



**Dorris.**

**GEAR DRIVES CATALOG**

**SHAFT MOUNTED / SCREW CONVEYOR  
OFFSET PARALLEL SHAFT  
GEAR MOTOR / ACCESSORIES**



## Thanks for the opportunity to show you the Dorris product line.

Welcome to the pages of our new Dorris Gear Drives Catalog. We know you're busy and want you to know that we appreciate the opportunity you have given us by taking the time to look over our line.

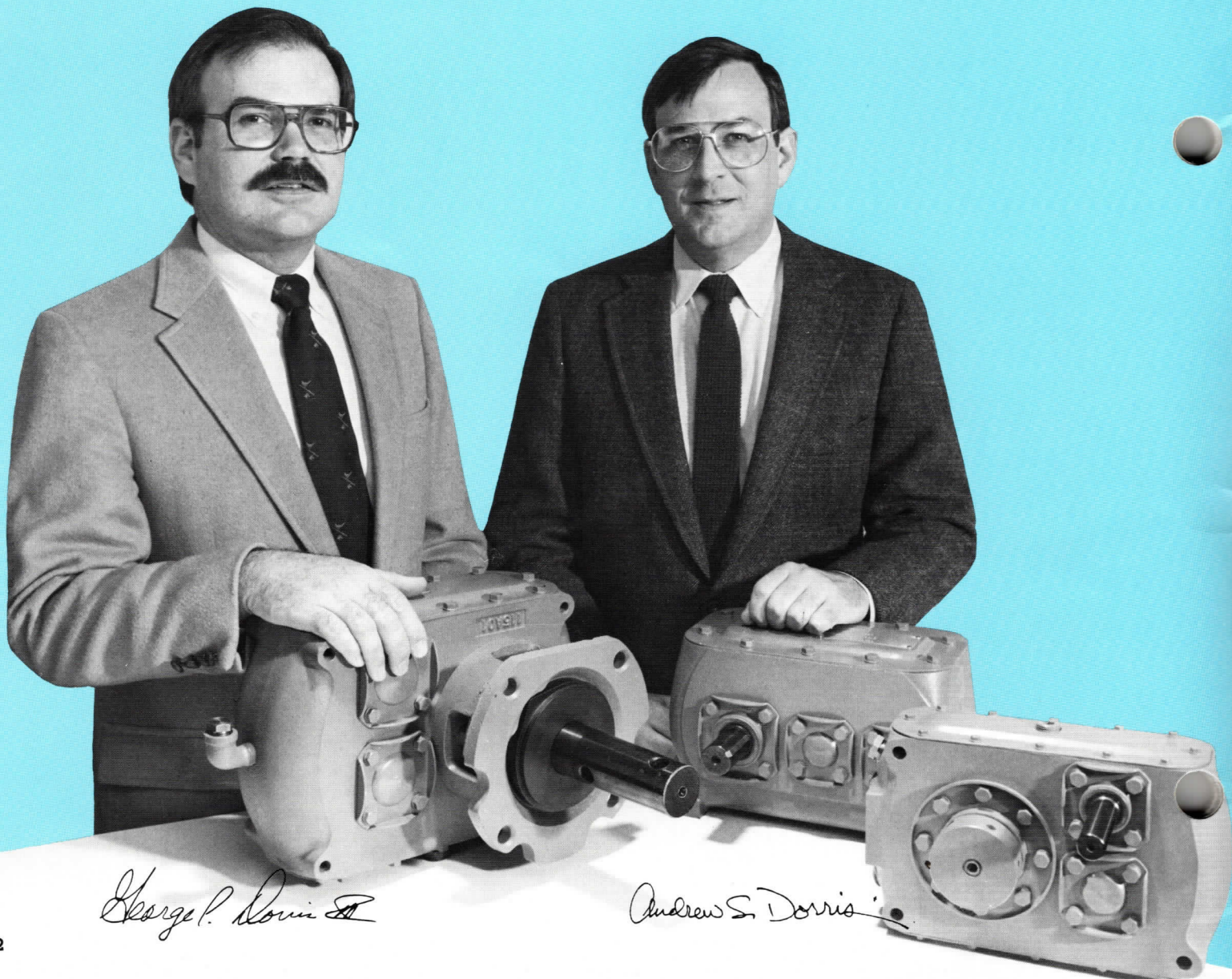
As perhaps you already have noticed, Dorris has a new look. Our traditional script-type logo has evolved into a more contemporary design to make it more readable, and to reflect some of the basic changes that have taken place within our Company.

The appearance and organization of our Catalog also has been updated. It reflects the superior performance and reliability you can expect of Dorris products as a result of our heavy emphasis on use of state-of-the-art materials, heat treatment, and improved gear-making techniques.

These features have allowed us to offer outstanding horsepower and torque capabilities in every series of gear drives we manufacture.

We can assure you, however—especially if you are an "old" customer—that despite changes at Dorris such as the addition of new computer and microcomputer systems, CAD facilities, and the initiation of an aggressive capital acquisition program, one thing remains constant: *our determination to maintain the high standards of quality and customer service that span three generations of Dorris management.*

Again, thanks for taking the time to examine our product line...we're looking forward to serving you!



*George L. Dorris*

*Andrew S. Dorris*



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## Guarantee

**PRODUCT GUARANTEE:** Dorris SM, SCD, and SMF gear drives are guaranteed for a period of two years from date of delivery, or 4,000 hours of operation, whichever comes first. OFFSET PARALLEL SHAFT—BASE TYPE and GEARMOTOR drives are guaranteed for a period of five years from date of delivery, or 10,000 hours of operation, whichever comes first. Guarantees on Dorris gear drives apply only when installation and lubrication are in accordance with our recommendations, and when the application does not exceed the rating shown in our catalog. Materials or workmanship that proves defective will be replaced or repaired at the option of Dorris Co., F.O.B., St. Louis, MO. No other guarantees shall be implied and we assume no responsibility beyond that expressed above.

**IMPORTANT NOTICE:** The products shown in this bulletin must be used in accordance with the engineering information that is shown in this bulletin. The proper installation and maintenance operation procedures must be observed. The instructions in our instruction manuals must be followed. Inspections should be made as necessary to assure safe operation under the prevailing operating conditions of each drive. The proper guards or other suitable safety devices or procedures may be desirable as specified in safety codes. The guards and safety devices are neither provided by Dorris Co., nor are the responsibility of the Dorris Co.

**CAUTION:** Dorris gear drives are shipped from the factory without oil and it is necessary that the proper amount as well as the proper grade of oil be added to the drive before it is placed into operation. See Instruction Bulletin for further information regarding lubrication.

The contents of this catalog are subject to change without notice or obligation. Information contained herein should be confirmed before placing orders.

THE PRODUCT CAPABILITY STATEMENTS AND  
ENGINEERING SPECIFICATIONS IN THIS CATALOG  
SUPERSEDE THOSE IN ALL PRIOR CATALOG  
EDITIONS AND PRODUCT PUBLICATIONS.



# A.G.M.A. SERVICE CLASSIFICATION

The service classification can be determined from the table on this page, and is defined under three classes.

**Class I** Steady load not exceeding motor HP rating and light shock loads during 10 hours a day. Moderate shock loads are allowable if operation is intermittent. For Class I applications, the maximum value of starting and momentary peak loads should not exceed 2x motor horsepower rating. If it exceeds this amount it should be

divided by 2, and the result used in selecting the drive under Class I ratings.

**Class II** Steady load not exceeding motor HP rating for over 10 hours per day. Moderate shock loads are allowable during 10 hours a day. For Class II applications the maximum value of starting and momentary peak loads should not exceed 2.8x motor horsepower rating. If it exceeds this amount, it should be divided by 2.8 and the result used in

selecting the drive under Class II ratings.

**Class III** Moderate shock loads for over 10 hours a day. Heavy shock loads are allowable during 10 hours a day. For Class III applications, the maximum value of starting and momentary peak loads should not exceed 4x motor horsepower rating. If it exceeds this amount, it should be divided by 4 and the result used in selecting the drive under Class III ratings.

**TABLE 1. SERVICE CLASSIFICATION**

APPLICATION	Class No.		APPLICATION	Class No.		APPLICATION	Class No.		APPLICATION	Class No.	
	10 Hour Day	Over 10 Hrs a Day		10 Hour Day	Over 10 Hrs a Day		10 Hour Day	Over 10 Hrs a Day		10 Hour Day	Over 10 Hrs a Day
<b>AGITATORS</b>			<b>CONVEYORS-</b>			<b>LAUNDRY</b>			<b>PEBBLE MILLS</b>	II	III
Paper Mill (Mixers) ..	II	II	<b>UNIFORMLY LOADED</b>			Washers, reversing .....	Refer to Factory		<b>PUMPS</b>		
Pure Liquids .....	I	II	<b>OR FED</b>			Tumblers .....	II	III	Proportioning ..	Refer to Factory	
Semi-Liquids, Variable Density ..	II	II	Apron .....	I	II	<b>LINE SHAFTS</b>			Reciprocating, open discharge ...	I	II
<b>APRON CONVEYORS</b>			Assembly .....	I	II	Uniform Load .....	I	II	Double Acting Multi-Cylinder .....	II	III
Uniformly Loaded .....	I	II	Belt .....	I	II	Heavy Load .....	II	II	Single Cylinder Refer to Factory		
Heavy Duty .....	II	III	Flight .....	II	II	<b>LIVE ROLL CONVEYORS</b>			Rotary (Gear Type)		
<b>ASSEMBLY CONVEYORS</b>			Oven .....	I	II	Uniformly Loaded Package .....	I	II	Constant Density ..	I	II
Uniformly Loaded .....	I	II	Live Roll (Package) ..	I	II	Heavy Duty .....	Refer to Factory		Variable Density ...	II	II
Heavy Duty .....	II	II	Screw .....	I	II	<b>MACHINE TOOLS</b>			<b>RECIPROCATING CONVEYORS</b>		
<b>BELT CONVEYORS</b>			Table-see Metal Mills ...	—	—	Auxiliary Drives .....	I	II	Conveyors .....	III	III
Uniformly Loaded .....	I	II	<b>CONVEYORS-HEAVY DUTY-NOT UNIFORMLY FED</b>			Main Drives, Uniform Load .....	II	II	<b>RUBBER INDUSTRY</b>		
Heavy Duty .....	II	II	Apron .....	II	III	Main Drive, Heavy Load .....	III	III	Tire Building Machines .....	II	II
<b>BREWING &amp; DISTILLING</b>			Assembly .....	II	II	<b>METAL MILLS</b>			Tire & Tube Press Openers .....	I	I
Bottling Machinery ..	I	II	Belt .....	II	II	Table Conveyors, Non Reversing .....	II	III	<b>SCREENS</b>		
Brew Kettles, Continuous .....	—	II	Bucket or Pan .....	II	II	Reversing .....	Refer to Factory		Air Washing .....	I	II
Can Filling Machines .....	I	II	Flight .....	II	II	Wire Drawing & Flattening Machines .....	II	III	Rotary, Stone or Gravel .....	II	II
Cookers, Continuous .....	—	II	Live Roll .....	Refer to Factory		<b>MILLS</b>			Traveling Water Intake .....	I	II
Mash Tubs, Continuous .....	—	II	Oven .....	II	III	(See Metal Mills)			Shaker .....	II	III
Scale Hoppers, Frequent Starts .....	II	II	Reciprocating .....	III	III	Pebble .....	II	III	<b>SCREW CONVEYORS</b>		
<b>BUCKET CONVEYORS</b>			Screw .....	II	II	<b>MIXERS (See Agitators)</b>			Uniformly Loaded ...	I	II
Conveyors, Heavy Duty .....	II	II	Table-See Metal Mills ...	—	—	Concrete, Continuous .....	II	III	Heavy Duty .....	II	II
Elevators, Uniform Load .....	I	II	<b>CRANES &amp; HOISTS</b>			Concrete, Intermittent .....	II	—	<b>SKIP HOISTS</b>	II	—
Elevators, Heavy Duty .....	II	III	Bridge Drive .....	II	II	Constant Density .....	I	II	<b>STOKERS</b>	—	II
<b>CAN FILLING MACHINES</b>			Trolley Drive .....	II	II	Variable Density .....	II	II	<b>TEXTILE INDUSTRY</b>		
<b>CAR DUMPERS</b>			<b>CUTTER HEAD DRIVES</b> .....	Refer to Factory		Liquid .....	I	II	Batchers .....	II	II
Dumpers .....	III	—	<b>DISTILLING-See Brewing</b>	—	—	Paper Mill (Agitators) .....	II	II	Calenders .....	II	II
Pullers .....	Refer to Factory		<b>DRYERS &amp; COOLERS, ROTARY</b>	II	III	Semi-Liquid .....	II	II	Card Machines .....	III	III
<b>CLARIFIERS</b>	I	II	<b>ELEVATORS</b>			<b>OVEN CONVEYORS</b>			Dry Cans .....	II	II
<b>CLASSIFIERS</b>	II	II	Bucket-Uniform Load .....	I	II	Uniformly Loaded ...	I	II	Dyeing Machinery ..	II	II
<b>CLAY WORKING MACHINERY</b>			Bucket-Heavy Load .....	II	III	Heavy Duty .....	II	II	Looms .....	Refer to Factory	
Brick Presses .....	III	III	Freight .....	II	II	<b>PAN CONVEYORS</b>			Mangles, Nappers & Soapers .....	II	II
Briquette Machines ..	III	III	<b>FLIGHT CONVEYORS</b>			Heavy Duty .....	II	II	Spinners .....	II	III
Extruders & Mixers ..	II	III	Uniformly Loaded ...	II	II	<b>PAPER MILLS</b>			Tenter Frames .....	II	II
			Heavy Duty .....	II	II	Agitators (Mixers) .....	II	II	<b>TUMBLING BARRELS</b>	III	III
			<b>FOOD INDUSTRY</b>			Bleachers .....	I	II	<b>WINDLASS</b>	II	III
			Beet Slicers .....	II	II	Calenders .....	—	III			
			Can Filling Machines .....	I	II	Cylinders .....	—	II			
			Cereal Cookers .....	I	II	Felt Stretchers .....	—	II			
			Dough Mixers .....	II	II	Winders .....	—	II			
			Meat Grinders .....	II	II						



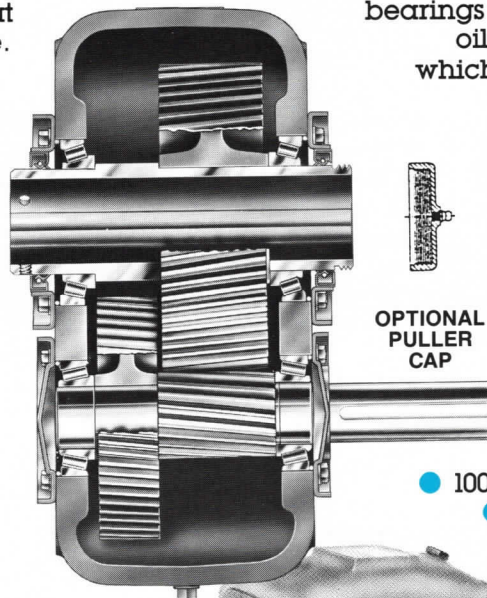
# SM SERIES

ALL AMERICAN COMPONENTS AND CONSTRUCTION  
TWO-YEAR—4,000-HOUR WARRANTY

## SHAFT MOUNTED DRIVES

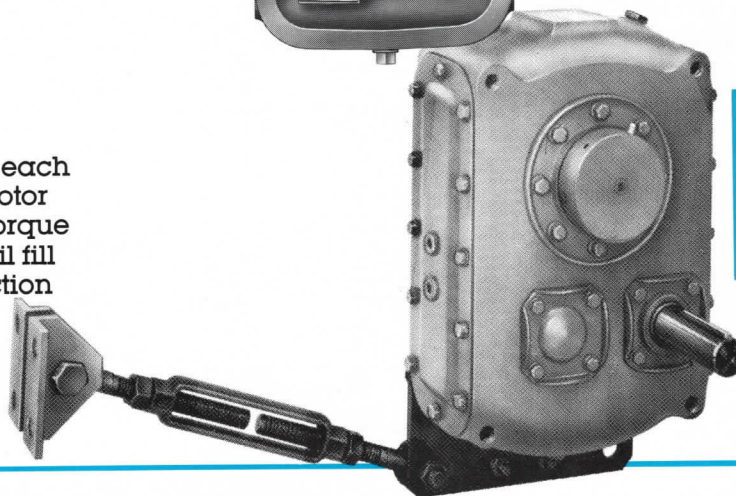
### FEATURES

- All gearing is made of high purity calcium treated 4150 alloy steel, heat treated for superior shock resistance. In addition, all gearing is helical form, wide-faced and shaved for maximum load carrying properties, efficiency and quietness of operation.
- All gears are from closed die forgings for superior grain flow in tooth area
- Optional puller cap is shown removed from the low-speed shaft
- Grease fitting on caps to purge rust forming moisture
- External components black oxidized for greater corrosion protection
- High-speed shaft induction hardened and super-finished in oil-seal area for superior sealing properties and longer seal life



- Standard Timken tapered roller bearings throughout
- Large capacity oil sump keeps temperature low, which helps prevent oil breakdown and premature failure
- Pinions are integral with shafts (one piece)
- One-piece high strength cast iron housing for maximum rigidity and optimal gear tooth alignment, eliminates housing leakage
- Standard double-lip oil seals
- Five standard ratios available
- Standard lubricants recommended
- 100% inspection and shop testing
- Roller clutch shaft extension on all units

- Threaded holes (2 each side) for attaching motor mount
- Standard torque arm
- Extra-large oil fill holes
- Dual inspection plates



### AVAILABLE OPTIONS:

- Bushings to reduce bore size
- Motor mounts and backstops

**DRIVES OPERATE IN HORIZONTAL OR VERTICAL POSITION:** When used in a vertical position, drive should be placed at the top with the high-speed shaft in the up position. Vertical mounting must be specified when the order is placed to ensure proper oil fill hole locations.

**SHAFT SEAL HELPS TO PREVENT CORROSION BONDING OF DRIVEN SHAFT TO HOLLOW DRIVE SHAFT:** Every Dorris SM unit is shipped standard with a moulded plastic shaft seal. The seal is placed on the end of the drive shaft after installation and the grease fitting utilized to force grease between the driven shaft and the hollow drive shaft to prevent corrosion from forming.

**POSITIVE REMOVAL OF SM SERIES SHAFT MOUNTED GEAR DRIVE:** The optional puller cap provides a better means for removing the unit from driven shaft. Just remove the set screw and inserting a hardened bolt in to the center of the puller cap, the drive can be removed by turning the bolt. This puller cap can be left on the unit and utilized in the same manner as the shaft seal.



# SM, SCD & SMF Horsepower Ratings

**TABLE 2. SM, SCD, AND SMF HORSEPOWER RATING TABLE. CLASS I, II, III.**

1 H.P. Class I		1 H.P. Class II		1 H.P. Class III	
Output RPM	Drive Size	Output RPM	Drive Size	Output RPM	Drive Size
176-350	107-05	176-350	107-05	176-350	107-05
117-175	107-10	117-175	107-10	117-175	107-10
88-116	107-15	88-116	107-15	88-116	107-15
71-87	107-20	71-87	107-20	71-87	107-20
18-70	107-25	25-70	107-25	36-70	107-25
11-17	115-25	15-24	115-25	21-35	115-25
7-10	203-25	9-14	203-25	13-20	203-25
		6-8	207-25	8-12	207-25

1½ H.P. Class I		1½ H.P. Class II		1½ H.P. Class III	
Output RPM	Drive Size	Output RPM	Drive Size	Output RPM	Drive Size
176-350	107-05	176-350	107-05	176-350	107-05
117-175	107-10	117-175	107-10	117-175	107-10
88-116	107-15	88-116	107-15	71-116	107-15
71-87	107-20	71-87	107-20	54-70	107-25
27-70	107-25	37-70	107-25	31-53	115-25
16-26	115-25	22-36	115-25	19-30	203-25
10-15	203-25	14-21	203-25	12-18	207-25
6-9	207-25	9-13	207-25	8-11	215-25

2 H.P. Class I		2 H.P. Class II		2 H.P. Class III	
Output RPM	Drive Size	Output RPM	Drive Size	Output RPM	Drive Size
176-350	107-05	176-350	107-05	176-350	107-05
117-175	107-10	117-175	107-10	117-175	107-10
88-116	107-15	88-116	107-15	76-116	107-15
71-87	107-20	71-87	107-20	71-75	115-20
36-70	107-25	50-70	107-25	42-70	115-25
21-35	115-25	29-49	115-25	26-41	203-25
13-20	203-25	18-28	203-25	16-25	207-25
8-12	207-25	12-17	207-25	11-15	215-25
		8-11	215-25	7-10	307-25

3 H.P. Class I		3 H.P. Class II		3 H.P. Class III	
Output RPM	Drive Size	Output RPM	Drive Size	Output RPM	Drive Size
176-350	107-05	176-350	107-05	176-350	107-05
117-175	107-10	117-175	107-10	135-175	107-10
88-116	107-15	80-116	107-15	117-134	115-10
54-87	107-20	71-79	115-20	71-116	115-15
31-53	115-25	44-70	115-25	63-70	115-25
19-30	203-25	27-43	203-25	40-62	203-25
12-18	207-25	17-26	207-25	25-39	207-25
8-11	215-25	11-16	215-25	16-24	215-25
				10-15	307-25

5 H.P. Class I		5 H.P. Class II		5 H.P. Class III	
Output RPM	Drive Size	Output RPM	Drive Size	Output RPM	Drive Size
176-350	107-05	176-350	115-05	176-350	115-05
117-175	107-10	117-175	115-10	117-175	115-10
95-116	107-15	77-116	115-15	108-116	115-15
71-94	115-20	60-76	203-20	76-107	203-15
53-70	115-25	46-59	203-25	71-75	207-20
33-52	203-25	29-45	207-25	41-70	207-25
20-32	207-25	18-28	215-25	26-40	215-25
13-19	215-25	12-17	307-25	16-25	307-25
8-12	307-25	8-11	315-25	11-15	315-25

7½ H.P. Class I		7½ H.P. Class II		7½ H.P. Class III	
Output RPM	Drive Size	Output RPM	Drive Size	Output RPM	Drive Size
176-350	115-05	176-350	115-05	176-350	203-05
88-175	115-10	126-175	115-10	129-175	203-10
81-87	115-20	117-125	203-10	118-128	207-10
71-80	203-20	79-116	203-15	88-117	207-15
50-70	203-25	71-78	207-20	71-87	207-20
31-49	207-25	43-70	207-25	64-70	207-25
20-30	215-25	28-42	215-25	40-63	215-25
12-19	307-25	17-27	307-25	25-39	307-25
9-11	315-25	12-16	315-25	17-24	315-25

10 H.P. Class I		10 H.P. Class II		10 H.P. Class III	
Output RPM	Drive Size	Output RPM	Drive Size	Output RPM	Drive Size
247-350	115-05	176-350	203-05	251-350	203-05
176-246	115-05	114-175	203-10	176-250	207-05
117-175	115-10	71-113	207-15	118-175	207-10
108-116	115-15	58-70	207-25	92-117	207-15
88-107	203-15	37-57	215-25	71-91	215-15
76-87	203-20	23-36	307-25	58-70	215-25
41-75	207-25	16-22	315-25	33-57	307-25
26-40	215-25			22-32	315-25
16-25	307-25				
11-15	315-25				

15 H.P. Class I		15 H.P. Class II		15 H.P. Class III	
Output RPM	Drive Size	Output RPM	Drive Size	Output RPM	Drive Size
176-350	203-05	264-350	203-05	291-350	207-05
129-175	203-10	176-263	207-05	176-290	215-05
117-128	207-10	126-175	207-10	118-175	215-10
88-116	207-15	102-125	207-15	94-117	215-15
71-87	207-20	71-101	215-15	71-93	307-15
64-70	207-25	61-70	215-25	58-70	307-25
40-63	215-25	35-60	307-25	34-57	315-25
25-39	307-25	23-34	315-25		
17-24	315-25				

20 H.P. Class I		20 H.P. Class II		20 H.P. Class III	
Output RPM	Drive Size	Output RPM	Drive Size	Output RPM	Drive Size
176-350	207-05	176-350	207-05	176-350	215-05
117-175	207-10	156-175	207-10	139-175	215-10
92-116	207-15	117-155	215-10	118-138	307-10
88-91	215-15	85-116	215-15	85-117	307-15
71-87	215-20	71-84	307-20	71-84	315-20
58-70	215-25	53-70	307-25	49-70	315-25
33-57	307-25	31-52	315-25		
22-32	315-25				

25 H.P. Class I		25 H.P. Class II		25 H.P. Class III	
Output RPM	Drive Size	Output RPM	Drive Size	Output RPM	Drive Size
176-350	207-05	176-350	215-05	176-350	307-05
139-175	207-10	115-175	215-10	117-175	307-10
118-138	215-10	75-114	307-15	71-116	315-15
89-117	215-15	71-74	315-20	66-70	315-25
75-88	215-20	41-70	315-25		
70-74	307-20				
45-69	307-25				
28-44	315-25				

30 H.P. Class I		30 H.P. Class II		30 H.P. Class III	
Output RPM	Drive Size	Output RPM	Drive Size	Output RPM	Drive Size
176-350	215-05	176-350	215-05		
118-175	215-10	145-175	215-10		
94-117	215-15	117-144	307-10		
88-93	307-15	90-116	307-15		
71-87	307-20	71-89	315-20		
58-70	307-25	53-70	315-25		
34-57	315-25				

40 H.P. Class I		40 H.P. Class II		40 H.P. Class III	
Output RPM	Drive Size	Output RPM	Drive Size	Output RPM	Drive Size
118-175	307-10	176-350	307-05		
85-117	307-15	141-175	307-10		
71-84	315-20	117-140	315-10		
49-70	315-25	78-116	315-15		

50 H.P. Class I		50 H.P. Class II		50 H.P. Class III	
Output RPM	Drive Size	Output RPM	Drive Size	Output RPM	Drive Size
126-175	307-10				
118-125	315-10				
88-117	315-15				
71-87	315-20				
66-70	315-25				



# SM SERIES

## SHAFT MOUNTED DRIVES

### SELECTION

#### WHEN SELECTING A SHAFT MOUNT DRIVE, IT IS NECESSARY TO HAVE THE FOLLOWING DATA:

Horsepower and RPM of motor. Is motor mount required? RPM of driven shaft. Is a backstop required? Diameter of driven shaft. Is a bushing required? Service classification of drive.

**CAUTION: Guarantee void if motor horsepower exceeds the horsepower rating of the gear drive.**

### HOW TO ORDER SHAFT MOUNT DRIVES

Obtain the Service Classification from Table 1, Page 4 and the size of drive from Table 2, Page 6. Compare the maximum bore of the drive selected to the diameter of the driven shaft. If the driven shaft diameter is greater than the bore of the shaft mount drive a larger drive is required. If the driven shaft diameter is smaller than the bore of the shaft mount drive, a bushing is required. Standard bushing bore sizes are shown in Table 3.

Tables 20 or 21, Page 21 show center to center dimensions for V belt drive. Motor plates are prepunched to accept "T" frame motor sizes shown in Table 19, Page 20.

Backstops are available and can be ordered with the drive. Backstops have the same size number as that of the drive. When ordered, backstops are shipped with the drive, but are not installed. See diagram on Page 9 for direction of rotation of backstop.

<p>Shaft Mount Drive 207 SM 25</p> <p>Unit size of Drive 207 = 2<sup>7</sup>/<sub>16</sub> bore</p> <p>Shaft Mount</p> <p>Gear Ratio 25 = 25:1</p>
<p>Shaft Mount Bushing 207 B 115</p> <p>207 Drive 2<sup>7</sup>/<sub>16</sub> O.D.</p> <p>Bushing</p> <p>115 Bore 1<sup>5</sup>/<sub>16</sub> I.D.</p>
<p>Shaft Mount Backstop 207 BS</p> <p>Size of Drive</p> <p>Backstop</p>
<p>Motor Mount 207 H MM</p> <p>Unit size of Motor Mount</p> <p>High Type</p> <p>Motor Mount</p>

### Order Example

A typical order could be written:

- 1—207 SM 25 Shaft Mount Drive
- 1—207 B 115 Bushing
- 1—207 BS Backstop—shipped loose
- 1—207 H MM Motor Mount

### V-Belt Selection

To select the V-belt drive for 207SM25, see Table 15, Page 17. On the same line as output RPM is shown the V-belt ratio and input RPM under the size of drive.

Example: At 40 RPM, the V-belt ratio is 1.75:1, and the input RPM would be 1000. With this information the V-belt drive can be selected from V-belt drive catalogs.

