

# Standard Worm Gear Speed Reducers



 **DELROYD WORM GEAR™**

A REGAL REXNORD BRAND



# Worm Gear Speed Reducers

Single, Double and Triple Worm Gearing

## Standard Features

- Single, Double and Triple Reductions
- 2" to 20" Center Distances
- Ratios of 5:1 to 175,000:1
- Drywell Construction on Vertical Units
- Multi-Mounting Configurations
- Solid Shaft and Hollow Shaft Designs
- Fan Cooled
- Oil Level Sight Glass
- 30,000 PSI Gray Cast Iron Housings
- High Strength Alloy Steel on Input and Output Shafts
- Centrifugally Cast Phosphorous Bronze Gears
- High Shock Load Capacity
- "C" Face Motor Flanges
- Motor Scoops



## Reliability and Versatility

Over the years, Delroyd Worm Gear Speed Reducers have developed an unmatched reputation for reliability and versatility. These years of experience assure you of a proven design and reliable service.

The exclusive use of the involute helicoid thread form (with leaving side contact) on the worm & gear, provides for high efficiencies and long service life. The hardened, ground and polished alloy steel worm develops a smooth, work hardened surface on the bronze gear. For this reason, the worm gears wear in and improve with prolonged service while other gears are wearing out.

Delroyd offers a wide selection of model configurations, sizes, ratios and accessories from our standard product line.

**Call Our Toll-Free Application Hotline:**

**800-432-0121**

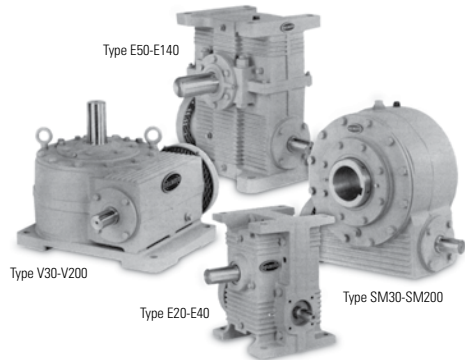
[www.delroyd.com](http://www.delroyd.com)

2221 Niagara Falls Boulevard  
Niagara Falls, NY 14302 - USA  
716-298-4100

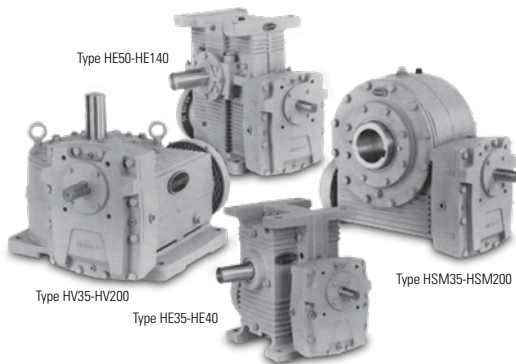
# Delroyd Worm Gear Speed Reducers

## Standard Units in Cast Iron Cases

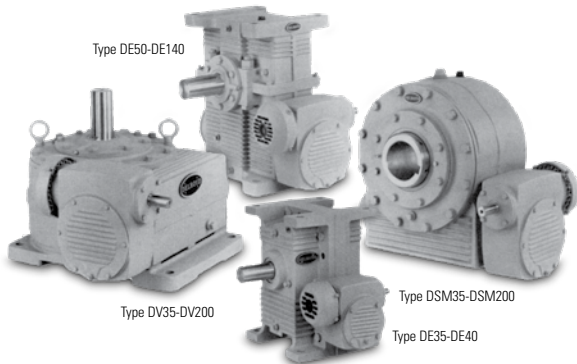
### Single Reduction Speed Reducers



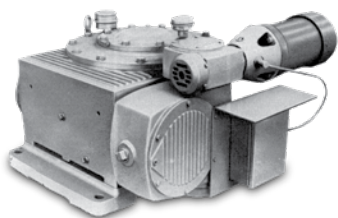
### Helical Worm Speed Reducers



### Double Worm Speed Reducers



### Triple Reduction Speed Reducers



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***For Lubrication Recommendations contact  
Delroyd Worm Gear Directly at 800-432-0121***

Triple Reduction  
Speed Reducers

Double Worm  
Speed Reducers

Helical Worm  
Speed Reducers

Single Reduction  
Speed Reducers

# Application Data Power Transmission Design Requirements

## Gear Set/Speed Reducer Application



### Delroyd Worm Gear

PO Box 1032  
Niagara Falls, NY USA 14302-1032

Tel: 716.298-4100  
Fax: 716.298-4101

Please photocopy this page and complete the data below. Forward information to address/number above for prompt action. We will contact you with our recommendations for your application.

☐ Gear Set      Quantity to be purchased \_\_\_\_\_      Delivery required \_\_\_\_\_  
☐ Speed Reducer      Quantity to be purchased \_\_\_\_\_      Delivery required \_\_\_\_\_

1. Prime Mover \_\_\_\_\_ Driven Load \_\_\_\_\_

2. Horsepower Transmitted: \_\_\_\_\_  
Motor HP \_\_\_\_\_ RPM \_\_\_\_\_ Motor Starting Torque \_\_\_\_\_  
Motor Frame Size \_\_\_\_\_ Brake Size \_\_\_\_\_

3. Normal Reducer Input Speed \_\_\_\_\_

4. Duty: ☐ Continuous ☐ Intermittent \_\_\_\_\_ Hours/Day \_\_\_\_\_ Minutes/Hour \_\_\_\_\_ Starts/Hour \_\_\_\_\_ Days/Week

5. AGMA Load Class: ☐ Uniform ☐ Moderate Shock ☐ Heavy Shock

6. Service Factor \_\_\_\_\_ ☐ From Above Data ☐ Required by Customer's Spec.

7. Output Torque Load \_\_\_\_\_

8. Ratio: \_\_\_\_\_:1 (± \_\_\_\_\_ %) ☐ Decrease ☐ Increase

9. Noise Limitations \_\_\_\_\_

10. Hours Life Expectancy \_\_\_\_\_ at \_\_\_\_\_ % of Rated Load

11. Environmental Conditions: ☐ Indoors ☐ Outdoors  
Temperature: High \_\_\_\_\_ °F Low \_\_\_\_\_ °F Other \_\_\_\_\_

12. Specifications to be adhered to:  
☐ AGMA ☐ Other ☐ MIL STD ☐ Bureau Ships ☐ OSHA

13. Output Shaft Overhung Load \_\_\_\_\_ lbs. at \_\_\_\_\_" from centerline or reducer.

14. Output Shaft Axial Thrust Load \_\_\_\_\_ lbs.

15. ☐ Stationary ☐ Mobile ☐ "G" Loading \_\_\_\_\_

16. Lube Oil Available: ☐ No ☐ Yes If Yes, what kind of oil? \_\_\_\_\_  
Pressure \_\_\_\_\_ PSI Flow \_\_\_\_\_ GPM Temp \_\_\_\_\_ °F Filtered: ☐ Yes ☐ No

17. Oil Cooler Available: ☐ No ☐ Yes

18. Envelope Requirements \_\_\_\_\_  
(Include sketch if possible.)

19. Input Shaft: ☐ Vertical (Up) ☐ Vertical (Down) ☐ Horizontal  
☐ Single-Extended ☐ Double-Extended  
☐ Other Specials (Describe) \_\_\_\_\_

20. Output Shaft: ☐ Vertical (Up) ☐ Vertical (Down) ☐ Horizontal  
☐ Single-Extended ☐ Double-Extended  
☐ Other Specials (Describe) \_\_\_\_\_

21. Special Paint Requirements \_\_\_\_\_

22. Export Boxing Required: ☐ Yes ☐ No

23. Please attach application sketch

24. Company Name \_\_\_\_\_ Your Name \_\_\_\_\_  
Address \_\_\_\_\_  
City \_\_\_\_\_ State \_\_\_\_\_ Zip \_\_\_\_\_  
Phone No. \_\_\_\_\_ Fax No. \_\_\_\_\_



# Advantages of Delroyd Worm Gearing

## Compactness and High Ratio Reduction

Single reduction worm gearing offers high ratio reduction with few moving parts in a close-coupled compact drive. The right angle arrangement of driving-to-driven machine requires a minimum of space. Input and output shafts can be extended in either or both directions in horizontal or vertical arrangements adaptable to any mounting requirement. Efficient motor speeds are reduced to slow speed requirements of many industrial machines in one reduction.

Double reduction units give a wider ratio range beyond practical single reduction limits. Compact right angle or parallel shaft arrangements are provided with the same versatility of shaft extensions.

## Long, Quiet Life

All worm gears incorporated in Delroyd reducers are made from phosphor bronze. The hardened, ground and polished alloy steel worm develops a smooth, work hardened surface on the bronze. For this reason, worm gears wear in and improve with prolonged service while other gears are wearing out. Two or more teeth are in contact with the worm at all times, transmitting power by a continuous, quiet and shockless action. The flow of torque is smooth and free from angular velocity changes. Vibration, pulsation, chatter, and other customary gear noises are thus eliminated.

## High Shock Load Capacity

The Delroyd worm gear tooth form is such that the gear teeth are under a crushing, rather than a bending load. For this reason, extremely high momentary shock loads, damaging to many forms of gearing, can be successfully withstood. High momentary overloads seldom cause failure, as worm gear ratings are figured on the wear resistance of the gear teeth.

## Safety and Ease of Maintenance

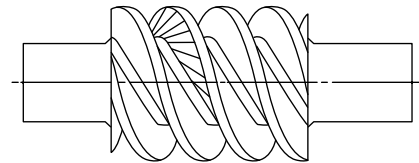
The few moving parts are completely enclosed assuring oil tightness. Hazards of exposed moving parts are avoided. Reducers operate with minimum attention even under the most adverse conditions.

## Interchangeability of Components

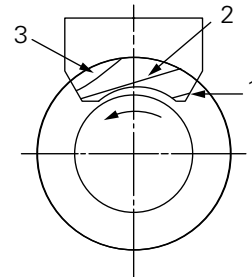
Standard parts are always available. All parts are manufactured to be interchangeable by use of limit gages retained as reference standards to assure precision and uniformity. The need for matched gearing is thus avoided. Worms and gears of different ratios can be readily interchanged if revision of speeds becomes necessary.

The involute helicoid ensures accuracy of profile and shape necessary to obtain proper contact and closeness of contact. More load carrying capacity, better accuracy, and longer life than any other thread form are assured.

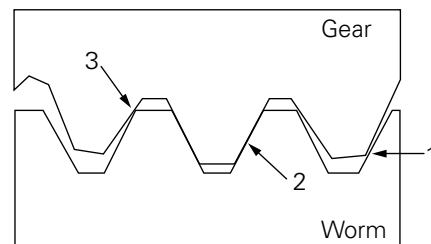
Conservative Delroyd ratings are based on more contact and greater torque arm in a given space. Delroyd contact is less sensitive to mounting dimension variations than any other thread form. Delroyd worms or gears can be replaced as interchangeable components without hours of lapping and running-in.



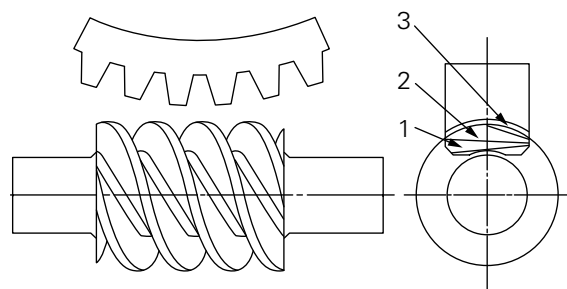
Involute Helicoid Straight Line Generation



Proper Contact

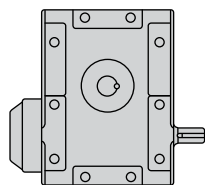


Closeness of Contact

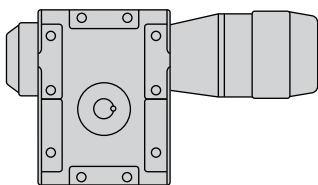


Multiple Lines of Contact

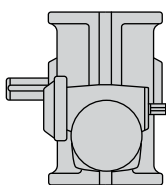
# Models Available



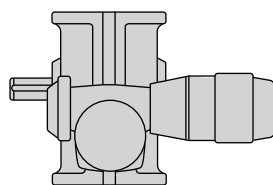
E20-E40



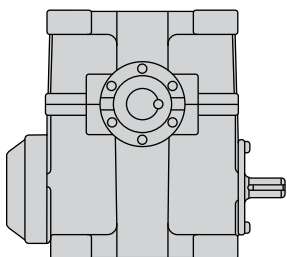
EMM20-EMM40



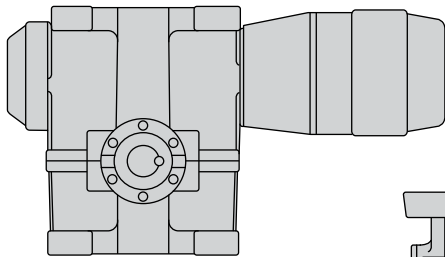
DE35-DE40



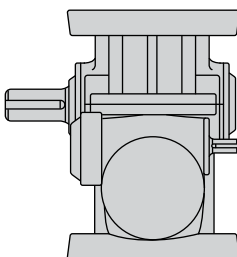
DEMM35-DEMM40



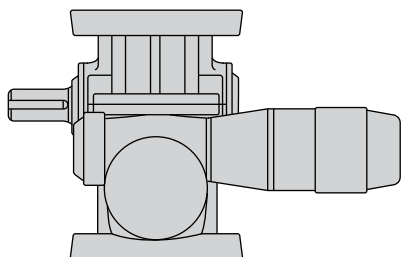
E50-E140



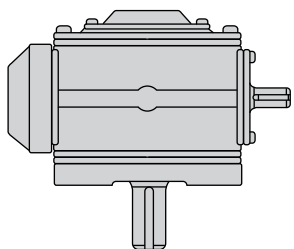
EMM50-EMM80



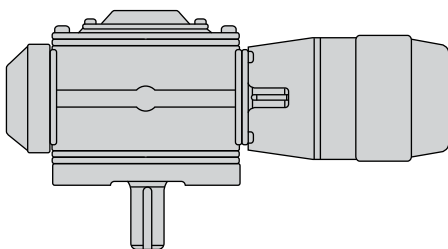
DE50-DE140



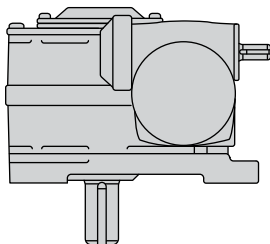
DEMM50-DEMM140



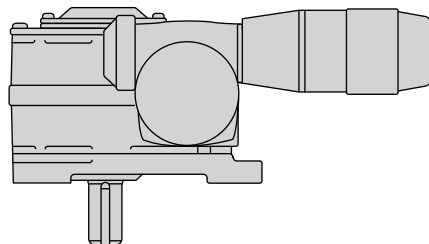
V30-V200



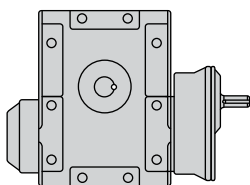
VMM30-VMM80



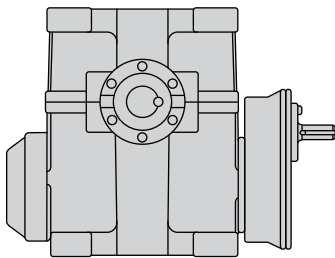
DV35-DV200



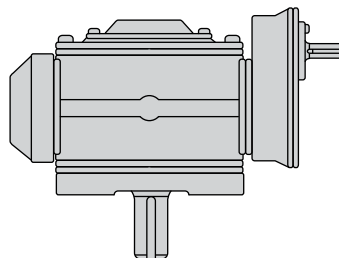
DVMM35-DVMM170



HE35-HE40

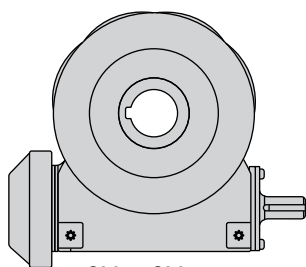


HE50-HE140

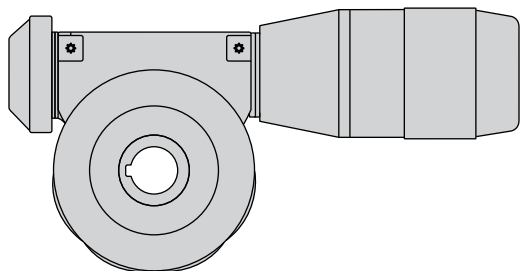


HV35-HV200

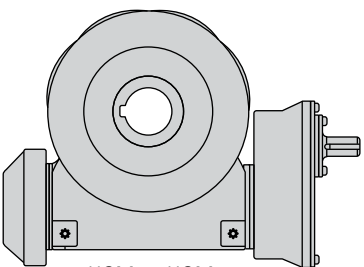
# Models Available



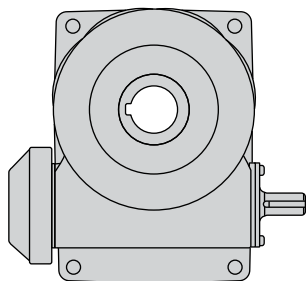
SM30-SM200



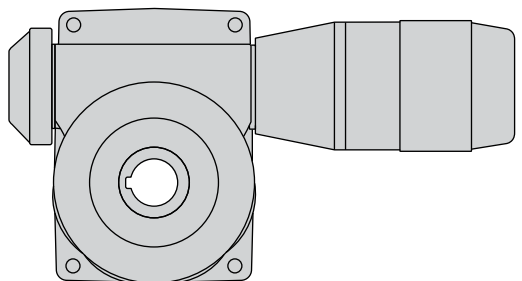
SMMM30-SMMM80



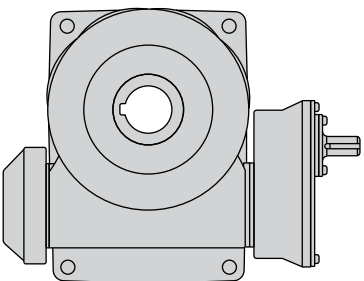
HSM35-HSM200



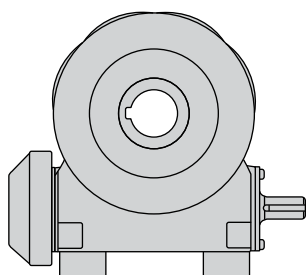
SMF30-SMF200



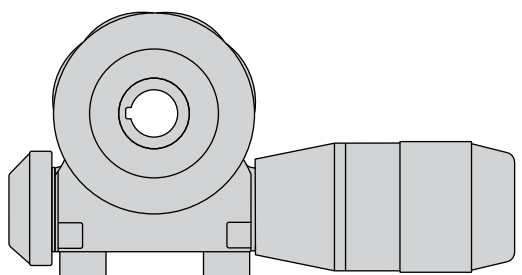
SMFMM30-SMFMM80



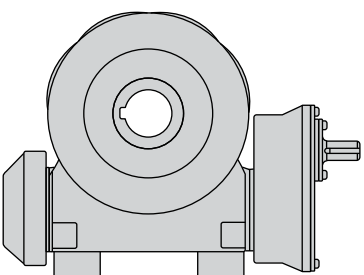
HSMF35-HSMF200



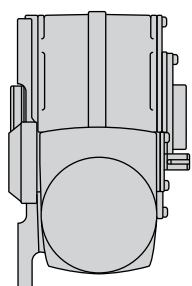
SMB30-SMB200



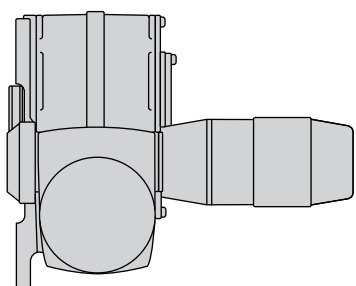
SMBMM30-SMBMM80



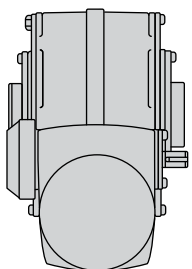
HSMB35-HSMB200



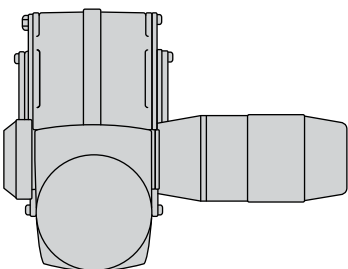
DSMF35-DSMF200



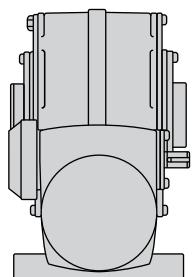
DSMFMM35-DSMFMM170



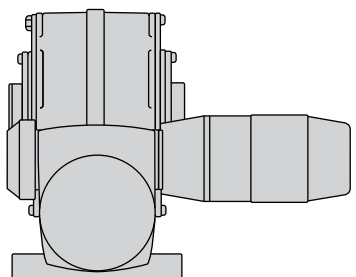
DSM35-DSM200



DSMMM35-DSMMM170

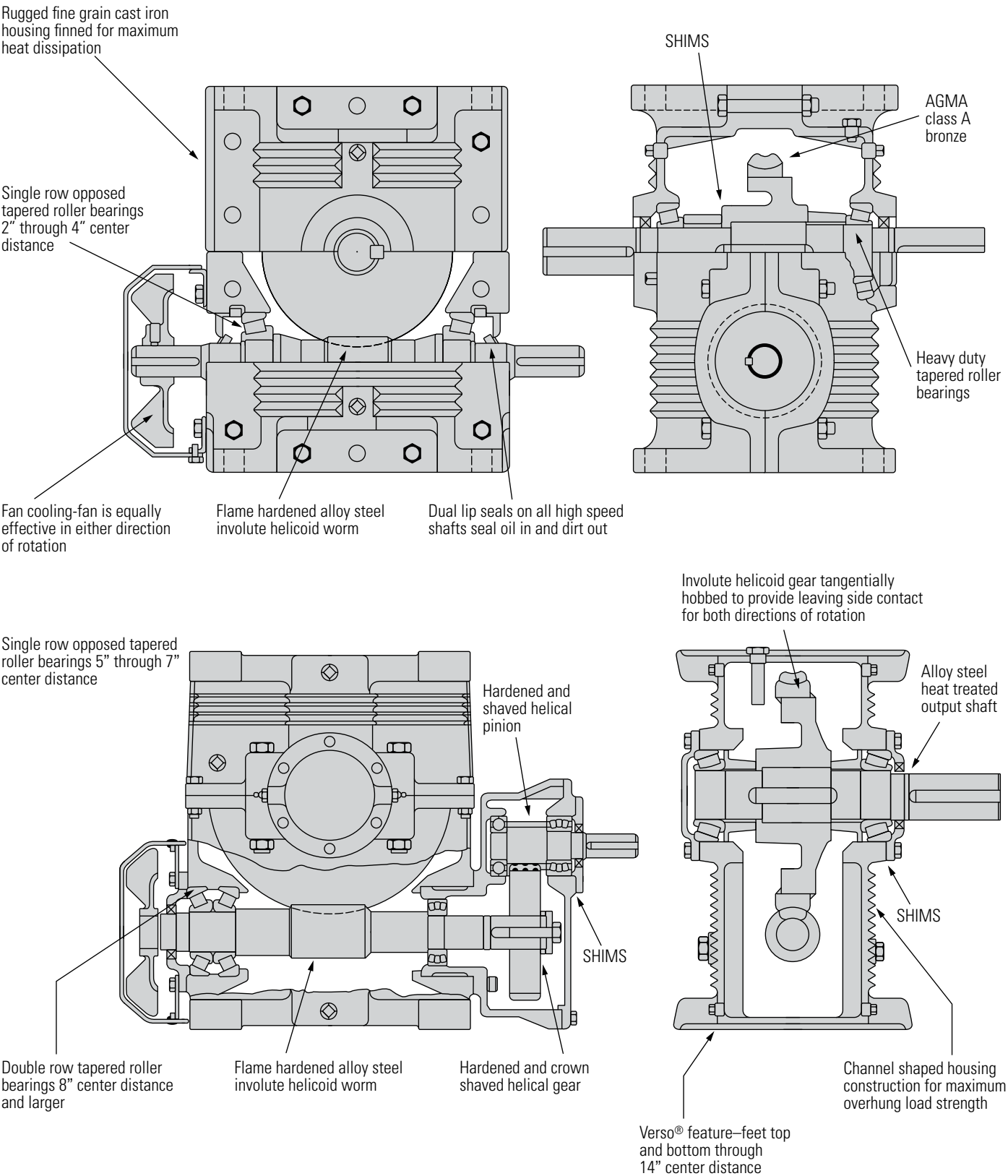


DSMB35-DSMB200



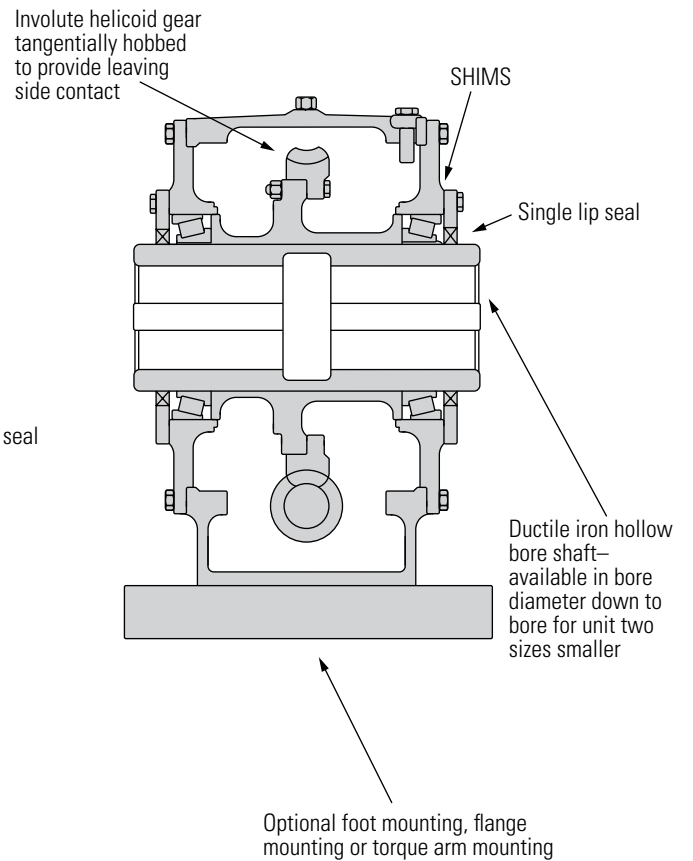
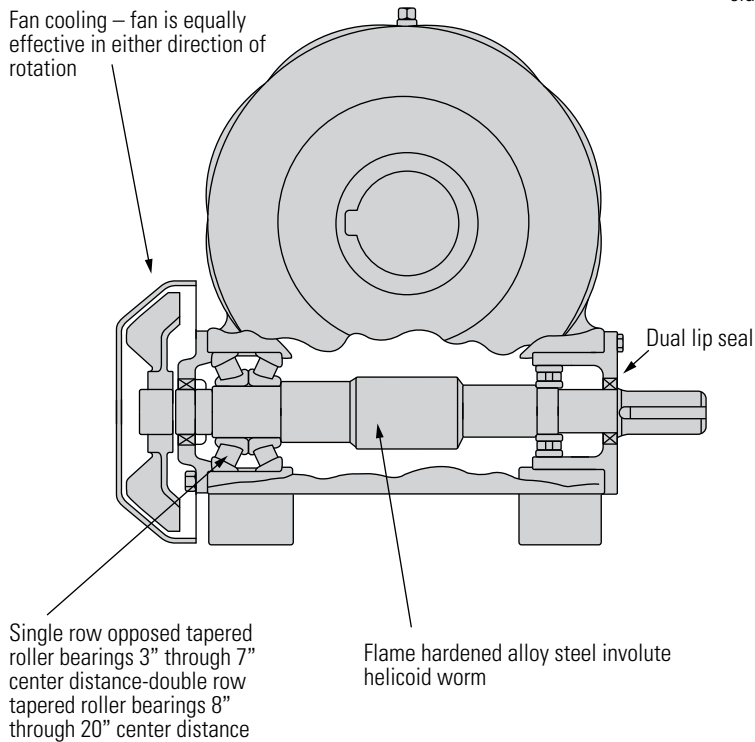
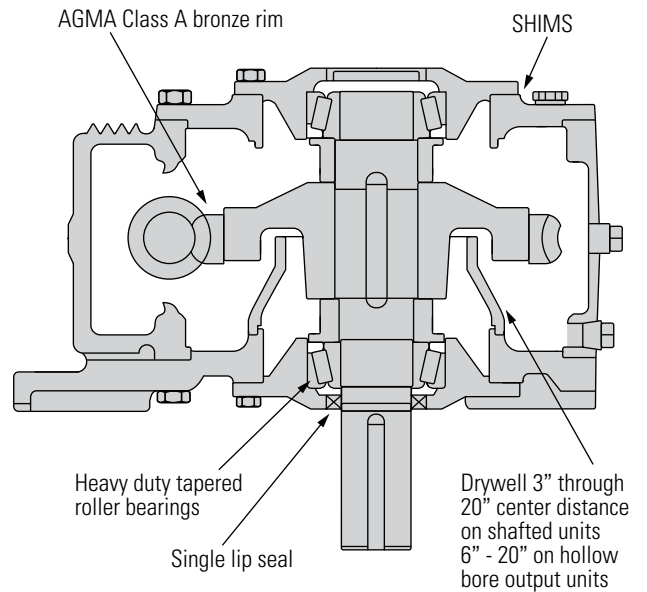
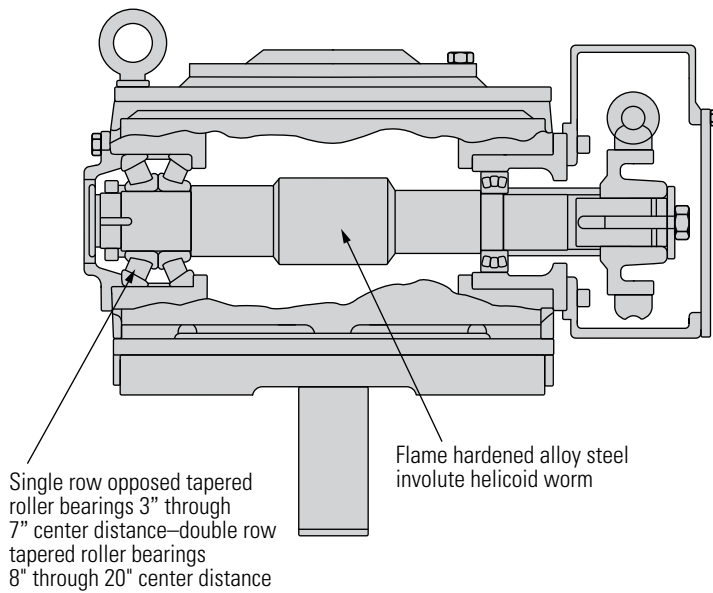
DSMBMM35-DSMBMM170

# Design Features and Internal Construction

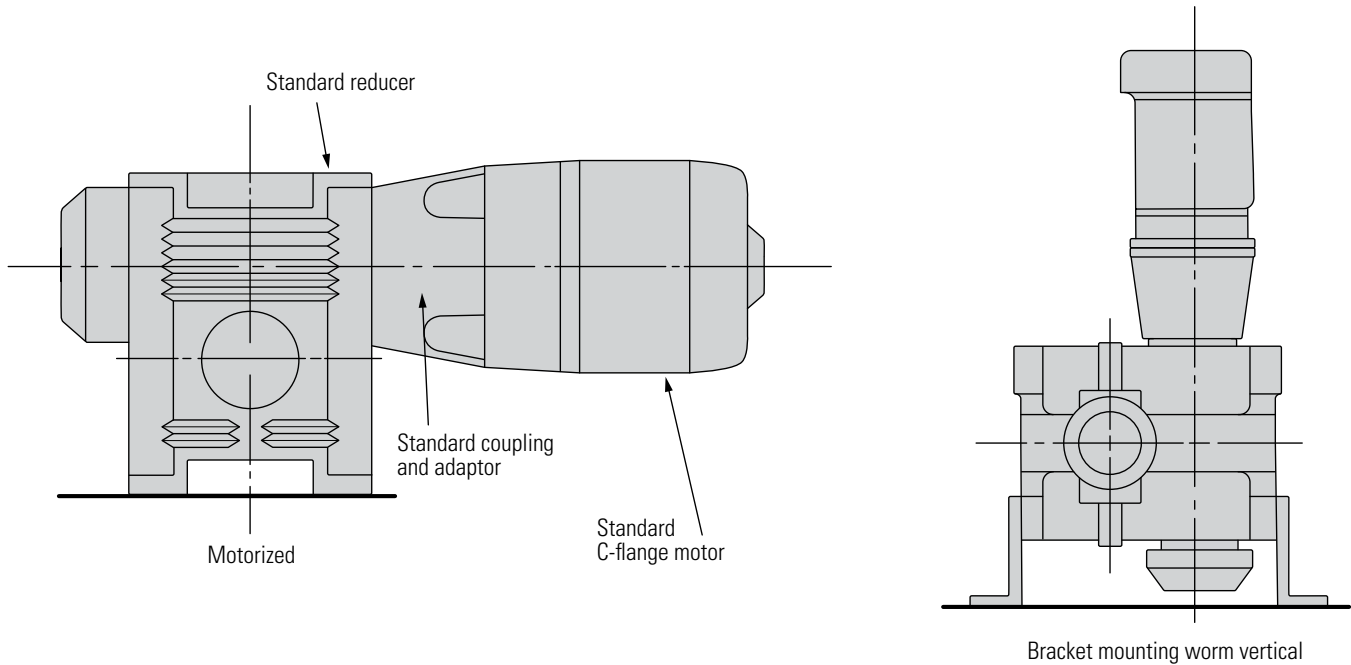




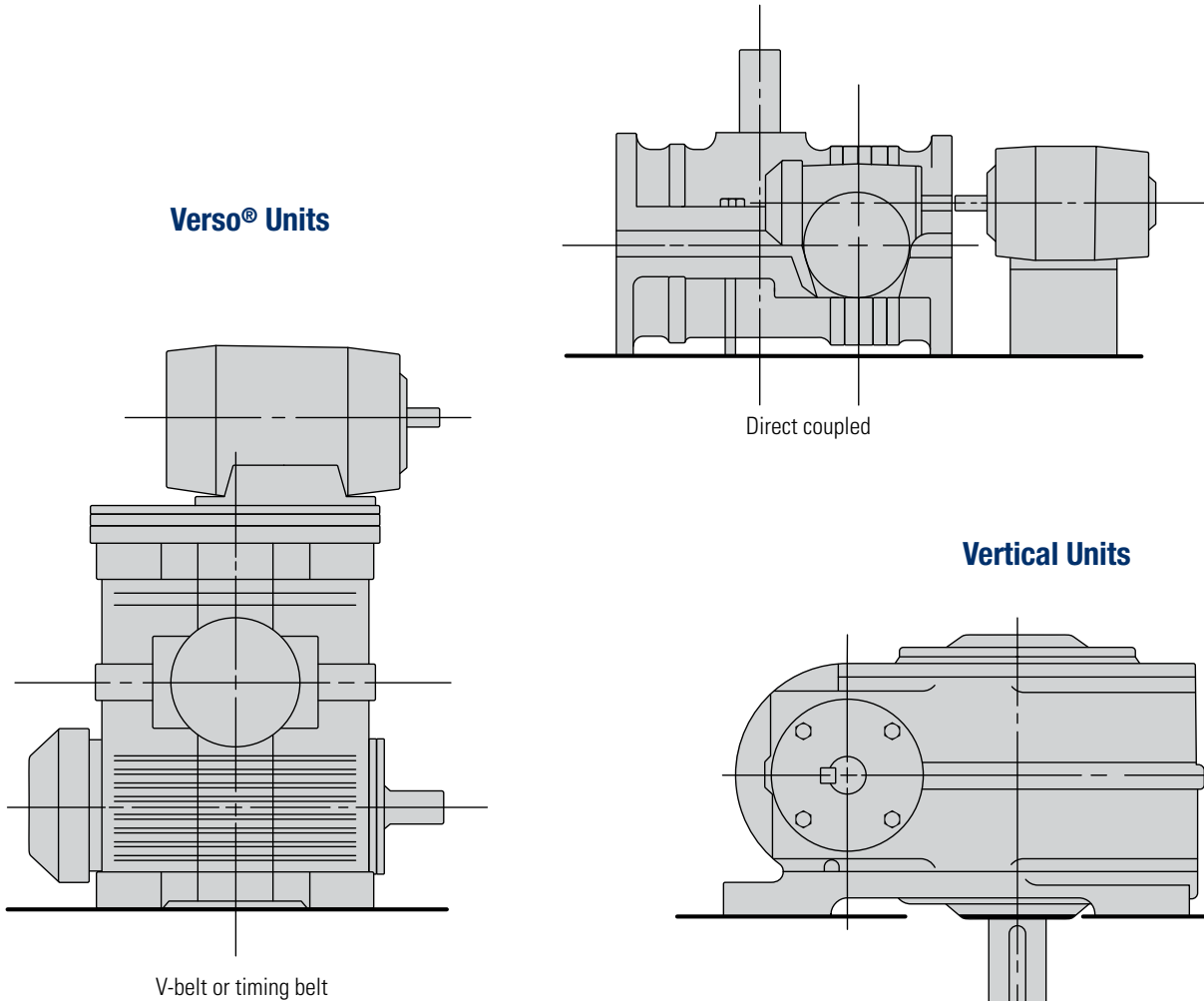
# Design Features and Internal Construction



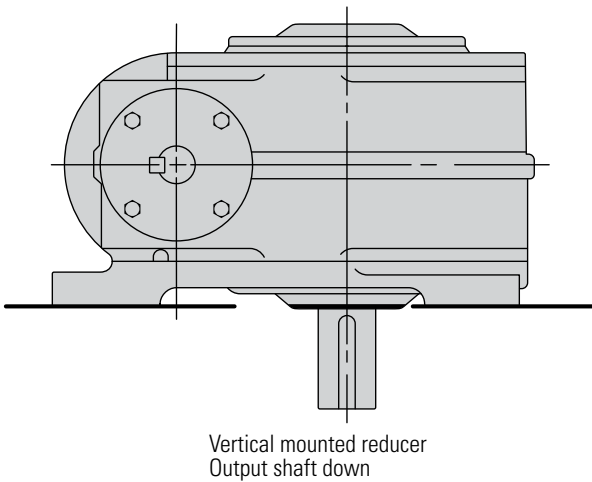
# Typical Applications of Delroyd Speed Reducers



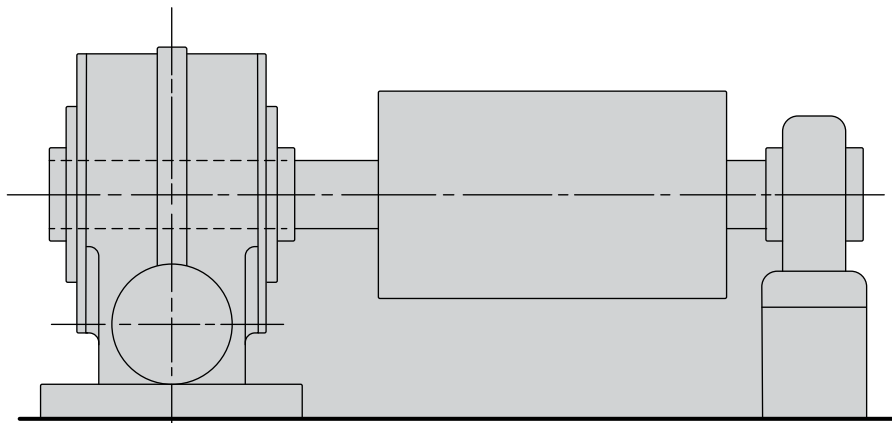
## Verso® Units



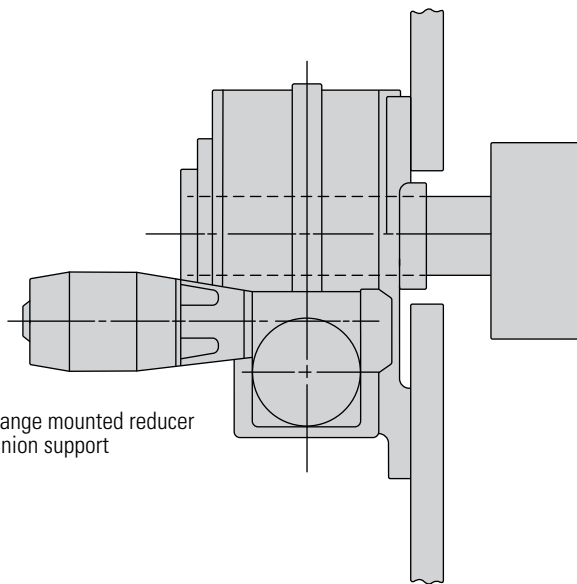
## Vertical Units



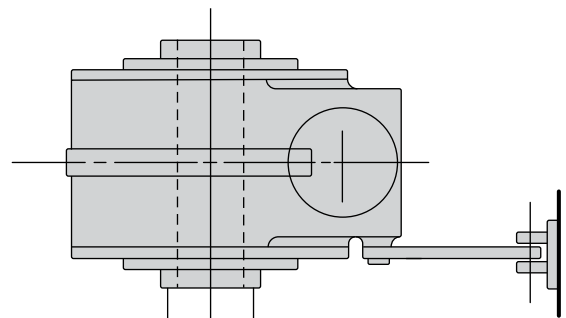
# Typical Applications of Delroyd Speed Reducers



Foot mounted reducer  
Conveyor head shaft support

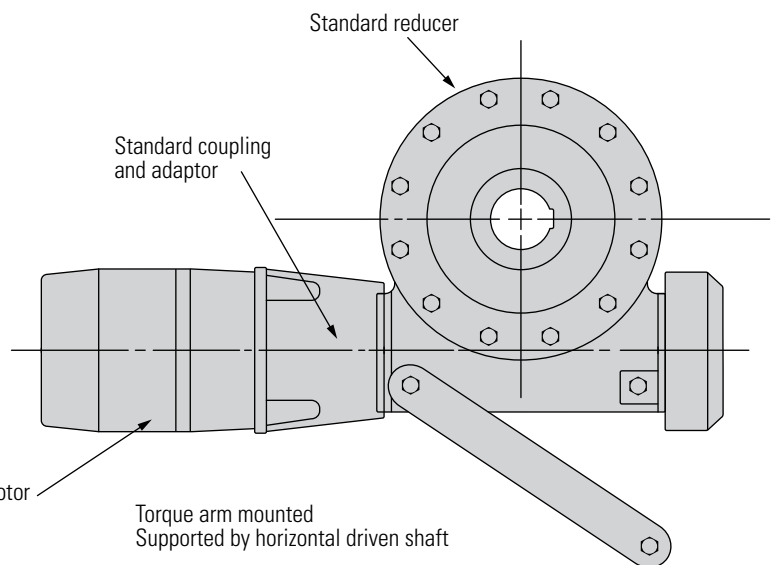


Flange mounted reducer  
Pinion support



Torque arm mounted  
Supported by vertical driven shaft

## Shaft Mounted Units



Standard reducer

Standard coupling  
and adaptor

Standard  
C-flange motor

Torque arm mounted  
Supported by horizontal driven shaft

# Standard Specifications

## Backlash

The gearing contained in any reducer requires a certain amount of backlash for satisfactory operation. Clearance must be provided to accommodate an oil film and to allow for thermal expansion. The amount of backlash provided is not of particular importance in most applications, though closer limits than required will result in unnecessary higher costs and should be avoided. It is important, however, to recognize where minimum backlash may be required to insure proper equipment functioning. Close limits are most often specified for accuracy of index or timing. In other instances it may be advantageous to specify minimum backlash for the purpose of limiting the stress at the gear teeth caused by shock loading- such as a reversing impact load.

Listed in the table are standard single reduction limits measured by a "circular shake" movement at an output shaft radius equal to the gear pitch radius. The peripheral movement of the worm, with the gear shaft held fixed, would differ from values shown in the table. For this reason the actual value of total backlash between double reduction gear pairs is not determined by adding table tolerances for respective sizes. Consult the factory for double reduction unit backlash.

## Lubrication

Oil contained in the housing reservoir is automatically directed by splash to the worm bearings and zone of tooth contact. (Gear bearings are grease lubricated at the factory and require only occasional attention.) Oil levels should be maintained properly. In accordance with best practice, a complete oil change is advisable after every six months of normal service.

Oil seals are fitted on all shaft extensions. "Drywells" are standard equipment on the larger units to assure positive sealing of vertical down shaft extensions. Filler plugs, drain holes, breathers and inspection openings are accessible for all mounting arrangements.

Lubricant types and oil capacities for each size and type reducer can be found in the Operation and Maintenance Manuals which are shipped with each unit or can be found at our web site. The oil level should be maintained at heights determined by the oil level sight gauge or plug in the reducer housing and checked only when the reducer is not operating.

## Reversibility

All units are capable of running in either direction of worm rotation. Both faces have leaving side contact in relation to the corresponding direction of worm rotation. All Delroyd gears are hobbled to attain this ideal condition.

## Self-Locking or Irreversibility

A self-locking worm gear is one which cannot be operated by applying power at the gear. Standard reducers incorporate gearing designed for most efficient power transmission and are not usually suited for self-locking service. A gear which is self-locking when stationary and subjected to only steady or light loads may start to creep in the presence of vibration and heavy loads. Owing to the rapid drop in the coefficient of friction with an increase in rubbing velocity, the efficiency of the drive rapidly increases with the RPM and the unit will quickly gather speed.

| Center Distance | Backlash Limits |
|-----------------|-----------------|
| 2.00"           | .003/.013"      |
| 2.50"           | .003/.013"      |
| 3.00"           | .003/.013"      |
| 3.50"           | .003/.013"      |
| 4.00"           | .004/.014"      |
| 5.00"           | .004/.014"      |
| 6.00"           | .005/.015"      |
| 7.00"           | .006/.018"      |
| 8.00"           | .007/.020"      |
| 9.00"           | .008/.021"      |
| 10.00"          | .010/.023"      |
| 12.00"          | .010/.026"      |
| 14.00"          | .013/.031"      |
| 17.00"          | .015/.036"      |
| 20.00"          | .019/.043"      |

Means of approaching locking characteristics include use of higher, less efficient ratios (above 50:1) and designing for inefficiency (purposely using special design worms of large diameter and lead angles of 5 degrees or less). Such recourse cannot be depended upon in actual practice. The best way to obtain locking is to use a brake, released electrically when the motor is started. The best location for this brake is on the motor shaft or reducer input shaft. With worm gears of high ratios, the braking effect should be only a fraction of full load motor torque.

## Overdriving

Ratios of 5: 1 through 15:1 can be used as speed increasers with approximately the same ratings as given in the catalog. Ratios above approximately 15:1 can tend to lock dynamically. Therefore, these ratios should be avoided in applications involving high inertia loads such as fan drives and wheel axle drives where the load tends to drive the gear when stopping. When ratios above 15:1 must be used in such applications, consult the factory.

# Selection Procedure

## Ratings and Service Factors

Reducers must be selected by considering both mechanical and thermal ratings. Tables in this book provide both mechanical ratings and thermal ratings in terms of input horsepower and inch-pounds output torque. Note that the fan cooled Delroyd design permits continuous service thermal ratings at a level equal to mechanical gearing capacities in most ranges.

Mechanical ratings reflect gearing wear capacity. Values in the rating tables apply for continuous service, free from recurrent shock loading, and of total duration up to ten hours per day. Normal starting or momentary peak loads up to 300% of this rating are permissible for a maximum period of two seconds duration. The total number of 300% peak loads is limited to 25,000 over the life of the reducer. Use of service factors is necessary dependent on

actual nature and duration of service. The terms **“intermittent”** and **“occasional”** specified in the service factor table refer to total operating time per day while the term **“frequent starts and stops”** refers to more than ten starts per hour.

Thermal ratings above 100-200 RPM worm speed represent the input HP which will provide a stabilized 100°F oil temperature rise over ambient air temperature when operated continuously. For example, if the ambient air temperature is 70°F, a reducer carrying rated thermal HP will operate with an average oil temperature of 170°F. Since normal worm gear lubricants will deteriorate rapidly and require frequent replacement when operating continuously at 210-220°F, they may not properly support gear mesh loads. Thus the practical maximum ambient air temperature for worm gear reducers carrying full thermal rating HP is 100°F.

## Service Factors

| Prime Mover                                | Duration of Service     | Driven Machine AGMA Load Classification         |                                                        |                                                     |
|--------------------------------------------|-------------------------|-------------------------------------------------|--------------------------------------------------------|-----------------------------------------------------|
|                                            |                         | Uniform<br>(Peak Load of 100%<br>of Driver Hp.) | Moderate Shock<br>(Peak Load of 125%<br>of Driver Hp.) | Heavy Shock<br>(Peak Load of 150%<br>of Driver Hp.) |
| Electric motor                             | occasional – ½ hr/day   | 0.80                                            | 0.90                                                   | 1.00                                                |
|                                            | intermittent – 2 hr/day | 0.90                                            | 1.00                                                   | 1.25                                                |
|                                            | 10 hr/day               | 1.00                                            | 1.25                                                   | 1.50                                                |
|                                            | 24 hr/day               | 1.25                                            | 1.50                                                   | 1.75                                                |
| Multicylinder internal combustion engine   | occasional – ½ hr/day   | 0.90                                            | 1.00                                                   | 1.25                                                |
|                                            | intermittent – 2 hr/day | 1.00                                            | 1.25                                                   | 1.50                                                |
|                                            | 10 hr/day               | 1.25                                            | 1.50                                                   | 1.75                                                |
|                                            | 24 hr/day               | 1.50                                            | 1.75                                                   | 2.00                                                |
| Single cylinder internal combustion engine | occasional – ½ hr/day   | 1.00                                            | 1.25                                                   | 1.50                                                |
|                                            | intermittent – 2 hr/day | 1.25                                            | 1.50                                                   | 1.75                                                |
|                                            | 10 hr/day               | 1.50                                            | 1.75                                                   | 2.00                                                |
|                                            | 24 hr/day               | 1.75                                            | 2.00                                                   | 2.25                                                |

### For Frequent Starts and Stops

|                |                         |      |      |      |
|----------------|-------------------------|------|------|------|
| Electric motor | occasional – ½ hr/day   | 0.90 | 1.00 | 1.25 |
|                | intermittent – 2 hr/day | 1.00 | 1.25 | 1.50 |
|                | 10 hr/day               | 1.25 | 1.50 | 1.75 |
|                | 24 hr/day               | 1.50 | 1.75 | 2.00 |



# Selection Procedure

Selections must be made on the basis of thermal ratings when they are less than the mechanical rating divided by the appropriate service factor. In making this comparison, do not apply service factors to thermal ratings since the nature of loading has a negligible effect on oil bath temperature rise. Thermal ratings can be completely ignored in occasional or intermittent service classification since the reducer can cool down between runs.

The total ratings of double reduction units are based on a 1.0 service factor. When operating conditions differ from those for proper application of a 1.0 service factor, the tabulated ratings for both helical-worm and double worm units must be divided by the appropriate service factors selected from the table on the opposite page.

### Allowable Starting Load

If the peak starting load of the driven machine is within 300% of the normal operating load, and has a maximum starting period of two seconds duration, the reducer selection may be based on the catalog rating with a 1.0 service factor. When the starting load exceeds 300% of the listed rating, the reducer selection should be based on peak load divided by 3. If the starting load is 300% of the catalog rating and exceeds two seconds in length, a larger size reducer is required.

| The procedure in the selection of a reducer should be as follows: |                                                                                                                                                                                                |
|-------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Step 1.                                                           | Determine ratio required to provide desired output speed.                                                                                                                                      |
| Step 2.                                                           | Determine service classification and corresponding service factor.                                                                                                                             |
| Step 3.                                                           | Refer to the horsepower rating table of the desired ratio. Select mechanical input and output rating which, when divided by the service factor, is equal to or greater than the required load. |
| Step 4.                                                           | In all applications except for intermittent service, check to see that the thermal horsepower or torque rating is greater than the mechanical rating divided by the service factor.            |
| Step 5.                                                           | Check external loads applied to reducer.                                                                                                                                                       |
|                                                                   | This procedure involves careful consideration of driven machine load classification for proper determination of service factor. See pages 13 and 14.                                           |

### Standard Ratios

Ratios are listed in the rating tables. All are standard with right hand threads as manufactured in stock lots using existing tooling. They should be used whenever possible since special ratios require special tools and additional costs. Note that the hunting tooth principle is used to provide highest accuracy throughout the gearing life.

### Horsepower and Torque

In transmitting power through a speed reducer, neglecting losses due to friction, the HP remains constant and the torque increases in the same ratio as the speed is reduced. To determine the horsepower required to drive a machine, it is sometimes necessary to ascertain the torque needed to operate the driven shaft at its desired speed. The conversion of output shaft torque and speed to input horsepower may be accomplished by using the following formula:

$$HP = \frac{P \times R \times RPM}{63,025 \times Eff} = \frac{T \times RPM}{63,025 \times Eff}$$

HP = Input HP

T = Output torque, in inch-pounds

R = Radius at which load force or weight is applied, in inches

RPM = Revolutions per minute of output shaft

P = Force or weight, in pounds

Eff = Efficiency, from table on page 15

# Load Class Tables

## Partial List of Typical Equipment Using Delroyd Reducers

| Application                                                            | Load Nature                                                                                   |                                                                                                                                                                                                |                                                                                                                                                      |                                                                                                                                                                                  |
|------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                                                                        | UNIFORM<br>(Peak load of 100% of Driver Hp.)                                                  | MODERATE SHOCK<br>(Peak load of 125% of Driver Hp.)                                                                                                                                            |                                                                                                                                                      | HEAVY SHOCK<br>(Peak load of 150% of Driver Hp.)                                                                                                                                 |
| Agitators                                                              | Pure and semi-liquids<br>(with uniform density)                                               | Liquids and solids<br>Liquids (variable density)                                                                                                                                               |                                                                                                                                                      |                                                                                                                                                                                  |
| Blowers                                                                | Vane and centrifugal                                                                          | Lobe                                                                                                                                                                                           |                                                                                                                                                      |                                                                                                                                                                                  |
| Brewing                                                                | Bottling machines      Cookers<br>Brew kettles              Mash tubs<br>Can filling machines | Scale hoppers - frequent starts                                                                                                                                                                |                                                                                                                                                      |                                                                                                                                                                                  |
| Car dumpers                                                            |                                                                                               |                                                                                                                                                                                                |                                                                                                                                                      | Heavy                                                                                                                                                                            |
| Car pullers                                                            |                                                                                               | Moderate                                                                                                                                                                                       |                                                                                                                                                      |                                                                                                                                                                                  |
| Clarifiers                                                             | Uniform                                                                                       |                                                                                                                                                                                                |                                                                                                                                                      |                                                                                                                                                                                  |
| Clay working machinery                                                 |                                                                                               | General and pug mills                                                                                                                                                                          |                                                                                                                                                      | Brick presses<br>Briquette machines                                                                                                                                              |
| Compressors                                                            | Centrifugal<br>Rotary                                                                         | Lobe<br>Reciprocating (multi-cylinder)                                                                                                                                                         |                                                                                                                                                      | Reciprocating (single-cylinder)                                                                                                                                                  |
| Conveyors<br>(uniformly loaded or fed)                                 | Apron      Bucket      Oven<br>Assembly   Flight   Screw<br>Belt        Floor        Trolley  |                                                                                                                                                                                                |                                                                                                                                                      |                                                                                                                                                                                  |
| Conveyors (not uniformly<br>loaded or fed and<br>non-uniform material) |                                                                                               | Apron      Belt      Chain      Oven<br>Assembly   Bucket   Flight   Screw                                                                                                                     |                                                                                                                                                      | Reciprocating<br>Shaker                                                                                                                                                          |
| Cranes and Hoists                                                      | Auxiliary hoists      Main hoists<br>Luffing booms                                            | Medium duty: reversing, skip, travel or<br>trolley motion                                                                                                                                      |                                                                                                                                                      | Heavy duty: reversing, skip,<br>travel or trolley motion                                                                                                                         |
| Crushers                                                               |                                                                                               |                                                                                                                                                                                                |                                                                                                                                                      | Ore or stone                                                                                                                                                                     |
| Elevators                                                              | Bucket (uniform and continuous)<br>Centrifugal discharge<br>Escalators<br>Gravity discharge   | Bucket (heavy load)<br>Freight                                                                                                                                                                 |                                                                                                                                                      | Refer passenger elevators to factory                                                                                                                                             |
| Fans                                                                   | Centrifugal (uniform speed & balance)<br>Light, small diameter propeller type                 | Induced draft<br>Large mine                                                                                                                                                                    |                                                                                                                                                      | Refer cooling towers to factory                                                                                                                                                  |
| Feeders                                                                | Disc                                                                                          | Apron      Belt      Screw                                                                                                                                                                     |                                                                                                                                                      | Reciprocating                                                                                                                                                                    |
| Food                                                                   | Bottling machines<br>Can filling machines<br>Cereal cookers                                   | Beet slicers<br>Dough mixers<br>Meat grinders                                                                                                                                                  |                                                                                                                                                      |                                                                                                                                                                                  |
| Hoists (see cranes)                                                    |                                                                                               |                                                                                                                                                                                                |                                                                                                                                                      |                                                                                                                                                                                  |
| Line shafts                                                            | Group drives (light duty)<br>Other line shafts                                                | Driving process equipment                                                                                                                                                                      |                                                                                                                                                      |                                                                                                                                                                                  |
| Lumbering and sawmills                                                 | Small waste conveyor belts                                                                    | Burner conveyors<br>Edger feeds<br>Gang feeds<br>Green chains<br>Off bearing rolls<br>Plane feed & floor chains<br>Planer tilting hoists<br>Re-saw conveyors<br>Small waste<br>conveyor chains | Sorting tables<br>Tipple hoist conveyors<br>Tipple hoist drives<br>Transfer and waste<br>conveyors<br>Transfer rolls<br>Tray drives<br>Trimmer reeds | Chain transfers<br>Craneway transfers<br>Live rolls<br>Log decks<br>Log hauls-incline and well type<br>Log turning devices<br>Main log conveyors<br>Roll cases<br>Slab conveyors |
| Machine tools                                                          | Auxiliary drives (feed, traverse)                                                             | Bending rolls<br>Main drives                                                                                                                                                                   |                                                                                                                                                      | Plate planers      Tapping machines<br>Punch presses                                                                                                                             |

Load classes identified above are for guidance. Choice of applicable service factor should be based on consideration of the actual load nature and duty cycle anticipated. Applications involving more than ten starts and stops per hour or where high energy loads must be absorbed are not covered. Maximum momentary starting load must not exceed 300% of speed reducer rating with service factor of 1.0.

# Load Class Tables

## Partial List of Typical Equipment Using Delroyd Reducers

| Application                  | Load Nature                                                                    |                                                                                                                        |                                                                                                           |
|------------------------------|--------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------|
|                              | UNIFORM<br>(Peak load of 100% of Driver Hp.)                                   | MODERATE SHOCK<br>(Peak load of 125% of Driver Hp.)                                                                    | HEAVY SHOCK<br>(Peak load of 150% of Driver Hp.)                                                          |
| Marine machinery             | Turning gear                                                                   | Dredges - cable reel, conveyor<br>cutter head, jig, pump, screen stackers<br>Utility winches                           | Main winches<br>Pulleys, barge head<br>Windlasses and capstans                                            |
| Metal mills                  |                                                                                | Draw bench carriage and main drives<br>Slab pushers<br>Slitters<br>Small rolling mill drives                           | Table conveyors (non-reversing)<br>Wire drawing and flattening machines<br>Wire winding machines          |
| Mills-rotary type            |                                                                                | Ball<br>Cement kilns<br>Dryers and coolers<br>Kilns (other than cement)                                                | Pebble<br>Pug<br>Rod-plain and wedge bar                                                                  |
| Mixers                       | Constant density                                                               | Variable density<br>Concrete mixers                                                                                    |                                                                                                           |
| Oil production and refining  |                                                                                | Chillers<br>Paraffin filter presses<br>Rotary kilns                                                                    | Refer well pumping units to factory                                                                       |
| Paper mill drives            | Bleacher<br>Conveyors (uniformly loaded)<br>Presses<br>Suction roll<br>Winders | Agitators or mixers<br>Beaters and pulpers<br>Calenders<br>Converting machines, except cutters, platers<br>Couch rolls | Cylinders<br>Dryers<br>Felt stretchers<br>Pulp machine reels<br>Stock chests<br>Washers and thickeners    |
| Pumps                        | Centrifugal,<br>Rotary, gear, screw,<br>lobe, vane                             | Proportioning<br>Reciprocating- single acting (3 or more cylinders) or<br>double acting (2 or more cylinders)          | Reciprocating-single acting<br>(1 or 2 cylinders) or double<br>acting (single cylinder)                   |
| Rubber and plastics industry | Rubber mills – three on line                                                   | Calenders<br>Extruders<br>Laboratory equipment<br>Refiners                                                             | Rubber mills-two on line<br>Sheeters<br>Tubers and strainers<br>Warming mills                             |
| Sand mullers                 |                                                                                | Moderate                                                                                                               |                                                                                                           |
| Screens                      | Air washing<br>Traveling water intake                                          | Rotary (stone or gravel)                                                                                               |                                                                                                           |
| Sewage disposal equipment    | Bar screens<br>Chemical feeders<br>Collectors (sludge, grit)                   | Dewatering screens<br>Scum breakers<br>Slow or rapid mixers                                                            | Thickeners<br>Vacuum filters                                                                              |
| Stokers                      | Uniform                                                                        |                                                                                                                        |                                                                                                           |
| Textile machinery            |                                                                                | Batchers<br>Calenders<br>Cards<br>Dry cans<br>Dryers<br>Dye boxes<br>Jigs<br>Looms                                     | Nappers and gigs<br>Pads<br>Slashers<br>Soapers<br>Spinning frames<br>Tenter frames<br>Washers<br>Winders |
|                              |                                                                                |                                                                                                                        | Refer knitting machines and range drives to factory                                                       |

Load classes identified above are for guidance. Choice of applicable service factor should be based on consideration of the actual load nature and duty cycle anticipated. Applications involving more than ten starts and stops per hour or where high energy loads must be absorbed are not covered. Maximum momentary starting load must not exceed 300% of speed reducer rating with service factor of 1.0.

The approximate percentage efficiency of a single reduction set of gearing in a Delroyd unit for any speed may be taken from the table below. Double worm reductions have an overall efficiency equal to the product of the separate reduction values at their actual operating speeds. Helical attachments, any ratio, run approximately 97% efficient.

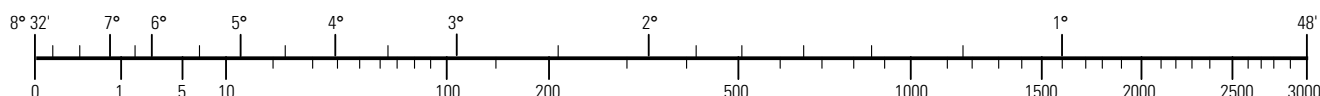
When using the table of efficiencies, some allowance should be made for reducer mechanical losses such as bearing friction and oil churning. Values listed are sufficiently accurate for most calculation purposes. First select the center distance and then read horizontally from the worm speed to the proper ratio column. Efficiencies for intermediate speeds and ratios may be obtained by interpolation.

$$VS = \frac{.262 \text{ (WPD) RPM}}{\cos (LA)}$$

$$\text{Efficiency} = \frac{\tan (LA)}{\tan (LA + \emptyset)}$$

VS = Rubbing speed - feet per minute  
WPD = Worm Pitch Diameter - inches  
RPM = Worm RPM  
LA = Lead angle of worm - degrees  
∅ = Friction angle - degrees (see chart)

## Friction Angle ∅



VS - Rubbing Speed (Feet per Minute)

|                 | RPM of Worm | Nominal Ratio |      |      |      |      |      |      |      |      |      |      |
|-----------------|-------------|---------------|------|------|------|------|------|------|------|------|------|------|
|                 |             | 5             | 7.5  | 10   | 15   | 20   | 25   | 30   | 40   | 50   | 60   | 70   |
| 2"-7"<br>C.D.   | 1750        | 96            | 95.5 | 94.5 | 92.5 | 90.5 | 90   | 87.5 | 85   | 81.5 | 78.5 | 74.5 |
|                 | 1450        | 95.5          | 95   | 94   | 92   | 90   | 89   | 86.5 | 83.5 | 80   | 76.5 | 72.5 |
|                 | 1150        | 95            | 94.5 | 93.5 | 91   | 89   | 89   | 85.5 | 82   | 78   | 74.5 | 70.5 |
|                 | 865         | 94.5          | 94   | 93   | 90.5 | 88.5 | 87   | 84.5 | 81   | 77   | 73   | 69   |
|                 | 680         | 94            | 93.5 | 92   | 90   | 87.5 | 86   | 83   | 79.5 | 75.5 | 71.5 | 67.5 |
|                 | 575         | 93            | 92   | 90.5 | 88   | 85.5 | 84   | 80.5 | 77   | 72.5 | 69   | 65   |
|                 | 300         | 92            | 90   | 88   | 84.5 | 81.5 | 80   | 76   | 72   | 67   | 64   | 60   |
|                 | 50          | 86            | 85   | 84   | 80   | 75   | 73   | 71   | 63   | 58   | 55   | 49   |
|                 | 0           | 76            | 76   | 74   | 70   | 63   | 60   | 58   | 49   | 44   | 42   | 36   |
| 8"-10"<br>C.D.  | 1750        | 97.5          | 97   | 96.5 | 95   | 93   | 92.5 | 91.5 | 88.5 | 85.5 | 84   | 81.5 |
|                 | 1450        | 97            | 96.5 | 96   | 94.5 | 92.5 | 92   | 91   | 87.5 | 85   | 83   | 80   |
|                 | 1150        | 96.5          | 96   | 95.5 | 94   | 92   | 91.5 | 90   | 86   | 83.5 | 81.5 | 78.5 |
|                 | 865         | 96            | 95.5 | 95   | 93.5 | 91.5 | 90.5 | 89   | 85   | 82   | 80   | 77   |
|                 | 680         | 95.5          | 95   | 94.5 | 92.5 | 90.5 | 89.5 | 88   | 83.5 | 80   | 78   | 75   |
|                 | 575         | 94.5          | 94   | 93.5 | 91   | 88.5 | 87   | 85.5 | 81   | 77   | 75   | 71.5 |
|                 | 300         | 93.5          | 92   | 91   | 88.5 | 84.5 | 83   | 81.5 | 76   | 72   | 69.5 | 66   |
|                 | 50          | 87            | 86   | 85   | 82   | 76   | 74   | 72   | 65   | 60   | 57   | 51   |
|                 | 0           | 76            | 76   | 74   | 70   | 63   | 60   | 58   | 49   | 44   | 42   | 36   |
| 12"-20"<br>C.D. | 1750        | 98            | 97.5 | 97   | 96   | 95   | 93.5 | 93   | 91   | 88.5 | 86.5 | 85   |
|                 | 1450        | 97.5          | 97   | 96.5 | 95.5 | 94.5 | 93.5 | 92.5 | 90.5 | 88   | 86   | 84.5 |
|                 | 1150        | 97.5          | 97   | 96.5 | 95   | 94   | 93   | 92   | 89.5 | 87   | 85   | 83   |
|                 | 865         | 97            | 96.5 | 96   | 95   | 93.5 | 92.5 | 91.5 | 89   | 86   | 84   | 81.5 |
|                 | 680         | 96.5          | 96.5 | 95.5 | 94.5 | 93   | 92   | 91   | 88   | 84.5 | 82   | 79   |
|                 | 575         | 96            | 95.5 | 95   | 93.5 | 91.5 | 90   | 88.5 | 85.5 | 81   | 78.5 | 75   |
|                 | 300         | 94.5          | 93.5 | 92.5 | 90.5 | 88   | 86   | 84   | 80.5 | 76   | 72.5 | 68   |
|                 | 50          | 90            | 89   | 88   | 85   | 82   | 80   | 77   | 72   | 68   | 63   | 57   |
|                 | 0           | 73            | 72   | 71   | 69   | 65   | 61   | 57   | 52   | 47   | 42   | 35   |

# Axial Thrust Capacity

## Axial Thrust Capacity - Low Speed Shaft- Pounds

| Unit Size | Low Speed Shaft RPM |       |       |       |       |
|-----------|---------------------|-------|-------|-------|-------|
|           | 350                 | 300   | 250   | 200   | 150   |
| 20        | 170                 | 200   | 220   | 240   | 260   |
| 25        | 300                 | 310   | 320   | 330   | 360   |
| 30        | 380                 | 400   | 420   | 450   | 480   |
| 35        | 650                 | 730   | 800   | 850   | 940   |
| 40        | 700                 | 750   | 850   | 970   | 1100  |
| 50        | 1000                | 1150  | 1200  | 1250  | 1360  |
| 60        | 1300                | 1375  | 1425  | 1500  | 1650  |
| 70        | 1500                | 1900  | 2200  | 2500  | 2800  |
| 80        | 3100                | 3700  | 4200  | 4700  | 5300  |
| 90        | 3200                | 3800  | 4300  | 4800  | 5400  |
| 100       | 3300                | 3900  | 4400  | 4900  | 5600  |
| 120       | 5000                | 6000  | 7000  | 7800  | 8800  |
| 140       | 6000                | 6500  | 6600  | 6750  | 6950  |
| 170       | 12000               | 13200 | 14400 | 15700 | 17200 |
| 200       | 17200               | 18300 | 18900 | 19700 | 20600 |

| Unit Size | Low Speed Shaft RPM |       |       |       |       |
|-----------|---------------------|-------|-------|-------|-------|
|           | 100                 | 75    | 50    | 25    | 10-0  |
| 20        | 320                 | 380   | 480   | 740   | 900   |
| 25        | 450                 | 550   | 730   | 1100  | 1200  |
| 30        | 550                 | 610   | 730   | 1100  | 1370  |
| 35        | 1000                | 1050  | 1170  | 1620  | 2200  |
| 40        | 1220                | 1300  | 1400  | 1800  | 2300  |
| 50        | 1500                | 1550  | 1800  | 2500  | 3500  |
| 60        | 1800                | 1820  | 2150  | 3150  | 4500  |
| 70        | 3100                | 3250  | 3600  | 4800  | 6500  |
| 80        | 5800                | 6100  | 6700  | 8200  | 9650  |
| 90        | 6000                | 6200  | 6800  | 8300  | 9900  |
| 100       | 6100                | 6400  | 7000  | 8400  | 10100 |
| 120       | 9700                | 10200 | 11500 | 14500 | 16500 |
| 140       | 7250                | 7550  | 7950  | 8650  | 10120 |
| 170       | 18900               | 19900 | 21000 | 24500 | 25000 |
| 200       | 21800               | 22800 | 24100 | 27600 | 30000 |

Axial thrust capacity is calculated assuming no overhung load is applied. When both thrust and overhung loads are applied, consult the factory.

# Overhung Load Capacity

Overhung load capacities for both input and output shafts are listed on these and following pages. Tabulated figures provide the maximum radial load which may be applied to the shafts. The determination of these figures is based on the load being applied at the midpoint of standard shaft extensions. A method is also included to provide the percentage reduction in output shaft overhung load capacity when force must be applied beyond midpoint of standard shaft extension. This load is usually in the form of a pull due to a chain on a sprocket, a belt on a pulley, the tooth pressure between a pinion and gear, or a weight such as might be carried by a hoisting drum.

In order to calculate the applied overhung load, first determine the torque at the shaft on which this load is applied. This may be accomplished by means of the formula given in the section on Horsepower and Torque on page 12.

In solving for torque, this formula is used in the following form:

$$T = \frac{HP \times 63,025}{RPM}$$

The tangential force on the overhung member may then be found by dividing the torque (T) by the pitch radius (R) of the overhung member. For a chain reduction the tangential force calculated in this manner is the actual overhung load. When the overhung member is a pinion or belt pulley, the actual overhung load is greater than the tangential force due to the separating force between gears or the initial tension required in the belts. The approximate overhung load may be determined by multiplying the tangential force by a suitable factor taken from the following tabulation:

Spur pinion 1.25  
V-belt pulley 1.5      Flat belt pulley 2.5

## Worm Shaft Overhung Load Capacity\* Pounds

| Unit Size | Worm Shaft RPM |      |      |      |      |      |      |      |      |
|-----------|----------------|------|------|------|------|------|------|------|------|
|           | 1750           | 1450 | 1150 | 870  | 680  | 580  | 450  | 300  | 100  |
| 20        | 100            | 110  | 120  | 130  | 135  | 140  | 145  | 150  | 160  |
| 25        | 150            | 160  | 170  | 180  | 185  | 190  | 195  | 200  | 210  |
| 30        | 200            | 210  | 220  | 240  | 260  | 275  | 290  | 310  | 330  |
| 35        | 230            | 250  | 275  | 300  | 340  | 360  | 390  | 425  | 470  |
| 40        | 270            | 310  | 350  | 400  | 450  | 480  | 520  | 570  | 650  |
| 50        | 340            | 395  | 450  | 540  | 620  | 680  | 740  | 830  | 950  |
| 60        | 500            | 520  | 600  | 710  | 800  | 850  | 930  | 1040 | 1210 |
| 70        | 550            | 575  | 650  | 770  | 850  | 920  | 1000 | 1100 | 1260 |
| 80        | 590            | 625  | 710  | 820  | 910  | 980  | 1050 | 1150 | 1300 |
| 90        | 680            | 725  | 790  | 890  | 1000 | 1040 | 1125 | 1250 | 1420 |
| 100       | 780            | 825  | 900  | 1000 | 1100 | 1160 | 1275 | 1400 | 1600 |
| 120       | 900            | 950  | 1000 | 1050 | 1150 | 1180 | 1400 | 1525 | 1740 |
| 140       | 1140           | 1200 | 1400 | 1600 | 1750 | 1800 | 1950 | 2100 | 2300 |
| 170       | 1380           | 1500 | 1700 | 1900 | 2100 | 2200 | 2300 | 2500 | 2800 |
| 200       | 1600           | 1750 | 2000 | 2400 | 2600 | 2750 | 2900 | 3100 | 3500 |

## Helical Pinion Overhung Load Capacity\* Pounds

| Unit Size | Helical Pinion RPM |      |      |      |      |
|-----------|--------------------|------|------|------|------|
|           | 1750               | 1450 | 1150 | 870  | 580  |
| 35        | 55                 | 54   | 45   | 43   | 40   |
| 40        | 110                | 100  | 90   | 85   | 80   |
| 50        | 140                | 135  | 130  | 125  | 120  |
| 60        | 210                | 205  | 200  | 190  | 180  |
| 70        | 275                | 240  | 250  | 225  | 200  |
| 80        | 400                | 375  | 350  | 300  | 250  |
| 90        | 650                | 625  | 600  | 550  | 475  |
| 100       | 800                | 750  | 700  | 675  | 500  |
| 120       | 900                | 850  | 800  | 750  | 700  |
| 140       | 1200               | 1150 | 1100 | 950  | 1000 |
| 170       | 1700               | 1650 | 1600 | 1550 | 1500 |
| 200       | 2500               | 2450 | 2400 | 2300 | 2200 |

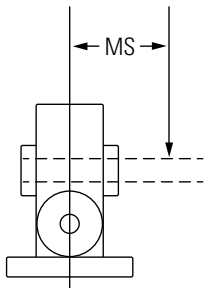
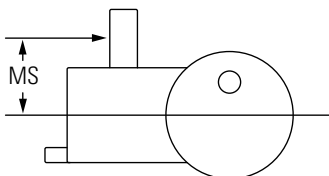
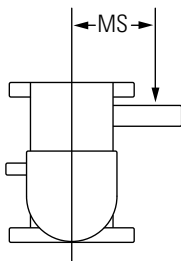
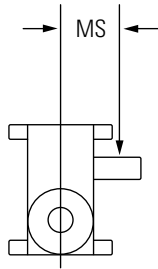
\*Worm shaft and helical pinion shaft overhung load capacities are calculated based on loads applied at midpoint of standard shaft extensions.

# Overhung Load Capacity

## Overhung Load Capacity- Low Speed Shaft- Pounds at Mid-point of Shaft Extension (Dimension "MS")

The overhung load capacities given below can vary based on the type of reducer being considered. For purposes of this catalog entry, the worst case (direction of application) for the overhung load was assumed for each of the different types of reducers (horizontal, vertical, and shaft mounted).

Overhung load capacity was calculated taking into consideration the bearing capacity, shaft stress, housing strength, and foot bolt stress. Since the minimum value of overhung load capacity is listed below, it is recommended that these figures be used as a guide only. Consult the factory when greater overhung load capacities are desired. We will quickly calculate the exact capacity for your application using our existing computerized formulas.



Load applied in any direction

| Unit Size | Point of Application Dimension MS | Low Speed Shaft RPM |       |       |       |       |
|-----------|-----------------------------------|---------------------|-------|-------|-------|-------|
|           |                                   | 350                 | 300   | 250   | 200   | 150   |
| 20        | 3                                 | 400                 | 410   | 420   | 430   | 450   |
| 25        | 4 1/4                             | 540                 | 545   | 550   | 560   | 580   |
| 30        | 4 3/4                             | 780                 | 800   | 830   | 900   | 1000  |
| 35        | 5 5/8                             | 1510                | 1550  | 1600  | 1720  | 1930  |
| 40        | 6 3/4                             | 1565                | 1600  | 1670  | 1800  | 2000  |
| 50        | 7 5/8                             | 2070                | 2100  | 2200  | 2350  | 2600  |
| 60        | 8 1/2                             | 2400                | 2410  | 2500  | 2650  | 2950  |
| 70        | 9                                 | 3800                | 3900  | 4050  | 4300  | 4800  |
| 80        | 9 3/8                             | 4800                | 5000  | 5400  | 5800  | 6400  |
| 90        | 11                                | 5600                | 5900  | 6300  | 6800  | 7600  |
| 100       | 12 3/8                            | 5600                | 5900  | 6300  | 6800  | 7700  |
| 120       | 13 1/4                            | 7100                | 7400  | 7700  | 8200  | 9200  |
| 140       | 14 3/4                            | 8200                | 8300  | 8500  | 8900  | 9500  |
| 170       | 16 1/2                            | 14700               | 15200 | 15800 | 16600 | 17600 |
| 200       | 18 1/4                            | 15000               | 15500 | 16200 | 17100 | 18000 |

Overhung load capacity is calculated assuming no thrust load is applied. When both overhung load and thrust loads are applied, consult the factory.

| Unit Size | Point of Application Dimension MS | Low Speed Shaft RPM |       |       |       |        |
|-----------|-----------------------------------|---------------------|-------|-------|-------|--------|
|           |                                   | 100                 | 75    | 50    | 25    | 10 – 0 |
| 20        | 3                                 | 500                 | 600   | 700   | 900   | 900    |
| 25        | 4 1/4                             | 720                 | 840   | 1000  | 1220  | 1500   |
| 30        | 4 3/4                             | 1170                | 1300  | 1470  | 1720  | 2100   |
| 35        | 5 5/8                             | 2270                | 2500  | 2850  | 3070  | 3070   |
| 40        | 6 3/4                             | 2300                | 2570  | 2950  | 3300  | 3300   |
| 50        | 7 5/8                             | 3000                | 3320  | 3750  | 4400  | 4830   |
| 60        | 8 1/2                             | 3470                | 3800  | 4300  | 4900  | 6880   |
| 70        | 9                                 | 5500                | 6100  | 6800  | 7800  | 8970   |
| 80        | 9 3/8                             | 7400                | 8000  | 8800  | 9700  | 11700  |
| 90        | 11                                | 8800                | 9600  | 10700 | 12000 | 14500  |
| 100       | 12 3/8                            | 9000                | 9900  | 11000 | 12500 | 16300  |
| 120       | 13 1/4                            | 10500               | 11500 | 12700 | 14400 | 20000  |
| 140       | 14 3/4                            | 10500               | 11500 | 12900 | 14500 | 22000  |
| 170       | 16 1/2                            | 19100               | 20200 | 22000 | 25500 | 27000  |
| 200       | 18 1/4                            | 19300               | 20600 | 22300 | 25700 | 28000  |

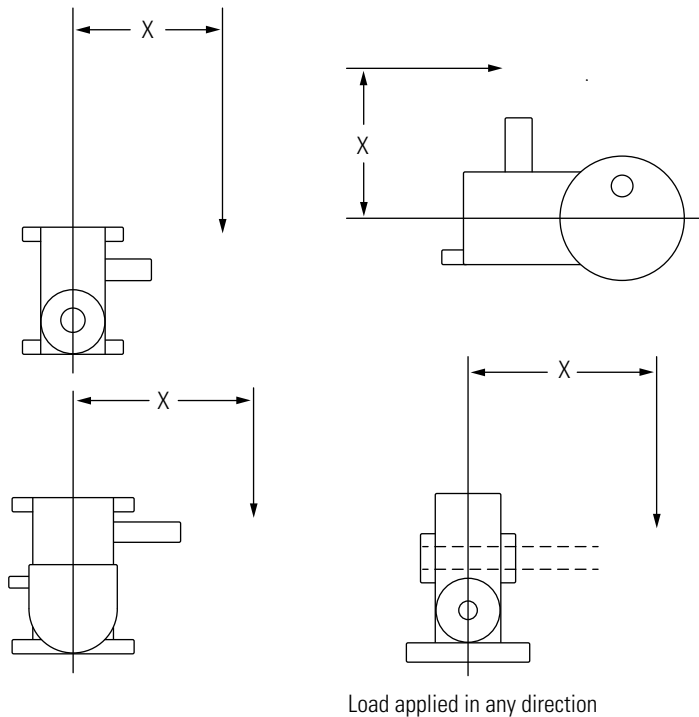
Overhung load capacity is calculated assuming no thrust load is applied. When both overhung load and thrust loads are applied, consult the factory.



# Overhung Load Capacity

## Overhung Load Capacity – Low Speed Shaft – Pounds at Distances Greater than Mid-point of Shaft Extension (Dimension “X”)

| <p>Maximum overhung load capacity at “X” dimension is the smaller of the following:</p> $\text{OHL}_{\text{at } x} = (\text{OHL}_{\text{at MS @ operating RPM}}) \left( \frac{\text{MS} \cdot A}{X + A} \right)$ $\text{OHL}_{\text{at } x} = (\text{OHL}_{\text{at MS @ 10 RPM}}) \left( \frac{B}{X - C} \right)$ <p>Where <math>\text{OHL}_{\text{at } x}</math> = overhung load at X<br/> <math>\text{OHL}_{\text{at MS}}</math> = overhung load at MS given in table on page 18<br/> A, B, and C = factors given in this table</p> | Unit Size | A     | B       | C        |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------|-------|---------|----------|
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | 20        | 1 1/4 | 1 7/16  | 1 9/16   |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | 25        | 2 1/8 | 1 3/4   | 2 1/2    |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | 30        | 2 3/8 | 1 7/8   | 2 7/8    |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | 35        | 2 3/4 | 2 5/16  | 3 5/16   |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | 40        | 3 5/8 | 2 5/8   | 4 1/8    |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | 50        | 4 1/8 | 2 7/8   | 4 3/4    |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | 60        | 4 5/8 | 3 1/8   | 5 3/8    |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | 70        | 4 3/4 | 3 9/16  | 5 7/16   |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | 80        | 4 7/8 | 3 11/16 | 5 11/16  |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | 90        | 5 5/8 | 4 1/2   | 6 1/2    |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | 100       | 6 3/8 | 5 1/16  | 7 5/16   |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | 120       | 6 7/8 | 5 3/8   | 7 7/8    |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | 140       | 8     | 5 7/8   | 8 7/8    |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | 170       | 8 1/2 | 6 1/2   | 10       |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | 200       | 9 7/8 | 7 1/16  | 11 13/16 |



# Examples of Worm Gear Selection

## Example I

A vertical worm gear reducer is to be selected to drive a pure liquid agitator by means of a direct coupled arrangement.

### Conditions:

1. Motor: 10 HP, 1750 RPM.
2. Agitator Speed- 58 RPM.
3. Axial thrust load due to weight of agitator and hydraulic thrust: 1650 pounds.
4. Service: 10 hours per day, no shock load.

### Solution:

1. Approximate ratio required is

$$\frac{1750}{58} = 30.2$$

2. 10 hour duty, pure liquid agitator service, electric motor drive (Refer to pages 12, 13 and 14.) Service factor = 1.0.
3. By reference to page 27, it is found that a 6" center distance reducer with a 30:1 ratio at 1750 RPM worm speed has a mechanical input horsepower rating of 10.2.
4. Since the mechanical rating divided by the appropriate service factor (1.0) is less than or equal to the thermal rating (10.2 HP), there will be no thermal problem.
5. Having established that a 30:1 ratio reducer of 6" center distance is of suitable size to transmit the load horsepower, the axial thrust capacity should next be checked by reference to the table on page 16. For output shaft speeds under 75 RPM, the 6" center distance unit has a thrust capacity of 1820 pounds. This is more than adequate.

## Example II

A horizontal worm gear reducer is to drive a medium duty hoisting drum. A chain reduction will be provided between the reducer shaft and the drum shaft.

### Conditions:

1. Motor: 575 RPM, horsepower to be determined.
2. Drum: radius from center of drum to centerline of rope is 8"; rope pull: 1700 pounds; drum speed 10 RPM.
3. Chain reduction: ratio 3:1, pitch diameter of sprocket mounted on reducer output shaft 5".
4. Service: intermittent, moderate shock, 5 or 6 cycles of operation per day with no more than one minute of operation during a one hour period.

### Solution:

1. The output speed of the reducer is obtained by multiplying the drum speed by the ratio of chain reduction

$$3 \times 10 = 30 \text{ RPM}$$

The approximate ratio required is

$$\frac{575}{30} = 19.2 \text{ or } 20:1$$

2. The torque at the drum is the product of the rope pull and the radius from the center of the drum to the rope centerline:  $1700 \times 8 = 13,600$  inch-pounds. This figure divided by the ratio of chain reduction provides the torque at the reducer output shaft

$$\frac{13,600}{3} = 4530 \text{ in-lbs}$$

3. The horsepower input to the reducer is found from the formula on page 12

Input HP =

$$\frac{T \times \text{RPM}}{63,025 \times \text{Eff}} = \frac{4530 \times 30}{63,025 \times .855} = 2.52$$

A 3 HP motor should therefore be used to supply the necessary power.

4. Determine proper service factor: 1.0 for occasional, moderate shock, total operating time not exceeding  $\frac{1}{2}$  hour per day, electric motor driven, from table on page 11.
5. Reference to rating tables for the desired 20:1 ratio shows that a 4.0" reducer operating at 575 RPM input has a mechanical rating of 3.11 HP. The reducer rating for this service is determined by dividing by the service factor

$$\frac{3.11}{1.0} = 3.11$$

This rating exceeds the required load to be transmitted, meaning the 3112" unit is proper. A thermal rating limitation will not be necessary due to the intermittent nature of the load.

6. The chain pull (overhung load) is determined by dividing the torque at the reducer output shaft by the pitch radius of the sprocket

$$\frac{4530}{2.5} = 1810 \text{ pounds}$$

Reference to page 18 shows the overhung load capacity of the 3 $\frac{1}{2}$ " unit low speed shaft to be 2850 pounds at speeds under 50 RPM.

## Example III

A right angle, horizontal output reduction unit is to be selected to drive a belt conveyor, not uniformly fed.

1. Operation: one eight hour continuous shift per day.
2. Load torque at conveyor headshaft: 32,000 inch-pounds.
3. Electric motor speed: 1750 RPM, HP to be determined.
4. Conveyor drum to turn 30 RPM.
5. Momentary starting load not exceeding 250% of transmitted power.

### Solution:

1. Approximate ratio required

$$\frac{1750}{30} = 58.3$$

2. Determine proper service factor: load class table, page 11, indicates moderate shock, 8 hours per day service factor = 1.25 (pages 13 & 14).
3. Selection can be made using output torque ratings from the tables. Page 44 shows that a 9" center distance, ratio 59.25 helicalworm unit has a mechanical output torque rating of 45,200 inch-pounds torque at 1750 RPM input with a 1.0 service factor. The equivalent rating with a 1.25 service factor is

$$\frac{45,200}{1.25} = 36,200 \text{ inch-pounds}$$

# Examples of Worm Gear Selection

4. The HE-90 selection is good since:

- Equivalent rating with 1.25 service factor (36,200 inch-pounds), exceeds load torque (32,000 inch-pounds).
- Equivalent mechanical rating is less than thermal rating.

$$45,200 \frac{21.4}{24.4} = 39,800 \text{ inch-pounds}$$

- Starting torque rating of HE-90 (3 x 45,200) exceeds conveyor peak starting load ( $2\frac{1}{2}$  x 32,000).

5. The helical gear efficiency times second reduction worm efficiency .97 x .903- from page 15 = 87% overall. The motor horsepower necessary to deliver 32,000 inchpounds torque at the conveyor shaft is

Input HP =

$$\frac{T \times \text{RPM}}{63,025 \times \text{Eff}} = \frac{32,000 \times 30}{63,025 \times .87} = 17.5$$

As a check, efficiency can be determined calculating from input and output values listed in rating tables.

The mechanical input HP rating of this selection is 24.4, the mechanical output torque 45,200 inch pounds.

Therefore

$$\begin{aligned} \text{Eff} &= \frac{\text{Output RPM} \times \text{Output Torque Rating}}{\text{Input HP Rating} \times 63,025} \\ &= \frac{29.5 \times 45,200}{24.4 \times 63,025} = 87\% \end{aligned}$$

Use a 20 HP motor with proper starting characteristics.

## Important Notes

### Dimensions and Weights

This catalog contains outline drawings for all Delroyd types. Major overall and mounting hole dimensions, plus shaft elevations, lengths and diameters are shown. Net weights in pounds of the reducers are included in the same tables. Outline drawings illustrating reducers combined with baseplates are available from your Delroyd salesman.

### How to Order

See page 2 for a quotation sheet. In ordering, specific reducer designations from this catalog should be used to avoid questions as to what is actually required. This description should include type, center distance, ratio, shaft assembly, and bore size (shaft mounted units only). Driving motor HP, operating worm speed, and output torque together with a short description of the nature of the load and duration of operation is desirable if available.

Shaft arrangements are shown in chart form on the dimension pages for each type. Carefully relate these charts to the input and output shaft construction needed for proper use with the driving and driven machines. Where motor adaptor and couplings are required, specify standard NEMA "C" face frame size to be used. If Delroyd is supplying the motor, include motor HP, speed, enclosure, voltage, phase, cycles and starting characteristics required.

Worm-above-gear arrangements (shaft assemblies T-1, etc.) require special design attention when operating under worm speeds of approximately 500 RPM. To insure adequate lubrication of worm bearings, please make special note of worm speeds under 500 RPM on order. Necessary lubrication modifications will then be provided at no increase in price.

Requirements for special worm lengths, special mounting positions, special low speed shafts, and special shaft mounted bores should be accompanied by sketches where possible. Shaft mounted units can be supplied with special bores from bore shown down to bore for unit two sizes smaller. Special modifications should be avoided whenever possible since additional charges must be made.

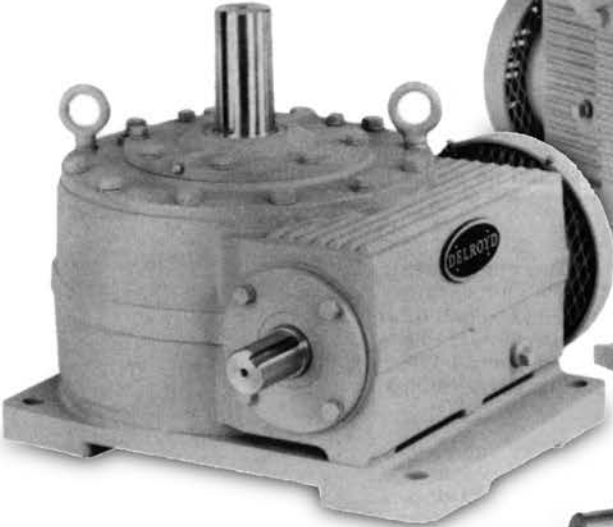
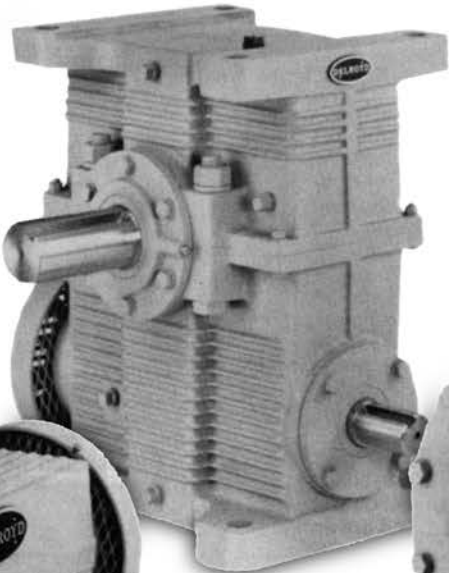
### Selections Beyond Range of This Catalog

Worm gear units and sets can be supplied to meet any requirement. Delroyd literature is available featuring selection and dimensional data on worm gearing to fit rating categories above and below those listed in this catalog. Specifications on machining limits, interchangeability of parts, materials, heat treatments, anti-friction bearings, self-contained lubrication systems, and increased ratings apply through the entire line.

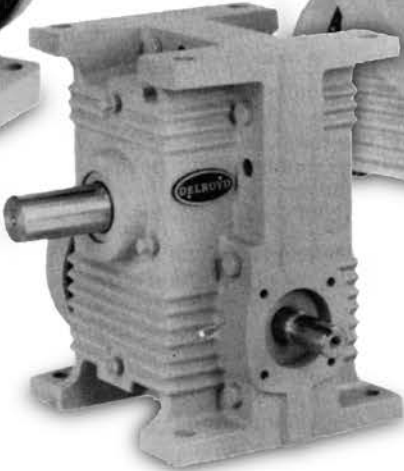
Inquiries for these or any other reducers should specify type, rating, and speed of the driving machine; the load nature, duty cycle, speed, actual and starting horsepower of the particular kind of driven machine; plus space, mounting, position or other special requirements to be met by the reducer.

# Delroyd Single Reduction Speed Reducers

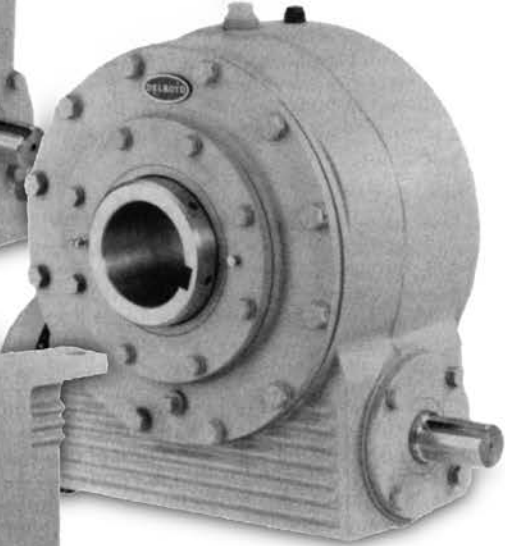
**Type E50-E140**



**Type V30-V200**



**Type E20-E40**



**Type SM30-SM200**

# Horsepower and Torque Ratings • Single Reduction

Single Reduction  
Speed Reducers

Nominal Ratio 5:1

| WORM<br>SPEED<br>(RPM) | Unit Size          | 20    | 25    | 30    | 35    | 40    | 50    | 60    | 70    | 80    | 90    | 100   | 120    | 140    | 170    | 200    |
|------------------------|--------------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|--------|--------|--------|--------|
|                        | Center Distance    | 2     | 2.5   | 3     | 3.5   | 4     | 5     | 6     | 7     | 8     | 9     | 10    | 12     | 14     | 17     | 20     |
|                        | Total Ratio        | 5:1   | 5:1   | 5:1   | 5:1   | 5:1   | 5:1   | 5:1   | 5:1   | 5:1   | 5:1   | 5:1   | 5:1    | 5:1    | 5:1    | 5:1    |
| 1750                   | Actual Ratio       | 5-1/6 | 5-1/6 | 5-1/6 | 5-1/6 | 5-1/6 | 5-1/6 | 5-1/8 | 5-1/8 | 5-1/8 | 5-1/8 | 5-1/8 | 5-1/9  | 5-1/10 | 5-1/10 | 5-1/10 |
|                        | Mech. Input HP     | 2.77  | 4.14  | 7.62  | 10.8  | 14.8  | 23.8  | 34.8  | 52.5  | 71.3  | 92.5  | 119   | 176    | 265    | 430    | 625    |
|                        | Out.Torq., in.lbs. | 465   | 709   | 1320  | 1880  | 2580  | 4180  | 6090  | 9210  | 12500 | 16200 | 21000 | 31200  | 46700  | 76000  | 111000 |
|                        | Therm. Input HP    | 2.77  | 4.14  | 7.03  | 10.0  | 13.5  | 23.8  | 34.8  | 50.0  | 67.0  | 85.0  | 110   | 150    | 184    | 225    | 290    |
|                        | Output RPM         | 339   | 339   | 339   | 339   | 339   | 339   | 341   | 341   | 341   | 341   | 341   | 342    | 343    | 343    | 343    |
| 1450                   | Efficiency %       | 90.2  | 92.0  | 93.1  | 93.6  | 93.7  | 94.4  | 94.8  | 95.0  | 95.0  | 94.9  | 95.6  | 96.3   | 95.9   | 96.2   | 96.7   |
|                        | Mech. Input HP     | 2.48  | 3.79  | 7.06  | 10.0  | 13.5  | 21.8  | 31.7  | 48.2  | 65.7  | 85.4  | 107   | 164    | 242    | 390    | 580    |
|                        | Out.Torq., in.lbs. | 503   | 781   | 1470  | 2090  | 2830  | 4620  | 6690  | 10200 | 13900 | 18200 | 23700 | 35000  | 51500  | 83000  | 124000 |
|                        | Therm. Input HP    | 2.48  | 3.79  | 6.25  | 8.78  | 12.0  | 21.8  | 31.7  | 47.0  | 59.3  | 75.0  | 98.0  | 133    | 165    | 203    | 262    |
|                        | Output RPM         | 281   | 281   | 281   | 281   | 281   | 281   | 283   | 283   | 283   | 283   | 283   | 284    | 284    | 284    | 284    |
| 1150                   | Efficiency %       | 90.3  | 91.8  | 92.7  | 93.1  | 93.3  | 94.4  | 94.7  | 95.0  | 95.0  | 95.7  | 99.4  | 96.1   | 96.0   | 96.0   | 96.4   |
|                        | Mech. Input HP     | 2.20  | 3.37  | 6.33  | 9.12  | 12.3  | 19.5  | 28.3  | 43.2  | 59.2  | 77.5  | 101   | 149    | 213    | 345    | 520    |
|                        | Out.Torq., in.lbs. | 560   | 872   | 1660  | 2400  | 3240  | 5170  | 7490  | 11500 | 15800 | 20700 | 27200 | 39900  | 57100  | 89200  | 141000 |
|                        | Therm. Input HP    | 2.20  | 3.37  | 5.38  | 7.52  | 10.3  | 19.0  | 28.3  | 42.0  | 51.1  | 64.5  | 86.9  | 115    | 140    | 173    | 225    |
|                        | Output RPM         | 223   | 223   | 223   | 223   | 223   | 223   | 224   | 224   | 224   | 224   | 224   | 225    | 225    | 225    | 225    |
| 865                    | Efficiency %       | 89.9  | 91.4  | 92.6  | 92.9  | 93.0  | 93.6  | 94.2  | 94.8  | 95.0  | 95.1  | 95.9  | 96.6   | 95.9   | 92.5   | 97.0   |
|                        | Mech. Input HP     | 1.82  | 2.81  | 5.39  | 8.10  | 10.9  | 17.4  | 25.2  | 37.4  | 51.3  | 67.0  | 87.4  | 132    | 185    | 300    | 445    |
|                        | Out.Torq., in.lbs. | 610   | 962   | 1870  | 2820  | 3800  | 6120  | 8810  | 13200 | 18100 | 23800 | 31000 | 47000  | 65800  | 107000 | 159000 |
|                        | Therm. Input HP    | 1.82  | 2.81  | 4.40  | 6.21  | 8.45  | 15.6  | 23.6  | 33.2  | 41.8  | 52.6  | 70.9  | 93.5   | 112    | 140    | 182    |
|                        | Output RPM         | 167   | 167   | 167   | 167   | 167   | 167   | 169   | 169   | 169   | 169   | 169   | 169    | 170    | 170    | 170    |
| 680                    | Efficiency %       | 89.0  | 90.9  | 92.2  | 92.5  | 92.6  | 93.4  | 93.6  | 94.5  | 94.5  | 95.1  | 95.0  | 95.6   | 95.7   | 96.0   | 96.2   |
|                        | Mech. Input HP     | 1.51  | 2.37  | 4.62  | 6.87  | 9.44  | 15.7  | 22.9  | 34.1  | 46.1  | 59.7  | 77.8  | 118    | 160    | 265    | 400    |
|                        | Out.Torq., in.lbs. | 645   | 1030  | 2020  | 3020  | 4170  | 6930  | 10200 | 15200 | 20700 | 26700 | 35300 | 53100  | 72200  | 120000 | 181000 |
|                        | Therm. Input HP    | 1.51  | 2.37  | 3.65  | 5.28  | 6.97  | 13.2  | 20.1  | 28.3  | 35.5  | 44.8  | 60.3  | 79.5   | 93.7   | 120    | 155    |
|                        | Output RPM         | 132   | 132   | 132   | 132   | 132   | 132   | 133   | 133   | 133   | 133   | 133   | 133    | 133    | 133    | 133    |
| 575                    | Efficiency %       | 89.2  | 90.8  | 91.3  | 91.8  | 92.2  | 92.2  | 93.8  | 93.8  | 94.5  | 94.2  | 95.5  | 95.0   | 95.5   | 95.8   | 95.7   |
|                        | Mech. Input HP     | 1.33  | 2.10  | 4.09  | 6.18  | 8.62  | 14.3  | 21.0  | 31.8  | 42.9  | 55.5  | 71.4  | 107    | 145    | 245    | 370    |
|                        | Out.Torq., in.lbs. | 662   | 1070  | 2110  | 3200  | 4480  | 7480  | 11000 | 16400 | 22700 | 29300 | 38300 | 56000  | 77000  | 131000 | 197000 |
|                        | Therm. Input HP    | 1.33  | 2.10  | 3.25  | 4.75  | 6.20  | 11.8  | 17.8  | 25.1  | 31.6  | 39.7  | 53.6  | 70.6   | 82.5   | 107    | 140    |
|                        | Output RPM         | 111   | 111   | 111   | 111   | 111   | 111   | 112   | 112   | 112   | 112   | 112   | 113    | 113    | 113    | 113    |
| 450                    | Efficiency %       | 87.9  | 90.0  | 91.1  | 91.4  | 91.8  | 92.4  | 93.2  | 91.8  | 94.2  | 94.0  | 95.5  | 93.4   | 95.0   | 95.7   | 95.2   |
|                        | Mech. Input HP     | 1.09  | 1.72  | 3.38  | 5.16  | 7.30  | 12.4  | 18.3  | 27.9  | 38.4  | 50.4  | 65.0  | 93.7   | 127    | 208    | 315    |
|                        | Out.Torq., in.lbs. | 690   | 1110  | 2200  | 3390  | 4810  | 8200  | 12100 | 18600 | 25700 | 33900 | 43800 | 63200  | 85600  | 141000 | 215000 |
|                        | Therm. Input HP    | 1.09  | 1.72  | 2.75  | 4.12  | 5.20  | 9.95  | 15.1  | 21.3  | 26.7  | 33.6  | 45.4  | 59.8   | 70.0   | 92.0   | 123    |
|                        | Output RPM         | 87.1  | 87.1  | 87.1  | 87.1  | 87.1  | 87.1  | 87.1  | 87.8  | 87.8  | 87.8  | 87.8  | 88.0   | 88.2   | 88.2   | 88.2   |
| 300                    | Efficiency %       | 87.5  | 89.2  | 89.9  | 90.8  | 91.1  | 91.4  | 92.1  | 92.9  | 93.2  | 93.7  | 93.9  | 94.2   | 94.4   | 94.9   | 95.6   |
|                        | Mech. Input HP     | 0.765 | 1.22  | 2.42  | 3.75  | 5.36  | 9.32  | 14.0  | 21.3  | 29.9  | 39.8  | 52.5  | 77.6   | 103    | 155    | 240    |
|                        | Out.Torq., in.lbs. | 720   | 1170  | 2340  | 3650  | 5230  | 9150  | 13800 | 21100 | 29800 | 39700 | 52500 | 77700  | 103000 | 156000 | 243000 |
|                        | Therm. Input HP    | 0.765 | 1.22  | 2.19  | 3.16  | 4.11  | 7.67  | 11.6  | 16.4  | 20.6  | 26.0  | 35.0  | 46.1   | 52.0   | 75.0   | 100    |
|                        | Output RPM         | 58.1  | 58.1  | 58.1  | 58.1  | 58.1  | 58.1  | 58.5  | 58.5  | 58.5  | 58.5  | 58.5  | 58.7   | 58.8   | 58.8   | 58.8   |
| 100                    | Efficiency %       | 86.7  | 88.4  | 89.1  | 89.7  | 89.9  | 90.4  | 91.6  | 92.0  | 92.6  | 92.6  | 92.9  | 93.3   | 93.3   | 93.9   | 94.5   |
|                        | Mech. Input HP     | 0.278 | 0.446 | 0.900 | 1.41  | 2.05  | 3.65  | 5.66  | 8.80  | 12.5  | 17.4  | 23.3  | 35.6   | 51.2   | 82.7   | 122    |
|                        | Out.Torq., in.lbs. | 757   | 1250  | 2530  | 3990  | 5830  | 10500 | 16100 | 25300 | 36200 | 50200 | 67500 | 103000 | 149000 | 242000 | 360000 |
|                        | Therm. Input HP    | 0.278 | 0.446 | 0.900 | 1.41  | 2.05  | 3.65  | 5.66  | 8.80  | 12.5  | 17.4  | 23.3  | 35.6   | 51.2   | 82.7   | 122    |
|                        | Output RPM         | 19.4  | 19.4  | 19.4  | 19.4  | 19.4  | 19.4  | 19.5  | 19.5  | 19.5  | 19.5  | 19.5  | 19.6   | 19.6   | 19.6   | 19.6   |
|                        | Efficiency %       | 83.6  | 86.1  | 86.3  | 86.9  | 87.3  | 88.3  | 88.1  | 89.0  | 89.7  | 89.3  | 89.7  | 89.8   | 90.5   | 91.0   | 91.8   |

Nominal Ratio 7.5:1

| WORM<br>SPEED<br>(RPM) | Unit Size          | 20    | 25    | 30    | 35    | 40    | 50    | 60    | 70    | 80    | 90    | 100   | 120    | 140    | 170    | 200    |
|------------------------|--------------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|--------|--------|--------|--------|
|                        | Center Distance    | 2     | 2.5   | 3     | 3.5   | 4     | 5     | 6     | 7     | 8     | 9     | 10    | 12     | 14     | 17     | 20     |
|                        | Total Ratio        | 7.25  | 7.25  | 7.25  | 7.25  | 7.25  | 7.25  | 7.40  | 7.40  | 7.40  | 7.33  | 7.33  | 7.33   | 7.43   | 7.43   | 7.43   |
|                        | Actual Ratio       | 7-1/4 | 7-1/4 | 7-1/4 | 7-1/4 | 7-1/4 | 7-1/4 | 7-2/5 | 7-2/5 | 7-2/5 | 7-2/6 | 7-2/6 | 7-2/6  | 7-3/7  | 7-3/7  | 7-3/7  |
| 1750                   | Mech. Input HP     | 2.27  | 3.59  | 6.40  | 8.72  | 11.7  | 19.7  | 28.9  | 43.1  | 58.8  | 76.2  | 98.9  | 152    | 215    | 355    | 530    |
|                        | Out.Torq., in.lbs. | 525   | 856   | 1540  | 2100  | 2820  | 4830  | 7250  | 10900 | 14800 | 19100 | 24900 | 38200  | 55000  | 91300  | 136000 |
|                        | Therm. Input HP    | 2.27  | 3.59  | 6.40  | 8.72  | 11.7  | 19.7  | 28.9  | 40.7  | 55.0  | 70.6  | 89.1  | 131    | 172    | 212    | 270    |
|                        | Output RPM         | 241   | 241   | 241   | 241   | 241   | 241   | 236   | 236   | 236   | 239   | 239   | 239    | 236    | 236    | 236    |
|                        | Efficiency %       | 88.6  | 91.3  | 92.2  | 92.2  | 92.3  | 93.9  | 94.1  | 94.9  | 94.4  | 95.0  | 95.4  | 95.2   | 95.6   | 96.1   | 95.9   |
| 1450                   | Mech. Input HP     | 2.04  | 3.26  | 5.89  | 8.10  | 10.8  | 18.1  | 26.4  | 39.3  | 54.2  | 70.5  | 91.3  | 141    | 192    | 315    | 480    |
|                        | Out.Torq., in.lbs. | 568   | 936   | 1710  | 2360  | 3150  | 5330  | 7980  | 11900 | 16400 | 21300 | 27700 | 43000  | 59500  | 97800  | 149000 |
|                        | Therm. Input HP    | 2.04  | 3.26  | 5.72  | 8.10  | 10.8  | 18.1  | 26.4  | 37.1  | 50.7  | 65.3  | 82.3  | 121    | 152    | 195    | 240    |
|                        | Output RPM         | 200   | 200   | 200   | 200   | 200   | 200   | 196   | 196   | 196   | 198   | 198   | 198    | 195    | 195    | 195    |
|                        | Efficiency %       | 88.4  | 91.1  | 92.1  | 92.5  | 92.6  | 93.4  | 94.0  | 94.1  | 94.1  | 94.8  | 95.2  | 95.7   | 96.0   | 96.2   | 96.1   |
| 1150                   | Mech. Input HP     | 1.77  | 2.85  | 5.24  | 7.29  | 9.83  | 16.4  | 23.7  | 35.4  | 48.5  | 63.2  | 82.3  | 128    | 167    | 275    | 425    |
|                        | Out.Torq., in.lbs. | 620   | 1030  | 1900  | 2600  | 3600  | 6080  | 9000  | 13400 | 18500 | 24000 | 31400 | 49100  | 64900  | 107000 | 165000 |
|                        | Therm. Input HP    | 1.77  | 2.85  | 4.94  | 6.90  | 9.30  | 16.4  | 23.7  | 33.4  | 45.3  | 58.3  | 74.2  | 104    | 129    | 163    | 215    |
|                        | Output RPM         | 159   | 159   | 159   | 159   | 159   | 159   | 155   | 155   | 155   | 157   | 157   | 157    | 155    | 155    | 155    |
|                        | Efficiency %       | 88.2  | 91.0  | 91.3  | 89.8  | 92.2  | 93.3  | 93.6  | 93.3  | 94.1  | 94.5  | 95.0  | 95.5   | 95.5   | 95.6   | 95.4   |
| 865                    | Mech. Input HP     | 1.45  | 2.35  | 4.39  | 6.24  | 8.52  | 14.6  | 21.2  | 30.7  | 42.1  | 54.9  | 71.5  | 112    | 142    | 232    | 360    |
|                        | Out.Torq., in.lbs. | 673   | 1120  | 2100  | 3020  | 4120  | 7130  | 10700 | 15400 | 21300 | 27700 | 36000 | 57000  | 73100  | 119000 | 187000 |
|                        | Therm. Input HP    | 1.45  | 2.35  | 4.03  | 5.68  | 7.60  | 14.2  | 21.2  | 29.2  | 38.1  | 47.6  | 64.1  | 85.1   | 103    | 133    | 170    |
|                        | Output RPM         | 119   | 119   | 119   | 119   | 119   | 119   | 117   | 117   | 117   | 118   | 118   | 118    | 116    | 116    | 116    |
|                        | Efficiency %       | 87.9  | 90.2  | 90.6  | 91.6  | 91.5  | 92.4  | 93.6  | 93.0  | 93.8  | 94.5  | 94.3  | 95.3   | 95.1   | 94.8   | 96.0   |
| 680                    | Mech. Input HP     | 1.21  | 1.97  | 3.73  | 5.36  | 7.39  | 12.9  | 19.0  | 28.1  | 38.3  | 49.7  | 64.0  | 99.7   | 123    | 202    | 304    |
|                        | Out.Torq., in.lbs. | 705   | 1180  | 2260  | 3270  | 4520  | 7960  | 12000 | 17900 | 24500 | 31600 | 40800 | 64000  | 80500  | 132000 | 200000 |
|                        | Therm. Input HP    | 1.21  | 1.97  | 3.35  | 4.85  | 6.40  | 12.0  | 18.3  | 25.9  | 32.3  | 40.3  | 54.5  | 72.4   | 86.0   | 114    | 145    |
|                        | Output RPM         | 93.8  | 93.8  | 93.8  | 93.8  | 93.8  | 93.8  | 91.9  | 91.9  | 91.9  | 92.8  | 92.8  | 92.8   | 91.5   | 91.5   | 91.5   |
|                        | Efficiency %       | 86.7  | 89.1  | 90.2  | 90.8  | 91.0  | 91.8  | 92.1  | 92.9  | 93.3  | 93.6  | 93.8  | 94.5   | 95.1   | 94.9   | 95.6   |
| 575                    | Mech. Input HP     | 1.06  | 1.72  | 3.29  | 4.76  | 6.64  | 11.7  | 17.3  | 25.7  | 35.3  | 46.1  | 58.8  | 88.7   | 112    | 182    | 270    |
|                        | Out.Torq., in.lbs. | 725   | 1220  | 2340  | 3410  | 4770  | 8500  | 12900 | 19200 | 26700 | 34600 | 44300 | 67100  | 86300  | 140000 | 210000 |
|                        | Therm. Input HP    | 1.06  | 1.72  | 2.96  | 4.33  | 5.65  | 10.7  | 16.2  | 23.0  | 28.8  | 35.9  | 48.5  | 64.3   | 77.0   | 103    | 130    |
|                        | Output RPM         | 79.3  | 79.3  | 79.3  | 79.3  | 79.3  | 79.3  | 77.7  | 77.7  | 77.7  | 78.4  | 78.4  | 78.4   | 77.4   | 77.4   | 77.4   |
|                        | Efficiency %       | 86.1  | 89.3  | 89.5  | 90.1  | 90.4  | 91.4  | 91.9  | 92.1  | 93.3  | 93.4  | 93.8  | 94.2   | 94.6   | 94.5   | 95.5   |
| 450                    | Mech. Input HP     | 0.867 | 1.41  | 2.71  | 3.95  | 5.54  | 10.1  | 14.9  | 22.5  | 31.2  | 41.0  | 52.9  | 80.5   | 101    | 155    | 227    |
|                        | Out.Torq., in.lbs. | 750   | 1270  | 2450  | 3580  | 5050  | 9180  | 14100 | 21400 | 29900 | 39100 | 50600 | 77400  | 99400  | 152000 | 224000 |
|                        | Therm. Input HP    | 0.867 | 1.41  | 2.50  | 3.72  | 4.75  | 9.05  | 13.7  | 19.5  | 24.3  | 30.4  | 41.1  | 54.4   | 64.0   | 87.0   | 112    |
|                        | Output RPM         | 62.1  | 62.1  | 62.1  | 62.1  | 62.1  | 62.1  | 60.8  | 60.8  | 60.8  | 61.4  | 61.4  | 61.4   | 60.6   | 60.6   | 60.6   |
|                        | Efficiency %       | 85.2  | 88.7  | 89.0  | 89.3  | 89.8  | 89.5  | 91.3  | 91.8  | 92.5  | 92.9  | 93.2  | 93.7   | 94.6   | 94.3   | 94.8   |
| 300                    | Mech. Input HP     | 0.589 | 0.990 | 1.92  | 2.83  | 4.03  | 7.26  | 11.1  | 16.8  | 23.8  | 31.7  | 41.6  | 65.0   | 84.7   | 126    | 176    |
|                        | Out.Torq., in.lbs. | 755   | 1320  | 2580  | 3810  | 5420  | 10000 | 15600 | 23700 | 33800 | 44800 | 59100 | 92800  | 123000 | 184000 | 258000 |
|                        | Therm. Input HP    | 0.589 | 0.990 | 1.92  | 2.83  | 3.73  | 6.97  | 10.5  | 16.8  | 18.8  | 23.5  | 31.7  | 42.0   | 50.0   | 72.0   | 90.0   |
|                        | Output RPM         | 41.4  | 41.4  | 41.4  | 41.4  | 41.4  | 41.4  | 40.5  | 40.5  | 40.5  | 40.9  | 40.9  | 40.9   | 40.4   | 40.4   | 40.4   |
|                        | Efficiency %       | 84.2  | 87.5  | 88.2  | 88.4  | 88.3  | 90.4  | 90.4  | 90.7  | 91.4  | 91.8  | 92.3  | 92.7   | 93.1   | 93.6   | 93.9   |
| 100                    | Mech. Input HP     | 0.213 | 0.359 | 0.720 | 1.06  | 1.52  | 2.84  | 4.37  | 6.74  | 9.70  | 13.2  | 17.6  | 28.6   | 39.7   | 62.9   | 91.9   |
|                        | Out.Torq., in.lbs. | 790   | 1400  | 2750  | 4130  | 5920  | 11200 | 17800 | 27600 | 39800 | 54100 | 72300 | 118000 | 168000 | 266000 | 392000 |
|                        | Therm. Input HP    | 0.213 | 0.359 | 0.720 | 1.06  | 1.52  | 2.84  | 4.37  | 6.74  | 9.70  | 13.2  | 17.6  | 25.0   | 32.0   | 47.0   | 62.0   |
|                        | Output RPM         | 13.8  | 13.8  | 13.8  | 13.8  | 13.8  | 13.8  | 13.5  | 13.5  | 13.5  | 13.6  | 13.6  | 13.6   | 13.5   | 13.5   | 13.5   |
|                        | Efficiency %       | 81.2  | 85.3  | 83.6  | 85.3  | 85.2  | 86.3  | 87.3  | 87.8  | 88.0  | 88.7  | 88.9  | 89.3   | 90.4   | 90.3   | 91.1   |

## Horsepower and Torque Ratings • Single Reduction

## Single Reduction Speed Reducers

## Nominal Ratio 10:1

## Nominal Ratio 15:1

[illegible]

| WORM<br>SPEED<br>(RPM) | Unit Size          | 20     | 25     | 30     | 35     | 40     | 50     | 60     | 70     | 80     | 90     | 100    | 120    | 140    | 170    | 200    |        |
|------------------------|--------------------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
|                        | Center Distance    | 2      | 2.5    | 3      | 3.5    | 4      | 5      | 6      | 7      | 8      | 9      | 10     | 12     | 14     | 17     | 20     |        |
|                        | Total Ratio        | 15.50  | 15.50  | 15.50  | 15.50  | 15.50  | 15.50  | 14.67  | 14.67  | 14.67  | 14.67  | 14.67  | 14.67  | 14.67  | 14.75  | 14.75  | 14.75  |
|                        | Actual Ratio       | 15-1/2 | 15-1/2 | 15-1/2 | 15-1/2 | 15-1/2 | 15-1/2 | 14-2/3 | 14-2/3 | 14-2/3 | 14-2/3 | 14-2/3 | 14-2/3 | 14-2/3 | 14-3/4 | 14-3/4 | 14-3/4 |
| 1750                   | Mech. Input HP     | 1.32   | 2.08   | 3.92   | 5.48   | 7.22   | 11.6   | 18.0   | 26.5   | 36.8   | 46.9   | 62.6   | 94.1   | 122    | 215    | 325    |        |
|                        | Out.Torq., in.lbs. | 603    | 993    | 1900   | 2670   | 3570   | 5830   | 8660   | 12800  | 17800  | 23100  | 30700  | 46500  | 60600  | 107000 | 164000 |        |
|                        | Therm. Input HP    | 1.32   | 2.08   | 3.92   | 5.48   | 7.22   | 11.6   | 18.0   | 25.0   | 34.4   | 43.5   | 56.4   | 81.2   | 122    | 170    | 225    |        |
|                        | Output RPM         | 113    | 113    | 113    | 113    | 113    | 113    | 119    | 119    | 119    | 119    | 119    | 119    | 119    | 119    | 119    |        |
|                        | Efficiency %       | 81.8   | 85.5   | 86.8   | 87.3   | 88.6   | 90.0   | 91.1   | 91.4   | 91.6   | 93.2   | 92.8   | 93.6   | 93.5   | 93.7   | 95.0   |        |
| 1450                   | Mech. Input HP     | 1.18   | 1.87   | 3.59   | 5.15   | 6.74   | 10.9   | 16.4   | 24.2   | 33.5   | 43.1   | 57.9   | 88.7   | 109    | 192    | 295    |        |
|                        | Out.Torq., in.lbs. | 649    | 1080   | 2090   | 3010   | 4010   | 6600   | 9530   | 14000  | 19700  | 25600  | 34300  | 52700  | 65500  | 115000 | 178000 |        |
|                        | Therm. Input HP    | 1.18   | 1.87   | 3.59   | 4.96   | 6.74   | 10.9   | 16.4   | 22.9   | 31.4   | 39.9   | 52.2   | 76.5   | 109    | 155    | 205    |        |
|                        | Output RPM         | 93.5   | 93.5   | 93.5   | 93.5   | 93.5   | 93.5   | 98.9   | 98.9   | 98.9   | 98.9   | 98.9   | 98.9   | 98.3   | 98.3   | 98.3   |        |
|                        | Efficiency %       | 81.6   | 85.7   | 86.4   | 86.8   | 88.3   | 89.9   | 91.2   | 90.7   | 92.2   | 93.2   | 92.9   | 93.2   | 93.7   | 93.4   | 94.1   |        |
| 1150                   | Mech. Input HP     | 1.02   | 1.62   | 3.20   | 4.61   | 6.06   | 9.95   | 15.0   | 21.7   | 29.9   | 38.3   | 51.8   | 80.2   | 96.2   | 165    | 265    |        |
|                        | Out.Torq., in.lbs. | 696    | 1170   | 2330   | 3380   | 4510   | 7570   | 10900  | 15900  | 22100  | 28500  | 38500  | 59900  | 72700  | 124000 | 202000 |        |
|                        | Therm. Input HP    | 1.02   | 1.62   | 3.05   | 4.26   | 5.80   | 9.44   | 15.0   | 20.5   | 28.0   | 35.5   | 46.7   | 69.2   | 96.2   | 135    | 175    |        |
|                        | Output RPM         | 74.2   | 74.2   | 74.2   | 74.2   | 74.2   | 74.2   | 78.4   | 78.4   | 78.4   | 78.4   | 78.4   | 78.4   | 78.0   | 78.0   | 78.0   |        |
|                        | Efficiency %       | 80.3   | 85.0   | 85.7   | 86.3   | 87.6   | 89.6   | 90.4   | 91.2   | 92.0   | 92.6   | 92.5   | 92.9   | 93.5   | 93.0   | 94.3   |        |
| 865                    | Mech. Input HP     | 0.828  | 1.33   | 2.67   | 3.94   | 5.22   | 8.63   | 13.4   | 19.4   | 26.6   | 34.0   | 44.9   | 69.6   | 84.5   | 138    | 225    |        |
|                        | Out.Torq., in.lbs. | 744    | 1260   | 2550   | 3820   | 5120   | 8640   | 12800  | 18600  | 25800  | 33400  | 44100  | 68700  | 84300  | 138000 | 227000 |        |
|                        | Therm. Input HP    | 0.828  | 1.33   | 2.50   | 3.52   | 4.67   | 7.75   | 13.3   | 18.4   | 25.1   | 31.8   | 40.9   | 60.6   | 84.5   | 110    | 145    |        |
|                        | Output RPM         | 55.8   | 55.8   | 55.8   | 55.8   | 55.8   | 55.8   | 59.0   | 59.0   | 59.0   | 59.0   | 59.0   | 59.0   | 58.6   | 58.6   | 58.6   |        |
|                        | Efficiency %       | 79.6   | 83.9   | 84.6   | 85.8   | 86.9   | 88.6   | 89.4   | 89.7   | 90.8   | 91.9   | 91.9   | 92.4   | 92.8   | 93.0   | 93.9   |        |
| 680                    | Mech. Input HP     | 0.687  | 1.11   | 2.26   | 3.40   | 4.50   | 7.59   | 11.8   | 17.3   | 23.9   | 30.6   | 41.0   | 62.4   | 75.7   | 120    | 192    |        |
|                        | Out.Torq., in.lbs. | 780    | 1320   | 2720   | 4110   | 5550   | 9610   | 14300  | 21100  | 29500  | 38000  | 50800  | 77700  | 95400  | 153000 | 246000 |        |
|                        | Therm. Input HP    | 0.687  | 1.11   | 2.07   | 2.99   | 3.85   | 6.56   | 11.4   | 15.7   | 21.3   | 28.2   | 37.3   | 54.3   | 72.0   | 93.0   | 125    |        |
|                        | Output RPM         | 43.9   | 43.9   | 43.9   | 43.9   | 43.9   | 43.9   | 46.4   | 46.4   | 46.4   | 46.4   | 46.4   | 46.4   | 46.1   | 46.1   | 46.1   |        |
|                        | Efficiency %       | 79.0   | 82.8   | 83.8   | 84.1   | 85.9   | 88.1   | 89.1   | 89.7   | 90.8   | 91.4   | 91.1   | 91.6   | 92.2   | 93.3   | 93.7   |        |
| 575                    | Mech. Input HP     | 0.603  | 0.968  | 2.00   | 3.03   | 4.01   | 6.74   | 10.7   | 15.8   | 22.0   | 27.9   | 37.8   | 56.0   | 70.2   | 108    | 174    |        |
|                        | Out.Torq., in.lbs. | 800    | 1350   | 2810   | 4300   | 5790   | 10000  | 15200  | 22500  | 31700  | 40900  | 55000  | 82200  | 104000 | 160000 | 263000 |        |
|                        | Therm. Input HP    | 0.603  | 0.968  | 1.82   | 2.63   | 3.45   | 5.86   | 10.0   | 14.0   | 18.9   | 25.0   | 33.7   | 51.0   | 64.0   | 82.0   | 113    |        |
|                        | Output RPM         | 37.1   | 37.1   | 37.1   | 37.1   | 37.1   | 37.1   | 39.2   | 39.2   | 39.2   | 39.2   | 39.2   | 39.2   | 39.0   | 39.0   | 39.0   |        |
|                        | Efficiency %       | 78.1   | 82.1   | 82.7   | 83.5   | 85.0   | 87.3   | 88.4   | 88.6   | 89.6   | 91.2   | 90.5   | 91.3   | 91.6   | 91.6   | 93.5   |        |
| 450                    | Mech. Input HP     | 0.487  | 0.792  | 1.60   | 2.53   | 3.33   | 5.65   | 9.09   | 13.6   | 19.2   | 24.1   | 33.5   | 50.8   | 64.4   | 97.2   | 150    |        |
|                        | Out.Torq., in.lbs. | 820    | 1400   | 2920   | 4520   | 6080   | 10600  | 16300  | 24600  | 35000  | 44800  | 61800  | 94400  | 121000 | 184000 | 287000 |        |
|                        | Therm. Input HP    | 0.487  | 0.792  | 1.55   | 2.20   | 2.95   | 4.94   | 8.55   | 11.8   | 16.1   | 21.2   | 28.5   | 43.1   | 54.0   | 72.0   | 97.0   |        |
|                        | Output RPM         | 29.0   | 29.0   | 29.0   | 29.0   | 29.0   | 29.0   | 30.7   | 30.7   | 30.7   | 30.7   | 30.7   | 30.7   | 30.5   | 30.5   | 30.5   |        |
|                        | Efficiency %       | 77.6   | 81.4   | 84.1   | 82.3   | 84.1   | 86.4   | 87.3   | 88.1   | 88.7   | 90.5   | 89.8   | 90.5   | 91.0   | 91.6   | 92.6   |        |
| 300                    | Mech. Input HP     | 0.338  | 0.554  | 1.18   | 1.82   | 2.42   | 4.12   | 6.55   | 10.1   | 14.3   | 18.0   | 25.9   | 40.1   | 52.5   | 82.0   | 118    |        |
|                        | Out.Torq., in.lbs. | 847    | 1450   | 3070   | 4790   | 6500   | 11400  | 17400  | 26900  | 38500  | 49400  | 70500  | 110000 | 146000 | 230000 | 324000 |        |
|                        | Therm. Input HP    | 0.338  | 0.554  | 1.18   | 1.65   | 2.31   | 3.82   | 6.55   | 9.07   | 12.4   | 16.4   | 22.0   | 33.3   | 44.0   | 57.0   | 77.0   |        |
|                        | Output RPM         | 19.4   | 19.4   | 19.4   | 19.4   | 19.4   | 19.4   | 20.5   | 20.5   | 20.5   | 20.5   | 20.5   | 20.5   | 20.3   | 20.3   | 20.3   |        |
|                        | Efficiency %       | 77.0   | 80.4   | 79.9   | 80.8   | 82.5   | 85.0   | 86.2   | 86.4   | 87.4   | 89.1   | 88.3   | 89.0   | 89.7   | 90.5   | 88.6   |        |
| 100                    | Mech. Input HP     | 0.125  | 0.205  | 0.439  | 0.697  | 0.914  | 1.57   | 2.61   | 4.05   | 5.76   | 7.03   | 10.7   | 17.2   | 23.7   | 39.1   | 58.0   |        |
|                        | Out.Torq., in.lbs. | 885    | 1520   | 3260   | 5180   | 7000   | 12400  | 19800  | 30800  | 44200  | 55500  | 83200  | 135000 | 188000 | 313000 | 472000 |        |
|                        | Therm. Input HP    | 0.125  | 0.205  | 0.439  | 0.697  | 0.914  | 1.57   | 2.61   | 3.97   | 5.65   | 6.90   | 10.3   | 16.4   | 23.7   | 37.0   | 55.0   |        |
|                        | Output RPM         | 6.45   | 6.45   | 6.45   | 6.45   | 6.45   | 6.45   | 6.82   | 6.82   | 6.82   | 6.82   | 6.82   | 6.82   | 6.78   | 6.78   | 6.78   |        |
|                        | Efficiency %       | 72.5   | 75.9   | 76.0   | 76.1   | 78.4   | 80.8   | 82.1   | 82.3   | 83.0   | 85.4   | 84.1   | 84.9   | 85.3   | 86.1   | 87.5   |        |

Ratings based on 1.0 service factor. For A.G.M.A. recommended practice on service factors, see page 11.



