

Moduline®

All-Motor Gearmotors

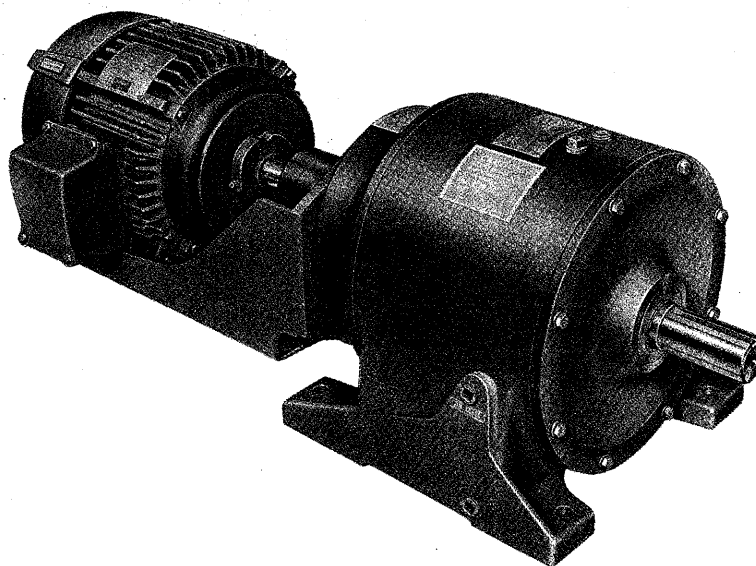
Type U

After many years of experience in the concept of gearmotor design, Nuttall Gear Corporation developed the Type U All-Motor Gearmotor.

This unit incorporates a unified mounting base for both the motor and gear box. The All-Motor Gearmotor allows a somewhat wider choice of drive motors in standard NEMA frames.

This arrangement is particularly advantageous where an entire plant is standardized on a particular motor type for interchangeability, or where existing motors must be utilized.

Many modifications, such as brakes, special motor insulation, various mounting positions, special oil seals, backstops, coupling guards and wet end paper mill features are available.



INDEX

	Section	Page
Construction Features	230	2
How to Select/Order	230	3
Ratings and Pricing	230	4-10
Mounting Positions	235	1
Gearcase Modifications	235	2-4

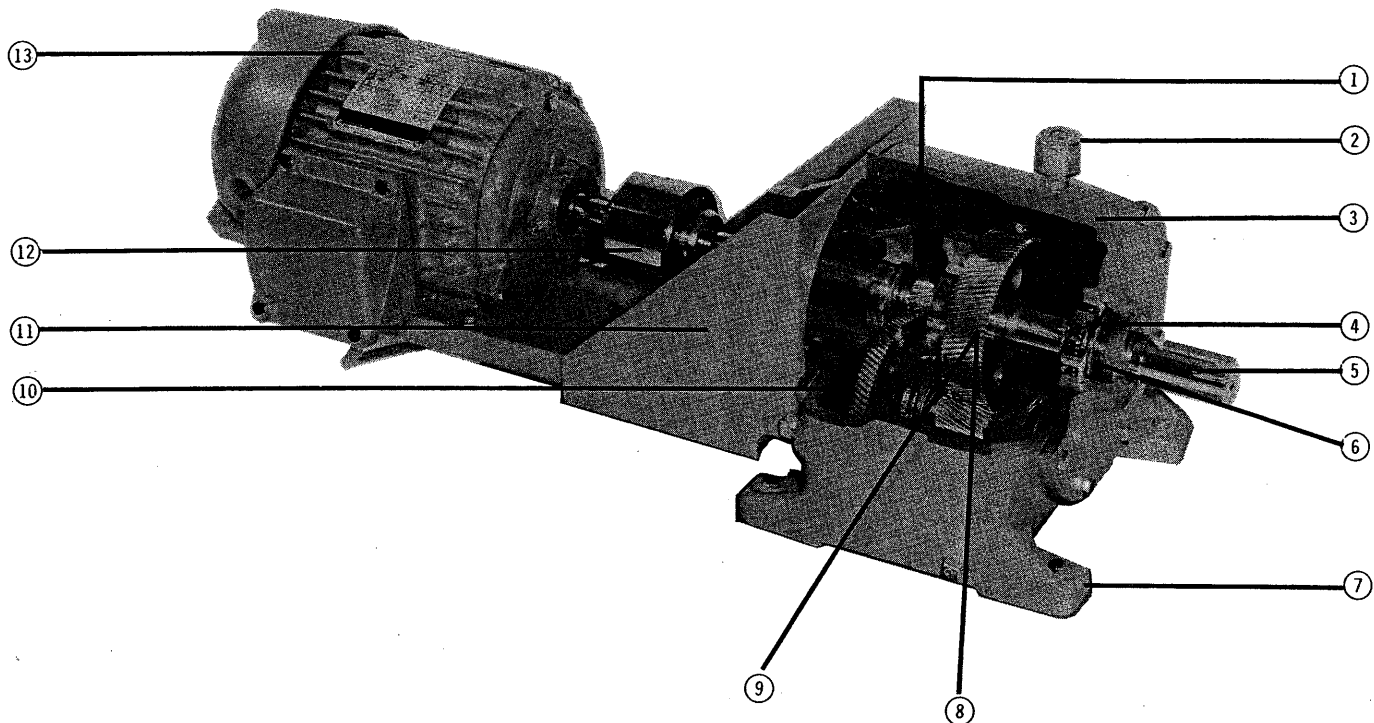
	Section	Page
Exact Gear Ratios	237	1
Overhung Load/Thrust Ratings	237	2,3
Application/Service Factor Classes	237	4,5
Dimensions	240	1-6

Effective: 15, October 1984

Supersedes: New

All-Motor Gearmotors

Type U

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① The high speed pinion and gear are mounted on splined shafts. The splines are cold rolled and the major diameters ground to close tolerances to assure concentricity of the gear and pinion with the shaft. This design permits easy change in the high speed gear set.

② A combination breather-filler plug keeps overall height at a minimum.

③ A sturdy one piece cast iron housing with integrally cast machined bearing supports provides proper internal alignment of components. The inherent corrosion resistance of cast iron allows placement of the unit in many severe atmospheres without special finishes.

④ Single row tapered roller bearings are used on all shafts. These bearings are conservatively selected in accordance with bearing manufacturers' recommendations to provide maximum load carrying capacity and reliability.

⑤ Input and output shafts of chrome-moly steel are supported on wide bearing spans to provide generous overhung load capacity.

⑥ Dual-lip seals are used exclusively by Nuttall Gear to retain oil effectively and to protect against entry of contaminants. This assures trouble-free long life.

⑦ Rugged feet are integrally cast on double, triple and quadruple reduction units to provide maximum strength. Foot pads are accurately milled to assure ease of alignment.

⑧ Helical gears, pioneered by Nuttall Gear, permit more than one gear tooth face to carry the load, and allow gradual progressive transmission of the load from tooth to tooth.

⑨ All gears and pinions are made of high quality chrome-moly steel generated on Pfauter hobs, and then heat treated by a special Ion Nitriding process. This assures gears of consistent accuracy, resulting in long trouble-free life and quiet operation.

⑩ Large oil reservoir and splash system provide positive lubrication of all gears and bearings.

⑪ The scoop type motor base is designed for strength and rigidity and to provide a simple method to "change-out" motors quickly.

⑫ The conservatively rated coupling selected for each motor and gearcase combination will provide a long trouble-free operating life. A coupling guard can also be provided which will meet OSHA requirements.

⑬ A wide variety of motor enclosures and designs are available in both AC and DC types. High efficiency, Mill and Chemical duty, multi-speed, high torque and high slip are among the selections available to assure you of single source responsibility, regardless of your requirements.

Module[®]

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Type U

1. REQUIRED APPLICATION INFORMATION.

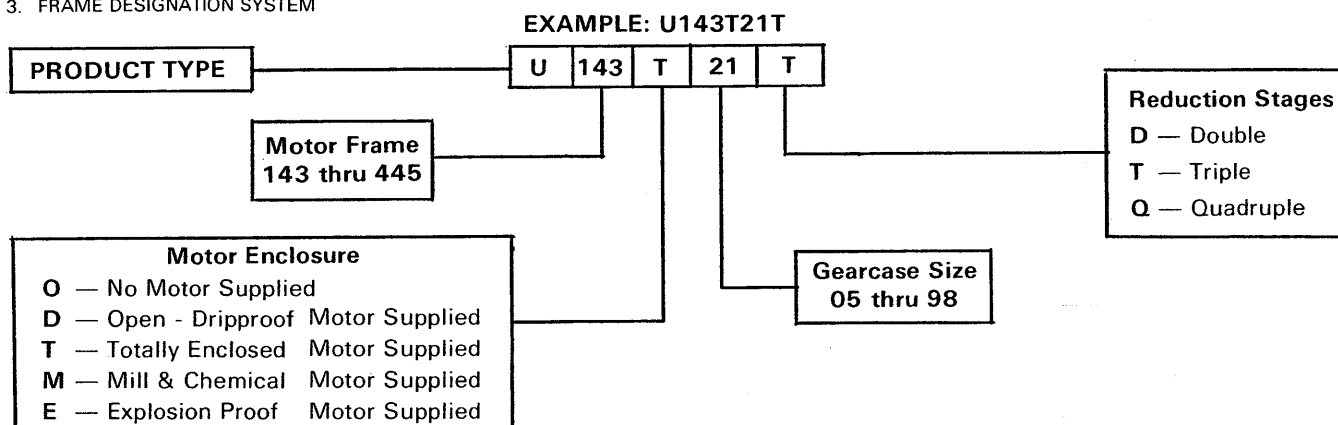
- A. **Horsepower**
- B. **Output speed**
- C. **Motor characteristics** (if motor is to be supplied)
 - 1. Design - B, C, D
 - 2. Enclosure
 - 3. AC or DC (for DC refer to office)
 - 4. Voltage, frequency, phase
- D. **AGMA load classification** (Refer to section 237, pages 4 and 5)
- E. **Thrust and overhung load** requirements, if any. (See section 237, pages 2 and 3.)
- F. **Mounting position** (see section 235, page 1)

2. SELECTION PROCEDURE

- A. Locate required horsepower. Refer to Section 230, pages 4 thru 10.
 - 1. Read down column to the desired output speed.
 - 2. **Locate required service class** (I, II or III).
 - 3. Note list price and frame designation.
- B. **Check overhung load** and/or **thrust capacities** of the selected unit in the engineering data (section 237, pages 2 and 3) against application requirements.
- C. Select required options and modifications from section 235. Add list prices to basic unit price.
- D. Use N-2 multiplier for appropriate customer class to obtain net price.

Note: Brake-motors — When the torque setting of a brake exceeds the torque rating of the motor, the rating of the brake should be considered in selecting the proper gearmotor service class.

3. FRAME DESIGNATION SYSTEM



4. SELECTION & PRICING EXAMPLE

Example

A customer requires a 20 hp AGMA class II, all-motor gearmotor, 56 rpm, shaft to be 5 inches longer than standard, unit to be boxed for export.

Solution

1. Turn to page 8 for All-motor Type U Gearmotor and locate the class II table. Read down to 56 rpm output gear speed. Select gear frame size U256064T, note price, \$4960 list.
2. Pricing: Discount symbol N-2.
 Special shaft 5" longer than standard, \$230 Basic
 plus \$90 — equals \$320.
 Export boxed — \$316.80
 Total Gear End — \$5,596.80 N-2.

5. **Ordering:** The following information must be provided for each order to permit manufacture and assembly of the correct gearmotor.

- A. Quantity
- B. Motor characteristics: (if motor is to be supplied)
 - Horsepower
 - Type
 - Enclosure
 - Phase
 - Hertz
 - Voltage
 - Modifications (described in detail)
- C. Gearmotor characteristics
 - Type: all-motor type U
 - Output rpm
 - AGMA class (I, II or III)
 - Designation (e.g. U184032D)
 - Mounting position
 - Modifications (describe in detail)
- C. Pricing:
 - Gearmotor list price
 - Discount
 - Net Price
- E. Shipment required.

