

Section Contents

Features / How To Order306

Selection Procedure..... 306-307

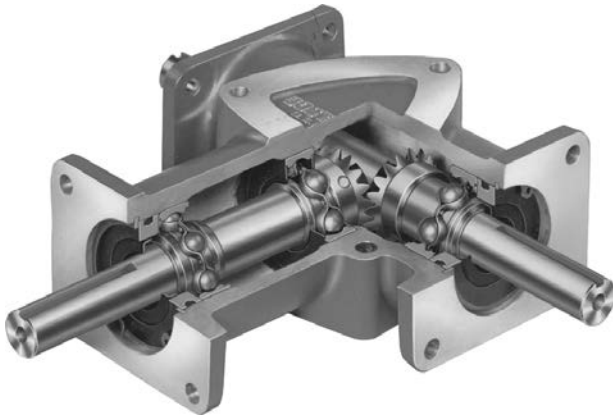
Dimensions307

Parts List308

Right-90 Series Features / How to Order

Spiral Bevel Gear

1:1 and 2:1 Ratios



Boston Right-90 Bevel Gear Drives are available with single or double output shaft projections in three sizes with Horsepowers ranging from .13 to 3.5.

Features

- Spiral Bevel Gear Drives are designed for high efficiency, quiet operation and long service life. Gears are made of hardened alloy steel
- Precision ground alloy steel shafts are mounted on precision ball bearings
- Housings are made of aluminum alloy, with all mounting surfaces precision machined
- All shaft projections have high quality oil seals
- **Prelubricated for life**

Selection Procedure

Catalog ratings are based on Class I service (uniform—no shock—load, operating no more than 10 hours/day). For applications meeting these conditions selection may be made by comparing the actual load to be transmitted with the appropriate catalog rating. For other conditions selection must be made, based on an equivalent horsepower or torque, obtained by multiplying actual load by the proper service factor.

Selection Procedure:

1. Determine the correct service factor using Applications Classification Chart—Pages 348 & 349. If the application is not listed, obtain service factor from Service Factor Chart, Page 349.
2. Multiply the actual output horsepower or torque by the service factor to obtain the equivalent rating required.
3. Establish input and output speed and/or gear ratio required for the enclosed drive.
4. Selection of all bevel gear drives should be based on Steps 1 through 3 using Selection Chart for desired input and output speeds (including speed increasing drives) that satisfy the required equivalent horsepower or torque.

Reference

Lubrication—Prelubricated for Ambient
Temperature Range of 50° to 125°F.

How to Order

These units may be mounted in any position. When mounting by Flanges only, at least two Flanges must be secured.

TO ORDER: Specify Catalog Number and/or Item Code

EXAMPLE: RA1021 (49420)

Order By Catalog Number or Item Code

2-Way SHAFT		3-Way SHAFT		Ratios
Catalog Number	Item Code	Catalog Number	Item Code	
RA621	49416	RA631	49418	1:1
RA622	49417	RA632	49419	2:1
RA1021	49420	RA1031	49422	1:1
RA1022	49421	RA1032	49423	2:1
RA1521	49424	RA1531	49426	1:1
RA1522	49425	RA1532	49427	2:1

Thrust Load		Overhung Load (No Thrust)
RA6	50 lb max.	25 lb
RA10	100 lb max.	50 lb
RA15	200 lb max.	100 lb

Right-90 Series Selection Chart / Dimensions

Right-90 Series

BEVEL GEAR - RIGHT ANGLE SELECTION TABLES

(RATINGS FOR SERVICE FACTOR 1.0)

	RATIO	X-SHAFT INPUT RPM	OUTPUT RPM	RA621/631		RA1021/1031		RA1521/1531	
				OUTPUT		OUTPUT		OUTPUT	
				HP	TORQUE†	HP	TORQUE†	HP	TORQUE†
	1:1	1750	1750	.91	31.1	2.19	74.9	3.5	125
		1150	1150	.61	31.8	1.47	76.5	2.5	135
		690	690	.37	32.1	0.9	78.1	1.6	142
		100	100	.06	35.9	0.14	83.8	.28	174
				RA622/632		RA1022/1032		RA1522/1532	
Reducer	2:1	1750	875	.26	17.8	1.07	73.2	1.8	132
		1150	575	.176	18.3	.72	75.0	1.4	150
		690	345	.108	18.7	.44	76.4	.89	162
		100	50	.016	19.2	.07	73.8	.14	175
Increase*	1:2	1750	3500	.13	2.4	.55	10	1.8	33.0
		1150	2300	.10	2.6	.40	11.2	1.4	37.5
		690	1380	.06	2.8	.25	11.7	.89	40.5
		100	200	.01	3.0	.04	12.5	.14	43.8



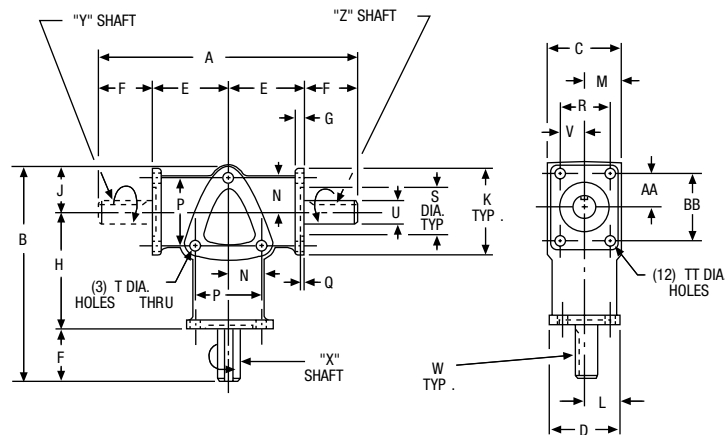
NOTE: See page 306 for features and how to order information.

