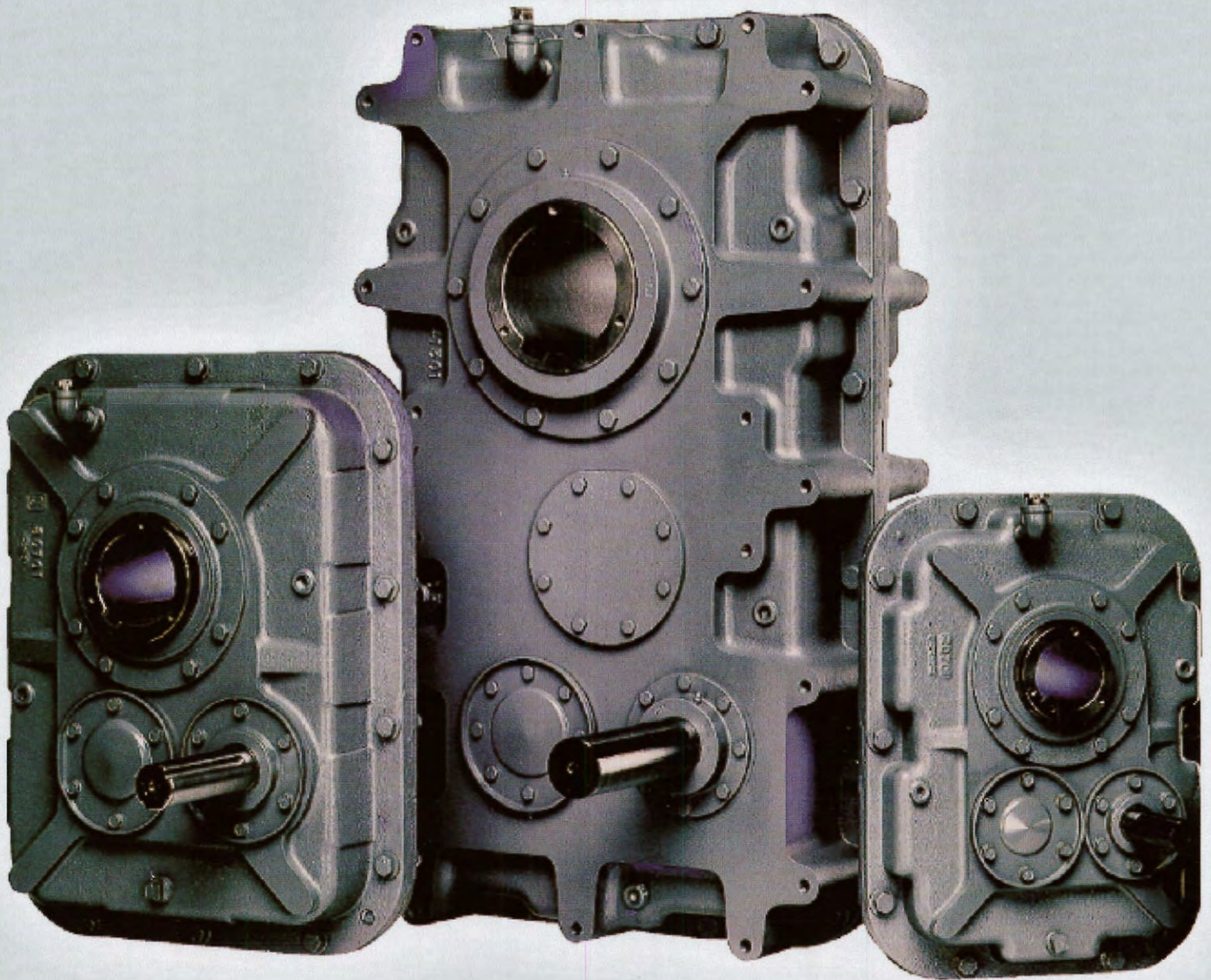


SHAFT MOUNT AND SCREW CONVEYOR GEAR DRIVES



Dorris
GEAR DRIVES

SHAFT MOUNT GEAR DRIVE APPLICATIONS



**SHAFT MOUNT AND SCREW CONVEYOR DRIVE INDUSTRIAL APPLICATIONS:
MINING & AGGREGATE, GRAIN HANDLING & AGRICULTURE, AND CONVEYOR SYSTEMS.**

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GUARANTEE

Dorris warrants that each gear drive will deliver successfully its rated capacity as indicated in the catalog, provided it is properly installed, maintained and operated in the environment and within the limits of speed, torque and other load conditions for which it was sold. Dorris Installation, Lubrication and Maintenance Instructions are provided with each gear drive and must be followed in strict accordance. Damage caused by misuse, negligence or accident is not covered.