# Horsepower and Torque Ratings • Single Reduction

Single Reduction  
Speed Reducers

Nominal Ratio 20:1

| WORM<br>SPEED<br>(RPM) | Unit Size           | 20     | 25     | 30     | 35     | 40     | 50     | 60     | 70     | 80     | 90     | 100    | 120    | 140    | 170    | 200    |
|------------------------|---------------------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
|                        | Center Distance     | 2      | 2.5    | 3      | 3.5    | 4      | 5      | 6      | 7      | 8      | 9      | 10     | 12     | 14     | 17     | 20     |
|                        | Total Ratio         | 20.50  | 20.50  | 20.50  | 20.50  | 20.50  | 20.50  | 20.50  | 20.50  | 20.50  | 20.50  | 20.50  | 20.50  | 19.67  | 19.67  | 19.67  |
|                        | Actual Ratio        | 20-1/2 | 20-1/2 | 20-1/2 | 20-1/2 | 20-1/2 | 20-1/2 | 20-1/2 | 20-1/2 | 20-1/2 | 20-1/2 | 20-1/2 | 20-1/2 | 20-1/2 | 19-2/3 | 19-2/3 |
| 1750                   | Mech. Input HP      | 1.08   | 1.66   | 3.07   | 4.48   | 5.74   | 9.28   | 14.0   | 20.7   | 28.1   | 37.8   | 48.2   | 74.0   | 95.1   | 156    | 252    |
|                        | Out. Torq., in.lbs. | 623    | 1010   | 1920   | 2750   | 3660   | 6000   | 9160   | 13600  | 18600  | 25100  | 32400  | 50100  | 62400  | 103000 | 166000 |
|                        | Therm. Input HP     | 1.08   | 1.66   | 3.07   | 4.48   | 5.74   | 9.28   | 14.0   | 19.6   | 26.3   | 35.0   | 43.5   | 63.8   | 95.1   | 142    | 190    |
|                        | Output RPM          | 85.4   | 85.4   | 85.4   | 85.4   | 85.4   | 85.4   | 85.4   | 85.4   | 85.4   | 85.4   | 85.4   | 85.4   | 89.0   | 89.0   | 89.0   |
|                        | Efficiency %        | 78.1   | 82.4   | 84.7   | 83.1   | 86.4   | 87.6   | 88.6   | 89.0   | 89.7   | 89.9   | 91.0   | 91.7   | 92.6   | 93.2   | 93.0   |
| 1450                   | Mech. Input HP      | 0.982  | 1.48   | 2.78   | 4.05   | 5.32   | 8.57   | 12.8   | 19.1   | 25.7   | 34.2   | 44.6   | 68.4   | 83.6   | 142    | 225    |
|                        | Out. Torq., in.lbs. | 657    | 1090   | 2080   | 3060   | 4080   | 6660   | 10000  | 15200  | 20500  | 27400  | 35900  | 55600  | 66100  | 113000 | 179000 |
|                        | Therm. Input HP     | 0.982  | 1.48   | 2.78   | 4.05   | 5.32   | 8.57   | 12.8   | 18.1   | 24.1   | 31.7   | 40.2   | 59.0   | 83.6   | 130    | 180    |
|                        | Output RPM          | 70.7   | 70.7   | 70.7   | 70.7   | 70.7   | 70.7   | 70.7   | 70.7   | 70.7   | 70.7   | 70.7   | 70.7   | 73.7   | 73.7   | 73.7   |
|                        | Efficiency %        | 75.1   | 82.7   | 84.0   | 84.8   | 86.1   | 87.2   | 87.7   | 89.3   | 89.5   | 89.9   | 90.3   | 91.2   | 92.5   | 93.1   | 93.1   |
| 1150                   | Mech. Input HP      | 0.821  | 1.28   | 2.43   | 3.63   | 4.76   | 7.87   | 11.7   | 17.2   | 23.1   | 30.8   | 40.0   | 61.7   | 76.0   | 125    | 200    |
|                        | Out. Torq., in.lbs. | 708    | 1170   | 2300   | 3420   | 4560   | 7650   | 11500  | 17100  | 23100  | 31100  | 40500  | 63100  | 75400  | 125000 | 201000 |
|                        | Therm. Input HP     | 0.821  | 1.28   | 2.43   | 3.50   | 4.76   | 7.87   | 11.7   | 16.3   | 21.6   | 28.6   | 36.1   | 53.2   | 76.0   | 112    | 160    |
|                        | Output RPM          | 56.1   | 56.1   | 56.1   | 56.1   | 56.1   | 56.1   | 56.1   | 56.1   | 56.1   | 56.1   | 56.1   | 56.1   | 58.5   | 58.5   | 58.5   |
|                        | Efficiency %        | 76.8   | 81.4   | 84.2   | 83.9   | 85.3   | 86.5   | 87.5   | 88.5   | 89.0   | 89.9   | 90.1   | 91.0   | 92.0   | 92.8   | 93.2   |
| 865                    | Mech. Input HP      | 0.667  | 1.05   | 2.01   | 3.08   | 4.07   | 6.88   | 10.4   | 15.4   | 20.4   | 26.8   | 34.8   | 54.0   | 67.1   | 109    | 163    |
|                        | Out. Torq., in.lbs. | 755    | 1260   | 2480   | 3810   | 5120   | 8780   | 13400  | 20000  | 26800  | 35500  | 46300  | 72400  | 87700  | 143000 | 217000 |
|                        | Therm. Input HP     | 0.667  | 1.05   | 2.01   | 2.88   | 3.97   | 6.88   | 10.4   | 14.7   | 19.3   | 25.1   | 31.7   | 47.0   | 67.1   | 95.0   | 135    |
|                        | Output RPM          | 42.2   | 42.2   | 42.2   | 42.2   | 42.2   | 42.2   | 42.2   | 42.2   | 42.2   | 42.2   | 42.2   | 42.2   | 44.0   | 44.0   | 44.0   |
|                        | Efficiency %        | 75.8   | 80.3   | 82.6   | 82.8   | 84.2   | 85.4   | 86.3   | 86.9   | 88.0   | 88.7   | 89.1   | 89.8   | 91.2   | 91.6   | 92.9   |
| 680                    | Mech. Input HP      | 0.556  | 0.873  | 1.70   | 2.64   | 3.50   | 6.00   | 9.28   | 13.8   | 18.6   | 24.6   | 31.7   | 48.4   | 59.7   | 92.3   | 144    |
|                        | Out. Torq., in.lbs. | 790    | 1320   | 2620   | 4090   | 5530   | 9620   | 15100  | 22600  | 30900  | 41000  | 53400  | 82100  | 98600  | 154000 | 242000 |
|                        | Therm. Input HP     | 0.556  | 0.873  | 1.70   | 2.41   | 3.25   | 6.00   | 9.28   | 13.0   | 17.6   | 22.2   | 27.4   | 42.1   | 59.7   | 80.0   | 115    |
|                        | Output RPM          | 33.2   | 33.2   | 33.2   | 33.2   | 33.2   | 33.2   | 33.2   | 33.2   | 33.2   | 33.2   | 33.2   | 33.2   | 34.6   | 34.6   | 34.6   |
|                        | Efficiency %        | 74.8   | 79.6   | 81.1   | 81.5   | 83.2   | 84.4   | 85.6   | 86.2   | 87.4   | 87.7   | 88.7   | 89.3   | 90.6   | 91.5   | 92.2   |
| 575                    | Mech. Input HP      | 0.484  | 0.766  | 1.50   | 2.35   | 3.11   | 5.42   | 8.38   | 12.6   | 17.0   | 22.6   | 29.3   | 43.6   | 55.9   | 85.1   | 130    |
|                        | Out. Torq., in.lbs. | 806    | 1350   | 2700   | 4250   | 5750   | 10200  | 16000  | 24400  | 32900  | 44300  | 57700  | 87000  | 108000 | 167000 | 256000 |
|                        | Therm. Input HP     | 0.484  | 0.766  | 1.50   | 2.18   | 2.90   | 5.36   | 8.38   | 11.6   | 15.8   | 19.7   | 24.4   | 38.7   | 55.9   | 73.0   | 102    |
|                        | Output RPM          | 28.0   | 28.0   | 28.0   | 28.0   | 28.0   | 28.0   | 28.0   | 28.0   | 28.0   | 28.0   | 28.0   | 28.0   | 29.2   | 29.2   | 29.2   |
|                        | Efficiency %        | 74.1   | 78.4   | 80.1   | 80.5   | 82.3   | 83.8   | 85.0   | 86.2   | 86.1   | 87.2   | 87.6   | 88.8   | 89.6   | 91.0   | 91.4   |
| 450                    | Mech. Input HP      | 0.394  | 0.617  | 1.22   | 1.96   | 2.59   | 4.56   | 7.23   | 10.9   | 14.9   | 20.1   | 26.2   | 39.3   | 51.1   | 77.2   | 113    |
|                        | Out. Torq., in.lbs. | 830    | 1380   | 2800   | 4450   | 6030   | 10800  | 17300  | 26400  | 36400  | 49600  | 65100  | 99200  | 126000 | 191000 | 284000 |
|                        | Therm. Input HP     | 0.394  | 0.617  | 1.22   | 1.82   | 2.45   | 4.52   | 7.23   | 9.80   | 13.4   | 16.7   | 20.6   | 32.7   | 48.0   | 62.0   | 87.0   |
|                        | Output RPM          | 22.0   | 22.0   | 22.0   | 22.0   | 22.0   | 22.0   | 22.0   | 22.0   | 22.0   | 22.0   | 22.0   | 22.0   | 22.9   | 22.9   | 22.9   |
|                        | Efficiency %        | 73.4   | 77.9   | 79.9   | 79.1   | 81.1   | 82.5   | 83.3   | 84.4   | 85.1   | 85.9   | 86.5   | 87.9   | 89.5   | 89.8   | 91.2   |
| 300                    | Mech. Input HP      | 0.278  | 0.436  | 0.860  | 1.40   | 1.86   | 3.36   | 5.36   | 8.08   | 11.2   | 15.3   | 20.4   | 31.1   | 41.0   | 65.0   | 92.5   |
|                        | Out. Torq., in.lbs. | 860    | 1440   | 2920   | 4700   | 6370   | 11600  | 18800  | 28600  | 40300  | 55700  | 74400  | 115000 | 148000 | 238000 | 342000 |
|                        | Therm. Input HP     | 0.278  | 0.436  | 0.860  | 1.40   | 1.86   | 3.36   | 5.36   | 7.56   | 10.3   | 12.9   | 15.9   | 25.2   | 38.0   | 50.0   | 72.0   |
|                        | Output RPM          | 14.6   | 14.6   | 14.6   | 14.6   | 14.6   | 14.6   | 14.6   | 14.6   | 14.6   | 14.6   | 14.6   | 14.6   | 15.3   | 15.3   | 15.3   |
|                        | Efficiency %        | 71.8   | 76.7   | 78.8   | 78.0   | 79.5   | 80.2   | 81.4   | 82.2   | 83.5   | 84.5   | 84.7   | 85.9   | 87.4   | 88.6   | 89.5   |
| 100                    | Mech. Input HP      | 0.102  | 0.160  | 0.324  | 0.536  | 0.709  | 1.30   | 2.13   | 3.26   | 4.59   | 6.44   | 8.60   | 13.4   | 18.9   | 31.2   | 45.8   |
|                        | Out. Torq., in.lbs. | 895    | 1500   | 3080   | 5040   | 6860   | 12700  | 21100  | 32800  | 46400  | 65500  | 88400  | 139000 | 193000 | 322000 | 480000 |
|                        | Therm. Input HP     | 0.102  | 0.160  | 0.324  | 0.536  | 0.709  | 1.30   | 2.13   | 3.20   | 4.50   | 6.25   | 8.27   | 12.8   | 18.9   | 31.2   | 45.8   |
|                        | Output RPM          | 4.88   | 4.88   | 4.88   | 4.88   | 4.88   | 4.88   | 4.88   | 4.88   | 4.88   | 4.88   | 4.88   | 4.88   | 5.08   | 5.08   | 5.08   |
|                        | Efficiency %        | 67.9   | 72.6   | 73.6   | 72.8   | 74.9   | 75.6   | 76.7   | 77.9   | 78.2   | 78.7   | 79.6   | 80.3   | 82.4   | 83.3   | 84.6   |

Nominal Ratio 25:1

| WORM<br>SPEED<br>(RPM) | Unit Size           | 20    | 25    | 30     | 35     | 40     | 50     | 60     | 70     | 80     | 90     | 100    | 120    | 140    | 170    | 200    |
|------------------------|---------------------|-------|-------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
|                        | Center Distance     | 2     | 2.5   | 3      | 3.5    | 4      | 5      | 6      | 7      | 8      | 9      | 10     | 12     | 14     | 17     | 20     |
|                        | Total Ratio         | 25.00 | 25.00 | 24.50  | 24.50  | 24.50  | 24.50  | 24.50  | 24.50  | 24.50  | 24.50  | 24.50  | 24.50  | 24.50  | 24.50  | 24.50  |
|                        | Actual Ratio        | 25    | 25    | 24-1/2 | 24-1/2 | 24-1/2 | 24-1/2 | 24-1/2 | 24-1/2 | 24-1/2 | 24-1/2 | 24-1/2 | 24-1/2 | 24-1/2 | 24-1/2 | 24-1/2 |
| 1750                   | Mech. Input HP      | 0.950 | 1.46  | 2.71   | 3.82   | 4.91   | 7.94   | 11.9   | 17.8   | 24.1   | 31.6   | 40.9   | 63.4   | 82.2   | 137    | 215    |
|                        | Out. Torq., in.lbs. | 620   | 1040  | 1970   | 2780   | 3670   | 6040   | 9180   | 13800  | 18800  | 24800  | 32300  | 50500  | 66100  | 111000 | 175000 |
|                        | Therm. Input HP     | 0.950 | 1.46  | 2.71   | 3.82   | 4.91   | 7.94   | 11.9   | 16.8   | 22.6   | 29.3   | 36.9   | 54.7   | 82.2   | 127    | 165    |
|                        | Output RPM          | 70.0  | 70.0  | 71.4   | 71.4   | 71.4   | 71.4   | 71.4   | 71.4   | 71.4   | 71.4   | 71.4   | 71.4   | 71.4   | 71.4   | 71.4   |
|                        | Efficiency %        | 72.5  | 79.1  | 82.4   | 82.5   | 84.7   | 86.2   | 87.4   | 87.9   | 88.4   | 88.9   | 89.5   | 90.3   | 91.1   | 91.8   | 92.2   |
| 1450                   | Mech. Input HP      | 0.861 | 1.33  | 2.45   | 3.53   | 4.54   | 7.40   | 10.9   | 16.3   | 22.1   | 28.9   | 37.7   | 58.6   | 72.0   | 127    | 192    |
|                        | Out. Torq., in.lbs. | 680   | 1140  | 2150   | 3100   | 4080   | 6750   | 10100  | 15200  | 20700  | 27300  | 35800  | 56300  | 69800  | 124000 | 188000 |
|                        | Therm. Input HP     | 0.861 | 1.33  | 2.45   | 3.53   | 4.54   | 7.40   | 10.9   | 15.4   | 20.7   | 26.8   | 34.0   | 50.6   | 72.0   | 115    | 150    |
|                        | Output RPM          | 58.0  | 58.0  | 59.2   | 59.2   | 59.2   | 59.2   | 59.2   | 59.2   | 59.2   | 59.2   | 59.2   | 59.2   | 59.2   | 59.2   | 59.2   |
|                        | Efficiency %        | 72.7  | 78.9  | 82.4   | 82.5   | 84.4   | 85.7   | 87.0   | 87.6   | 88.0   | 88.7   | 89.2   | 90.2   | 91.0   | 91.7   | 91.9   |
| 1150                   | Mech. Input HP      | 0.751 | 1.17  | 2.17   | 3.16   | 4.06   | 6.75   | 10.0   | 14.7   | 19.9   | 26.1   | 33.3   | 53.1   | 63.7   | 112    | 165    |
|                        | Out. Torq., in.lbs. | 740   | 1240  | 2360   | 3460   | 4550   | 7710   | 11600  | 17200  | 23300  | 30800  | 39600  | 63800  | 77500  | 137000 | 203000 |
|                        | Therm. Input HP     | 0.751 | 1.17  | 2.17   | 3.16   | 4.06   | 6.75   | 10.0   | 13.9   | 18.5   | 24.1   | 30.0   | 45.8   | 63.7   | 100    | 130    |
|                        | Output RPM          | 46.0  | 46.0  | 46.9   | 46.9   | 46.9   | 46.9   | 46.9   | 46.9   | 46.9   | 46.9   | 46.9   | 46.9   | 46.9   | 46.9   | 46.9   |
|                        | Efficiency %        | 71.9  | 77.4  | 81.0   | 81.5   | 83.5   | 85.1   | 86.4   | 87.1   | 87.2   | 87.9   | 88.6   | 89.5   | 90.6   | 91.1   | 91.6   |
| 865                    | Mech. Input HP      | 0.623 | 0.980 | 1.81   | 2.72   | 3.45   | 5.89   | 8.86   | 13.1   | 17.7   | 22.8   | 29.7   | 46.2   | 55.9   | 94.1   | 134    |
|                        | Out. Torq., in.lbs. | 798   | 1350  | 2580   | 3890   | 5070   | 8820   | 13500  | 20100  | 27300  | 35600  | 46300  | 73000  | 89600  | 151000 | 219000 |
|                        | Therm. Input HP     | 0.623 | 0.980 | 1.81   | 2.72   | 3.45   | 5.89   | 8.86   | 12.5   | 16.7   | 21.4   | 26.9   | 40.2   | 55.9   | 82.0   | 110    |
|                        | Output RPM          | 34.6  | 34.6  | 35.3   | 35.3   | 35.3   | 35.3   | 35.3   | 35.3   | 35.3   | 35.3   | 35.3   | 35.3   | 35.3   | 35.3   | 35.3   |
|                        | Efficiency %        | 70.3  | 75.6  | 79.9   | 80.1   | 82.3   | 83.9   | 85.4   | 86.0   | 86.4   | 87.5   | 87.3   | 88.5   | 89.8   | 89.9   | 91.6   |
| 680                    | Mech. Input HP      | 0.527 | 0.824 | 1.53   | 2.33   | 2.96   | 5.12   | 7.87   | 11.7   | 16.0   | 20.9   | 27.1   | 41.7   | 50.0   | 81.2   | 114    |
|                        | Out. Torq., in.lbs. | 840   | 1420  | 2720   | 4160   | 5450   | 9630   | 15000  | 22600  | 31100  | 41100  | 53400  | 83000  | 101000 | 165000 | 234000 |
|                        | Therm. Input HP     | 0.527 | 0.824 | 1.53   | 2.33   | 2.96   | 5.07   | 7.87   | 11.2   | 15.1   | 19.6   | 24.4   | 36.2   | 50.0   | 70.0   | 95.0   |
|                        | Output RPM          | 27.2  | 27.2  | 27.8   | 27.8   | 27.8   | 27.8   | 27.8   | 27.8   | 27.8   | 27.8   | 27.8   | 27.8   | 27.8   | 27.8   | 27.8   |
|                        | Efficiency %        | 68.8  | 74.4  | 78.3   | 78.6   | 81.1   | 82.8   | 83.9   | 85.1   | 85.6   | 86.6   | 86.8   | 87.7   | 89.0   | 89.5   | 90.4   |
| 575                    | Mech. Input HP      | 0.445 | 0.727 | 1.35   | 2.07   | 2.62   | 4.59   | 7.11   | 10.7   | 14.5   | 19.3   | 24.9   | 37.7   | 47.0   | 73.0   | 106    |
|                        | Out. Torq., in.lbs. | 860   | 1470  | 2790   | 4320   | 5640   | 10100  | 15900  | 24100  | 33300  | 44400  | 57500  | 88000  | 111000 | 174000 | 257000 |
|                        | Therm. Input HP     | 0.445 | 0.727 | 1.35   | 2.07   | 2.62   | 4.55   | 7.11   | 10.2   | 13.9   | 17.4   | 21.6   | 34.3   | 47.0   | 62.0   | 85.0   |
|                        | Output RPM          | 23.0  | 23.0  | 23.5   | 23.5   | 23.5   | 23.5   | 23.5   | 23.5   | 23.5   | 23.5   | 23.5   | 23.5   | 23.5   | 23.5   | 23.5   |
|                        | Efficiency %        | 70.5  | 73.8  | 77.0   | 77.7   | 80.2   | 81.9   | 83.3   | 83.9   | 85.5   | 85.7   | 86.0   | 86.9   | 87.9   | 88.8   | 90.3   |
| 450                    | Mech. Input HP      | 0.384 | 0.598 | 1.11   | 1.73   | 2.19   | 3.85   | 6.07   | 9.22   | 12.7   | 17.0   | 22.2   | 34.1   | 43.1   | 64.8   | 89.5   |
|                        | Out. Torq., in.lbs. | 890   | 1520  | 2910   | 4530   | 5940   | 10600  | 17000  | 26700  | 36700  | 49200  | 64600  | 100000 | 129000 | 196000 | 274000 |
|                        | Therm. Input HP     | 0.384 | 0.598 | 1.11   | 1.73   | 2.19   | 3.73   | 6.07   | 8.61   | 11.7   | 14.7   | 18.3   | 29.3   | 42.0   | 55.0   | 75.0   |
|                        | Output RPM          | 18.0  | 18.0  | 18.4   | 18.4   | 18.4   | 18.4   | 18.4   | 18.4   | 18.4   | 18.4   | 18.4   | 18.4   | 18.4   | 18.4   | 18.4   |
|                        | Efficiency %        | 66.2  | 72.6  | 76.4   | 76.3   | 79.0   | 80.2   | 81.6   | 84.4   | 84.2   | 84.3   | 84.8   | 85.5   | 87.2   | 88.1   | 89.2   |
| 300                    | Mech. Input HP      | 0.272 | 0.426 | 0.792  | 1.25   | 1.57   | 2.83   | 4.53   | 6.82   | 9.58   | 13.1   | 17.2   | 27.0   | 35.4   | 54.5   | 77.6   |
|                        | Out. Torq., in.lbs. | 925   | 1580  | 3040   | 4790   | 6250   | 11400  | 18500  | 28200  | 40200  | 55100  | 73200  | 117000 | 155000 | 242000 | 345000 |
|                        | Therm. Input HP     | 0.272 | 0.426 | 0.792  | 1.25   | 1.57   | 2.83   | 4.53   | 6.65   | 9.01   | 11.4   | 14.1   | 22.7   | 34.0   | 45.0   | 62.0   |
|                        | Output RPM          | 12.0  | 12.0  | 12.2   | 12.2   | 12.2   | 12.2   | 12.2   | 12.2   | 12.2   | 12.2   | 12.2   | 12.2   | 12.2   | 12.2   | 12.2   |
|                        | Efficiency %        | 64.8  | 70.6  | 74.6   | 74.5   | 77.3   | 78.3   | 79.3   | 80.3   | 81.5   | 81.7   | 82.7   | 84.2   | 85.1   | 86.3   | 86.4   |
| 100                    | Mech. Input HP      | 0.099 | 0.160 | 0.294  | 0.482  | 0.596  | 1.10   | 1.78   | 2.73   | 3.88   | 5.38   | 7.21   | 11.7   | 16.1   | 26.5   | 37.9   |
|                        | Out. Torq., in.lbs. | 970   | 1660  | 3220   | 5130   | 6690   | 12600  | 20400  | 31900  | 46000  | 63700  | 85900  | 142000 | 198000 | 329000 | 480000 |
|                        | Therm. Input HP     | 0.099 | 0.160 | 0.294  | 0.482  | 0.596  | 1.10   | 1.78   | 2.73   | 3.88   | 5.38   | 7.21   | 11.7   | 16.1   | 26.5   | 37.9   |
|                        | Output RPM          | 4.00  | 4.00  | 4.08   | 4.08   | 4.08   | 4.08   | 4.08   | 4.08   | 4.08   | 4.08   | 4.08   | 4.08   | 4.08   | 4.08   | 4.08   |
|                        | Efficiency %        | 62.2  | 65.8  | 70.9   | 68.9   | 72.7   | 74.2   | 74.2   | 75.7   | 76.8   | 76.7   | 77.2   | 78.6   | 79.6   | 80.4   | 82.0   |



# Horsepower and Torque Ratings • Single Reduction

Single Reduction  
Speed Reducers

Nominal Ratio 30:1

| WORM<br>SPEED<br>(RPM) | Unit Size<br>Center Distance | 20           | 25    | 30    | 35    | 40    | 50     | 60     | 70     | 80     | 90     | 100    | 120    | 140    | 170    | 200    |
|------------------------|------------------------------|--------------|-------|-------|-------|-------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
|                        |                              | 2            | 2.5   | 3     | 3.5   | 4     | 5      | 6      | 7      | 8      | 9      | 10     | 12     | 14     | 17     | 20     |
|                        |                              | Total Ratio  | 30.00 | 30.00 | 30.00 | 30.00 | 29.50  | 29.50  | 29.50  | 29.50  | 29.50  | 29.50  | 29.50  | 29.50  | 29.50  | 29.50  |
|                        |                              | Actual Ratio | 30    | 30    | 30    | 30    | 29-1/2 | 29-1/2 | 29-1/2 | 29-1/2 | 29-1/2 | 29-1/2 | 29-1/2 | 29-1/2 | 29-1/2 | 29-1/2 |
| 1750                   | Mech. Input HP               | 0.806        | 1.25  | 2.31  | 3.24  | 4.23  | 6.80   | 10.2   | 14.8   | 20.2   | 26.5   | 35.1   | 53.3   | 68.8   | 120    | 195    |
|                        | Out. Torq., in.lbs.          | 620          | 1040  | 1970  | 2770  | 3710  | 6070   | 9220   | 13600  | 18700  | 24800  | 33100  | 50500  | 65500  | 115000 | 189000 |
|                        | Therm. Input HP              | 0.806        | 1.25  | 2.31  | 3.24  | 4.23  | 6.80   | 10.2   | 14.0   | 18.9   | 24.6   | 31.7   | 46.0   | 68.8   | 110    | 140    |
|                        | Output RPM                   | 58.3         | 58.3  | 58.3  | 58.3  | 58.3  | 59.3   | 59.3   | 59.3   | 59.3   | 59.3   | 59.3   | 59.3   | 59.3   | 59.3   | 59.3   |
|                        | Efficiency %                 | 71.2         | 77.0  | 78.9  | 79.1  | 81.2  | 84.0   | 85.1   | 86.5   | 87.1   | 88.1   | 88.8   | 89.2   | 89.6   | 90.2   | 91.2   |
| 1450                   | Mech. Input HP               | 0.718        | 1.13  | 2.13  | 3.03  | 3.96  | 6.34   | 9.36   | 13.6   | 18.5   | 24.4   | 32.1   | 49.3   | 62.5   | 112    | 175    |
|                        | Out. Torq., in.lbs.          | 670          | 1120  | 2170  | 3100  | 4160  | 6800   | 10200  | 15000  | 20600  | 27300  | 36400  | 56200  | 71500  | 130000 | 204000 |
|                        | Therm. Input HP              | 0.718        | 1.13  | 2.13  | 3.03  | 3.96  | 6.34   | 9.36   | 12.9   | 17.3   | 22.6   | 29.0   | 42.5   | 62.5   | 102    | 132    |
|                        | Output RPM                   | 48.3         | 48.3  | 48.3  | 48.3  | 48.3  | 49.2   | 49.2   | 49.2   | 49.2   | 49.2   | 49.2   | 49.2   | 49.2   | 49.2   | 49.2   |
|                        | Efficiency %                 | 71.6         | 76.0  | 78.1  | 78.5  | 80.6  | 83.6   | 85.0   | 86.0   | 86.8   | 87.3   | 88.4   | 88.9   | 89.2   | 90.5   | 90.9   |
| 1150                   | Mech. Input HP               | 0.622        | 0.994 | 1.90  | 2.75  | 3.58  | 5.80   | 8.59   | 12.4   | 16.6   | 21.9   | 29.0   | 44.4   | 53.5   | 100    | 150    |
|                        | Out. Torq., in.lbs.          | 720          | 1230  | 2400  | 3500  | 4960  | 7760   | 11600  | 17100  | 23200  | 30700  | 41000  | 63300  | 77000  | 145000 | 219000 |
|                        | Therm. Input HP              | 0.622        | 0.994 | 1.90  | 2.75  | 3.58  | 5.80   | 8.59   | 11.7   | 15.6   | 20.3   | 26.2   | 38.3   | 53.5   | 87.0   | 117    |
|                        | Output RPM                   | 38.3         | 38.3  | 38.3  | 38.3  | 38.3  | 39.0   | 39.0   | 39.0   | 39.0   | 39.0   | 39.0   | 39.0   | 39.0   | 39.0   | 39.0   |
|                        | Efficiency %                 | 70.4         | 75.3  | 76.8  | 77.4  | 84.3  | 82.8   | 83.5   | 85.3   | 86.4   | 86.7   | 87.4   | 88.2   | 89.0   | 89.7   | 90.3   |
| 865                    | Mech. Input HP               | 0.515        | 0.812 | 1.61  | 2.38  | 3.09  | 5.06   | 7.64   | 11.0   | 14.9   | 19.4   | 25.5   | 38.7   | 47.1   | 83.5   | 116    |
|                        | Out. Torq., in.lbs.          | 773          | 1310  | 2650  | 3960  | 5290  | 8850   | 13500  | 20000  | 27300  | 35700  | 47500  | 72600  | 89200  | 155000 | 224000 |
|                        | Therm. Input HP              | 0.515        | 0.812 | 1.61  | 2.38  | 3.09  | 5.06   | 7.64   | 10.5   | 14.1   | 18.2   | 23.2   | 33.7   | 47.1   | 73.0   | 97.0   |
|                        | Output RPM                   | 28.8         | 28.8  | 28.8  | 28.8  | 28.8  | 29.3   | 29.3   | 29.3   | 29.3   | 29.3   | 29.3   | 29.3   | 29.3   | 29.3   | 29.3   |
|                        | Efficiency %                 | 68.7         | 73.8  | 75.3  | 76.1  | 78.3  | 81.4   | 82.2   | 84.6   | 85.2   | 85.6   | 86.7   | 87.3   | 88.1   | 86.4   | 89.8   |
| 680                    | Mech. Input HP               | 0.429        | 0.684 | 1.38  | 2.07  | 2.69  | 4.42   | 6.79   | 9.84   | 13.4   | 17.6   | 23.5   | 35.1   | 42.2   | 70.0   | 96.0   |
|                        | Out. Torq., in.lbs.          | 808          | 1380  | 2820  | 4260  | 5730  | 9680   | 15100  | 22300  | 30800  | 40900  | 55000  | 83000  | 100000 | 169000 | 234000 |
|                        | Therm. Input HP              | 0.429        | 0.684 | 1.38  | 2.07  | 2.69  | 4.42   | 6.79   | 9.38   | 12.7   | 16.5   | 20.2   | 30.6   | 42.2   | 62.0   | 85.0   |
|                        | Output RPM                   | 22.7         | 22.7  | 22.7  | 22.7  | 22.7  | 23.1   | 23.1   | 23.1   | 23.1   | 23.1   | 23.1   | 23.1   | 23.1   | 23.1   | 23.1   |
|                        | Efficiency %                 | 67.7         | 72.6  | 73.5  | 74.0  | 76.6  | 80.1   | 81.3   | 82.9   | 84.1   | 85.0   | 85.6   | 86.5   | 86.7   | 88.3   | 89.1   |
| 575                    | Mech. Input HP               | 0.376        | 0.600 | 1.22  | 1.86  | 2.41  | 3.99   | 6.16   | 8.87   | 12.2   | 16.2   | 21.3   | 31.7   | 39.8   | 64.9   | 85.1   |
|                        | Out. Torq., in.lbs.          | 827          | 1410  | 2910  | 4460  | 5990  | 10200  | 16000  | 23600  | 32900  | 43800  | 58500  | 87800  | 111000 | 184000 | 243000 |
|                        | Therm. Input HP              | 0.376        | 0.600 | 1.22  | 1.86  | 2.41  | 3.80   | 6.16   | 8.53   | 11.7   | 14.7   | 18.0   | 28.9   | 39.8   | 55.0   | 77.0   |
|                        | Output RPM                   | 19.2         | 19.2  | 19.2  | 19.2  | 19.2  | 19.5   | 19.5   | 19.5   | 19.5   | 19.5   | 19.5   | 19.5   | 19.5   | 19.5   | 19.5   |
|                        | Efficiency %                 | 66.9         | 71.5  | 72.5  | 72.9  | 75.6  | 79.1   | 80.3   | 82.3   | 83.4   | 83.6   | 84.9   | 85.7   | 86.3   | 87.7   | 88.3   |
| 450                    | Mech. Input HP               | 0.307        | 0.492 | 1.02  | 1.57  | 2.03  | 3.35   | 5.28   | 7.62   | 10.6   | 14.2   | 18.9   | 28.6   | 36.3   | 55.2   | 76.8   |
|                        | Out. Torq., in.lbs.          | 846          | 1450  | 3050  | 4690  | 6300  | 10800  | 17200  | 25400  | 36000  | 48600  | 65100  | 99500  | 128000 | 197000 | 277000 |
|                        | Therm. Input HP              | 0.307        | 0.492 | 1.02  | 1.57  | 2.03  | 3.20   | 5.28   | 7.33   | 10.1   | 12.4   | 15.2   | 26.0   | 36.3   | 47.0   | 67.0   |
|                        | Output RPM                   | 15.0         | 15.0  | 15.0  | 15.0  | 15.0  | 15.3   | 15.3   | 15.3   | 15.3   | 15.3   | 15.3   | 15.3   | 15.3   | 15.3   | 15.3   |
|                        | Efficiency %                 | 65.6         | 70.1  | 71.2  | 71.1  | 73.9  | 78.0   | 78.8   | 80.7   | 82.2   | 82.8   | 83.4   | 84.2   | 85.3   | 86.4   | 87.3   |
| 300                    | Mech. Input HP               | 0.218        | 0.350 | 0.731 | 1.15  | 1.48  | 2.47   | 3.96   | 5.62   | 7.98   | 10.8   | 14.4   | 22.4   | 29.9   | 46.3   | 65.6   |
|                        | Out. Torq., in.lbs.          | 876          | 1510  | 3180  | 4980  | 6710  | 11500  | 18700  | 27300  | 39200  | 53500  | 72500  | 114000 | 153000 | 242000 | 347000 |
|                        | Therm. Input HP              | 0.218        | 0.350 | 0.731 | 1.15  | 1.48  | 2.47   | 3.96   | 5.51   | 7.75   | 9.62   | 11.7   | 20.8   | 29.9   | 37.0   | 55.0   |
|                        | Output RPM                   | 10.0         | 10.0  | 10.0  | 10.0  | 10.0  | 10.2   | 10.2   | 10.2   | 10.2   | 10.2   | 10.2   | 10.2   | 10.2   | 10.2   | 10.2   |
|                        | Efficiency %                 | 63.8         | 68.5  | 69.0  | 68.7  | 71.9  | 75.1   | 76.2   | 78.4   | 79.3   | 79.9   | 81.2   | 82.1   | 82.6   | 84.3   | 85.4   |
| 100                    | Mech. Input HP               | 0.082        | 0.133 | 0.283 | 0.452 | 0.580 | 0.966  | 1.63   | 2.24   | 3.22   | 4.42   | 5.90   | 9.63   | 13.6   | 22.5   | 32.9   |
|                        | Out. Torq., in.lbs.          | 920          | 1590  | 3390  | 5370  | 7240  | 12600  | 20800  | 30600  | 44200  | 61400  | 83000  | 136000 | 191000 | 326000 | 484000 |
|                        | Therm. Input HP              | 0.082        | 0.133 | 0.283 | 0.452 | 0.580 | 0.966  | 1.63   | 2.24   | 3.22   | 4.42   | 5.90   | 9.63   | 13.6   | 22.5   | 32.9   |
|                        | Output RPM                   | 3.33         | 3.33  | 3.33  | 3.33  | 3.33  | 3.39   | 3.39   | 3.39   | 3.39   | 3.39   | 3.39   | 3.39   | 3.39   | 3.39   | 3.39   |
|                        | Efficiency %                 | 59.3         | 63.2  | 63.4  | 62.8  | 66.0  | 70.2   | 68.6   | 73.5   | 73.8   | 74.7   | 75.7   | 76.0   | 75.5   | 77.9   | 79.1   |

Nominal Ratio 40:1

| WORM<br>SPEED<br>(RPM) | Unit Size<br>Center Distance | 20           | 25    | 30    | 35    | 40    | 50    | 60    | 70    | 80    | 90    | 100   | 120   | 140    | 170    | 200    |
|------------------------|------------------------------|--------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|--------|--------|--------|
|                        |                              | 2            | 2.5   | 3     | 3.5   | 4     | 5     | 6     | 7     | 8     | 9     | 10    | 12    | 14     | 17     | 20     |
|                        |                              | Total Ratio  | 40.00 | 40.00 | 40.00 | 40.00 | 40.00 | 40.00 | 40.00 | 40.00 | 40.00 | 40.00 | 40.00 | 39.50  | 39.50  | 39.50  |
|                        |                              | Actual Ratio | 40    | 40    | 40    | 40    | 40    | 40    | 40    | 40    | 40    | 40    | 40    | 39-1/2 | 39-1/2 | 39-1/2 |
| 1750                   | Mech. Input HP               | 0.654        | 0.972 | 1.79  | 2.55  | 3.31  | 5.25  | 7.83  | 11.5  | 16.2  | 19.8  | 26.3  | 40.3  | 49.9   | 89.4   | 135    |
|                        | Out. Torq., in.lbs.          | 625          | 1020  | 1930  | 2750  | 3690  | 6010  | 9150  | 13600 | 19600 | 24300 | 32100 | 49800 | 62100  | 112000 | 170000 |
|                        | Therm. Input HP              | 0.654        | 0.972 | 1.79  | 2.55  | 3.31  | 5.25  | 7.83  | 10.9  | 15.2  | 18.4  | 23.7  | 34.8  | 49.9   | 89.4   | 115    |
|                        | Output RPM                   | 43.8         | 43.8  | 43.8  | 43.8  | 43.8  | 43.8  | 43.8  | 43.8  | 43.8  | 43.8  | 43.8  | 43.8  | 44.3   | 44.3   | 44.3   |
|                        | Efficiency %                 | 66.3         | 72.8  | 74.8  | 74.9  | 77.4  | 79.5  | 81.1  | 82.1  | 84.0  | 85.2  | 84.7  | 85.8  | 87.5   | 88.1   | 88.5   |
| 1450                   | Mech. Input HP               | 0.586        | 0.874 | 1.63  | 2.39  | 3.08  | 4.88  | 7.15  | 10.5  | 14.2  | 18.1  | 24.3  | 38.1  | 46.3   | 81.0   | 125    |
|                        | Out. Torq., in.lbs.          | 675          | 1100  | 2110  | 3080  | 4120  | 6710  | 10100 | 15000 | 20500 | 26600 | 35600 | 56400 | 69400  | 124000 | 190000 |
|                        | Therm. Input HP              | 0.586        | 0.874 | 1.63  | 2.39  | 3.08  | 4.88  | 7.15  | 9.96  | 13.3  | 16.8  | 21.9  | 32.9  | 46.3   | 80.0   | 105    |
|                        | Output RPM                   | 36.3         | 36.3  | 36.3  | 36.3  | 36.3  | 36.3  | 36.3  | 36.3  | 36.3  | 36.3  | 36.3  | 36.3  | 36.7   | 36.7   | 36.7   |
|                        | Efficiency %                 | 66.3         | 72.4  | 74.5  | 74.1  | 76.9  | 79.1  | 81.2  | 82.2  | 83.0  | 84.5  | 84.3  | 85.1  | 87.3   | 89.2   | 88.5   |
| 1150                   | Mech. Input HP               | 0.506        | 0.748 | 1.44  | 2.16  | 2.78  | 4.51  | 6.65  | 9.61  | 13.3  | 16.3  | 21.9  | 33.7  | 42.0   | 71.0   | 110    |
|                        | Out. Torq., in.lbs.          | 723          | 1180  | 2310  | 3450  | 4610  | 7670  | 11600 | 17000 | 24200 | 29900 | 40100 | 62600 | 78500  | 134000 | 210000 |
|                        | Therm. Input HP              | 0.506        | 0.748 | 1.44  | 2.16  | 2.78  | 4.51  | 6.65  | 9.07  | 12.5  | 15.1  | 19.8  | 29.1  | 42.0   | 70.0   | 90.0   |
|                        | Output RPM                   | 28.8         | 28.8  | 28.8  | 28.8  | 28.8  | 28.8  | 28.8  | 28.8  | 28.8  | 28.8  | 28.8  | 28.8  | 29.1   | 29.1   | 29.1   |
|                        | Efficiency %                 | 65.2         | 72.0  | 73.2  | 72.9  | 75.6  | 77.6  | 79.6  | 80.7  | 83.0  | 83.7  | 83.5  | 84.7  | 86.3   | 87.2   | 88.2   |
| 865                    | Mech. Input HP               | 0.417        | 0.626 | 1.21  | 1.86  | 2.39  | 3.95  | 5.91  | 8.64  | 11.5  | 14.6  | 19.3  | 29.5  | 37.1   | 62.5   | 90.0   |
|                        | Out. Torq., in.lbs.          | 773          | 1270  | 2520  | 3860  | 5170  | 8770  | 13400 | 20000 | 27100 | 35200 | 46200 | 71700 | 90900  | 155000 | 227000 |
|                        | Therm. Input HP              | 0.417        | 0.626 | 1.21  | 1.86  | 2.39  | 3.95  | 5.91  | 8.23  | 10.9  | 13.7  | 17.6  | 25.7  | 37.1   | 62.0   | 77.0   |
|                        | Output RPM                   | 21.6         | 21.6  | 21.6  | 21.6  | 21.6  | 21.6  | 21.6  | 21.6  | 21.6  | 21.6  | 21.6  | 21.6  | 21.9   | 21.9   | 21.9   |
|                        | Efficiency %                 | 63.6         | 69.6  | 71.5  | 71.2  | 74.2  | 76.2  | 77.8  | 79.4  | 80.9  | 82.7  | 82.1  | 83.4  | 85.1   | 86.2   | 87.6   |
| 680                    | Mech. Input HP               | 0.350        | 0.521 | 1.03  | 1.62  | 2.08  | 3.45  | 5.27  | 7.73  | 10.5  | 13.3  | 17.8  | 26.9  | 33.6   | 55.0   | 76.2   |
|                        | Out. Torq., in.lbs.          | 805          | 1310  | 2650  | 4170  | 5580  | 9570  | 15000 | 22300 | 30800 | 40000 | 53200 | 81600 | 103000 | 172000 | 240000 |
|                        | Therm. Input HP              | 0.350        | 0.521 | 1.03  | 1.62  | 2.08  | 3.45  | 5.27  | 7.37  | 9.91  | 12.5  | 16.2  | 23.4  | 33.6   | 48.0   | 65     |

## Single Reduction Speed Reducers

## Nominal Ratio 50:1

## Nominal Ratio 60:1

Ratings based on 1.0 service factor. For A.G.M.A. recommended practice on service factors, see page 11.

# Horsepower and Torque Ratings • Single Reduction

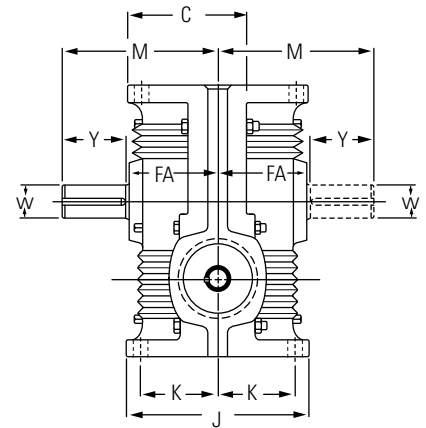
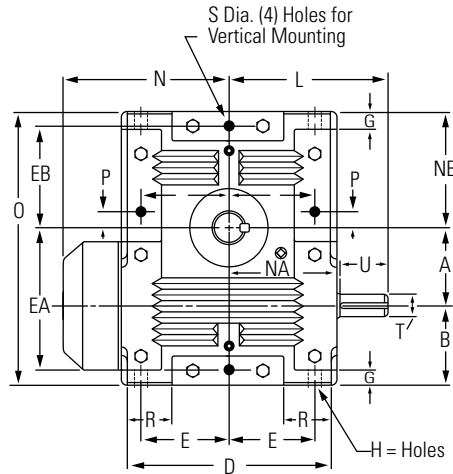
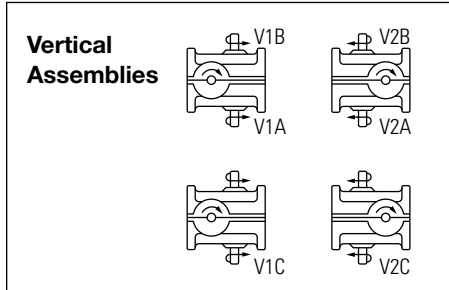
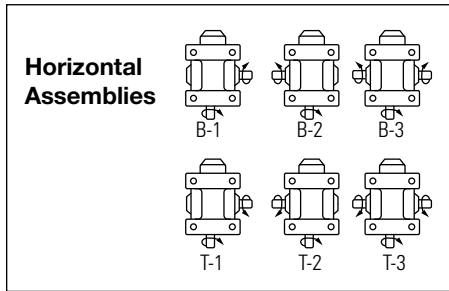
Single Reduction  
Speed Reducers

Nominal Ratio 70:1

| WORM<br>SPEED<br>(RPM) | Unit Size<br>Center Distance | 20          | 25    | 30    | 35    | 40    | 50    | 60    | 70    | 80    | 90    | 100   | 120    | 140    | 170    | 200    |
|------------------------|------------------------------|-------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|--------|--------|--------|--------|
|                        |                              | 2           | 2.5   | 3     | 3.5   | 4     | 5     | 6     | 7     | 8     | 9     | 10    | 12     | 14     | 17     | 20     |
|                        |                              | Total Ratio | 70.00 | 70.00 | 70.00 | 70.00 | 70.00 | 70.00 | 70.00 | 70.00 | 70.00 | 70.00 | 70.00  | 70.00  | 70.00  | 70.00  |
| 1750                   | Actual Ratio                 | 70          | 70    | 70    | 70    | 70    | 70    | 70    | 70    | 70    | 70    | 70    | 70     | 70     | 70     | 70     |
|                        | Mech. Input HP               | 0.348       | 0.551 | 1.02  | 1.43  | 1.82  | 2.85  | 4.27  | 6.34  | 8.95  | 11.0  | 14.3  | 21.3   | 28.1   | 47.5   | 69.6   |
|                        | Out. Torq., in.lbs.          | 500         | 849   | 1640  | 2330  | 3100  | 5000  | 7720  | 11700 | 16500 | 20900 | 27400 | 41800  | 55500  | 95000  | 142000 |
|                        | Therm. Input HP              | 0.348       | 0.551 | 1.02  | 1.43  | 1.82  | 2.85  | 4.27  | 5.99  | 8.37  | 10.2  | 12.9  | 18.4   | 28.1   | 47.5   | 69.6   |
|                        | Output RPM                   | 25.0        | 25.0  | 25.0  | 25.0  | 25.0  | 25.0  | 25.0  | 25.0  | 25.0  | 25.0  | 25.0  | 25.0   | 25.0   | 25.0   | 25.0   |
| 1450                   | Efficiency %                 | 57.0        | 61.1  | 63.8  | 64.6  | 67.6  | 69.6  | 71.7  | 73.2  | 73.1  | 75.4  | 76.0  | 77.8   | 78.3   | 79.3   | 80.9   |
|                        | Mech. Input HP               | 0.318       | 0.494 | 0.926 | 1.32  | 1.68  | 2.65  | 3.94  | 5.83  | 7.82  | 10.1  | 13.0  | 19.8   | 25.5   | 42.5   | 63.0   |
|                        | Out. Torq., in.lbs.          | 533         | 912   | 1790  | 2580  | 3440  | 5600  | 8520  | 12900 | 17500 | 23000 | 30100 | 46600  | 60400  | 102000 | 155000 |
|                        | Therm. Input HP              | 0.318       | 0.494 | 0.926 | 1.32  | 1.68  | 2.65  | 3.94  | 5.50  | 7.31  | 9.39  | 11.8  | 17.1   | 25.5   | 42.5   | 63.0   |
|                        | Output RPM                   | 20.7        | 20.7  | 20.7  | 20.7  | 20.7  | 20.7  | 20.7  | 20.7  | 20.7  | 20.7  | 20.7  | 20.7   | 20.7   | 20.7   | 20.7   |
| 1150                   | Efficiency %                 | 55.1        | 60.7  | 63.5  | 64.2  | 67.3  | 69.5  | 71.1  | 72.7  | 73.6  | 74.8  | 76.1  | 77.4   | 77.8   | 78.9   | 80.9   |
|                        | Mech. Input HP               | 0.269       | 0.431 | 0.821 | 1.20  | 1.53  | 2.44  | 3.66  | 5.33  | 7.08  | 9.23  | 11.9  | 17.9   | 22.1   | 37.0   | 56.0   |
|                        | Out. Torq., in.lbs.          | 565         | 982   | 1960  | 2880  | 3860  | 6350  | 9780  | 14600 | 19600 | 26000 | 34000 | 52500  | 65600  | 111000 | 171000 |
|                        | Therm. Input HP              | 0.269       | 0.431 | 0.821 | 1.20  | 1.53  | 2.44  | 3.66  | 5.03  | 6.62  | 8.55  | 10.8  | 15.5   | 22.1   | 37.0   | 56.0   |
|                        | Output RPM                   | 16.4        | 16.4  | 16.4  | 16.4  | 16.4  | 16.4  | 16.4  | 16.4  | 16.4  | 16.4  | 16.4  | 16.4   | 16.4   | 16.4   | 16.4   |
| 865                    | Efficiency %                 | 54.7        | 59.4  | 62.2  | 62.6  | 65.8  | 67.8  | 69.7  | 71.4  | 72.2  | 73.4  | 74.5  | 76.5   | 77.4   | 78.2   | 79.6   |
|                        | Mech. Input HP               | 0.222       | 0.357 | 0.702 | 1.04  | 1.32  | 2.16  | 3.29  | 4.84  | 6.40  | 8.22  | 10.5  | 15.8   | 19.8   | 34.6   | 48.3   |
|                        | Out. Torq., in.lbs.          | 597         | 1050  | 2130  | 3190  | 4280  | 7270  | 11400 | 17100 | 23000 | 30000 | 39000 | 60100  | 76000  | 135000 | 193000 |
|                        | Therm. Input HP              | 0.222       | 0.357 | 0.702 | 1.04  | 1.32  | 2.16  | 3.29  | 4.61  | 6.04  | 7.69  | 9.84  | 13.8   | 19.8   | 34.6   | 48.3   |
|                        | Output RPM                   | 12.4        | 12.4  | 12.4  | 12.4  | 12.4  | 12.4  | 12.4  | 12.4  | 12.4  | 12.4  | 12.4  | 12.4   | 12.4   | 12.4   | 12.4   |
| 680                    | Efficiency %                 | 52.7        | 57.7  | 59.5  | 60.1  | 63.6  | 66.0  | 67.9  | 69.3  | 70.5  | 71.6  | 72.8  | 74.6   | 75.3   | 76.5   | 78.3   |
|                        | Mech. Input HP               | 0.185       | 0.302 | 0.596 | 0.906 | 1.15  | 1.91  | 2.95  | 4.38  | 5.88  | 7.65  | 9.81  | 14.6   | 18.1   | 31.4   | 41.6   |
|                        | Out. Torq., in.lbs.          | 620         | 1100  | 2250  | 3420  | 4590  | 7920  | 12600 | 19200 | 26100 | 34600 | 44900 | 68400  | 83300  | 148000 | 208000 |
|                        | Therm. Input HP              | 0.185       | 0.302 | 0.596 | 0.906 | 1.15  | 1.91  | 2.95  | 4.18  | 5.55  | 6.90  | 7.60  | 12.7   | 18.1   | 31.4   | 41.6   |
|                        | Output RPM                   | 9.71        | 9.71  | 9.71  | 9.71  | 9.71  | 9.71  | 9.71  | 9.71  | 9.71  | 9.71  | 9.71  | 9.71   | 9.71   | 9.71   | 9.71   |
| 575                    | Efficiency %                 | 51.7        | 56.1  | 58.2  | 58.2  | 61.5  | 63.9  | 65.8  | 67.6  | 68.4  | 69.7  | 70.5  | 72.2   | 70.9   | 72.6   | 77.1   |
|                        | Mech. Input HP               | 0.162       | 0.266 | 0.534 | 0.806 | 1.03  | 1.74  | 2.71  | 4.02  | 5.39  | 7.12  | 9.10  | 13.4   | 17.0   | 27.3   | 38.1   |
|                        | Out. Torq., in.lbs.          | 630         | 1120  | 2320  | 3550  | 4760  | 8330  | 13400 | 20300 | 28100 | 37300 | 48400 | 72600  | 94400  | 155000 | 222000 |
|                        | Therm. Input HP              | 0.162       | 0.266 | 0.534 | 0.806 | 1.03  | 1.74  | 2.71  | 3.87  | 5.19  | 6.11  | 6.76  | 11.5   | 17.0   | 27.0   | 38.1   |
|                        | Output RPM                   | 8.21        | 8.21  | 8.21  | 8.21  | 8.21  | 8.21  | 8.21  | 8.21  | 8.21  | 8.21  | 8.21  | 8.21   | 8.21   | 8.21   | 8.21   |
| 450                    | Efficiency %                 | 50.7        | 54.9  | 56.6  | 57.4  | 60.2  | 62.4  | 64.4  | 65.8  | 67.9  | 68.3  | 69.3  | 70.6   | 72.4   | 74.0   | 75.9   |
|                        | Mech. Input HP               | 0.138       | 0.219 | 0.450 | 0.693 | 0.870 | 1.49  | 2.35  | 3.53  | 4.81  | 6.37  | 8.26  | 12.3   | 15.8   | 24.4   | 33.8   |
|                        | Out. Torq., in.lbs.          | 644         | 1150  | 2400  | 3720  | 4960  | 8800  | 14300 | 22100 | 30800 | 41300 | 57200 | 83000  | 109000 | 165000 | 245000 |
|                        | Therm. Input HP              | 0.138       | 0.219 | 0.450 | 0.693 | 0.870 | 1.49  | 2.35  | 3.40  | 4.59  | 5.18  | 5.70  | 9.69   | 15.8   | 23.0   | 33.8   |
|                        | Output RPM                   | 6.43        | 6.43  | 6.43  | 6.43  | 6.43  | 6.43  | 6.43  | 6.43  | 6.43  | 6.43  | 6.43  | 6.43   | 6.43   | 6.43   | 6.43   |
| 300                    | Efficiency %                 | 47.6        | 53.6  | 54.4  | 54.8  | 58.2  | 60.2  | 62.1  | 63.9  | 65.3  | 66.1  | 70.6  | 68.8   | 70.4   | 69.0   | 73.9   |
|                        | Mech. Input HP               | 0.094       | 0.158 | 0.327 | 0.508 | 0.639 | 1.12  | 1.80  | 2.68  | 3.73  | 5.02  | 6.60  | 9.94   | 13.4   | 20.5   | 28.3   |
|                        | Out. Torq., in.lbs.          | 650         | 1190  | 2500  | 3910  | 5240  | 9410  | 15500 | 23800 | 33700 | 46100 | 61500 | 95900  | 132000 | 206000 | 296000 |
|                        | Therm. Input HP              | 0.094       | 0.158 | 0.327 | 0.508 | 0.639 | 1.12  | 1.80  | 2.63  | 3.63  | 4.00  | 4.41  | 7.47   | 13.4   | 17.0   | 28.3   |
|                        | Output RPM                   | 4.29        | 4.29  | 4.29  | 4.29  | 4.29  | 4.29  | 4.29  | 4.29  | 4.29  | 4.29  | 4.29  | 4.29   | 4.29   | 4.29   | 4.29   |
| 100                    | Efficiency %                 | 47.0        | 51.2  | 52.0  | 52.3  | 55.8  | 57.1  | 58.6  | 60.4  | 61.4  | 62.4  | 63.4  | 65.6   | 67.0   | 68.3   | 71.1   |
|                        | Mech. Input HP               | 0.036       | 0.062 | 0.132 | 0.206 | 0.258 | 0.465 | 0.749 | 1.15  | 1.62  | 2.22  | 2.95  | 4.63   | 6.69   | 11.1   | 15.8   |
|                        | Out. Torq., in.lbs.          | 688         | 1250  | 2640  | 4170  | 5600  | 10300 | 17200 | 26900 | 38400 | 53500 | 71800 | 116000 | 170000 | 284000 | 421000 |
|                        | Therm. Input HP              | 0.036       | 0.062 | 0.132 | 0.206 | 0.258 | 0.465 | 0.749 | 1.15  | 1.62  | 2.22  | 2.95  | 4.63   | 6.69   | 11.1   | 15.8   |
|                        | Output RPM                   | 1.43        | 1.43  | 1.43  | 1.43  | 1.43  | 1.43  | 1.43  | 1.43  | 1.43  | 1.43  | 1.43  | 1.43   | 1.43   | 1.43   | 1.43   |
|                        | Efficiency %                 | 43.3        | 45.7  | 45.3  | 45.9  | 49.2  | 50.2  | 52.1  | 53.0  | 53.7  | 54.6  | 55.2  | 56.8   | 57.6   | 58.0   | 60.4   |

Ratings based on 1.0 service factor. For A.G.M.A. recommended practice on service factors, see page 11.

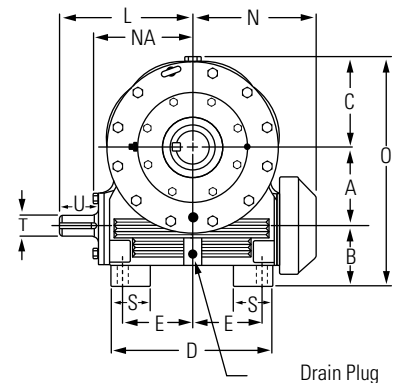
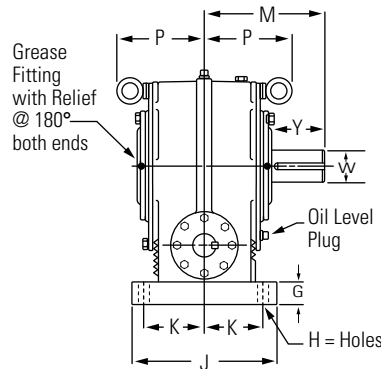
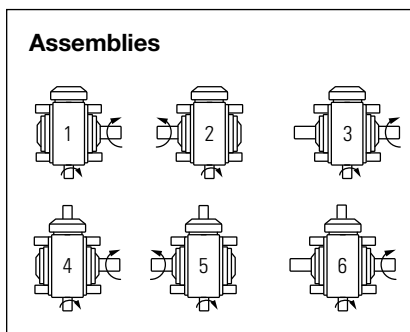
# Dimensions Type E • Horizontal and Vertical



Additional horizontal assemblies for Type E on page 30

| Unit Size | Weight Pounds | A                             | B                             | C                              | D                              | E                             | EA                             | EB                             | FA                             | G                             | H                              | J                             | K                             | L                             | M                             | N                              | NA                            | NB                            | O                              | P                              | Q                             | R                              | S                              | T▲                             | U                              | Keyway                                                                                            | WA                            | Y                               | Keyway                                                                                           |
|-----------|---------------|-------------------------------|-------------------------------|--------------------------------|--------------------------------|-------------------------------|--------------------------------|--------------------------------|--------------------------------|-------------------------------|--------------------------------|-------------------------------|-------------------------------|-------------------------------|-------------------------------|--------------------------------|-------------------------------|-------------------------------|--------------------------------|--------------------------------|-------------------------------|--------------------------------|--------------------------------|--------------------------------|--------------------------------|---------------------------------------------------------------------------------------------------|-------------------------------|---------------------------------|--------------------------------------------------------------------------------------------------|
| E20       | 35            | 2                             | 2 <sup>5</sup> / <sub>8</sub> | 2 <sup>5</sup> / <sub>8</sub>  | 6 <sup>1</sup> / <sub>8</sub>  | 2 <sup>5</sup> / <sub>8</sub> | 4 <sup>1</sup> / <sub>4</sub>  | 2 <sup>5</sup> / <sub>8</sub>  | 2 <sup>1</sup> / <sub>16</sub> | 1 <sup>1</sup> / <sub>2</sub> | 7 <sup>1</sup> / <sub>16</sub> | 4 <sup>1</sup> / <sub>8</sub> | 1 <sup>5</sup> / <sub>8</sub> | 4 <sup>1</sup> / <sub>2</sub> | 4                             | 5 <sup>1</sup> / <sub>4</sub>  | 3 <sup>1</sup> / <sub>4</sub> | 3                             | 7 <sup>5</sup> / <sub>8</sub>  | 1 <sup>3</sup> / <sub>16</sub> | 2 <sup>5</sup> / <sub>8</sub> | 1 <sup>3</sup> / <sub>16</sub> | 7 <sup>1</sup> / <sub>16</sub> | 1 <sup>1</sup> / <sub>16</sub> | 1 <sup>5</sup> / <sub>16</sub> | 3 <sup>1</sup> / <sub>16</sub> x 3 <sup>3</sup> / <sub>32</sub> x 1 <sup>1</sup> / <sub>4</sub>   | 1                             | 1 <sup>15</sup> / <sub>16</sub> | 1 <sup>1</sup> / <sub>4</sub> x 1 <sup>1</sup> / <sub>8</sub> x 1 <sup>7</sup> / <sub>8</sub>    |
| E25       | 48            | 2 <sup>1</sup> / <sub>2</sub> | 2 <sup>1</sup> / <sub>2</sub> | 3 <sup>3</sup> / <sub>8</sub>  | 6 <sup>3</sup> / <sub>4</sub>  | 2 <sup>7</sup> / <sub>8</sub> | 4 <sup>9</sup> / <sub>16</sub> | 3 <sup>5</sup> / <sub>16</sub> | 3                              | 1 <sup>1</sup> / <sub>2</sub> | 1 <sup>1</sup> / <sub>2</sub>  | 6                             | 2 <sup>1</sup> / <sub>2</sub> | 5 <sup>3</sup> / <sub>8</sub> | 5 <sup>3</sup> / <sub>8</sub> | 5 <sup>5</sup> / <sub>8</sub>  | 3 <sup>5</sup> / <sub>8</sub> | 3 <sup>3</sup> / <sub>4</sub> | 8 <sup>3</sup> / <sub>4</sub>  | 3 <sup>1</sup> / <sub>4</sub>  | 2 <sup>7</sup> / <sub>8</sub> | 1 <sup>7</sup> / <sub>16</sub> | 7 <sup>1</sup> / <sub>16</sub> | 1 <sup>1</sup> / <sub>16</sub> | 1 <sup>3</sup> / <sub>4</sub>  | 3 <sup>1</sup> / <sub>16</sub> x 3 <sup>3</sup> / <sub>32</sub> x 1 <sup>1</sup> / <sub>16</sub>  | 1 <sup>1</sup> / <sub>8</sub> | 2 <sup>1</sup> / <sub>4</sub>   | 1 <sup>1</sup> / <sub>4</sub> x 1 <sup>1</sup> / <sub>8</sub> x 2 <sup>1</sup> / <sub>8</sub>    |
| E30       | 64            | 3                             | 3                             | 4 <sup>9</sup> / <sub>16</sub> | 7 <sup>7</sup> / <sub>8</sub>  | 3 <sup>3</sup> / <sub>8</sub> | 5 <sup>1</sup> / <sub>2</sub>  | 4                              | 3 <sup>9</sup> / <sub>16</sub> | 5 <sup>5</sup> / <sub>8</sub> | 9 <sup>1</sup> / <sub>16</sub> | 7 <sup>1</sup> / <sub>8</sub> | 3                             | 6 <sup>1</sup> / <sub>8</sub> | 6                             | 6 <sup>7</sup> / <sub>16</sub> | 4 <sup>1</sup> / <sub>8</sub> | 4 <sup>1</sup> / <sub>2</sub> | 10 <sup>1</sup> / <sub>2</sub> | 1                              | 3 <sup>3</sup> / <sub>8</sub> | 1 <sup>3</sup> / <sub>4</sub>  | 7 <sup>1</sup> / <sub>16</sub> | 7 <sup>1</sup> / <sub>8</sub>  | 1 <sup>7</sup> / <sub>8</sub>  | 3 <sup>1</sup> / <sub>16</sub> x 3 <sup>3</sup> / <sub>32</sub> x 1 <sup>13</sup> / <sub>16</sub> | 1 <sup>1</sup> / <sub>4</sub> | 2 <sup>7</sup> / <sub>16</sub>  | 1 <sup>1</sup> / <sub>4</sub> x 1 <sup>1</sup> / <sub>8</sub> x 2 <sup>3</sup> / <sub>8</sub>    |
| E35       | 95            | 3 <sup>1</sup> / <sub>2</sub> | 3 <sup>3</sup> / <sub>8</sub> | 5 <sup>5</sup> / <sub>16</sub> | 9                              | 3 <sup>7</sup> / <sub>8</sub> | 6 <sup>3</sup> / <sub>8</sub>  | 4 <sup>7</sup> / <sub>8</sub>  | 4 <sup>1</sup> / <sub>8</sub>  | 7 <sup>7</sup> / <sub>8</sub> | 1 <sup>1</sup> / <sub>16</sub> | 8 <sup>1</sup> / <sub>4</sub> | 3 <sup>3</sup> / <sub>8</sub> | 7                             | 7 <sup>1</sup> / <sub>8</sub> | 7 <sup>1</sup> / <sub>16</sub> | 4 <sup>3</sup> / <sub>8</sub> | 5 <sup>3</sup> / <sub>8</sub> | 12 <sup>1</sup> / <sub>4</sub> | 1 <sup>1</sup> / <sub>4</sub>  | 3 <sup>3</sup> / <sub>8</sub> | 2                              | 9 <sup>1</sup> / <sub>16</sub> | 1                              | 2                              | 1 <sup>1</sup> / <sub>4</sub> x 1 <sup>1</sup> / <sub>8</sub> x 1 <sup>15</sup> / <sub>16</sub>   | 1 <sup>1</sup> / <sub>2</sub> | 3                               | 3 <sup>5</sup> / <sub>8</sub> x 3 <sup>3</sup> / <sub>16</sub> x 2 <sup>15</sup> / <sub>16</sub> |
| E40       | 160           | 4                             | 4 <sup>1</sup> / <sub>4</sub> | 6 <sup>5</sup> / <sub>16</sub> | 10 <sup>1</sup> / <sub>4</sub> | 4 <sup>1</sup> / <sub>4</sub> | 7 <sup>1</sup> / <sub>2</sub>  | 5 <sup>1</sup> / <sub>4</sub>  | 5                              | 7 <sup>7</sup> / <sub>8</sub> | 1 <sup>3</sup> / <sub>16</sub> | 10                            | 4                             | 7 <sup>3</sup> / <sub>4</sub> | 8 <sup>1</sup> / <sub>2</sub> | 8 <sup>1</sup> / <sub>16</sub> | 5 <sup>1</sup> / <sub>2</sub> | 6                             | 14 <sup>1</sup> / <sub>4</sub> | 1 <sup>3</sup> / <sub>4</sub>  | 4 <sup>1</sup> / <sub>4</sub> | 2 <sup>3</sup> / <sub>8</sub>  | 1 <sup>1</sup> / <sub>16</sub> | 1 <sup>1</sup> / <sub>8</sub>  | 2 <sup>1</sup> / <sub>16</sub> | 1 <sup>1</sup> / <sub>4</sub> x 1 <sup>1</sup> / <sub>8</sub> x 2                                 | 1 <sup>3</sup> / <sub>4</sub> | 3 <sup>1</sup> / <sub>2</sub>   | 3 <sup>5</sup> / <sub>8</sub> x 3 <sup>3</sup> / <sub>16</sub> x 3 <sup>7</sup> / <sub>16</sub>  |

## Dimensions Type EB • Horizontal



| Unit Size | Wt. Lbs. | A  | B                              | C                               | D  | E                              | G                             | H                               | J  | K                              | L                              | M                              | N                              | NA                               | O                              | P                              | S                             | T▲                            | U                              | Keyway                                                                                           | W▲                            | Y  | Keyway                                                                                         |
|-----------|----------|----|--------------------------------|---------------------------------|----|--------------------------------|-------------------------------|---------------------------------|----|--------------------------------|--------------------------------|--------------------------------|--------------------------------|----------------------------------|--------------------------------|--------------------------------|-------------------------------|-------------------------------|--------------------------------|--------------------------------------------------------------------------------------------------|-------------------------------|----|------------------------------------------------------------------------------------------------|
| EB170     | 4100     | 17 | 10 <sup>1</sup> / <sub>2</sub> | 18 <sup>1</sup> / <sub>2</sub>  | 32 | 13 <sup>1</sup> / <sub>4</sub> | 3 <sup>3</sup> / <sub>8</sub> | 1 <sup>1</sup> / <sub>16</sub>  | 24 | 10 <sup>1</sup> / <sub>4</sub> | 24                             | 21 <sup>1</sup> / <sub>2</sub> | 22 <sup>3</sup> / <sub>4</sub> | 17 <sup>15</sup> / <sub>16</sub> | 45 <sup>3</sup> / <sub>4</sub> | 13 <sup>1</sup> / <sub>4</sub> | 5 <sup>3</sup> / <sub>4</sub> | 3 <sup>1</sup> / <sub>4</sub> | 6 <sup>3</sup> / <sub>16</sub> | 3 <sup>1</sup> / <sub>4</sub> x 3 <sup>3</sup> / <sub>8</sub> x 6 <sup>1</sup> / <sub>8</sub>    | 5 <sup>3</sup> / <sub>4</sub> | 10 | 1 <sup>1</sup> / <sub>2</sub> x 3 <sup>3</sup> / <sub>4</sub> x 9 <sup>3</sup> / <sub>4</sub>  |
| EB200     | 5700     | 20 | 11 <sup>1</sup> / <sub>2</sub> | 21 <sup>7</sup> / <sub>16</sub> | 36 | 14 <sup>3</sup> / <sub>4</sub> | 3 <sup>5</sup> / <sub>8</sub> | 1 <sup>15</sup> / <sub>16</sub> | 27 | 11 <sup>1</sup> / <sub>2</sub> | 27 <sup>3</sup> / <sub>8</sub> | 23 <sup>3</sup> / <sub>4</sub> | 26                             | 20 <sup>3</sup> / <sub>16</sub>  | 52 <sup>3</sup> / <sub>4</sub> | 14 <sup>1</sup> / <sub>2</sub> | 6 <sup>1</sup> / <sub>2</sub> | 3 <sup>1</sup> / <sub>2</sub> | 7                              | 7 <sup>7</sup> / <sub>8</sub> x 7 <sup>1</sup> / <sub>16</sub> x 6 <sup>15</sup> / <sub>16</sub> | 6 <sup>1</sup> / <sub>2</sub> | 11 | 1 <sup>1</sup> / <sub>2</sub> x 3 <sup>3</sup> / <sub>4</sub> x 10 <sup>1</sup> / <sub>2</sub> |

All dimensions are in inches. Use certified prints for construction. The input shaft may be rotated in either direction. Standard gear sets are cut with right hand threads giving relative shaft rotations as shown above. Shaft arrangements are shown above. Desired assembly should be specified when ordering. Standard keys are furnished with units.

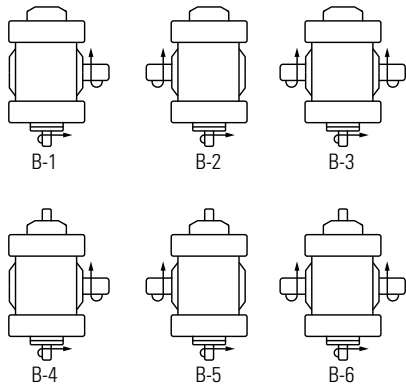
▲ Tolerances: 1<sup>1</sup>/<sub>2</sub>" Diameter or Less = +.0000" -.0005"

Over 1<sup>1</sup>/<sub>2</sub>" Diameter = +.000" -.001"

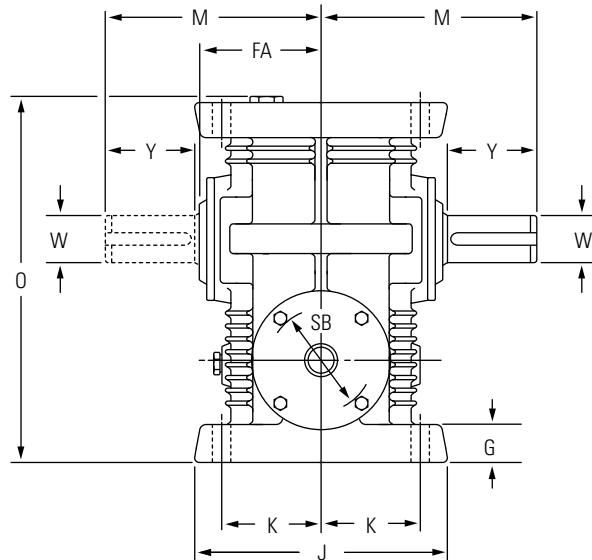
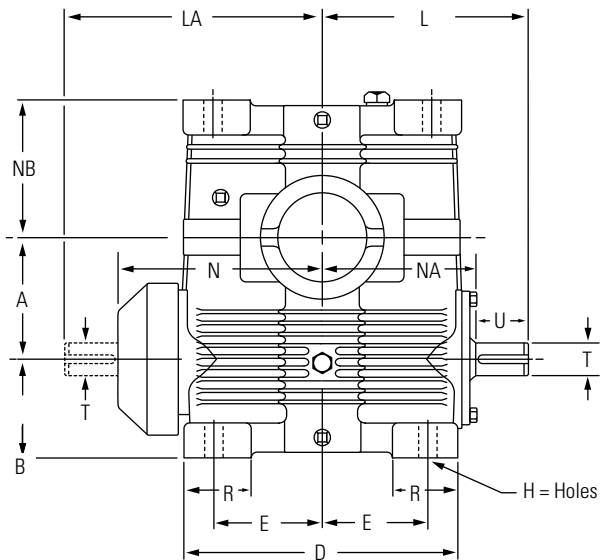
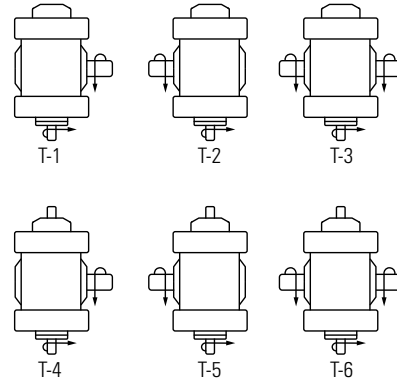
Low input speeds require special order instructions. See introductory section.

# Dimensions Type E • Horizontal

Bottom Drive Assemblies



Top Drive Assemblies



| Unit Size | WT LBS. | A  | B     | D      | E      | FA     | G       | H       | J      | K     | L      | LA       | M      | N        | NA       | NB     | O      | R     | SB     | T     | U       | Keyway              | W     | Y     | Keyway               |
|-----------|---------|----|-------|--------|--------|--------|---------|---------|--------|-------|--------|----------|--------|----------|----------|--------|--------|-------|--------|-------|---------|---------------------|-------|-------|----------------------|
| E50       | 175     | 5  | 4 5/8 | 11 3/8 | 4 3/4  | 5 1/2  | 1 1/2   | 13/16   | 10 3/4 | 4 3/8 | 8 3/4  | 10 15/16 | 9 5/8  | 8 9/16   | 6 7/16   | 5 3/4  | 15 7/8 | 2     | 4 7/16 | 1 3/8 | 2 5/16  | 5/16 x 5/32 x 2 1/4 | 2     | 4     | 1/2 x 1/4 x 3 7/8    |
| E60       | 285     | 6  | 5     | 13 1/2 | 5 1/4  | 6 1/8  | 1 11/16 | 15/16   | 12 1/4 | 4 3/4 | 10 1/4 | 12 5/8   | 10 3/4 | 10 1/16  | 7 3/4    | 6 3/4  | 18 1/2 | 3     | 5      | 1 1/2 | 2 11/16 | 3/8 x 3/16 x 2 5/8  | 2 1/4 | 4 1/2 | 1/2 x 1/4 x 4 3/8    |
| E70       | 365     | 7  | 5 3/8 | 14 3/4 | 6      | 6 3/8  | 1 11/16 | 1 1/16  | 13     | 5     | 11 1/2 | 13 7/8   | 11 1/2 | 10 3/4   | 8 3/8    | 7 3/4  | 20 5/8 | 2 3/4 | 5      | 1 5/8 | 3 1/8   | 3/8 x 3/16 x 3 1/16 | 2 1/2 | 5     | 5/8 x 5/16 x 4 15/16 |
| E80       | 520     | 8  | 5 3/4 | 16 1/2 | 6 3/4  | 6 1/2  | 1 3/4   | 1 3/16  | 13 1/2 | 5 3/8 | 12 1/2 | 15 1/2   | 12 1/8 | 11 3/4   | 9 3/8    | 8 3/4  | 23     | 3     | 5 1/8  | 1 7/8 | 3 1/8   | 1/2 x 1/4 x 3 1/16  | 2 3/4 | 5 1/2 | 5/8 x 5/16 x 5 1/16  |
| E90       | 725     | 9  | 6 1/4 | 18 3/4 | 7 3/4  | 7 5/8  | 1 7/8   | 1 7/16  | 15 1/4 | 6     | 14 1/4 | 17 3/4   | 14 1/4 | 13 7/8   | 10 3/8   | 9 3/4  | 25 1/2 | 3 1/4 | 5 7/8  | 2 1/8 | 3 15/16 | 1/2 x 1/4 x 3 7/8   | 3 1/4 | 6 1/2 | 3/4 x 3/8 x 6 3/8    |
| E100      | 980     | 10 | 6 3/4 | 21     | 8 3/4  | 8 5/8  | 2       | 1 7/16  | 17     | 6 3/8 | 15 1/2 | 18 13/16 | 16     | 15 1/8   | 11 11/16 | 10 3/4 | 27 7/8 | 3 1/2 | 5 7/8  | 2 1/4 | 4       | 1/2 x 1/4 x 3 15/16 | 3 5/8 | 7 1/4 | 7/8 x 7/16 x 7 3/16  |
| E120      | 1370    | 12 | 7 1/2 | 24 5/8 | 10 1/2 | 8 7/8  | 2 1/8   | 1 9/16  | 18 1/2 | 7 1/8 | 18     | 21 9/16  | 17 1/2 | 17 1/16  | 13 7/8   | 13 1/4 | 33     | 4     | 6 7/8  | 2 1/2 | 4 9/16  | 5/8 x 5/16 x 4 1/2  | 4 1/4 | 8 1/2 | 1 x 1/2 x 8 5/8      |
| E140      | 2200    | 14 | 9 1/2 | 27 1/2 | 11 1/2 | 10 1/8 | 2 1/4   | 1 11/16 | 21 3/4 | 8 3/4 | 21     | 26 3/8   | 19 1/4 | 20 11/16 | 15 1/2   | 15 3/8 | 39     | 4 1/2 | 9 3/16 | 3     | 5 1/2   | 3/4 x 3/8 x 5 5/8   | 5     | 9     | 1 1/4 x 5/8 x 8 5/8  |

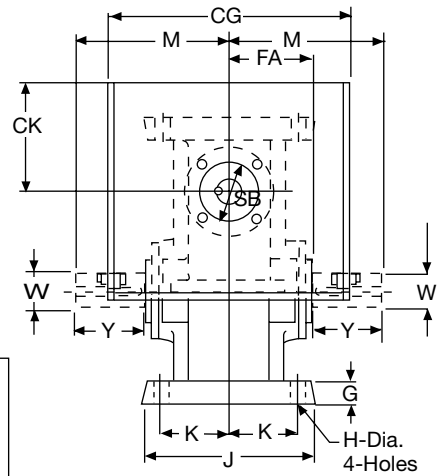
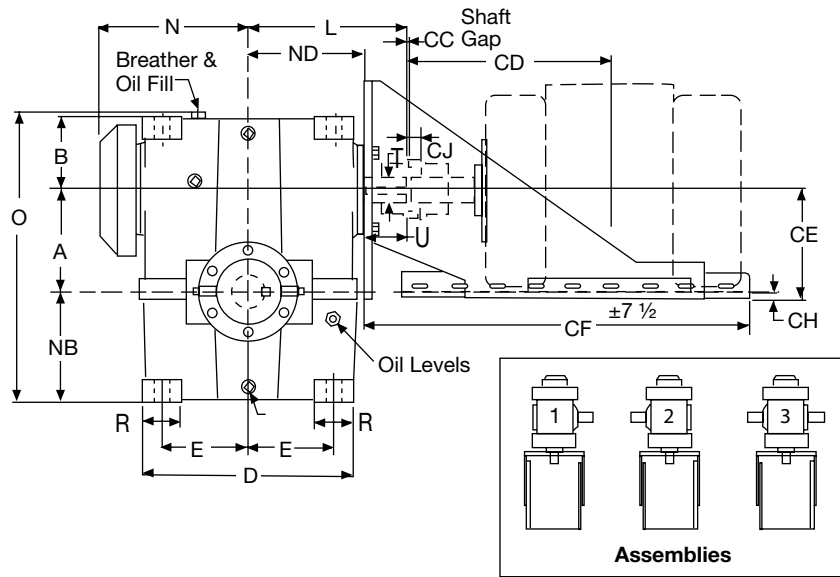
All dimensions are in inches. Use certified prints for construction. The input shaft may be rotated in either direction. Standard gear sets are cut with right hand threads giving relative shaft rotations as shown above. Shaft arrangements are shown above. Desired assembly should be specified when ordering. Standard keys are furnished with units.

▲ Tolerances: 1 1/2" Diameter or Less = +.0000" -.0005"

Over 1 1/2" Diameter = +.000" -.001"

Low input speeds require special order instructions. See introductory section.

# Dimensions for “Sugar Scoop” Motor Mounts for Type EK



Single Reduction  
Speed Reducers

| Motor<br>Frame<br>Size | CJ  |     |     |     |     |     |     |        |        |        |        |       |       |
|------------------------|-----|-----|-----|-----|-----|-----|-----|--------|--------|--------|--------|-------|-------|
|                        | 20  | 25  | 30  | 35  | 40  | 50  | 60  | 70     | 80     | 90     | 100    | 120   | 140   |
| 56T                    | 3/8 | 3/8 | 3/8 | 3/8 | 5/8 | 5/8 |     |        |        |        |        |       |       |
| 143T                   | 3/8 | 3/8 | 3/8 | 3/8 | 5/8 | 5/8 |     |        |        |        |        |       |       |
| 145T                   | 3/8 | 3/8 | 3/8 | 3/8 | 5/8 | 5/8 |     |        |        |        |        |       |       |
| 182T                   |     | 3/8 | 5/8 | 5/8 | 5/8 | 5/8 | 5/8 | 3/4    | 7/8    |        |        |       |       |
| 184T                   |     |     | 5/8 | 5/8 | 5/8 | 5/8 | 5/8 | 3/4    | 7/8    |        |        |       |       |
| 213T                   |     |     | 5/8 | 5/8 | 5/8 | 3/4 | 5/8 | 3/4    | 7/8    | 1 5/16 |        |       |       |
| 215T                   |     |     | 5/8 | 5/8 | 5/8 | 3/4 | 5/8 | 3/4    | 7/8    | 1 5/16 | 1 5/16 |       |       |
| 254T                   |     |     |     |     |     | 7/8 | 7/8 | 7/8    | 7/8    | 1 5/16 | 1 5/16 | 1 1/4 |       |
| 256T                   |     |     |     |     |     | 7/8 | 7/8 | 7/8    | 7/8    | 1 5/16 | 1 5/16 | 1 1/4 |       |
| 284T                   |     |     |     |     |     |     | 7/8 | 7/8    | 7/8    | 1 5/16 | 1 5/16 | 1 1/4 | 2 1/8 |
| 286T                   |     |     |     |     |     |     | 7/8 | 7/8    | 7/8    | 1 5/16 | 1 5/16 | 1 1/4 | 2 1/8 |
| 324T                   |     |     |     |     |     |     |     | 1 5/16 | 1 5/16 | 1 5/16 | 1 5/16 | 1 1/4 | 2 1/8 |
| 326T                   |     |     |     |     |     |     |     | 1 5/16 | 1 5/16 | 1 5/16 | 1 5/16 | 1 1/4 | 2 1/8 |
| 364T                   |     |     |     |     |     |     |     |        | 1 5/16 | 1 5/16 | 1 5/16 | 1 1/4 | 2 1/8 |
| 365T                   |     |     |     |     |     |     |     |        |        | 1 5/16 | 1 5/16 | 1 1/4 | 2 1/8 |
| 404T                   |     |     |     |     |     |     |     |        |        |        | 1 7/8  | 1 7/8 | 2 1/8 |
| 405T                   |     |     |     |     |     |     |     |        |        |        |        | 1 7/8 | 2 1/8 |

| Motor<br>Frame<br>Size | CF  |        |        |                     |         |       |        |
|------------------------|-----|--------|--------|---------------------|---------|-------|--------|
|                        | CC  | CD     | CE     | $\pm 7 \frac{1}{2}$ | CG      | CH    | CK     |
| 56T                    | 1/8 | 6 1/8  | 4 7/8  | 25                  | 12 5/8  | 3/16  | 4 7/8  |
| 143T                   | 1/8 | 6 1/2  | 4 7/8  | 25                  | 12 5/8  | 3/16  | 4 7/8  |
| 145T                   | 1/8 | 7      | 4 7/8  | 25                  | 12 5/8  | 3/16  | 4 7/8  |
| 182T                   | 1/8 | 7 3/4  | 4 7/8  | 25                  | 12 5/8  | 3/16  | 4 7/8  |
| 184T                   | 1/8 | 8 1/4  | 4 7/8  | 25                  | 12 5/8  | 3/16  | 4 7/8  |
| 213T                   | 1/8 | 9 5/8  | 5 9/16 | 28                  | 12 3/4  | 1/4   | 5      |
| 215T                   | 1/8 | 10 3/8 | 5 9/16 | 28                  | 12 3/4  | 1/4   | 5      |
| 254T                   | 1/8 | 12 3/8 | 6 5/8  | 31                  | 15      | 15/16 | 6 5/8  |
| 256T                   | 1/8 | 13 1/4 | 6 5/8  | 31                  | 15      | 15/16 | 6 5/8  |
| 284T                   | 1/8 | 14 1/8 | 7 5/8  | 31                  | 17      | 15/16 | 7 5/8  |
| 286T                   | 1/8 | 14 7/8 | 7 5/8  | 31                  | 17      | 15/16 | 7 5/8  |
| 324T                   | 1/8 | 15 3/4 | 8 1/2  | 35 1/4              | 19 1/16 | 3/8   | 8 1/2  |
| 326T                   | 1/8 | 16 1/2 | 8 1/2  | 35 1/4              | 19 1/16 | 3/8   | 8 1/2  |
| 364T                   | 1/8 | 17 3/8 | 9 1/2  | 35 1/4              | 21 5/16 | 3/8   | 9 1/2  |
| 365T                   | 1/8 | 17 7/8 | 9 1/2  | 35 1/4              | 21 5/16 | 3/8   | 9 1/2  |
| 404T                   | 1/8 | 20     | 10 1/2 | 35 1/4              | 23 5/16 | 3/8   | 10 1/2 |
| 405T                   | 1/8 | 20 3/4 | 10 1/2 | 35 1/4              | 23 5/16 | 3/8   | 10 1/2 |

| Unit<br>Size | A     | B     | D      | E      | FA     | G       | H       | J      | K     | L      | M      | N        | NB     | ND     | O      | R      | SB     | T▲     | U       | Keyway                | W▲    | Y       | Keyway               |
|--------------|-------|-------|--------|--------|--------|---------|---------|--------|-------|--------|--------|----------|--------|--------|--------|--------|--------|--------|---------|-----------------------|-------|---------|----------------------|
| EK-20        | 2     | 2 5/8 | 6 1/8  | 2 5/8  | 2 1/16 | 1/2     | 7/16    | 4 1/8  | 1 5/8 | 4 1/2  | 4      | 5 1/4    | 3      | 3 1/4  | 7 5/8  | 1 3/16 | —      | 1 1/16 | 1 5/16  | 3/16 x 3/32 x 1 1/4   | 1     | 1 15/16 | 1/4 x 1/8 x 1 7/8    |
| EK-25        | 2 1/2 | 2 1/2 | 6 3/4  | 2 7/8  | 3      | 1/2     | 1/2     | 6      | 2 1/2 | 5 3/8  | 5 3/8  | 5 1/8    | 3 3/4  | 3 5/8  | 8 3/4  | 1 7/16 | —      | 1 1/16 | 1 3/4   | 3/16 x 3/32 x 1 11/16 | 1 1/8 | 2 1/4   | 1/4 x 1/8 x 2 1/8    |
| EK-30        | 3     | 3     | 7 7/8  | 3 3/8  | 3 9/16 | 5/8     | 9/16    | 7 1/8  | 3     | 6 1/8  | 6      | 6 7/16   | 4 1/2  | 4 1/8  | 10 1/2 | 1 3/4  | —      | 7/8    | 1 7/8   | 3/16 x 3/32 x 1 13/16 | 1 1/4 | 2 7/16  | 1/4 x 1/8 x 2 3/8    |
| EK-35        | 3 1/2 | 3 3/8 | 9      | 3 7/8  | 4 1/8  | 7/8     | 1 1/16  | 8 1/4  | 3 3/8 | 7      | 7 1/8  | 7 1/16   | 5 3/8  | 4 3/4  | 12 1/4 | 2      | —      | 1      | 2       | 1/4 x 1/8 x 1 15/16   | 1 1/2 | 3       | 3/8 x 3/16 x 2 15/16 |
| EK-40        | 4     | 4 1/4 | 10 1/4 | 4 1/4  | 5      | 7/8     | 1 3/16  | 10     | 4     | 7 3/4  | 8 1/2  | 8 1/16   | 6      | 5 1/2  | 14 1/4 | 2 3/8  | —      | 1 1/8  | 2 1/16  | 1/4 x 1/8 x 2         | 1 3/4 | 3 1/2   | 3/8 x 3/16 x 3 7/16  |
| EK-50        | 5     | 4 5/8 | 11 3/8 | 4 3/4  | 5 1/2  | 1 1/2   | 1 3/16  | 10 3/4 | 4 3/8 | 8 3/4  | 9 5/8  | 8 5/8    | 5 3/4  | 6 3/16 | 15 7/8 | 2      | 4 7/16 | 1 3/8  | 2 5/16  | 5/16 x 5/32 x 2 1/4   | 2     | 4       | 1/2 x 1/4 x 3 7/8    |
| EK-60        | 6     | 5     | 13 1/2 | 5 1/4  | 6 1/8  | 1 11/16 | 1 5/16  | 12 1/4 | 4 3/4 | 10 1/4 | 10 3/4 | 10 1/16  | 6 3/4  | 7 7/16 | 18 1/2 | 3      | 5      | 1 1/2  | 2 11/16 | 3/8 x 3/16 x 2 5/8    | 2 1/4 | 4 1/2   | 1/2 x 1/4 x 4 3/8    |
| EK-70        | 7     | 5 3/8 | 14 3/4 | 6      | 6 3/8  | 1 11/16 | 1 1/16  | 13     | 5     | 11 1/2 | 11 1/2 | 10 3/4   | 7 3/4  | 8 1/16 | 20 5/8 | 2 3/4  | 5      | 1 3/8  | 3 1/8   | 3/8 x 3/16 x 3 1/16   | 2 1/2 | 5       | 5/8 x 5/16 x 4 15/16 |
| EK-80        | 8     | 5 3/4 | 16 1/2 | 6 3/4  | 6 1/2  | 1 3/4   | 1 3/16  | 13 1/2 | 5 3/8 | 12 1/2 | 12 1/8 | 11 3/4   | 8 3/4  | 9      | 23     | 3      | 5 1/8  | 1 7/8  | 3 1/8   | 1/2 x 1/4 x 3 1/16    | 2 3/4 | 5 1/2   | 5/8 x 5/16 x 5 7/16  |
| EK-90        | 9     | 6 1/4 | 18 3/4 | 7 3/4  | 7 5/8  | 1 7/8   | 1 7/16  | 15 1/4 | 6     | 14 1/4 | 14 1/4 | 13 13/16 | 9 3/4  | 10     | 25 1/2 | 3 1/4  | 5 7/8  | 2 1/8  | 3 15/16 | 1/2 x 1/4 x 3 7/8     | 3 1/4 | 6 1/2   | 3/4 x 3/8 x 6 3/8    |
| EK-100       | 10    | 6 3/4 | 21     | 8 3/4  | 8 5/8  | 2       | 1 7/16  | 17     | 6 3/8 | 15 1/2 | 16     | 14 7/8   | 10 3/4 | 11 1/4 | 27 7/8 | 3 1/2  | 5 3/4  | 2 1/4  | 4       | 1/2 x 1/4 x 3 15/16   | 3 5/8 | 7 1/4   | 7/8 x 7/16 x 7 3/16  |
| EK-120       | 12    | 7 1/2 | 24 5/8 | 10 1/2 | 8 7/8  | 2 1/8   | 1 9/16  | 18 1/2 | 7 1/8 | 18     | 17 1/2 | 16 5/8   | 13 1/4 | 13     | 33     | 4      | 6 7/8  | 2 1/2  | 4 9/16  | 5/8 x 5/16 x 4 1/2    | 4 1/4 | 8 1/2   | 1 x 1/2 x 8 3/8      |
| EK-140       | 14    | 9 1/2 | 27 1/2 | 11 1/2 | 10 1/8 | 2 1/4   | 1 11/16 | 21 3/4 | 8 3/4 | 21     | 19 1/4 | 20 11/16 | 15 3/8 | 14 1/2 | 39     | 4 1/2  | 9 3/16 | 3      | 5 1/2   | 3/4 x 3/8 x 5 5/8     | 5     | 9       | 1 1/4 x 5/8 x 8 5/8  |

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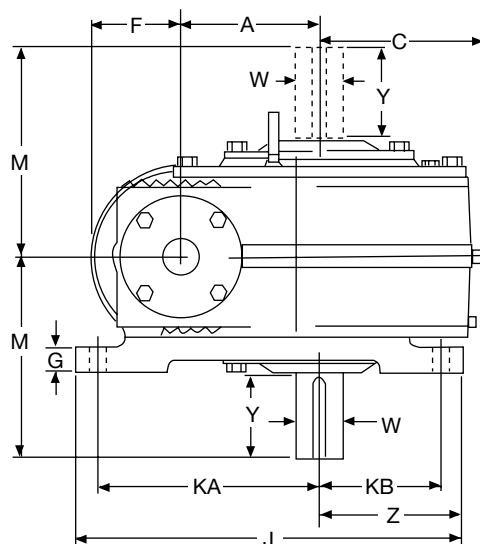
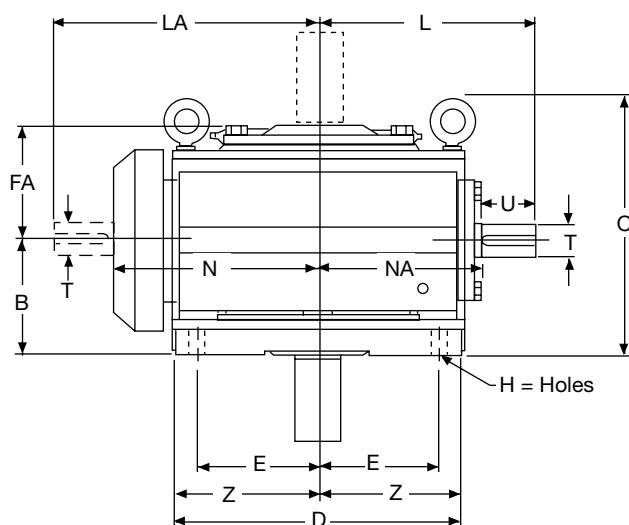
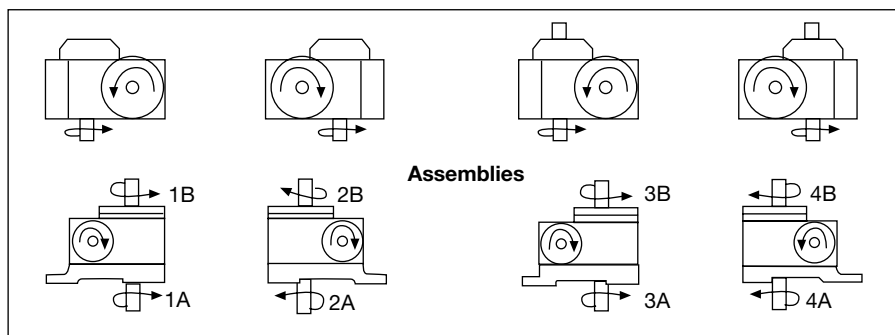
specified when ordering. Standard keys are furnished with units.

▲ Tolerances: 1 1/2" Diameter or Less = +.0000" -.0005"

Over 1 1/2" Diameter = +.000" -.001"

Low input speeds require special order instructions. See introductory section.

# Dimensions Type V • Vertical



A drywell is standard for vertical assemblies sizes 30-200 only.

| Unit Size | Weight Pounds | A     | B      | C       | D      | E      | F       | FA     | G     | H      | J      | KA     | KB     | L      | LA       | M      | N        | NA       | O       | T▲    | U       | Keyway                | W▲    | Y     | Keyway               | Z       |
|-----------|---------------|-------|--------|---------|--------|--------|---------|--------|-------|--------|--------|--------|--------|--------|----------|--------|----------|----------|---------|-------|---------|-----------------------|-------|-------|----------------------|---------|
| V30       | 70            | 3     | 3 1/2  | 4 1/4   | 7 1/8  | 3      | 2 5/8   | 3 3/8  | 3/4   | 9/16   | 10 1/8 | 6      | 3      | 6 1/8  | 7 13/16  | 6      | 5 15/16  | 4 13/16  | 7 11/16 | 7/8   | 1 7/8   | 3/16 x 3/32 x 1 13/16 | 1 1/4 | 2 1/2 | 1/4 x 1/8 x 2 3/8    | 3 9/16  |
| V35       | 100           | 3 1/2 | 4 1/8  | 4 13/16 | 8 3/8  | 3 1/2  | 2 5/8   | 4      | 7/8   | 1 1/16 | 11 3/4 | 6 7/8  | 3 1/2  | 7      | 8 5/8    | 7 1/8  | 6 5/8    | 5        | 9 1/8   | 1     | 2       | 1/4 x 1/8 x 1 15/16   | 1 1/2 | 3     | 3/8 x 3/16 x 2 15/16 | 4 3/16  |
| V40       | 160           | 4     | 5      | 5 3/8   | 9 1/4  | 3 7/8  | 3 1/4   | 4 7/8  | 1 1/8 | 1 1/16 | 13 1/8 | 7 5/8  | 3 7/8  | 7 3/4  | 9 13/16  | 8 1/2  | 7 3/4    | 5 11/16  | 10 1/2  | 1 1/8 | 2 1/16  | 1/4 x 1/8 x 2         | 1 3/4 | 3 1/2 | 3/8 x 3/16 x 3 7/16  | 4 5/8   |
| V50       | 250           | 5     | 5 5/8  | 7 1/2   | 11 1/8 | 4 3/4  | 3 11/16 | 5 1/2  | 1 1/4 | 1 3/16 | 15 3/8 | 9      | 4 3/4  | 8 3/4  | 10 15/16 | 9 5/8  | 8 5/8    | 6 7/16   | 12 9/16 | 1 3/8 | 2 5/16  | 5/16 x 5/32 x 2 1/4   | 2     | 4     | 1/2 x 1/4 x 3 7/8    | 5 9/16  |
| V60       | 350           | 6     | 6 1/4  | 8 5/8   | 13 3/8 | 5 3/4  | 4 1/8   | 6 1/8  | 1 3/8 | 1 3/16 | 18 1/8 | 10 1/2 | 5 3/4  | 10 1/4 | 12 5/8   | 10 3/4 | 10 1/16  | 7 3/4    | 13 7/16 | 1 1/2 | 2 11/16 | 3/8 x 3/16 x 2 5/8    | 2 1/4 | 4 1/2 | 1/2 x 1/4 x 4 3/8    | 6 11/16 |
| V70       | 480           | 7     | 6 1/2  | 9 1/4   | 14 5/8 | 6 1/4  | 5 3/16  | 6 7/8  | 1 3/8 | 1 5/16 | 20 1/8 | 11 3/4 | 6 1/4  | 11 1/2 | 13 7/8   | 11 1/2 | 10 3/4   | 8 3/8    | 14      | 1 5/8 | 3 1/8   | 3/8 x 3/16 x 3 1/16   | 2 1/2 | 5     | 5/8 x 5/16 x 4 15/16 | 7 5/16  |
| V80       | 595           | 8     | 6 5/8  | 10 1/2  | 16 1/2 | 7      | 5 3/16  | 6 1/2  | 1 1/2 | 1 1/16 | 22 1/4 | 12 3/4 | 7      | 12 1/2 | 15 1/2   | 12 1/8 | 11 3/4   | 9 3/8    | 14 7/8  | 1 7/8 | 3 1/8   | 1/2 x 1/4 x 3 1/16    | 2 3/4 | 5 1/2 | 5/8 x 5/16 x 5 15/16 | 8 1/4   |
| V90       | 760           | 9     | 7 3/4  | 11 3/8  | 18 1/2 | 7 1/8  | 6 3/16  | 7 5/8  | 1 5/8 | 1 3/16 | 25     | 14 3/8 | 7 7/8  | 14 1/4 | 17 3/4   | 14 1/4 | 13 13/16 | 10 3/8   | 17      | 2 1/8 | 3 15/16 | 1/2 x 1/4 x 3 7/8     | 3 1/4 | 6 1/2 | 3/4 x 3/8 x 6 3/8    | 9 1/4   |
| V100      | 960           | 10    | 8 3/4  | 12 5/8  | 20 3/4 | 9      | 6 3/16  | 8 5/8  | 1 3/4 | 1 3/16 | 27 1/4 | 15 1/2 | 9      | 15 1/2 | 18 13/16 | 16     | 15 1/8   | 11 11/16 | 18 1/2  | 2 1/4 | 4       | 1/2 x 1/4 x 3 15/16   | 3 5/8 | 7 1/4 | 7/8 x 7/16 x 7 3/16  | 10 3/8  |
| V120      | 1600          | 12    | 9      | 14 5/8  | 24 1/4 | 10 3/8 | 6 3/16  | 8 7/8  | 2 1/8 | 1 5/16 | 32 3/8 | 18 1/2 | 10 3/8 | 18     | 21 9/16  | 17 1/2 | 17       | 13 7/16  | 19 1/2  | 2 1/2 | 4 9/16  | 5/8 x 5/16 x 4 1/2    | 4 1/4 | 8 1/2 | 1 x 1/2 x 8 3/8      | 12 1/8  |
| V140      | 2350          | 14    | 10 1/4 | 16 5/8  | 27 1/2 | 12     | 7 11/16 | 9 7/8  | 2 1/4 | 1 5/16 | 37 1/2 | 22     | 12     | 21     | 26 3/8   | 19 1/4 | 20 11/16 | 15 1/2   | 21 3/4  | 3     | 5 5/8   | 3/4 x 3/8 x 5 5/8     | 5     | 9     | 1 1/4 x 5/8 x 8 5/8  | 13 3/4  |
| V170      | 3570          | 17    | 11 1/2 | 19 1/2  | 33     | 14 1/2 | 8 3/16  | 11 1/8 | 2 1/2 | 1 9/16 | 44 3/4 | 26 1/4 | 14 1/2 | 24     | 29       | 21 1/2 | 22 3/4   | 17 15/16 | 24 3/4  | 3 1/4 | 6 3/16  | 3/4 x 3/8 x 6 1/8     | 5 3/4 | 10    | 1 1/2 x 3/4 x 9 3/4  | 16 1/2  |
| V200      | 4950          | 20    | 12 3/4 | 22 1/2  | 39     | 17     | 10 1/4  | 12 7/8 | 2 3/4 | 1 9/16 | 53     | 31     | 17     | 27 3/8 | 33       | 23 3/4 | 26       | 20 3/16  | 27 1/4  | 3 1/2 | 7       | 7/8 x 7/16 x 16 5/16  | 6 1/2 | 11    | 1 1/2 x 3/4 x 10 1/2 | 19 1/2  |

All dimensions are in inches. Use certified prints for construction. The input shaft may be rotated in either direction. Standard gear sets are cut with right hand threads giving relative shaft rotations as shown above. Shaft arrangements are shown above. Desired assembly should be

specified when ordering. Standard keys are furnished with units.

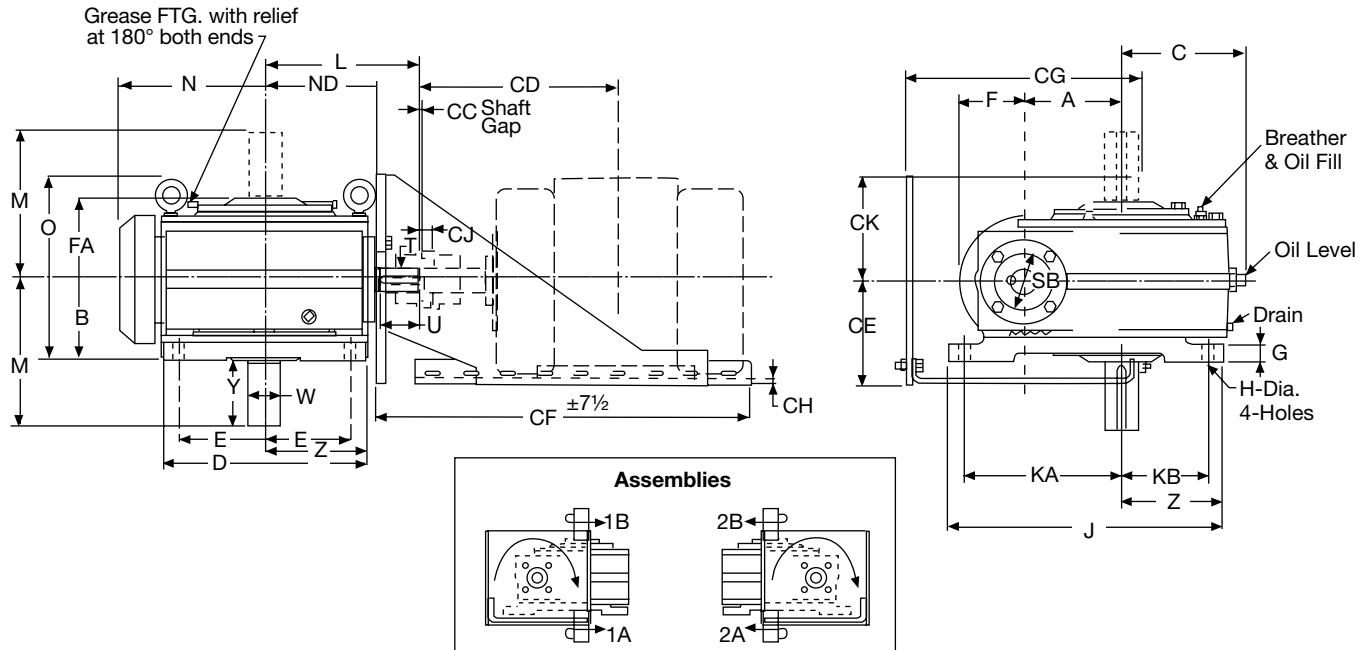
▲ Tolerances: 1 1/2" Diameter or Less = +.0000" -.0005"

Over 1 1/2" Diameter = +.000" -.001"

Low input speeds require special order instructions. See introductory section.



# Dimensions for “Sugar Scoop” Motor Mounts for Type VK



Single Reduction  
Speed Reducers

A drywell is standard for vertical assemblies sizes 30-200 only.

| Motor<br>Frame<br>Size | CJ  |     |     |     |     |        |        |        |        |       |       |       |       |
|------------------------|-----|-----|-----|-----|-----|--------|--------|--------|--------|-------|-------|-------|-------|
|                        | 30  | 35  | 40  | 50  | 60  | 70     | 80     | 90     | 100    | 120   | 140   | 170   | 200   |
| 56T                    | 3/8 | 3/8 | 5/8 |     |     |        |        |        |        |       |       |       |       |
| 143T                   | 3/8 | 3/8 | 5/8 | 5/8 |     |        |        |        |        |       |       |       |       |
| 145T                   | 3/8 | 3/8 | 5/8 | 5/8 |     |        |        |        |        |       |       |       |       |
| 182T                   | 5/8 | 5/8 | 5/8 | 5/8 | 5/8 | 3/4    | 7/8    |        |        |       |       |       |       |
| 184T                   | 5/8 | 5/8 | 5/8 | 5/8 | 5/8 | 3/4    | 7/8    |        |        |       |       |       |       |
| 213T                   | 5/8 | 5/8 | 5/8 | 3/4 | 5/8 | 3/4    | 7/8    | 1 5/16 |        |       |       |       |       |
| 215T                   | 5/8 | 5/8 | 5/8 | 3/4 | 5/8 | 3/4    | 7/8    | 1 5/16 | 1 5/16 |       |       |       |       |
| 254T                   |     |     |     | 7/8 | 7/8 | 7/8    | 7/8    | 1 5/16 | 1 5/16 | 1 1/4 |       |       |       |
| 256T                   |     |     |     | 7/8 | 7/8 | 7/8    | 7/8    | 1 5/16 | 1 5/16 | 1 1/4 |       |       |       |
| 284T                   |     |     |     |     | 7/8 | 7/8    | 7/8    | 1 5/16 | 1 5/16 | 1 1/4 | 2 1/8 |       |       |
| 286T                   |     |     |     |     | 7/8 | 7/8    | 7/8    | 1 5/16 | 1 5/16 | 1 1/4 | 2 1/8 |       |       |
| 324T                   |     |     |     |     |     | 1 5/16 | 1 5/16 | 1 5/16 | 1 5/16 | 1 1/4 | 2 1/8 | 2 1/8 |       |
| 326T                   |     |     |     |     |     | 1 5/16 | 1 5/16 | 1 5/16 | 1 5/16 | 1 1/4 | 2 1/8 | 2 1/8 |       |
| 364T                   |     |     |     |     |     |        | 1 5/16 | 1 5/16 | 1 5/16 | 1 1/4 | 2 1/8 | 2 1/8 | 2 1/8 |
| 365T                   |     |     |     |     |     |        |        | 1 5/16 | 1 5/16 | 1 1/4 | 2 1/8 | 2 1/8 | 2 1/8 |
| 404T                   |     |     |     |     |     |        |        |        | 1 7/8  | 2 1/8 | 2 1/8 | 2 1/8 | 2 1/8 |
| 405T                   |     |     |     |     |     |        |        |        |        | 1 7/8 | 2 1/8 | 2 1/8 | 2 1/8 |

| Motor Frame Size | CF  |        |        |        |         |      |        |
|------------------|-----|--------|--------|--------|---------|------|--------|
|                  | CC  | CD     | CE     | ±7/2   | CG      | CH   | CK     |
| 56T              | 1/8 | 6 1/8  | 4 7/8  | 25     | 12 5/8  | 3/16 | 4 7/8  |
| 143T             | 1/8 | 6 1/2  | 4 7/8  | 25     | 12 5/8  | 3/16 | 4 7/8  |
| 145T             | 1/8 | 7      | 4 7/8  | 25     | 12 5/8  | 3/16 | 4 7/8  |
| 182T             | 1/8 | 7 3/4  | 4 7/8  | 25     | 12 5/8  | 3/16 | 4 7/8  |
| 184T             | 1/8 | 8 1/4  | 4 7/8  | 25     | 12 5/8  | 3/16 | 4 7/8  |
| 213T             | 1/8 | 9 5/8  | 5 9/16 | 28     | 12 3/4  | 1/4  | 5      |
| 215T             | 1/8 | 10 3/8 | 5 9/16 | 28     | 12 3/4  | 1/4  | 5      |
| 254T             | 1/8 | 12 3/8 | 6 5/8  | 31     | 15      | 5/16 | 6 5/8  |
| 256T             | 1/8 | 13 1/4 | 6 5/8  | 31     | 15      | 5/16 | 6 5/8  |
| 284T             | 1/8 | 14 1/8 | 7 5/8  | 31     | 17      | 5/16 | 7 5/8  |
| 286T             | 1/8 | 14 7/8 | 7 5/8  | 31     | 17      | 5/16 | 7 5/8  |
| 324T             | 1/8 | 15 3/4 | 8 1/2  | 35 1/4 | 19 1/16 | 3/8  | 8 1/2  |
| 326T             | 1/8 | 16 1/2 | 8 1/2  | 35 1/4 | 19 1/16 | 3/8  | 8 1/2  |
| 364T             | 1/8 | 17 3/8 | 9 1/2  | 35 1/4 | 21 5/16 | 3/8  | 9 1/2  |
| 365T             | 1/8 | 17 7/8 | 9 1/2  | 35 1/4 | 21 5/16 | 3/8  | 9 1/2  |
| 404T             | 1/8 | 20     | 10 1/2 | 35 1/4 | 23 5/16 | 3/8  | 10 1/2 |
| 405T             | 1/8 | 20 3/4 | 10 1/2 | 35 1/4 | 23 5/16 | 3/8  | 10 1/2 |

| Unit Size | A     | B      | C       | D      | E      | F       | FA     | G     | H      | J      | KA     | KB     | L      | M      | N        | ND     | O       | SB      | T▲    | U       | Keyway                | W▲    | Y     | Keyway               | Z       |
|-----------|-------|--------|---------|--------|--------|---------|--------|-------|--------|--------|--------|--------|--------|--------|----------|--------|---------|---------|-------|---------|-----------------------|-------|-------|----------------------|---------|
| VK-30     | 3     | 3 1/2  | 4 1/4   | 7 1/8  | 3      | 2 5/8   | 3 3/8  | 3/4   | 9/16   | 10 1/8 | 6      | 3      | 6 1/8  | 6      | 5 15/16  | 4      | 7 11/16 | 3 1/8   | 7/8   | 1 7/8   | 3/16 x 3/32 x 1 13/16 | 1 1/4 | 2 1/2 | 1/4 x 1/8 x 2 3/8    | 3 9/16  |
| VK-35     | 3 1/2 | 4 1/8  | 4 13/16 | 8 3/8  | 3 1/2  | 2 5/8   | 4      | 7/8   | 1 1/16 | 11 3/4 | 6 7/8  | 3 1/2  | 7      | 7 1/8  | 6 5/8    | 4 3/4  | 9 1/8   | 3 3/16  | 1     | 2       | 1/4 x 1/8 x 1 15/16   | 1 1/2 | 3     | 3/8 x 3/16 x 2 15/16 | 4 3/16  |
| VK-40     | 4     | 5      | 5 3/8   | 9 1/4  | 3 7/8  | 3 1/4   | 4 7/8  | 1 1/8 | 1 1/16 | 13 1/8 | 7 5/8  | 3 7/8  | 7 3/4  | 8 1/2  | 7 3/4    | 5 7/16 | 10 1/2  | 3 9/16  | 1 1/8 | 2 1/16  | 1/4 x 1/8 x 2         | 1 3/4 | 3 1/2 | 3/8 x 3/16 x 3 7/16  | 4 5/8   |
| VK-50     | 5     | 5 5/8  | 7 1/2   | 11 1/8 | 4 3/4  | 3 11/16 | 5 1/2  | 1 1/4 | 1 3/16 | 15 3/8 | 9      | 4 3/4  | 8 3/4  | 9 5/8  | 8 5/8    | 6 3/16 | 12 9/16 | 4 7/16  | 1 3/8 | 2 5/16  | 5/16 x 5/32 x 2 1/4   | 2     | 4     | 1/2 x 1/4 x 3 7/8    | 5 9/16  |
| VK-60     | 6     | 6 1/4  | 8 5/8   | 13 3/8 | 5 3/4  | 4 1/8   | 6 1/8  | 1 3/8 | 1 3/16 | 18 1/8 | 10 1/2 | 5 3/4  | 10 1/4 | 10 3/4 | 10 1/16  | 7 7/16 | 13 7/16 | 5       | 1 1/2 | 2 11/16 | 3/8 x 3/16 x 2 5/8    | 2 1/4 | 4 1/2 | 1/2 x 1/4 x 4 3/8    | 6 11/16 |
| VK-70     | 7     | 6 1/2  | 9 1/4   | 14 5/8 | 6 1/4  | 5 3/16  | 6 7/16 | 1 3/8 | 1 5/16 | 20 1/8 | 11 3/4 | 6 1/4  | 11 1/2 | 11 1/2 | 10 3/4   | 8 1/16 | 14      | 5       | 1 5/8 | 3 1/8   | 3/8 x 3/16 x 3 1/16   | 2 1/2 | 5     | 5/8 x 5/16 x 4 15/16 | 7 5/16  |
| VK-80     | 8     | 6 5/8  | 10 1/2  | 16 1/2 | 7      | 5 3/16  | 6 1/2  | 1 1/2 | 1 1/16 | 22 1/4 | 12 3/4 | 7      | 12 1/2 | 12 1/8 | 11 3/4   | 9      | 14 7/8  | 5 1/8   | 1 7/8 | 3 1/8   | 1/2 x 1/4 x 3 1/16    | 2 3/4 | 5 1/2 | 5/8 x 5/16 x 5 7/16  | 8 1/4   |
| VK-90     | 9     | 7 3/4  | 11 3/8  | 18 1/2 | 7 7/8  | 6 3/16  | 7 5/8  | 1 5/8 | 1 3/16 | 25     | 14 3/8 | 7 7/8  | 14 1/4 | 14 1/4 | 13 3/16  | 10     | 17      | 5 7/8   | 2 1/8 | 3 15/16 | 1/2 x 1/4 x 3 7/8     | 3 1/4 | 6 1/2 | 3/4 x 3/8 x 6 3/8    | 9 1/4   |
| VK-100    | 10    | 8 3/4  | 12 5/8  | 20 3/4 | 9      | 6 3/16  | 8 5/8  | 1 3/4 | 1 3/16 | 27 1/4 | 15 1/2 | 9      | 15 1/2 | 16     | 15 1/8   | 11 1/4 | 18 1/2  | 5 3/4   | 2 1/4 | 4       | 1/2 x 1/4 x 3 5/16    | 3 5/8 | 7 1/4 | 7/8 x 7/16 x 7 3/16  | 10 3/8  |
| VK-120    | 12    | 9      | 14 5/8  | 24 1/4 | 10 3/8 | 6 9/16  | 8 7/8  | 2 1/8 | 1 5/16 | 32 3/8 | 18 1/2 | 10 3/8 | 18     | 17 1/2 | 17       | 13     | 19 1/2  | 6 7/8   | 2 1/2 | 4 9/16  | 5/8 x 5/16 x 4 1/2    | 4 1/4 | 8 1/2 | 1 x 1/2 x 8 3/8      | 12 1/8  |
| VK-140    | 14    | 10 1/4 | 16 5/8  | 27 1/2 | 12     | 7 11/16 | 9 7/8  | 2 1/4 | 1 5/16 | 37 1/2 | 22     | 12     | 21     | 19 1/4 | 20 11/16 | 14 1/2 | 21 3/4  | 9 9/16  | 3     | 5 5/8   | 3/4 x 3/8 x 5 5/8     | 5     | 9     | 1 1/4 x 5/8 x 8 5/8  | 13 3/4  |
| VK-170    | 17    | 11 1/2 | 19 1/2  | 33     | 14 1/2 | 8 9/16  | 11 1/8 | 2 1/2 | 1 9/16 | 44 3/4 | 26 1/4 | 14 1/2 | 24     | 21 1/2 | 22 3/4   | 17 3/8 | 24 3/4  | 10 7/16 | 3 1/4 | 6 3/16  | 3/4 x 3/8 x 6 1/8     | 5 3/4 | 10    | 1 1/2 x 3/4 x 9 3/4  | 16 1/2  |
| VK-200    | 20    | 12 3/4 | 22 1/2  | 39     | 17     | 10 1/4  | 12 7/8 | 2 3/4 | 1 9/16 | 53     | 31     | 17     | 27 3/8 | 23 3/4 | 26       | 19 1/4 | 27 1/4  | 11      | 3 1/2 | 7       | 7/8 x 7/16 x 6 15/16  | 6 1/2 | 11    | 1 1/2 x 3/4 x 10 1/2 | 19 1/2  |

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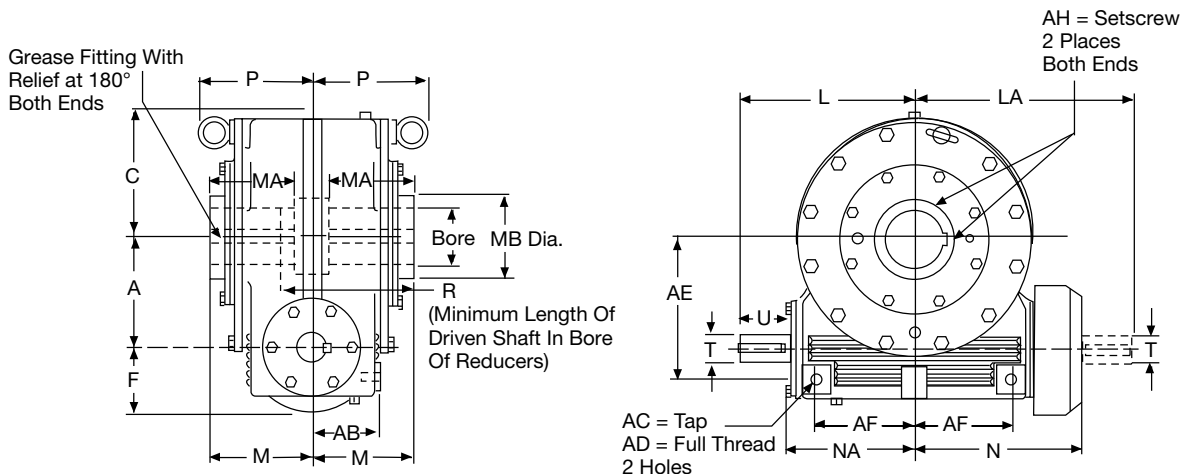
specified when ordering. Standard keys are furnished with units.

▲ Tolerances: 1 1/2" Diameter or Less = +.0000" -.0005"

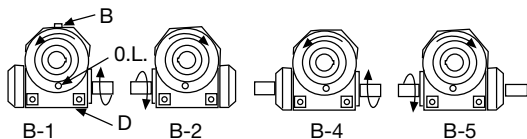
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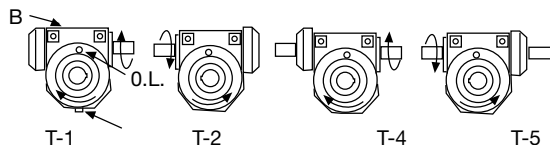
# Dimensions Type SM • Horizontal and Vertical



## Horizontal Assemblies

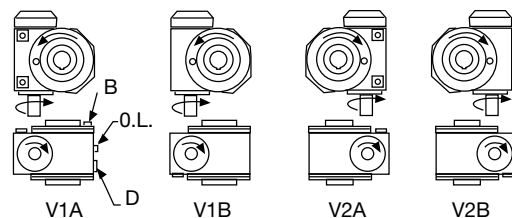


## Horizontal Assemblies

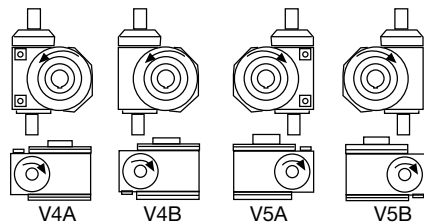


B = Breather, D = Drain, O.L. = Oil Level

## Vertical Assemblies



## Vertical Assemblies



A drywell is standard for vertical assemblies sizes 60-200 only.

| Unit. Size | WT. LBS. | A     | AB    | AC      | AD    | AE     | AF     | AH     | C       | F       | L      | LA       | M       | MA      | MB     | Bore          | Keyway       | N        | NA       | P       | R      | T▲    | U       | Keyway                  |
|------------|----------|-------|-------|---------|-------|--------|--------|--------|---------|---------|--------|----------|---------|---------|--------|---------------|--------------|----------|----------|---------|--------|-------|---------|-------------------------|
| SM30       | 65       | 3     | 2 1/2 | 1/2-13  | 7/8   | 4 1/2  | 3      | 1/4-20 | 4 1/4   | 2 5/8   | 6 1/8  | 7 13/16  | 4       | 3 1/2   | 2 7/8  | 1.9385/1.9405 | 1/2 x 1/4    | 5 15/16  | 4 3/16   | 4 3/16  | 5      | 7/8   | 1 7/8   | 3 1/16 x 3/32 x 1 13/16 |
| SM35       | 90       | 3 1/2 | 3     | 1/2-13  | 3/4   | 5 1/8  | 3 1/2  | 3/8-16 | 4 13/16 | 2 5/8   | 7      | 8 5/8    | 4 11/16 | 4 1/8   | 3 1/8  | 2.1885/2.1905 | 1/2 x 1/4    | 6 5/8    | 5        | 5       | 5 3/4  | 1     | 2       | 1/4 x 1/8 x 1 15/16     |
| SM40       | 145      | 4     | 3 1/2 | 5/8-11  | 1     | 5 3/4  | 3 7/8  | 3/8-16 | 5 3/8   | 3 1/4   | 7 3/4  | 9 13/16  | 5 5/16  | 4 11/16 | 3 1/2  | 2.438 / 2.440 | 5/8 x 5/16   | 7 3/4    | 5 11/16  | 5 1/2   | 6 7/16 | 1 1/8 | 2 1/16  | 1/4 x 1/8 x 2           |
| SM50       | 225      | 5     | 4     | 3/4-10  | 1 1/4 | 7      | 4 3/4  | 1/2-13 | 7 1/2   | 3 11/16 | 8 3/4  | 10 15/16 | 5 7/8   | 5 1/4   | 4 3/16 | 2.938 / 2.940 | 3/4 x 3/8    | 8 5/8    | 6 7/16   | 6 15/16 | 7      | 1 3/8 | 2 5/16  | 5/16 x 5/32 x 2 1/4     |
| SM60       | 310      | 6     | 4 1/4 | 3/4-10  | 1 1/8 | 8 1/2  | 5 3/4  | 1/2-13 | 8 5/8   | 4 1/8   | 10 1/4 | 12 5/8   | 6 1/2   | 5 3/4   | 4 3/4  | 3.438 / 3.440 | 7/8 x 7/16   | 10 1/16  | 7 3/4    | 7 3/16  | 7 3/4  | 1 1/2 | 2 11/16 | 3/8 x 3/16 x 2 5/8      |
| SM70       | 430      | 7     | 4 1/2 | 7/8-9   | 1 3/8 | 9 3/8  | 6 1/4  | 1/2-13 | 9 1/4   | 5 3/16  | 11 1/2 | 13 7/8   | 6 3/4   | 5 7/8   | 5 1/2  | 3.938 / 3.940 | 1 x 1/2      | 10 3/4   | 8 3/8    | 7 1/2   | 8 1/8  | 1 5/8 | 3 1/8   | 3/8 x 3/16 x 3 1/16     |
| SM80       | 550      | 8     | 4 5/8 | 1-8     | 1 1/2 | 10 1/4 | 7      | 1/2-13 | 10 1/2  | 5 3/16  | 12 1/2 | 15 1/2   | 7 1/4   | 6 1/4   | 6 1/4  | 4.438 / 4.440 | 1 x 1/2      | 11 3/4   | 9 3/8    | 8 1/4   | 8 3/4  | 1 7/8 | 3 1/8   | 1/2 x 1/4 x 3 1/16      |
| SM90       | 710      | 9     | 5 5/8 | 1-8     | 1 1/2 | 11 1/2 | 7 7/8  | 1/2-13 | 11 3/8  | 6 3/16  | 14 1/4 | 17 3/4   | 8 1/4   | 7 1/8   | 7      | 4.938 / 4.940 | 1 1/4 x 7/16 | 13 13/16 | 10 3/8   | 9 1/4   | 9 7/8  | 2 1/8 | 3 15/16 | 1/2 x 1/4 x 3 7/8       |
| SM100      | 930      | 10    | 6 1/8 | 1-8     | 1 1/2 | 12 3/4 | 9      | 5/8-11 | 12 5/8  | 6 3/16  | 15 1/2 | 18 13/16 | 9 1/4   | 8       | 7 1/2  | 5.438 / 5.440 | 1 1/4 x 7/16 | 15 1/8   | 11 11/16 | 9 3/4   | 11     | 2 1/4 | 4       | 1/2 x 1/4 x 3 15/16     |
| SM120      | 1300     | 12    | 6 1/2 | 1 1/4-7 | 2     | 15 1/4 | 10 3/8 | 5/8-11 | 14 5/8  | 6 3/16  | 18     | 21 9/16  | 9 3/4   | 8 3/8   | 8      | 6.000 / 6.002 | 1 1/2 x 1/2  | 17       | 13 7/16  | 10 1/2  | 11 5/8 | 2 1/2 | 4 9/16  | 1/2 x 1/4 x 4 1/2       |
| SM140      | 1900     | 14    | 7 1/2 | 1 1/4-7 | 2 1/8 | 18 1/2 | 12     | 5/8-11 | 16 5/8  | 7 11/16 | 21     | 26 3/8   | 10 3/4  | 9       | 8      | 6.000 / 6.002 | 1 1/2 x 1/2  | 20 11/16 | 15 1/2   | 11 1/2  | 13     | 3     | 5 5/8   | 3/4 x 3/8 x 5 5/8       |
| SM170      | 3050     | 17    | 8 1/2 | 1 1/2-6 | 2 1/4 | 22     | 14 1/2 | 5/8-11 | 19 1/2  | 8 3/16  | 24     | 29       | 12 1/4  | 10 1/4  | 9 1/4  | 6.500 / 6.502 | 1 1/2 x 1/2  | 22 3/4   | 17 15/16 | 13 1/4  | 14 3/4 | 3 1/4 | 6 3/16  | 3/4 x 3/8 x 6 1/8       |
| SM200      | 4500     | 20    | 9 1/2 | 1 1/2-6 | 2 1/4 | 26     | 16 1/4 | 5/8-11 | 22 1/2  | 10 1/4  | 27 3/8 | 33       | 13 1/2  | 11 1/2  | 9 1/4  | 6.500 / 6.502 | 1 1/2 x 1/2  | 26       | 20 3/16  | 14 1/2  | 16     | 3 1/2 | 7       | 7/8 x 7/16 x 6 15/16    |

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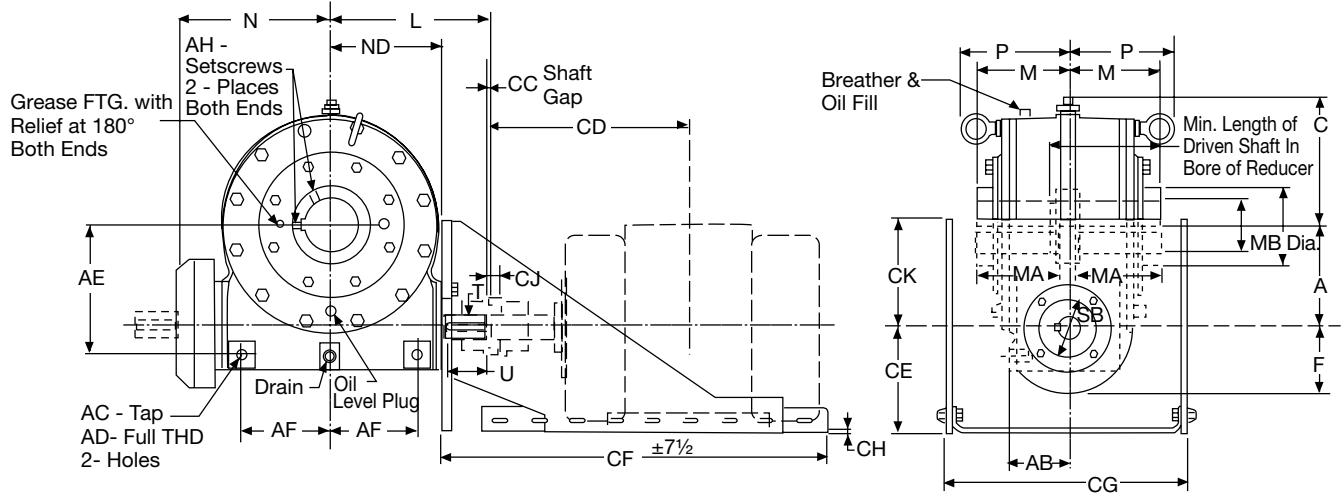
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Over 1 1/2" Diameter = +.000" -.001"

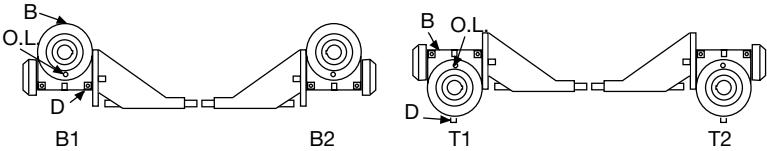
Low input speeds require special order instructions. See introductory section.