All-Motor Gearmotors**Type U****Moduline®**

1 HORSEPOWER							1 - ½ HORSEPOWER						
RPM	CLASS I		CLASS II		CLASS III		CLASS I		CLASS II		CLASS III		RPM
	List Price	Frame	List Price	Frame	List Price	Frame	List Price	Frame	List Price	Frame	List Price	Frame	
420	995	U143005D	995	U143005D	995	U143005D	995	U145005D	995	U145005D	995	U145005D	420
350	995	U143005D	995	U143005D	995	U143005D	995	U145005D	995	U145005D	995	U145005D	350
280	995	U143005D	995	U143005D	995	U143005D	995	U145005D	995	U145005D	995	U145005D	280
230	995	U143005D	995	U143005D	995	U143005D	995	U145005D	995	U145005D	995	U145005D	230
190	995	U143005D	995	U143005D	995	U143005D	995	U145005D	995	U145005D	995	U145005D	190
155	995	U143005D	995	U143005D	995	U143005D	995	U145005D	995	U145005D	995	U145005D	155
125	995	U143005D	995	U143005D	995	U143005D	995	U145005D	995	U145005D	995	U145005D	125
100	995	U143005D	995	U143005D	995	U143005D	995	U145005D	995	U145005D	1350	U145010D	100
84	995	U143005D	995	U143005D	995	U143005D	995	U145005D	995	U145005D	1350	U145010D	84
68	995	U143005D	995	U143005D	1350	U143010D	995	U145005D	1350	U145010D	1350	U145010D	68
56	995	U143005D	1350	U143010D	1350	U143010D	1350	U145010D	1350	U145010D	1670	U145015T	56
45	1670	U143015T	1670	U143015T	1670	U143015T	1670	U145015T	1670	U145015T	1715	U145021D	45
37	1670	U143015T	1670	U143015T	1670	U143015T	1670	U145015T	1670	U145015T	1930	U145021T	37
30	1670	U143015T	1670	U143015T	1670	U143015T	1670	U145015T	1930	U145021T	1930	U145021T	30
25	1670	U143015T	1670	U143015T	1670	U143015T	1670	U145015T	1930	U145021T	2340	U145032T	25
20	1670	U143015T	1930	U143021T	1930	U143021T	1930	U145021T	1930	U145021T	2340	U145032T	20
16.5	1670	U143015T	1930	U143021T	2340	U143032T	1930	U145021T	2340	U145032T	2920	U145043T	16.5
13.5	1930	U143021T	1930	U143021T	2340	U143032T	1930	U145021T	2340	U145032T	2920	U145043T	13.5
11.0	2340	U143032T	2340	U143032T	2340	U143032T	2340	U145032T	2920	U145043T	3260	U145051T	11.0
9.0	2340	U143032T	2895	U143032Q	3395	U143043Q	2895	U145032Q	3395	U145043Q	3880	U145054T	9.0
7.5	2895	U143032Q	3395	U143043Q	3395	U143043Q	3395	U145043Q	3395	U145043Q	4180	U145054Q	7.5
6.0	2895	U143032Q	3395	U143043Q	4180	U143054Q	3395	U145043Q	4180	U145054Q	5295	U145064Q	6.0
5.0	3395	U143043Q	3395	U143043Q	4180	U143054Q	3395	U145043Q	4180	U145054Q	5295	U145064Q	5.0
4.0	3395	U143043Q	4180	U143054Q	5295	U143064Q	3395	U145043Q	5295	U145064Q	7035	U145076Q	4.0
3.2	4180	U143054Q	4180	U143054Q	5295	U143064Q	4180	U145054Q	5295	U145064Q	7035	U145076Q	3.2
2.7	4180	U143054Q	5295	U143064Q	7035	U143065Q	5295	U145064Q	7035	U145076Q	7035	U145076Q	2.7
2.2	5295	*U145064Q	5295	*U145064Q	7035	U143076Q	5315	*U182064Q	7055	*U182076Q	11,385	U145088Q	2.2
1.8	5295	*U145064Q	7035	*U145076Q	7035	*U145076Q	7070	*U182076Q	11,420	*U182088Q	11,420	*U182088Q	1.8
1.5	7035	*U145076Q	7035	*U145076Q	11,385	*U145088Q	7070	*U182076Q	11,420	*U182088Q	11,420	*U182088Q	1.5
1.2	11,385	*U145088Q	11,385	*U145088Q	11,385	*U145088Q	11,420	*U182088Q	11,420	*U182088Q	11,420	—	1.2

- List prices include motor base and appropriate coupling selected by Nuttall Gear. Prices do not include motor; however a wide variety of motors and motor modifications are available from Nuttall Gear. Please see Section 900, or contact your Nuttall Gear Sales Office.
- Motor frame assignments are based on 1750 RPM, TEFC, 60 Hertz, design B motors unless indicated by asterisk (*) which indicates an 1170 RPM motor is necessary to provide the desired nominal output speed.

DISCOUNT N-2

Effective: 31, May 1986

Supersedes: 15, October 1984

Your Total Drive Source


All-Motor Gearmotors

Moduline®

Type U

2 HORSEPOWER							3 HORSEPOWER						
RPM	CLASS I		CLASS II		CLASS III		CLASS I		CLASS II		CLASS III		RPM
	List Price	Frame	List Price	Frame	List Price	Frame	List Price	Frame	List Price	Frame	List Price	Frame	
420	995	U145O05D	995	U145O05D	995	U145O05D	1015	U182O05D	1015	U182O05D	1015	U182O05D	420
350	995	U145O05D	995	U145O05D	995	U145O05D	1015	U182O05D	1015	U182O05D	1015	U182O05D	350
280	995	U145O05D	995	U145O05D	995	U145O05D	1015	U182O05D	1015	U182O05D	1015	U182O05D	280
230	995	U145O05D	995	U145O05D	995	U145O05D	1015	U182O05D	1015	U182O05D	1015	U182O05D	230
190	995	U145O05D	995	U145O05D	995	U145O05D	1015	U182O05D	1015	U182O05D	1370	U182O10D	190
155	995	U145O05D	995	U145O05D	1350	U145O10D	1015	U182O05D	1370	U182O10D	1370	U182O10D	155
125	995	U145O05D	995	U145O05D	1350	U145O10D	1015	U182O05D	1370	U182O10D	1370	U182O10D	125
100	995	U145O05D	1350	U145O10D	1350	U145O10D	1370	U182O10D	1370	U182O10D	1735	U182O21D	100
84	995	U145O05D	1350	U145O10D	1350	U145O10D	1370	U182O10D	1370	U182O10D	1735	U182O21D	84
68	1350	U145O10D	1715	U145O21D	1715	U145O21D	1735	U182O21D	1735	U182O21D	2140	U182O32D	68
56	1350	U145O10D	1715	U145O21D	1715	U145O21D	1735	U182O21D	1735	U182O21D	2140	U182O32D	56
45	1670	U145O15T	1715	U145O21D	1930	U145O21T	1735	U182O21D	1950	U182O21T	2360	U182O32T	45
37	1670	U145O15T	1930	U145O21T	2340	U145O32T	1950	U182O21T	2360	U182O32T	2940	U182O43T	37
30	1930	U145O21T	1930	U145O21T	2340	U145O32T	1950	U182O21T	2360	U182O32T	2940	U182O43T	30
25	1930	U145O21T	2340	U145O32T	2920	U145O43T	2360	U182O32T	2940	U182O43T	2940	U182O43T	25
20	1930	U145O21T	2340	U145O32T	2920	U145O43T	2360	U182O32T	2940	U182O43T	3280	U182O51T	20
16.5	2340	U145O32T	2920	U145O43T	2920	U145O43T	2940	U182O43T	2940	U182O43T	3900	U182O54T	16.5
13.5	2340	U145O32T	2920	U145O43T	3260	U145O51T	2940	U182O43T	3280	U182O51T	3900	U182O54T	13.5
11.0	2340	U145O32T	3260	U145O51T	3880	U145O54T	3280	U182O51T	3900	U182O54T	4920	U182O64T	11.0
9.0	3395	U145O43Q	3260	U145O51T	4180	U145O54Q	3900	U182O54T	4200	U182O54Q	5315	U182O64Q	9.0
7.5	3395	U145O43Q	4180	U145O54Q	5295	U145O64Q	4200	U182O54Q	5315	U182O64Q	7055	U182O76Q	7.5
6.0	4180	U145O54Q	5295	U145O64Q	5295	U145O64Q	5315	U182O64Q	7055	U182O76Q	7055	U182O76Q	6.0
5.0	4180	U145O54Q	5295	U145O64Q	7035	U145O76Q	5315	U182O64Q	7055	U182O76Q	11,420	U182O88Q	5.0
4.0	5295	U145O64Q	7035	U145O76Q	7035	U145O76Q	7055	U182O76Q	7055	U182O76Q	11,420	U182O88Q	4.0
3.2	5295	U145O64Q	7035	U145O76Q	11,385	U145O88Q	7055	U182O76Q	11,420	U182O88Q	11,420	U182O88Q	3.2
2.7	7035	U145O76Q	7035	U145O76Q	11,385	U145O88Q	7055	U182O76Q	11,420	U182O88Q	13,185	U182O92Q	2.7
2.2	7035	U145O76Q	11,385	U145O88Q	11,420	*U182O88Q	11,420	U182O88Q	11,420	U182O88Q	16,990	U182O98Q	2.2
1.8	7035	U145O76Q	11,420	*U184O88Q	13,185	*U182O92Q	11,420	*U213O88Q	16,990	U182O98Q	16,990	U182O98Q	1.8
1.5	11,420	*U184O88Q	11,420	*U184O88Q	—	—	11,420	*U213O88Q	—	—	—	—	1.5
1.2	11,420	*U184O88Q	—	—	—	—	—	—	—	—	—	—	1.2

- List prices include motor base and appropriate coupling selected by Nuttall Gear. Prices do not include motor; however a wide variety of motors and motor modifications are available from Nuttall Gear. Please see Section 900, or contact your Nuttall Gear Sales Office.
- Motor frame assignments are based on 1750 RPM, TEFC, 60 Hertz, design B motors unless indicated by asterisk (*) which indicates an 1170 RPM motor is necessary to provide the desired nominal output speed.

DISCOUNT N-2

Effective: 31, May 1986

Supersedes: 15, October 1984

All-Motor Gearmotors

Type U

Moduline®

5 HORSEPOWER							7 1/2 HORSEPOWER						
RPM	CLASS I		CLASS II		CLASS III		CLASS I		CLASS II		CLASS III		RPM
	List Price	Frame	List Price	Frame	List Price	Frame	List Price	Frame	List Price	Frame	List Price	Frame	
420	1015	U184O05D	1015	U184O05D	1370	U184O10D	1370	U213O10D	1370	U213O10D	1750	U213O21D	420
350	1015	U184O05D	1370	U184O10D	1370	U184O10D	1370	U213O10D	1370	U213O10D	1750	U213O21D	350
280	1015	U184O05D	1370	U184O10D	1370	U184O10D	1370	U213O10D	1370	U213O10D	1750	U213O21D	280
230	1015	U184O05D	1370	U184O10D	1370	U184O10D	1370	U213O10D	1370	U213O10D	1750	U213O21D	230
190	1015	U184O05D	1370	U184O10D	1370	U184O10D	1370	U213O10D	1750	U213O21D	1750	U213O21D	190
155	1370	U184Q10D	1370	U184O10D	1735	U184O21D	1750	U213O21D	1750	U213O21D	2155	U213O32D	155
125	1370	U184O10D	1735	U184O21D	1735	U184O21D	1750	U213O21D	1750	U213O21D	2155	U213O32D	125
100	1370	U184O10D	1735	U184O21D	2140	U184O32D	1750	W213O21D	2155	U213O32D	2540	U213O43D	100
84	1735	U182O21D	1735	U184O21D	2140	U184O32D	2155	U213O32D	2155	U213O32D	2540	U213O43D	84
68	1735	U182O21D	2140	U184O32D	2525	U184O43D	2155	U213O32D	2540	U213O43D	2540	U213O43D	68
56	1950	U184O21T	2360	U184O32T	2940	U184O43T	2360	U213O32T	2955	U213O43T	2985	U213O51D	56
45	2140	U184O32D	2360	U184O32T	2940	U184O43T	2540	U213O43D	2955	U213O43T	3915	U213O54T	45
37	2360	U184O32T	2940	U184O43T	3280	U184O51T	2955	U213O43T	3295	U213O51T	3915	U213O54T	37
30	2940	U184O43T	2940	U184O43T	3900	U184O54T	2955	U213O43T	3915	U213O54T	4935	U213O64T	30
25	2940	U184O43T	3280	U184O51T	3900	U184O54T	3295	U213O51T	3915	U213O54T	4935	U213O64T	25
20	2940	U184O43T	3900	U184O54T	4920	U184O64T	3915	U213O54T	4935	U213O64T	6340	U213O76T	20
16.5	3280	U184O51T	3900	U184O54T	4920	U184O64T	3915	U213O54T	4935	U213O64T	6340	U213O76T	16.5
13.5	3900	U184O54T	4920	U184O64T	6325	U184O76T	4935	U213O64T	6340	U213O76T	8135	U213O85T	13.5
11.0	3900	U184O54T	4920	U184O64T	6325	U184O76T	6340	U213O76T	6340	U213O76T	8135	U213O85T	11.0
9.0	5315	U184O64Q	7055	U184O76Q	8115	U184O85T	7070	U213O76Q	8135	U213O85T	11,440	U213O88Q	9.0
7.5	7055	U184O76Q	7055	U184O76Q	8115	U184O85T	7070	U213O76Q	9365	U213O88T	11,175	U213O92T	7.5
6.0	7055	U184O76Q	11,385	U184O88Q	11,385	U184O88Q	11,440	U213O88Q	11,440	U213O88Q	17,005	U213O98Q	6.0
5.0	7055	U184O76Q	11,385	U184O88Q	13,185	U184O92Q	11,440	U213O88Q	13,200	U213O92Q	17,005	U213O98Q	5.0
4.0	11,385	U184O88Q	11,385	U184O88Q	16,190	U184O98Q	11,440	U213O88Q	17,005	U213O98Q	—	—	4.0
3.2	11,385	U184O88Q	13,185	U184O92Q	16,190	U184O98Q	17,005	U213O98Q	17,005	U213O98Q	—	—	3.2
2.7	11,385	U184O88Q	16,190	U184O98Q	16,190	U184O98Q	17,005	U213O98Q	17,005	—	—	—	2.7
2.2	17,005	*U215O98Q	17,005	*U215O98Q	—	—	—	—	—	—	—	—	2.2
1.8	17,005	*U215O98Q	—	—	—	—	—	—	—	—	—	—	1.8
1.5	—	—	—	—	—	—	—	—	—	—	—	—	1.5