The guarantee period for all gear drives is two years from the date of shipment from our factory or 4,000 hours of operation, whichever comes first. Materials or workmanship that prove defective will be replaced or repaired at the option of the SGC Dorris Company, Inc., F.O.B., Fraser, MI. This warranty is in lieu of all other expressed or implied warranties. In no event shall the SGC Dorris Company, Inc. be liable for any special, indirect or consequential damages (including but not limited to, lost profits or other damages from loss of production) caused by material or workmanship that is proven to be defective.

IMPORTANT NOTICE

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 the SGC Dorris Company nor are they the responsibility of the SGC Dorris Company.

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 the Installation, Lubrication and Maintenance Instructions shipped with each unit for further information regarding lubrication.

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

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

FEATURES AND BENEFITS

The TR product line is the third generation of Dorris shaft mounts. It carries the same design integrity, reliability and manufacturing excellence of previous product offerings, but this carefully designed product line has a new look with features and benefits that set Dorris apart from the rest of the field.

NARROW DESIGN

One of the most critical dimensions of a shaft mounted gear drive is the required driven shaft length. The Dorris TR design has a narrow "thru the bore" dimension, a bushing design that mounts from the open (motor) side and requires a drive shaft that only needs to extend partially through the gear drive. With these features, Dorris requires approximately half the driven shaft length of the leading competitor.

QUICK RELEASE

The quick release tapered bushing is easier to install and remove than any comparable bushing system. The single tapered bushing consists of a flexible sleeve and threaded collar that conforms to the driven shaft with greater gripping power, thus it is designed to avoid crevice or fretting corrosion, localized welding, binding and many of the problems that exist in other bushing designs.

40:1 RATIO

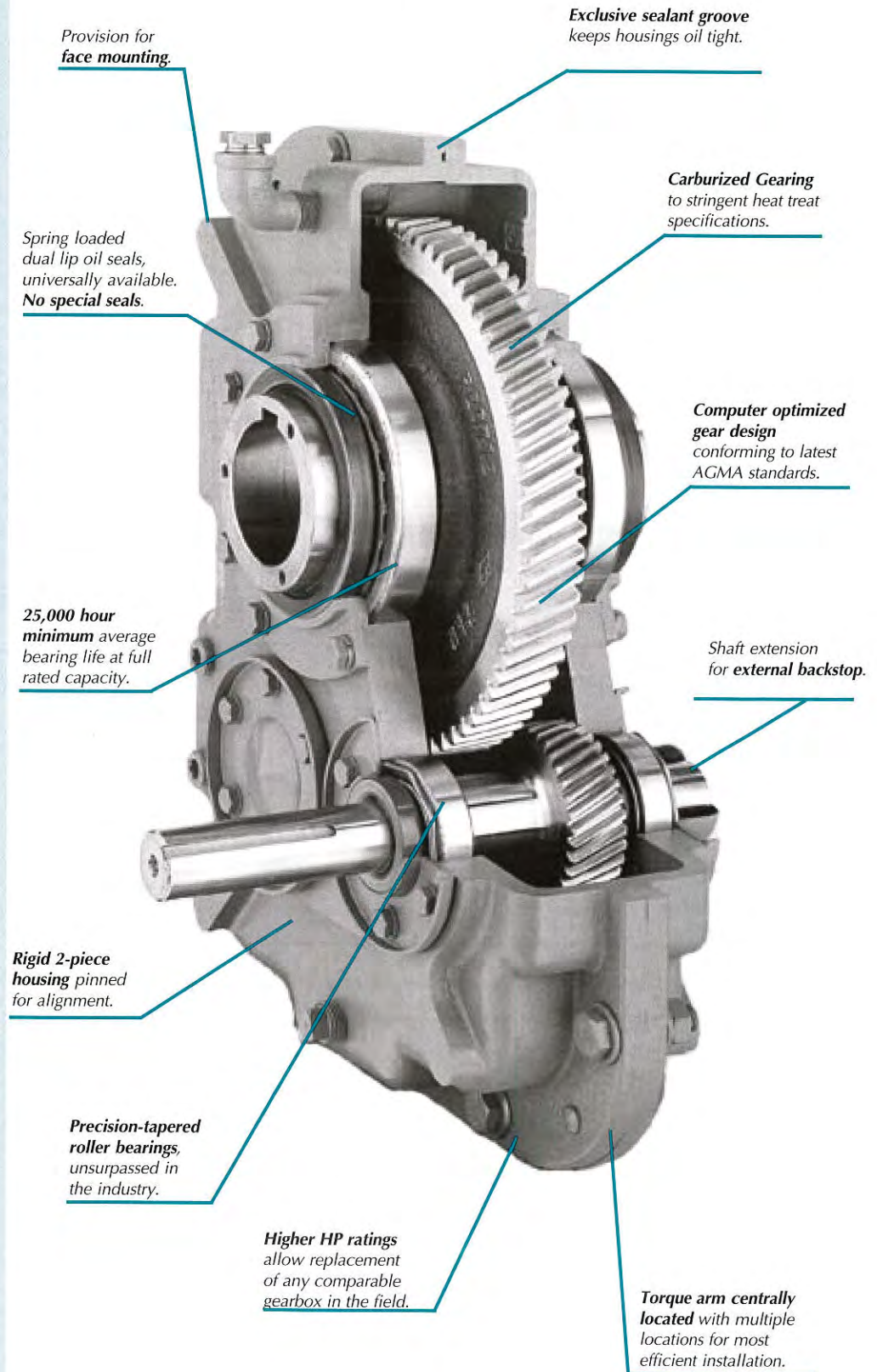
Three ratios, 30:1, 35:1 and 40:1 are new and available only from Dorris. They allow many new options in selecting a drive system. Among a few of these are lower output speeds; higher speed, lower cost motors; smaller, less expensive sheaves and enough ratio within the gear drive to directly couple a C-face motor.