# Dimensions for "Sugar Scoop" Motor Mounts for Type SMK

Single Reduction  
Speed Reducers

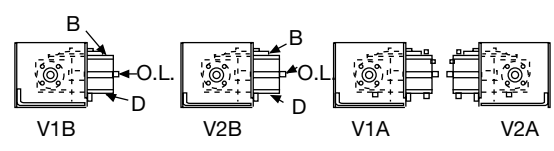


**Horizontal Assemblies**



B = Breather, D = Drain, O.L. = Oil Level

**Vertical Assemblies**



B = Breather, D = Drain, O.L. = Oil Level

A drywell is standard for vertical assemblies sizes 60-200 only.

| Motor Frame Size | CJ  |     |     |     |     |        |        |        |        |       |       |       |       |  |  |  |
|------------------|-----|-----|-----|-----|-----|--------|--------|--------|--------|-------|-------|-------|-------|--|--|--|
|                  | 30  | 35  | 40  | 50  | 60  | 70     | 80     | 90     | 100    | 120   | 140   | 170   | 200   |  |  |  |
| 56T              | 3/8 | 3/8 | 5/8 |     |     |        |        |        |        |       |       |       |       |  |  |  |
| 143T             | 3/8 | 3/8 | 5/8 | 5/8 |     |        |        |        |        |       |       |       |       |  |  |  |
| 145T             | 3/8 | 3/8 | 5/8 | 5/8 |     |        |        |        |        |       |       |       |       |  |  |  |
| 182T             | 5/8 | 5/8 | 5/8 | 5/8 | 5/8 | 3/4    | 7/8    |        |        |       |       |       |       |  |  |  |
| 184T             | 5/8 | 5/8 | 5/8 | 5/8 | 5/8 | 3/4    | 7/8    |        |        |       |       |       |       |  |  |  |
| 213T             | 5/8 | 5/8 | 5/8 | 3/4 | 3/4 | 3/4    | 7/8    | 1 5/16 | 1 5/16 |       |       |       |       |  |  |  |
| 215T             | 5/8 | 5/8 | 5/8 | 3/4 | 3/4 | 3/4    | 7/8    | 1 5/16 | 1 5/16 | 1 1/4 |       |       |       |  |  |  |
| 254T             |     |     |     | 7/8 | 7/8 | 7/8    | 7/8    | 1 5/16 | 1 5/16 | 1 1/4 |       |       |       |  |  |  |
| 256T             |     |     |     | 7/8 | 7/8 | 7/8    | 7/8    | 1 5/16 | 1 5/16 | 1 1/4 |       |       |       |  |  |  |
| 284T             |     |     |     |     | 7/8 | 7/8    | 7/8    | 1 5/16 | 1 5/16 | 1 1/4 | 2 1/8 |       |       |  |  |  |
| 286T             |     |     |     |     | 7/8 | 7/8    | 7/8    | 1 5/16 | 1 5/16 | 1 1/4 | 2 1/8 |       |       |  |  |  |
| 324T             |     |     |     |     |     | 1 5/16 | 1 5/16 | 1 5/16 | 1 5/16 | 1 1/4 | 2 1/8 | 2 1/8 |       |  |  |  |
| 326T             |     |     |     |     |     | 1 5/16 | 1 5/16 | 1 5/16 | 1 5/16 | 1 1/4 | 2 1/8 | 2 1/8 |       |  |  |  |
| 364T             |     |     |     |     |     |        | 1 5/16 | 1 5/16 | 1 5/16 | 1 1/4 | 2 1/8 | 2 1/8 | 2 1/8 |  |  |  |
| 365T             |     |     |     |     |     |        |        | 1 5/16 | 1 5/16 | 1 1/4 | 2 1/8 | 2 1/8 | 2 1/8 |  |  |  |
| 404T             |     |     |     |     |     |        |        |        | 1 7/8  | 1 7/8 | 2 1/8 | 2 1/8 | 2 1/8 |  |  |  |
| 405T             |     |     |     |     |     |        |        |        |        | 1 7/8 | 2 1/8 | 2 1/8 | 2 1/8 |  |  |  |

| Motor Frame Size | CF  |        |        |        |         |      |        |
|------------------|-----|--------|--------|--------|---------|------|--------|
|                  | CC  | CD     | CE     | ±7 1/2 | CG      | CH   | CK     |
| 56T              | 1/8 | 6 1/2  | 4 7/8  | 25     | 12 5/8  | 3/16 | 4 7/8  |
| 143T             | 1/8 | 6 1/2  | 4 7/8  | 25     | 12 5/8  | 3/16 | 4 7/8  |
| 145T             | 1/8 | 7      | 4 7/8  | 25     | 12 5/8  | 3/16 | 4 7/8  |
| 182T             | 1/8 | 7 3/4  | 4 7/8  | 25     | 12 5/8  | 3/16 | 4 7/8  |
| 184T             | 1/8 | 8 1/4  | 4 7/8  | 25     | 12 5/8  | 3/16 | 4 7/8  |
| 213T             | 1/8 | 9 5/8  | 5 9/16 | 28     | 12 3/4  | 1/4  | 5      |
| 215T             | 1/8 | 10 3/8 | 5 9/16 | 28     | 12 3/4  | 1/4  | 5      |
| 254T             | 1/8 | 12 3/8 | 6 5/8  | 31     | 15      | 5/16 | 6 5/8  |
| 256T             | 1/8 | 13 1/4 | 6 5/8  | 31     | 15      | 5/16 | 6 5/8  |
| 284T             | 1/8 | 14 1/8 | 7 5/8  | 31     | 17      | 5/16 | 7 5/8  |
| 286T             | 1/8 | 14 7/8 | 7 5/8  | 31     | 17      | 5/16 | 7 5/8  |
| 324T             | 1/8 | 15 3/4 | 8 1/2  | 35 1/4 | 19 1/16 | 3/8  | 8 1/2  |
| 326T             | 1/8 | 16 1/2 | 8 1/2  | 35 1/4 | 19 1/16 | 3/8  | 8 1/2  |
| 364T             | 1/8 | 17 3/8 | 9 1/2  | 35 1/4 | 21 5/16 | 3/8  | 9 1/2  |
| 365T             | 1/8 | 17 7/8 | 9 1/2  | 35 1/4 | 21 5/16 | 3/8  | 9 1/2  |
| 404T             | 1/8 | 20     | 10 1/2 | 35 1/4 | 23 5/16 | 3/8  | 10 1/2 |
| 405T             | 1/8 | 20 3/4 | 10 1/2 | 35 1/4 | 23 5/16 | 3/8  | 10 1/2 |

| Unit Size | A     | AB    | AC       | AD    | AE     | AF     | AH       | C       | F       | L      | M       | MA      | MB     | N        | ND     | P       | R      | SB      | T▲    | U       | Keyway                | Bore          | Keyway       |
|-----------|-------|-------|----------|-------|--------|--------|----------|---------|---------|--------|---------|---------|--------|----------|--------|---------|--------|---------|-------|---------|-----------------------|---------------|--------------|
| SMK-30    | 3     | 2 1/2 | 1 1/2-13 | 7/8   | 4 1/2  | 3      | 1 1/4-20 | 4 1/4   | 2 5/8   | 6 1/8  | 4       | 3 1/2   | 2 7/8  | 5 15/16  | 4      | 4 3/16  | 5      | 3 1/8   | 7/8   | 1 7/16  | 3/16 x 3/32 x 1 13/16 | 1.9385/1.9405 | 1/2 x 1/4    |
| SMK-35    | 3 1/2 | 3     | 1 1/2-13 | 3/4   | 5 1/8  | 3 1/2  | 3/8-16   | 4 13/16 | 2 5/8   | 7      | 4 11/16 | 4 1/8   | 3 1/8  | 6 5/8    | 4 3/4  | 5       | 5 3/4  | 3 3/16  | 1     | 2       | 1/4 x 1/8 x 1 15/16   | 2.1885/2.1905 | 1/2 x 1/4    |
| SMK-40    | 4     | 3 1/2 | 5/8-11   | 1     | 5 3/4  | 3 7/8  | 3/8-16   | 5 3/8   | 3 1/4   | 7 3/4  | 5 5/16  | 4 11/16 | 3 1/2  | 7 3/4    | 5 7/16 | 5 1/2   | 6 7/16 | 3 9/16  | 1 1/8 | 2 1/16  | 1/4 x 1/8 x 2         | 2.438 / 2.440 | 5/8 x 5/16   |
| SMK-50    | 5     | 4     | 3/4-10   | 1 1/4 | 7      | 4 3/4  | 1 1/2-13 | 7 1/2   | 3 11/16 | 8 3/4  | 5 7/8   | 5 1/4   | 4 3/16 | 8 5/8    | 6 3/16 | 6 15/16 | 7      | 4 7/16  | 1 3/8 | 2 5/16  | 5/16 x 5/32 x 2 1/4   | 2.938 / 2.940 | 3/4 x 3/8    |
| SMK-60    | 6     | 4 1/4 | 3/4-10   | 1 1/4 | 8 1/2  | 5 3/4  | 1 1/2-13 | 8 5/8   | 4 1/8   | 10 1/4 | 6 1/2   | 5 3/4   | 4 3/4  | 10 1/16  | 7 7/16 | 7 3/16  | 7 3/4  | 5       | 1 1/2 | 2 11/16 | 3/8 x 3/16 x 2 5/8    | 3.438 / 3.440 | 7/8 x 7/16   |
| SMK-70    | 7     | 4 1/2 | 7/8-9    | 1 3/8 | 9 3/8  | 6 1/4  | 1 1/2-13 | 9 1/4   | 5 3/16  | 11 1/2 | 6 3/4   | 5 7/8   | 5 1/2  | 10 3/4   | 8 1/16 | 7 1/2   | 8 1/8  | 5       | 1 5/8 | 3 1/8   | 3/8 x 3/16 x 3 1/16   | 3.938 / 3.940 | 1 x 1/2      |
| SMK-80    | 8     | 4 5/8 | 1-8      | 1 1/2 | 10 1/4 | 7      | 1 1/2-13 | 10 1/2  | 5 3/16  | 12 1/2 | 7 1/4   | 6 1/4   | 6 1/4  | 11 3/4   | 9      | 8 1/4   | 8 3/4  | 5 1/8   | 1 7/8 | 3 1/8   | 1/2 x 1/4 x 3 1/16    | 4.438 / 4.440 | 1 x 1/2      |
| SMK-90    | 9     | 5 5/8 | 1-8      | 1 1/2 | 11 1/2 | 7 7/8  | 1 1/2-13 | 11 3/8  | 6 3/16  | 14 1/4 | 8 1/4   | 7 1/8   | 7      | 13 13/16 | 10     | 9 1/4   | 9 7/8  | 5 7/8   | 2 1/8 | 3 15/16 | 1/2 x 1/4 x 3 7/8     | 4.938 / 4.940 | 1 1/4 x 7/16 |
| SMK-100   | 10    | 6 1/8 | 1-8      | 1 1/2 | 12 3/4 | 9      | 5/8-11   | 12 5/8  | 6 3/16  | 15 1/2 | 9 1/4   | 8       | 7 1/2  | 15 1/8   | 11 1/4 | 9 3/4   | 11     | 5 3/4   | 2 1/4 | 4       | 1/2 x 1/4 x 3 15/16   | 5.438 / 5.440 | 1 1/4 x 7/16 |
| SMK-120   | 12    | 6 1/2 | 1 1/4-7  | 2     | 15 1/4 | 10 3/8 | 5/8-11   | 14 5/8  | 6 3/16  | 18     | 9 3/4   | 8 3/8   | 8      | 17       | 13     | 10 1/2  | 11 5/8 | 6 7/8   | 2 1/2 | 4 9/16  | 5/4 x 3/16 x 4 1/2    | 6.000 / 6.002 | 1 1/2 x 1/2  |
| SMK-140   | 14    | 7 1/2 | 1 1/4-7  | 2 1/8 | 18 1/2 | 12     | 5/8-11   | 16 5/8  | 7 11/16 | 21     | 10 3/4  | 9       | 8      | 20 11/16 | 14 1/2 | 11 1/2  | 13     | 9 3/16  | 3     | 5 5/8   | 3/4 x 3/8 x 5 5/8     | 6.000 / 6.002 | 1 1/2 x 1/2  |
| SMK-170   | 17    | 8 1/2 | 1 1/2-6  | 2 1/4 | 22     | 14 1/2 | 5/8-11   | 19 1/2  | 8 3/16  | 24     | 12 1/4  | 10 1/4  | 9 1/4  | 22 3/4   | 17 3/8 | 13 1/4  | 14 3/4 | 10 7/16 | 3 1/4 | 6 3/16  | 3/4 x 3/8 x 6 1/8     | 6.500 / 6.502 | 1 1/2 x 1/2  |
| SMK-200   | 20    | 9 1/2 | 1 1/2-6  | 2 1/4 | 26     | 16 1/4 | 5/8-11   | 22 1/2  | 10 1/4  | 27 3/8 | 13 1/2  | 10 1/2  | 9 1/4  | 26       | 19 1/4 | 14 1/2  | 16     | 11      | 3 1/2 | 7       | 7/8 x 7/16 x 6 5/16   | 6.500 / 6.502 | 1 1/2 x 1/2  |

All dimensions are in inches. Use certified prints for construction. The input shaft may be rotated in either direction. Standard gear sets are cut with right hand threads giving relative shaft rotations as shown above. Shaft arrangements are shown above. Desired assembly should be

specified when ordering. Standard keys are furnished with units.

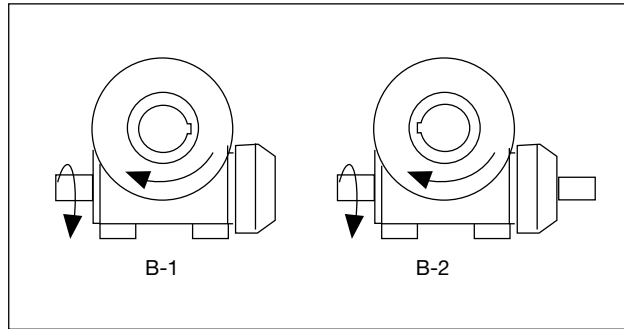
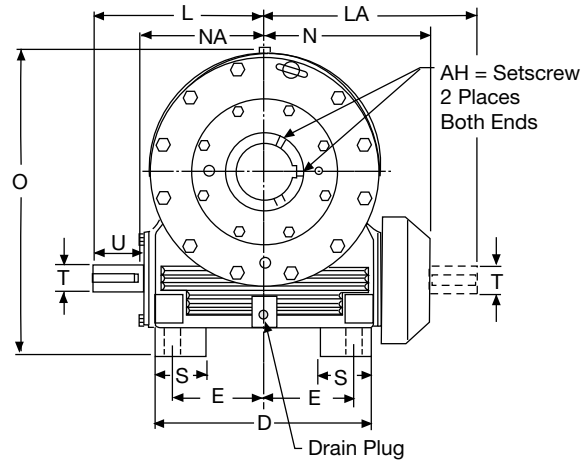
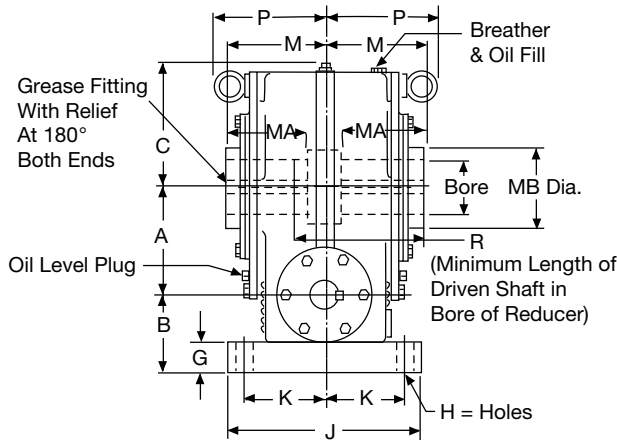
▲ Tolerances: 1 1/2" Diameter or Less = +.0000" -.0005"

Over 1 1/2" Diameter = +.000" -.001"

Low input speeds require special order instructions. See introductory section.

# Dimensions Type SMB • Base Mount

Single Reduction  
Speed Reducers



| Unit Size | WT. LBS. | A     | AH     | B      | C       | D      | E      | G     | H       | J      | K      | L      | LA       | M       | MA      | MB     | N        | NA       | O        | P       | R      | S     | TA    | U       | Keyway                | Bore          | Keyway       |
|-----------|----------|-------|--------|--------|---------|--------|--------|-------|---------|--------|--------|--------|----------|---------|---------|--------|----------|----------|----------|---------|--------|-------|-------|---------|-----------------------|---------------|--------------|
| SMB-30    | 82       | 3     | 1/4-20 | 3      | 4 1/4   | 7 7/8  | 3 3/8  | 7/8   | 9/16    | 7 5/8  | 3      | 6 1/8  | 7 13/16  | 4       | 3 1/2   | 2 7/8  | 5 15/16  | 4 3/16   | 10 1/4   | 4 3/16  | 5      | 1 3/4 | 7/8   | 1 7/8   | 3/16 x 3/32 x 1 13/16 | 1.9385/1.9405 | 1/2 x 1/4    |
| SMB-35    | 117      | 3 1/2 | 3/8-16 | 3 3/8  | 4 13/16 | 9 1/4  | 3 7/8  | 1 1/8 | 11/16   | 9      | 3 3/4  | 7      | 8 5/8    | 4 11/16 | 4 1/8   | 3 1/8  | 6 5/8    | 5        | 11 11/16 | 5       | 5 3/4  | 2 1/4 | 1     | 2       | 1/4 x 1/8 x 1 15/16   | 2.1885/2.1905 | 1/2 x 1/4    |
| SMB-40    | 195      | 4     | 3/8-16 | 4      | 5 3/8   | 10 3/8 | 4 1/4  | 1 1/2 | 13/16   | 10 1/2 | 4 3/8  | 7 3/4  | 9 13/16  | 5 5/16  | 4 11/16 | 3 1/2  | 7 3/4    | 5 11/16  | 13 3/8   | 5 1/2   | 6 7/16 | 2 1/2 | 1 1/8 | 2 1/16  | 1/4 x 1/8 x 2         | 2.438 / 2.440 | 5/8 x 5/16   |
| SMB-50    | 285      | 5     | 1/2-13 | 4 5/8  | 7 1/2   | 11 1/2 | 4 3/4  | 1 3/4 | 13/16   | 12     | 4 7/8  | 8 3/4  | 10 15/16 | 5 7/8   | 5 1/4   | 4 3/16 | 8 5/8    | 6 7/16   | 17 1/8   | 6 15/16 | 7      | 3     | 1 3/8 | 2 5/16  | 5/16 x 5/32 x 2 1/4   | 2.938 / 2.940 | 3/4 x 3/8    |
| SMB-60    | 405      | 6     | 1/2-13 | 5      | 8 5/8   | 13 1/4 | 5 1/4  | 1 1/2 | 15/16   | 13     | 5 1/4  | 10 1/4 | 12 5/8   | 6 1/2   | 5 3/4   | 4 3/4  | 10 1/16  | 7 3/4    | 19 5/8   | 7 3/16  | 7 3/4  | 3     | 1 1/2 | 2 11/16 | 3/8 x 3/16 x 2 5/8    | 3.438 / 3.440 | 7/8 x 7/16   |
| SMB-70    | 545      | 7     | 1/2-13 | 5 3/8  | 9 1/4   | 14 3/4 | 6      | 2     | 1 1/16  | 14     | 5 5/8  | 11 1/2 | 13 7/8   | 6 3/4   | 5 7/8   | 5 1/2  | 10 3/4   | 8 3/8    | 21 5/8   | 7 1/2   | 8 1/8  | 3 1/2 | 1 5/8 | 3 1/8   | 3/8 x 3/16 x 3 1/16   | 3.938 / 3.940 | 1 x 1/2      |
| SMB-80    | 680      | 8     | 1/2-13 | 5 3/4  | 10 1/2  | 16 1/2 | 6 3/4  | 2 1/4 | 1 3/16  | 14 1/2 | 6      | 12 1/2 | 15 1/2   | 7 1/4   | 6 1/4   | 6 1/4  | 11 3/4   | 9 3/8    | 24 1/4   | 8 1/4   | 8 3/4  | 4     | 1 7/8 | 3 1/8   | 1/2 x 1/4 x 3 1/16    | 4.438 / 4.440 | 1 x 1/2      |
| SMB-90    | 875      | 9     | 1/2-13 | 6 1/4  | 11 3/8  | 18 3/4 | 7 3/4  | 2 1/2 | 1 7/16  | 17 1/2 | 7 1/4  | 14 1/4 | 17 3/4   | 8 1/4   | 7 1/8   | 7      | 13 13/16 | 10 3/8   | 26 5/8   | 9 1/4   | 9 7/8  | 4     | 2 1/8 | 3 15/16 | 1/2 x 1/4 x 3 7/8     | 4.938 / 4.940 | 1 1/4 x 7/16 |
| SMB-100   | 1125     | 10    | 5/8-11 | 6 3/4  | 12 5/8  | 21     | 8 3/4  | 2 7/8 | 1 7/16  | 18     | 7 1/2  | 15 1/2 | 18 13/16 | 9 1/4   | 8       | 7 1/2  | 15 1/16  | 11 11/16 | 29 3/8   | 9 3/4   | 11     | 4 1/4 | 2 1/4 | 4       | 1/2 x 1/4 x 3 15/16   | 5.438 / 5.440 | 1 1/4 x 7/16 |
| SMB-120   | 1750     | 12    | 5/8-11 | 7 1/2  | 14 5/8  | 24 1/2 | 10 1/2 | 2 3/4 | 1 9/16  | 21     | 9      | 18     | 21 9/16  | 9 3/4   | 8 3/4   | 8      | 17       | 13 7/16  | 34 1/8   | 10 1/2  | 11 5/8 | 4 1/2 | 2 1/2 | 4 9/16  | 5/8 x 5/16 x 4 1/2    | 6.000 / 6.002 | 1 1/2 x 1/2  |
| SMB-140   | 2585     | 14    | 5/8-11 | 9 1/2  | 16 5/8  | 27 1/2 | 11 1/2 | 3     | 1 11/16 | 21 3/4 | 9 1/4  | 21     | 26 3/8   | 10 3/4  | 9       | 8      | 20 11/16 | 15 1/2   | 40 1/8   | 11 1/2  | 13     | 5     | 3     | 5 5/8   | 3/4 x 3/8 x 5 5/8     | 6.000 / 6.002 | 1 1/2 x 1/2  |
| SMB-170   | 3860     | 17    | 5/8-11 | 10 1/2 | 19 1/2  | 32     | 13 1/4 | 3 3/8 | 1 11/16 | 24     | 10 1/4 | 24     | 29       | 12 1/4  | 10 1/4  | 9 1/4  | 22 3/4   | 17 15/16 | 47       | 13 1/4  | 14 3/4 | 5 3/4 | 3 1/4 | 6 3/16  | 3/4 x 3/8 x 6 1/8     | 6.500 / 6.502 | 1 1/2 x 1/2  |
| SMB-200   | 5360     | 20    | 5/8-11 | 11 1/2 | 22 1/2  | 36     | 14 3/4 | 3 5/8 | 1 15/16 | 27     | 11 1/2 | 27 3/8 | 33       | 13 1/2  | 10 1/2  | 9 1/4  | 26       | 20 3/16  | 54       | 14 1/2  | 16     | 6 1/2 | 3 1/2 | 7       | 7/8 x 7/16 x 6 15/16  | 6.500 / 6.502 | 1 1/2 x 1/2  |

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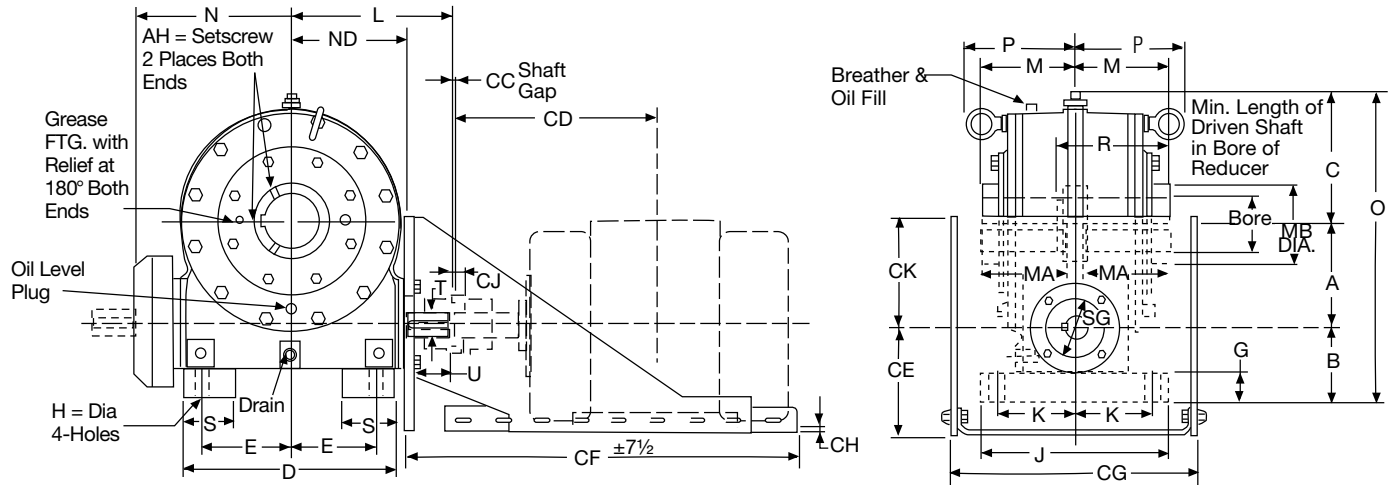
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Over 1 1/2" Diameter = +.000" -.001"

Low input speeds require special order instructions. See introductory section.

# Dimensions for “Sugar Scoop” Motor Mounts for Type SMBK

Single Reduction  
Speed Reducers



| Motor<br>Frame<br>Size | CJ  |     |     |     |     |                                |                                |                                |                                |                               |                               |                               |                               |
|------------------------|-----|-----|-----|-----|-----|--------------------------------|--------------------------------|--------------------------------|--------------------------------|-------------------------------|-------------------------------|-------------------------------|-------------------------------|
|                        | 30  | 35  | 40  | 50  | 60  | 70                             | 80                             | 90                             | 100                            | 120                           | 140                           | 170                           | 200                           |
| 56T                    | 3/8 | 3/8 | 5/8 |     |     |                                |                                |                                |                                |                               |                               |                               |                               |
| 143T                   | 3/8 | 3/8 | 5/8 | 5/8 |     |                                |                                |                                |                                |                               |                               |                               |                               |
| 145T                   | 3/8 | 3/8 | 5/8 | 5/8 |     |                                |                                |                                |                                |                               |                               |                               |                               |
| 182T                   | 5/8 | 5/8 | 5/8 | 5/8 | 5/8 | 3/4                            | 7/8                            |                                |                                |                               |                               |                               |                               |
| 184T                   | 5/8 | 5/8 | 5/8 | 5/8 | 5/8 | 3/4                            | 7/8                            |                                |                                |                               |                               |                               |                               |
| 213T                   | 5/8 | 5/8 | 5/8 | 3/4 | 5/8 | 3/4                            | 7/8                            | 1 <sup>5</sup> / <sub>16</sub> |                                |                               |                               |                               |                               |
| 215T                   | 5/8 | 5/8 | 5/8 | 3/4 | 5/8 | 3/4                            | 7/8                            | 1 <sup>5</sup> / <sub>16</sub> | 1 <sup>5</sup> / <sub>16</sub> |                               |                               |                               |                               |
| 254T                   |     |     |     | 7/8 | 7/8 | 7/8                            | 7/8                            | 1 <sup>5</sup> / <sub>16</sub> | 1 <sup>5</sup> / <sub>16</sub> | 1 1/4                         |                               |                               |                               |
| 256T                   |     |     |     | 7/8 | 7/8 | 7/8                            | 7/8                            | 1 <sup>5</sup> / <sub>16</sub> | 1 <sup>5</sup> / <sub>16</sub> | 1 1/4                         |                               |                               |                               |
| 284T                   |     |     |     |     | 7/8 | 7/8                            | 7/8                            | 1 <sup>5</sup> / <sub>16</sub> | 1 <sup>5</sup> / <sub>16</sub> | 1 1/4                         | 2 <sup>1</sup> / <sub>8</sub> |                               |                               |
| 286T                   |     |     |     |     | 7/8 | 7/8                            | 7/8                            | 1 <sup>5</sup> / <sub>16</sub> | 1 <sup>5</sup> / <sub>16</sub> | 1 1/4                         | 2 <sup>1</sup> / <sub>8</sub> |                               |                               |
| 324T                   |     |     |     |     |     | 1 <sup>5</sup> / <sub>16</sub> | 1 <sup>5</sup> / <sub>16</sub> | 1 <sup>5</sup> / <sub>16</sub> | 1 <sup>5</sup> / <sub>16</sub> | 1 1/4                         | 2 <sup>1</sup> / <sub>8</sub> | 2 <sup>1</sup> / <sub>8</sub> |                               |
| 326T                   |     |     |     |     |     | 1 <sup>5</sup> / <sub>16</sub> | 1 <sup>5</sup> / <sub>16</sub> | 1 <sup>5</sup> / <sub>16</sub> | 1 <sup>5</sup> / <sub>16</sub> | 1 1/4                         | 2 <sup>1</sup> / <sub>8</sub> | 2 <sup>1</sup> / <sub>8</sub> |                               |
| 364T                   |     |     |     |     |     |                                | 1 <sup>5</sup> / <sub>16</sub> | 1 <sup>5</sup> / <sub>16</sub> | 1 <sup>5</sup> / <sub>16</sub> | 1 1/4                         | 2 <sup>1</sup> / <sub>8</sub> | 2 <sup>1</sup> / <sub>8</sub> | 2 <sup>1</sup> / <sub>8</sub> |
| 365T                   |     |     |     |     |     |                                |                                | 1 <sup>5</sup> / <sub>16</sub> | 1 <sup>5</sup> / <sub>16</sub> | 1 1/4                         | 2 <sup>1</sup> / <sub>8</sub> | 2 <sup>1</sup> / <sub>8</sub> | 2 <sup>1</sup> / <sub>8</sub> |
| 404T                   |     |     |     |     |     |                                |                                |                                | 1 <sup>7</sup> / <sub>8</sub>  | 1 <sup>7</sup> / <sub>8</sub> | 2 <sup>1</sup> / <sub>8</sub> | 2 <sup>1</sup> / <sub>8</sub> | 2 <sup>1</sup> / <sub>8</sub> |
| 405T                   |     |     |     |     |     |                                |                                |                                |                                | 1 <sup>7</sup> / <sub>8</sub> | 2 <sup>1</sup> / <sub>8</sub> | 2 <sup>1</sup> / <sub>8</sub> | 2 <sup>1</sup> / <sub>8</sub> |

| Motor Frame Size | CF  |        |        |        |         |      |        |
|------------------|-----|--------|--------|--------|---------|------|--------|
|                  | CC  | CD     | CE     | ±7 1/2 | CG      | CH   | CK     |
| 56T              | 1/8 | 6 1/2  | 4 7/8  | 25     | 12 5/8  | 3/16 | 4 7/8  |
| 143T             | 1/8 | 6 1/2  | 4 7/8  | 25     | 12 5/8  | 3/16 | 4 7/8  |
| 145T             | 1/8 | 7      | 4 7/8  | 25     | 12 5/8  | 3/16 | 4 7/8  |
| 182T             | 1/8 | 7 3/4  | 4 7/8  | 25     | 12 5/8  | 3/16 | 4 7/8  |
| 184T             | 1/8 | 8 1/4  | 4 7/8  | 25     | 12 5/8  | 3/16 | 4 7/8  |
| 213T             | 1/8 | 9 5/8  | 5 9/16 | 28     | 12 3/4  | 1/4  | 5      |
| 215T             | 1/8 | 10 3/8 | 5 9/16 | 28     | 12 3/4  | 1/4  | 5      |
| 254T             | 1/8 | 12 3/8 | 6 5/8  | 31     | 15      | 5/16 | 6 5/8  |
| 256T             | 1/8 | 13 1/4 | 6 5/8  | 31     | 15      | 5/16 | 6 5/8  |
| 284T             | 1/8 | 14 1/8 | 7 5/8  | 31     | 17      | 5/16 | 7 5/8  |
| 286T             | 1/8 | 14 7/8 | 7 5/8  | 31     | 17      | 5/16 | 7 5/8  |
| 324T             | 1/8 | 15 3/4 | 8 1/2  | 35 1/4 | 19 1/16 | 3/8  | 8 1/2  |
| 326T             | 1/8 | 16 1/2 | 8 1/2  | 35 1/4 | 19 1/16 | 3/8  | 8 1/2  |
| 364T             | 1/8 | 17 3/8 | 9 1/2  | 35 1/4 | 21 5/16 | 3/8  | 9 1/2  |
| 365T             | 1/8 | 17 7/8 | 9 1/2  | 35 1/4 | 21 5/16 | 3/8  | 9 1/2  |
| 404T             | 1/8 | 20     | 10 1/2 | 35 1/4 | 23 5/16 | 3/8  | 10 1/2 |
| 405T             | 1/8 | 20 3/4 | 10 1/2 | 35 1/4 | 23 5/16 | 3/8  | 10 1/2 |

| Unit Size | A     | AH       | B      | C       | D      | E      | G     | H       | J      | K      | L      | M        | MA      | MB     | N        | ND     | O        | P       | R      | S     | SB      | T▲    | U       | Keyway                | Bore          | Keyway       |
|-----------|-------|----------|--------|---------|--------|--------|-------|---------|--------|--------|--------|----------|---------|--------|----------|--------|----------|---------|--------|-------|---------|-------|---------|-----------------------|---------------|--------------|
| SMBK-30   | 3     | 1 1/4-20 | 3      | 4 1/4   | 7 7/8  | 3 3/8  | 7/8   | 9/16    | 7 5/8  | 3      | 6 1/8  | 4        | 3 1/2   | 2 7/8  | 5 15/16  | 4      | 10 1/4   | 4 3/16  | 5      | 1 3/4 | 3 1/8   | 7/8   | 1 7/8   | 3/16 x 3/32 x 1 13/16 | 1.9385/1.9405 | 1/2 x 1/4    |
| SMBK-35   | 3 1/2 | 3/8-16   | 3 3/8  | 4 13/16 | 9 1/4  | 3 7/8  | 1 1/8 | 1 1/16  | 9      | 3 3/4  | 7      | 4 1 1/16 | 4 1/8   | 3 1/8  | 6 5/8    | 4 3/4  | 11 11/16 | 5       | 5 3/4  | 2 1/4 | 3 3/16  | 1     | 2       | 1/4 x 1/8 x 1 15/16   | 2.1885/2.1905 | 1/2 x 1/4    |
| SMBK-40   | 4     | 3/8-16   | 4      | 5 3/8   | 10 3/8 | 4 1/4  | 1 1/2 | 1 3/16  | 10 1/2 | 4 3/8  | 7 3/4  | 5 5/16   | 4 11/16 | 3 1/2  | 7 3/4    | 5 7/16 | 13 3/8   | 5 1/2   | 6 7/16 | 2 1/2 | 3 3/8   | 1 1/8 | 2 1/16  | 1/4 x 1/8 x 2         | 2.438 / 2.440 | 5/8 x 5/16   |
| SMBK-50   | 5     | 1/2-13   | 4 5/8  | 7 1/2   | 11 1/2 | 4 3/4  | 1 3/4 | 1 3/16  | 12     | 4 7/8  | 8 3/4  | 5 7/8    | 5 1/4   | 4 3/16 | 8 5/8    | 6 3/16 | 17 1/8   | 6 15/16 | 7      | 3     | 4 7/16  | 1 3/8 | 2 5/16  | 5/16 x 5/32 x 2 1/4   | 2.938 / 2.940 | 3/4 x 3/8    |
| SMBK-60   | 6     | 1/2-13   | 5      | 8 5/8   | 13 1/4 | 5 1/4  | 1 1/2 | 1 5/16  | 13     | 5 1/4  | 10 1/4 | 6 1/2    | 5 3/4   | 4 3/4  | 10 1/8   | 7 7/16 | 19 5/8   | 7 3/16  | 7 3/4  | 3     | 5       | 1 1/2 | 2 11/16 | 3/8 x 3/16 x 2 5/8    | 3.438 / 3.440 | 7/8 x 7/16   |
| SMBK-70   | 7     | 1/2-13   | 5 3/8  | 9 1/4   | 14 3/4 | 6      | 2     | 1 1/16  | 14     | 5 3/8  | 11 1/2 | 6 3/4    | 5 7/8   | 5 1/2  | 10 3/8   | 8 1/16 | 21 5/8   | 7 1/2   | 8 1/8  | 3 1/2 | 5       | 1 5/8 | 3 1/8   | 1/2 x 1/4 x 3 1/16    | 4.438 / 4.440 | 1 x 1/2      |
| SMBK-80   | 8     | 1/2-13   | 5 3/4  | 10 1/2  | 16 1/2 | 6 3/4  | 2 1/4 | 1 3/16  | 14 1/2 | 6      | 12 1/2 | 7 1/4    | 6 1/4   | 6 1/4  | 11 3/4   | 9      | 24 1/4   | 8 1/4   | 8 3/4  | 4     | 5       | 1 7/8 | 3 1/8   | 1/2 x 1/4 x 3 1/16    | 4.938 / 4.940 | 1 x 1/2      |
| SMBK-90   | 9     | 1/2-13   | 6 1/4  | 11 3/8  | 18 3/4 | 7 3/4  | 2 1/2 | 1 7/16  | 17 1/2 | 7 1/4  | 14 1/4 | 8 1/4    | 7 1/8   | 7      | 13 13/16 | 10     | 26 5/8   | 9 1/4   | 9 7/8  | 4     | 5 7/8   | 2 1/8 | 3 15/16 | 1/2 x 1/4 x 3 7/8     | 4.938 / 4.940 | 1 1/4 x 7/16 |
| SMBK-100  | 10    | 5/8-11   | 6 3/4  | 12 5/8  | 21     | 8 3/4  | 2 7/8 | 1 7/16  | 18     | 7 1/2  | 15 1/2 | 9 1/4    | 8       | 7 1/2  | 15 1/8   | 11 1/4 | 29 3/8   | 9 3/4   | 11     | 4 1/4 | 5 3/4   | 2 1/4 | 4       | 1/2 x 1/4 x 3 15/16   | 5.438 / 5.440 | 1 1/4 x 7/16 |
| SMBK-120  | 12    | 5/8-11   | 7 1/2  | 14 5/8  | 24 1/2 | 10 1/2 | 3 1/4 | 1 9/16  | 21     | 9      | 18     | 9 3/4    | 8 3/8   | 8      | 17       | 13     | 34 1/8   | 10 1/2  | 11 5/8 | 4 1/2 | 6 7/8   | 2 1/2 | 4 9/16  | 5/8 x 5/16 x 4 1/2    | 6.000 / 6.002 | 1 1/2 x 1/2  |
| SMBK-140  | 14    | 5/8-11   | 9 1/2  | 16 3/8  | 27 1/2 | 11 1/2 | 3     | 1 11/16 | 21 3/4 | 9 1/4  | 21     | 10 3/4   | 9       | 8      | 20 11/16 | 14 1/2 | 40 1/8   | 11 1/2  | 13     | 5     | 9 9/16  | 3     | 5 5/8   | 3/4 x 3/8 x 5 5/8     | 6.000 / 6.002 | 1 1/2 x 1/2  |
| SMBK-170  | 17    | 5/8-11   | 10 1/2 | 19 1/2  | 32     | 13 1/4 | 3 3/8 | 1 11/16 | 24     | 10 1/4 | 24     | 12 1/4   | 10 1/4  | 9 1/4  | 22 3/4   | 17 3/8 | 47       | 13 1/4  | 14 3/4 | 5 3/4 | 10 7/16 | 3 1/4 | 6 3/8   | 3/4 x 3/8 x 6 1/8     | 6.500 / 6.502 | 1 1/2 x 1/2  |
| SMBK-200  | 20    | 5/8-11   | 11 1/2 | 22 1/2  | 36     | 14 3/4 | 3 5/8 | 1 15/16 | 27     | 11 1/2 | 27 3/8 | 13 1/2   | 10 1/2  | 9 1/4  | 26       | 19 1/4 | 54       | 14 1/2  | 16     | 6 1/2 | 11      | 3 1/2 | 7       | 7/8 x 7/16 x 6 5/16   | 6.500 / 6.502 | 1 1/2 x 1/2  |

All dimensions are in inches. Use certified prints for construction. The input shaft may be rotated in either direction. Standard gear sets are cut with right hand threads giving relative shaft rotations as shown above. Shaft arrangements are shown above. Desired assembly should be

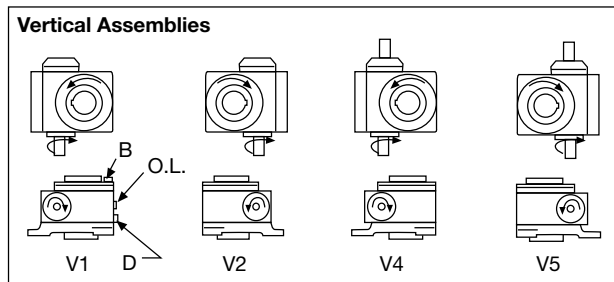
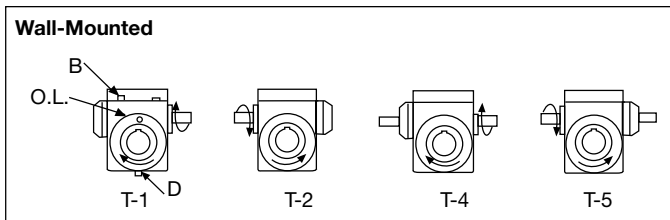
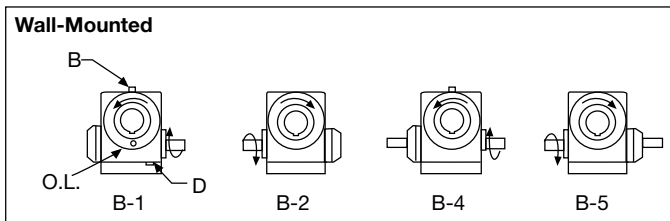
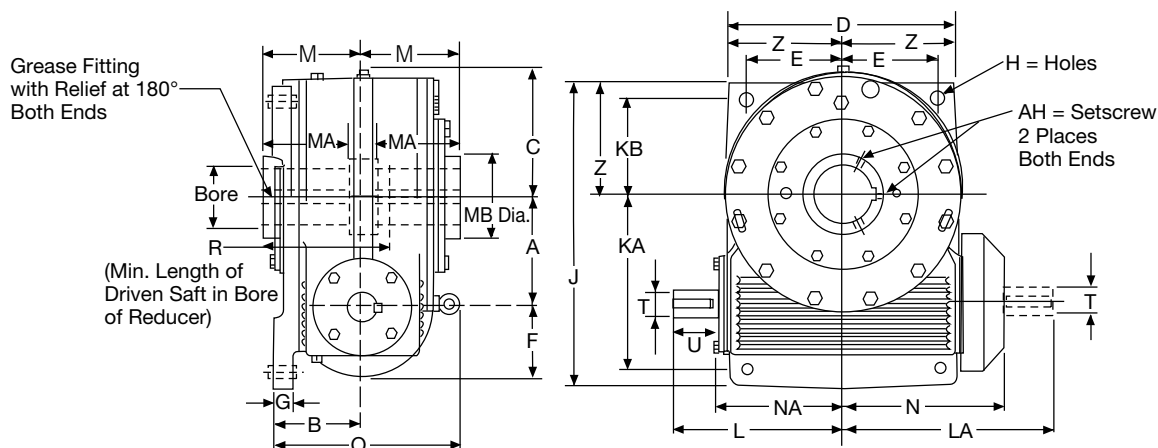
specified when ordering. Standard keys are furnished with units.

▲ Tolerances: 1 1/2" Diameter or Less = +.0000" -.0005"

Over 1 1/2" Diameter = +.000" -.001"

Low input speeds require special order instructions. See introductory section.

# Dimensions Type SMF • Wall-Mounted and Vertical



B = Breather D = Drain O.L. = Oil Level

A drywell is standard for vertical assemblies sizes 60-200 only.

| Unit Size | WT. LBS. | A     | AH     | B      | C       | D      | E      | F       | G     | H      | J      | KA     | KB     | L      | LA       | M       | MA      | MB     | N        | NA       | O       | R      | T▲    | U       | Keyway                | Bore            | Keyway       | Z       |
|-----------|----------|-------|--------|--------|---------|--------|--------|---------|-------|--------|--------|--------|--------|--------|----------|---------|---------|--------|----------|----------|---------|--------|-------|---------|-----------------------|-----------------|--------------|---------|
| SMF-30    | 75       | 3     | 1/4-20 | 3 1/2  | 4 1/4   | 7 1/8  | 3      | 2 5/8   | 3/4   | 9/16   | 10 1/8 | 6      | 3      | 6 1/8  | 7 13/16  | 4       | 3 1/2   | 2 7/8  | 5 5/16   | 4 3/16   | 7 11/16 | 5      | 7/8   | 1 7/8   | 3/16 x 3/32 x 1 13/16 | 1.9385 / 1.9405 | 1/2 x 1/4    | 3 9/16  |
| SMF-35    | 105      | 3 1/2 | 3/8-16 | 4 1/8  | 4 13/16 | 8 3/8  | 3 1/2  | 2 5/8   | 7/8   | 1 1/16 | 11 3/4 | 6 7/8  | 3 1/2  | 7      | 8 5/8    | 4 11/16 | 4 1/8   | 3 1/8  | 6 5/8    | 5        | 9 1/8   | 5 3/4  | 1     | 2       | 1/4 x 1/8 x 1 5/16    | 2.1885 / 2.1905 | 1/2 x 1/4    | 4 3/16  |
| SMF-40    | 170      | 4     | 3/8-16 | 5      | 5 3/8   | 9 1/4  | 3 7/8  | 3 1/4   | 1 1/8 | 1 1/16 | 13 1/8 | 7 5/8  | 3 7/8  | 7 3/4  | 9 13/16  | 5 5/16  | 4 11/16 | 3 1/2  | 7 3/4    | 5 11/16  | 10 1/2  | 6 7/16 | 1 1/8 | 2 1/16  | 1/4 x 1/8 x 2         | 2.438 / 2.440   | 5/8 x 3/16   | 4 5/8   |
| SMF-50    | 250      | 5     | 1/2-13 | 5 5/8  | 7 1/2   | 11 1/8 | 4 3/4  | 3 11/16 | 1 1/4 | 1 3/16 | 15 3/8 | 9      | 4 3/4  | 8 3/4  | 10 15/16 | 5 7/8   | 5 1/4   | 4 3/16 | 8 5/8    | 6 7/16   | 12 3/16 | 7      | 1 3/8 | 2 5/16  | 5/16 x 5/32 x 2 1/4   | 2.938 / 2.940   | 3/4 x 3/8    | 5 9/16  |
| SMF-60    | 370      | 6     | 1/2-13 | 6 1/4  | 8 5/8   | 13 3/8 | 5 3/4  | 4 1/8   | 1 3/8 | 1 3/16 | 18 1/8 | 10 1/2 | 5 3/4  | 10 1/4 | 12 5/8   | 6 1/2   | 5 3/4   | 4 3/4  | 10 1/16  | 7 3/4    | 13 7/16 | 7 3/4  | 1 1/2 | 2 11/16 | 3/8 x 3/16 x 2 5/8    | 3.438 / 3.440   | 7/8 x 7/16   | 6 11/16 |
| SMF-70    | 490      | 7     | 1/2-13 | 6 1/2  | 9 1/4   | 14 5/8 | 6 1/4  | 5 3/16  | 1 3/8 | 1 5/16 | 20 1/8 | 11 3/4 | 6 1/4  | 11 1/2 | 13 7/8   | 6 3/4   | 5 7/8   | 5 1/2  | 10 3/4   | 8 5/8    | 14      | 8 1/8  | 1 5/8 | 3 3/8   | 3/8 x 3/16 x 3 1/16   | 3.938 / 3.940   | 1 x 1/2      | 7 5/16  |
| SMF-80    | 610      | 8     | 1/2-13 | 6 5/8  | 10 1/2  | 16 1/2 | 7      | 5 3/16  | 1 1/2 | 1 1/16 | 22 1/4 | 12 3/4 | 7      | 12 1/2 | 15 1/2   | 7 1/4   | 6 1/4   | 6 1/4  | 11 3/4   | 9 3/8    | 14 7/8  | 8 3/4  | 1 7/8 | 3 3/8   | 1/2 x 1/4 x 3 1/16    | 4.438 / 4.440   | 1 x 1/2      | 8 1/4   |
| SMF-90    | 780      | 9     | 1/2-13 | 7 3/4  | 11 3/8  | 18 1/2 | 7 7/8  | 6 3/16  | 1 5/8 | 1 3/16 | 25     | 14 3/8 | 7 7/8  | 14 1/4 | 17 3/4   | 8 1/4   | 7 1/8   | 7      | 13 13/16 | 10 3/8   | 17      | 9 7/8  | 2 1/8 | 3 15/16 | 1/2 x 1/4 x 3 7/8     | 4.938 / 4.940   | 1 1/4 x 7/16 | 9 1/4   |
| SMF-100   | 1000     | 10    | 5/8-11 | 8 3/4  | 12 5/8  | 20 3/4 | 9      | 6 3/16  | 1 3/4 | 1 3/16 | 27 1/4 | 15 1/2 | 9      | 15 1/2 | 18 13/16 | 9 1/4   | 8       | 7 1/2  | 15 1/8   | 11 11/16 | 18 1/2  | 11     | 2 1/4 | 4       | 1/2 x 1/4 x 3 5/16    | 5.438 / 5.440   | 1 1/4 x 7/16 | 10 3/8  |
| SMF-120   | 1600     | 12    | 5/8-11 | 9      | 14 5/8  | 24 1/4 | 10 3/8 | 6 3/16  | 2 1/8 | 1 5/16 | 32 3/8 | 18 1/2 | 10 3/8 | 18     | 21 9/16  | 9 3/4   | 8 3/4   | 8      | 17       | 13 7/16  | 19 1/2  | 11 5/8 | 2 1/2 | 4 5/8   | 5/8 x 5/16 x 4 1/2    | 6.000 / 6.002   | 1 1/2 x 1/2  | 12 1/8  |
| SMF-140   | 2400     | 14    | 5/8-11 | 10 1/4 | 16 5/8  | 27 1/2 | 12     | 7 11/16 | 2 1/4 | 1 5/16 | 37 1/2 | 22     | 12     | 21     | 26 3/8   | 10 3/4  | 9       | 8      | 20 11/16 | 15 1/2   | 21 3/4  | 13     | 3     | 5 5/8   | 3/4 x 3/8 x 5 5/8     | 6.000 / 6.002   | 1 1/2 x 1/2  | 13 3/4  |
| SMF-170   | 3600     | 17    | 5/8-11 | 11 1/2 | 19 1/2  | 33     | 14 1/2 | 8 3/16  | 2 1/2 | 1 9/16 | 44 3/4 | 26 1/4 | 14 1/2 | 24     | 29       | 12 1/4  | 10 1/4  | 9 1/4  | 22 3/4   | 17 15/16 | 24 3/4  | 14 3/4 | 3 1/4 | 6 3/16  | 3/4 x 3/8 x 6 1/8     | 6.500 / 6.502   | 1 1/2 x 1/2  | 16 1/2  |
| SMF-200   | 5000     | 20    | 5/8-11 | 12 3/4 | 22 1/2  | 39     | 17     | 10 1/4  | 2 3/4 | 1 9/16 | 53     | 31     | 17     | 27 3/8 | 33       | 13 1/2  | 11 1/2  | 9 1/4  | 26       | 20 3/16  | 27 1/4  | 16     | 3 1/2 | 7       | 7/8 x 7/16 x 6 15/16  | 6.500 / 6.502   | 1 1/2 x 1/2  | 19 1/2  |

All dimensions are in inches. Use certified prints for construction. The input shaft may be rotated in either direction. Standard gear sets are cut with right hand threads giving relative shaft rotations as shown above. Shaft arrangements are shown above. Desired assembly should be

specified when ordering. Standard keys are furnished with units.

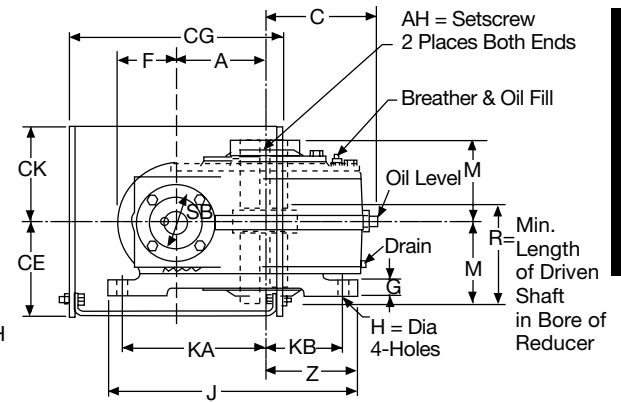
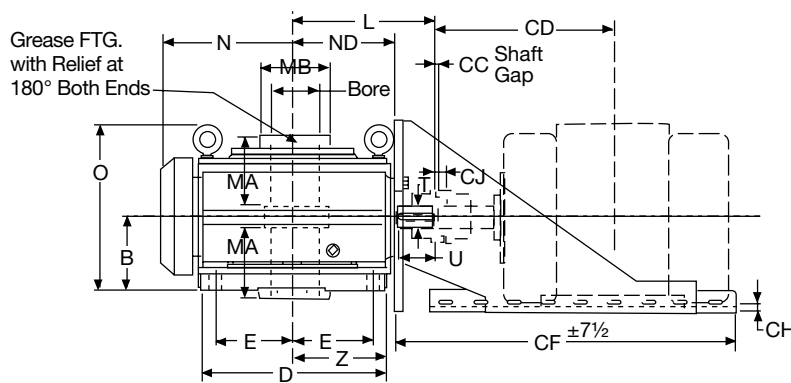
▲ Tolerances: 1 1/2" Diameter or Less = +.0000" -.0005"

Over 1 1/2" Diameter = +.000" -.001"

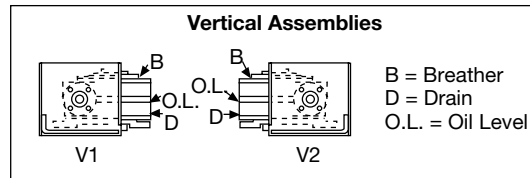
Low input speeds require special order instructions. See introductory section.



# Dimensions for “Sugar Scoop” Motor Mounts for Type SMFK



Single Reduction  
Speed Reducers



A drywell is standard for vertical assemblies sizes 60-200 only.

| Motor Frame Size | 30  | 35  | 40  | 50  | 60  | 70     | 80     | 90     | 100    | 120   | 140   | 170   | 200   |
|------------------|-----|-----|-----|-----|-----|--------|--------|--------|--------|-------|-------|-------|-------|
| 56T              | 3/8 | 3/8 | 5/8 |     |     |        |        |        |        |       |       |       |       |
| 143T             | 3/8 | 3/8 | 5/8 | 5/8 |     |        |        |        |        |       |       |       |       |
| 145T             | 3/8 | 3/8 | 5/8 | 5/8 |     |        |        |        |        |       |       |       |       |
| 182T             | 5/8 | 5/8 | 5/8 | 5/8 | 5/8 | 3/4    | 7/8    |        |        |       |       |       |       |
| 184T             | 5/8 | 5/8 | 5/8 | 5/8 | 5/8 | 3/4    | 7/8    |        |        |       |       |       |       |
| 213T             | 5/8 | 5/8 | 5/8 | 3/4 | 3/4 | 3/4    | 7/8    | 1 5/16 |        |       |       |       |       |
| 215T             | 5/8 | 5/8 | 5/8 | 3/4 | 3/4 | 3/4    | 7/8    | 1 5/16 | 1 5/16 |       |       |       |       |
| 254T             |     |     |     | 7/8 | 7/8 | 7/8    | 7/8    | 1 5/16 | 1 5/16 | 1 1/4 |       |       |       |
| 256T             |     |     |     | 7/8 | 7/8 | 7/8    | 7/8    | 1 5/16 | 1 5/16 | 1 1/4 |       |       |       |
| 284T             |     |     |     |     | 7/8 | 7/8    | 7/8    | 1 5/16 | 1 5/16 | 2 1/8 |       |       |       |
| 286T             |     |     |     |     | 7/8 | 7/8    | 7/8    | 1 5/16 | 1 5/16 | 2 1/8 |       |       |       |
| 324T             |     |     |     |     |     | 1 5/16 | 1 5/16 | 1 5/16 | 1 5/16 | 1 1/4 | 2 1/8 | 2 1/8 |       |
| 326T             |     |     |     |     |     | 1 5/16 | 1 5/16 | 1 5/16 | 1 5/16 | 1 1/4 | 2 1/8 | 2 1/8 |       |
| 364T             |     |     |     |     |     |        | 1 5/16 | 1 5/16 | 1 5/16 | 1 1/4 | 2 1/8 | 2 1/8 | 2 1/8 |
| 365T             |     |     |     |     |     |        |        | 1 5/16 | 1 5/16 | 1 1/4 | 2 1/8 | 2 1/8 | 2 1/8 |
| 404T             |     |     |     |     |     |        |        |        | 1 7/8  | 1 7/8 | 2 1/8 | 2 1/8 | 2 1/8 |
| 405T             |     |     |     |     |     |        |        |        |        | 1 7/8 | 2 1/8 | 2 1/8 | 2 1/8 |

| Motor Frame Size | CC  | CD     | CE     | ±7 1/2 | CG      | CH   | CK     |
|------------------|-----|--------|--------|--------|---------|------|--------|
| 56T              | 1/8 | 6 1/8  | 4 7/8  | 25     | 12 5/8  | 3/16 | 4 7/8  |
| 143T             | 1/8 | 6 1/2  | 4 7/8  | 25     | 12 5/8  | 3/16 | 4 7/8  |
| 145T             | 1/8 | 7      | 4 7/8  | 25     | 12 5/8  | 3/16 | 4 7/8  |
| 182T             | 1/8 | 7 3/4  | 4 7/8  | 25     | 12 5/8  | 3/16 | 4 7/8  |
| 184T             | 1/8 | 8 1/4  | 4 7/8  | 25     | 12 5/8  | 3/16 | 4 7/8  |
| 213T             | 1/8 | 9 5/8  | 5 9/16 | 28     | 12 3/4  | 1/4  | 5      |
| 215T             | 1/8 | 10 3/8 | 5 9/16 | 28     | 12 3/4  | 1/4  | 5      |
| 254T             | 1/8 | 12 3/8 | 6 5/8  | 31     | 15      | 5/16 | 6 5/8  |
| 256T             | 1/8 | 13 1/4 | 6 5/8  | 31     | 15      | 5/16 | 6 5/8  |
| 284T             | 1/8 | 14 1/8 | 7 5/8  | 31     | 17      | 5/16 | 7 5/8  |
| 286T             | 1/8 | 14 7/8 | 7 5/8  | 31     | 17      | 5/16 | 7 5/8  |
| 324T             | 1/8 | 15 3/4 | 8 1/2  | 35 1/4 | 19 1/16 | 3/8  | 8 1/2  |
| 326T             | 1/8 | 16 1/2 | 8 1/2  | 35 1/4 | 19 1/16 | 3/8  | 8 1/2  |
| 364T             | 1/8 | 17 3/8 | 9 1/2  | 35 1/4 | 21 5/16 | 3/8  | 9 1/2  |
| 365T             | 1/8 | 17 7/8 | 9 1/2  | 35 1/4 | 21 5/16 | 3/8  | 9 1/2  |
| 404T             | 1/8 | 20     | 10 1/2 | 35 1/4 | 23 5/16 | 3/8  | 10 1/2 |
| 405T             | 1/8 | 20 3/4 | 10 1/2 | 35 1/4 | 23 5/16 | 3/8  | 10 1/2 |

| Unit Size | A     | AH     | B      | C       | D      | E      | F        | G     | H      | J      | KA     | KB     | L      | M        | MA       | MB     | N         | ND     | O       | R      | SB      | T▲    | U        | Keyway                | Bore            | Keyway       | Z        |
|-----------|-------|--------|--------|---------|--------|--------|----------|-------|--------|--------|--------|--------|--------|----------|----------|--------|-----------|--------|---------|--------|---------|-------|----------|-----------------------|-----------------|--------------|----------|
| SMFK-30   | 3     | 1/4-20 | 3 1/2  | 4 1/4   | 7 1/8  | 3      | 2 5/8    | 3/4   | 9/16   | 10 1/8 | 6      | 3      | 6 1/8  | 4        | 3 1/2    | 27/8   | 5 1/16    | 4      | 7 11/16 | 5      | 3 1/8   | 7/8   | 17/8     | 3/16 x 3/32 x 1 13/16 | 1.9385 / 1.9405 | 1/2 x 1/4    | 3 9/16   |
| SMFK-35   | 3 1/2 | 3/8-16 | 4 1/8  | 4 13/16 | 8 3/8  | 3 1/2  | 2 5/8    | 7/8   | 1 1/16 | 11 3/4 | 6 7/8  | 3 1/2  | 7      | 4 1 1/16 | 4 1/8    | 3 1/8  | 6 5/8     | 4 3/4  | 9 1/8   | 5 3/4  | 3 3/16  | 1     | 2        | 1/4 x 1/8 x 1 15/16   | 2.1885 / 2.1905 | 1/2 x 1/4    | 4 3/16   |
| SMFK-40   | 4     | 3/8-16 | 5      | 5 3/8   | 9 1/4  | 3 7/8  | 3 1/4    | 1 1/8 | 1 1/16 | 13 1/8 | 7 5/8  | 3 7/8  | 7 3/4  | 5 5/16   | 4 1 1/16 | 3 1/2  | 7 3/4     | 5 7/16 | 10 1/2  | 6 7/16 | 3 9/16  | 1 1/8 | 2 1/16   | 1/4 x 1/8 x 2         | 2.438 / 2.440   | 5/8 x 5/16   | 4 5/8    |
| SMFK-50   | 5     | 1/2-13 | 5 5/8  | 7 1/2   | 11 1/8 | 4 3/4  | 3 1 1/16 | 1 1/4 | 1 3/16 | 15 3/8 | 9      | 4 3/4  | 8 3/4  | 5 7/8    | 5 1/4    | 4 3/16 | 8 5/8     | 6 3/16 | 12 9/16 | 7      | 4 7/16  | 1 3/8 | 2 5/16   | 5/16 x 3/32 x 2 1/4   | 2.938 / 2.940   | 3/4 x 3/8    | 5 9/16   |
| SMFK-60   | 6     | 1/2-13 | 6 1/4  | 8 5/8   | 13 3/8 | 5 3/4  | 4 1/8    | 1 3/8 | 1 3/16 | 18 1/8 | 10 1/2 | 5 3/4  | 10 1/4 | 6 1/2    | 5 3/4    | 4 3/4  | 10 5/8    | 7 7/16 | 13 7/16 | 7 3/4  | 5       | 1 1/2 | 2 1 1/16 | 3/8 x 3/16 x 2 3/8    | 3.438 / 3.440   | 7/8 x 7/16   | 6 1 1/16 |
| SMFK-70   | 7     | 1/2-13 | 6 1/2  | 9 1/4   | 14 5/8 | 6 1/4  | 5 3/16   | 1 3/8 | 1 5/16 | 20 1/8 | 11 3/4 | 6 1/4  | 11 1/2 | 6 3/4    | 5 7/8    | 5 1/2  | 10 3/4    | 8 1/16 | 14      | 8 1/8  | 5       | 1 3/8 | 3 1/8    | 3/8 x 3/16 x 3 1/16   | 3.938 / 3.940   | 1 x 1/2      | 7 5/16   |
| SMFK-80   | 8     | 1/2-13 | 6 5/8  | 10 1/2  | 16 1/2 | 7      | 5 3/16   | 1 1/2 | 1 1/16 | 22 1/4 | 12 3/4 | 7      | 12 1/2 | 7 1/4    | 6 1/4    | 6 1/4  | 11 3/4    | 9      | 14 7/8  | 8 3/4  | 5 1/8   | 1 7/8 | 3 1/8    | 1/2 x 1/4 x 3 1/16    | 4.438 / 4.440   | 1 x 1/2      | 8 1/4    |
| SMFK-90   | 9     | 1/2-13 | 7 3/4  | 11 3/8  | 18 1/2 | 7 7/8  | 6 3/16   | 1 5/8 | 1 3/16 | 25     | 14 3/8 | 7 7/8  | 14 1/4 | 8 1/4    | 7 1/8    | 7      | 13 13/16  | 10     | 17      | 9 7/8  | 5 7/8   | 2 1/8 | 3 15/16  | 1/2 x 1/4 x 3 7/8     | 4.938 / 4.940   | 1 1/4 x 7/16 | 9 1/4    |
| SMFK-100  | 10    | 5/8-11 | 8 3/4  | 12 5/8  | 20 3/4 | 9      | 6 3/16   | 1 3/4 | 1 3/16 | 27 1/4 | 15 1/2 | 9      | 15 1/2 | 9 1/4    | 8        | 7 1/2  | 15 1/8    | 11 1/4 | 18 1/2  | 11     | 5 3/4   | 2 1/4 | 4        | 1/2 x 1/4 x 3 15/16   | 5.438 / 5.440   | 1 1/4 x 7/16 | 10 3/8   |
| SMFK-120  | 12    | 5/8-11 | 9      | 14 5/8  | 24 1/2 | 10 3/8 | 6 3/16   | 2 1/8 | 1 5/16 | 32 3/8 | 18 1/2 | 10 3/8 | 18     | 9 3/4    | 8 3/8    | 8      | 17        | 13     | 19 1/2  | 11 5/8 | 6 7/8   | 2 1/2 | 4 9/16   | 5/8 x 5/16 x 4 1/2    | 6.000 / 6.002   | 1 1/2 x 1/2  | 12 1/8   |
| SMFK-140  | 14    | 5/8-11 | 10 1/4 | 16 5/8  | 27 1/2 | 12     | 7 1 1/16 | 2 1/4 | 1 5/16 | 37 1/2 | 22     | 12     | 21     | 10 3/4   | 9        | 8      | 20 1 1/16 | 14 1/2 | 21 3/4  | 13     | 9 9/16  | 3     | 5 5/8    | 3/4 x 3/8 x 5 5/8     | 6.000 / 6.002   | 1 1/2 x 1/2  | 13 3/4   |
| SMFK-170  | 17    | 5/8-11 | 11 1/2 | 19 1/2  | 33     | 14 1/2 | 8 3/16   | 2 1/2 | 1 9/16 | 44 3/4 | 26 1/4 | 14 1/2 | 24     | 12 1/4   | 10 1/4   | 9 1/4  | 22 3/4    | 17 3/8 | 24 3/4  | 14 3/4 | 10 7/16 | 3 1/4 | 6 3/16   | 3/4 x 3/8 x 6 1/8     | 6.500 / 6.502   | 1 1/2 x 1/2  | 16 1/2   |
| SMFK-200  | 20    | 5/8-11 | 12 3/4 | 22 1/2  | 39     | 17     | 10 1/4   | 2 3/4 | 1 9/16 | 53     | 31     | 17     | 27 3/8 | 13 1/2   | 10 1/2   | 9 1/4  | 26        | 19 1/4 | 27 1/4  | 16     | 11      | 3 1/2 | 7        | 7/8 x 7/16 x 6 5/16   | 6.500 / 6.502   | 1 1/2 x 1/2  | 19 1/2   |

All dimensions are in inches. Use certified prints for construction. The input shaft may be rotated in either direction. Standard gear sets are cut with right hand threads giving relative shaft rotations as shown above. Shaft arrangements are shown above. Desired assembly should be

specified when ordering. Standard keys are furnished with units.

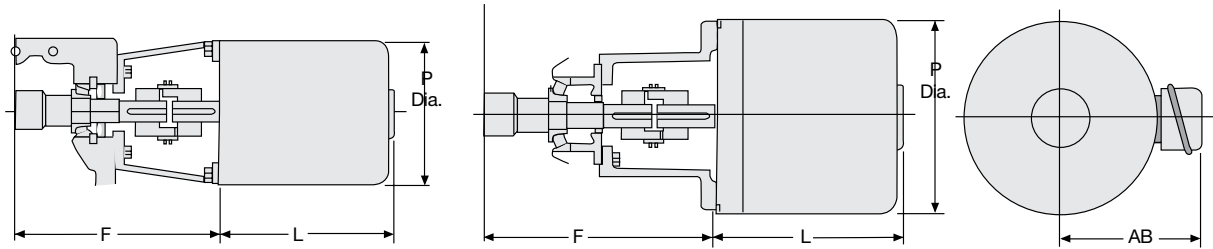
▲ Tolerances: 1 1/2" Diameter or Less = +.0000" -.0005"

Over 1 1/2" Diameter = +.000" -.001"

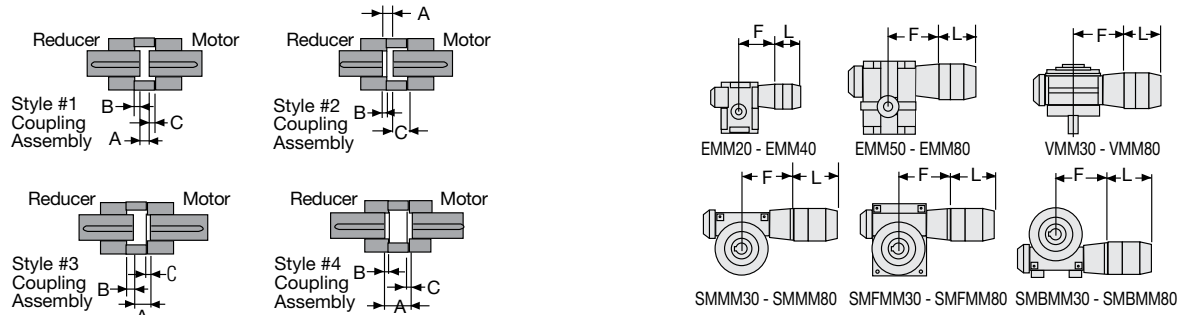
Low input speeds require special order instructions. See introductory section.



# Single Reduction Worm Gear Speed Reducers - Motorized



## Coupling Assemblies All Unit Types



Dimensions - inches single worm reduction units with "C" flange motor. Mounting Dimensions for type EMM - 20 to 40 only.

| T.E.F.G. Motor |         |         |        |          | Unit Size E-20 |            |      |      |      |   | Unit Size E-25 |            |      |      |      |        | Unit Size E-30 |            |        |      |      |         | Unit Size E-35 |            |      |      |      |         | Unit Size E-40 |            |      |      |      |          |
|----------------|---------|---------|--------|----------|----------------|------------|------|------|------|---|----------------|------------|------|------|------|--------|----------------|------------|--------|------|------|---------|----------------|------------|------|------|------|---------|----------------|------------|------|------|------|----------|
| Motor Frame    | AB      | L       | P      | WT. LBS. | CPLG size      | Style Assy | A    | B    | C    | F | CPLG size      | Style Assy | A    | B    | C    | F      | CPLG size      | Style Assy | A      | B    | C    | F       | CPLG size      | Style Assy | A    | B    | C    | F       | CPLG size      | Style Assy | A    | B    | C    | F        |
| 56C            |         | 11 7/16 | 7 1/8  | 36       | L-090          | 2          | 7/16 | 1/8  | 3/16 | 7 | L-090          | 4          | 5/8  | 1/16 | 1/16 | 8 1/16 | L-095          | 4          | 3/4    | 1/8  | 1/8  | 8 15/16 | L-095          | 1          | 1/2  | 0    | 0    | 9 9/16  | L-099          | 1          | 1/2  | 1/8  | 1/8  | 10 9/16  |
| 56CZ           |         | 11 7/16 | 7 1/8  | 36       | L-095          | 2          | 1/4  | 3/16 | 7/16 | 7 | L-095          | 1          | 7/16 | 1/16 | 0    | 8 1/16 | L-095          | 4          | 9/16   | 1/32 | 1/32 | 8 15/16 | L-095          | 2          | 5/16 | 0    | 3/16 | 9 9/16  | L-099          | 1          | 5/16 | 7/32 | 7/32 | 10 9/16  |
| 143TC          | 6       | 10 3/8  | 7 1/8  | 30       | L-095          | 2          | 3/8  | 1/4  | 3/8  | 7 | L-095          | 4          | 9/16 | 1/32 | 1/32 | 8 1/16 | L-095          | 4          | 1 1/16 | 3/32 | 3/32 | 8 15/16 | L-095          | 1          | 7/16 | 1/32 | 1/32 | 9 9/16  | L-099          | 1          | 7/16 | 5/32 | 5/32 | 10 9/16  |
| 145TC          | 6       | 11 3/8  | 7 1/8  | 34       | L-095          | 2          | 3/8  | 1/4  | 3/8  | 7 | L-095          | 4          | 9/16 | 1/32 | 1/32 | 8 1/16 | L-095          | 4          | 1 1/16 | 3/32 | 3/32 | 8 15/16 | L-095          | 1          | 7/16 | 1/32 | 1/32 | 9 9/16  | L-099          | 1          | 7/16 | 5/32 | 5/32 | 10 9/16  |
| 182TC          | 7       | 12 3/4  | 9 3/16 | 56       |                |            |      |      |      |   |                |            |      |      |      |        | L-099          | 1          | 9/16   | 3/16 | 0    | 9 9/16  | L-099          | 3          | 5/16 | 7/16 | 0    | 9 15/16 | L-099          | 1          | 5/16 | 7/32 | 7/32 | 10 15/16 |
| 184TC          | 7       | 13 3/4  | 9 3/16 | 70       |                |            |      |      |      |   |                |            |      |      |      |        | L-099          | 1          | 9/16   | 3/16 | 0    | 9 9/16  | L-099          | 3          | 5/16 | 7/16 | 0    | 9 15/16 | L-099          | 1          | 5/16 | 7/32 | 7/32 | 10 15/16 |
| 213TC          | 8 13/16 | 15 3/8  | 11 1/4 | 141      |                |            |      |      |      |   |                |            |      |      |      |        | L-100          | 2          | 7/16   | 0    | 5/16 | 9 9/16  | L-100          | 1          | 3/16 | 1/16 | 1/2  | 9 15/16 | L-100          | 2          | 3/16 | 0    | 9/16 | 10 15/16 |
| 215TC          | 8 13/16 | 16 7/8  | 11 1/4 | 176      |                |            |      |      |      |   |                |            |      |      |      |        | L-100          | 2          | 7/16   | 0    | 5/16 | 9 9/16  | L-100          | 1          | 3/16 | 1/16 | 1/2  | 9 15/16 | L-100          | 2          | 3/16 | 0    | 9/16 | 10 15/16 |
| 254TC          | 10 1/16 | 18 9/16 | 13 1/2 | 252      |                |            |      |      |      |   |                |            |      |      |      |        |                |            |        |      |      |         |                |            |      |      |      |         |                |            |      |      |      |          |
| 256TC          | 10 1/16 | 20 5/16 | 13 1/2 | 302      |                |            |      |      |      |   |                |            |      |      |      |        |                |            |        |      |      |         |                |            |      |      |      |         |                |            |      |      |      |          |

Dimensions- inches single worm reduction unit with "C" flange motor.

Mounting dimensions for type VMM 30-80, SMBMM 30-80, SMFMM 30-80, SMMM 30-80, EMM 50-80.

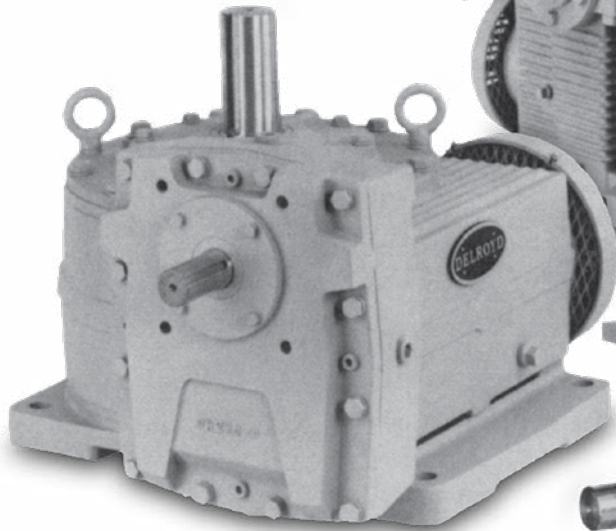
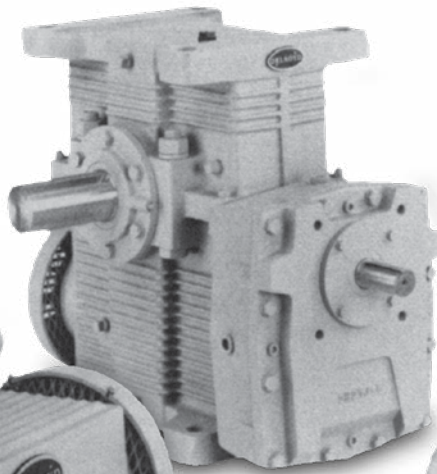
| Unit Size 30 |            |      |      |      |         | Unit Size 35 |            |      |      |      |         | Unit Size 40 |            |      |      |     |        | Unit Size 50 |            |       |     |     |        |
|--------------|------------|------|------|------|---------|--------------|------------|------|------|------|---------|--------------|------------|------|------|-----|--------|--------------|------------|-------|-----|-----|--------|
| CPLG size    | Style Assy | A    | B    | C    | F       | CPLG size    | Style Assy | A    | B    | C    | F       | CPLG size    | Style Assy | A    | B    | C   | F      | CPLG size    | Style Assy | A     | B   | C   | F      |
| L-095        | 2          | 5/8  | 1/8  | 0    | 8 13/16 | L-095        | 1          | 1/2  | 0    | 0    | 9 9/16  | L-099        | 1          | 7/16 | 5/16 | 0   | 10 1/4 |              |            |       |     |     |        |
| L-095        | 3          | 7/16 | 1/16 | 0    | 8 13/16 | L-095        | 3          | 5/16 | 3/16 | 0    | 9 9/16  | L-099        | 1          | 1/4  | 1/2  | 0   | 10 1/4 |              |            |       |     |     |        |
| L-095        | 2          | 9/16 | 1/16 | 0    | 8 13/16 | L-095        | 3          | 7/16 | 1/16 | 0    | 9 9/16  | L-099        | 1          | 3/8  | 3/8  | 0   | 10 1/4 | L-100        | 1          | 1/8   | 5/8 | 0   | 11     |
| L-095        | 2          | 9/16 | 1/16 | 0    | 8 13/16 | L-095        | 3          | 7/16 | 1/16 | 0    | 9 9/16  | L-099        | 1          | 1/4  | 1/2  | 0   | 10 1/4 | L-100        | 1          | 1/8   | 5/8 | 0   | 11     |
| L-099        | 2          | 7/16 | 0    | 5/16 | 9 3/16  | L-099        | 2          | 5/16 | 0    | 7/16 | 9 15/16 | L-099        | 1          | 1/4  | 1/2  | 0   | 10 5/8 | L-100        | 4          | 1 1/4 | 1/4 | 1/4 | 12 5/8 |
| L-099        | 2          | 7/16 | 0    | 5/16 | 9 3/16  | L-099        | 2          | 5/16 | 0    | 7/16 | 9 15/16 | L-099        | 1          | 1/4  | 1/2  | 0   | 10 5/8 | L-100        | 4          | 1 1/4 | 1/4 | 1/4 | 12 5/8 |
| L-100        | 2          | 5/16 | 0    | 7/16 | 9 9/16  | L-100        | 2          | 3/16 | 0    | 9/16 | 10 5/16 | L-100        | 2          | 1/8  | 0    | 5/8 | 11     | L-110        | 1          | 3/4   | 1/8 | 0   | 12 5/8 |
| L-100        | 2          | 5/16 | 0    | 7/16 | 9 9/16  | L-100        | 2          | 3/16 | 0    | 9/16 | 10 5/16 | L-100        | 2          | 1/8  | 0    | 5/8 | 11     | L-110        | 1          | 3/4   | 1/8 | 0   | 12 5/8 |
|              |            |      |      |      |         |              |            |      |      |      |         |              |            |      |      |     |        | L-150        | 2          | 1/8   | 0   | 7/8 | 12 5/8 |
|              |            |      |      |      |         |              |            |      |      |      |         |              |            |      |      |     |        | L-150        | 2          | 1/8   | 0   | 7/8 | 12 5/8 |

| Unit Size 60 |            |         |      |     |          | Unit Size 70 |            |        |      |     |         | Unit Size 80 |            |       |      |      |        |
|--------------|------------|---------|------|-----|----------|--------------|------------|--------|------|-----|---------|--------------|------------|-------|------|------|--------|
| CPLG size    | Style Assy | A       | B    | C   | F        | CPLG size    | Style Assy | A      | B    | C   | F       | CPLG size    | Style Assy | A     | B    | C    | F      |
| L-110        | 4          | 1 15/16 | 9/16 | 1/2 | 14 13/16 | L-110        | 2          | 1 5/16 | 7/16 | 0   | 15 7/16 | L-150        | 2          | 1 1/4 | 1/4  | 0    | 16 3/8 |
| L-110        | 4          | 1 15/16 | 9/16 | 1/2 | 14 13/16 | L-110        | 2          | 1 5/16 | 7/16 | 0   | 15 7/16 | L-150        | 2          | 1 1/4 | 1/4  | 0    | 16 3/8 |
| L-110        | 4          | 1 7/16  | 5/16 | 1/4 | 14 13/16 | L-110        | 1          | 1 3/16 | 1/16 | 0   | 15 7/16 | L-150        | 1          | 3/4   | 1/4  | 0    | 16 3/8 |
| L-110        | 4          | 1 7/16  | 5/16 | 1/4 | 14 13/16 | L-110        | 1          | 1 3/16 | 1/16 | 0   | 15 7/16 | L-150        | 1          | 3/4   | 1/4  | 0    | 16 3/8 |
| L-150        | 1          | 1 3/16  | 3/16 | 0   | 14 13/16 | L-150        | 1          | 3/16   | 5/16 | 1/2 | 15 7/16 | L-150        | 1          | 1/8   | 7/16 | 7/16 | 16 3/8 |
| L-150        | 1          | 1 3/16  | 3/16 | 0   | 14 13/16 | L-150        | 1          | 3/16   | 5/16 | 1/2 | 15 7/16 | L-150        | 1          | 1/8   | 7/16 | 7/16 | 16 3/8 |

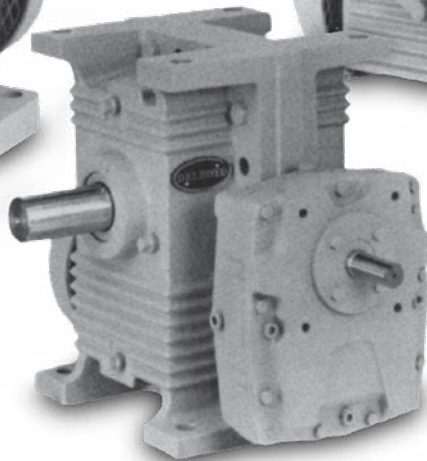
\*Motor dimensions will vary slightly with make of motors. Dimensions shown are for totally enclosed fan cooled motor. Open, drip proof or totally enclosed motors may be furnished.

# Delroyd Helical Worm Speed Reducers

**Type HE50-HE140**

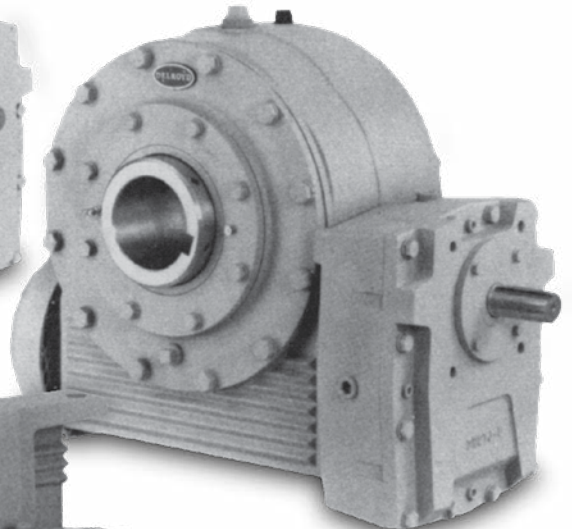


**Type HV35-HV200**



**Type HE35-HE40**

**Type HSM35-HSM200**



# Horsepower and Torque Ratings • Helical Worm

Helical Worm  
Speed Reducers

| INPUT<br>SPEED<br>(RPM) | Unit Size          | 35    | 40    | 50    | 60    | 70    | 80    | 90    | 100   | 120   | 140    | 170    | 200    |
|-------------------------|--------------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|--------|--------|--------|
|                         | Center Distance    | 3.5   | 4     | 5     | 6     | 7     | 8     | 9     | 10    | 12    | 14     | 17     | 20     |
|                         | Total Actual Ratio | 15.75 | 15.74 | 15.66 | 15.57 | 15.55 | 15.56 | 15.55 | 15.58 | 15.53 | 15.50  | 15.45  | 15.45  |
|                         | Ratio Combinations | 3.05  | 3.04  | 3.04  | 3.04  | 3.03  | 3.04  | 3.03  | 3.04  | 3.04  | 3.04   | 3.04   | 3.04   |
|                         |                    | 5-1/6 | 5-1/6 | 5-1/6 | 5-1/6 | 5-1/6 | 5-1/6 | 5-1/6 | 5-1/6 | 5-1/6 | 5-1/10 | 5-1/10 | 5-1/10 |
| 1750                    | Mech. Input HP     | 6.26  | 8.80  | 14.6  | 21.6  | 32.0  | 44.3  | 56.7  | 73.0  | 108   | 144    | 252    | 350    |
|                         | Out.Torq., in.lbs. | 3180  | 4450  | 7380  | 11000 | 16400 | 22600 | 29200 | 38000 | 56000 | 75500  | 131000 | 185000 |
|                         | Therm. Input HP    | 4.83  | 6.31  | 12.0  | 18.3  | 25.6  | 32.5  | 40.6  | 54.8  | 72.0  | 101    | 134    | 175    |
|                         | Output RPM         | 111   | 111   | 112   | 112   | 113   | 112   | 113   | 112   | 113   | 113    | 113    | 113    |
|                         | Efficiency%        | 89.6  | 89.2  | 89.6  | 90.8  | 91.5  | 91.0  | 92.0  | 92.8  | 92.7  | 93.9   | 93.4   | 95.0   |
| 1450                    | Mech. Input HP     | 546   | 7.95  | 13.0  | 19.5  | 29.2  | 41.0  | 52.2  | 68.2  | 98.5  | 125    | 218    | 288    |
|                         | Out.Torq., in.lbs. | 3330  | 4860  | 7880  | 11900 | 18000 | 25000 | 32800 | 42700 | 61200 | 79000  | 137000 | 180000 |
|                         | Therm. Input HP    | 4.33  | 5.54  | 10.6  | 16.0  | 22.6  | 28.6  | 35.6  | 48.4  | 63.6  | 82.5   | 121    | 156    |
|                         | Output RPM         | 92.1  | 92.1  | 92.6  | 93.1  | 93.2  | 93.2  | 93.2  | 93.1  | 93.4  | 93.5   | 93.9   | 93.9   |
|                         | Efficiency%        | 89.1  | 89.4  | 89.1  | 90.2  | 91.2  | 90.2  | 93.0  | 92.5  | 92.0  | 93.8   | 93.6   | 93.1   |
| 1150                    | Mech. Input HP     | 4.60  | 6.50  | 12.0  | 16.6  | 25.4  | 35.5  | 46.8  | 62.8  | 87.8  | 104    | 187    | 247    |
|                         | Out.Torq., in.lbs. | 3510  | 4940  | 9170  | 12700 | 19800 | 27400 | 36400 | 48500 | 68200 | 82000  | 147000 | 195000 |
|                         | Therm. Input HP    | 3.76  | 4.78  | 9.07  | 13.7  | 19.4  | 24.0  | 30.7  | 41.7  | 54.7  | 74.0   | 104    | 134    |
|                         | Output RPM         | 73.0  | 73.1  | 73.4  | 73.9  | 74.0  | 73.9  | 74.0  | 73.8  | 74.1  | 74.2   | 74.4   | 74.4   |
|                         | Efficiency%        | 88.4  | 88.1  | 89.0  | 89.7  | 91.5  | 90.5  | 91.3  | 90.4  | 91.3  | 92.8   | 92.8   | 93.2   |
| 865                     | Mech. Input HP     | 3.64  | 5.16  | 9.18  | 13.6  | 21.0  | 29.3  | 39.0  | 50.0  | 76.0  | 80.0   | 155    | 191    |
|                         | Out.Torq., in.lbs. | 3630  | 5150  | 9180  | 13600 | 21200 | 30000 | 40000 | 52000 | 77800 | 83300  | 160000 | 198000 |
|                         | Therm. Input HP    | 3.11  | 4.04  | 7.52  | 11.4  | 16.2  | 20.5  | 29.2  | 35.6  | 46.1  | 60.0   | 87.5   | 117.0  |
|                         | Output RPM         | 54.9  | 55.0  | 55.2  | 55.6  | 55.6  | 55.6  | 55.6  | 55.5  | 55.7  | 55.8   | 56.0   | 56.0   |
|                         | Efficiency %       | 86.9  | 87.0  | 87.6  | 88.1  | 89.1  | 90.3  | 90.5  | 91.6  | 90.5  | 92.2   | 91.7   | 92.1   |
| 575                     | Mech. Input HP     | 2.62  | 3.70  | 6.79  | 10.1  | 15.6  | 22.5  | 29.2  | 38.3  | 57.0  | 57.0   | 125    | 133    |
|                         | Out.Torq., in.lbs. | 3860  | 5480  | 10100 | 15000 | 23300 | 34600 | 44500 | 59700 | 88200 | 88200  | 194000 | 207000 |
|                         | Therm. Input HP    | 2.35  | 3.19  | 5.80  | 8.75  | 12.7  | 16.7  | 21.4  | 29.1  | 47.3  | 37.2   | 72.0   | 94.5   |
|                         | Output RPM         | 36.5  | 36.5  | 36.7  | 36.9  | 37.0  | 37.0  | 37.0  | 36.9  | 37.0  | 37.1   | 37.2   | 37.2   |
|                         | Efficiency%        | 85.3  | 85.8  | 86.7  | 87.0  | 87.6  | 90.2  | 89.4  | 91.3  | 90.9  | 91.1   | 91.6   | 91.9   |
| 300                     | Mech. Input HP     | 1.41  | 2.09  | 3.72  | 5.76  | 8.80  | 12.6  | 17.2  | 22.8  | 34.6  | 34.6   | 75.0   | 75.0   |
|                         | Out.Torq., in.lbs. | 3990  | 5830  | 10500 | 16100 | 24800 | 35500 | 48800 | 64900 | 98400 | 98400  | 217000 | 217000 |
|                         | Therm. Input HP    | 1.41  | 2.09  | 3.72  | 5.76  | 8.80  | 12.6  | 17.2  | 22.8  | 28.6  | 31.3   | 56.5   | 75.0   |
|                         | Output RPM         | 19.0  | 19.1  | 19.2  | 19.3  | 19.3  | 19.3  | 19.3  | 19.3  | 19.3  | 19.4   | 19.4   | 19.4   |
|                         | Efficiency %       | 85.5  | 84.4  | 85.8  | 85.5  | 86.3  | 86.2  | 86.8  | 87.0  | 87.2  | 87.3   | 89.1   | 89.1   |

| INPUT<br>SPEED<br>(RPM) | Unit Size          | 35    | 40    | 50    | 60    | 70    | 80    | 90    | 100   | 120    | 140    | 170    | 200    |
|-------------------------|--------------------|-------|-------|-------|-------|-------|-------|-------|-------|--------|--------|--------|--------|
|                         | Center Distance    | 3.5   | 4     | 5     | 6     | 7     | 8     | 9     | 10    | 12     | 14     | 17     | 20     |
|                         | Total Actual Ratio | 20.99 | 20.97 | 20.91 | 20.74 | 20.95 | 20.73 | 20.70 | 20.70 | 20.69  | 20.64  | 20.59  | 20.59  |
|                         | Ratio Combinations | 4.06  | 4.06  | 4.05  | 4.05  | 4.09  | 4.04  | 4.04  | 4.05  | 4.05   | 4.05   | 4.04   | 4.04   |
|                         |                    | 5-1/6 | 5-1/6 | 5-1/6 | 5-1/6 | 5-1/6 | 5-1/6 | 5-1/6 | 5-1/6 | 5-1/6  | 5-1/10 | 5-1/10 | 5-1/10 |
| 1750                    | Mech. Input HP     | 5.10  | 7.10  | 12.2  | 18.1  | 26.6  | 38.2  | 50.3  | 65.2  | 93.5   | 120    | 205    | 260    |
|                         | Out.Torq., in.lbs. | 3420  | 4780  | 8210  | 12200 | 18300 | 26000 | 34400 | 44500 | 64500  | 83800  | 142000 | 180000 |
|                         | Therm. Input HP    | 4.08  | 5.20  | 9.87  | 14.9  | 21.2  | 26.4  | 33.5  | 45.6  | 59.6   | 85.0   | 115    | 150    |
|                         | Output RPM         | 83.4  | 83.5  | 83.7  | 84.4  | 83.5  | 84.4  | 84.5  | 84.5  | 84.3   | 84.8   | 85.0   | 85.0   |
|                         | Efficiency%        | 88.7  | 89.1  | 89.4  | 90.2  | 91.2  | 91.2  | 91.7  | 91.6  | 92.3   | 93.9   | 93.4   | 93.4   |
| 1450                    | Mech. Input HP     | 4.41  | 6.20  | 10.8  | 16.0  | 24.4  | 33.2  | 44.2  | 57.0  | 85.1   | 100    | 180    | 220    |
|                         | Out.Torq., in.lbs. | 3550  | 4980  | 8700  | 13000 | 20000 | 27100 | 36300 | 46500 | 70000  | 83100  | 150000 | 185000 |
|                         | Therm. Input HP    | 3.63  | 4.61  | 8.75  | 13.1  | 18.7  | 23.2  | 29.5  | 40.6  | 52.8   | 74.0   | 103    | 134    |
|                         | Output RPM         | 69.1  | 69.1  | 69.3  | 69.9  | 69.2  | 69.9  | 70.0  | 70.0  | 69.8   | 70.3   | 70.4   | 70.4   |
|                         | Efficiency%        | 88.2  | 88.1  | 88.6  | 90.1  | 90.0  | 90.6  | 91.3  | 90.7  | 91.2   | 92.6   | 93.1   | 94.0   |
| 1150                    | Mech. Input HP     | 3.64  | 5.16  | 9.18  | 13.6  | 20.7  | 28.9  | 37.5  | 48.5  | 73.4   | 79.0   | 155    | 180    |
|                         | Out.Torq., in.lbs. | 3670  | 5200  | 9280  | 13800 | 21400 | 29600 | 39000 | 50500 | 76000  | 81800  | 160000 | 189000 |
|                         | Therm. Input HP    | 3.10  | 4.03  | 9.07  | 11.3  | 16.1  | 20.0  | 25.8  | 35.4  | 46.0   | 61.0   | 88.0   | 116    |
|                         | Output RPM         | 54.8  | 54.8  | 55.0  | 55.4  | 54.9  | 55.5  | 55.6  | 55.6  | 55.4   | 55.7   | 55.9   | 55.9   |
|                         | Efficiency%        | 87.6  | 87.7  | 88.2  | 89.3  | 90.0  | 90.2  | 91.7  | 91.8  | 91.0   | 91.5   | 91.5   | 93.1   |
| 865                     | Mech. Input HP     | 2.89  | 4.10  | 7.00  | 11.0  | 16.0  | 22.2  | 30.0  | 39.0  | 58.1   | 60.0   | 135    | 140    |
|                         | Out.Torq., in.lbs. | 3800  | 5400  | 9290  | 14600 | 21400 | 30200 | 41000 | 54400 | 83000  | 85700  | 185000 | 193000 |
|                         | Therm. Input HP    | 2.57  | 3.43  | 6.25  | 9.49  | 13.6  | 17.7  | 22.5  | 30.8  | 39.4   | 53.0   | 78.0   | 102    |
|                         | Output RPM         | 41.2  | 41.2  | 41.4  | 41.7  | 41.3  | 41.7  | 41.8  | 41.8  | 41.7   | 41.9   | 42.0   | 42.0   |
|                         | Efficiency %       | 86.0  | 86.2  | 87.1  | 87.8  | 87.6  | 90.1  | 90.6  | 92.5  | 94.4   | 95.0   | 91.3   | 91.9   |
| 575                     | Mech. Input HP     | 2.01  | 2.92  | 4.90  | 7.97  | 11.0  | 15.0  | 21.4  | 27.4  | 40.7   | 42.1   | 92.0   | 110    |
|                         | Out.Torq., in.lbs. | 3920  | 5720  | 9650  | 15700 | 22000 | 30200 | 43200 | 55700 | 84000  | 86900  | 187000 | 225000 |
|                         | Therm. Input HP    | 1.90  | 2.65  | 4.75  | 7.25  | 10.7  | 13.9  | 19.2  | 25.8  | 32.6   | 40.7   | 65.0   | 88.5   |
|                         | Output RPM         | 27.4  | 27.4  | 27.5  | 27.7  | 27.4  | 27.7  | 27.8  | 27.8  | 27.7   | 27.9   | 27.9   | 27.9   |
|                         | Efficiency%        | 84.8  | 85.2  | 85.9  | 86.7  | 87.1  | 88.6  | 89.0  | 89.6  | 90.7   | 91.2   | 90.1   | 90.6   |
| 300                     | Mech. Input HP     | 1.13  | 1.62  | 2.90  | 4.50  | 6.90  | 9.96  | 13.6  | 18.0  | 27.4   | 41.7   | 72.4   | 104    |
|                         | Out.Torq., in.lbs. | 4170  | 6000  | 10800 | 16800 | 26100 | 37500 | 51600 | 68600 | 105000 | 160000 | 266000 | 389000 |
|                         | Therm. Input HP    | 1.05  | 1.57  | 2.79  | 4.32  | 6.58  | 9.40  | 12.9  | 17.1  | 21.8   | 21.8   | 51.5   | 51.5   |
|                         | Output RPM         | 14.3  | 14.3  | 14.3  | 14.5  | 14.3  | 14.5  | 14.5  | 14.5  | 14.5   | 14.5   | 14.6   | 14.6   |
|                         | Efficiency %       | 83.7  | 84.1  | 84.8  | 85.7  | 85.9  | 86.5  | 87.2  | 87.6  | 87.9   | 88.5   | 84.9   | 86.5   |

Ratings based on 1.0 service factor. For A.G.M.A. recommended practice on service factors, see page 11.

# Horsepower and Torque Ratings • Helical Worm

| INPUT SPEED (RPM) | Unit Size          | 35    | 40    | 50    | 60    | 70    | 80    | 90    | 100   | 120    | 140    | 170    | 200    |
|-------------------|--------------------|-------|-------|-------|-------|-------|-------|-------|-------|--------|--------|--------|--------|
|                   | Center Distance    | 3.5   | 4     | 5     | 6     | 7     | 8     | 9     | 10    | 12     | 14     | 17     | 20     |
|                   | Total Actual Ratio | 22.09 | 22.08 | 21.97 | 22.48 | 22.45 | 22.46 | 22.23 | 22.28 | 22.27  | 22.57  | 22.51  | 22.51  |
|                   | Ratio Combinations | 3.05  | 3.04  | 3.04  | 3.04  | 3.03  | 3.04  | 3.03  | 3.04  | 3.04   | 3.04   | 3.04   | 3.04   |
|                   |                    | 7-1/4 | 7-1/4 | 7-1/4 | 7-2/5 | 7-2/5 | 7-2/5 | 7-2/6 | 7-2/6 | 7-2/6  | 7-3/7  | 7-3/7  | 7-3/7  |
| 1750              | Mech. Input HP     | 4.81  | 6.71  | 11.9  | 17.6  | 26.0  | 36.5  | 47.0  | 59.6  | 90.6   | 113    | 185    | 278    |
|                   | Out.Torq., in.lbs. | 3360  | 4720  | 8460  | 12900 | 19200 | 26600 | 34600 | 44000 | 67000  | 86000  | 140000 | 210000 |
|                   | Therm. Input HP    | 4.41  | 5.75  | 10.9  | 16.6  | 23.5  | 29.6  | 36.7  | 49.6  | 65.6   | 95.0   | 129    | 162    |
|                   | Output RPM         | 79.2  | 79.3  | 79.7  | 77.8  | 78.0  | 77.9  | 78.7  | 78.5  | 78.6   | 77.5   | 77.7   | 77.7   |
|                   | Efficiency%        | 87.8  | 88.5  | 89.9  | 90.5  | 91.3  | 90.1  | 92.0  | 92.0  | 92.2   | 93.6   | 93.3   | 93.2   |
| 1450              | Mech. Input HP     | 4.16  | 5.87  | 10.6  | 15.7  | 23.6  | 32.9  | 43.3  | 55.0  | 84.0   | 105    | 163    | 242    |
|                   | Out.Torq., in.lbs. | 3490  | 4940  | 9000  | 13800 | 20800 | 29200 | 38200 | 49000 | 75000  | 96000  | 148000 | 220000 |
|                   | Therm. Input HP    | 3.92  | 5.05  | 9.57  | 14.6  | 20.7  | 26.0  | 32.2  | 43.7  | 57.8   | 82.5   | 113    | 141    |
|                   | Output RPM         | 65.6  | 65.7  | 66.0  | 64.5  | 64.6  | 64.6  | 65.2  | 65.1  | 65.1   | 64.2   | 64.4   | 64.4   |
|                   | Efficiency%        | 87.4  | 87.7  | 88.9  | 90.0  | 90.3  | 90.9  | 91.3  | 92.0  | 92.2   | 93.2   | 92.8   | 92.9   |
| 1150              | Mech. Input HP     | 3.45  | 4.95  | 8.98  | 13.4  | 20.0  | 28.6  | 37.5  | 49.0  | 74.8   | 94.5   | 143    | 208    |
|                   | Out.Torq., in.lbs. | 3620  | 5200  | 9580  | 14800 | 22200 | 31800 | 41600 | 54500 | 84000  | 108000 | 163000 | 237000 |
|                   | Therm. Input HP    | 3.39  | 4.30  | 8.22  | 12.5  | 17.7  | 22.0  | 27.7  | 37.4  | 49.6   | 71.0   | 97.5   | 125    |
|                   | Output RPM         | 52.1  | 52.1  | 52.3  | 51.2  | 51.2  | 51.2  | 51.7  | 51.6  | 51.6   | 51.0   | 51.1   | 51.1   |
|                   | Efficiency%        | 86.7  | 86.8  | 88.6  | 89.6  | 90.2  | 90.3  | 91.1  | 91.1  | 92.0   | 92.4   | 92.4   | 92.4   |
| 865               | Mech. Input HP     | 2.77  | 3.90  | 7.12  | 10.9  | 16.6  | 23.3  | 31.2  | 41.1  | 63.0   | 79.0   | 124    | 176    |
|                   | Out.Torq., in.lbs. | 3840  | 5420  | 9930  | 15700 | 24000 | 34200 | 45200 | 60000 | 94000  | 120000 | 187000 | 263000 |
|                   | Therm. Input HP    | 2.72  | 3.67  | 6.78  | 10.3  | 14.7  | 18.5  | 23.4  | 31.4  | 41.6   | 58.0   | 78.0   | 106    |
|                   | Output RPM         | 39.2  | 39.2  | 39.4  | 38.5  | 38.5  | 38.5  | 38.9  | 38.8  | 38.8   | 38.3   | 38.4   | 38.4   |
|                   | Efficiency %       | 86.1  | 86.4  | 87.1  | 87.9  | 88.4  | 89.7  | 89.4  | 89.9  | 92.0   | 92.4   | 92.3   | 91.1   |
| 575               | Mech. Input HP     | 1.94  | 2.80  | 5.21  | 7.86  | 12.1  | 17.1  | 22.5  | 29.8  | 47.5   | 56.3   | 94.8   | 133    |
|                   | Out.Torq., in.lbs. | 3980  | 5760  | 10700 | 16700 | 25700 | 38000 | 49600 | 66000 | 106000 | 128000 | 215000 | 296000 |
|                   | Therm. Input HP    | 1.93  | 2.77  | 5.08  | 7.62  | 11.1  | 14.6  | 18.5  | 24.6  | 33.3   | 45.0   | 65.0   | 88.5   |
|                   | Output RPM         | 26.0  | 26.0  | 26.2  | 25.6  | 25.6  | 25.6  | 25.9  | 25.8  | 25.8   | 25.5   | 25.5   | 25.5   |
|                   | Efficiency%        | 84.7  | 85.0  | 85.3  | 86.2  | 86.3  | 90.3  | 90.5  | 90.7  | 91.4   | 91.9   | 91.9   | 90.2   |
| 300               | Mech. Input HP     | 1.06  | 1.55  | 2.88  | 4.46  | 6.82  | 9.87  | 13.5  | 17.9  | 28.9   | 34.0   | 63.4   | 81.0   |
|                   | Out.Torq., in.lbs. | 4130  | 6030  | 11200 | 17800 | 27600 | 39900 | 54100 | 72300 | 118000 | 143000 | 266000 | 332000 |
|                   | Therm. Input HP    | 1.06  | 1.55  | 2.88  | 4.46  | 6.82  | 9.87  | 13.5  | 17.9  | 28.9   | 31.3   | 53.0   | 70.0   |
|                   | Output RPM         | 13.6  | 13.6  | 13.7  | 13.3  | 13.4  | 13.4  | 13.5  | 13.5  | 13.5   | 13.3   | 13.3   | 13.3   |
|                   | Efficiency %       | 84.0  | 83.9  | 84.3  | 84.5  | 85.8  | 85.7  | 85.8  | 86.3  | 87.3   | 88.7   | 88.7   | 86.7   |

Helical Worm  
Speed Reducers

| INPUT SPEED (RPM) | Unit Size          | 35    | 40    | 50    | 60    | 70    | 80    | 90    | 100   | 120    | 140    | 170    | 200    |
|-------------------|--------------------|-------|-------|-------|-------|-------|-------|-------|-------|--------|--------|--------|--------|
|                   | Center Distance    | 3.5   | 4     | 5     | 6     | 7     | 8     | 9     | 10    | 12     | 14     | 17     | 20     |
|                   | Total Actual Ratio | 26.20 | 25.67 | 26.14 | 25.93 | 25.89 | 25.89 | 25.88 | 25.28 | 25.85  | 25.80  | 25.73  | 25.73  |
|                   | Ratio Combinations | 5.07  | 5.07  | 5.06  | 5.06  | 5.05  | 5.05  | 5.05  | 4.93  | 5.06   | 4.05   | 5.05   | 3.52   |
|                   |                    | 5-1/6 | 5-1/6 | 5-1/6 | 5-1/6 | 5-1/6 | 5-1/6 | 5-1/6 | 5-1/6 | 5-1/6  | 6-5/6  | 5-1/10 | 7-3/7  |
| 1750              | Mech. Input HP     | 4.29  | 5.94  | 10.1  | 15.7  | 23.4  | 32.4  | 42.7  | 61.0  | 75.2   | 110    | 172    | 225    |
|                   | Out.Torq., in.lbs. | 3560  | 4830  | 8430  | 13200 | 19700 | 27400 | 36200 | 45400 | 65300  | 95300  | 150000 | 199000 |
|                   | Therm. Input HP    | 3.54  | 4.52  | 8.56  | 12.9  | 18.3  | 22.8  | 29.1  | 40.0  | 52.0   | 72.5   | 100    | 134    |
|                   | Output RPM         | 66.8  | 68.2  | 66.9  | 67.5  | 67.6  | 67.6  | 67.6  | 69.2  | 67.7   | 67.8   | 68.0   | 68.0   |
|                   | Efficiency%        | 87.9  | 88.0  | 88.7  | 90.0  | 90.3  | 90.7  | 91.0  | 92.8  | 93.3   | 93.6   | 94.1   | 95.4   |
| 1450              | Mech. Input HP     | 3.67  | 4.90  | 8.30  | 13.5  | 19.6  | 27.3  | 36.2  | 54.7  | 70.2   | 92.8   | 151    | 205    |
|                   | Out.Torq., in.lbs. | 3660  | 4800  | 8310  | 13500 | 19700 | 27800 | 37000 | 48200 | 73100  | 96600  | 157000 | 218000 |
|                   | Therm. Input HP    | 3.14  | 4.05  | 7.56  | 11.4  | 16.3  | 20.3  | 26.0  | 35.7  | 46.6   | 62.5   | 91.0   | 119    |
|                   | Output RPM         | 55.3  | 56.5  | 55.5  | 55.9  | 56.0  | 56.0  | 56.0  | 57.4  | 56.1   | 56.2   | 56.4   | 56.4   |
|                   | Efficiency%        | 87.6  | 87.8  | 88.1  | 88.7  | 89.3  | 90.5  | 90.9  | 91.0  | 92.7   | 92.8   | 93.0   | 95.1   |
| 1150              | Mech. Input HP     | 3.03  | 4.05  | 6.65  | 11.2  | 15.8  | 22.6  | 29.5  | 49.6  | 62.5   | 75.9   | 139    | 187    |
|                   | Out.Torq., in.lbs. | 3780  | 4960  | 8320  | 14000 | 19900 | 29000 | 37900 | 55000 | 81400  | 98800  | 181000 | 250000 |
|                   | Therm. Input HP    | 2.67  | 3.56  | 6.52  | 9.9   | 14.1  | 17.7  | 23.1  | 31.6  | 40.7   | 54.0   | 79.0   | 106    |
|                   | Output RPM         | 43.9  | 44.8  | 44.0  | 44.4  | 44.4  | 44.4  | 44.4  | 45.5  | 44.5   | 44.6   | 44.7   | 44.7   |
|                   | Efficiency%        | 86.9  | 87.1  | 87.3  | 88.0  | 88.8  | 90.4  | 90.6  | 90.8  | 91.9   | 92.1   | 92.3   | 94.8   |
| 865               | Mech. Input HP     | 2.39  | 3.09  | 5.10  | 8.30  | 12.0  | 16.5  | 22.5  | 37.4  | 47.8   | 59.3   | 105    | 166    |
|                   | Out.Torq., in.lbs. | 3910  | 4960  | 8460  | 13700 | 19800 | 28000 | 38300 | 55400 | 82200  | 102000 | 181000 | 292000 |
|                   | Therm. Input HP    | 2.18  | 3.01  | 5.10  | 8.24  | 12.0  | 15.9  | 20.5  | 27.8  | 35.4   | 45.0   | 72.0   | 92.5   |
|                   | Output RPM         | 33.0  | 33.7  | 33.1  | 33.4  | 33.4  | 33.4  | 33.4  | 34.2  | 33.5   | 33.5   | 33.6   | 33.6   |
|                   | Efficiency %       | 85.7  | 85.8  | 87.1  | 87.4  | 87.5  | 90.0  | 90.3  | 91.2  | 91.3   | 91.5   | 92.0   | 93.8   |
| 575               | Mech. Input HP     | 1.62  | 2.15  | 3.73  | 5.91  | 8.50  | 11.3  | 15.0  | 25.7  | 34.0   | 43.0   | 75.5   | 121    |
|                   | Out.Torq., in.lbs. | 3920  | 5120  | 9250  | 14600 | 21000 | 27900 | 37000 | 54900 | 84400  | 107000 | 190000 | 317000 |
|                   | Therm. Input HP    | 1.60  | 2.15  | 3.73  | 5.90  | 8.50  | 11.3  | 17.9  | 22.3  | 30.0   | 45.0   | 62.0   | 67.0   |
|                   | Output RPM         | 21.9  | 22.4  | 22.0  | 22.2  | 22.2  | 22.2  | 22.2  | 22.7  | 22.2   | 22.3   | 22.3   | 22.3   |
|                   | Efficiency%        | 84.3  | 84.6  | 86.6  | 86.9  | 87.1  | 87.0  | 87.0  | 87.5  | 87.6   | 88.0   | 89.2   | 92.9   |
| 300               | Mech. Input HP     | 0.906 | 1.33  | 2.30  | 3.61  | 5.61  | 8.08  | 11.1  | 17.1  | 22.7   | 36.4   | 57.5   | 82.4   |
|                   | Out.Torq., in.lbs. | 4200  | 6050  | 10900 | 17000 | 26400 | 38100 | 52500 | 69900 | 108000 | 173000 | 274000 | 404000 |
|                   | Therm. Input HP    | 0.860 | 1.25  | 1.90  | 3.10  | 4.50  | 6.00  | 10.3  | 12.0  | 17.2   | 20.7   | 39.0   | 39.0   |
|                   | Output RPM         | 11.5  | 11.7  | 11.5  | 11.6  | 11.6  | 11.6  | 11.6  | 11.9  | 11.6   | 11.6   | 11.7   | 11.7   |
|                   | Efficiency %       | 84.2  | 84.4  | 86.3  | 86.4  | 86.5  | 86.7  | 87.0  | 87.3  | 87.6   | 87.7   | 88.2   | 90.7   |

Ratings based on 1.0 service factor. For A.G.M.A. recommended practice on service factors, see page 11.

# Horsepower and Torque Ratings • Helical Worm

Helical Worm  
Speed Reducers

| INPUT<br>SPEED<br>(RPM) | Unit Size          | 35    | 40    | 50    | 60    | 70    | 80    | 90    | 100   | 120    | 140    | 170    | 200    |
|-------------------------|--------------------|-------|-------|-------|-------|-------|-------|-------|-------|--------|--------|--------|--------|
|                         | Center Distance    | 3.5   | 4     | 5     | 6     | 7     | 8     | 9     | 10    | 12     | 14     | 17     | 20     |
|                         | Total Actual Ratio | 29.47 | 29.45 | 29.30 | 29.63 | 29.59 | 29.60 | 29.57 | 29.64 | 29.63  | 29.77  | 29.70  | 29.70  |
|                         | Ratio Combinations | 3.05  | 3.04  | 3.04  | 3.04  | 3.03  | 3.04  | 3.03  | 3.04  | 3.04   | 3.04   | 3.04   | 3.04   |
|                         |                    | 9-2/3 | 9-2/3 | 9-2/3 | 9-3/4 | 9-3/4 | 9-3/4 | 9-3/4 | 9-3/4 | 9-3/4  | 9-4/5  | 9-4/5  | 9-4/5  |
| 1750                    | Mech. Input HP     | 4.25  | 5.67  | 9.97  | 14.4  | 21.6  | 29.6  | 39.8  | 50.2  | 76.0   | 95.7   | 163    | 239    |
|                         | Out.Torq., in.lbs. | 3890  | 5230  | 9290  | 13700 | 20800 | 28600 | 38800 | 49500 | 75000  | 95000  | 162000 | 238000 |
|                         | Therm. Input HP    | 3.50  | 4.49  | 8.44  | 13.8  | 19.5  | 26.0  | 33.3  | 46.4  | 63.0   | 90.0   | 119    | 163    |
|                         | Output RPM         | 59.4  | 59.4  | 59.7  | 59.1  | 59.1  | 59.1  | 59.2  | 59.0  | 59.1   | 58.8   | 58.9   | 58.9   |
|                         | Efficiency%        | 86.2  | 87.0  | 88.3  | 89.2  | 90.4  | 90.6  | 91.5  | 92.4  | 92.5   | 92.6   | 92.9   | 93.1   |
| 1450                    | Mech. Input HP     | 3.72  | 4.95  | 8.81  | 12.7  | 20.0  | 27.0  | 36.2  | 46.0  | 71.5   | 88.3   | 147    | 207    |
|                         | Out.Torq., in.lbs. | 4050  | 5470  | 9810  | 14400 | 23000 | 31400 | 42200 | 54000 | 84000  | 105000 | 174000 | 246000 |
|                         | Therm. Input HP    | 3.08  | 3.95  | 7.42  | 12.2  | 17.3  | 23.0  | 29.2  | 41.6  | 55.0   | 80.0   | 106    | 138    |
|                         | Output RPM         | 49.2  | 49.2  | 49.5  | 48.9  | 49.0  | 49.0  | 49.0  | 48.9  | 48.9   | 48.7   | 48.8   | 48.8   |
|                         | Efficiency%        | 85.0  | 86.3  | 87.4  | 88.0  | 89.4  | 90.4  | 90.7  | 91.1  | 91.2   | 91.9   | 92.0   | 92.1   |
| 1150                    | Mech. Input HP     | 3.12  | 4.15  | 7.44  | 10.9  | 16.7  | 23.5  | 31.5  | 40.8  | 64.4   | 78.7   | 128    | 176    |
|                         | Out.Torq., in.lbs. | 4260  | 5700  | 10400 | 15500 | 24000 | 33800 | 45600 | 59500 | 94000  | 117000 | 190000 | 262000 |
|                         | Therm. Input HP    | 2.62  | 3.41  | 6.36  | 10.4  | 14.8  | 19.6  | 25.2  | 35.5  | 46.9   | 66.0   | 91.5   | 110    |
|                         | Output RPM         | 39.0  | 39.0  | 39.2  | 38.8  | 38.9  | 38.9  | 38.9  | 38.8  | 38.8   | 38.6   | 38.7   | 38.7   |
|                         | Efficiency%        | 84.5  | 85.1  | 87.1  | 87.6  | 88.6  | 88.7  | 89.3  | 89.8  | 89.9   | 91.1   | 91.2   | 91.5   |
| 865                     | Mech. Input HP     | 2.47  | 3.28  | 5.84  | 8.80  | 13.3  | 19.0  | 25.6  | 33.5  | 52.6   | 69.3   | 108    | 152    |
|                         | Out.Torq., in.lbs. | 4390  | 5930  | 10600 | 16400 | 25000 | 35800 | 49200 | 65000 | 104000 | 136000 | 212000 | 300000 |
|                         | Therm. Input HP    | 2.13  | 2.86  | 5.27  | 8.54  | 12.3  | 16.7  | 21.1  | 29.3  | 39.0   | 55.0   | 78.0   | 98.5   |
|                         | Output RPM         | 29.4  | 29.4  | 29.5  | 29.2  | 29.2  | 29.2  | 29.3  | 29.2  | 29.2   | 29.1   | 29.1   | 29.1   |
|                         | Efficiency %       | 82.8  | 84.3  | 85.0  | 86.3  | 87.2  | 87.4  | 89.2  | 89.8  | 91.6   | 90.5   | 90.7   | 91.2   |
| 575                     | Mech. Input HP     | 1.75  | 2.33  | 4.25  | 6.38  | 9.63  | 13.6  | 18.4  | 24.4  | 38.9   | 56.0   | 84.6   | 123    |
|                         | Out.Torq., in.lbs. | 4600  | 6230  | 11400 | 17600 | 26700 | 38300 | 53300 | 71000 | 115000 | 163000 | 247000 | 362000 |
|                         | Therm. Input HP    | 1.58  | 2.17  | 3.96  | 6.27  | 9.22  | 12.6  | 16.2  | 22.0  | 30.9   | 42.5   | 65.0   | 82.5   |
|                         | Output RPM         | 19.5  | 19.5  | 19.6  | 19.4  | 19.4  | 19.4  | 19.4  | 19.4  | 19.4   | 19.3   | 19.4   | 19.4   |
|                         | Efficiency%        | 81.4  | 82.8  | 83.5  | 84.9  | 85.5  | 86.8  | 89.4  | 89.6  | 91.0   | 89.2   | 89.7   | 90.4   |
| 300                     | Mech. Input HP     | 0.960 | 1.30  | 2.38  | 3.56  | 5.63  | 7.85  | 10.9  | 14.5  | 23.2   | 31.3   | 53.7   | 75.0   |
|                         | Out.Torq., in.lbs. | 4810  | 6520  | 12000 | 18400 | 29400 | 41100 | 57300 | 77000 | 127000 | 170000 | 296000 | 416000 |
|                         | Therm. Input HP    | 0.960 | 1.30  | 2.38  | 3.56  | 5.63  | 7.85  | 10.9  | 14.5  | 23.2   | 31.3   | 51.5   | 64.5   |
|                         | Output RPM         | 10.2  | 10.2  | 10.2  | 10.1  | 10.1  | 10.1  | 10.1  | 10.1  | 10.1   | 10.1   | 10.1   | 10.1   |
|                         | Efficiency %       | 80.9  | 81.1  | 81.9  | 83.0  | 84.0  | 84.2  | 84.6  | 85.3  | 87.9   | 86.8   | 88.3   | 88.9   |

| INPUT<br>SPEED<br>(RPM) | Unit Size          | 35    | 40    | 50    | 60    | 70    | 80    | 90    | 100   | 120    | 140    | 170    | 200    |
|-------------------------|--------------------|-------|-------|-------|-------|-------|-------|-------|-------|--------|--------|--------|--------|
|                         | Center Distance    | 3.5   | 4     | 5     | 6     | 7     | 8     | 9     | 10    | 12     | 14     | 17     | 20     |
|                         | Total Actual Ratio | 36.77 | 36.73 | 36.68 | 37.44 | 37.39 | 37.39 | 37.02 | 36.16 | 37.08  | 37.58  | 37.48  | 37.48  |
|                         | Ratio Combinations | 5.07  | 5.07  | 5.06  | 5.06  | 5.05  | 5.05  | 5.05  | 4.93  | 5.06   | 5.06   | 5.05   | 5.05   |
|                         |                    | 7-1/4 | 7-1/4 | 7-1/4 | 7-2/5 | 7-2/5 | 7-2/5 | 7-2/6 | 7-2/6 | 7-3/6  | 7-3/7  | 7-3/7  | 7-3/7  |
| 1750                    | Mech. Input HP     | 3.16  | 4.55  | 8.32  | 12.6  | 19.1  | 27.0  | 35.7  | 47.5  | 72.3   | 80.8   | 123    | 185    |
|                         | Out.Torq., in.lbs. | 3680  | 5320  | 9740  | 15100 | 23000 | 32600 | 42800 | 56000 | 87500  | 98500  | 150000 | 228000 |
|                         | Therm. Input HP    | 3.19  | 4.12  | 7.75  | 11.7  | 16.7  | 20.9  | 26.3  | 35.6  | 47.0   | 67.5   | 95.0   | 121    |
|                         | Output RPM         | 47.6  | 47.6  | 47.7  | 46.7  | 46.8  | 46.8  | 47.3  | 48.4  | 47.2   | 46.6   | 46.7   | 46.7   |
|                         | Efficiency%        | 87.9  | 88.4  | 88.6  | 88.9  | 89.4  | 89.7  | 89.9  | 90.5  | 90.6   | 90.1   | 90.7   | 91.3   |
| 1450                    | Mech. Input HP     | 2.74  | 3.85  | 6.95  | 10.9  | 16.6  | 23.5  | 31.3  | 42.0  | 64.7   | 67.7   | 128    | 135    |
|                         | Out.Torq., in.lbs. | 3830  | 5450  | 9940  | 15700 | 24000 | 34200 | 45200 | 59500 | 94000  | 99200  | 188000 | 200000 |
|                         | Therm. Input HP    | 2.74  | 3.68  | 6.81  | 10.3  | 14.8  | 18.6  | 23.5  | 31.8  | 42.0   | 60.0   | 85.0   | 109    |
|                         | Output RPM         | 39.4  | 39.5  | 39.5  | 38.7  | 38.8  | 38.8  | 39.2  | 40.1  | 39.1   | 38.6   | 38.7   | 38.7   |
|                         | Efficiency%        | 87.5  | 88.7  | 89.7  | 88.5  | 89.0  | 89.5  | 89.7  | 90.1  | 90.1   | 89.7   | 90.5   | 90.9   |
| 1150                    | Mech. Input HP     | 2.24  | 3.19  | 5.90  | 9.10  | 13.7  | 20.0  | 26.2  | 34.7  | 55.8   | 55.3   | 113    | 128    |
|                         | Out.Torq., in.lbs. | 3920  | 5670  | 10500 | 16600 | 25000 | 36500 | 47500 | 61500 | 102000 | 102000 | 210000 | 238000 |
|                         | Therm. Input HP    | 2.24  | 3.16  | 5.82  | 8.74  | 12.7  | 16.1  | 20.5  | 27.4  | 36.6   | 50.3   | 77.0   | 98.0   |
|                         | Output RPM         | 31.3  | 31.3  | 31.4  | 30.7  | 30.8  | 30.8  | 31.1  | 31.8  | 31.0   | 30.6   | 30.7   | 30.7   |
|                         | Efficiency%        | 86.8  | 88.3  | 88.5  | 88.9  | 89.1  | 89.3  | 89.4  | 89.6  | 90.0   | 89.6   | 90.2   | 90.5   |
| 865                     | Mech. Input HP     | 1.76  | 2.51  | 4.67  | 7.18  | 10.8  | 15.9  | 21.1  | 27.9  | 45.0   | 44.6   | 94.5   | 94.3   |
|                         | Out.Torq., in.lbs. | 4010  | 5850  | 11000 | 17300 | 26100 | 38500 | 50600 | 65400 | 109000 | 109000 | 231000 | 231000 |
|                         | Therm. Input HP    | 1.76  | 2.61  | 4.70  | 7.10  | 10.4  | 13.6  | 17.5  | 23.2  | 43.9   | 43.9   | 66.0   | 86.0   |
|                         | Output RPM         | 23.5  | 23.6  | 23.6  | 23.1  | 23.1  | 23.1  | 23.4  | 23.9  | 23.3   | 23.0   | 23.1   | 23.1   |
|                         | Efficiency %       | 85.0  | 87.1  | 88.1  | 88.3  | 88.7  | 88.9  | 88.9  | 89.0  | 89.7   | 89.3   | 89.5   | 89.7   |
| 575                     | Mech. Input HP     | 1.20  | 1.80  | 3.20  | 5.03  | 7.49  | 10.9  | 14.7  | 19.8  | 31.3   | 31.3   | 67.2   | 67.0   |
|                         | Out.Torq., in.lbs. | 4110  | 6260  | 11200 | 18000 | 26800 | 39000 | 52600 | 69600 | 113000 | 113000 | 246000 | 246000 |
|                         | Therm. Input HP    | 1.20  | 1.80  | 3.28  | 5.03  | 7.49  | 10.5  | 14.0  | 18.5  | 26.5   | 30.3   | 58.0   | 67.0   |
|                         | Output RPM         | 15.6  | 15.7  | 15.7  | 15.4  | 15.4  | 15.4  | 15.5  | 15.9  | 15.5   | 15.3   | 15.3   | 15.3   |
|                         | Efficiency%        | 85.0  | 86.4  | 87.1  | 87.2  | 87.3  | 87.7  | 88.2  | 88.7  | 88.8   | 87.6   | 89.1   | 89.4   |
| 300                     | Mech. Input HP     | 0.674 | 0.956 | 1.77  | 2.74  | 4.17  | 6.00  | 8.20  | 11.1  | 17.7   | 25.0   | 42.8   | 63.1   |
|                         | Out.Torq., in.lbs. | 4350  | 6260  | 11600 | 18500 | 28300 | 40800 | 55300 | 73500 | 121000 | 171000 | 296000 | 437000 |
|                         | Therm. Input HP    | 0.640 | 0.930 | 1.73  | 2.66  | 4.02  | 5.82  | 7.83  | 10.4  | 16.7   | 16.7   | 38.5   | 39.0   |
|                         | Output RPM         | 8.16  | 8.17  | 8.18  | 8.01  | 8.02  | 8.02  | 8.10  | 8.30  | 8.09   | 7.98   | 8.00   | 8.00   |
|                         | Efficiency %       | 83.5  | 84.9  | 85.0  | 85.8  | 86.4  | 86.6  | 86.7  | 87.2  | 87.8   | 86.6   | 87.8   | 88.0   |

Ratings based on 1.0 service factor. For A.G.M.A. recommended practice on service factors, see page 11.