TABLE 3. SM UNIT SIZE AND GEAR RATIOS

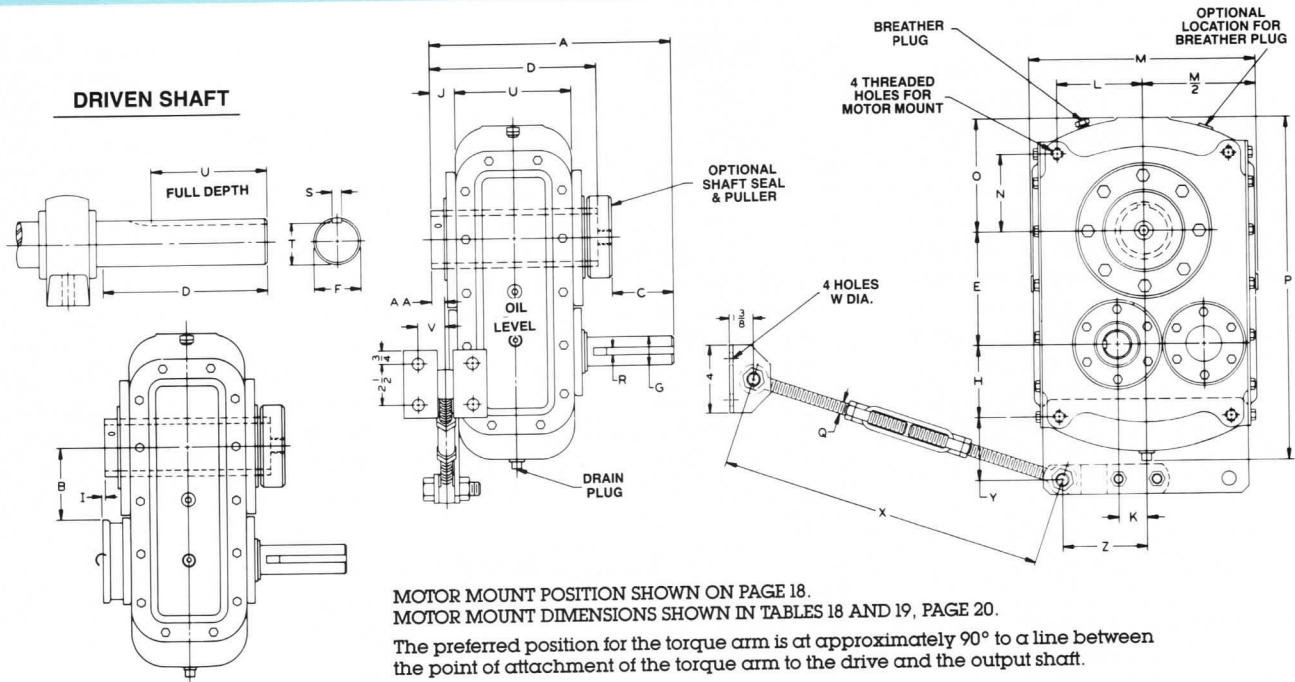
The 5:1 gear ratio is a single reduction drive. The other gear ratios are double reduction drives.

Model SM Unit Size	Maximum Bore	Standard Size Bushing Diameter				Actual Gear Ratio				
						5:1	10:1	15:1	20:1	25:1
315 SM	3 <sup>15</sup> / <sub>16</sub>	3 <sup>7</sup> / <sub>16</sub>	3 <sup>3</sup> / <sub>16</sub>	3	2 <sup>15</sup> / <sub>16</sub>	4.96	9.90	14.76	19.65	25.00
307 SM	3 <sup>7</sup> / <sub>16</sub>	3 <sup>3</sup> / <sub>16</sub>	3	2 <sup>15</sup> / <sub>16</sub>	2 <sup>11</sup> / <sub>16</sub>	4.52	10.04	15.10	19.66	25.42
215 SM	2 <sup>15</sup> / <sub>16</sub>	2 <sup>7</sup> / <sub>16</sub>	2 <sup>3</sup> / <sub>16</sub>	2	1 <sup>15</sup> / <sub>16</sub>	5.04	9.92	14.62	19.81	24.99
207 SM	2 <sup>7</sup> / <sub>16</sub>	2 <sup>3</sup> / <sub>16</sub>	2	1 <sup>15</sup> / <sub>16</sub>	1 <sup>11</sup> / <sub>16</sub>	4.96	9.99	14.68	20.40	25.01
203 SM	2 <sup>3</sup> / <sub>16</sub>	2	1 <sup>15</sup> / <sub>16</sub>	1 <sup>11</sup> / <sub>16</sub>	1 <sup>1</sup> / <sub>2</sub>	5.05	10.02	14.96	20.39	25.24
115 SM	1 <sup>15</sup> / <sub>16</sub>	1 <sup>11</sup> / <sub>16</sub>	1 <sup>1</sup> / <sub>2</sub>	1 <sup>7</sup> / <sub>16</sub>	1 <sup>3</sup> / <sub>16</sub>	4.95	10.19	15.04	19.80	25.01
107 SM	1 <sup>7</sup> / <sub>16</sub>	1 <sup>1</sup> / <sub>4</sub>	1 <sup>3</sup> / <sub>16</sub>	1 <sup>1</sup> / <sub>8</sub>	1	5.05	10.16	15.03	19.76	24.98

BUSHING ASSEMBLY AND DIMENSIONS SHOWN IN TABLE 5, PAGE 8.



### SHAFT MOUNTED DRIVES & BUSHING DATA



MOTOR MOUNT POSITION SHOWN ON PAGE 18.  
MOTOR MOUNT DIMENSIONS SHOWN IN TABLES 18 AND 19, PAGE 20.  
The preferred position for the torque arm is at approximately 90° to a line between the point of attachment of the torque arm to the drive and the output shaft.

**TABLE 4. SM DRIVES, SINGLE REDUCTION 5 TO 1 RATIO**

DRIVE SIZE	Dimensions in Inches																				Weight Pounds										
	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T		U	V	W	X		Y	Z	AA		
	MIN.		MAX.		MIN.		MAX.		MIN.		MAX.		MIN.		MAX.		MIN.		MAX.			MIN.		MAX.		MIN.		MAX.		MIN.	
107SM05	8 <sup>5</sup> / <sub>16</sub>	2 <sup>5</sup> / <sub>16</sub>	2	6 <sup>1</sup> / <sub>16</sub>	4	1 <sup>1</sup> / <sub>16</sub>	7/8	2 <sup>5</sup> / <sub>16</sub>	1/4	1 <sup>1</sup> / <sub>16</sub>	1 <sup>5</sup> / <sub>16</sub>	2 <sup>3</sup> / <sub>32</sub>	8	3	4 <sup>3</sup> / <sub>16</sub>	12 <sup>7</sup> / <sub>16</sub>	5/8	3/16	3/8	1.225 1.215	3 <sup>1</sup> / <sub>2</sub>	1 <sup>15</sup> / <sub>32</sub>	9/16	20 <sup>1</sup> / <sub>8</sub>	26 <sup>1</sup> / <sub>8</sub>	2 <sup>5</sup> / <sub>8</sub>	2 <sup>1</sup> / <sub>16</sub>	2 <sup>3</sup> / <sub>32</sub>	46		
115SM05	9 <sup>7</sup> / <sub>16</sub>	3 <sup>3</sup> / <sub>16</sub>	2	7 <sup>3</sup> / <sub>16</sub>	5 <sup>1</sup> / <sub>16</sub>	1 <sup>15</sup> / <sub>16</sub>	1 <sup>1</sup> / <sub>4</sub>	2 <sup>15</sup> / <sub>16</sub>	1 <sup>1</sup> / <sub>32</sub>	1 <sup>1</sup> / <sub>16</sub>	1 <sup>1</sup> / <sub>32</sub>	4	10 <sup>1</sup> / <sub>8</sub>	3 <sup>7</sup> / <sub>16</sub>	5 <sup>3</sup> / <sub>16</sub>	15 <sup>7</sup> / <sub>16</sub>	5/8	1/4	1/2	1.653 1.643	4 <sup>3</sup> / <sub>4</sub>	1 <sup>15</sup> / <sub>32</sub>	9/16	20 <sup>1</sup> / <sub>8</sub>	26 <sup>1</sup> / <sub>8</sub>	3 <sup>3</sup> / <sub>8</sub>	3 <sup>3</sup> / <sub>4</sub>	2 <sup>3</sup> / <sub>32</sub>	82		
203SM05	10 <sup>9</sup> / <sub>16</sub>	3 <sup>11</sup> / <sub>16</sub>	2 <sup>1</sup> / <sub>2</sub>	7 <sup>5</sup> / <sub>16</sub>	5 <sup>1</sup> / <sub>16</sub>	2 <sup>3</sup> / <sub>16</sub>	1 <sup>3</sup> / <sub>8</sub>	3 <sup>1</sup> / <sub>4</sub>	1 <sup>1</sup> / <sub>32</sub>	1 <sup>1</sup> / <sub>16</sub>	1 <sup>3</sup> / <sub>8</sub>	4 <sup>5</sup> / <sub>16</sub>	10 <sup>7</sup> / <sub>8</sub>	3 <sup>1</sup> / <sub>16</sub>	5 <sup>1</sup> / <sub>2</sub>	16 <sup>7</sup> / <sub>16</sub>	3/4	5/16	1/2	1.907 1.897	5	1 <sup>17</sup> / <sub>32</sub>	1 <sup>1</sup> / <sub>16</sub>	24 <sup>1</sup> / <sub>8</sub>	30 <sup>1</sup> / <sub>8</sub>	3 <sup>3</sup> / <sub>8</sub>	4	2 <sup>1</sup> / <sub>8</sub>	99		
207SM05	12 <sup>1</sup> / <sub>2</sub>	3 <sup>1</sup> / <sub>16</sub>	3 <sup>1</sup> / <sub>8</sub>	8 <sup>5</sup> / <sub>16</sub>	5 <sup>5</sup> / <sub>16</sub>	2 <sup>7</sup> / <sub>16</sub>	1 <sup>1</sup> / <sub>2</sub>	3 <sup>1</sup> / <sub>16</sub>	3/8	1 <sup>1</sup> / <sub>16</sub>	1 <sup>7</sup> / <sub>16</sub>	4 <sup>7</sup> / <sub>16</sub>	11 <sup>1</sup> / <sub>2</sub>	4 <sup>1</sup> / <sub>16</sub>	5 <sup>5</sup> / <sub>16</sub>	17 <sup>1</sup> / <sub>16</sub>	3/4	3/8	5/8	2.083 2.073	6	1 <sup>17</sup> / <sub>32</sub>	1 <sup>1</sup> / <sub>16</sub>	24 <sup>1</sup> / <sub>8</sub>	30 <sup>1</sup> / <sub>8</sub>	3 <sup>3</sup> / <sub>4</sub>	4 <sup>5</sup> / <sub>16</sub>	2 <sup>1</sup> / <sub>8</sub>	130		
215SM05	14	4 <sup>1</sup> / <sub>32</sub>	3 <sup>5</sup> / <sub>8</sub>	9 <sup>5</sup> / <sub>16</sub>	6 <sup>1</sup> / <sub>2</sub>	2 <sup>15</sup> / <sub>16</sub>	1 <sup>5</sup> / <sub>8</sub>	3 <sup>13</sup> / <sub>16</sub>	9/16	1 <sup>5</sup> / <sub>16</sub>	1 <sup>1</sup> / <sub>16</sub>	4 <sup>13</sup> / <sub>16</sub>	12 <sup>1</sup> / <sub>4</sub>	4 <sup>9</sup> / <sub>16</sub>	6 <sup>3</sup> / <sub>8</sub>	18 <sup>15</sup> / <sub>16</sub>	3/4	3/8	3/4	2.513 2.503	7	1 <sup>17</sup> / <sub>32</sub>	1 <sup>1</sup> / <sub>16</sub>	24 <sup>1</sup> / <sub>8</sub>	30 <sup>1</sup> / <sub>8</sub>	3 <sup>3</sup> / <sub>4</sub>	4 <sup>1</sup> / <sub>16</sub>	2 <sup>1</sup> / <sub>8</sub>	166		
307SM05	16 <sup>7</sup> / <sub>16</sub>	4 <sup>1</sup> / <sub>2</sub>	4 <sup>1</sup> / <sub>8</sub>	11 <sup>9</sup> / <sub>16</sub>	7 <sup>3</sup> / <sub>8</sub>	3 <sup>7</sup> / <sub>16</sub>	1 <sup>3</sup> / <sub>4</sub>	4 <sup>3</sup> / <sub>4</sub>	3/4	1 <sup>3</sup> / <sub>8</sub>	1 <sup>3</sup> / <sub>4</sub>	5 <sup>13</sup> / <sub>16</sub>	14 <sup>7</sup> / <sub>8</sub>	5 <sup>1</sup> / <sub>2</sub>	7 <sup>3</sup> / <sub>4</sub>	22 <sup>1</sup> / <sub>16</sub>	7/8	3/8	7/8	2.942 2.932	8 <sup>13</sup> / <sub>16</sub>	1 <sup>1</sup> / <sub>32</sub>	1 <sup>1</sup> / <sub>16</sub>	24 <sup>1</sup> / <sub>8</sub>	30 <sup>1</sup> / <sub>8</sub>	4	6	2 <sup>1</sup> / <sub>8</sub>	277		
315SM05	17 <sup>7</sup> / <sub>16</sub>	5 <sup>2</sup> / <sub>32</sub>	4 <sup>7</sup> / <sub>8</sub>	11 <sup>13</sup> / <sub>16</sub>	8 <sup>23</sup> / <sub>32</sub>	3 <sup>15</sup> / <sub>16</sub>	2	3 <sup>25</sup> / <sub>32</sub>	5/8	1 <sup>1</sup> / <sub>2</sub>	2	6 <sup>7</sup> / <sub>8</sub>	16 <sup>3</sup> / <sub>8</sub>	5	8 <sup>1</sup> / <sub>16</sub>	25	7/8	1/2	1	3.373 3.363	8 <sup>13</sup> / <sub>16</sub>	1 <sup>1</sup> / <sub>32</sub>	1 <sup>1</sup> / <sub>16</sub>	24 <sup>1</sup> / <sub>8</sub>	30 <sup>1</sup> / <sub>8</sub>	4 <sup>3</sup> / <sub>8</sub>	6 <sup>3</sup> / <sub>4</sub>	2 <sup>5</sup> / <sub>32</sub>	355		

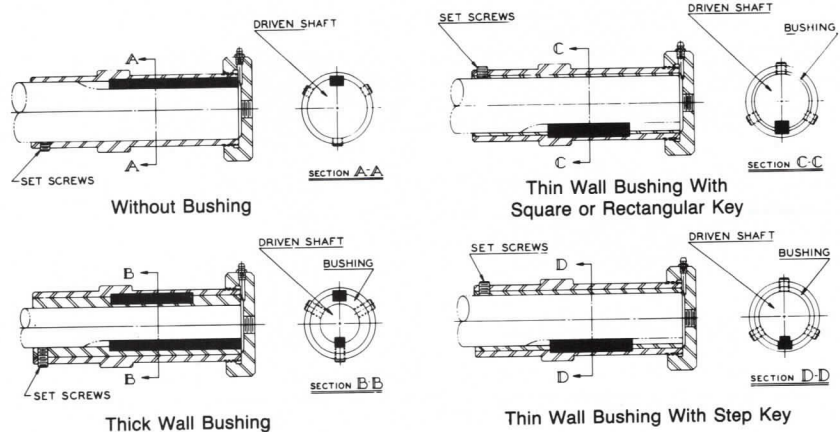
FOR 10, 15, 20 AND 25 TO 1 RATIOS SEE DOUBLE REDUCTION DRIVES, PAGE 9.

**TABLE 5**

Diameter Bushing Bore	Driven Shaft Keyseat			
	Keyway S	Under Key T		
1.000	.250	.859	—	.849
1.125	.250	.986	—	.976
1.187	.250	1.049	—	1.039
1.250	.250	1.112	—	1.102
1.437	.375	1.225	—	1.215
1.500	.375	1.288	—	1.278
1.625	.375	1.415	—	1.405
1.687	.375	1.478	—	1.468
1.937	.500	1.653	—	1.643
2.000	.500	1.717	—	1.707
2.187	.500	1.907	—	1.897
2.437	.625	2.083	—	2.073
2.500	.625	2.147	—	2.137
2.687	.625	2.337	—	2.327
2.937	.750	2.513	—	2.503
3.000	.750	2.576	—	2.566
3.187	.750	2.767	—	2.757
3.437	.875	2.942	—	2.932

### SINGLE REDUCTION AND DOUBLE REDUCTION DRIVEN SHAFT AND BUSHING ASSEMBLY

For ordering see page 7.

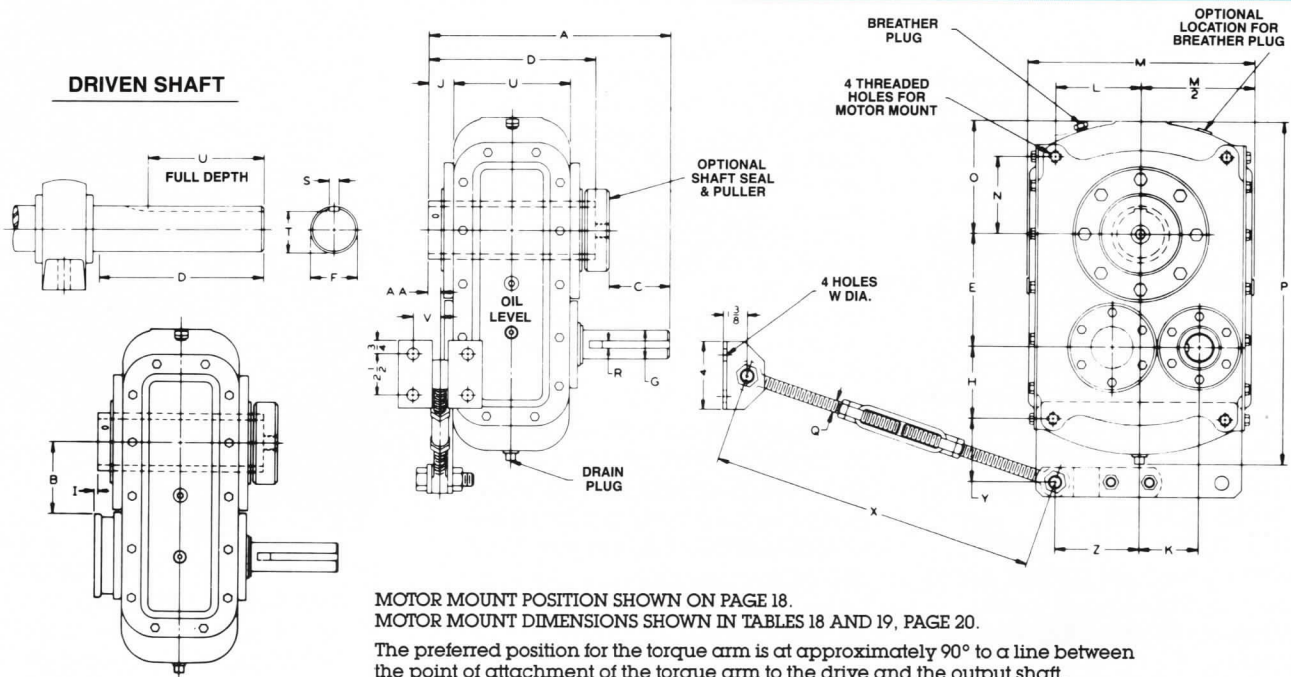




# SM SERIES

**GEAR RATIOS 10, 15, 20 AND 25 TO 1  
DOUBLE REDUCTION GEARING**

## SHAFT MOUNTED DRIVES & BACKSTOPS



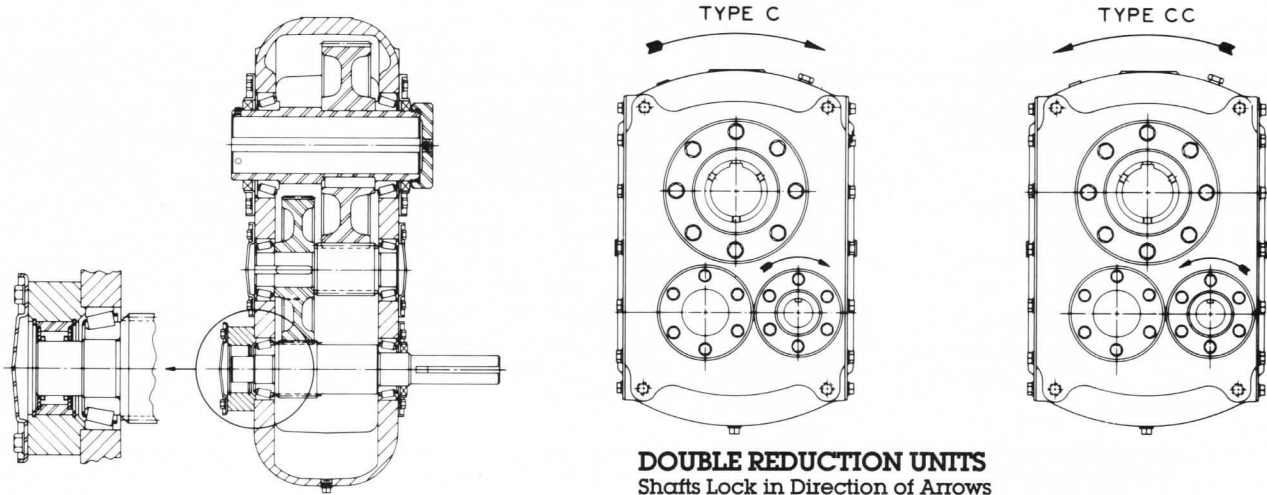
MOTOR MOUNT POSITION SHOWN ON PAGE 18.  
MOTOR MOUNT DIMENSIONS SHOWN IN TABLES 18 AND 19, PAGE 20.  
The preferred position for the torque arm is at approximately 90° to a line between the point of attachment of the torque arm to the drive and the output shaft.

**TABLE 6. SM DRIVES, DOUBLE REDUCTION 10-15-20-25 TO 1 RATIO**

DRIVE SIZE	Dimensions in Inches																				Weight Pounds										
	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T		U	V	W	X		Y	Z	AA		
	MIN.		MAX.		MIN.		MAX.		MIN.		MAX.		MIN.		MAX.		MIN.		MAX.			MIN.		MAX.		MIN.		MAX.		MIN.	
107SM	8 <sup>5</sup> / <sub>16</sub>	2 <sup>5</sup> / <sub>16</sub>	2	6 <sup>1</sup> / <sub>16</sub>	4	1 <sup>7</sup> / <sub>16</sub>	7/8	2 <sup>5</sup> / <sub>16</sub>	1/4	1 <sup>5</sup> / <sub>16</sub>	2 <sup>3</sup> / <sub>32</sub>	2 <sup>31</sup> / <sub>32</sub>	8	3	4 <sup>3</sup> / <sub>16</sub>	12 <sup>7</sup> / <sub>16</sub>	5/8	3/16	3/8	1.225 1.215	3 1/2	1 <sup>15</sup> / <sub>32</sub>	9/16	20 <sup>1</sup> / <sub>16</sub>	26 <sup>1</sup> / <sub>16</sub>	2 <sup>5</sup> / <sub>16</sub>	2 <sup>11</sup> / <sub>16</sub>	2 <sup>3</sup> / <sub>32</sub>	50		
115SM	9 <sup>7</sup> / <sub>16</sub>	3 <sup>3</sup> / <sub>16</sub>	2	7 <sup>3</sup> / <sub>16</sub>	5 <sup>1</sup> / <sub>16</sub>	1 <sup>15</sup> / <sub>16</sub>	1 1/4	2 <sup>15</sup> / <sub>16</sub>	1 <sup>1</sup> / <sub>32</sub>	1 <sup>5</sup> / <sub>16</sub>	2 <sup>5</sup> / <sub>16</sub>	4	10 <sup>1</sup> / <sub>16</sub>	3 <sup>7</sup> / <sub>16</sub>	5 <sup>3</sup> / <sub>16</sub>	15 <sup>7</sup> / <sub>16</sub>	5/8	1/4	1/2	1.653 1.643	4 3/4	1 <sup>15</sup> / <sub>32</sub>	9/16	20 <sup>1</sup> / <sub>16</sub>	26 <sup>1</sup> / <sub>16</sub>	3 <sup>3</sup> / <sub>16</sub>	3 <sup>3</sup> / <sub>16</sub>	2 <sup>3</sup> / <sub>32</sub>	90		
203SM	10 <sup>5</sup> / <sub>16</sub>	3 <sup>1</sup> / <sub>16</sub>	2 1/2	7 <sup>5</sup> / <sub>16</sub>	5 <sup>7</sup> / <sub>16</sub>	2 <sup>3</sup> / <sub>16</sub>	1 3/4	3 <sup>3</sup> / <sub>16</sub>	1 <sup>1</sup> / <sub>32</sub>	1 <sup>5</sup> / <sub>16</sub>	2 <sup>29</sup> / <sub>32</sub>	4 <sup>5</sup> / <sub>16</sub>	10 <sup>7</sup> / <sub>16</sub>	3 <sup>1</sup> / <sub>16</sub>	5 <sup>1</sup> / <sub>16</sub>	16 <sup>7</sup> / <sub>16</sub>	3/4	5/16	1/2	1.907 1.897	5	1 <sup>17</sup> / <sub>32</sub>	1 <sup>1</sup> / <sub>16</sub>	24 <sup>1</sup> / <sub>16</sub>	30 <sup>1</sup> / <sub>16</sub>	3 <sup>3</sup> / <sub>16</sub>	4	2 <sup>1</sup> / <sub>32</sub>	109		
207SM	12 1/2	3 <sup>29</sup> / <sub>32</sub>	3 1/8	8 <sup>5</sup> / <sub>16</sub>	5 <sup>7</sup> / <sub>16</sub>	2 <sup>7</sup> / <sub>16</sub>	1 1/2	3 <sup>11</sup> / <sub>16</sub>	5 <sup>5</sup> / <sub>32</sub>	1 <sup>5</sup> / <sub>16</sub>	3 <sup>3</sup> / <sub>32</sub>	4 <sup>7</sup> / <sub>16</sub>	11 1/2	4 <sup>1</sup> / <sub>16</sub>	5 <sup>7</sup> / <sub>16</sub>	17 <sup>1</sup> / <sub>16</sub>	3/4	3/8	5/8	2.083 2.073	6	1 <sup>17</sup> / <sub>32</sub>	1 <sup>1</sup> / <sub>16</sub>	24 <sup>1</sup> / <sub>16</sub>	30 <sup>1</sup> / <sub>16</sub>	3 <sup>3</sup> / <sub>16</sub>	4 <sup>5</sup> / <sub>16</sub>	2 <sup>1</sup> / <sub>32</sub>	143		
215SM	14	4 <sup>3</sup> / <sub>16</sub>	3 <sup>5</sup> / <sub>16</sub>	9 <sup>5</sup> / <sub>16</sub>	6 <sup>1</sup> / <sub>2</sub>	2 <sup>15</sup> / <sub>16</sub>	1 <sup>5</sup> / <sub>16</sub>	3 <sup>13</sup> / <sub>16</sub>	3/8	1 <sup>5</sup> / <sub>16</sub>	3 <sup>3</sup> / <sub>32</sub>	4 <sup>13</sup> / <sub>16</sub>	12 3/4	4 <sup>9</sup> / <sub>16</sub>	6 <sup>3</sup> / <sub>16</sub>	18 <sup>15</sup> / <sub>16</sub>	3/4	3/8	3/4	2.513 2.503	7	1 <sup>17</sup> / <sub>32</sub>	1 <sup>1</sup> / <sub>16</sub>	24 <sup>1</sup> / <sub>16</sub>	30 <sup>1</sup> / <sub>16</sub>	3 <sup>3</sup> / <sub>16</sub>	4 <sup>1</sup> / <sub>16</sub>	2 <sup>1</sup> / <sub>32</sub>	184		
307SM	16 <sup>7</sup> / <sub>16</sub>	4 <sup>1</sup> / <sub>2</sub>	4 <sup>1</sup> / <sub>16</sub>	11 <sup>1</sup> / <sub>16</sub>	7 <sup>3</sup> / <sub>16</sub>	3 <sup>7</sup> / <sub>16</sub>	1 3/4	4 <sup>3</sup> / <sub>4</sub>	3/4	1 <sup>3</sup> / <sub>8</sub>	4 <sup>3</sup> / <sub>32</sub>	5 <sup>13</sup> / <sub>16</sub>	14 <sup>3</sup> / <sub>4</sub>	5 <sup>1</sup> / <sub>8</sub>	7 <sup>3</sup> / <sub>4</sub>	22 <sup>1</sup> / <sub>16</sub>	7/8	3/8	7/8	2.942 2.932	8 <sup>13</sup> / <sub>16</sub>	1 <sup>19</sup> / <sub>32</sub>	1 <sup>3</sup> / <sub>16</sub>	24 <sup>1</sup> / <sub>16</sub>	30 <sup>1</sup> / <sub>16</sub>	4	6	2 <sup>1</sup> / <sub>32</sub>	315		
315SM	17 <sup>7</sup> / <sub>16</sub>	5 <sup>27</sup> / <sub>32</sub>	4 <sup>7</sup> / <sub>16</sub>	11 <sup>13</sup> / <sub>16</sub>	8 <sup>23</sup> / <sub>32</sub>	3 <sup>15</sup> / <sub>16</sub>	2	3 <sup>25</sup> / <sub>32</sub>	5/8	1 1/2	4 <sup>1</sup> / <sub>32</sub>	6 <sup>7</sup> / <sub>16</sub>	16 <sup>3</sup> / <sub>16</sub>	5	8 <sup>1</sup> / <sub>16</sub>	25	7/8	1/2	1	3.373 3.363	8 <sup>13</sup> / <sub>16</sub>	1 <sup>19</sup> / <sub>32</sub>	1 <sup>3</sup> / <sub>16</sub>	24 <sup>1</sup> / <sub>16</sub>	30 <sup>1</sup> / <sub>16</sub>	4 <sup>3</sup> / <sub>16</sub>	6 <sup>3</sup> / <sub>16</sub>	2 <sup>5</sup> / <sub>32</sub>	397		

FOR 5 TO 1 RATIO SEE SINGLE REDUCTION DRIVES, PAGE 8.

Backstop is available for all models, when required. For ordering see Page 7.