250:1 RATIO

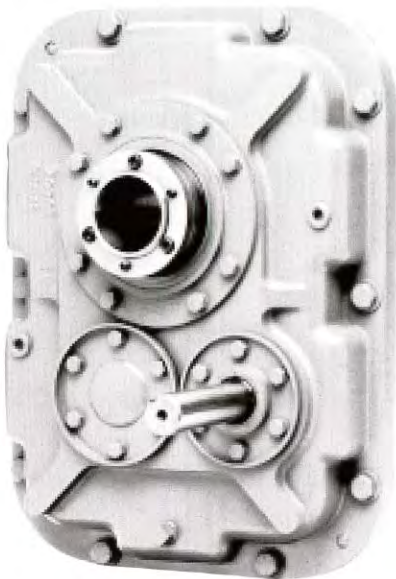
The 407, 415, 507, 608 and 700 Series offer triple reduction ratios to 250:1, as well as single and double gearing.

HIGHEST STANDARDS

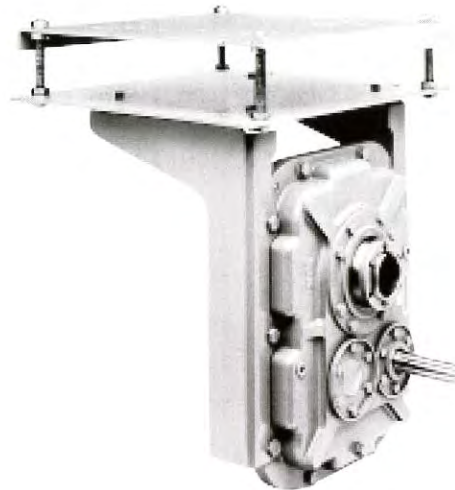
A total quality management system assures excellence from customer contact to delivery of the finished product. The TR series of products are CAD designed and in strict accordance with AGMA standards. Gearing is of the helical type with optimized geometry and hardened for strength, durability and compactness of design. Gears are made of aircraft quality materials. Tapered roller bearings are used throughout, yielding a more reliable bearing design with greater thrust and overhung load capacity.