# Horsepower and Torque Ratings • Helical Worm

| INPUT SPEED (RPM) | Unit Size          | 35    | 40    | 50    | 60    | 70    | 80    | 90    | 100   | 120    | 140    | 170    | 200    |
|-------------------|--------------------|-------|-------|-------|-------|-------|-------|-------|-------|--------|--------|--------|--------|
|                   | Center Distance    | 3.5   | 4     | 5     | 6     | 7     | 8     | 9     | 10    | 12     | 14     | 17     | 20     |
|                   | Total Actual Ratio | 39.27 | 39.24 | 39.13 | 39.46 | 39.84 | 39.44 | 39.39 | 39.49 | 39.46  | 39.67  | 39.56  | 39.56  |
|                   | Ratio Combinations | 4.06  | 4.06  | 4.05  | 4.05  | 4.09  | 4.04  | 4.04  | 4.05  | 4.05   | 4.05   | 4.04   | 4.04   |
|                   |                    | 9-2/3 | 9-2/3 | 9-2/3 | 9-3/4 | 9-3/4 | 9-3/4 | 9-3/4 | 9-3/4 | 9-3/4  | 9-4/5  | 9-4/5  | 9-4/5  |
| 1750              | Mech. Input HP     | 3.44  | 4.59  | 8.23  | 11.9  | 18.5  | 25.6  | 34.6  | 43.6  | 67.8   | 84.7   | 136    | 190    |
|                   | Out.Torq., in.lbs. | 4130  | 5590  | 10100 | 14900 | 23600 | 32400 | 44000 | 56500 | 88000  | 111000 | 180000 | 250000 |
|                   | Therm. Input HP    | 2.87  | 3.70  | 6.95  | 11.4  | 16.2  | 21.3  | 27.5  | 39.0  | 51.4   | 75.0   | 100    | 128    |
|                   | Output RPM         | 44.6  | 44.6  | 44.7  | 44.3  | 43.9  | 44.4  | 44.4  | 44.3  | 44.3   | 44.1   | 44.2   | 44.2   |
|                   | Efficiency%        | 84.9  | 86.2  | 87.1  | 88.1  | 88.9  | 89.1  | 89.6  | 91.1  | 91.3   | 91.7   | 92.9   | 92.4   |
| 1450              | Mech. Input HP     | 2.99  | 3.96  | 7.14  | 10.5  | 16.0  | 22.5  | 30.3  | 38.8  | 61.5   | 77.6   | 123    | 174    |
|                   | Out.Torq., in.lbs. | 4290  | 5750  | 10500 | 15800 | 24400 | 34200 | 46400 | 60500 | 96000  | 122000 | 194000 | 275000 |
|                   | Therm. Input HP    | 2.52  | 3.28  | 6.13  | 10.0  | 14.3  | 19.0  | 24.3  | 33.6  | 45.2   | 65.0   | 92.5   | 115    |
|                   | Output RPM         | 36.9  | 37.0  | 37.1  | 36.7  | 36.4  | 36.8  | 36.8  | 36.7  | 36.7   | 36.6   | 36.7   | 36.7   |
|                   | Efficiency%        | 84.1  | 85.1  | 86.5  | 87.7  | 88.1  | 88.7  | 89.4  | 90.8  | 91.0   | 91.2   | 91.7   | 91.9   |
| 1150              | Mech. Input HP     | 2.45  | 3.28  | 5.87  | 8.89  | 13.3  | 19.0  | 25.7  | 33.2  | 53.0   | 69.4   | 108    | 151    |
|                   | Out.Torq., in.lbs. | 4410  | 5980  | 10800 | 16600 | 25200 | 35800 | 49200 | 65000 | 104000 | 137000 | 212000 | 300000 |
|                   | Therm. Input HP    | 2.13  | 2.86  | 5.27  | 8.50  | 12.2  | 16.6  | 21.0  | 29.1  | 38.9   | 56.0   | 80.0   | 100    |
|                   | Output RPM         | 29.3  | 29.3  | 29.4  | 29.1  | 28.9  | 29.2  | 29.2  | 29.1  | 29.1   | 29.0   | 29.1   | 29.1   |
|                   | Efficiency%        | 83.6  | 84.8  | 85.8  | 86.3  | 86.8  | 87.2  | 88.7  | 90.5  | 90.7   | 90.8   | 91.0   | 91.6   |
| 865               | Mech. Input HP     | 1.95  | 2.60  | 4.70  | 7.04  | 10.5  | 15.1  | 20.5  | 26.8  | 43.2   | 57.4   | 90.3   | 132.0  |
|                   | Out.Torq., in.lbs. | 4570  | 6190  | 11300 | 17300 | 26400 | 37600 | 52000 | 69500 | 112000 | 150000 | 236000 | 347000 |
|                   | Therm. Input HP    | 1.73  | 2.36  | 4.30  | 6.89  | 10.1  | 13.8  | 17.5  | 24.0  | 32.6   | 46.7   | 69.5   | 88.0   |
|                   | Output RPM         | 22.0  | 22.0  | 22.1  | 21.9  | 21.7  | 21.9  | 22.0  | 21.9  | 21.9   | 21.8   | 21.9   | 21.9   |
|                   | Efficiency %       | 81.9  | 83.3  | 84.3  | 85.5  | 86.6  | 86.7  | 88.4  | 90.1  | 90.2   | 90.4   | 90.7   | 91.2   |
| 575               | Mech. Input HP     | 1.33  | 1.83  | 3.28  | 5.00  | 7.48  | 10.6  | 14.6  | 19.3  | 31.5   | 40.5   | 69.5   | 93.5   |
|                   | Out.Torq., in.lbs. | 4660  | 6440  | 11600 | 18200 | 27600 | 39700 | 55200 | 74000 | 121000 | 157000 | 270000 | 368000 |
|                   | Therm. Input HP    | 1.28  | 1.74  | 3.16  | 4.90  | 7.29  | 10.1  | 13.4  | 18.0  | 26.6   | 37.8   | 59.0   | 73.0   |
|                   | Output RPM         | 14.6  | 14.7  | 14.7  | 14.6  | 14.4  | 14.6  | 14.6  | 14.6  | 14.6   | 14.5   | 14.5   | 14.5   |
|                   | Efficiency%        | 81.4  | 81.8  | 82.5  | 84.2  | 84.5  | 86.6  | 87.6  | 88.6  | 88.8   | 89.2   | 89.6   | 90.8   |
| 300               | Mech. Input HP     | 0.736 | 0.980 | 1.81  | 2.72  | 4.22  | 5.95  | 8.15  | 10.8  | 17.6   | 26.0   | 42.9   | 61.8   |
|                   | Out.Torq., in.lbs. | 4920  | 6600  | 12200 | 18800 | 29600 | 41400 | 57600 | 77000 | 127000 | 187000 | 312000 | 452000 |
|                   | Therm. Input HP    | 0.720 | 0.980 | 1.78  | 2.66  | 4.22  | 5.90  | 8.12  | 10.8  | 18.0   | 21.8   | 40.7   | 51.5   |
|                   | Output RPM         | 7.64  | 7.65  | 7.67  | 7.60  | 7.53  | 7.61  | 7.62  | 7.60  | 7.60   | 7.56   | 7.58   | 7.58   |
|                   | Efficiency %       | 81.0  | 81.7  | 82.0  | 83.4  | 83.8  | 84.0  | 85.4  | 85.9  | 87.0   | 86.3   | 87.5   | 88.0   |

Helical Worm  
Speed Reducers

| INPUT SPEED (RPM) | Unit Size          | 35     | 40     | 50     | 60     | 70     | 80     | 90     | 100    | 120    | 140    | 170    | 200    |
|-------------------|--------------------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
|                   | Center Distance    | 3.5    | 4      | 5      | 6      | 7      | 8      | 9      | 10     | 12     | 14     | 17     | 20     |
|                   | Total Actual Ratio | 47.24  | 47.21  | 46.97  | 44.57  | 44.52  | 44.53  | 44.50  | 44.59  | 44.57  | 44.81  | 44.70  | 44.70  |
|                   | Ratio Combinations | 3.05   | 3.04   | 3.04   | 3.04   | 3.03   | 3.04   | 3.03   | 3.04   | 3.04   | 3.04   | 3.04   | 3.04   |
|                   |                    | 15-1/2 | 15-1/2 | 15-1/2 | 14-2/3 | 14-2/3 | 14-2/3 | 14-2/3 | 14-2/3 | 14-2/3 | 14-3/4 | 14-3/4 | 14-3/4 |
| 1750              | Mech. Input HP     | 3.08   | 4.03   | 6.86   | 10.8   | 16.3   | 23.2   | 29.0   | 39.0   | 56.5   | 70.3   | 108    | 171    |
|                   | Out.Torq., in.lbs. | 4280   | 5710   | 9930   | 15000  | 22800  | 32600  | 40800  | 55500  | 82000  | 104000 | 160000 | 262000 |
|                   | Therm. Input HP    | 2.69   | 3.52   | 5.96   | 10.3   | 14.3   | 19.4   | 25.8   | 34.4   | 51.2   | 70.3   | 103    | 138    |
|                   | Output RPM         | 37.0   | 37.1   | 37.3   | 39.3   | 39.3   | 39.3   | 39.3   | 39.2   | 39.3   | 39.1   | 39.1   | 39.1   |
|                   | Efficiency%        | 81.7   | 83.3   | 85.6   | 86.5   | 87.2   | 87.6   | 87.8   | 88.6   | 90.4   | 91.7   | 92.0   | 95.2   |
| 1450              | Mech. Input HP     | 2.67   | 3.54   | 6.04   | 9.50   | 14.5   | 20.6   | 26.0   | 35.4   | 53.2   | 66.4   | 100    | 162    |
|                   | Out.Torq., in.lbs. | 4420   | 6000   | 10400  | 15600  | 24000  | 34200  | 44000  | 60000  | 91000  | 117000 | 178000 | 287000 |
|                   | Therm. Input HP    | 2.35   | 3.11   | 5.22   | 9.09   | 12.6   | 17.3   | 22.8   | 30.4   | 46.0   | 66.4   | 94.0   | 125    |
|                   | Output RPM         | 30.7   | 30.7   | 30.9   | 32.5   | 32.6   | 32.6   | 32.6   | 32.5   | 32.5   | 32.4   | 32.4   | 32.4   |
|                   | Efficiency%        | 80.6   | 82.6   | 84.3   | 84.8   | 85.5   | 85.8   | 87.5   | 87.5   | 88.3   | 90.5   | 91.6   | 91.2   |
| 1150              | Mech. Input HP     | 2.24   | 2.98   | 5.10   | 8.15   | 12.4   | 17.6   | 22.4   | 30.6   | 47.4   | 60.0   | 91.5   | 135    |
|                   | Out.Torq., in.lbs. | 4630   | 6310   | 11000  | 16800  | 25700  | 36800  | 47000  | 65500  | 101000 | 132000 | 202000 | 300000 |
|                   | Therm. Input HP    | 1.99   | 2.70   | 4.52   | 7.80   | 10.7   | 14.7   | 19.6   | 25.8   | 39.4   | 58.5   | 79.0   | 107    |
|                   | Output RPM         | 24.3   | 24.4   | 24.5   | 25.8   | 25.8   | 25.8   | 25.8   | 25.8   | 25.8   | 25.7   | 25.7   | 25.7   |
|                   | Efficiency%        | 79.8   | 81.8   | 83.8   | 84.4   | 84.9   | 85.7   | 86.0   | 87.0   | 87.2   | 89.6   | 90.1   | 90.7   |
| 865               | Mech. Input HP     | 1.77   | 2.35   | 4.09   | 6.49   | 9.90   | 14.0   | 18.0   | 25.2   | 39.5   | 51.0   | 81.0   | 112    |
|                   | Out.Torq., in.lbs. | 4750   | 6500   | 11500  | 17700  | 27200  | 38800  | 50000  | 71000  | 112000 | 147000 | 235000 | 330000 |
|                   | Therm. Input HP    | 1.61   | 2.26   | 3.74   | 6.34   | 8.92   | 12.1   | 16.0   | 21.3   | 32.6   | 48.3   | 66.0   | 90.0   |
|                   | Output RPM         | 18.3   | 18.3   | 18.4   | 19.4   | 19.4   | 19.4   | 19.4   | 19.4   | 19.4   | 19.3   | 19.4   | 19.4   |
|                   | Efficiency %       | 78.0   | 80.4   | 82.2   | 84.0   | 84.7   | 85.4   | 85.7   | 86.7   | 87.3   | 88.3   | 89.1   | 90.5   |
| 575               | Mech. Input HP     | 1.26   | 1.66   | 2.89   | 4.80   | 7.10   | 10.1   | 12.7   | 19.0   | 29.0   | 39.3   | 65.0   | 92     |
|                   | Out.Torq., in.lbs. | 4960   | 6650   | 12000  | 19600  | 29000  | 41500  | 53000  | 79900  | 123000 | 168000 | 278000 | 395000 |
|                   | Therm. Input HP    | 1.19   | 1.66   | 2.77   | 4.63   | 6.68   | 9.10   | 11.7   | 16.0   | 24.7   | 39.3   | 57.0   | 77.0   |
|                   | Output RPM         | 12.2   | 12.2   | 12.2   | 12.9   | 12.9   | 12.9   | 12.9   | 12.9   | 12.9   | 12.8   | 12.9   | 12.9   |
|                   | Efficiency%        | 76.0   | 77.4   | 80.7   | 83.6   | 83.7   | 84.2   | 85.6   | 86.0   | 86.8   | 87.0   | 87.3   | 87.6   |
| 300               | Mech. Input HP     | 0.700  | 0.930  | 1.60   | 2.66   | 4.07   | 5.85   | 7.15   | 11.2   | 17.5   | 23.7   | 39.2   | 58.0   |
|                   | Out.Torq., in.lbs. | 5180   | 7000   | 12400  | 19800  | 30800  | 44400  | 55500  | 83200  | 135000 | 188000 | 313000 | 472000 |
|                   | Therm. Input HP    | 0.700  | 0.930  | 1.60   | 2.66   | 4.07   | 5.85   | 7.15   | 10.9   | 17.5   | 23.7   | 39.2   | 58.0   |
|                   | Output RPM         | 6.35   | 6.35   | 6.39   | 6.73   | 6.74   | 6.74   | 6.74   | 6.73   | 6.73   | 6.69   | 6.71   | 6.71   |
|                   | Efficiency %       | 74.6   | 75.9   | 78.5   | 79.5   | 80.9   | 81.1   | 83.0   | 79.3   | 82.4   | 84.3   | 85.0   | 86.7   |

Ratings based on 1.0 service factor. For A.G.M.A. recommended practice on service factors, see page 11.

# Horsepower and Torque Ratings • Helical Worm

Helical Worm  
Speed Reducers

| INPUT<br>SPEED<br>(RPM) | Unit Size          | 35            | 40            | 50            | 60            | 70            | 80            | 90            | 100           | 120           | 140           | 170           | 200           |
|-------------------------|--------------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|
|                         | Center Distance    | 3.5           | 4             | 5             | 6             | 7             | 8             | 9             | 10            | 12            | 14            | 17            | 20            |
|                         | Total Actual Ratio | 49.04         | 48.99         | 48.92         | 49.32         | 49.26         | 49.26         | 49.24         | 48.10         | 49.32         | 49.58         | 49.44         | 49.44         |
|                         | Ratio Combinations | 5.07<br>9-2/3 | 5.07<br>9-2/3 | 5.06<br>9-2/3 | 5.06<br>9-3/4 | 5.05<br>9-3/4 | 5.05<br>9-3/4 | 5.05<br>9-3/4 | 4.93<br>9-3/4 | 5.06<br>9-3/4 | 5.06<br>9-4/5 | 5.05<br>9-4/5 | 5.05<br>9-4/5 |
|                         |                    |               |               |               |               |               |               |               |               |               |               |               |               |
| 1750                    | Mech. Input HP     | 2.89          | 3.86          | 6.91          | 10.2          | 15.7          | 21.9          | 30.0          | 39.8          | 61.0          | 76.2          | 120           | 166           |
|                         | Out.Torq., in.lbs. | 4310          | 5820          | 10500         | 15900         | 24500         | 34400         | 47200         | 61500         | 97000         | 124000        | 196000        | 272000        |
|                         | Therm. Input HP    | 2.46          | 3.23          | 6.01          | 9.78          | 14.0          | 18.6          | 24.0          | 33.8          | 44.4          | 63.5          | 87.5          | 113           |
|                         | Output RPM         | 35.7          | 35.7          | 35.8          | 35.5          | 35.5          | 35.5          | 35.5          | 36.4          | 35.5          | 35.3          | 35.4          | 35.4          |
|                         | Efficiency%        | 84.4          | 85.5          | 86.2          | 87.8          | 88.0          | 88.5          | 88.7          | 89.2          | 89.5          | 91.1          | 91.7          | 92.0          |
| 1450                    | Mech. Input HP     | 2.48          | 3.31          | 5.90          | 8.80          | 13.4          | 19.0          | 26.0          | 35.0          | 54.0          | 68.3          | 109           | 151           |
|                         | Out.Torq., in.lbs. | 4400          | 5950          | 10700         | 16300         | 25200         | 35800         | 49200         | 65000         | 104000        | 133000        | 212000        | 296000        |
|                         | Therm. Input HP    | 2.15          | 2.88          | 5.29          | 8.57          | 12.3          | 16.8          | 21.1          | 29.8          | 39.4          | 57.5          | 81.5          | 103           |
|                         | Output RPM         | 29.6          | 29.6          | 29.6          | 29.4          | 29.4          | 29.4          | 29.4          | 30.1          | 29.4          | 29.2          | 29.3          | 29.3          |
|                         | Efficiency%        | 83.2          | 84.4          | 85.3          | 86.4          | 87.8          | 88.0          | 88.4          | 88.8          | 89.8          | 90.4          | 90.5          | 91.2          |
| 1150                    | Mech. Input HP     | 2.04          | 2.73          | 4.93          | 7.42          | 11.1          | 15.7          | 21.7          | 29.4          | 45.8          | 54.5          | 95.0          | 126           |
|                         | Out.Torq., in.lbs. | 4540          | 6150          | 11200         | 17300         | 26100         | 37200         | 51600         | 68500         | 110000        | 133000        | 232000        | 308000        |
|                         | Therm. Input HP    | 1.81          | 2.46          | 4.52          | 7.22          | 10.5          | 14.4          | 18.1          | 25.0          | 34.0          | 49.0          | 70.0          | 91.5          |
|                         | Output RPM         | 23.5          | 23.5          | 23.5          | 23.3          | 23.3          | 23.3          | 23.4          | 23.9          | 23.3          | 23.2          | 23.3          | 23.3          |
|                         | Efficiency%        | 82.8          | 83.9          | 84.7          | 86.3          | 87.1          | 87.8          | 88.1          | 88.4          | 89.0          | 89.8          | 90.1          | 89.9          |
| 865                     | Mech. Input HP     | 1.60          | 2.16          | 3.93          | 5.92          | 8.90          | 12.6          | 17.5          | 23.7          | 37.0          | 42.5          | 79.0          | 103           |
|                         | Out.Torq., in.lbs. | 4650          | 6390          | 11700         | 18000         | 27200         | 38800         | 54100         | 72000         | 118000        | 137000        | 254000        | 334000        |
|                         | Therm. Input HP    | 1.47          | 2.01          | 3.67          | 5.81          | 8.62          | 11.8          | 15.1          | 20.5          | 29.2          | 41.0          | 64.0          | 86.5          |
|                         | Output RPM         | 17.6          | 17.7          | 17.7          | 17.5          | 17.6          | 17.6          | 17.6          | 18.0          | 17.5          | 17.4          | 17.5          | 17.5          |
|                         | Efficiency %       | 81.3          | 82.9          | 83.5          | 84.6          | 85.2          | 85.8          | 86.2          | 86.7          | 88.7          | 89.2          | 89.3          | 89.7          |
| 575                     | Mech. Input HP     | 1.09          | 1.47          | 2.65          | 4.08          | 6.15          | 8.80          | 12.3          | 16.7          | 26.7          | 30.3          | 59.7          | 74.7          |
|                         | Out.Torq., in.lbs. | 4750          | 6450          | 11700         | 18400         | 28200         | 40600         | 56800         | 76000         | 125000        | 144000        | 286000        | 360000        |
|                         | Therm. Input HP    | 1.08          | 1.47          | 2.65          | 4.04          | 5.97          | 8.62          | 11.6          | 15.4          | 24.1          | 30.3          | 53.0          | 67.0          |
|                         | Output RPM         | 11.7          | 11.7          | 11.8          | 11.7          | 11.7          | 11.7          | 11.7          | 12.0          | 11.7          | 11.6          | 11.6          | 11.6          |
|                         | Efficiency%        | 81.1          | 81.7          | 82.3          | 83.4          | 84.9          | 85.4          | 85.6          | 86.3          | 86.6          | 87.5          | 88.4          | 89.0          |
| 300                     | Mech. Input HP     | 0.598         | 0.794         | 1.46          | 2.20          | 3.38          | 4.77          | 6.62          | 8.96          | 14.4          | 21.1          | 36.4          | 50.6          |
|                         | Out.Torq., in.lbs. | 4960          | 6630          | 12300         | 19000         | 29600         | 42000         | 58300         | 77500         | 128000        | 191000        | 330000        | 465000        |
|                         | Therm. Input HP    | 0.580         | 0.780         | 1.42          | 2.13          | 3.38          | 4.70          | 6.50          | 8.73          | 14.3          | 15.9          | 36.4          | 39.0          |
|                         | Output RPM         | 6.12          | 6.12          | 6.13          | 6.08          | 6.09          | 6.09          | 6.09          | 6.24          | 6.08          | 6.05          | 6.07          | 6.07          |
|                         | Efficiency %       | 80.5          | 81.1          | 82.0          | 83.4          | 84.6          | 85.1          | 85.1          | 85.6          | 85.8          | 86.9          | 87.3          | 88.5          |

| INPUT<br>SPEED<br>(RPM)) | Unit Size          | 35             | 40             | 50             | 60             | 70             | 80             | 90             | 100            | 120            | 140            | 170            | 200            |
|--------------------------|--------------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|
|                          | Center Distance    | 3.5            | 4              | 5              | 6              | 7              | 8              | 9              | 10             | 12             | 14             | 17             | 20             |
|                          | Total Actual Ratio | 62.97          | 62.91          | 62.74          | 59.27          | 59.94          | 59.33          | 59.25          | 59.40          | 59.37          | 59.70          | 59.54          | 59.54          |
|                          | Ratio Combinations | 4.06<br>15-1/2 | 4.06<br>15-1/2 | 4.05<br>15-1/2 | 4.05<br>14-2/3 | 4.09<br>14-2/3 | 4.04<br>14-2/3 | 4.04<br>14-2/3 | 4.05<br>14-2/3 | 4.05<br>14-2/3 | 4.05<br>14-3/4 | 4.04<br>14-3/4 | 4.04<br>14-3/4 |
|                          |                    |                |                |                |                |                |                |                |                |                |                |                |                |
| 1750                     | Mech. Input HP     | 2.48           | 3.70           | 5.64           | 8.87           | 13.3           | 19.3           | 24.4           | 33.6           | 51.5           | 64.0           | 96.8           | 146            |
|                          | Out.Torq., in.lbs. | 4510           | 6780           | 10700          | 16300          | 24800          | 35600          | 45200          | 62500          | 96000          | 124000         | 188000         | 287000         |
|                          | Therm. Input HP    | 2.19           | 2.93           | 4.91           | 8.50           | 11.8           | 16.0           | 21.4           | 28.4           | 43.2           | 64.0           | 87.6           | 119            |
|                          | Output RPM         | 27.8           | 27.8           | 27.9           | 29.5           | 29.2           | 29.5           | 29.5           | 29.5           | 29.5           | 29.3           | 29.4           | 29.4           |
|                          | Efficiency%        | 80.2           | 80.9           | 84.0           | 86.1           | 86.4           | 86.6           | 86.8           | 87.0           | 87.2           | 90.1           | 90.6           | 91.7           |
| 1450                     | Mech. Input HP     | 2.15           | 2.84           | 4.90           | 7.75           | 11.7           | 16.9           | 21.5           | 29.9           | 46.4           | 58.1           | 89.0           | 130            |
|                          | Out.Torq., in.lbs. | 4670           | 6320           | 11200          | 16900          | 26000          | 37200          | 47600          | 67000          | 104000         | 135000         | 208000         | 305000         |
|                          | Therm. Input HP    | 1.91           | 2.61           | 4.35           | 7.50           | 10.4           | 14.2           | 18.8           | 25.0           | 38.0           | 58.1           | 78.6           | 106            |
|                          | Output RPM         | 23.0           | 23.0           | 23.1           | 24.5           | 24.2           | 24.4           | 24.5           | 24.4           | 24.4           | 24.3           | 24.4           | 24.4           |
|                          | Efficiency%        | 79.4           | 81.4           | 83.8           | 84.6           | 85.3           | 85.4           | 86.0           | 86.8           | 86.9           | 89.5           | 90.3           | 90.7           |
| 1150                     | Mech. Input HP     | 1.77           | 2.33           | 4.09           | 6.48           | 9.79           | 14.1           | 17.9           | 25.5           | 40.4           | 51.7           | 79.8           | 113            |
|                          | Out.Torq., in.lbs. | 4790           | 6480           | 11600          | 17700          | 27300          | 39000          | 50000          | 71500          | 114000         | 148000         | 234000         | 332000         |
|                          | Therm. Input HP    | 1.60           | 2.25           | 3.73           | 6.32           | 8.90           | 12.1           | 15.9           | 21.1           | 32.5           | 50.0           | 67.0           | 860            |
|                          | Output RPM         | 18.3           | 18.3           | 18.3           | 19.4           | 19.2           | 19.4           | 19.4           | 19.4           | 19.4           | 19.3           | 19.3           | 19.3           |
|                          | Efficiency%        | 78.4           | 80.7           | 82.5           | 84.1           | 84.9           | 85.1           | 86.0           | 86.1           | 86.7           | 87.5           | 89.9           | 90.0           |
| 865                      | Mech. Input HP     | 1.40           | 1.86           | 3.21           | 5.14           | 7.70           | 11.0           | 14.2           | 20.7           | 32.2           | 42.7           | 69.5           | 98.0           |
|                          | Out.Torq., in.lbs. | 4930           | 6750           | 11900          | 18500          | 28500          | 40600          | 52400          | 76800          | 120000         | 162000         | 266000         | 377000         |
|                          | Therm. Input HP    | 1.30           | 1.84           | 3.02           | 5.10           | 7.30           | 9.90           | 12.8           | 17.4           | 26.8           | 42.7           | 60.0           | 80.5           |
|                          | Output RPM         | 13.7           | 13.7           | 13.8           | 14.6           | 14.4           | 14.6           | 14.6           | 14.6           | 14.6           | 14.5           | 14.5           | 14.5           |
|                          | Efficiency %       | 76.8           | 79.2           | 81.1           | 83.3           | 84.8           | 85.4           | 85.5           | 85.7           | 86.2           | 87.2           | 88.2           | 88.7           |
| 575                      | Mech. Input HP     | 0.970          | 1.29           | 2.22           | 3.68           | 5.50           | 7.85           | 9.90           | 14.6           | 23.5           | 31.9           | 53.1           | 766            |
|                          | Out.Torq., in.lbs. | 5050           | 6820           | 12100          | 19400          | 30000          | 42800          | 54400          | 80500          | 130000         | 179000         | 300000         | 435000         |
|                          | Therm. Input HP    | 0.960          | 1.29           | 2.20           | 3.62           | 5.38           | 7.40           | 9.30           | 13.1           | 20.5           | 31.9           | 50.7           | 67.3           |
|                          | Output RPM         | 9.13           | 9.14           | 9.16           | 9.70           | 9.59           | 9.69           | 9.70           | 9.68           | 9.69           | 9.63           | 9.66           | 9.66           |
|                          | Efficiency%        | 75.4           | 76.7           | 79.3           | 81.1           | 83.0           | 83.8           | 84.6           | 84.7           | 85.0           | 85.8           | 86.6           | 87.0           |
| 300                      | Mech. Input HP     | 0.531          | 0.719          | 1.23           | 2.04           | 3.07           | 4.76           | 6.10           | 8.07           | 13.2           | 18.7           | 31.2           | 46.0           |
|                          | Out.Torq., in.lbs. | 5290           | 7190           | 12800          | 20200          | 31100          | 48000          | 61800          | 82400          | 135000         | 198000         | 331000         | 491000         |
|                          | Therm. Input HP    | 0.520          | 0.700          | 1.20           | 1.99           | 3.05           | 4.38           | 5.37           | 8.15           | 13.1           | 17.8           | 29.5           | 44.2           |
|                          | Output RPM         | 4.76           | 4.77           | 4.78           | 5.06           | 5.01           | 5.06           | 5.06           | 5.05           | 5.05           | 5.03           | 5.04           | 5.04           |
|                          | Efficiency %       | 75.3           | 75.7           | 79.0           | 79.5           | 80.4           | 80.9           | 81.4           | 81.8           | 82.0           | 84.4           | 84.8           | 85.3           |

Ratings based on 1.0 service factor. For A.G.M.A. recommended practice on service factors, see page 11.



# Horsepower and Torque Ratings • Helical Worm

| INPUT SPEED (RPM) | Unit Size          | 35     | 40     | 50     | 60     | 70     | 80     | 90     | 100    | 120    | 140    | 170    | 200    |
|-------------------|--------------------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
|                   | Center Distance    | 3.5    | 4      | 5      | 6      | 7      | 8      | 9      | 10     | 12     | 14     | 17     | 20     |
|                   | Total Actual Ratio | 78.6   | 78.5   | 78.4   | 74.2   | 74.1   | 74.1   | 74.1   | 72.4   | 74.2   | 74.6   | 74.4   | 74.4   |
|                   | Ratio Combinations | 5.07   | 5.07   | 5.06   | 5.06   | 5.05   | 5.05   | 5.05   | 4.93   | 5.06   | 5.06   | 5.05   | 5.05   |
|                   |                    | 15-1/2 | 15-1/2 | 15-1/2 | 14-2/3 | 14-2/3 | 14-2/3 | 14-2/3 | 14-2/3 | 14-2/3 | 14-3/4 | 14-3/4 | 14-3/4 |
| 1750              | Mech. Input HP     | 2.1    | 2.8    | 4.7    | 7.5    | 11.5   | 16.4   | 20.5   | 29.4   | 44.5   | 57.2   | 87.5   | 127    |
|                   | Out.Torq., in.lbs. | 4670   | 6360   | 10800  | 17000  | 26200  | 37500  | 47200  | 67500  | 105000 | 137000 | 211000 | 310000 |
|                   | Therm. Input HP    | 1.9    | 2.6    | 4.3    | 7.3    | 10.2   | 13.9   | 18.5   | 24.6   | 37.4   | 57.2   | 79.0   | 103    |
|                   | Output RPM         | 22.3   | 22.3   | 22.3   | 23.6   | 23.6   | 23.6   | 23.6   | 24.2   | 23.6   | 23.5   | 23.5   | 23.5   |
|                   | Efficiency%        | 79.3   | 81.1   | 82.1   | 84.5   | 85.3   | 85.7   | 86.3   | 88.1   | 88.3   | 89.1   | 90.0   | 911    |
| 1450              | Mech. Input HP     | 1.79   | 2.36   | 4.14   | 6.52   | 10.0   | 14.2   | 18.2   | 26.0   | 39.7   | 51.5   | 81.3   | 113    |
|                   | Out.Torq., in.lbs. | 4800   | 6500   | 11500  | 17600  | 27200  | 38800  | 50000  | 71300  | 112000 | 148000 | 234000 | 330000 |
|                   | Therm. Input HP    | 1.62   | 2.26   | 3.76   | 6.38   | 8.98   | 12.2   | 16.1   | 21.6   | 39.4   | 51.5   | 75.0   | 87.5   |
|                   | Output RPM         | 18.4   | 18.5   | 18.5   | 19.5   | 19.6   | 19.6   | 19.6   | 20.0   | 19.5   | 19.4   | 19.5   | 19.5   |
|                   | Efficiency%        | 78.5   | 80.7   | 81.5   | 83.7   | 84.4   | 84.8   | 85.3   | 87.2   | 87.5   | 88.6   | 89.0   | 90.3   |
| 1150              | Mech. Input HP     | 1.47   | 1.95   | 3.42   | 5.42   | 8.34   | 11.8   | 15.0   | 22.0   | 33.5   | 44.5   | 72.7   | 101.0  |
|                   | Out.Torq., in.lbs. | 4910   | 6670   | 11900  | 18300  | 28200  | 40200  | 51600  | 75700  | 119000 | 159000 | 260000 | 367000 |
|                   | Therm. Input HP    | 1.36   | 1.93   | 3.17   | 5.35   | 7.65   | 10.4   | 13.4   | 18.1   | 27.9   | 44.0   | 61.0   | 83.0   |
|                   | Output RPM         | 14.6   | 14.6   | 14.7   | 15.5   | 15.5   | 15.5   | 15.5   | 15.9   | 15.5   | 15.4   | 15.5   | 15.5   |
|                   | Efficiency%        | 77.5   | 79.5   | 81.0   | 83.0   | 83.2   | 83.9   | 84.7   | 86.8   | 87.3   | 87.4   | 87.7   | 89.1   |
| 865               | Mech. Input HP     | 1.16   | 1.55   | 2.65   | 4.32   | 6.65   | 9.38   | 11.8   | 18.0   | 27.0   | 36.2   | 60.3   | 85.7   |
|                   | Out.Torq., in.lbs. | 5000   | 6710   | 12200  | 19000  | 29400  | 42000  | 53600  | 81000  | 125000 | 171000 | 286000 | 410000 |
|                   | Therm. Input HP    | 1.1    | 1.55   | 2.58   | 4.3    | 6.26   | 8.49   | 10.8   | 14.9   | 23.2   | 36.2   | 58.5   | 75.5   |
|                   | Output RPM         | 11.0   | 11.0   | 11.0   | 11.7   | 11.7   | 11.7   | 11.7   | 12.0   | 11.7   | 11.6   | 11.6   | 11.6   |
|                   | Efficiency %       | 75.3   | 75.7   | 80.6   | 81.3   | 81.9   | 82.9   | 84.2   | 85.3   | 85.6   | 86.9   | 87.5   | 88.2   |
| 575               | Mech. Input HP     | 0.8    | 1.07   | 1.80   | 3.01   | 4.6    | 6.9    | 8.14   | 12.4   | 19.4   | 26.6   | 44.0   | 65.0   |
|                   | Out.Torq., in.lbs. | 5160   | 6940   | 12300  | 19700  | 30400  | 46300  | 55200  | 82500  | 133000 | 185000 | 308000 | 460000 |
|                   | Therm. Input HP    | 0.8    | 1.04   | 1.80   | 3.01   | 4.5    | 6.33   | 7.8    | 11.3   | 17.8   | 26.6   | 44.0   | 65.0   |
|                   | Output RPM         | 7.31   | 7.32   | 7.33   | 7.75   | 7.76   | 7.76   | 7.76   | 7.95   | 7.75   | 7.71   | 7.73   | 7.73   |
|                   | Efficiency%        | 74.9   | 75.4   | 79.5   | 80.5   | 81.3   | 82.6   | 83.5   | 83.9   | 84.5   | 85.0   | 85.8   | 86.8   |
| 300               | Mech. Input HP     | .431   | .583   | 1.0    | 1.63   | 2.5    | 3.85   | 4.83   | 8.56   | 10.5   | 15.2   | 25.4   | 37.7   |
|                   | Out.Torq., in.lbs. | 5310   | 7240   | 12900  | 20400  | 31400  | 48600  | 62600  | 83400  | 138000 | 202000 | 338000 | 504000 |
|                   | Therm. Input HP    | .42    | .560   | .960   | 1.6    | 2.45   | 3.5    | 4.28   | 6.53   | 10.5   | 14.4   | 23.8   | 35.7   |
|                   | Output RPM         | 3.82   | 3.82   | 3.83   | 4.04   | 4.05   | 4.05   | 4.05   | 4.15   | 4.04   | 4.02   | 4.03   | 4.03   |
|                   | Efficiency %       | 74.6   | 75.3   | 78.3   | 80.3   | 80.7   | 81.1   | 83.3   | 83.6   | 84.3   | 84.8   | 85.1   | 85.5   |

Helical Worm  
Speed Reducers

| INPUT SPEED (RPM) | Unit Size          | 35     | 40     | 50     | 60     | 70     | 80     | 90     | 100    | 120    | 140    | 170    | 200    |
|-------------------|--------------------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
|                   | Center Distance    | 3.5    | 4      | 5      | 6      | 7      | 8      | 9      | 10     | 12     | 14     | 17     | 20     |
|                   | Total Actual Ratio | 83.28  | 83.21  | 82.98  | 82.98  | 83.78  | 82.93  | 82.82  | 83.02  | 82.98  | 79.60  | 79.39  | 79.39  |
|                   | Ratio Combinations | 4.06   | 4.06   | 4.05   | 4.05   | 4.09   | 4.04   | 4.04   | 4.05   | 4.05   | 4.05   | 4.04   | 4.04   |
|                   |                    | 20-1/2 | 20-1/2 | 20-1/2 | 20-1/2 | 20-1/2 | 20-1/2 | 20-1/2 | 20-1/2 | 20-1/2 | 19-2/3 | 19-2/3 | 19-2/3 |
| 1750              | Mech. Input HP     | 1.91   | 2.53   | 4.46   | 7.14   | 10.6   | 14.8   | 20.0   | 26.4   | 40.0   | 52.4   | 76.7   | 112    |
|                   | Out.Torq., in.lbs. | 4430   | 5930   | 10800  | 17600  | 26600  | 37000  | 50000  | 66500  | 101000 | 129000 | 194000 | 290000 |
|                   | Therm. Input HP    | 1.83   | 2.41   | 4.46   | 7.13   | 9.8    | 13.4   | 16.8   | 20.6   | 32.9   | 52.4   | 75.0   | 109    |
|                   | Output RPM         | 21.0   | 21.0   | 21.1   | 21.1   | 20.9   | 21.1   | 21.1   | 21.1   | 21.1   | 22.0   | 22.0   | 22.0   |
|                   | Efficiency%        | 77.3   | 78.2   | 81.0   | 82.5   | 83.2   | 83.7   | 83.8   | 84.2   | 84.5   | 85.9   | 88.5   | 90.6   |
| 1450              | Mech. Input HP     | 1.65   | 2.18   | 3.89   | 6.27   | 9.4    | 13.1   | 17.8   | 23.6   | 36.1   | 46.1   | 71.5   | 102    |
|                   | Out.Torq., in.lbs. | 4580   | 6140   | 11000  | 18300  | 27800  | 39000  | 53200  | 71000  | 109000 | 139000 | 21600  | 315000 |
|                   | Therm. Input HP    | 1.60   | 2.13   | 3.89   | 6.2    | 7.4    | 11.8   | 14.7   | 18.0   | 29.0   | 46.1   | 68.5   | 96.0   |
|                   | Output RPM         | 17.4   | 17.4   | 17.5   | 17.5   | 13.7   | 17.5   | 17.5   | 17.5   | 17.5   | 18.2   | 18.3   | 18.3   |
|                   | Efficiency%        | 76.7   | 77.9   | 78.4   | 80.9   | 81.2   | 82.6   | 83.0   | 83.4   | 83.7   | 87.1   | 87.5   | 89.5   |
| 1150              | Mech. Input HP     | 1.37   | 1.83   | 3.3    | 5.25   | 7.85   | 10.9   | 14.9   | 20.0   | 30.8   | 40.2   | 65.2   | 90.0   |
|                   | Out.Torq., in.lbs. | 4710   | 6410   | 11700  | 19200  | 29000  | 40700  | 56000  | 75700  | 117000 | 150000 | 246000 | 347000 |
|                   | Therm. Input HP    | 1.33   | 1.8    | 3.25   | 5.2    | 7.4    | 10.0   | 12.5   | 15.4   | 24.9   | 40.2   | 57.3   | 85.5   |
|                   | Output RPM         | 13.8   | 13.8   | 13.9   | 13.9   | 13.7   | 13.9   | 13.9   | 13.9   | 13.9   | 14.4   | 14.5   | 14.5   |
|                   | Efficiency%        | 75.3   | 76.8   | 78.0   | 80.4   | 80.5   | 82.2   | 82.8   | 83.2   | 83.5   | 85.5   | 86.7   | 88.6   |
| 865               | Mech. Input HP     | 1.03   | 1.42   | 2.58   | 4.19   | 6.41   | 8.66   | 11.9   | 16.0   | 24.9   | 33.4   | 56.3   | 78.0   |
|                   | Out.Torq., in.lbs. | 4820   | 6580   | 12100  | 19900  | 30800  | 42800  | 58800  | 80000  | 125000 | 165000 | 278000 | 392000 |
|                   | Therm. Input HP    | 1.07   | 1.42   | 2.58   | 4.15   | 6.02   | 8.07   | 10.3   | 12.9   | 20.7   | 33.4   | 51.7   | 74.5   |
|                   | Output RPM         | 10.4   | 10.4   | 10.4   | 10.4   | 10.3   | 10.4   | 10.4   | 10.4   | 10.4   | 10.9   | 10.9   | 10.9   |
|                   | Efficiency %       | 74.2   | 76.4   | 77.6   | 78.6   | 78.7   | 81.8   | 81.9   | 82.7   | 83.0   | 85.2   | 85.4   | 86.9   |
| 575               | Mech. Input HP     | .76    | 1.0    | 1.84   | 2.98   | 4.5    | 6.25   | 8.67   | 11.7   | 18.0   | 25.0   | 41.8   | 60.0   |
|                   | Out.Torq., in.lbs. | 5000   | 6750   | 12600  | 20700  | 31800  | 45000  | 62400  | 85200  | 134000 | 182000 | 306000 | 445000 |
|                   | Therm. Input HP    | .76    | 1.0    | 1.82   | 2.94   | 4.38   | 5.94   | 7.88   | 10.4   | 16.0   | 25.0   | 41.8   | 60.0   |
|                   | Output RPM         | 6.9    | 6.91   | 6.93   | 6.93   | 6.86   | 6.93   | 6.94   | 6.93   | 6.93   | 7.2    | 7.24   | 7.24   |
|                   | Efficiency%        | 72.1   | 74.0   | 75.3   | 76.4   | 77.0   | 79.2   | 79.3   | 80.0   | 81.8   | 83.4   | 84.1   | 85.2   |
| 300               | Mech. Input HP     | .407   | .554   | 1.01   | 1.65   | 2.48   | 3.83   | 4.86   | 6.5    | 10.2   | 15.0   | 24.9   | 36.6   |
|                   | Out.Torq., in.lbs. | 5130   | 7040   | 13000  | 21500  | 32800  | 50800  | 65600  | 88400  | 139000 | 203000 | 338000 | 502000 |
|                   | Therm. Input HP    | .40    | .540   | .99    | 1.62   | 2.48   | 3.5    | 4.83   | 6.53   | 10.2   | 14.3   | 23.7   | 35.0   |
|                   | Output RPM         | 3.6    | 3.61   | 3.62   | 3.62   | 3.58   | 3.62   | 3.6    | 3.6    | 3.62   | 3.77   | 3.78   | 3.78   |
|                   | Efficiency %       | 72.0   | 72.7   | 73.8   | 74.7   | 75.1   | 76.1   | 77.6   | 77.7   | 78.2   | 80.9   | 81.4   | 82.2   |

Ratings based on 1.0 service factor. For A.G.M.A. recommended practice on service factors, see page 11.

# Horsepower and Torque Ratings • Helical Worm

Helical Worm  
Speed Reducers

| INPUT<br>SPEED<br>(RPM) | Unit Size          | 35    | 40    | 50     | 60     | 70     | 80     | 90     | 100    | 120    | 140    | 170    | 200    |
|-------------------------|--------------------|-------|-------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
|                         | Center Distance    | 3.5   | 4     | 5      | 6      | 7      | 8      | 9      | 10     | 12     | 14     | 17     | 20     |
|                         | Total Actual Ratio | 91.43 | 91.37 | 89.63  | 89.64  | 89.52  | 89.55  | 89.48  | 89.68  | 89.64  | 89.64  | 89.39  | 89.39  |
|                         | Ratio Combinations | 3.05  | 3.04  | 3.04   | 3.04   | 3.03   | 3.04   | 3.03   | 3.04   | 3.04   | 3.04   | 3.04   | 3.04   |
|                         |                    | 30    | 30    | 29-1/2 | 29-1/2 | 29-1/2 | 29-1/2 | 29-1/2 | 29-1/2 | 29-1/2 | 29-1/2 | 29-1/2 | 29-1/2 |
| 1750                    | Mech. Input HP     | 1.88  | 2.44  | 4.05   | 6.3    | 9.0    | 12.5   | 16.6   | 21.8   | 32.3   | 39.9   | 65.6   | 85.5   |
|                         | Out.Torq., in.lbs. | 4460  | 6010  | 10200  | 16200  | 23600  | 32800  | 43600  | 58500  | 87000  | 110000 | 184000 | 242000 |
|                         | Therm. Input HP    | 1.88  | 2.44  | 3.9    | 6.27   | 8.69   | 11.9   | 15.1   | 18.4   | 29.4   | 39.9   | 65.6   | 85.5   |
|                         | Output RPM         | 19.1  | 19.2  | 19.5   | 19.5   | 19.5   | 19.5   | 19.6   | 19.5   | 19.5   | 19.5   | 19.6   | 19.6   |
|                         | Efficiency%        | 72.0  | 79.4  | 78.0   | 79.7   | 81.3   | 81.4   | 81.5   | 83.1   | 83.4   | 85.4   | 87.1   | 87.9   |
| 1450                    | Mech. Input HP     | 1.65  | 2.15  | 3.53   | 5.59   | 7.93   | 11.3   | 15.1   | 20.0   | 30.0   | 37.7   | 59.5   | 78.6   |
|                         | Out.Torq., in.lbs. | 4650  | 6260  | 10500  | 17100  | 24800  | 35400  | 47600  | 63500  | 97000  | 124000 | 200000 | 268000 |
|                         | Therm. Input HP    | 1.65  | 2.15  | 3.42   | 5.58   | 7.71   | 10.7   | 13.4   | 16.2   | 27.0   | 37.2   | 59.5   | 78.5   |
|                         | Output RPM         | 15.9  | 15.9  | 16.2   | 16.2   | 16.2   | 16.2   | 16.2   | 16.2   | 16.2   | 16.2   | 16.2   | 16.2   |
|                         | Efficiency%        | 70.9  | 73.3  | 76.4   | 78.5   | 80.4   | 80.5   | 81.1   | 81.5   | 83.0   | 84.4   | 86.5   | 87.6   |
| 1150                    | Mech. Input HP     | 1.38  | 1.81  | 3.0    | 4.78   | 6.77   | 9.63   | 13.0   | 17.0   | 26.2   | 34.0   | 51.7   | 73.7   |
|                         | Out.Torq., in.lbs. | 4830  | 6510  | 11100  | 17900  | 26300  | 37600  | 51200  | 68000  | 106000 | 139000 | 214000 | 310000 |
|                         | Therm. Input HP    | 1.38  | 1.81  | 2.92   | 4.78   | 6.6    | 9.23   | 11.5   | 13.8   | 23.9   | 34.0   | 51.7   | 73.7   |
|                         | Output RPM         | 12.6  | 12.6  | 12.8   | 12.8   | 12.8   | 12.8   | 12.9   | 12.8   | 12.8   | 12.8   | 12.9   | 12.9   |
|                         | Efficiency%        | 69.8  | 71.8  | 75.3   | 76.2   | 79.2   | 79.6   | 80.3   | 81.4   | 82.4   | 83.2   | 84.5   | 85.9   |
| 865                     | Mech. Input HP     | 1.09  | 1.45  | 2.37   | 3.81   | 5.42   | 7.55   | 10.4   | 13.7   | 21.7   | 28.7   | 46.5   | 64.5   |
|                         | Out.Torq., in.lbs. | 5020  | 6760  | 11600  | 18900  | 27500  | 38500  | 53600  | 72500  | 116000 | 154000 | 250000 | 355000 |
|                         | Therm. Input HP    | 1.09  | 1.45  | 2.37   | 3.81   | 5.35   | 7.55   | 9.4    | 11.3   | 19.9   | 28.7   | 46.5   | 64.5   |
|                         | Output RPM         | 9.46  | 9.47  | 9.65   | 9.65   | 9.66   | 9.66   | 9.67   | 9.65   | 9.65   | 9.65   | 9.68   | 9.68   |
|                         | Efficiency %       | 69.1  | 70.0  | 74.9   | 76.0   | 77.8   | 78.2   | 79.1   | 81.0   | 81.8   | 82.2   | 82.5   | 84.5   |
| 575                     | Mech. Input HP     | .790  | 1.03  | 1.71   | 2.76   | 4.05   | 5.57   | 7.59   | 9.81   | 15.8   | 21.9   | 21.9   | 52.3   |
|                         | Out.Torq., in.lbs. | 5200  | 7000  | 12100  | 19900  | 29900  | 41800  | 58500  | 78000  | 126000 | 176000 | 176000 | 422000 |
|                         | Therm. Input HP    | .790  | 1.02  | 1.71   | 2.76   | 3.93   | 5.46   | 6.95   | 8.5    | 14.9   | 21.9   | 21.9   | 52.3   |
|                         | Output RPM         | 6.29  | 6.29  | 6.42   | 6.41   | 6.42   | 6.42   | 6.43   | 6.41   | 6.41   | 6.41   | 6.43   | 6.43   |
|                         | Efficiency%        | 65.7  | 67.9  | 72.0   | 73.4   | 75.2   | 76.5   | 78.6   | 80.9   | 81.2   | 81.8   | 82.0   | 82.4   |
| 300                     | Mech. Input HP     | .45   | .590  | .99    | 1.61   | 2.28   | 3.27   | 4.5    | 5.97   | 9.85   | 14.4   | 22.4   | 32.0   |
|                         | Out.Torq., in.lbs. | 5370  | 7240  | 12600  | 21800  | 30900  | 44500  | 61400  | 83000  | 138000 | 203000 | 326000 | 484000 |
|                         | Therm. Input HP    | .45   | .590  | .99    | 1.61   | 2.28   | 3.27   | 4.5    | 5.97   | 9.85   | 14.4   | 22.4   | 32.0   |
|                         | Output RPM         | 3.28  | 3.28  | 3.35   | 3.35   | 3.35   | 3.35   | 3.35   | 3.35   | 3.35   | 3.35   | 3.36   | 3.36   |
|                         | Efficiency %       | 62.1  | 63.9  | 67.6   | 71.9   | 72.1   | 72.3   | 72.6   | 73.8   | 74.4   | 74.9   | 77.5   | 80.5   |

| INPUT<br>SPEED<br>(RPM) | Unit Size          | 35     | 40     | 50     | 60     | 70     | 80     | 90     | 100    | 120    | 140    | 170    | 200    |
|-------------------------|--------------------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
|                         | Center Distance    | 3.5    | 4      | 5      | 6      | 7      | 8      | 9      | 10     | 12     | 14     | 17     | 20     |
|                         | Total Actual Ratio | 104.0  | 103.9  | 103.7  | 103.7  | 103.6  | 103.6  | 103.5  | 101.1  | 103.7  | 99.49  | 99.22  | 99.22  |
|                         | Ratio Combinations | 5.07   | 5.07   | 5.06   | 5.06   | 5.05   | 5.05   | 5.05   | 4.93   | 5.06   | 5.06   | 5.05   | 5.05   |
|                         |                    | 20-1/2 | 20-1/2 | 20-1/2 | 20-1/2 | 20-1/2 | 20-1/2 | 20-1/2 | 20-1/2 | 20-1/2 | 19-2/3 | 19-2/3 | 19-2/3 |
| 1750                    | Mech. Input HP     | 1.60   | 2.12   | 3.78   | 6.12   | 9.20   | 12.8   | 17.4   | 22.8   | 34.0   | 45.6   | 69.8   | 100    |
|                         | Out.Torq., in.lbs. | 4570   | 6180   | 11300  | 18400  | 28000  | 39200  | 53600  | 71500  | 110000 | 142000 | 220000 | 320000 |
|                         | Therm. Input HP    | 1.55   | 2.08   | 3.78   | 6.07   | 8.49   | 11.6   | 14.5   | 17.6   | 28.6   | 45.6   | 66.5   | 96.5   |
|                         | Output RPM         | 16.8   | 16.8   | 16.9   | 16.9   | 16.9   | 16.9   | 16.9   | 17.3   | 16.9   | 17.6   | 17.6   | 17.6   |
|                         | Efficiency%        | 76.3   | 77.9   | 80.0   | 80.5   | 81.6   | 82.1   | 82.6   | 86.1   | 86.6   | 86.9   | 88.2   | 89.6   |
| 1450                    | Mech. Input HP     | 1.37   | 1.83   | 3.26   | 5.27   | 7.93   | 11.0   | 15.1   | 20.0   | 30.2   | 40.8   | 65.0   | 92.9   |
|                         | Out.Torq., in.lbs. | 4690   | 6400   | 11700  | 19100  | 28800  | 40600  | 56000  | 75500  | 117000 | 152000 | 244000 | 358000 |
|                         | Therm. Input HP    | 1.35   | 1.82   | 3.26   | 5.23   | 7.43   | 10.1   | 12.7   | 15.6   | 25.2   | 40.8   | 60.0   | 87.5   |
|                         | Output RPM         | 13.9   | 14.0   | 14.0   | 14.0   | 14.0   | 14.0   | 14.0   | 14.3   | 14.0   | 14.6   | 14.6   | 14.6   |
|                         | Efficiency%        | 75.7   | 77.4   | 79.6   | 80.4   | 80.7   | 82.0   | 82.4   | 85.9   | 86.0   | 86.2   | 87.0   | 89.4   |
| 1150                    | Mech. Input HP     | 1.13   | 1.50   | 2.71   | 4.41   | 6.63   | 9.10   | 12.5   | 16.8   | 25.5   | 35.1   | 58.6   | 80.5   |
|                         | Out.Torq., in.lbs. | 4800   | 6450   | 12000  | 19800  | 30000  | 42300  | 58400  | 79000  | 123000 | 163000 | 272000 | 382000 |
|                         | Therm. Input HP    | 1.12   | 1.50   | 2.71   | 4.36   | 6.30   | 8.45   | 10.8   | 13.3   | 21.4   | 35.1   | 52.5   | 76.0   |
|                         | Output RPM         | 11.1   | 11.1   | 11.1   | 11.1   | 11.1   | 11.1   | 11.1   | 11.4   | 11.1   | 11.6   | 11.6   | 11.6   |
|                         | Efficiency%        | 74.5   | 75.5   | 77.9   | 79.0   | 79.7   | 81.9   | 82.1   | 84.9   | 85.0   | 85.2   | 85.4   | 87.3   |
| 865                     | Mech. Input HP     | 0.890  | 1.18   | 2.16   | 3.50   | 5.28   | 7.26   | 10.0   | 13.6   | 20.5   | 28.5   | 48.0   | 67.8   |
|                         | Out.Torq., in.lbs. | 4900   | 6680   | 12300  | 20300  | 31000  | 44000  | 61100  | 83800  | 130000 | 174000 | 294000 | 422000 |
|                         | Therm. Input HP    | 0.890  | 1.18   | 2.16   | 3.50   | 5.12   | 6.87   | 8.90   | 11.2   | 18.0   | 28.5   | 45.5   | 67.8   |
|                         | Output RPM         | 8.32   | 8.33   | 8.34   | 8.34   | 8.35   | 8.35   | 8.36   | 8.56   | 8.34   | 8.69   | 8.72   | 8.72   |
|                         | Efficiency %       | 72.7   | 74.8   | 75.4   | 76.8   | 77.8   | 80.3   | 81.0   | 83.6   | 83.9   | 84.2   | 84.7   | 86.1   |
| 575                     | Mech. Input HP     | 0.620  | 0.810  | 1.51   | 2.45   | 3.73   | 5.22   | 7.10   | 9.71   | 14.9   | 20.9   | 35.1   | 50.9   |
|                         | Out.Torq., in.lbs. | 5010   | 6820   | 12600  | 21000  | 32400  | 45800  | 63600  | 87000  | 138000 | 188000 | 318000 | 465000 |
|                         | Therm. Input HP    | 0.620  | 0.810  | 1.51   | 2.43   | 3.65   | 5.00   | 6.80   | 8.85   | 14.0   | 20.9   | 35.1   | 50.9   |
|                         | Output RPM         | 5.53   | 5.53   | 5.54   | 5.54   | 5.55   | 5.55   | 5.56   | 5.69   | 5.54   | 5.78   | 5.80   | 5.80   |
|                         | Efficiency%        | 70.9   | 73.9   | 73.4   | 75.4   | 76.5   | 77.3   | 79.0   | 80.9   | 81.5   | 82.5   | 83.3   | 84.0   |
| 300                     | Mech. Input HP     | 0.337  | 0.445  | 0.815  | 1.34   | 2.01   | 2.90   | 3.92   | 5.23   | 8.31   | 12.3   | 20.6   | 30.2   |
|                         | Out.Torq., in.lbs. | 5160   | 6860   | 13100  | 21700  | 33100  | 48000  | 66500  | 88400  | 141000 | 206000 | 346000 | 515000 |
|                         | Therm. Input HP    | 0.330  | 0.430  | 0.790  | 1.30   | 1.99   | 2.80   | 3.86   | 5.23   | 8.20   | 11.5   | 19.2   | 28.2   |
|                         | Output RPM         | 2.88   | 2.89   | 2.89   | 2.89   | 2.90   | 2.90   | 2.90   | 2.97   | 2.89   | 3.02   | 3.02   | 3.02   |
|                         | Efficiency %       | 70.1   | 70.7   | 73.8   | 74.3   | 75.7   | 76.0   | 78.0   | 79.6   | 77.9   | 80.1   | 80.6   | 81.8   |

Ratings based on 1.0 service factor. For A.G.M.A. recommended practice on service factors, see page 11.

# Horsepower and Torque Ratings • Helical Worm

| INPUT SPEED (RPM) | Unit Size          | 35    | 40    | 50     | 60     | 70     | 80     | 90     | 100    | 120    | 140    | 170    | 200    |
|-------------------|--------------------|-------|-------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
|                   | Center Distance    | 3.5   | 4     | 5      | 6      | 7      | 8      | 9      | 10     | 12     | 14     | 17     | 20     |
|                   | Total Actual Ratio | 121.9 | 121.8 | 119.4  | 119.4  | 120.6  | 119.3  | 119.2  | 119.5  | 119.4  | 119.4  | 119.1  | 119.1  |
|                   | Ratio Combinations | 4.06  | 4.06  | 4.05   | 4.05   | 4.09   | 4.04   | 4.04   | 4.05   | 4.05   | 4.05   | 4.04   | 4.04   |
|                   |                    | 30    | 30    | 29-1/2 | 29-1/2 | 29-1/2 | 29-1/2 | 29-1/2 | 29-1/2 | 29-1/2 | 29-1/2 | 29-1/2 | 29-1/2 |
| 1750              | Mech. Input HP     | 1.53  | 2.00  | 3.31   | 5.24   | 7.45   | 10.3   | 14.0   | 18.9   | 27.8   | 35.8   | 54.0   | 77.3   |
|                   | Out.Torq., in.lbs. | 4740  | 6200  | 10800  | 17500  | 25600  | 35400  | 49200  | 66200  | 101000 | 131000 | 200000 | 288000 |
|                   | Therm. Input HP    | 1.53  | 2.00  | 3.20   | 5.23   | 7.24   | 10.0   | 12.6   | 15.2   | 25.6   | 35.8   | 54.0   | 77.3   |
|                   | Output RPM         | 14.4  | 14.4  | 14.7   | 14.7   | 14.5   | 14.7   | 14.7   | 14.6   | 14.7   | 14.7   | 14.7   | 14.7   |
|                   | Efficiency%        | 70.6  | 70.7  | 75.9   | 77.7   | 79.1   | 80.0   | 81.9   | 81.4   | 84.5   | 85.1   | 86.3   | 86.9   |
| 1450              | Mech. Input HP     | 1.31  | 1.73  | 2.87   | 4.58   | 6.60   | 9.28   | 12.5   | 16.7   | 25.2   | 32.0   | 50.3   | 69.7   |
|                   | Out.Torq., in.lbs. | 4880  | 6560  | 11200  | 18100  | 26900  | 38000  | 51800  | 70000  | 109000 | 140000 | 222000 | 310000 |
|                   | Therm. Input HP    | 1.31  | 1.73  | 2.82   | 4.58   | 6.38   | 8.97   | 11.1   | 13.2   | 23.0   | 31.6   | 50.3   | 29.9   |
|                   | Output RPM         | 11.9  | 11.9  | 12.1   | 12.1   | 12.0   | 12.2   | 12.2   | 12.1   | 12.1   | 12.1   | 12.2   | 12.2   |
|                   | Efficiency%        | 70.3  | 71.6  | 75.2   | 76.1   | 77.8   | 79.0   | 80.0   | 80.7   | 83.3   | 84.3   | 85.3   | 85.9   |
| 1150              | Mech. Input HP     | 1.09  | 1.44  | 2.37   | 3.82   | 5.43   | 7.69   | 10.4   | 13.9   | 21.8   | 28.9   | 46.3   | 64.2   |
|                   | Out.Torq., in.lbs. | 5020  | 6760  | 11600  | 18700  | 27600  | 39600  | 54000  | 73000  | 117000 | 156000 | 251000 | 355000 |
|                   | Therm. Input HP    | 1.09  | 1.44  | 2.37   | 3.82   | 5.34   | 7.50   | 9.38   | 11.2   | 19.8   | 28.9   | 46.3   | 64.2   |
|                   | Output RPM         | 9.43  | 9.44  | 9.63   | 9.63   | 9.54   | 9.64   | 9.65   | 9.62   | 9.63   | 9.63   | 9.66   | 9.66   |
|                   | Efficiency%        | 68.9  | 70.3  | 74.8   | 74.8   | 76.9   | 78.8   | 79.5   | 80.2   | 82.0   | 82.5   | 83.1   | 84.7   |
| 865               | Mech. Input HP     | 0.870 | 1.17  | 1.90   | 3.04   | 4.37   | 6.13   | 8.35   | 11.0   | 17.1   | 23.7   | 41.3   | 56.3   |
|                   | Out.Torq., in.lbs. | 5150  | 6940  | 12000  | 19600  | 28600  | 41200  | 56900  | 76500  | 121000 | 168000 | 294000 | 407000 |
|                   | Therm. Input HP    | 0.870 | 1.17  | 1.90   | 3.04   | 4.29   | 6.02   | 7.62   | 9.30   | 16.3   | 22.6   | 41.3   | 56.3   |
|                   | Output RPM         | 7.10  | 7.10  | 7.24   | 7.24   | 7.17   | 7.25   | 7.26   | 7.24   | 7.24   | 7.24   | 7.26   | 7.26   |
|                   | Efficiency %       | 66.6  | 66.8  | 72.6   | 74.1   | 74.5   | 77.3   | 78.5   | 79.9   | 81.3   | 81.5   | 82.0   | 83.3   |
| 575               | Mech. Input HP     | 0.620 | 0.810 | 1.34   | 2.15   | 3.05   | 4.45   | 6.00   | 7.83   | 12.7   | 17.7   | 29.9   | 42.8   |
|                   | Out.Torq., in.lbs. | 5290  | 7110  | 12400  | 20300  | 29800  | 43000  | 59600  | 80500  | 132000 | 186000 | 315000 | 455000 |
|                   | Therm. Input HP    | 0.620 | 0.810 | 1.34   | 2.15   | 2.98   | 4.40   | 5.60   | 7.12   | 12.1   | 17.7   | 29.9   | 42.8   |
|                   | Output RPM         | 4.72  | 4.72  | 4.82   | 4.82   | 4.77   | 4.82   | 4.82   | 4.81   | 4.82   | 4.82   | 4.83   | 4.83   |
|                   | Efficiency%        | 63.9  | 65.7  | 70.7   | 72.1   | 73.9   | 73.9   | 76.0   | 78.5   | 79.4   | 80.3   | 80.7   | 81.4   |
| 300               | Mech. Input HP     | 0.346 | 0.451 | 0.743  | 1.17   | 1.70   | 2.45   | 3.36   | 4.47   | 7.35   | 10.1   | 18.0   | 26.0   |
|                   | Out.Torq., in.lbs. | 5470  | 7410  | 12800  | 21100  | 31200  | 44500  | 61400  | 83000  | 137000 | 191000 | 341000 | 506000 |
|                   | Therm. Input HP    | 0.340 | 0.440 | 0.740  | 1.20   | 1.70   | 2.45   | 3.38   | 4.47   | 7.35   | 10.1   | 17.2   | 24.9   |
|                   | Output RPM         | 2.5   | 2.5   | 2.5    | 2.5    | 2.5    | 2.5    | 2.5    | 2.5    | 2.5    | 2.5    | 2.5    | 2.5    |
|                   | Efficiency %       | 61.7  | 64.2  | 68.7   | 71.9   | 72.4   | 72.5   | 73.0   | 74.0   | 74.3   | 75.4   | 75.7   | 77.8   |

Helical Worm  
Speed Reducers

| INPUT SPEED (RPM) | Unit Size          | 35     | 40     | 50     | 60     | 70     | 80     | 90     | 100    | 120    | 140    | 170    | 200    |
|-------------------|--------------------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
|                   | Center Distance    | 3.5    | 4      | 5      | 6      | 7      | 8      | 9      | 10     | 12     | 14     | 17     | 20     |
|                   | Total Actual Ratio | 124.3  | 124.1  | 123.9  | 123.9  | 123.8  | 123.8  | 123.7  | 120.9  | 123.9  | 123.9  | 123.6  | 123.6  |
|                   | Ratio Combinations | 5.07   | 5.07   | 5.06   | 5.06   | 5.05   | 5.05   | 5.05   | 4.93   | 5.06   | 5.06   | 5.05   | 5.05   |
|                   |                    | 24-1/2 | 24-1/2 | 24-1/2 | 24-1/2 | 24-3/2 | 24-1/2 | 24-1/2 | 24-1/2 | 24-1/2 | 24-1/2 | 24-1/2 | 24-1/2 |
| 1750              | Mech. Input HP     | 1.42   | 1.78   | 3.21   | 5.10   | 7.82   | 11.0   | 14.6   | 19.4   | 29.8   | 38.7   | 58.0   | 79.6   |
|                   | Out.Torq., in.lbs. | 4710   | 6170   | 11200  | 17900  | 27800  | 39200  | 53200  | 70000  | 111000 | 146000 | 222000 | 310000 |
|                   | Therm. Input HP    | 1.42   | 1.78   | 3.21   | 5.10   | 7.45   | 10.2   | 12.8   | 15.7   | 25.0   | 38.7   | 58.0   | 79.6   |
|                   | Output RPM         | 14.1   | 14.1   | 14.1   | 14.1   | 14.1   | 14.1   | 14.1   | 14.5   | 14.1   | 14.1   | 14.2   | 14.2   |
|                   | Efficiency%        | 74.1   | 77.6   | 78.2   | 78.7   | 79.7   | 79.9   | 82.1   | 82.9   | 83.5   | 84.5   | 86.0   | 87.5   |
| 1450              | Mech. Input HP     | 1.22   | 1.52   | 2.75   | 4.39   | 6.66   | 9.35   | 12.7   | 17.2   | 26.5   | 34.9   | 54.3   | 74.5   |
|                   | Out.Torq., in.lbs. | 4810   | 6310   | 11500  | 18400  | 28400  | 40500  | 55600  | 74000  | 118000 | 157000 | 250000 | 349000 |
|                   | Therm. Input HP    | 1.20   | 1.52   | 2.75   | 4.39   | 6.51   | 8.80   | 11.2   | 13.8   | 22.2   | 34.9   | 53.5   | 74.5   |
|                   | Output RPM         | 11.7   | 11.7   | 11.7   | 11.7   | 11.7   | 11.7   | 11.7   | 12.0   | 11.7   | 11.7   | 11.7   | 11.7   |
|                   | Efficiency%        | 73.0   | 77.0   | 77.7   | 77.8   | 79.2   | 80.5   | 81.4   | 81.9   | 82.7   | 83.5   | 85.7   | 87.2   |
| 1150              | Mech. Input HP     | 1.00   | 1.25   | 2.29   | 3.67   | 5.47   | 7.80   | 10.5   | 14.8   | 22.4   | 30.2   | 48.8   | 68.2   |
|                   | Out.Torq., in.lbs. | 4910   | 6430   | 11900  | 19200  | 29200  | 42000  | 57600  | 79500  | 125000 | 169000 | 276000 | 395000 |
|                   | Therm. Input HP    | 1.00   | 1.25   | 2.29   | 3.67   | 5.42   | 7.40   | 9.40   | 11.6   | 18.9   | 30.2   | 46.5   | 68.2   |
|                   | Output RPM         | 9.25   | 9.27   | 9.28   | 9.28   | 9.29   | 9.29   | 9.30   | 9.51   | 9.28   | 9.28   | 9.30   | 9.30   |
|                   | Efficiency%        | 72.1   | 75.6   | 76.5   | 77.0   | 78.7   | 79.4   | 80.9   | 81.1   | 82.2   | 82.4   | 83.5   | 85.5   |
| 865               | Mech. Input HP     | 0.790  | 0.990  | 1.82   | 2.92   | 4.35   | 6.30   | 8.50   | 11.5   | 18.0   | 24.5   | 40.4   | 57.2   |
|                   | Out.Torq., in.lbs. | 5010   | 6550   | 12200  | 19700  | 30200  | 44300  | 60000  | 81000  | 132000 | 181000 | 300000 | 435000 |
|                   | Therm. Input HP    | 0.790  | 0.990  | 1.82   | 2.92   | 4.31   | 5.95   | 7.72   | 9.70   | 15.8   | 24.5   | 40.4   | 57.2   |
|                   | Output RPM         | 6.96   | 6.97   | 6.98   | 6.98   | 6.99   | 6.99   | 6.99   | 7.15   | 6.98   | 6.98   | 7.00   | 7.00   |
|                   | Efficiency %       | 70.0   | 73.2   | 74.3   | 74.7   | 77.0   | 78.0   | 78.3   | 80.0   | 81.2   | 81.8   | 82.5   | 84.4   |
| 575               | Mech. Input HP     | 0.550  | 0.690  | 1.26   | 2.02   | 3.13   | 4.37   | 6.00   | 7.98   | 12.9   | 18.0   | 29.6   | 42.4   |
|                   | Out.Torq., in.lbs. | 5110   | 6670   | 12500  | 20200  | 31500  | 45400  | 62800  | 84500  | 140000 | 199000 | 322000 | 470000 |
|                   | Therm. Input HP    | 0.550  | 0.690  | 1.26   | 2.02   | 3.08   | 4.27   | 5.80   | 7.51   | 12.3   | 18.0   | 29.6   | 42.4   |
|                   | Output RPM         | 4.63   | 4.63   | 4.64   | 4.64   | 4.64   | 4.64   | 4.65   | 4.76   | 4.64   | 4.64   | 4.65   | 4.65   |
|                   | Efficiency%        | 68.2   | 71.1   | 73.1   | 73.6   | 74.2   | 76.6   | 77.2   | 79.9   | 79.9   | 81.4   | 80.3   | 81.8   |
| 300               | Mech. Input HP     | 0.296  | 0.378  | 0.682  | 1.12   | 1.69   | 2.41   | 3.28   | 4.38   | 7.20   | 10.3   | 17.5   | 25.0   |
|                   | Out.Torq., in.lbs. | 5240   | 6850   | 12800  | 21100  | 32400  | 46600  | 63700  | 86100  | 145000 | 210000 | 352000 | 513000 |
|                   | Therm. Input HP    | 0.290  | 0.370  | 0.670  | 1.10   | 1.66   | 2.38   | 3.28   | 4.37   | 7.20   | 9.87   | 16.4   | 23.2   |
|                   | Output RPM         | 2.41   | 2.42   | 2.42   | 2.42   | 2.42   | 2.42   | 2.43   | 2.48   | 2.42   | 2.42   | 2.43   | 2.43   |
|                   | Efficiency %       | 67.8   | 69.5   | 72.1   | 72.4   | 73.7   | 74.3   | 74.7   | 77.4   | 77.4   | 78.3   | 77.5   | 79.0   |

Ratings based on 1.0 service factor. For A.G.M.A. recommended practice on service factors, see page 11.

# Horsepower and Torque Ratings • Helical Worm

Helical Worm  
Speed Reducers

| INPUT<br>SPEED<br>(RPM) | Unit Size          | 35    | 40    | 50     | 60     | 70     | 80     | 90     | 100    | 120    | 140    | 170    | 200    |
|-------------------------|--------------------|-------|-------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
|                         | Center Distance    | 3.5   | 4     | 5      | 6      | 7      | 8      | 9      | 10     | 12     | 14     | 17     | 20     |
|                         | Total Actual Ratio | 152.1 | 152.0 | 149.2  | 149.2  | 149.1  | 149.1  | 149.0  | 145.5  | 149.2  | 149.2  | 148.8  | 148.8  |
|                         | Ratio Combinations | 5.07  | 5.07  | 5.06   | 5.06   | 5.05   | 5.05   | 5.05   | 4.93   | 5.06   | 5.06   | 5.05   | 5.05   |
|                         |                    | 30    | 30    | 29-1/2 | 29-1/2 | 29-1/2 | 29-1/2 | 29-1/2 | 29-1/2 | 29-1/2 | 29-1/2 | 29-1/2 | 29-1/2 |
| 1750                    | Mech. Input HP     | 1.28  | 1.68  | 2.79   | 4.46   | 6.30   | 9.00   | 11.9   | 16.5   | 24.7   | 32.1   | 49.2   | 68.5   |
|                         | Out.Torq., in.lbs. | 4900  | 6600  | 11200  | 18200  | 26400  | 38300  | 52000  | 70500  | 110000 | 144000 | 222000 | 317000 |
|                         | Therm. Input HP    | 1.28  | 1.68  | 2.75   | 4.46   | 6.21   | 8.66   | 10.9   | 13.0   | 22.7   | 32.1   | 49.2   | 68.5   |
|                         | Output RPM         | 11.5  | 11.5  | 11.7   | 11.7   | 11.7   | 11.7   | 11.7   | 12.0   | 11.7   | 11.7   | 11.8   | 11.8   |
|                         | Efficiency%        | 69.9  | 71.8  | 74.7   | 75.9   | 78.0   | 79.3   | 81.4   | 81.8   | 82.9   | 83.5   | 84.2   | 86.4   |
| 1450                    | Mech. Input HP     | 1.10  | 1.45  | 2.39   | 3.84   | 5.54   | 7.80   | 10.3   | 14.1   | 21.7   | 29.1   | 46.7   | 65.0   |
|                         | Out.Torq., in.lbs. | 5020  | 6750  | 11600  | 18800  | 27800  | 39400  | 53600  | 73000  | 116000 | 156000 | 251000 | 355000 |
|                         | Therm. Input HP    | 1.10  | 1.45  | 2.39   | 3.84   | 5.38   | 7.55   | 9.50   | 11.4   | 20.2   | 29.1   | 46.7   | 65.0   |
|                         | Output RPM         | 9.53  | 9.54  | 9.72   | 9.72   | 9.73   | 9.73   | 9.73   | 9.97   | 9.72   | 9.72   | 9.74   | 9.74   |
|                         | Efficiency%        | 69.0  | 70.5  | 74.8   | 75.5   | 77.4   | 77.9   | 80.4   | 81.9   | 82.4   | 82.7   | 83.1   | 84.4   |
| 1150                    | Mech. Input HP     | 0.920 | 1.20  | 2.00   | 3.19   | 4.57   | 6.46   | 8.67   | 11.7   | 18.2   | 25.0   | 41.0   | 58.3   |
|                         | Out.Torq., in.lbs. | 5130  | 6900  | 11900  | 19400  | 28400  | 40800  | 55700  | 76000  | 122000 | 169000 | 278000 | 397000 |
|                         | Therm. Input HP    | 0.920 | 1.17  | 2.00   | 3.19   | 4.49   | 6.33   | 8.00   | 9.60   | 17.0   | 25.0   | 40.3   | 58.3   |
|                         | Output RPM         | 7.56  | 7.57  | 7.71   | 7.71   | 7.71   | 7.71   | 7.72   | 7.90   | 7.71   | 7.71   | 7.73   | 7.73   |
|                         | Efficiency%        | 66.9  | 69.0  | 72.8   | 74.4   | 76.1   | 77.3   | 78.7   | 81.5   | 82.0   | 82.7   | 83.1   | 83.5   |
| 865                     | Mech. Input HP     | 0.720 | 0.950 | 1.60   | 2.55   | 3.67   | 5.08   | 6.90   | 9.40   | 14.6   | 20.2   | 34.4   | 48.7   |
|                         | Out.Torq., in.lbs. | 5230  | 7040  | 12400  | 20000  | 29600  | 42200  | 58000  | 79500  | 128000 | 178000 | 304000 | 435000 |
|                         | Therm. Input HP    | 0.710 | 0.950 | 1.58   | 2.55   | 3.57   | 5.02   | 6.45   | 8.00   | 13.8   | 20.2   | 34.4   | 48.7   |
|                         | Output RPM         | 5.69  | 5.69  | 5.80   | 5.80   | 5.80   | 5.80   | 5.81   | 5.95   | 5.80   | 5.80   | 5.81   | 5.81   |
|                         | Efficiency %       | 65.5  | 66.9  | 71.3   | 72.1   | 74.2   | 76.5   | 77.4   | 79.8   | 80.6   | 81.1   | 81.5   | 82.4   |
| 575                     | Mech. Input HP     | 0.510 | 0.660 | 1.09   | 1.77   | 2.56   | 3.60   | 4.90   | 6.60   | 10.5   | 14.8   | 25.1   | 36.3   |
|                         | Out.Torq., in.lbs. | 5340  | 7190  | 12500  | 20700  | 30400  | 43800  | 60400  | 82000  | 134000 | 190000 | 322000 | 472000 |
|                         | Therm. Input HP    | 0.510 | 0.660 | 1.09   | 1.77   | 2.50   | 3.57   | 4.78   | 6.18   | 10.2   | 14.8   | 25.1   | 36.3   |
|                         | Output RPM         | 3.78  | 3.78  | 3.85   | 3.85   | 3.86   | 3.86   | 3.86   | 3.95   | 3.85   | 3.85   | 3.86   | 3.86   |
|                         | Efficiency%        | 62.8  | 65.4  | 70.1   | 71.5   | 72.7   | 74.4   | 75.5   | 77.9   | 78.0   | 78.5   | 78.7   | 79.7   |
| 300                     | Mech. Input HP     | 0.277 | 0.360 | 0.601  | 0.965  | 1.36   | 1.97   | 2.68   | 3.65   | 5.90   | 8.86   | 14.8   | 21.5   |
|                         | Out.Torq., in.lbs. | 5500  | 7458  | 12800  | 21800  | 30900  | 44900  | 61700  | 83000  | 138000 | 208000 | 348000 | 519000 |
|                         | Therm. Input HP    | 0.270 | 0.350 | 0.590  | 0.960  | 1.35   | 1.97   | 2.68   | 3.56   | 5.90   | 8.23   | 13.9   | 20.1   |
|                         | Output RPM         | 1.97  | 1.97  | 2.01   | 2.01   | 2.01   | 2.01   | 2.01   | 2.06   | 2.01   | 2.01   | 2.02   | 2.02   |
|                         | Efficiency %       | 62.1  | 64.9  | 67.9   | 72.1   | 72.5   | 72.8   | 73.5   | 74.4   | 74.6   | 74.9   | 75.2   | 77.2   |

| INPUT<br>SPEED<br>(RPM) | Unit Size          | 35    | 40    | 50    | 60    | 70    | 80    | 90    | 100   | 120    | 140    | 170    | 200    |
|-------------------------|--------------------|-------|-------|-------|-------|-------|-------|-------|-------|--------|--------|--------|--------|
|                         | Center Distance    | 3.5   | 4     | 5     | 6     | 7     | 8     | 9     | 10    | 12     | 14     | 17     | 20     |
|                         | Total Actual Ratio | 162.5 | 162.4 | 161.9 | 161.9 | 163.5 | 161.8 | 161.8 | 162.0 | 161.9  | 158.9  | 159.5  | 159.5  |
|                         | Ratio Combinations | 4.06  | 4.06  | 4.05  | 4.05  | 4.09  | 4.04  | 4.04  | 4.05  | 4.05   | 4.05   | 4.04   | 4.04   |
|                         |                    | 40    | 40    | 40    | 40    | 40    | 40    | 40    | 40    | 40     | 39-1/2 | 39-1/2 | 39-1/2 |
| 1750                    | Mech. Input HP     | 1.19  | 1.53  | 2.63  | 4.00  | 5.95  | 8.40  | 10.7  | 14.0  | 21.5   | 28.6   | 44.0   | 57.7   |
|                         | Out.Torq., in.lbs. | 4580  | 6140  | 10800 | 17200 | 26000 | 36500 | 48000 | 64500 | 101000 | 133000 | 208000 | 277000 |
|                         | Therm. Input HP    | 1.19  | 1.53  | 2.62  | 4.00  | 5.73  | 7.95  | 10.0  | 13.0  | 20.1   | 28.6   | 44.0   | 57.7   |
|                         | Output RPM         | 10.8  | 10.8  | 10.8  | 10.8  | 10.7  | 10.8  | 10.8  | 10.8  | 10.8   | 11.0   | 11.0   | 11.0   |
|                         | Efficiency%        | 65.8  | 68.6  | 70.4  | 73.7  | 74.2  | 74.6  | 77.0  | 79.0  | 80.8   | 81.3   | 82.3   | 83.6   |
| 1450                    | Mech. Input HP     | 1.04  | 1.32  | 2.29  | 3.49  | 5.20  | 7.40  | 9.27  | 12.4  | 19.6   | 26.2   | 39.9   | 53.7   |
|                         | Out.Torq., in.lbs. | 4710  | 6300  | 11100 | 17900 | 27000 | 38200 | 50000 | 68500 | 109000 | 144000 | 224000 | 307000 |
|                         | Therm. Input HP    | 1.04  | 1.32  | 2.29  | 3.49  | 5.05  | 7.14  | 8.76  | 11.4  | 18.4   | 26.2   | 39.9   | 53.7   |
|                         | Output RPM         | 8.92  | 8.93  | 8.96  | 8.96  | 8.87  | 8.96  | 8.96  | 8.95  | 8.96   | 9.13   | 9.09   | 9.09   |
|                         | Efficiency%        | 64.1  | 67.6  | 68.9  | 72.9  | 73.1  | 73.4  | 76.7  | 78.5  | 79.0   | 79.6   | 81.0   | 82.5   |
| 1150                    | Mech. Input HP     | 0.860 | 1.10  | 1.90  | 2.96  | 4.28  | 6.13  | 7.80  | 10.8  | 17.1   | 23.4   | 34.5   | 49.5   |
|                         | Out.Torq., in.lbs. | 4830  | 6480  | 11500 | 18700 | 28000 | 39800 | 52000 | 73000 | 117000 | 158000 | 240000 | 350000 |
|                         | Therm. Input HP    | 0.860 | 1.10  | 1.90  | 2.96  | 4.20  | 5.98  | 7.52  | 9.50  | 15.9   | 23.4   | 33.0   | 49.5   |
|                         | Output RPM         | 7.08  | 7.08  | 7.10  | 7.10  | 7.03  | 7.11  | 7.11  | 7.10  | 7.10   | 7.24   | 7.21   | 7.21   |
|                         | Efficiency%        | 63.1  | 66.2  | 68.2  | 71.2  | 73.0  | 73.2  | 75.2  | 76.1  | 77.1   | 77.5   | 79.6   | 80.9   |
| 865                     | Mech. Input HP     | 0.690 | 0.870 | 1.49  | 2.35  | 3.40  | 4.90  | 6.37  | 8.70  | 13.8   | 19.5   | 29.0   | 42.5   |
|                         | Out.Torq., in.lbs. | 4960  | 6640  | 11800 | 19400 | 29000 | 41600 | 54400 | 77000 | 125000 | 172000 | 264000 | 397000 |
|                         | Therm. Input HP    | 0.690 | 0.870 | 1.49  | 2.35  | 3.35  | 4.83  | 6.12  | 7.75  | 12.9   | 19.5   | 29.0   | 42.5   |
|                         | Output RPM         | 5.32  | 5.33  | 5.34  | 5.34  | 5.29  | 5.35  | 5.35  | 5.34  | 5.34   | 5.44   | 5.42   | 5.42   |
|                         | Efficiency %       | 60.7  | 64.5  | 67.1  | 70.0  | 71.6  | 72.0  | 72.4  | 75.0  | 76.8   | 76.2   | 78.3   | 80.4   |
| 575                     | Mech. Input HP     | 0.490 | 0.620 | 1.05  | 1.72  | 2.41  | 3.51  | 4.52  | 6.37  | 10.1   | 14.4   | 21.9   | 33.3   |
|                         | Out.Torq., in.lbs. | 5090  | 6790  | 12200 | 20100 | 30400 | 43900 | 56800 | 81500 | 133000 | 187000 | 292000 | 447000 |
|                         | Therm. Input HP    | 0.490 | 0.620 | 1.05  | 1.72  | 2.37  | 3.51  | 4.40  | 5.95  | 9.59   | 14.4   | 21.9   | 33.3   |
|                         | Output RPM         | 3.54  | 3.54  | 3.55  | 3.55  | 3.52  | 3.55  | 3.55  | 3.55  | 3.55   | 3.62   | 3.61   | 3.61   |
|                         | Efficiency%        | 58.3  | 61.5  | 65.5  | 65.9  | 70.4  | 70.5  | 70.9  | 72.1  | 74.2   | 74.6   | 76.3   | 76.8   |
| 300                     | Mech. Input HP     | 0.275 | 0.344 | 0.611 | 0.974 | 1.42  | 2.03  | 2.70  | 3.76  | 5.97   | 8.09   | 13.5   | 20.2   |
|                         | Out.Torq., in.lbs. | 5270  | 7000  | 12700 | 20800 | 31500 | 44900 | 62600 | 84800 | 138000 | 195000 | 326000 | 497000 |
|                         | Therm. Input HP    | 0.270 | 0.340 | 0.600 | 0.960 | 1.41  | 2.02  | 2.52  | 3.76  | 5.97   | 8.06   | 13.3   | 19.4   |
|                         | Output RPM         | 1.85  | 1.85  | 1.85  | 1.85  | 1.83  | 1.85  | 1.85  | 1.85  | 1.85   | 1.89   | 1.88   | 1.88   |
|                         | Efficiency %       | 56.1  | 59.6  | 61.1  | 62.8  | 64.6  | 65.1  | 68.2  | 66.3  | 68.0   | 72.2   | 72.1   | 73.4   |

Ratings based on 1.0 service factor. For A.G.M.A. recommended practice on service factors, see page 11.

# Horsepower and Torque Ratings • Helical Worm

| INPUT SPEED (RPM) | Unit Size          | 35    | 40    | 50    | 60    | 70    | 80    | 90    | 100   | 120    | 140    | 170    | 200    |
|-------------------|--------------------|-------|-------|-------|-------|-------|-------|-------|-------|--------|--------|--------|--------|
|                   | Center Distance    | 3.5   | 4     | 5     | 6     | 7     | 8     | 9     | 10    | 12     | 14     | 17     | 20     |
|                   | Total Actual Ratio | 182.9 | 182.7 | 182.3 | 182.3 | 182.1 | 182.1 | 182.0 | 182.4 | 182.3  | 182.3  | 181.8  | 181.8  |
|                   | Ratio Combinations | 3.05  | 3.04  | 3.04  | 3.04  | 3.03  | 3.04  | 3.03  | 3.04  | 3.04   | 3.04   | 3.04   | 3.04   |
|                   |                    | 60    | 60    | 60    | 60    | 60    | 60    | 60    | 60    | 60     | 60     | 60     | 60     |
| 1750              | Mech. Input HP     | 0.990 | 1.15  | 2.02  | 3.12  | 4.70  | 6.60  | 8.45  | 10.9  | 16.5   | 20.2   | 35.5   | 45.2   |
|                   | Out.Torq., in.lbs. | 3860  | 4860  | 8810  | 13900 | 21200 | 30000 | 39600 | 52000 | 79500  | 101000 | 178000 | 238000 |
|                   | Therm. Input HP    | 0.990 | 1.15  | 2.02  | 3.12  | 4.55  | 6.12  | 7.80  | 8.60  | 14.4   | 19.9   | 35.5   | 45.2   |
|                   | Output RPM         | 9.57  | 9.58  | 9.60  | 9.60  | 9.61  | 9.61  | 9.62  | 9.59  | 9.60   | 9.60   | 9.63   | 9.63   |
|                   | Efficiency%        | 59.2  | 64.2  | 66.4  | 67.9  | 68.8  | 69.3  | 71.5  | 72.6  | 73.4   | 76.2   | 76.6   | 80.4   |
| 1450              | Mech. Input HP     | 0.870 | 1.00  | 1.77  | 2.74  | 4.20  | 5.90  | 7.72  | 10.0  | 15.5   | 18.7   | 31.8   | 41.7   |
|                   | Out.Torq., in.lbs. | 4000  | 5010  | 9190  | 14600 | 22400 | 32200 | 42800 | 56000 | 87000  | 112000 | 192000 | 262000 |
|                   | Therm. Input HP    | 0.870 | 1.00  | 1.77  | 2.74  | 4.08  | 5.50  | 6.90  | 7.60  | 12.8   | 18.7   | 31.7   | 41.7   |
|                   | Output RPM         | 7.93  | 7.94  | 7.95  | 7.95  | 7.96  | 7.96  | 7.97  | 7.95  | 7.95   | 7.95   | 7.98   | 7.98   |
|                   | Efficiency%        | 57.8  | 63.1  | 65.5  | 67.2  | 67.4  | 69.0  | 70.1  | 70.6  | 70.8   | 75.6   | 76.4   | 79.5   |
| 1150              | Mech. Input HP     | 0.730 | 0.830 | 1.50  | 2.34  | 3.60  | 5.00  | 6.78  | 8.80  | 13.8   | 17.4   | 27.8   | 37.4   |
|                   | Out.Torq., in.lbs. | 4140  | 5160  | 9550  | 15400 | 23800 | 34100 | 46400 | 60500 | 96000  | 126000 | 206000 | 287000 |
|                   | Therm. Input HP    | 0.730 | 0.830 | 1.50  | 2.34  | 3.47  | 4.81  | 5.95  | 6.65  | 10.9   | 17.4   | 27.8   | 37.4   |
|                   | Output RPM         | 6.29  | 6.29  | 6.31  | 6.31  | 6.32  | 6.32  | 6.32  | 6.30  | 6.31   | 6.31   | 6.33   | 6.33   |
|                   | Efficiency%        | 56.6  | 62.1  | 63.7  | 65.9  | 66.2  | 68.3  | 68.6  | 68.8  | 69.6   | 72.5   | 74.4   | 77.0   |
| 865               | Mech. Input HP     | 0.590 | 0.660 | 1.20  | 1.89  | 2.92  | 4.05  | 5.40  | 7.20  | 11.5   | 15.0   | 23.9   | 32.4   |
|                   | Out.Torq., in.lbs. | 4280  | 5310  | 9900  | 16100 | 25100 | 35800 | 48000 | 65000 | 105000 | 142000 | 226000 | 320000 |
|                   | Therm. Input HP    | 0.590 | 0.660 | 1.20  | 1.89  | 2.84  | 3.94  | 4.90  | 5.60  | 8.80   | 15.0   | 23.9   | 32.4   |
|                   | Output RPM         | 4.73  | 4.73  | 4.74  | 4.74  | 4.75  | 4.75  | 4.75  | 4.74  | 4.74   | 4.74   | 4.76   | 4.76   |
|                   | Efficiency %       | 54.4  | 60.4  | 62.1  | 64.1  | 64.8  | 66.6  | 67.0  | 67.9  | 68.7   | 71.3   | 71.4   | 74.6   |
| 575               | Mech. Input HP     | 0.420 | 0.470 | 0.860 | 1.34  | 2.08  | 2.94  | 3.96  | 5.25  | 8.50   | 11.8   | 18.8   | 26.2   |
|                   | Out.Torq., in.lbs. | 4410  | 5460  | 10300 | 16900 | 26400 | 37800 | 51400 | 69800 | 114000 | 161000 | 258000 | 372000 |
|                   | Therm. Input HP    | 0.420 | 0.470 | 0.860 | 1.34  | 2.06  | 2.88  | 3.67  | 4.33  | 6.80   | 11.8   | 18.8   | 26.2   |
|                   | Output RPM         | 3.14  | 3.15  | 3.15  | 3.15  | 3.16  | 3.16  | 3.16  | 3.15  | 3.15   | 3.15   | 3.16   | 3.16   |
|                   | Efficiency%        | 52.4  | 58.0  | 59.9  | 63.1  | 63.6  | 64.4  | 65.1  | 66.5  | 67.1   | 68.3   | 68.9   | 71.3   |
| 300               | Mech. Input HP     | 0.240 | 0.270 | 0.510 | 0.820 | 1.25  | 1.79  | 2.47  | 3.32  | 5.26   | 7.22   | 11.9   | 17.1   |
|                   | Out.Torq., in.lbs. | 4540  | 5600  | 10600 | 17600 | 27400 | 40000 | 55400 | 74800 | 122000 | 176000 | 293000 | 435000 |
|                   | Therm. Input HP    | 0.240 | 0.270 | 0.510 | 0.820 | 1.25  | 1.79  | 2.47  | 3.32  | 5.26   | 7.22   | 11.9   | 17.1   |
|                   | Output RPM         | 1.64  | 1.64  | 1.65  | 1.65  | 1.65  | 1.65  | 1.65  | 1.64  | 1.65   | 1.65   | 1.65   | 1.65   |
|                   | Efficiency %       | 49.2  | 54.0  | 54.3  | 56.0  | 57.3  | 58.4  | 58.7  | 58.8  | 60.6   | 63.6   | 64.5   | 66.6   |

Helical Worm  
Speed Reducers

| INPUT SPEED (RPM) | Unit Size          | 35    | 40    | 50    | 60    | 70    | 80    | 90    | 100   | 120    | 140    | 170    | 200    |
|-------------------|--------------------|-------|-------|-------|-------|-------|-------|-------|-------|--------|--------|--------|--------|
|                   | Center Distance    | 3.5   | 4     | 5     | 6     | 7     | 8     | 9     | 10    | 12     | 14     | 17     | 20     |
|                   | Total Actual Ratio | 202.9 | 202.7 | 202.4 | 202.4 | 202.1 | 202.1 | 202.0 | 197.3 | 202.3  | 199.8  | 199.3  | 199.3  |
|                   | Ratio Combinations | 5.07  | 5.07  | 5.06  | 5.06  | 5.05  | 5.05  | 5.05  | 4.93  | 5.06   | 5.06   | 5.05   | 5.05   |
|                   |                    | 40    | 40    | 40    | 40    | 40    | 40    | 40    | 40    | 40     | 39-1/2 | 39-1/2 | 39-1/2 |
| 1750              | Mech. Input HP     | 1.01  | 1.28  | 2.22  | 3.42  | 5.15  | 7.20  | 9.25  | 12.9  | 19.7   | 25.7   | 38.9   | 53.5   |
|                   | Out.Torq., in.lbs. | 4730  | 6330  | 11200 | 18000 | 27200 | 38400 | 50400 | 69000 | 110000 | 147000 | 226000 | 315000 |
|                   | Therm. Input HP    | 1.01  | 1.28  | 2.22  | 3.42  | 4.88  | 6.94  | 8.66  | 11.2  | 18.0   | 25.7   | 38.9   | 53.5   |
|                   | Output RPM         | 8.62  | 8.63  | 8.65  | 8.66  | 8.66  | 8.66  | 8.66  | 8.87  | 8.65   | 8.76   | 8.78   | 8.78   |
|                   | Efficiency%        | 64.1  | 67.7  | 69.2  | 72.3  | 72.6  | 73.3  | 74.9  | 75.3  | 76.6   | 79.5   | 80.9   | 82.0   |
| 1450              | Mech. Input HP     | 0.880 | 1.10  | 1.91  | 2.96  | 4.37  | 6.20  | 8.05  | 11.0  | 17.0   | 23.3   | 34.7   | 49.5   |
|                   | Out.Torq., in.lbs. | 4840  | 6460  | 11500 | 18600 | 28000 | 39800 | 52000 | 72000 | 115000 | 158000 | 240000 | 350000 |
|                   | Therm. Input HP    | 0.880 | 1.10  | 1.91  | 2.96  | 4.19  | 6.02  | 7.60  | 9.60  | 16.0   | 23.3   | 34.7   | 49.5   |
|                   | Output RPM         | 7.15  | 7.15  | 7.16  | 7.17  | 7.17  | 7.17  | 7.18  | 7.35  | 7.17   | 7.26   | 7.28   | 7.28   |
|                   | Efficiency%        | 62.4  | 66.7  | 68.4  | 71.5  | 72.9  | 73.1  | 73.6  | 76.3  | 76.9   | 78.1   | 79.8   | 81.6   |
| 1150              | Mech. Input HP     | 0.720 | 0.920 | 1.59  | 2.49  | 3.65  | 5.20  | 6.60  | 9.20  | 14.5   | 20.1   | 30.3   | 44.7   |
|                   | Out.Torq., in.lbs. | 4940  | 6600  | 11800 | 19200 | 28800 | 41200 | 53600 | 76000 | 123000 | 170000 | 260000 | 387000 |
|                   | Therm. Input HP    | 0.720 | 0.920 | 1.59  | 2.49  | 3.49  | 5.08  | 6.60  | 8.15  | 13.5   | 20.1   | 30.3   | 44.7   |
|                   | Output RPM         | 5.67  | 5.67  | 5.68  | 5.69  | 5.69  | 5.69  | 5.69  | 5.83  | 5.68   | 5.76   | 5.77   | 5.77   |
|                   | Efficiency%        | 61.7  | 64.6  | 66.9  | 69.6  | 71.2  | 71.5  | 73.4  | 76.4  | 76.5   | 77.2   | 78.6   | 79.3   |
| 865               | Mech. Input HP     | 0.570 | 0.720 | 1.24  | 2.01  | 2.92  | 4.16  | 5.30  | 7.45  | 11.8   | 16.4   | 25.0   | 37.4   |
|                   | Out.Torq., in.lbs. | 5030  | 6730  | 12000 | 19800 | 29800 | 42600 | 55600 | 79500 | 130000 | 180000 | 280000 | 425000 |
|                   | Therm. Input HP    | 0.570 | 0.720 | 1.24  | 2.01  | 2.84  | 4.10  | 5.15  | 6.70  | 11.1   | 16.4   | 25.0   | 37.4   |
|                   | Output RPM         | 4.26  | 4.27  | 4.27  | 4.28  | 4.28  | 4.28  | 4.28  | 4.38  | 4.28   | 4.33   | 4.34   | 4.34   |
|                   | Efficiency %       | 59.7  | 63.3  | 65.6  | 66.9  | 69.3  | 69.5  | 71.3  | 74.2  | 74.7   | 75.4   | 77.1   | 78.3   |
| 575               | Mech. Input HP     | 0.410 | 0.520 | 0.860 | 1.43  | 2.10  | 3.02  | 3.82  | 5.42  | 8.65   | 11.9   | 18.6   | 28.0   |
|                   | Out.Torq., in.lbs. | 5140  | 6860  | 12300 | 20500 | 30800 | 44400 | 57600 | 83000 | 136000 | 191000 | 304000 | 465000 |
|                   | Therm. Input HP    | 0.410 | 0.520 | 0.860 | 1.43  | 1.98  | 3.02  | 3.82  | 5.42  | 8.65   | 11.9   | 18.6   | 28.0   |
|                   | Output RPM         | 2.83  | 2.84  | 2.84  | 2.85  | 2.85  | 2.85  | 2.85  | 2.91  | 2.84   | 2.88   | 2.89   | 2.89   |
|                   | Efficiency%        | 56.4  | 59.4  | 64.5  | 64.7  | 66.2  | 66.4  | 68.1  | 70.8  | 70.9   | 73.3   | 74.8   | 76.0   |
| 300               | Mech. Input HP     | 0.226 | 0.275 | 0.496 | 0.788 | 1.16  | 1.63  | 2.24  | 3.00  | 4.81   | 6.77   | 11.5   | 17.1   |
|                   | Out.Torq., in.lbs. | 5300  | 7040  | 12800 | 21000 | 31800 | 45400 | 63400 | 84400 | 140000 | 198000 | 332000 | 509000 |
|                   | Therm. Input HP    | 0.220 | 0.270 | 0.480 | 0.770 | 1.14  | 1.61  | 2.00  | 3.00  | 4.76   | 6.60   | 10.8   | 16.0   |
|                   | Output RPM         | 1.48  | 1.48  | 1.48  | 1.48  | 1.48  | 1.48  | 1.49  | 1.52  | 1.48   | 1.50   | 1.51   | 1.51   |
|                   | Efficiency %       | 55.0  | 60.1  | 60.7  | 62.7  | 64.6  | 65.6  | 66.7  | 67.9  | 68.5   | 69.7   | 69.0   | 71.1   |

Ratings based on 1.0 service factor. For A.G.M.A. recommended practice on service factors, see page 11.



# Horsepower and Torque Ratings • Helical Worm

Helical Worm  
Speed Reducers

| INPUT<br>SPEED<br>(RPM) | Unit Size          | 35         | 40         | 50         | 60         | 70         | 80         | 90         | 100        | 120        | 140        | 170        | 200        |
|-------------------------|--------------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|
|                         | Center Distance    | 3.5        | 4          | 5          | 6          | 7          | 8          | 9          | 10         | 12         | 14         | 17         | 20         |
|                         | Total Actual Ratio | 213.3      | 213.2      | 212.1      | 212.7      | 212.4      | 212.5      | 212.3      | 212.8      | 212.7      | 212.7      | 212.1      | 212.1      |
|                         | Ratio Combinations | 3.05<br>70 | 3.04<br>70 | 3.04<br>70 | 3.04<br>70 | 3.03<br>70 | 3.04<br>70 | 3.03<br>70 | 3.04<br>70 | 3.04<br>70 | 3.04<br>70 | 3.04<br>70 | 3.04<br>70 |
| 1750                    | Mech. Input HP     | 0.830      | 1.04       | 1.76       | 2.76       | 4.15       | 5.50       | 7.47       | 9.10       | 13.5       | 16.7       | 27.7       | 36.8       |
|                         | Out.Torq., in.lbs. | 3560       | 4760       | 8310       | 13400      | 20400      | 28000      | 37200      | 48000      | 73000      | 94000      | 156000     | 222000     |
|                         | Therm. Input HP    | 0.830      | 1.04       | 1.76       | 2.76       | 3.98       | 5.20       | 6.40       | 6.80       | 11.6       | 16.7       | 27.7       | 36.8       |
|                         | Output RPM         | 8.20       | 8.21       | 8.25       | 8.23       | 8.24       | 8.24       | 8.24       | 8.22       | 8.23       | 8.23       | 8.25       | 8.25       |
|                         | Efficiency%        | 55.8       | 59.6       | 61.8       | 63.4       | 64.3       | 66.5       | 65.1       | 68.8       | 70.6       | 73.5       | 73.7       | 79.0       |
| 1450                    | Mech. Input HP     | 0.740      | 0.920      | 1.56       | 2.46       | 3.69       | 4.96       | 6.87       | 8.80       | 12.9       | 15.9       | 23.9       | 34.6       |
|                         | Out.Torq., in.lbs. | 3690       | 4930       | 8700       | 14100      | 21200      | 30200      | 40200      | 55000      | 81000      | 105000     | 162000     | 238000     |
|                         | Therm. Input HP    | 0.740      | 0.920      | 1.56       | 2.46       | 3.59       | 4.70       | 5.70       | 5.90       | 10.3       | 15.9       | 23.9       | 34.6       |
|                         | Output RPM         | 6.80       | 6.80       | 6.84       | 6.82       | 6.83       | 6.82       | 6.83       | 6.81       | 6.82       | 6.82       | 6.84       | 6.84       |
|                         | Efficiency%        | 53.8       | 57.8       | 60.5       | 62.0       | 62.2       | 65.9       | 63.4       | 67.6       | 67.9       | 71.4       | 73.5       | 74.6       |
| 1150                    | Mech. Input HP     | 0.620      | 0.780      | 1.34       | 2.13       | 3.20       | 4.36       | 6.07       | 7.87       | 11.7       | 14.2       | 21.6       | 31.2       |
|                         | Out.Torq., in.lbs. | 3810       | 5100       | 9100       | 14900      | 23000      | 32200      | 43200      | 59000      | 89000      | 115000     | 179000     | 262000     |
|                         | Therm. Input HP    | 0.620      | 0.780      | 1.34       | 2.13       | 3.10       | 4.18       | 4.91       | 5.15       | 8.80       | 14.2       | 21.6       | 31.2       |
|                         | Output RPM         | 5.39       | 5.39       | 5.42       | 5.41       | 5.41       | 5.41       | 5.42       | 5.40       | 5.41       | 5.41       | 5.42       | 5.42       |
|                         | Efficiency%        | 52.6       | 56.0       | 58.4       | 60.0       | 61.7       | 63.4       | 61.2       | 64.3       | 65.3       | 69.5       | 71.3       | 72.2       |
| 865                     | Mech. Input HP     | 0.500      | 0.610      | 1.08       | 1.72       | 2.60       | 3.70       | 5.00       | 6.53       | 9.93       | 13.0       | 20.0       | 27.8       |
|                         | Out.Torq., in.lbs. | 3930       | 5260       | 9490       | 15700      | 23800      | 34000      | 46400      | 62000      | 97000      | 134000     | 212000     | 300000     |
|                         | Therm. Input HP    | 0.500      | 0.610      | 1.08       | 1.72       | 2.57       | 3.46       | 4.08       | 4.40       | 7.45       | 13.0       | 20.0       | 27.8       |
|                         | Output RPM         | 4.06       | 4.06       | 4.08       | 4.07       | 4.07       | 4.07       | 4.07       | 4.06       | 4.07       | 4.07       | 4.08       | 4.08       |
|                         | Efficiency %       | 50.6       | 55.5       | 56.9       | 58.9       | 59.1       | 59.4       | 60.0       | 61.2       | 63.0       | 66.5       | 68.6       | 69.8       |
| 575                     | Mech. Input HP     | 0.360      | 0.440      | 0.780      | 1.24       | 1.88       | 2.67       | 3.62       | 4.80       | 7.47       | 10.5       | 16.4       | 23.4       |
|                         | Out.Torq., in.lbs. | 4050       | 5420       | 9900       | 16400      | 25200      | 36000      | 49600      | 66000      | 106000     | 154000     | 253000     | 357000     |
|                         | Therm. Input HP    | 0.360      | 0.440      | 0.780      | 1.24       | 1.86       | 2.52       | 3.12       | 3.60       | 5.95       | 10.5       | 16.4       | 23.4       |
|                         | Output RPM         | 2.70       | 2.70       | 2.71       | 2.70       | 2.71       | 2.71       | 2.71       | 2.70       | 2.70       | 2.70       | 2.71       | 2.71       |
|                         | Efficiency%        | 48.1       | 52.7       | 54.6       | 56.7       | 57.6       | 57.9       | 58.9       | 59.0       | 60.9       | 62.9       | 66.4       | 65.6       |
| 300                     | Mech. Input HP     | 0.210      | 0.260      | 0.470      | 0.760      | 1.14       | 1.63       | 2.26       | 2.97       | 4.70       | 6.42       | 10.5       | 15.2       |
|                         | Out.Torq., in.lbs. | 4170       | 5600       | 10300      | 17200      | 26900      | 38600      | 53500      | 71800      | 115000     | 170000     | 284000     | 421000     |
|                         | Therm. Input HP    | 0.210      | 0.260      | 0.470      | 0.760      | 1.14       | 1.63       | 2.26       | 2.97       | 4.70       | 6.42       | 10.5       | 15.2       |
|                         | Output RPM         | 1.41       | 1.41       | 1.41       | 1.41       | 1.41       | 1.41       | 1.41       | 1.41       | 1.41       | 1.41       | 1.41       | 1.41       |
|                         | Efficiency %       | 44.3       | 48.1       | 49.2       | 50.6       | 52.9       | 53.0       | 53.1       | 54.1       | 54.8       | 59.3       | 60.7       | 62.2       |

| INPUT<br>SPEED<br>(RPM) | Unit Size          | 35         | 40         | 50         | 60         | 70         | 80         | 90         | 100        | 120        | 140        | 170        | 200        |
|-------------------------|--------------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|
|                         | Center Distance    | 3.5        | 4          | 5          | 6          | 7          | 8          | 9          | 10         | 12         | 14         | 17         | 20         |
|                         | Total Actual Ratio | 243.7      | 243.5      | 242.9      | 242.9      | 245.2      | 242.7      | 242.4      | 243.0      | 242.9      | 242.9      | 242.2      | 242.2      |
|                         | Ratio Combinations | 4.06<br>60 | 4.06<br>60 | 4.05<br>60 | 4.05<br>60 | 4.09<br>60 | 4.04<br>60 | 4.04<br>60 | 4.05<br>60 | 4.05<br>60 | 4.05<br>60 | 4.04<br>60 | 4.04<br>60 |
| 1750                    | Mech. Input HP     | 0.810      | 0.930      | 1.65       | 2.58       | 3.95       | 5.58       | 7.38       | 9.70       | 15.0       | 18.1       | 30.2       | 39.5       |
|                         | Out.Torq., in.lbs. | 4070       | 5080       | 9350       | 14800      | 23000      | 33200      | 44400      | 58500      | 91000      | 118000     | 198000     | 267000     |
|                         | Therm. Input HP    | 0.810      | 0.930      | 1.65       | 2.56       | 3.83       | 5.30       | 6.50       | 7.20       | 12.0       | 18.1       | 30.2       | 39.5       |
|                         | Output RPM         | 7.18       | 7.19       | 7.20       | 7.20       | 7.14       | 7.21       | 7.22       | 7.20       | 7.20       | 7.20       | 7.23       | 7.23       |
|                         | Efficiency%        | 57.3       | 62.3       | 64.8       | 65.6       | 65.9       | 68.1       | 68.9       | 68.9       | 69.4       | 74.5       | 75.2       | 77.5       |
| 1450                    | Mech. Input HP     | 0.700      | 0.800      | 1.44       | 2.25       | 3.45       | 4.92       | 6.52       | 8.65       | 13.5       | 16.8       | 26.9       | 35.1       |
|                         | Out.Torq., in.lbs. | 4170       | 5190       | 9630       | 15500      | 24000      | 34600      | 46400      | 62000      | 98000      | 129000     | 210000     | 293000     |
|                         | Therm. Input HP    | 0.700      | 0.800      | 1.44       | 2.23       | 3.41       | 4.70       | 5.70       | 6.40       | 10.4       | 16.8       | 25.0       | 35.1       |
|                         | Output RPM         | 5.95       | 5.95       | 5.97       | 5.97       | 5.91       | 5.97       | 5.98       | 5.97       | 5.97       | 5.97       | 5.99       | 5.99       |
|                         | Efficiency%        | 56.2       | 61.3       | 63.3       | 65.2       | 65.3       | 66.7       | 67.5       | 67.9       | 68.8       | 72.7       | 74.2       | 79.3       |
| 1150                    | Mech. Input HP     | 0.590      | 0.660      | 1.20       | 1.87       | 2.88       | 4.10       | 5.43       | 7.20       | 11.5       | 15.4       | 23.6       | 32.5       |
|                         | Out.Torq., in.lbs. | 4280       | 5310       | 9900       | 16100      | 25200      | 35800      | 48400      | 65000      | 105000     | 143000     | 226000     | 320000     |
|                         | Therm. Input HP    | 0.590      | 0.660      | 1.20       | 1.87       | 2.83       | 3.91       | 4.86       | 5.60       | 8.80       | 15.4       | 21.0       | 32.5       |
|                         | Output RPM         | 4.72       | 4.72       | 4.73       | 4.73       | 4.69       | 4.74       | 4.74       | 4.73       | 4.73       | 4.73       | 4.75       | 4.75       |
|                         | Efficiency%        | 54.3       | 60.3       | 62.0       | 64.7       | 65.1       | 65.6       | 67.1       | 67.8       | 68.6       | 69.8       | 72.1       | 74.2       |
| 865                     | Mech. Input HP     | 0.470      | 0.520      | 0.960      | 1.51       | 2.34       | 3.26       | 4.35       | 5.81       | 9.25       | 12.8       | 20.1       | 28.0       |
|                         | Out.Torq., in.lbs. | 4380       | 5420       | 10200      | 16700      | 26200      | 37400      | 50500      | 68500      | 112000     | 156000     | 248000     | 360000     |
|                         | Therm. Input HP    | 0.470      | 0.520      | 0.960      | 1.51       | 2.26       | 3.17       | 4.00       | 4.70       | 7.30       | 12.8       | 15.6       | 28.0       |
|                         | Output RPM         | 3.55       | 3.55       | 3.56       | 3.56       | 3.53       | 3.56       | 3.57       | 3.56       | 3.56       | 3.56       | 3.57       | 3.57       |
|                         | Efficiency %       | 52.5       | 58.7       | 60.0       | 62.5       | 62.7       | 64.9       | 65.7       | 66.6       | 68.4       | 68.9       | 69.9       | 72.9       |
| 575                     | Mech. Input HP     | 0.330      | 0.370      | 0.680      | 1.08       | 1.65       | 2.36       | 3.17       | 4.20       | 6.70       | 9.53       | 15.4       | 21.6       |
|                         | Out.Torq., in.lbs. | 4480       | 5530       | 10400      | 17300      | 27000      | 39000      | 53600      | 72000      | 118000     | 169000     | 274000     | 405000     |
|                         | Therm. Input HP    | 0.330      | 0.370      | 0.680      | 1.08       | 1.63       | 2.32       | 3.00       | 3.65       | 5.78       | 9.53       | 13.0       | 21.6       |
|                         | Output RPM         | 2.36       | 2.36       | 2.37       | 2.37       | 2.35       | 2.37       | 2.37       | 2.37       | 2.37       | 2.37       | 2.37       | 2.37       |
|                         | Efficiency%        | 50.8       | 56.0       | 57.4       | 60.2       | 60.9       | 62.1       | 63.6       | 64.4       | 66.2       | 66.6       | 67.0       | 70.6       |
| 300                     | Mech. Input HP     | 0.185      | 0.219      | 0.388      | 0.636      | 0.943      | 1.34       | 1.85       | 2.48       | 3.97       | 5.86       | 9.72       | 14.0       |
|                         | Out.Torq., in.lbs. | 4660       | 5850       | 10900      | 18000      | 27600      | 39900      | 55200      | 74300      | 122000     | 184000     | 308000     | 458000     |
|                         | Therm. Input HP    | 0.180      | 0.210      | 0.380      | 0.620      | 0.937      | 1.34       | 1.85       | 2.48       | 3.97       | 5.60       | 9.25       | 13.3       |
|                         | Output RPM         | 1.23       | 1.23       | 1.24       | 1.24       | 1.22       | 1.24       | 1.24       | 1.23       | 1.24       | 1.24       | 1.24       | 1.24       |
|                         | Efficiency %       | 49.2       | 52.2       | 55.1       | 55.5       | 56.8       | 58.4       | 58.6       | 58.7       | 60.2       | 61.5       | 62.3       | 64.3       |

Ratings based on 1.0 service factor. For A.G.M.A. recommended practice on service factors, see page 11.



# Horsepower and Torque Ratings • Helical Worm

| INPUT SPEED (RPM) | Unit Size          | 35    | 40    | 50    | 60    | 70    | 80    | 90    | 100   | 120    | 140    | 170    | 200    |
|-------------------|--------------------|-------|-------|-------|-------|-------|-------|-------|-------|--------|--------|--------|--------|
|                   | Center Distance    | 3.5   | 4     | 5     | 6     | 7     | 8     | 9     | 10    | 12     | 14     | 17     | 20     |
|                   | Total Actual Ratio | 253.6 | 253.3 | 252.9 | 252.9 | 252.6 | 252.6 | 252.5 | 246.7 | 252.9  | 252.9  | 252.3  | 252.3  |
|                   | Ratio Combinations | 5.07  | 5.07  | 5.06  | 5.06  | 5.05  | 5.05  | 5.05  | 4.93  | 5.06   | 5.06   | 5.05   | 5.05   |
|                   |                    | 50    | 50    | 50    | 50    | 50    | 50    | 50    | 50    | 50     | 50     | 50     | 50     |
| 1750              | Mech. Input HP     | 0.820 | 1.00  | 1.78  | 2.74  | 4.17  | 5.87  | 7.57  | 10.4  | 15.3   | 19.9   | 31.4   | 42.7   |
|                   | Out.Torq., in.lbs. | 4450  | 5840  | 10500 | 17000 | 26200 | 37200 | 49400 | 67000 | 105000 | 138000 | 220000 | 307000 |
|                   | Therm. Input HP    | 0.820 | 1.00  | 1.78  | 2.74  | 4.07  | 5.61  | 7.30  | 8.40  | 14.0   | 19.9   | 31.4   | 42.7   |
|                   | Output RPM         | 6.90  | 6.91  | 6.92  | 6.92  | 6.93  | 6.93  | 6.93  | 7.09  | 6.92   | 6.92   | 6.94   | 6.94   |
|                   | Efficiency%        | 59.4  | 64.0  | 64.8  | 68.1  | 69.1  | 69.7  | 71.8  | 72.5  | 75.3   | 76.1   | 77.1   | 79.1   |
| 1450              | Mech. Input HP     | 0.700 | 0.860 | 1.53  | 2.37  | 3.55  | 5.05  | 6.54  | 9.13  | 13.8   | 18.3   | 28.6   | 39.6   |
|                   | Out.Torq., in.lbs. | 4540  | 5950  | 10800 | 17500 | 26900 | 38300 | 50500 | 70200 | 112000 | 150000 | 236000 | 337000 |
|                   | Therm. Input HP    | 0.700 | 0.860 | 1.53  | 2.37  | 3.51  | 4.90  | 6.40  | 7.40  | 12.4   | 18.3   | 28.6   | 39.6   |
|                   | Output RPM         | 5.72  | 5.72  | 5.73  | 5.73  | 5.74  | 5.74  | 5.74  | 5.88  | 5.73   | 5.73   | 5.75   | 5.75   |
|                   | Efficiency%        | 58.8  | 62.8  | 64.2  | 67.2  | 69.0  | 69.1  | 70.4  | 71.7  | 73.8   | 74.6   | 75.2   | 77.6   |
| 1150              | Mech. Input HP     | 0.580 | 0.710 | 1.28  | 2.00  | 2.98  | 4.22  | 5.59  | 7.50  | 11.9   | 16.0   | 25.3   | 34.3   |
|                   | Out.Torq., in.lbs. | 4630  | 6060  | 11100 | 18000 | 27800 | 39800 | 53600 | 73500 | 120000 | 163000 | 258000 | 372000 |
|                   | Therm. Input HP    | 0.580 | 0.710 | 1.28  | 2.00  | 2.94  | 4.12  | 5.43  | 6.20  | 10.5   | 16.0   | 22.0   | 34.3   |
|                   | Output RPM         | 4.53  | 4.54  | 4.55  | 4.55  | 4.55  | 4.55  | 4.55  | 4.66  | 4.55   | 4.55   | 4.56   | 4.56   |
|                   | Efficiency%        | 57.4  | 61.5  | 62.6  | 64.9  | 67.4  | 68.1  | 69.3  | 72.5  | 72.8   | 73.5   | 73.8   | 78.4   |
| 865               | Mech. Input HP     | 0.470 | 0.550 | 1.02  | 1.61  | 2.40  | 3.40  | 4.55  | 5.90  | 9.40   | 13.2   | 20.5   | 30.4   |
|                   | Out.Torq., in.lbs. | 4710  | 6160  | 11400 | 18500 | 28700 | 41100 | 55600 | 76700 | 126000 | 178000 | 278000 | 415000 |
|                   | Therm. Input HP    | 0.470 | 0.550 | 1.02  | 1.61  | 2.30  | 3.34  | 4.40  | 5.15  | 8.70   | 13.2   | 18.0   | 30.4   |
|                   | Output RPM         | 3.41  | 3.41  | 3.42  | 3.42  | 3.42  | 3.42  | 3.43  | 3.51  | 3.42   | 3.42   | 3.43   | 3.43   |
|                   | Efficiency %       | 54.2  | 60.7  | 60.7  | 62.4  | 65.0  | 65.7  | 66.4  | 72.3  | 72.7   | 73.2   | 73.8   | 74.3   |
| 575               | Mech. Input HP     | 0.330 | 0.390 | 0.720 | 1.14  | 1.70  | 2.43  | 3.30  | 4.50  | 7.10   | 9.53   | 15.8   | 22.3   |
|                   | Out.Torq., in.lbs. | 4900  | 6270  | 11600 | 19000 | 29300 | 42800 | 59600 | 80000 | 131000 | 184000 | 305000 | 445000 |
|                   | Therm. Input HP    | 0.330 | 0.390 | 0.720 | 1.14  | 1.64  | 2.43  | 3.25  | 4.00  | 6.69   | 9.53   | 15.8   | 22.3   |
|                   | Output RPM         | 2.27  | 2.27  | 2.27  | 2.27  | 2.28  | 2.28  | 2.28  | 2.33  | 2.27   | 2.27   | 2.28   | 2.28   |
|                   | Efficiency%        | 53.4  | 57.9  | 58.1  | 60.1  | 62.3  | 63.6  | 65.3  | 65.7  | 66.6   | 69.7   | 69.8   | 72.2   |
| 300               | Mech. Input HP     | 0.176 | 0.212 | 0.395 | 0.649 | 0.970 | 1.38  | 1.86  | 2.47  | 3.99   | 5.90   | 9.76   | 14.0   |
|                   | Out.Torq., in.lbs. | 4980  | 6350  | 12200 | 20200 | 30800 | 44300 | 61300 | 80900 | 135000 | 200000 | 335000 | 513000 |
|                   | Therm. Input HP    | 0.170 | 0.210 | 0.380 | 0.620 | 0.945 | 1.34  | 1.84  | 2.47  | 3.97   | 5.50   | 9.04   | 12.4   |
|                   | Output RPM         | 1.18  | 1.18  | 1.19  | 1.19  | 1.19  | 1.19  | 1.19  | 1.22  | 1.19   | 1.19   | 1.19   | 1.19   |
|                   | Efficiency %       | 53.1  | 56.3  | 58.1  | 58.6  | 59.8  | 60.5  | 62.1  | 63.2  | 63.7   | 63.8   | 64.8   | 69.1   |

Helical Worm  
Speed Reducers

| INPUT SPEED (RPM) | Unit Size          | 35    | 40    | 50    | 60    | 70    | 80    | 90    | 100   | 120    | 140    | 170    | 200    |
|-------------------|--------------------|-------|-------|-------|-------|-------|-------|-------|-------|--------|--------|--------|--------|
|                   | Center Distance    | 3.5   | 4     | 5     | 6     | 7     | 8     | 9     | 10    | 12     | 14     | 17     | 20     |
|                   | Total Actual Ratio | 284.4 | 284.1 | 283.3 | 283.3 | 286.1 | 283.2 | 282.8 | 283.5 | 283.3  | 283.3  | 282.6  | 282.6  |
|                   | Ratio Combinations | 4.06  | 4.06  | 4.05  | 4.05  | 4.09  | 4.04  | 4.04  | 4.05  | 4.05   | 4.05   | 4.04   | 4.04   |
|                   |                    | 70    | 70    | 70    | 70    | 70    | 70    | 70    | 70    | 70     | 70     | 70     | 70     |
| 1750              | Mech. Input HP     | 0.680 | 0.860 | 1.47  | 2.32  | 3.52  | 4.74  | 6.30  | 8.50  | 12.4   | 15.6   | 22.7   | 33.0   |
|                   | Out.Torq., in.lbs. | 3740  | 5010  | 8880  | 14500 | 22400 | 31300 | 41600 | 58000 | 85000  | 112000 | 168000 | 247000 |
|                   | Therm. Input HP    | 0.680 | 0.860 | 1.47  | 2.32  | 3.37  | 4.48  | 5.15  | 5.40  | 9.60   | 15.6   | 22.7   | 33.0   |
|                   | Output RPM         | 6.15  | 6.16  | 6.18  | 6.18  | 6.12  | 6.18  | 6.19  | 6.17  | 6.18   | 6.18   | 6.19   | 6.19   |
|                   | Efficiency%        | 53.7  | 56.9  | 59.2  | 61.3  | 61.8  | 64.7  | 64.8  | 66.8  | 67.2   | 70.4   | 72.7   | 73.5   |
| 1450              | Mech. Input HP     | 0.600 | 0.740 | 1.28  | 2.04  | 3.10  | 4.26  | 5.70  | 7.80  | 11.2   | 14.3   | 20.3   | 30.2   |
|                   | Out.Torq., in.lbs. | 3840  | 5130  | 9190  | 15100 | 23200 | 32700 | 44000 | 60700 | 91000  | 122000 | 178000 | 267000 |
|                   | Therm. Input HP    | 0.600 | 0.740 | 1.28  | 2.04  | 3.00  | 4.08  | 4.70  | 5.00  | 8.40   | 14.3   | 20.3   | 30.2   |
|                   | Output RPM         | 5.10  | 5.10  | 5.12  | 5.12  | 5.07  | 5.12  | 5.13  | 5.11  | 5.12   | 5.12   | 5.13   | 5.13   |
|                   | Efficiency%        | 51.8  | 56.1  | 58.3  | 60.1  | 60.2  | 62.4  | 62.8  | 63.2  | 66.0   | 69.3   | 71.4   | 72.0   |
| 1150              | Mech. Input HP     | 0.500 | 0.610 | 1.07  | 1.72  | 2.60  | 3.65  | 4.90  | 6.40  | 9.90   | 13.2   | 19.9   | 28.2   |
|                   | Out.Torq., in.lbs. | 3930  | 5260  | 9490  | 15700 | 24000 | 34000 | 46600 | 62000 | 98000  | 135000 | 212000 | 302000 |
|                   | Therm. Input HP    | 0.500 | 0.610 | 1.07  | 1.72  | 2.55  | 3.46  | 4.04  | 4.40  | 7.42   | 13.2   | 19.9   | 28.2   |
|                   | Output RPM         | 4.04  | 4.05  | 4.06  | 4.06  | 4.02  | 4.06  | 4.07  | 4.06  | 4.06   | 4.06   | 4.07   | 4.07   |
|                   | Efficiency%        | 50.4  | 55.4  | 57.1  | 58.8  | 58.9  | 60.0  | 61.4  | 62.4  | 63.8   | 65.9   | 68.8   | 69.1   |
| 865               | Mech. Input HP     | 0.400 | 0.490 | 0.860 | 1.37  | 2.07  | 2.97  | 4.03  | 5.30  | 8.10   | 11.3   | 17.8   | 24.8   |
|                   | Out.Torq., in.lbs. | 4020  | 5380  | 9780  | 16200 | 24900 | 35600 | 48800 | 65300 | 104000 | 149000 | 244000 | 345000 |
|                   | Therm. Input HP    | 0.400 | 0.490 | 0.860 | 1.37  | 2.05  | 2.76  | 3.40  | 3.65  | 6.33   | 11.3   | 17.8   | 24.8   |
|                   | Output RPM         | 3.04  | 3.04  | 3.05  | 3.05  | 3.02  | 3.05  | 3.06  | 3.05  | 3.05   | 3.05   | 3.06   | 3.06   |
|                   | Efficiency %       | 48.5  | 53.0  | 55.1  | 57.3  | 57.7  | 58.1  | 58.8  | 59.6  | 62.2   | 63.9   | 66.6   | 67.6   |
| 575               | Mech. Input HP     | 0.280 | 0.340 | 0.630 | 1.01  | 1.46  | 2.08  | 2.86  | 3.70  | 5.90   | 8.60   | 13.7   | 19.8   |
|                   | Out.Torq., in.lbs. | 4110  | 5500  | 10300 | 16800 | 26000 | 37300 | 51900 | 69000 | 111000 | 163000 | 270000 | 390000 |
|                   | Therm. Input HP    | 0.280 | 0.340 | 0.630 | 1.01  | 1.44  | 2.04  | 2.60  | 3.15  | 5.17   | 8.60   | 13.7   | 19.8   |
|                   | Output RPM         | 2.02  | 2.02  | 2.03  | 2.03  | 2.01  | 2.03  | 2.03  | 2.03  | 2.03   | 2.03   | 2.03   | 2.03   |
|                   | Efficiency%        | 47.1  | 51.9  | 52.7  | 53.6  | 56.8  | 57.8  | 58.5  | 60.0  | 60.6   | 61.0   | 63.6   | 63.6   |
| 300               | Mech. Input HP     | 0.203 | 0.195 | 0.360 | 0.580 | 0.867 | 1.22  | 1.70  | 2.23  | 3.43   | 5.10   | 8.14   | 11.1   |
|                   | Out.Torq., in.lbs. | 5280  | 5750  | 10600 | 17200 | 26900 | 38400 | 53500 | 71800 | 116000 | 170000 | 284000 | 421000 |
|                   | Therm. Input HP    | 0.160 | 0.190 | 0.360 | 0.580 | 0.867 | 1.22  | 1.70  | 2.23  | 3.43   | 5.10   | 8.14   | 11.1   |
|                   | Output RPM         | 1.05  | 1.06  | 1.06  | 1.06  | 1.05  | 1.06  | 1.06  | 1.06  | 1.06   | 1.06   | 1.06   | 1.06   |
|                   | Efficiency %       | 43.5  | 49.4  | 49.5  | 49.8  | 51.6  | 52.9  | 53.0  | 54.1  | 56.8   | 56.0   | 58.8   | 63.9   |

Ratings based on 1.0 service factor. For A.G.M.A. recommended practice on service factors, see page 11.