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DISCOUNT N-2

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Your Total Drive Source 

All-Motor Gearmotors

Moduline®

Type U

10 HORSEPOWER							15 HORSEPOWER						
RPM	CLASS I		CLASS II		CLASS III		CLASS I		CLASS II		CLASS III		RPM
	List Price	Frame	List Price	Frame	List Price	Frame	List Price	Frame	List Price	Frame	List Price	Frame	
420	1370	U215010D	1750	U215021D	2155	U215032D	2170	U254032D	2170	U254032D	2170	U254032D	420
350	1370	U215010D	1750	U215021D	2155	U215032D	2170	U254032D	2170	U254032D	2170	U254032D	350
280	1370	U215010D	1750	U215021D	2155	U215032D	2170	U254032D	2170	U254032D	2170	U254032D	280
230	1370	U215010D	1750	U215021D	2155	U215032D	2170	U254032D	2170	U254032D	2170	U254032D	230
190	1370	U215010D	1750	U215021D	2155	U215032D	2170	U254032D	2170	U254032D	2555	U254043D	190
155	1750	U215021D	2155	U215032D	2155	U215032D	2170	U254032D	2170	U254032D	2555	U254043D	155
125	1750	U215021D	2155	U215032D	2540	U215043D	2170	U254032D	2555	U254043D	3010	U254051D	125
100	2155	U215032D	2540	U215043D	2540	U215043D	2555	U254043D	2555	U254043D	3450	U254054D	100
84	2155	U215032D	2540	U215043D	2985	U215051D	2555	U254043D	3010	U254051D	3450	U254054D	84
68	2540	U215043D	2540	U215043D	2985	U215051D	2555	U254043D	3010	U254051D	3880	U254064D	68
56	2955	U215043T	2985	U215051D	3450	U215054D	3010	U254051D	3940	U254054T	4960	U254064T	56
45	2955	U215043T	3915	U215054T	4935	U215064T	3940	U254054T	4960	U254064T	6365	U254076T	45
37	3295	U215051T	3915	U215054T	4935	U215064T	3940	U254054T	4960	U254064T	6365	U254076T	37
30	3915	U215054T	4935	U215064T	6340	U215076T	4960	U254064T	6365	U254076T	8175	U254085T	30
25	3915	U215054T	4935	U215064T	6340	U215076T	4960	U254064T	6365	U254076T	8175	U254085T	25
20	4935	U215064T	6340	U215076T	6340	U215076T	6365	U254076T	8175	U254085T	9405	U254088T	20
16.5	4935	U215064T	6340	U215076T	8135	U215085T	6365	U254076T	8175	U254085T	11,220	U254092T	16.5
13.5	6340	U215076T	8135	U215085T	9365	U215088T	8175	U254085T	9405	U254088T	14,870	U254098T	13.5
11.0	6340	U215076T	8135	U215085T	11,440	U215088Q	8175	U254085T	11,480	U254088Q	14,870	U254098T	11.0
9.0	8135	U215085T	11,440	U215088Q	11,175	U215092T	11,480	U254088Q	17,050	U254098Q	17,050	U254098Q	9.0
7.5	8135	U215085T	11,175	U215092T	17,005	U215098Q	11,220	U254092T	17,050	U254098Q	—	—	7.5
6.0	11,440	U215088Q	17,005	U215098Q	17,005	U215098Q	17,050	U254098Q	17,050	U254098Q	—	—	6.0
5.0	13,200	U215092Q	17,005	U215098Q	—	—	17,050	U254098Q	—	—	—	—	5.0
4.0	17,050	U215098Q	17,050	U215098Q	—	—	17,115	*U284098Q	—	—	—	—	4.0
3.2	17,050	U215098Q	—	—	—	—	—	—	—	—	—	—	3.2
2.7	17,050	U215098Q	—	—	—	—	—	—	—	—	—	—	2.7

- List prices include motor base and appropriate coupling selected by Nuttall Gear. Prices do not include motor; however a wide variety of motors and motor modifications are available from Nuttall Gear. Please see Section 900, or contact your Nuttall Gear Sales Office.
- Motor frame assignments are based on 1750 RPM, TEFC, 60 Hertz, design B motors unless indicated by asterisk (*) which indicates an 1170 RPM motor is necessary to provide the desired nominal output speed.

DISCOUNT N-2

Effective: 31, May 1986

Supersedes: 15, October 1984

All-Motor Gearmotors

RATINGS — PRICES

20 — 25 HP

Type U

Moduline®

20 HORSEPOWER							25 HORSEPOWER						
RPM	CLASS I		CLASS II		CLASS III		RPM	CLASS I		CLASS II		CLASS III	
	List Price	Frame	List Price	Frame	List Price	Frame		List Price	Frame	List Price	Frame	List Price	Frame
420	2170	U256032D	2170	U256032D	2555	U256043D	420	2195	U284032D	2195	U284032D	3045	U284051D
350	2170	U256032D	2170	U256032D	2555	U256043D	350	2195	U284032D	2195	U284032D	3045	U284051D
280	2170	U256032D	2170	U256032D	2555	U256043D	280	2195	U284032D	2195	U284032D	3045	U284051D
230	2170	U256032D	2170	U256032D	2555	U256043D	230	2195	U284032D	2580	U284043D	3045	U284051D
190	2170	U256032D	2555	U256043D	2555	U256043D	190	2195	U284032D	2580	U284043D	3485	U284054D
155	2170	U256032D	2555	U256043D	3010	U256051D	155	2580	U284043D	3045	U284051D	3485	U284054D
125	2555	U256043D	3010	U256051D	3450	U256054D	125	2580	U284043D	3045	U284051D	3915	U284064D
100	2555	U256043D	3450	U256054D	3880	U256064D	100	3045	U284051D	3484	U284054D	3915	U284064D
84	3010	U256051D	3450	U256054D	3880	U256064D	84	3485	U284054D	3915	U284064D	5145	U284076D
68	3010	U256051D	3880	U256064D	5110	U256076D	68	3485	U284054D	3915	U284064D	5145	U284076D
56	3940	U256054T	4960	U256064T	6365	U256076T	56	4995	U284064T	6400	U284076T	6795	U284085D
45	4960	U256064T	6365	U256076T	6365	U256076T	45	4995	U284064T	6400	U284076T	6795	U284085D
37	4960	U256064T	6365	U256076T	8175	U256085T	37	6400	U284076T	8195	U284085T	9425	U284088T
30	6365	U256076T	6365	U256076T	9405	U256088T	30	6400	U284076T	8195	U284085T	11,285	U284092T
25	6365	U256076T	8175	U256085T	9405	U256088T	25	8195	U284085T	9425	U284088T	11,285	U284092T
20	6365	U256076T	9405	U256088T	11,220	U256092T	20	8195	U284085T	11,285	U284092T	14,935	U284098T
16.5	8175	U256085T	11,220	U256092T	14,870	U256098T	16.5	9425	U284088T	11,285	U284092T	14,935	U284098T
13.5	9405	U256088T	11,220	U256092T	17,050	U256098Q	13.5	11,285	U284092T	14,935	U284098T	14,935	U284098T
11.0	11,480	U256088Q	14,870	U256098T	17,050	U256098Q	11.0	14,935	U284098T	14,935	U284098T	—	—
9.0	11,220	U256092T	17,050	U256098Q	—	—	9.0	17,115	U284098Q	—	—	—	—
7.5	14,935	*U286098T	—	—	—	—	7.5	17,115	U284098Q	—	—	—	—
6.0	14,935	*U286098T	—	—	—	—	6.0	—	—	—	—	—	—

1. List prices include motor base and appropriate coupling selected by Nuttall Gear. Prices do not include motor; however a wide variety of motors and motor modifications are available from Nuttall Gear. Please see Section 900, or contact your Nuttall Gear Sales Office.

2. Motor frame assignments are based on 1750 RPM, TEFC, 60 Hertz, design B motors unless indicated by asterisk (*) which indicates an 1170 RPM motor is necessary to provide the desired nominal output speed.

DISCOUNT N-2

Effective: 31, May 1986

Supersedes: 15, October 1984

Your Total Drive Source 

All-Motor Gearmotors**Moduline®****Type U**

30 HORSEPOWER							40 HORSEPOWER						
RPM	CLASS I		CLASS II		CLASS III		CLASS I		CLASS II		CLASS III		RPM
	List Price	Frame	List Price	Frame	List Price	Frame	List Price	Frame	List Price	Frame	List Price	Frame	
420	2195	U286032D	2580	U286043D	3045	U286051D	2615	U324043D	3045	U324051D	3485	U324054D	420
350	2195	U286032D	3045	U286051D	3045	U286051D	2615	U324043D	3045	U324051D	3485	U324054D	350
280	2195	U286032D	3045	U286051D	3045	U286051D	2615	U324043D	3045	U324051D	3485	U324054D	280
230	2195	U286032D	3045	U286051D	3485	U286054D	2615	U324043D	3045	U324051D	3485	U324054D	230
190	2580	U286043D	3045	U286051D	3485	U286054D	2615	U324043D	3485	U324054D	3915	U324064D	190
155	2580	U286043D	3485	U286054D	3915	U286064D	3045	U324051D	3915	U324064D	5145	U324076D	155
125	3045	U286051D	3485	U286054D	3915	U286064D	3485	U324054D	3915	U324064D	5145	U324076D	125
100	3485	U286054D	3915	U286064D	5145	U286076D	3915	U324064D	3915	U324064D	5145	U324076D	100
84	3485	U286054D	3915	U286064D	5145	U286076D	3915	U324064D	5145	U324076D	6795	U324085D	84
68	3915	U286064D	5145	U286076D	5145	U286076D	5145	U324076D	5145	U324076D	7790	U324088D	68
56	4995	U286064T	6400	U286076T	6795	U286085D	6400	U324076T	6795	U324085D	9425	U324088T	56
45	6400	U286076T	6795	U286085D	7790	U286088D	6400	U324076T	7790	U324088D	10,040	U324092D	45
37	6400	U286076T	8195	U286085T	11,285	U286092T	8195	U324085T	9425	U324088T	14,935	U324098T	37
30	8195	U286085T	9425	U286088T	11,285	U286092T	9425	U324088T	11,285	U324092T	14,935	U324098T	30
25	8195	U286085T	11,285	U286092T	14,935	U286098T	9425	U324088T	14,935	U324098T	14,935	U324098T	25
20	9425	U286088T	11,285	U286092T	14,935	U286098T	11,285	U324092T	14,935	U324098T	—	—	20
16.5	11,285	U286092T	14,935	U286098T	—	—	14,935	U324098T	14,935	U324098T	—	—	16.5
13.5	14,935	U286098T	14,935	U286098T	—	—	14,935	U324098T	—	—	—	—	13.5
11.0	14,935	U286098T	—	—	—	—	14,935	U324098T	—	—	—	—	11.0
9.0	17,115	U286098Q	—	—	—	—	—	—	—	—	—	—	9.0
							—	—	—	—	—	—	7.5
							—	—	—	—	—	—	6.0

50 HORSEPOWER							60 HORSEPOWER						
RPM	CLASS I		CLASS II		CLASS III		CLASS I		CLASS II		CLASS III		RPM
	List Price	Frame	List Price	Frame	List Price	Frame	List Price	Frame	List Price	Frame	List Price	Frame	
420	3045	U326051D	3485	U326054D	3915	U326064D	3095	U364051D	5240	U364076D	5240	U364076D	420
350	3045	U326051D	3485	U326054D	3915	U326064D	3535	U364054D	4010	U364064D	4010	U364064D	350
280	3045	U326051D	3485	U326054D	3915	U326064D	3535	U364054D	4010	U364064D	4010	U364064D	280
230	3045	U326051D	3485	U326054D	3915	U326064D	3535	U364054D	4010	U364064D	5240	U364076D	230
190	3485	U326054D	3915	U326064D	5145	U326076D	3535	U364054D	4010	U364064D	5240	U364076D	190
155	3485	U326054D	3915	U326064D	5145	U326076D	4010	U364064D	5240	U364076D	5240	U364076D	155
125	3915	U326064D	5145	U326076D	5145	U326076D	4010	U364064D	5240	U364076D	6890	U364085D	125
100	3915	U326064D	5145	U326076D	6795	U326085D	5240	U364076D	5240	U364076D	7805	U364088D	100
84	5145	U326076D	6795	U326085D	7790	U326088D	5240	U364076D	6890	U364085D	10,130	U364092D	84
68	5145	U326076D	6795	U326085D	10,040	U326092D	5240	U364076D	7805	U364088D	10,130	U364092D	68
56	6795	U326085D	7790	U326088D	10,040	U326092D	6890	U364085D	9520	U364088T	12,865	U364098D	56
45	6795	U326085D	9425	U326088T	14,935	U326098T	7805	U364088D	10,130	U364092D	15,025	U364098T	45
37	9425	U326088T	11,285	U326092T	14,935	U326098T	11,375	U364092T	15,025	U364098T	15,025	U364098T	37
30	11,285	U326092T	14,935	U326098T	14,935	U326098T	11,375	U364092T	15,025	U364098T	—	—	30
25	11,285	U326092T	14,935	U326098T	—	—	15,025	U364098T	15,025	U364098T	—	—	25
20	14,935	U326098T	14,935	U326098T	—	—	15,025	U364098T	—	—	—	—	20
16.5	14,935	U326098T	—	—	—	—	—	—	—	—	—	—	16.5
13.5	14,935	U326098T	—	—	—	—	—	—	—	—	—	—	13.5

1. List prices include motor base and appropriate coupling selected by Nuttall Gear. Prices do not include motor; however a wide variety of motors and motor modifications are available from Nuttall Gear. Please see Section 900, or contact your Nuttall Gear Sales Office.

2. Motor frame assignments are based on 1750 RPM, TEFC, 60 Hertz, design B motors unless indicated by asterisk (*) which indicates an 1170 RPM motor is necessary to provide the desired nominal output speed.