FEATURES AND BENEFITS



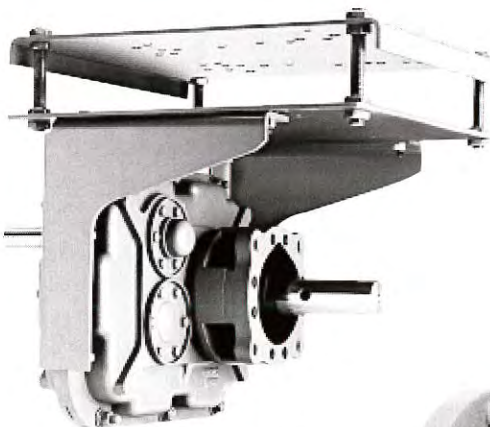
TR Shaft Mounted Drive



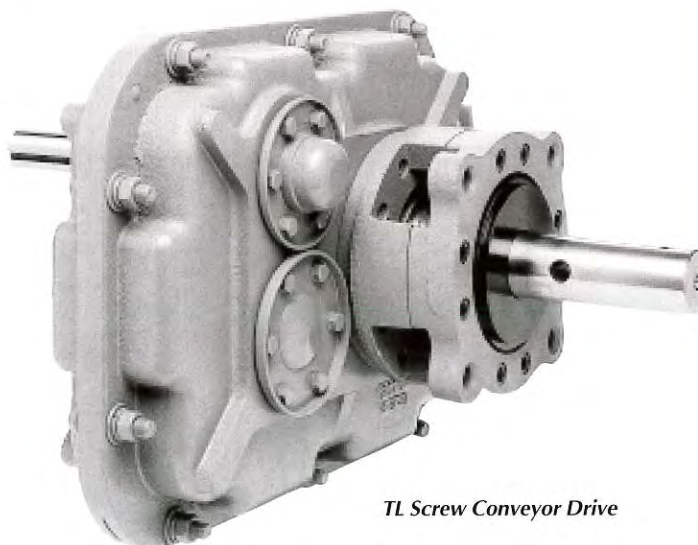
*TR Shaft Mounted Drive
with Motor Mount*



Tapered Release Bushing



*TL Screw Conveyor Drive
with Motor Mount*



TL Screw Conveyor Drive

WARRANTY

The adherence to strict standards allows Dorris to offer the best shaft mount **WARRANTY OF TWO YEARS/4000 HOURS.**

LESS INVESTMENT

The TR product is versatile, efficient and cost effective. Only three motor mount sizes are needed for the first seven models and all mounting configurations. Screw conveyor kits allow the quick conversion of a TR to a TL product.

AMERICAN MADE

The TR shaft mounts, as are all Dorris products, are made completely in America (Fraser, MI) with American workers, American sources of materials and produced in an American owned plant.

OPTIONS AND ACCESSORIES

- ^ Available Arrangements:
TR - Tapered Bore Shaft Mount
TL - Loose Shaft Screw Conveyor Drive
- ^ Motor mounts - only 3 sizes necessary for 7 models: 107-315. Accommodates all mounting positions. Additionally, only 3 sizes are necessary for models 407 through 700.
- ^ External backstop kits - mount in the field using supplied shaft race extension on all double reduction drives. Backstop kits must be specified when ordering 608 or 700 models as they can not be added later.
- ^ Screw conveyor kits - adapt the unit to either CEMA or Dorris' own TEF style trough ends.
- ^ Stainless steel screw conveyor drive shafts.
- ^ 3-hole drilled screw conveyor drive shafts.
- ^ CAD disc with outline drawing and dimensions.
- ^ Taconite "grease purge" seals.
- ^ Hydraulic motor interface.
- ^ C-face motor interface.
- ^ Low speed shaft bushings to smaller size.
- ^ Metric high speed shaft and low speed bushing.
- ^ Modifications to specific customer requirements in quantity of one or more.
- ^ Overload release device.

SELECTION AND ORDERING

When selecting shaft mounted gear drives or screw conveyor drives, the following information is required:

- ^ Horsepower and/or torque of the driver. Use the nameplate horsepower, rather than a calculated or measured power "draw".
- ^ Speed of the driver (motor).
- ^ Output speed required from the gear drive. The speed of the driver divided by the output speed of the gear drive is the total ratio required, which is commonly a combination of a v-belt ratio and gear drive ratio. Select the gear drive ratio that is closest to the total ratio required.
- ^ Application, which will determine the required class of service and resulting service factor. Class II service is the most common. Note the limits for maximum starting or momentary peak loads given in the Service Classification section.

Once these items are known, the gear drive can be selected using either the Horsepower Selection Charts or Torque Selection Charts.

See Engineering Information section for limits on high speed shaft sheave diameter and low speed shaft thrust loads (if applicable).