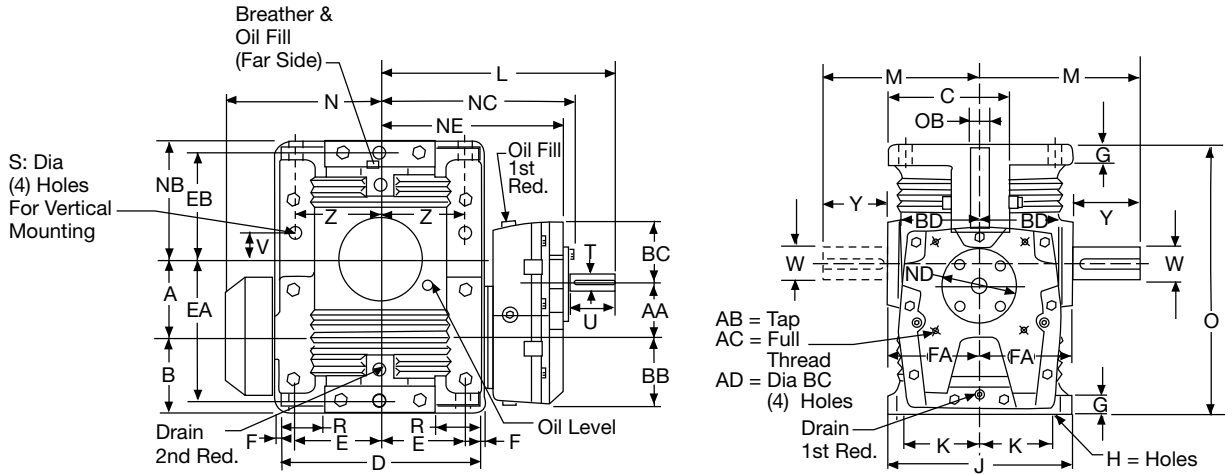
# Horsepower and Torque Ratings • Helical Worm

| INPUT<br>SPEED<br>(RPM) | Unit Size          | 35         | 40         | 50         | 60         | 70         | 80         | 90         | 100        | 120        | 140        | 170        | 200        |
|-------------------------|--------------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|
|                         | Center Distance    | 3.5        | 4          | 5          | 6          | 7          | 8          | 9          | 10         | 12         | 14         | 17         | 20         |
|                         | Total Actual Ratio | 304.3      | 304.0      | 303.5      | 303.5      | 303.2      | 303.2      | 303.0      | 296.0      | 303.5      | 303.5      | 302.7      | 302.7      |
|                         | Ratio Combinations | 5.07<br>60 | 5.07<br>60 | 5.06<br>60 | 5.06<br>60 | 5.05<br>60 | 5.05<br>60 | 5.05<br>60 | 4.93<br>60 | 5.06<br>60 | 5.06<br>60 | 5.05<br>60 | 5.05<br>60 |
| 1750                    | Mech. Input HP     | 0.680      | 0.770      | 1.40       | 2.17       | 3.35       | 4.78       | 6.35       | 8.65       | 13.2       | 16.6       | 26.5       | 35.5       |
|                         | Out.Torq., in.lbs. | 4190       | 5210       | 9670       | 15600      | 24200      | 34700      | 46600      | 62300      | 99000      | 132000     | 212000     | 297000     |
|                         | Therm. Input HP    | 0.680      | 0.720      | 1.40       | 2.17       | 3.28       | 4.58       | 5.60       | 6.40       | 10.3       | 16.6       | 25.0       | 35.5       |
|                         | Output RPM         | 5.75       | 5.76       | 5.77       | 5.77       | 5.77       | 5.77       | 5.78       | 5.91       | 5.77       | 5.77       | 5.78       | 5.78       |
|                         | Efficiency%        | 56.2       | 61.8       | 63.2       | 65.8       | 66.2       | 66.5       | 67.3       | 67.6       | 68.6       | 72.7       | 73.4       | 76.7       |
| 1450                    | Mech. Input HP     | 0.590      | 0.670      | 1.20       | 1.89       | 2.95       | 4.10       | 5.46       | 7.50       | 11.7       | 15.4       | 23.6       | 32.6       |
|                         | Out.Torq., in.lbs. | 4270       | 5300       | 9890       | 16100      | 25200      | 35800      | 48000      | 65000      | 105000     | 143000     | 224000     | 320000     |
|                         | Therm. Input HP    | 0.590      | 0.670      | 1.20       | 1.89       | 2.95       | 3.98       | 4.90       | 5.60       | 8.80       | 15.4       | 22.6       | 32.6       |
|                         | Output RPM         | 4.77       | 4.77       | 4.78       | 4.78       | 4.78       | 4.78       | 4.79       | 4.90       | 4.78       | 4.78       | 4.79       | 4.79       |
|                         | Efficiency%        | 54.7       | 59.9       | 62.5       | 64.6       | 64.8       | 66.3       | 66.8       | 67.4       | 68.3       | 70.4       | 72.1       | 74.6       |
| 1150                    | Mech. Input HP     | 0.490      | 0.550      | 1.00       | 1.56       | 2.40       | 3.38       | 4.50       | 6.20       | 9.80       | 13.4       | 21.0       | 29.0       |
|                         | Out.Torq., in.lbs. | 4360       | 5390       | 10100      | 16600      | 26000      | 37000      | 50000      | 67500      | 110000     | 154000     | 244000     | 350000     |
|                         | Therm. Input HP    | 0.490      | 0.550      | 1.00       | 1.56       | 2.39       | 3.31       | 4.19       | 4.80       | 7.58       | 13.4       | 18.3       | 29.0       |
|                         | Output RPM         | 3.78       | 3.78       | 3.79       | 3.79       | 3.79       | 3.79       | 3.80       | 3.89       | 3.79       | 3.79       | 3.80       | 3.80       |
|                         | Efficiency%        | 53.4       | 58.8       | 60.7       | 64.0       | 65.2       | 65.9       | 66.9       | 67.1       | 67.5       | 69.1       | 70.0       | 72.8       |
| 865                     | Mech. Input HP     | 0.390      | 0.430      | 0.800      | 1.25       | 1.94       | 2.74       | 3.68       | 4.95       | 7.80       | 11.0       | 17.4       | 24.4       |
|                         | Out.Torq., in.lbs. | 4440       | 5480       | 10300      | 17000      | 26600      | 38200      | 52400      | 71200      | 116000     | 164000     | 263000     | 385000     |
|                         | Therm. Input HP    | 0.390      | 0.430      | 0.800      | 1.25       | 1.89       | 2.69       | 3.42       | 4.04       | 6.40       | 11.0       | 15.7       | 24.4       |
|                         | Output RPM         | 2.84       | 2.85       | 2.85       | 2.85       | 2.85       | 2.85       | 2.85       | 2.92       | 2.85       | 2.85       | 2.86       | 2.86       |
|                         | Efficiency %       | 51.3       | 57.5       | 58.2       | 61.5       | 62.1       | 63.1       | 64.5       | 66.7       | 67.3       | 67.4       | 68.5       | 71.5       |
| 575                     | Mech. Input HP     | 0.270      | 0.300      | 0.570      | 0.920      | 1.39       | 1.99       | 2.70       | 3.50       | 5.60       | 8.10       | 13.1       | 18.7       |
|                         | Out.Torq., in.lbs. | 4520       | 5570       | 10700      | 17500      | 27200      | 39800      | 54100      | 73000      | 120000     | 174000     | 286000     | 425000     |
|                         | Therm. Input HP    | 0.270      | 0.300      | 0.570      | 0.920      | 1.36       | 1.90       | 2.70       | 3.21       | 5.17       | 8.10       | 12.0       | 18.7       |
|                         | Output RPM         | 1.89       | 1.89       | 1.89       | 1.89       | 1.90       | 1.90       | 1.90       | 1.94       | 1.89       | 1.89       | 1.90       | 1.90       |
|                         | Efficiency%        | 50.2       | 55.7       | 56.4       | 57.2       | 58.9       | 60.2       | 60.3       | 64.3       | 64.4       | 64.6       | 65.8       | 68.5       |
| 300                     | Mech. Input HP     | 0.155      | 0.178      | 0.311      | 0.508      | 0.774      | 1.09       | 1.50       | 1.99       | 3.17       | 4.81       | 8.04       | 11.6       |
|                         | Out.Torq., in.lbs. | 4690       | 5880       | 11000      | 18200      | 27900      | 40300      | 55800      | 74500      | 123000     | 188000     | 314000     | 469000     |
|                         | Therm. Input HP    | 0.150      | 0.170      | 0.300      | 0.500      | 0.774      | 1.08       | 1.47       | 1.98       | 3.15       | 4.57       | 7.62       | 10.8       |
|                         | Output RPM         | 0.986      | 0.987      | 0.988      | 0.988      | 0.989      | 0.989      | 0.990      | 1.01       | 0.988      | 0.988      | 0.991      | 0.991      |
|                         | Efficiency %       | 47.3       | 51.7       | 55.5       | 56.2       | 56.6       | 58.0       | 58.4       | 60.2       | 60.9       | 61.3       | 61.4       | 63.6       |

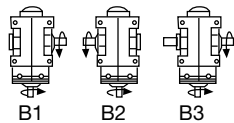
| INPUT<br>SPEED<br>(RPM) | Unit Size          | 35         | 40         | 50         | 60         | 70         | 80         | 90         | 100        | 120        | 140        | 170        | 200        |
|-------------------------|--------------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|
|                         | Center Distance    | 3.5        | 4          | 5          | 6          | 7          | 8          | 9          | 10         | 12         | 14         | 17         | 20         |
|                         | Total Actual Ratio | 355.0      | 354.7      | 354.1      | 354.1      | 353.7      | 353.7      | 353.7      | 345.3      | 354.1      | 354.1      | 353.2      | 353.2      |
|                         | Ratio Combinations | 5.07<br>70 | 5.07<br>70 | 5.06<br>70 | 5.06<br>70 | 5.05<br>70 | 5.05<br>70 | 5.05<br>70 | 4.93<br>70 | 5.06<br>70 | 5.06<br>70 | 5.05<br>70 | 5.05<br>70 |
| 1750                    | Mech. Input HP     | 0.580      | 0.720      | 1.25       | 1.99       | 3.00       | 4.12       | 5.50       | 7.42       | 11.0       | 14         | 20.8       | 30.2       |
|                         | Out.Torq., in.lbs. | 3850       | 5160       | 9230       | 15200      | 23300      | 32800      | 44400      | 61000      | 92000      | 124000     | 188000     | 275000     |
|                         | Therm. Input HP    | 0.580      | 0.720      | 1.25       | 1.99       | 2.92       | 3.98       | 4.60       | 4.80       | 8.40       | 14.2       | 20.8       | 30.2       |
|                         | Output RPM         | 4.93       | 4.93       | 4.94       | 4.94       | 4.95       | 4.95       | 4.95       | 5.07       | 4.94       | 4.94       | 4.95       | 4.95       |
|                         | Efficiency%        | 51.9       | 56.1       | 57.9       | 59.9       | 61.0       | 62.5       | 63.4       | 66.1       | 65.6       | 68.5       | 71.1       | 71.6       |
| 1450                    | Mech. Input HP     | 0.500      | 0.620      | 1.08       | 1.72       | 2.59       | 3.57       | 4.85       | 6.56       | 9.90       | 13         | 19.9       | 28.6       |
|                         | Out.Torq., in.lbs. | 3930       | 5260       | 9480       | 15700      | 23800      | 34000      | 46400      | 62000      | 97000      | 134000     | 212000     | 310000     |
|                         | Therm. Input HP    | 0.500      | 0.620      | 1.08       | 1.72       | 2.57       | 3.47       | 4.01       | 4.40       | 7.50       | 13.1       | 18.7       | 28.6       |
|                         | Output RPM         | 4.08       | 4.09       | 4.09       | 4.09       | 4.10       | 4.10       | 4.10       | 4.20       | 4.09       | 4.09       | 4.11       | 4.11       |
|                         | Efficiency%        | 50.9       | 55.0       | 57.0       | 59.3       | 59.8       | 61.9       | 62.2       | 63.0       | 63.7       | 66.5       | 69.4       | 70.6       |
| 1150                    | Mech. Input HP     | 0.410      | 0.510      | 0.890      | 1.44       | 2.16       | 2.96       | 4.05       | 5.50       | 8.34       | 11.7       | 18.2       | 24.7       |
|                         | Out.Torq., in.lbs. | 4000       | 5360       | 9730       | 16100      | 24700      | 35200      | 48400      | 64000      | 102000     | 147000     | 236000     | 335000     |
|                         | Therm. Input HP    | 0.410      | 0.510      | 0.850      | 1.44       | 2.15       | 2.90       | 4.01       | 4.00       | 6.53       | 11.7       | 16.5       | 24.7       |
|                         | Output RPM         | 3.24       | 3.24       | 3.25       | 3.25       | 3.25       | 3.25       | 3.25       | 3.33       | 3.25       | 3.25       | 3.26       | 3.26       |
|                         | Efficiency%        | 50.1       | 54.1       | 56.3       | 57.6       | 59.0       | 61.3       | 61.7       | 61.5       | 63.0       | 64.7       | 67.0       | 70.1       |
| 865                     | Mech. Input HP     | 0.330      | 0.410      | 0.720      | 1.16       | 1.73       | 2.42       | 3.20       | 4.30       | 6.70       | 9.80       | 15.3       | 22.2       |
|                         | Out.Torq., in.lbs. | 4070       | 5460       | 9960       | 16600      | 25600      | 36500      | 50400      | 67100      | 108000     | 159000     | 260000     | 379000     |
|                         | Therm. Input HP    | 0.330      | 0.410      | 0.720      | 1.16       | 1.71       | 2.34       | 2.96       | 3.45       | 5.60       | 9.80       | 12.0       | 22.2       |
|                         | Output RPM         | 2.44       | 2.44       | 2.44       | 2.44       | 2.45       | 2.45       | 2.45       | 2.51       | 2.44       | 2.44       | 2.45       | 2.45       |
|                         | Efficiency %       | 47.7       | 51.5       | 53.6       | 55.5       | 57.4       | 58.5       | 61.1       | 62.0       | 62.5       | 62.9       | 66.0       | 66.3       |
| 575                     | Mech. Input HP     | 0.230      | 0.290      | 0.520      | 0.840      | 1.23       | 1.71       | 2.35       | 3.19       | 5.00       | 7.30       | 11.7       | 16.9       |
|                         | Out.Torq., in.lbs. | 4150       | 5550       | 10300      | 17100      | 26600      | 38000      | 52800      | 70500      | 114000     | 168000     | 280000     | 410000     |
|                         | Therm. Input HP    | 0.230      | 0.290      | 0.520      | 0.840      | 1.21       | 1.68       | 2.30       | 2.80       | 4.68       | 7.30       | 11.7       | 16.9       |
|                         | Output RPM         | 1.62       | 1.62       | 1.62       | 1.62       | 1.63       | 1.63       | 1.63       | 1.67       | 1.62       | 1.62       | 1.63       | 1.63       |
|                         | Efficiency%        | 46.4       | 49.2       | 51.0       | 52.5       | 55.8       | 57.3       | 58.0       | 58.4       | 58.7       | 59.3       | 61.8       | 62.7       |
| 300                     | Mech. Input HP     | 0.166      | 0.165      | 0.280      | 0.460      | 0.693      | 0.977      | 1.36       | 1.78       | 2.82       | 4.18       | 6.70       | 9.80       |
|                         | Out.Torq., in.lbs. | 5330       | 5780       | 10300      | 17200      | 26900      | 38400      | 53700      | 71800      | 118000     | 176000     | 284000     | 421000     |
|                         | Therm. Input HP    | 0.130      | 0.160      | 0.280      | 0.460      | 0.693      | 0.977      | 1.36       | 1.78       | 2.82       | 4.18       | 6.70       | 9.80       |
|                         | Output RPM         | 0.845      | 0.846      | 0.847      | 0.847      | 0.848      | 0.848      | 0.848      | 0.869      | 0.847      | 0.847      | 0.849      | 0.849      |
|                         | Efficiency %       | 43.1       | 47.0       | 49.4       | 50.3       | 52.2       | 52.9       | 53.1       | 55.6       | 56.2       | 56.6       | 57.1       | 57.9       |

Ratings based on 1.0 service factor. For A.G.M.A. recommended practice on service factors, see page 11.

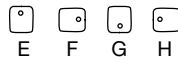
# Dimensions Type HE • Horizontal and Vertical



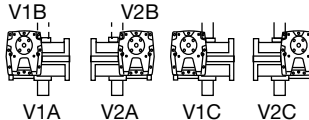
## Horizontal Assemblies



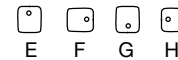
### Helical Input Shaft Positions



## Vertical Assemblies



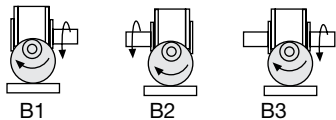
### Helical Input Shaft Positions



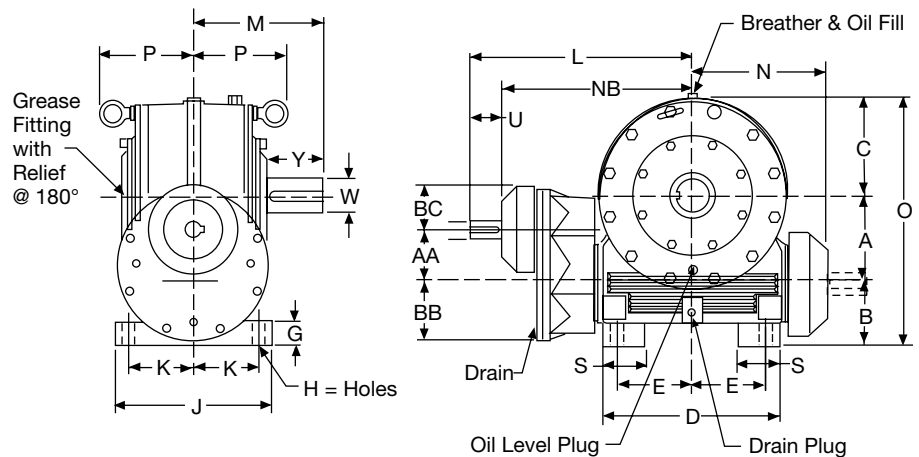
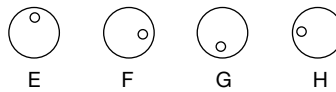
| UNIT SIZE | WT. LBS. | A     | AA    | AB     | AC  | AD    | B     | BB    | BC    | BD    | C      | D      | E     | EA    | EB    | F   | FA    | G   | H      | J     | K     | L       | M     | N      | NB    | NC     | ND     | NE    | O      | OB  | R     | S      | V     | T▲  | U | KEYWAY                | W▲    | Y     | KEYWAY               | Z     |
|-----------|----------|-------|-------|--------|-----|-------|-------|-------|-------|-------|--------|--------|-------|-------|-------|-----|-------|-----|--------|-------|-------|---------|-------|--------|-------|--------|--------|-------|--------|-----|-------|--------|-------|-----|---|-----------------------|-------|-------|----------------------|-------|
| HE35      | 120      | 3 1/2 | 2 1/2 | 3/8-16 | 5/8 | 5 3/4 | 3 3/8 | 3 1/8 | 2 1/4 | 3 3/8 | 5 1/8  | 9      | 3 3/8 | 6 3/8 | 4 7/8 | 1/4 | 4 1/8 | 7/8 | 1 1/16 | 8 1/4 | 3 3/8 | 10 5/8  | 7 1/8 | 7 1/16 | 5 3/8 | 8 5/8  | 3 5/16 | 8 1/8 | 12 1/4 | 7/8 | 2     | 9/16   | 1 1/4 | 3/4 | 2 | 3/16 X 3/32 X 1 15/16 | 1 1/2 | 3     | 3/8 X 3/16 X 2 15/16 | 3 1/8 |
| HE40      | 189      | 4     | 3     | 3/8-16 | 5/8 | 5 3/4 | 4 1/4 | 3 1/2 | 2 1/8 | 4     | 6 5/16 | 10 1/4 | 4 1/4 | 7 1/2 | 5 1/4 | 3/8 | 5     | 7/8 | 1 3/16 | 10    | 4     | 11 9/16 | 8 1/2 | 8 1/16 | 6     | 9 9/16 | 3 5/16 | 9 1/8 | 14 1/4 | 1   | 2 3/8 | 1 1/16 | 1 3/4 | 7/8 | 2 | 3/16 X 3/32 X 1 15/16 | 1 3/4 | 3 1/2 | 3/8 X 3/16 X 3 1/16  | 4 1/4 |

# Dimensions Type HEB • Horizontal

## Assemblies



## Helical Input Shaft Positions



| Unit Size | WT. LBS. | A  | AA | B      | BB     | BC | C       | D  | E      | G     | H       | J  | K      | L      | M      | N      | NB     | O      | P      | S     | T▲    | U | Keyway               | W▲    | Y  | Keyway               |
|-----------|----------|----|----|--------|--------|----|---------|----|--------|-------|---------|----|--------|--------|--------|--------|--------|--------|--------|-------|-------|---|----------------------|-------|----|----------------------|
| *HEB170   | 4400     | 17 | 10 | 10 1/2 | 11 1/2 | 8  | 18 1/2  | 32 | 13 1/4 | 3 3/8 | 1 11/16 | 24 | 10 1/4 | 41 3/8 | 21 1/2 | 22 3/4 | 36 3/8 | 45 3/4 | 13 1/4 | 5 3/4 | 2 1/2 | 5 | 5/8 X 5/16 X 4 15/16 | 5 3/4 | 10 | 1 1/2 X 3/4 X 9 3/4  |
| *HEB200   | 6000     | 20 | 10 | 11 1/2 | 11 1/2 | 8  | 21 7/16 | 36 | 14 3/4 | 3 5/8 | 1 15/16 | 27 | 11 1/2 | 43 1/4 | 23 3/4 | 26     | 38 1/4 | 52 3/4 | 14 1/2 | 6 1/2 | 2 1/2 | 5 | 5/8 X 5/16 X 4 15/16 | 6 1/2 | 11 | 1 1/2 X 3/4 X 10 1/2 |

\*No "suger scoop" motor mount available for 170 or 200 sizes.

All dimensions are in inches. Use certified prints for construction. The input shaft may be rotated in either direction. Standard gear sets are cut with right hand threads giving relative shaft rotations as shown above. Shaft arrangements are shown above. Desired assembly should be

specified when ordering. Standard keys are furnished with units.

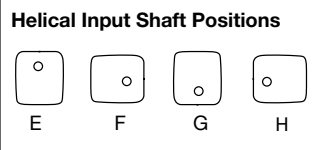
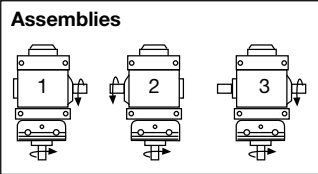
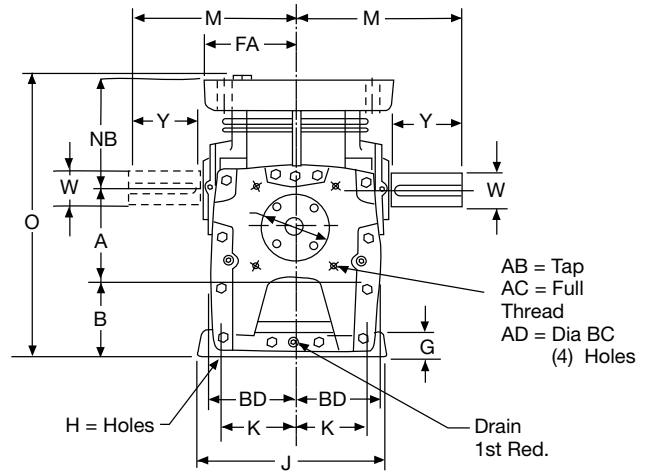
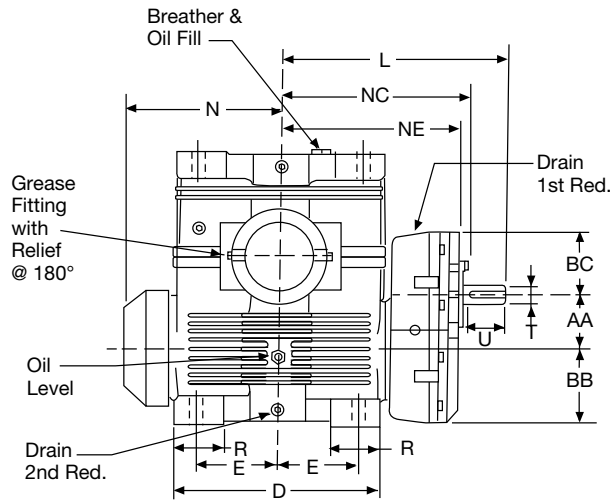
▲ Tolerances: 1 1/2" Diameter or Less = +.0000" -.0005"

Over 1 1/2" Diameter = +.000" -.001"

Low input speeds require special order instructions. See introductory section.

# Dimensions Type HE • Horizontal

Helical Worm Speed Reducers



Special note: Unit size 140 will be supplied with a fan mounted on input shaft. Allowance has been made in "L" & "NC" dimensions.

| Unit Size | WT. LBS. | A  | AA    | AB     | AC  | AD     | B     | BB     | BC      | BD    | D      | E      | FA     | G       | H       | J      | K     | L      | M      | N        | NB     | NC       | ND    | NE       | O      | R     | T▲    | U     | Keyway                | W▲    | Y     | Keyway               |
|-----------|----------|----|-------|--------|-----|--------|-------|--------|---------|-------|--------|--------|--------|---------|---------|--------|-------|--------|--------|----------|--------|----------|-------|----------|--------|-------|-------|-------|-----------------------|-------|-------|----------------------|
| HE50      | 221      | 5  | 3 1/2 | 1/2-13 | 3/4 | 7 1/4  | 4 5/8 | 4      | 3 1/2   | 4 5/8 | 11 3/8 | 4 3/4  | 5 1/2  | 1 1/2   | 13 1/8  | 10 3/4 | 4 3/8 | 12 5/8 | 9 5/8  | 8 9/16   | 5 3/4  | 10 3/8   | 4 1/4 | 9 7/8    | 15 7/8 | 2     | 1 1/8 | 2 1/4 | 1/4 x 1/8 x 2 3/16    | 2     | 4     | 1/2 x 1/4 x 3 7/8    |
| HE60      | 333      | 6  | 4     | 1/2-13 | 3/4 | 7 1/4  | 5     | 4 3/4  | 3 5/8   | 5 1/2 | 13 1/2 | 5 1/4  | 6 1/8  | 1 11/16 | 15 1/8  | 12 1/4 | 4 3/4 | 14 3/4 | 10 3/4 | 10 1/8   | 6 3/4  | 12 1/4   | 4 1/4 | 11 3/4   | 18 1/2 | 3     | 1 1/4 | 2 1/2 | 1/4 x 1/8 x 2 7/16    | 2 1/4 | 4 1/2 | 1/2 x 1/4 x 4 3/8    |
| HE70      | 466      | 7  | 4 1/2 | 1/2-13 | 3/4 | 7 1/4  | 5 5/8 | 5 1/8  | 4       | 5 7/8 | 14 3/4 | 6      | 6 3/8  | 1 11/16 | 1 1/8   | 13     | 5     | 16 3/8 | 11 1/2 | 10 3/4   | 7 3/4  | 13 5/8   | 4 7/8 | 13 1/8   | 20 5/8 | 2 3/4 | 1 3/8 | 2 3/4 | 5/16 x 5/32 x 2 11/16 | 2 1/2 | 5     | 5/8 x 5/16 x 4 15/16 |
| HE80      | 651      | 8  | 5     | 5/8-11 | 1   | 8 1/4  | 5 3/4 | 5 1/2  | 4 3/8   | 6 3/8 | 16 1/2 | 6 3/4  | 6 1/2  | 1 3/4   | 1 3/8   | 13 1/2 | 5 3/8 | 18     | 12 1/8 | 11 3/4   | 8 3/4  | 15 1/8   | 5 3/4 | 14 7/8   | 23     | 3     | 1 1/2 | 3     | 3/8 x 3/16 x 2 15/16  | 2 3/4 | 5 1/2 | 5/8 x 5/16 x 5 7/16  |
| HE90      | 885      | 9  | 5 1/2 | 5/8-11 | 1   | 8 1/4  | 6 1/4 | 6 3/16 | 4 7/8   | 6 1/2 | 18 3/4 | 7 3/4  | 7 5/8  | 1 7/8   | 1 7/16  | 15 1/4 | 6     | 20 1/8 | 14 1/4 | 13 7/8   | 9 3/4  | 16 11/16 | 5 3/4 | 16 1/8   | 25 1/2 | 3 1/4 | 1 3/4 | 3 1/2 | 3/8 x 3/16 x 3 7/16   | 3 1/4 | 6 1/2 | 3/4 x 3/8 x 6 3/8    |
| HE100     | 1178     | 10 | 6     | 5/8-11 | 1   | 10 1/4 | 6 3/4 | 6 1/2  | 5 1/4   | 7 5/8 | 21     | 8 3/4  | 8 5/8  | 2       | 1 7/8   | 17     | 6 3/8 | 22 1/4 | 16     | 15 5/8   | 10 3/4 | 18 11/16 | 6 3/4 | 18       | 27 7/8 | 3 1/2 | 1 7/8 | 3 3/4 | 1/2 x 1/4 x 3 11/16   | 3 5/8 | 7 1/4 | 7/8 x 7/16 x 7 3/16  |
| HE120     | 1651     | 12 | 7     | 5/8-11 | 1   | 10 1/4 | 7 1/2 | 7 5/16 | 5 11/16 | 8 3/4 | 24 5/8 | 10 1/2 | 8 7/8  | 2 1/8   | 1 9/16  | 18 1/2 | 7 1/8 | 25 5/8 | 17 1/2 | 17 1/8   | 13 1/4 | 21 5/8   | 7     | 20 11/16 | 33     | 4     | 2 1/8 | 4 1/4 | 1/2 x 1/4 x 4 3/16    | 4 1/4 | 8 1/2 | 1 x 1/2 x 8 3/8      |
| HE140     | 2481     | 14 | 7     | 5/8-11 | 1   | 10 1/4 | 9 1/2 | 7 5/16 | 5 11/16 | 8 3/4 | 27 1/2 | 11 1/2 | 10 1/8 | 2 1/4   | 1 11/16 | 21 3/4 | 8 3/4 | 32 5/8 | 19 1/4 | 20 11/16 | 15 5/8 | 28 3/8   | 7     | 23 15/16 | 39     | 4 1/2 | 2 1/8 | 4 1/4 | 1/2 x 1/4 x 4 3/16    | 5     | 9     | 1 1/4 x 5/8 x 8 5/8  |

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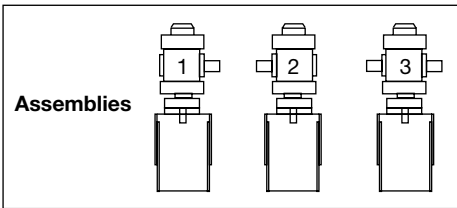
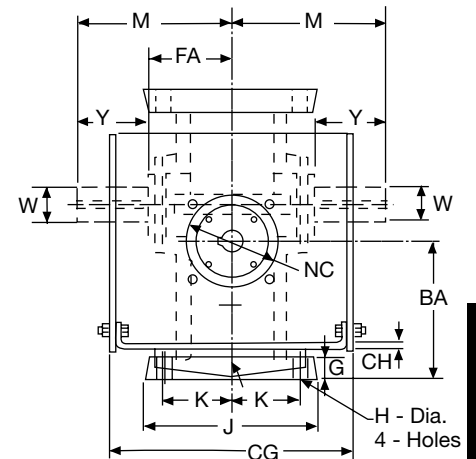
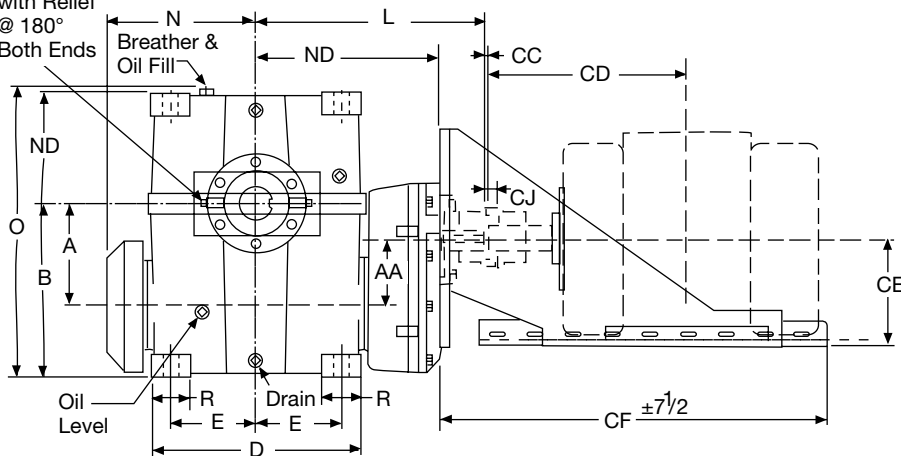
▲ Tolerances: 1 1/2" Diameter or Less = +.0000" -.0005"

Over 1 1/2" Diameter = +.000" -.001"

Low input speeds require special order instructions. See introductory section.

# Dimensions for "Sugar Scoop" Motor Mounts for Type HEK

Grease Fitting  
with Relief  
@ 180°  
Both Ends



Assemblies

Helical Worm  
Speed Reducers

| Motor<br>Frame<br>Size | CJ  |     |     |     |     |        |        |        |        |        |
|------------------------|-----|-----|-----|-----|-----|--------|--------|--------|--------|--------|
|                        | 35  | 40  | 50  | 60  | 70  | 80     | 90     | 100    | 120    | 140    |
| 143T                   | 3/8 | 3/8 | 3/8 |     |     |        |        |        |        |        |
| 145T                   | 3/8 | 3/8 | 3/8 |     |     |        |        |        |        |        |
| 182T                   | 3/8 | 3/8 | 3/8 | 5/8 | 5/8 | 5/8    |        |        |        |        |
| 184T                   | 3/8 | 3/8 | 3/8 | 5/8 | 5/8 | 5/8    | 7/8    |        |        |        |
| 213T                   |     | 5/8 | 5/8 | 5/8 | 5/8 | 5/8    | 7/8    | 7/8    |        |        |
| 215T                   |     | 5/8 | 5/8 | 5/8 | 5/8 | 5/8    | 7/8    | 7/8    | 1 5/16 |        |
| 254T                   |     |     |     | 3/4 | 3/4 | 5/8    | 7/8    | 7/8    | 1 5/16 | 1 5/16 |
| 256T                   |     |     |     | 3/4 | 3/4 | 5/8    | 7/8    | 7/8    | 1 5/16 | 1 5/16 |
| 284T                   |     |     |     |     | 7/8 | 7/8    | 7/8    | 7/8    | 1 5/16 | 1 5/16 |
| 286T                   |     |     |     |     | 7/8 | 7/8    | 7/8    | 7/8    | 1 5/16 | 1 5/16 |
| 324T                   |     |     |     |     |     | 1 5/16 | 1 5/16 | 1 5/16 | 1 5/16 | 1 5/16 |
| 326T                   |     |     |     |     |     |        | 1 5/16 | 1 5/16 | 1 5/16 | 1 5/16 |
| 364T                   |     |     |     |     |     |        |        | 1 1/4  | 1 1/4  | 1 1/4  |
| 365T                   |     |     |     |     |     |        |        | 1 1/4  | 1 1/4  | 1 1/4  |
| 404T                   |     |     |     |     |     |        |        |        | 1 7/8  | 1 7/8  |
| 405T                   |     |     |     |     |     |        |        |        |        | 1 7/8  |

| Motor<br>Frame<br>Size | CC  | CD     | CE     | CF<br>±7/2 | CG      | CH   |
|------------------------|-----|--------|--------|------------|---------|------|
| 143T                   | 1/8 | 6 1/2  | 4 7/8  | 25         | 12 5/8  | 3/16 |
| 145T                   | 1/8 | 7      | 4 7/8  | 25         | 12 5/8  | 3/16 |
| 182T                   | 1/8 | 7 3/4  | 4 7/8  | 25         | 12 5/8  | 3/16 |
| 184T                   | 1/8 | 8 1/4  | 4 7/8  | 25         | 12 5/8  | 3/16 |
| 213T                   | 1/8 | 9 5/8  | 5 9/16 | 28         | 12 3/4  | 1/4  |
| 215T                   | 1/8 | 10 3/8 | 5 9/16 | 28         | 12 3/4  | 1/4  |
| 254T                   | 1/8 | 12 3/8 | 6 5/8  | 31         | 15      | 5/16 |
| 256T                   | 1/8 | 13 1/4 | 6 5/8  | 31         | 15      | 5/16 |
| 284T                   | 1/8 | 14 1/8 | 7 5/8  | 31         | 17      | 5/16 |
| 286T                   | 1/8 | 14 7/8 | 7 5/8  | 31         | 17      | 5/16 |
| 324T                   | 1/8 | 15 3/4 | 8 1/2  | 35 1/4     | 19 1/16 | 3/8  |
| 326T                   | 1/8 | 16 1/2 | 8 1/2  | 35 1/4     | 19 1/16 | 3/8  |
| 364T                   | 1/8 | 17 3/8 | 9 1/2  | 35 1/4     | 21 5/16 | 3/8  |
| 365T                   | 1/8 | 17 7/8 | 9 1/2  | 35 1/4     | 21 5/16 | 3/8  |
| 404T                   | 1/8 | 20     | 10 1/2 | 35 1/4     | 23 5/16 | 3/8  |
| 405T                   | 1/8 | 20 3/4 | 10 1/2 | 35 1/4     | 23 5/16 | 3/8  |

| Unit<br>Size | A     | AA    | B      | BA     | D      | E      | FA     | G       | H       | J      | K     | L       | M      | N        | NB     | NC     | ND       | O      | R     | T▲    | U     | Keyway                | W▲    | Y     | Keyway               |
|--------------|-------|-------|--------|--------|--------|--------|--------|---------|---------|--------|-------|---------|--------|----------|--------|--------|----------|--------|-------|-------|-------|-----------------------|-------|-------|----------------------|
| HEK-35       | 3 1/2 | 2 1/2 | 6 7/8  | 5 7/8  | 9      | 3 7/8  | 4 1/8  | 7/8     | 1 1/16  | 8 1/4  | 3 3/8 | 10 5/8  | 7 1/8  | 7 1/16   | 5 3/8  | 5 1/8  | 8 1/8    | 12 1/4 | 2     | 3/4   | 2     | 3/16 x 3/32 x 1 15/16 | 1 1/2 | 3     | 3/8 x 3/16 x 2 15/16 |
| HEK-40       | 4     | 3     | 8 1/4  | 7 1/4  | 10 1/4 | 4 1/4  | 5      | 7/8     | 1 3/16  | 10     | 4     | 11 9/16 | 8 1/2  | 8 1/16   | 6      | 5 1/8  | 9 1/16   | 14 1/4 | 2 3/8 | 7/8   | 2     | 3/16 x 3/32 x 1 15/16 | 1 3/4 | 3 1/2 | 3/8 x 3/16 x 3 7/16  |
| HEK-50       | 5     | 3 1/2 | 9 5/8  | 8 1/8  | 11 3/8 | 4 3/4  | 5 1/2  | 1 1/2   | 1 3/16  | 10 3/4 | 4 3/8 | 12 5/8  | 9 5/8  | 8 5/8    | 5 3/4  | 6 3/8  | 9 7/8    | 15 7/8 | 2     | 1 1/8 | 2 1/4 | 1/4 x 1/8 x 2 3/16    | 2     | 4     | 1/2 x 1/4 x 3 7/8    |
| HEK-60       | 6     | 4     | 11     | 9      | 13 1/2 | 5 1/4  | 6 1/8  | 1 11/16 | 1 5/16  | 12 1/4 | 4 3/4 | 14 3/4  | 10 3/4 | 10 1/16  | 6 3/4  | 6 3/8  | 11 3/4   | 18 1/2 | 3     | 1 1/4 | 2 1/2 | 1/4 x 1/8 x 2 7/16    | 2 1/4 | 4 1/2 | 1/2 x 1/4 x 4 3/8    |
| HEK-70       | 7     | 4 1/2 | 12 3/8 | 9 7/8  | 14 3/4 | 6      | 6 3/8  | 1 11/16 | 1 1/16  | 13     | 5     | 16 3/8  | 11 1/2 | 10 3/4   | 7 3/4  | 6 3/8  | 13 1/16  | 20 5/8 | 2 3/4 | 1 3/8 | 2 3/4 | 3/16 x 3/32 x 2 11/16 | 2 1/2 | 5     | 5/8 x 5/16 x 4 15/16 |
| HEK-80       | 8     | 5     | 13 3/4 | 10 3/4 | 16 1/2 | 6 3/4  | 6 1/2  | 1 3/4   | 1 3/16  | 13 1/2 | 5 3/8 | 18      | 12 1/8 | 11 3/4   | 8 3/4  | 7 3/16 | 14 7/16  | 23     | 3     | 1 1/2 | 3     | 3/8 x 3/16 x 2 15/16  | 2 3/4 | 5 1/2 | 5/8 x 5/16 x 5 7/16  |
| HEK-90       | 9     | 5 1/2 | 15 1/4 | 11 3/4 | 18 3/4 | 7 3/4  | 7 5/8  | 1 7/8   | 1 7/16  | 15 1/4 | 6     | 20 1/8  | 14 1/4 | 13 15/16 | 9 3/4  | 7 3/16 | 16 1/16  | 25 1/2 | 3 1/4 | 1 3/4 | 3 1/2 | 3/8 x 3/16 x 3 7/16   | 3 1/4 | 6 1/2 | 3/4 x 3/8 x 6 3/8    |
| HEK-100      | 10    | 6     | 16 3/4 | 12 3/4 | 21     | 8 3/4  | 8 5/8  | 2       | 1 7/16  | 17     | 6 3/8 | 22 1/4  | 16     | 14 7/8   | 10 3/4 | 9 3/16 | 18       | 27 7/8 | 3 1/2 | 1 7/8 | 3 3/4 | 1/2 x 1/4 x 3 11/16   | 3 5/8 | 7 1/4 | 7/8 x 7/16 x 7 3/16  |
| HEK-120      | 12    | 7     | 19 1/2 | 14 1/2 | 24 5/8 | 10 1/2 | 8 7/8  | 2 1/8   | 1 9/16  | 18 1/2 | 7 1/8 | 25 5/8  | 17 1/2 | 16 5/8   | 13 1/4 | 9 3/16 | 20 11/16 | 33     | 4     | 2 1/8 | 4 1/4 | 1/2 x 1/4 x 4 3/16    | 4 1/4 | 8 1/2 | 1 x 1/2 x 8 3/8      |
| HEK-140      | 14    | 7     | 23 1/2 | 16 1/2 | 27 1/2 | 11 1/2 | 10 1/8 | 2 1/4   | 1 11/16 | 21 3/4 | 8 3/4 | 32 5/8  | 19 1/4 | 20 11/16 | 15 3/8 | 9 3/16 | 23 15/16 | 39     | 4 1/2 | 2 1/8 | 4 1/4 | 1/2 x 1/4 x 4 3/16    | 5     | 9     | 1 1/4 x 5/8 x 8 5/8  |

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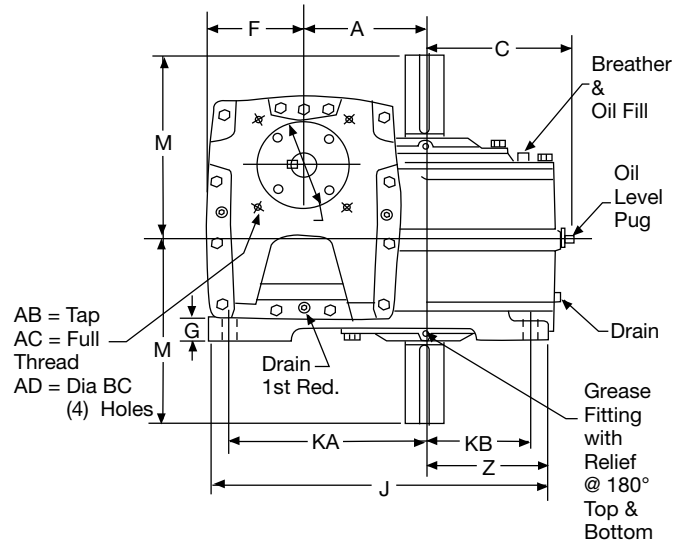
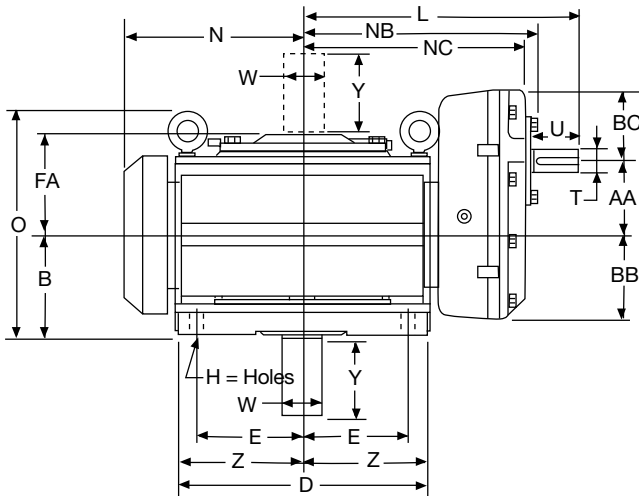
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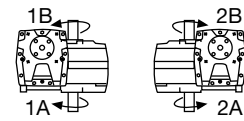
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# Dimensions Type HV • Vertical

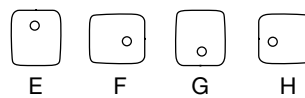
## Helical Worm Speed Reducers



### Assemblies



### Helical Shaft Input Positions



A drywell is standard for vertical assemblies sizes 30-200 only.

| Unit Size | WT. LBS. | A     | AA    | AB     | AC  | AD     | B      | BB     | BC      | C       | D      | E      | F      | FA     | G     | H      | J      | KA     | KB     | L       | M      | N        | NB       | NC       | ND     | O       | T▲    | U     | Keyway                | W▲    | Y     | Keyway               | Z       |
|-----------|----------|-------|-------|--------|-----|--------|--------|--------|---------|---------|--------|--------|--------|--------|-------|--------|--------|--------|--------|---------|--------|----------|----------|----------|--------|---------|-------|-------|-----------------------|-------|-------|----------------------|---------|
| HV35      | 125      | 3 1/2 | 2 1/2 | 3/8-16 | 5/8 | 5 3/4  | 4 1/8  | 3 1/8  | 2 3/4   | 4 13/16 | 8 3/8  | 3 1/2  | 3 3/8  | 4      | 7/8   | 1 1/16 | 11 3/4 | 6 7/8  | 3 1/2  | 10 5/8  | 7 1/8  | 6 5/8    | 8 5/8    | 8 1/8    | 3 3/16 | 9 1/8   | 3/4   | 2     | 3/16 x 3/32 x 1 15/16 | 1 1/2 | 3     | 3/8 x 3/16 x 2 15/16 | 4 3/16  |
| HV40      | 190      | 4     | 3     | 3/8-16 | 5/8 | 5 3/4  | 5      | 3 1/2  | 2 7/8   | 5 3/8   | 9 1/4  | 3 7/8  | 4      | 4 7/8  | 1 1/8 | 1 1/16 | 13 1/8 | 7 5/8  | 3 7/8  | 11 9/16 | 8 1/2  | 7 3/4    | 9 9/16   | 9 1/8    | 3 3/16 | 10 1/2  | 7/8   | 2     | 3/16 x 3/32 x 1 15/16 | 1 3/4 | 3 1/2 | 3/8 x 3/16 x 3 7/16  | 4 5/8   |
| HV50      | 285      | 5     | 3 1/2 | 1/2-13 | 3/4 | 7 1/4  | 5 5/8  | 4      | 3 1/2   | 7 1/2   | 11 1/8 | 4 3/4  | 4 5/8  | 5 1/2  | 1 1/4 | 1 3/16 | 15 3/8 | 9      | 4 3/4  | 12 5/8  | 9 5/8  | 8 5/8    | 10 3/8   | 9 7/8    | 4 1/4  | 12 9/16 | 1 1/8 | 2 1/4 | 1/4 x 1/8 x 2 3/16    | 2     | 4     | 1/2 x 1/4 x 3 7/8    | 5 9/16  |
| HV60      | 400      | 6     | 4     | 1/2-13 | 3/4 | 7 1/4  | 6 1/4  | 4 3/4  | 3 3/8   | 8 5/8   | 13 3/8 | 5 3/4  | 5 1/2  | 6 1/8  | 1 3/8 | 1 3/16 | 18 1/8 | 10 1/2 | 5 3/4  | 14 3/4  | 10 3/4 | 10 11/16 | 12 1/4   | 11 3/4   | 4 1/4  | 13 7/16 | 1 1/4 | 2 1/2 | 1/4 x 1/8 x 2 7/16    | 2 1/4 | 4 1/2 | 1/2 x 1/4 x 4 3/8    | 6 11/16 |
| HV70      | 575      | 7     | 4 1/2 | 1/2-13 | 3/4 | 7 1/4  | 6 1/2  | 5 1/8  | 4       | 9 1/4   | 14 3/8 | 6 1/4  | 5 7/8  | 6 7/16 | 1 3/8 | 1 5/16 | 20 1/8 | 11 3/4 | 6 1/4  | 16 3/8  | 11 1/2 | 10 3/4   | 13 5/8   | 13 1/16  | 4 7/8  | 14      | 1 3/8 | 2 3/4 | 5/16 x 5/32 x 2 11/16 | 2 1/2 | 5     | 5/8 x 5/16 x 4 15/16 | 7 5/16  |
| HV80      | 695      | 8     | 5     | 5/8-11 | 1   | 8 1/4  | 6 3/8  | 5 1/2  | 4 3/8   | 10 1/2  | 16 1/2 | 7      | 6 3/8  | 6 1/2  | 1 1/2 | 1 1/16 | 22 1/4 | 12 3/4 | 7      | 18      | 12 1/8 | 11 3/4   | 15 1/16  | 14 7/16  | 5 3/4  | 14 7/8  | 1 1/2 | 3     | 3/8 x 3/16 x 2 15/16  | 2 3/4 | 5 1/2 | 5/8 x 5/16 x 5 7/16  | 8 1/4   |
| HV90      | 905      | 9     | 5 1/2 | 5/8-11 | 1   | 8 1/4  | 7 3/4  | 6 3/16 | 4 7/16  | 11 3/8  | 18 1/2 | 7 7/8  | 8 1/32 | 7 5/8  | 1 5/8 | 1 3/16 | 25     | 14 3/8 | 7 7/8  | 20 1/8  | 14 1/4 | 13 13/16 | 16 11/16 | 16 1/16  | 5 3/4  | 17      | 1 3/4 | 3 1/2 | 3/8 x 3/16 x 3 7/16   | 3 1/4 | 6 1/2 | 3/4 x 3/8 x 6 3/8    | 9 1/4   |
| HV100     | 1180     | 10    | 6     | 5/8-11 | 1   | 10 1/4 | 8 3/4  | 6 1/2  | 5 1/4   | 12 5/8  | 20 3/4 | 9      | 7 5/8  | 8 5/8  | 1 3/4 | 1 3/16 | 27 1/4 | 15 1/2 | 9      | 22 1/4  | 16     | 15 1/8   | 18 11/16 | 18       | 6 3/4  | 18 1/2  | 1 7/8 | 3 3/4 | 1/2 x 1/4 x 3 11/16   | 3 5/8 | 7 1/4 | 7/8 x 7/16 x 7 3/16  | 10 3/8  |
| HV120     | 1800     | 12    | 7     | 5/8-11 | 1   | 10 1/4 | 9      | 7 5/16 | 5 11/16 | 14 5/8  | 24 1/2 | 10 3/8 | 8 3/4  | 8 7/8  | 2 1/8 | 1 5/16 | 32 3/8 | 18 1/2 | 10 3/8 | 25 5/8  | 17 1/2 | 17       | 21 5/8   | 20 11/16 | 7      | 19 1/2  | 2 1/8 | 4 1/4 | 1/2 x 1/4 x 4 3/16    | 4 1/4 | 8 1/2 | 1 x 1/2 x 8 3/8      | 12 1/2  |
| HV140     | 2550     | 14    | 7     | 5/8-11 | 1   | 10 1/4 | 10 1/4 | 7 9/16 | 5 11/16 | 16 5/8  | 27 1/2 | 12     | 8 3/4  | 9 7/8  | 2 1/4 | 1 9/16 | 37 1/2 | 22     | 12     | 32 5/8  | 19 1/4 | 20 11/16 | 28 3/8   | 23 15/16 | 7      | 21 3/4  | 2 1/8 | 4 1/4 | 1/2 x 1/4 x 4 3/16    | 5     | 9     | 1 1/4 x 5/8 x 8 5/8  | 13 3/4  |
| HV170     | 3570     | 17    | 10    | -      | -   | -      | 11 1/2 | 11 1/2 | 8       | 19 1/2  | 33     | 14 1/2 | 14 3/4 | 11 1/8 | 2 1/2 | 1 9/16 | 44 3/4 | 26 1/4 | 14 1/2 | 41 3/8  | 21 1/2 | 22 3/4   | 36 3/8   | -        | 9 9/16 | 24 3/4  | 2 1/2 | 5     | 5/8 x 5/16 x 4 15/16  | 5 3/4 | 10    | 1 1/2 x 3/4 x 9 3/4  | 16 1/2  |
| HV200     | 4950     | 20    | 10    | -      | -   | -      | 12 3/4 | 11 1/2 | 8       | 22 1/2  | 39     | 17     | 14 3/4 | 12 7/8 | 2 3/4 | 1 9/16 | 53     | 31     | 17     | 43 1/4  | 23 3/4 | 26       | 38 1/4   | -        | 9 9/16 | 27 1/4  | 2 1/2 | 5     | 5/8 x 5/16 x 4 15/16  | 6 1/2 | 11    | 1 1/2 x 3/4 x 10 1/2 | 19 1/2  |

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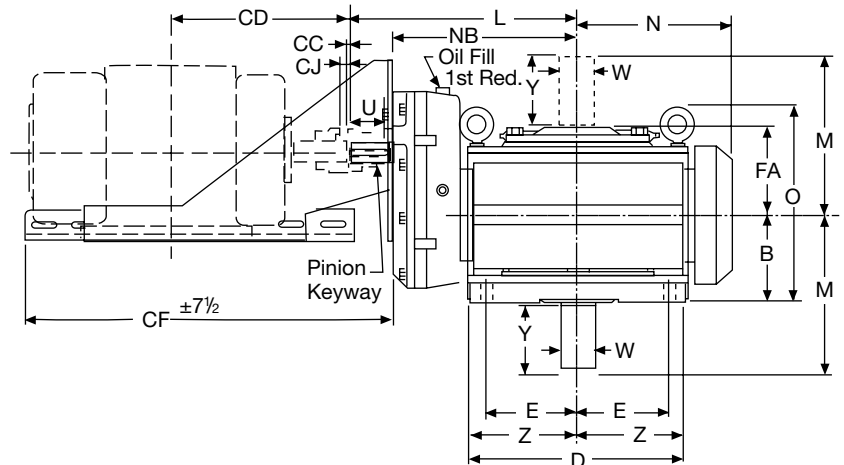
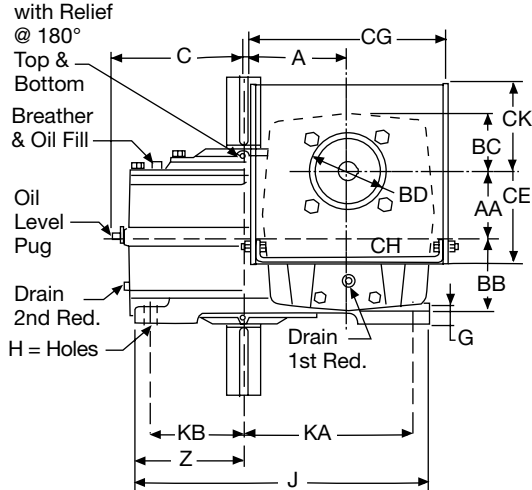
Over 1 1/2" Diameter = +.000" -.001"

Low input speeds require special order instructions. See introductory section.



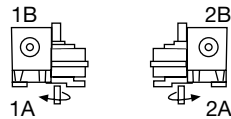
# Dimensions for "Sugar Scoop" Motor Mounts for Type HVK

Grease Fitting  
with Relief  
@ 180°

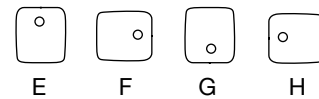


A drywell is standard for  
vertical assemblies sizes 30-200 only.

## Assemblies



## Helical Shaft Input Positions



| Motor<br>Frame<br>Size | CJ  |     |     |     |     |        |        |        |        |        |       |       |
|------------------------|-----|-----|-----|-----|-----|--------|--------|--------|--------|--------|-------|-------|
|                        | 35  | 40  | 50  | 60  | 70  | 80     | 90     | 100    | 120    | 140    | 170   | 200   |
| 143T                   | 3/8 | 3/8 | 3/8 |     |     |        |        |        |        |        |       |       |
| 145T                   | 3/8 | 3/8 | 3/8 |     |     |        |        |        |        |        |       |       |
| 182T                   | 3/8 | 3/8 | 3/8 | 5/8 | 5/8 | 5/8    |        |        |        |        |       |       |
| 184T                   | 3/8 | 3/8 | 3/8 | 5/8 | 5/8 | 5/8    | 7/8    |        |        |        |       |       |
| 213T                   |     | 5/8 | 5/8 | 5/8 | 5/8 | 5/8    | 7/8    | 7/8    |        |        |       |       |
| 215T                   |     | 5/8 | 5/8 | 5/8 | 5/8 | 5/8    | 7/8    | 7/8    | 1 5/16 |        |       |       |
| 254T                   |     |     |     | 3/4 | 3/4 | 3/4    | 7/8    | 7/8    | 1 5/16 | 1 5/16 | 1 3/8 | 1 3/8 |
| 256T                   |     |     |     | 3/4 | 3/4 | 3/4    | 7/8    | 7/8    | 1 5/16 | 1 5/16 | 1 3/8 | 1 3/8 |
| 284T                   |     |     |     |     | 7/8 | 7/8    | 7/8    | 7/8    | 1 5/16 | 1 5/16 | 1 3/8 | 1 3/8 |
| 286T                   |     |     |     |     | 7/8 | 7/8    | 7/8    | 7/8    | 1 5/16 | 1 5/16 | 1 3/8 | 1 3/8 |
| 324T                   |     |     |     |     |     | 1 5/16 | 1 5/16 | 1 5/16 | 1 5/16 | 1 5/16 | 1 3/8 | 1 3/8 |
| 326T                   |     |     |     |     |     |        | 1 5/16 | 1 5/16 | 1 5/16 | 1 5/16 | 1 3/8 | 1 3/8 |
| 364T                   |     |     |     |     |     |        |        | 1 1/4  | 1 1/4  | 1 1/4  | 1 3/8 | 1 3/8 |
| 365T                   |     |     |     |     |     |        |        | 1 1/4  | 1 1/4  | 1 1/4  | 1 3/8 | 1 3/8 |
| 404T                   |     |     |     |     |     |        |        |        | 1 7/8  | 1 7/8  | 1 7/8 | 1 7/8 |
| 405T                   |     |     |     |     |     |        |        |        |        | 1 7/8  | 1 7/8 | 1 7/8 |

| Motor<br>Frame<br>Size | CC  | CD     | CE     | CF<br>± 7/2 | CG      | CH   | CK     |
|------------------------|-----|--------|--------|-------------|---------|------|--------|
| 143T                   | 1/8 | 6 1/2  | 4 7/8  | 25          | 12 5/8  | 3/16 | 4 7/8  |
| 145T                   | 1/8 | 7      | 4 7/8  | 25          | 12 5/8  | 3/16 | 4 7/8  |
| 182T                   | 1/8 | 7 3/4  | 4 7/8  | 25          | 12 5/8  | 3/16 | 4 7/8  |
| 184T                   | 1/8 | 8 1/4  | 4 7/8  | 25          | 12 5/8  | 3/16 | 4 7/8  |
| 213T                   | 1/8 | 9 5/8  | 5 9/16 | 28          | 12 3/4  | 1/4  | 5      |
| 215T                   | 1/8 | 10 3/8 | 5 9/16 | 28          | 12 3/4  | 1/4  | 5      |
| 254T                   | 1/8 | 12 3/8 | 6 5/8  | 31          | 15      | 5/16 | 6 5/8  |
| 256T                   | 1/8 | 13 1/4 | 6 5/8  | 31          | 15      | 5/16 | 6 5/8  |
| 284T                   | 1/8 | 14 1/8 | 7 5/8  | 31          | 17      | 5/16 | 7 5/8  |
| 286T                   | 1/8 | 14 7/8 | 7 5/8  | 31          | 17      | 5/16 | 7 5/8  |
| 324T                   | 1/8 | 15 3/4 | 8 1/2  | 35 1/4      | 19 1/16 | 3/8  | 8 1/2  |
| 326T                   | 1/8 | 16 1/2 | 8 1/2  | 35 1/4      | 19 1/16 | 3/8  | 8 1/2  |
| 364T                   | 1/8 | 17 3/8 | 9 1/2  | 35 1/4      | 21 5/16 | 3/8  | 9 1/2  |
| 365T                   | 1/8 | 17 7/8 | 9 1/2  | 35 1/4      | 21 5/16 | 3/8  | 9 1/2  |
| 404T                   | 1/8 | 20     | 10 1/2 | 35 1/4      | 23 5/16 | 3/8  | 10 1/2 |
| 405T                   | 1/8 | 20 3/4 | 10 1/2 | 35 1/4      | 23 5/16 | 3/8  | 10 1/2 |

| Unit<br>Size | A     | AA    | B      | BB     | BC      | BD     | C       | D      | E      | FA     | G     | H      | J      | KA     | KB     | L       | M      | N        | NB       | O       | T▲    | U     | Keyway                | W▲    | Y     | Keyway               | Z       |
|--------------|-------|-------|--------|--------|---------|--------|---------|--------|--------|--------|-------|--------|--------|--------|--------|---------|--------|----------|----------|---------|-------|-------|-----------------------|-------|-------|----------------------|---------|
| HVK-35       | 3 1/2 | 2 1/2 | 4 1/8  | 3 1/8  | 2 3/4   | 5 1/8  | 4 13/16 | 8 3/8  | 3 1/2  | 4      | 7/8   | 1 1/16 | 11 3/4 | 6 7/8  | 3 1/2  | 10 5/8  | 7 1/8  | 6 5/8    | 8 1/8    | 9 1/8   | 3/4   | 2     | 3/16 x 3/32 x 1 15/16 | 1 1/2 | 3     | 3/8 x 3/16 x 2 15/16 | 4 3/16  |
| HVK-40       | 4     | 3     | 5      | 3 1/2  | 2 7/8   | 5 1/8  | 5 3/8   | 9 1/4  | 3 7/8  | 4 7/8  | 1 1/8 | 1 1/16 | 13 1/8 | 7 5/8  | 3 7/8  | 11 9/16 | 8 1/8  | 7 3/4    | 9 1/8    | 10 1/2  | 7/8   | 2     | 3/16 x 3/32 x 1 15/16 | 1 3/4 | 3 1/2 | 3/8 x 3/16 x 3 7/8   | 4 3/8   |
| HVK-50       | 5     | 3 1/2 | 5 5/8  | 4      | 3 1/2   | 6 3/8  | 7 1/2   | 11 1/8 | 4 3/4  | 5 1/2  | 1 1/4 | 1 1/8  | 15 3/8 | 9      | 4 3/4  | 12 5/8  | 9 5/8  | 8 5/8    | 9 7/8    | 12 9/16 | 1 1/8 | 2 1/4 | 1/4 x 1/8 x 2 3/16    | 2     | 4     | 1/2 x 1/4 x 3 7/8    | 5 9/16  |
| HVK-60       | 6     | 4     | 6 1/4  | 4 3/4  | 3 5/8   | 6 3/8  | 8 5/8   | 13 3/8 | 5 3/4  | 6 1/8  | 1 3/8 | 1 3/16 | 18 1/8 | 10 1/2 | 5 3/4  | 14 3/4  | 10 3/4 | 10 1/16  | 11 3/4   | 13 7/16 | 1 1/4 | 2 1/2 | 1/4 x 1/8 x 2 7/16    | 2 1/4 | 4 1/2 | 1/2 x 1/4 x 4 3/8    | 6 11/16 |
| HVK-70       | 7     | 4 1/2 | 6 1/2  | 5 1/8  | 4       | 6 3/8  | 9 1/4   | 14 5/8 | 6 1/4  | 6 7/16 | 1 3/8 | 1 5/16 | 20 1/8 | 11 3/4 | 6 1/4  | 16 3/8  | 11 1/2 | 10 3/4   | 13 1/16  | 14      | 1 3/8 | 2 3/4 | 5/16 x 5/32 x 2 11/16 | 2 1/2 | 5     | 5/8 x 5/16 x 4 15/16 | 7 5/16  |
| HVK-80       | 8     | 5     | 6 3/8  | 5 1/2  | 4 3/8   | 7 3/16 | 10 1/2  | 16 1/2 | 7      | 6 1/2  | 1 1/2 | 1 1/16 | 22 1/4 | 12 3/4 | 7      | 18      | 12 1/8 | 11 3/4   | 14 7/16  | 14 7/8  | 1 1/2 | 3     | 3/8 x 3/16 x 2 15/16  | 2 3/4 | 5 1/2 | 5/8 x 5/16 x 5 7/8   | 8 1/4   |
| HVK-90       | 9     | 5 1/2 | 7 3/4  | 6 3/16 | 4 7/8   | 7 3/16 | 11 3/8  | 18 1/2 | 7 7/8  | 7 5/8  | 1 5/8 | 1 3/16 | 25     | 14 3/8 | 7 7/8  | 20 1/8  | 14 1/4 | 13 13/16 | 16 1/16  | 17      | 1 3/4 | 3 1/2 | 3/8 x 3/16 x 3 7/16   | 3 1/4 | 6 1/2 | 3/4 x 3/8 x 6 3/8    | 9 1/4   |
| HVK-100      | 10    | 6     | 8 3/4  | 6 1/2  | 5 1/4   | 9 3/16 | 12 5/8  | 20 3/4 | 9      | 8 5/8  | 1 3/4 | 1 3/16 | 27 1/4 | 15 1/2 | 9      | 22 1/4  | 16     | 15 1/8   | 18       | 18 1/2  | 1 7/8 | 3 3/4 | 1/2 x 1/4 x 3 11/16   | 3 5/8 | 7 1/4 | 7/8 x 7/16 x 7 3/16  | 10 3/8  |
| HVK-120      | 12    | 7     | 9      | 7 7/16 | 5 11/16 | 9 3/16 | 14 5/8  | 24 1/2 | 10 3/8 | 8 7/8  | 2 1/8 | 1 5/16 | 32 3/8 | 18 1/2 | 10 3/8 | 25 5/8  | 17 1/2 | 17       | 20 11/16 | 19 1/2  | 2 1/8 | 4 1/4 | 1/2 x 1/4 x 4 3/16    | 4 1/4 | 8 1/2 | 1 x 1/2 x 8 3/8      | 12 1/8  |
| HVK-140      | 14    | 7     | 10 1/4 | 7 7/16 | 5 11/16 | 9 3/16 | 16 3/8  | 27 1/2 | 12     | 9 7/8  | 2 1/4 | 1 5/16 | 37 1/2 | 22     | 12     | 32 5/8  | 19 1/4 | 20 11/16 | 23 15/16 | 21 3/4  | 2 1/8 | 4 1/4 | 1/2 x 1/4 x 4 3/16    | 5     | 9     | 1 1/4 x 5/8 x 8 5/8  | 13 3/4  |
| HVK-170      | 17    | 10    | 11 1/2 | 11 1/2 | 8       | -      | 19 1/2  | 33     | 14 1/2 | 11 1/8 | 2 1/2 | 1 9/16 | 44 3/4 | 26 1/4 | 14 1/2 | 41 3/8  | 21 1/2 | 22 3/4   | 32 3/16  | 24 3/4  | 2 1/2 | 5     | 5/8 x 5/16 x 4 15/16  | 5 3/4 | 10    | 1 1/2 x 3/4 x 9 3/4  | 16 1/2  |
| HVK-200      | 20    | 10    | 12 3/4 | 11 1/2 | 8       | -      | 22 1/2  | 39     | 17     | 12 7/8 | 2 3/4 | 1 9/16 | 53     | 31     | 17     | 43 1/4  | 23 3/4 | 26       | 34 1/16  | 27 1/4  | 2 1/2 | 5     | 5/8 x 5/16 x 4 15/16  | 6 1/2 | 11    | 1 1/2 x 3/4 x 10 1/2 | 19 1/2  |

All dimensions are in inches. Use certified prints for construction. The input shaft may be rotated in either direction. Standard gear sets are cut with right hand threads giving relative shaft rotations as shown above. Shaft arrangements are shown above. Desired assembly should be

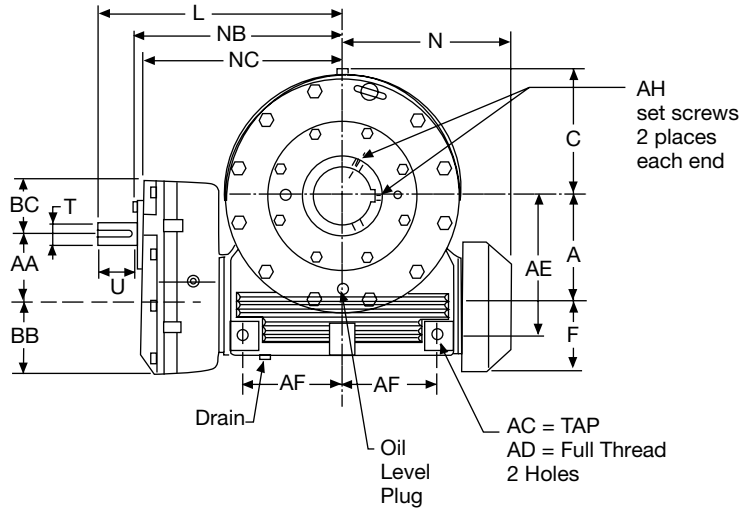
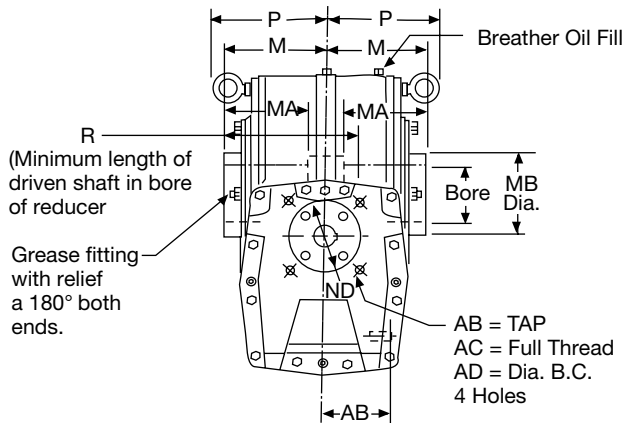
specified when ordering. Standard keys are furnished with units.

▲ Tolerances: 1 1/2" Diameter or Less = +.0000" -.0005"

Over 1 1/2" Diameter = +.000" -.001"

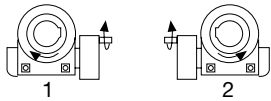
Low input speeds require special order instructions. See introductory section.

# Dimensions Type HSM • Horizontal and Vertical

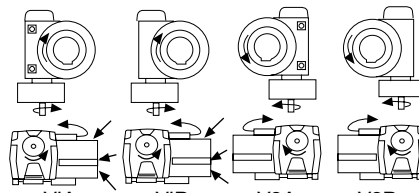


Special Note:  
Unit sizes 140, 170 & 200 will be supplied with a fan mounted on input shaft. Allowance has been made in L & NB dimensions.

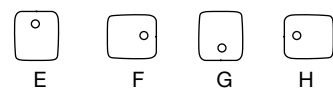
**Horizontal Assemblies**



**Vertical Assemblies**



**Helical Shaft Input Positions**



A drywell is standard for vertical assemblies sizes 60-200 only.

| Unit Size | WT. LBS. | A     | AA    | AB    | AC      | AD    | AE     | AF     | AG     | AH     | AJ  | AK     | BB     | BC      | C       | F       | L       | M       | MA      | MB    | N        | NB       | NC       | ND     | P       | R      | T▲    | U     | Keyway                | Bore            | Keyway       |
|-----------|----------|-------|-------|-------|---------|-------|--------|--------|--------|--------|-----|--------|--------|---------|---------|---------|---------|---------|---------|-------|----------|----------|----------|--------|---------|--------|-------|-------|-----------------------|-----------------|--------------|
| HSM35     | 115      | 3 1/2 | 2 1/2 | 3     | 1/2-13  | 3/4   | 5 1/8  | 3 1/2  | 3/8-16 | 3/8-16 | 5/8 | 5 3/4  | 3 1/8  | 2 3/4   | 4 13/16 | 2 5/8   | 10 5/8  | 4 11/16 | 4 1/8   | 3 1/8 | 6 5/8    | 8 5/8    | 8 1/8    | 3 3/16 | 5       | 5 3/4  | 3/4   | 2     | 3/16 x 3/32 x 1 15/16 | 2.1885 / 2.1905 | 1/2 x 1/4    |
| HSM40     | 175      | 4     | 3     | 3 1/2 | 5/8-11  | 1     | 5 3/4  | 3 7/8  | 3/8-16 | 3/8-16 | 5/8 | 5 3/4  | 3 1/2  | 2 7/8   | 5 3/8   | 3 1/4   | 11 9/16 | 5 5/16  | 4 11/16 | 3 1/2 | 7 3/4    | 9 9/16   | 9 1/8    | 3 3/16 | 5 1/2   | 6 7/8  | 7/8   | 2     | 3/16 x 3/32 x 1 15/16 | 2.438 / 2.440   | 5/8 x 5/16   |
| HSM50     | 260      | 5     | 3 1/2 | 4     | 3/4-10  | 1 1/4 | 7      | 4 3/4  | 1/2-13 | 1/2-13 | 3/4 | 7 1/4  | 4      | 3 1/2   | 7 1/2   | 3 11/16 | 12 5/8  | 5 7/8   | 5 1/4   | 4 3/8 | 8 5/8    | 10 3/8   | 9 7/8    | 4 1/4  | 6 15/16 | 7      | 1 1/8 | 2 1/4 | 1/4 x 1/8 x 2 13/16   | 2.938 / 2.940   | 3/4 x 3/8    |
| HSM60     | 360      | 6     | 4     | 4 1/4 | 3/4-10  | 1 1/8 | 8 1/2  | 5 3/4  | 1/2-13 | 1/2-13 | 3/4 | 7 1/4  | 4 3/4  | 3 3/8   | 8 3/8   | 4 1/8   | 14 3/4  | 6 1/2   | 5 3/4   | 4 3/4 | 10 1/8   | 12 1/4   | 11 3/4   | 4 1/4  | 7 3/8   | 7 3/4  | 1 1/4 | 2 1/2 | 1/4 x 1/8 x 2 7/8     | 3.438 / 3.440   | 7/8 x 7/16   |
| HSM70     | 525      | 7     | 4 1/2 | 4 1/2 | 7/8-9   | 1 3/8 | 9 3/8  | 6 1/4  | 1/2-13 | 1/2-13 | 3/4 | 7 1/4  | 5 1/8  | 4       | 9 1/4   | 5 3/8   | 16 3/8  | 6 3/4   | 5 7/8   | 5 1/2 | 10 3/4   | 13 5/8   | 13 1/8   | 4 7/8  | 7 1/2   | 8 1/8  | 1 3/8 | 2 3/4 | 5/16 x 3/32 x 2 11/16 | 3.938 / 3.940   | 1 x 1/2      |
| HSM80     | 650      | 8     | 5     | 4 5/8 | 1-8     | 1 1/2 | 10 1/4 | 7      | 5/8-11 | 1/2-13 | 1   | 8 1/4  | 5 1/2  | 4 3/8   | 10 1/2  | 5 3/8   | 18      | 7 1/4   | 6 1/4   | 6 1/4 | 11 3/4   | 15 1/16  | 14 7/16  | 5 3/4  | 8 1/4   | 8 3/4  | 1 1/2 | 3     | 3/8 x 3/16 x 2 15/16  | 4.438 / 4.440   | 1 x 1/2      |
| HSM90     | 855      | 9     | 5 1/2 | 5 5/8 | 1-8     | 1 1/2 | 11 1/2 | 7 7/8  | 5/8-11 | 1/2-13 | 1   | 8 1/4  | 6 3/8  | 4 7/8   | 11 3/8  | 6 3/8   | 20 1/8  | 8 1/4   | 7 1/8   | 7     | 13 13/16 | 16 11/16 | 16 1/16  | 5 3/4  | 9 1/4   | 9 7/8  | 1 3/4 | 3 1/2 | 3/8 x 3/16 x 3 7/16   | 4.938 / 4.940   | 1 1/4 x 7/16 |
| HSM100    | 1150     | 10    | 6     | 6 1/8 | 1-8     | 1 1/2 | 12 3/4 | 9      | 5/8-11 | 5/8-11 | 1   | 10 1/4 | 6 1/2  | 5 1/4   | 12 5/8  | 6 3/8   | 22 1/4  | 9 1/4   | 8       | 7 1/2 | 15 1/8   | 18 11/16 | 18       | 6 3/4  | 9 3/4   | 11     | 1 7/8 | 3 3/4 | 1/2 x 1/4 x 3 11/16   | 5.438 / 5.440   | 1 1/4 x 7/16 |
| HSM120    | 1500     | 12    | 7     | 6 1/2 | 1 1/4-7 | 2     | 15 1/4 | 10 3/8 | 5/8-11 | 5/8-11 | 1   | 10 1/4 | 7 5/16 | 5 11/16 | 14 5/8  | 6 3/8   | 25 5/8  | 9 3/4   | 8 3/8   | 8     | 17       | 21 5/8   | 20 11/16 | 7      | 10 1/2  | 11 5/8 | 2 1/8 | 4 1/4 | 1/2 x 1/4 x 4 3/16    | 6.000 / 6.002   | 1 1/2 x 1/2  |
| HSM140    | 2100     | 14    | 7     | 7 1/2 | 1 1/4-7 | 2 1/8 | 18 1/2 | 12     | 5/8-11 | 5/8-11 | 1   | 10 1/4 | 7 5/16 | 5 11/16 | 16 5/8  | 7 11/16 | 32 3/8  | 10 3/4  | 9       | 8     | 20 11/16 | 28 3/8   | 23 15/16 | 7      | 11 1/2  | 13     | 2 1/8 | 4 1/4 | 1/2 x 1/4 x 4 3/16    | 6.000 / 6.002   | 1 1/2 x 1/2  |
| HSM170    | 3350     | 17    | 10    | 8 1/2 | 1 1/2-6 | 2 1/4 | 22     | 14 1/2 | -      | 5/8-11 | -   | -      | 11 1/2 | 8       | 19 1/2  | 8 3/8   | 41 3/8  | 12 1/4  | 10 1/4  | 9 1/4 | 22 3/4   | 36 3/8   | -        | 9 9/16 | 13 1/4  | 14 3/4 | 2 1/2 | 5     | 5/8 x 5/16 x 4 15/16  | 6.500 / 6.502   | 1 1/2 x 1/2  |
| HSM200    | 4800     | 20    | 10    | 9 1/2 | 1 1/2-6 | 2 1/4 | 26     | 16 1/4 | -      | 5/8-11 | -   | -      | 11 1/2 | 8       | 22 1/2  | 10 1/4  | 43 1/4  | 13 1/2  | 10 1/2  | 9 1/4 | 26       | 38 1/4   | -        | 9 9/16 | 14 1/2  | 16     | 2 1/2 | 5     | 5/8 x 5/16 x 4 15/16  | 6.500 / 6.502   | 1 1/2 x 1/2  |

All dimensions are in inches. Use certified prints for construction. The input shaft may be rotated in either direction. Standard gear sets are cut with right hand threads giving relative shaft rotations as shown above. Shaft arrangements are shown above. Desired assembly should be

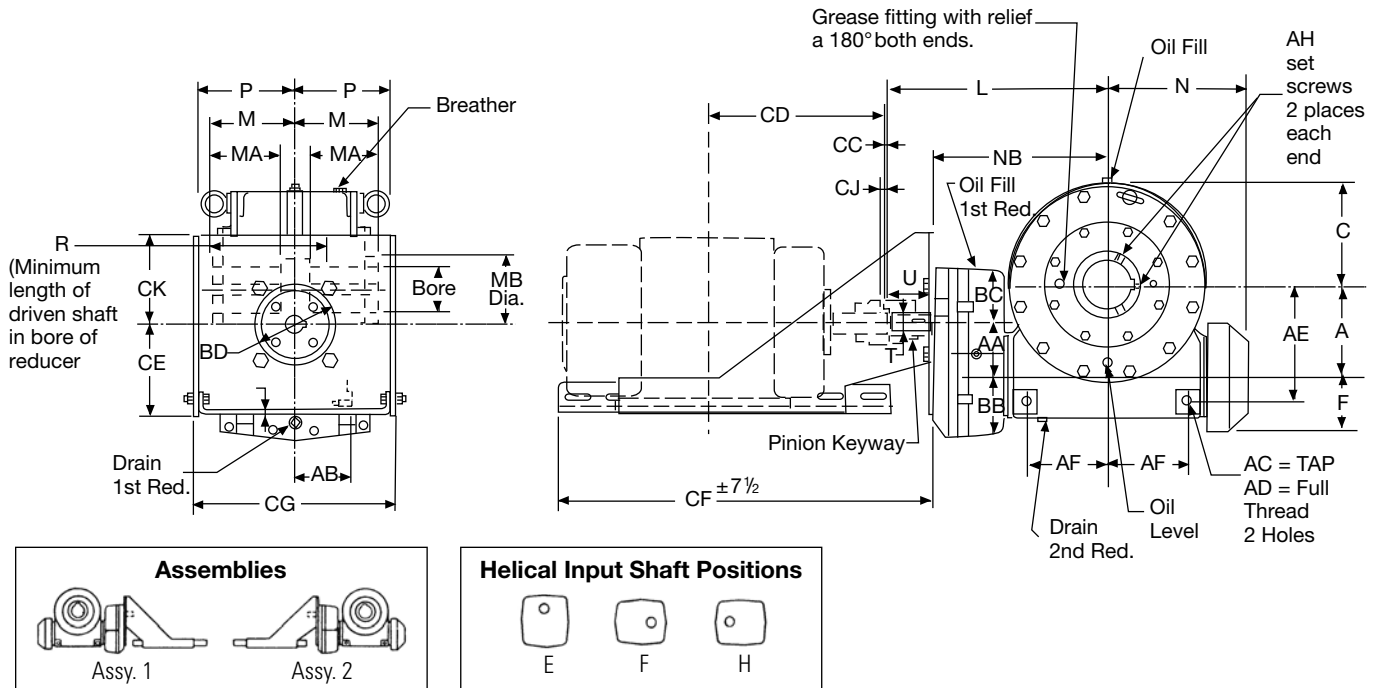
specified when ordering. Standard keys are furnished with units.

▲ Tolerances: 1 1/2" Diameter or Less = +.0000" -.0005"

Over 1 1/2" Diameter = +.000" -.001"

Low input speeds require special order instructions. See introductory section.

# Dimensions for "Sugar Scoop" Motor Mounts for Type HSMK



Helical Worm Speed Reducers

A drywell is standard for vertical assemblies sizes 60-200 only.

| Motor Frame Size | CJ  |     |     |     |     |        |        |        |        |        |       |       |
|------------------|-----|-----|-----|-----|-----|--------|--------|--------|--------|--------|-------|-------|
|                  | 35  | 40  | 50  | 60  | 70  | 80     | 90     | 100    | 120    | 140    | 170   | 200   |
| 143T             | 3/8 | 3/8 | 3/8 |     |     |        |        |        |        |        |       |       |
| 145T             | 3/8 | 3/8 | 3/8 |     |     |        |        |        |        |        |       |       |
| 182T             | 3/8 | 3/8 | 3/8 | 5/8 | 5/8 | 5/8    |        |        |        |        |       |       |
| 184T             | 3/8 | 3/8 | 3/8 | 5/8 | 5/8 | 5/8    | 7/8    |        |        |        |       |       |
| 213T             |     | 5/8 | 5/8 | 5/8 | 5/8 | 5/8    | 7/8    | 7/8    |        |        |       |       |
| 215T             |     | 5/8 | 5/8 | 5/8 | 5/8 | 5/8    | 7/8    | 7/8    | 1 5/16 |        |       |       |
| 254T             |     |     |     | 3/4 | 3/4 | 3/4    | 7/8    | 7/8    | 1 5/16 | 1 5/16 | 1 3/8 | 1 3/8 |
| 256T             |     |     |     | 3/4 | 3/4 | 3/4    | 7/8    | 7/8    | 1 5/16 | 1 5/16 | 1 3/8 | 1 3/8 |
| 284T             |     |     |     |     | 7/8 | 7/8    | 7/8    | 7/8    | 1 5/16 | 1 5/16 | 1 3/8 | 1 3/8 |
| 286T             |     |     |     |     | 7/8 | 7/8    | 7/8    | 7/8    | 1 5/16 | 1 5/16 | 1 3/8 | 1 3/8 |
| 324T             |     |     |     |     |     | 1 5/16 | 1 5/16 | 1 5/16 | 1 5/16 | 1 5/16 | 1 3/8 | 1 3/8 |
| 326T             |     |     |     |     |     |        | 1 5/16 | 1 5/16 | 1 5/16 | 1 5/16 | 1 3/8 | 1 3/8 |
| 364T             |     |     |     |     |     |        |        | 1 1/4  | 1 1/4  | 1 1/4  | 1 3/8 | 1 3/8 |
| 365T             |     |     |     |     |     |        |        | 1 1/4  | 1 1/4  | 1 1/4  | 1 3/8 | 1 3/8 |
| 404T             |     |     |     |     |     |        |        |        | 1 7/8  | 1 7/8  | 1 7/8 | 1 7/8 |
| 405T             |     |     |     |     |     |        |        |        |        | 1 7/8  | 1 7/8 | 1 7/8 |

| Motor Frame Size | CC  | CD     | CE     | CF ±7 1/2 | CG      | CH   | CK     |
|------------------|-----|--------|--------|-----------|---------|------|--------|
| 143T             | 1/8 | 6 1/2  | 4 7/8  | 25        | 12 5/8  | 3/16 | 4 7/8  |
| 145T             | 1/8 | 7      | 4 7/8  | 25        | 12 5/8  | 3/16 | 4 7/8  |
| 182T             | 1/8 | 7 3/4  | 4 7/8  | 25        | 12 5/8  | 3/16 | 4 7/8  |
| 184T             | 1/8 | 8 1/4  | 4 7/8  | 25        | 12 5/8  | 3/16 | 4 7/8  |
| 213T             | 1/8 | 9 5/8  | 5 9/16 | 28        | 12 3/4  | 1/4  | 5      |
| 215T             | 1/8 | 10 3/8 | 5 9/16 | 28        | 12 3/4  | 1/4  | 5      |
| 254T             | 1/8 | 12 3/8 | 6 5/8  | 31        | 15      | 5/16 | 6 5/8  |
| 256T             | 1/8 | 13 1/4 | 6 5/8  | 31        | 15      | 5/16 | 6 5/8  |
| 284T             | 1/8 | 14 1/8 | 7 5/8  | 31        | 17      | 5/16 | 7 5/8  |
| 286T             | 1/8 | 14 7/8 | 7 5/8  | 31        | 17      | 5/16 | 7 5/8  |
| 324T             | 1/8 | 15 3/4 | 8 1/2  | 35 1/4    | 19 1/16 | 3/8  | 8 1/2  |
| 326T             | 1/8 | 16 1/2 | 8 1/2  | 35 1/4    | 19 1/16 | 3/8  | 8 1/2  |
| 364T             | 1/8 | 17 3/8 | 9 1/2  | 35 1/4    | 21 5/16 | 3/8  | 9 1/2  |
| 365T             | 1/8 | 17 7/8 | 9 1/2  | 35 1/4    | 21 5/16 | 3/8  | 9 1/2  |
| 404T             | 1/8 | 20     | 10 1/2 | 35 1/4    | 23 5/16 | 3/8  | 10 1/2 |
| 405T             | 1/8 | 20 3/4 | 10 1/2 | 35 1/4    | 23 5/16 | 3/8  | 10 1/2 |

| Unit Size | A     | AA    | AB    | AC       | AD    | AE     | AF     | AH       | BB     | BC      | BD    | C       | F       | L       | M       | MA      | MB     | N        | NB       | P       | R      | T▲    | U     | Pinion Keyway         | Bore            | Bore Keyway            |
|-----------|-------|-------|-------|----------|-------|--------|--------|----------|--------|---------|-------|---------|---------|---------|---------|---------|--------|----------|----------|---------|--------|-------|-------|-----------------------|-----------------|------------------------|
| HSMK-35   | 3 1/2 | 2 1/2 | 3     | 1 1/2-13 | 3/4   | 5 1/8  | 3 1/2  | 3/8-16   | 3 1/2  | 2 3/4   | 5 1/8 | 4 13/16 | 2 5/8   | 10 9/8  | 4 11/16 | 4 1/8   | 3 1/8  | 6 5/8    | 8 1/8    | 5       | 5 3/4  | 3/4   | 2     | 3/16 x 3/32 x 1 15/16 | 2.1885 / 2.1905 | 1/2 Wide x 1/4 Deep    |
| HSMK-40   | 4     | 3     | 3 1/2 | 5/8-11   | 1     | 5 3/4  | 3 7/8  | 3/8-16   | 3 1/2  | 2 7/8   | 5 1/8 | 5 3/8   | 3 1/4   | 11 9/16 | 5 5/16  | 4 11/16 | 3 1/2  | 7 3/4    | 9 1/8    | 5 1/2   | 6 7/16 | 7/8   | 2     | 3/16 x 3/32 x 1 15/16 | 2.438 / 2.440   | 5/8 Wide x 5/16 Deep   |
| HSMK-50   | 5     | 3 1/2 | 4     | 3/4-10   | 1 1/4 | 7      | 4 3/4  | 1 1/2-13 | 4      | 3 1/2   | 6 3/8 | 7 1/2   | 3 11/16 | 12 5/8  | 5 7/8   | 5 1/4   | 4 3/16 | 8 5/8    | 9 7/8    | 6 15/16 | 7      | 1 1/8 | 2 1/4 | 1/4 x 1/8 x 2 3/16    | 2.938 / 2.940   | 3/4 Wide x 3/8 Deep    |
| HSMK-60   | 6     | 4     | 4 1/4 | 3/4-10   | 1 1/8 | 8 1/2  | 5 3/4  | 1 1/2-13 | 4 3/4  | 3 3/8   | 6 3/8 | 8 5/8   | 4 1/4   | 14 3/4  | 6 1/2   | 5 3/4   | 4 3/4  | 10 1/16  | 11 3/4   | 7 3/4   | 7 3/4  | 1 1/4 | 2 1/2 | 1/4 x 1/8 x 2 7/16    | 3.438 / 3.440   | 7/8 Wide x 7/16 Deep   |
| HSMK-70   | 7     | 4 1/2 | 4 1/2 | 7/8-9    | 1 3/8 | 9 3/8  | 6 1/4  | 1 1/2-13 | 5 1/8  | 4       | 6 3/8 | 9 1/4   | 5 3/8   | 16 3/8  | 6 3/4   | 5 7/8   | 5 1/2  | 10 3/4   | 13 1/16  | 7 1/2   | 8 1/8  | 1 3/8 | 2 3/4 | 5/16 x 5/32 x 2 11/16 | 3.938 / 3.940   | 1 Wide x 1/2 Deep      |
| HSMK-80   | 8     | 5     | 4 5/8 | 1-8      | 1 1/2 | 10 1/4 | 7      | 1 1/2-13 | 5 1/2  | 4 3/8   | 7 3/8 | 10 1/2  | 5 3/8   | 18      | 7 1/4   | 6 1/4   | 6 1/4  | 11 3/4   | 14 7/16  | 8 1/4   | 8 3/4  | 1 1/2 | 3     | 3/8 x 3/16 x 2 15/16  | 4.438 / 4.440   | 1 Wide x 1/2 Deep      |
| HSMK-90   | 9     | 5 1/2 | 5 5/8 | 1-8      | 1 1/2 | 11 1/2 | 7 1/8  | 1 1/2-13 | 6 3/8  | 4 7/8   | 7 3/8 | 11 3/8  | 6 3/8   | 20 1/8  | 8 1/4   | 7 1/8   | 7      | 13 13/16 | 16 1/16  | 9 1/4   | 9 7/8  | 1 3/4 | 3 1/2 | 3/8 x 3/16 x 3 7/16   | 4.938 / 4.940   | 1 1/4 Wide x 7/16 Deep |
| HSMK-100  | 10    | 6     | 6 1/8 | 1-8      | 1 1/2 | 12 3/4 | 9      | 5/8-11   | 6 1/2  | 5 1/4   | 9 3/8 | 12 5/8  | 6 3/8   | 22 1/4  | 9 1/4   | 8       | 7 1/2  | 15 1/8   | 18       | 9 3/4   | 11     | 1 7/8 | 3 3/4 | 1/2 x 1/4 x 3 11/16   | 5.438 / 5.440   | 1 1/4 Wide x 7/16 Deep |
| HSMK-120  | 12    | 7     | 6 1/2 | 1 1/4-7  | 2     | 15 1/4 | 10 3/8 | 5/8-11   | 7 3/8  | 5 11/16 | 9 3/8 | 14 5/8  | 6 3/8   | 25 5/8  | 9 3/4   | 8 3/8   | 8      | 17       | 20 11/16 | 10 1/2  | 11 5/8 | 2 1/8 | 4 1/4 | 1/2 x 1/4 x 4 3/16    | 6.000 / 6.002   | 1 1/2 Wide x 1/2 Deep  |
| HSMK-140  | 14    | 7     | 7 1/2 | 1 1/4-7  | 2 1/8 | 18 1/2 | 12     | 5/8-11   | 7 3/8  | 5 11/16 | 9 3/8 | 16 5/8  | 7 11/16 | 32 5/8  | 10 3/4  | 9       | 8      | 20 11/16 | 23 15/16 | 11 1/4  | 13     | 2 1/8 | 4 1/4 | 1/2 x 1/4 x 4 3/16    | 6.000 / 6.002   | 1 1/2 Wide x 1/2 Deep  |
| HSMK-170  | 17    | 10    | 8 1/2 | 1 1/2-6  | 2 1/4 | 22     | 14 1/2 | 5/8-11   | 11 1/2 | 8       | —     | 19 1/2  | 8 3/8   | 41 3/8  | 12 1/4  | 10 1/4  | 9 1/4  | 22 3/4   | 32 3/8   | 13 1/4  | 14 3/4 | 2 1/2 | 5     | 5/8 x 9/16 x 4 15/16  | 6.500 / 6.502   | 1 1/2 Wide x 1/2 Deep  |
| HSMK-200  | 20    | 10    | 9 1/2 | 1 1/2-6  | 2 1/4 | 26     | 16 1/4 | 5/8-11   | 11 1/2 | 8       | —     | 22 1/2  | 10 1/4  | 43 1/4  | 13 1/2  | 10 1/2  | 9 1/4  | 26       | 34 1/8   | 14 1/2  | 16     | 2 1/2 | 5     | 5/8 x 9/16 x 4 15/16  | 6.500 / 6.502   | 1 1/2 Wide x 1/2 Deep  |

All dimensions are in inches. Use certified prints for construction. The input shaft may be rotated in either direction. Standard gear sets are cut with right hand threads giving relative shaft rotations as shown above. Shaft arrangements are shown above. Desired assembly should be

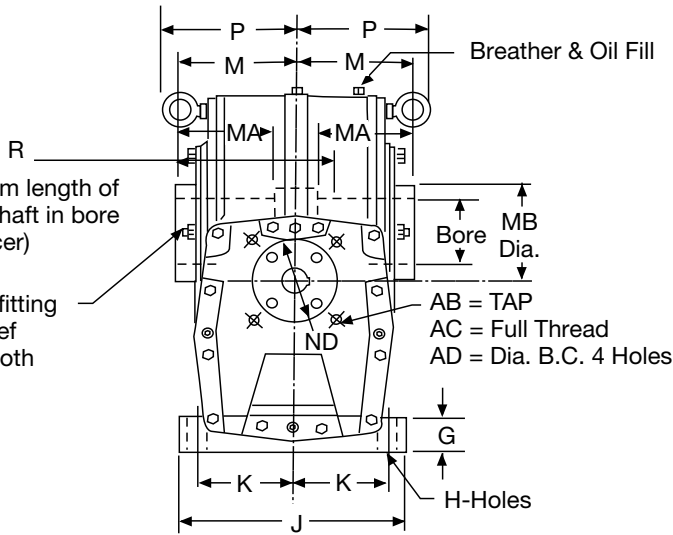
specified when ordering. Standard keys are furnished with units.

▲ Tolerances: 1 1/2" Diameter or Less = +.0000" -.0005"

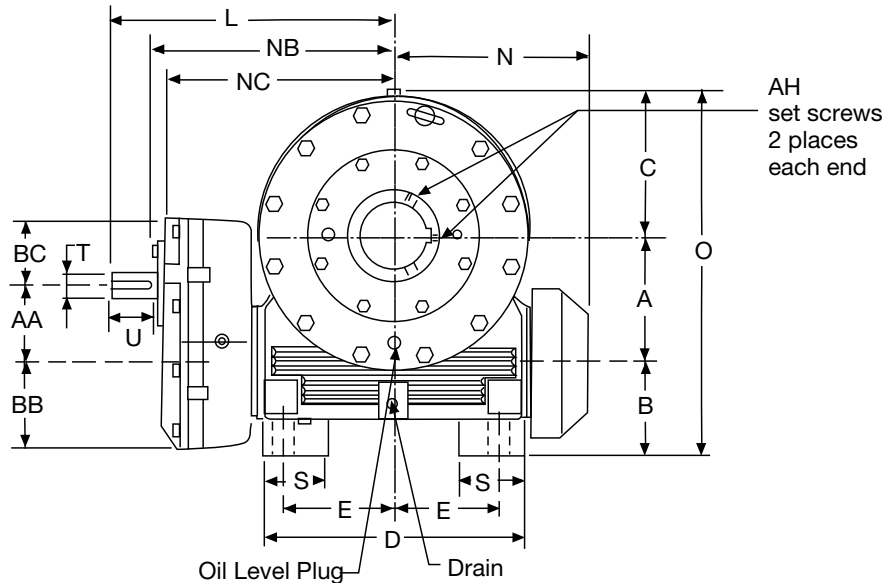
Over 1 1/2" Diameter = +.000" -.001"

Low input speeds require special order instructions. See introductory section.

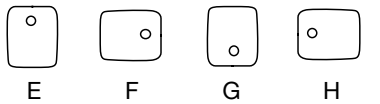
# Dimensions Type HSMB • Base Mount



**Special Note:**  
Unit sizes 140, 170 & 200 will be supplied with a fan mounted on input shaft. Allowance has been made in L & NB dimensions.



**Helical Shaft Input Positions**



| Unit Size | WT. LBS. | A     | AA    | AG     | AH     | AJ  | AK     | B      | BB     | BC      | C       | D      | E      | G     | H       | J      | K      | L       | M       | MA      | MB    | N        | NB       | NC       | ND     | O        | P       | R      | S     | T     | U     | Keyway                | Bore            | Keyway       |
|-----------|----------|-------|-------|--------|--------|-----|--------|--------|--------|---------|---------|--------|--------|-------|---------|--------|--------|---------|---------|---------|-------|----------|----------|----------|--------|----------|---------|--------|-------|-------|-------|-----------------------|-----------------|--------------|
| HSMB35    | 142      | 3 1/2 | 2 1/2 | 3/8-16 | 3/8-16 | 3/8 | 5/8    | 3 3/8  | 3 1/8  | 2 3/4   | 4 13/16 | 9 1/4  | 3 7/8  | 1 1/8 | 1 1/8   | 9      | 3 3/4  | 10 5/8  | 4 11/16 | 4 1/8   | 3 1/8 | 6 5/8    | 8 5/8    | 8 1/8    | 3 3/16 | 11 11/16 | 5       | 5 3/4  | 2 1/4 | 3/4   | 2     | 3/16 x 3/32 x 1 15/16 | 2.1885 / 2.1905 | 1/2 x 1/4    |
| HSMB40    | 225      | 4     | 3     | 3/8-16 | 3/8-16 | 3/8 | 5/8    | 4      | 3 1/2  | 2 7/8   | 5 5/8   | 10 3/8 | 4 1/4  | 1 1/2 | 1 1/2   | 12     | 4 1/2  | 11 9/16 | 5 5/8   | 4 11/16 | 3 1/2 | 7 3/4    | 9 9/16   | 9 1/8    | 3 5/16 | 13 3/8   | 5 1/2   | 6 7/16 | 2 1/2 | 7/8   | 2     | 3/16 x 3/32 x 1 15/16 | 2.438 / 2.440   | 5/8 x 3/16   |
| HSMB50    | 320      | 5     | 3 1/2 | 1/2-13 | 1/2-13 | 3/4 | 7 1/4  | 4 5/8  | 4      | 3 1/2   | 7 1/2   | 11 1/2 | 4 3/4  | 1 3/4 | 1 3/4   | 12     | 4 1/2  | 12 5/8  | 5 7/8   | 5 1/4   | 4 3/8 | 8 5/8    | 10 3/8   | 9 7/8    | 4 1/4  | 17 1/8   | 6 15/16 | 7      | 3     | 1 1/8 | 2 1/4 | 1/4 x 1/8 x 2 13/16   | 2.938 / 2.940   | 3/4 x 3/8    |
| HSMB60    | 455      | 6     | 4     | 1/2-13 | 1/2-13 | 3/4 | 7 1/4  | 5      | 4 3/4  | 3 3/8   | 8 5/8   | 13 1/4 | 5 1/4  | 1 1/2 | 1 1/2   | 13     | 5 1/4  | 14 3/4  | 6 1/2   | 5 3/4   | 4 3/4 | 10 1/8   | 12 1/4   | 11 3/4   | 4 1/4  | 19 5/8   | 7 3/8   | 7 3/4  | 3     | 1 1/4 | 2 1/2 | 1/4 x 1/8 x 2 7/8     | 3.438 / 3.440   | 7/8 x 7/16   |
| HSMB70    | 640      | 7     | 4 1/2 | 1/2-13 | 1/2-13 | 3/4 | 7 1/4  | 5 5/8  | 5 1/8  | 4       | 9 1/4   | 14 3/4 | 6      | 2     | 1 1/8   | 14     | 5 5/8  | 16 3/8  | 6 3/4   | 5 7/8   | 5 1/2 | 10 3/4   | 13 3/8   | 13 1/8   | 4 7/8  | 21 5/8   | 7 1/2   | 8 1/8  | 3 1/2 | 1 3/8 | 2 3/4 | 5/16 x 5/32 x 2 11/16 | 3.938 / 3.940   | 1 x 1/2      |
| HSMB80    | 780      | 8     | 5     | 5/8-11 | 1/2-13 | 1   | 8 1/4  | 5 3/4  | 5 1/2  | 4 3/8   | 10 1/2  | 16 1/2 | 6 3/4  | 2 1/4 | 1 3/8   | 14 1/2 | 6      | 18      | 7 1/4   | 6 1/4   | 6 1/4 | 11 3/4   | 15 1/8   | 14 7/8   | 5 3/4  | 24 1/4   | 8 1/4   | 8 3/4  | 4     | 1 1/2 | 3     | 3/8 x 3/16 x 2 15/16  | 4.438 / 4.440   | 1 x 1/2      |
| HSMB90    | 1020     | 9     | 5 1/2 | 5/8-11 | 1/2-13 | 1   | 8 1/4  | 6 1/4  | 6 3/8  | 4 7/8   | 11 3/8  | 18 3/4 | 7 3/4  | 2 1/2 | 1 7/8   | 17 1/2 | 7 1/4  | 20 1/8  | 8 1/4   | 7 1/8   | 7     | 13 13/16 | 16 11/16 | 16 1/8   | 5 3/4  | 26 5/8   | 9 1/4   | 9 7/8  | 4     | 1 3/4 | 3 1/2 | 3/8 x 3/16 x 3 7/8    | 4.938 / 4.940   | 1 1/4 x 7/16 |
| HSMB100   | 1345     | 10    | 6     | 5/8-11 | 5/8-11 | 1   | 10 1/4 | 6 3/4  | 6 1/2  | 5 1/4   | 12 5/8  | 21     | 8 3/4  | 2 7/8 | 1 7/8   | 18     | 7 1/2  | 22 1/4  | 9 1/4   | 8       | 7 1/2 | 15 1/8   | 18 11/16 | 18       | 6 3/4  | 29 3/8   | 9 3/4   | 11     | 4 1/4 | 1 7/8 | 3 3/4 | 1/2 x 1/4 x 3 11/16   | 5.438 / 5.440   | 1 1/4 x 7/16 |
| HSMB120   | 1950     | 12    | 7     | 5/8-11 | 5/8-11 | 1   | 10 1/4 | 7 1/2  | 7 3/8  | 5 11/16 | 14 5/8  | 24 1/2 | 10 1/2 | 2 3/4 | 1 9/16  | 21     | 9      | 25 5/8  | 9 3/4   | 8 3/8   | 8     | 17       | 21 3/8   | 20 11/16 | 7      | 34 1/8   | 10 1/2  | 11 5/8 | 4 1/2 | 2 1/8 | 4 1/4 | 1/2 x 1/4 x 4 3/8     | 6.000 / 6.002   | 1 1/2 x 1/2  |
| HSMB140   | 2785     | 14    | 7     | 5/8-11 | 5/8-11 | 1   | 10 1/4 | 9 1/2  | 7 5/8  | 5 11/16 | 16 5/8  | 27 1/2 | 11 1/2 | 3     | 1 11/16 | 21 3/4 | 9 1/4  | 32 5/8  | 10 3/4  | 9       | 8     | 20 11/16 | 28 3/8   | 23 15/16 | 7      | 40 1/8   | 11 1/2  | 13     | 5     | 2 1/8 | 4 1/4 | 1/2 x 1/4 x 4 3/8     | 6.000 / 6.002   | 1 1/2 x 1/2  |
| HSMB170   | 4160     | 17    | 10    | —      | 5/8-11 | —   | —      | 10 1/2 | 11 1/2 | 8       | 19 1/2  | 32     | 13 1/4 | 3 3/8 | 1 11/16 | 24     | 10 1/4 | 41 3/4  | 12 1/4  | 10 1/4  | 9 1/4 | 22 3/4   | 36 3/8   | —        | 9 5/16 | 47       | 13 1/4  | 14 3/4 | 5 3/4 | 2 1/2 | 5     | 5/8 x 5/16 x 4 15/16  | 6.500 / 6.502   | 1 1/2 x 1/2  |
| HSMB200   | 5660     | 20    | 10    | —      | 5/8-11 | —   | —      | 11 1/2 | 11 1/2 | 8       | 22 1/2  | 36     | 14 3/4 | 3 5/8 | 1 15/16 | 27     | 11 1/2 | 43 1/4  | 13 1/2  | 10 1/2  | 9 1/4 | 26       | 38 1/4   | —        | 9 5/16 | 54       | 14 1/2  | 16     | 6 1/2 | 2 1/2 | 5     | 5/8 x 5/16 x 4 15/16  | 6.500 / 6.502   | 1 1/2 x 1/2  |

All dimensions are in inches. Use certified prints for construction. The input shaft may be rotated in either direction. Standard gear sets are cut with right hand threads giving relative shaft rotations as shown above. Shaft arrangements are shown above. Desired assembly should be

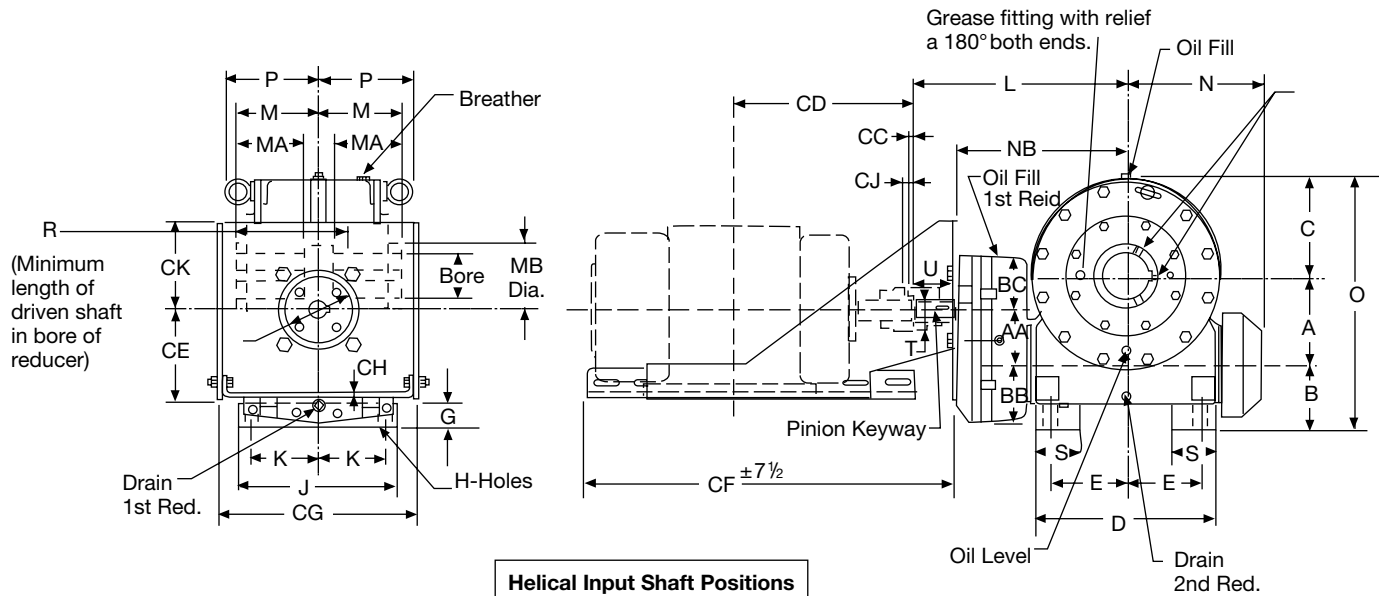
specified when ordering. Standard keys are furnished with units.

▲ Tolerances: 1 1/2" Diameter or Less = +.0000" -.0005"

Over 1 1/2" Diameter = +.000" -.001"

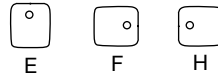
Low input speeds require special order instructions. See introductory section.

# Dimensions for “Sugar Scoop” Motor Mounts for Type HSMBK



Helical Worm Speed Reducers

Helical Input Shaft Positions



| Motor Frame Size | CJ  |     |     |     |     |        |        |        |        |        |       |       |
|------------------|-----|-----|-----|-----|-----|--------|--------|--------|--------|--------|-------|-------|
|                  | 35  | 40  | 50  | 60  | 70  | 80     | 90     | 100    | 120    | 140    | 170   | 200   |
| 143T             | 3/8 | 3/8 | 3/8 |     |     |        |        |        |        |        |       |       |
| 145T             | 3/8 | 3/8 | 3/8 |     |     |        |        |        |        |        |       |       |
| 182T             | 3/8 | 3/8 | 3/8 | 5/8 | 5/8 | 5/8    |        |        |        |        |       |       |
| 184T             | 3/8 | 3/8 | 3/8 | 5/8 | 5/8 | 5/8    | 7/8    |        |        |        |       |       |
| 213T             |     | 5/8 | 5/8 | 5/8 | 5/8 | 5/8    | 7/8    | 7/8    |        |        |       |       |
| 215T             |     | 5/8 | 5/8 | 5/8 | 5/8 | 5/8    | 7/8    | 7/8    | 1 5/16 |        |       |       |
| 254T             |     |     |     | 3/4 | 3/4 | 3/4    | 7/8    | 7/8    | 1 5/16 | 1 5/16 | 1 3/8 | 1 3/8 |
| 256T             |     |     |     | 3/4 | 3/4 | 3/4    | 7/8    | 7/8    | 1 5/16 | 1 5/16 | 1 3/8 | 1 3/8 |
| 284T             |     |     |     |     | 7/8 | 7/8    | 7/8    | 7/8    | 1 5/16 | 1 5/16 | 1 3/8 | 1 3/8 |
| 286T             |     |     |     |     | 7/8 | 7/8    | 7/8    | 7/8    | 1 5/16 | 1 5/16 | 1 3/8 | 1 3/8 |
| 324T             |     |     |     |     |     | 1 5/16 | 1 5/16 | 1 5/16 | 1 5/16 | 1 5/16 | 1 3/8 | 1 3/8 |
| 326T             |     |     |     |     |     |        | 1 5/16 | 1 5/16 | 1 5/16 | 1 5/16 | 1 3/8 | 1 3/8 |
| 364T             |     |     |     |     |     |        |        | 1 1/4  | 1 1/4  | 1 1/4  | 1 3/8 | 1 3/8 |
| 365T             |     |     |     |     |     |        |        | 1 1/4  | 1 1/4  | 1 1/4  | 1 3/8 | 1 3/8 |
| 404T             |     |     |     |     |     |        |        |        | 1 7/8  | 1 7/8  | 1 7/8 | 1 7/8 |
| 405T             |     |     |     |     |     |        |        |        |        | 1 7/8  | 1 7/8 | 1 7/8 |

| Motor Frame Size | CC  | CD     | CE     | CF ±7 1/2 | CG      | CH   | CK     |
|------------------|-----|--------|--------|-----------|---------|------|--------|
| 143T             | 1/8 | 6 1/2  | 4 7/8  | 25        | 12 5/8  | 3/16 | 4 7/8  |
| 145T             | 1/8 | 7      | 4 7/8  | 25        | 12 5/8  | 3/16 | 4 7/8  |
| 182T             | 1/8 | 7 3/4  | 4 7/8  | 25        | 12 5/8  | 3/16 | 4 7/8  |
| 184T             | 1/8 | 8 1/4  | 4 7/8  | 25        | 12 5/8  | 3/16 | 4 7/8  |
| 213T             | 1/8 | 9 5/8  | 5 9/16 | 28        | 12 3/4  | 1/4  | 5      |
| 215T             | 1/8 | 10 3/8 | 5 9/16 | 28        | 12 3/4  | 1/4  | 5      |
| 254T             | 1/8 | 12 3/8 | 6 5/8  | 31        | 15      | 5/16 | 6 5/8  |
| 256T             | 1/8 | 13 1/4 | 6 5/8  | 31        | 15      | 5/16 | 6 5/8  |
| 284T             | 1/8 | 14 1/8 | 7 5/8  | 31        | 17      | 5/16 | 7 5/8  |
| 286T             | 1/8 | 14 7/8 | 7 5/8  | 31        | 17      | 5/16 | 7 5/8  |
| 324T             | 1/8 | 15 3/4 | 8 1/2  | 35 1/4    | 19 1/16 | 3/8  | 8 1/2  |
| 326T             | 1/8 | 16 1/2 | 8 1/2  | 35 1/4    | 19 1/16 | 3/8  | 8 1/2  |
| 364T             | 1/8 | 17 3/8 | 9 1/2  | 35 1/4    | 21 5/16 | 3/8  | 9 1/2  |
| 365T             | 1/8 | 17 7/8 | 9 1/2  | 35 1/4    | 21 5/16 | 3/8  | 9 1/2  |
| 404T             | 1/8 | 20     | 10 1/2 | 35 1/4    | 23 5/16 | 3/8  | 10 1/2 |
| 405T             | 1/8 | 20 3/4 | 10 1/2 | 35 1/4    | 23 5/16 | 3/8  | 10 1/2 |

| Unit Size | A     | AA    | AH     | B      | BB     | BC      | BD    | C       | D      | E      | G     | H       | J      | K      | L       | M       | MA      | MB    | N        | NB       | O        | P       | R      | S     | T▲    | U     | Pinion Keyway         | Bore            | Bore Keyway            |
|-----------|-------|-------|--------|--------|--------|---------|-------|---------|--------|--------|-------|---------|--------|--------|---------|---------|---------|-------|----------|----------|----------|---------|--------|-------|-------|-------|-----------------------|-----------------|------------------------|
| HSMBK-35  | 3 1/2 | 2 1/2 | 3/8-16 | 3 3/8  | 3 1/8  | 2 3/4   | 5 1/8 | 4 13/16 | 9 1/4  | 3 7/8  | 1 1/8 | 1 1/16  | 9      | 3 3/4  | 10 3/8  | 4 11/16 | 4 1/8   | 3 1/8 | 6 5/8    | 8 1/8    | 11 11/16 | 5       | 5 3/4  | 2 1/4 | 3/4   | 2     | 3/16 x 3/32 x 1 15/16 | 2.1885 / 2.1905 | 1/2 Wide x 1/4 Deep    |
| HSMBK-40  | 4     | 3     | 3/8-16 | 4      | 3 1/2  | 2 7/8   | 5 1/8 | 5 3/8   | 10 3/8 | 4 1/4  | 1 1/2 | 13/16   | 10 1/2 | 4 3/8  | 11 9/16 | 5 5/16  | 4 11/16 | 3 1/2 | 7 3/4    | 9 1/8    | 13 3/8   | 5 1/2   | 6 7/16 | 2 1/2 | 7/8   | 2     | 3/16 x 3/32 x 1 15/16 | 2.438 / 2.440   | 5/8 Wide x 5/16 Deep   |
| HSMBK-50  | 5     | 3 1/2 | 1/2-13 | 4 5/8  | 4      | 3 1/2   | 6 3/8 | 7 1/2   | 11 1/2 | 4 3/4  | 1 3/4 | 13/16   | 12     | 4 7/8  | 12 5/8  | 5 7/8   | 5 1/4   | 4 3/8 | 8 5/8    | 9 7/8    | 17 1/8   | 6 15/16 | 7      | 3     | 1 1/8 | 2 1/4 | 1/4 x 1/8 x 2 3/16    | 2.938 / 2.940   | 3/4 Wide x 3/8 Deep    |
| HSMBK-60  | 6     | 4     | 1/2-13 | 5      | 4 3/4  | 3 3/8   | 6 3/8 | 8 5/8   | 13 1/4 | 5 1/4  | 1 1/2 | 15/16   | 13     | 5 1/4  | 14 3/4  | 6 1/2   | 5 3/4   | 4 3/4 | 10 1/16  | 11 3/4   | 19 9/8   | 7 3/8   | 7 3/4  | 3     | 1 1/4 | 2 1/2 | 1/4 x 1/8 x 2 7/16    | 3.438 / 3.440   | 7/8 Wide x 7/16 Deep   |
| HSMBK-70  | 7     | 4 1/2 | 1/2-13 | 5 3/8  | 5 1/8  | 4       | 6 3/8 | 9 1/4   | 14 3/4 | 6      | 2     | 1 1/8   | 14     | 5 5/8  | 16 3/8  | 6 3/4   | 5 7/8   | 5 1/2 | 10 3/4   | 13 1/8   | 21 5/8   | 7 1/2   | 8 1/8  | 3 1/2 | 1 3/8 | 2 3/4 | 5/16 x 5/32 x 2 11/16 | 3.938 / 3.940   | 1 Wide x 1/2 Deep      |
| HSMBK-80  | 8     | 5     | 1/2-13 | 5 3/4  | 5 1/2  | 4 3/8   | 7 3/8 | 10 1/2  | 16 1/2 | 6 3/4  | 2 1/4 | 1 3/8   | 14 1/2 | 6      | 18      | 7 1/4   | 6 1/4   | 6 1/4 | 11 3/4   | 14 7/8   | 24 1/4   | 8 1/4   | 8 3/4  | 4     | 1 1/2 | 3     | 3/8 x 3/16 x 2 15/16  | 4.438 / 4.440   | 1 Wide x 1/2 Deep      |
| HSMBK-90  | 9     | 5 1/2 | 1/2-13 | 6 1/4  | 6 3/8  | 4 7/8   | 7 3/8 | 11 3/8  | 18 3/4 | 7 3/4  | 2 1/2 | 1 7/8   | 17 1/2 | 7 1/4  | 20 1/8  | 8 1/4   | 7 1/8   | 7     | 13 13/16 | 16 1/8   | 26 5/8   | 9 1/4   | 9 7/8  | 4     | 1 3/4 | 3 1/2 | 3/8 x 3/16 x 3 7/16   | 4.938 / 4.940   | 1 1/4 Wide x 7/16 Deep |
| HSMBK-100 | 10    | 6     | 5/8-11 | 6 3/4  | 6 1/2  | 5 1/4   | 9 3/8 | 12 5/8  | 21     | 8 3/4  | 2 7/8 | 1 7/8   | 18     | 7 1/2  | 22 1/4  | 9 1/4   | 8       | 7 1/2 | 15 1/8   | 18       | 29 3/8   | 9 3/4   | 11     | 4 1/4 | 1 7/8 | 3 3/4 | 1/2 x 1/4 x 3 11/16   | 5.438 / 5.440   | 1 1/4 Wide x 7/16 Deep |
| HSMBK-120 | 12    | 7     | 5/8-11 | 7 1/2  | 7 5/8  | 5 11/16 | 9 3/8 | 14 5/8  | 24 1/2 | 10 1/2 | 2 3/4 | 1 9/16  | 21     | 9      | 25 3/8  | 9 3/4   | 8 3/8   | 8     | 17       | 20 11/16 | 34 1/8   | 10 1/2  | 11 5/8 | 4 1/2 | 2 1/8 | 4 1/4 | 1/2 x 1/4 x 4 3/16    | 6.000 / 6.002   | 1 1/2 Wide x 1/2 Deep  |
| HSMBK-140 | 14    | 7     | 5/8-11 | 9 1/2  | 7 5/8  | 5 11/16 | 9 3/8 | 16 3/8  | 27 1/2 | 11 1/2 | 3     | 1 11/16 | 21 3/4 | 9 1/4  | 32 5/8  | 10 3/4  | 9       | 8     | 20 11/16 | 23 15/16 | 40 1/8   | 11 1/2  | 13     | 5     | 2 1/8 | 4 1/4 | 1/2 x 1/4 x 4 3/16    | 6.000 / 6.002   | 1 1/2 Wide x 1/2 Deep  |
| HSMBK-170 | 17    | 10    | 5/8-11 | 10 1/2 | 11 1/2 | 8       | —     | 19 1/2  | 32     | 13 1/4 | 3 3/8 | 1 11/16 | 24     | 10 1/4 | 41 3/8  | 12 1/4  | 10 1/4  | 9 1/4 | 22 3/4   | 32 3/8   | 47       | 13 1/4  | 14 3/4 | 5 3/4 | 2 1/2 | 5     | 5/8 x 3/16 x 4 15/16  | 6.500 / 6.502   | 1 1/2 Wide x 1/2 Deep  |
| HSMBK-200 | 20    | 10    | 5/8-11 | 11 1/2 | 11 1/2 | 8       | —     | 22 1/2  | 36     | 14 3/4 | 3 5/8 | 1 15/16 | 27     | 11 1/2 | 43 1/4  | 13 1/2  | 10 1/2  | 9 1/4 | 26       | 34 1/16  | 54       | 14 1/2  | 16     | 6 1/2 | 2 1/2 | 5     | 5/8 x 3/16 x 4 15/16  | 6.500 / 6.502   | 1 1/2 Wide x 1/2 Deep  |

All dimensions are in inches. Use certified prints for construction. The input shaft may be rotated in either direction. Standard gear sets are cut with right hand threads giving relative shaft rotations as shown above. Shaft arrangements are shown above. Desired assembly should be

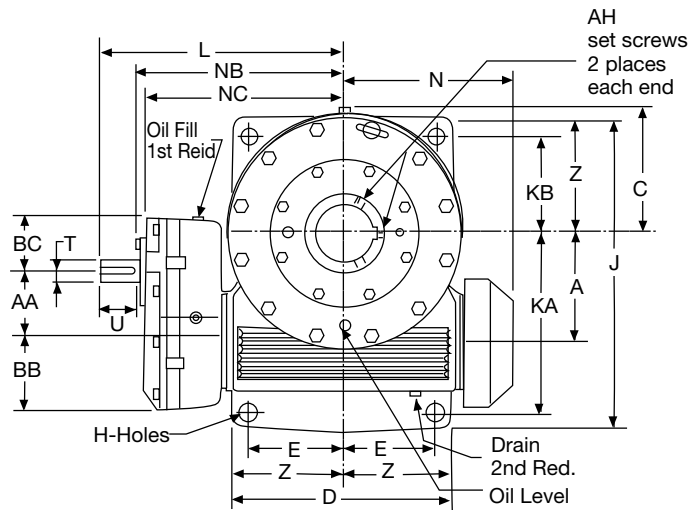
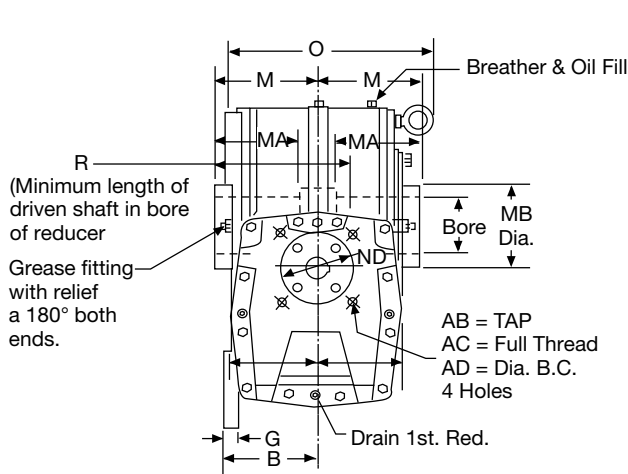
specified when ordering. Standard keys are furnished with units.