**DOUBLE REDUCTION UNITS**  
Shafts Lock in Direction of Arrows



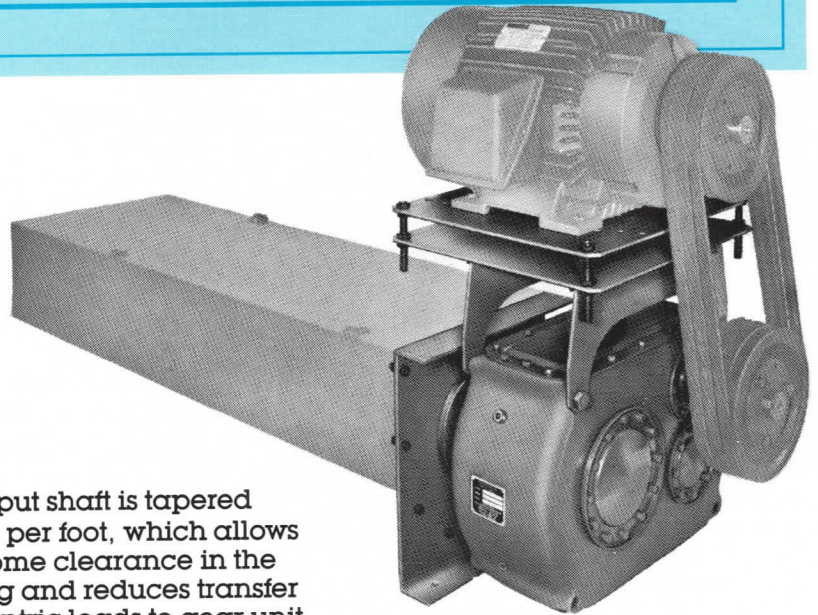
# SCD SERIES

All American Components and Construction  
Two-Year—4,000-Hour Warranty

## SCREW CONVEYOR DRIVES

### FEATURES

- All gearing is made of high purity calcium treated 4150 alloy steel, heat treated for superior shock resistance. In addition, all gearing is helical form, wide-faced and shaved for maximum load carrying properties, efficiency, and quietness of operation.
- All gears are from closed die forgings for superior grain flow in tooth area
- Pinions are integral with shafts (one piece)
- One-piece high strength cast iron housing for maximum rigidity, optimal gear tooth alignment, eliminates housing leakage
- Large capacity oil sump keeps temperature low, which helps prevent oil breakdown and premature failure
- Standard Timken tapered roller bearings throughout
- High-speed shaft induction hardened and super-finished in oil-seal area for greater sealing properties and longer seal life
- Standard double-lip oil seals
- External components black oxidized for greater corrosion protection
- Packing gland is FDA approved plastic with a Kelvar Fiber Teflon impregnated seal acceptable for contact with foods
- Output shaft is heat treated 4150 for greater strength—reduces hole rounding and breakage
- One-piece output shaft is mounted into drive gear for superior load-carrying ability and less runout



- Output shaft is tapered  $\frac{1}{4}$ -inch per foot, which allows shaft some clearance in the bushing and reduces transfer of eccentric loads to gear unit
- 100% inspection and shop testing
- Five standard ratios available
- Standard lubricants recommended

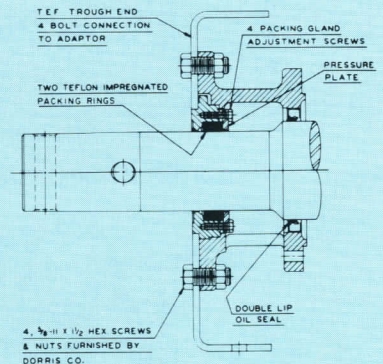
### AVAILABLE OPTIONS

- Motor mounts
- Stainless steel output shafts
- Multiple-hole output shafts

### HIGH PERFORMANCE PACKING GLAND (OPTIONAL)

The high performance packing gland provides a seal around the low-speed shaft of the drive at the trough end. This gland consists of a cast iron retainer, two Kelvar Fiber Teflon-impregnated packing rings, a steel pressure plate and four cap screws, as shown in the drawing on this page. The gland is supported by the trough end and the adaptor. The machined surfaces of the gland fit into the trough end on the front face and into the adaptor on the back face. The gland is prevented from rotating by a tooth on the gland, which fits into a notch in the adaptor.

The packing rings are compressed in the retainer and around the low-speed shaft of the drive by a pressure plate and four cap



screws, which hold the plate and rings in proper adjustment and provides for adjustment during life of the unit.



# SCD SERIES

## SCREW CONVEYOR DRIVES

### SELECTION

#### WHEN SELECTING A SCREW CONVEYOR DRIVE, IT IS NECESSARY TO HAVE THE FOLLOWING DATA:

Horsepower and RPM of motor. Is motor mount required? Top or side mount position? Size and RPM of the screw conveyor. Will conveyor be horizontal or inclined? If inclined, the drive should be placed at the high end of the conveyor. Bore of screw conveyor flight. Service classification of drive.

**CAUTION: Guarantee void if motor horsepower exceeds the horsepower rating of the gear drive.**

### HOW TO ORDER SCREW CONVEYOR DRIVES

Obtain the Service Classification from Table 1, Page 4 and the size of the drive from Table 2, Page 6. Standard output shaft diameters that are available for each size of drive are shown on Table 7. Motor plates are prepunched to accept "T" frame motor sizes shown in Tables 17 and 18, Page 20. Position "T" requires Type W motor mount. Positions LS and RS require Type H Motor mount. Positions shown on page 18.

Motor mount selection is based on Gear Drive Size, Trough End Type, Trough End Size and Motor Mount Position. See Table 16, Page 19.

SCD screw conveyor drives require Dorris trough ends as shown on page 22. Trough ends conform to industry standards with the exception of the 4 3/4 diameter hole on the center line of the trough end, and the four 2 1/2 diameter holes spaced at 90 degrees on an 8 inch bolt circle. To order, use the proper prefix ahead of the size of the conveyor. For example: TEF 16 for a 16 inch U-Trough End Flange.

Screw Conveyor Drive	215	SCD	10	2 7/16
	Unit size of Drive	Type Drive	Gear Ratio	Output shaft Diameter
Motor Mount	215	W	MM	Position T
	Unit size of Motor Mount	Wide Type	Motor Mount	
Motor Mount	215	H	MM	Position RS or Position LS
	Unit size of Motor Mount	High Type	Motor Mount	
Trough End		TEF	12	
		Type of Trough End (For Four Bolt Connection)	Size of Conveyor	

### Order Example

A typical order could be written:

- 1—215 SCD 10, 2 7/16 Screw Conveyor Drive
- 1—215 W MM Motor Mount, Position T or
- 1—215 H MM Motor Mount, Position RS or LS
- 1—TEF 12 Trough End

### V-Belt Selection

See Tables 20 and 21, Page 21 for center to center dimensions for the V-belt drive. To select the V-belt drive for 215 SCD 10, 2 7/16, see Table 12, Page 16. On the same line as output RPM is shown the V-belt ratio and the input RPM under the size of drive.

Example: At 130 RPM, the V-belt ratio is 1.36, and the input RPM would be 1290. With this information, the V-belt drive can be selected from V-belt drive catalogs.

TABLE 7. SCD UNIT SIZE AND GEAR RATIOS

The 5:1 gear ratio is a single reduction drive. The other gear ratios are double reduction drives.

Model SCD Unit Size	Standard Output Shaft Diameters					Actual Gear Ratios				
	1 1/2	2	2 7/16	3	3 7/16	5:1	10:1	15:1	20:1	25:1
315 SCD	No	No	Yes	Yes	Yes	4.96	9.90	14.76	19.65	25.00
307 SCD	No	No	Yes	Yes	Yes	4.52	10.04	15.10	19.66	25.42
215 SCD	No	Yes	Yes	Yes	Yes	5.04	9.92	14.62	19.81	24.99
207 SCD	Yes	Yes	Yes	Yes	No	4.96	9.99	14.68	20.40	25.01
203 SCD	Yes	Yes	Yes	No	No	5.05	10.02	14.96	20.39	25.24
115 SCD	Yes	Yes	No	No	No	4.95	10.19	15.04	19.80	25.01
107 SCD	Yes	Yes	No	No	No	5.05	10.16	15.03	19.76	24.98

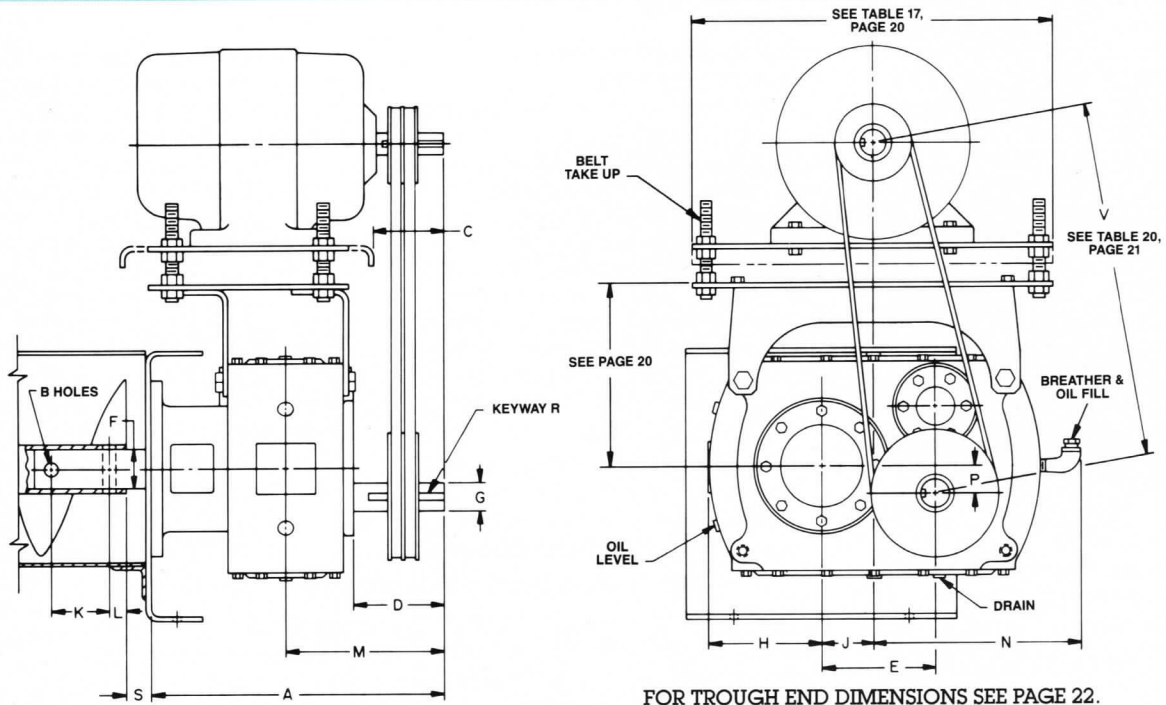
Note: Some sizes not shown as standard are available upon request.



# SCD SERIES

**GEAR RATIO 5 TO 1  
SINGLE REDUCTION GEARING**

## SCREW CONVEYOR DRIVES



FOR TROUGH END DIMENSIONS SEE PAGE 22.

POSITION T MOTOR MOUNT SHOWN, FOR POSITION RS AND LS SEE PAGE 18.

**TABLE 8. SCD DRIVES, SINGLE REDUCTION, 5 TO 1 RATIO.**

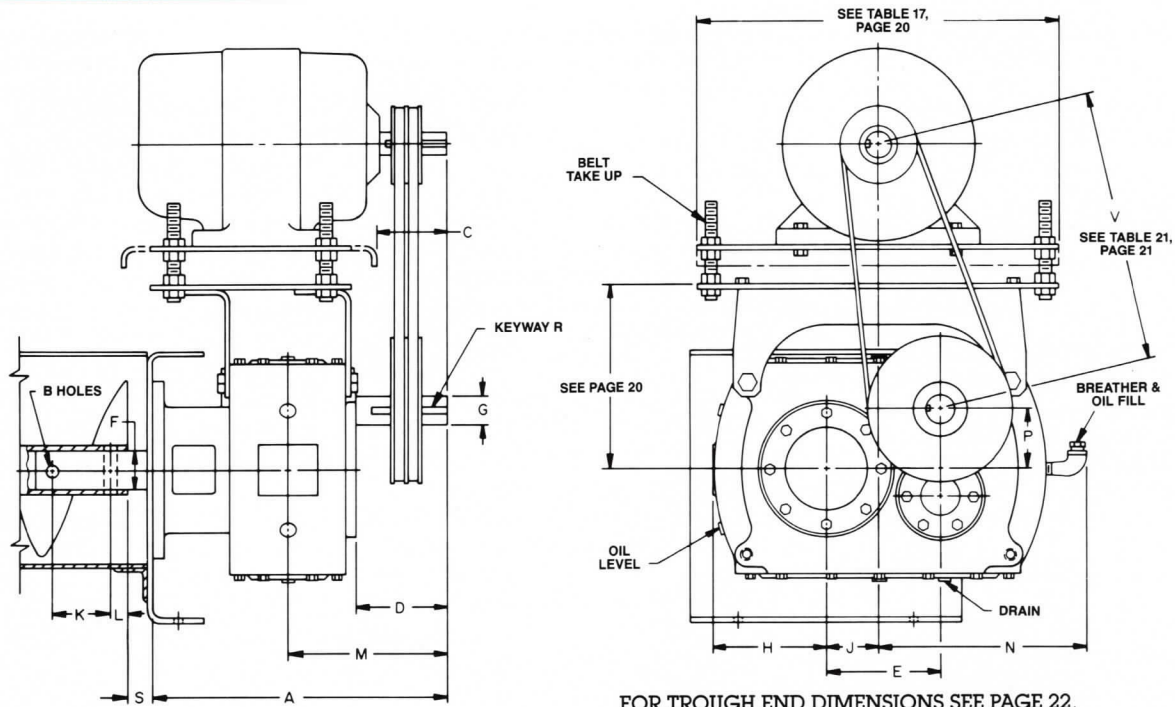
Drive Size	Output Shaft Dia.	Screw Conv. Size	Dimensions In Inches																Weight Pounds
			A	B	C	D	E	F	G	H	J	K	L	M	N	P	R	S	
107SCD05	1 1/2	6,9,10	11 5/16	17/32	3 3/16	3 1/8	4	1 1/2	7/8	4 3/16	1 13/16	3	7/8	5 1/16	7 3/4	1 5/16	3/16	1 1/4	63
	2	9,10,12		2 1/32				2											67
115SCD05	1 1/2	6,9,10	12 7/16	17/32	3 3/16	3 1/4	5 1/8	1 1/2	1 1/4	5 3/16	2 5/16	3	7/8	6 3/16	9 1/4	1 1/32	1/4	1 1/4	105
	2	9,10,12		2 1/32				2											109
203SCD05	1 1/2	6,9,10	13 5/16	17/32	4 1/16	3 3/4	5 7/16	1 1/2	1 3/8	5 1/2	2 1/2	3	7/8	6 13/16	9 3/4	1 3/8	5/16	1 1/4	119
	2	9,10,12		2 1/32				2					123						
	2 7/16	12,14		2 1/32				2 7/16					128						
207SCD05	1 1/2	6,9,10	15 3/16	17/32	4	4 5/8	5 5/8	1 1/2	1 1/2	5 7/8	2 3/4	3	7/8	8 3/16	10 3/8	1 7/16	3/8	1 1/4	152
	2	9,10,12		2 1/32				2					156						
	2 7/16	12,14		2 1/32				2 7/16					161						
	3	12,14,16,18,20		2 5/32				3					168						
215SCD05	2	9,10,12	16 11/16	21/32	4	5 1/8	6 1/2	2	1 5/8	6 3/8	2 7/8	3	7/8	9 1/16	11	1 1/16	3/8	1 1/4	199
	2 7/16	12,14		2 1/32				2 7/16					205						
	3	12,14,16,18,20		2 5/32				3					211						
	3 7/16	18,20,24		2 9/32				3 7/16					222						
307SCD05	2 7/16	12,14	19 1/16	21/32	5	5 7/16	7 3/8	2 7/16	1 3/4	7 3/4	3 1/2	3	1 5/16	10 21/32	12 3/4	1 3/4	3/8	1 1/4	322
	3	12,14,16,18,20		2 5/32				3					329						
	3 7/16	18,20,24		2 9/32				4					340						
315SCD05	2 7/16	12,14	19 5/16	21/32	5	6 7/16	8 23/32	2 7/16	2	8 9/16	3 3/4	3	1 5/16	11 17/32	14	2	1/2	1 1/4	412
	3	12,14,16,18,20		2 5/32				3					418						
	3 7/16	18,20,24		2 9/32				4					429						



# SCD SERIES

**GEAR RATIOS 10, 15, 20, AND 25 TO 1  
DOUBLE REDUCTION GEARING**

## SCREW CONVEYOR DRIVES



FOR TROUGH END DIMENSIONS SEE PAGE 22.

POSITION T MOTOR MOUNT SHOWN, FOR POSITION RS AND LS SEE PAGE 18.

**TABLE 9. SCD DRIVES, DOUBLE REDUCTION, 10-15-20-25 TO 1 RATIO.**

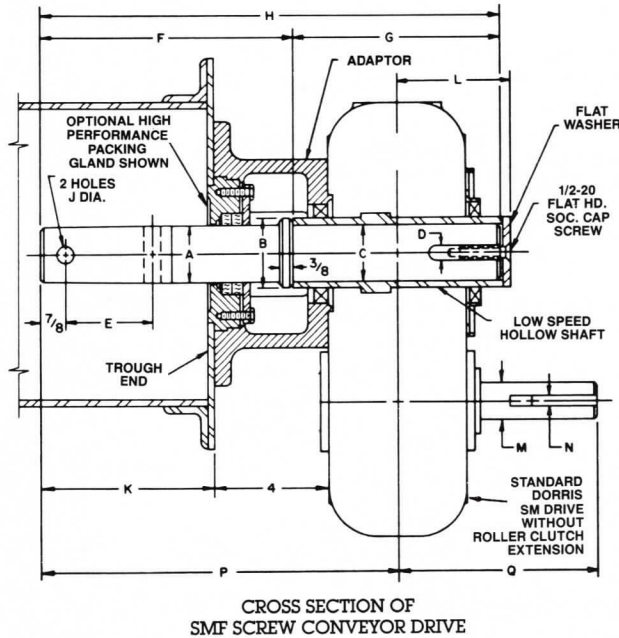
Drive Size	Output Shaft Dia.	Screw Conv. Size	Dimensions In Inches															Weight Pounds	
			A	B	C	D	E	F	G	H	J	K	L	M	N	P	R		S
107SCD	1½	6,9,10	11⅝	17/32	3⅜	3⅝	4	1½	7/8	4⅜	11⅜	3	7/8	5⅞	7¾	2⅜	3/8	1¼	67
	2	9,10,12		21/32				2											71
115SCD	1½	6,9,10	12⅞	17/32	3⅜	3¼	5½	1½	1¼	5⅞	2⅝	3	7/8	6⅜	9¼	2⅝	¼	1¼	113
	2	9,10,12		21/32				2											117
203SCD	1½	6,9,10	13⅝	17/32	4⅜	3¾	5⅞	1½	1⅝	5½	2½	3	7/8	6⅜	9¾	2⅞	5/8	1¼	129
	2	9,10,12		21/32				2					133						
	2⅞	12,14		21/32				2⅞					138						
207SCD	1½	6,9,10	15⅝	17/32	4	4⅝	5½	1½	1½	5½	2¾	3	7/8	8⅜	10⅝	3⅜	3/8	1¼	165
	2	9,10,12		21/32				2					169						
	2⅞	12,14		21/32				2⅞					174						
	3	12,14,16,18,20		25/32				3					181						
215SCD	2	9,10,12	16⅜	21/32	4	5⅝	6½	2	1⅝	6⅝	2½	3	7/8	9⅜	11	3⅜	3/8	1¼	217
	2⅞	12,14		21/32				2⅞					223						
	3	12,14,16,18,20		25/32				3					229						
	3⅞	18,20,24		29/32				3⅞					240						
307SCD	2⅞	12,14	19⅞	21/32	5	5⅞	7⅝	2⅞	1¼	7¾	3½	3	15/16	10⅜	12¾	4⅞	3/8	1¼	360
	3	12,14,16,18,20		25/32				3					378						
	3⅞	18,20,24		29/32				3⅞					378						
315SCD	2⅞	12,14	19⅞	21/32	5	6⅞	8⅜	2⅞	2	8⅞	3¾	3	15/16	11⅜	14	4⅞	½	1¼	454
	3	12,14,16,18,20		25/32				3					460						
	3⅞	18,20,24		29/32				3⅞					471						



# SMF SERIES

**ALL AMERICAN COMPONENTS AND CONSTRUCTION  
TWO-YEAR—4,000-HOUR WARRANTY  
GEAR RATIOS 5, 10, 15, 20 AND 25 TO 1  
SINGLE AND DOUBLE REDUCTION GEARING**

## SCREW CONVEYOR DRIVES



### SMF SCREW CONVEYOR DRIVE WITH INTERCHANGEABLE DRIVE SHAFT

SMF Drives are a combination of the SM Shaft Mounted Drives and the SCD Screw Conveyor Drives. The SCD Adaptor is assembled to the SM Drive and a Solid Drive Shaft is fitted into the Hollow Low Speed Shaft. Special materials such as stainless steel may be used for the Solid Drive Shaft.

Available in sizes 107 through 315

Parts for field conversion from a SM Drive to a SMF Drive are available for sizes 107 through 307 only. 315 SMF must be assembled by the factory.

SMF Gear Ratios, Motor Mounts and Trough Ends are the same as the SCD Drives. Refer to page 11 for ordering procedure of Screw Conveyor Drives substituting SMF for SCD. SMF Drives can be ordered without the low speed drive shaft or packing gland.

**TABLE 10. SMF DRIVES, SINGLE AND DOUBLE REDUCTION 5-10-15-20 AND 25 TO 1 RATIO**

Drive Size	Dimensions In Inches															Weight Pounds
	A	B	C	D	E	F	G	H	J	K	L	M	N	P	Q	
107SMF	1½	2	1⅞	¾	3	8⅞	6	14⅞	17/32	6	3⅝	⅞	⅜	11¾	5⅞	67
	2								21/32							71
115SMF	1½	2⅜	1⅞	½	3	8⅞	7¼	15⅞	17/32	6	3⅝	1¼	¼	12⅜	6⅞	113
	2								21/32							117
203SMF	1½	2⅝	2⅞	½	3	8⅞	7½	16⅞	17/32	6	4⅞	1⅜	⅝	12½	6⅞	129
	2								21/32							133
	2⅞								6⅝							138
207SMF	1½	3	2⅞	⅝	3	8⅞	8½	17⅞	17/32	6	4⅞	1½	⅜	13	8⅞	165
	2								21/32							169
	2⅞								6⅝							174
	3								6⅜							181
215SMF	2	3⅞	2⅞	¾	3	8⅞	9½	18⅞	21/32	6	5⅞	1⅝	⅜	13½	9⅞	217
	2⅞								25/32							223
	3								6⅜							229
	3⅞								8⅜							240
307SMF	2⅞	4	3⅞	⅞	3	9¼	11⅞	20⅞	21/32	6⅝	6⅝	1¾	⅜	15⅞	10⅞	360
	3								25/32							367
	3⅞								8⅜							378
315SMF	2⅞	—	3⅞	—	3	9¼	—	—	21/32	6⅝	6⅝	2	½	15⅞	11⅞	454
	3								25/32							460
	3⅞								8⅜							471



# SM, SCD & SMF SERIES

## V-BELT DRIVE RATIOS

### SHAFT MOUNTED DRIVE SCREW CONVEYOR DRIVE

It is good practice to keep the V-belt drive ratio to a minimum. For this reason SM, SCD and SMF gear drives are manufactured in five different gear ratios. They are 5:1, 10:1, 15:1, 20:1 and 25:1. This large number of gear ratios allow the designer an opportunity to select the gear ratio for the most economical V-belt drive for each particular application.

V-belt drive ratio and input RPM are shown in tables 11, 12, 13, 14 and 15. Output speeds from 24 to 350 RPM are based on the use of 1750 RPM motor. Output speeds from 10 to 22 RPM are based on the use of 1160 RPM motor.

V-belt drive shaft center dimensions are shown in this bulletin. For SM, SCD and SMF drives, see tables 20 and 21.

V-belt selection tables, not shown in this bulletin, give sheave combinations that can be used to obtain given speeds for both 1750 and 1160 RPM motors. By using the V-belt ratio, or the input RPM, with a V-belt selection table, the size of sheaves can be determined for a given output RPM.

Example: Determine the V-belt ratio and input RPM for Model 207SM25 with an output speed of 60 RPM.

Turn to table 15 for 25:1 gear ratio. Under output RPM select line showing 60 RPM. On same line under

207-25 is shown V-belt ratio of 1:17 and 1501 input RPM, using 1750 RPM motor. Use the above information with a V-belt selection table to obtain sheave combinations and standard V-belt lengths.

Example: Determine the V-belt ratio and input RPM for Model 203SCD10 with an output speed of 126 RPM.

Turn to table 12 for 10:1 gear ratio. Under output RPM select line showing 126 RPM. On same line under 203-10 is shown V-belt ratio of 1.39 and 1263 input RPM, using 1750 RPM motor. Use the above information with a V-belt selection table to obtain sheave combinations and standard V-belt lengths.

TABLE 11. V-BELT DRIVE RATIOS, 5 TO 1 GEARING, 1750 RPM MOTOR

OUTPUT RPM	107-05		115-05		203-05		207-05		215-05		307-05		315-05		OUTPUT RPM
	Gear Ratio 5:05		Gear Ratio 4.95		Gear Ratio 5.05		Gear Ratio 4.96		Gear Ratio 5.04		Gear Ratio 4.52		Gear Ratio 4.96		
	V Belt Ratio	Input RPM	V Belt Ratio	Input RPM	V Belt Ratio	Input RPM	V Belt Ratio	Input RPM	V Belt Ratio	Input RPM	V Belt Ratio	Input RPM	V Belt Ratio	Input RPM	
175	1.98	884	2.02	866	1.98	884	2.02	868	1.98	882	2.21	791	2.02	868	175
180	1.92	909	1.96	891	1.92	909	1.96	893	1.92	907	2.15	814	1.96	893	180
185	1.87	934	1.91	916	1.87	934	1.91	918	1.87	932	2.09	836	1.91	918	185
190	1.82	959	1.86	940	1.82	959	1.86	942	1.82	958	2.04	859	1.86	942	190
195	1.78	985	1.81	965	1.78	985	1.81	967	1.78	983	1.99	881	1.81	967	195
200	1.73	1010	1.77	990	1.73	1010	1.77	992	1.73	1008	1.94	904	1.77	992	200
205	1.69	1035	1.72	1015	1.69	1035	1.72	1017	1.69	1033	1.89	927	1.72	1017	205
210	1.65	1060	1.68	1039	1.65	1060	1.68	1042	1.65	1058	1.84	949	1.68	1042	210
215	1.61	1086	1.64	1064	1.61	1086	1.64	1066	1.61	1084	1.80	972	1.64	1066	215
220	1.58	1111	1.61	1089	1.58	1111	1.61	1091	1.58	1109	1.76	994	1.61	1091	220
225	1.54	1136	1.57	1134	1.54	1136	1.57	1116	1.54	1134	1.72	1017	1.57	1116	225
230	1.51	1161	1.54	1138	1.51	1161	1.54	1141	1.51	1159	1.68	1040	1.54	1141	230
235	1.47	1187	1.50	1163	1.47	1187	1.50	1166	1.47	1184	1.65	1062	1.50	1166	235
240	1.44	1212	1.47	1188	1.44	1212	1.47	1190	1.44	1210	1.61	1085	1.47	1190	240
245	1.41	1237	1.44	1213	1.41	1237	1.44	1215	1.41	1235	1.58	1107	1.44	1215	245
250	1.39	1262	1.41	1237	1.39	1262	1.41	1240	1.39	1260	1.55	1130	1.41	1240	250
255	1.36	1288	1.39	1262	1.36	1288	1.39	1265	1.36	1285	1.52	1153	1.39	1265	255
260	1.33	1313	1.36	1287	1.33	1313	1.36	1290	1.33	1310	1.49	1175	1.36	1290	260
265	1.31	1338	1.33	1312	1.31	1338	1.33	1314	1.31	1336	1.46	1198	1.33	1314	265
270	1.28	1363	1.31	1336	1.28	1363	1.31	1339	1.28	1361	1.43	1220	1.31	1339	270
275	1.26	1389	1.29	1361	1.26	1388	1.29	1364	1.26	1386	1.41	1243	1.29	1364	275
280	1.24	1414	1.26	1386	1.24	1414	1.26	1389	1.24	1411	1.38	1266	1.26	1389	280
285	1.22	1439	1.24	1411	1.22	1439	1.24	1414	1.22	1436	1.36	1288	1.24	1414	285
290	1.19	1464	1.22	1435	1.19	1464	1.22	1438	1.19	1462	1.34	1311	1.22	1438	290
295	1.19	1490	1.20	1460	1.17	1490	1.20	1463	1.17	1487	1.31	1333	1.20	1463	295
300	1.16	1515	1.18	1485	1.16	1515	1.18	1488	1.16	1512	1.29	1356	1.18	1488	300
310	1.12	1565	1.14	1534	1.12	1565	1.14	1538	1.12	1562	1.25	1401	1.14	1538	310
320	1.08	1616	1.10	1584	1.08	1616	1.10	1587	1.08	1613	1.21	1446	1.10	1587	320
330	1.05	1666	1.07	1633	1.05	1666	1.07	1637	1.05	1663	1.17	1492	1.07	1637	330
340	1.02	1717	1.04	1683	1.02	1717	1.04	1686	1.02	1714	1.14	1537	1.04	1686	340
350	1.00	1767	1.01	1732	1.00	1767	1.01	1736	1.00	1764	1.11	1582	1.01	1736	350