For example, if a 10 HP, 1750 rpm electric motor is used as a driver for a non-uniformly fed belt conveyor that will operate eight hours per day at 35 rpm, the shaft mounted gear drive selection would be a 215TR40. From the Service Classification section, note that this application requires Class II service, and from the Horsepower Ratings for Class II Service, a 215 TR is required, with any of seven nominal gear drive ratios available (10:1 through 40:1). Choose the gear drive ratio closest to the total ratio required, which in this example is:

$$1750/35 = 50:1$$

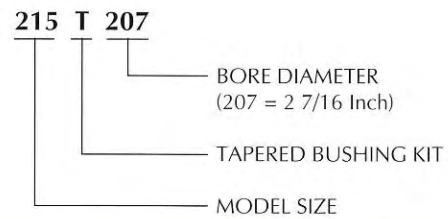
Therefore, a 215TR40 would be the selection yielding the closest ratio in this case. If a screw conveyor drive was desired, a 215TL40 would be appropriate.

TR SHAFT MOUNTED GEAR DRIVE ORDER EXAMPLE

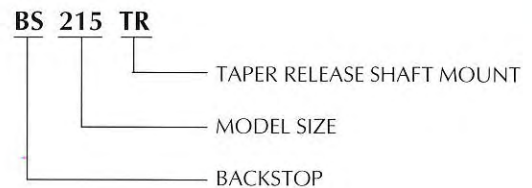
Shaft Mounted Gear Drive



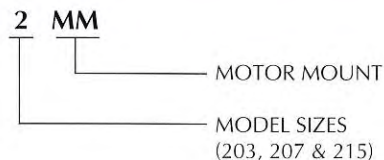
Tapered Bushing Kit



Backstop Kit



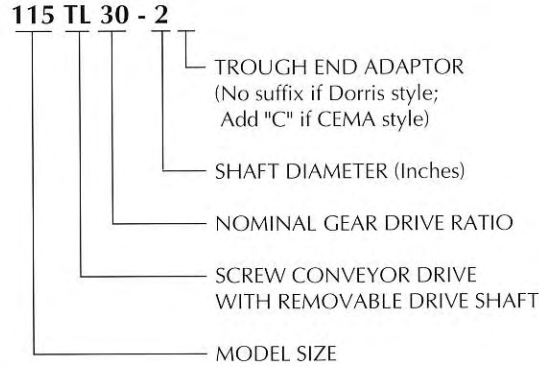
Motor Mount



SELECTION AND ORDERING

TL SCREW CONVEYOR DRIVE ORDER EXAMPLE

Screw Conveyor Drive



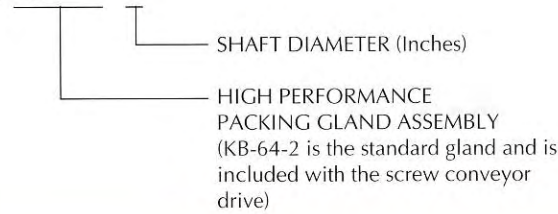
For a shaft mounted gear drive, also consider these commonly selected options:

- ^ Bushings to sizes listed for each model.
- ^ Backstops for each model and ratio. See Engineering Information section for backstop torque capacity. The selection may be dependent on ratio.
- ^ Motor mounts.
- ^ Other options are also available. See Features and Benefits section.

For a screw conveyor drive, also consider these commonly selected options:

- ^ Various shaft extension diameters.
- ^ Dorris or CEMA trough end adaptors.
- ^ Two options on packing glands.
- ^ Various trough ends.
- ^ Motor mounts. The position must be selected to clear the trough end.
- ^ Other options are also available. See Features and Benefits section.

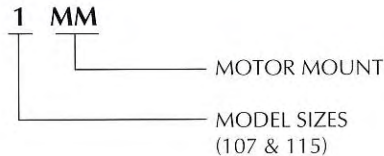
Packing Gland Assembly KA - 64 - 2



Trough End



Motor Mount



SERVICE CLASSIFICATION

Obtain the service factor for your application based on the information below and Table 1.

AGMA SERVICE CLASSIFICATION	AGMA SERVICE FACTOR	RELATIVE DUTY
I	1.0	Light
II	1.4	Normal
III	2.0	Heavy

The service classification can be determined from Table 1 and is defined by three classes.

Class I - Steady load not exceeding motor HP rating and light shock loads during a maximum of 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 load must not exceed 2x motor horsepower rating.

Class I service is characterized as light duty and carries a 1.0 service factor. This is rarely used.