DISCOUNT N-2

Effective: 31, May 1986

Supersedes: 15, October 1984

All-Motor Gearmotors

Type U

Moduline®

75 HORSEPOWER						
RPM	CLASS I		CLASS II		CLASS III	
	List Price	Frame	List Price	Frame	List Price	Frame
420	5240	U365O76D	5240	U365O76D	5240	U365O76D
350	4010	U365O64D	4010	U365O64D	4010	U365O64D
280	4010	U365O64D	4010	U365O64D	5240	U365O76D
230	4010	U365O64D	4010	U365O64D	5240	U365O76D
190	4010	U365O64D	5240	U365O76D	5240	U365O76D
155	4010	U365O64D	5240	U365O76D	6890	U365O85D
125	5240	U365O76D	6890	U365O85D	7805	U365O88D
100	5240	U365O76D	6890	U365O85D	10,130	U365O92D
84	6890	U365O85D	7805	U365O88D	10,130	U365O92D
68	6890	U365O85D	10,130	U365O92D	12,865	U365O98D
56	9520	U365O88T	12,865	U365O98D	12,865	U365O98D
45	10,130	U365O92D	15,025	U365O98T	15,025	U365O98T
37	15,025	U365O98T	15,025	U365O98T	—	—
30	15,025	U365O98T	15,025	U365O98T	—	—
25	15,025	U365O98T	—	—	—	—
20	—	—	—	—	—	—
16.5	—	—	—	—	—	—
13.5	—	—	—	—	—	—

100 HORSEPOWER						
RPM	CLASS I		CLASS II		CLASS III	
	List Price	Frame	List Price	Frame	List Price	Frame
420	7805	U405O88D	7805	U405O88D	7805	U405O88D
350	7805	U405O88D	7805	U405O88D	7805	U405O88D
280	6890	U405O85D	6890	U405O85D	6890	U405O85D
230	6890	U405O85D	6890	U405O85D	6890	U405O85D
190	6890	U405O85D	6890	U405O85D	7805	U405O88D
155	6890	U405O85D	6890	U405O85D	7805	U405O88D
125	5240	U405O76D	7805	U405O88D	10,130	U405O92D
100	6890	U405O85D	10,130	U405O92D	12,865	U405O98D
84	7805	U405O88D	10,130	U405O92D	12,865	U405O98D
68	10,130	U405O92D	12,865	U405O98D	12,865	U405O98D
56	10,130	U405O92D	12,865	U405O98D	—	—
45	15,025	U405O98T	15,025	U405O98T	—	—
37	15,025	U405O98T	—	—	—	—
30	15,025	U405O98T	—	—	—	—
25	—	—	—	—	—	—
20	—	—	—	—	—	—
16.5	—	—	—	—	—	—
13.5	—	—	—	—	—	—

125 HORSEPOWER						
RPM	CLASS I		CLASS II		CLASS III	
	List Price	Frame	List Price	Frame	List Price	Frame
420	7805	U444O88D	7805	U444O88D	7805	U444O88D
350	7805	U444O88D	7805	U444O88D	7805	U444O88D
280	6890	U444O85D	6890	U444O85D	6890	U444O85D
230	6890	U444O85D	6890	U444O85D	6890	U444O85D
190	6890	U444O85D	6890	U444O85D	6890	U444O85D
155	6890	U444O85D	6890	U444O85D	6890	U444O85D
125	6890	U444O85D	10,130	U444O92D	12,865	U444O98D
100	7805	U444O88D	10,130	U444O92D	12,865	U444O98D
84	10,130	U444O92D	12,865	U444O98D	12,865	U444O98D
68	10,130	U444O92D	12,865	U444O98D	—	—
56	12,865	U444O98D	—	—	—	—
45	15,025	U444O98T	—	—	—	—
37	15,025	U444O98T	—	—	—	—
30	—	—	—	—	—	—

150 HORSEPOWER						
RPM	CLASS I		CLASS II		CLASS III	
	List Price	Frame	List Price	Frame	List Price	Frame
420	—	—	—	—	—	—
350	—	—	—	—	—	—
280	10,130	U445O92D	10,130	U445O92D	10,130	U445O92D
230	10,130	U445O92D	10,130	U445O92D	10,130	U445O92D
190	10,130	U445O92D	10,130	U445O92D	10,130	U445O92D
155	10,130	U445O92D	10,130	U445O92D	10,130	U445O92D
125	10,130	U445O92D	10,130	U445O92D	12,865	U445O98D
100	10,130	U445O92D	12,865	U445O98D	12,865	U445O98D
84	10,130	U445O92D	12,865	U445O98D	—	—
68	12,865	U445O98D	—	—	—	—
56	12,865	U445O98D	—	—	—	—
45	—	—	—	—	—	—
37	—	—	—	—	—	—
30	—	—	—	—	—	—

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- Motor frame assignments are based on 1750 RPM, TEFC, 60 Hertz, design B motors unless indicated by asterisk (*) which indicates an 1170 RPM motor is necessary to provide the desired nominal output speed.

DISCOUNT N-2

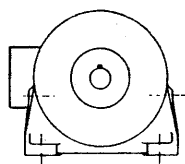
Effective: 15, October 1984

Supersedes: New

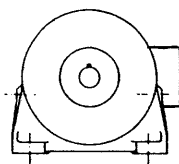
Your Total Drive Source 

All-Motor Gearmotors Type U

Moduline®

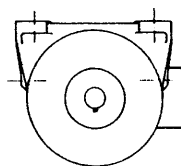


Standard
Position F

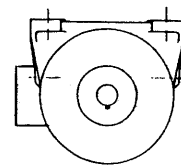


Position FX

Floor Mounted

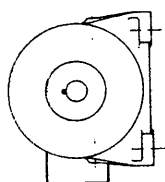


Standard
Position C

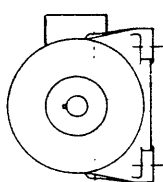


Position CX

Ceiling Mounted

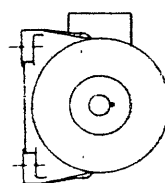


Standard
Position W-R

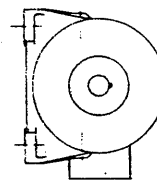


Position W-RX

**Right Hand
Wall Mounting**



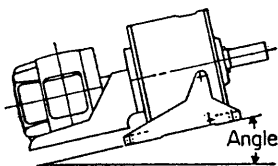
Standard
Position W-L



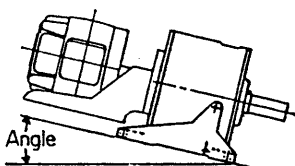
Position W-LX

**Left Hand
Wall Mounting**

For mounting position W-L
(and W-LX) on sizes 85-98,
please contact Nuttall Gear.

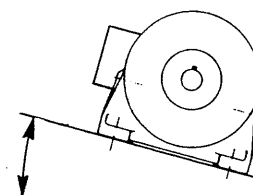


Position F-I
Output shaft up
maximum 10 degrees

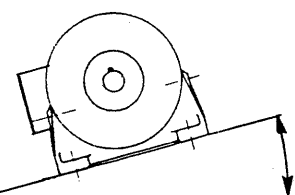


Position F-D
Output shaft down
maximum 15 degrees

For units with inclines or declines ex-
ceeding the above, please contact
Nuttall Gear.

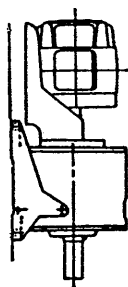


Position F-RR



Position F-RL

For units mounted as above, please
contact Nuttall Gear.



Position W-D

For foot mounted or flange mounted
vertical units, please see modification
section.

For vertical units with drywell con-
struction, please see section. 600

Standard Conduit Box Location

When looking at the output shaft, the conduit box
will be located on the left side when floor
mounted, and on the right side when ceiling
mounted.

When other locations are required, use the follow-
ing suffixes to the assembly position code:

- X - opposite standard
- T - mounted opposite mounting feet
- B - same side as mounting feet

Conduit box location is a no charge option.

WHEN NUTTALL GEAR SUPPLIES OR MOUNTS THE MOTOR, THE CONDUIT BOX WILL BE LOCATED IN THE STANDARD POSITION, UNLESS OTHERWISE SPECIFIED BY CUSTOMER.

All-Motor Gearmotors

Type U

Moduline®

MODIFICATIONS

Gear Case Size	05	10	15/21	32	43	51/54	64	76	85/88	92	98
1. Special Shafts											
A. Basic Addition											
1. Any modification up to standard length.											
1 - 5 units	150	150	155	175	185	215	230	260	365	425	485
6 - 25 units	90	90	95	100	110	125	140	155	220	260	300
26 + units	55	55	60	65	70	85	95	105	145	170	195
B. 1. For each 5" or fraction above standard length add -	40	40	55	55	60	75	90	110	150	200	240
2. For special features other than length, add the following charges to the basic addition.											
A. Drilling and tapping end of shaft.	30	30	35	35	40	45	45	55	70	85	100
B. Special Keyway	30	30	35	35	40	45	45	55	70	85	100
C. Splined Shaft	90	90	95	100	110	130	140	155	220	260	300
D. Special Diameter: One special diameter is included in the basic addition. For each additional diameter add the following.	30	30	35	35	40	45	45	55	70	85	100
E. Threaded shaft: For each set of threads.	30	30	35	35	40	45	45	55	70	85	100
F. Tapered shaft with threaded end.	70	70	80	85	90	110	120	130	180	210	245
2. Mounting Customer's Equipment There is no charge for Mounting Equipment purchased thru Nuttall Gear. Pressing customer's material on output shaft (couplings, sprockets, pinions). NOTE: Customer's material must be delivered to Nuttall Gear transportation prepaid and ready for mounting. Shipment must be marked for application to specific order and item number. Any machining of customer's material must be negotiated with Nuttall Gear in advance of mounting. Nuttall Gear is not responsible for loss or damage to customer's material.	120	120	125	140	145	160	170	185	205	215	225

DISCOUNT N-2

Effective: 1, October 1984

Supersedes: New

Your Total Drive Source 

Moduline®**All-Motor Gearmotors****Type U**

Gear Case Size	05	10	15/21	32	43	51/54	64	76	85/88	92	98
3. Mounting Positions. There is no additional charge for floor, wall, or ceiling mounted units in which the shaft is horizontal, or for floor mounted units whose shaft is inclined up to 10 degrees or declined up to 15 degrees from horizontal.											
A. Vertical shaft down (foot mounted)	110	110	130	165	210	275	335	440	-	-	-
B. Vertical shaft down (flange mounted) Note: Moduline units, other than dry well construction or veri-dri units, running at 155 rpm or greater may run too hot with the low speed shaft down, therefore the thermal hp capacity should be reduced by approximately 30 percent. (Refer to Nuttall Gear)	265	265	330	400	525	680	835	995	-	-	-
C. Vertical shaft down (dry well construction)	Refer to Veri-Dri Section - 600 -										
D. Shaft - up	REFER TO NUTTALL OFFICE										
E. Horizontal (with rotation about shaft)	REFER TO NUTTALL OFFICE										
4. Mill & Chemical Features (gearcase only) Note: Mill and chemical features include wet end seals and epoxy paint.	35	35	40	50	60	85	110	130	180	215	240
5. Special Paint											
A. Addition for standard commercial paints, available in one gallon units.	85	85	100	110	135	155	155	170	195	195	210
B. Customer supplied paint.	REFER TO NUTTALL OFFICE										
C. Primer only.	25	25	25	25	25	25	25	25	25	25	25
D. Special primers, paints, finish.	REFER TO NUTTALL OFFICE										
6. Special Seals											
A. Wet end for moisture laden atmospheres such as wet end paper mill drives.	35	35	40	50	60	85	110	130	180	215	265
B. Taconite duty: for taconite, cement or other abrasive dust atmospheres. If dust is not abrasive no modification is needed.	150	150	190	245	300	400	495	600	1005	1280	1475
7. Slide Rails (pair)	REFER TO NUTTALL OFFICE										
8. Oil Sight Gauge	35	35	35	35	35	35	35	35	35	35	35
9. Special Output Speeds 1 - 2 units	615	615	615	615	615	615	615	615	615	615	615
3 - 24 units	325	325	325	325	325	325	325	325	325	325	325
25 + units	No charge.										
10. Backstops (factory installed) The Largest built-in backstop has a maximum rating of 215 ft. lbs. at service factor 1.0. Backstops requiring higher capacity must be externally mounted on a longer than standard H.S. shaft. Refer to Nuttall Gear for selection and pricing.	322	365	400	400	490	555	555	975	1520	2130	2130

DISCOUNT N-2

Effective: 1, March 1985

Supersedes: 1 October 1984

All-Motor Gearmotors**Type U****Moduline®**

MODIFICATIONS

Gear Case Size	05	10	15/21	32	43	51/54	64	76	85/88	92	98
11. Couplings											
A. Omission of standard input shaft coupling - deduct.	15	15	25	25	35	35	65	110	110	110	110
B. Substitution of customer specified coupling.	Please refer to Nuttall Office.										
C. Mounting of customer supplied coupling - add.	120	120	125	140	145	160	170	185	205	215	225
12. Mounting customer supplied motor.	85	85	85	85	85	85	85	85	115	115	190
13. Coupling Guards These coupling guards are designed to meet OSHA standards when used with MODULINE Reducers and Nuttall supplied couplings.	100	100	115	140	155	175	175	190	220	220	240
14. Export Boxing: Under Deck - Overseas Packing.	Add 6% Net to Unit price (Minimum \$100.00 Net Per Unit).										