# SM, SCD & SMF V-Belt Drive Ratios

**TABLE 12. V-BELT DRIVE RATIOS, 10 TO 1 GEARING, 1750 RPM MOTOR**

OUTPUT RPM	107-10		115-10		203-10		207-10		215-10		307-10		315-10		OUTPUT RPM
	Gear Ratio 10.16		Gear Ratio 10.19		Gear Ratio 10.02		Gear Ratio 9.99		Gear Ratio 9.92		Gear Ratio 10.04		Gear Ratio 9.90		
	V-Belt Ratio	Input RPM	V-Belt Ratio	Input RPM	V-Belt Ratio	Input RPM	V-Belt Ratio	Input RPM	V-Belt Ratio	Input RPM	V-Belt Ratio	Input RPM	V-Belt Ratio	Input RPM	
114	1.51	1158	1.51	1162	1.53	1142	1.54	1139	1.55	1131	1.53	1145	1.55	1129	114
116	1.48	1179	1.48	1182	1.50	1162	1.51	1159	1.52	1151	1.50	1165	1.52	1148	116
118	1.46	1199	1.46	1202	1.48	1182	1.48	1179	1.50	1171	1.48	1185	1.50	1168	118
120	1.44	1219	1.43	1223	1.46	1202	1.46	1199	1.47	1190	1.45	1205	1.47	1188	120
122	1.41	1239	1.41	1243	1.43	1222	1.44	1219	1.45	1210	1.43	1225	1.45	1208	122
124	1.39	1260	1.38	1264	1.41	1242	1.41	1239	1.42	1230	1.41	1245	1.43	1228	124
126	1.37	1280	1.36	1284	1.39	1263	1.39	1259	1.40	1250	1.38	1265	1.40	1248	126
128	1.35	1300	1.34	1304	1.36	1283	1.37	1279	1.38	1270	1.36	1285	1.38	1268	128
130	1.32	1321	1.32	1325	1.34	1303	1.35	1299	1.36	1290	1.34	1305	1.36	1287	130
132	1.30	1341	1.30	1345	1.32	1323	1.33	1319	1.34	1310	1.32	1325	1.34	1307	132
134	1.28	1361	1.28	1365	1.30	1343	1.31	1339	1.32	1329	1.30	1345	1.32	1327	134
136	1.27	1382	1.26	1386	1.28	1363	1.29	1359	1.30	1349	1.28	1365	1.30	1346	136
138	1.25	1402	1.24	1406	1.27	1383	1.27	1379	1.28	1369	1.26	1386	1.28	1366	138
140	1.23	1422	1.23	1427	1.25	1403	1.25	1399	1.26	1389	1.25	1406	1.26	1386	140
142	1.21	1443	1.21	1447	1.23	1423	1.23	1419	1.24	1409	1.23	1426	1.24	1406	142
144	1.20	1463	1.19	1467	1.21	1443	1.22	1439	1.23	1428	1.21	1446	1.23	1426	144
146	1.18	1483	1.18	1488	1.20	1463	1.20	1459	1.21	1448	1.19	1466	1.21	1445	146
148	1.16	1504	1.16	1508	1.18	1483	1.18	1479	1.19	1468	1.18	1486	1.19	1465	148
150	1.15	1524	1.14	1528	1.16	1503	1.17	1499	1.18	1488	1.16	1506	1.18	1485	150
152	1.13	1544	1.13	1549	1.15	1523	1.15	1518	1.16	1508	1.15	1526	1.16	1505	152
154	1.12	1565	1.12	1569	1.13	1543	1.14	1538	1.15	1528	1.13	1546	1.15	1525	154
156	1.10	1585	1.10	1590	1.12	1563	1.12	1558	1.13	1548	1.12	1566	1.13	1544	156
158	1.09	1605	1.09	1610	1.11	1583	1.11	1578	1.12	1567	1.10	1586	1.12	1564	158
160	1.08	1626	1.07	1630	1.09	1603	1.09	1598	1.10	1587	1.09	1606	1.10	1584	160
162	1.06	1646	1.06	1651	1.08	1623	1.08	1618	1.09	1607	1.08	1626	1.09	1604	162
164	1.05	1666	1.05	1671	1.06	1643	1.07	1638	1.08	1627	1.06	1647	1.08	1624	164
166	1.04	1687	1.03	1692	1.05	1663	1.06	1658	1.06	1647	1.05	1667	1.06	1643	166
168	1.03	1707	1.02	1712	1.04	1683	1.04	1678	1.05	1667	1.04	1687	1.05	1663	168
170	1.01	1727	1.01	1732	1.03	1703	1.03	1698	1.04	1686	1.03	1707	1.04	1683	170
172	1.00	1747	1.00	1753	1.02	1723	1.02	1718	1.03	1706	1.01	1727	1.03	1703	172
174	1.00	1768	1.00	1773	1.00	1743	1.00	1738	1.01	1726	1.00	1747	1.01	1723	174

**TABLE 13. V-BELT DRIVE RATIOS, 15 TO 1 GEARING, 1750 RPM MOTOR**

OUTPUT RPM	107-15		115-15		203-15		207-15		215-15		307-15		315-15		OUTPUT RPM
	Gear Ratio 15.03		Gear Ratio 15.04		Gear Ratio 14.96		Gear Ratio 14.68		Gear Ratio 14.62		Gear Ratio 15.10		Gear Ratio 14.76		
	V-Belt Ratio	Input RPM	V-Belt Ratio	Input RPM	V-Belt Ratio	Input RPM	V-Belt Ratio	Input RPM	V-Belt Ratio	Input RPM	V-Belt Ratio	Input RPM	V-Belt Ratio	Input RPM	
86	1.35	1293	1.35	1293	1.36	1287	1.39	1257	1.39	1257	1.35	1299	1.38	1269	86
87	1.34	1308	1.34	1308	1.34	1302	1.38	1272	1.38	1272	1.33	1314	1.36	1284	87
88	1.32	1323	1.32	1324	1.33	1316	1.36	1287	1.36	1287	1.32	1329	1.35	1299	88
89	1.31	1338	1.31	1339	1.31	1331	1.35	1301	1.35	1301	1.30	1344	1.33	1314	89
90	1.29	1353	1.29	1354	1.30	1346	1.33	1316	1.33	1316	1.29	1359	1.32	1328	90
91	1.28	1368	1.28	1369	1.29	1361	1.32	1330	1.32	1330	1.27	1374	1.30	1343	91
92	1.27	1383	1.27	1384	1.27	1376	1.30	1345	1.30	1345	1.26	1389	1.29	1358	92
93	1.25	1398	1.25	1399	1.26	1391	1.29	1360	1.29	1360	1.25	1404	1.27	1373	93
94	1.24	1413	1.24	1414	1.24	1406	1.27	1374	1.27	1374	1.23	1419	1.26	1387	94
95	1.23	1428	1.23	1429	1.23	1421	1.26	1389	1.26	1389	1.22	1434	1.25	1402	95
96	1.21	1443	1.21	1444	1.22	1436	1.25	1404	1.25	1404	1.21	1450	1.23	1417	96
97	1.20	1458	1.20	1459	1.21	1451	1.23	1418	1.23	1418	1.20	1465	1.22	1432	97
98	1.19	1473	1.19	1474	1.19	1466	1.22	1433	1.22	1433	1.18	1480	1.21	1446	98
99	1.18	1488	1.18	1489	1.18	1481	1.21	1447	1.21	1447	1.17	1495	1.20	1461	99
100	1.16	1503	1.16	1504	1.17	1496	1.20	1462	1.20	1462	1.16	1510	1.18	1476	100
101	1.15	1518	1.15	1519	1.16	1511	1.18	1477	1.18	1477	1.15	1525	1.17	1491	101
102	1.14	1533	1.14	1534	1.15	1526	1.17	1491	1.17	1491	1.14	1540	1.16	1506	102
103	1.13	1548	1.13	1549	1.14	1541	1.16	1506	1.16	1506	1.13	1555	1.15	1520	103
104	1.12	1563	1.12	1564	1.12	1556	1.15	1520	1.15	1520	1.11	1570	1.14	1535	104
105	1.11	1578	1.11	1579	1.11	1571	1.14	1535	1.14	1535	1.10	1585	1.13	1550	105
106	1.10	1593	1.10	1594	1.10	1586	1.13	1550	1.13	1550	1.09	1602	1.12	1565	106
107	1.09	1608	1.09	1609	1.09	1601	1.12	1564	1.12	1564	1.08	1616	1.11	1580	107
108	1.08	1623	1.08	1624	1.08	1616	1.11	1579	1.11	1579	1.07	1631	1.10	1594	108
109	1.07	1638	1.07	1639	1.07	1631	1.10	1594	1.10	1594	1.06	1646	1.09	1609	109
110	1.06	1653	1.06	1654	1.06	1646	1.09	1608	1.09	1608	1.05	1661	1.08	1624	110
111	1.05	1668	1.05	1669	1.05	1661	1.08	1623	1.08	1623	1.04	1676	1.07	1638	111
112	1.04	1683	1.04	1684	1.04	1676	1.07	1637	1.07	1637	1.03	1691	1.06	1653	112
113	1.03	1698	1.03	1700	1.04	1690	1.06	1652	1.06	1652	1.03	1706	1.05	1668	113
114	1.02	1713	1.02	1715	1.03	1705	1.05	1667	1.05	1667	1.02	1721	1.04	1683	114
115	1.01	1728	1.01	1730	1.02	1720	1.04	1681	1.04	1681	1.01	1736	1.03	1697	115
116	1.00	1743	1.00	1745	1.01	1735	1.03	1696	1.03	1696	1.00	1751	1.02	1712	116



# SM, SCD & SMF V-Belt Drive Ratios

**TABLE 14. V-BELT DRIVE RATIOS, 20 TO 1 GEARING, 1750 RPM MOTOR**

OUTPUT RPM	107-20		115-20		203-20		207-20		215-20		307-20		315-20		OUTPUT RPM
	Gear Ratio 19.76		Gear Ratio 19.80		Gear Ratio 20.39		Gear Ratio 20.40		Gear Ratio 19.81		Gear Ratio 19.66		Gear Ratio 19.65		
	V-Belt Ratio	Input RPM	V-Belt Ratio	Input RPM	V-Belt Ratio	Input RPM	V-Belt Ratio	Input RPM	V-Belt Ratio	Input RPM	V-Belt Ratio	Input RPM	V-Belt Ratio	Input RPM	
58	1.53	1146	1.52	1148	1.48	1183	1.48	1183	1.52	1149	1.54	1140	1.54	1140	58
59	1.50	1166	1.50	1168	1.45	1203	1.45	1204	1.50	1169	1.50	1160	1.50	1159	59
60	1.48	1186	1.47	1188	1.43	1223	1.43	1224	1.47	1189	1.48	1180	1.48	1179	60
61	1.45	1205	1.45	1208	1.41	1244	1.41	1244	1.45	1208	1.46	1200	1.46	1199	61
62	1.43	1225	1.43	1228	1.38	1264	1.38	1265	1.43	1228	1.44	1219	1.44	1218	62
63	1.41	1245	1.40	1247	1.36	1285	1.36	1285	1.40	1248	1.41	1239	1.41	1238	63
64	1.38	1265	1.38	1267	1.34	1305	1.34	1306	1.38	1268	1.39	1258	1.39	1258	64
65	1.36	1284	1.36	1287	1.32	1325	1.32	1326	1.36	1288	1.37	1278	1.37	1277	65
66	1.34	1304	1.34	1307	1.30	1346	1.30	1346	1.34	1307	1.35	1298	1.35	1297	66
67	1.32	1324	1.32	1327	1.28	1366	1.28	1367	1.32	1327	1.33	1317	1.33	1317	67
68	1.30	1344	1.30	1346	1.26	1387	1.26	1387	1.30	1347	1.31	1337	1.31	1336	68
69	1.28	1363	1.28	1366	1.24	1407	1.24	1408	1.28	1367	1.29	1357	1.29	1356	69
70	1.27	1383	1.26	1386	1.23	1427	1.23	1428	1.26	1387	1.27	1376	1.27	1375	70
71	1.25	1403	1.24	1406	1.21	1448	1.21	1448	1.28	1407	1.25	1396	1.25	1395	71
72	1.23	1423	1.23	1426	1.19	1468	1.19	1469	1.23	1426	1.24	1416	1.24	1415	72
73	1.21	1442	1.21	1445	1.18	1488	1.18	1489	1.21	1446	1.22	1435	1.22	1434	73
74	1.20	1462	1.19	1465	1.16	1509	1.16	1510	1.19	1466	1.20	1455	1.20	1454	74
75	1.18	1482	1.18	1485	1.14	1529	1.14	1530	1.18	1486	1.19	1475	1.19	1474	75
76	1.17	1502	1.16	1505	1.13	1550	1.13	1550	1.16	1506	1.17	1495	1.17	1493	76
77	1.15	1522	1.15	1525	1.11	1570	1.11	1571	1.15	1525	1.16	1514	1.16	1513	77
78	1.14	1541	1.13	1544	1.10	1590	1.10	1591	1.13	1545	1.14	1533	1.14	1533	78
79	1.12	1561	1.12	1564	1.09	1611	1.09	1612	1.12	1565	1.13	1553	1.13	1552	79
80	1.11	1581	1.10	1584	1.07	1631	1.07	1632	1.10	1585	1.11	1573	1.11	1572	80
81	1.09	1601	1.09	1604	1.06	1652	1.06	1652	1.09	1605	1.10	1592	1.10	1592	81
82	1.08	1620	1.08	1624	1.05	1672	1.05	1673	1.08	1624	1.09	1612	1.09	1611	82
83	1.07	1640	1.07	1643	1.03	1692	1.03	1693	1.07	1644	1.07	1632	1.07	1631	83
84	1.05	1660	1.05	1663	1.02	1713	1.02	1714	1.05	1664	1.06	1651	1.06	1651	84
85	1.04	1680	1.04	1683	1.01	1733	1.01	1734	1.04	1684	1.05	1671	1.05	1670	85
86	1.03	1700	1.03	1703	1.00	1754	1.00	1754	1.03	1704	1.04	1691	1.04	1690	86
87	1.02	1719	1.02	1723		1774		1775	1.02	1723	1.02	1710	1.02	1710	87
88	1.01	1739	1.00	1742		1794		1795	1.00	1743	1.01	1730	1.01	1729	88

**TABLE 15. V-BELT DRIVE RATIOS, 25 TO 1 GEARING, 1750-1160 RPM MOTOR**

OUTPUT RPM	107-25		115-25		203-25		207-25		215-25		307-25		315-25		OUTPUT RPM
	Gear Ratio 24.98		Gear Ratio 25.01		Gear Ratio 25.24		Gear Ratio 25.01		Gear Ratio 24.99		Gear Ratio 25.42		Gear Ratio 25.00		
	V-Belt Ratio	Input RPM	V-Belt Ratio	Input RPM	V-Belt Ratio	Input RPM	V-Belt Ratio	Input RPM	V-Belt Ratio	Input RPM	V-Belt Ratio	Input RPM	V-Belt Ratio	Input RPM	
10	4.64	250	4.64	250	4.60	252	4.64	250	4.64	250	4.57	254	4.64	250	10
12	3.87	300	3.87	300	3.83	303	3.87	300	3.87	300	3.80	305	3.87	300	12
14	3.31	350	3.31	350	3.27	353	3.31	350	3.31	350	3.26	356	3.31	350	14
16	2.90	400	2.90	400	2.87	404	2.90	400	2.90	400	2.85	407	2.90	400	16
18	2.58	450	2.58	450	2.56	454	2.58	450	2.58	450	2.53	458	2.58	450	18
20	2.32	500	2.32	500	2.30	505	2.32	500	2.32	500	2.28	508	2.32	500	20
22	2.11	550	2.11	550	2.09	555	2.11	550	2.11	550	2.08	559	2.11	550	22
24	2.92	600	2.92	600	2.89	606	2.92	600	2.92	600	2.87	610	2.92	600	24
26	2.70	649	2.70	650	2.67	656	2.70	650	2.70	650	2.65	661	2.70	650	26
28	2.50	699	2.50	700	2.48	707	2.50	700	2.50	700	2.46	712	2.50	700	28
30	2.34	749	2.34	750	2.31	757	2.34	750	2.34	750	2.29	763	2.34	750	30
32	2.19	799	2.19	800	2.17	808	2.19	800	2.19	800	2.15	813	2.19	800	32
34	2.06	849	2.06	850	2.04	858	2.06	850	2.06	850	2.03	864	2.06	850	34
36	1.95	899	1.95	900	1.93	909	1.95	900	1.95	900	1.91	915	1.95	900	36
38	1.84	949	1.84	950	1.82	959	1.84	950	1.84	950	1.81	966	1.84	950	38
40	1.75	999	1.75	1000	1.73	1010	1.75	1000	1.75	1000	1.72	1017	1.75	1000	40
42	1.67	1049	1.67	1050	1.65	1060	1.67	1050	1.67	1050	1.60	1068	1.67	1050	42
44	1.59	1099	1.59	1100	1.58	1111	1.59	1100	1.59	1100	1.57	1118	1.59	1100	44
46	1.52	1149	1.52	1150	1.51	1161	1.52	1150	1.52	1150	1.50	1169	1.52	1150	46
48	1.46	1199	1.46	1200	1.45	1211	1.46	1200	1.46	1200	1.43	1220	1.46	1200	48
50	1.40	1249	1.40	1250	1.39	1262	1.40	1250	1.40	1250	1.38	1271	1.40	1250	50
52	1.35	1299	1.35	1300	1.33	1312	1.35	1300	1.35	1300	1.32	1322	1.35	1300	52
54	1.30	1349	1.30	1350	1.28	1363	1.30	1350	1.30	1349	1.27	1373	1.30	1350	54
56	1.25	1399	1.25	1400	1.24	1413	1.25	1400	1.25	1399	1.23	1424	1.25	1400	56
58	1.21	1449	1.21	1451	1.20	1464	1.21	1451	1.21	1449	1.19	1474	1.21	1450	58
60	1.17	1499	1.17	1501	1.16	1514	1.17	1501	1.17	1499	1.15	1525	1.17	1500	60
62	1.13	1549	1.13	1551	1.12	1565	1.13	1551	1.13	1549	1.11	1576	1.13	1550	62
64	1.09	1599	1.09	1601	1.08	1615	1.09	1601	1.09	1599	1.08	1627	1.09	1600	64
66	1.06	1649	1.06	1651	1.05	1666	1.06	1651	1.06	1649	1.04	1678	1.06	1650	66
68	1.03	1699	1.03	1701	1.02	1716	1.03	1701	1.03	1699	1.01	1729	1.03	1700	68
70	1.00	1749	1.00	1751		1767	1.00	1751	1.00	1749		1799	1.00	1750	70

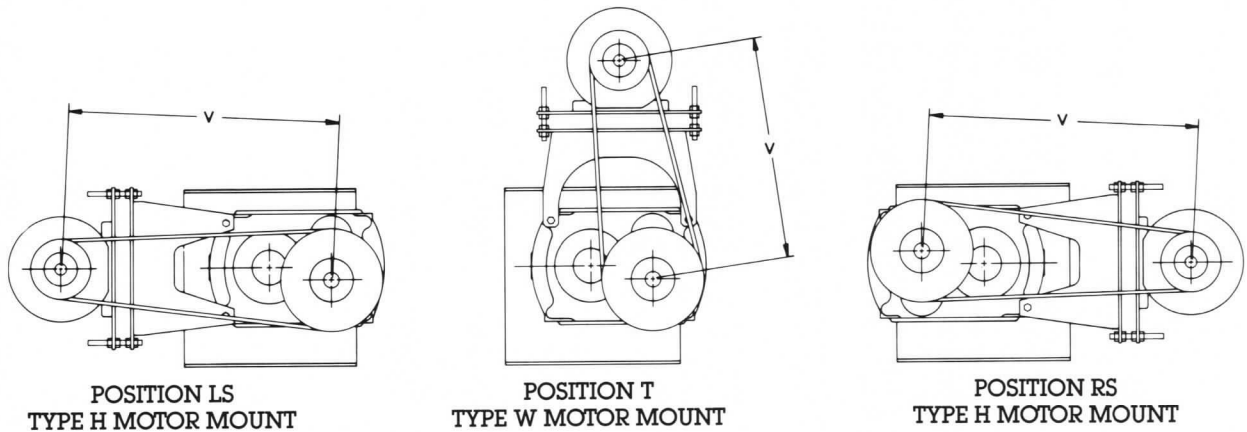
SHADED AREA INDICATES USE OF 1160 RPM MOTOR TO OBTAIN THE V-BELT RATIO SHOWN



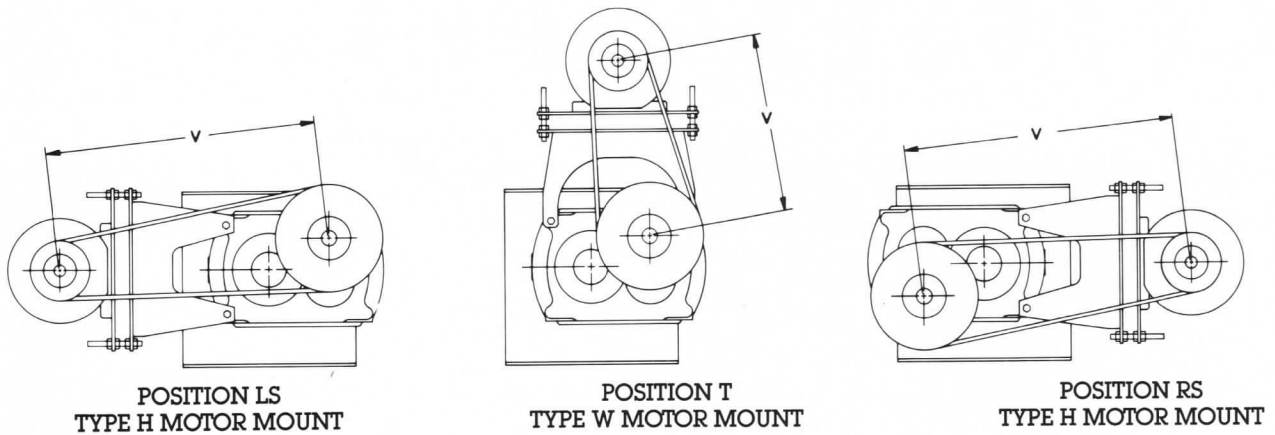
# SM, SCD & SMF SERIES

## MOTOR MOUNT POSITIONS

### SCREW CONVEYOR DRIVE GEAR RATIO 5 TO 1



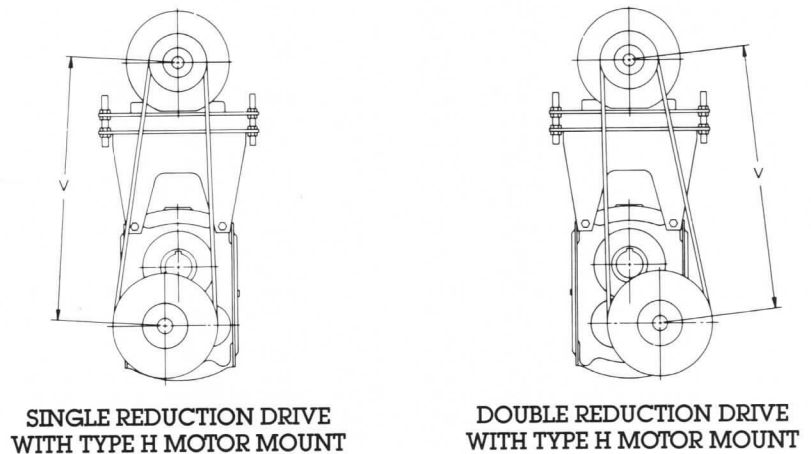
### SCREW CONVEYOR DRIVE GEAR RATIOS 10, 15, 20 AND 25 TO 1



**Caution:** When floor mounted conveyors are in position LS or RS, some models require raised trough ends to allow motor base to clear floor. TEF 6, position RS requires rotating mounting ring 180°.

**Note:** When selecting a V belt drive, the V dimension should be in a median area between the minimum and maximum dimensions shown in Tables 20 and 21. This will allow for installation and tensioning of the V belts. Opposite hand assembly available for the above drives. Please contact factory.

### SHAFT MOUNTED DRIVE





# SCD & SMF SERIES

## MOTOR MOUNT SELECTION

### SCREW CONVEYOR DRIVES TYPE W AND TYPE H MOTOR MOUNTS

SCD and SMF Drives use Motor Mounts Type W or Type H. Motor Mounts are designed to clear trough ends shown in Table 22. Use Table 16 to select proper motor mount for Trough End required. Motor Mount prefix number is the same as the Gear Drive size. Motor mount

is indicated by Type "W" (Position T) or Type "H" (Position RS and LS). Selection is based on Gear Drive Size, Trough End Type, Trough End Size and Motor Mount Position. Positions shown on Page 18.

Dimensions for Motor Mounts are shown in Tables 17 and 18,

Page 20.

V-Belt center distances are shown in Tables 20 and 21, Page 21.

Unless otherwise specified W and H Motor Mounts without Suffix will be shipped as Standard.

TABLE 16. SCD AND SMF MOTOR MOUNTS

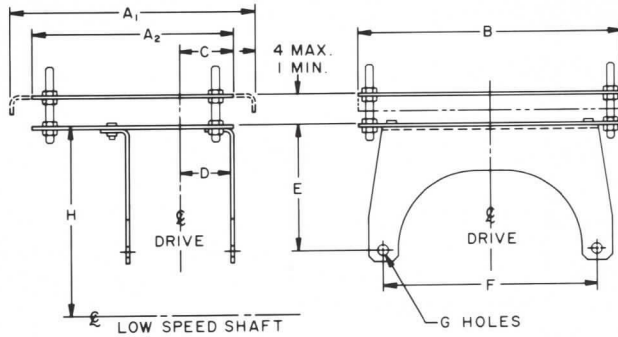
Motor Mount	107		115		203		207		215		307-315	
Position	T	RS LS	T	RS LS	T	RS LS	T	RS LS	T	RS LS	T	RS LS
Conveyor Size	<i>"U" Flange (TEF) Trough Ends</i>											
6	W	H	W	H	W	H	W	H	W	H	W	H
9		HI										
10	W1	HI	W	H	W	H	W	H	W	H	W	H
12												
14												
16												
18												
20							W1	HI				
24									W1	HI	W1	HI



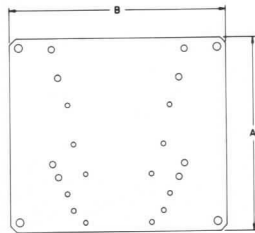
# SM, SCD & SMF Motor Mount Selection

Motor Mount dimensions shown in the tables below are for SCD, SMF and SM Gear Drives. Motor Mount holes are prepunched for motor frames shown in Tables 17, 18, 19.

EXAMPLE: 107 Series Motor Plates are punched for Nema Frames 56 thru 184T only.

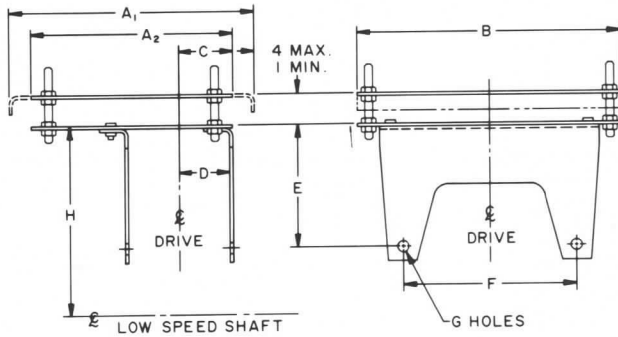


TYPE W MOTOR MOUNT



Typical Motor Plate Hole Pattern

The motor is correctly positioned on the motor plate when the motor anchor bolt holes line up with a set of anchor bolt holes in the motor plate. V-Belt center distances are shown in Tables 20 and 21, Page 21.