▲ Tolerances: 1 1/2" Diameter or Less = +.0000" -.0005"

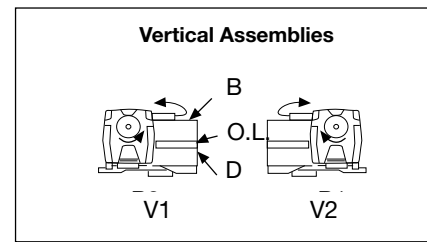
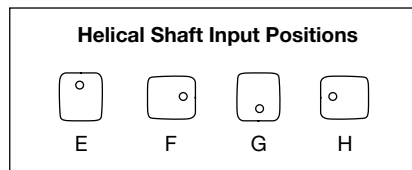
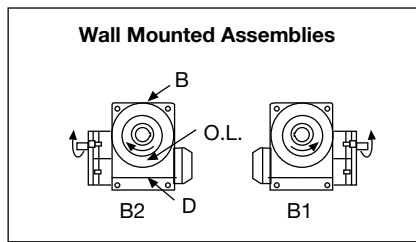
Over 1 1/2" Diameter = +.000" -.001"

Low input speeds require special order instructions. See introductory section.

# Dimensions Type HSMF • Wall Mounted and Vertical



Special Note:  
Unit sizes 140, 170 & 200 will be supplied with a fan mounted on input shaft. Allowance has been made in L & NB dimensions.



B= Breather D= Drain O.L.= Oil Level

A drywell is standard for vertical assemblies sizes 60-200 only.

| Unit Size | WT. LBS. | A     | AA    | AB     | AC  | AD     | AH     | B      | BB     | BC      | BD     | C       | D      | E      | G     | H      | J      | KA     | KB     | L       | M       | MA      | MB    | N        | NB       | NC       | ND     | O      | R      | T     | U     | Keyway                | Bore          | K'way        | Z       |
|-----------|----------|-------|-------|--------|-----|--------|--------|--------|--------|---------|--------|---------|--------|--------|-------|--------|--------|--------|--------|---------|---------|---------|-------|----------|----------|----------|--------|--------|--------|-------|-------|-----------------------|---------------|--------------|---------|
| HSMF35    | 130      | 3 1/2 | 2 1/2 | 3/8-16 | 5/8 | 5/8    | 3/8-16 | 4 1/8  | 3 1/8  | 2 3/4   | 3 3/8  | 4 13/16 | 8 3/8  | 3 1/2  | 7/8   | 1 1/16 | 11 3/4 | 6 7/8  | 3 1/2  | 10 3/8  | 4 11/16 | 4 1/8   | 3 3/8 | 6 3/8    | 8 3/8    | 8 3/8    | 3 3/8  | 9 3/8  | 5 3/8  | 3/4   | 2     | 3/16 x 3/32 x 1 15/16 | 2.1885/2.1905 | 1/2 x 1/4    | 4 3/16  |
| HSMF40    | 200      | 4     | 3     | 3/8-16 | 5/8 | 5/8    | 3/8-16 | 5      | 3 1/2  | 2 7/8   | 4      | 5 3/8   | 9 1/4  | 3 3/8  | 1 1/8 | 1 1/16 | 13 3/8 | 7 3/8  | 3 3/8  | 11 9/16 | 5 5/16  | 4 11/16 | 3 3/2 | 7 3/4    | 9 9/16   | 9 1/8    | 3 3/8  | 10 1/2 | 6 7/8  | 7/8   | 2     | 3/16 x 3/32 x 1 15/16 | 2.438/2.440   | 5/8 x 5/16   | 4 5/8   |
| HSMF50    | 285      | 5     | 3 1/2 | 1/2-13 | 3/4 | 7/8    | 1/2-13 | 5 5/8  | 4      | 3 1/2   | 4 3/8  | 7 1/2   | 11 1/8 | 4 3/4  | 1 1/4 | 1 3/16 | 15 3/8 | 9      | 4 3/4  | 12 5/8  | 5 7/8   | 5 1/4   | 4 3/8 | 8 3/8    | 10 3/8   | 9 7/8    | 4 1/4  | 12 3/8 | 7      | 1 1/8 | 2 1/4 | 1/4 x 1/8 x 2 3/16    | 2.938/2.940   | 3/4 x 7/16   | 5 9/16  |
| HSMF60    | 420      | 6     | 4     | 1/2-13 | 3/4 | 7/8    | 1/2-13 | 6 1/4  | 4 3/4  | 3 3/8   | 5 1/2  | 8 3/8   | 13 3/8 | 5 3/4  | 1 3/8 | 1 3/16 | 18 1/8 | 10 1/2 | 5 3/4  | 14 3/4  | 6 1/2   | 5 3/4   | 4 3/4 | 10 1/8   | 12 1/4   | 11 3/4   | 4 1/4  | 13 7/8 | 7 3/4  | 1 1/4 | 2 1/2 | 1/4 x 1/8 x 2 3/16    | 3.438/3.440   | 7/8 x 7/16   | 6 11/16 |
| HSMF70    | 585      | 7     | 4 1/2 | 1/2-13 | 3/4 | 7/8    | 1/2-13 | 6 1/2  | 5 1/8  | 4       | 5 7/8  | 9 1/4   | 14 5/8 | 6 1/4  | 1 3/8 | 1 5/16 | 20 1/8 | 11 3/4 | 6 1/4  | 16 3/8  | 6 3/4   | 5 7/8   | 5 1/2 | 10 3/4   | 13 3/8   | 13 1/8   | 4 7/8  | 14     | 8 1/8  | 1 3/8 | 2 3/4 | 5/16 x 3/32 x 2 11/16 | 3.938/3.940   | 1 x 1/2      | 7 3/16  |
| HSMF80    | 710      | 8     | 5     | 5/8-11 | 1   | 8 1/4  | 1/2-13 | 6 3/8  | 5 1/2  | 4 3/8   | 6 3/8  | 10 1/2  | 16 1/2 | 7      | 1 1/2 | 1 1/16 | 22 1/4 | 12 3/4 | 7      | 18      | 7 1/4   | 6 1/4   | 6 1/4 | 11 3/4   | 15 1/8   | 14 7/8   | 5 3/4  | 17 7/8 | 8 3/4  | 1 1/2 | 3     | 3/8 x 3/16 x 3 7/16   | 4.438/4.440   | 1 x 1/2      | 8 1/4   |
| HSMF90    | 925      | 9     | 5 1/2 | 5/8-11 | 1   | 8 1/4  | 1/2-13 | 7 3/8  | 6 3/8  | 4 7/8   | 8 1/2  | 11 3/8  | 18 1/2 | 7 7/8  | 1 5/8 | 1 3/16 | 25     | 14 3/8 | 7 7/8  | 20 1/8  | 8 1/4   | 7 1/8   | 7     | 13 13/16 | 16 11/16 | 16 1/8   | 5 3/4  | 17     | 9 7/8  | 1 3/4 | 3 1/2 | 3/8 x 3/16 x 3 7/16   | 4.938/4.940   | 1 1/4 x 7/16 | 9 1/4   |
| HSMF100   | 1220     | 10    | 6     | 5/8-11 | 1   | 10 1/4 | 5/8-11 | 8 3/4  | 6 1/2  | 5 1/4   | 7 3/8  | 12 5/8  | 20 3/4 | 9      | 1 3/4 | 1 3/16 | 27 1/4 | 15 1/2 | 9      | 22 1/4  | 9 1/4   | 8       | 7 1/2 | 15 1/8   | 18 11/16 | 18       | 6 3/4  | 18 1/2 | 11     | 1 7/8 | 3 3/4 | 1/2 x 1/4 x 3 11/16   | 5.438/5.440   | 1 1/4 x 7/16 | 10 3/8  |
| HSMF120   | 1800     | 12    | 7     | 5/8-11 | 1   | 10 1/4 | 5/8-11 | 9      | 7 5/8  | 5 11/16 | 8 3/4  | 14 5/8  | 24 1/4 | 10 3/8 | 2 1/8 | 1 5/16 | 32 3/8 | 18 1/2 | 10 3/8 | 25 5/8  | 9 3/4   | 8 3/8   | 8     | 17       | 21 5/8   | 20 11/16 | 7      | 19 1/2 | 11 5/8 | 2 1/8 | 4 1/4 | 1/2 x 1/4 x 4 3/16    | 6.000/6.002   | 1 1/2 x 1/2  | 12 1/8  |
| HSMF140   | 2600     | 14    | 7     | 5/8-11 | 1   | 10 1/4 | 5/8-11 | 10 1/4 | 7 7/8  | 5 11/16 | 8 3/4  | 16 5/8  | 27 1/2 | 12     | 2 1/4 | 1 5/8  | 37 1/2 | 22     | 12     | 32 3/8  | 10 3/4  | 9       | 8     | 20 11/16 | 28 3/8   | 23 15/16 | 7      | 21 3/4 | 13     | 2 1/8 | 4 1/4 | 1/2 x 1/4 x 4 3/16    | 6.000/6.002   | 1 1/2 x 1/2  | 13 3/4  |
| HSMF170   | 3900     | 17    | 10    | -      | -   | -      | 5/8-11 | 11 1/2 | 11 1/2 | 8       | 14 3/4 | 19 1/2  | 33     | 14 1/2 | 2 1/2 | 1 5/8  | 44 3/4 | 26 1/4 | 14 1/2 | 41 3/8  | 12 1/4  | 10 1/4  | 9 1/4 | 22 3/4   | 36 3/8   | -        | 9 9/16 | 24 3/4 | 14 3/4 | 2 1/2 | 5     | 5/8 x 5/16 x 4 15/16  | 6.500/6.502   | 1 1/2 x 1/2  | 16 1/2  |
| HSMF200   | 5300     | 20    | 10    | -      | -   | -      | 5/8-11 | 12 3/4 | 11 1/2 | 8       | 14 3/4 | 22 1/2  | 39     | 17     | 2 3/4 | 1 5/8  | 53     | 31     | 17     | 43 1/4  | 13 1/2  | 10 1/2  | 9 1/4 | 26       | 38 1/4   | -        | 9 9/16 | 27 1/4 | 16     | 2 1/2 | 5     | 5/8 x 5/16 x 4 15/16  | 6.500/6.502   | 1 1/2 x 1/2  | 19 1/2  |

All dimensions are in inches. Use certified prints for construction. The input shaft may be rotated in either direction. Standard gear sets are cut with right hand threads giving relative shaft rotations as shown above. Shaft arrangements are shown above. Desired assembly should be

specified when ordering. Standard keys are furnished with units.

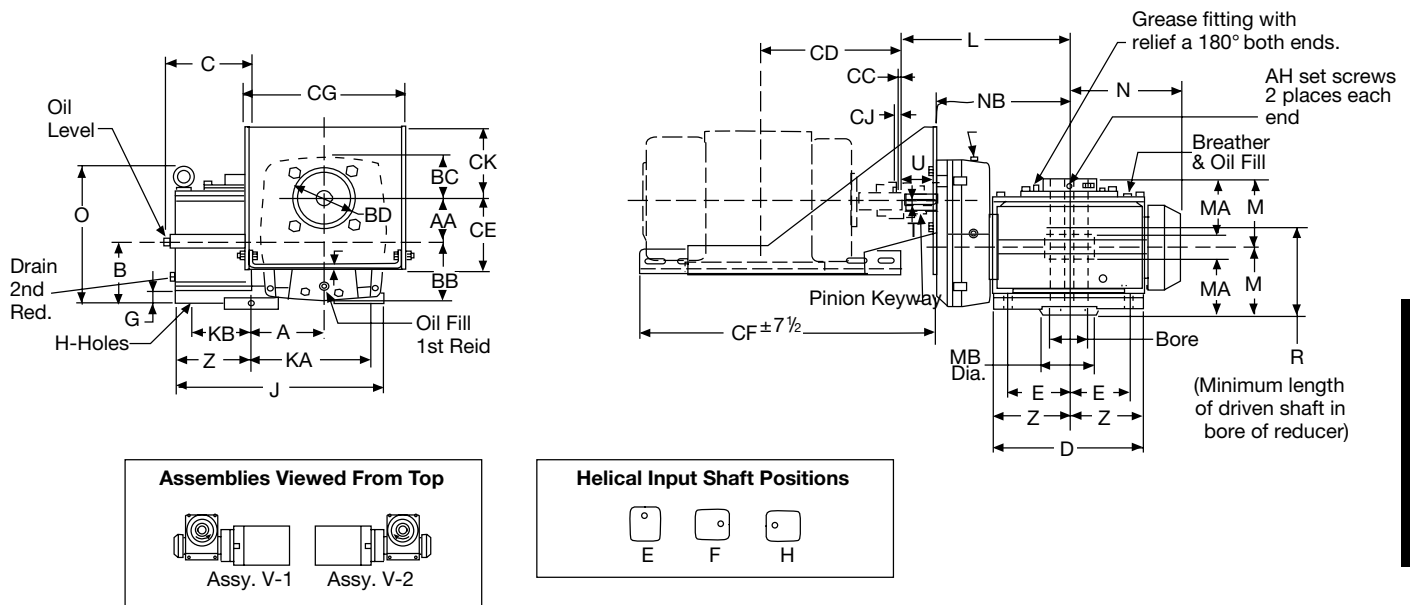
▲ Tolerances: 1 1/2" Diameter or Less = +.0000" -.0005"

Over 1 1/2" Diameter = +.000" -.001"

Low input speeds require special order instructions. See introductory section.



# Dimensions for "Sugar Scoop" Motor Mounts for Type HSMF



Helical Worm Speed Reducers

A drywell is standard for vertical assemblies sizes 60-200 only.

| Motor Frame Size | CJ  |     |     |     |     |        |        |        |        |        |       |       |
|------------------|-----|-----|-----|-----|-----|--------|--------|--------|--------|--------|-------|-------|
|                  | 35  | 40  | 50  | 60  | 70  | 80     | 90     | 100    | 120    | 140    | 170   | 200   |
| 143T             | 3/8 | 3/8 | 3/8 |     |     |        |        |        |        |        |       |       |
| 145T             | 3/8 | 3/8 | 3/8 |     |     |        |        |        |        |        |       |       |
| 182T             | 3/8 | 3/8 | 3/8 | 5/8 | 5/8 | 5/8    |        |        |        |        |       |       |
| 184T             | 3/8 | 3/8 | 3/8 | 5/8 | 5/8 | 5/8    | 7/8    |        |        |        |       |       |
| 213T             |     | 5/8 | 5/8 | 5/8 | 5/8 | 5/8    | 7/8    | 7/8    |        |        |       |       |
| 215T             |     | 5/8 | 5/8 | 5/8 | 5/8 | 5/8    | 7/8    | 7/8    | 1 5/16 |        |       |       |
| 254T             |     |     |     | 3/4 | 3/4 | 3/4    | 7/8    | 7/8    | 1 5/16 | 1 5/16 | 1 3/8 | 1 3/8 |
| 256T             |     |     |     | 3/4 | 3/4 | 3/4    | 7/8    | 7/8    | 1 5/16 | 1 5/16 | 1 3/8 | 1 3/8 |
| 284T             |     |     |     |     | 7/8 | 7/8    | 7/8    | 7/8    | 1 5/16 | 1 5/16 | 1 3/8 | 1 3/8 |
| 286T             |     |     |     |     | 7/8 | 7/8    | 7/8    | 7/8    | 1 5/16 | 1 5/16 | 1 3/8 | 1 3/8 |
| 324T             |     |     |     |     |     | 1 5/16 | 1 5/16 | 1 5/16 | 1 5/16 | 1 5/16 | 1 3/8 | 1 3/8 |
| 326T             |     |     |     |     |     |        | 1 5/16 | 1 5/16 | 1 5/16 | 1 5/16 | 1 3/8 | 1 3/8 |
| 364T             |     |     |     |     |     |        |        | 1 1/4  | 1 1/4  | 1 1/4  | 1 3/8 | 1 3/8 |
| 365T             |     |     |     |     |     |        |        | 1 1/4  | 1 1/4  | 1 1/4  | 1 3/8 | 1 3/8 |
| 404T             |     |     |     |     |     |        |        |        | 1 7/8  | 1 7/8  | 1 7/8 | 1 7/8 |
| 405T             |     |     |     |     |     |        |        |        |        | 1 7/8  | 1 7/8 | 1 7/8 |

| Motor Frame Size | CC  | CD     | CE     | CF ±7 1/2 | CG      | CH   | CK     |
|------------------|-----|--------|--------|-----------|---------|------|--------|
| 143T             | 1/8 | 6 1/2  | 4 7/8  | 25        | 12 5/8  | 3/16 | 4 7/8  |
| 145T             | 1/8 | 7      | 4 7/8  | 25        | 12 5/8  | 3/16 | 4 7/8  |
| 182T             | 1/8 | 7 3/4  | 4 7/8  | 25        | 12 5/8  | 3/16 | 4 7/8  |
| 184T             | 1/8 | 8 1/4  | 4 7/8  | 25        | 12 5/8  | 3/16 | 4 7/8  |
| 213T             | 1/8 | 9 5/8  | 5 9/16 | 28        | 12 3/4  | 1/4  | 5      |
| 215T             | 1/8 | 10 3/8 | 5 9/16 | 28        | 12 3/4  | 1/4  | 5      |
| 254T             | 1/8 | 12 3/8 | 6 5/8  | 31        | 15      | 5/16 | 6 5/8  |
| 256T             | 1/8 | 13 1/4 | 6 5/8  | 31        | 15      | 5/16 | 6 5/8  |
| 284T             | 1/8 | 14 1/8 | 7 5/8  | 31        | 17      | 5/16 | 7 5/8  |
| 286T             | 1/8 | 14 7/8 | 7 5/8  | 31        | 17      | 5/16 | 7 5/8  |
| 324T             | 1/8 | 15 3/4 | 8 1/2  | 35 1/4    | 19 1/16 | 3/8  | 8 1/2  |
| 326T             | 1/8 | 16 1/2 | 8 1/2  | 35 1/4    | 19 1/16 | 3/8  | 8 1/2  |
| 364T             | 1/8 | 17 3/8 | 9 1/2  | 35 1/4    | 21 5/16 | 3/8  | 9 1/2  |
| 365T             | 1/8 | 17 7/8 | 9 1/2  | 35 1/4    | 21 5/16 | 3/8  | 9 1/2  |
| 404T             | 1/8 | 20     | 10 1/2 | 35 1/4    | 23 5/16 | 3/8  | 10 1/2 |
| 405T             | 1/8 | 20 3/4 | 10 1/2 | 35 1/4    | 23 5/16 | 3/8  | 10 1/2 |

| Unit Size | A     | AA    | AH     | B      | BB     | BC      | BD     | C       | D      | E      | G     | H      | J      | KA     | KB     | L       | M       | MA      | MB     | N        | NB       | O       | R      | T▲    | U     | Pinion Keyway         | Bore          | Bore Keyway            | Z       |
|-----------|-------|-------|--------|--------|--------|---------|--------|---------|--------|--------|-------|--------|--------|--------|--------|---------|---------|---------|--------|----------|----------|---------|--------|-------|-------|-----------------------|---------------|------------------------|---------|
| HSMFK-35  | 3 1/2 | 2 1/2 | 3/8-16 | 4 1/8  | 3 1/8  | 2 3/4   | 5 1/8  | 4 13/16 | 8 3/8  | 3 1/2  | 7/8   | 1 1/16 | 11 3/4 | 6 7/8  | 3 1/2  | 10 5/8  | 4 11/16 | 4 1/8   | 3 1/8  | 6 3/8    | 8 1/8    | 9 1/8   | 5 3/4  | 3/4   | 2     | 3/16 x 3/32 x 1 15/16 | 2.1885/2.1905 | 1/2 Wide x 1/4 Deep    | 4 3/16  |
| HSMFK-40  | 4     | 3     | 3/8-16 | 5      | 3 1/2  | 2 7/8   | 5 1/8  | 5 3/8   | 9 1/4  | 3 7/8  | 1 1/8 | 1 1/16 | 13 1/8 | 7 5/8  | 3 7/8  | 11 9/16 | 5 5/16  | 4 11/16 | 3 1/2  | 7 3/8    | 9 1/8    | 10 1/2  | 6 7/16 | 7/8   | 2     | 3/16 x 3/32 x 1 15/16 | 2.438/2.440   | 5/8 Wide x 5/16 Deep   | 4 5/8   |
| HSMFK-50  | 5     | 3 1/2 | 1/2-13 | 5 5/8  | 4      | 3 1/2   | 6 3/8  | 7 1/2   | 11 1/8 | 4 3/4  | 1 1/4 | 1 3/16 | 15 3/8 | 9      | 4 3/4  | 12 5/8  | 5 7/8   | 5 1/4   | 4 3/16 | 8 5/8    | 9 7/8    | 12 9/16 | 7      | 1 1/8 | 2 1/4 | 1/4 x 1/8 x 2 7/16    | 2.938/2.940   | 3/4 Wide x 3/8 Deep    | 5 5/16  |
| HSMFK-60  | 6     | 4     | 1/2-13 | 6 1/4  | 4 3/4  | 3 5/8   | 6 3/8  | 8 5/8   | 13 3/8 | 5 3/4  | 1 3/8 | 1 3/16 | 18 1/8 | 10 1/2 | 5 3/4  | 14 3/4  | 6 1/2   | 5 3/4   | 4 3/4  | 10 1/16  | 11 3/4   | 13 7/16 | 7 3/4  | 1 1/4 | 2 1/2 | 1/4 x 1/8 x 2 7/16    | 3.438/3.440   | 7/8 Wide x 7/16 Deep   | 6 11/16 |
| HSMFK-70  | 7     | 4 1/2 | 1/2-13 | 6 1/2  | 5 1/8  | 4       | 6 3/8  | 9 1/4   | 14 5/8 | 6 1/4  | 1 3/8 | 1 5/16 | 20 1/8 | 11 3/4 | 6 1/4  | 16 3/8  | 6 3/4   | 5 7/8   | 5 1/2  | 10 3/4   | 13 1/16  | 14      | 8 1/8  | 1 3/8 | 2 3/4 | 5/16 x 3/32 x 2 11/16 | 3.938/3.940   | 1 Wide x 1/2 Deep      | 7 5/16  |
| HSMFK-80  | 8     | 5     | 1/2-13 | 6 5/8  | 5 1/2  | 4 3/8   | 7 3/16 | 10 1/2  | 16 1/2 | 7      | 1 1/2 | 1 1/16 | 22 1/4 | 12 3/4 | 7      | 18      | 7 1/4   | 6 1/4   | 6 1/4  | 11 3/4   | 14 7/16  | 14 7/8  | 8 3/4  | 1 1/2 | 3     | 3/8 x 3/16 x 2 15/16  | 4.438/4.440   | 1 Wide x 1/2 Deep      | 8 1/4   |
| HSMFK-90  | 9     | 5 1/2 | 1/2-13 | 7 3/4  | 6 3/16 | 4 7/8   | 7 3/16 | 11 3/8  | 18 1/2 | 7 7/8  | 1 5/8 | 1 3/16 | 25     | 14 3/8 | 7 7/8  | 20 1/8  | 8 1/4   | 7 1/8   | 7      | 13 13/16 | 16 1/16  | 17      | 9 7/8  | 1 3/4 | 3 1/2 | 3/8 x 3/16 x 3 7/16   | 4.938/4.940   | 1 1/4 Wide x 7/16 Deep | 9 1/4   |
| HSMFK-100 | 10    | 6     | 5/8-11 | 8 3/4  | 6 1/2  | 5 1/4   | 9 3/16 | 12 5/8  | 20 3/4 | 9      | 1 3/4 | 1 3/16 | 27 1/4 | 15 1/2 | 9      | 22 1/4  | 9 1/4   | 8       | 7 1/2  | 15 5/8   | 18       | 18 1/2  | 11     | 1 7/8 | 3 3/4 | 1/2 x 1/4 x 3 11/16   | 5.438/5.440   | 1 1/4 Wide x 7/16 Deep | 10 3/8  |
| HSMFK-120 | 12    | 7     | 5/8-11 | 9      | 7 5/16 | 5 11/16 | 9 3/16 | 14 5/8  | 24 1/4 | 10 3/8 | 2 1/8 | 1 5/16 | 32 3/8 | 18 1/2 | 10 3/8 | 25 5/8  | 9 3/4   | 8 3/8   | 8      | 17       | 20 11/16 | 19 1/2  | 11 5/8 | 2 1/8 | 4 1/4 | 1/2 x 1/4 x 4 3/16    | 6.000/6.002   | 1 1/2 Wide x 1/2 Deep  | 12 1/8  |
| HSMFK-140 | 14    | 7     | 5/8-11 | 10 1/4 | 7 5/16 | 5 11/16 | 9 3/16 | 16 5/8  | 27 1/2 | 12     | 2 1/4 | 1 5/16 | 37 1/2 | 22     | 12     | 32 3/8  | 10 3/4  | 9       | 8      | 20 11/16 | 23 5/16  | 21 3/4  | 13     | 2 1/8 | 4 1/4 | 1/2 x 1/4 x 4 3/16    | 6.000/6.002   | 1 1/2 Wide x 1/2 Deep  | 13 3/4  |
| HSMFK-170 | 17    | 10    | 5/8-11 | 11 1/2 | 11 1/2 | 8       | -      | 19 1/2  | 33     | 14 1/2 | 2 1/2 | 1 9/16 | 44 3/4 | 26 1/4 | 14 1/2 | 41 3/8  | 12 1/4  | 10 1/4  | 9 1/4  | 22 3/4   | 32 3/16  | 24 3/4  | 14 3/4 | 2 1/2 | 5     | 5/8 x 5/16 x 4 5/16   | 6.500/6.502   | 1 1/2 Wide x 1/2 Deep  | 16 1/2  |
| HSMFK-200 | 20    | 10    | 5/8-11 | 12 3/4 | 11 1/2 | 8       | -      | 22 1/2  | 39     | 17     | 2 3/4 | 1 9/16 | 53     | 31     | 17     | 43 1/4  | 13 1/2  | 10 1/2  | 9 1/4  | 26       | 34 1/16  | 27 1/4  | 16     | 2 1/2 | 5     | 5/8 x 5/16 x 4 5/16   | 6.500/6.502   | 1 1/2 Wide x 1/2 Deep  | 19 1/2  |

All dimensions are in inches. Use certified prints for construction. The input shaft may be rotated in either direction. Standard gear sets are cut with right hand threads giving relative shaft rotations as shown above. Shaft arrangements are shown above. Desired assembly should be

specified when ordering. Standard keys are furnished with units.

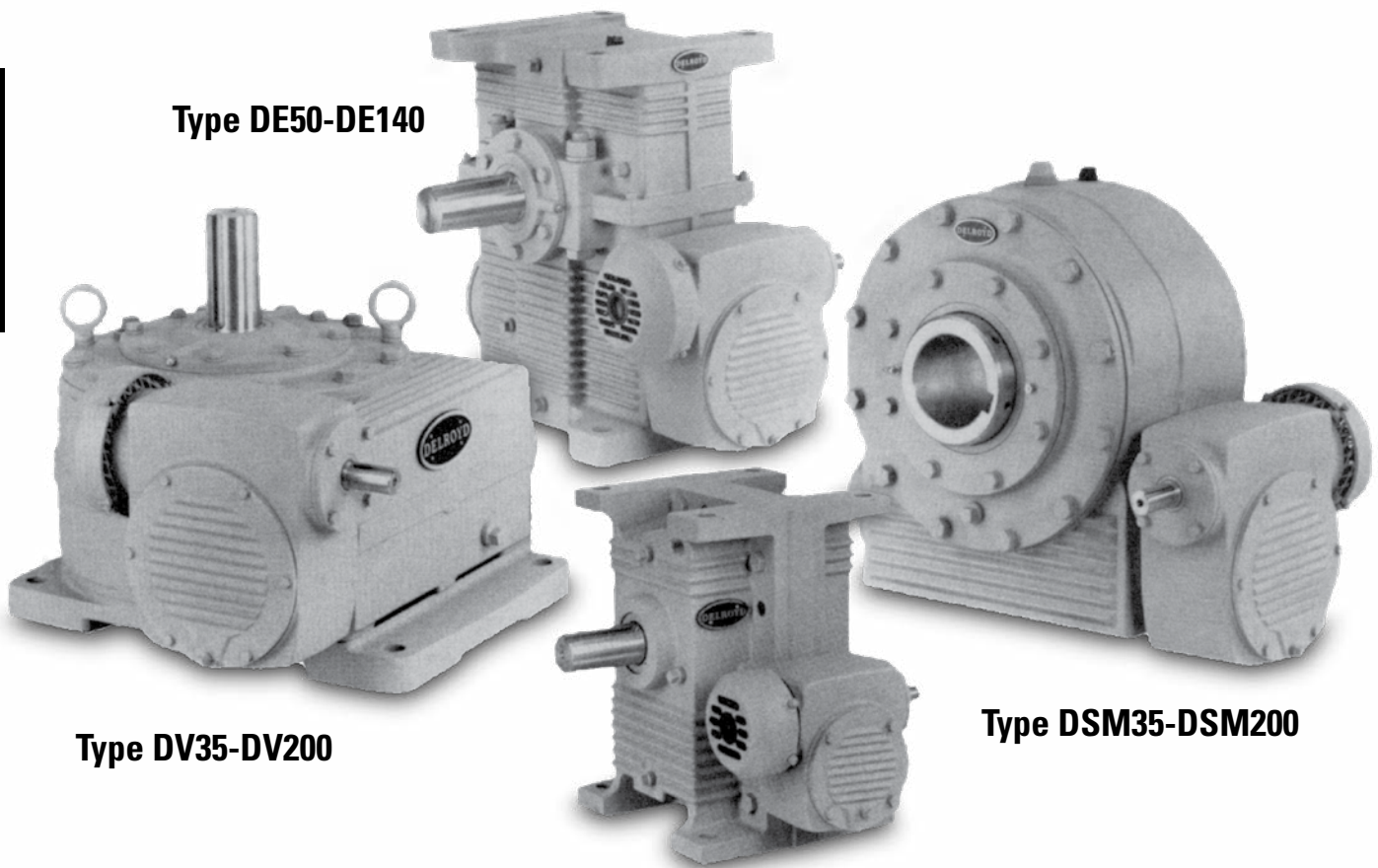
▲ Tolerances: 1 1/2" Diameter or Less = +.0000" -.0005"

Over 1 1/2" Diameter = +.000" -.001"

Low input speeds require special order instructions. See introductory section.

# Delroyd Double Worm Speed Reducers

**Type DE50-DE140**



**Type DV35-DV200**

**Type DSM35-DSM200**

**Type DE35-DE40**

Double Worm  
Speed Reducers

# Horsepower and Torque Ratings • Double Worm

| WORM SPEED (RPM) | Unit Size          | 35     | 40     | 50     | 60     | 70     | 80     | 90     | 100    | 120    | 140    | 170    | 200    |
|------------------|--------------------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
|                  | Center Distance    | 3.5    | 4      | 5      | 6      | 7      | 8      | 9      | 10     | 12     | 14     | 17     | 20     |
|                  | Total Actual Ratio | 80.1   | 80.1   | 80.1   | 75.8   | 75.8   | 75.8   | 75.8   | 75.8   | 75.2   | 75.6   | 75.6   | 75.6   |
|                  | Ratio Combinations | 5-1/6  | 5-1/6  | 5-1/6  | 5-1/6  | 5-1/6  | 5-1/6  | 5-1/6  | 5-1/6  | 5-1/6  | 5-1/6  | 5-1/6  | 5-1/6  |
|                  |                    | 15-1/2 | 15-1/2 | 15-1/2 | 14-2/3 | 14-2/3 | 14-2/3 | 14-2/3 | 14-2/3 | 14-2/3 | 14-3/4 | 14-3/4 | 14-3/4 |
| 1750             | Mech. Input HP     | 2.32   | 2.96   | 4.14   | 7.62   | 10.8   | 14.8   | 21.7   | 23.8   | 34.8   | 34.8   | 71.3   | 92.5   |
|                  | Out.Torq., in.lbs. | 4810   | 6390   | 9180   | 16400  | 23600  | 32800  | 49300  | 53500  | 80000  | 80000  | 170000 | 224000 |
|                  | Therm. Input HP    | 2.03   | 2.78   | 3.10   | 5.27   | 7.50   | 10.1   | 17.9   | 17.9   | 26.2   | 34.8   | 62.5   | 82.5   |
|                  | Output RPM         | 21.8   | 21.8   | 21.8   | 23.1   | 23.1   | 23.1   | 23.1   | 23.1   | 23.3   | 23.2   | 23.2   | 23.2   |
|                  | Efficiency%        | 71.9   | 74.8   | 76.9   | 78.8   | 80.0   | 81.2   | 83.2   | 82.3   | 84.9   | 84.4   | 87.6   | 88.9   |
| 1450             | Mech. Input HP     | 1.98   | 2.57   | 3.79   | 6.96   | 10.0   | 13.5   | 19.0   | 21.8   | 31.7   | 31.7   | 65.7   | 85.4   |
|                  | Out.Torq., in.lbs. | 4860   | 6610   | 10100  | 18000  | 26100  | 35900  | 51800  | 59000  | 88500  | 88500  | 187000 | 246000 |
|                  | Therm. Input HP    | 1.78   | 2.48   | 2.94   | 4.85   | 6.80   | 9.30   | 16.9   | 16.9   | 24.6   | 31.7   | 55.0   | 75.0   |
|                  | Output RPM         | 18.1   | 18.1   | 18.1   | 19.1   | 19.1   | 19.1   | 19.1   | 19.1   | 19.3   | 19.2   | 19.2   | 19.2   |
|                  | Efficiency%        | 70.5   | 73.9   | 76.5   | 78.4   | 79.2   | 80.7   | 82.9   | 82.1   | 85.4   | 85.0   | 86.6   | 87.7   |
| 1150             | Mech. Input HP     | 1.62   | 2.14   | 3.37   | 5.76   | 8.68   | 12.3   | 16.1   | 19.5   | 28.3   | 28.3   | 59.2   | 77.5   |
|                  | Out.Torq., in.lbs. | 4980   | 6800   | 11200  | 18600  | 28200  | 40000  | 54500  | 66000  | 97500  | 97500  | 210000 | 278000 |
|                  | Therm. Input HP    | 1.50   | 2.04   | 2.70   | 4.30   | 6.02   | 8.25   | 14.2   | 15.2   | 22.6   | 28.3   | 50.0   | 64.5   |
|                  | Output RPM         | 14.4   | 14.4   | 14.4   | 15.2   | 15.2   | 15.2   | 15.2   | 15.2   | 15.3   | 15.2   | 15.2   | 15.2   |
|                  | Efficiency%        | 69.9   | 72.4   | 75.7   | 77.6   | 78.1   | 78.3   | 81.3   | 81.5   | 83.6   | 83.2   | 85.6   | 86.6   |
| 865              | Mech. Input HP     | 1.27   | 1.67   | 2.81   | 4.49   | 6.91   | 9.72   | 12.7   | 16.9   | 25.2   | 25.2   | 51.3   | 67.0   |
|                  | Out.Torq., in.lbs. | 5090   | 6940   | 12200  | 19200  | 29200  | 41700  | 57100  | 75400  | 113000 | 113000 | 238000 | 313000 |
|                  | Therm. Input HP    | 1.22   | 1.62   | 2.39   | 3.74   | 5.28   | 7.19   | 11.4   | 13.3   | 20.0   | 23.6   | 41.8   | 52.6   |
|                  | Output RPM         | 10.8   | 10.8   | 10.8   | 11.4   | 11.4   | 11.4   | 11.4   | 11.4   | 11.5   | 11.4   | 11.4   | 11.4   |
|                  | Efficiency %       | 68.7   | 71.2   | 74.4   | 77.2   | 76.6   | 77.7   | 81.6   | 80.8   | 81.8   | 81.4   | 84.2   | 84.8   |
| 575              | Mech. Input HP     | 0.887  | 1.16   | 1.96   | 3.14   | 4.88   | 6.89   | 9.43   | 12.0   | 18.5   | 21.0   | 42.9   | 55.5   |
|                  | Out.Torq., in.lbs. | 5210   | 7080   | 12600  | 19800  | 30300  | 43500  | 59900  | 79500  | 130000 | 140000 | 323000 | 381000 |
|                  | Therm. Input HP    | 0.871  | 1.14   | 1.89   | 2.92   | 4.27   | 5.58   | 8.19   | 10.6   | 16.0   | 17.8   | 31.6   | 39.7   |
|                  | Output RPM         | 7.18   | 7.18   | 7.18   | 7.59   | 7.59   | 7.59   | 7.59   | 7.59   | 7.65   | 7.61   | 7.61   | 7.61   |
|                  | Efficiency%        | 66.9   | 69.6   | 73.0   | 75.8   | 74.9   | 76.0   | 76.5   | 79.4   | 85.1   | 80.4   | 83.0   | 82.8   |
| 300              | Mech. Input HP     | 0.489  | 0.641  | 1.08   | 1.72   | 2.72   | 3.83   | 5.27   | 6.91   | 12.3   | 14.0   | 27.2   | 39.8   |
|                  | Out.Torq., in.lbs. | 5320   | 7240   | 12900  | 20400  | 31400  | 45300  | 62700  | 83600  | 138000 | 173000 | 339000 | 502000 |
|                  | Therm. Input HP    | 0.476  | 0.620  | 1.04   | 1.67   | 2.67   | 3.74   | 4.67   | 6.87   | 10.6   | 11.6   | 20.6   | 26.0   |
|                  | Output RPM         | 3.75   | 3.75   | 3.75   | 3.96   | 3.96   | 3.96   | 3.96   | 3.96   | 3.99   | 3.97   | 3.97   | 3.97   |
|                  | Efficiency %       | 64.7   | 67.1   | 70.8   | 74.4   | 72.4   | 74.6   | 74.6   | 76.0   | 70.6   | 77.8   | 78.5   | 79.5   |

Double Worm  
Speed Reducers

| WORM SPEED (RPM) | Unit Size          | 35    | 40    | 50    | 60    | 70    | 80    | 90    | 100   | 120    | 140    | 170    | 200    |
|------------------|--------------------|-------|-------|-------|-------|-------|-------|-------|-------|--------|--------|--------|--------|
|                  | Center Distance    | 3.5   | 4     | 5     | 6     | 7     | 8     | 9     | 10    | 12     | 14     | 17     | 20     |
|                  | Total Actual Ratio | 93.4  | 93.4  | 93.4  | 94.2  | 94.2  | 94.2  | 94.2  | 94.2  | 95.1   | 95.5   | 95.5   | 95.5   |
|                  | Ratio Combinations | 9-2/3 | 9-2/3 | 9-2/3 | 9-2/3 | 9-2/3 | 9-2/3 | 9-2/3 | 9-2/3 | 9-3/4  | 9-3/4  | 9-3/4  | 9-3/4  |
|                  |                    | 9-2/3 | 9-2/3 | 9-2/3 | 9-3/4 | 9-3/4 | 9-3/4 | 9-3/4 | 9-3/4 | 9-3/4  | 9-4/5  | 9-4/5  | 9-4/5  |
| 1750             | Mech. Input HP     | 1.74  | 1.74  | 2.88  | 5.39  | 7.64  | 10.1  | 16.6  | 16.6  | 24.0   | 24.0   | 48.7   | 65.1   |
|                  | Out.Torq., in.lbs. | 4270  | 4430  | 7160  | 14400 | 20500 | 27200 | 45800 | 45800 | 72100  | 72100  | 146000 | 195000 |
|                  | Therm. Input HP    | 1.82  | 2.16  | 2.16  | 3.86  | 5.50  | 7.20  | 12.5  | 12.5  | 18.0   | 24.0   | 45.5   | 60.3   |
|                  | Output RPM         | 18.7  | 18.7  | 18.7  | 18.6  | 18.6  | 18.6  | 18.6  | 18.6  | 18.4   | 18.3   | 18.3   | 18.3   |
|                  | Efficiency%        | 73.0  | 75.7  | 73.9  | 78.8  | 79.1  | 79.4  | 81.3  | 81.3  | 87.7   | 87.4   | 87.2   | 87.1   |
| 1450             | Mech. Input HP     | 1.56  | 1.56  | 2.61  | 4.91  | 7.11  | 9.37  | 15.4  | 15.4  | 21.9   | 21.9   | 44.7   | 60.2   |
|                  | Out.Torq., in.lbs. | 4630  | 4780  | 7950  | 15600 | 22700 | 30300 | 51300 | 51300 | 77600  | 77600  | 158000 | 212000 |
|                  | Therm. Input HP    | 1.48  | 1.93  | 2.02  | 3.55  | 4.98  | 6.62  | 11.9  | 11.9  | 17.0   | 21.9   | 41.8   | 55.8   |
|                  | Output RPM         | 15.5  | 15.5  | 15.5  | 15.4  | 15.4  | 15.4  | 15.4  | 15.4  | 15.2   | 15.2   | 15.2   | 15.2   |
|                  | Efficiency%        | 73.1  | 75.4  | 75.0  | 77.6  | 78.0  | 79.0  | 81.0  | 81.0  | 85.7   | 85.4   | 85.2   | 85.2   |
| 1150             | Mech. Input HP     | 1.33  | 1.34  | 2.27  | 4.33  | 6.42  | 8.46  | 13.3  | 13.9  | 19.8   | 19.8   | 40.1   | 53.5   |
|                  | Out.Torq., in.lbs. | 4830  | 5080  | 8640  | 17200 | 25600 | 34300 | 55200 | 57800 | 87000  | 87000  | 174000 | 235000 |
|                  | Therm. Input HP    | 1.28  | 1.68  | 1.82  | 3.15  | 4.41  | 5.84  | 10.7  | 10.7  | 15.8   | 19.8   | 37.5   | 49.6   |
|                  | Output RPM         | 12.3  | 12.3  | 12.3  | 12.2  | 12.2  | 12.2  | 12.2  | 12.2  | 12.1   | 12.0   | 12.0   | 12.0   |
|                  | Efficiency%        | 71.0  | 74.1  | 74.4  | 76.9  | 77.2  | 78.5  | 80.3  | 80.6  | 84.3   | 84.0   | 82.9   | 83.9   |
| 865              | Mech. Input HP     | 1.00  | 1.08  | 1.87  | 3.58  | 5.50  | 7.76  | 10.5  | 10.8  | 17.7   | 17.7   | 35.1   | 46.4   |
|                  | Out.Torq., in.lbs. | 4890  | 5340  | 9330  | 18600 | 28700 | 40900 | 56800 | 58900 | 102000 | 102000 | 197000 | 262000 |
|                  | Therm. Input HP    | 0.986 | 1.32  | 1.59  | 2.72  | 3.84  | 5.10  | 9.35  | 9.35  | 15.1   | 17.7   | 33.1   | 43.3   |
|                  | Output RPM         | 9.26  | 9.26  | 9.26  | 9.18  | 9.18  | 9.18  | 9.18  | 9.18  | 9.10   | 9.05   | 9.05   | 9.05   |
|                  | Efficiency %       | 71.7  | 72.6  | 73.3  | 75.9  | 75.9  | 76.8  | 78.8  | 79.5  | 83.2   | 82.8   | 80.7   | 81.2   |
| 575              | Mech. Input HP     | 0.694 | 0.778 | 1.36  | 2.47  | 3.80  | 5.46  | 7.47  | 9.70  | 14.2   | 14.2   | 29.1   | 39.1   |
|                  | Out.Torq., in.lbs. | 4960  | 5650  | 9980  | 19000 | 29300 | 41900 | 58300 | 77600 | 120000 | 120000 | 246000 | 330000 |
|                  | Therm. Input HP    | 0.674 | 0.897 | 1.22  | 2.16  | 3.07  | 3.96  | 7.15  | 7.45  | 12.2   | 13.5   | 25.4   | 32.6   |
|                  | Output RPM         | 6.15  | 6.15  | 6.15  | 6.10  | 6.10  | 6.10  | 6.10  | 6.10  | 6.05   | 6.02   | 6.02   | 6.02   |
|                  | Efficiency%        | 69.7  | 71.0  | 71.7  | 74.6  | 74.6  | 74.4  | 75.6  | 77.4  | 81.1   | 80.7   | 80.8   | 80.6   |
| 300              | Mech. Input HP     | 0.380 | 0.440 | 0.781 | 1.34  | 2.10  | 3.01  | 4.05  | 5.35  | 8.79   | 9.00   | 19.2   | 26.4   |
|                  | Out.Torq., in.lbs. | 5020  | 5940  | 10700 | 19300 | 29900 | 42900 | 59900 | 80000 | 132000 | 136000 | 290000 | 398000 |
|                  | Therm. Input HP    | 0.365 | 0.483 | 0.781 | 1.28  | 2.00  | 2.88  | 3.88  | 5.15  | 8.42   | 8.75   | 16.6   | 21.4   |
|                  | Output RPM         | 3.21  | 3.21  | 3.21  | 3.18  | 3.18  | 3.18  | 3.18  | 3.18  | 3.16   | 3.14   | 3.14   | 3.14   |
|                  | Efficiency %       | 67.2  | 68.8  | 69.8  | 72.6  | 72.0  | 72.1  | 74.6  | 75.6  | 75.5   | 75.3   | 75.3   | 75.1   |

# Horsepower and Torque Ratings • Double Worm

Double Worm  
Speed Reducers

| WORM<br>SPEED<br>(RPM) | Unit Size          | 35     | 40     | 50     | 60     | 70     | 80     | 90     | 100    | 120    | 140    | 170    | 200    |
|------------------------|--------------------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
|                        | Center Distance    | 3.5    | 4      | 5      | 6      | 7      | 8      | 9      | 10     | 12     | 14     | 17     | 20     |
|                        | Total Actual Ratio | 105.9  | 105.9  | 105.9  | 105.9  | 105.9  | 105.9  | 105.9  | 105.9  | 105.1  | 100.8  | 100.8  | 100.8  |
|                        | Ratio Combinations | 5-1/6  | 5-1/6  | 5-1/6  | 5-1/6  | 5-1/6  | 5-1/6  | 5-1/6  | 5-1/6  | 5-1/6  | 5-1/6  | 5-1/6  | 5-1/6  |
|                        |                    | 20-1/2 | 20-1/2 | 20-1/2 | 20-1/2 | 20-1/2 | 20-1/2 | 20-1/2 | 20-1/2 | 20-1/2 | 19-2/3 | 19-2/3 | 19-2/3 |
| 1750                   | Mech. Input HP     | 1.81   | 2.32   | 4.07   | 6.45   | 9.63   | 13.3   | 17.9   | 23.8   | 34.8   | 34.8   | 71.3   | 92.5   |
|                        | Out.Torq., in.lbs. | 4760   | 6350   | 11400  | 18400  | 28000  | 39400  | 54000  | 71000  | 107000 | 107000 | 219000 | 284000 |
|                        | Therm. Input HP    | 1.72   | 2.26   | 3.10   | 5.27   | 7.50   | 10.1   | 14.8   | 17.9   | 26.2   | 34.8   | 53.0   | 78.0   |
|                        | Output RPM         | 16.5   | 16.5   | 16.5   | 16.5   | 16.5   | 16.5   | 16.5   | 16.5   | 16.7   | 17.4   | 17.4   | 17.4   |
|                        | Efficiency%        | 69.0   | 71.6   | 73.1   | 74.8   | 76.2   | 77.7   | 79.1   | 78.2   | 81.2   | 84.7   | 84.6   | 84.6   |
| 1450                   | Mech. Input HP     | 1.54   | 2.00   | 3.50   | 5.58   | 8.36   | 11.4   | 15.5   | 21.1   | 31.7   | 31.7   | 65.7   | 85.4   |
|                        | Out.Torq., in.lbs. | 4830   | 6490   | 11800  | 19000  | 28900  | 40600  | 56000  | 75500  | 116000 | 116000 | 241000 | 313000 |
|                        | Therm. Input HP    | 1.25   | 1.99   | 2.94   | 4.85   | 6.80   | 9.30   | 13.5   | 16.6   | 24.6   | 31.7   | 48.0   | 70.0   |
|                        | Output RPM         | 13.7   | 13.7   | 13.7   | 13.7   | 13.7   | 13.7   | 13.7   | 13.7   | 13.8   | 14.4   | 14.4   | 14.4   |
|                        | Efficiency%        | 68.1   | 70.4   | 73.0   | 74.2   | 75.1   | 77.4   | 78.5   | 77.7   | 80.1   | 83.5   | 83.7   | 83.6   |
| 1150                   | Mech. Input HP     | 1.29   | 1.67   | 2.90   | 4.65   | 6.95   | 9.66   | 13.1   | 17.7   | 27.2   | 28.3   | 59.2   | 77.5   |
|                        | Out.Torq., in.lbs. | 4930   | 6640   | 12100  | 19700  | 30000  | 42400  | 58300  | 79500  | 124000 | 129000 | 269000 | 352000 |
|                        | Therm. Input HP    | 1.25   | 1.65   | 2.7    | 4.30   | 6.02   | 8.25   | 11.5   | 14.2   | 22.6   | 28.3   | 43.0   | 63.0   |
|                        | Output RPM         | 10.9   | 10.9   | 10.9   | 10.9   | 10.9   | 10.9   | 10.9   | 10.9   | 10.9   | 11.4   | 11.4   | 11.4   |
|                        | Efficiency%        | 65.9   | 68.4   | 71.8   | 73.0   | 74.4   | 75.6   | 76.7   | 77.4   | 79.1   | 82.5   | 82.2   | 82.2   |
| 865                    | Mech. Input HP     | 0.993  | 1.32   | 2.30   | 3.55   | 5.56   | 7.67   | 10.7   | 14.3   | 21.9   | 25.2   | 49.1   | 67.0   |
|                        | Out.Torq., in.lbs. | 5010   | 6790   | 12400  | 20400  | 31200  | 44300  | 61000  | 83500  | 131000 | 151000 | 294000 | 400000 |
|                        | Therm. Input HP    | 0.977  | 1.30   | 2.28   | 3.56   | 5.28   | 7.19   | 9.68   | 12.0   | 18.9   | 23.6   | 38.0   | 52.6   |
|                        | Output RPM         | 8.17   | 8.17   | 8.17   | 8.17   | 8.17   | 8.17   | 8.17   | 8.17   | 8.23   | 8.58   | 8.58   | 8.58   |
|                        | Efficiency %       | 65.4   | 66.8   | 70.1   | 74.3   | 72.7   | 74.9   | 73.9   | 75.7   | 78.1   | 81.4   | 81.6   | 81.3   |
| 575                    | Mech. Input HP     | 0.687  | 0.919  | 1.60   | 2.59   | 3.97   | 5.44   | 7.55   | 10.0   | 15.8   | 21.0   | 36.5   | 53.9   |
|                        | Out.Torq., in.lbs. | 5060   | 6930   | 12800  | 21000  | 32600  | 46100  | 63500  | 85000  | 138000 | 184000 | 320000 | 472000 |
|                        | Therm. Input HP    | 0.681  | 0.905  | 1.59   | 2.59   | 3.88   | 5.32   | 7.32   | 9.45   | 14.5   | 17.8   | 31.6   | 39.7   |
|                        | Output RPM         | 5.43   | 5.43   | 5.43   | 5.43   | 5.43   | 5.43   | 5.43   | 5.43   | 5.47   | 5.70   | 5.70   | 5.70   |
|                        | Efficiency%        | 63.4   | 65.0   | 68.8   | 69.9   | 70.5   | 73.1   | 72.5   | 73.2   | 75.8   | 79.3   | 79.4   | 79.2   |
| 300                    | Mech. Input HP     | 0.381  | 0.511  | 0.888  | 1.45   | 2.17   | 3.06   | 4.34   | 5.63   | 8.40   | 14.0   | 20.7   | 30.7   |
|                        | Out.Torq., in.lbs. | 5160   | 7080   | 13100  | 21700  | 33100  | 48100  | 66600  | 88600  | 141000 | 235000 | 346000 | 516000 |
|                        | Therm. Input HP    | 0.372  | 0.495  | 0.86   | 1.41   | 2.16   | 2.96   | 4.27   | 5.62   | 8.28   | 11.5   | 19.2   | 26.0   |
|                        | Output RPM         | 2.83   | 2.83   | 2.83   | 2.83   | 2.83   | 2.83   | 2.83   | 2.83   | 2.86   | 2.98   | 2.98   | 2.98   |
|                        | Efficiency %       | 60.9   | 62.3   | 66.4   | 67.3   | 68.3   | 70.5   | 69.0   | 70.7   | 76.0   | 79.2   | 79.2   | 79.2   |

| WORM<br>SPEED<br>(RPM) | Unit Size          | 35     | 40     | 50     | 60     | 70     | 80     | 90     | 100    | 120    | 140    | 170    | 200    |
|------------------------|--------------------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
|                        | Center Distance    | 3.5    | 4      | 5      | 6      | 7      | 8      | 9      | 10     | 12     | 14     | 17     | 20     |
|                        | Total Actual Ratio | 126.6  | 126.6  | 126.6  | 126.6  | 126.6  | 126.6  | 126.6  | 126.6  | 125.5  | 125.5  | 125.5  | 125.5  |
|                        | Ratio Combinations | 5-1/6  | 5-1/6  | 5-1/6  | 5-1/6  | 5-1/6  | 5-1/6  | 5-1/6  | 5-1/6  | 5-1/6  | 5-1/6  | 5-1/6  | 5-1/6  |
|                        |                    | 24-1/2 | 24-1/2 | 24-1/2 | 24-1/2 | 24-1/2 | 24-1/2 | 24-1/2 | 24-1/2 | 24-1/2 | 24-1/2 | 24-1/2 | 24-1/2 |
| 1750                   | Mech. Input HP     | 1.58   | 1.96   | 3.46   | 5.43   | 8.16   | 11.4   | 15.4   | 19.3   | 31.4   | 34.8   | 62.9   | 88.3   |
|                        | Out.Torq., in.lbs. | 4740   | 6180   | 11300  | 18200  | 27800  | 39400  | 53600  | 68000  | 112000 | 128000 | 231000 | 324000 |
|                        | Therm. Input HP    | 1.57   | 1.96   | 3.10   | 5.27   | 7.50   | 10.1   | 13.3   | 16.3   | 26.2   | 34.8   | 48.0   | 65.0   |
|                        | Output RPM         | 13.8   | 13.8   | 13.8   | 13.8   | 13.8   | 13.8   | 13.8   | 13.8   | 13.9   | 13.9   | 13.9   | 13.9   |
|                        | Efficiency%        | 65.8   | 69.0   | 71.4   | 73.5   | 74.7   | 75.8   | 76.3   | 77.3   | 78.9   | 81.4   | 81.3   | 81.3   |
| 1450                   | Mech. Input HP     | 1.36   | 1.69   | 2.99   | 4.70   | 7.12   | 9.75   | 13.5   | 17.7   | 27.9   | 31.7   | 59.3   | 84.0   |
|                        | Out.Torq., in.lbs. | 4820   | 6310   | 11600  | 18700  | 28800  | 40600  | 56600  | 74000  | 125000 | 135000 | 252000 | 357000 |
|                        | Therm. Input HP    | 1.35   | 1.66   | 2.94   | 4.70   | 6.80   | 9.30   | 12.0   | 14.8   | 24.0   | 31.7   | 43.0   | 60.0   |
|                        | Output RPM         | 11.4   | 11.4   | 11.4   | 11.4   | 11.4   | 11.4   | 11.4   | 11.4   | 11.5   | 11.5   | 11.5   | 11.5   |
|                        | Efficiency%        | 64.7   | 68.0   | 70.3   | 72.3   | 73.5   | 74.1   | 74.8   | 76.0   | 78.2   | 78.1   | 77.9   | 77.8   |
| 1150                   | Mech. Input HP     | 1.12   | 1.39   | 2.49   | 3.92   | 5.94   | 8.17   | 11.3   | 15.0   | 23.6   | 28.3   | 52.0   | 74.1   |
|                        | Out.Torq., in.lbs. | 4940   | 6450   | 11900  | 19300  | 29800  | 42000  | 58000  | 77500  | 125000 | 150000 | 275000 | 393000 |
|                        | Therm. Input HP    | 1.11   | 1.39   | 2.47   | 3.89   | 5.80   | 7.94   | 10.2   | 12.6   | 20.4   | 28.3   | 38.0   | 55.0   |
|                        | Output RPM         | 9.08   | 9.08   | 9.08   | 9.08   | 9.08   | 9.08   | 9.08   | 9.08   | 9.16   | 9.16   | 9.16   | 9.16   |
|                        | Efficiency%        | 63.6   | 66.7   | 68.9   | 70.8   | 72.3   | 74.1   | 74.0   | 74.5   | 77.0   | 77.1   | 77.0   | 77.0   |
| 865                    | Mech. Input HP     | 0.874  | 1.10   | 1.95   | 3.11   | 4.65   | 6.53   | 9.06   | 12.1   | 19.5   | 25.2   | 43.8   | 62.9   |
|                        | Out.Torq., in.lbs. | 5030   | 6580   | 12200  | 19800  | 30400  | 43700  | 60400  | 81500  | 133000 | 172000 | 299000 | 430000 |
|                        | Therm. Input HP    | 0.868  | 1.09   | 1.96   | 3.07   | 4.60   | 6.42   | 8.42   | 10.6   | 17.6   | 25.2   | 33.0   | 51.0   |
|                        | Output RPM         | 6.83   | 6.83   | 6.83   | 6.83   | 6.83   | 6.83   | 6.83   | 6.83   | 6.89   | 6.89   | 6.89   | 6.89   |
|                        | Efficiency %       | 62.4   | 65.1   | 67.9   | 69.2   | 70.9   | 72.6   | 72.3   | 73.0   | 74.6   | 74.6   | 74.7   | 74.7   |
| 575                    | Mech. Input HP     | 0.614  | 0.764  | 1.37   | 2.18   | 3.29   | 4.65   | 6.50   | 8.61   | 14.0   | 19.8   | 32.6   | 47.2   |
|                        | Out.Torq., in.lbs. | 5140   | 6720   | 12500  | 20500  | 31600  | 45500  | 62800  | 85000  | 140000 | 197000 | 325000 | 471000 |
|                        | Therm. Input HP    | 0.609  | 0.757  | 1.37   | 2.16   | 3.24   | 4.58   | 6.29   | 8.07   | 13.3   | 19.6   | 30.0   | 45.0   |
|                        | Output RPM         | 4.54   | 4.54   | 4.54   | 4.54   | 4.54   | 4.54   | 4.54   | 4.54   | 4.58   | 4.58   | 4.58   | 4.58   |
|                        | Efficiency%        | 60.4   | 63.4   | 65.8   | 67.7   | 69.2   | 70.5   | 69.6   | 71.1   | 72.7   | 72.3   | 72.5   | 72.5   |
| 300                    | Mech. Input HP     | 0.341  | 0.421  | 0.762  | 1.21   | 1.84   | 2.61   | 3.69   | 4.79   | 7.70   | 11.4   | 19.2   | 27.8   |
|                        | Out.Torq., in.lbs. | 5240   | 6850   | 12800  | 21100  | 32500  | 46700  | 64800  | 86300  | 142000 | 210000 | 352000 | 514000 |
|                        | Therm. Input HP    | 0.334  | 0.411  | 0.748  | 1.18   | 1.81   | 2.57   | 3.63   | 4.77   | 7.70   | 10.7   | 17.9   | 26.0   |
|                        | Output RPM         | 2.37   | 2.37   | 2.37   | 2.37   | 2.37   | 2.37   | 2.37   | 2.37   | 2.39   | 2.39   | 2.39   | 2.39   |
|                        | Efficiency %       | 57.8   | 61.2   | 63.3   | 65.0   | 66.3   | 67.3   | 66.0   | 67.7   | 69.9   | 70.2   | 69.7   | 70.0   |

Ratings based on 1.0 service factor. For A.G.M.A. recommended practice on service factors, see page 11.

# Horsepower and Torque Ratings • Double Worm

| WORM SPEED (RPM) | Unit Size          | 35              | 40              | 50              | 60              | 70              | 80              | 90              | 100             | 120             | 140             | 170             | 200             |
|------------------|--------------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|
|                  | Center Distance    | 3.5             | 4               | 5               | 6               | 7               | 8               | 9               | 10              | 12              | 14              | 17              | 20              |
|                  | Total Actual Ratio | 149.8           | 149.8           | 149.8           | 141.8           | 141.8           | 141.8           | 141.8           | 141.8           | 143.0           | 143.8           | 143.8           | 143.8           |
|                  | Ratio Combinations | 9-2/3<br>15-1/2 | 9-2/3<br>15-1/2 | 9-2/3<br>15-1/2 | 9-2/3<br>14-2/3 | 9-2/3<br>14-2/3 | 9-2/3<br>14-2/3 | 9-2/3<br>14-2/3 | 9-2/3<br>14-2/3 | 9-3/4<br>14-2/3 | 9-3/4<br>14-3/4 | 9-3/4<br>14-3/4 | 9-3/4<br>14-3/4 |
|                  |                    |                 |                 |                 |                 |                 |                 |                 |                 |                 |                 |                 |                 |
| 1750             | Mech. Input HP     | 1.44            | 1.74            | 2.88            | 4.93            | 7.60            | 10.3            | 13.9            | 16.6            | 24.0            | 24.0            | 48.7            | 65.1            |
|                  | Out.Torq., in.lbs. | 5060            | 6570            | 11400           | 19000           | 29200           | 41200           | 56500           | 66900           | 99200           | 99300           | 202000          | 270000          |
|                  | Therm. Input HP    | 1.33            | 1.78            | 2.16            | 3.86            | 5.50            | 7.20            | 12.3            | 12.5            | 18.0            | 24.0            | 45.5            | 60.3            |
|                  | Output RPM         | 11.7            | 11.7            | 11.7            | 12.3            | 12.3            | 12.3            | 12.3            | 12.3            | 12.2            | 12.2            | 12.2            | 12.2            |
|                  | Efficiency%        | 65.1            | 70.0            | 73.4            | 75.5            | 75.2            | 78.3            | 79.5            | 78.9            | 80.3            | 79.9            | 80.1            | 80.1            |
| 1450             | Mech. Input HP     | 1.19            | 1.56            | 2.57            | 4.21            | 6.47            | 9.03            | 11.9            | 15.4            | 21.9            | 21.9            | 44.7            | 60.2            |
|                  | Out.Torq., in.lbs. | 5130            | 6860            | 12300           | 19300           | 29800           | 42500           | 58000           | 74000           | 108000          | 108000          | 222000          | 299000          |
|                  | Therm. Input HP    | 1.14            | 1.52            | 2.02            | 3.55            | 4.98            | 6.62            | 10.6            | 11.9            | 17.0            | 21.9            | 41.8            | 55.8            |
|                  | Output RPM         | 9.68            | 9.68            | 9.68            | 10.2            | 10.2            | 10.2            | 10.2            | 10.2            | 10.1            | 10.1            | 10.1            | 10.1            |
|                  | Efficiency%        | 66.1            | 68.5            | 73.5            | 74.5            | 74.7            | 76.4            | 78.9            | 78.0            | 79.3            | 78.9            | 79.5            | 79.5            |
| 1150             | Mech. Input HP     | 0.972           | 1.27            | 2.11            | 3.43            | 5.32            | 7.43            | 9.76            | 13.2            | 19.8            | 19.8            | 40.1            | 53.5            |
|                  | Out.Torq., in.lbs. | 5190            | 7060            | 12500           | 19700           | 30500           | 43600           | 59500           | 78900           | 123000          | 123000          | 250000          | 333000          |
|                  | Therm. Input HP    | 0.950           | 1.25            | 1.82            | 3.15            | 4.41            | 5.84            | 8.73            | 10.7            | 15.9            | 19.8            | 37.5            | 49.6            |
|                  | Output RPM         | 7.67            | 7.67            | 7.67            | 8.11            | 8.11            | 8.11            | 8.11            | 8.11            | 8.04            | 8.00            | 8.00            | 8.00            |
|                  | Efficiency%        | 65.0            | 67.7            | 72.0            | 73.8            | 73.8            | 75.5            | 78.5            | 77.0            | 79.3            | 78.8            | 79.1            | 79.0            |
| 865              | Mech. Input HP     | 0.755           | 0.987           | 1.65            | 2.67            | 4.13            | 5.78            | 7.65            | 10.5            | 16.4            | 17.7            | 35.1            | 46.4            |
|                  | Out.Torq., in.lbs. | 5250            | 7150            | 12700           | 20000           | 30800           | 44200           | 61000           | 81200           | 133000          | 143000          | 284000          | 376000          |
|                  | Therm. Input HP    | 0.745           | 0.967           | 1.59            | 2.64            | 3.84            | 5.10            | 6.95            | 9.35            | 15.1            | 17.7            | 33.1            | 43.3            |
|                  | Output RPM         | 5.77            | 5.77            | 5.77            | 6.10            | 6.10            | 6.10            | 6.10            | 6.10            | 6.05            | 6.01            | 6.01            | 6.01            |
|                  | Efficiency %       | 70.5            | 66.3            | 63.7            | 72.6            | 72.2            | 74.0            | 77.3            | 74.6            | 77.6            | 77.1            | 77.2            | 77.3            |
| 575              | Mech. Input HP     | 0.524           | 0.683           | 1.14            | 1.85            | 2.88            | 4.04            | 5.35            | 7.43            | 11.6            | 17.1            | 28.6            | 39.1            |
|                  | Out.Torq., in.lbs. | 5320            | 7240            | 12900           | 20400           | 31400           | 45200           | 62600           | 83500           | 138000          | 168000          | 339000          | 464000          |
|                  | Therm. Input HP    | 0.511           | 0.661           | 1.10            | 1.80            | 2.83            | 3.95            | 4.74            | 7.40            | 11.4            | 13.5            | 25.4            | 32.6            |
|                  | Output RPM         | 3.84            | 3.84            | 3.84            | 4.06            | 4.06            | 4.06            | 4.06            | 4.06            | 4.02            | 4.00            | 4.00            | 4.00            |
|                  | Efficiency%        | 61.7            | 64.5            | 68.7            | 70.8            | 70.0            | 72.0            | 75.3            | 72.3            | 75.6            | 75.1            | 75.2            | 75.3            |
| 300              | Mech. Input HP     | 0.305           | 0.371           | 0.624           | 1.00            | 1.60            | 2.23            | 2.94            | 4.18            | 6.60            | 9.00            | 16.2            | 26.4            |
|                  | Out.Torq., in.lbs. | 5380            | 7320            | 13000           | 20700           | 32000           | 46200           | 64200           | 85800           | 142000          | 193000          | 354000          | 585000          |
|                  | Therm. Input HP    | 0.279           | 0.355           | 0.593           | 0.957           | 1.54            | 2.13            | 2.54            | 4.05            | 6.27            | 8.75            | 14.1            | 21.3            |
|                  | Output RPM         | 2.00            | 2.00            | 2.00            | 2.12            | 2.12            | 2.12            | 2.12            | 2.12            | 2.10            | 2.09            | 2.09            | 2.09            |
|                  | Efficiency %       | 56.0            | 62.7            | 66.4            | 69.4            | 67.1            | 69.7            | 73.4            | 69.0            | 71.7            | 71.1            | 72.5            | 73.4            |

Double Worm  
Speed Reducers

| WORM SPEED (RPM) | Unit Size          | 35          | 40          | 50              | 60              | 70              | 80              | 90              | 100             | 120             | 140             | 170             | 200             |
|------------------|--------------------|-------------|-------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|
|                  | Center Distance    | 3.5         | 4           | 5               | 6               | 7               | 8               | 9               | 10              | 12              | 14              | 17              | 20              |
|                  | Total Actual Ratio | 155.0       | 155.0       | 152.4           | 152.4           | 152.4           | 152.4           | 152.4           | 152.4           | 151.2           | 151.2           | 151.2           | 151.2           |
|                  | Ratio Combinations | 5-1/6<br>30 | 5-1/6<br>30 | 5-1/6<br>29-1/2 | 5-1/6<br>29-1/2 | 5-1/6<br>29-1/2 | 5-1/6<br>29-1/2 | 5-1/6<br>29-1/2 | 5-1/6<br>29-1/2 | 5-1/8<br>29-1/2 | 5-1/8<br>29-1/2 | 5-1/8<br>29-1/2 | 5-1/8<br>29-1/2 |
|                  |                    |             |             |                 |                 |                 |                 |                 |                 |                 |                 |                 |                 |
| 1750             | Mech. Input HP     | 1.46        | 1.87        | 3.10            | 4.69            | 6.65            | 9.41            | 12.6            | 17.1            | 26.2            | 34.1            | 53.3            | 75.3            |
|                  | Out.Torq., in.lbs. | 4920        | 6640        | 11500           | 18300           | 26800           | 38400           | 52400           | 71000           | 111000          | 148000          | 232000          | 327000          |
|                  | Therm. Input HP    | 1.46        | 1.87        | 2.99            | 4.69            | 6.65            | 9.09            | 11.2            | 13.3            | 26.2            | 33.0            | 40.0            | 60.0            |
|                  | Output RPM         | 11.3        | 11.3        | 11.5            | 11.5            | 11.5            | 11.5            | 11.5            | 11.5            | 11.6            | 11.6            | 11.6            | 11.6            |
|                  | Efficiency%        | 60.6        | 63.5        | 67.6            | 71.1            | 73.4            | 74.4            | 75.8            | 75.6            | 77.8            | 80.0            | 79.8            | 79.8            |
| 1450             | Mech. Input HP     | 1.26        | 1.61        | 2.60            | 4.05            | 5.84            | 8.20            | 10.9            | 14.6            | 23.2            | 31.5            | 49.8            | 71.3            |
|                  | Out.Torq., in.lbs. | 5050        | 6800        | 11700           | 19000           | 27600           | 39600           | 54000           | 73000           | 117000          | 159000          | 252000          | 360000          |
|                  | Therm. Input HP    | 1.25        | 1.61        | 2.58            | 4.05            | 5.84            | 8.20            | 10.3            | 12.1            | 23.2            | 30.0            | 37.0            | 55.0            |
|                  | Output RPM         | 9.35        | 9.35        | 9.51            | 9.51            | 9.51            | 9.51            | 9.51            | 9.51            | 9.59            | 9.59            | 9.59            | 9.59            |
|                  | Efficiency%        | 59.5        | 62.7        | 67.9            | 70.8            | 71.4            | 72.9            | 74.8            | 75.5            | 76.7            | 76.8            | 77.0            | 76.9            |
| 1150             | Mech. Input HP     | 1.04        | 1.33        | 2.14            | 3.32            | 4.83            | 7.05            | 9.20            | 12.3            | 19.4            | 27.1            | 43.4            | 62.6            |
|                  | Out.Torq., in.lbs. | 5190        | 6970        | 12000           | 19600           | 28400           | 41000           | 56000           | 76000           | 122000          | 171000          | 274000          | 396000          |
|                  | Therm. Input HP    | 1.04        | 1.32        | 2.14            | 3.32            | 4.83            | 7.05            | 8.57            | 10.4            | 19.4            | 26.5            | 33.0            | 50.0            |
|                  | Output RPM         | 7.42        | 7.42        | 7.54            | 7.54            | 7.54            | 7.54            | 7.54            | 7.54            | 7.61            | 7.61            | 7.61            | 7.61            |
|                  | Efficiency%        | 58.8        | 61.6        | 67.1            | 70.7            | 70.4            | 69.6            | 72.9            | 74.0            | 75.9            | 76.1            | 76.2            | 76.4            |
| 865              | Mech. Input HP     | 0.822       | 1.05        | 1.69            | 2.62            | 3.86            | 5.43            | 7.34            | 9.85            | 16.0            | 22.6            | 37.0            | 54.0            |
|                  | Out.Torq., in.lbs. | 5300        | 7130        | 12300           | 20100           | 29400           | 42400           | 58000           | 79000           | 129000          | 182000          | 297000          | 434000          |
|                  | Therm. Input HP    | 0.815       | 1.04        | 1.69            | 2.62            | 3.86            | 5.43            | 7.03            | 8.75            | 16.0            | 22.1            | 30.0            | 45.0            |
|                  | Output RPM         | 5.58        | 5.58        | 5.68            | 5.68            | 5.68            | 5.68            | 5.68            | 5.68            | 5.72            | 5.72            | 5.72            | 5.72            |
|                  | Efficiency %       | 57.1        | 60.3        | 65.5            | 69.1            | 68.6            | 70.3            | 71.2            | 72.2            | 73.2            | 73.1            | 73.0            | 73.0            |
| 575              | Mech. Input HP     | 0.574       | 0.735       | 1.17            | 1.84            | 2.72            | 3.87            | 5.31            | 7.05            | 11.4            | 16.5            | 27.3            | 40.3            |
|                  | Out.Torq., in.lbs. | 5380        | 7300        | 12500           | 20700           | 30400           | 43800           | 60800           | 82000           | 135000          | 195000          | 323000          | 476000          |
|                  | Therm. Input HP    | 0.57        | 0.725       | 1.17            | 1.84            | 2.72            | 3.87            | 5.17            | 7.05            | 11.4            | 16.0            | 25.0            | 40.0            |
|                  | Output RPM         | 3.71        | 3.71        | 3.77            | 3.77            | 3.77            | 3.77            | 3.77            | 3.77            | 3.80            | 3.80            | 3.80            | 3.80            |
|                  | Efficiency%        | 55.2        | 58.4        | 64.0            | 67.4            | 66.9            | 67.8            | 68.5            | 69.6            | 71.4            | 71.3            | 71.2            | 71.3            |
| 300              | Mech. Input HP     | 0.322       | 0.410       | 0.648           | 1.04            | 1.50            | 2.08            | 2.96            | 3.91            | 6.32            | 9.59            | 16.0            | 23.9            |
|                  | Out.Torq., in.lbs. | 5500        | 7460        | 12800           | 21300           | 30900           | 44200           | 61400           | 83000           | 137000          | 208000          | 349000          | 520000          |
|                  | Therm. Input HP    | 0.314       | 0.398       | 0.636           | 1.01            | 1.49            | 2.08            | 2.96            | 3.91            | 6.32            | 8.80            | 15.0            | 22.3            |
|                  | Output RPM         | 1.94        | 1.94        | 1.97            | 1.97            | 1.97            | 1.97            | 1.97            | 1.97            | 1.98            | 1.98            | 1.98            | 1.98            |
|                  | Efficiency %       | 52.5        | 55.9        | 61.9            | 64.3            | 64.1            | 66.4            | 64.8            | 66.3            | 68.2            | 68.3            | 68.4            | 68.3            |



# Horsepower and Torque Ratings • Double Worm

Double Worm  
Speed Reducers

| WORM<br>SPEED<br>(RPM) | Unit Size          | 35              | 40              | 50              | 60              | 70              | 80              | 90              | 100             | 120             | 140             | 170             | 200             |
|------------------------|--------------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|
|                        | Center Distance    | 3.5             | 4               | 5               | 6               | 7               | 8               | 9               | 10              | 12              | 14              | 17              | 20              |
|                        | Total Actual Ratio | 198.2           | 198.2           | 198.2           | 198.2           | 198.2           | 198.2           | 198.2           | 198.2           | 199.9           | 191.8           | 191.8           | 191.8           |
|                        | Ratio Combinations | 9-2/3<br>20-1/2 | 9-2/3<br>20-1/2 | 9-2/3<br>20-1/2 | 9-2/3<br>20-1/2 | 9-2/3<br>20-1/2 | 9-2/3<br>20-1/2 | 9-2/3<br>20-1/2 | 9-2/3<br>20-1/2 | 9-3/4<br>20-1/2 | 9-3/4<br>19-2/3 | 9-3/4<br>19-2/3 | 9-3/4<br>19-2/3 |
|                        |                    |                 |                 |                 |                 |                 |                 |                 |                 |                 |                 |                 |                 |
| 1750                   | Mech. Input HP     | 1.10            | 1.42            | 2.52            | 4.02            | 6.05            | 8.34            | 11.5            | 15.5            | 23.2            | 24.0            | 48.7            | 65.1            |
|                        | Out.Torq., in.lbs. | 4930            | 6750            | 12400           | 20200           | 30800           | 43700           | 60400           | 82500           | 129000          | 133000          | 270000          | 360000          |
|                        | Therm. Input HP    | 1.09            | 1.41            | 2.16            | 3.86            | 5.50            | 7.20            | 10.3            | 12.5            | 18.0            | 24.0            | 40.0            | 58.0            |
|                        | Output RPM         | 8.83            | 8.83            | 8.83            | 8.83            | 8.83            | 8.83            | 8.83            | 8.83            | 8.76            | 9.13            | 9.13            | 9.13            |
|                        | Efficiency%        | 63.0            | 66.4            | 68.6            | 70.4            | 71.3            | 73.4            | 73.6            | 74.6            | 77.2            | 80.2            | 80.3            | 80.5            |
| 1450                   | Mech. Input HP     | 0.942           | 1.21            | 2.14            | 3.42            | 5.17            | 7.13            | 9.89            | 13.3            | 20.0            | 21.9            | 44.7            | 60.2            |
|                        | Out.Torq., in.lbs. | 4990            | 6830            | 12500           | 20600           | 31600           | 44800           | 62000           | 84500           | 133000          | 146000          | 298000          | 402000          |
|                        | Therm. Input HP    | 0.935           | 1.20            | 2.02            | 3.42            | 4.98            | 6.62            | 9.35            | 11.1            | 17.0            | 21.9            | 37.0            | 55.0            |
|                        | Output RPM         | 7.32            | 7.32            | 7.32            | 7.32            | 7.32            | 7.32            | 7.32            | 7.32            | 7.25            | 7.56            | 7.56            | 7.56            |
|                        | Efficiency%        | 61.4            | 65.8            | 67.9            | 69.9            | 71.0            | 72.9            | 72.8            | 73.8            | 76.5            | 80.0            | 80.0            | 80.1            |
| 1150                   | Mech. Input HP     | 0.750           | 0.981           | 1.73            | 2.78            | 4.31            | 5.98            | 8.18            | 11.0            | 16.6            | 19.8            | 38.5            | 53.5            |
|                        | Out.Torq., in.lbs. | 5040            | 6920            | 12700           | 20900           | 32400           | 45900           | 63600           | 87000           | 137000          | 163000          | 317000          | 440000          |
|                        | Therm. Input HP    | 0.743           | 0.964           | 1.71            | 2.77            | 4.17            | 5.97            | 8.18            | 9.86            | 15.8            | 19.8            | 33.0            | 50.0            |
|                        | Output RPM         | 5.80            | 5.80            | 5.80            | 5.80            | 5.80            | 5.80            | 5.80            | 5.80            | 5.75            | 6.00            | 6.00            | 6.00            |
|                        | Efficiency%        | 62.0            | 64.9            | 67.8            | 69.5            | 69.2            | 70.6            | 71.6            | 72.8            | 75.3            | 78.3            | 78.3            | 78.2            |
| 865                    | Mech. Input HP     | 0.580           | 0.758           | 1.34            | 2.17            | 3.34            | 4.68            | 4.50            | 8.57            | 13.0            | 17.7            | 30.2            | 45.7            |
|                        | Out.Torq., in.lbs. | 5100            | 7000            | 12900           | 21300           | 32800           | 46900           | 65500           | 88400           | 139000          | 190000          | 331000          | 490000          |
|                        | Therm. Input HP    | 0.573           | 0.743           | 1.32            | 2.15            | 3.34            | 4.63            | 6.48            | 8.57            | 13.0            | 17.7            | 30.0            | 44.7            |
|                        | Output RPM         | 4.36            | 4.36            | 4.36            | 4.36            | 4.36            | 4.36            | 4.36            | 4.36            | 4.33            | 4.51            | 4.51            | 4.51            |
|                        | Efficiency %       | 60.9            | 63.9            | 66.6            | 68.0            | 68.0            | 69.4            | 70.0            | 71.4            | 73.4            | 76.8            | 78.6            | 76.8            |
| 575                    | Mech. Input HP     | 0.402           | 0.521           | 0.920           | 1.51            | 2.30            | 3.29            | 4.50            | 5.87            | 9.00            | 12.8            | 22.2            | 33.0            |
|                        | Out.Torq., in.lbs. | 5160            | 6250            | 13100           | 21700           | 33100           | 48000           | 66500           | 88400           | 141000          | 207000          | 346000          | 516000          |
|                        | Therm. Input HP    | 0.393           | 0.505           | 0.892           | 1.47            | 2.28            | 3.18            | 4.43            | 5.87            | 8.88            | 12.3            | 20.6            | 30.7            |
|                        | Output RPM         | 2.90            | 2.90            | 2.90            | 2.90            | 2.90            | 2.90            | 2.90            | 2.90            | 2.88            | 3.00            | 3.00            | 3.00            |
|                        | Efficiency%        | 59.0            | 62.5            | 65.5            | 66.1            | 66.2            | 67.2            | 68.1            | 69.3            | 71.4            | 76.8            | 74.4            | 74.4            |
| 300                    | Mech. Input HP     | 0.224           | 0.286           | 0.507           | 0.830           | 1.26            | 1.84            | 2.55            | 3.30            | 5.09            | 7.49            | 12.7            | 19.6            |
|                        | Out.Torq., in.lbs. | 5210            | 7160            | 13300           | 22000           | 33700           | 49100           | 68200           | 90900           | 145000          | 214000          | 361000          | 540000          |
|                        | Therm. Input HP    | 0.217           | 0.274           | 0.485           | 0.795           | 1.23            | 1.74            | 2.45            | 3.21            | 4.87            | 6.76            | 11.3            | 17.4            |
|                        | Output RPM         | 1.51            | 1.51            | 1.51            | 1.51            | 1.51            | 1.51            | 1.51            | 1.51            | 1.50            | 1.56            | 1.56            | 1.56            |
|                        | Efficiency %       | 55.8            | 60.1            | 62.9            | 63.7            | 64.0            | 64.0            | 64.2            | 66.1            | 68.0            | 70.9            | 70.7            | 68.5            |

| WORM<br>SPEED<br>(RPM) | Unit Size          | 35              | 40              | 50              | 60              | 70              | 80              | 90              | 100             | 120             | 140             | 170             | 200             |
|------------------------|--------------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|
|                        | Center Distance    | 3.5             | 4               | 5               | 6               | 7               | 8               | 9               | 10              | 12              | 14              | 17              | 20              |
|                        | Total Actual Ratio | 236.8           | 236.8           | 236.8           | 236.8           | 236.8           | 236.8           | 236.8           | 236.8           | 238.9           | 238.9           | 238.9           | 238.9           |
|                        | Ratio Combinations | 9-2/3<br>24-1/2 | 9-2/3<br>24-1/2 | 9-2/3<br>24-1/2 | 9-2/3<br>24-1/2 | 9-2/3<br>24-1/2 | 9-2/3<br>24-1/2 | 9-2/3<br>24-1/2 | 9-2/3<br>24-1/2 | 9-3/4<br>24-1/2 | 9-3/4<br>24-1/2 | 9-3/4<br>24-1/2 | 9-3/4<br>24-1/2 |
|                        |                    |                 |                 |                 |                 |                 |                 |                 |                 |                 |                 |                 |                 |
| 1750                   | Mech. Input HP     | 0.984           | 1.20            | 2.13            | 3.38            | 5.06            | 7.19            | 9.76            | 12.9            | 20.3            | 24.0            | 45.8            | 65.1            |
|                        | Out.Torq., in.lbs. | 5000            | 6550            | 12100           | 19700           | 30000           | 43400           | 59600           | 80500           | 131000          | 155000          | 296000          | 421000          |
|                        | Therm. Input HP    | 0.983           | 1.20            | 2.13            | 3.38            | 5.06            | 6.97            | 9.13            | 11.2            | 18.0            | 24.0            | 35.0            | 53.0            |
|                        | Output RPM         | 7.39            | 7.39            | 7.39            | 7.39            | 7.39            | 7.39            | 7.39            | 7.39            | 7.33            | 7.33            | 7.33            | 7.33            |
|                        | Efficiency%        | 59.6            | 63.7            | 66.6            | 68.3            | 69.5            | 70.8            | 71.6            | 73.2            | 75.0            | 75.1            | 75.1            | 75.2            |
| 1450                   | Mech. Input HP     | 0.832           | 1.01            | 1.77            | 2.87            | 4.32            | 6.10            | 8.48            | 11.1            | 17.6            | 21.9            | 40.3            | 58.7            |
|                        | Out.Torq., in.lbs. | 5060            | 6620            | 12300           | 20000           | 30600           | 44200           | 61200           | 82500           | 135000          | 168000          | 309000          | 450000          |
|                        | Therm. Input HP    | 0.830           | 0.996           | 1.77            | 2.86            | 4.32            | 5.88            | 8.00            | 9.66            | 15.6            | 21.9            | 33.0            | 50.0            |
|                        | Output RPM         | 6.12            | 6.12            | 6.12            | 6.12            | 6.12            | 6.12            | 6.12            | 6.12            | 6.07            | 6.07            | 6.07            | 6.07            |
|                        | Efficiency%        | 59.1            | 63.9            | 67.5            | 67.9            | 68.8            | 70.4            | 70.1            | 72.2            | 73.9            | 73.9            | 73.2            | 73.8            |
| 1150                   | Mech. Input HP     | 0.678           | 0.826           | 1.45            | 2.35            | 3.59            | 5.07            | 6.98            | 9.20            | 14.5            | 19.8            | 33.7            | 49.2            |
|                        | Out.Torq., in.lbs. | 5120            | 6700            | 12500           | 20400           | 31400           | 45300           | 62600           | 84500           | 139000          | 190000          | 323000          | 470000          |
|                        | Therm. Input HP    | 0.675           | 0.820           | 1.45            | 2.34            | 3.59            | 5.07            | 6.68            | 8.48            | 14.0            | 19.8            | 30.0            | 47.0            |
|                        | Output RPM         | 4.86            | 4.86            | 4.86            | 4.86            | 4.86            | 4.86            | 4.86            | 4.86            | 4.81            | 4.81            | 4.81            | 4.81            |
|                        | Efficiency%        | 58.2            | 62.5            | 66.4            | 66.9            | 67.4            | 68.8            | 69.1            | 70.8            | 73.2            | 73.4            | 73.2            | 73.0            |
| 865                    | Mech. Input HP     | 0.505           | 0.613           | 1.09            | 1.75            | 2.67            | 3.79            | 5.24            | 6.87            | 11.1            | 15.9            | 26.4            | 38.5            |
|                        | Out.Torq., in.lbs. | 5180            | 6770            | 12600           | 20700           | 31900           | 46000           | 63700           | 85900           | 142000          | 203000          | 337000          | 490000          |
|                        | Therm. Input HP    | 0.500           | 0.606           | 1.09            | 1.72            | 2.67            | 3.79            | 5.24            | 6.87            | 11.1            | 15.5            | 25.8            | 37.7            |
|                        | Output RPM         | 3.65            | 3.65            | 3.65            | 3.65            | 3.65            | 3.65            | 3.65            | 3.65            | 3.62            | 3.62            | 3.62            | 3.62            |
|                        | Efficiency %       | 59.5            | 64.0            | 67.0            | 68.7            | 69.2            | 70.4            | 70.5            | 72.5            | 73.5            | 73.4            | 73.3            | 73.1            |
| 575                    | Mech. Input HP     | 0.367           | .440            | 0.788           | 1.26            | 1.94            | 2.74            | 3.80            | 4.89            | 7.81            | 11.6            | 17.8            | 25.9            |
|                        | Out.Torq., in.lbs. | 5240            | 6850            | 12800           | 21100           | 32400           | 46600           | 64700           | 86200           | 142000          | 210000          | 352000          | 514000          |
|                        | Therm. Input HP    | 0.359           | 0.430           | 0.775           | 1.22            | 1.91            | 2.70            | 3.74            | 4.87            | 7.80            | 10.9            | 16.6            | 24.2            |
|                        | Output RPM         | 2.43            | 2.43            | 2.43            | 2.43            | 2.43            | 2.43            | 2.43            | 2.43            | 2.41            | 2.41            | 2.41            | 2.41            |
|                        | Efficiency%        | 55.0            | 59.9            | 62.6            | 64.4            | 64.4            | 65.6            | 65.6            | 68.0            | 69.5            | 69.4            | 75.7            | 75.8            |
| 300                    | Mech. Input HP     | 0.204           | 0.242           | 0.433           | 0.692           | 1.08            | 1.51            | 2.12            | 2.76            | 4.40            | 6.54            | 11.0            | 16.1            |
|                        | Out.Torq., in.lbs. | 5300            | 6920            | 13000           | 21400           | 33000           | 47600           | 66300           | 88500           | 146000          | 218000          | 367000          | 538000          |
|                        | Therm. Input HP    | 0.198           | 0.234           | 0.420           | 0.660           | 1.04            | 1.46            | 2.04            | 2.68            | 4.26            | 5.95            | 9.90            | 14.4            |
|                        | Output RPM         | 1.27            | 1.27            | 1.27            | 1.27            | 1.27            | 1.27            | 1.27            | 1.27            | 1.26            | 1.26            | 1.26            | 1.26            |
|                        | Efficiency %       | 52.1            | 57.5            | 60.3            | 62.1            | 61.7            | 63.3            | 62.8            | 64.4            | 66.4            | 66.3            | 66.2            | 66.4            |

Ratings based on 1.0 service factor. For A.G.M.A. recommended practice on service factors, see page 11.



# Horsepower and Torque Ratings • Double Worm

| WORM SPEED (RPM) | Unit Size          | 35    | 40    | 50     | 60     | 70     | 80     | 90     | 100    | 120    | 140    | 170    | 200    |
|------------------|--------------------|-------|-------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
|                  | Center Distance    | 3.5   | 4     | 5      | 6      | 7      | 8      | 9      | 10     | 12     | 14     | 17     | 20     |
|                  | Total Actual Ratio | 290.0 | 290.0 | 285.2  | 285.2  | 285.2  | 285.2  | 285.2  | 285.2  | 287.6  | 287.6  | 287.6  | 287.6  |
|                  | Ratio Combinations | 9-2/3 | 9-2/3 | 9-2/3  | 9-2/3  | 9-2/3  | 9-2/3  | 9-2/3  | 9-2/3  | 9-3/4  | 9-3/4  | 9-3/4  | 9-3/4  |
|                  |                    | 30    | 30    | 29-1/2 | 29-1/2 | 29-1/2 | 29-1/2 | 29-1/2 | 29-1/2 | 29-1/2 | 29-1/2 | 29-1/2 | 29-1/2 |
| 1750             | Mech. Input HP     | 0.932 | 1.17  | 1.90   | 2.96   | 4.22   | 5.94   | 8.10   | 10.8   | 16.8   | 23.8   | 39.1   | 56.7   |
|                  | Out.Torq., in.lbs. | 5230  | 7090  | 12100  | 20000  | 29200  | 42000  | 57600  | 78500  | 127000 | 180000 | 296000 | 430000 |
|                  | Therm. Input HP    | 0.930 | 1.16  | 1.88   | 2.96   | 4.22   | 5.94   | 7.62   | 9.39   | 15.9   | 23.1   | 30.0   | 47.0   |
|                  | Output RPM         | 6.03  | 6.03  | 6.14   | 6.14   | 6.14   | 6.14   | 6.14   | 6.14   | 6.08   | 6.08   | 6.08   | 6.08   |
|                  | Efficiency%        | 53.7  | 58.0  | 62.1   | 65.8   | 67.4   | 68.8   | 0.692  | 70.8   | 73.0   | 73.1   | 73.0   | 73.2   |
| 1450             | Mech. Input HP     | 0.784 | 0.991 | 1.62   | 2.52   | 3.61   | 5.08   | 6.95   | 9.18   | 14.5   | 20.8   | 34.3   | 50.0   |
|                  | Out.Torq., in.lbs. | 5300  | 7180  | 12300  | 20300  | 29300  | 42800  | 58800  | 80000  | 130000 | 187000 | 308000 | 450000 |
|                  | Therm. Input HP    | 0.780 | 0.980 | 1.59   | 2.52   | 3.60   | 5.08   | 6.65   | 7.93   | 13.8   | 20.2   | 28.0   | 44.0   |
|                  | Output RPM         | 5.00  | 5.00  | 5.08   | 5.08   | 5.08   | 5.08   | 5.08   | 5.08   | 5.04   | 5.04   | 5.04   | 5.04   |
|                  | Efficiency%        | 53.6  | 57.5  | 61.4   | 65.0   | 65.4   | 68.0   | 68.3   | 70.3   | 71.7   | 71.7   | 71.8   | 72.0   |
| 1150             | Mech. Input HP     | 0.641 | 0.806 | 1.32   | 2.07   | 2.96   | 4.17   | 5.74   | 7.48   | 12.1   | 17.5   | 29.0   | 42.7   |
|                  | Out.Torq., in.lbs. | 5370  | 7280  | 12500  | 20600  | 30300  | 43700  | 60400  | 81000  | 134000 | 194000 | 320000 | 472000 |
|                  | Therm. Input HP    | 0.638 | 0.798 | 1.30   | 2.07   | 2.96   | 4.17   | 5.55   | 7.06   | 11.5   | 17.0   | 26.0   | 41.0   |
|                  | Output RPM         | 3.96  | 3.96  | 4.03   | 4.03   | 4.03   | 4.03   | 4.03   | 4.03   | 4.00   | 4.00   | 4.00   | 4.00   |
|                  | Efficiency%        | 52.7  | 56.8  | 60.5   | 63.7   | 65.5   | 67.1   | 67.3   | 69.3   | 70.3   | 70.2   | 70.1   | 70.1   |
| 865              | Mech. Input HP     | 0.501 | 0.626 | 1.00   | 1.66   | 2.30   | 3.23   | 4.47   | 5.84   | 9.48   | 13.9   | 23.0   | 34.2   |
|                  | Out.Torq., in.lbs. | 5430  | 7370  | 12600  | 21000  | 30600  | 44200  | 61400  | 83000  | 137000 | 201000 | 334000 | 495000 |
|                  | Therm. Input HP    | 0.495 | 0.615 | 0.998  | 1.65   | 2.30   | 3.21   | 4.47   | 5.84   | 9.48   | 13.2   | 22.5   | 33.5   |
|                  | Output RPM         | 2.98  | 2.98  | 3.03   | 3.03   | 3.03   | 3.03   | 3.03   | 3.03   | 3.01   | 3.01   | 3.01   | 3.01   |
|                  | Efficiency %       | 51.3  | 55.7  | 60.8   | 60.7   | 64.0   | 65.8   | 66.1   | 68.4   | 69.0   | 69.0   | 69.1   | 69.0   |
| 575              | Mech. Input HP     | 0.348 | 0.431 | 0.694  | 1.12   | 1.58   | 2.21   | 3.08   | 4.00   | 6.47   | 9.82   | 16.5   | 24.6   |
|                  | Out.Torq., in.lbs. | 5500  | 7460  | 12800  | 21300  | 30900  | 44200  | 61700  | 83000  | 137000 | 208000 | 349000 | 519000 |
|                  | Therm. Input HP    | 0.340 | 0.419 | 0.681  | 1.09   | 1.57   | 2.21   | 3.06   | 4.00   | 6.47   | 9.02   | 15.4   | 22.9   |
|                  | Output RPM         | 1.98  | 1.98  | 2.02   | 2.02   | 2.02   | 2.02   | 2.02   | 2.02   | 2.00   | 2.00   | 2.00   | 2.00   |
|                  | Efficiency%        | 49.7  | 54.4  | 59.2   | 61.0   | 62.4   | 64.0   | 64.2   | 66.4   | 67.2   | 67.2   | 67.2   | 67.0   |
| 300              | Mech. Input HP     | 0.196 | 0.237 | 0.379  | 0.612  | 0.870  | 1.19   | 1.69   | 2.21   | 3.59   | 5.53   | 9.32   | 13.9   |
|                  | Out.Torq., in.lbs. | 5560  | 7550  | 13000  | 21600  | 31500  | 44200  | 63100  | 84600  | 140000 | 215000 | 363000 | 544000 |
|                  | Therm. Input HP    | 0.189 | 0.227 | 0.367  | 0.588  | 0.847  | 1.19   | 1.65   | 2.17   | 3.52   | 4.91   | 8.37   | 12.4   |
|                  | Output RPM         | 1.03  | 1.03  | 1.05   | 1.05   | 1.05   | 1.05   | 1.05   | 1.05   | 1.04   | 1.04   | 1.04   | 1.04   |
|                  | Efficiency %       | 46.6  | 52.4  | 57.3   | 59.0   | 60.3   | 62.0   | 62.1   | 63.8   | 64.4   | 64.4   | 64.5   | 64.6   |

Double Worm  
Speed Reducers

| WORM SPEED (RPM) | Unit Size          | 35     | 40     | 50     | 60     | 70     | 80     | 90     | 100    | 120    | 140    | 170    | 200    |
|------------------|--------------------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
|                  | Center Distance    | 3.5    | 4      | 5      | 6      | 7      | 8      | 9      | 10     | 12     | 14     | 17     | 20     |
|                  | Total Actual Ratio | 317.8  | 317.8  | 317.8  | 317.8  | 317.8  | 317.8  | 317.8  | 317.8  | 300.7  | 288.5  | 288.5  | 288.5  |
|                  | Ratio Combinations | 15-1/2 | 15-1/2 | 15-1/2 | 15-1/2 | 15-1/2 | 15-1/2 | 15-1/2 | 15-1/2 | 14-2/3 | 14-2/3 | 14-2/3 | 14-2/3 |
|                  |                    | 20-1/2 | 20-1/2 | 20-1/2 | 20-1/2 | 20-1/2 | 20-1/2 | 20-1/2 | 20-1/2 | 20-1/2 | 19-2/3 | 19-2/3 | 19-2/3 |
| 1750             | Mech. Input HP     | 0.765  | 0.991  | 1.72   | 2.77   | 4.22   | 5.83   | 7.95   | 10.8   | 18.0   | 18.0   | 36.8   | 46.9   |
|                  | Out.Torq., in.lbs. | 5060   | 6930   | 12800  | 21000  | 32400  | 45100  | 64000  | 87500  | 135000 | 135000 | 277000 | 353000 |
|                  | Therm. Input HP    | 0.760  | 0.976  | 1.56   | 2.77   | 4.22   | 5.82   | 7.95   | 8.70   | 13.5   | 18.0   | 34.4   | 43.5   |
|                  | Output RPM         | 5.51   | 5.51   | 5.51   | 5.51   | 5.51   | 5.51   | 5.51   | 5.51   | 5.82   | 6.07   | 6.07   | 6.07   |
|                  | Efficiency%        | 57.7   | 61.1   | 64.8   | 66.2   | 67.1   | 69.1   | 70.3   | 70.8   | 69.3   | 72.2   | 72.4   | 72.4   |
| 1450             | Mech. Input HP     | 0.642  | 0.832  | 1.45   | 2.35   | 3.62   | 4.97   | 6.82   | 9.07   | 15.5   | 16.4   | 33.5   | 43.1   |
|                  | Out.Torq., in.lbs. | 5090   | 6990   | 12900  | 21200  | 32800  | 46800  | 65500  | 88400  | 139000 | 147000 | 300000 | 386000 |
|                  | Therm. Input HP    | 0.635  | 0.817  | 1.43   | 2.33   | 3.62   | 4.93   | 6.82   | 8.45   | 12.7   | 16.4   | 31.4   | 39.9   |
|                  | Output RPM         | 4.56   | 4.56   | 4.56   | 4.56   | 4.56   | 4.56   | 4.56   | 4.56   | 4.82   | 5.03   | 5.03   | 5.03   |
|                  | Efficiency%        | 57.5   | 60.8   | 64.3   | 65.6   | 65.6   | 68.1   | 69.5   | 70.6   | 68.6   | 71.5   | 71.4   | 71.4   |
| 1150             | Mech. Input HP     | 0.519  | 0.669  | 1.18   | 1.90   | 2.89   | 4.05   | 5.49   | 7.38   | 12.5   | 15.0   | 29.9   | 38.3   |
|                  | Out.Torq., in.lbs. | 5130   | 7040   | 13000  | 21500  | 32800  | 47500  | 65600  | 88400  | 139000 | 167000 | 323000 | 413000 |
|                  | Therm. Input HP    | 0.510  | 0.652  | 1.15   | 1.86   | 2.89   | 3.96   | 5.48   | 7.38   | 12.0   | 15.0   | 28.0   | 35.5   |
|                  | Output RPM         | 3.62   | 3.62   | 3.62   | 3.62   | 3.62   | 3.62   | 3.62   | 3.62   | 3.82   | 3.99   | 3.99   | 3.99   |
|                  | Efficiency%        | 56.7   | 60.4   | 63.4   | 65.1   | 63.5   | 67.3   | 68.6   | 68.8   | 67.5   | 70.4   | 68.3   | 68.2   |
| 865              | Mech. Input HP     | 0.401  | 0.516  | 0.910  | 1.47   | 2.25   | 3.16   | 4.30   | 5.42   | 9.83   | 13.4   | 26.6   | 34.0   |
|                  | Out.Torq., in.lbs. | 5160   | 7090   | 13100  | 21700  | 32200  | 48200  | 66700  | 88800  | 141000 | 192000 | 330000 | 422000 |
|                  | Therm. Input HP    | 0.391  | 0.499  | 0.880  | 1.43   | 2.23   | 3.04   | 4.22   | 5.40   | 9.70   | 13.4   | 25.1   | 31.8   |
|                  | Output RPM         | 2.72   | 2.72   | 2.72   | 2.72   | 2.72   | 2.72   | 2.72   | 2.72   | 2.88   | 3.00   | 3.00   | 3.00   |
|                  | Efficiency %       | 55.7   | 59.4   | 62.3   | 63.7   | 63.5   | 65.9   | 67.0   | 70.7   | 65.4   | 68.2   | 59.1   | 59.0   |
| 575              | Mech. Input HP     | 0.276  | 0.354  | 0.623  | 1.01   | 1.57   | 2.19   | 3.00   | 3.91   | 6.82   | 9.99   | 16.8   | 25.2   |
|                  | Out.Torq., in.lbs. | 5200   | 7140   | 13200  | 22000  | 33600  | 48900  | 67800  | 90400  | 144000 | 212000 | 357000 | 533000 |
|                  | Therm. Input HP    | 0.268  | 0.340  | 0.597  | 0.970  | 1.53   | 2.08   | 2.90   | 3.82   | 6.58   | 9.11   | 14.0   | 22.7   |
|                  | Output RPM         | 1.81   | 1.81   | 1.81   | 1.81   | 1.81   | 1.81   | 1.81   | 1.81   | 1.91   | 1.99   | 1.99   | 1.99   |
|                  | Efficiency%        | 54.0   | 57.9   | 61.1   | 62.4   | 61.5   | 64.0   | 64.8   | 66.4   | 64.1   | 67.0   | 67.0   | 66.9   |
| 300              | Mech. Input HP     | 0.154  | 0.196  | 0.341  | 0.554  | 0.863  | 1.21   | 1.66   | 2.17   | 3.76   | 5.54   | 9.37   | 14.0   |
|                  | Out.Torq., in.lbs. | 5230   | 7190   | 13400  | 22200  | 34000  | 49600  | 68800  | 92000  | 147000 | 216000 | 367000 | 550000 |
|                  | Therm. Input HP    | 0.148  | 0.187  | 0.324  | 0.527  | 0.833  | 1.13   | 1.58   | 2.09   | 3.55   | 4.94   | 8.23   | 12.2   |
|                  | Output RPM         | 0.944  | 0.944  | 0.944  | 0.944  | 0.944  | 0.944  | 0.944  | 0.944  | 0.998  | 1.04   | 1.04   | 1.04   |
|                  | Efficiency %       | 51.0   | 55.0   | 58.7   | 60.0   | 59.0   | 61.5   | 62.1   | 63.3   | 62.0   | 64.5   | 64.6   | 64.9   |

# Horsepower and Torque Ratings • Double Worm

Double Worm  
Speed Reducers

| WORM<br>SPEED<br>(RPM) | Unit Size          | 35     | 40     | 50     | 60     | 70     | 80     | 90     | 100    | 120    | 140    | 170    | 200    |
|------------------------|--------------------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
|                        | Center Distance    | 3.5    | 4      | 5      | 6      | 7      | 8      | 9      | 10     | 12     | 14     | 17     | 20     |
|                        | Total Actual Ratio | 379.8  | 379.8  | 379.8  | 379.8  | 379.8  | 379.8  | 379.8  | 379.8  | 359.3  | 359.3  | 359.3  | 359.3  |
|                        | Ratio Combinations | 15-1/2 | 15-1/2 | 15-1/2 | 15-1/2 | 15-1/2 | 15-1/2 | 15-1/2 | 15-1/2 | 14-2/3 | 14-2/3 | 14-2/3 | 14-2/3 |
|                        |                    | 24-1/2 | 24-1/2 | 24-1/2 | 24-1/2 | 24-1/2 | 24-1/2 | 24-1/2 | 24-1/2 | 24-1/2 | 24-1/2 | 24-1/2 | 24-1/2 |
| 1750                   | Mech. Input HP     | 0.693  | 0.804  | 1.47   | 2.36   | 3.56   | 4.96   | 6.85   | 9.00   | 15.0   | 18.0   | 34.7   | 46.9   |
|                        | Out.Torq., in.lbs. | 5140   | 6710   | 12500  | 20500  | 31600  | 45400  | 62800  | 85000  | 139000 | 167000 | 322000 | 435000 |
|                        | Therm. Input HP    | 0.688  | 0.800  | 1.47   | 2.33   | 3.56   | 4.96   | 6.63   | 8.46   | 13.5   | 18.0   | 30.0   | 43.5   |
|                        | Output RPM         | 4.61   | 4.61   | 4.61   | 4.61   | 4.61   | 4.61   | 4.61   | 4.61   | 4.87   | 4.87   | 4.87   | 4.87   |
|                        | Efficiency%        | 54.2   | 61.0   | 62.2   | 63.4   | 64.9   | 66.9   | 67.0   | 69.0   | 71.6   | 71.7   | 71.7   | 71.7   |
| 1450                   | Mech. Input HP     | 0.575  | 0.704  | 1.24   | 1.99   | 3.02   | 4.18   | 5.82   | 7.63   | 12.2   | 16.4   | 28.5   | 42.7   |
|                        | Out.Torq., in.lbs. | 5170   | 6760   | 12600  | 20600  | 31900  | 46000  | 63700  | 85900  | 142000 | 191000 | 332000 | 482000 |
|                        | Therm. Input HP    | 0.570  | 0.696  | 1.24   | 1.96   | 3.02   | 4.18   | 5.82   | 7.50   | 12.2   | 16.4   | 28.3   | 39.9   |
|                        | Output RPM         | 3.82   | 3.82   | 3.82   | 3.82   | 3.82   | 3.82   | 3.82   | 3.82   | 4.04   | 4.04   | 4.04   | 4.04   |
|                        | Efficiency%        | 54.5   | 58.2   | 61.6   | 63.0   | 64.0   | 66.7   | 66.3   | 68.2   | 74.5   | 74.6   | 74.4   | 72.2   |
| 1150                   | Mech. Input HP     | 0.469  | 0.572  | 0.970  | 1.61   | 2.44   | 3.38   | 4.72   | 6.13   | 10.1   | 14.6   | 14.6   | 35.6   |
|                        | Out.Torq., in.lbs. | 5210   | 6810   | 12700  | 20900  | 32100  | 46100  | 64000  | 85900  | 142000 | 205000 | 205000 | 498000 |
|                        | Therm. Input HP    | 0.462  | 0.562  | 0.960  | 1.57   | 2.42   | 3.37   | 4.70   | 6.13   | 10.1   | 14.1   | 14.1   | 34.3   |
|                        | Output RPM         | 3.03   | 3.03   | 3.03   | 3.03   | 3.03   | 3.03   | 3.03   | 3.03   | 3.20   | 3.20   | 3.20   | 3.20   |
|                        | Efficiency%        | 53.4   | 57.2   | 63.1   | 62.4   | 63.3   | 65.6   | 65.1   | 67.3   | 71.4   | 71.3   | 71.1   | 71.1   |
| 865                    | Mech. Input HP     | 0.361  | 0.440  | 0.779  | 1.24   | 1.90   | 2.65   | 3.66   | 4.70   | 7.58   | 11.3   | 18.8   | 27.5   |
|                        | Out.Torq., in.lbs. | 5250   | 6860   | 12800  | 21100  | 32500  | 46800  | 64900  | 86500  | 142000 | 210000 | 352000 | 514000 |
|                        | Therm. Input HP    | 0.353  | 0.429  | 0.764  | 1.20   | 1.86   | 2.61   | 3.59   | 4.67   | 7.57   | 10.6   | 17.6   | 25.7   |
|                        | Output RPM         | 2.28   | 2.28   | 2.28   | 2.28   | 2.28   | 2.28   | 2.28   | 2.28   | 2.41   | 2.41   | 2.41   | 2.41   |
|                        | Efficiency %       | 52.5   | 56.4   | 59.6   | 61.4   | 62.0   | 63.7   | 64.1   | 66.5   | 71.6   | 71.4   | 71.4   | 71.3   |
| 575                    | Mech. Input HP     | 0.248  | 0.301  | 0.535  | 0.853  | 1.32   | 1.83   | 2.54   | 3.28   | 5.42   | 8.05   | 13.6   | 19.8   |
|                        | Out.Torq., in.lbs. | 5250   | 6900   | 13000  | 21300  | 32900  | 47400  | 66000  | 88000  | 145000 | 215000 | 363000 | 531000 |
|                        | Therm. Input HP    | 0.353  | 0.292  | 0.520  | 0.816  | 1.28   | 1.78   | 2.45   | 3.20   | 5.30   | 7.40   | 12.3   | 17.9   |
|                        | Output RPM         | 1.51   | 1.51   | 1.51   | 1.51   | 1.51   | 1.51   | 1.51   | 1.51   | 1.60   | 1.60   | 1.60   | 1.60   |
|                        | Efficiency%        | 52.5   | 55.0   | 58.2   | 60.0   | 59.9   | 62.1   | 62.5   | 64.5   | 68.0   | 67.9   | 67.9   | 68.1   |
| 300                    | Mech. Input HP     | 0.137  | 0.164  | 0.293  | 0.470  | 0.734  | 0.996  | 1.41   | 1.82   | 3.03   | 4.50   | 7.62   | 11.2   |
|                        | Out.Torq., in.lbs. | 5320   | 6950   | 13100  | 21500  | 33300  | 48000  | 66900  | 89400  | 148000 | 220000 | 373000 | 547000 |
|                        | Therm. Input HP    | 0.132  | 0.158  | 0.283  | 0.445  | 0.703  | 0.954  | 1.34   | 1.75   | 2.90   | 4.04   | 6.72   | 9.80   |
|                        | Output RPM         | 0.790  | 0.790  | 0.790  | 0.790  | 0.790  | 0.790  | 0.790  | 0.790  | 0.835  | 0.835  | 0.835  | 0.835  |
|                        | Efficiency %       | 48.7   | 53.1   | 55.8   | 57.4   | 56.9   | 60.4   | 59.6   | 61.5   | 64.9   | 64.9   | 64.9   | 64.9   |

| WORM<br>SPEED<br>(RPM) | Unit Size          | 35     | 40     | 50     | 60     | 70     | 80     | 90     | 100    | 120    | 140    | 170    | 200    |
|------------------------|--------------------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
|                        | Center Distance    | 3.5    | 4      | 5      | 6      | 7      | 8      | 9      | 10     | 12     | 14     | 17     | 20     |
|                        | Total Actual Ratio | 420.3  | 420.3  | 420.3  | 420.3  | 420.3  | 420.3  | 420.3  | 420.3  | 420.3  | 403.2  | 403.2  | 403.2  |
|                        | Ratio Combinations | 20-1/2 | 20-1/2 | 20-1/2 | 20-1/2 | 20-1/2 | 20-1/2 | 20-1/2 | 20-1/2 | 20-1/2 | 20-1/2 | 20-1/2 | 20-1/2 |
|                        |                    | 20-1/2 | 20-1/2 | 20-1/2 | 20-1/2 | 20-1/2 | 20-1/2 | 20-1/2 | 20-1/2 | 20-1/2 | 19-2/3 | 19-2/3 | 19-2/3 |
| 1750                   | Mech. Input HP     | 0.615  | 0.795  | 1.36   | 2.21   | 3.32   | 4.67   | 6.40   | 8.56   | 13.1   | 14.0   | 28.1   | 37.8   |
|                        | Out.Torq., in.lbs. | 5110   | 7010   | 12900  | 21400  | 32800  | 47100  | 65500  | 88400  | 139000 | 149000 | 300000 | 403000 |
|                        | Therm. Input HP    | 0.607  | 0.778  | 1.25   | 2.18   | 3.32   | 4.30   | 6.40   | 7.95   | 13.1   | 14.0   | 26.3   | 35.0   |
|                        | Output RPM         | 4.16   | 4.16   | 4.16   | 4.16   | 4.16   | 4.16   | 4.16   | 4.16   | 4.16   | 4.34   | 4.34   | 4.34   |
|                        | Efficiency%        | 54.8   | 58.2   | 62.6   | 63.9   | 65.3   | 66.6   | 67.6   | 68.2   | 70.1   | 73.3   | 73.5   | 73.4   |
| 1450                   | Mech. Input HP     | 0.516  | 0.672  | 1.15   | 1.85   | 2.78   | 3.98   | 5.38   | 7.17   | 11.0   | 12.8   | 25.7   | 34.2   |
|                        | Out.Torq., in.lbs. | 5140   | 7050   | 13000  | 21500  | 32800  | 47600  | 65800  | 88400  | 139000 | 162000 | 323000 | 430000 |
|                        | Therm. Input HP    | 0.506  | 0.654  | 1.12   | 1.81   | 2.78   | 3.88   | 5.35   | 6.85   | 11.0   | 12.8   | 24.1   | 31.7   |
|                        | Output RPM         | 3.45   | 3.45   | 3.45   | 3.45   | 3.45   | 3.45   | 3.45   | 3.45   | 3.45   | 3.60   | 3.60   | 3.60   |
|                        | Efficiency%        | 54.5   | 57.4   | 62.1   | 63.8   | 64.6   | 65.5   | 67.0   | 67.5   | 69.2   | 72.2   | 71.8   | 71.7   |
| 1150                   | Mech. Input HP     | 0.416  | 0.538  | 0.932  | 1.50   | 2.26   | 3.24   | 4.41   | 5.79   | 8.88   | 11.7   | 21.8   | 30.8   |
|                        | Out.Torq., in.lbs. | 5160   | 7090   | 13100  | 21700  | 33100  | 48200  | 66700  | 88700  | 141000 | 186000 | 348000 | 491000 |
|                        | Therm. Input HP    | 0.406  | 0.521  | 0.902  | 1.46   | 2.24   | 3.12   | 4.33   | 5.77   | 8.73   | 11.7   | 20.2   | 28.6   |
|                        | Output RPM         | 2.74   | 2.74   | 2.74   | 2.74   | 2.74   | 2.74   | 2.74   | 2.74   | 2.74   | 2.85   | 2.85   | 2.85   |
|                        | Efficiency%        | 53.9   | 57.2   | 61.1   | 62.7   | 63.6   | 64.6   | 65.7   | 66.5   | 69.1   | 71.9   | 72.1   | 72.2   |
| 865                    | Mech. Input HP     | 0.321  | 0.416  | 0.720  | 1.15   | 1.74   | 2.52   | 3.42   | 4.54   | 6.92   | 10.2   | 16.5   | 24.6   |
|                        | Out.Torq., in.lbs. | 5190   | 7130   | 13200  | 21900  | 33500  | 48700  | 67500  | 89900  | 144000 | 211000 | 355000 | 530000 |
|                        | Therm. Input HP    | 0.312  | 0.400  | 0.692  | 1.11   | 1.71   | 2.40   | 3.32   | 4.46   | 6.70   | 9.29   | 15.0   | 22.3   |
|                        | Output RPM         | 2.06   | 2.06   | 2.06   | 2.06   | 2.06   | 2.06   | 2.06   | 2.06   | 2.06   | 2.14   | 2.14   | 2.14   |
|                        | Efficiency %       | 52.8   | 56.0   | 59.9   | 62.1   | 62.6   | 63.1   | 64.4   | 64.7   | 67.8   | 70.7   | 73.1   | 73.3   |
| 575                    | Mech. Input HP     | 0.220  | 0.284  | 0.493  | 0.795  | 1.20   | 1.74   | 2.36   | 3.14   | 4.82   | 7.09   | 11.9   | 17.9   |
|                        | Out.Torq., in.lbs. | 5220   | 7170   | 13300  | 22100  | 33800  | 49200  | 68300  | 91200  | 146000 | 214000 | 362000 | 543000 |
|                        | Therm. Input HP    | 0.212  | 0.272  | 0.471  | 0.760  | 1.17   | 1.64   | 2.26   | 3.04   | 4.60   | 6.38   | 10.6   | 15.8   |
|                        | Output RPM         | 1.37   | 1.37   | 1.37   | 1.37   | 1.37   | 1.37   | 1.37   | 1.37   | 1.37   | 1.43   | 1.43   | 1.43   |
|                        | Efficiency%        | 51.6   | 54.7   | 58.5   | 60.3   | 60.8   | 61.4   | 62.9   | 63.1   | 65.6   | 68.4   | 68.7   | 68.7   |
| 300                    | Mech. Input HP     | 0.120  | 0.269  | 0.269  | 0.439  | 0.673  | 0.962  | 1.31   | 1.74   | 2.68   | 3.46   | 6.71   | 10.1   |
|                        | Out.Torq., in.lbs. | 5240   | 13400  | 13400  | 22200  | 34100  | 49800  | 69100  | 92400  | 148000 | 218000 | 370000 | 555000 |
|                        | Therm. Input HP    | 0.115  | 0.255  | 0.255  | 0.416  | 0.647  | 0.897  | 1.24   | 1.67   | 2.52   | 3.50   | 5.84   | 8.70   |
|                        | Output RPM         | 0.714  | 0.714  | 0.714  | 0.714  | 0.714  | 0.714  | 0.714  | 0.714  | 0.714  | 0.744  | 0.744  | 0.744  |
|                        | Efficiency %       | 49.3   | 52.5   | 56.4   | 57.4   | 71.4   | 58.6   | 59.8   | 60.0   | 62.5   | 65.1   | 65.1   | 65.1   |

Ratings based on 1.0 service factor. For A.G.M.A. recommended practice on service factors, see page 11.