DISCOUNT N-2

Effective: 1, October 1984

Supersedes: New Page

Your Total Drive Source

All-Motor Gearmotors

Moduline®

Type U

ENGINEERING DATA
EXACT GEAR RATIOS

AGMA Nominal Ratio	Double Reduction Units										Nominal Output Speeds With Input Speed Of			
	05D/10D	21D	32D	43D	51/54D	64D	76D	85/88D	92D	98D	1750	1430	1170	870
4.134	4.12	4.119	4.125	4.128	4.131	—	4.125	4.099	—	—	420	350	280	210
5.06	5.141	5.079	5.169	5.150	5.154	5.023	5.147	5.017	—	—	350	280	230	115
6.20	6.209	6.386	6.399	6.220	6.130	6.269	6.216	6.145	6.257	6.142	280	230	190	140
7.59	7.559	7.488	7.518	7.572	7.577	7.614	7.567	7.575	7.658	7.528	230	190	155	115
9.30	9.317	9.136	9.386	9.333	9.340	9.327	9.327	9.248	9.418	9.311	190	155	125	95
11.39	11.70	11.33	11.38	11.32	11.33	11.58	11.31	11.35	11.56	11.238	155	125	100	77
13.95	14.33	14.41	14.35	14.35	14.35	14.36	14.08	14.34	13.94	14.24	125	100	84	62
17.09	16.95	17.11	17.51	16.98	16.99	17.48	17.16	16.99	17.30	16.681	100	84	68	50
20.93	20.45	20.45	20.92	20.49	20.50	21.22	20.48	20.90	21.28	20.90	84	68	56	42
25.63	25.41	25.65	25.09	25.40	25.42	25.19	25.15	25.85	26.33	25.40	68	56	45	34
31.39	30.65	30.65	31.25	30.65	30.65	—	—	31.65	32.23	29.95	56	45	37	28
38.44	—	37.54	37.49	37.99	37.99	—	—	37.93	38.62	—	45	37	30	22

Triple Reduction Units

		15/21T	32T	43T	51/54T	64T	76T	85/88T	92T	98T				
31.39		31.83	31.89	32.28	31.89	32.11	31.97	32.16	—	—	56	45	37	28
38.44		38.44	38.52	38.98	40.10	39.75	38.61	38.84	—	38.98	45	37	30	22
47.08		46.79	46.89	47.45	47.02	46.70	47.00	48.20	49.06	47.45	37	30	25	18
57.66		57.68	57.79	58.49	57.37	58.30	57.93	58.21	58.38	58.49	30	25	20	15
70.62		72.45	72.59	73.47	71.16	70.70	70.25	70.86	72.15	70.93	25	20	16.5	12.5
86.50		88.70	88.87	89.95	90.48	89.15	89.08	87.35	88.95	89.94	20	16.5	13.5	10
105.9		104.9	105.2	106.4	107.4	108.8	105.4	105.9	107.9	107.6	16.5	13.5	11	8.3
129.7		126.6	126.9	128.4	128.4	129.9	127.2	134.3	136.8	128.4	13.5	11	9	6.8
158.9		157.3	157.3	159.2	157.3	155.9	157.6	158.9	161.8	157.7	11.0	9	7.5	5.5
194.6		189.8	189.5	192.1	191.9	—	—	191.7	195.3	—	9	7.5	6	4.5
238.4		—	—	—	235.1	—	—	237.7	—	242.0	7.5	6	5	3.8

Quadruple Reduction Units

			32Q	43Q	54Q	64Q	76Q	88Q	92Q	98Q				
194.6			197.3	199.7	197.6	199.4	200.6	201.8	—	197.06	9	7.5	6	4.5
238.4			283.3	241.2	243.6	242.8	235.7	237.1	—	239.9	7.5	6	5	3.8
291.9			290.1	293.6	305.9	299.3	294.3	296.1	315.1	295.7	6	5	4	3.0
357.5			357.6	361.9	374.5	375.9	356.9	359.0	382.1	358.6	5	4	3.2	2.5
437.9			449.2	454.6	443.2	460.2	450.0	452.7	484.5	454.7	4	3.2	2.7	2.0
536.3			549.9	556.5	534.6	544.5	549.1	552.4	573.2	538.0	3.2	2.7	2.2	1.6
656.8			650.6	658.5	662.5	656.9	655.9	659.8	691.8	649.1	2.7	2.2	1.8	1.3
804.5			785.0	794.4	799.2	—	786.8	791.5	—	—	2.2	1.8	1.5	1.1
985.3			973.0	984.8	—	—	—	989.0	—	—	1.8	1.5	1.2	.90

Effective: 15 March 1985

Supersedes: 1 October 1984

All-Motor Gearmotors

ENGINEERING DATA

OVERHUNG LOAD, THRUST RATINGS

Type U

Moduline®

Output Shaft – Overhung Load and Thrust Capacities
Double, Triple and Quadruple Reduction

Gear Size	Pounds	Output Rpm												
		420	350	280	230	190	155	125	100	84	68	56	45	37 and Below
05	Overhung Load	870	970	1060	1140	1220	1300	1400	1500	1600	1700	1700		
	Thrust (Down or Out)	640	700	780	830	910	990	1080	1180	1280	1380	1500	.....	.....
	Thrust (Up or In)	600	660	720	780	830	900	970	1050	1130	1220	1300	.....	.....
10	Overhung Load	1000	1100	1160	1240	1320	1400	1500	1600	1700	1700	1700	1700	.....
	Thrust (Down or Out)	860	920	1000	1050	1130	1210	1300	1400	1500	1600	1720	1850	.....
	Thrust (Up or In)	700	760	820	880	930	1000	1070	1150	1230	1320	1400	1500	.....
15/21	Overhung Load	1260	1330	1420	1500	1600	1700	1800	1930	2020	2150	2300	2300	2300
	Thrust (Down or Out)	1220	1300	1400	1500	1600	1720	1850	2000	2110	2260	2420	2600	2600
	Thrust (Up or In)	1000	1060	1150	1230	1300	1400	1500	1620	1720	1850	1970	2120	2200
32	Overhung Load	1600	1690	1800	1920	2020	2150	2300	2450	2580	2750	2900	3000	3000
	Thrust (Down or Out)	1640	1750	1880	2000	2150	2300	2470	2660	2820	3020	3250	3500	3500
	Thrust (Up or In)	1430	1520	1640	1750	1870	2000	2150	2320	2450	2630	2810	3000	3000
43	Overhung Load	1950	2050	2200	2340	2480	2620	2800	3000	3150	3370	3570	3800	4000
	Thrust (Down or Out)	2270	2420	2600	2800	2950	3200	3400	3700	3900	4200	4500	4800	5000
	Thrust (Up or In)	2000	2150	2320	2470	2640	2800	3050	3270	3460	3710	3950	4300	4500
51/54	Overhung Load	3450	3680	3920	4180	4400	4700	5000	5000	5000	5000	5000	5000	5000
	Thrust (Down or Out)	3600	3850	4150	4400	4700	5000	5400	5800	6150	6600	7000	7400	7400
	Thrust (Up or In)	2850	3000	3260	3500	3740	4000	4300	4650	4950	5300	5650	6100	6200
64	Overhung Load	.....	4400	4700	5000	5300	5600	6000	6400	6750	7200	7600	8000	8000
	Thrust (Down or Out)	.....	4600	5000	5300	5700	6000	6500	7000	7400	7900	8500	9000	9000
	Thrust (Up or In)	.....	3600	3900	4200	4500	4800	5200	5600	5900	6400	6800	7300	7500
76	Overhung Load	5200	5450	5850	6200	6600	7000	7450	8000	8400	8950	9500	10000	10000
	Thrust (Down or Out)	5050	5350	5750	6150	6550	7000	7500	8100	8550	9150	9800	10500	11000
	Thrust (Up or In)	4100	4350	4700	5000	5350	5750	6200	6650	7100	7600	8100	8700	9000
85/88	Overhung Load	10000	10500	11250	12000	13000	14500	15250	16500	17750	19250	20000	20000	20000
	Thrust (Down or Out)	9500	10000	10750	11500	12500	13500	14750	16250	17500	20000	20000	20000	20000
	Thrust (Up or In)	9500	10000	10750	11500	12500	13500	14750	16250	17500	20000	20000	20000	20000
92	Overhung Load	.....	.....	12000	12800	13800	14800	16000	17400	18500	10000	21500	22500	22500
	Thrust (Down or Out)	.....	.....	14000	15000	15800	16900	18000	19500	20500	22000	23400	25000	25000
	Thrust (Up or In)	.....	.....	12750	13600	14500	15500	16500	18000	19000	20500	21500	23000	23000
98	Overhung Load	.....	.....	12800	13700	14800	16000	17700	19000	20400	22000	22800	22800	22800
	Thrust (Down or Out)	.....	.....	12400	13000	14000	15100	16900	18000	19200	20000	20400	20400	20400
	Thrust (Up or In)	.....	.....	12000	12600	13200	14000	15300	16700	17900	18200	18500	18500	18500

Note: The thrust capacities published above are for units with pure thrust loads. Refer to Nuttall Gear when there are combined radial and thrust loads or when loads exceed capacities listed. Indicate direction of rotation of shaft and location and direction of applied load.

All-Motor Gearmotors

Moduline®

Type U

ENGINEERING DATA
OVERHUNG LOAD DETERMINATION**Overhung Load Capacities**

Moduline Gearmotors provide generous overhung load capacity which is seldom exceeded; however, when a pulley, sprocket or pinion is to be mounted on the output shaft, the overhung load capacity of the Gearmotor must be checked.

The overhung load capacities listed in Section 237, Page 2 are calculated for a sprocket, pinion or pulley mounted with the centerline of its face at the midpoint of the output shaft extension.

If the sprocket, pinion or pulley is to be mounted at a location other than the above, use the following formula to calculate the overhung load on the shaft after selecting appropriate L_c and L_f factors from the tables below.

If the calculated overhung load for the Gearmotor selected exceeds the capacity listed in the table, select the next larger Gearmotor.

Overhung Load Formula

OHL (lbs) =

$$\text{motor hp} \times 126,000 \times L_c$$

$$\text{output rpm} \times \text{pitch diameter (inches)} \times L_f$$

Load Connection Factor, L_c

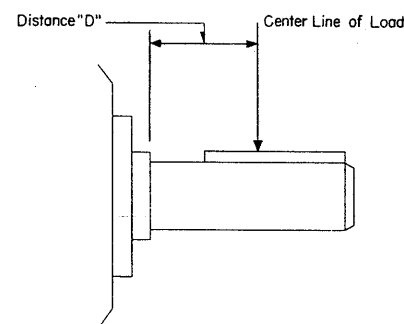
Type of Load Connection	Factor, L_c
Sprocket	1.00
Pinion	1.25
V-Belt	1.50
Flat Belt	2.50

Load Location Factor, L_f

Shaft Dia. Inches	"D" — Distance From Center Line of Load to Gearmotor Shaft Shoulder, Inches														
	1	1.5	2	2.5	3	3.5	4	4.5	5	5.5	6	6.5	7	7.5	8
.875	1.06	.90	.77	.68	....	....	....	....	....	....	....	....	....	....	....
1.125	1.12	.98	.83	.74	....	....	....	....	....	....	....	....	....	....	....
1.375	1.15	1.03	.91	.79	.73	....	....	....	....	....	....	....	....	....	....
1.500	1.17	1.06	.94	.83	.76	.70	....	....	....	....	....	....	....	....	....
1.625	1.18	1.08	.97	.86	.78	.73	.68	....	....	....	....	....	....	....	....
1.875	1.22	1.13	1.04	.94	.85	.78	.74	.69	....	....	....	....	....	....	....
2.125	1.23	1.14	1.06	.96	.88	.80	.76	.71	.67	....	....	....	....	....	....
2.375	1.24	1.17	1.09	1.01	.94	.85	.79	.75	.71	.67	....	....	....	....	....
2.625	1.25	1.18	1.11	1.04	.97	.89	.82	.77	.74	.70	.67	....	....	....	....
3.125	1.25	1.22	1.15	1.09	1.04	.97	.91	.85	.79	.76	.73	.70	....	....	....
3.625	1.25	1.24	1.18	1.13	1.08	1.02	.97	.91	.86	.80	.78	.75	.72	.69	....
4.500	1.25	1.25	1.23	1.18	1.14	1.08	1.04	1.00	.96	.92	.87	.83	.79	.77	.74
5.000	1.25	1.25	1.24	1.20	1.16	1.12	1.07	1.04	.99	.95	.91	.87	.83	.79	.77
5.500	1.25	1.25	1.25	1.20	1.17	1.13	1.08	1.05	1.00	.91	.83	.77	.72	.67	.63

Output Shaft Diameters

Gear Size	Double, Triple and Quadruple
05	1.375
10	1.375
15/21	1.625
32	1.875
43	2.125
51/54	2.625
64	3.125
76	3.625
85/88	4.500
92	5.000
98	5.500

**Example**

A belt conveyor is to be driven by a 5 hp size 21D Moduline Gearmotor, 280 rpm output using a 4" diameter V-belt sheave on the output shaft. The output shaft diameter on a size 21D is 1.625 inches. The centerline of the load is to be placed 1.5 inches from the shaft shoulder.

Procedure — Calculate overhung load
 $L_c = 1.50$ and $L_f = 1.08$

$$\text{OHL} = \frac{5 \times 126,000 \times 1.50}{280 \times 4 \times 1.08} = 781 \text{ lbs.}$$

Refer to overhung load table. Since the overhung load capacity of the gear size 21D at 280 rpm is 1420 lbs., the gear unit has ample capacity.

Effective: 1, October 1984

Supersedes: New

APPLICATION
SERVICE CLASSES

All-Motor Gearmotors

Type U

Moduline®

Typical Gearmotor Applications – AGMA Standard Practices

AGMA standard practice recognizes three classes of integral and all-motor gearmotors based on load conditions and service required. The table illustrates the difference between these classes. For load conditions not in-

cluded in the table, refer to Nuttall Gear. For peak loading applications, refer to curves on page 5.

Class I: For steady loads not exceeding normal rating of motor and 10 hours a day service. Moderate shock loads where service is intermittent.

Class II: For steady loads not exceeding normal rating of motor and 24 hours a day. Moderate shock loads for 10 hours a day.

Class III: Moderate shock loads for 24 hours a day. Heavy shock loads for 10 hours a day.