TYPE H MOTOR MOUNT

**TABLE 19. SM DRIVES**

H Motor Mount No.	Motor Frame Number	For Dimensions Refer to Table 18
107H	56 • 184T	
115H	56 • 215T	
203H	56 • 254T	
207H	143T • 286T	
215H	143T • 286T	
307H	182T • 326T	
315H	182T • 326T	

**TABLE 17. SCD AND SMF DRIVES—POSITION T**

W Motor Mount No.	Dimensions in Inches									Motor Frame No.	Wt. Lbs.
	A1	A2	B	C	D	E	F	G	H		
107W	—	8 3/4	12	2	1 3/4	4 9/16	9 5/8	5/8	7 17/32	56 • 184T	23
107W1	—	8 3/4	12	2	1 3/4	6 1/32	9 5/8	5/8	9	56 • 215T	25
115W	—	12	14 1/2	2 5/8	2 3/8	6 9/16	11 1/2	5/8	10 9/16	56 • 215T	36
203W	—	14	16	2 3/4	2 1/2	7 7/16	12 3/8	1 1/16	11 3/4	56 • 254T	44
207W	17 7/8	—	18 1/2	4 3/16	3	9 9/16	13 3/8	1 1/16	13 1/2	143T • 286T	61
207W1	17 7/8	—	18 1/2	4 3/16	3	10 5/16	13 3/8	1 1/16	14 3/8	143T • 286T	64
215W	17 7/8	—	18 1/2	5 5/16	3 1/2	8 1 1/16	14 7/8	1 1/16	13 1/2	143T • 286T	63
215W1	17 7/8	—	18 1/2	5 5/16	3 1/2	12 5 1/16	14 7/8	1 1/16	17 3/4	143T • 286T	73
307W	19 1/4	—	20 1/2	5 21/32	4 13/32	8 15/16	17 1/4	1 3/16	14 3/4	182T • 326T	72
307W1	19 1/4	—	20 1/2	5 21/32	4 13/32	11 1 1/16	17 1/4	1 3/16	17 3/4	182T • 326T	80
315W	19 1/4	—	20 1/2	6 17/32	4 13/32	7 7/8	17 1/2	1 3/16	14 3/4	182T • 326T	73
315W1	19 1/4	—	20 1/2	6 17/32	4 13/32	10 7/8	17 1/2	1 3/16	17 3/4	182T • 326T	81

**TABLE 18. SCD AND SMF DRIVES—POSITION RS AND LS**

H Motor Mount No.	Dimensions in Inches									Motor Frame No.	Wt. Lbs.
	A1	A2	B	C	D	E	F	G	H		
107H	—	8 3/4	12	2	1 3/4	5	5 5/16	5/8	8	56 • 184T	24
107H1	—	8 3/4	12	2	1 3/4	6 7/8	5 5/16	5/8	9 7/8	56 • 184T	27
115H	—	12	14 1/2	2 5/8	2 3/8	7 5/16	8	5/8	10 3/4	56 • 215T	37
203H	—	14	16	2 3/4	2 1/2	8 1/16	8 5/8	1 1/16	11 3/4	56 • 254T	45
207H	17 7/8	—	18 1/2	4 3/16	3	9 3/16	8 7/8	1 1/16	13 1/4	143T • 286T	62
207H1	17 7/8	—	18 1/2	4 3/16	3	10 5/16	8 7/8	1 1/16	14 3/8	143T • 286T	64
215H	17 7/8	—	18 1/2	5 5/16	3 1/2	8 1 1/16	9 5/8	1 1/16	13 1/4	143T • 286T	64
215H1	17 7/8	—	18 1/2	5 5/16	3 1/2	11 13 1/16	9 5/8	1 1/16	16 3/8	143T • 286T	71
307H	19 1/4	—	20 1/2	5 21/32	4 13/32	9 9/16	11 5/8	1 3/16	14 1/4	182T • 326T	74
307H1	19 1/4	—	20 1/2	5 21/32	4 13/32	11 1/4	11 5/8	1 3/16	16 3/8	182T • 326T	79
315H	19 1/4	—	20 1/2	6 17/32	4 13/32	9 1/4	13 3/4	1 3/16	14 1/4	182T • 326T	75
315H1	19 1/4	—	20 1/2	6 17/32	4 13/32	11 3/8	13 3/4	1 3/16	16 3/8	182T • 326T	80



# SM, SCD & SMF V-Belt Center Distances

TABLE 20. SINGLE REDUCTION GEAR DRIVE V-BELT CENTER DISTANCES, 5 TO 1 RATIO

Motor Mount	Center Distance For Motor Frames												
	56/143T/145T		182T/184T		213T/215T		254T/256T		284T/286T		324T/326T		
	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	
SCD/SMF POSITION T	107W	13.15	16.12	14.14	17.11								
	107W1	14.60	17.58	15.59	18.57								
	115W	16.58	19.55	17.57	20.54	18.31	21.28						
	203W	17.87	20.83	18.86	21.83	19.60	22.57	20.59	23.56				
	207W	19.69	22.66	20.68	23.65	21.42	24.39	22.41	25.38	23.15	26.13		
	207W1	20.92	23.89	21.91	24.89	22.66	25.63	23.65	26.62	24.39	27.37		
	215W	19.89	22.85	20.88	23.84	21.62	24.58	22.60	25.57	23.34	26.31		
	215W1	24.09	27.05	25.07	28.05	25.82	28.79	26.81	29.78	27.55	30.53		
	307W	21.36	24.31	22.34	25.30	23.08	26.04	24.07	27.03	24.81	27.77	25.79	28.76
	307W1	24.31	27.28	25.30	28.27	26.04	29.01	27.03	30.00	27.77	30.75	28.76	31.74
315W	21.82	24.76	22.80	25.73	23.53	26.47	24.51	27.45	25.25	28.19	26.23	29.18	
315W1	24.76	27.70	25.73	28.68	26.47	29.42	27.45	30.41	28.19	31.15	29.18	32.14	
SM AND SCD/SMF POSITION LS OR RS	107H	16.53	19.53	17.53	20.53								
	107H1	18.41	21.40	19.40	22.40								
	115H	20.40	23.40	21.40	24.39	22.15	25.14						
	203H	21.74	24.74	22.74	25.74	23.49	26.49	24.49	27.48				
	207H	23.68	26.68	24.68	27.67	25.43	28.42	26.43	29.42	27.17	30.17		
	207H1	24.80	27.80	25.80	28.80	26.55	29.55	27.55	30.55	28.30	31.29		
	215H	24.29	27.28	25.29	28.28	26.04	29.03	27.03	30.03	27.78	30.78		
	215H1	27.41	30.40	28.41	31.40	29.16	32.15	30.15	33.15	30.90	33.90		
	307H	26.20	29.19	27.19	30.19	27.94	30.94	28.94	31.94	29.69	32.68	30.69	33.68
	307H1	28.32	31.31	29.32	32.31	30.06	33.06	31.06	34.06	31.81	34.81	32.81	35.81
315H	27.55	30.54	28.55	31.54	29.29	32.29	30.29	33.29	31.04	34.03	32.04	35.03	
315H1	29.67	32.66	30.67	33.66	31.41	34.41	32.41	35.41	33.16	36.16	34.16	37.15	

TABLE 21. DOUBLE REDUCTION GEAR DRIVE V-BELT CENTER DISTANCES, 10-15-20-25 TO 1 RATIOS

Motor Mount	Center Distance For Motor Frames												
	56/143T/145T		182T/184T		213T/215T		254T/256T		284T/286T		324T/326T		
	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	
SCD/SMF POSITION T	107W	10.18	13.12	11.15	14.11								
	107W1	11.61	14.57	12.60	15.56								
	115W	12.74	15.68	13.72	16.67	14.45	17.41						
	203W	13.66	16.61	14.64	17.59	15.38	18.33	16.36	19.32				
	207W	15.24	18.19	16.22	19.18	16.96	19.92	17.94	20.90	18.68	21.65		
	207W1	16.47	19.42	17.45	20.41	18.19	21.15	19.18	22.14	19.92	22.88		
	215W	15.14	18.07	16.12	19.05	16.85	19.79	17.83	20.77	18.56	21.51		
	215W1	19.30	22.25	20.28	23.24	21.02	23.98	22.00	24.97	22.74	25.71		
	307W	15.46	18.37	16.42	19.35	17.15	20.09	18.13	21.07	18.86	21.81	19.84	22.79
	307W1	18.37	21.32	19.35	22.30	20.09	23.04	21.07	24.02	21.81	24.77	22.79	25.75
315W	16.00	18.88	16.95	19.84	17.67	20.57	18.63	21.54	19.36	22.27	20.33	23.25	
315W1	18.88	21.78	19.84	22.76	20.57	23.49	21.54	24.47	22.27	25.20	23.25	26.19	
SM AND SCD/SMF POSITION LS OR RS	107H	16.64	19.62	17.63	20.61								
	107H1	18.50	21.48	19.49	22.48								
	115H	20.53	23.51	21.52	24.50	22.27	25.25						
	203H	21.89	24.87	22.88	25.86	23.63	26.61	24.62	27.60				
	207H	23.84	26.81	24.83	27.81	25.57	28.55	26.57	29.55	27.31	30.29		
	207H1	24.95	27.93	25.94	28.93	26.69	29.67	27.68	30.67	28.43	31.41		
	215H	24.46	27.44	25.45	28.43	26.20	29.17	27.19	30.17	27.93	30.91		
	215H1	27.56	30.54	28.55	31.54	29.30	32.28	30.29	33.28	31.04	34.02		
	307H	26.49	29.45	27.47	30.44	28.22	31.18	29.20	32.18	29.95	32.92	30.94	33.91
	307H1	28.59	31.56	29.57	32.55	30.32	33.29	31.31	34.28	32.05	35.03	33.04	36.02
315H	27.77	30.74	28.75	31.73	29.50	32.48	30.49	33.46	31.24	34.21	32.23	35.21	
315H1	29.87	32.85	30.87	33.84	31.61	34.59	32.60	35.58	33.35	36.32	34.34	37.32	



# TEF Trough Ends, U End Conveyor

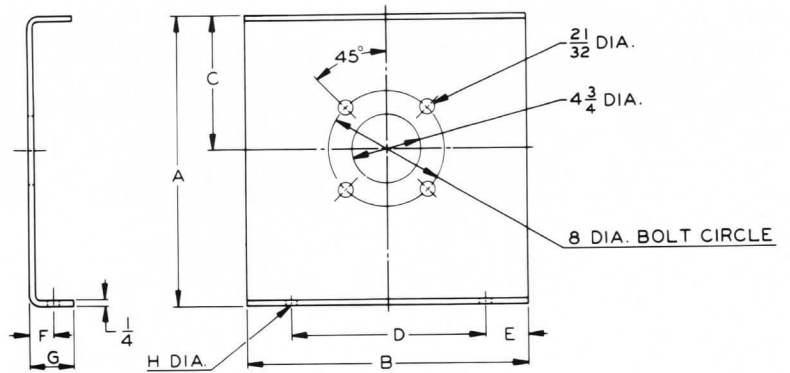
## SCREW CONVEYOR DRIVE TYPE TEF TROUGH END DIMENSIONS

The hole sizes and locations for "U" flanges shown in the drawings and tables below conform to industry standards. A 4 3/4 diameter hole and four 2 1/32 diameter holes on an 8 inch bolt circle is provided for attaching standard SCD and SMF Dorris Gear Drives.

The TEF 6 Trough End will fit the 107 through the 207 series gear drives only.

With the exception stated above, all standard Dorris Gear Drives will fit any Trough End listed. Use the prefix TEF and the Conveyor Sizes to specify the trough ends shown on this page.

EXAMPLE: TEF-12 Trough End, for a 12 inch "U" end conveyor.



TYPICAL ALL TROUGH ENDS

Type TEF Trough Ends  
Bolt Patterns for U-Trough End Flanges  
Dimensions are symmetrical about the centerline of Trough End.

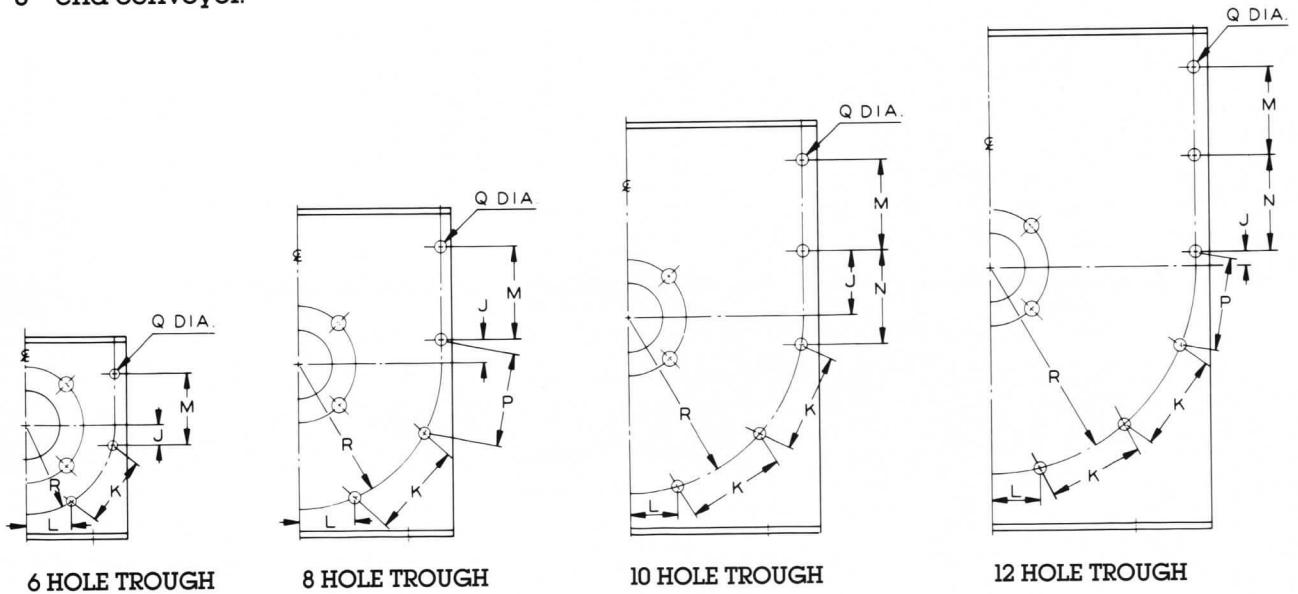


TABLE 22. TYPE TEF TROUGH END DIMENSIONS

Screw Conveyor Size	No. Holes	Dimensions in Inches																Weight Pounds
		A	B	C	D	E	F	G	H	J	K	L	M	N	P	Q	R	
6	6	10 1/8	9 3/4	4 1/2	8 1/8	1 3/16	1	2	7/16	2 1/32	4 1/16	2 1/32	4 1/8	—	—	7/16	4 7/16	9
9	8	14	13 1/2	6 1/8	9 3/8	2 1/16	1 1/2	3	9/16	1 3/16	3 3/4	2 9/16	4 1/8	—	4 1/8	7/16	6 1/4	17
10	8	15 1/4	14 1/2	6 3/8	9 1/2	2 1/2	1 3/4	3	9/16	5/8	4 3/16	2 1/32	3 1/2	—	4 1/8	7/16	6 5/8	19
12	8	17 3/8	17 1/4	7 3/4	12 1/4	2 1/2	1 5/8	3	1 1/16	1 5/16	4 1/16	3 7/8	5 5/16	—	5 3/16	9/16	7 15/16	26
14	8	20 1/8	19 1/4	9 1/4	13 1/2	2 7/8	1 5/8	3	1 1/16	1 3/32	5 1/16	3	5 5/8	—	5 15/16	9/16	8 15/16	33
16	8	22 5/8	21 1/4	10 5/8	14 7/8	3 3/16	2	3	1 1/16	1 5/8	6 5/8	3 3/4	6 3/8	—	6 5/8	1 1/16	10	40
18	10	25 1/2	24 1/4	12 1/8	16	4 1/8	2	3	1 1/16	3 7/16	5 7/8	2 15/16	5 15/16	5 15/16	—	1 1/16	11	51
20	10	28 1/2	26 1/4	13 1/2	19 1/4	3 1/2	2 1/4	3 1/4	1 3/16	4 15/32	6 1/16	3 11/32	6 1/4	6 11/16	—	1 1/16	12 3/16	61
24	12	34 5/8	30 1/4	16 1/2	20	5 1/8	2 1/2	3 1/2	1 3/16	3 1/32	6 5/8	3 5/16	6 1/8	6 5/8	6 19/32	1 1/16	14 1/4	84

Type FE (Flush End), FL (Flush End), & TU (Tubular End)  
Trough Ends available—Consult factory.



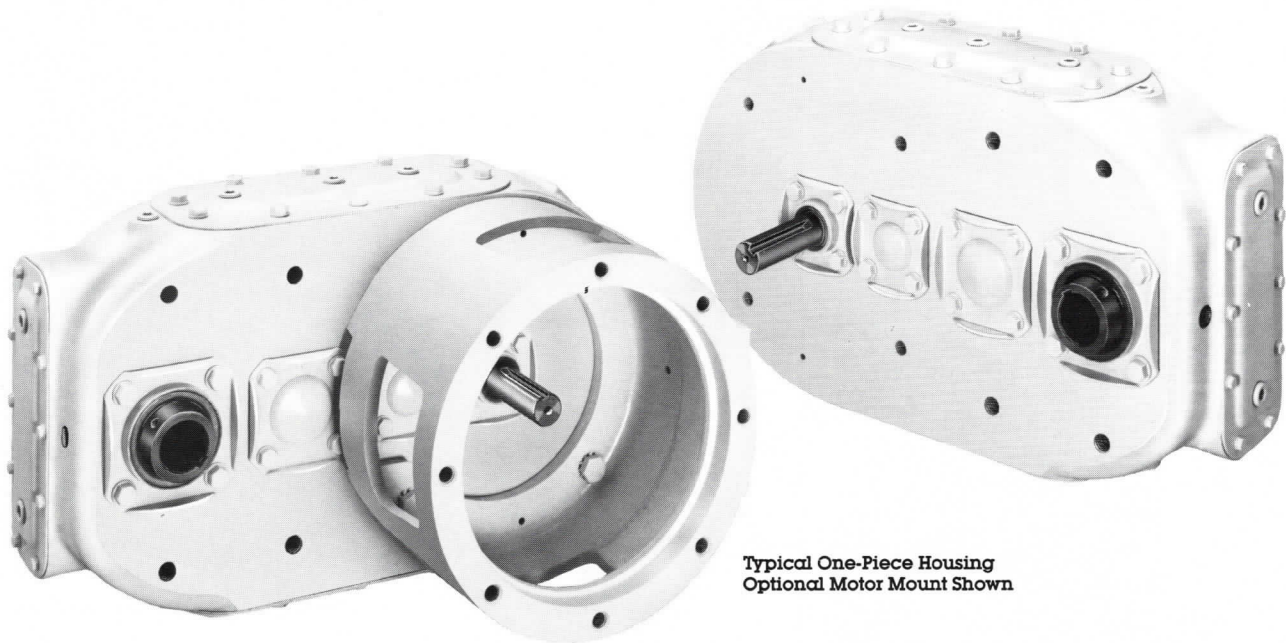
# 3107 SERIES

ALL AMERICAN COMPONENTS  
AND CONSTRUCTION  
TWO-YEAR—4,000-HOUR  
WARRANTY

# 3107G SERIES

## TRIPLE REDUCTION SHAFT MOUNTED DRIVES

2.6-9.2	Horsepower Ratings	4.6-16.9
50.0-13.2	Nominal Gear Ratios	50.0-13.2
35-132	Output RPM	35-132
4,700 (LB.-IN.)	Maximum Output Torque	8,200 (LB.-IN.)



Typical One-Piece Housing  
Optional Motor Mount Shown

### FEATURES

- All gearing is made of high purity calcium treated 4150 alloy steel, heat treated for superior shock resistance. In addition, all gearing is helical form, wide-faced and shaved for maximum load carrying properties, efficiency, and quietness of operation.
- Pinions are integral with shafts (one piece)
- All gears are from closed die forgings for superior grain flow in tooth area
- Large capacity oil sump—keeps temperature low, which helps prevent oil breakdown and premature failure
- High-speed shaft induction hardened and super-finished in oil-seal area for greater sealing properties and longer seal life
- All gears and pinions are supported between Timken tapered roller bearings
- Numerous standard ratios

- Compact design suitable for limited space requirements
- 100% inspection and shop testing
- All units have multiple large inspection plate covers
- External components black oxidized for greater corrosion protection
- Standard Timken tapered roller bearings throughout
- Standard double-lip oil seals
- One-piece high strength cast iron housing for maximum rigidity, optimal gear tooth alignment, eliminates housing leakage

### AVAILABLE OPTIONS

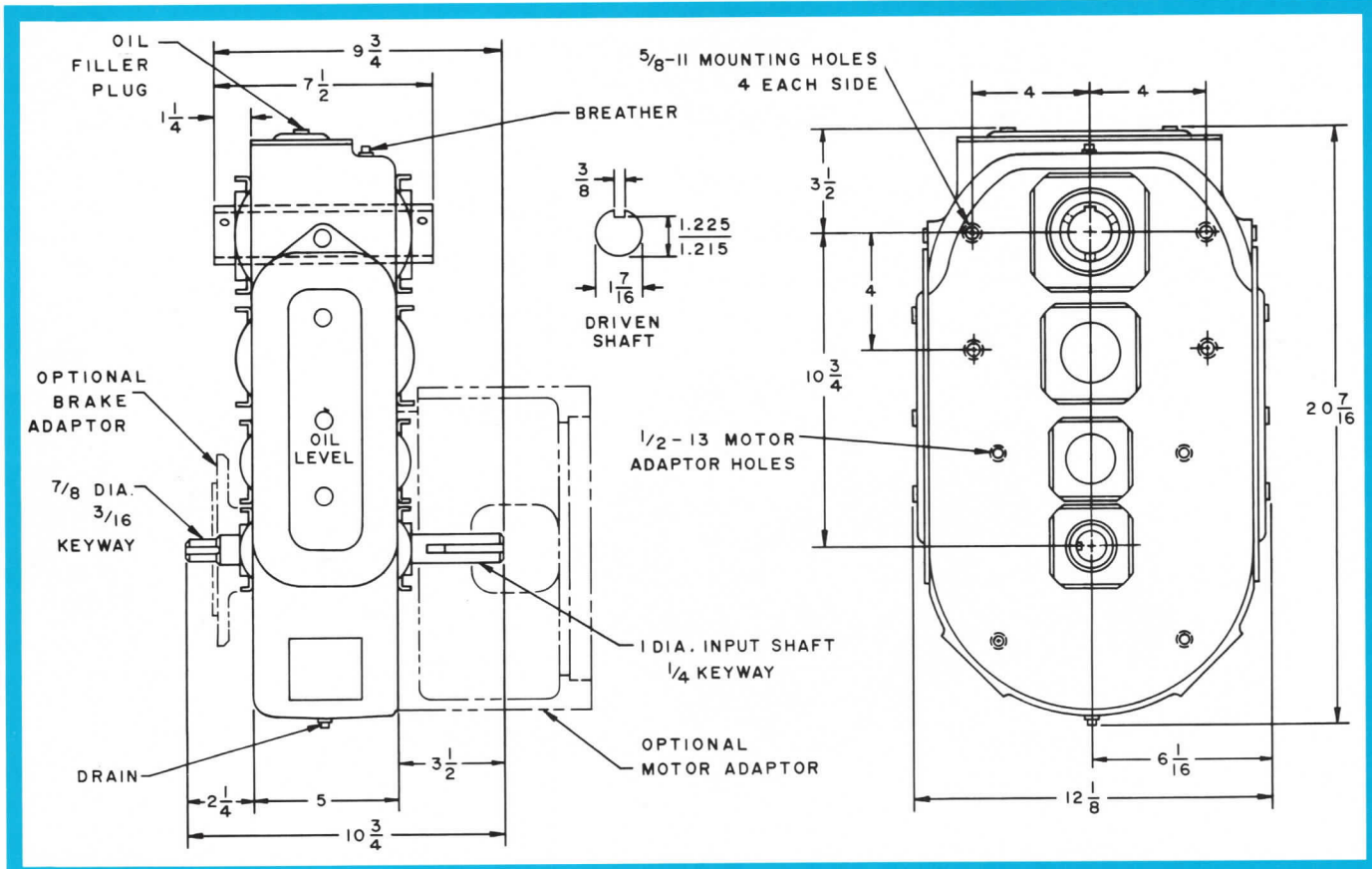
- C and D face motor adaptors
- Typical shaft-mount style motor mounts
- Brake adaptors



# 3107 & 3107G

## SERIES

### TRIPLE REDUCTION—SHAFT MOUNTED DRIVES



#### 3107 SERIES

MODEL	RATIO	OUTPUT (RPM)	RATINGS	
			INPUT HORSEPOWER	OUTPUT TORQUE (LB.-IN.)
310750	50.0	35	2.6	4736
310740	40.1	44	3.2	4584
310734	34.5	51	3.6	4560
310728	28.8	61	4.3	4536
310723	23.3	75	5.3	4504
310720	20.7	85	6.0	4464
310713	13.2	132	9.2	4402

#### 3107G SERIES

MODEL	RATIO	OUTPUT (RPM)	RATINGS	
			INPUT HORSEPOWER	OUTPUT TORQUE (LB.-IN.)
310750G	50.0	35	4.6	8283
310740G	40.1	44	5.7	8165
310734G	34.5	51	6.6	8156
310728G	28.8	61	7.8	8142
310723G	23.3	75	9.6	8126
310720G	20.7	85	10.9	8089
310713G	13.2	132	16.9	8074

#### OPTIONAL MOTOR ADAPTOR

ADAPTOR	MOTOR	GAP
AD0	143TC-145TC	3/8
AD1	182TD-184TD	3/8
AD2	213TD-215TD	1/2

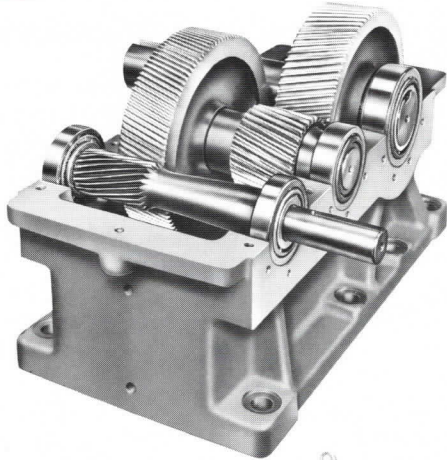
Average shipping weight:  
171 pounds

Horsepower and output speed  
based on 1750 RPM input speed,  
and Class 1 service.

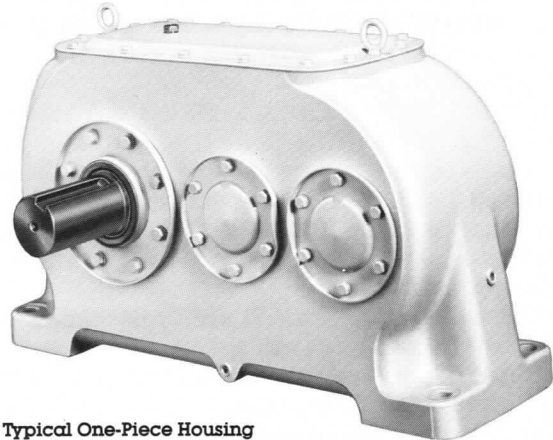


**ALL AMERICAN COMPONENTS AND CONSTRUCTION  
FIVE-YEAR—10,000-HOUR WARRANTY**

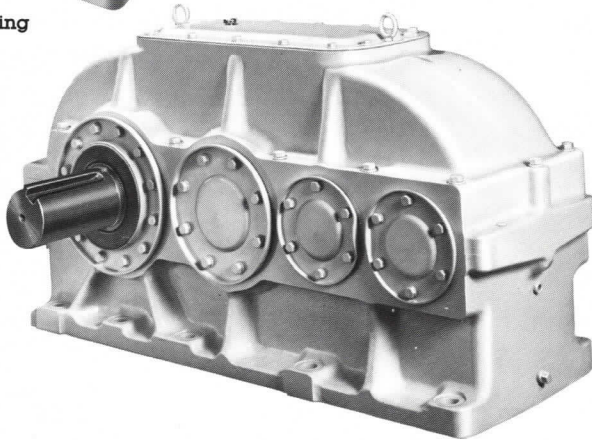
## **OFFSET PARALLEL SHAFT—BASE TYPE GEAR DRIVES**



Typical Split Housing



Typical One-Piece Housing



### **FEATURES**

- All gearing is made of high purity calcium treated 4150 alloy steel, heat treated for superior shock resistance. In addition, all gearing is helical form, wide-faced and shaved for maximum load carrying properties, efficiency, and quietness of operation.
- Pinions are integral with shafts (one piece)
- Large capacity oil sump—keeps temperature low, which helps prevent oil breakdown and premature failure
- High-speed shaft induction hardened in oil seal area, and super-finished for greater sealing properties and longer seal life
- Output shaft of heat-treated 4150 high alloy steel
- All gears and pinions are supported between Timken tapered roller bearings
- Numerous standard ratios
- 100% inspection and shop testing
- All gears are from closed die forgings for superior grain flow in tooth area
- All housings of extra-rigid high strength cast iron construction
- All units have large inspection plate covers
- External components black oxidized for greater corrosion protection
- Standard Timken tapered roller bearings throughout
- Standard double-lip oil seals

### **AVAILABLE OPTIONS**

- Top mounting motor mounts
- Adjustable bedplates
- One piece bedplates
- Roller clutches (must be ordered with unit)
- Special shaft lengths/configurations
- Special non-listed ratios



# OFFSET PARALLEL SHAFT—BASE TYPE GEAR DRIVES

## SELECTION

When selecting a base type drive, it is necessary to have the following data:

The HP and RPM of motor. The Class of service in which the drive will be used. Will the drive be direct connected to the motor by means of a flexible coupling or will the drive be connected to the motor by means of a V-Belt Drive? Will a bedplate or motor mount be required? Will a backstop be required?

Obtain the Service Classification from Table 1, Page 4.

**The horsepower ratings shown in this bulletin are based on Class I Service. To obtain horsepower ratings for Class II, or Class III service, multiply horsepower ratings shown in this bulletin by the proper multiplier.**

**For Class II service, use .71 multiplier times catalog input horsepower rating.**

**For Class III service, use .50 multiplier times catalog input horsepower rating.**

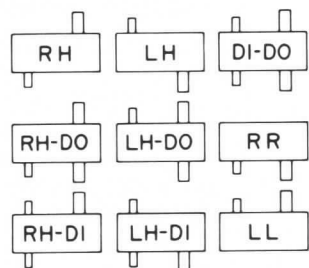
**CAUTION: Guarantee void if motor horsepower exceeds the horsepower rating of the gear drive.**

## ORDERING

When ordering base type gear drives, specify the model number of the drive, followed by the shaft assembly that is required, per the shaft assembly diagram shown on this page. It is not necessary to indicate the gear ratio of the drive as this is shown in the engineering data tables for each series of drives.

The last two or in some cases the last three digits in the model number indicates the approximate gear ratio for that particular model. This system of model numbers and shaft assembly letters makes it easy to order the desired gear drive with a minimum of writing, which results in a minimum of errors.

Wall or ceiling mounting of the gear drives is permissible, but must be specified on the order when required. For wall mounting, the input and output shafts should be horizontal. Specify if the input shaft will be above or below the output shaft, so the oil level, breather and drain plugs can be located in the proper location.



SHAFT ASSEMBLY DIAGRAM

Top View

H.S. Shaft On Left

Steel bedplates are available for use with any base type drive. Model numbers and dimensions of the bedplates are shown on Page 36. The prefix in the model number of the bedplate is the same as the drive series, and the suffix of the model number is the NEMA frame size of the motor which will be used.

Adjustable bases for bedplates are available and are shown on page 37.

When ordering a base type gear drive with motor mount, specify the model number of the gear drive, the shaft assembly desired, and the motor mount number. Motor mounts and dimensions are shown on page 38.

For example, a typical order could be written:

Model 2821 RH Gear Drive  
28MM—RH Motor Mount

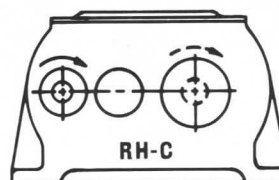
In the event that the above drive was to be ordered with a Roller Clutch Backstop, the order would then be written:

Model 2821 RH Gear Drive  
2800 BS Backstop—shipped loose  
28MM—RH Motor Mount

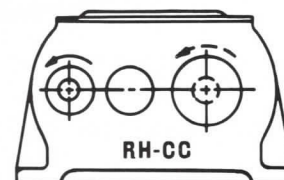
## ROLLER CLUTCH BACKSTOP DIAGRAM

All offset parallel shaft gear drives are available with roller clutch backstops. Roller clutch backstops are shipped loose.

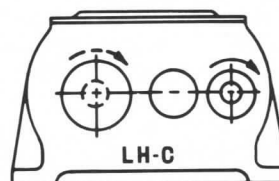
Shafts lock in direction indicated by arrows. Run free in opposite direction. Applies to all double reduction gear drives.