# Horsepower and Torque Ratings • Double Worm

| WORM SPEED (RPM) | Unit Size          | 35     | 40     | 50     | 60     | 70     | 80     | 90     | 100    | 120    | 140    | 170    | 200    |
|------------------|--------------------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
|                  | Center Distance    | 3.5    | 4      | 5      | 6      | 7      | 8      | 9      | 10     | 12     | 14     | 17     | 20     |
|                  | Total Actual Ratio | 502.3  | 502.3  | 502.3  | 502.3  | 502.3  | 502.3  | 502.3  | 502.3  | 502.3  | 502.3  | 502.3  | 502.3  |
|                  | Ratio Combinations | 20-1/2 | 20-1/2 | 20-1/2 | 20-1/2 | 20-1/2 | 20-1/2 | 20-1/2 | 20-1/2 | 20-1/2 | 20-1/2 | 20-1/2 | 20-1/2 |
|                  |                    | 24-1/2 | 24-1/2 | 24-1/2 | 24-1/2 | 24-1/2 | 24-1/2 | 24-1/2 | 24-1/2 | 24-1/2 | 24-1/2 | 24-1/2 | 24-1/2 |
| 1750             | Mech. Input HP     | 0.561  | 0.677  | 1.17   | 1.87   | 2.81   | 3.95   | 5.48   | 7.24   | 11.5   | 14.0   | 27.4   | 37.8   |
|                  | Out.Torq., in.lbs. | 5190   | 6780   | 12700  | 20800  | 31900  | 46000  | 63700  | 85900  | 142000 | 173000 | 339000 | 467000 |
|                  | Therm. Input HP    | 0.555  | 0.668  | 1.16   | 1.84   | 2.81   | 3.95   | 5.48   | 7.24   | 10.5   | 14.0   | 26.3   | 35.0   |
|                  | Output RPM         | 3.48   | 3.48   | 3.48   | 3.48   | 3.48   | 3.48   | 3.48   | 3.48   | 3.48   | 3.48   | 3.48   | 3.48   |
|                  | Efficiency%        | 51.1   | 55.4   | 60.0   | 61.3   | 62.8   | 64.4   | 64.3   | 65.6   | 68.2   | 68.3   | 68.4   | 68.3   |
| 1450             | Mech. Input HP     | 0.470  | 0.567  | 0.988  | 1.57   | 2.39   | 3.34   | 4.67   | 5.97   | 9.57   | 12.8   | 23.4   | 34.0   |
|                  | Out.Torq., in.lbs. | 5220   | 6820   | 12800  | 20900  | 32200  | 46200  | 64100  | 85900  | 142000 | 190000 | 346000 | 504000 |
|                  | Therm. Input HP    | 0.462  | 0.556  | 0.976  | 1.53   | 2.37   | 3.32   | 4.64   | 5.97   | 9.57   | 12.8   | 2.22   | 31.7   |
|                  | Output RPM         | 2.89   | 2.89   | 2.89   | 2.89   | 2.89   | 2.89   | 2.89   | 2.89   | 2.89   | 2.89   | 2.89   | 2.89   |
|                  | Efficiency%        | 50.9   | 55.1   | 59.1   | 61.1   | 61.6   | 63.5   | 62.9   | 65.9   | 68.0   | 68.0   | 67.9   | 67.9   |
| 1150             | Mech. Input HP     | 0.380  | 0.457  | 0.800  | 1.27   | 1.94   | 2.71   | 3.82   | 4.85   | 7.66   | 11.3   | 18.9   | 27.6   |
|                  | Out.Torq., in.lbs. | 5250   | 6860   | 12800  | 21100  | 32500  | 46700  | 64900  | 86400  | 142000 | 211000 | 354000 | 516000 |
|                  | Therm. Input HP    | 0.371  | 0.446  | 0.785  | 1.23   | 1.90   | 2.67   | 3.75   | 4.82   | 7.63   | 10.6   | 17.6   | 25.7   |
|                  | Output RPM         | 2.29   | 2.29   | 2.29   | 2.29   | 2.29   | 2.29   | 2.29   | 2.29   | 2.29   | 2.29   | 2.29   | 2.29   |
|                  | Efficiency%        | 50.2   | 54.5   | 58.3   | 60.2   | 61.0   | 62.6   | 61.7   | 64.7   | 67.6   | 67.8   | 67.9   | 67.8   |
| 865              | Mech. Input HP     | 0.292  | 0.352  | 0.617  | 0.982  | 1.51   | 2.10   | 2.99   | 3.77   | 5.97   | 8.86   | 14.9   | 21.8   |
|                  | Out.Torq., in.lbs. | 5270   | 6890   | 12900  | 21300  | 32800  | 47200  | 65700  | 87600  | 145000 | 214000 | 361000 | 528000 |
|                  | Therm. Input HP    | 0.284  | 0.342  | 0.601  | 0.942  | 1.47   | 2.05   | 2.90   | 3.70   | 5.86   | 8.18   | 13.6   | 19.8   |
|                  | Output RPM         | 1.72   | 1.72   | 1.72   | 1.72   | 1.72   | 1.72   | 1.72   | 1.72   | 1.72   | 1.72   | 1.72   | 1.72   |
|                  | Efficiency %       | 49.4   | 53.4   | 57.3   | 59.2   | 59.3   | 61.3   | 60.0   | 63.4   | 66.2   | 66.1   | 66.1   | 66.2   |
| 575              | Mech. Input HP     | 0.200  | 0.240  | 0.423  | 0.677  | 1.06   | 1.46   | 2.06   | 2.62   | 4.14   | 6.15   | 10.4   | 15.2   |
|                  | Out.Torq., in.lbs. | 5300   | 6930   | 13000  | 21400  | 33100  | 47700  | 66400  | 88700  | 147000 | 218000 | 369000 | 540000 |
|                  | Therm. Input HP    | 0.193  | 0.232  | 0.410  | 0.644  | 1.02   | 1.41   | 1.98   | 2.54   | 4.00   | 5.58   | 9.30   | 13.5   |
|                  | Output RPM         | 1.14   | 1.14   | 1.14   | 1.14   | 1.14   | 1.14   | 1.14   | 1.14   | 1.14   | 1.14   | 1.14   | 1.14   |
|                  | Efficiency%        | 48.3   | 52.4   | 55.8   | 57.5   | 56.8   | 59.3   | 58.4   | 61.4   | 64.5   | 64.4   | 64.2   | 64.6   |
| 300              | Mech. Input HP     | 0.111  | 0.131  | 0.233  | 0.373  | 0.586  | 0.808  | 1.14   | 1.45   | 2.22   | 3.30   | 5.58   | 8.20   |
|                  | Out.Torq., in.lbs. | 5330   | 6960   | 13100  | 21600  | 33400  | 48200  | 67200  | 89800  | 149000 | 222000 | 376000 | 552000 |
|                  | Therm. Input HP    | 0.107  | 0.126  | 0.224  | 0.352  | 0.560  | 0.771  | 1.08   | 1.39   | 2.11   | 2.94   | 4.88   | 7.13   |
|                  | Output RPM         | 0.597  | 0.597  | 0.597  | 0.597  | 0.597  | 0.597  | 0.597  | 0.597  | 0.597  | 0.597  | 0.597  | 0.597  |
|                  | Efficiency %       | 45.4   | 50.3   | 53.3   | 54.9   | 54.0   | 59.7   | 55.9   | 58.6   | 63.8   | 63.8   | 63.9   | 63.8   |

Double Worm  
Speed Reducers

| WORM SPEED (RPM) | Unit Size          | 35     | 40     | 50     | 60     | 70     | 80     | 90     | 100    | 120    | 140    | 170    | 200    |
|------------------|--------------------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
|                  | Center Distance    | 3.5    | 4      | 5      | 6      | 7      | 8      | 9      | 10     | 12     | 14     | 17     | 20     |
|                  | Total Actual Ratio | 620.0  | 620.0  | 620.0  | 620.0  | 620.0  | 620.0  | 620.0  | 620.0  | 586.6  | 579.3  | 579.3  | 579.3  |
|                  | Ratio Combinations | 15-1/2 | 15-1/2 | 15-1/2 | 15-1/2 | 15-1/2 | 15-1/2 | 15-1/2 | 15-1/2 | 14-2/3 | 14-2/3 | 14-2/3 | 14-2/3 |
|                  |                    | 40     | 40     | 40     | 40     | 40     | 40     | 40     | 40     | 40     | 39-1/2 | 39-1/2 | 39-1/2 |
| 1750             | Mech. Input HP     | 0.559  | 0.650  | 1.09   | 1.68   | 2.46   | 3.44   | 4.83   | 6.30   | 10.2   | 15.6   | 25.2   | 38.4   |
|                  | Out.Torq., in.lbs. | 5190   | 6900   | 12500  | 20400  | 30800  | 44300  | 60700  | 83000  | 136000 | 190000 | 306000 | 465000 |
|                  | Therm. Input HP    | 0.545  | 0.647  | 1.07   | 1.68   | 2.42   | 3.44   | 4.58   | 6.30   | 10.2   | 15.6   | 25.0   | 30.0   |
|                  | Output RPM         | 2.82   | 2.82   | 2.82   | 2.82   | 2.82   | 2.82   | 2.82   | 2.82   | 2.98   | 3.02   | 3.02   | 3.02   |
|                  | Efficiency%        | 41.6   | 47.6   | 51.5   | 54.4   | 56.1   | 57.7   | 56.3   | 59.0   | 63.1   | 58.4   | 58.3   | 58.0   |
| 1450             | Mech. Input HP     | 0.451  | 0.547  | 0.913  | 1.42   | 2.08   | 2.92   | 4.14   | 5.35   | 8.73   | 12.2   | 19.9   | 30.4   |
|                  | Out.Torq., in.lbs. | 5230   | 6950   | 12600  | 20600  | 31100  | 44800  | 61600  | 84400  | 138000 | 193000 | 315000 | 478000 |
|                  | Therm. Input HP    | 0.446  | 0.544  | 0.898  | 1.41   | 2.08   | 2.92   | 3.92   | 5.35   | 8.73   | 12.2   | 19.7   | 28.0   |
|                  | Output RPM         | 2.34   | 2.34   | 2.34   | 2.34   | 2.34   | 2.34   | 2.34   | 2.34   | 2.47   | 2.50   | 2.50   | 2.50   |
|                  | Efficiency%        | 43.0   | 47.1   | 51.2   | 54.0   | 55.7   | 56.9   | 55.3   | 58.5   | 62.0   | 62.8   | 62.7   | 62.5   |
| 1150             | Mech. Input HP     | 0.365  | 0.444  | 0.747  | 1.15   | 1.69   | 2.36   | 3.39   | 4.36   | 7.02   | 9.85   | 16.4   | 25.2   |
|                  | Out.Torq., in.lbs. | 5270   | 7000   | 12700  | 20800  | 31500  | 44900  | 62600  | 84400  | 138000 | 194000 | 324000 | 494000 |
|                  | Therm. Input HP    | 0.358  | 0.438  | 0.728  | 1.15   | 1.67   | 2.35   | 3.16   | 4.36   | 7.02   | 9.81   | 15.8   | 24.3   |
|                  | Output RPM         | 1.85   | 1.85   | 1.85   | 1.85   | 1.85   | 1.85   | 1.85   | 1.85   | 1.96   | 1.98   | 1.98   | 1.98   |
|                  | Efficiency%        | 42.5   | 46.4   | 50.1   | 53.4   | 55.0   | 56.1   | 54.4   | 57.0   | 61.2   | 62.0   | 62.0   | 61.8   |
| 865              | Mech. Input HP     | 0.280  | 0.343  | 0.577  | 0.887  | 1.34   | 1.84   | 2.66   | 3.38   | 5.46   | 7.75   | 13.0   | 20.0   |
|                  | Out.Torq., in.lbs. | 5310   | 7050   | 12800  | 21000  | 31900  | 45500  | 63600  | 84900  | 140000 | 198000 | 332000 | 510000 |
|                  | Therm. Input HP    | 0.273  | 0.336  | 0.558  | 0.865  | 1.31   | 1.81   | 2.44   | 3.36   | 5.40   | 7.55   | 12.2   | 18.7   |
|                  | Output RPM         | 1.40   | 1.40   | 1.40   | 1.40   | 1.40   | 1.40   | 1.40   | 1.40   | 1.47   | 1.49   | 1.49   | 1.49   |
|                  | Efficiency %       | 41.9   | 45.5   | 49.2   | 52.5   | 52.7   | 54.8   | 53.0   | 55.6   | 60.0   | 60.6   | 60.4   | 60.4   |
| 575              | Mech. Input HP     | 0.192  | 0.236  | 0.399  | 0.613  | 0.928  | 1.28   | 1.83   | 2.37   | 3.82   | 5.43   | 9.16   | 14.1   |
|                  | Out.Torq., in.lbs. | 5350   | 7100   | 12900  | 21200  | 32300  | 46100  | 64500  | 86400  | 143000 | 202000 | 341000 | 526000 |
|                  | Therm. Input HP    | 0.186  | 0.230  | 0.382  | 0.592  | 0.897  | 1.24   | 1.66   | 2.32   | 3.70   | 5.18   | 8.35   | 12.8   |
|                  | Output RPM         | 0.927  | 0.927  | 0.927  | 0.927  | 0.927  | 0.927  | 0.927  | 0.927  | 0.980  | 0.992  | 0.992  | 0.992  |
|                  | Efficiency%        | 40.9   | 44.2   | 47.8   | 51.0   | 51.2   | 53.2   | 51.8   | 53.5   | 58.0   | 58.7   | 58.7   | 58.7   |
| 300              | Mech. Input HP     | 0.106  | 0.128  | 0.220  | 0.339  | 0.514  | 0.715  | 1.01   | 1.33   | 2.14   | 3.04   | 5.14   | 7.95   |
|                  | Out.Torq., in.lbs. | 5380   | 7150   | 13000  | 21400  | 32600  | 46700  | 65400  | 87700  | 146000 | 207000 | 350000 | 542000 |
|                  | Therm. Input HP    | 0.102  | 0.124  | 0.209  | 0.324  | 0.492  | 0.686  | 0.900  | 1.28   | 2.03   | 2.84   | 4.57   | 7.00   |
|                  | Output RPM         | 0.484  | 0.484  | 0.484  | 0.484  | 0.484  | 0.484  | 0.484  | 0.484  | 0.511  | 0.518  | 0.518  | 0.518  |
|                  | Efficiency %       | 38.9   | 42.8   | 45.6   | 48.6   | 48.7   | 50.1   | 49.8   | 50.6   | 55.2   | 55.8   | 55.9   | 56.0   |

# Horsepower and Torque Ratings • Double Worm

Double Worm  
Speed Reducers

| WORM<br>SPEED<br>(RPM) | Unit Size          | 35     | 40     | 50     | 60     | 70     | 80     | 90     | 100    | 120    | 140    | 170    | 200    |
|------------------------|--------------------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
|                        | Center Distance    | 3.5    | 4      | 5      | 6      | 7      | 8      | 9      | 10     | 12     | 14     | 17     | 20     |
|                        | Total Actual Ratio | 775.0  | 775.0  | 775.0  | 775.0  | 775.0  | 775.0  | 775.0  | 775.0  | 733.3  | 733.3  | 733.3  | 733.3  |
|                        | Ratio Combinations | 15-1/2 | 15-1/2 | 15-1/2 | 15-1/2 | 15-1/2 | 15-1/2 | 15-1/2 | 15-1/2 | 14-2/3 | 14-2/3 | 14-2/3 | 14-2/3 |
|                        |                    | 50     | 50     | 50     | 50     | 50     | 50     | 50     | 50     | 50     | 50     | 50     | 50     |
| 1750                   | Mech. Input HP     | 0.451  | 0.519  | 0.898  | 1.40   | 2.08   | 2.87   | 3.90   | 5.12   | 8.57   | 12.6   | 20.8   | 31.4   |
|                        | Out.Torq., in.lbs. | 4880   | 6280   | 11900  | 19600  | 29800  | 42800  | 59600  | 80000  | 131000 | 186000 | 307000 | 464000 |
|                        | Therm. Input HP    | 0.444  | 0.519  | 0.877  | 1.37   | 2.01   | 2.87   | 3.90   | 4.80   | 8.40   | 11.7   | 19.4   | 25.0   |
|                        | Output RPM         | 2.26   | 2.26   | 2.26   | 2.26   | 2.26   | 2.26   | 2.26   | 2.26   | 2.39   | 2.39   | 2.39   | 2.39   |
|                        | Efficiency%        | 38.8   | 43.4   | 47.4   | 50.0   | 51.2   | 53.4   | 54.8   | 56.0   | 55.9   | 55.2   | 56.0   | 55.9   |
| 1450                   | Mech. Input HP     | 0.380  | 0.435  | 0.758  | 1.20   | 1.77   | 2.44   | 3.35   | 4.37   | 7.35   | 10.8   | 18.0   | 27.4   |
|                        | Out.Torq., in.lbs. | 4920   | 6300   | 12000  | 19800  | 30100  | 43200  | 60800  | 80900  | 133000 | 191000 | 316000 | 480000 |
|                        | Therm. Input HP    | 0.372  | 0.435  | 0.740  | 1.16   | 1.76   | 2.43   | 3.35   | 4.37   | 7.16   | 10.0   | 16.7   | 23.0   |
|                        | Output RPM         | 1.87   | 1.87   | 1.87   | 1.87   | 1.87   | 1.87   | 1.87   | 1.87   | 1.98   | 1.98   | 1.98   | 1.98   |
|                        | Efficiency%        | 38.5   | 43.0   | 46.9   | 49.1   | 50.6   | 52.6   | 53.9   | 55.0   | 55.1   | 55.2   | 55.1   | 55.0   |
| 1150                   | Mech. Input HP     | 0.305  | 0.349  | 0.612  | 0.968  | 1.43   | 1.99   | 2.67   | 3.52   | 7.35   | 8.80   | 14.6   | 22.3   |
|                        | Out.Torq., in.lbs. | 4950   | 6300   | 12100  | 20000  | 30500  | 43800  | 60800  | 80900  | 133000 | 195000 | 326000 | 497000 |
|                        | Therm. Input HP    | 0.297  | 0.348  | 0.592  | 0.930  | 1.41   | 1.96   | 2.67   | 3.52   | 5.67   | 7.93   | 13.2   | 19.3   |
|                        | Output RPM         | 1.48   | 1.48   | 1.48   | 1.48   | 1.48   | 1.48   | 1.48   | 1.48   | 1.57   | 1.57   | 1.57   | 1.57   |
|                        | Efficiency%        | 38.2   | 42.6   | 46.5   | 48.6   | 50.1   | 51.8   | 53.6   | 54.1   | 55.2   | 55.2   | 55.3   | 55.4   |
| 865                    | Mech. Input HP     | 0.235  | 0.271  | 0.474  | 0.753  | 1.12   | 1.56   | 2.10   | 2.77   | 4.76   | 7.06   | 14.6   | 18.0   |
|                        | Out.Torq., in.lbs. | 4980   | 6360   | 12200  | 20200  | 30900  | 44400  | 61500  | 82300  | 135000 | 200000 | 326000 | 514000 |
|                        | Therm. Input HP    | 0.227  | 0.269  | 0.455  | 0.716  | 1.09   | 1.51   | 2.08   | 2.72   | 4.44   | 6.22   | 13.2   | 15.1   |
|                        | Output RPM         | 1.12   | 1.12   | 1.12   | 1.12   | 1.12   | 1.12   | 1.12   | 1.12   | 1.18   | 1.18   | 1.18   | 1.18   |
|                        | Efficiency %       | 37.6   | 41.5   | 45.5   | 47.5   | 48.7   | 50.5   | 51.8   | 52.7   | 53.0   | 53.0   | 53.3   | 53.2   |
| 575                    | Mech. Input HP     | 0.159  | 0.186  | 0.327  | 0.522  | 0.780  | 1.09   | 1.46   | 1.91   | 3.35   | 4.97   | 8.40   | 13.0   |
|                        | Out.Torq., in.lbs. | 5020   | 6400   | 12300  | 20400  | 31200  | 45000  | 62400  | 83600  | 138000 | 204000 | 344000 | 531000 |
|                        | Therm. Input HP    | 0.153  | 0.183  | 0.311  | 0.491  | 0.750  | 1.04   | 1.42   | 1.85   | 3.06   | 4.28   | 7.15   | 10.5   |
|                        | Output RPM         | 0.742  | 0.742  | 0.742  | 0.742  | 0.742  | 0.742  | 0.742  | 0.742  | 0.784  | 0.784  | 0.784  | 0.784  |
|                        | Efficiency%        | 37.1   | 40.5   | 44.3   | 46.0   | 47.1   | 48.8   | 50.4   | 51.5   | 51.2   | 51.2   | 51.0   | 50.9   |
| 300                    | Mech. Input HP     | 0.088  | 0.102  | 0.181  | 0.289  | 0.427  | 0.605  | 0.817  | 1.08   | 1.87   | 2.79   | 4.73   | 7.34   |
|                        | Out.Torq., in.lbs. | 5050   | 6440   | 12400  | 20600  | 31600  | 45600  | 63300  | 85000  | 140000 | 209000 | 354000 | 548000 |
|                        | Therm. Input HP    | 0.084  | 0.099  | 0.171  | 0.270  | 0.406  | 0.572  | 0.785  | 1.03   | 1.68   | 2.35   | 3.92   | 5.75   |
|                        | Output RPM         | 0.387  | 0.387  | 0.387  | 0.387  | 0.387  | 0.387  | 0.387  | 0.387  | 0.409  | 0.409  | 0.409  | 0.409  |
|                        | Efficiency %       | 35.0   | 38.9   | 42.0   | 43.7   | 45.4   | 46.3   | 47.6   | 48.2   | 48.6   | 48.6   | 48.6   | 48.5   |

| WORM<br>SPEED<br>(RPM) | Unit Size          | 35    | 40    | 50     | 60     | 70     | 80     | 90     | 100    | 120    | 140    | 170    | 200    |
|------------------------|--------------------|-------|-------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
|                        | Center Distance    | 3.5   | 4     | 5      | 6      | 7      | 8      | 9      | 10     | 12     | 14     | 17     | 20     |
|                        | Total Actual Ratio | 900.0 | 900.0 | 885.0  | 885.0  | 885.0  | 885.0  | 870.0  | 870.0  | 870.0  | 870.0  | 870.0  | 870.0  |
|                        | Ratio Combinations | 30    | 30    | 30     | 30     | 30     | 30     | 29-1/2 | 29-1/2 | 29-1/2 | 29-1/2 | 29-1/2 | 29-1/2 |
|                        |                    | 30    | 30    | 29-1/2 | 29-1/2 | 29-1/2 | 29-1/2 | 29-1/2 | 29-1/2 | 29-1/2 | 29-1/2 | 29-1/2 | 29-1/2 |
| 1750                   | Mech. Input HP     | 0.413 | 0.509 | 0.794  | 1.24   | 1.77   | 2.43   | 3.41   | 4.40   | 7.13   | 11.2   | 18.9   | 26.5   |
|                        | Out.Torq., in.lbs. | 5500  | 7460  | 12800  | 21300  | 30900  | 44200  | 61700  | 82600  | 136000 | 208000 | 348000 | 488000 |
|                        | Therm. Input HP    | 0.403 | 0.494 | 0.779  | 1.21   | 1.75   | 2.43   | 3.34   | 4.35   | 7.06   | 10.2   | 17.4   | 24.6   |
|                        | Output RPM         | 1.94  | 1.94  | 1.98   | 1.98   | 1.98   | 1.98   | 2.01   | 2.01   | 2.01   | 2.01   | 2.01   | 2.01   |
|                        | Efficiency%        | 41.1  | 45.2  | 50.8   | 53.9   | 54.9   | 57.1   | 57.7   | 59.9   | 60.9   | 58.8   | 58.8   | 58.8   |
| 1450                   | Mech. Input HP     | 0.344 | 0.425 | 0.666  | 1.06   | 1.48   | 2.04   | 2.89   | 3.68   | 6.12   | 9.36   | 15.8   | 23.6   |
|                        | Out.Torq., in.lbs. | 5520  | 7490  | 12900  | 21400  | 31100  | 44200  | 62200  | 83300  | 137000 | 210000 | 354000 | 528000 |
|                        | Therm. Input HP    | 0.334 | 0.411 | 0.650  | 1.03   | 1.46   | 2.08   | 2.81   | 3.61   | 6.00   | 8.36   | 14.3   | 21.3   |
|                        | Output RPM         | 1.61  | 1.61  | 1.64   | 1.64   | 1.64   | 1.64   | 1.67   | 1.67   | 1.67   | 1.67   | 1.67   | 1.67   |
|                        | Efficiency%        | 41.1  | 45.0  | 50.4   | 52.5   | 54.5   | 56.3   | 56.8   | 59.8   | 59.4   | 59.4   | 59.3   | 59.1   |
| 1150                   | Mech. Input HP     | 0.287 | 0.342 | 0.538  | 0.857  | 1.21   | 1.64   | 2.34   | 2.99   | 4.89   | 7.34   | 12.3   | 18.4   |
|                        | Out.Torq., in.lbs. | 5550  | 7520  | 13000  | 21600  | 31300  | 44200  | 62700  | 84000  | 139000 | 213000 | 359000 | 536000 |
|                        | Therm. Input HP    | 0.278 | 0.329 | 0.523  | 0.827  | 0.914  | 1.64   | 2.25   | 2.90   | 4.74   | 6.47   | 11.0   | 16.3   |
|                        | Output RPM         | 1.28  | 1.28  | 1.30   | 1.30   | 1.30   | 1.30   | 1.32   | 1.32   | 1.32   | 1.32   | 1.32   | 1.32   |
|                        | Efficiency%        | 39.2  | 44.6  | 49.7   | 51.9   | 53.5   | 55.6   | 56.2   | 59.0   | 59.6   | 60.9   | 61.1   | 61.2   |
| 865                    | Mech. Input HP     | 0.209 | 0.261 | 0.415  | 0.665  | 0.940  | 1.26   | 1.81   | 2.34   | 3.79   | 5.82   | 9.82   | 14.6   |
|                        | Out.Torq., in.lbs. | 5570  | 7550  | 13000  | 21700  | 31500  | 44200  | 63100  | 84700  | 140000 | 215000 | 364000 | 545000 |
|                        | Therm. Input HP    | 0.202 | 0.250 | 0.402  | 0.638  | 0.914  | 1.26   | 1.73   | 2.25   | 3.64   | 5.07   | 8.65   | 12.8   |
|                        | Output RPM         | 0.961 | 0.961 | 0.977  | 0.977  | 0.977  | 0.977  | 0.994  | 0.994  | 0.994  | 0.994  | 0.994  | 0.994  |
|                        | Efficiency %       | 40.5  | 44.2  | 48.6   | 50.6   | 51.9   | 54.4   | 55.0   | 57.2   | 58.4   | 58.4   | 58.4   | 58.6   |
| 575                    | Mech. Input HP     | 0.144 | 0.179 | 0.287  | 0.462  | 0.652  | 1.26   | 1.24   | 1.61   | 2.65   | 4.09   | 6.92   | 10.4   |
|                        | Out.Torq., in.lbs. | 5590  | 7580  | 13100  | 21800  | 31600  | 44200  | 63600  | 85400  | 142000 | 218000 | 369000 | 554000 |
|                        | Therm. Input HP    | 0.138 | 0.171 | 0.277  | 0.441  | 0.630  | 0.872  | 1.18   | 1.54   | 2.52   | 3.52   | 6.01   | 8.97   |
|                        | Output RPM         | 0.639 | 0.639 | 0.650  | 0.650  | 0.650  | 0.650  | 0.661  | 0.661  | 0.661  | 0.661  | 0.661  | 0.661  |
|                        | Efficiency%        | 39.4  | 42.9  | 46.9   | 48.6   | 50.1   | 52.3   | 53.6   | 55.6   | 56.0   | 55.9   | 55.9   | 55.6   |
| 300                    | Mech. Input HP     | 0.079 | 0.098 | 0.162  | 0.257  | 0.364  | 0.484  | 0.687  | 0.897  | 1.48   | 2.28   | 3.85   | 5.79   |
|                        | Out.Torq., in.lbs. | 5610  | 7610  | 3100   | 21900  | 31800  | 44200  | 64100  | 86100  | 143000 | 220000 | 374000 | 562000 |
|                        | Therm. Input HP    | 0.075 | 0.093 | 0.155  | 0.244  | 0.350  | 0.484  | 0.647  | .850   | 1.39   | 1.94   | 3.30   | 4.90   |
|                        | Output RPM         | 0.333 | 0.333 | 0.339  | 0.339  | 0.339  | 0.339  | 0.345  | 0.345  | 0.345  | 0.345  | 0.345  | 0.345  |
|                        | Efficiency %       | 37.5  | 41.0  | 43.7   | 45.8   | 47.0   | 49.1   | 51.0   | 52.5   | 53.0   | 53.0   | 53.1   | 53.1   |

Ratings based on 1.0 service factor. For A.G.M.A. recommended practice on service factors, see page 11.

# Horsepower and Torque Ratings • Double Worm

| WORM<br>SPEED<br>(RPM) | Unit Size          | 35           | 40           | 50           | 60           | 70           | 80           | 90           | 100          | 120          | 140          | 170          | 200          |
|------------------------|--------------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|
|                        | Center Distance    | 3.5          | 4            | 5            | 6            | 7            | 8            | 9            | 10           | 12           | 14           | 17           | 20           |
|                        | Total Actual Ratio | 1025         | 1025         | 1025         | 1025         | 1025         | 1025         | 1025         | 1025         | 1025         | 1025         | 1025         | 1025         |
|                        | Ratio Combinations | 20-1/2<br>50 | 20-1/2<br>50 | 20-1/2<br>50 | 20-1/2<br>50 | 20-1/2<br>50 | 20-1/2<br>50 | 20-1/2<br>50 | 20-1/2<br>50 | 20-1/2<br>50 | 20-1/2<br>50 | 20-1/2<br>50 | 20-1/2<br>50 |
| 1750                   | Mech. Input HP     | 0.372        | 0.422        | 0.728        | 1.13         | 1.68         | 2.34         | 3.84         | 4.15         | 6.46         | 9.41         | 15.6         | 23.8         |
|                        | Out.Torq., in.lbs. | 4930         | 6300         | 12000        | 19900        | 30300        | 43500        | 58800        | 80900        | 133000       | 194000       | 322000       | 491000       |
|                        | Therm. Input HP    | 0.364        | 0.422        | 0.708        | 1.09         | 1.66         | 2.32         | 3.22         | 4.15         | 6.46         | 9.04         | 15.0         | 22.0         |
|                        | Output RPM         | 1.71         | 1.71         | 1.71         | 1.71         | 1.71         | 1.71         | 1.71         | 1.71         | 1.71         | 1.71         | 1.71         | 1.71         |
|                        | Efficiency%        | 35.9         | 40.4         | 44.8         | 47.7         | 49.0         | 50.3         | 54.8         | 52.8         | 55.8         | 55.7         | 56.0         | 55.9         |
| 1450                   | Mech. Input HP     | 0.306        | 0.353        | 0.610        | 0.954        | 1.42         | 1.99         | 3.29         | 3.51         | 5.44         | 8.06         | 13.5         | 20.6         |
|                        | Out.Torq., in.lbs. | 4960         | 6320         | 12100        | 20000        | 30600        | 44000        | 59700        | 81200        | 133000       | 197000       | 329000       | 503000       |
|                        | Therm. Input HP    | 0.297        | 0.352        | 0.589        | 0.915        | 1.39         | 1.95         | 2.71         | 3.50         | 5.44         | 7.61         | 12.7         | 18.6         |
|                        | Output RPM         | 1.41         | 1.41         | 1.41         | 1.41         | 1.41         | 1.41         | 1.41         | 1.41         | 1.41         | 1.41         | 1.41         | 1.41         |
|                        | Efficiency%        | 36.4         | 40.2         | 44.6         | 47.1         | 48.4         | 49.6         | 53.9         | 51.9         | 54.9         | 54.9         | 54.8         | 54.8         |
| 1150                   | Mech. Input HP     | 0.245        | 0.284        | 0.494        | 0.778        | 1.16         | 1.62         | 2.66         | 2.89         | 4.35         | 6.47         | 10.8         | 16.6         |
|                        | Out.Torq., in.lbs. | 4980         | 6360         | 12100        | 20200        | 30800        | 44400        | 60600        | 82200        | 135000       | 200000       | 336000       | 516000       |
|                        | Therm. Input HP    | 0.237        | 0.281        | 0.474        | 0.740        | 1.13         | 1.57         | 2.18         | 2.84         | 3.38         | 6.00         | 10.0         | 14.6         |
|                        | Output RPM         | 1.12         | 1.12         | 1.12         | 1.12         | 1.12         | 1.12         | 1.12         | 1.12         | 1.12         | 1.12         | 1.12         | 1.12         |
|                        | Efficiency%        | 36.2         | 39.9         | 43.9         | 46.2         | 47.3         | 48.9         | 53.6         | 50.7         | 55.3         | 55.2         | 55.2         | 55.4         |
| 865                    | Mech. Input HP     | 0.187        | 0.217        | 0.377        | 0.598        | 0.909        | 1.27         | 2.10         | 2.25         | 3.49         | 5.17         | 8.70         | 13.4         |
|                        | Out.Torq., in.lbs. | 5010         | 6390         | 12300        | 20300        | 31100        | 44900        | 61500        | 83300        | 137000       | 204000       | 343000       | 528000       |
|                        | Therm. Input HP    | 0.180        | 0.214        | 0.360        | 0.565        | 0.876        | 1.22         | 1.69         | 2.19         | 3.38         | 4.72         | 7.86         | 11.5         |
|                        | Output RPM         | 0.844        | 0.844        | 0.844        | 0.844        | 0.844        | 0.844        | 0.844        | 0.844        | 0.844        | 0.844        | 0.844        | 0.844        |
|                        | Efficiency %       | 35.9         | 39.4         | 43.5         | 45.5         | 45.9         | 47.3         | 51.8         | 49.5         | 52.7         | 52.8         | 52.8         | 52.9         |
| 575                    | Mech. Input HP     | 0.128        | 0.148        | 0.260        | 0.413        | 0.638        | 0.878        | 1.46         | 1.57         | 2.45         | 3.64         | 6.16         | 9.53         |
|                        | Out.Torq., in.lbs. | 5040         | 6420         | 12300        | 20500        | 31400        | 45300        | 62400        | 84300        | 139000       | 207000       | 350000       | 541000       |
|                        | Therm. Input HP    | 0.122        | 0.145        | 0.246        | 0.387        | 0.610        | 0.835        | 1.16         | 1.51         | 2.34         | 3.27         | 5.46         | 8.00         |
|                        | Output RPM         | 0.561        | 0.561        | 0.561        | 0.561        | 0.561        | 0.561        | 0.561        | 0.561        | 0.561        | 0.561        | 0.561        | 0.561        |
|                        | Efficiency%        | 35.2         | 38.7         | 42.3         | 44.2         | 43.8         | 45.9         | 50.4         | 47.7         | 50.6         | 50.6         | 50.5         | 50.5         |
| 300                    | Mech. Input HP     | 0.069        | 0.080        | 0.142        | 0.227        | 0.364        | 0.491        | 0.817        | 0.875        | 1.38         | 2.06         | 3.49         | 5.46         |
|                        | Out.Torq., in.lbs. | 5060         | 6450         | 12400        | 20600        | 31700        | 45700        | 63300        | 85300        | 141000       | 211000       | 357000       | 553000       |
|                        | Therm. Input HP    | 0.066        | 0.078        | 0.134        | 0.211        | 0.345        | 0.463        | 0.652        | 0.830        | 1.30         | 1.82         | 3.03         | 4.48         |
|                        | Output RPM         | 0.293        | 0.293        | 0.293        | 0.293        | 0.293        | 0.293        | 0.293        | 0.293        | 0.293        | 0.293        | 0.293        | 0.293        |
|                        | Efficiency %       | 33.7         | 37.2         | 40.6         | 42.3         | 40.4         | 43.2         | 47.6         | 45.3         | 47.5         | 47.4         | 47.5         | 47.1         |

Double Worm  
Speed Reducers

| WORM<br>SPEED<br>(RPM) | Unit Size          | 35       | 40       | 50       | 60       | 70       | 80       | 90           | 100          | 120          | 140              | 170              | 200              |
|------------------------|--------------------|----------|----------|----------|----------|----------|----------|--------------|--------------|--------------|------------------|------------------|------------------|
|                        | Center Distance    | 3.5      | 4        | 5        | 6        | 7        | 8        | 9            | 10           | 12           | 14               | 17               | 20               |
|                        | Total Actual Ratio | 1200     | 1200     | 1200     | 1200     | 1200     | 1200     | 1180         | 1180         | 1180         | 1165             | 1165             | 1165             |
|                        | Ratio Combinations | 30<br>40 | 30<br>40 | 30<br>40 | 30<br>40 | 30<br>40 | 30<br>40 | 29-1/2<br>40 | 29-1/2<br>40 | 29-1/2<br>40 | 29-1/2<br>39-1/2 | 29-1/2<br>39-1/2 | 29-1/2<br>39-1/2 |
| 1750                   | Mech. Input HP     | 0.343    | 0.407    | 0.666    | 1.02     | 1.50     | 2.09     | 2.78         | 3.69         | 5.95         | 8.44             | 14.2             | 21.8             |
|                        | Out.Torq., in.lbs. | 5300     | 7050     | 12800    | 21000    | 31800    | 45400    | 63400        | 84600        | 140000       | 198000           | 332000           | 509000           |
|                        | Therm. Input HP    | 0.334    | 0.399    | 0.645    | 1.00     | 1.47     | 2.06     | 2.56         | 3.68         | 5.88         | 8.23             | 13.3             | 20.4             |
|                        | Output RPM         | 1.46     | 1.46     | 1.46     | 1.46     | 1.46     | 1.46     | 1.48         | 1.48         | 1.48         | 1.50             | 1.50             | 1.50             |
|                        | Efficiency%        | 35.8     | 40.1     | 44.5     | 47.4     | 49.1     | 50.3     | 53.7         | 54.0         | 55.2         | 55.9             | 55.7             | 55.7             |
| 1450                   | Mech. Input HP     | 0.287    | 0.341    | 0.561    | 0.870    | 1.26     | 1.78     | 2.34         | 3.10         | 4.98         | 7.06             | 11.9             | 18.3             |
|                        | Out.Torq., in.lbs. | 5330     | 7070     | 12900    | 21100    | 32000    | 45800    | 63900        | 85400        | 141000       | 200000           | 337000           | 518000           |
|                        | Therm. Input HP    | 0.279    | 0.333    | 0.540    | 0.845    | 0.998    | 1.74     | 2.14         | 3.06         | 4.87         | 6.81             | 11.0             | 16.9             |
|                        | Output RPM         | 1.21     | 1.21     | 1.21     | 1.21     | 0.958    | 0.958    | 1.23         | 1.23         | 1.23         | 1.24             | 1.24             | 1.24             |
|                        | Efficiency%        | 35.5     | 39.8     | 44.0     | 46.5     | 48.6     | 49.4     | 53.2         | 53.8         | 55.2         | 56.0             | 55.8             | 55.7             |
| 1150                   | Mech. Input HP     | 0.228    | 0.272    | 0.453    | 0.706    | 1.03     | 1.45     | 1.91         | 2.49         | 4.05         | 5.73             | 9.68             | 14.9             |
|                        | Out.Torq., in.lbs. | 5340     | 7100     | 12900    | 21200    | 32200    | 46100    | 64400        | 86200        | 143000       | 202000           | 342000           | 526000           |
|                        | Therm. Input HP    | 0.221    | 0.265    | 0.434    | 0.682    | 0.998    | 1.41     | 1.73         | 2.44         | 3.92         | 5.46             | 8.82             | 13.5             |
|                        | Output RPM         | 0.958    | 0.958    | 0.958    | 0.958    | 0.958    | 0.958    | 0.974        | 0.974        | 0.974        | 0.987            | 0.987            | 0.987            |
|                        | Efficiency%        | 35.6     | 39.6     | 43.4     | 45.7     | 47.5     | 48.3     | 52.2         | 53.5         | 54.4         | 55.4             | 55.2             | 55.3             |
| 865                    | Mech. Input HP     | 0.175    | 0.208    | 0.352    | 0.548    | 0.804    | 1.12     | 1.49         | 1.93         | 3.18         | 4.50             | 7.62             | 11.8             |
|                        | Out.Torq., in.lbs. | 5360     | 7130     | 13000    | 21300    | 32400    | 46400    | 64900        | 87000        | 144000       | 205000           | 346000           | 534000           |
|                        | Therm. Input HP    | 0.169    | 0.202    | 0.336    | 0.527    | 0.773    | 1.08     | 1.34         | 1.87         | 3.04         | 4.24             | 6.85             | 10.5             |
|                        | Output RPM         | 0.721    | 0.721    | 0.721    | 0.721    | 0.721    | 0.721    | 0.733        | 0.733        | 0.733        | 0.742            | 0.742            | 0.742            |
|                        | Efficiency %       | 35.0     | 39.1     | 42.2     | 44.5     | 46.2     | 47.4     | 50.7         | 53.5         | 52.8         | 53.6             | 53.5             | 53.5             |
| 575                    | Mech. Input HP     | 0.120    | 0.143    | 0.244    | 0.389    | 0.560    | 0.774    | 1.03         | 1.34         | 2.21         | 3.13             | 5.32             | 8.22             |
|                        | Out.Torq., in.lbs. | 5390     | 7150     | 13000    | 21400    | 32600    | 46700    | 65400        | 87700        | 146000       | 207000           | 351000           | 543000           |
|                        | Therm. Input HP    | 0.115    | 0.138    | 0.232    | 0.372    | 0.535    | 0.742    | 0.917        | 1.29         | 2.09         | 2.92             | 4.72             | 7.23             |
|                        | Output RPM         | 0.479    | 0.479    | 0.479    | 0.479    | 0.479    | 0.479    | 0.487        | 0.487        | 0.487        | 0.493            | 0.493            | 0.493            |
|                        | Efficiency%        | 34.2     | 38.1     | 40.6     | 41.9     | 44.3     | 45.9     | 49.2         | 50.6         | 51.0         | 51.8             | 51.6             | 51.7             |
| 300                    | Mech. Input HP     | 0.0660   | 0.078    | 0.136    | 0.211    | 0.314    | 0.433    | 0.572        | 0.743        | 1.24         | 1.74             | 2.97             | 4.61             |
|                        | Out.Torq., in.lbs. | 5400     | 7180     | 13100    | 21500    | 32800    | 47000    | 65900        | 88400        | 147000       | 209000           | 355000           | 551000           |
|                        | Therm. Input HP    | 0.063    | 0.075    | 0.129    | 0.201    | 0.299    | 0.413    | 0.507        | 0.736        | 1.16         | 1.61             | 2.60             | 3.99             |
|                        | Output RPM         | 0.250    | 0.250    | 0.250    | 0.250    | 0.250    | 0.250    | 0.254        | 0.254        | 0.254        | 0.257            | 0.257            | 0.257            |
|                        | Efficiency %       | 32.5     | 36.3     | 38.1     | 40.4     | 41.4     | 43.0     | 46.5         | 48.0         | 48.0         | 49.0             | 48.9             | 48.8             |

Ratings based on 1.0 service factor. For A.G.M.A. recommended practice on service factors, see page 11.



# Horsepower and Torque Ratings • Double Worm

Double Worm  
Speed Reducers

| WORM<br>SPEED<br>(RPM) | Unit Size<br>Center Distance | 35                 | 40       | 50       | 60       | 70           | 80           | 90           | 100          | 120          | 140          | 170          | 200          |
|------------------------|------------------------------|--------------------|----------|----------|----------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|
|                        |                              | 3.5                | 4        | 5        | 6        | 7            | 8            | 9            | 10           | 12           | 14           | 17           | 20           |
|                        |                              | Total Actual Ratio | 1500     | 1500     | 1500     | 1470         | 1470         | 1470         | 1470         | 1470         | 1470         | 1470         | 1470         |
|                        |                              | Ratio Combinations | 25<br>60 | 25<br>60 | 25<br>60 | 24-1/2<br>60 | 24-1/2<br>60 | 24-1/2<br>60 | 24-1/2<br>60 | 24-1/2<br>60 | 24-1/2<br>60 | 24-1/2<br>60 | 24-1/2<br>60 |
| 1750                   | Mech. Input HP               | 0.291              | 0.321    | 0.534    | 0.814    | 1.20         | 1.67         | 2.29         | 3.00         | 4.67         | 7.00         | 11.6         | 17.2         |
|                        | Out.Torq., in.lbs.           | 4670               | 5860     | 10900    | 18100    | 27600        | 40000        | 55300        | 74100        | 122000       | 185000       | 309000       | 460000       |
|                        | Therm. Input HP              | 0.283              | 0.307    | 0.493    | 0.793    | 1.19         | 1.67         | 2.27         | 3.00         | 4.67         | 6.66         | 11.0         | 16.3         |
|                        | Output RPM                   | 1.17               | 1.17     | 1.17     | 1.19     | 1.19         | 1.19         | 1.19         | 1.19         | 1.19         | 1.19         | 1.19         | 1.19         |
|                        | Efficiency%                  | 29.7               | 33.8     | 37.9     | 41.9     | 43.5         | 45.2         | 45.6         | 46.7         | 49.3         | 49.9         | 50.3         | 50.4         |
| 1450                   | Mech. Input HP               | 0.243              | 0.267    | 0.446    | 0.684    | 1.01         | 1.42         | 1.92         | 2.52         | 3.84         | 5.90         | 9.72         | 14.4         |
|                        | Out.Torq., in.lbs.           | 4690               | 5880     | 11000    | 18200    | 27800        | 40300        | 55800        | 74600        | 122000       | 188000       | 315000       | 496000       |
|                        | Therm. Input HP              | 0.235              | 0.254    | 0.410    | 0.662    | 0.994        | 1.41         | 1.89         | 2.50         | 3.84         | 5.54         | 9.05         | 13.4         |
|                        | Output RPM                   | 0.967              | 0.967    | 0.967    | 0.986    | 0.986        | 0.986        | 0.986        | 0.986        | 0.986        | 0.986        | 0.986        | 0.986        |
|                        | Efficiency%                  | 29.6               | 33.8     | 37.8     | 41.6     | 43.1         | 44.4         | 45.4         | 46.4         | 49.7         | 49.7         | 50.7         | 50.8         |
| 1150                   | Mech. Input HP               | 0.193              | 0.213    | 0.360    | 0.552    | 0.815        | 1.15         | 1.59         | 2.05         | 3.08         | 4.80         | 8.05         | 12.0         |
|                        | Out.Torq., in.lbs.           | 4710               | 5900     | 11000    | 18300    | 28000        | 40700        | 56300        | 75400        | 122000       | 190000       | 320000       | 478000       |
|                        | Therm. Input HP              | 0.186              | 0.202    | 0.329    | 0.531    | 0.797        | 1.13         | 1.55         | 2.02         | 3.08         | 4.44         | 7.37         | 10.9         |
|                        | Output RPM                   | 0.767              | 0.767    | 0.767    | 0.782    | 0.782        | 0.782        | 0.782        | 0.782        | 0.782        | 0.782        | 0.782        | 0.782        |
|                        | Efficiency%                  | 29.7               | 33.7     | 37.3     | 41.1     | 42.7         | 42.7         | 43.9         | 45.5         | 49.2         | 49.2         | 49.4         | 49.5         |
| 865                    | Mech. Input HP               | 0.147              | 0.163    | 0.277    | 0.426    | 0.631        | 0.897        | 1.24         | 1.60         | 2.38         | 3.72         | 6.27         | 9.35         |
|                        | Out.Torq., in.lbs.           | 4730               | 5920     | 11100    | 18400    | 28200        | 41000        | 56800        | 76100        | 122000       | 193000       | 325000       | 487000       |
|                        | Therm. Input HP              | 0.141              | 0.154    | 0.252    | 0.408    | 0.613        | 0.876        | 1.20         | 1.56         | 2.38         | 3.40         | 5.65         | 8.35         |
|                        | Output RPM                   | 0.577              | 0.577    | 0.577    | 0.588    | 0.588        | 0.588        | 0.588        | 0.588        | 0.588        | 0.588        | 0.588        | 0.588        |
|                        | Efficiency %                 | 29.5               | 33.3     | 36.7     | 40.3     | 41.7         | 42.6         | 42.6         | 44.4         | 47.9         | 48.3         | 48.4         | 48.6         |
| 575                    | Mech. Input HP               | 0.101              | 0.110    | 0.191    | 0.294    | 0.440        | 0.622        | 0.884        | 1.11         | 1.65         | 2.64         | 4.27         | 6.39         |
|                        | Out.Torq., in.lbs.           | 4750               | 5950     | 11100    | 18500    | 28400        | 41300        | 57300        | 76800        | 122000       | 195000       | 331000       | 496000       |
|                        | Therm. Input HP              | 0.096              | 0.104    | 0.173    | 0.280    | 0.424        | 0.603        | 0.845        | 1.02         | 1.65         | 2.38         | 3.78         | 5.60         |
|                        | Output RPM                   | 0.383              | 0.383    | 0.383    | 0.391    | 0.391        | 0.391        | 0.391        | 0.391        | 0.391        | 0.391        | 0.391        | 0.391        |
|                        | Efficiency%                  | 28.6               | 32.8     | 35.5     | 39.0     | 40.1         | 41.2         | 40.2         | 43.0         | 45.9         | 45.9         | 48.1         | 48.2         |
| 300                    | Mech. Input HP               | 0.055              | 0.060    | 0.106    | 0.163    | 0.247        | 0.348        | 0.480        | 0.621        | 0.910        | 1.47         | 2.49         | 3.73         |
|                        | Out.Torq., in.lbs.           | 4770               | 5970     | 11200    | 18600    | 28600        | 41600        | 57800        | 77600        | 122000       | 198000       | 336000       | 505000       |
|                        | Therm. Input HP              | 0.0530             | 0.057    | 0.095    | 0.154    | 0.237        | 0.335        | 0.455        | 0.593        | 0.910        | 1.31         | 2.17         | 3.21         |
|                        | Output RPM                   | 0.200              | 0.200    | 0.200    | 0.204    | 0.204        | 0.204        | 0.204        | 0.204        | 0.204        | 0.204        | 0.204        | 0.204        |
|                        | Efficiency %                 | 27.2               | 31.1     | 33.6     | 37.0     | 37.4         | 38.7         | 39.0         | 40.5         | 43.4         | 43.5         | 43.7         | 43.9         |

| WORM<br>SPEED<br>(RPM) | Unit Size<br>Center Distance | 35                 | 40       | 50       | 60       | 70       | 80       | 90       | 100      | 120      | 140          | 170          | 200          |
|------------------------|------------------------------|--------------------|----------|----------|----------|----------|----------|----------|----------|----------|--------------|--------------|--------------|
|                        |                              | 3.5                | 4        | 5        | 6        | 7        | 8        | 9        | 10       | 12       | 14           | 17           | 20           |
|                        |                              | Total Actual Ratio | 1600     | 1600     | 1600     | 1600     | 1600     | 1600     | 1600     | 1600     | 1580         | 1580         | 1580         |
|                        |                              | Ratio Combinations | 40<br>40 | 40<br>40 | 40<br>40 | 40<br>40 | 40<br>40 | 40<br>40 | 40<br>40 | 40<br>40 | 40<br>39-1/2 | 40<br>39-1/2 | 40<br>39-1/2 |
| 1750                   | Mech. Input HP               | 0.281              | 0.333    | 0.553    | 0.821    | 1.22     | 1.68     | 2.23     | 2.96     | 4.68     | 6.66         | 11.1         | 17.1         |
|                        | Out.Torq., in.lbs.           | 5330               | 7080     | 12900    | 21200    | 32100    | 45900    | 64200    | 85800    | 142000   | 201000       | 339000       | 522000       |
|                        | Therm. Input HP              | 0.272              | 0.325    | 0.532    | 0.796    | 1.18     | 1.64     | 2.03     | 2.91     | 4.55     | 6.38         | 10.2         | 15.6         |
|                        | Output RPM                   | 1.09               | 1.09     | 1.09     | 1.09     | 1.09     | 1.09     | 1.09     | 1.09     | 1.09     | 1.11         | 1.11         | 1.11         |
|                        | Efficiency%                  | 33.0               | 36.9     | 36.9     | 44.7     | 45.9     | 47.4     | 49.9     | 50.3     | 52.6     | 53.2         | 53.6         | 53.7         |
| 1450                   | Mech. Input HP               | 0.235              | 0.276    | 0.459    | 0.694    | 1.02     | 1.44     | 1.89     | 2.50     | 3.94     | 5.61         | 9.34         | 14.4         |
|                        | Out.Torq., in.lbs.           | 5350               | 7110     | 12900    | 21200    | 32300    | 46100    | 64600    | 86400    | 143000   | 203000       | 343000       | 528000       |
|                        | Therm. Input HP              | 0.227              | 0.268    | 0.440    | 0.670    | 0.990    | 1.40     | 1.71     | 2.44     | 3.80     | 5.33         | 8.47         | 13.0         |
|                        | Output RPM                   | 0.906              | 0.906    | 0.906    | 0.906    | 0.906    | 0.906    | 0.906    | 0.906    | 0.906    | 0.918        | 0.918        | 0.918        |
|                        | Efficiency%                  | 32.8               | 37.1     | 40.5     | 44.0     | 45.3     | 46.0     | 49.1     | 49.7     | 52.2     | 52.7         | 53.5         | 53.4         |
| 1150                   | Mech. Input HP               | 0.188              | 0.221    | 0.366    | 0.560    | 0.819    | 1.14     | 1.54     | 2.02     | 3.19     | 4.54         | 7.68         | 11.9         |
|                        | Out.Torq., in.lbs.           | 5360               | 7130     | 13000    | 21300    | 32400    | 46400    | 64900    | 87000    | 144000   | 205000       | 346000       | 535000       |
|                        | Therm. Input HP              | 0.227              | 0.214    | 0.349    | 0.538    | 0.788    | 1.10     | 1.39     | 1.96     | 3.06     | 4.28         | 6.90         | 10.6         |
|                        | Output RPM                   | 0.719              | 0.719    | 0.719    | 0.719    | 0.719    | 0.719    | 0.719    | 0.719    | 0.719    | 0.728        | 0.728        | 0.728        |
|                        | Efficiency%                  | 32.8               | 36.8     | 40.5     | 43.4     | 45.2     | 46.4     | 47.9     | 49.1     | 51.4     | 52.1         | 52.0         | 52.0         |
| 865                    | Mech. Input HP               | 0.142              | 0.168    | 0.282    | 0.432    | 0.637    | 0.897    | 1.21     | 1.57     | 2.50     | 3.56         | 5.85         | 9.06         |
|                        | Out.Torq., in.lbs.           | 5380               | 7150     | 13000    | 21400    | 32600    | 46600    | 65300    | 87600    | 145000   | 206000       | 350000       | 541000       |
|                        | Therm. Input HP              | 0.181              | 0.163    | 0.268    | 0.414    | 0.610    | 0.862    | 1.08     | 1.51     | 2.38     | 3.33         | 5.20         | 7.99         |
|                        | Output RPM                   | 0.541              | 0.541    | 0.541    | 0.541    | 0.541    | 0.541    | 0.541    | 0.541    | 0.541    | 0.547        | 0.547        | 0.547        |
|                        | Efficiency %                 | 32.6               | 36.4     | 39.7     | 42.5     | 43.9     | 44.6     | 46.4     | 47.9     | 49.7     | 50.3         | 52.0         | 51.9         |
| 575                    | Mech. Input HP               | 0.096              | 0.115    | 0.194    | 0.301    | 0.441    | 0.623    | 0.824    | 1.08     | 1.75     | 2.49         | 4.22         | 6.54         |
|                        | Out.Torq., in.lbs.           | 5400               | 7170     | 13100    | 21500    | 32700    | 46900    | 65700    | 88100    | 146000   | 208000       | 353000       | 547000       |
|                        | Therm. Input HP              | 0.092              | 0.111    | 0.187    | 0.287    | 0.420    | 0.596    | 0.732    | 1.04     | 1.65     | 2.31         | 3.72         | 5.70         |
|                        | Output RPM                   | 0.359              | 0.359    | 0.359    | 0.359    | 0.359    | 0.359    | 0.359    | 0.359    | 0.359    | 0.364        | 0.364        | 0.364        |
|                        | Efficiency%                  | 31.9               | 35.5     | 38.4     | 40.7     | 42.4     | 42.9     | 45.5     | 46.3     | 47.7     | 48.2         | 48.3         | 48.3         |
| 300                    | Mech. Input HP               | 0.053              | 0.064    | 0.109    | 0.167    | 0.249    | 0.347    | 0.475    | 0.616    | .983     | 1.40         | 2.38         | 3.69         |
|                        | Out.Torq., in.lbs.           | 5410               | 7180     | 13100    | 21600    | 32900    | 47100    | 66100    | 88700    | 147000   | 210000       | 356000       | 553000       |
|                        | Therm. Input HP              | 0.050              | 0.061    | 0.103    | 0.159    | 0.236    | 0.330    | 0.420    | 0.587    | 0.923    | 1.29         | 2.08         | 3.18         |
|                        | Output RPM                   | 0.188              | 0.188    | 0.188    | 0.188    | 0.188    | 0.188    | 0.188    | 0.188    | 0.188    | 0.190        | 0.190        | 0.190        |
|                        | Efficiency %                 | 30.3               | 33.3     | 35.8     | 38.4     | 39.3     | 40.4     | 41.4     | 42.8     | 44.5     | 45.1         | 45.0         | 45.1         |

Ratings based on 1.0 service factor. For A.G.M.A. recommended practice on service factors, see page 11.



# Horsepower and Torque Ratings • Double Worm

| WORM SPEED (RPM) | Unit Size<br>Center Distance | 35                 | 40       | 50       | 60       | 70       | 80       | 90           | 100          | 120          | 140          | 170          | 200          |
|------------------|------------------------------|--------------------|----------|----------|----------|----------|----------|--------------|--------------|--------------|--------------|--------------|--------------|
|                  |                              | 3.5                | 4        | 5        | 6        | 7        | 8        | 9            | 10           | 12           | 14           | 17           | 20           |
|                  |                              | Total Actual Ratio | 1800     | 1800     | 1800     | 1800     | 1800     | 1770         | 1770         | 1770         | 1770         | 1770         | 1770         |
|                  |                              | Ratio Combinations | 30<br>60 | 30<br>60 | 30<br>60 | 30<br>60 | 30<br>60 | 29-1/2<br>60 | 29-1/2<br>60 | 29-1/2<br>60 | 29-1/2<br>60 | 29-1/2<br>60 | 29-1/2<br>60 |
| 1750             | Mech. Input HP               | 0.257              | 0.278    | 0.457    | 0.712    | 1.05     | 1.46     | 1.95         | 2.57         | 4.02         | 6.15         | 10.3         | 15.4         |
|                  | Out.Torq., in.lbs.           | 4690               | 5880     | 11000    | 18200    | 27800    | 40400    | 55800        | 74600        | 122000       | 188000       | 314000       | 469000       |
|                  | Therm. Input HP              | 0.249              | 0.265    | 0.420    | 0.689    | 1.03     | 1.45     | 1.95         | 2.55         | 4.02         | 5.77         | 9.60         | 14.3         |
|                  | Output RPM                   | 0.972              | 0.972    | 0.927    | 0.972    | 0.972    | 0.972    | 0.988        | 0.988        | 0.988        | 0.988        | 0.988        | 0.988        |
|                  | Efficiency%                  | 28.1               | 32.6     | 37.1     | 39.4     | 41.0     | 42.6     | 44.1         | 45.6         | 47.6         | 47.8         | 47.9         | 47.7         |
| 1450             | Mech. Input HP               | 0.207              | 0.236    | 0.371    | 0.598    | 0.895    | 1.24     | 1.64         | 2.15         | 3.47         | 5.39         | 9.06         | 13.6         |
|                  | Out.Torq., in.lbs.           | 4710               | 5900     | 11000    | 18300    | 28000    | 40600    | 56300        | 75200        | 122000       | 190000       | 319000       | 476000       |
|                  | Therm. Input HP              | 0.200              | 0.224    | 0.340    | 0.576    | 0.867    | 1.22     | 1.63         | 2.12         | 3.47         | 5.00         | 8.32         | 12.4         |
|                  | Output RPM                   | 0.806              | 0.806    | 0.806    | 0.806    | 0.806    | 0.806    | 0.819        | 0.819        | 0.819        | 0.819        | 0.819        | 0.819        |
|                  | Efficiency%                  | 29.0               | 32.0     | 38.0     | 39.0     | 40.0     | 41.9     | 43.7         | 45.4         | 45.7         | 45.8         | 45.8         | 45.6         |
| 1150             | Mech. Input HP               | 0.170              | 0.189    | 0.305    | 0.487    | 0.715    | 1.00     | 1.32         | 1.75         | 2.68         | 4.21         | 7.09         | 10.1         |
|                  | Out.Torq., in.lbs.           | 4720               | 5920     | 11100    | 18400    | 28200    | 40900    | 56700        | 75900        | 122000       | 192000       | 324000       | 484000       |
|                  | Therm. Input HP              | 0.163              | 0.179    | 0.278    | 0.466    | 0.695    | 0.980    | 1.30         | 1.71         | 2.68         | 3.86         | 6.42         | 9.60         |
|                  | Output RPM                   | 0.639              | 0.639    | 0.639    | 0.639    | 0.639    | 0.639    | 0.650        | 0.650        | 0.650        | 0.650        | 0.650        | 0.650        |
|                  | Efficiency%                  | 28.2               | 31.7     | 36.8     | 38.3     | 40.0     | 41.4     | 43.5         | 44.7         | 46.9         | 47.0         | 47.0         | 46.7         |
| 865              | Mech. Input HP               | 0.132              | 0.144    | 0.236    | 0.374    | 0.553    | 0.782    | 1.03         | 1.36         | 2.07         | 3.29         | 5.56         | 8.36         |
|                  | Out.Torq., in.lbs.           | 4740               | 5940     | 11100    | 18500    | 28300    | 41200    | 57100        | 76500        | 122000       | 194000       | 328000       | 492000       |
|                  | Therm. Input HP              | 0.126              | 0.136    | 0.214    | 0.357    | 0.535    | 0.760    | 1.01         | 1.32         | 2.07         | 2.98         | 4.96         | 7.40         |
|                  | Output RPM                   | 0.480              | 0.480    | 0.480    | 0.480    | 0.480    | 0.480    | 0.489        | 0.489        | 0.489        | 0.489        | 0.489        | 0.489        |
|                  | Efficiency %                 | 27.5               | 31.4     | 36.0     | 37.6     | 39.0     | 40.1     | 42.1         | 43.5         | 45.7         | 45.8         | 45.8         | 45.6         |
| 575              | Mech. Input HP               | 0.089              | 0.100    | 0.162    | 0.261    | 0.385    | 0.549    | 0.714        | 0.947        | 1.43         | 2.30         | 3.89         | 5.88         |
|                  | Out.Torq., in.lbs.           | 4760               | 5960     | 11200    | 18600    | 28500    | 41400    | 57500        | 77100        | 122000       | 196000       | 333000       | 499000       |
|                  | Therm. Input HP              | 0.0850             | 0.0940   | 0.147    | 0.248    | 0.370    | 0.530    | 0.692        | .910         | 1.43         | 2.06         | 3.43         | 5.12         |
|                  | Output RPM                   | 0.319              | 0.319    | 0.319    | 0.319    | 0.319    | 0.319    | 0.325        | 0.325        | 0.325        | 0.325        | 0.325        | 0.325        |
|                  | Efficiency%                  | 27.1               | 30.2     | 34.8     | 36.0     | 37.5     | 38.2     | 40.8         | 42.0         | 44.0         | 44.0         | 44.0         | 43.8         |
| 300              | Mech. Input HP               | 0.0490             | 0.0540   | 0.091    | 0.145    | 0.215    | 0.307    | 0.403        | 0.517        | 0.790        | 1.28         | 2.18         | 3.31         |
|                  | Out.Torq., in.lbs.           | 4770               | 5970     | 11200    | 18600    | 28600    | 41700    | 57900        | 77700        | 122000       | 198000       | 337000       | 507000       |
|                  | Therm. Input HP              | 0.046              | 0.050    | 0.082    | 0.137    | 0.206    | 0.295    | 0.388        | 0.493        | 0.790        | 1.14         | 1.90         | 2.84         |
|                  | Output RPM                   | 0.167              | 0.167    | 0.167    | 0.167    | 0.167    | 0.167    | 0.169        | 0.169        | 0.169        | 0.169        | 0.169        | 0.169        |
|                  | Efficiency %                 | 25.8               | 29.3     | 32.5     | 34.0     | 35.2     | 35.9     | 38.0         | 40.4         | 41.5         | 41.5         | 41.5         | 41.2         |

Double Worm  
Speed Reducers

| WORM SPEED (RPM) | Unit Size<br>Center Distance | 35                 | 40       | 50       | 60       | 70       | 80       | 90       | 100      | 120      | 140      | 170      | 200      |
|------------------|------------------------------|--------------------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|
|                  |                              | 3.5                | 4        | 5        | 6        | 7        | 8        | 9        | 10       | 12       | 14       | 17       | 20       |
|                  |                              | Total Actual Ratio | 2000     | 2000     | 2000     | 2000     | 2000     | 2000     | 2000     | 2000     | 2000     | 2000     | 2000     |
|                  |                              | Ratio Combinations | 40<br>50 | 40<br>50 | 40<br>50 | 40<br>50 | 40<br>50 | 40<br>50 | 40<br>50 | 40<br>50 | 40<br>50 | 40<br>50 | 40<br>50 |
| 1750             | Mech. Input HP               | 0.320              | 0.270    | 0.455    | 0.706    | 1.06     | 1.46     | 1.96     | 2.53     | 3.81     | 5.84     | 9.83     | 14.7     |
|                  | Out.Torq., in.lbs.           | 4980               | 6380     | 12200    | 20300    | 31200    | 44800    | 62100    | 83200    | 133000   | 203000   | 342000   | 527000   |
|                  | Therm. Input HP              | 0.232              | 0.266    | 0.434    | 0.667    | 1.02     | 1.40     | 1.92     | 2.46     | 3.81     | 5.34     | 8.90     | 12.7     |
|                  | Output RPM                   | 0.875              | 0.875    | 0.875    | 0.875    | 0.875    | 0.875    | 0.875    | 0.875    | 0.875    | 0.875    | 0.875    | 0.875    |
|                  | Efficiency%                  | 28.8               | 32.9     | 37.4     | 40.0     | 40.8     | 42.7     | 43.4     | 45.7     | 48.5     | 48.4     | 48.4     | 49.6     |
| 1450             | Mech. Input HP               | 0.266              | 0.219    | 0.377    | 0.590    | 0.890    | 1.21     | 1.33     | 2.12     | 3.19     | 4.93     | 8.33     | 12.6     |
|                  | Out.Torq., in.lbs.           | 5000               | 6400     | 12300    | 20400    | 31200    | 45000    | 62800    | 83700    | 133000   | 205000   | 346000   | 534000   |
|                  | Therm. Input HP              | 0.192              | 0.216    | 0.359    | 0.555    | 0.855    | 1.16     | 1.29     | 2.05     | 3.19     | 4.47     | 7.46     | 10.7     |
|                  | Output RPM                   | 0.725              | 0.725    | 0.725    | 0.725    | 0.725    | 0.725    | 0.725    | 0.725    | 0.725    | 0.725    | 0.725    | 0.725    |
|                  | Efficiency%                  | 33.6               | 33.6     | 37.5     | 39.8     | 40.4     | 42.7     | 43.4     | 45.4     | 48.0     | 47.9     | 47.8     | 48.8     |
| 1150             | Mech. Input HP               | 0.210              | 0.182    | 0.305    | 0.476    | 0.719    | 0.993    | 1.33     | 1.73     | 2.56     | 3.99     | 6.74     | 10.2     |
|                  | Out.Torq., in.lbs.           | 5020               | 6420     | 12300    | 20500    | 31400    | 45300    | 62800    | 84300    | 133000   | 207000   | 350000   | 540000   |
|                  | Therm. Input HP              | 0.151              | 0.179    | 0.290    | 0.446    | 0.687    | 0.945    | 1.29     | 1.66     | 2.56     | 3.58     | 5.97     | 8.57     |
|                  | Output RPM                   | 0.575              | 0.575    | 0.575    | 0.575    | 0.575    | 0.575    | 0.575    | 0.575    | 0.575    | 0.575    | 0.575    | 0.575    |
|                  | Efficiency%                  | 29.1               | 32.1     | 36.8     | 39.3     | 39.8     | 41.6     | 43.0     | 44.5     | 47.4     | 47.4     | 47.4     | 48.3     |
| 865              | Mech. Input HP               | 0.159              | 0.135    | 0.235    | 0.367    | 0.559    | 0.766    | 1.03     | 1.34     | 1.97     | 3.10     | 5.25     | 7.95     |
|                  | Out.Torq., in.lbs.           | 5040               | 6430     | 12400    | 20600    | 31500    | 45500    | 63200    | 84800    | 133000   | 209000   | 353000   | 547000   |
|                  | Therm. Input HP              | 0.114              | 0.132    | 0.222    | 0.343    | 0.532    | 0.725    | 0.993    | 1.28     | 1.97     | 2.76     | 4.61     | 6.60     |
|                  | Output RPM                   | 0.432              | 0.432    | 0.432    | 0.432    | 0.432    | 0.432    | 0.432    | 0.432    | 0.432    | 0.432    | 0.432    | 0.432    |
|                  | Efficiency %                 | 29.0               | 32.8     | 36.2     | 38.4     | 38.7     | 40.8     | 42.0     | 43.4     | 46.3     | 46.2     | 46.2     | 47.2     |
| 575              | Mech. Input HP               | 0.109              | *0.161   | 0.255    | 0.390    | 0.531    | 0.720    | 0.936    | 1.35     | 2.14     | 3.64     | 5.52     |          |
|                  | Out.Torq., in.lbs.           | 5050               | 0.090    | 12400    | 20600    | 31700    | 45800    | 63600    | 85300    | 133000   | 211000   | 357000   | 554000   |
|                  | Therm. Input HP              | 0.078              | 6450     | 0.152    | 0.237    | 0.370    | 0.500    | 0.689    | 0.887    | 1.35     | 1.89     | 3.16     | 4.53     |
|                  | Output RPM                   | 0.288              | 0.088    | 0.288    | 0.288    | 0.288    | 0.288    | 0.288    | 0.288    | 0.288    | 0.288    | 0.288    | 0.288    |
|                  | Efficiency%                  | 28.1               | 0.288    | 35.1     | 37.0     | 37.0     | 39.3     | 40.2     | 41.6     | 44.9     | 44.9     | 44.8     | 45.7     |
| 300              | Mech. Input HP               | 0.0590             | 0.050    | 0.089    | 0.141    | 0.220    | 0.299    | 0.408    | 0.531    | 0.745    | 1.19     | 2.01     | 3.06     |
|                  | Out.Torq., in.lbs.           | 5070               | 6460     | 12400    | 20700    | 31800    | 46000    | 63900    | 85900    | 133000   | 212000   | 360000   | 560000   |
|                  | Therm. Input HP              | 0.042              | 0.049    | 0.083    | 0.131    | 0.208    | 0.280    | 0.388    | 0.500    | 0.745    | 1.04     | 1.73     | 2.48     |
|                  | Output RPM                   | 0.150              | 0.150    | 0.150    | 0.150    | 0.150    | 0.150    | 0.150    | 0.150    | 0.150    | 0.150    | 0.150    | 0.150    |
|                  | Efficiency %                 | 27.2               | 30.5     | 33.2     | 34.9     | 34.3     | 36.6     | 37.3     | 38.5     | 42.5     | 42.6     | 42.6     | 43.6     |

Ratings based on 1.0 service factor. For A.G.M.A. recommended practice on service factors, see page 11.

# Horsepower and Torque Ratings • Double Worm

Double Worm  
Speed Reducers

| WORM<br>SPEED<br>(RPM) | Unit Size          | 35       | 40       | 50       | 60       | 70       | 80       | 90       | 100      | 120      | 140      | 170      | 200      |
|------------------------|--------------------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|
|                        | Center Distance    | 3.5      | 4        | 5        | 6        | 7        | 8        | 9        | 10       | 12       | 14       | 17       | 20       |
|                        | Total Actual Ratio | 2500     | 2500     | 2500     | 2500     | 2500     | 2500     | 2500     | 2500     | 2500     | 2500     | 2500     | 2500     |
|                        | Ratio Combinations | 50<br>50 | 50<br>50 | 50<br>50 | 50<br>50 | 50<br>50 | 50<br>50 | 50<br>50 | 50<br>50 | 50<br>50 | 50<br>50 | 50<br>50 | 50<br>50 |
| 1750                   | Mech. Input HP     | 0.210    | 0.236    | 0.393    | 0.608    | 0.902    | 1.23     | 1.68     | 2.14     | 3.21     | 4.82     | 8.12     | 12.3     |
|                        | Out.Torq., in.lbs. | 5020     | 6400     | 12300    | 20400    | 31300    | 45100    | 62500    | 83800    | 133000   | 206000   | 347000   | 535000   |
|                        | Therm. Input HP    | 0.202    | 0.232    | 0.374    | 0.572    | 0.866    | 1.18     | 1.63     | 2.07     | 3.21     | 4.36     | 7.26     | 10.4     |
|                        | Output RPM         | 0.700    | 0.700    | 0.700    | 0.700    | 0.700    | 0.700    | 0.700    | 0.700    | 0.700    | 0.700    | 0.700    | 0.700    |
|                        | Efficiency%        | 26.5     | 30.2     | 34.7     | 37.3     | 38.5     | 40.6     | 41.4     | 43.4     | 46.0     | 47.4     | 47.4     | 48.5     |
| 1450                   | Mech. Input HP     | 0.176    | 0.198    | 0.328    | 0.510    | 0.760    | 1.04     | 1.40     | 1.81     | 2.70     | 4.21     | 7.13     | 10.8     |
|                        | Out.Torq., in.lbs. | 5030     | 6420     | 12300    | 20500    | 31400    | 45300    | 62800    | 84200    | 133000   | 207000   | 350000   | 540000   |
|                        | Therm. Input HP    | 0.168    | 0.194    | 0.311    | 0.478    | 0.727    | 0.993    | 1.36     | 1.74     | 2.70     | 3.78     | 6.32     | 9.06     |
|                        | Output RPM         | 0.580    | 0.580    | 0.580    | 0.580    | 0.580    | 0.580    | 0.580    | 0.580    | 0.580    | 0.580    | 0.580    | 0.580    |
|                        | Efficiency%        | 26.4     | 29.9     | 34.6     | 37.0     | 38.0     | 39.9     | 41.1     | 42.8     | 45.3     | 45.3     | 45.1     | 46.1     |
| 1150                   | Mech. Input HP     | 0.139    | 0.154    | 0.264    | 0.414    | 0.613    | 0.847    | 1.13     | 1.48     | 2.16     | 3.39     | 5.73     | 8.70     |
|                        | Out.Torq., in.lbs. | 5040     | 6430     | 12400    | 20500    | 31500    | 45500    | 63100    | 84700    | 133000   | 208000   | 353000   | 546000   |
|                        | Therm. Input HP    | 0.133    | 0.151    | 0.250    | 0.387    | 0.584    | 0.803    | 1.09     | 1.41     | 2.16     | 3.02     | 5.04     | 7.24     |
|                        | Output RPM         | 0.460    | 0.460    | 0.460    | 0.460    | 0.460    | 0.460    | 0.460    | 0.460    | 0.460    | 0.460    | 0.460    | 0.460    |
|                        | Efficiency%        | 26.4     | 30.4     | 34.2     | 36.2     | 37.5     | 39.2     | 40.7     | 41.9     | 44.9     | 45.0     | 44.9     | 45.8     |
| 865                    | Mech. Input HP     | 0.105    | 0.120    | 0.204    | 0.319    | 0.477    | 0.655    | 0.882    | 1.15     | 1.67     | 2.64     | 4.47     | 6.80     |
|                        | Out.Torq., in.lbs. | 5060     | 6440     | 12400    | 20600    | 31600    | 45600    | 63400    | 85100    | 133000   | 210000   | 356000   | 551000   |
|                        | Therm. Input HP    | 0.1      | 0.117    | 0.192    | 0.297    | 0.453    | 0.618    | 0.846    | 1.09     | 1.67     | 2.34     | 3.90     | 5.60     |
|                        | Output RPM         | 0.346    | 0.346    | 0.346    | 0.346    | 0.346    | 0.346    | 0.346    | 0.346    | 0.346    | 0.346    | 0.346    | 0.346    |
|                        | Efficiency %       | 26.5     | 29.6     | 33.4     | 35.5     | 36.4     | 38.3     | 39.4     | 40.8     | 43.7     | 43.6     | 43.6     | 44.5     |
| 575                    | Mech. Input HP     | 0.071    | 0.080    | 0.141    | 0.222    | 0.332    | 0.456    | 0.614    | 0.904    | 1.16     | 1.84     | 3.12     | 4.76     |
|                        | Out.Torq., in.lbs. | 5070     | 6450     | 12400    | 20700    | 31700    | 45800    | 63700    | 85600    | 133000   | 211000   | 358000   | 556000   |
|                        | Therm. Input HP    | 0.067    | 0.0790   | 0.133    | 0.206    | 0.314    | 0.429    | 0.586    | 0.855    | 1.16     | 1.62     | 2.7      | 3.88     |
|                        | Output RPM         | 0.230    | 0.230    | 0.230    | 0.230    | 0.230    | 0.230    | 0.230    | 0.230    | 0.230    | 0.230    | 0.230    | 0.230    |
|                        | Efficiency%        | 26.0     | 29.1     | 32.1     | 31.5     | 34.9     | 36.7     | 37.9     | 34.5     | 41.8     | 41.9     | 41.9     | 42.7     |
| 300                    | Mech. Input HP     | 0.038    | 0.045    | 0.079    | 0.125    | 0.190    | 0.258    | 0.347    | 0.453    | 0.652    | 1.04     | 1.77     | 2.70     |
|                        | Out.Torq., in.lbs. | 5080     | 6470     | 12500    | 20700    | 31800    | 46000    | 64000    | 86000    | 133000   | 213000   | 361000   | 562000   |
|                        | Therm. Input HP    | 0.036    | 0.044    | 0.074    | 0.116    | 0.179    | 0.242    | 0.330    | 0.426    | 0.652    | 0.914    | 1.52     | 2.18     |
|                        | Output RPM         | 0.120    | 0.120    | 0.120    | 0.120    | 0.120    | 0.120    | 0.120    | 0.120    | 0.120    | 0.120    | 0.120    | 0.120    |
|                        | Efficiency %       | 24.9     | 27.0     | 29.9     | 31.5     | 31.9     | 33.9     | 35.1     | 36.2     | 38.8     | 38.8     | 38.8     | 39.6     |

| WORM<br>SPEED<br>(RPM) | Unit Size          | 35       | 40       | 50       | 60       | 70       | 80       | 90       | 100      | 120      | 140      | 170      | 200      |
|------------------------|--------------------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|
|                        | Center Distance    | 3.5      | 4        | 5        | 6        | 7        | 8        | 9        | 10       | 12       | 14       | 17       | 20       |
|                        | Total Actual Ratio | 3000     | 3000     | 3000     | 3000     | 3000     | 3000     | 3000     | 3000     | 3000     | 3000     | 3000     | 3000     |
|                        | Ratio Combinations | 50<br>60 | 50<br>60 | 50<br>60 | 50<br>60 | 50<br>60 | 50<br>60 | 50<br>60 | 50<br>60 | 50<br>60 | 50<br>60 | 50<br>60 | 50<br>60 |
| 1750                   | Mech. Input HP     | 0.182    | 0.194    | 0.325    | 0.500    | 0.733    | 1.01     | 1.39     | 1.78     | 2.70     | 4.16     | 7.08     | 10.6     |
|                        | Out.Torq., in.lbs. | 4730     | 5920     | 11100    | 18400    | 28200    | 41000    | 56800    | 76100    | 125000   | 193000   | 326000   | 487000   |
|                        | Therm. Input HP    | 0.175    | 0.183    | 0.296    | 0.478    | 0.720    | 0.970    | 1.34     | 1.78     | 2.70     | 3.80     | 6.37     | 9.43     |
|                        | Output RPM         | 0.583    | 0.583    | 0.583    | 0.583    | 0.583    | 0.583    | 0.583    | 0.583    | 0.583    | 0.583    | 0.583    | 0.583    |
|                        | Efficiency%        | 24.0     | 28.3     | 31.6     | 34.1     | 35.6     | 37.4     | 37.8     | 39.6     | 42.8     | 42.9     | 42.6     | 42.7     |
| 1450                   | Mech. Input HP     | 0.154    | 0.162    | 0.271    | 0.418    | 0.611    | 0.855    | 1.16     | 1.49     | 2.27     | 3.51     | 5.97     | 8.93     |
|                        | Out.Torq., in.lbs. | 4740     | 5940     | 11100    | 18500    | 28300    | 41200    | 57100    | 76500    | 126000   | 194000   | 328000   | 492000   |
|                        | Therm. Input HP    | 0.147    | 0.153    | 0.246    | 0.399    | 0.591    | 0.831    | 1.11     | 1.44     | 2.27     | 3.18     | 5.33     | 7.90     |
|                        | Output RPM         | 0.483    | 0.483    | 0.483    | 0.483    | 0.483    | 0.483    | 0.483    | 0.483    | 0.483    | 0.483    | 0.483    | 0.483    |
|                        | Efficiency%        | 23.7     | 28.1     | 31.5     | 33.8     | 35.6     | 36.9     | 37.9     | 39.5     | 42.5     | 42.4     | 42.2     | 42.2     |
| 1150                   | Mech. Input HP     | 0.122    | 0.131    | 0.216    | 0.338    | 0.493    | 0.691    | 0.929    | 1.19     | 1.85     | 2.84     | 4.86     | 7.26     |
|                        | Out.Torq., in.lbs. | 4750     | 5950     | 11100    | 18500    | 28400    | 41300    | 57300    | 76900    | 127000   | 196000   | 331000   | 496000   |
|                        | Therm. Input HP    | 0.117    | 0.123    | 0.196    | 0.321    | 0.475    | 0.669    | 0.888    | 1.15     | 1.85     | 2.56     | 4.30     | 6.36     |
|                        | Output RPM         | 0.383    | 0.383    | 0.383    | 0.383    | 0.383    | 0.383    | 0.383    | 0.383    | 0.383    | 0.383    | 0.383    | 0.383    |
|                        | Efficiency%        | 23.6     | 27.7     | 31.3     | 33.4     | 35.1     | 36.4     | 37.5     | 39.2     | 41.7     | 41.8     | 41.4     | 41.6     |
| 865                    | Mech. Input HP     | 0.092    | 0.101    | 0.165    | 0.266    | 0.383    | 0.536    | 0.720    | 0.927    | 1.45     | 2.23     | 3.79     | 5.68     |
|                        | Out.Torq., in.lbs. | 4760     | 5960     | 11200    | 18600    | 28500    | 41500    | 57600    | 77200    | 128000   | 197000   | 334000   | 501000   |
|                        | Therm. Input HP    | 0.088    | 0.094    | 0.149    | 0.271    | 0.368    | 0.517    | 0.685    | 0.889    | 1.45     | 1.99     | 3.33     | 4.93     |
|                        | Output RPM         | 0.288    | 0.288    | 0.288    | 0.288    | 0.288    | 0.288    | 0.288    | 0.288    | 0.288    | 0.288    | 0.288    | 0.288    |
|                        | Efficiency %       | 23.5     | 27.0     | 31.0     | 29.7     | 34.1     | 35.4     | 36.6     | 38.1     | 40.4     | 40.5     | 40.2     | 40.4     |
| 575                    | Mech. Input HP     | 0.0620   | 0.067    | 0.113    | 0.182    | 0.268    | 0.374    | 0.501    | 0.645    | 1.00     | 1.54     | 2.63     | 3.94     |
|                        | Out.Torq., in.lbs. | 4770     | 5970     | 11200    | 18600    | 28600    | 41600    | 57800    | 77600    | 128000   | 198000   | 336000   | 506000   |
|                        | Therm. Input HP    | 0.0590   | 0.0630   | 0.102    | 0.172    | 0.257    | 0.359    | 0.475    | 0.616    | 1.00     | 1.37     | 2.29     | 3.39     |
|                        | Output RPM         | 0.192    | 0.192    | 0.192    | 0.192    | 0.192    | 0.192    | 0.192    | 0.192    | 0.192    | 0.192    | 0.192    | 0.192    |
|                        | Efficiency%        | 23.4     | 27.0     | 30.1     | 31.1     | 32.4     | 33.9     | 35.1     | 36.6     | 38.8     | 39.1     | 38.9     | 39.0     |
| 300                    | Mech. Input HP     | 0.0330   | 0.037    | 0.063    | 0.102    | 0.153    | 0.208    | 0.284    | 0.368    | .566     | 0.875    | 1.49     | 2.24     |
|                        | Out.Torq., in.lbs. | 4780     | 5980     | 11200    | 18700    | 28700    | 41800    | 58100    | 78000    | 129000   | 199000   | 339000   | 510000   |
|                        | Therm. Input HP    | 0.031    | 0.034    | 0.059    | 0.096    | 0.146    | 0.199    | 0.268    | 0.350    | .566     | 0.772    | 1.29     | 1.91     |
|                        | Output RPM         | 0.100    | 0.100    | 0.100    | 0.100    | 0.100    | 0.100    | 0.100    | 0.100    | 0.100    | 0.100    | 0.100    | 0.100    |
|                        | Efficiency %       | 23.0     | 25.5     | 27.9     | 28.9     | 29.8     | 31.9     | 32.4     | 33.6     | 36.1     | 36.2     | 36.0     | 36.1     |

Ratings based on 1.0 service factor. For A.G.M.A. recommended practice on service factors, see page 11.

# Horsepower and Torque Ratings • Double Worm

| WORM<br>SPEED<br>(RPM) | Unit Size          | 35       | 40       | 50       | 60       | 70       | 80       | 90       | 100      | 120      | 140      | 170      | 200      |
|------------------------|--------------------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|
|                        | Center Distance    | 3.5      | 4        | 5        | 6        | 7        | 8        | 9        | 10       | 12       | 14       | 17       | 20       |
|                        | Total Actual Ratio | 3600     | 3600     | 3600     | 3600     | 3600     | 3600     | 3600     | 3600     | 3600     | 3600     | 3600     | 3600     |
|                        | Ratio Combinations | 60<br>60 | 60<br>60 | 60<br>60 | 60<br>60 | 60<br>60 | 60<br>60 | 60<br>60 | 60<br>60 | 60<br>60 | 60<br>60 | 60<br>60 | 60<br>60 |
| 1750                   | Mech. Input HP     | 0.163    | 0.175    | 0.288    | 0.446    | 0.652    | 0.882    | 1.23     | 1.59     | 2.39     | 3.80     | 6.45     | 9.46     |
|                        | Out.Torq., in.lbs. | 4740     | 5940     | 11100    | 18500    | 28300    | 41100    | 57100    | 76500    | 122000   | 194000   | 328000   | 492000   |
|                        | Therm. Input HP    | 0.156    | 0.165    | 0.262    | 0.425    | 0.631    | 0.857    | 1.18     | 1.54     | 2.39     | 3.44     | 5.76     | 8.37     |
|                        | Output RPM         | 0.486    | 0.486    | 0.486    | 0.486    | 0.486    | 0.486    | 0.486    | 0.486    | 0.486    | 0.486    | 0.486    | 0.486    |
|                        | Efficiency%        | 22.4     | 26.2     | 29.7     | 31.9     | 33.5     | 36.0     | 35.8     | 37.1     | 39.4     | 39.4     | 39.2     | 40.1     |
| 1450                   | Mech. Input HP     | 0.135    | 0.146    | 0.239    | 0.375    | 0.544    | 0.735    | 1.02     | 1.31     | 1.96     | 3.13     | 5.34     | 7.98     |
|                        | Out.Torq., in.lbs. | 4750     | 5950     | 11100    | 18500    | 28400    | 41300    | 57300    | 76800    | 122000   | 195000   | 330000   | 496000   |
|                        | Therm. Input HP    | 0.129    | 0.138    | 0.217    | 0.357    | 0.525    | 0.712    | 0.976    | 1.26     | 1.96     | 2.82     | 4.73     | 7.00     |
|                        | Output RPM         | 0.403    | 0.403    | 0.403    | 0.403    | 0.403    | 0.403    | 0.403    | 0.403    | 0.403    | 0.403    | 0.403    | 0.403    |
|                        | Efficiency%        | 22.5     | 25.9     | 29.7     | 31.5     | 33.4     | 35.9     | 35.9     | 37.6     | 39.8     | 39.9     | 39.6     | 39.7     |
| 1150                   | Mech. Input HP     | 0.109    | 0.117    | 0.192    | 0.307    | 0.439    | 0.593    | 0.822    | 1.07     | 1.57     | 2.52     | 4.29     | 6.41     |
|                        | Out.Torq., in.lbs. | 4760     | 5960     | 11200    | 18600    | 28500    | 41400    | 57500    | 77100    | 122000   | 196000   | 333000   | 500000   |
|                        | Therm. Input HP    | 0.104    | 0.110    | 0.174    | 0.291    | 0.422    | 0.573    | 0.783    | 1.03     | 1.57     | 2.26     | 3.78     | 5.58     |
|                        | Output RPM         | 0.319    | 0.319    | 0.319    | 0.319    | 0.319    | 0.319    | 0.319    | 0.319    | 0.319    | 0.319    | 0.319    | 0.319    |
|                        | Efficiency%        | 22.1     | 25.8     | 29.4     | 30.7     | 32.9     | 35.4     | 35.5     | 36.5     | 39.4     | 39.5     | 39.3     | 39.5     |
| 865                    | Mech. Input HP     | 0.081    | 0.0900   | 0.147    | 0.239    | 0.338    | 0.458    | 0.62.9   | 0.817    | 1.22     | 1.98     | 3.37     | 5.06     |
|                        | Out.Torq., in.lbs. | 4770     | 5970     | 11200    | 18600    | 28600    | 41500    | 57700    | 77400    | 122000   | 198000   | 335000   | 503000   |
|                        | Therm. Input HP    | 0.077    | 0.084    | 0.133    | 0.226    | 0.324    | 0.441    | 0.597    | 0.782    | 1.22     | 1.76     | 2.95     | 4.37     |
|                        | Output RPM         | 0.240    | 0.240    | 0.240    | 0.240    | 0.240    | 0.240    | 0.240    | 0.240    | 0.240    | 0.240    | 0.240    | 0.240    |
|                        | Efficiency %       | 22.3     | 25.3     | 29.0     | 29.7     | 32.2     | 34.6     | 35.0     | 36.1     | 38.1     | 38.1     | 37.9     | 38.0     |
| 575                    | Mech. Input HP     | 0.046    | 0.060    | 0.101    | 0.166    | 0.238    | 0.316    | 0.440    | 0.570    | 0.846    | 1.38     | 2.35     | 3.52     |
|                        | Out.Torq., in.lbs. | 4770     | 5970     | 11200    | 18600    | 28600    | 41700    | 57900    | 77700    | 122000   | 199000   | 337000   | 507000   |
|                        | Therm. Input HP    | 0.0440   | 0.056    | 0.091    | 0.157    | 0.228    | 0.303    | 0.416    | 0.543    | 0.846    | 1.22     | 2.04     | 3.02     |
|                        | Output RPM         | 0.160    | 0.160    | 0.160    | 0.160    | 0.160    | 0.160    | 0.160    | 0.160    | 0.160    | 0.160    | 0.160    | 0.160    |
|                        | Efficiency%        | 26.2     | 24.9     | 28.0     | 28.4     | 30.5     | 33.5     | 33.4     | 34.6     | 36.5     | 36.6     | 36.4     | 36.5     |
| 300                    | Mech. Input HP     | 0.029    | 0.0330   | 0.056    | 0.094    | 0.135    | 0.178    | 0.248    | 0.323    | 0.473    | 0.774    | 1.32     | 1.98     |
|                        | Out.Torq., in.lbs. | 4780     | 5980     | 11200    | 18700    | 28700    | 41800    | 58100    | 78000    | 122000   | 200000   | 340000   | 511000   |
|                        | Therm. Input HP    | 0.028    | 0.030    | 0.050    | 0.088    | 0.129    | 0.170    | 0.234    | 0.307    | 0.473    | 0.682    | 1.14     | 1.69     |
|                        | Output RPM         | 0.083    | 0.088    | 0.083    | 0.083    | 0.083    | 0.083    | 0.083    | 0.083    | 0.0833   | 0.0833   | 0.0833   | 0.0833   |
|                        | Efficiency %       | 21.3     | 24.0     | 26.2     | 26.3     | 28.1     | 31.1     | 31.0     | 31.9     | 34.1     | 34.1     | 34.0     | 34.0     |

Double Worm  
Speed Reducers

| WORM<br>SPEED<br>(RPM) | Unit Size          | 35       | 40       | 50       | 60       | 70       | 80       | 90       | 100      | 120      | 140      | 170      | 200      |
|------------------------|--------------------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|
|                        | Center Distance    | 3.5      | 4        | 5        | 6        | 7        | 8        | 9        | 10       | 12       | 14       | 17       | 20       |
|                        | Total Actual Ratio | 4200     | 4200     | 4200     | 4200     | 4200     | 4200     | 4200     | 4200     | 4200     | 4200     | 4200     | 4200     |
|                        | Ratio Combinations | 70<br>60 | 70<br>60 | 70<br>60 | 70<br>60 | 70<br>60 | 70<br>60 | 70<br>60 | 70<br>60 | 70<br>60 | 70<br>60 | 70<br>60 | 70<br>60 |
| 1750                   | Mech. Input HP     | 0.107    | 0.123    | 0.231    | 0.357    | 0.528    | 0.728    | 0.969    | 1.29     | 1.96     | 3.13     | 5.32     | 7.94     |
|                        | Out.Torq., in.lbs. | 4750     | 5940     | 11100    | 18500    | 28400    | 41200    | 57200    | 76700    | 122000   | 195000   | 330000   | 495000   |
|                        | Therm. Input HP    | 0.102    | 0.116    | 0.210    | 0.340    | 0.510    | 0.706    | 0.927    | 1.25     | 1.96     | 2.82     | 4.72     | 6.98     |
|                        | Output RPM         | 0.417    | 0.417    | 0.417    | 0.417    | 0.417    | 0.417    | 0.417    | 0.417    | 0.417    | 0.417    | 0.417    | 0.417    |
|                        | Efficiency%        | 29.4     | 31.9     | 31.8     | 34.2     | 35.5     | 37.5     | 39.1     | 39.2     | 41.2     | 41.3     | 41.0     | 41.2     |
| 1450                   | Mech. Input HP     | 0.092    | 0.104    | 0.195    | 0.299    | 0.448    | 0.616    | 0.823    | 1.10     | 1.66     | 2.66     | 4.53     | 6.78     |
|                        | Out.Torq., in.lbs. | 4750     | 5950     | 11200    | 18500    | 28400    | 41400    | 57400    | 77000    | 122000   | 196000   | 332000   | 498000   |
|                        | Therm. Input HP    | 0.088    | 0.097    | 0.177    | 0.284    | 0.431    | 0.595    | 0.785    | 1.06     | 1.66     | 2.39     | 4.00     | 5.92     |
|                        | Output RPM         | 0.345    | 0.345    | 0.345    | 0.345    | 0.345    | 0.345    | 0.345    | 0.345    | 0.345    | 0.345    | 0.345    | 0.345    |
|                        | Efficiency%        | 28.1     | 31.5     | 31.3     | 34.0     | 34.8     | 36.8     | 38.2     | 38.3     | 40.3     | 40.3     | 40.1     | 40.2     |
| 1150                   | Mech. Input HP     | 0.075    | 0.084    | 0.159    | 0.243    | 0.362    | 0.498    | 0.668    | 0.876    | 1.35     | 2.17     | 3.70     | 5.55     |
|                        | Out.Torq., in.lbs. | 4760     | 5960     | 11200    | 18600    | 28500    | 41500    | 57600    | 77300    | 122000   | 197000   | 334000   | 502000   |
|                        | Therm. Input HP    | 0.071    | 0.079    | 0.144    | 0.230    | 0.348    | 0.480    | 0.635    | 0.840    | 1.35     | 1.94     | 3.25     | 4.81     |
|                        | Output RPM         | 0.274    | 0.274    | 0.274    | 0.274    | 0.274    | 0.274    | 0.274    | 0.274    | 0.274    | 0.274    | 0.274    | 0.274    |
|                        | Efficiency%        | 27.5     | 30.7     | 30.5     | 33.2     | 34.2     | 36.2     | 37.5     | 38.3     | 39.3     | 39.4     | 39.2     | 39.3     |
| 865                    | Mech. Input HP     | 0.058    | 0.065    | 0.123    | 0.191    | 0.286    | 0.389    | 0.522    | 0.699    | 1.04     | 1.69     | 2.88     | 4.32     |
|                        | Out.Torq., in.lbs. | 4770     | 5970     | 11200    | 18600    | 28600    | 41600    | 57800    | 77600    | 122000   | 198000   | 336000   | 505000   |
|                        | Therm. Input HP    | 0.055    | 0.061    | 0.111    | 0.181    | 0.274    | 0.374    | 0.495    | 0.668    | 1.04     | 1.50     | 2.51     | 3.72     |
|                        | Output RPM         | 0.206    | 0.206    | 0.206    | 0.206    | 0.206    | 0.206    | 0.206    | 0.206    | 0.206    | 0.206    | 0.206    | 0.206    |
|                        | Efficiency %       | 26.7     | 29.7     | 29.7     | 31.8     | 32.7     | 35.0     | 36.2     | 36.2     | 38.3     | 38.3     | 38.1     | 38.2     |
| 575                    | Mech. Input HP     | 0.0410   | 0.045    | 0.086    | 0.136    | 0.204    | 0.274    | 0.369    | 0.501    | 0.730    | 1.19     | 2.03     | 3.05     |
|                        | Out.Torq., in.lbs. | 4780     | 5980     | 11200    | 18600    | 28700    | 41700    | 58000    | 77800    | 122000   | 199000   | 338000   | 508000   |
|                        | Therm. Input HP    | 0.0390   | 0.0430   | 0.078    | 0.128    | 0.195    | 0.263    | 0.349    | 0.477    | 0.730    | 1.05     | 1.76     | 2.61     |
|                        | Output RPM         | 0.137    | 0.137    | 0.137    | 0.137    | 0.137    | 0.137    | 0.137    | 0.137    | 0.137    | 0.137    | 0.137    | 0.137    |
|                        | Efficiency%        | 25.3     | 28.3     | 28.1     | 29.9     | 30.5     | 33.0     | 34.1     | 33.7     | 36.3     | 36.4     | 36.2     | 36.2     |
| 300                    | Mech. Input HP     | 0.023    | 0.026    | 0.049    | 0.078    | 0.118    | 0.157    | 0.215    | 0.289    | 0.425    | 0.694    | 1.18     | 1.78     |
|                        | Out.Torq., in.lbs. | 4780     | 5890     | 11200    | 18700    | 28700    | 41800    | 58100    | 78100    | 122000   | 200000   | 340000   | 511000   |
|                        | Therm. Input HP    | 0.022    | 0.024    | 0.044    | 0.073    | 0.113    | 0.150    | 0.203    | 0.274    | 0.425    | 0.611    | 1.02     | 1.51     |
|                        | Output RPM         | 0.071    | 0.071    | 0.071    | 0.071    | 0.071    | 0.071    | 0.071    | 0.071    | 0.0714   | 0.0714   | 0.0714   | 0.0714   |
|                        | Efficiency %       | 23.2     | 25.7     | 25.7     | 27.0     | 27.5     | 30.2     | 30.6     | 30.6     | 32.5     | 32.6     | 32.6     | 32.6     |

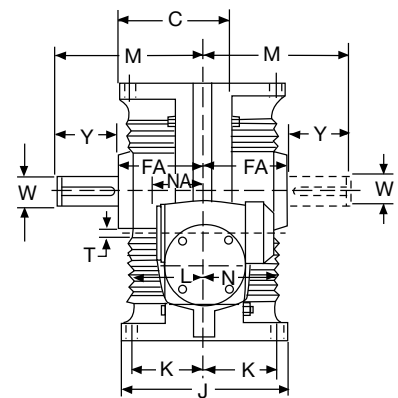
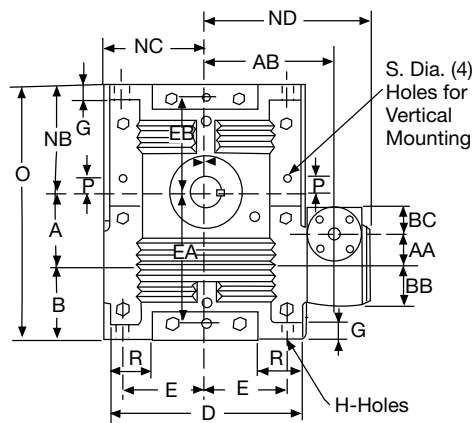
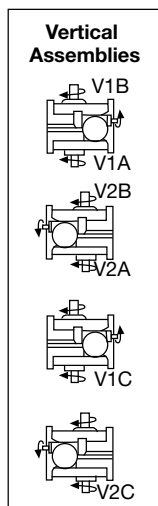
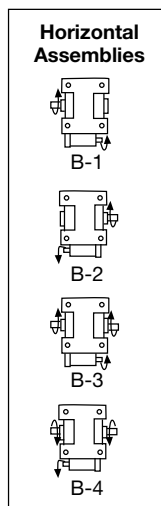
Ratings based on 1.0 service factor. For A.G.M.A. recommended practice on service factors, see page 11.

# Horsepower and Torque Ratings • Double Worm

| WORM SPEED (RPM) | Unit Size          | 35       | 40       | 50       | 60       | 70       | 80       | 90       | 100      | 120      | 140      | 170      | 200      |
|------------------|--------------------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|
|                  | Center Distance    | 3.5      | 4        | 5        | 6        | 7        | 8        | 9        | 10       | 12       | 14       | 17       | 20       |
|                  | Total Actual Ratio | 4900     | 4900     | 4900     | 4900     | 4900     | 4900     | 4900     | 4900     | 4900     | 4900     | 4900     | 4900     |
|                  | Ratio Combinations | 70<br>70 | 70<br>70 | 70<br>70 | 70<br>70 | 70<br>70 | 70<br>70 | 70<br>70 | 70<br>70 | 70<br>70 | 70<br>70 | 70<br>70 | 70<br>70 |
| 1750             | Mech. Input HP     | 0.096    | 0.118    | 0.216    | 0.314    | 0.482    | 0.667    | 0.875    | 1.12     | 1.77     | 2.68     | 4.52     | 6.90     |
|                  | Out.Torq., in.lbs. | 4340     | 5850     | 10900    | 17200    | 26900    | 38400    | 53500    | 71700    | 116000   | 176000   | 309000   | 472000   |
|                  | Therm. Input HP    | 0.092    | 0.113    | 0.204    | 0.314    | 0.482    | 0.667    | 0.875    | 1.12     | 1.77     | 2.59     | 4.15     | 6.15     |
|                  | Output RPM         | 0.357    | 0.357    | 0.357    | 0.357    | 0.357    | 0.357    | 0.357    | 0.357    | 0.357    | 0.357    | 0.357    | 0.357    |
|                  | Efficiency%        | 25.5     | 28.1     | 28.6     | 31.0     | 31.6     | 32.6     | 34.6     | 36.3     | 37.1     | 37.2     | 38.8     | 38.8     |
| 1450             | Mech. Input HP     | 0.081    | 0.101    | 0.182    | 0.264    | 0.405    | 0.560    | 0.739    | 0.957    | 1.48     | 2.26     | 3.96     | 6.04     |
|                  | Out.Torq., in.lbs. | 4340     | 5860     | 10900    | 17200    | 26900    | 38400    | 53500    | 71900    | 116000   | 177000   | 311000   | 475000   |
|                  | Therm. Input HP    | 0.078    | 0.096    | 0.172    | 0.264    | 0.405    | 0.560    | 0.739    | 0.955    | 1.48     | 2.17     | 3.62     | 5.35     |
|                  | Output RPM         | 0.296    | 0.296    | 0.296    | 0.296    | 0.296    | 0.296    | 0.296    | 0.296    | 0.296    | 0.296    | 0.296    | 0.296    |
|                  | Efficiency%        | 24.9     | 27.3     | 28.1     | 30.6     | 31.2     | 32.2     | 34.0     | 35.3     | 36.8     | 36.8     | 36.8     | 37.0     |
| 1150             | Mech. Input HP     | 0.066    | 0.081    | 0.148    | 0.214    | 0.328    | 0.458    | 0.603    | 0.778    | 1.20     | 1.84     | 3.24     | 4.95     |
|                  | Out.Torq., in.lbs. | 4350     | 5870     | 10900    | 17200    | 26900    | 38400    | 53500    | 72200    | 116000   | 178000   | 313000   | 479000   |
|                  | Therm. Input HP    | 0.063    | 0.077    | 0.139    | 0.214    | 0.328    | 0.458    | 0.603    | 0.774    | 1.20     | 1.76     | 2.94     | 4.35     |
|                  | Output RPM         | 0.235    | 0.235    | 0.235    | 0.235    | 0.235    | 0.235    | 0.235    | 0.235    | 0.235    | 0.235    | 0.235    | 0.235    |
|                  | Efficiency%        | 24.4     | 26.9     | 27.6     | 29.9     | 30.5     | 31.2     | 33.0     | 34.5     | 36.0     | 36.0     | 36.0     | 36.0     |
| 865              | Mech. Input HP     | 0.066    | 0.063    | 0.126    | 0.167    | 0.259    | 0.356    | 0.471    | 0.608    | 0.934    | 1.44     | 2.53     | 3.87     |
|                  | Out.Torq., in.lbs. | 4360     | 5880     | 11000    | 17200    | 26900    | 38400    | 53600    | 72400    | 116000   | 179000   | 315000   | 482000   |
|                  | Therm. Input HP    | 0.049    | 0.060    | 0.118    | 0.167    | 0.259    | 0.356    | 0.470    | 0.603    | 0.934    | 1.37     | 2.28     | 3.38     |
|                  | Output RPM         | 0.176    | 0.176    | 0.176    | 0.176    | 0.176    | 0.176    | 0.176    | 0.176    | 0.176    | 0.176    | 0.176    | 0.176    |
|                  | Efficiency %       | 16.3     | 25.9     | 24.4     | 28.8     | 29.1     | 30.2     | 31.9     | 33.4     | 34.8     | 34.8     | 34.9     | 34.9     |
| 575              | Mech. Input HP     | 0.036    | 0.044    | 0.080    | 0.118    | 0.186    | 0.253    | 0.336    | 0.432    | 0.655    | 1.01     | 1.78     | 2.72     |
|                  | Out.Torq., in.lbs. | 4360     | 5890     | 11000    | 17200    | 26900    | 38400    | 53800    | 72700    | 116000   | 180000   | 317000   | 485000   |
|                  | Therm. Input HP    | 0.034    | 0.042    | 0.075    | 0.118    | 0.186    | 0.253    | 0.334    | 0.427    | 0.655    | 0.960    | 1.60     | 2.36     |
|                  | Output RPM         | 0.117    | 0.117    | 0.117    | 0.117    | 0.117    | 0.117    | 0.117    | 0.117    | 0.117    | 0.117    | 0.117    | 0.117    |
|                  | Efficiency%        | 22.4     | 24.6     | 25.4     | 27.1     | 26.9     | 28.3     | 29.8     | 31.3     | 33.0     | 33.0     | 33.0     | 33.2     |
| 300              | Mech. Input HP     | 0.020    | 0.025    | 0.045    | 0.068    | 0.108    | 0.144    | 0.195    | 0.249    | 0.382    | 0.610    | 1.08     | 1.65     |
|                  | Out.Torq., in.lbs. | 4370     | 5900     | 11000    | 17200    | 26900    | 38500    | 54000    | 73000    | 116000   | 180000   | 319000   | 488000   |
|                  | Therm. Input HP    | 0.019    | 0.024    | 0.043    | 0.068    | 0.108    | 0.144    | 0.193    | 0.245    | 0.382    | 0.575    | 0.960    | 1.42     |
|                  | Output RPM         | 0.612    | 0.061    | 0.061    | 0.061    | 0.061    | 0.061    | 0.061    | 0.061    | 0.0612   | 0.0612   | 0.0612   | 0.0612   |
|                  | Efficiency %       | 20.5     | 22.5     | 23.3     | 24.5     | 24.2     | 25.9     | 26.9     | 28.5     | 29.5     | 28.7     | 28.7     | 28.8     |

Ratings based on 1.0 service factor. For A.G.M.A. recommended practice on service factors, see page 11.

## Dimensions Type DE • Horizontal and Vertical



| Unit Size | WT. LBS. | A     | AA | AB    | B     | BB    | BC      | C     | D      | E     | EA    | EB    | FA    | G   | H      | J     | K     | L     | M     | N      | NA    | NB    | NC    | ND    | O      | P     | Q     | R     | S      | T      | U      | Keyway              | W     | Y     | Keyway               |
|-----------|----------|-------|----|-------|-------|-------|---------|-------|--------|-------|-------|-------|-------|-----|--------|-------|-------|-------|-------|--------|-------|-------|-------|-------|--------|-------|-------|-------|--------|--------|--------|---------------------|-------|-------|----------------------|
| DE35      | 120      | 3 1/2 | 2  | 6 5/8 | 3 3/8 | 2 1/2 | 1 11/16 | 5 3/8 | 9      | 3 7/8 | 6 3/8 | 4 7/8 | 4 1/8 | 7/8 | 1 1/16 | 8 1/4 | 3 3/8 | 4 1/2 | 7 1/8 | 4 9/16 | 3 1/8 | 5 3/8 | 4 3/4 | 8 7/8 | 12 1/4 | 1 1/4 | 3 7/8 | 2     | 9/16   | 1 1/16 | 1 9/16 | 3/16 x 3/32 x 1 1/4 | 1 1/2 | 3     | 3/8 x 3/16 x 2 15/16 |
| DE40      | 180      | 4     | 2  | 7 3/8 | 4 1/4 | 2 1/2 | 1 11/16 | 6 3/8 | 10 1/4 | 4 1/4 | 7 1/2 | 5 1/4 | 5     | 7/8 | 1 9/16 | 10    | 4     | 4 1/2 | 8 1/2 | 4 9/16 | 3 1/8 | 6     | 5 1/2 | 9 3/8 | 14 1/4 | 1 3/4 | 4 1/4 | 2 3/8 | 1 1/16 | 1 1/16 | 1 9/16 | 3/16 x 3/32 x 1 1/4 | 1 3/4 | 3 1/2 | 3/8 x 3/16 x 3 7/16  |

All dimensions are in inches. Use certified prints for construction. The input shaft may be rotated in either direction. Standard gear sets are cut with right hand threads giving relative shaft rotations as shown above. Shaft arrangements are shown above. Desired assembly should be

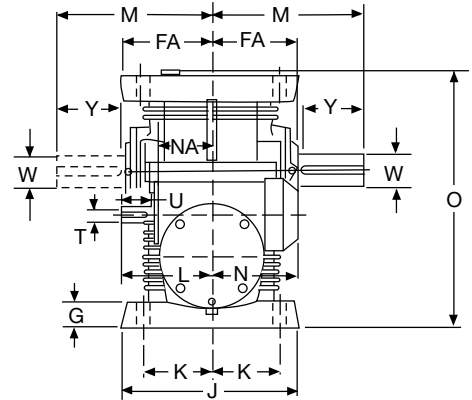
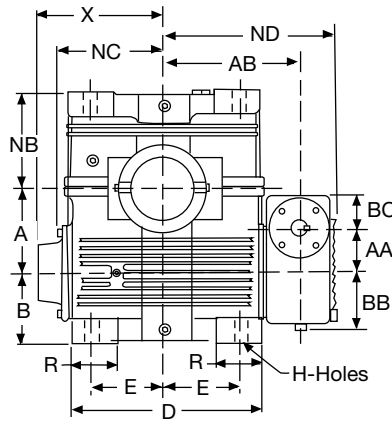
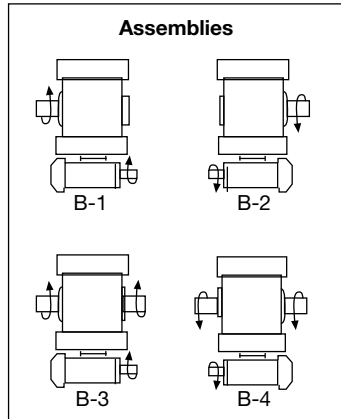
specified when ordering. Standard keys are furnished with units.

▲ Tolerances: 1 1/2" Diameter or Less = +.0000" -.0005"

Over 1 1/2" Diameter = +.000" -.001"

Low input speeds require special order instructions. See introductory section.

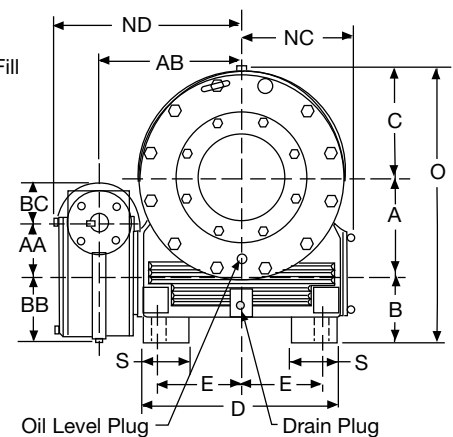
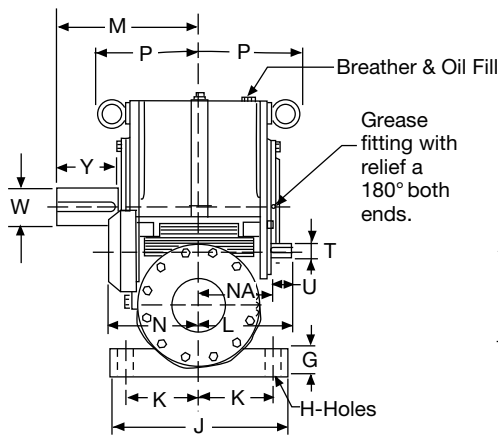
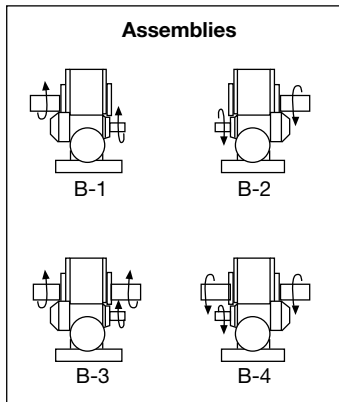
# Dimensions Type DE • Horizontal



| Unit Size | WT LBS | A  | AA    | AB     | B     | BB    | BC     | D      | E      | FA     | G       | H       | J      | K     | L      | M      | N       | NA      | NB     | NC       | ND       | O      | R     | T▲     | U       | Keyway                | W▲    | Y     | Keyway               | X       |
|-----------|--------|----|-------|--------|-------|-------|--------|--------|--------|--------|---------|---------|--------|-------|--------|--------|---------|---------|--------|----------|----------|--------|-------|--------|---------|-----------------------|-------|-------|----------------------|---------|
| DE50      | 210    | 5  | 2 1/2 | 7 7/8  | 4 5/8 | 3 3/8 | 1 7/8  | 11 3/4 | 4 3/4  | 5 1/2  | 1 1/2   | 13/16   | 10 3/4 | 4 3/8 | 5 3/8  | 9 5/8  | 5 1/8   | 3 5/8   | 5 3/4  | 6 7/16   | 10 3/16  | 15 7/8 | 2     | 1 1/16 | 1 3/4   | 3/16 x 3/32 x 1 11/16 | 2     | 4     | 1/2 x 1/4 x 3 7/8    | 8 3/16  |
| DE60      | 335    | 6  | 3     | 9 1/2  | 5     | 4 3/8 | 2 5/16 | 13 1/2 | 5 1/4  | 6 1/8  | 1 11/16 | 15/16   | 12 1/4 | 4 3/4 | 6 1/8  | 10 3/4 | 5 7/8   | 4 3/16  | 6 3/4  | 7 3/4    | 12 1/4   | 18 1/2 | 3     | 7/8    | 1 7/8   | 3/16 x 3/32 x 1 13/16 | 2 1/4 | 4 1/2 | 1/2 x 1/4 x 4 3/8    | 9 9/16  |
| DE70      | 435    | 7  | 3 1/2 | 10 3/8 | 5 3/8 | 4 3/4 | 2 1/2  | 14 3/4 | 6      | 6 3/8  | 1 11/16 | 1 1/8   | 13     | 5     | 7      | 11 1/2 | 6 9/16  | 5       | 7 3/4  | 8 3/8    | 13 1/4   | 20 5/8 | 2 3/4 | 1      | 2       | 1/4 x 1/8 x 1 15/16   | 2 1/2 | 5     | 5/8 x 5/16 x 4 15/16 | 10 3/16 |
| DE80      | 625    | 8  | 4     | 11 5/8 | 5 3/4 | 5 1/8 | 2 7/8  | 16 1/2 | 6 3/4  | 6 1/2  | 1 3/4   | 1 3/16  | 13 1/2 | 5 3/8 | 7 3/4  | 12 1/8 | 8       | 5 11/16 | 8 3/4  | 9 3/8    | 14 15/16 | 23     | 3     | 1 1/8  | 2 1/16  | 1/4 x 1/8 x 2         | 2 3/4 | 5 1/2 | 5/8 x 5/16 x 5 7/16  | 11 9/16 |
| DE90      | 855    | 9  | 5     | 13 1/8 | 6 1/4 | 6 1/8 | 3 3/8  | 18 3/4 | 7 3/4  | 7 5/8  | 1 7/8   | 1 7/16  | 15 1/4 | 6     | 8 3/4  | 14 1/4 | 8 9/16  | 6 7/16  | 9 3/4  | 10 3/8   | 16 13/16 | 25 1/2 | 3 1/4 | 1 3/8  | 2 5/16  | 5/16 x 5/32 x 2 1/4   | 3 1/4 | 6 1/2 | 3/4 x 3/8 x 6 3/8    | 13 3/8  |
| DE100     | 1110   | 10 | 5     | 14 1/4 | 6 3/4 | 6 1/8 | 3 3/8  | 21     | 8 3/4  | 8 5/8  | 2       | 1 7/16  | 17     | 6 3/8 | 8 3/4  | 16     | 8 9/16  | 6 7/16  | 10 3/4 | 11 11/16 | 17 15/16 | 27 7/8 | 3 1/2 | 1 3/8  | 2 5/16  | 5/16 x 5/32 x 2 1/4   | 3 5/8 | 7 1/4 | 7/8 x 7/16 x 7 3/16  | 14 3/8  |
| DE120     | 1530   | 12 | 6     | 16 3/8 | 7 1/2 | 7 1/4 | 3 7/8  | 24 5/8 | 10 1/2 | 8 7/8  | 2 1/8   | 1 9/16  | 18 1/2 | 7 1/8 | 10 1/4 | 17 1/2 | 10 1/16 | 7 3/4   | 13 1/4 | 13 7/16  | 20 5/8   | 33     | 4     | 1 1/2  | 2 11/16 | 3/8 x 3/16 x 2 5/8    | 4 1/4 | 8 1/2 | 1 x 1/2 x 8 3/8      | 16 1/8  |
| DE140     | 2360   | 14 | 6     | 19 3/8 | 9 1/2 | 7 1/4 | 3 7/8  | 27 1/2 | 11 1/2 | 10 1/8 | 2 1/4   | 1 11/16 | 21 3/4 | 8 3/4 | 10 1/4 | 19 1/4 | 10 1/16 | 7 3/4   | 15 3/8 | 15 1/2   | 23 5/8   | 39     | 4 1/2 | 1 1/2  | 2 11/16 | 3/8 x 3/16 x 2 5/8    | 5     | 9     | 1 1/4 x 5/8 x 8 5/8  | —       |

Double Worm Speed Reducers

# Dimensions Type DEB • Horizontal



| Unit Size | WT. LBS. | A  | AA | AB     | B      | BB     | BC     | C       | D  | E      | G     | H       | J  | K      | L      | M      | N        | NA     | NC       | ND     | O      | P      | S     | T▲    | U       | Keyway             | W▲    | Y  | Keyway               |
|-----------|----------|----|----|--------|--------|--------|--------|---------|----|--------|-------|---------|----|--------|--------|--------|----------|--------|----------|--------|--------|--------|-------|-------|---------|--------------------|-------|----|----------------------|
| DEB170    | 4325     | 17 | 8  | 22 3/8 | 10 1/2 | 9 1/4  | 5 3/16 | 18 1/2  | 32 | 13 1/4 | 3 3/8 | 1 11/16 | 24 | 10 1/4 | 12 1/2 | 21 1/2 | 11 3/4   | 9 3/8  | 18 11/16 | 28 1/8 | 45 3/4 | 13 1/4 | 5 3/4 | 1 7/8 | 3 1/8   | 1/2 x 1/4 x 3 1/16 | 5 3/4 | 10 | 1 1/2 x 3/4 x 9 3/4  |
| DEB200    | 5960     | 20 | 9  | 25 3/8 | 11 1/2 | 10 1/4 | 6 3/16 | 21 7/16 | 36 | 14 3/4 | 3 3/8 | 1 15/16 | 27 | 11 1/2 | 14 1/4 | 23 3/4 | 13 13/16 | 10 3/8 | 21 3/16  | 32     | 52 3/4 | 14 1/2 | 6 1/2 | 2 1/8 | 3 15/16 | 1/2 x 1/4 x 3 7/8  | 6 1/2 | 11 | 1 1/2 x 3/4 x 10 1/2 |

All dimensions are in inches. Use certified prints for construction. The input shaft may be rotated in either direction. Standard gear sets are cut with right hand threads giving relative shaft rotations as shown above. Shaft arrangements are shown above. Desired assembly should be

specified when ordering. Standard keys are furnished with units.

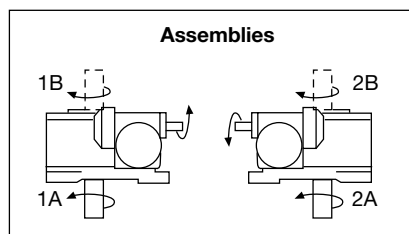
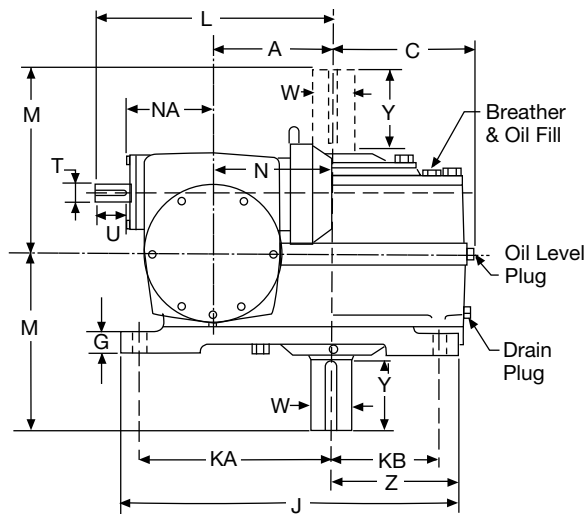
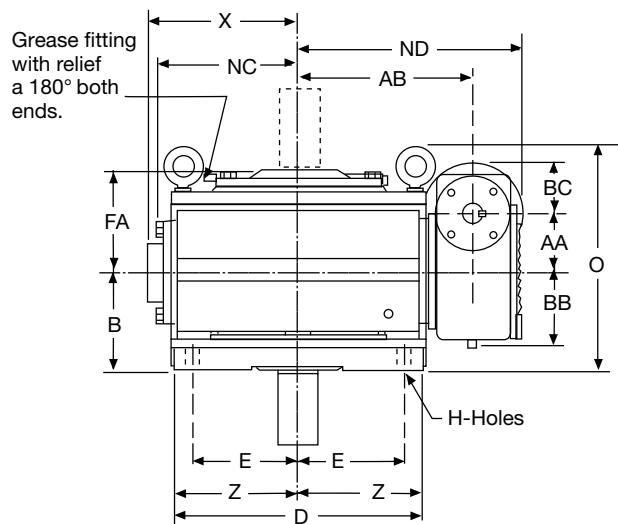
▲ Tolerances: 1 1/2" Diameter or Less = +.0000" -.0005"

Over 1 1/2" Diameter = +.000" -.001"

Low input speeds require special order instructions. See introductory section.

# Dimensions Type DV • Vertical

Double Worm  
Speed Reducers

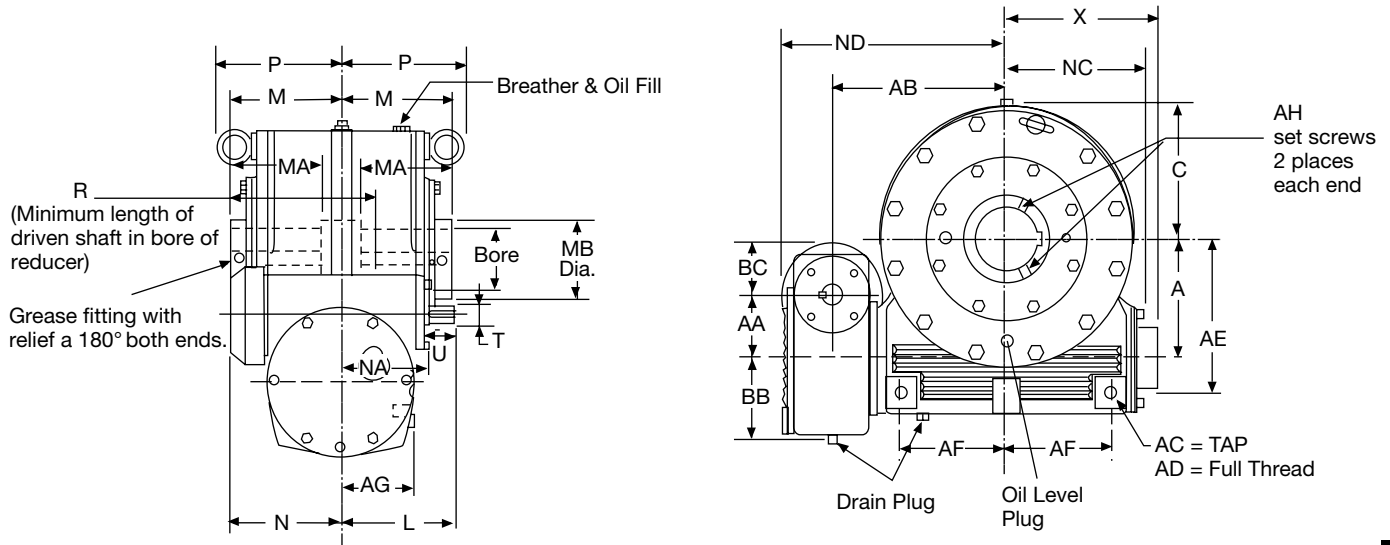


A drywell is standard for vertical assemblies sizes 30-200 only.

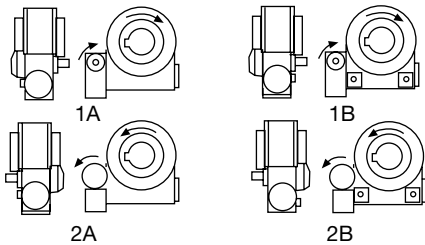
| Unit Size | WT. LBS. | A     | AA    | AB     | B      | BB     | BC      | C       | D      | E      | FA     | G     | H      | J      | KA     | KB     | L      | M      | N        | NA      | NC       | ND       | O       | T▲     | U       | Keyway                | W▲    | Y     | Keyway               | Z       | X       |
|-----------|----------|-------|-------|--------|--------|--------|---------|---------|--------|--------|--------|-------|--------|--------|--------|--------|--------|--------|----------|---------|----------|----------|---------|--------|---------|-----------------------|-------|-------|----------------------|---------|---------|
| DV35      | 90       | 3 1/2 | 2     | 6 5/8  | 4 1/8  | 2 1/2  | 2 1/8   | 4 13/16 | 8 3/8  | 3 1/2  | 4      | 7/8   | 1 1/16 | 11 3/4 | 6 7/8  | 3 1/2  | 8      | 7 1/8  | 4 9/16   | 3 1/8   | 5        | 8 7/8    | 9 1/8   | 1 1/16 | 1 5/16  | 3/16 x 3/32 x 1 1/4   | 1 1/2 | 3     | 3/8 x 3/16 x 2 15/16 | 4 3/16  | 6 5/8   |
| DV40      | 125      | 4     | 2     | 7 3/8  | 5      | 2 1/2  | 2 1/8   | 5 3/8   | 9 1/4  | 3 7/8  | 4 7/8  | 1 1/8 | 1 1/16 | 13 1/8 | 7 5/8  | 3 7/8  | 8 1/2  | 8 1/2  | 4 9/16   | 3 1/8   | 5 11/16  | 9 5/8    | 10 1/2  | 1 1/16 | 1 5/16  | 3/16 x 3/32 x 1 1/4   | 1 3/4 | 3 1/2 | 3/8 x 3/16 x 3 7/16  | 4 3/8   | 7 1/2   |
| DV50      | 285      | 5     | 2 1/2 | 7 7/8  | 5 5/8  | 3 5/8  | 2 1/8   | 6 5/8   | 11 1/8 | 4 3/4  | 5 1/2  | 1 1/4 | 1 3/16 | 15 3/8 | 9      | 4 3/4  | 10 3/8 | 9 5/8  | 5 1/16   | 3 5/8   | 6 7/16   | 10 3/16  | 12 9/16 | 1 1/16 | 1 3/4   | 3/16 x 3/64 x 1 11/16 | 2     | 4     | 1/2 x 1/4 x 3 7/8    | 5 9/16  | 8 3/16  |
| DV60      | 400      | 6     | 3     | 9 1/2  | 6 1/4  | 4 3/4  | 2 9/16  | 7 3/4   | 13 3/8 | 5 3/4  | 6 1/8  | 1 3/8 | 1 3/16 | 18 1/8 | 10 1/2 | 5 3/4  | 12 1/8 | 10 3/4 | 5 7/8    | 4 3/16  | 7 3/4    | 12 1/4   | 13 7/16 | 7/8    | 1 7/8   | 3/16 x 3/64 x 1 13/16 | 2 1/4 | 4 1/2 | 1/2 x 1/4 x 4 3/8    | 6 11/16 | 9 9/16  |
| DV70      | 550      | 7     | 3 1/2 | 10 3/8 | 6 1/2  | 4 3/4  | 2 9/16  | 8 3/8   | 14 5/8 | 6 1/4  | 6 7/16 | 1 3/8 | 1 5/16 | 20 1/8 | 11 3/4 | 6 1/4  | 14     | 11 1/2 | 6 9/16   | 5       | 8 3/8    | 13 1/4   | 14      | 1      | 2       | 1/4 x 1/8 x 1 15/16   | 2 1/2 | 5     | 5/8 x 5/16 x 4 15/16 | 7 5/16  | 10 3/16 |
| DV80      | 690      | 8     | 4     | 11 5/8 | 6 5/8  | 5 1/8  | 3 5/16  | 9 1/2   | 16 1/2 | 7      | 6 1/2  | 1 1/2 | 1 1/16 | 22 1/4 | 12 3/4 | 7      | 15 3/4 | 12 1/8 | 8        | 5 11/16 | 9 3/8    | 14 15/16 | 14 7/8  | 1 1/8  | 2 1/16  | 1/4 x 1/8 x 2         | 2 3/4 | 5 1/2 | 5/8 x 5/16 x 5 7/16  | 8 1/4   | 11 9/16 |
| DV90      | 890      | 9     | 5     | 13 1/8 | 7 3/4  | 6 1/8  | 3 11/16 | 10 1/2  | 18 1/2 | 7 7/8  | 7 5/8  | 1 5/8 | 1 3/16 | 25     | 14 3/8 | 7 7/8  | 17 3/4 | 14 1/4 | 8 9/16   | 6 7/16  | 10 3/8   | 16 13/16 | 17      | 1 3/8  | 2 5/16  | 5/16 x 5/32 x 2 1/4   | 3 1/4 | 6 1/2 | 3/4 x 3/8 x 6 3/8    | 9 1/4   | 13 3/8  |
| DV100     | 1090     | 10    | 5     | 14 1/4 | 8 3/4  | 6 1/8  | 3 11/16 | 11 5/8  | 20 3/4 | 9      | 8 5/8  | 1 3/4 | 1 3/16 | 27 1/4 | 15 1/2 | 9      | 18 3/4 | 16     | 8 9/16   | 6 7/16  | 11 11/16 | 17 15/16 | 18 1/2  | 1 3/8  | 2 5/16  | 5/16 x 5/32 x 2 1/4   | 3 5/8 | 7 1/4 | 7/8 x 7/16 x 7 3/16  | 10 3/8  | 14 3/8  |
| DV120     | 1760     | 12    | 6     | 16 3/8 | 9      | 7 1/4  | 4 1/8   | 13 5/8  | 24 1/4 | 10 3/8 | 8 7/8  | 2 1/8 | 1 5/16 | 32 3/8 | 18 1/2 | 10 3/8 | 22 1/4 | 17 1/2 | 10 1/16  | 7 3/4   | 13 7/16  | 20 5/8   | 19 1/2  | 1 1/2  | 2 11/16 | 3/8 x 3/16 x 2 5/8    | 4 1/4 | 8 1/2 | 1 x 1/2 x 8 3/8      | 12 1/8  | 16 1/8  |
| DV140     | 2510     | 14    | 6     | 19 3/8 | 10 1/4 | 7 1/4  | 4 1/8   | 15 5/8  | 27 1/2 | 12     | 9 7/8  | 2 1/4 | 1 5/16 | 37 1/2 | 22     | 12     | 24 1/4 | 19 1/4 | 10 1/16  | 7 3/4   | 16       | 23 5/8   | 21 3/4  | 1 1/2  | 2 11/16 | 3/8 x 3/16 x 2 5/8    | 5     | 9     | 1 1/4 x 5/8 x 8 5/8  | 13 3/4  | —       |
| DV170     | 4160     | 17    | 8     | 22 3/8 | 11 1/2 | 9 1/4  | 5 3/16  | 18 1/2  | 33     | 14 1/2 | 11 1/8 | 2 1/2 | 1 9/16 | 44 3/4 | 26 1/4 | 14 1/2 | 29 1/2 | 21 1/2 | 11 3/4   | 9 3/8   | 18 11/16 | 28 1/8   | 24 3/4  | 1 7/8  | 3 1/8   | 1/2 x 1/4 x 3 1/16    | 5 3/4 | 10    | 1 1/2 x 3/4 x 9 3/4  | 16 1/2  | —       |
| DV200     | 5630     | 20    | 9     | 25 3/8 | 12 3/4 | 10 1/4 | 6 3/16  | 21 7/16 | 39     | 17     | 12 7/8 | 2 3/4 | 1 9/16 | 53     | 31     | 17     | 34 1/4 | 23 3/4 | 13 13/16 | 10 3/8  | 21 3/16  | 32       | 27 1/4  | 2 1/8  | 3 15/16 | 1/2 x 1/4 x 3 7/8     | 6 1/2 | 11    | 1 1/2 x 3/4 x 10 1/2 | 19 1/2  | —       |



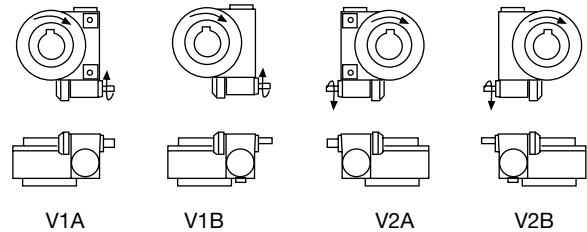
# Dimensions Type DSM • Horizontal and Vertical



Horizontal Assemblies



Vertical Assemblies



A drywell is standard for vertical assemblies sizes 60-200 only.

| Unit Size | WT. LBS. | A     | AA    | AB     | AC       | AD    | AE     | AF     | AG    | AH     | BB     | BC      | C       | L      | M       | MA     | MB     | N        | NA      | NC       | ND       | P       | R      | T ▲    | U       | Keyway                | Bore        | Keyway       | X       |
|-----------|----------|-------|-------|--------|----------|-------|--------|--------|-------|--------|--------|---------|---------|--------|---------|--------|--------|----------|---------|----------|----------|---------|--------|--------|---------|-----------------------|-------------|--------------|---------|
| DSM35     | 115      | 3 1/2 | 2     | 6 5/8  | 1 1/2-13 | 3/4   | 5 1/8  | 3 1/2  | 3     | 3/8-16 | 2 1/2  | 2 1/8   | 4 13/16 | 4 1/2  | 4 11/16 | 4 1/8  | 3 1/8  | 4 9/16   | 3 1/8   | 5        | 8 7/8    | 5       | 5 3/4  | 1 1/16 | 1 5/16  | 3/16 x 3/32 x 1 1/4   | 21885/21905 | 1/2 x 1/4    | 6 5/8   |
| DSM40     | 165      | 4     | 2     | 7 3/8  | 5/8-11   | 1     | 5 3/4  | 3 7/8  | 3 1/2 | 3/8-16 | 2 1/2  | 2 1/8   | 5 3/8   | 4 1/2  | 5 5/16  | 4 1/16 | 3 1/2  | 4 9/16   | 3 1/8   | 5 11/16  | 9 5/8    | 5 1/2   | 6 7/16 | 1 1/16 | 1 5/16  | 3/16 x 3/32 x 1 1/4   | 2438/2440   | 5/8 x 5/16   | 7 1/2   |
| DSM50     | 260      | 5     | 2 1/2 | 7 7/8  | 3/4-10   | 1 1/4 | 7      | 4 3/4  | 4     | 1/2-13 | 3 5/8  | 2 1/8   | 6 5/8   | 5 3/8  | 5 7/8   | 5 1/4  | 4 3/16 | 5 1/16   | 3 5/8   | 6 7/16   | 10 3/16  | 6 15/16 | 7      | 1 1/16 | 1 3/4   | 3/16 x 3/32 x 1 11/16 | 2938/2940   | 3/4 x 3/8    | 8 3/16  |
| DSM60     | 360      | 6     | 3     | 9 1/2  | 3/4-10   | 1 1/8 | 9 1/2  | 5 3/4  | 4 1/4 | 1/2-13 | 4 3/8  | 2 9/16  | 7 3/4   | 6 1/8  | 6 1/2   | 5 3/4  | 4 3/4  | 5 7/8    | 4 3/16  | 7 3/4    | 12 1/4   | 7 3/16  | 7 3/4  | 7/8    | 1 7/8   | 3/16 x 3/32 x 1 13/16 | 3438/3440   | 7/8 x 7/16   | 9 9/16  |
| DSM70     | 500      | 7     | 3 1/2 | 10 3/8 | 7/8-9    | 1 3/8 | 9 3/8  | 6 1/4  | 4 1/2 | 1/2-13 | 4 3/4  | 2 9/16  | 8 3/8   | 7      | 6 3/4   | 5 7/8  | 5 1/2  | 6 9/16   | 5       | 8 3/8    | 13 1/4   | 7 1/2   | 8 1/8  | 1      | 2       | 1/4 x 1/8 x 1 15/16   | 3938/3940   | 1 x 1/2      | 10 3/16 |
| DSM80     | 645      | 8     | 4     | 11 5/8 | 1-8      | 1 1/2 | 10 1/4 | 7      | 4 5/8 | 1/2-13 | 5 1/8  | 3 5/16  | 9 1/2   | 7 3/4  | 7 1/4   | 6 1/4  | 6 1/4  | 8        | 5 11/16 | 9 3/8    | 14 15/16 | 8 1/4   | 8 3/4  | 1 1/8  | 2 1/16  | 1/4 x 1/8 x 2         | 4438/4440   | 1 x 1 1/2    | 11 9/16 |
| DSM90     | 840      | 9     | 5     | 13 1/8 | 1-8      | 1 1/2 | 11 1/2 | 7 7/8  | 5 5/8 | 1/2-13 | 6 1/8  | 3 11/16 | 10 1/2  | 8 3/4  | 8 1/4   | 7 1/8  | 7      | 8 9/16   | 6 7/16  | 10 3/8   | 16 13/16 | 9 1/4   | 9 7/8  | 1 3/8  | 2 5/16  | 5/16 x 5/32 x 2 1/4   | 4938/4940   | 1 1/4 x 7/16 | 13 3/8  |
| DSM100    | 1060     | 10    | 5     | 14 1/4 | 1-8      | 1 1/2 | 12 3/4 | 9      | 6 1/8 | 5/8-11 | 6 1/8  | 3 11/16 | 11 5/8  | 8 3/4  | 9 1/4   | 8      | 7 1/2  | 8 9/16   | 6 7/16  | 11 11/16 | 17 15/16 | 9 3/4   | 11     | 1 5/8  | 2 5/16  | 5/16 x 5/32 x 2 1/4   | 5438/5440   | 1 1/4 x 7/16 | 14 3/8  |
| DSM120    | 1460     | 12    | 6     | 16 3/8 | 1 1/4-7  | 2     | 15 1/4 | 10 3/8 | 6 1/2 | 5/8-11 | 7 1/4  | 4 1/8   | 13 5/8  | 10 1/4 | 9 3/4   | 8 3/8  | 8      | 10 1/16  | 7 3/4   | 13 7/16  | 20 3/8   | 10 1/2  | 11 5/8 | 1 1/2  | 2 11/16 | 3/8 x 3/16 x 2 5/8    | 6000/6002   | 1 1/2 x 1/2  | 16 1/8  |
| DSM140    | 2060     | 14    | 6     | 19 3/8 | 1 1/4-7  | 2 1/8 | 18 1/2 | 12     | 7 1/2 | 5/8-11 | 7 1/4  | 4 1/8   | 15 5/8  | 10 1/4 | 10 3/4  | 9      | 8      | 10 1/16  | 7 3/4   | 16       | 23 3/8   | 11 1/2  | 13     | 1 1/2  | 2 11/16 | 3/8 x 3/16 x 2 5/8    | 6000/6002   | 1 1/2 x 1/2  | —       |
| DSM170    | 3275     | 17    | 8     | 22 3/8 | 1 1/2-6  | 2 1/4 | 22     | 14 1/2 | 8 1/2 | 5/8-11 | 9 1/4  | 5 3/8   | 18 1/2  | 12 1/2 | 12 1/4  | 10 1/4 | 9 1/4  | 11 3/4   | 9 3/8   | 18 11/16 | 28 1/8   | 13 1/4  | 14 3/4 | 1 7/8  | 3 1/8   | 1/2 x 1/4 x 3 1/8     | 6500/6502   | 1 1/2 x 1/2  | —       |
| DSM200    | 4760     | 20    | 9     | 25 3/8 | 1 1/2-6  | 2 1/4 | 26     | 16 1/4 | 9 1/2 | 5/8-11 | 10 1/4 | 6 3/8   | 21 7/16 | 14 1/4 | 13 1/2  | 11 1/2 | 9 1/4  | 13 13/16 | 10 3/8  | 21 3/8   | 32       | 14 1/2  | 16     | 2 1/8  | 3 15/16 | 1/2 x 1/4 x 3 7/8     | 6500/6502   | 1 1/2 x 1/2  | —       |

All dimensions are in inches. Use certified prints for construction. The input shaft may be rotated in either direction. Standard gear sets are cut with right hand threads giving relative shaft rotations as shown above. Shaft arrangements are shown above. Desired assembly should be specified when ordering. Standard keys are furnished with units.