Table 1: Typical Applications

Application	Hours Service per Day		Application	Hours Service per Day		Application	Hours Service per Day	
	Over 3 Up to 10	Over 10		Over 3 Up to 10	Over 10		Over 3 Up to 10	Over 10
AGMA Classes			AGMA Classes			AGMA Classes		
Agitators			Cranes and Hoists			Lumber		
Pure liquids	I	II	Main hoists			Barkers – Spindle Feed	II	III
Liquids and solids	II		Heavy duty	III	III①	Barkers – Main Drive	III	III①
Liquids, variable density	II		Medium duty	II	II	Carriage Drive	②	②
Semi-liquids	II	II①	Reversing	II	II	Conveyors – Burner	II	III
Blowers			Skip hoists	II	II	Conveyors – Main or Heavy Duty	II	III
Centrifugal	I	II	Trolley drive	II	II①	Conveyors – Main Log	III	III①
Lobe	II	II	Bridge drive	II	II①	Conveyors – Merry-Go-Round	II	III
Vane	I	II	Crushers			Conveyors – Slab	III	III①
Brewing and Distilling			Ore	III	III	Conveyors – Transfer	II	III
Bottling machinery	I	II	Stone	III	III	Conveyors – Waste	II	III
Brew kettles, cont. duty	II		Dredges			Chains – Floor	II	III
Cookers, continuous duty	II		Cable reels	II	II	Chains – Green	II	III
Mash tube, cont. duty	II		Conveyors	II	II	Cut-Off Saws – Chain	II	III
Scale hopper, frequent starts	II	II	Cutter head drives	III	III①	Cut-Off Saws – Drag	II	III
Car Dumpers			Jig drives	III	III①	Debarking Drums	III	III①
Can Filling Machines			Maneuvering winches	II	II	Feeds – Edger	II	III
Cane Knives			Pumps	II	II	Feeds – Gang	III	III①
Car Pullers			Screen drive	III	III①	Feeds – Trimmer	II	III
Intermittent duty	I	II	Stackers	II	II	Log Deck	III	III①
Clarifiers			Utility winches	II	II	Log Hauls – Incline – Well Type	III	III①
Classifiers			Elevators			Log Turning Devices	III	III①
Clay Working Machinery			Bucket, uniform load	I	II	Planer Feed	II	III
Brick press	III	III①	Bucket, heavy load	II	II	Planer Tilting Hoists	II	III
Briquette machine	II	III①	Bucket, continuous	I	II	Rolls – Live- Off Brg. –		
Clay working machinery	II	II	Centrifugal discharge	I	II	Roll Cases	III	III①
Pug mill	II	II	Escalators	I	I	Sorting Table	II	III
Compressors			Freight	II	II	Tipple Hoist	II	III
Centrifugal	I	II	Gravity discharge	I	II	Transfers – Chain	II	III
Lobe	II	II	Man lifts	②	②	Transfers – Craneway	II	III
Reciprocating	II	II①	Passenger	②	②	Tray Drives	II	III
Multi-cylinder	II	II①	Service, hand lift	III	II	Veneer Lathe Drives	②	②
Single cylinder	III	III①	Fans			Machine Tools		
Conveyors, Uniformly Loaded or Fed			Centrifugal	II	II	Bending roll	II	II
Apron	I	II	Cooling towers			Notching press, belt driven	②	②
Assembly	I	II	Induced draft	II	II	Plate planer	III	III①
Belt	II	II	Forced draft	②	②	Punch press, gear driven	III	III①
Bucket	I	II	Induced draft	II	II	Tapping machines	III	III①
Chain	I	II	Large (mine, etc)	II	II①	Other machine tools		
Flight	I	II	Large industrial	II	II①	Main drives	II	II
Oven	I	II	Light (small diameter)	I	II	Auxiliary drives	I	II
Screw	I	II	Feeders			Metal Mills		
Conveyors, Heavy Duty – Not Uniformly Fed			Apron	II	II	Bridge Roll Drives	III	III①
Apron	II	II	Belt	II	II	Draw bench, carriage	III	III①
Assembly	II	II	Disk	I	II	Draw bench, main drive	III	III①
Belt	II	II	Reciprocating	III	III①	Forming machines	III	III①
Bucket	II	II	Screw	II	II	Pinch dryer and scrubber		
Chain	II	II	Food Industry			rolls, reversing	②	②
Flight	II	II	Beet slicer	II	II	Slitters	II	II
Live roll (package)	I	II	Cereal cooker	I	II	Table conveyors		
Oven	II	II	Dough mixer	II	II	Non-reversing	II	III
Reciprocating	III	III①	Meat grinders	II	II	Reversing	III	III
Screw	II	II	Generators (not Welding)			Winding reels – strip	III	III
Shaker	III	III①				Wire drawing and flattening		
Laundry Washers			Hammer Mills			machine	II	III
Reversing	II	II				Wire winding machine	II	II
Line Shafts			Laundry Tumblers			Mills, Rotary Type		
Heavy shock load	III	III①				Ball	III	III①
Moderate shock load	II	II	Laundry Washers			Cement kilns	②	②
Uniform shock load	I	II	Reversing	II	II	Dryers and coolers	II	II
Machine Tools			Reversing			Kilns	II	II
Bending roll	II	II	Line Shafts			Pebble	III	III①
Notching press, belt driven	②	②	Heavy shock load	III	III①	Rod	III	III①
Plate planer	III	III①	Moderate shock load	II	II	Tumbling barrels	III	III①
Punch press, gear driven	III	III①	Uniform shock load	I	II			
Tapping machines	III	III①						
Other machine tools								
Main drives	II	II						
Auxiliary drives	I	II						

① Classes listed are minimum, and normal conditions are assumed. In view of varying load conditions, it is suggested that these applications be carefully reviewed before final selection is made.

② Check safety codes and refer to Nuttall Gear.

Moduline®**All-Motor Gearmotors****Type U****APPLICATION
SERVICE CLASSES****Table 1: Typical Applications Continued**

Application	Hours Service per Day		Application	Hours Service per Day		Application	Hours Service per Day	
	Over 3 Up to 10	Over 10		Over 3 Up to 10	Over 10		Over 3 Up to 10	Over 10
	AGMA Classes			AGMA Classes			AGMA Classes	
Mixers			Printing Presses	I	II	Sewage Disposal Equip. (Cont.)		
Concrete mixers, continuous....	II	II	Pullers			Slow or rapid mixers.....	II	II
Concrete mixers, intermittent....	I	..	Barge haul.....	III	III①	Sludge collectors.....	I	II
Constant density.....	I	II	Pumps			Thickeners.....	II	II
Variable density.....	II	II	Centrifugal.....	I	II	Vacuum filters.....	II	II
Oil Industry			Proportioning.....	II	II①	Slab Pushers	II	II
Chillers.....	II	II	Reciprocating			Steering Gear	II	II
Oil well pumping.....	②	②	Single acting,			Stokers	I	II
Paraffin filter press.....	II	II	3 or more cylinders.....	II	II	Textile Industry		
Rotary kilns.....	II	II	Double acting, 2 or more			Batchers.....	II	II
Paper Mills			cylinders.....	II	II	Calenders.....	II	II
Aerators.....	②	②	Single acting, 1 or 2 cylinders.....	②	②	Card machines.....	II	II①
Agitators (mixers).....	II	II	Double acting, single cylinder.....	②	②	Cloth finishing machines		
Barker auxiliaries, hydraulic.....	III		Rotary - gear type.....	I	II	(washers, pads, tenters,		
Barker, mechanical.....	III		Lobe, vane.....	I	II	dryers, calenders, etc).....	II	II
Barking drum.....	III①		Rubber Industry			Dry cans.....	II	II
Beater and pulper.....	II①		Mixer.....	III	III①	Dyeing machinery.....	II	II
Bleacher.....	II		Rubber calender.....	II	II①	Knitting machines (Looms, etc)...	II	II
Calenders.....	II①		Rubber mill (2 or more).....	II	II①	Looms.....	II	II
Calenders, super.....	II		Sheeter.....	II	II①	Mangles.....	II	II
Converting machines, except			Tire building machines.....	②	②	Nappers.....	II	II
cutters, platers.....	II		Tire and tube press openers.....	②	②	Range drives.....	②	②
Conveyors.....	II		Tubers and strainers.....	II	II	Slashers.....	II	II
Couch.....	II①		Screens			Soapers.....	II	II
Cutters, platers.....	III①		Air washing.....	I	II	Spinners.....	II	II
Cylinders.....	II		Rotary - stone or gravel.....	II	II	Tenter frames.....	II	II
Dryers.....	II①		Traveling water intake.....	I	II	Washers.....	II	II
Felt stretcher.....	II		Sewage Disposal Equip.			Winders (other than batchers)...	II	II
Felt whipper.....	III①		Aerators.....	②	②	Yarn preparatory machines		
Jordans.....	III		Bar screens.....	I	II	(cards, spinners, slashers, etc)...	II	II
Log haul.....	III①		Chemical feeders.....	I	II	Windlass	II	II①
Presses.....	II①		Collectors, circuline or					
Pulp machines.....	II		straightline.....	I	II			
Reel.....	II		Dewatering screws.....	II	II			
Stock chests.....	II		Grit collectors.....	I	II			
Suction roll.....	II①		Scum breakers.....	II	II			
Washers and thickeners.....	II①							
Winders.....	II							

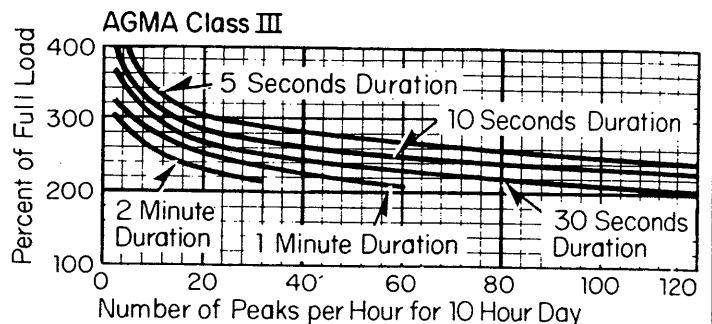
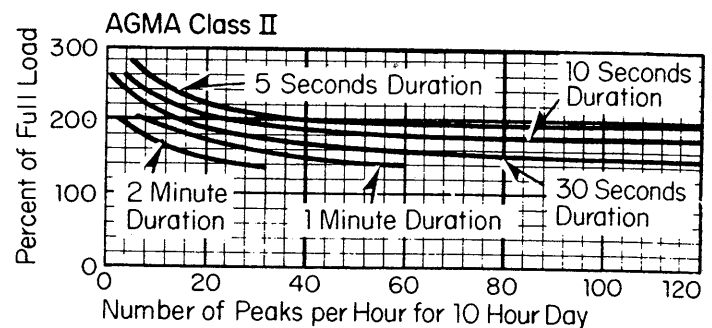
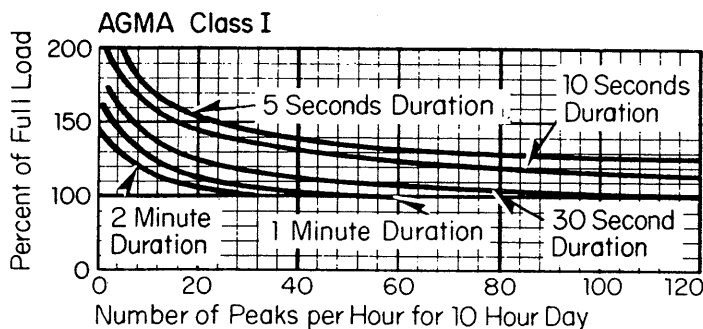
① Classes listed are minimum, and normal conditions are assumed. In view of varying load conditions, it is sug-

gested that these applications be carefully reviewed before final selection is made.

② Check safety codes and refer to Nuttall Gear.

Allowable Peak Loadings

For duty cycle applications, consult the following curves to determine the correct AGMA class.



Effective: 1, October 1984

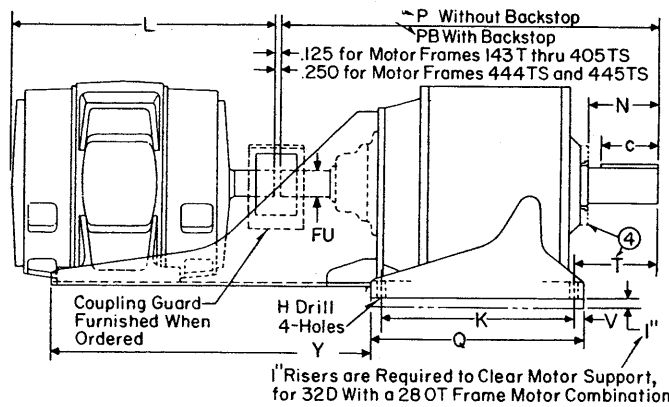
Supersedes: New

All-Motor Gearmotors

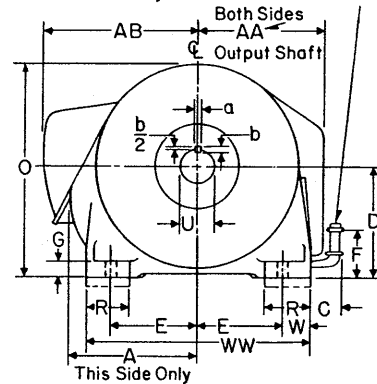
Moduline®

Type U

DIMENSIONS
DOUBLE REDUCTION
05D thru 76D



Supplied Only for 125 R.P.M. Output and Higher, Units 10 thru 76 May be Mounted on Either Side.



Dimensions, Inches Not to be used for construction purposes unless dimensions are approved.