* Applicable ratings when used as a speed increaser, and driven by "Y" or "Z" shaft only.

† Torque (LB-IN.)

Input Horsepower approximately 5% higher than output horsepower shown above.

Dimensions



ALL DIMENSIONS IN INCHES

"Y" shaft omitted in 2-way sizes

Size	A	B	C	D	E	F	G	H	J	K	L	M
RA6	3.95	3.66	1.25	1.22	1.38	.59	.19	2.16	.91	1.56	.61	.63
RA10	7.25	6.03	2.00	1.94	2.13	1.50	.25	3.25	1.28	2.44	.97	1.00
RA15	10.00	8.88	3.00	2.94	3.00	2.00	.31	5.00	1.88	3.75	1.47	1.50

Size	N	P	Q	R	S	T Holes	TT Holes	U +.000 -.001	ALL SHAFTS		AA	BB	Approx. Weight (Lbs.)
									V	W Keyway			
RA6	.66	1.31	.09	.88	.88	.194	.166	.375	.44	Flat	.59	1.19	3/4
RA10	.94	1.88	.09	1.38	1.38	.266	.266	.625	.69	3/16 3/32	.94	1.88	2-3/4
RA15	1.50	3.00	.13	2.25	2.13	.323	.323	.750	1.13	3/16 3/32	1.50	3.00	8

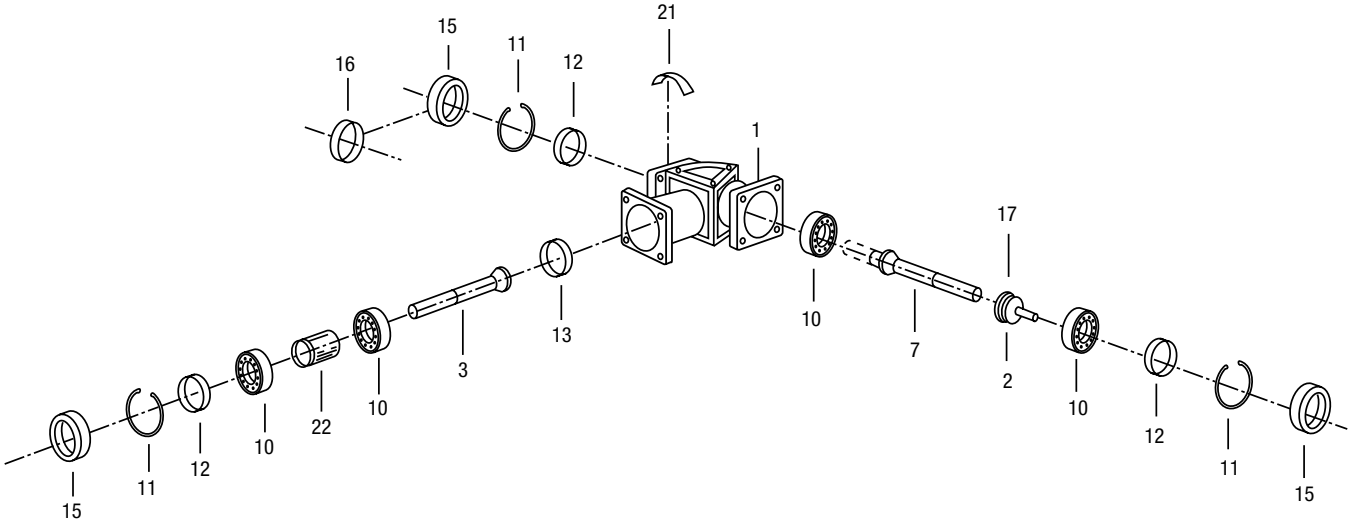
The letters X, Y and Z are used to designate specific shaft projections when ordering units with special shaft requirements.

NOTE: On 2:1 or 1:2 ratio's pinion will always be on X shaft.

No time relation between keyways on X, Y, or Z shafts.

Right-90 Series Parts List

RA600*/RA1000/RA1500 Series



Part No.	Description of Part
1	HOUSING
2	OUTPUT GEAR
3	INPUT GEAR AND SHAFT
7	OUTPUT SHAFT
10	BALL BEARING
11	RETAINING RING
12	ADJUSTMENT SHIM
13	ADJUSTMENT SHIM
15	OIL SEAL
16	BORE PLUG
17	PIN
21	NAMEPLATE
22	SPACER

Part Ordering Information

Be sure to provide complete Boston Gear catalog number from speed reducer nameplate, along with part description and number.

* No replacement parts available.