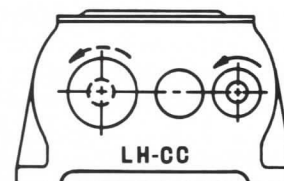
Facing HS Shaft  
Right Hand Assembly



Facing HS Shaft  
Right Hand Assembly



Facing HS Shaft  
Left Hand Assembly



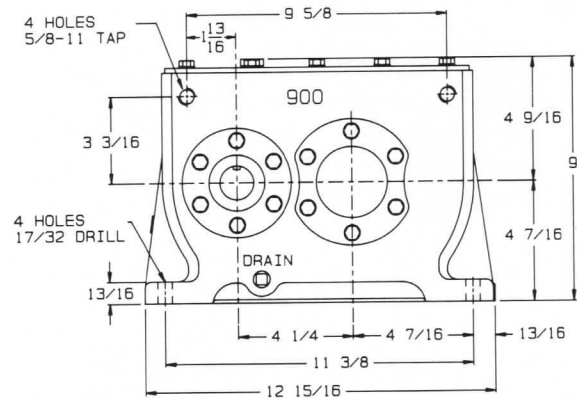
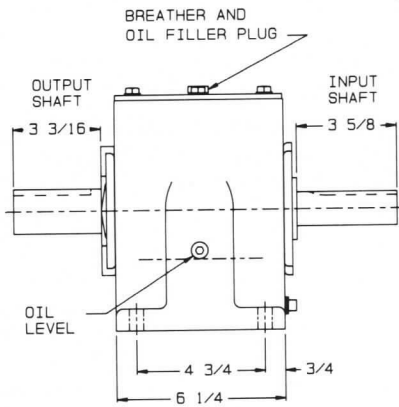
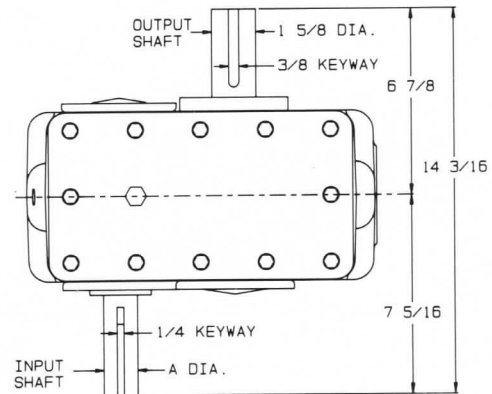
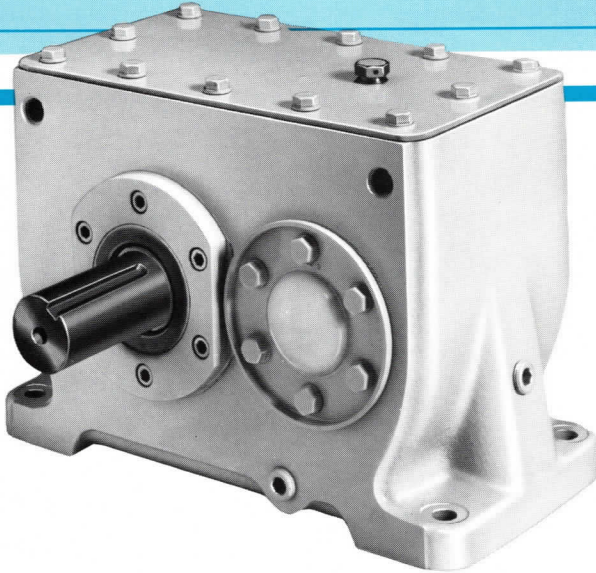
Facing HS Shaft  
Left Hand Assembly



# 900 SERIES

ALL AMERICAN COMPONENTS AND CONSTRUCTION  
FIVE-YEAR—10,000-HOUR WARRANTY  
SINGLE REDUCTION GEARING

## OFFSET PARALLEL SHAFT—BASE TYPE GEAR DRIVES



MODEL	RATIO	OUTPUT (RPM)	RATINGS		DIA. A (INCHES)
			INPUT HORSEPOWER	OUTPUT TORQUE (LB.-IN.)	
9068	6.81	257	12.0	2936	1.000
9063	6.35	276	13.1	3005	1.000
9059	5.94	295	14.6	3119	1.000
9056	5.58	314	15.9	3201	1.125
9052	5.25	333	17.6	3335	1.125
9049	4.95	354	18.9	3369	1.250
9047	4.68	374	20.3	3413	1.250
9044	4.44	394	22.0	3511	1.250
9042	4.21	416	23.7	3589	1.250
9040	4.00	438	25.2	3630	1.250
9036	3.63	482	29.3	3836	1.250
9033	3.31	529	32.5	3873	1.250
9028	2.79	627	39.7	3988	1.250
9024	2.38	735	47.8	4096	1.250
9019	1.91	916	59.7	4105	1.250
9015	1.55	1129	71.1	3969	1.250

Average shipping weight:  
65 pounds

Overhung load capacity of output  
shaft is 1500 pounds.

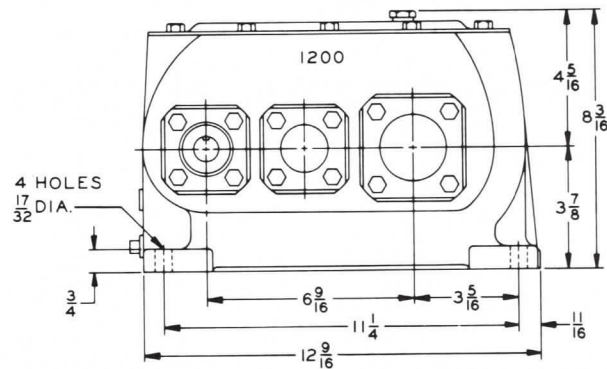
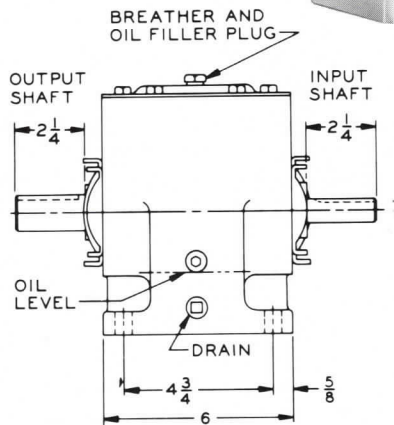
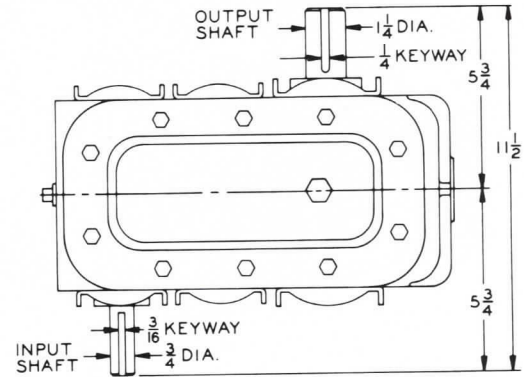
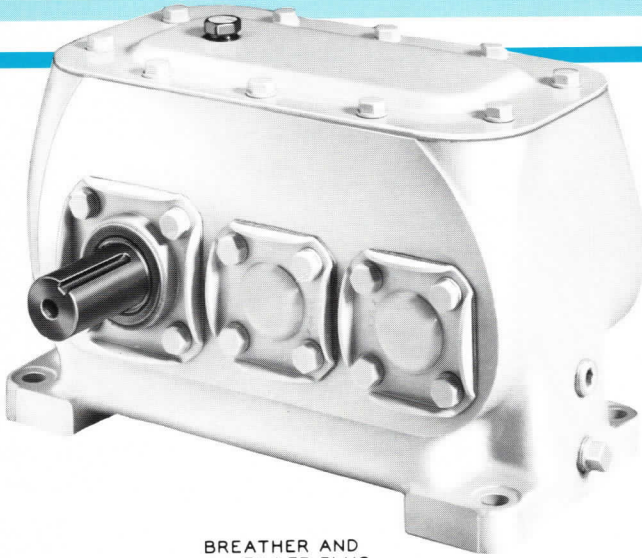
Horsepower and output speed  
based on 1750 RPM input speed,  
and Class 1 service.



# 1200 SERIES

ALL AMERICAN COMPONENTS AND CONSTRUCTION  
FIVE-YEAR—10,000-HOUR WARRANTY  
DOUBLE REDUCTION GEARING

## OFFSET PARALLEL SHAFT—BASE TYPE GEAR DRIVES



MODEL	RATIO	OUTPUT (RPM)	RATINGS	
			INPUT HORSEPOWER	OUTPUT TORQUE (LB.-IN.)
1236	35.86	49	1.7	2255
1229	28.94	60	2.4	2467
1224	24.09	73	2.8	2452
1222	22.77	77	3.0	2443
1220	19.43	90	3.5	2425
1218	17.78	98	4.1	2645
1215	15.17	115	4.8	2626
1214	13.68	128	5.7	2825
1212	11.67	150	6.7	2803
1210	10.09	173	7.7	2783
1209	9.21	190	8.4	2770
1206	6.17	284	12.3	2728
1205	4.95	354	15.1	2691

Average shipping weight:  
59 pounds

Overhung load capacity of output  
shaft is 1500 pounds.

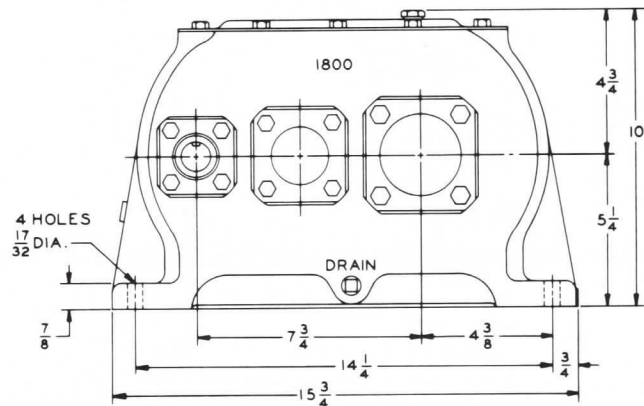
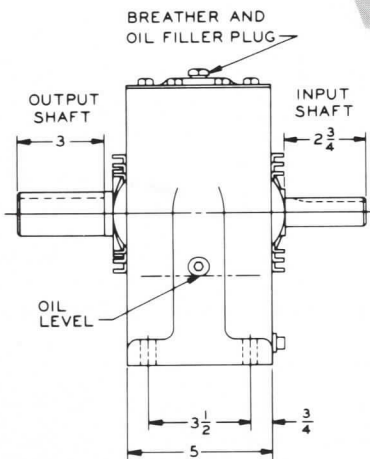
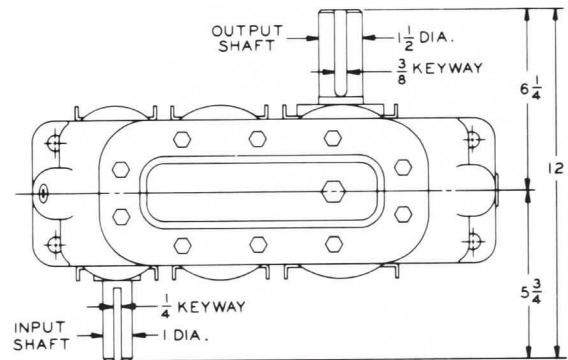
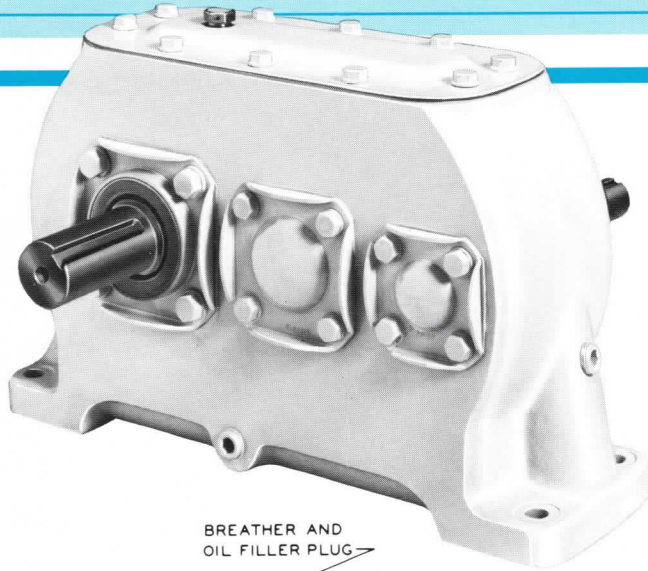
Horsepower and output speed  
based on 1750 RPM input speed,  
and Class 1 service.



# 1800 SERIES

ALL AMERICAN COMPONENTS AND CONSTRUCTION  
FIVE-YEAR—10,000-HOUR WARRANTY  
DOUBLE REDUCTION GEARING

## OFFSET PARALLEL SHAFT—BASE TYPE GEAR DRIVES



MODEL	RATIO	OUTPUT (RPM)	RATINGS	
			INPUT HORSEPOWER	OUTPUT TORQUE (LB.-IN.)
1820	20.40	86	5.0	3690
1819	19.11	92	5.3	3673
1817	16.90	104	6.0	3665
1815	14.92	117	7.4	3985
1814	13.90	126	7.9	3947
18133	13.34	131	8.3	4004
18129	12.91	136	8.5	3939
18125	12.49	140	8.9	3984
1811	11.00	159	10.0	3964
18105	10.46	167	10.7	4028
1809	9.30	188	11.8	3937
18088	8.83	198	12.6	3998
1808	7.60	230	14.3	3904
18072	7.19	243	15.3	3953
18065	6.48	270	17.0	3961

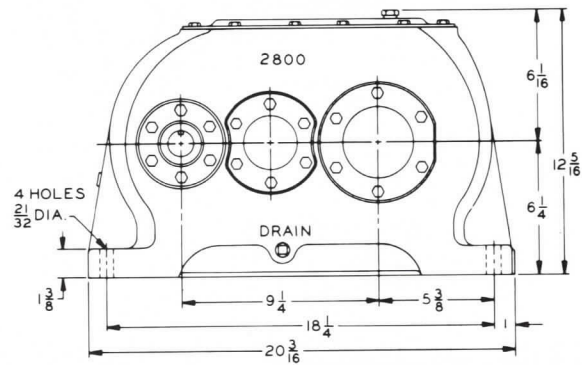
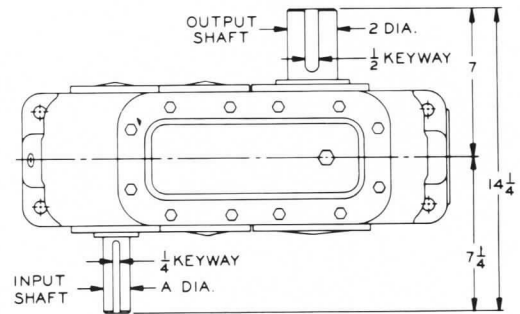
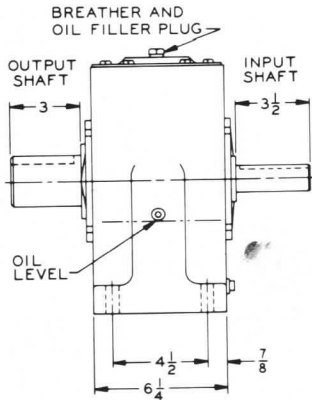
Average shipping weight:  
75 pounds  
Overhung load capacity of output  
shaft is 1800 pounds.  
Horsepower and output speed  
based on 1750 RPM input speed,  
and Class 1 service.



# 2800 SERIES

ALL AMERICAN COMPONENTS AND CONSTRUCTION  
FIVE-YEAR—10,000-HOUR WARRANTY  
DOUBLE REDUCTION GEARING

## OFFSET PARALLEL SHAFT—BASE TYPE GEAR DRIVES



MODEL	RATIO	OUTPUT (RPM)	RATINGS		DIA. A (INCHES)
			INPUT HORSEPOWER	OUTPUT TORQUE (LB.-IN.)	
2841	41.73	42	4.1	6222	1.000
2838	38.91	45	4.4	6180	1.000
2836	36.25	48	4.9	6345	1.000
2833	33.92	52	5.1	6267	1.000
2829	29.75	59	6.1	6557	1.125
2827	27.90	63	6.7	6692	1.125
2824	24.68	71	7.7	6800	1.125
2821	21.93	80	8.8	6966	1.250
2819	19.59	89	10.2	7175	1.250
2818	18.52	94	10.8	7203	1.250
2817	17.55	100	11.3	7167	1.250
2816	16.65	105	12.0	7178	1.250
28159	15.96	110	13.2	7604	1.250
2815	15.09	116	14.0	7581	1.250
2814	14.29	122	14.7	7550	1.250
2813	13.56	129	15.5	7560	1.250
2812	12.89	136	16.2	7520	1.250
2811	11.87	147	17.9	7656	1.250
2810	10.71	163	19.7	7602	1.250
2809	9.72	180	21.6	7561	1.250
28088	8.86	198	23.7	7553	1.250
2807	7.46	235	27.8	7472	1.250

Average shipping weight:  
161 pounds

Overhung load capacity of output  
shaft is 3100 pounds.

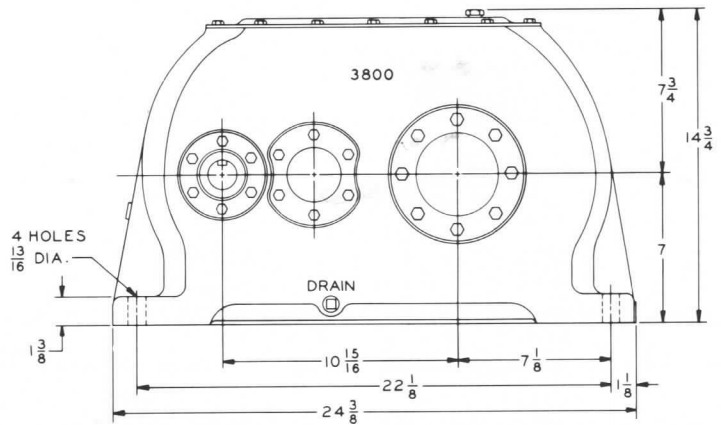
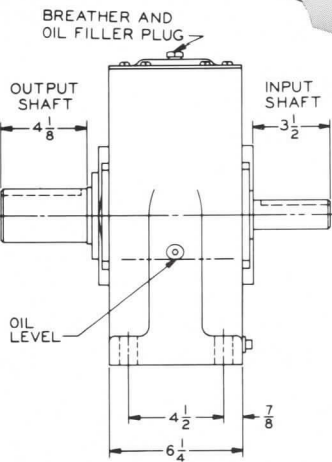
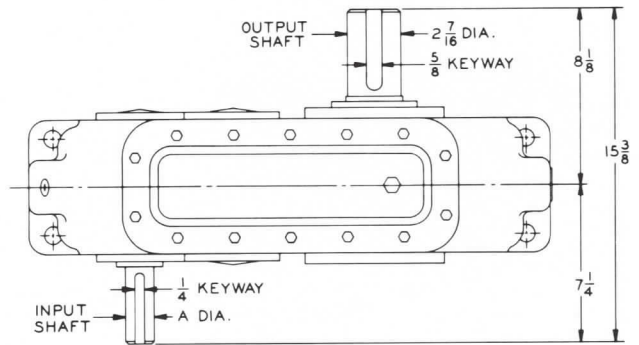
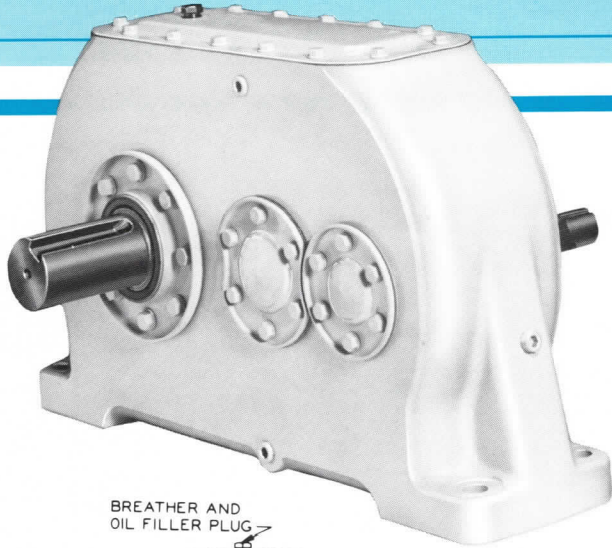
Horsepower and output speed  
based on 1750 RPM input speed,  
and Class 1 service.



# 3800 SERIES

ALL AMERICAN COMPONENTS AND CONSTRUCTION  
FIVE-YEAR—10,000-HOUR WARRANTY  
DOUBLE REDUCTION GEARING

## OFFSET PARALLEL SHAFT—BASE TYPE GEAR DRIVES



MODEL	RATIO	OUTPUT (RPM)	RATINGS		DIA. A (INCHES)
			INPUT HORSEPOWER	OUTPUT TORQUE (LB.-IN.)	
3841	41.22	42	6.3	9352	1.125
3836	36.54	48	8.1	10659	1.125
3834	34.39	51	8.1	10032	1.125
3831	30.65	57	9.0	9935	1.250
3828	27.56	63	10.8	10720	1.250
3826	26.00	67	11.7	10956	1.250
3825	24.68	71	11.7	10399	1.250
3823	22.75	77	14.4	11798	1.250
3821	21.50	81	15.3	11847	1.250
3820	20.37	86	16.2	11884	1.250
3819	19.30	91	17.1	11886	1.250
3817	17.16	102	19.8	12237	1.250
3816	16.30	107	21.6	12680	1.250
3815	15.48	113	22.5	12544	1.250
3814	14.00	125	24.3	12252	1.250
3813	12.81	137	27.0	12456	1.250
3811	10.79	162	31.5	12241	1.250
38074	7.40	236	45.0	11993	1.250

Average shipping weight:  
221 pounds

Overhung load capacity of output shaft is 4700 pounds.

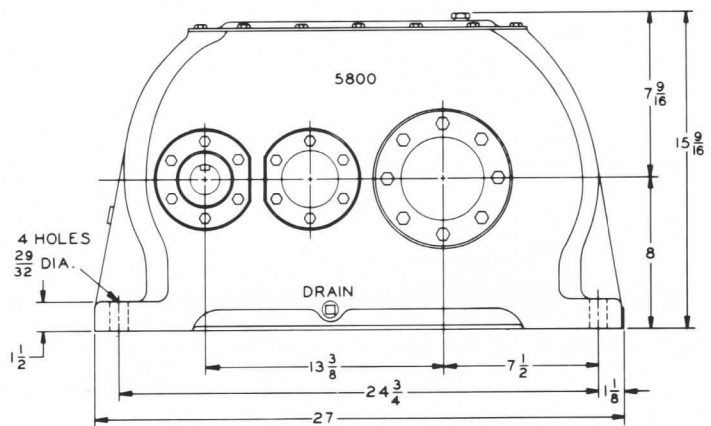
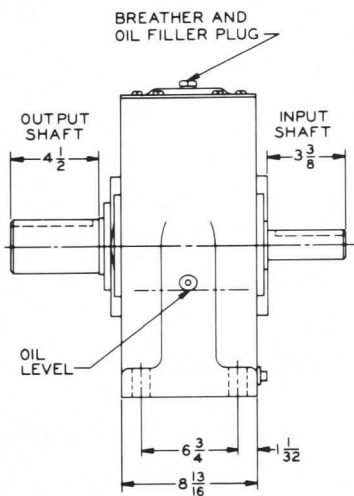
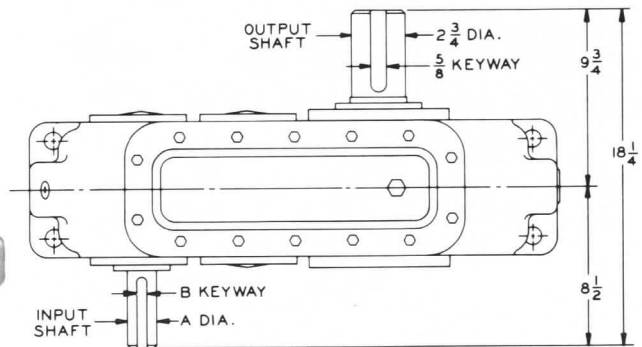
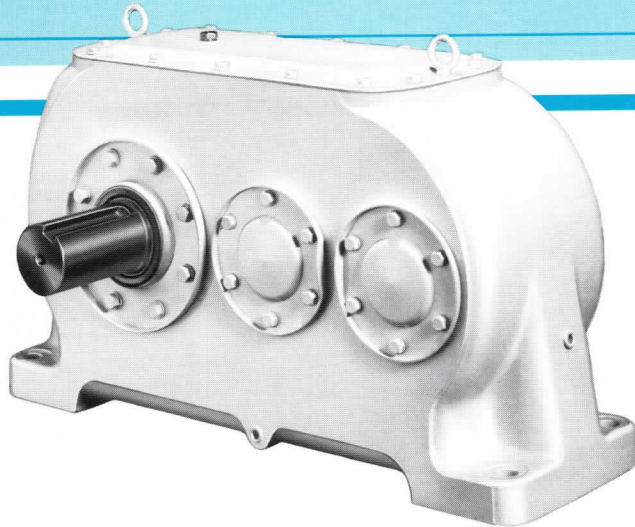
Horsepower and output speed based on 1750 RPM input speed, and Class 1 service.



# 5800 SERIES

ALL AMERICAN COMPONENTS AND CONSTRUCTION  
FIVE-YEAR—10,000-HOUR WARRANTY  
DOUBLE REDUCTION GEARING

## OFFSET PARALLEL SHAFT—BASE TYPE GEAR DRIVES



MODEL	RATIO	OUTPUT (RPM)	RATINGS		DIA. A (INCHES)
			INPUT HORSEPOWER	OUTPUT TORQUE (LB.-IN.)	
5840	40.30	43	10.1	14659	1.250
5835	35.30	50	13.0	16527	1.250
5829	29.50	59	14.4	15299	1.250
5826	25.98	67	18.7	17497	1.375
5823	23.28	75	23.0	19283	1.375
5822	22.09	79	24.5	19491	1.375
5815	15.20	115	36.0	19707	2.000
5809	9.30	188	59.0	19761	2.000

Average shipping weight:  
363 pounds

Overhung load capacity of output shaft is 5700 pounds.

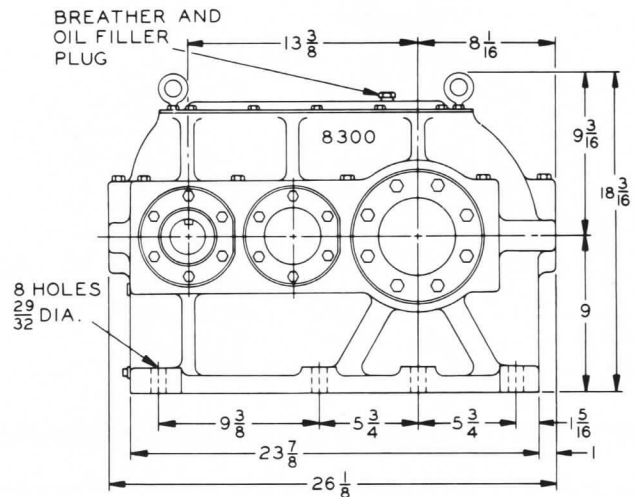
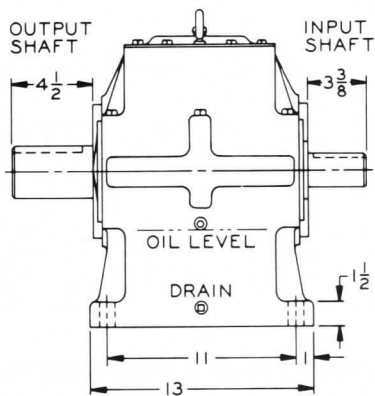
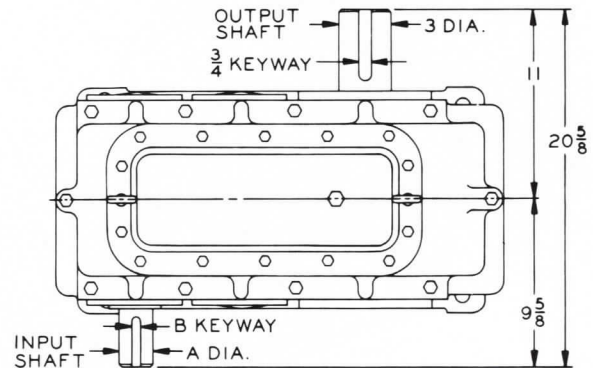
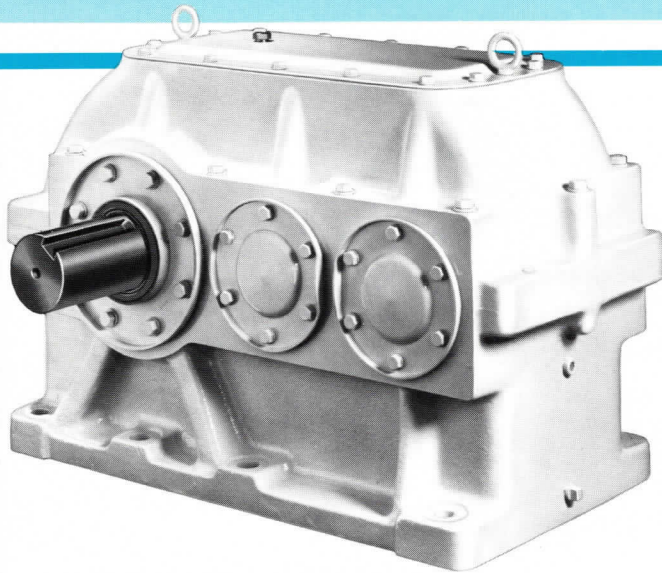
Horsepower and output speed based on 1750 RPM input speed, and Class 1 service.