Unit Size	U①	Key a	b	c	FU①	Key a	b	c	A	C	D②	E	F	G	H	J	K	N	O	PB④	P④	Q
5/10D	1.375	.31	.31	2.00	.875	.19	.19	1.8	5.2	1.7	5.68	4.12	3.4	.8	.438	2.8	9.00	2.6	10.1	19.1	18.1	10.5
21D	1.625	.38	.38	2.50	1.125	.25	.25	2.3	...	1.7	6.25	4.50	4.0	1.0	.562	3.5	9.75	3.4	11.7	21.6	20.5	11.1
32D	1.875	.50	.50	3.00	1.375	.31	.31	2.5	...	1.7	7.25	5.50	4.6	1.1	.688	4.0	13.50	3.8	13.9	24.7	23.2	15.0
43D	2.125	.50	.50	3.25	1.625	.38	.38	2.5	...	1.7	9.25	7.00	5.7	1.3	.812	4.8	15.00	4.4	16.6	25.8	24.3	17.0
51/54D	2.625	.62	.62	4.00	1.625	.38	.38	2.8	...	1.7	10.75	8.00	6.7	1.3	.938	6.0	17.25	5.3	20.0	29.0	27.6	19.3
64D	3.125	.75	.75	5.00	1.875	.50	.50	1.8	12.3	1.7	10.75	8.00	6.7	1.3	.938	...	17.25	6.3	20.0	30.4	29.4	19.3
76D	3.625	.88	.88	6.00	2.125	.50	.50	3.3	13.4	2.2	12.00	9.25	7.8	1.3	1.062	4.8	20.00	7.3	22.8	35.9	34.2	22.8

Unit Size	R	T④	V	W	WW	Approx. Wt. Lbs. ⑤
5/10D	1.6	3.4	.8	1.0	10.2	77
21D	2.2	4.3	.7	1.5	12.0	132
32D	2.8	4.8	.8	1.8	14.5	194
43D	3.2	5.3	1.0	2.0	18.0	270
51/54D	4.0	6.5	1.0	2.4	20.8	484
64D	4.0	7.8	1.0	2.4	20.8	550
76D	4.8	8.9	1.4	2.8	24.0	767

① Tolerance = + .000 to — .001.

② This dimension will never be exceeded. When exact dimension is required, shims up to .03 may be necessary.

③ Approximate weight without motor.

④ When special seal for hazardous dust conditions is used, add .50 inches to T, P, and PB Dimensions.

⑤ Motor Dimensions will never be exceeded.

AC Motor Dimensions ⑤

Motor Frame	Drip-proof, TEFC & Explosion Proof							Y Dimensions						
	AA	AB		L Dim.				Gear Size						
	DP & TEFC	DP	TEFC	DP	TEFC	DP	TEFC	5/10D	21D	32D	43D	51/54D	64D	76D
143T	4.1	5.6	8.2	12.6	13.5	40	55	16.1	19.1	17.2	....	....	....	....
145T	4.1	5.6	8.2	12.6	13.5	45	60	16.1	19.1	17.2	....	....	....	....
182T	5.4	7.4	9.4	14.1	14.6	70	85	16.4	19.4	17.6	16.1	15.6	....	....
184T	5.4	7.4	9.4	14.1	15.7	88	100	16.4	19.4	17.6	16.1	15.6	....	....
213T	6.0	8.4	10.3	15.8	17.7	110	145	19.4	22.4	20.6	19.1	18.6	....	....
215T	6.0	8.4	10.3	17.3	19.2	130	175	19.4	22.4	20.6	19.1	18.6	....	....
254T	7.3	10.3	12.4	20.5	23.0	230	230	....	....	23.6	22.1	24.4	25.6	24.9
256T	7.3	10.3	12.4	22.3	24.8	265	270	....	....	23.6	22.1	24.4	25.6	24.9
284TS	8.4	12.1	13.3	22	25.8	330	360	....	....	25.6	24.1	26.4	27.6	26.9
286TS	8.4	12.1	13.3	23.5	26.1	370	390	....	....	25.6	24.1	26.4	27.6	26.9
324TS	9.3	14.3	17.1	24.5	27.5	475	550	....	....	....	26.3	28.6	29.8	29.1
326TS	9.3	14.3	17.1	27.4	28.8	525	610	....	....	....	26.3	28.6	29.8	29.1
364TS	10.4	17.9	18.8	26.6	31.5	672	835	....	....	....	....	25.6	26.8	28.4
365TS	10.4	17.9	18.8	27.6	30.5	716	920	....	....	....	....	25.6	26.8	28.4
404TS	11.9	18.9	20.5	29.6	33.8	960	1145							29.6
405TS	11.9	18.9	20.5	31.1	35.3	1010	1260							29.6

PRELIMINARY ☐

CERTIFIED ☐

PRINT FOR:

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Customer		Customer Order	
G.O.		Item No.	
Motor Rpm	Output Rpm	Service Factor	Service Hp
Application	Signed	Date	

Effective 15, October 1984

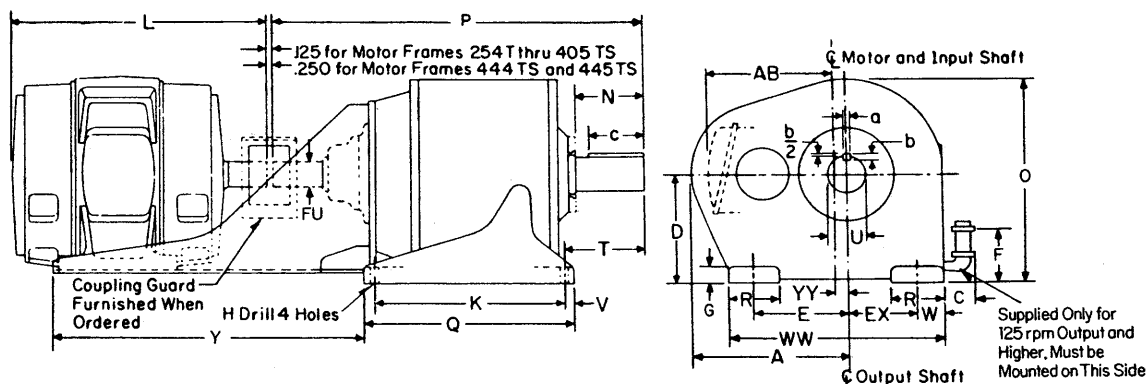
Supersedes: New

DIMENSIONS
DOUBLE REDUCTION
85D thru 98D

All-Motor Gearmotors

Type U

Moduline®



Dimensions, Inches Not to be used for construction purposes unless dimensions are approved

Unit Size	U①	Key			FU①	Key			A	C	D②	E	EX	F max.	G	H	K	N	O	P④
		a	b	c		a	b	c												
85/88D	4.500	1.00	1.00	7.5	2.125	.50	.50	3.3	19.0	2.2	13.00	11.50	8.75	9.1	2.0	1.625	25.50	9.0	23.9	40.1
92D	5.000	1.25	.88	7.5	2.125	.50	.50	3.3	20.6	2.2	14.50	12.62	9.38	10.2	2.3	1.875	28.00	9.0	27.5	43.5
98D	5.500	1.25	.88	7.0	3.000	.75	.75	3.7	23.82	2.2	16.50	14.30	10.57	12.5	2.3	1.875	28.75	9.0	31.5	46.6

Unit Size	Q	R	T③	V	W	WW	YY	Approx. Wt. Lbs. ⑤
85/88D	29.0	6.0	11.4	1.8	3.0	26.3	...	1227
92D	31.5	7.0	11.4	1.8	3.0	28.0	1.62	1300
98D	33.8	7.0	11.5	1.8	3.3	31.4	1.18	2350

① Tolerance = + .000 to — .001.

② This dimension will never be exceeded. When exact dimension is required, shims up to .03 may be necessary.

③ Approximate weight without motor.

④ When Taconite oil seal is required, add .50 inches to dimensions P, and T.

⑤ Motor dimensions will never be exceeded.

AC Motor Dimensions ⑤

Motor Frame	Drip-proof, TEFC & Explosion Proof						Y Dimensions		
	AB		L Dim.		Motor Wt. Lbs		Gear Size		
	DP	TEFC	DP	TEFC	DP	TEFC	85/88D	92D	98D
284TS	12.1	13.3	22	25.8	330	360	24.5	...	21.6
286TS	12.1	13.3	23.5	26.1	370	450	24.5	...	21.6
324TS	14.3	17.1	24.5	27.5	475	550	26.7	27.5	23.3
326TS	14.3	17.1	27.4	28.8	525	610	26.7	27.5	23.3
364TS	17.9	18.8	26.6	30.5	672	835	26.0	27.0	23.3
365TS	17.9	18.8	27.6	31.5	716	920	26.0	27.0	23.3
404TS	18.9	20.5	29.6	33.8	960	1145	27.2	31.0	27.3
405TS	18.9	20.5	31.1	35.3	1010	1260	27.2	31.0	27.3
444TS	21.4	26.3	34.1	38.9	1338	1515	...	...	27.3
445TS	21.4	26.3	36.1	40.9	1448	1785	...	...	27.3
447TS	...	21.5	...	43.9	...	2510	...	...	27.3
449TS	20.5	21.5	44.6	48.9	1850	2510	...	...	27.3

PRELIMINARY ☐ CERTIFIED ☐ PRINT FOR:

Customer		Customer Order		
G.O.		Cat. No.		Item No.
Motor Rpm	Output Rpm	Service Factor	Service Hp	Gear Ratio
Application		Signed		Date

Effective: 31, May 1986

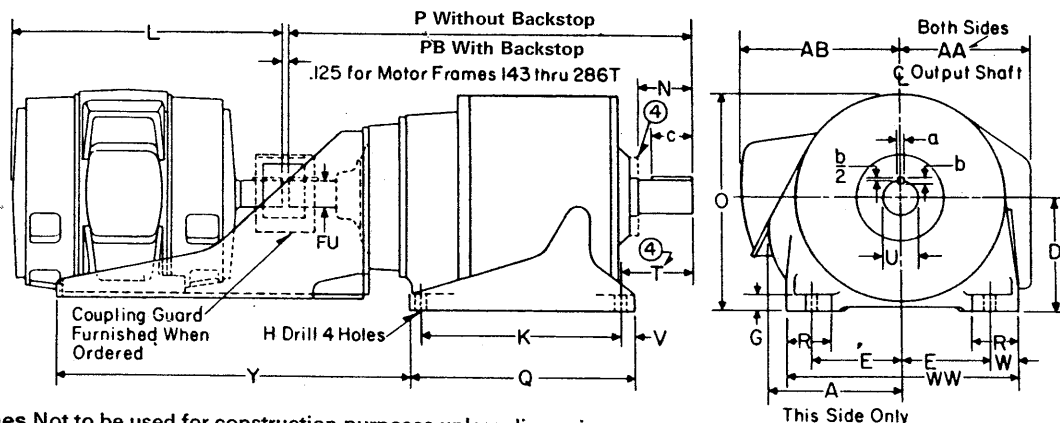
Supersedes: 15, October 1984

Your Total Drive Source **ncc**

All-Motor Gearmotors

Moduline®

Type U



Dimensions, Inches Not to be used for construction purposes unless dimensions are approved.

Unit Size	U①	Key a	b	c	FU①	Key a	b	c	A	C	D②	E	G	H	K	N	O	PB①	P④
15/21T	1.625	.38	.38	2.50	.875	.19	.19	1.8	....	1.7	6.25	4.50	1.0	.562	9.75	3.4	11.7	23.8	22.8
32T	1.875	.50	.50	3.00	.875	.19	.19	1.8	....	1.7	7.25	5.50	1.1	.688	13.50	3.8	13.9	25.9	24.9
43T	2.125	.50	.50	3.25	1.125	.25	.25	2.3	....	1.7	9.25	7.00	1.3	.812	15.00	4.4	16.6	27.9	26.8
51/54T	2.625	.62	.62	4.00	1.375	.31	.31	2.5	....	1.7	10.75	8.00	1.3	.938	17.25	5.3	20.0	33.7	32.2
64T	3.125	.75	.75	5.00	1.375	.31	.31	2.5	12.3	1.7	10.75	8.00	1.3	.938	17.25	6.3	20.0	36.1	34.6
76T	3.625	.88	.88	6.00	1.625	.38	.38	2.5	13.4	2.2	12.00	9.25	1.8	1.062	20.00	7.3	22.8	40.0	38.5

Unit Size	Q	R	T④	V	W	WW	Approx. Wt. Lbs. ⑤
15/21T	11.1	2.3	4.3	.7	1.5	12.0	130
32T	15.0	2.8	4.8	.8	1.8	14.5	191
43T	17.0	3.3	5.3	1.0	2.0	18.0	287
51/54T	19.3	4.0	6.5	1.0	2.4	20.8	499
64T	19.3	4.0	7.8	1.0	2.4	20.8	570
76T	22.8	4.8	8.9	1.4	2.8	24.0	773

① Tolerance = + .000 to — .001

② This dimension will never be exceeded. When exact dimension is required, shims up to .03 may be necessary.

③ Approximate weight without motor.

④ When special seal for hazardous dust conditions is used, add .50 inches to T, P, and PB Dimensions.

⑤ Motor Dimensions will never be exceeded.