▲ Tolerances: 1 1/2" Diameter or Less = +.0000" -.0005"

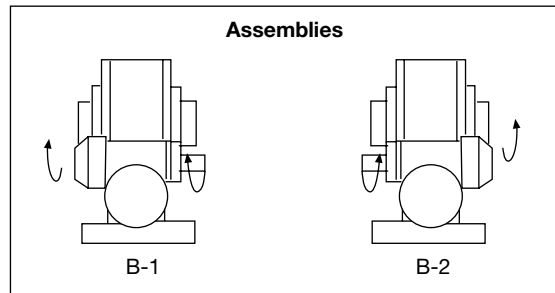
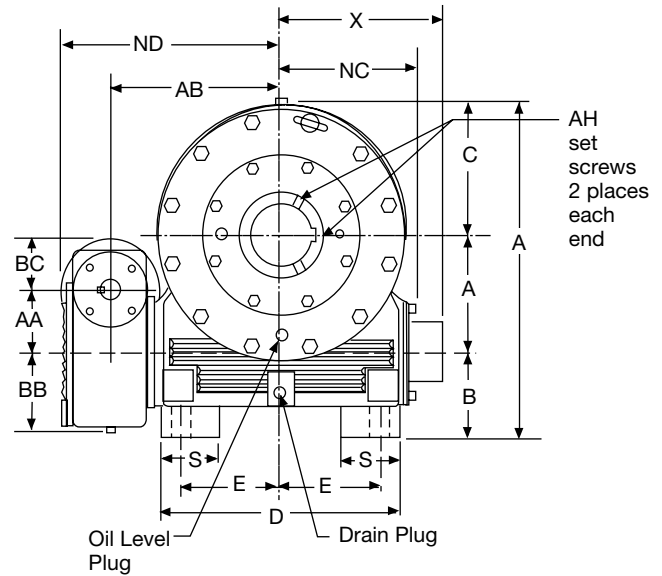
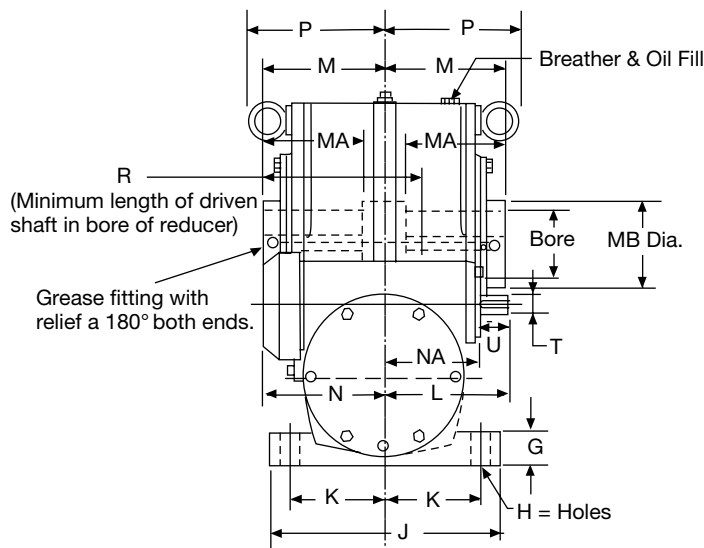
Over 1 1/2" Diameter = +.000" -.001"

Low input speeds require special order instructions. See introductory section.

A drywell is standard for vertical assemblies 60-200 only.

# Dimensions Type DSMB • Base Mount

Double Worm  
Speed Reducers



| Unit Size | WT. LBS. | A     | AA    | AB     | AH     | B      | BB     | BC      | C       | D      | E      | G     | H       | J      | K      | L      | M       | MA      | MB     | N        | NA      | NC       | ND       | O        | P       | R      | S     | T      | U       | Keyway                | Bore          | Keyway       | X      |
|-----------|----------|-------|-------|--------|--------|--------|--------|---------|---------|--------|--------|-------|---------|--------|--------|--------|---------|---------|--------|----------|---------|----------|----------|----------|---------|--------|-------|--------|---------|-----------------------|---------------|--------------|--------|
| DSMB35    | 142      | 3 1/2 | 2     | 6 5/8  | 3/8-16 | 3 3/8  | 2 1/2  | 2 1/8   | 4 13/16 | 9 1/4  | 3 7/8  | 1 1/8 | 1 1/16  | 9      | 3 3/4  | 4 1/2  | 4 11/16 | 4 1/8   | 3 1/8  | 4 9/16   | 3 1/8   | 5        | 8 7/8    | 11 11/16 | 5       | 5 3/4  | 2 1/4 | 1 1/16 | 1 1/8   | 3/16 x 3/32 x 1 1/4   | 21885 / 21905 | 1/2 x 1/4    | 6 3/8  |
| DSMB40    | 215      | 4     | 2     | 7 3/8  | 3/8-16 | 4      | 2 1/2  | 2 1/8   | 5 3/8   | 10 3/8 | 4 1/4  | 1 1/2 | 1 3/16  | 10 1/2 | 4 3/8  | 4 1/2  | 5 5/8   | 4 11/16 | 3 1/2  | 4 9/16   | 3 1/8   | 5 11/16  | 9 5/8    | 13 3/8   | 5 1/2   | 6 7/8  | 2 1/2 | 1 1/16 | 1 1/8   | 3/16 x 3/32 x 1 1/4   | 2438 / 2440   | 5/8 x 5/16   | 7 1/2  |
| DSMB50    | 320      | 5     | 2 1/2 | 7 7/8  | 1/2-13 | 4 5/8  | 3 3/8  | 2 1/8   | 7 1/2   | 11 1/2 | 4 3/4  | 1 3/4 | 1 3/16  | 12     | 4 7/8  | 5 3/8  | 5 7/8   | 5 1/4   | 4 9/16 | 5 1/8    | 3 3/8   | 6 7/8    | 10 3/8   | 17 1/8   | 6 15/16 | 7      | 3     | 1 1/16 | 1 3/4   | 3/16 x 3/32 x 1 11/16 | 2938 / 2940   | 3/4 x 3/8    | 8 3/8  |
| DSMB60    | 455      | 6     | 3     | 9 1/2  | 1/2-13 | 5      | 4 3/8  | 2 9/16  | 8 3/8   | 13 1/4 | 5 1/4  | 1 1/2 | 1 3/16  | 13     | 5 1/4  | 6 1/8  | 6 1/2   | 5 3/4   | 4 3/4  | 5 7/8    | 4 3/16  | 7 3/4    | 12 1/4   | 19 3/8   | 7 3/8   | 7 3/4  | 3     | 7/8    | 1 7/8   | 3/16 x 3/32 x 1 13/16 | 3438 / 3440   | 7/8 x 7/16   | 9 9/16 |
| DSMB70    | 615      | 7     | 3 1/2 | 10 3/8 | 1/2-13 | 5 5/8  | 4 3/4  | 2 9/16  | 9 1/4   | 14 3/4 | 6      | 2     | 1 1/16  | 14     | 5 3/8  | 7      | 6 3/4   | 5 7/8   | 5 1/2  | 6 9/16   | 5       | 8 3/8    | 13 1/4   | 21 3/8   | 7 1/2   | 8 1/8  | 3 1/2 | 1      | 2       | 1/4 x 1/8 x 1 15/16   | 3938 / 3940   | 1 1/2 x 1/2  | 10 3/8 |
| DSMB80    | 775      | 8     | 4     | 11 5/8 | 1/2-13 | 5 3/4  | 5 1/8  | 3 5/8   | 10 1/2  | 16 1/2 | 6 3/4  | 2 1/4 | 1 3/16  | 14 1/2 | 6      | 7 3/4  | 7 1/4   | 6 1/4   | 6 1/4  | 8        | 5 11/16 | 9 3/8    | 14 15/16 | 24 1/4   | 8 1/4   | 8 3/4  | 4     | 1 1/8  | 2 1/16  | 1/4 x 1/8 x 2         | 4438 / 4440   | 1 x 1/2      | 11 3/8 |
| DSMB90    | 1005     | 9     | 5     | 13 1/8 | 1/2-13 | 6 1/4  | 6 1/8  | 3 11/16 | 11 3/8  | 18 3/4 | 7 3/4  | 2 1/2 | 1 7/16  | 17 1/2 | 7 1/4  | 8 3/4  | 8 1/4   | 7 1/8   | 7      | 8 9/16   | 6 7/8   | 10 3/8   | 16 13/16 | 26 3/8   | 9 1/4   | 9 7/8  | 4     | 1 3/8  | 2 5/16  | 5/16 x 3/32 x 2 1/4   | 4938 / 4940   | 1 1/4 x 7/16 | 13 3/8 |
| DSMB100   | 1255     | 10    | 5     | 14 1/4 | 5/8-11 | 6 3/4  | 6 1/8  | 3 11/16 | 12 3/8  | 21     | 8 3/4  | 2 7/8 | 1 7/16  | 18     | 7 1/2  | 8 3/4  | 9 1/4   | 8       | 7 1/2  | 8 9/16   | 6 7/8   | 11 11/16 | 17 15/16 | 29 3/8   | 9 3/4   | 11     | 4 1/4 | 1 3/8  | 2 9/16  | 5/16 x 3/32 x 2 1/4   | 5438 / 5440   | 1 1/4 x 7/16 | 14 3/8 |
| DSMB120   | 1930     | 12    | 6     | 16 3/8 | 5/8-11 | 7 1/2  | 7 1/4  | 4 1/8   | 14 3/8  | 24 1/2 | 10 1/2 | 2 3/4 | 1 9/16  | 21     | 9      | 10 1/4 | 9 3/4   | 8 3/8   | 8      | 10 1/16  | 7 3/4   | 13 7/16  | 20 5/8   | 34 1/8   | 10 1/2  | 11 5/8 | 4 1/2 | 1 1/2  | 2 11/16 | 3/8 x 3/16 x 2 5/8    | 6000 / 6002   | 1 1/2 x 1/2  | 16 1/8 |
| DSMB140   | 2745     | 14    | 6     | 19 3/8 | 5/8-11 | 9 1/2  | 7 1/4  | 4 1/8   | 16 3/8  | 27 1/2 | 11 1/2 | 3     | 1 11/16 | 21 3/4 | 9 1/4  | 10 1/4 | 10 3/4  | 9       | 8      | 10 1/16  | 7 3/4   | 16       | 23 3/8   | 40 1/8   | 11 1/2  | 13     | 5     | 1 1/2  | 2 11/16 | 3/8 x 3/16 x 2 5/8    | 6000 / 6002   | 1 1/2 x 1/2  | -      |
| DSMB170   | 4085     | 17    | 8     | 22 3/8 | 5/8-11 | 10 1/2 | 9 1/4  | 5 3/8   | 19 1/2  | 32     | 13 1/4 | 3 3/8 | 1 11/16 | 24     | 10 1/4 | 12 1/2 | 12 1/4  | 10 1/4  | 9 1/4  | 11 1/4   | 9 3/8   | 18 11/16 | 28 1/8   | 47       | 13 1/4  | 14 3/4 | 5 1/8 | 1 7/8  | 3 1/8   | 1/2 x 1/4 x 3 1/8     | 6500 / 6502   | 1 1/2 x 1/2  | -      |
| DSMB200   | 5620     | 20    | 9     | 25 3/8 | 5/8-11 | 11 1/2 | 10 1/4 | 6 3/8   | 22 1/2  | 36     | 14 3/4 | 3 3/8 | 1 15/16 | 27     | 11 1/2 | 14 1/4 | 13 1/2  | 11 1/2  | 9 1/4  | 13 13/16 | 10 3/8  | 21 3/8   | 32       | 54       | 14 1/2  | 16     | 6 1/2 | 2 1/8  | 3 15/16 | 1/2 x 1/4 x 3 7/8     | 6500 / 6502   | 1 1/2 x 1/2  | -      |

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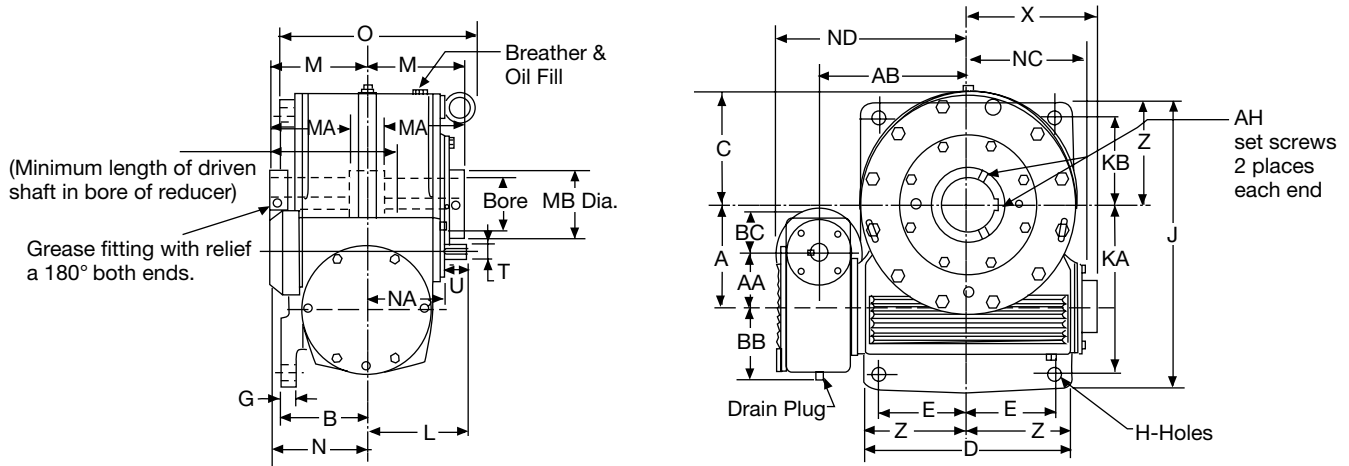
specified when ordering. Standard keys are furnished with units.

▲ Tolerances: 1 1/2" Diameter or Less = +.0000" -.0005"

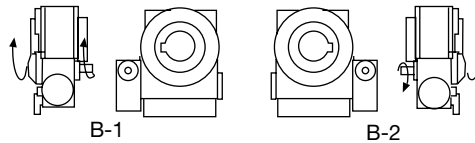
Over 1 1/2" Diameter = +.000" -.001"

Low input speeds require special order instructions. See introductory section.

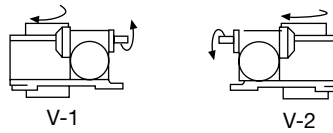
# Dimensions Type DSMF • Wall Mounted and Vertical



## Wall Mounted Assemblies



## Vertical Assemblies



A drywell is standard for vertical assemblies sizes 60-200 only.

| Unit Size | WT LBS | A     | AA    | AB     | AH     | B      | BB     | BC      | C       | D      | E      | G     | H      | J      | KA     | KB     | L      | M       | MA      | MB    | N        | NA      | NC       | ND       | O       | R      | T▲     | U       | Keyway                | Bore            | Keyway       | Z       | X       |
|-----------|--------|-------|-------|--------|--------|--------|--------|---------|---------|--------|--------|-------|--------|--------|--------|--------|--------|---------|---------|-------|----------|---------|----------|----------|---------|--------|--------|---------|-----------------------|-----------------|--------------|---------|---------|
| DSMF35    | 130    | 3 1/2 | 2     | 6 5/8  | 3/8-16 | 4 1/8  | 2 1/2  | 2 1/8   | 4 13/16 | 8 3/8  | 3 1/2  | 7/8   | 1 1/16 | 11 3/4 | 6 7/8  | 3 1/2  | 4 1/2  | 4 11/16 | 4 1/8   | 3 1/8 | 4 3/8    | 3 1/8   | 5        | 8 7/8    | 9 1/8   | 5 3/4  | 1 1/16 | 1 5/8   | 3/16 x 3/32 x 1 1/4   | 2.1885 / 2.1905 | 1/2 x 1/4    | 4 3/16  | 6 5/8   |
| DSMF40    | 190    | 4     | 2     | 7 3/8  | 3/8-16 | 5      | 2 1/2  | 2 1/8   | 5 3/8   | 9 1/4  | 3 7/8  | 1 1/8 | 1 1/16 | 13 3/8 | 7 5/8  | 3 7/8  | 4 1/2  | 5 5/8   | 41 1/16 | 3 1/2 | 4 3/8    | 3 1/8   | 5 11/16  | 9 5/8    | 10 1/2  | 6 7/8  | 1 1/16 | 1 5/8   | 3/16 x 3/32 x 1 1/4   | 2.438 / 2.440   | 5/8 x 5/16   | 4 5/8   | 7 1/2   |
| DSMF50    | 285    | 5     | 2 1/2 | 7 7/8  | 1/2-13 | 5 5/8  | 3 3/8  | 2 1/8   | 7 1/2   | 11 1/8 | 4 3/4  | 1 1/4 | 1 3/16 | 15 3/8 | 9      | 4 3/4  | 5 3/8  | 5 7/8   | 5 1/4   | 4 3/8 | 5 1/8    | 3 3/8   | 6 7/8    | 10 3/8   | 12 5/8  | 7      | 1 1/16 | 1 3/4   | 3/16 x 3/32 x 1 11/16 | 2.938 / 2.940   | 3/4 x 3/8    | 5 9/16  | 8 3/16  |
| DSMF60    | 420    | 6     | 3     | 9 1/2  | 1/2-13 | 6 1/4  | 4 3/8  | 2 9/16  | 8 5/8   | 13 3/8 | 5 3/4  | 1 3/8 | 1 3/16 | 18 1/8 | 10 1/2 | 5 3/4  | 6 1/8  | 6 1/2   | 5 3/4   | 4 3/4 | 5 7/8    | 4 3/8   | 7 3/4    | 12 1/4   | 13 7/16 | 7 3/4  | 7/8    | 1 7/8   | 3/16 x 3/32 x 1 13/16 | 3.438 / 3.440   | 7/8 x 7/16   | 6 11/16 | 9 9/16  |
| DSMF70    | 560    | 7     | 3 1/2 | 10 3/8 | 1/2-13 | 6 1/2  | 4 3/4  | 2 9/16  | 9 1/4   | 14 3/8 | 6 1/4  | 1 3/8 | 1 5/16 | 20 1/8 | 11 3/4 | 6 1/4  | 7      | 6 3/4   | 5 7/8   | 5 1/2 | 6 9/16   | 5       | 8 3/8    | 13 1/4   | 14      | 8 1/8  | 1      | 2       | 1/4 x 1/8 x 1 15/16   | 3.938 / 3.940   | 1 x 1/2      | 7 5/16  | 10 9/16 |
| DSMF80    | 705    | 8     | 4     | 11 1/8 | 1/2-13 | 6 5/8  | 5 1/8  | 3 3/16  | 10 1/2  | 16 1/2 | 7      | 1 1/2 | 1 1/16 | 22 1/4 | 12 3/4 | 7      | 7 3/4  | 7 1/4   | 6 1/4   | 6 1/4 | 8        | 5 11/16 | 9 3/8    | 14 15/16 | 14 7/8  | 8 3/4  | 1 1/8  | 2 1/16  | 1/4 x 1/8 x 2         | 4.438 / 4.440   | 1 x 1/2      | 8 1/4   | 11 9/16 |
| DSMF90    | 910    | 9     | 5     | 13 1/8 | 1/2-13 | 7 3/4  | 6 1/8  | 3 11/16 | 11 3/8  | 18 1/2 | 7 7/8  | 1 5/8 | 1 3/16 | 25     | 14 3/8 | 7 7/8  | 8 3/4  | 8 1/4   | 7 1/8   | 7     | 8 9/16   | 6 7/8   | 10 3/8   | 16 13/16 | 17      | 9 7/8  | 1 3/8  | 2 5/16  | 5/16 x 5/32 x 2 1/4   | 4.938 / 4.940   | 1 1/4 x 7/16 | 9 1/4   | 13 3/8  |
| DSMF100   | 1130   | 10    | 5     | 14 1/4 | 5/8-11 | 8 3/4  | 6 1/8  | 3 11/16 | 12 5/8  | 20 3/4 | 9      | 1 3/4 | 1 3/16 | 27 1/4 | 15 1/2 | 9      | 8 3/4  | 9 1/4   | 8       | 7 1/2 | 8 9/16   | 6 7/8   | 11 11/16 | 17 15/16 | 18 1/2  | 11     | 1 3/8  | 2 5/16  | 5/16 x 5/32 x 2 1/4   | 5.438 / 5.440   | 1 1/4 x 7/16 | 10 3/8  | 14 3/8  |
| DSMF120   | 1760   | 12    | 6     | 16 3/8 | 5/8-11 | 9      | 7 1/4  | 4 1/8   | 14 5/8  | 24 1/4 | 10 3/8 | 2 1/8 | 1 5/16 | 32 3/8 | 18 1/2 | 10 3/8 | 10 1/4 | 9 3/4   | 8 3/8   | 8     | 10 1/16  | 7 3/4   | 13 7/8   | 20 5/8   | 19 1/2  | 11 5/8 | 1 1/2  | 2 11/16 | 3/8 x 3/16 x 2 5/8    | 6.000 / 6.002   | 1 1/2 x 1/2  | 12 1/8  | 16 1/8  |
| DSMF140   | 2560   | 14    | 6     | 19 3/8 | 5/8-11 | 10 1/4 | 7 1/4  | 4 1/8   | 16 3/8  | 27 1/2 | 12     | 2 3/4 | 1 9/16 | 37 1/2 | 22     | 12     | 10 1/4 | 10 3/4  | 9       | 8     | 10 1/16  | 7 3/4   | 16       | 23 3/8   | 21 3/4  | 13     | 1 1/2  | 2 11/16 | 3/8 x 3/16 x 2 5/8    | 6.000 / 6.002   | 1 1/2 x 1/2  | 13 3/4  | -       |
| DSMF170   | 3825   | 17    | 8     | 22 3/8 | 5/8-11 | 11 1/2 | 9 1/4  | 5 3/16  | 19 1/2  | 33     | 14 1/2 | 2 1/2 | 1 9/16 | 44 3/4 | 26 1/4 | 14 1/2 | 12 1/2 | 12 1/4  | 10 1/4  | 9 1/4 | 11 3/4   | 9 3/8   | 18 11/16 | 28 1/8   | 24 3/4  | 14 3/4 | 1 7/8  | 3 1/8   | 1/2 x 1/4 x 3 1/8     | 6.500 / 6.502   | 1 1/2 x 1/2  | 16 1/2  | -       |
| DSMF200   | 5260   | 20    | 9     | 25 3/8 | 5/8-11 | 12 3/4 | 10 1/4 | 6 3/16  | 22 1/2  | 39     | 17     | 2 3/4 | 1 9/16 | 53     | 31     | 17     | 14 1/4 | 13 1/2  | 11 1/2  | 9 1/4 | 13 13/16 | 10 3/8  | 21 3/8   | 32       | 27 1/4  | 16     | 2 1/8  | 3 15/16 | 1/2 x 1/4 x 3 7/8     | 6.500 / 6.502   | 1 1/2 x 1/2  | 19 1/2  | -       |

All dimensions are in inches. Use certified prints for construction. The input shaft may be rotated in either direction. Standard gear sets are cut with right hand threads giving relative shaft rotations as shown above. Shaft arrangements are shown above. Desired assembly should be

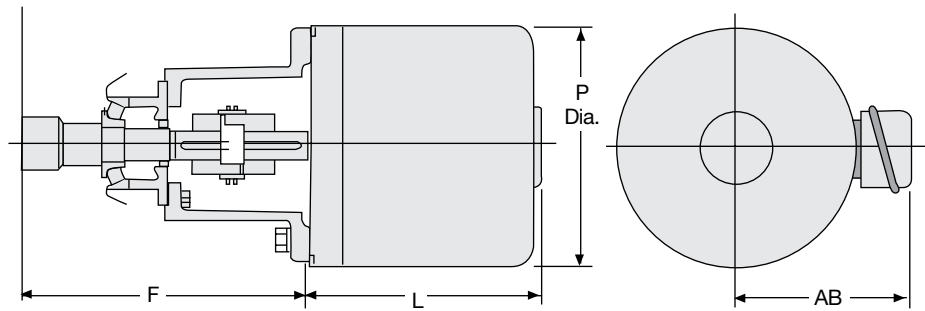
specified when ordering. Standard keys are furnished with units.

▲ Tolerances: 1 1/2" Diameter or Less = +.0000" -.0005"

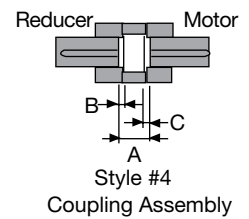
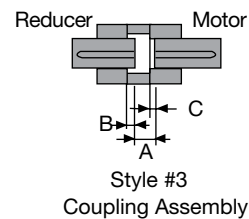
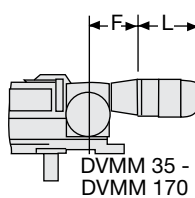
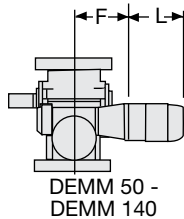
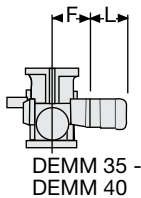
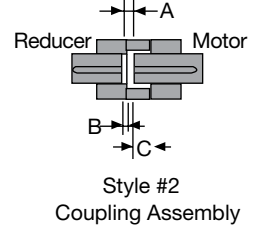
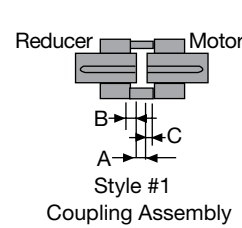
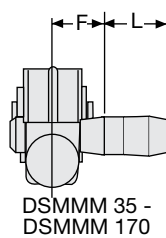
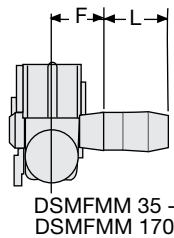
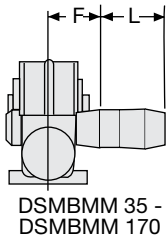
Over 1 1/2" Diameter = +.000" -.001"

Low input speeds require special order instructions. See introductory section.

# Double Reduction Worm Gear Speed Reducers - Motorized



Double Worm Speed Reducers



Dimensions - inches single worm reduction units with "C" flange motor.  
Mounting dimensions for type DEMM 35 - 140, DVMM 35 - 170  
DSMFMM 35 - 170, DSMMM 35 - 170, DSMBMM 35 - 170.

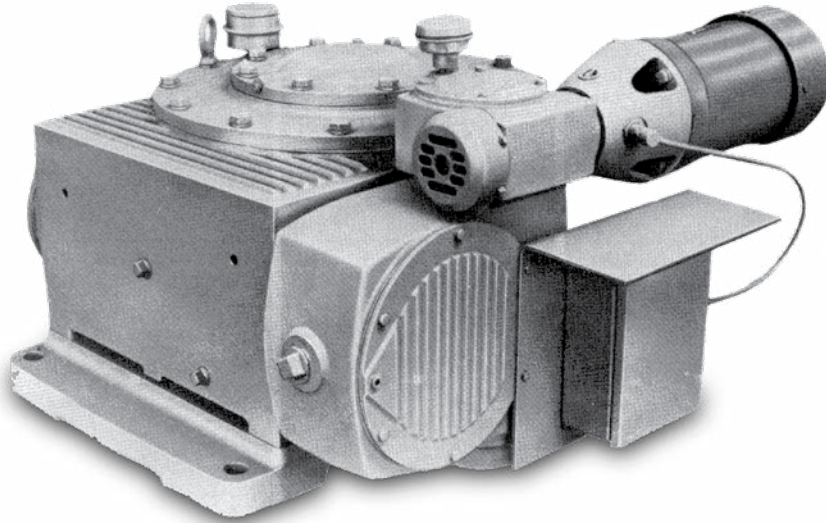
| T.E.F.C. Motor |         |         |        |          | Unit Size 35 & 40 |            |       |      |     |       | Unit Size 50 |            |      |      |     |       | Unit Size 60 |            |      |      |      |         | Unit Size 70 |            |      |      |      |         | Unit Size 80 |            |      |      |     |        |
|----------------|---------|---------|--------|----------|-------------------|------------|-------|------|-----|-------|--------------|------------|------|------|-----|-------|--------------|------------|------|------|------|---------|--------------|------------|------|------|------|---------|--------------|------------|------|------|-----|--------|
| Motor Frame    | AB      | L       | P      | WT. LBS. | CPLG Size         | Style Assy | A     | B    | C   | F     | CPLG Size    | Style Assy | A    | B    | C   | F     | CPLG Size    | Style Assy | A    | B    | C    | F       | CPLG Size    | Style Assy | A    | B    | C    | F       | CPLG Size    | Style Assy | A    | B    | C   | F      |
| 56C            |         | 11 7/16 | 7 1/8  | 36       | L-090             | 4          | 13/16 | 3/16 | 1/8 | 7 3/8 | L-090        | 3          | 7/16 | 1/16 | 0   | 7 7/8 | L-095        | 2          | 5/8  | 1/8  | 0    | 8 13/16 | L-095        | 1          | 1/2  | 0    | 0    | 9 9/16  | L-099        | 1          | 7/16 | 5/16 | 0   | 10 1/4 |
| 56CZ           |         | 11 7/16 | 7 1/8  | 36       | L-095             | 2          | 5/8   | 1/8  | 0   | 7 3/8 | L-095        | 2          | 1/4  | 0    | 1/4 | 7 7/8 | L-095        | 3          | 7/16 | 1/16 | 0    | 8 13/16 | L-095        | 3          | 5/16 | 3/16 | 0    | 9 9/16  | L-099        | 1          | 1/4  | 1/2  | 0   | 10 1/4 |
| 143TC          | 6       | 10 3/8  | 7 1/8  | 30       | L-095             | 2          | 3/4   | 1/4  | 0   | 7 3/8 | L-095        | 2          | 3/8  | 0    | 1/8 | 7 7/8 | L-095        | 2          | 9/16 | 1/16 | 0    | 8 13/16 | L-095        | 3          | 7/16 | 1/16 | 0    | 9 9/16  | L-099        | 1          | 3/8  | 3/8  | 0   | 10 1/4 |
| 145TC          | 6       | 11 3/8  | 7 1/8  | 34       | L-095             | 2          | 3/4   | 1/4  | 0   | 7 3/8 | L-095        | 2          | 3/8  | 0    | 1/8 | 7 7/8 | L-095        | 2          | 9/16 | 1/16 | 0    | 8 13/16 | L-095        | 3          | 7/16 | 1/16 | 0    | 9 9/16  | L-099        | 1          | 1/4  | 1/2  | 0   | 10 1/4 |
| 182TC          | 7       | 12 3/4  | 9 3/16 | 56       |                   |            |       |      |     |       |              |            |      |      |     |       | L-099        | 2          | 7/16 | 0    | 5/16 | 9 3/16  | L-099        | 2          | 5/16 | 0    | 7/16 | 9 15/16 | L-099        | 1          | 1/4  | 1/2  | 0   | 10 5/8 |
| 184TC          | 7       | 13 3/4  | 9 3/16 | 70       |                   |            |       |      |     |       |              |            |      |      |     |       | L-099        | 2          | 7/16 | 0    | 5/16 | 9 3/16  | L-099        | 2          | 5/16 | 0    | 7/16 | 9 15/16 | L-099        | 1          | 1/4  | 1/2  | 0   | 10 5/8 |
| 213TC          | 8 13/16 | 15 3/8  | 11 1/4 | 141      |                   |            |       |      |     |       |              |            |      |      |     |       | L-100        | 2          | 5/16 | 0    | 7/16 | 9 9/16  | L-100        | 2          | 3/16 | 0    | 9/16 | 10 5/16 | L-100        | 2          | 1/8  | 0    | 5/8 | 11     |
| 215TC          | 8 13/16 | 16 7/8  | 11 1/4 | 176      |                   |            |       |      |     |       |              |            |      |      |     |       | L-100        | 2          | 5/16 | 0    | 7/16 | 9 9/16  | L-100        | 2          | 3/16 | 0    | 9/16 | 10 5/16 | L-100        | 2          | 1/8  | 0    | 5/8 | 11     |

| T.E.F.C. Motor |         |         |        |          | Unit Size 90 & 100 |            |       |     |     |        | Unit Size 120 & 140 |            |         |      |     |          | Unit Size 170 |            |       |      |      |        |
|----------------|---------|---------|--------|----------|--------------------|------------|-------|-----|-----|--------|---------------------|------------|---------|------|-----|----------|---------------|------------|-------|------|------|--------|
| Motor Frame    | AB      | L       | P      | WT. LBS. | CPLG size          | Style Assy | A     | B   | C   | F      | CPLG size           | Style Assy | A       | B    | C   | F        | CPLG size     | Style Assy | A     | B    | C    | F      |
| 143TC          | 6       | 10 3/8  | 7 1/8  | 30       | L-100              | 1          | 1/8   | 5/8 | 0   | 11     |                     |            |         |      |     |          |               |            |       |      |      |        |
| 145TC          | 6       | 11 3/8  | 7 1/8  | 34       | L-100              | 1          | 1/8   | 5/8 | 0   | 11     |                     |            |         |      |     |          |               |            |       |      |      |        |
| 182TC          | 7       | 12 3/4  | 9 3/16 | 56       | L-100              | 4          | 1 1/4 | 1/4 | 1/4 | 12 5/8 | L-110               | 4          | 1 15/16 | 9/16 | 1/2 | 14 13/16 | L-150         | 2          | 1 1/4 | 1/4  | 0    | 16 3/8 |
| 184TC          | 7       | 13 3/4  | 9 3/16 | 70       | L-100              | 4          | 1 1/4 | 1/4 | 1/4 | 12 5/8 | L-110               | 4          | 1 15/16 | 9/16 | 1/2 | 14 13/16 | L-150         | 2          | 1 1/4 | 1/4  | 0    | 16 3/8 |
| 213TC          | 8 13/16 | 15 3/8  | 11 1/4 | 141      | L-110              | 1          | 3/4   | 1/8 | 0   | 12 5/8 | L-110               | 4          | 1 7/16  | 5/16 | 1/4 | 14 13/16 | L-150         | 1          | 3/4   | 1/4  | 0    | 16 3/8 |
| 215TC          | 8 13/16 | 16 7/8  | 11 1/4 | 176      | L-110              | 1          | 3/4   | 1/8 | 0   | 12 5/8 | L-110               | 4          | 1 7/16  | 5/16 | 1/4 | 14 13/16 | L-150         | 1          | 3/4   | 1/4  | 0    | 16 3/8 |
| 254TC          | 10 1/16 | 18 9/16 | 13 1/2 | 252      | L-150              | 2          | 1/8   | 0   | 7/8 | 12 5/8 | L-150               | 1          | 13/16   | 3/16 | 0   | 14 13/16 | L-150         | 1          | 1/8   | 7/16 | 7/16 | 16 3/8 |
| 256TC          | 10 1/16 | 20 5/16 | 13 1/2 | 302      | L-150              | 2          | 1/8   | 0   | 7/8 | 12 5/8 | L-150               | 1          | 13/16   | 3/16 | 0   | 14 13/16 | L-150         | 1          | 1/8   | 7/16 | 7/16 | 16 3/8 |

\*Motor dimensions will vary slightly with make of motor. Dimensions shown are for totally enclosed fan cooled motor. Open, dripproof or totally enclosed motors may be furnished.

# Triple Reduction Worm Gear Speed Reducers

- Ratios from 5000:1 to 17 5,000:1
- HP from 0.09 to 6.25
- Output torque to 583,000 in. lbs.
- Output RPM down to 0.01 0
- Ideal for ultra-slow speed, high torque applications



Delroyd® DDVM series triple-reduction worm gear speed reducers are available in ratios from 5000:1 to 175,000:1 and center distances from 7 to 20 in. (larger sizes are available on request). Output torque ranges from 33,000 in. lbs. for the 7-in. CD DDVM-70 to 582,900 in. lbs. for the DDVM-200. Mechanical HP input requirements are from 0.09 for the 175,000:1 7-in. CD reducer to 6.246 for the 5000:1 20-in. CD unit.

These reducers are available in any four configurations: horizontal, vertical, shafted and shaft-mounted.

They are ideal for water/wastewater equipment drive applications such as thickeners and clarifiers which require a vertical downshaft. Other available configurations also make DELROYD R triple reduction reducers perfect for use on mixers, elevators, solar panels, astronomical telescopes, indexing tables, hoists, conveyers or other process or materials handling systems where large torques/slow speeds are needed.

These reducers are also available with a helical primary reduction stage and are termed the HDVM series.

# Triple Reduction Worm Gear Speed Reducers

| 7.000 in. center distance (Ratings are for 1750 RPM input speed) |                                           |          |               |            |            |
|------------------------------------------------------------------|-------------------------------------------|----------|---------------|------------|------------|
| Nominal Ratio                                                    | Actual Ratio                              | Input HP | Output Torque | Efficiency | Output RPM |
| 5,000:1                                                          | 4,925.125:1<br>(15 1/2 x 15 1/2 x 20 1/2) | 0.495    | 34,300*#      | 39%        | 0.355      |
| 6,000:1                                                          | 5,945:1<br>(9 2/3 x 30 x 20 1/2)          | 0.458    | 34,300*#      | 35%        | 0.294      |
| 8,000:1                                                          | 7,926.667:1<br>(9 2/3 x 40 x 20 1/2)      | 0.415    | 34,300*#      | 29%        | 0.221      |
| 10,000:1                                                         | 9,908.333:1<br>(9 2/3 x 50 x 20 1/2)      | 0.356    | 34,300*#      | 27%        | 0.177      |
| 12,000:1                                                         | 12,607.5:1<br>(20 1/2 x 30 x 20 1/2)      | 0.280    | 34,300*#      | 27%        | 0.139      |
| 15,000:1                                                         | 15,375:1<br>(25 x 30 x 20 1/2)            | 0.259    | 34,300*#      | 24%        | 0.114      |
| 20,000:1                                                         | 20,500:1<br>(25 x 40 x 20 1/2)            | 0.233    | 34,400*#      | 20%        | 0.085      |
| 25,000:1                                                         | 24,600:1<br>(30 x 40 x 20 1/2)            | 0.204    | 34,400*#      | 19%        | 0.071      |
| 30,000:1                                                         | 30,750:1<br>(30 x 50 x 20 1/2)            | 0.183    | 34,400*#      | 17%        | 0.057      |
| 35,000:1                                                         | 35,875:1<br>(25 x 70 x 20 1/2)            | 0.148    | 34,400*#      | 14%        | 0.049      |
| 40,000:1                                                         | 41,000:1<br>(40 x 50 x 20 1/2)            | 0.155    | 34,400*#      | 15%        | 0.043      |
| 50,000:1                                                         | 51,250:1<br>(50 x 50 x 20 1/2)            | 0.143    | 34,400*#      | 14%        | 0.034      |
| 60,000:1                                                         | 61,500:1<br>(50 x 60 x 20 1/2)            | 0.120    | 34,400*#      | 11%        | 0.028      |
| 75,000:1                                                         | 73,800:1<br>(60 x 60 x 20 1/2)            | 0.108    | 34,400*#      | 10%        | 0.024      |
| 125,000:1                                                        | 120,050:1<br>(70 x 70 x 24 1/2)           | 0.111    | 33,700*#      | 7%         | 0.015      |
| 175,000:1                                                        | 168,000:1<br>(60 x 70 x 40)               | 0.091    | 33,000*#      | 6%         | 0.010      |

| 8.000 in. center distance (Ratings are for 1750 RPM input speed) |                                           |          |               |            |            |
|------------------------------------------------------------------|-------------------------------------------|----------|---------------|------------|------------|
| Nominal Ratio                                                    | Actual Ratio                              | Input HP | Output Torque | Efficiency | Output RPM |
| 5,000:1                                                          | 4,925.125:1<br>(15 1/2 x 15 1/2 x 20 1/2) | 0.672    | 50,000*#      | 42%        | 0.355      |
| 6,000:1                                                          | 5,945:1<br>(9 2/3 x 30 x 20 1/2)          | 0.600    | 50,100*#      | 39%        | 0.294      |
| 8,000:1                                                          | 7,926.667:1<br>(9 2/3 x 40 x 20 1/2)      | 0.517    | 50,100*#      | 34%        | 0.221      |
| 10,000:1                                                         | 9,908.333:1<br>(9 2/3 x 50 x 20 1/2)      | 0.454    | 50,200*#      | 31%        | 0.177      |
| 12,000:1                                                         | 12,607.5:1<br>(20 1/2 x 30 x 20 1/2)      | 0.357    | 50,200*#      | 31%        | 0.139      |
| 15,000:1                                                         | 15,375:1<br>(25 x 30 x 20 1/2)            | 0.336    | 50,200*#      | 27%        | 0.114      |
| 20,000:1                                                         | 20,500:1<br>(25 x 40 x 20 1/2)            | 0.296    | 50,200*#      | 23%        | 0.085      |
| 25,000:1                                                         | 24,600:1<br>(30 x 40 x 20 1/2)            | 0.248    | 50,200*#      | 23%        | 0.071      |
| 30,000:1                                                         | 30,750:1<br>(30 x 50 x 20 1/2)            | 0.227    | 50,300*#      | 20%        | 0.057      |
| 35,000:1                                                         | 35,875:1<br>(25 x 70 x 20 1/2)            | 0.243    | 50,300*#      | 16%        | 0.049      |
| 40,000:1                                                         | 41,000:1<br>(40 x 50 x 20 1/2)            | 0.189    | 50,300*#      | 18%        | 0.043      |
| 50,000:1                                                         | 51,250:1<br>(50 x 50 x 20 1/2)            | 0.160    | 50,300*#      | 17%        | 0.034      |
| 60,000:1                                                         | 61,500:1<br>(50 x 60 x 20 1/2)            | 0.151    | 50,300*#      | 15%        | 0.028      |
| 75,000:1                                                         | 73,800:1<br>(60 x 60 x 20 1/2)            | 0.146    | 50,300*#      | 13%        | 0.024      |
| 125,000:1                                                        | 120,050:1<br>(70 x 70 x 24 1/2)           | 0.113    | 48,700*#      | 10%        | 0.015      |
| 175,000:1                                                        | 168,000:1<br>(60 x 70 x 40)               | 0.112    | 47,300*#      | 7%         | 0.010      |

Triple Reduction  
Speed Reducers

| 9.000 in. center distance (Ratings are for 1750 RPM input speed) |                                            |          |               |            |            |
|------------------------------------------------------------------|--------------------------------------------|----------|---------------|------------|------------|
| Nominal Ratio                                                    | Actual Ratio                               | Input HP | Output Torque | Efficiency | Output RPM |
| 5,000:1                                                          | 4,925.125:1<br>(15 1/2 x 15 1/2 x 20 1/2)  | 0.872    | 69,600*#      | 45%        | 0.355      |
| 6,000:1                                                          | 5,845.917:1<br>(9 2/3 x 29 1/2 x 20 1/2)   | 0.827    | 69,700*#      | 40%        | 0.299      |
| 8,000:1                                                          | 7,926.667:1<br>(9 2/3 x 40 x 20 1/2)       | 0.679    | 69,800*#      | 36%        | 0.221      |
| 10,000:1                                                         | 9,908.333:1<br>(9 2/3 x 50 x 20 1/2)       | 0.652    | 69,800*#      | 31%        | 0.177      |
| 12,000:1                                                         | 12,397.375:1<br>(20 1/2 x 29 1/2 x 20 1/2) | 0.602    | 69,900*#      | 33%        | 0.141      |
| 15,000:1                                                         | 15,118.75:1<br>(25 x 29 1/2 x 20 1/2)      | 0.642    | 69,900*#      | 30%        | 0.116      |
| 20,000:1                                                         | 20,500:1<br>(25 x 40 x 20 1/2)             | 0.364    | 69,900*#      | 26%        | 0.085      |
| 25,000:1                                                         | 24,600:1<br>(30 x 40 x 20 1/2)             | 0.395    | 70,000*#      | 20%        | 0.071      |
| 30,000:1                                                         | 30,750:1<br>(30 x 50 x 20 1/2)             | 0.287    | 70,000*#      | 22%        | 0.057      |
| 35,000:1                                                         | 35,875:1<br>(25 x 70 x 20 1/2)             | 0.285    | 70,000*#      | 19%        | 0.049      |
| 40,000:1                                                         | 41,000:1<br>(40 x 50 x 20 1/2)             | 0.237    | 65,500*#      | 20%        | 0.043      |
| 50,000:1                                                         | 51,250:1<br>(50 x 50 x 20 1/2)             | 0.211    | 70,000*#      | 18%        | 0.034      |
| 60,000:1                                                         | 61,500:1<br>(50 x 60 x 20 1/2)             | 0.198    | 70,000*#      | 16%        | 0.028      |
| 75,000:1                                                         | 73,800:1<br>(60 x 60 x 20 1/2)             | 0.188    | 70,000*#      | 14%        | 0.024      |
| 125,000:1                                                        | 120,050:1<br>(70 x 70 x 24 1/2)            | 0.157    | 68,000*#      | 10%        | 0.015      |
| 175,000:1                                                        | 168,000:1<br>(60 x 70 x 40)                | 0.157    | 66,400*#      | 7%         | 0.010      |

| 10.000 in. center distance (Ratings are for 1750 RPM input speed) |                                            |          |               |            |            |
|-------------------------------------------------------------------|--------------------------------------------|----------|---------------|------------|------------|
| Nominal Ratio                                                     | Actual Ratio                               | Input HP | Output Torque | Efficiency | Output RPM |
| 5,000:1                                                           | 4,925.125:1<br>(15 1/2 x 15 1/2 x 20 1/2)  | 1.116    | 93,000*#      | 47%        | 0.355      |
| 6,000:1                                                           | 5,845.917:1<br>(9 2/3 x 29 1/2 x 20 1/2)   | 1.053    | 93,200*#      | 42%        | 0.299      |
| 8,000:1                                                           | 7,926.667:1<br>(9 2/3 x 40 x 20 1/2)       | 0.883    | 93,300*#      | 37%        | 0.221      |
| 10,000:1                                                          | 9,908.333:1<br>(9 2/3 x 50 x 20 1/2)       | 0.770    | 93,400*#      | 34%        | 0.177      |
| 12,000:1                                                          | 12,397.375:1<br>(20 1/2 x 29 1/2 x 20 1/2) | 0.616    | 93,400*#      | 34%        | 0.141      |
| 15,000:1                                                          | 15,118.75:1<br>(25 x 29 1/2 x 20 1/2)      | 0.537    | 93,500*#      | 32%        | 0.116      |
| 20,000:1                                                          | 20,500:1<br>(25 x 40 x 20 1/2)             | 0.452    | 93,500*#      | 28%        | 0.085      |
| 25,000:1                                                          | 24,600:1<br>(30 x 40 x 20 1/2)             | 0.391    | 93,600*#      | 27%        | 0.071      |
| 30,000:1                                                          | 30,750:1<br>(30 x 50 x 20 1/2)             | 0.367    | 93,600*#      | 23%        | 0.057      |
| 35,000:1                                                          | 35,875:1<br>(25 x 70 x 20 1/2)             | 0.362    | 93,600*#      | 20%        | 0.049      |
| 40,000:1                                                          | 41,000:1<br>(40 x 50 x 20 1/2)             | 0.302    | 93,600*#      | 21%        | 0.043      |
| 50,000:1                                                          | 51,250:1<br>(50 x 50 x 20 1/2)             | 0.267    | 93,600*#      | 19%        | 0.034      |
| 60,000:1                                                          | 61,500:1<br>(50 x 60 x 20 1/2)             | 0.249    | 93,600*#      | 17%        | 0.028      |
| 75,000:1                                                          | 73,800:1<br>(60 x 60 x 20 1/2)             | 0.220    | 93,600*#      | 16%        | 0.024      |
| 125,000:1                                                         | 120,050:1<br>(70 x 70 x 24 1/2)            | 0.175    | 91,000*#      | 12%        | 0.015      |
| 175,000:1                                                         | 168,000:1<br>(60 x 70 x 40)                | 0.164    | 89,200*#      | 9%         | 0.010      |

Maximum momentary starting load must not exceed 300% of speed reducer rating shown above. Other ratio combinations are available upon request.



# Triple Reduction Worm Gear Speed Reducers

| 12.000 in. center distance (Ratings are for 1750 RPM input speed) |                                                                                                                     |          |               |            |            |
|-------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------|----------|---------------|------------|------------|
| Nominal Ratio                                                     | Actual Ratio                                                                                                        | Input HP | Output Torque | Efficiency | Output RPM |
| 5,000:1                                                           | 5,063.333:1<br>(5 <sup>1</sup> / <sub>6</sub> x 40 x 24 <sup>1</sup> / <sub>2</sub> )                               | 1.916    | 150,200*#     | 43%        | 0.346      |
| 6,000:1                                                           | 5,802.417:1<br>(9 <sup>2</sup> / <sub>3</sub> x 24 <sup>1</sup> / <sub>2</sub> x 24 <sup>1</sup> / <sub>2</sub> )   | 1.600    | 150,400*#     | 45%        | 0.302      |
| 8,000:1                                                           | 7,784.875:1<br>(15 <sup>1</sup> / <sub>2</sub> x 20 <sup>1</sup> / <sub>2</sub> x 24 <sup>1</sup> / <sub>2</sub> )  | 1.280    | 150,700*#     | 42%        | 0.225      |
| 10,000:1                                                          | 10,296.125:1<br>(20 <sup>1</sup> / <sub>2</sub> x 20 <sup>1</sup> / <sub>2</sub> x 24 <sup>1</sup> / <sub>2</sub> ) | 1.044    | 150,900*#     | 39%        | 0.170      |
| 12,000:1                                                          | 12,305.125:1<br>(20 <sup>1</sup> / <sub>2</sub> x 24 <sup>1</sup> / <sub>2</sub> x 24 <sup>1</sup> / <sub>2</sub> ) | 0.897    | 151,000*#     | 38%        | 0.142      |
| 15,000:1                                                          | 14,706.125:1<br>(24 <sup>1</sup> / <sub>2</sub> x 24 <sup>1</sup> / <sub>2</sub> x 24 <sup>1</sup> / <sub>2</sub> ) | 0.947    | 151,000*#     | 36%        | 0.119      |
| 20,000:1                                                          | 20,090:1<br>(20 <sup>1</sup> / <sub>2</sub> x 40 x 24 <sup>1</sup> / <sub>2</sub> )                                 | 0.921    | 151,200*#     | 31%        | 0.087      |
| 25,000:1                                                          | 25,112.5:1<br>(20 <sup>1</sup> / <sub>2</sub> x 50 x 24 <sup>1</sup> / <sub>2</sub> )                               | 0.774    | 151,300*#     | 27%        | 0.070      |
| 30,000:1                                                          | 30,012.5:1<br>(24 <sup>1</sup> / <sub>2</sub> x 50 x 24 <sup>1</sup> / <sub>2</sub> )                               | 0.609    | 151,400*#     | 23%        | 0.058      |
| 35,000:1                                                          | 36,015:1<br>(24 <sup>1</sup> / <sub>2</sub> x 60 x 24 <sup>1</sup> / <sub>2</sub> )                                 | 0.486    | 151,400*#     | 24%        | 0.049      |
| 40,000:1                                                          | 39,200:1<br>(40 x 40 x 24 <sup>1</sup> / <sub>2</sub> )                                                             | 0.447    | 151,400*#     | 24%        | 0.045      |
| 50,000:1                                                          | 49,000:1<br>(40 x 50 x 24 <sup>1</sup> / <sub>2</sub> )                                                             | 0.390    | 151,500*#     | 22%        | 0.036      |
| 60,000:1                                                          | 61,250:1<br>(50 x 50 x 24 <sup>1</sup> / <sub>2</sub> )                                                             | 0.343    | 151,500*#     | 20%        | 0.029      |
| 75,000:1                                                          | 73,500:1<br>(50 x 60 x 24 <sup>1</sup> / <sub>2</sub> )                                                             | 0.318    | 151,500*#     | 18%        | 0.024      |
| 125,000:1                                                         | 120,050:1<br>(70 x 70 x 24 <sup>1</sup> / <sub>2</sub> )                                                            | 0.250    | 151,600*#     | 14%        | 0.015      |
| 175,000:1                                                         | 168,000:1<br>(60 x 70 x 40)                                                                                         | 0.223    | 148,700*#     | 11%        | 0.010      |

| 14.000 in. center distance (Ratings are for 1750 RPM input speed) |                                                                                                                    |          |               |            |            |
|-------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------|----------|---------------|------------|------------|
| Nominal Ratio                                                     | Actual Ratio                                                                                                       | Input HP | Output Torque | Efficiency | Output RPM |
| 5,000:1                                                           | 4,925.125:1<br>(15 <sup>1</sup> / <sub>2</sub> x 15 <sup>1</sup> / <sub>2</sub> x 20 <sup>1</sup> / <sub>2</sub> ) | 2.726    | 223,700*#     | 45%        | 0.346      |
| 6,000:1                                                           | 5,945:1<br>(9 <sup>2</sup> / <sub>3</sub> x 30 x 20 <sup>1</sup> / <sub>2</sub> )                                  | 2.280    | 224,000*#     | 47%        | 0.302      |
| 8,000:1                                                           | 7,926.667:1<br>(9 <sup>2</sup> / <sub>3</sub> x 40 x 20 <sup>1</sup> / <sub>2</sub> )                              | 1.820    | 224,500*#     | 44%        | 0.225      |
| 10,000:1                                                          | 9,908.333:1<br>(9 <sup>2</sup> / <sub>3</sub> x 50 x 20 <sup>1</sup> / <sub>2</sub> )                              | 1.479    | 224,800*#     | 41%        | 0.170      |
| 12,000:1                                                          | 12,607.5:1<br>(20 <sup>1</sup> / <sub>2</sub> x 30 x 20 <sup>1</sup> / <sub>2</sub> )                              | 1.301    | 225,000*#     | 39%        | 0.142      |
| 15,000:1                                                          | 15,375:1<br>(25 x 30 x 20 <sup>1</sup> / <sub>2</sub> )                                                            | 1.372    | 225,000*#     | 37%        | 0.119      |
| 20,000:1                                                          | 20,500:1<br>(25 x 40 x 20 <sup>1</sup> / <sub>2</sub> )                                                            | 1.329    | 225,200*#     | 32%        | 0.087      |
| 25,000:1                                                          | 24,600:1<br>(30 x 40 x 2 <sup>1</sup> / <sub>2</sub> )                                                             | 1.112    | 225,400*#     | 28%        | 0.070      |
| 30,000:1                                                          | 30,750:1<br>(30 x 50 x 20 <sup>1</sup> / <sub>2</sub> )                                                            | 0.773    | 225,600*#     | 27%        | 0.058      |
| 35,000:1                                                          | 35,875:1<br>(25 x 70 x 20 <sup>1</sup> / <sub>2</sub> )                                                            | 0.696    | 225,600*#     | 25%        | 0.049      |
| 40,000:1                                                          | 41,000:1<br>(40 x 50 x 20 <sup>1</sup> / <sub>2</sub> )                                                            | 0.615    | 225,600*#     | 26%        | 0.045      |
| 50,000:1                                                          | 51,250:1<br>(50 x 50 x 20 <sup>1</sup> / <sub>2</sub> )                                                            | 0.556    | 225,700*#     | 23%        | 0.036      |
| 60,000:1                                                          | 61,500:1<br>(50 x 60 x 20 <sup>1</sup> / <sub>2</sub> )                                                            | 0.487    | 225,800*#     | 21%        | 0.029      |
| 75,000:1                                                          | 73,800:1<br>(60 x 60 x 20 <sup>1</sup> / <sub>2</sub> )                                                            | 0.426    | 225,800*#     | 20%        | 0.024      |
| 125,000:1                                                         | 120,050:1<br>(70 x 70 x 24)                                                                                        | 0.348    | 225,800*#     | 15%        | 0.015      |
| 175,000:1                                                         | 168,000:1<br>(60 x 70 x 40)                                                                                        | 0.295    | 211,500*#     | 12%        | 0.011      |

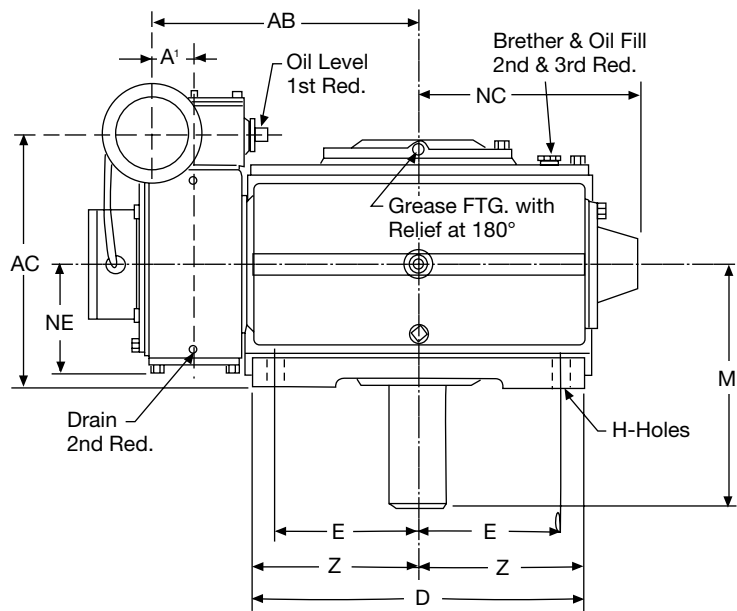
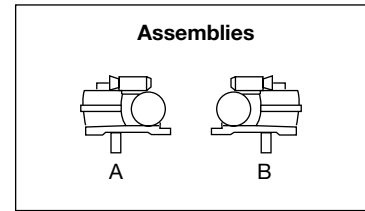
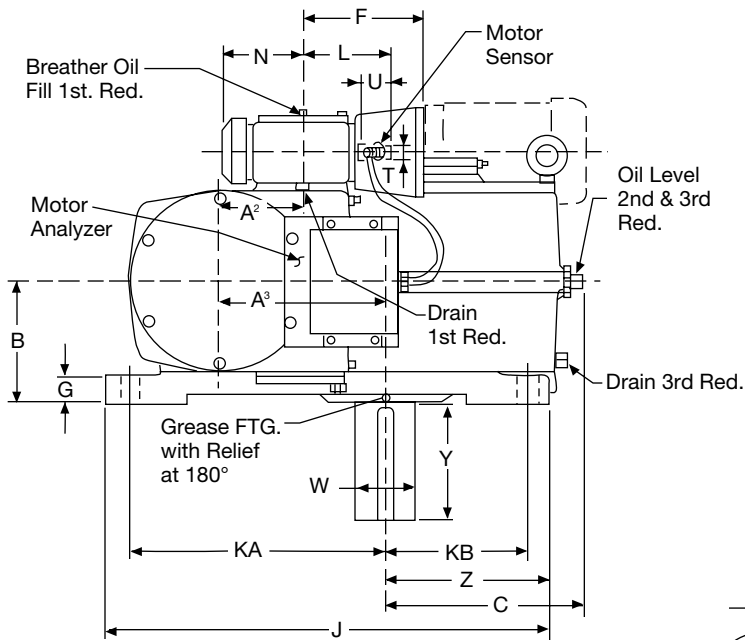
| 17.000 in. center distance (Ratings are for 1750 RPM input speed) |                                                                                                                     |          |               |            |            |
|-------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------|----------|---------------|------------|------------|
| Nominal Ratio                                                     | Actual Ratio                                                                                                        | Input HP | Output Torque | Efficiency | Output RPM |
| 5,000:1                                                           | 5,063.333:1<br>(5 <sup>1</sup> / <sub>6</sub> x 40 x 24 <sup>1</sup> / <sub>2</sub> )                               | 4.431    | 379,800*#     | 47%        | 0.346      |
| 6,000:1                                                           | 5,802.417:1<br>(9 <sup>2</sup> / <sub>3</sub> x 24 <sup>1</sup> / <sub>2</sub> x 24 <sup>1</sup> / <sub>2</sub> )   | 3.873    | 380,400*#     | 47%        | 0.302      |
| 8,000:1                                                           | 7,784.875:1<br>(15 <sup>1</sup> / <sub>2</sub> x 20 <sup>1</sup> / <sub>2</sub> x 24 <sup>1</sup> / <sub>2</sub> )  | 3.023    | 381,400*#     | 45%        | 0.225      |
| 10,000:1                                                          | 10,296.125:1<br>(20 <sup>1</sup> / <sub>2</sub> x 20 <sup>1</sup> / <sub>2</sub> x 24 <sup>1</sup> / <sub>2</sub> ) | 2.454    | 382,200*#     | 42%        | 0.170      |
| 12,000:1                                                          | 12,305.125:1<br>(20 <sup>1</sup> / <sub>2</sub> x 24 <sup>1</sup> / <sub>2</sub> x 24 <sup>1</sup> / <sub>2</sub> ) | 2.157    | 382,600*#     | 40%        | 0.142      |
| 15,000:1                                                          | 14,706.125:1<br>(24 <sup>1</sup> / <sub>2</sub> x 24 <sup>1</sup> / <sub>2</sub> x 24 <sup>1</sup> / <sub>2</sub> ) | 2.272    | 382,600*#     | 38%        | 0.119      |
| 20,000:1                                                          | 20,090:1<br>(20 <sup>1</sup> / <sub>2</sub> x 40 x 24 <sup>1</sup> / <sub>2</sub> )                                 | 2.191    | 382,900*#     | 33%        | 0.087      |
| 25,000:1                                                          | 25,112.5:1<br>(20 <sup>1</sup> / <sub>2</sub> x 50 x 24 <sup>1</sup> / <sub>2</sub> )                               | 1.827    | 383,300*#     | 29%        | 0.070      |
| 30,000:1                                                          | 30,012.5:1<br>(24 <sup>1</sup> / <sub>2</sub> x 50 x 24 <sup>1</sup> / <sub>2</sub> )                               | 1.315    | 383,700*#     | 27%        | 0.058      |
| 35,000:1                                                          | 36,015:1<br>(24 <sup>1</sup> / <sub>2</sub> x 60 x 24 <sup>1</sup> / <sub>2</sub> )                                 | 1.138    | 383,800*#     | 26%        | 0.049      |
| 40,000:1                                                          | 39,200:1<br>(40 x 40 x 24 <sup>1</sup> / <sub>2</sub> )                                                             | 1.046    | 383,900*#     | 26%        | 0.045      |
| 50,000:1                                                          | 49,000:1<br>(40 x 50 x 24 <sup>1</sup> / <sub>2</sub> )                                                             | 0.907    | 384,000*#     | 24%        | 0.036      |
| 60,000:1                                                          | 61,250:1<br>(50 x 50 x 24 <sup>1</sup> / <sub>2</sub> )                                                             | 0.791    | 384,100*#     | 22%        | 0.029      |
| 75,000:1                                                          | 73,500:1<br>(50 x 60 x 24 <sup>1</sup> / <sub>2</sub> )                                                             | 0.691    | 384,200*#     | 21%        | 0.024      |
| 125,000:1                                                         | 120,050:1<br>(70 x 70 x 24 <sup>1</sup> / <sub>2</sub> )                                                            | 0.556    | 384,300*#     | 16%        | 0.015      |
| 175,000:1                                                         | 165,900:1<br>(60 x 70 x 39 <sup>1</sup> / <sub>2</sub> )                                                            | 0.463    | 359,900*#     | 13%        | 0.011      |

| 20.000 in. center distance (Ratings are for 1750 RPM input speed) |                                                                                                                     |          |               |            |            |
|-------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------|----------|---------------|------------|------------|
| Nominal Ratio                                                     | Actual Ratio                                                                                                        | Input HP | Output Torque | Efficiency | Output RPM |
| 5,000:1                                                           | 5,063.333:1<br>(5 <sup>1</sup> / <sub>6</sub> x 40 x 24 <sup>1</sup> / <sub>2</sub> )                               | 6.246    | 558,100*#     | 49%        | 0.346      |
| 6,000:1                                                           | 5,802.417:1<br>(9 <sup>2</sup> / <sub>3</sub> x 24 <sup>1</sup> / <sub>2</sub> x 24 <sup>1</sup> / <sub>2</sub> )   | 5.350    | 559,000*#     | 50%        | 0.302      |
| 8,000:1                                                           | 7,784.875:1<br>(15 <sup>1</sup> / <sub>2</sub> x 20 <sup>1</sup> / <sub>2</sub> x 24 <sup>1</sup> / <sub>2</sub> )  | 4.255    | 560,700*#     | 47%        | 0.225      |
| 10,000:1                                                          | 10,296.125:1<br>(20 <sup>1</sup> / <sub>2</sub> x 20 <sup>1</sup> / <sub>2</sub> x 24 <sup>1</sup> / <sub>2</sub> ) | 3.444    | 561,900*#     | 44%        | 0.170      |
| 12,000:1                                                          | 12,305.125:1<br>(20 <sup>1</sup> / <sub>2</sub> x 24 <sup>1</sup> / <sub>2</sub> x 24 <sup>1</sup> / <sub>2</sub> ) | 3.173    | 562,500*#     | 42%        | 0.142      |
| 15,000:1                                                          | 14,706.125:1<br>(24 <sup>1</sup> / <sub>2</sub> x 24 <sup>1</sup> / <sub>2</sub> x 24 <sup>1</sup> / <sub>2</sub> ) | 3.037    | 563,000*#     | 40%        | 0.119      |
| 20,000:1                                                          | 20,090:1<br>(20 <sup>1</sup> / <sub>2</sub> x 40 x 24 <sup>1</sup> / <sub>2</sub> )                                 | 2.513    | 563,700*#     | 35%        | 0.087      |
| 25,000:1                                                          | 25,112.5:1<br>(20 <sup>1</sup> / <sub>2</sub> x 50 x 24 <sup>1</sup> / <sub>2</sub> )                               | 2.012    | 564,000*#     | 31%        | 0.070      |
| 30,000:1                                                          | 30,012.5:1<br>(24 <sup>1</sup> / <sub>2</sub> x 50 x 24 <sup>1</sup> / <sub>2</sub> )                               | 1.800    | 564,300*#     | 29%        | 0.058      |
| 35,000:1                                                          | 36,015:1<br>(24 <sup>1</sup> / <sub>2</sub> x 60 x 24 <sup>1</sup> / <sub>2</sub> )                                 | 1.612    | 564,500*#     | 27%        | 0.049      |
| 40,000:1                                                          | 39,200:1<br>(40 x 40 x 24 <sup>1</sup> / <sub>2</sub> )                                                             | 1.428    | 564,600*#     | 28%        | 0.045      |
| 50,000:1                                                          | 49,000:1<br>(40 x 50 x 24 <sup>1</sup> / <sub>2</sub> )                                                             | 1.280    | 564,800*#     | 25%        | 0.036      |
| 60,000:1                                                          | 61,250:1<br>(50 x 50 x 24 <sup>1</sup> / <sub>2</sub> )                                                             | 1.114    | 565,000*#     | 23%        | 0.029      |
| 75,000:1                                                          | 73,500:1<br>(50 x 60 x 24 <sup>1</sup> / <sub>2</sub> )                                                             | 1.017    | 565,100*#     | 21%        | 0.024      |
| 125,000:1                                                         | 120,050:1<br>(70 x 70 x 24 <sup>1</sup> / <sub>2</sub> )                                                            | 0.817    | 565,300*#     | 16%        | 0.015      |
| 175,000:1                                                         | 165,900:1<br>(60 x 70 x 39 <sup>1</sup> / <sub>2</sub> )                                                            | 0.750    | 582,900*#     | 13%        | 0.011      |

Triple Reduction  
Speed Reducers

Maximum momentary starting load must not exceed 300% of speed reducer rating shown above. Other ratio combinations are available upon request.

# Triple Reduction Worm Gear Speed Reducers



A drywell is standard for vertical assemblies sizes 70-200 only.

| Unit Size | WT. LBS. | A <sup>3</sup> | A <sup>2</sup> | A <sup>1</sup> | AB     | AC     | B      | C      | D      | E      | F       | G     | H      | J      | KA     | KB     | L     | M      | N        | NC       | NE     |
|-----------|----------|----------------|----------------|----------------|--------|--------|--------|--------|--------|--------|---------|-------|--------|--------|--------|--------|-------|--------|----------|----------|--------|
| DDVM70    | 585      | 7              | 3 1/2          | 2              | 12 3/8 | 13 1/8 | 6 1/2  | 9 1/4  | 14 5/8 | 6 1/4  | 7 3/8   | 1 3/8 | 1 5/16 | 20 1/8 | 11 3/4 | 6 1/4  | 4 1/2 | 11 1/2 | 6 9/16   | 10 3/16  | 5 1/16 |
| DDVM80    | 725      | 8              | 4              | 2              | 13 5/8 | 14     | 6 5/8  | 10 1/8 | 16 1/2 | 7      | 7 3/8   | 1 1/2 | 1 1/16 | 22 1/4 | 12 3/4 | 7      | 4 1/2 | 12 1/8 | 8        | 11 9/16  | 5 3/4  |
| DDVM90    | 930      | 9              | 5              | 2 1/2          | 15 5/8 | 15 5/8 | 7 3/4  | 10 1/2 | 18 1/2 | 7 7/8  | 7 7/8   | 1 5/8 | 1 3/16 | 25     | 14 3/8 | 7 7/8  | 5 3/8 | 14 1/4 | 8 9/16   | 13 3/8   | 6 7/16 |
| DDVM100   | 1140     | 10             | 5              | 2 1/2          | 16 3/4 | 16 5/8 | 8 3/4  | 11 5/8 | 20 3/4 | 9      | 7 7/8   | 1 3/4 | 1 3/16 | 27 1/4 | 15 1/2 | 9      | 5 3/8 | 16     | 8 9/16   | 14 3/8   | 8 3/16 |
| DDVM120   | 1830     | 12             | 6              | 3              | 19 3/8 | 18 1/2 | 9      | 13 5/8 | 24 1/4 | 10 3/8 | 8 13/16 | 2 1/8 | 1 5/16 | 32 3/8 | 18 1/2 | 10 3/8 | 6 1/8 | 17 1/2 | 10 1/16  | 16 1/8   | 7 7/8  |
| DDVM140   | 2580     | 14             | 6              | 3              | 22 3/8 | 19 3/4 | 10 1/4 | 15 3/8 | 27 1/2 | 12     | 8 13/16 | 2 1/4 | 1 5/16 | 37 1/2 | 22     | 12     | 6 1/8 | 19 1/4 | 10 1/16  | 16       | 9 9/16 |
| DDVM170   | 4320     | 17             | 8              | 4              | 26 3/8 | 23 1/8 | 11 1/2 | 18 1/2 | 33     | 14 1/2 | 10 1/4  | 2 1/2 | 1 9/16 | 44 3/4 | 26 1/4 | 14 1/2 | 7 3/4 | 21 1/2 | 11 3/4   | 18 15/16 | 9 1/2  |
| DDVM200   | 5880     | 20             | 9              | 5              | 30 3/8 | 25 7/8 | 12 3/4 | 21 7/8 | 39     | 17     | 11      | 2 3/4 | 1 9/16 | 53     | 31     | 17     | 8 3/4 | 23 3/4 | 13 13/16 | 21 3/16  | 10 1/2 |

| Unit Size | T <sub>A</sub> | U       | Keyway              | W <sub>A</sub> | Y     | ¥                    | Z      |
|-----------|----------------|---------|---------------------|----------------|-------|----------------------|--------|
| DDVM70    | 1              | 2       | 1/4 x 1/8 x 1 15/16 | 2 1/2          | 5     | 5/8 x 5/16 x 4 15/16 | 7 5/16 |
| DDVM80    | 1 1/8          | 2 1/16  | 1/4 x 1/8 x 2       | 2 3/4          | 5 1/2 | 5/8 x 5/16 x 5 7/16  | 8 1/4  |
| DDVM90    | 1 3/8          | 2 5/16  | 5/16 x 5/32 x 2 1/4 | 3 1/4          | 6 1/2 | 3/4 x 3/8 x 6 3/8    | 9 1/4  |
| DDVM100   | 1 3/8          | 2 5/16  | 5/16 x 5/32 x 2 1/4 | 3 5/8          | 7 1/4 | 7/8 x 7/16 x 7 3/16  | 10 3/8 |
| DDVM120   | 1 1/2          | 2 11/16 | 3/8 x 3/16 x 2 5/8  | 4 1/4          | 8 1/2 | 1 x 1/2 x 8 3/8      | 12 1/8 |
| DDVM140   | 1 1/2          | 2 11/16 | 3/8 x 3/16 x 2 5/8  | 5              | 9     | 1 1/4 x 5/8 x 8 5/8  | 13 3/4 |
| DDVM170   | 1 7/8          | 3 1/8   | 1/2 x 1/4 x 3 1/16  | 5 3/4          | 10    | 1 1/2 x 3/4 x 9 3/4  | 16 1/2 |
| DDVM200   | 2 1/8          | 3 15/16 | 1/2 x 1/4 x 3 7/8   | 6 1/2          | 11    | 1 1/2 x 3/4 x 10 1/2 | 19 1/2 |

Larger sizes available on request.

Available in shafted unit as shown or hollow output units.

# BT Pinch Roll Reduction Units

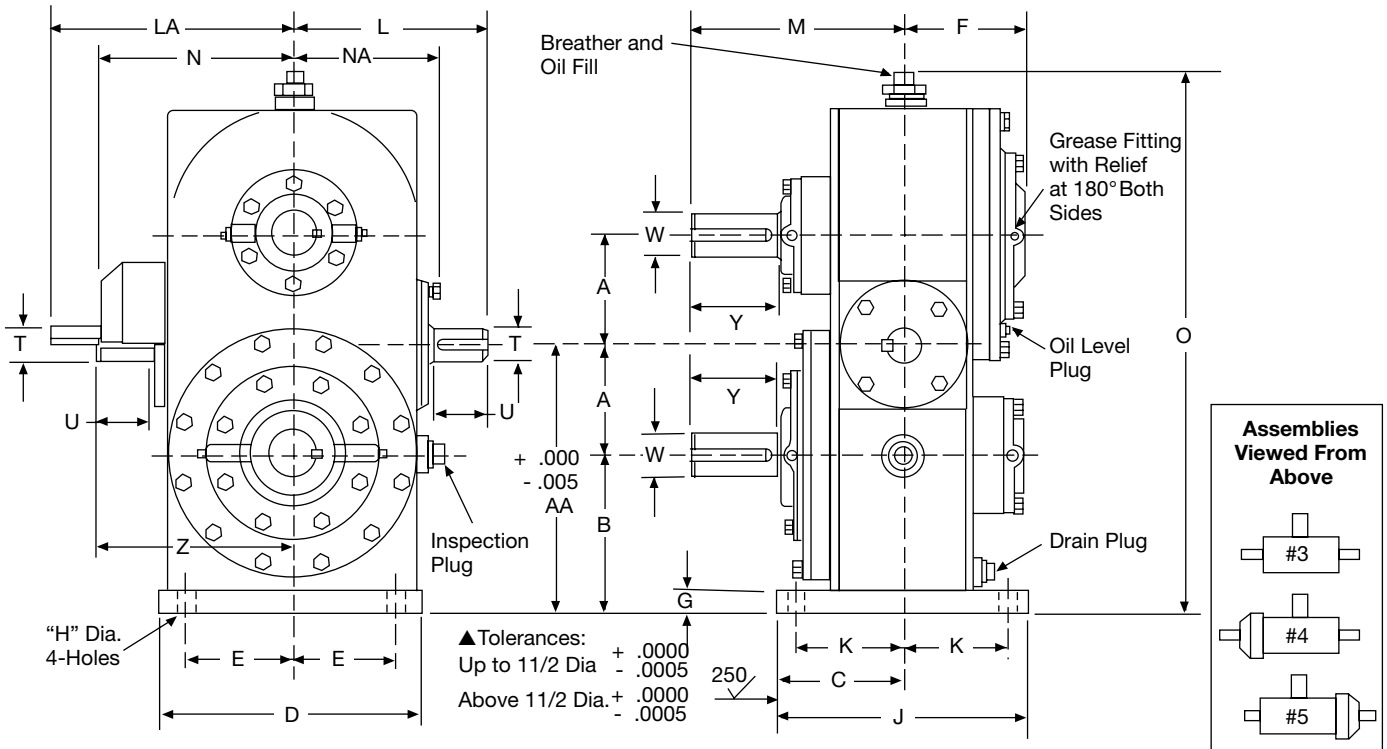
- Hardened and ground AISI 4150 steel worms
- Bronze-rim worm gears with cast iron centers
- Heat-treated steel output shafts in horizontal and up- or down-vertical configurations
- Tapered and spherical roller bearings
- Fabricated steel housings

## Example of selection procedure

1. A 1750 RPM motor will be used to power a pinch roll unit. Output shaft speed to be approximately 60 RPM. 15 HP input.
2.  $1750/60 = 29.17$  reduction ratio. Look in 30:1 ratio table on page 25  $15/1.5 = 10.0$  mechanical input horsepower needed. A BT60 unit with 6.0" center distance provides 10.2 HP and its 29 1/2 nominal ratio gives an output shaft speed of 59.32 RPM.

## Features

1. Mechanical input horsepower ratings are 1.5 times the single reduction reducer ratings published on pages 22-27 of this catalog center distances.
2. Each output shaft will transmit 75% of the torque ratings listed on pages 22-27 of this catalog assuming that the input HP divides equally. This should be the case if both rolls on the output shafts are of the same diameter.
3. Delroyd BT units can be fan-cooled, water-cooled or force feed-cooled with an oil-circulating pump. Contact DELROYD Worm Gear for thermal ratings.
4. All bearings and bearing retainers are designed to withstand the additional thrust imposed by driving two gears with a common worm shaft.
5. Delroyd BT units can be furnished with double-end input shafts for mounting in series. All standard worms are designed to carry 10,000 psi torsional stress. If input torque results in a torsional stress greater than 10,000 psi, a larger root diameter worm must be selected when driving worms in series. Before final selection is made for tandem-driving units, consult Delroyd Worm Gear.
6. The Delroyd involute helicoid thread form permits simple, accurate gearing adjustments without running in expensive matched, lapped worm and gear sets.



| Unit Size | C.D. | A  | AA     | B     | C               | D      | E     | F       | G     | H      | J      | K     | L      | LA       | M      | N       | NA       | O      | T▲    | U       | Keyway                | W▲    | Y     | Keyway               | Z       |
|-----------|------|----|--------|-------|-----------------|--------|-------|---------|-------|--------|--------|-------|--------|----------|--------|---------|----------|--------|-------|---------|-----------------------|-------|-------|----------------------|---------|
| BT30      | 3    | 3  | 7-1/4  | 4-1/4 | 4.125<br>4.120  | 7-1/2  | 3     | 3-11/16 | 1/2   | 9/16   | 8-1/4  | 3-3/4 | 6-1/8  | 7-13/16  | 6      | 5-15/16 | 4-3/16   | 14-1/4 | 7/8   | 1-7/8   | 3/16 x 3/32 x 1-13/16 | 1-1/4 | 2-1/2 | 1/4 x 1/8 x 2-3/8    | 6-1/8   |
| BT40      | 4    | 4  | 9-1/4  | 5-1/4 | 5.000<br>4.995  | 10-1/4 | 4-1/4 | 4-7/8   | 3/4   | 13/16  | 10     | 4-1/4 | 7-3/4  | 9-13/16  | 8-1/2  | 7-7/8   | 5-3/4    | 19-1/2 | 1-1/8 | 2-1/16  | 1/4 x 1/8 x 2         | 1-3/4 | 3-1/2 | 3/8 x 3/16 x 3-7/16  | 7-3/4   |
| BT50      | 5    | 5  | 12-1/4 | 7-1/4 | 5.625<br>5.620  | 11-3/4 | 4-3/4 | 5-1/2   | 1     | 13/16  | 11-1/4 | 4-3/4 | 8-3/4  | 10-15/16 | 9-5/8  | 8-5/8   | 6-3/8    | 24-3/4 | 1-3/8 | 2-5/16  | 5/16 x 5/32 x 2-1/4   | 2     | 4     | 1/2 x 1/4 x 3-7/8    | 8-3/4   |
| BT60      | 6    | 6  | 14-1/2 | 8-1/2 | 6.000<br>5.995  | 14     | 5-1/2 | 6-1/8   | 1-1/8 | 15/16  | 12     | 5     | 10-1/4 | 12-5/8   | 10-3/4 | 10-1/16 | 7-7/8    | 29-1/4 | 1-1/2 | 2-11/16 | 3/8 x 3/16 x 2-5/8    | 2-1/4 | 4-1/2 | 1/2 x 1/4 x 4-3/8    | 10-1/4  |
| BT70      | 7    | 7  | 16     | 9     | 6.500<br>6.495  | 15-1/4 | 6-1/4 | 6-7/16  | 1-1/8 | 1-1/16 | 13     | 5-1/2 | 11-1/2 | 13-7/8   | 11-1/2 | 10-3/4  | 8-1/2    | 32-1/2 | 1-5/8 | 3-1/8   | 3/8 x 3/16 x 3-1/16   | 2-1/2 | 5     | 5/8 x 5/16 x 4-15/16 | 11-1/2  |
| BT80      | 8    | 8  | 18     | 10    | 7.000<br>6.995  | 17-1/8 | 7     | 6-1/2   | 1-1/4 | 1-3/16 | 14     | 5-3/4 | 12-1/2 | 15-1/2   | 12-1/8 | 11 3/4  | 9-1/2    | 36-1/2 | 1-7/8 | 3-1/8   | 1/2 x 1/4 x 3-1/16    | 2-3/4 | 5-1/2 | 5/8 x 5/16 x 5-7/16  | 13-1/8  |
| BT90      | 9    | 9  | 20     | 11    | 8.000<br>7.995  | 19     | 7-3/4 | 7-5/8   | 1-1/4 | 1-7/16 | 16     | 6-1/2 | 14-1/4 | 17-3/4   | 14-1/4 | 13-7/8  | 10-1/2   | 40-1/2 | 2-1/8 | 3-15/16 | 1/2 x 1/4 x 3-7/8     | 3-1/4 | 6-1/2 | 3/4 x 3/8 x 6-3/8    | 15-3/16 |
| BT100     | 10   | 10 | 22     | 12    | 8.500<br>8.495  | 21-1/2 | 8-3/4 | 8-5/8   | 1-1/4 | 1-7/16 | 17     | 7     | 15-1/2 | 18-13/16 | 16     | 15-1/8  | 11-13/16 | 43-3/4 | 2-1/4 | 4       | 1/2 x 1/4 x 3-15/16   | 3-5/8 | 7-1/4 | 7/8 x 7/16 x 7-3/16  | 15-5/8  |
| BT120     | 12   | 12 | 26     | 14    | 10.000<br>9.995 | 25-1/4 | 11    | 8-7/8   | 1-1/2 | 1-9/16 | 20     | 8-1/2 | 18     | 21-9/16  | 17-1/2 | 17      | 13-9/16  | 51-1/2 | 2-1/2 | 4-9/16  | 5/8 x 5/16 x 4-1/2    | 4-1/4 | 8-1/2 | 1 x 1/2 x 8-3/8      | 18-1/8  |

▲ Tolerances: Up to 1 1/2 Dia. + .0000  
                          - .0005  
Above 1 1/2 Dia. + .0000  
                          - .0005

# P Mixer Drive Units

## Worm Gear Mixer Drives...

Reliable power transmission for mixers/agitations.

### Features

Fluid mixing is often a very complex process. While the properties of the materials to be mixed, as well as the mixing vessel and agitator are very important considerations, the type of drive can greatly affect mixing costs - both operating and initial investment. For a wide variety of materials in chemical, process, pollution control and many other applications, Delroyd Worm gear drives for mixers and agitators offer many advantages over the other types of gearing and drive units.

- Because of their unique worm and gear design, Delroyd worm gear sets operate with multiple tooth contact at all times. This assures shockless power delivery. As a result, operation is smooth and extremely quiet, normally in a sound range of 76 to 80 dBA ... very important for meeting OSHA standards.

- Single reduction Delroyd worm gear sets can easily provide gear reductions of 5: 1 through 70:1, for output speeds down to 25 rpm (using standard 1750 rpm motors). With double reduction Delroyd helical-worm gear reducers, gear reduction can go from 15:1 to 350:1 ratio to provide outputs as low as 5 rpm. This allows economical yet efficient mixing at lower speeds: power costs as well as initial capital outlay are usually lower with Delroyd worm gear drives.

Please remember that gearing efficiency is quite different from mixing efficiency. While mixing efficiency is influenced by gearing efficiency, it also depends on other technical and economic factors.

- Delroyd worm gear drives are engineered to withstand up to 300% momentary peak overloads and shock loads ... forces that would cause other forms of gearing to fail.

- Minimum service factor for Delroyd mixer drives is 1.25.

- In Delroyd units, heavy-duty tapered Timken roller bearings (B-10 life of over 10,000 hours on the worm shaft; B-10 life of 100,000 hours on low speed shaft) minimize shaft vibration and sensitivity to shaft deflection. This eliminates the need for hollow quill construction and lowers the overall cost of the mixer/agitator.

- The centrifugally cast phosphorous bronze gear mates with a hardened, ground and polished steel worm. As the drive operates, the bronze gear conforms and work-hardens to the contour of the worm. This is responsible for the saying that "Delroyd worm gears wear in, not wear out."

- Standard drywell construction provides positive protection against leakage of lubricants. There's no danger of product contamination.

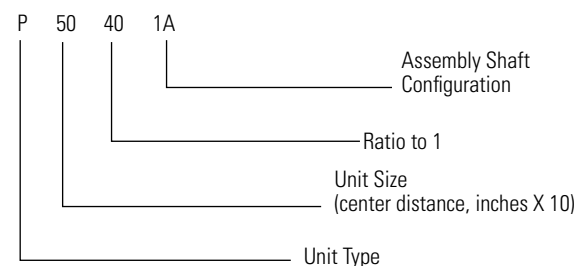
Standard Delroyd units range from 3 through 14-inch center distances, and horsepower from .132 to 265 HP.

Drives with even larger center distances and greater horsepower are available.



### Mixer Drive Nomenclature

#### Example:



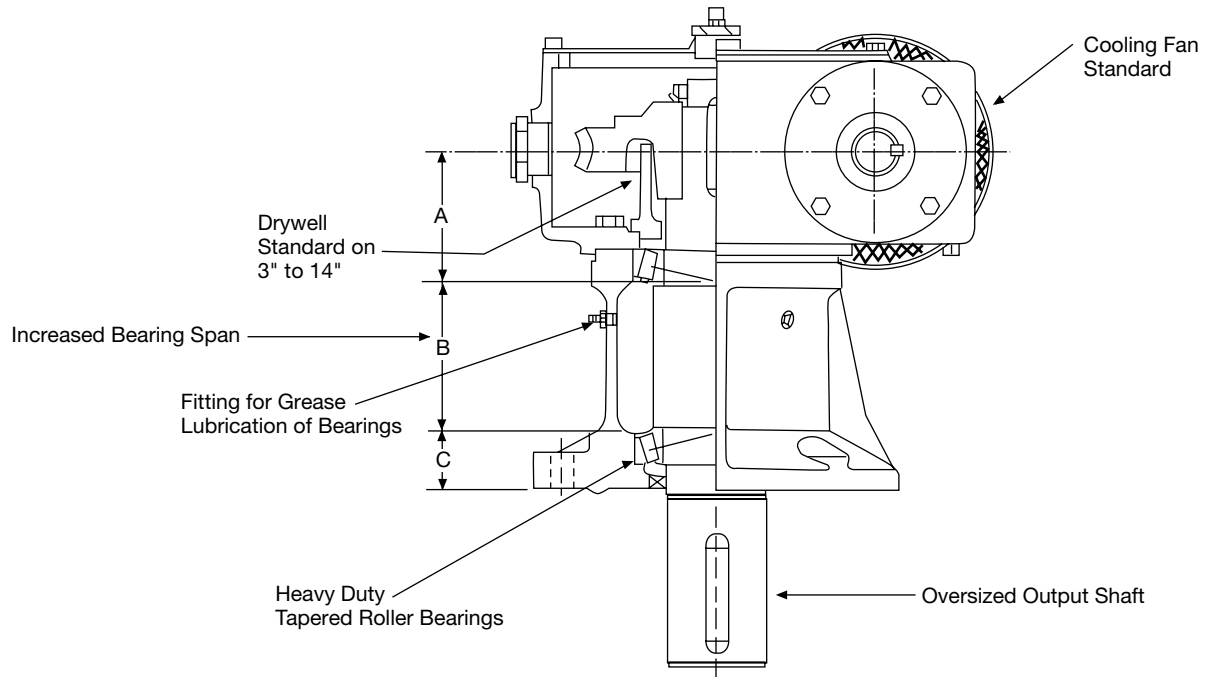
### Delroyd Mixer Unit Types Available

| Options                       | Single Reduction | Double-Reduction Helical-Worm | Double-Reduction Worm-Worm |
|-------------------------------|------------------|-------------------------------|----------------------------|
| Standard Shaft                | P                | HP                            | DP*                        |
| Tapered Output Shaft          | PT               | HPT *                         | DPT*                       |
| Scoop for Foot-Mounted Motor  | PK*              | HPK*                          | DPK*                       |
| Adaptor for "C"-Mounted Motor | PM*              | HPM*                          | DPM*                       |

\*Available but not included in dimensional sheets.

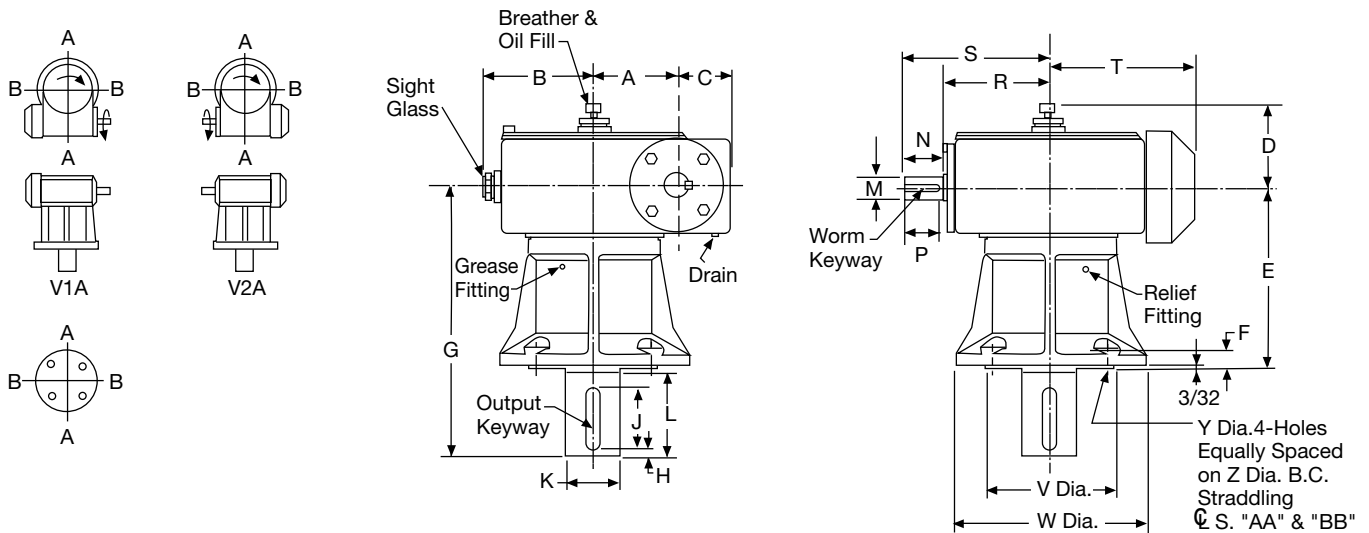
Note: If high overhung load capacity is needed, request information on Delroyd VFF and HVFF Series units.

# Design Features and Internal Construction



| Unit Size | P30   | P40   | P50   | P60   | P70   | P80    | P90  | P100  | P120  | P140  |
|-----------|-------|-------|-------|-------|-------|--------|------|-------|-------|-------|
|           |       | HP40  | HP50  | HP60  | HP70  | HP80   | HP90 | HP100 | HP120 | HP140 |
| A"        | 3.638 | 3.74  | 4.309 | 4.719 | 4.94  | 4.938  | 5.5  | 6.75  | 6.75  | 6.93  |
| B"        | 3.79  | 4.105 | 4.545 | 4.955 | 8.09  | 10.063 | 12.0 | 11.75 | 11.75 | 14.34 |
| C"        | 1.573 | 1.905 | 1.896 | 2.076 | 2.345 | 2.50   | 2.75 | 3.75  | 3.75  | 3.73  |

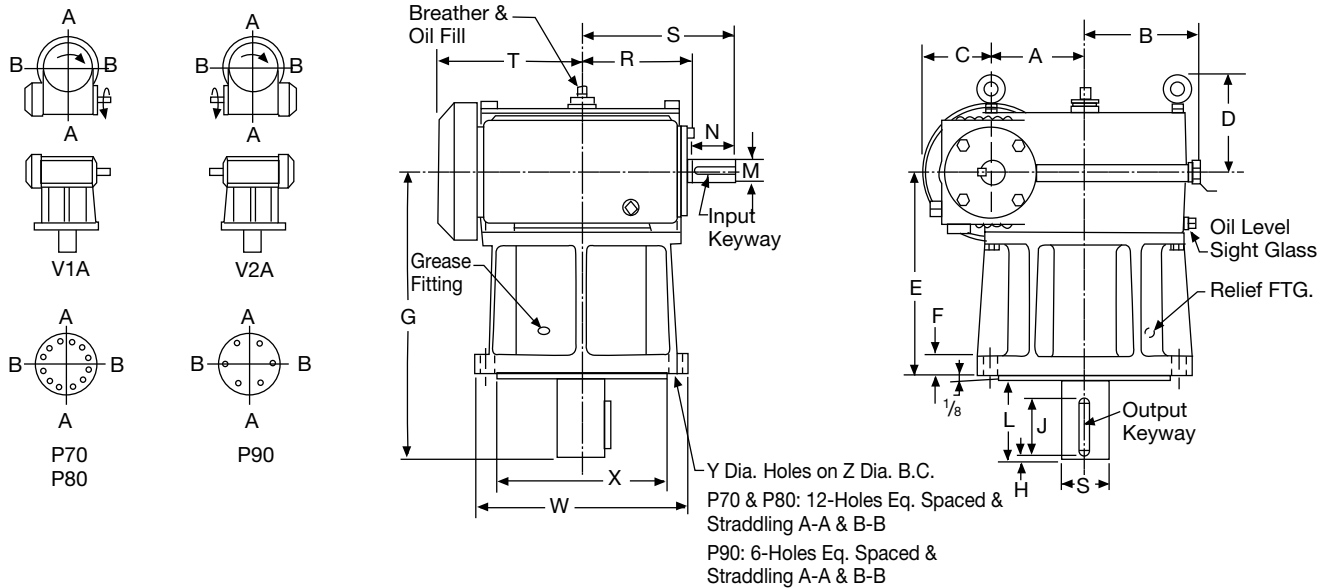
## P30 - P40 - P50 - P60



| Unit Size | Reducer Wt. | A | B                             | C                              | D                               | E                              | F                             | G                              | H                             | J                             | Output Keyway        | K▲                              | L                             | M▲                            | N                               | P                               | Worm Keyway           | R                               | S                              | T                               | U                              | V■    | W                              | Y                               | Z DIA. B.C.                   |
|-----------|-------------|---|-------------------------------|--------------------------------|---------------------------------|--------------------------------|-------------------------------|--------------------------------|-------------------------------|-------------------------------|----------------------|---------------------------------|-------------------------------|-------------------------------|---------------------------------|---------------------------------|-----------------------|---------------------------------|--------------------------------|---------------------------------|--------------------------------|-------|--------------------------------|---------------------------------|-------------------------------|
| P30       | 110         | 3 | 4 <sup>3</sup> / <sub>8</sub> | 2 <sup>5</sup> / <sub>16</sub> | 3 <sup>9</sup> / <sub>16</sub>  | 9                              | 5 <sup>5</sup> / <sub>8</sub> | 13 <sup>1</sup> / <sub>2</sub> | 1 <sup>1</sup> / <sub>4</sub> | 3                             | 1/2 wide x 3/16 deep | 1 <sup>15</sup> / <sub>16</sub> | 4 <sup>1</sup> / <sub>4</sub> | 7 <sup>7</sup> / <sub>8</sub> | 1 <sup>7</sup> / <sub>8</sub>   | 1 <sup>13</sup> / <sub>16</sub> | 3/16 wide x 3/32 deep | 4 <sup>3</sup> / <sub>16</sub>  | 6 <sup>1</sup> / <sub>8</sub>  | 5 <sup>15</sup> / <sub>16</sub> | 3 <sup>1</sup> / <sub>16</sub> | 7.749 | 11 <sup>1</sup> / <sub>2</sub> | 1 <sup>11</sup> / <sub>16</sub> | 9 <sup>3</sup> / <sub>4</sub> |
| P40       | 170         | 4 | 5 <sup>1</sup> / <sub>2</sub> | 2 <sup>7</sup> / <sub>8</sub>  | 3 <sup>7</sup> / <sub>8</sub>   | 9 <sup>3</sup> / <sub>4</sub>  | 1                             | 15 <sup>1</sup> / <sub>4</sub> | 3 <sup>3</sup> / <sub>4</sub> | 3 <sup>3</sup> / <sub>4</sub> | 3/4 wide x 1/4 deep  | 2 <sup>7</sup> / <sub>8</sub>   | 5 <sup>1</sup> / <sub>4</sub> | 1 <sup>1</sup> / <sub>8</sub> | 2 <sup>1</sup> / <sub>16</sub>  | 2                               | 1/4 wide x 1/8 deep   | 5 <sup>11</sup> / <sub>16</sub> | 7 <sup>3</sup> / <sub>4</sub>  | 7 <sup>3</sup> / <sub>4</sub>   | 3 <sup>9</sup> / <sub>16</sub> | 7.749 | 11 <sup>1</sup> / <sub>2</sub> | 1 <sup>11</sup> / <sub>16</sub> | 9 <sup>3</sup> / <sub>4</sub> |
| P50       | 225         | 5 | 6 <sup>1</sup> / <sub>2</sub> | 3 <sup>3</sup> / <sub>8</sub>  | 4 <sup>5</sup> / <sub>16</sub>  | 10 <sup>3</sup> / <sub>4</sub> | 1 <sup>1</sup> / <sub>8</sub> | 16 <sup>1</sup> / <sub>4</sub> | 3 <sup>3</sup> / <sub>8</sub> | 3 <sup>3</sup> / <sub>4</sub> | 3/4 wide x 1/4 deep  | 3 <sup>1</sup> / <sub>8</sub>   | 5 <sup>1</sup> / <sub>4</sub> | 1 <sup>3</sup> / <sub>8</sub> | 2 <sup>5</sup> / <sub>16</sub>  | 2 <sup>1</sup> / <sub>4</sub>   | 5/16 wide x 5/32 deep | 6 <sup>7</sup> / <sub>16</sub>  | 8 <sup>3</sup> / <sub>4</sub>  | 8 <sup>5</sup> / <sub>8</sub>   | 4 <sup>7</sup> / <sub>16</sub> | 7.749 | 11 <sup>1</sup> / <sub>2</sub> | 1 <sup>11</sup> / <sub>16</sub> | 9 <sup>3</sup> / <sub>4</sub> |
| P60       | 350         | 6 | 7 <sup>3</sup> / <sub>4</sub> | 3 <sup>7</sup> / <sub>8</sub>  | 4 <sup>13</sup> / <sub>16</sub> | 11 <sup>3</sup> / <sub>4</sub> | 1 <sup>1</sup> / <sub>4</sub> | 17 <sup>1</sup> / <sub>2</sub> | 3 <sup>3</sup> / <sub>8</sub> | 3 <sup>3</sup> / <sub>8</sub> | 7/8 wide x 5/16 deep | 3 <sup>1</sup> / <sub>2</sub>   | 5 <sup>1</sup> / <sub>2</sub> | 1 <sup>1</sup> / <sub>2</sub> | 2 <sup>11</sup> / <sub>16</sub> | 2 <sup>5</sup> / <sub>8</sub>   | 3/8 wide x 3/16 deep  | 7 <sup>3</sup> / <sub>4</sub>   | 10 <sup>1</sup> / <sub>4</sub> | 10 <sup>1</sup> / <sub>16</sub> | 5                              | 7.749 | 11 <sup>1</sup> / <sub>2</sub> | 1 <sup>11</sup> / <sub>16</sub> | 9 <sup>3</sup> / <sub>4</sub> |

■ Tolerances: +.000 -.002 ▲ Tolerances: 1 1/2 Diameter or less +.0000 -.0005 over 1 1/2 Diameter +.000 -.001

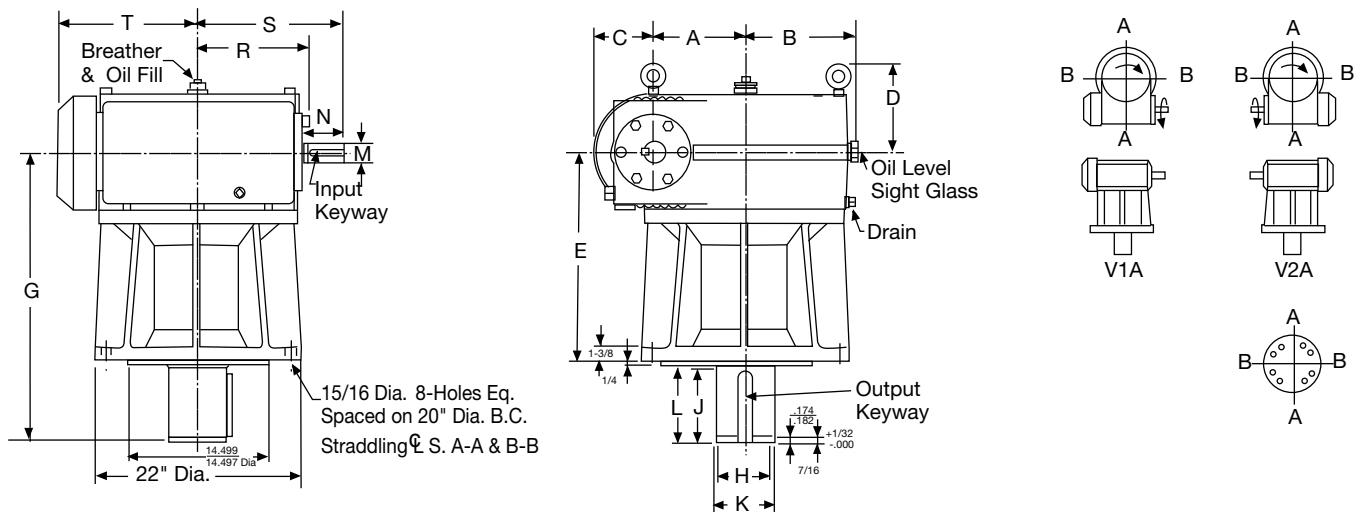
# P70 - P80 - P90



| Unit Size | Reducer Wt. | A | B                              | C                              | D                               | E                              | F                             | G                              | H                             | J                             | Output Keyway         | K▲                            | L                             | M▲                            | N                               | Input Keyway        | R                              | S      | T                                | W  | X■     | Y | Z      |
|-----------|-------------|---|--------------------------------|--------------------------------|---------------------------------|--------------------------------|-------------------------------|--------------------------------|-------------------------------|-------------------------------|-----------------------|-------------------------------|-------------------------------|-------------------------------|---------------------------------|---------------------|--------------------------------|--------|----------------------------------|----|--------|---|--------|
| P70       | 475         | 7 | 8 <sup>9</sup> / <sub>16</sub> | 5 <sup>3</sup> / <sub>16</sub> | 7 <sup>5</sup> / <sub>16</sub>  | 15 <sup>3</sup> / <sub>8</sub> | 1 <sup>5</sup> / <sub>8</sub> | 21 <sup>5</sup> / <sub>8</sub> | 3 <sup>3</sup> / <sub>8</sub> | 4 <sup>3</sup> / <sub>8</sub> | 7/2 wide x 7/16 deep  | 3 1/2                         | 6                             | 1 <sup>5</sup> / <sub>8</sub> | 3 1/8                           | 3/8 x 3/16 x 3 1/16 | 8 1/2                          | 11 1/2 | 10 <sup>3</sup> / <sub>4</sub>   | 16 | 12.749 | 1 | 14 1/4 |
| P80       | 780         | 8 | 9 <sup>7</sup> / <sub>16</sub> | 5 <sup>3</sup> / <sub>16</sub> | 7 <sup>15</sup> / <sub>16</sub> | 17 1/2                         | 1 <sup>5</sup> / <sub>8</sub> | 24 <sup>1</sup> / <sub>2</sub> | 3 <sup>3</sup> / <sub>8</sub> | 4 1/2                         | 1 wide x 1/2 deep     | 4                             | 8 <sup>3</sup> / <sub>8</sub> | 1 <sup>7</sup> / <sub>8</sub> | 3 1/8                           | 1/2 x 1/4 x 3 1/16  | 9 1/2                          | 12 1/2 | 11 <sup>3</sup> / <sub>4</sub>   | 16 | 12.749 | 1 | 14 1/4 |
| P90       | 1100        | 9 | 10 <sup>3</sup> / <sub>8</sub> | 6 <sup>3</sup> / <sub>16</sub> | 8 <sup>15</sup> / <sub>16</sub> | 20 1/4                         | 1 <sup>5</sup> / <sub>8</sub> | 27 1/4                         | 3 <sup>3</sup> / <sub>8</sub> | 4 <sup>3</sup> / <sub>4</sub> | 1 1/4 wide x 5/8 deep | 4 <sup>5</sup> / <sub>8</sub> | 6 <sup>3</sup> / <sub>4</sub> | 2 <sup>1</sup> / <sub>8</sub> | 3 <sup>15</sup> / <sub>16</sub> | 1/2 x 1/4 x 3 1/8   | 10 <sup>3</sup> / <sub>8</sub> | 14 1/4 | 13 <sup>13</sup> / <sub>16</sub> | 16 | 14.999 | 1 | 17     |

■ Tolerances: +.000 -.003 ▲ Tolerances: 1/2 Diameter or less +.0000 -.0005 over 1/2 Diameter +.000 -.001

# P100 - P120 - P140

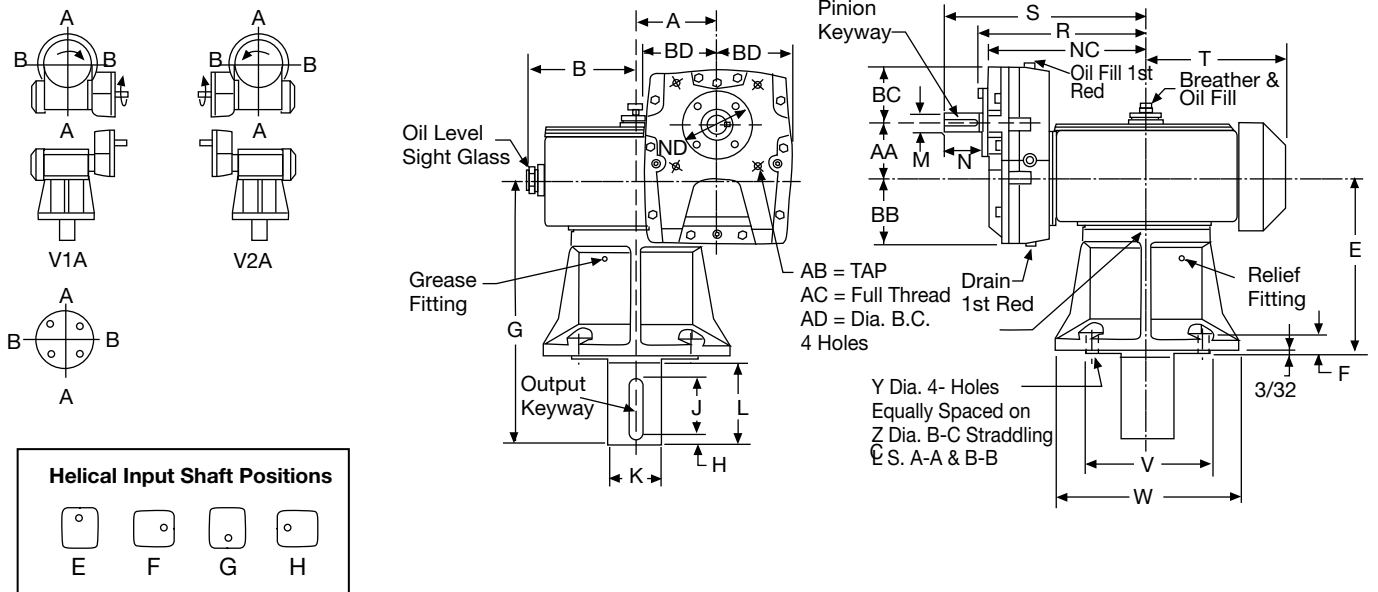


| Unit Size | Reducer Wt. | A  | B                              | C                               | D                               | E      | G                              | H■    | J     | Output Keyway         | K▲    | L                             | M▲    | N                              | Input Keyway                              | R                                | S      | T                                |
|-----------|-------------|----|--------------------------------|---------------------------------|---------------------------------|--------|--------------------------------|-------|-------|-----------------------|-------|-------------------------------|-------|--------------------------------|-------------------------------------------|----------------------------------|--------|----------------------------------|
| P100      | 1700        | 10 | 11 <sup>5</sup> / <sub>8</sub> | 6 <sup>3</sup> / <sub>16</sub>  | 9 <sup>7</sup> / <sub>16</sub>  | 22 1/4 | 31                             | 5.993 | 8 1/8 | 1 1/2 wide x 3/4 deep | 6.250 | 8 1/4                         | 2 1/4 | 4                              | 1/2 x 1/4 x 3 15/16                       | 11 <sup>13</sup> / <sub>16</sub> | 15 1/2 | 15 1/8                           |
| P120      | 2150        | 12 | 13 1/2                         | 6 <sup>3</sup> / <sub>16</sub>  | 10 <sup>9</sup> / <sub>16</sub> | 22 1/4 | 31                             | 5.993 | 8 1/8 | 1 1/2 wide x 3/4 deep | 6.250 | 8 1/4                         | 2 1/2 | 4 <sup>9</sup> / <sub>16</sub> | 5/8 x 5/16 x 4 1/2                        | 13 <sup>9</sup> / <sub>16</sub>  | 18     | 17                               |
| P140      | 2750        | 14 | 14 <sup>3</sup> / <sub>4</sub> | 7 <sup>11</sup> / <sub>16</sub> | 11 1/8                          | 25     | 34 <sup>3</sup> / <sub>4</sub> | 6.713 | 9     | 1 3/4 wide x 7/8 deep | 7.000 | 9 <sup>1</sup> / <sub>8</sub> | 3     | 5 <sup>5</sup> / <sub>8</sub>  | 3/4 x 3/8 x 5 <sup>5</sup> / <sub>8</sub> | 15 1/2                           | 21     | 20 <sup>11</sup> / <sub>16</sub> |

■ Tolerance: +.000 -.014 ▲ Tolerance: +.000 -.001



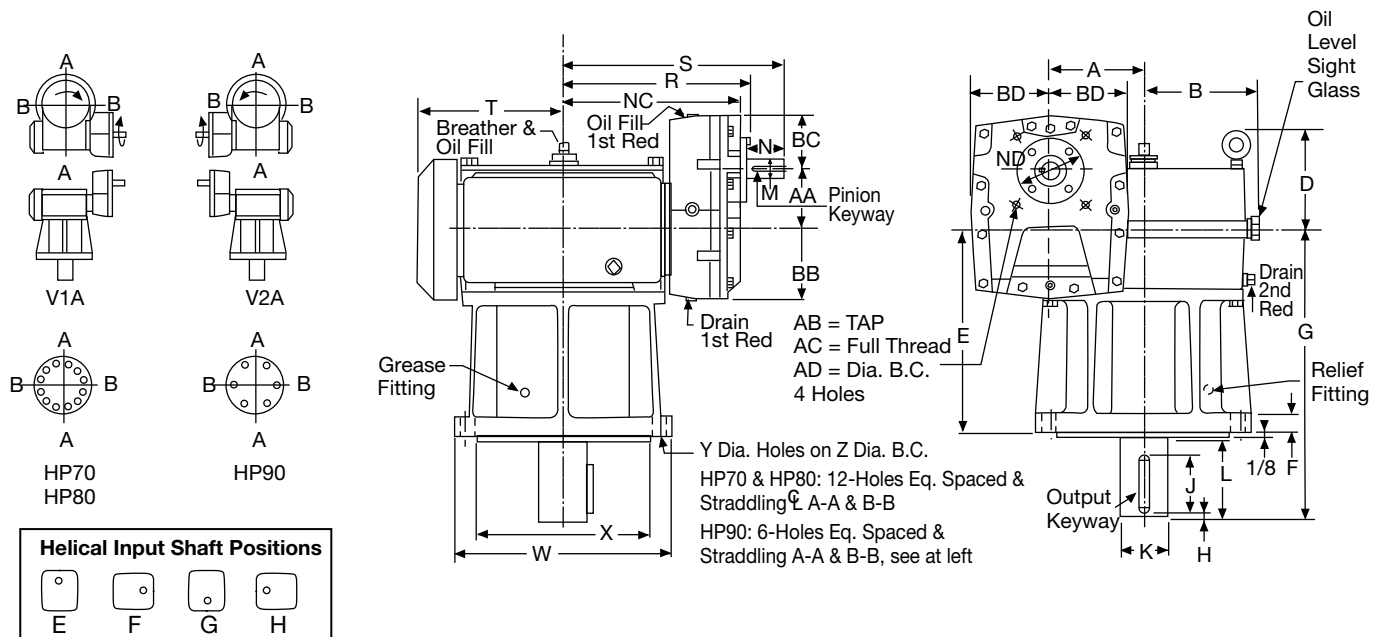
# HP40 - H50 - HP60



| Unit Size | Reducer Wt. | A | AA    | AB     | AC  | AD    | B     | BB    | BC    | BD    | E      | F     | G      | H   | J     | Output Keyway        | K▲    | L     | M▲    | Pinion Keyway         | N     | NC     | ND     | R      | S       | T      | V     | W      | Y      | Z     |
|-----------|-------------|---|-------|--------|-----|-------|-------|-------|-------|-------|--------|-------|--------|-----|-------|----------------------|-------|-------|-------|-----------------------|-------|--------|--------|--------|---------|--------|-------|--------|--------|-------|
| HP40      | 215         | 4 | 3     | 3/8-16 | 5/8 | 5 1/4 | 5 1/2 | 3 1/2 | 2 7/8 | 4     | 9 3/4  | 1     | 15 1/4 | 3/8 | 3 3/4 | 3/4 wide x 1/4 deep  | 2 7/8 | 5 1/4 | 7/8   | 3/16 x 3/32 x 1 15/16 | 2     | 9 1/16 | 3 5/16 | 9 9/16 | 11 1/16 | 7 3/4  | 7.749 | 11 1/2 | 1 1/16 | 9 3/4 |
| HP50      | 325         | 5 | 3 1/2 | 1/2-13 | 3/4 | 7 1/4 | 6 1/2 | 4     | 3 1/2 | 4 5/8 | 10 3/4 | 1 1/8 | 16 1/4 | 3/8 | 3 3/4 | 3/4 wide x 1/4 deep  | 3 1/8 | 5 1/4 | 1 1/8 | 1/4 x 1/8 x 2 3/16    | 2 1/4 | 9 7/8  | 4 1/4  | 10 9/8 | 12 5/8  | 8 5/8  | 7.749 | 11 1/2 | 1 1/16 | 9 3/4 |
| HP60      | 410         | 6 | 4     | 1/2-13 | 3/4 | 7 1/4 | 7 3/4 | 4 3/4 | 3 5/8 | 5 1/2 | 11 3/4 | 1 1/4 | 17 1/2 | 3/8 | 3 7/8 | 7/8 wide x 5/16 deep | 3 1/2 | 5 1/2 | 1 1/4 | 1/4 x 1/8 x 2 7/16    | 2 1/2 | 11 3/4 | 4 1/4  | 12 1/4 | 14 3/4  | 10 1/8 | 7.749 | 11 1/2 | 1 1/16 | 9 3/4 |

■ Tolerances: +.000 -.003 ▲ Tolerances: 1 1/2 Diameter or less +.0000 -.0005 over 1 1/2 Diameter +.000 -.001

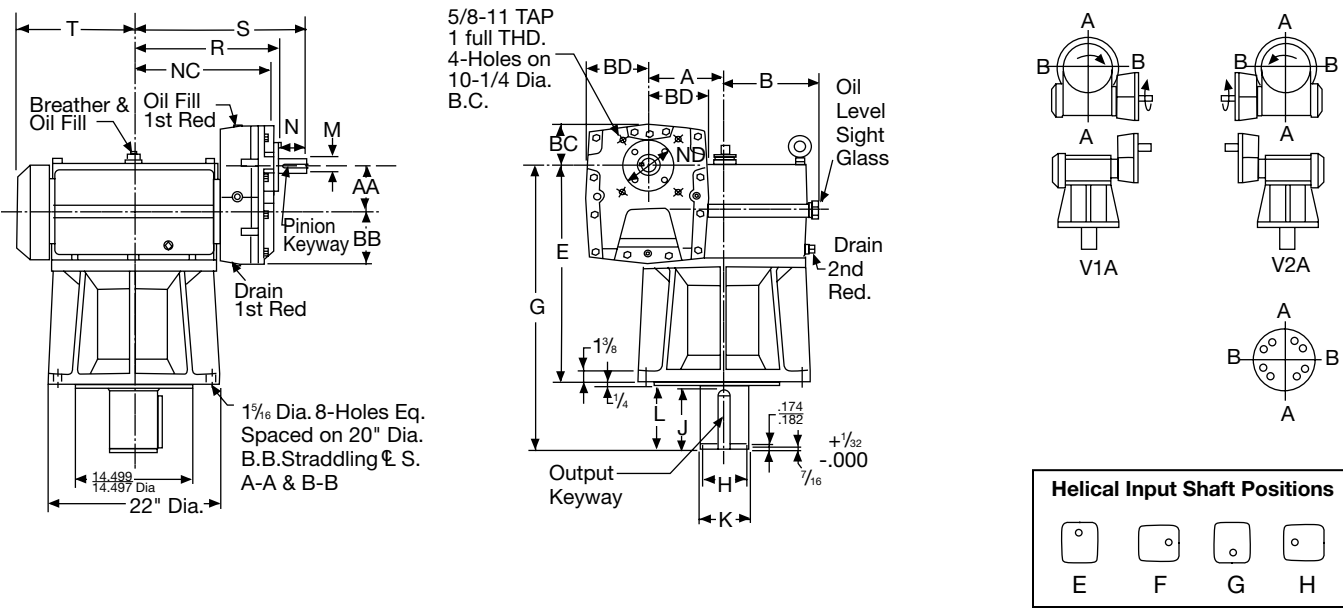
# HP70 - HP80 - HP90



| Unit Size | Reducer Wt. | A | AA    | AB     | AC  | AD    | B      | BB     | BC     | BD     | D       | E      | F     | G      | H   | J     | Output Keyway         | K▲    | L     | M▲    | N     | Pinion Keyway         | NC      | ND    | R       | S      | T       | W  | X      | Y | Z      |
|-----------|-------------|---|-------|--------|-----|-------|--------|--------|--------|--------|---------|--------|-------|--------|-----|-------|-----------------------|-------|-------|-------|-------|-----------------------|---------|-------|---------|--------|---------|----|--------|---|--------|
| HP70      | 670         | 7 | 4 1/2 | 1/2-13 | 3/4 | 7 1/4 | 8 9/16 | 5 1/8  | 4      | 5 1/8  | 7 9/16  | 15 3/8 | 1 3/4 | 2 15/8 | 3/8 | 4 3/8 | 7/8 wide x 7/16 deep  | 3 1/2 | 6     | 1 3/8 | 2 3/4 | 5/16 x 3/32 x 2 11/16 | 13 1/16 | 4 7/8 | 13 3/8  | 16 3/8 | 10 3/4  | 16 | 12.749 | 1 | 14 1/4 |
| HP80      | 875         | 8 | 5     | 5/8-11 | 1   | 8 1/4 | 9 7/16 | 5 1/2  | 4 3/8  | 6 3/8  | 7 15/16 | 17 1/2 | 1 5/8 | 24 1/8 | 3/8 | 4 1/2 | 1 wide x 1/2 deep     | 4     | 6 3/8 | 1 1/2 | 3     | 3/8 x 3/16 x 2 15/16  | 14 7/16 | 5 3/4 | 15 1/16 | 18     | 11 3/4  | 16 | 12.749 | 1 | 14 1/4 |
| HP90      | 1204        | 9 | 5 1/2 | 5/8-11 | 1   | 8 1/4 | 10 3/8 | 6 3/16 | 4 7/16 | 8 1/32 | 8 15/16 | 20 1/4 | 1 5/8 | 27 1/4 | 3/8 | 4 3/4 | 1 1/4 wide x 5/8 deep | 4 5/8 | 6 3/4 | 1 3/4 | 3 1/2 | 3/8 x 3/16 x 3 7/16   | 16 1/16 | 5 3/4 | 16 1/16 | 20 1/8 | 13 3/16 | 19 | 14.999 | 1 | 17     |

■ Tolerances: +.000 -.003 ▲ Tolerances: 1 1/2 Diameter or less +.0000 -.0005 over 1 1/2 Diameter +.000 -.001

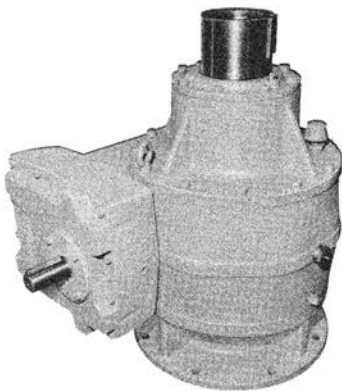
# HP100 - HP120 - HP140



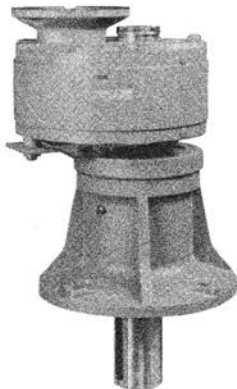
| Unit Size | Reducer Wt. | A  | AA | B      | BB     | BC      | BD    | E      | G      | H     | J     | Output Keyway         | K     | L     | M     | N     | Pinion Keyway       | NC       | ND    | R        | S      | T        |
|-----------|-------------|----|----|--------|--------|---------|-------|--------|--------|-------|-------|-----------------------|-------|-------|-------|-------|---------------------|----------|-------|----------|--------|----------|
| HP100     | 1890        | 10 | 6  | 11 5/8 | 6 1/2  | 5 1/4   | 7 5/8 | 28 1/4 | 37     | 5.993 | 8 1/8 | 1 1/2 wide x 3/4 deep | 6.250 | 8 1/4 | 1 7/8 | 3 3/4 | 1/2 x 1/4 x 3 11/16 | 18       | 6 3/4 | 18 11/16 | 22 1/4 | 15 1/8   |
| HP120     | 2150        | 12 | 7  | 13 1/2 | 7 5/16 | 5 11/16 | 8 3/4 | 29 1/4 | 38     | 5.993 | 8 1/8 | 1 1/2 wide x 3/4 deep | 6.250 | 8 1/4 | 2 1/8 | 4 1/4 | 1/2 x 1/4 x 4 3/16  | 20 11/16 | 7     | 21 1/2   | 25 5/8 | 17       |
| HP140     | 2995        | 14 | 7  | 14 3/4 | 7 5/16 | 5 11/16 | 8 3/4 | 32     | 41 3/4 | 6.713 | 9     | 1 3/4 wide x 7/8 deep | 7.000 | 9 1/8 | 2 1/8 | 4 1/4 | 1/2 x 1/4 x 4 3/16  | 22 5/16  | 7     | 28 3/8   | 32 5/8 | 20 11/16 |

■ Tolerances: +.000 -.014 ▲ Tolerances: +.000 -.001

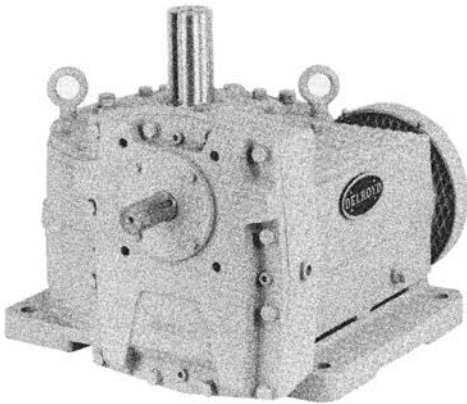
## Other Models Available



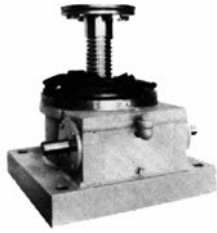
Helical Worm  
HVFH100-S2



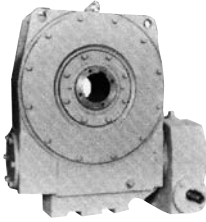
Helical  
FPM40



Helical Worm  
HV80



Screw Jack, 8" Center Distance



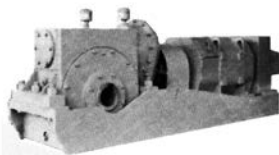
Straightener Drive 12" Center Distance



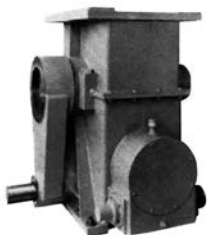
Hoist Drive 8" Center Distance, 35" Shaft



Fabricated Steel Pinch Roll Drives  
12" Center Distance Between Shafts



Stacker / Reclaimer Wheel Drive  
12" Center Distance



Paper Roll Drive 24" Center Distance

# **DELROYD WORM GEAR™**

A REGAL REXNORD BRAND

## **Need More Than a Standard Gearbox? Consider Delroyd**

Delroyd Worm Gear Speed Reducers have been solving problems in power transmission that cannot be solved with a "catalog solution".

### **Custom Designs**

Delroyd has the design and manufacturing capability to provide a custom speed reducer for your special application, be it a new project or a direct drop-in replacement for a competitor's speed reducer.

The use of fabricated steel reducers allow Delroyd to match a competitor's foot print, centerline, and shaft height allowing a direct drop-in replacement, saving the customer time and money.

Delroyd's unique design and manufacturing experience can provide you with any special worm gear speed reducer or set you may require.

### **Fabricated Designs**

Whenever worm gear speed reducers may be subjected to severe shock loads or housing damage from external sources as in steel mills or mobile equipment applications, Delroyd can provide fabricated steel housings with up to 48" center distances, permitting transmission of higher horsepower than are possible with the standard cast iron units.

The fabricated steel housing design provides maximum rigidity and strength for the application. The extra-heavy side plates connect the worm and gear shaft bearing supports, assuring proper meshing of the gear under all conditions of load.

In the smaller sizes, the fabricated steel reducers are interchangeable with Delroyd's standard cast iron reducers, per mounting dimensions and internal construction.

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