# 8300 SERIES

ALL AMERICAN COMPONENTS AND CONSTRUCTION  
FIVE-YEAR—10,000-HOUR WARRANTY  
DOUBLE REDUCTION GEARING

## OFFSET PARALLEL SHAFT—BASE TYPE GEAR DRIVES



MODEL	RATIO	OUTPUT (RPM)	RATINGS		DIA. A (INCHES)	KEYWAY B
			INPUT HORSEPOWER	OUTPUT TORQUE (LB.-IN.)		
8340	40.33	43	18.3	26510	1.250	1/4
8335	35.32	50	21.8	27773	1.250	1/4
8329	29.51	59	22.6	23970	1.250	1/4
8324	24.77	71	27.5	24568	1.375	3/8
8318	18.61	94	36.9	24755	1.500	3/8
8315	15.30	114	46.8	25763	1.500	3/8
8310	10.03	174	69.8	25205	2.000	1/2
8309	9.16	191	77.4	25525	2.000	1/2

Average shipping weight:  
475 pounds

Overhung load capacity of output shaft is 7500 pounds.

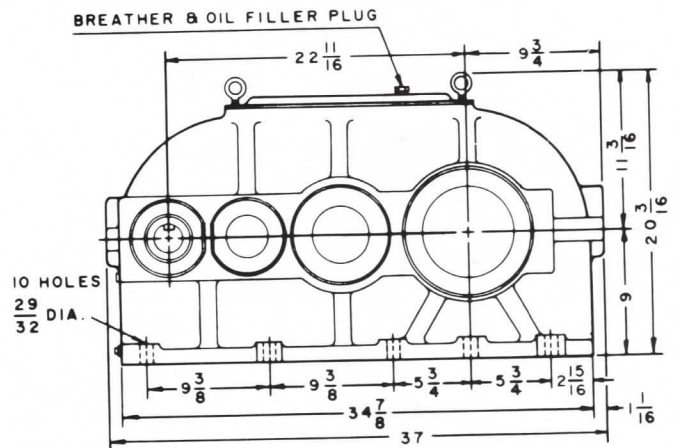
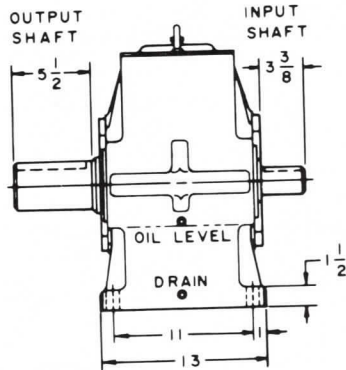
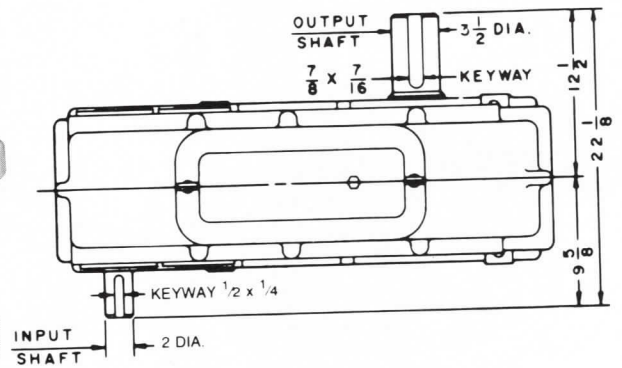
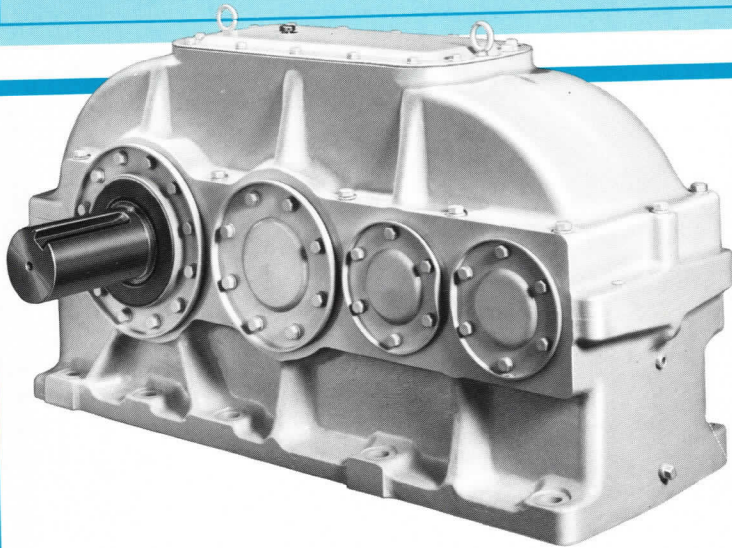
Horsepower and output speed based on 1750 RPM input speed, and Class 1 service.



# 9100 SERIES

ALL AMERICAN COMPONENTS AND CONSTRUCTION  
FIVE-YEAR—10,000-HOUR WARRANTY  
TRIPLE REDUCTION GEARING

## OFFSET PARALLEL SHAFT—BASE TYPE GEAR DRIVES



MODEL	RATIO	OUTPUT (RPM)	RATINGS	
			INPUT HORSEPOWER	OUTPUT TORQUE (LB.-IN.)
9184	84.19	21	14.2	43061
9170	70.34	25	16.8	42657
9160	59.81	29	19.6	42242
9148	47.98	36	24.1	41725
9145	44.87	39	25.8	41624
9139	39.44	44	29.1	41355
9136	36.00	49	31.8	41260
9126	26.20	67	43.2	40745
9124	23.91	73	47.1	40548
9121	21.54	81	51.9	40271
9120	19.66	89	56.7	40159

Average shipping weight:  
700 pounds

Overhung load capacity of output shaft is 10,000 pounds.

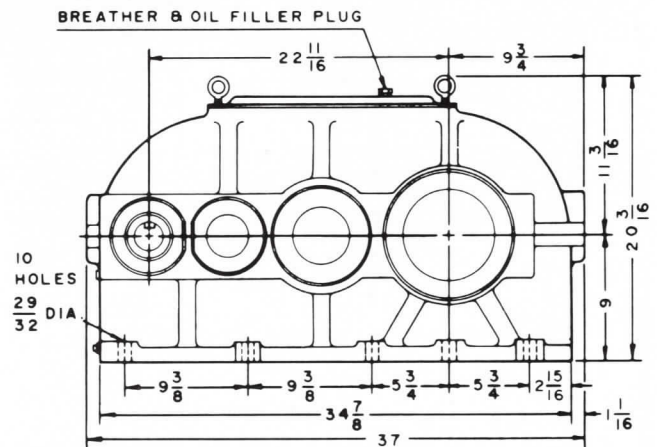
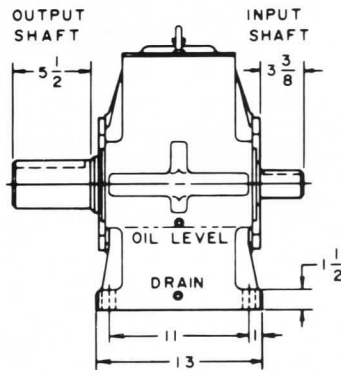
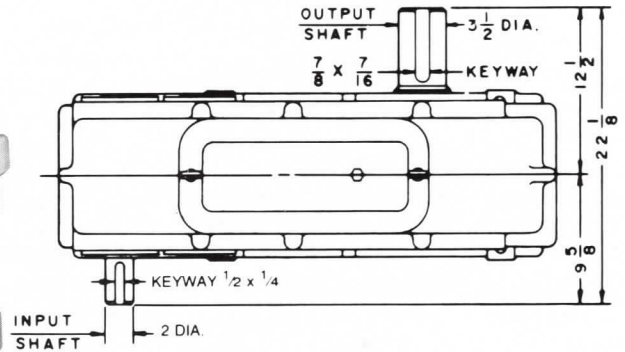
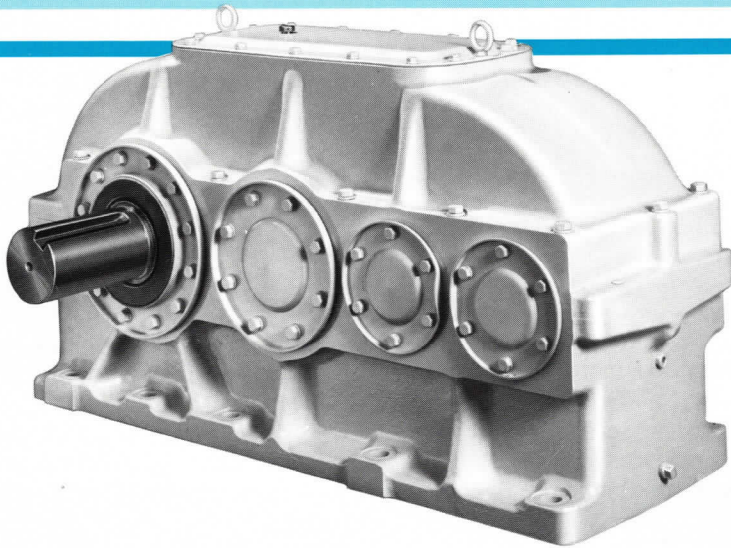
Horsepower and output speed based on 1750 RPM input speed, and Class 1 service.



# 9300 SERIES

ALL AMERICAN COMPONENTS AND CONSTRUCTION  
FIVE-YEAR—10,000-HOUR WARRANTY  
TRIPLE REDUCTION GEARING

## OFFSET PARALLEL SHAFT—BASE TYPE GEAR DRIVES



MODEL	RATIO	OUTPUT (RPM)	RATINGS	
			INPUT HORSEPOWER	OUTPUT TORQUE (LB.-IN.)
93100	100.16	18	25.3	88585
9380	80.35	22	31.3	89667
9370	70.36	25	35.7	89999
9359	58.79	30	42.5	89285
9350	49.99	35	44.8	80672
9340	40.04	44	55.1	78924
9337	37.50	47	66.1	88637
9333	32.91	53	69.7	82883
9330	30.04	58	77.3	83997
9327	26.64	66	86.7	82791
9323	22.94	76	100.0	82927

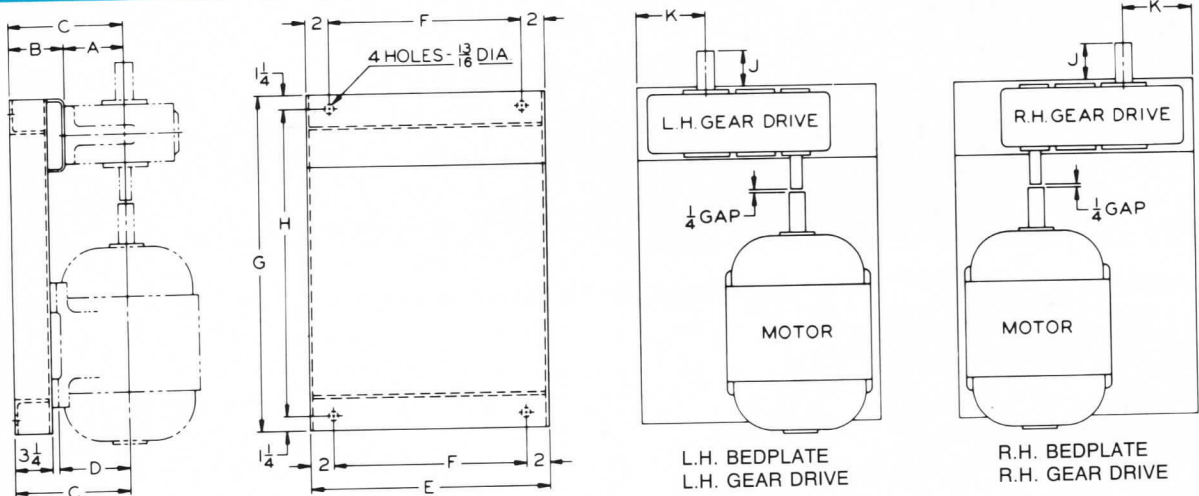
Average shipping weight:  
700 pounds

Overhung load capacity of output shaft is 10,000 pounds.

Horsepower and output speed based on 1750 RPM input speed, and Class 1 service.



# BEDPLATES—BASE TYPE GEAR DRIVES



Steel bedplates are available for use with any base type drive. The prefix in the model number of the bedplate is the same as the drive series, and the suffix of the

model number is the NEMA frame size of the motor which will be used.

Bedplates can be ordered with motor holes drilled. The motor

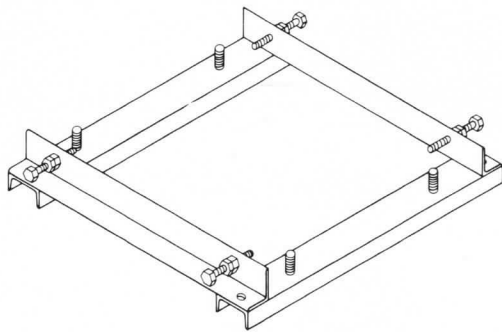
frame size and coupling gap must be given. All bedplates drilled or undrilled for motor are based on 1/4 inch coupling gap unless otherwise specified.

TABLE 23.

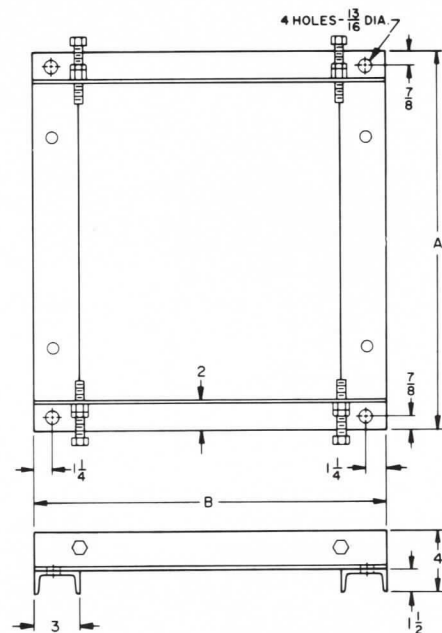
Bedplate Model Number	Dimensions In Inches									
	A	B	C	D	E	F	G	H	J	K
9	4 7/16	4 1/16	8 1/2	5 1/4	18	14	28	25 1/2	3 3/8	7
254T/256T		5 1/16	9 1/2	6 1/4			36	33 1/2		
284T/286T		5 13/16	10 1/4	7			40	37 1/2		
324T/326T		6 13/16	11 1/4	8			42	39 1/2		
364T		7 13/16	12 1/4	9						
12	3 3/8	3 3/4	7 1/8	3 1/2	18	14	24	21 1/2	2 1/8	5
143T/145T		3 3/8	7 3/4	4 1/2			28	25 1/2		
182T/184T		4 5/8	8 1/2	5 1/4			32	29 1/2		
213T/215T		5 5/8	9 1/2	6 1/4						
18	5 1/4	3 3/4	8 1/2	4 1/2	21	17	28	25 1/2	3 3/8	6
184T		5 1/4	9 1/2	6 1/4			32	29 1/2		
213T/215T		4 1/4	9 1/2	6 1/4						
28	6 1/4	3 3/4	9 1/2	4 1/2	25	21	32	29 1/2	3 3/4	7
182T/184T		5 1/4	9 1/2	6 1/4			36	33 1/2		
213T/215T		4	10 1/4	7						
254T/256T										
38	7	3 3/4	10 1/4	4 1/2	27	23	32	29 1/2	4 3/8	9
184T		5 1/4	10 1/4	6 1/4			36	33 1/2		
213T/215T		7	10 1/4	7			40	37 1/2		
254T/256T		4 1/4	11 1/4	8						
284T/286T										
58	8	3 3/4	11 1/4	5 1/4	32	28	34	31 1/2	4 3/4	9 1/4
215T		6 1/4	11 1/4	7			38	35 1/2		
254T/256T		7	11 1/4	8			42	39 1/2		
284T/286T		6 1/4	11 1/4	6 1/4			38	35 1/2		
324T/326T		7	11 1/4	7						
83	9	3 3/4	12 1/4	5 1/4	32	28	42	39 1/2	4 1/2	7 3/4
254T/256T		6 1/4	12 1/4	7			48	45 1/2		
284T/286T		7	12 1/4	8			34	31 1/2		
324T/326T		8	12 1/4	9			39	36 1/2		
91	9	3 3/4	12 1/4	6 1/4	42	38	44	41 1/2	6	9 3/4
215T		6 1/4	12 1/4	7			44	41 1/2		
254T/256T		7	12 1/4	8						
284T/286T		8	12 1/4	9						
93	9	3 3/4	12 1/4	6 1/4	42	38	39	36 1/2	6	9 3/4
254T/256T		7	12 1/4	7			44	41 1/2		
284T/286T		8	12 1/4	8						
324T/326T		9	12 1/4	9						
364T/365T		4 1/4	13 1/4	10			44	40		



# ADJUSTABLE BASE BEDPLATES—BASE TYPE GEAR DRIVES



Typical Adjustable Base



The gear drive and motor are mounted on the bedplate. The bedplate is mounted on the adjustable base which is bolted to the foundation. A total adjustment of 2 inches is provided for installing or servicing

belt and chain drives.

When ordering, the adjustable base and bedplate must be ordered together.

Adjustable bases require slotted mounting holes in the bedplates. Standard bedplates

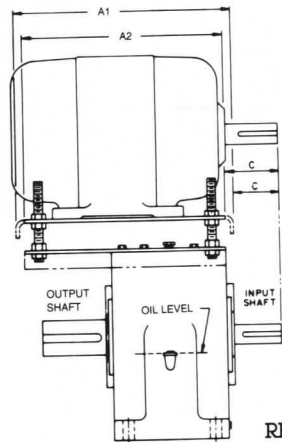
are not slotted and will not fit the adjustable base. However, all the dimensions are the same. When ordering use the standard bedplate number plus the adjustable base number.

TABLE 24.

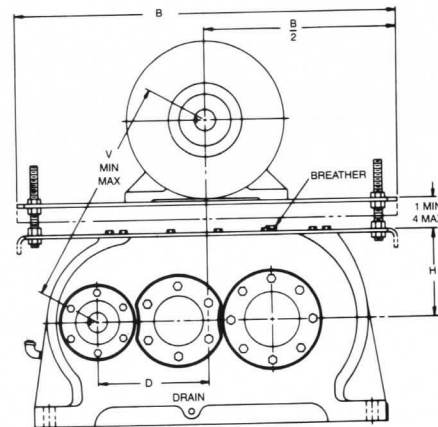
Bedplate Model Number	Base Number	A	B
9-215T 12-213T/215T	AB9-1	24½	28
9-254T/256T/284T/286T	AB9-2	27½	36
9-324T/326T	AB9-3	27½	40
9-364T	AB9-4	27½	42
12-143T/145T/182T/184T	AB12-1	24½	24
12-254T 18-254T	AB12-2	27½	32
18-184T/213T/215T	AB18-1	27½	28
28-182T/184T/213T/215T	AB28-1	31½	32
28-254T/256T/284T	AB28-2	31½	36
38-184T/213T/215T	AB38-1	33½	32
38-254T/256T/284T/286T	AB38-2	35½	36
38-324T	AB38-3	35½	40
58-215T/254T/256T	AB58-1	38½	34
58-284T/286T 83-254T/256T	AB58-2	38½	38
58-324T/326T 83-284T/286T/324T/326T	AB58-3	38½	42
83-364T/365T	AB83-1	38½	48
91-215T	AB91-1	48½	34
91-254T/256T 93-254T/256T	AB91-2	48½	39
91-284T/286T/324T/326T 93-284T/286T/324T/326T/364T/365T	AB91-3	48½	44
93-404T	AB93-1	50½	48



# MOTOR MOUNTS—BASE TYPE GEAR DRIVES



RH SHAFT ASSEMBLY SHOWN



Most motor mounts replace the top inspection cover plate of the drive and support the motor so that a V-Belt can be used between the motor and

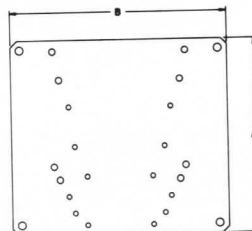
the drive.

There is a separate motor mount for each size of gear drive. The motor is correctly positioned on the motor plate

when the anchor bolt holes in the motor line up with a set of anchor bolt holes in the motor plate.

TABLE 25.

Motor Mount	Dimensions In Inches					
	A1	A2	B	C	D	H
9 MM	17	—	21¼	3 <sup>11</sup> / <sub>16</sub>	3	5 <sup>13</sup> / <sub>16</sub>
12 MM	—	12	16	2¾	4 <sup>9</sup> / <sub>32</sub>	3 <sup>15</sup> / <sub>16</sub>
18 MM	—	15	16	3¼	5	4 <sup>5</sup> / <sub>16</sub>
28 MM	17	—	21¼	3 <sup>11</sup> / <sub>16</sub>	5 <sup>5</sup> / <sub>16</sub>	5 <sup>11</sup> / <sub>16</sub>
38 MM	19	—	24	3 <sup>11</sup> / <sub>16</sub>	7	7 <sup>5</sup> / <sub>16</sub>
58 MM	21¼	—	27	3 <sup>9</sup> / <sub>32</sub>	8½	7 <sup>1</sup> / <sub>16</sub>
83 MM	21¼	—	27	4 <sup>25</sup> / <sub>32</sub>	8¾	7 <sup>9</sup> / <sub>16</sub>
91 MM	21¼	—	27	4 <sup>25</sup> / <sub>32</sub>	14 <sup>13</sup> / <sub>16</sub>	9 <sup>9</sup> / <sub>16</sub>
93 MM	21¼	—	27	4 <sup>25</sup> / <sub>32</sub>	14 <sup>13</sup> / <sub>16</sub>	9 <sup>9</sup> / <sub>16</sub>



TYPICAL MOTOR PLATE

Motor plates are pre-punched for motor frame sizes where dimensions are shown (shaded). Bedplates are recommended for larger horsepower motors not shown.

TABLE 26.

Drive Size	V Dimensions In Inches													
	143T/145T		182T/184T		213T/215T		254T/256T		284T/286T		324T/326T		364T/365T	
	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.
900			11.70	14.62	12.43	15.36	13.40	16.34						
1200	9.46	12.21	10.36	13.15	11.05	13.87								
1800	10.13	12.83	11.01	13.75	11.68	14.45	12.60	15.40						
2800			12.50	15.25	13.18	15.95	14.09	16.89						
3800			14.60	17.29	15.26	17.98	16.16	18.91	16.84	19.60				
5800					15.79	18.39	16.65	19.29	17.30	19.96	18.17	20.87		
8300					16.16	18.79	17.02	19.69	17.68	20.37	18.56	21.28	19.46	22.21
9100					21.67	23.95	22.41	24.74	22.98	25.35	23.75	26.16	24.54	26.99
9300					21.67	23.95	22.41	24.74	22.98	25.35	23.75	26.16	24.54	26.99

When ordering an Offset Parallel Shaft Base Type Gear Drive with motor mount, specify the model number of the gear drive, the shaft assembly desired, and the motor mount number.

For example, a typical order could be written:  
 Model 2821 RH Gear Drive  
 28MM-RH Motor Mount  
 Motor mounts for field installation are shipped with

oil level fitting, gasket and special length bolts for mounting to gear drive, if required. For motor frame sizes not listed, please contact factory.



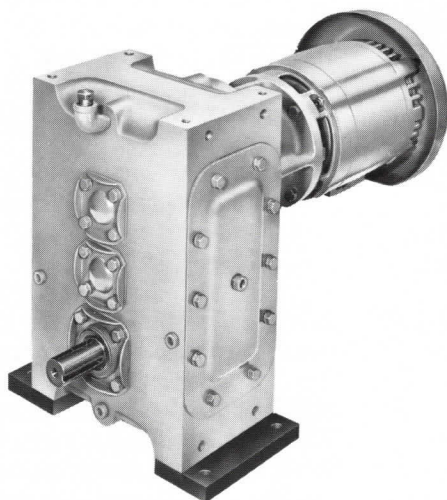
# GM

SERIES

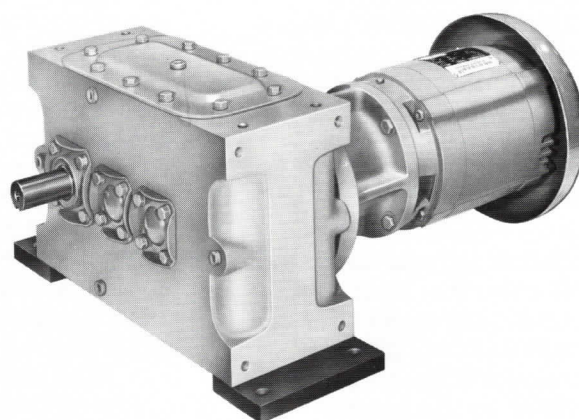
ALL AMERICAN COMPONENTS AND CONSTRUCTION  
FIVE-YEAR—10,000-HOUR WARRANTY

## OFFSET PARALLEL SHAFT GEARMOTOR DRIVES

TYPICAL ONE-PIECE HOUSING



Vertical Position  
Optional C-Flange Motor and Adaptor Shown



Horizontal Position  
Optional C-Flange Motor and Adaptor Shown

### FEATURES

- All gearing is made of high purity calcium treated 4150 alloy steel, heat treated for superior shock resistance. In addition, all gearing is helical form, wide-faced and shaved for maximum load carrying properties, efficiency, and quietness of operation.
- Pinions are integral with shafts (one piece)
- Large capacity oil sump keeps temperature low, which helps prevent oil breakdown and premature failure
- High-speed shaft induction hardened and super-finished in oil-seal area for greater sealing properties and longer seal life
- Output shaft of heat treated 4150 high alloy steel
- All gears and pinions are supported between Timken tapered roller bearings
- Numerous standard ratios
- 100% inspection and shop testing

- All gears are from closed die forgings for greater grain flow in tooth area
- Dual large inspection plate covers
- External components black oxidized for greater corrosion protection
- Standard Timken tapered roller bearings throughout
- Standard double—lip oil seals
- One-piece high strength cast iron housing for maximum rigidity, optimal gear tooth alignment, eliminates housing leakage
- Numerous mounting arrangements

### AVAILABLE OPTIONS

- Scoop type (sugar scoop) motor mounts
- C-face motor adaptors
- Roller clutches (must be ordered with unit)
- Special shaft lengths/configurations



# GM SERIES

ALL AMERICAN COMPONENTS AND CONSTRUCTION  
FIVE-YEAR—10,000-HOUR WARRANTY

## OFFSET PARALLEL SHAFT GEARMOTOR DRIVES

### SELECTION

When selecting a Gearmotor Drive, it is necessary to have the following data:

Horsepower and R.P.M. of the motor. Proper Service Classification of Drive. Output R.P.M. of the drive. Is a motor or scoop mount required? Is a backstop required?

Obtain the Service Classification from Table 1, Page 4.

**The horsepower ratings shown in this bulletin are based on Class I Service. To obtain horsepower ratings for Class II, or Class III service, multiply horsepower ratings shown in this bulletin by the proper multiplier.**

**For Class II service, use .71 multiplier times catalog input horsepower rating.**

**For Class III service, use .50 multiplier times catalog input horsepower rating.**

**CAUTION: Guarantee void if motor horsepower exceeds horsepower rating of the gear drive.**

### ORDERING THE GM SERIES GEARMOTOR DRIVE

After determining the Class of Service, the horsepower that is required and the output RPM, select the proper model with the proper gear ratio that suits the specifications.

The last two or in some cases the last three digits in the model number indicates the approximate gear ratio for that particular model. This system of model numbers makes it easy to order the desired gearmotor drive with a minimum of writing, which results in a minimum of errors.

Horsepower ratings, gear ratios and R.P.M. output speeds for Class I Service are shown on Pages 41, 42, 43, and 44.

**EXAMPLE 1:** For Class I Service, 5HP motor, 128 RPM output speed. On Page 41 is shown Model 10 GM 14 which has a gear ratio of 13.7 and output RPM of 128 and rated 5.7HP for Class I Service.

When the Gearmotor drive is to be shipped from our plant without the optional motor or without the optional backstop, the order for Example 1 would be typed as shown in next column:

When the adaptor and a "TC" flange motor is used  
1—10 GM 14 Gearmotor Drive  
1—AD 18 TC Flange Motor  
Adaptor (See Page 41)  
1—CPL 18 Coupling

When a Scoop mount is to be used a "T" frame motor is required:  
1—10 GM 14 Gearmotor Drive  
1—GMM 18 Scoop Mount (See Page 45)  
1—CPL 18 Coupling

All Offset Parallel Shaft Gearmotor drives are available with roller clutch backstops. Roller clutch backstops are shipped loose. When properly installed facing the high speed shaft, the high speed shaft and the low speed shaft lock clockwise with a type C backstop and lock counter-clockwise with a type CC backstop. Backstops have the same number as that of the drive. When ordering use the suffix BS after the drive number.

**EXAMPLE 2:**  
1—10BS Backstop—shipped loose  
Brake adaptors are available for some magnetic brakes. Refer to factory for selection.