Ac Motor Dimensions

Motor Frame	Drip-proof, TEFC & Explosion Proof							Y Dimensions					
	AA	AB		L Dim.		Motor Wt. Lbs.		Gear Size					
	DP & TEFC	DP	TEFC	DP	TEFC	DP	TEFC	15/21T	32T	43T	51/54T	64T	76T
143T	4.1	5.6	8.2	12.6	13.5	40	55	19.3	17.1	18.8	20.4	....	...
145T	4.1	5.6	8.2	12.6	13.5	45	60	19.3	17.1	18.8	20.4	....	...
182T	5.4	7.4	9.4	14.1	14.6	70	85	19.7	17.5	19.1	20.8	22.0	21.3
184T	5.4	7.4	9.4	14.1	15.7	88	100	19.7	17.5	19.1	20.8	22.0	21.3
213T	6.0	8.4	10.3	15.8	17.7	110	145	....	....	22.1	23.8	25.0	24.3
215T	6.0	8.4	10.3	17.3	19.2	130	175	....	....	22.1	23.8	25.0	24.3
254T	7.3	10.3	12.4	20.5	23.0	230	230	....	....	....	26.8	28.0	27.3
256T	7.3	10.3	12.4	22.3	24.8	265	270	....	....	....	26.8	28.0	27.3
284TS	8.4	12.1	13.3	22.0	24.5	330	360	....	....	....	....	30.0	29.3
286TS	8.4	12.1	13.3	23.5	25.9	370	370					30.0	29.3
324TS	9.3	14.3	17.1	24.6	26.1	475	550						31.5
326TS	9.3	14.3	17.1	27.4	27.5	525	610						31.5

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PRELIMINARY ☐ CERTIFIED ☐ PRINT FOR:

Customer		Customer Order	
G.O.		Item No.	
Motor Rpm	Output Rpm	Service Factor	Service Hp
Application	Signed	Date	

Effective: 15, October 1984

Supersedes: New

All-Motor Gearmotors

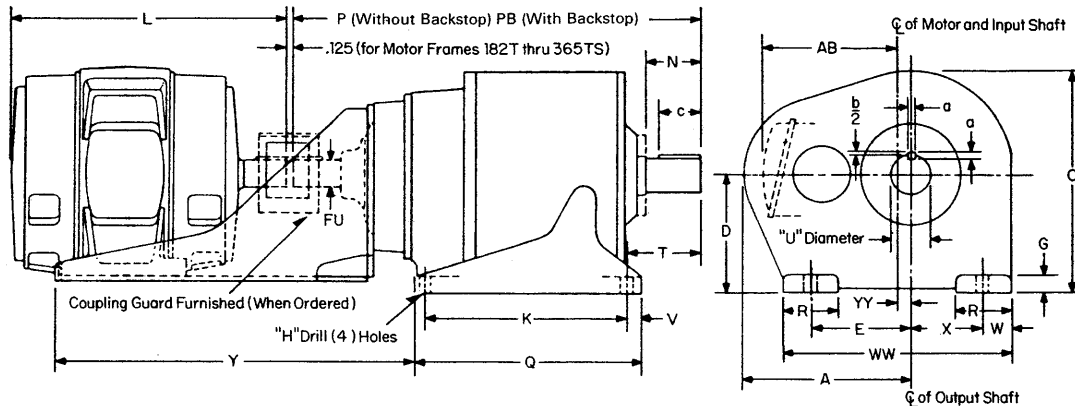
Type U

Moduline®

DIMENSIONS

TRIPLE REDUCTION

85T thru 98T



Dimensions, Inches Not to be used for construction purposes unless dimensions are approved.

Unit Size	U①	Key a	b	c	FU①	Key a	b	c	A	D②	E	G	H	K	N	O	PB④	P④	Q	R	T④
85/88T	4,500	1.00	1.00	7.5	1.625	.38	.38	2.5	19.0	13.00	11.50	2.0	1.62	25.50	9.0	23.9	46.0	44.5	29.0	6.0	11.4
92T	5,000	1.25	.88	7.5	1.625	.38	.38	2.5	20.6	14.50	12.62	2.2	1.88	28.00	9.0	27.5	47.6	46.2	31.5	7.0	11.4
98T	5,500	1.25	.88	7.0	2.125	.50	.50	3.2	23.82	16.50	14.30	2.3	1.875	28.75	9.0	31.5	52.3	50.6	33.8	7.0	11.5

Unit Size	V	W	WW	X	YY	Approx Wt. Lbs. ③
85/88T	1.8	3.0	26.3	8.75	...	1236
92T	1.8	3.0	28.0	9.38	1.62	1450
98T	1.8	3.3	31.4	10.56	1.18	2400

① Tolerance = + .000 to —.001

② This dimension will never be exceeded. When exact dimension is required, shims up to .03 may be necessary.

③ Approximate weight without motor.

④ When Taconite oil seal is required, add .50 inch to dimensions P, PB, and T.

⑤ Motor Dimensions will never be exceeded.

Ac Motor Dimensions ⑤

Motor Frame	Drip-proof, TEFC & Explosion Proof				Y Dimensions			
	AB		L Dim.		Motor Wt. Lbs.		Gear Size	
	DP	TEFC	DP	TEFC	DP	TEFC	85/88T	92T
182T	7.4	9.4	14.1	14.6	70	85	19.0	....
184T	7.4	9.4	14.1	15.7	88	100	19.0	....
213T	8.4	10.3	15.8	17.7	110	145	22.0	20.8
215T	8.4	10.3	17.3	19.2	130	175	22.0	20.8
254T	10.3	12.4	20.5	23.0	230	230	25.0	26.6
256T	10.3	12.4	22.3	24.8	265	270	25.0	26.6
284TS	12.1	13.3	22.0	24.4	330	360	27.0	28.6
286TS	12.1	13.3	23.5	25.9	370	390	27.0	28.6
324TS	14.3	17.1	24.6	26.1	475	550	29.3	30.8
326TS	14.3	17.1	27.4	27.5	525	610	29.3	30.8
364TS	17.9	18.8	26.6	30.5	672	835	....	27.8
365TS	17.9	18.8	27.6	31.5	716	920	....	27.8

Reproduced from Drawing 2731-D-01

PRELIMINARY ☐ CERTIFIED ☐ PRINT FOR:

Customer		Customer Order	
G.O.		Item No.	
Motor Rpm	Output Rpm	Service Factor	Service Hp
Application	Signed	Gear Ratio	
		Date	

Effective: 31, May 1986

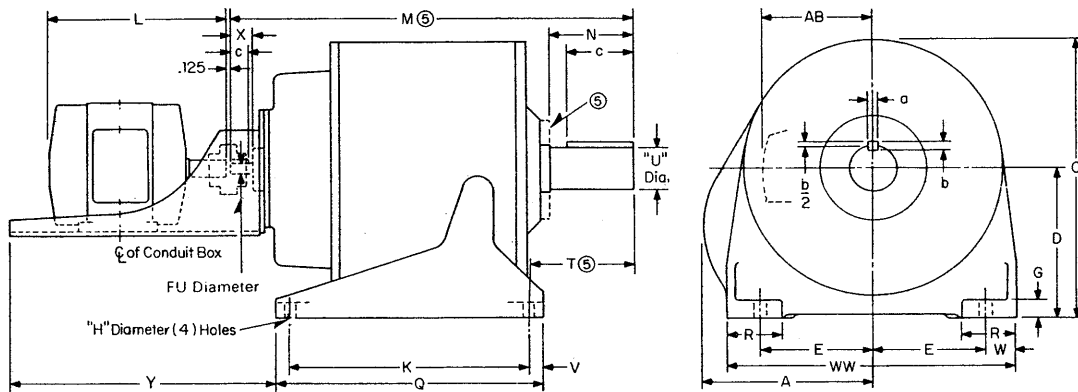
Supersedes: 15, October 1984

Your Total Drive Source

All-Motor Gearmotors

Moduline®

Type U



Dimensions, Inches Not to be used for construction purposes unless dimensions are approved.

Unit Size	U①	Key (Low Speed)			FU ①	Key (High Speed)			A	D②	E	G	H	K	M③	N	O	Q	R
		a	b	c		a	b	c											
32Q	1.875	.50	.50	3.00	.875	.19	.19	1.5	....	7.25	5.50	1.1	.69	13.50	23.75	3.81	13.9	15.0	2.8
43Q	2.125	.50	.50	3.25	.875	.19	.19	1.5	....	9.25	7.00	1.2	.81	15.00	24.56	4.38	16.6	17.0	3.3
54Q	2.625	.62	.62	4.00	.875	.19	.19	1.5	....	10.75	8.00	1.2	.94	17.25	28.19	5.20	20.0	19.2	4.0
64Q	3.125	.75	.75	5.00	.875	.19	.19	1.5	12.3	10.75	8.00	1.2	.94	17.25	30.63	6.20	20.0	19.2	4.0
76Q	3.625	.88	.88	6.00	1.125	.25	.25	2.0	13.4	12.00	9.25	1.8	1.06	20.00	36.85	7.30	22.8	22.8	4.8

Unit Size	T④	V	W	WW	X	Approx. Wt. Lbs. ⑤
32Q	4.75	.75	1.8	14.5	2.0	210
43Q	5.31	1.00	2.0	18.0	2.0	280
54Q	6.50	1.00	2.4	20.8	2.0	499
64Q	7.75	1.00	2.4	20.8	2.0	570
76Q	8.94	1.40	2.8	24.0	2.5	775

① Tolerance = +.000 to -.001.

② This dimension will never be exceeded. When exact dimension is required, shims up to .03 inch may be necessary.

③ Approximate weight without motor.

④ Maximum dimension.

⑤ When special seal for hazardous dust condition is used, add .50 to "T" and "M" dimensions for all units except gear size 64Q.

Ac Motor Dimensions ④

Motor Frame	Drip-proof, TEFC & Explosion Proof						Y Dimensions				
	AB⊙		L⊙		Motor Wt. Lbs		Gear Size				
	DP	TEFC	DP	TEFC	DP	TEFC	32	43	54	64	76
143T	5.5	8.2	12.6	13.5	40	55	14.1	17.4	17.5	18.7	20.1
145T	5.5	8.2	12.6	13.5	45	60	14.1	17.4	17.5	18.7	20.1
182T	7.4	9.4	14.1	14.6	70	85	....	....	17.9	19.1	20.5
184T	7.4	9.4	14.1	15.7	88	100	....	....	17.9	19.1	20.5

Reproduced from Drawing 2733-D-46

PRELIMINARY ☐ CERTIFIED ☐ PRINT FOR:

Customer				Customer Order			
G.O.				Cat. No.			
Motor Rpm		Output Rpm		Service Factor		Service Hp	
Application		Signed		Gear Ratio		Date	

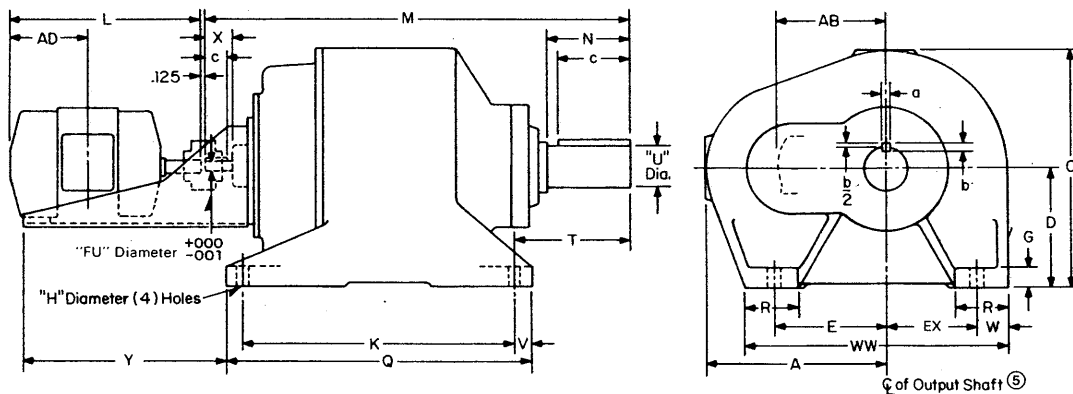
Effective: 15, October 1984

Supersedes: New

All-Motor Gearmotors

Type U

Moduline®



Dimensions, Inches Not to be used for construction purposes unless dimensions are approved.

Unit Size	U ₁	Key (Low Speed)			FU ^①	Key (High Speed)			A	D ^②	E	EX	G	H
		a	b	c		a	b	c						
88Q	4.500	1.00	1.00	7.5	1.125	.25	.25	2.0	19.0	13.00	11.50	8.75	2.0	1.63
92Q	5.000	1.25	.88	7.5	1.625	.375	.375	2.5	20.6	14.50	12.62	9.38	2.2	1.88
98Q	5.500	1.25	.88	7.0	1.625	.375	.375	2.5	23.5	16.50	14.30	10.56	2.3	1.88

Unit Size	K	M	N	O	Q	R	T	V	W	WW	X	Approx. Wt. Lbs. ^③
88Q	25.50	42.15	9.0	23.9	29.0	6.0	11.4	1.8	3.0	26.3	2.5	1250
92Q	28.00	45.87	9.0	27.5	31.6	7.0	11.4	1.8	3.0	28.0	3.0	1540
98Q	28.75	48.13	9.3	31.5	32.4	7.0	11.5	1.8	3.3	31.4	3.0	2630

① Tolerance = + .000 to — .001.

② This dimension will never be exceeded. When exact dimension is required, shims up to .03 may be necessary.

③ Approximate weight without motor.

④ Maximum dimensions.

⑤ On Units 92Q and 98Q, the input shafts are offset 1.62 and 1.18 respectively.

Ac Motor Dimensions

Motor Frame	Drip-proof, TEFC & Explosion Proof						Y Dimensions		
	AB		L		Motor Wt. Lbs.		Gear Size		
	DP	TEFC	DP	TEFC	DP	TEFC	88Q	92Q	98Q
143T	5.5	8.2	12.6	13.5	40	55	16.4	19.8	20.6
145T	5.5	8.2	12.6	13.5	45	60	16.4	19.8	20.6
182T	7.4	9.4	14.1	14.6	70	85	16.8	19.8	20.6
184T	7.4	9.4	14.1	15.7	88	100	16.8	19.8	20.6
213T	8.4	10.3	15.8	17.7	110	145	19.8	19.8	20.6
215T	8.4	10.3	17.3	19.2	130	175	19.8	19.8	20.6

Reproduced from Drawing 5646-D-19

PRELIMINARY ☐ CERTIFIED ☐ PRINT FOR:

Customer		Customer Order		
G.O.		Cat. No.		Item No.
Motor Rpm	Output Rpm	Service Factor	Service Hp	Gear Ratio
Application		Signed		Date

Effective: 31, May 1986

Supersedes: 15, October 1984

Your Total Drive Source