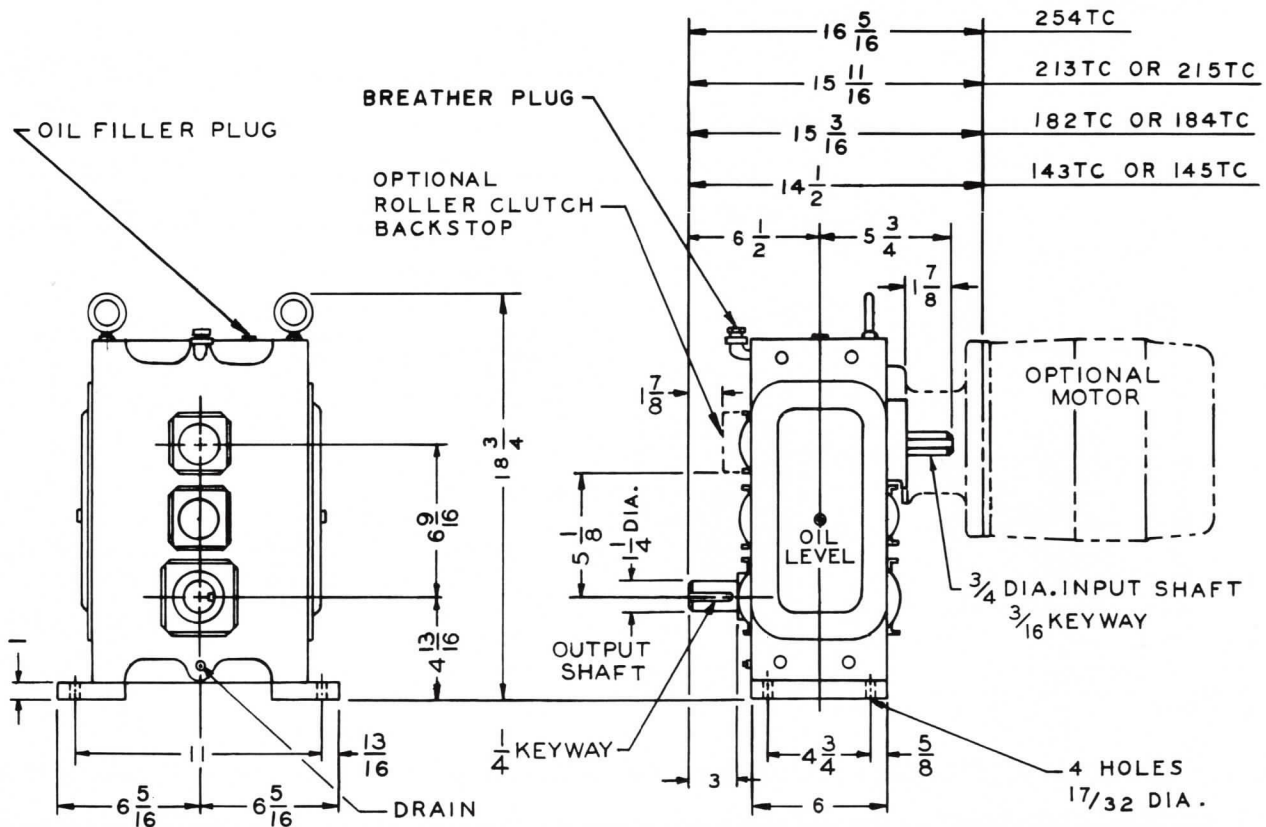
Horizontal mounting dimensions and ordering information shown on Page 46.



# 10GM SERIES

ALL AMERICAN COMPONENTS AND CONSTRUCTION  
FIVE-YEAR—10,000-HOUR WARRANTY  
DOUBLE REDUCTION GEARING

## OFFSET PARALLEL SHAFT GEARMOTOR DRIVES



MODEL	RATIO	OUTPUT (RPM)	RATINGS	
			INPUT HORSEPOWER	OUTPUT TORQUE (LB.-IN.)
10GM35	35.9	49	1.7	2225
10GM28	28.9	61	2.4	2467
10GM24	24.1	73	2.8	2452
10GM19	19.4	90	3.5	2425
10GM18	17.8	98	4.1	2645
10GM15	15.2	115	4.8	2626
10GM14	13.7	128	5.7	2825
10GM12	11.7	150	6.7	2803
10GM10	10.1	174	7.7	2783
10GM9	9.2	190	8.4	2770
10GM6	6.1	285	12.3	2728
10GM5	4.9	353	15.1	2691

Motor Frame Number	Adaptor Number	Coupling Number
143TC-145TC	AD14	CPL14
182TC-184TC	AD18	CPL18
213TC-215TC	AD21	CPL21
254TC	AD25	CPL25

Several NEMA frame size motors can be used with this series of drives and are shown in the above chart. Select the coupling and adaptor after determining the frame size of the motor that will be used. When a coupling is ordered the gearmotor drive model number and the motor frame size must be given to insure proper fit.

Average shipping weight:  
125 pounds

Overhung load capacity of output shaft is 1500 pounds.

Horsepower and output speed based on 1750 RPM input speed, and Class 1 service.

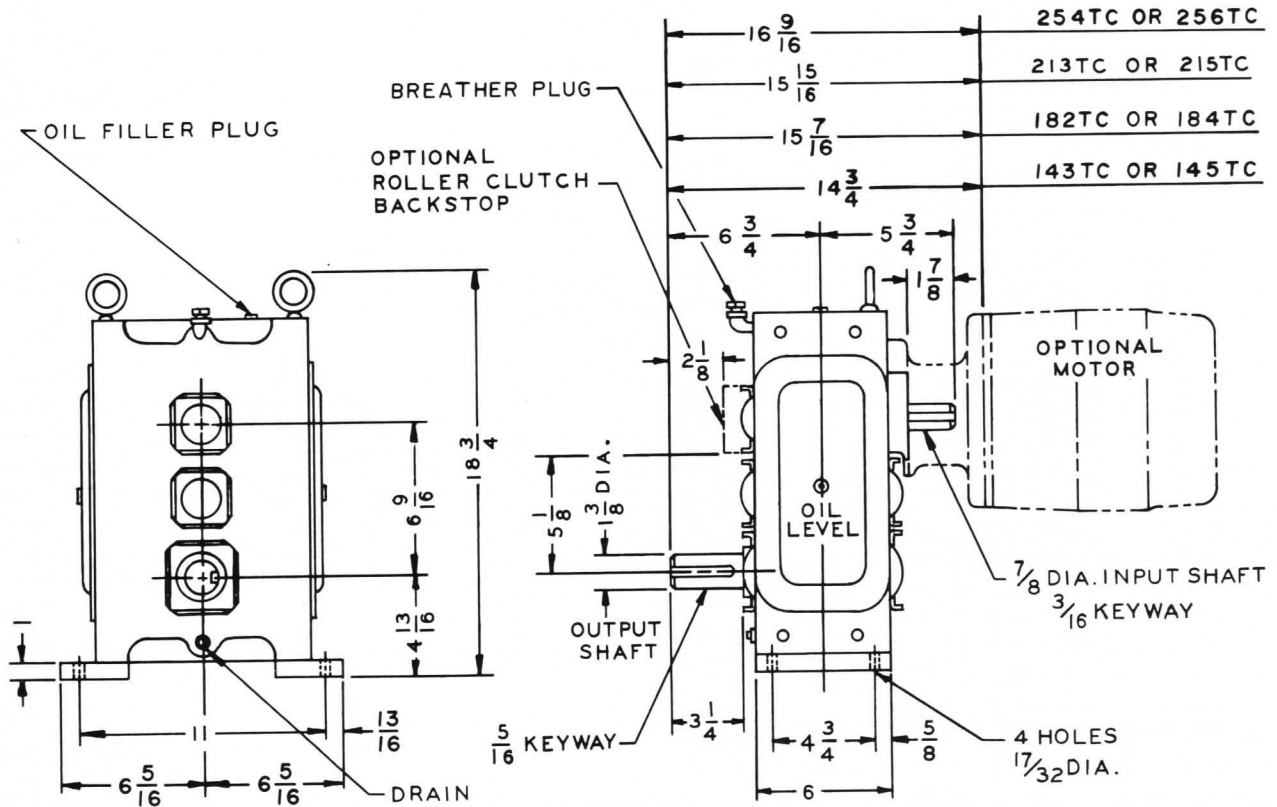


# 15GM

## SERIES

ALL AMERICAN COMPONENTS AND CONSTRUCTION  
FIVE-YEAR—10,000-HOUR WARRANTY  
DOUBLE REDUCTION GEARING

### OFFSET PARALLEL SHAFT GEARMOTOR DRIVES



MODEL	RATIO	OUTPUT (RPM)	RATINGS	
			INPUT HORSEPOWER	OUTPUT TORQUE (LB.-IN.)
15GM24	23.7	74	4.0	3407
15GM22	22.1	79	4.5	3590
15GM21	20.9	84	4.7	3526
15GM18	18.3	96	5.6	3676
15GM17	17.3	101	6.0	3744
15GM15	15.5	113	6.6	3681
15GM14	13.8	127	7.7	3821
15GM12	12.4	141	8.5	3799
15GM11	11.1	157	9.8	3934
15GM10	10.1	173	10.8	3934
15GM9	9.1	193	12.2	3983
15GM7	7.6	231	14.6	3983
15GM6	6.2	284	17.7	3927
15GM5	5.1	344	21.2	3884

Motor Frame Number	Adaptor Number	Coupling Number
143TC-145TC	AD14	CPL14
182TC-184TC	AD18	CPL18
213TC-215TC	AD21	CPL21
254TC-256TC	AD25	CPL25

Several NEMA frame size motors can be used with this series of drives and are shown in the above chart. Select the coupling and adaptor after determining the frame size of the motor that will be used. When a coupling is ordered the gearmotor drive model number and the motor frame size must be given to insure proper fit.

Average shipping weight:  
125 pounds

Overhung load capacity of output shaft is 1600 pounds.

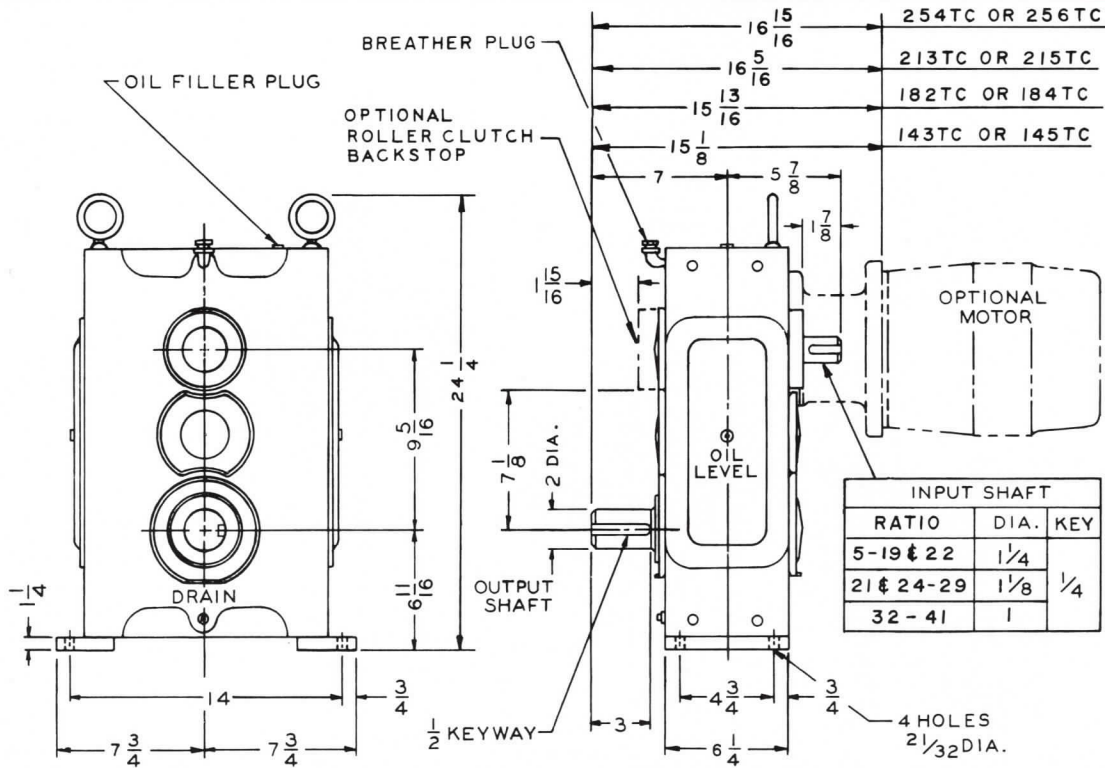
Horsepower and output speed based on 1750 RPM input speed, and Class 1 service.



# 20GM SERIES

ALL AMERICAN COMPONENTS AND CONSTRUCTION  
FIVE-YEAR—10,000-HOUR WARRANTY  
DOUBLE REDUCTION GEARING

## OFFSET PARALLEL SHAFT GEARMOTOR DRIVES



MODEL	RATIO	OUTPUT (RPM)	RATINGS	
			INPUT HORSEPOWER	OUTPUT TORQUE (LB.-IN.)
20GM41	41.7	42	4.1	6222
20GM39	38.9	45	4.4	6180
20GM36	36.2	48	4.9	6345
20GM33	33.9	52	5.1	6267
20GM29	29.7	59	6.1	6557
20GM27	27.9	63	6.7	6692
20GM24	24.6	71	7.7	6800
20GM22	21.9	80	8.8	6966
20GM19	19.6	89	10.2	7175
20GM18	18.5	95	10.8	7203
20GM17	17.5	100	11.3	7167
20GM16	16.6	105	12.0	7178
20GM15	15.1	116	14.0	7581
20GM14	14.3	125	14.7	7550
20GM13	12.9	136	16.2	7520
20GM12	11.9	147	17.9	7565
20GM10	10.7	164	19.7	7602
20GM9	9.7	180	21.6	7561
20GM8.8	8.8	199	23.7	7553
20GM7	7.4	230	27.8	7472

Motor Frame Number	Adaptor Number	Coupling Number
143TC-145TC	AD14	CPL14
182TC-184TC	AD18	CPL18
213TC-215TC	AD21	CPL21
254TC-256TC	AD25	CPL25

Several NEMA frame size motors can be used with this series of drives and are shown in the above chart. Select the coupling and adaptor after determining the frame size of the motor that will be used. When a coupling is ordered the gearmotor drive model number and the motor frame size must be given to insure proper fit.

Average shipping weight:  
225 pounds

Overhung load capacity of output shaft is 3100 pounds.

Horsepower and output speed based on 1750 RPM input speed, and Class 1 service.

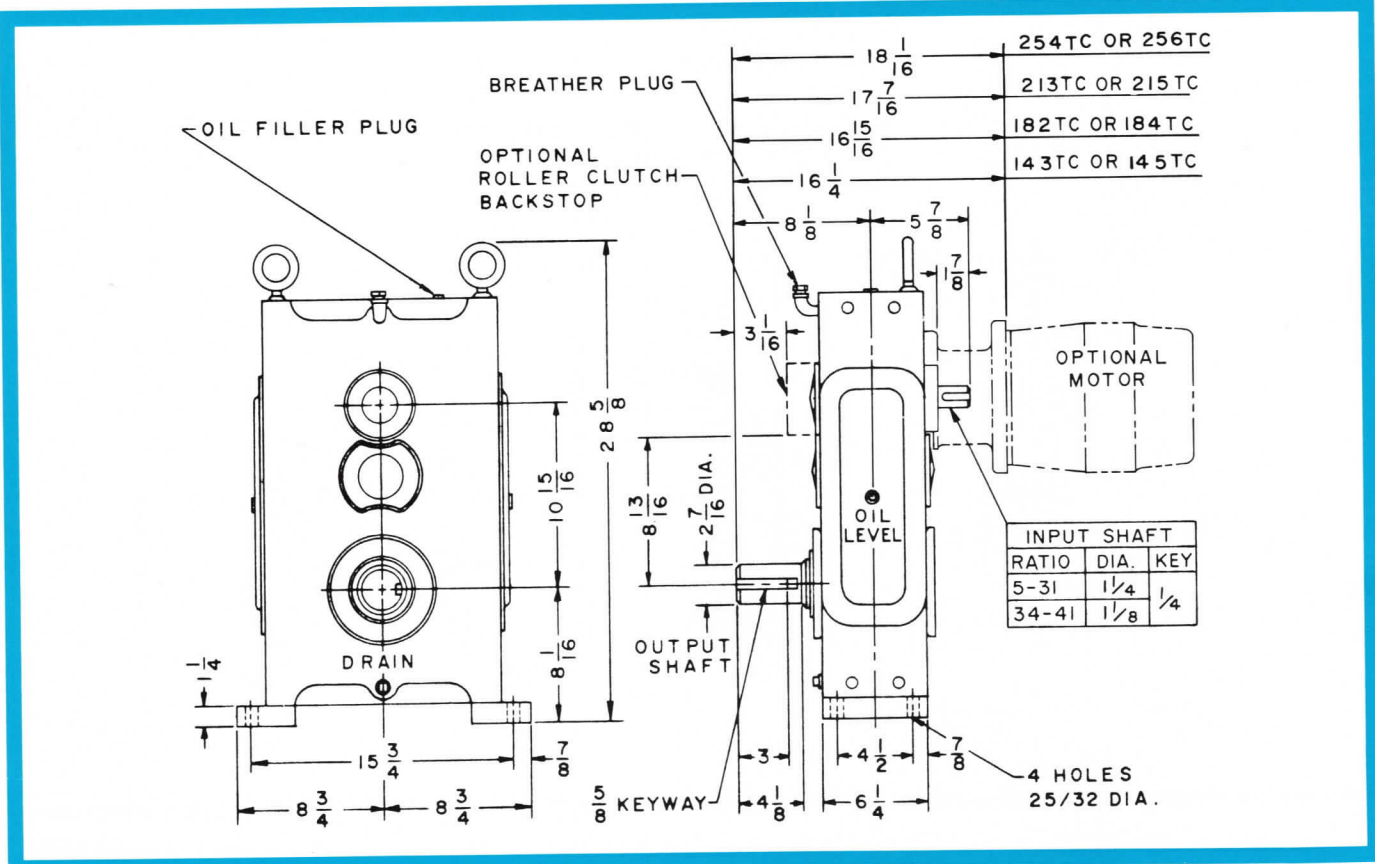
Note: Motor adaptor not available over 20 H.P.



# 30GM SERIES

ALL AMERICAN COMPONENTS AND CONSTRUCTION  
FIVE-YEAR—10,000-HOUR WARRANTY  
DOUBLE REDUCTION GEARING

## OFFSET PARALLEL SHAFT GEARMOTOR DRIVES



MODEL	RATIO	OUTPUT (RPM)	RATINGS	
			INPUT HORSEPOWER	OUTPUT TORQUE (LB.-IN.)
30GM41	41.2	42	6.3	9352
30GM36	36.5	49	8.1	10659
30GM34	34.4	51	8.1	10032
30GM31	30.7	57	9.0	9935
30GM28	27.6	63	10.8	10720
30GM26	26.0	67	11.7	10956
30GM25	24.7	71	11.7	10399
30GM23	22.8	77	14.4	11798
30GM21	21.5	81	15.3	11847
30GM20	20.4	86	16.2	11884
30GM19	19.3	91	17.1	11886
30GM17	17.2	102	19.8	12237
30GM16	16.3	107	21.6	12680
30GM15	15.5	113	22.5	12554
30GM14	14.0	125	24.3	12252
30GM13	12.8	137	27.0	12456
30GM11	10.8	162	31.5	12241
30GM7.4	7.4	236	45.0	11993

Note: Motor adaptor not available over 20 H.P.

Motor Frame Number	Adaptor Number	Coupling Number
143TC-145TC	AD14	CPL14
182TC-184TC	AD18	CPL18
213TC-215TC	AD21	CPL21
254TC-256TC	AD25	CPL25

Several NEMA frame size motors can be used with this series of drives and are shown in the above chart. Select the coupling and adaptor after determining the frame size of the motor that will be used. When a coupling is ordered the gearmotor drive model number and the motor frame size must be given to insure proper fit.

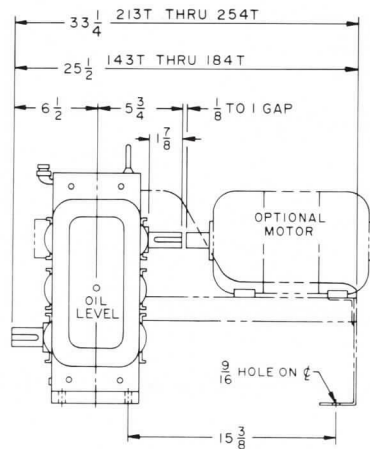
Average shipping weight:  
300 pounds

Overhung load capacity of output shaft is 4700 pounds.

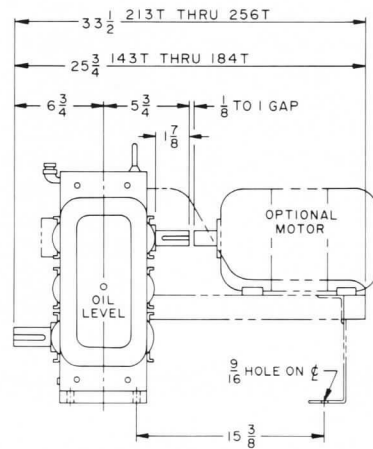
Horsepower and output speed based on 1750 RPM input speed, and Class 1 service.



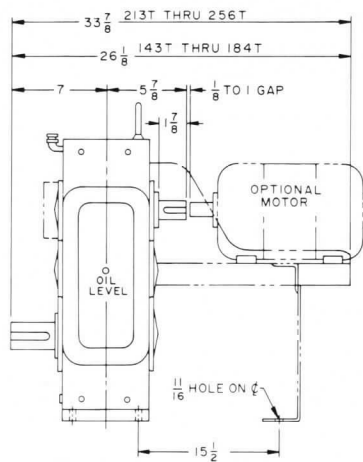
# SCOOP TYPE MOTOR MOUNTS — GEARMOTOR DRIVES



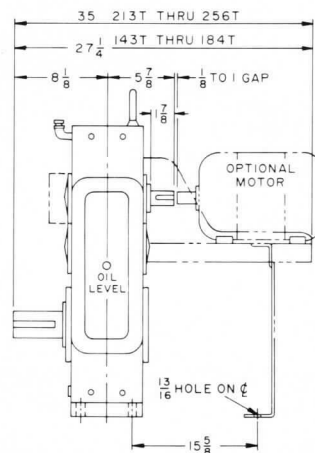
10 GM SERIES



15 GM SERIES DRIVE



20 GM SERIES DRIVE



30 GM SERIES DRIVE

Refer to Pages 41, 42, 43 and 44 for dimensions not shown, and Page 40 for ordering information.

Scoop mount is designed for the use of a standard NEMA "T" Frame motor and flexible

coupling between the motor and the high speed shaft of the drive.

Motor Frame Number	Scoop-Type Motor Mount Number	Coupling Number
143T-145T	GMM14	CPL14
182T-184T	GMM18	CPL18
213T-215T	GMM21	CPL21
254T-256T	GMM25	CPL25

Several NEMA frame size motors can be used with this series of drives and are shown in the above chart. Select the

coupling and scoop mount after determining the frame size of the motor that will be used. When the coupling is

ordered the gearmotor drive model number and the motor frame size must be given to insure proper fit.

NOTE: Scoop Mount not available over 20 H.P.



# GEARMOTOR DRIVES, HORIZONTAL POSITION

The Dorris Gearmotor Drive can be used in the horizontal position as shown below and on page 39.

Scoop type motor mounts have some limitations in the horizontal position. 10GM and 15GM Series maximum frame size motor is 145T. 20GM Series maximum frame size motor is 215T. 30GM Series maximum frame size motor is 256T. Also they are not suitable for DO, RR or LL assemblies. Use the chart on page 45 for selection

of scoop mounts with limitations stated above. Insert the letter "H" after GMM to indicate horizontal mounting.

"TC" frame motors and adaptors can be used in accordance with the data shown on Page 41, 42, 43 and 44. Coupling selection is the same procedure as vertical mounting.

When ordering specify the model number of the gearmotor drive, followed by the shaft assembly that is required, per the shaft assembly diagram shown

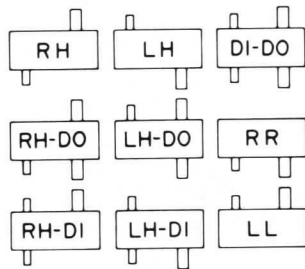
on this page, adaptor or scoop mount and coupling if required.

### EXAMPLE

When the Adaptor and "TC" flange motor is used  
 1—10GM 14 RH Gearmotor Drive  
 1—AD14 Adaptor  
 1—CPL 14 Coupling

When a Scoop mount is to be used a "T" frame motor is required:

1—10GM 14 RH Gearmotor Drive  
 1—GMMH 14 Scoop Mount  
 1—CPL 14 Coupling



SHAFT ASSEMBLY DIAGRAM  
 Top View  
 H.S. Shaft on Left

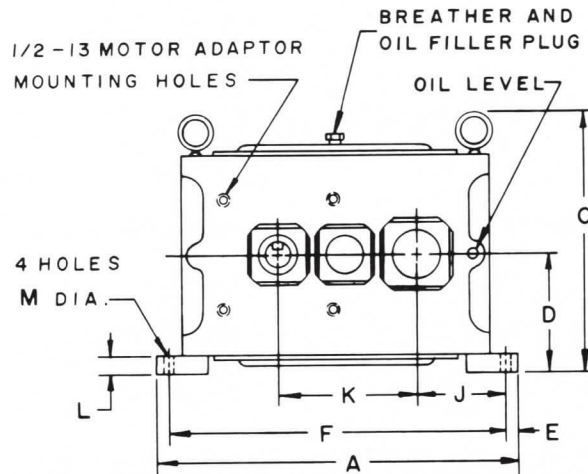
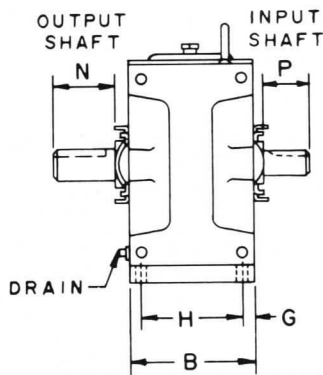
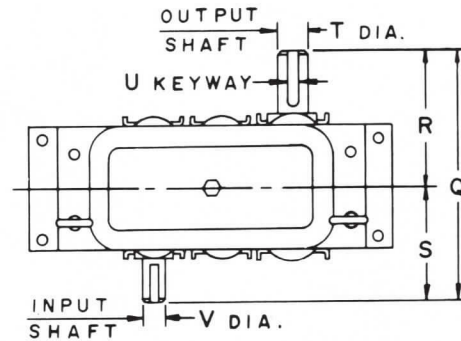


TABLE 27. DIMENSIONS IN INCHES

Model	A	B	C	D	E	F	G	H	J	K	L	M	N	P	Q	R	S	T	U	V
10	18¼	6	13½	5¾	13 <sup>3</sup> / <sub>16</sub>	16 <sup>5</sup> / <sub>8</sub>	5 <sup>8</sup> / <sub>16</sub>	4¾	4 <sup>9</sup> / <sub>16</sub>	6 <sup>9</sup> / <sub>16</sub>	1	17 <sup>17</sup> / <sub>32</sub>	3	2¼	12¼	6½	5¾	1¼	¼	Refer To Pages 41, 42, 43 and 44
15	18¼	6	13½	5¾	13 <sup>3</sup> / <sub>16</sub>	16 <sup>5</sup> / <sub>8</sub>	5 <sup>8</sup> / <sub>16</sub>	4¾	4 <sup>9</sup> / <sub>16</sub>	6 <sup>9</sup> / <sub>16</sub>	1	17 <sup>17</sup> / <sub>32</sub>	3¼	2¼	12½	6¾	5¾	1¾	5 <sup>1</sup> / <sub>16</sub>	
20	23	6¼	16¾	7½	¾	21½	¾	4¾	6 <sup>3</sup> / <sub>16</sub>	9 <sup>5</sup> / <sub>16</sub>	1¼	21 <sup>21</sup> / <sub>32</sub>	3	2¾	12 <sup>7</sup> / <sub>8</sub>	7	5 <sup>7</sup> / <sub>8</sub>	2	½	
30	27½	6¼	18 <sup>5</sup> / <sub>8</sub>	8¼	7 <sup>8</sup> / <sub>16</sub>	25¾	7 <sup>8</sup> / <sub>16</sub>	4½	7 <sup>11</sup> / <sub>16</sub>	10 <sup>15</sup> / <sub>16</sub>	1¼	25 <sup>25</sup> / <sub>32</sub>	4¾	2¾	14	8 <sup>7</sup> / <sub>8</sub>	5 <sup>7</sup> / <sub>8</sub>	2 <sup>7</sup> / <sub>16</sub>	5 <sup>5</sup> / <sub>8</sub>	

Dimensions for gearmotor drive with adaptors are shown on page 41, 42, 43 and 44. Refer to factory for scoop mount dimensions.



# ENGINEERING DATA

## TO DETERMINE HORSEPOWER RATING

When horsepower ratings are based on 1750 R.P.M. input speed, the revised rating at a lower input speed can be determined by the use of the following formula.

$$\text{Approx. H.P. Capacity} = \frac{\text{Input R.P.M.} \times \text{Rated H.P.}}{1750}$$

## TO DETERMINE TORQUE WITH HORSEPOWER AND R.P.M. KNOWN USE THE FOLLOWING FORMULA:

$$\text{Torque in pound-inches} = \frac{63025 \times \text{H.P.}}{\text{R.P.M.}}$$

## TO DETERMINE HORSEPOWER WITH TORQUE AND R.P.M. KNOWN USE THE FOLLOWING FORMULA:

$$\text{Horsepower} = \frac{\text{Torque in pound-inches} \times \text{R.P.M.}}{63025}$$

TABLE 28. TORQUE (lb-in) AT 1 H.P.

RPM	LB-IN	RPM	LB-IN	RPM	LB-IN	RPM	LB-IN
1	63,025	50	1,261	100	630	200	315
5	12,605	55	1,146	110	573	300	210
10	6,303	60	1,050	120	525	400	158
15	4,202	65	970	130	485	500	126
20	3,151	70	900	140	450	600	105
25	2,521	75	840	150	420	800	79
30	2,101	80	788	160	394	1000	63
35	1,801	85	741	170	371	1250	50
40	1,576	90	700	180	350	1500	42
45	1,401	95	663	190	332	1750	36

To compute torque at any other horsepower, multiply torque values shown above by horsepower required.

EXAMPLE: 5 hp @ 40 rpm, Torque = 5 × 1576 or 7880 lb-in.

## TO DETERMINE OVERHUNG LOADS ON SHAFTS USE THE FOLLOWING FORMULA:

$$\text{Overhung load in pounds} = \frac{\text{Torque in pound-inches}}{\text{Pitch radius of sprocket in inches}}$$

Note: Overhung load ratings, as shown on all series of speed reducers in this catalog, are based on the load being applied at the middle of the shaft extension.

To decrease the overhung load, increase the pitch diameter of the sprocket.



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