Class II - Steady load not exceeding motor HP rating for over 10 hours a day. Moderate shock loads are allowable during a maximum of 10 hours a day. For Class II applications the maximum value of starting and momentary peak load must not exceed 2.8x motor horsepower rating.

Class II service is characterized as normal duty, carries a 1.4 service factor and is the most common service.

Class III - Moderate shock loads for over 10 hours a day. Heavy shock loads are allowable during a maximum of 10 hours a day. For Class III applications, the maximum value of starting and momentary peak load should not exceed 4x motor horsepower rating.

Class III service is characterized as heavy duty and carries a 2.0 service factor.

Table 1. AGMA Class Of Service For Gear Drives Driven By

APPLICATION	CLASS NO.			APPLICATION	CLASS NO.		
	< 3 HRS DAY	3-10 HRS DAY	> 10 HRS DAY		< 3 HRS DAY	3-10 HRS DAY	> 10 HRS DAY
AGITATORS (Mixers)				FANS			
Pure Liquids	I	I	II	Centrifugal	I	I	II
Liquids and Solids	I	II	II	Cooling Towers	III	III	III
Liquids - Variable Density	I	II	II	Forced Draft	II	II	II
BLOWERS				Induced Draft	II	II	II
Centrifugal	I	I	II	Industrial & Mine	II	II	II
Lobe	I	II	II	FEEDERS			
Vane	I	II	II	Apron	I	II	II
BREWING AND DISTILLING				Belt	I	II	II
Bottling Machinery	I	I	II	Disc	I	I	II
Brew Kettles - Continuous Duty	II	II	II	Reciprocating	II	III	III
Cookers - Continuous Duty	II	II	II	Screw	I	II	II
Mash Tubs - Continuous Duty	II	II	II	FOOD INDUSTRY			
Scale Hopper - Frequent Starts	II	II	II	Cereal Cooker	I	I	II
CAN FILLING MACHINES	I	I	II	Dough Mixer	II	II	II
CAR DUMPERS	I	III	III	Meat Grinders	II	II	II
CAR PULLERS	I	II	II	Slicers	I	II	II
CLARIFIERS	I	I	II	GENERATORS AND EXCITERS	II	II	II
CLASSIFIERS	I	II	II	HAMMER MILLS	III	III	III
CLAY WORKING MACHINERY				HOISTS (SEE CRANES)			
Brick Press	II	III	III	Heavy Duty	III	III	III
Briquette Machine	II	III	III	Medium Duty	II	II	II
Pug Mill	I	II	II	Skip Hoist	II	II	II
COMPACTORS	III	III	III	LAUNDRY TUMBLERS	II	II	II
COMPRESSORS				LAUNDRY WASHERS	II	II	III
Centrifugal	I	I	II	LUMBER INDUSTRY			
Lobe	I	II	II	Barkers			
Reciprocating, Multi-Cylinder	II	II	III	Spindle Feed	II	II	II
Reciprocating, Single-Cylinder	III	III	III	Main Drive	III	III	III
CONVEYORS - General Purpose				Conveyors			
Includes Apron, Assembly, Belt, Bucket, Chain, Flight, Oven and Screw				Burner	II	II	II
Uniformly Loaded or Fed	I	I	II	Main or Heavy Duty	II	II	II
Heavy Duty-Not Uniformly Fed	I	II	II	Main Log	III	III	III
Severe Duty - Reciprocating or Shaker	II	III	III	Re-saw, Merry-Go-Round	II	II	II
CRANES ¹				Slab	III	III	III
Industrial Duty				Transfer	II	II	II
Main Hoist	II/III	II/III	III	Chains			
Auxiliary Hoist	II/III	II	III	Floor	II	II	II
Bridge	II/III	III	III	Green	II	II	III
Trolley Travel	II/III	II	III	Cut-off Saws			
CRUSHER				Chain	II	II	III
Stone or Ore	III	III	III	Drag	II	II	III
DREDGES				Debarking Drums	III	III	III
Cable Reels	II	II	II	Feeds			
Conveyors	II	II	II	Edger	II	II	II
Cutter Head Drives	III	III	III	Gang	III	III	III
Pumps	III	III	III	Trimmer	II	II	II
Screen Drives	III	III	III	Log Deck	III	III	III
Stackers	II	II	II	Log Hauls - Incline - Well Type	III	III	III
Winches	II	II	II	Log Turning Devices	III	III	III
ELEVATORS				Planer Feed	II	II	II
Bucket	I	II	II	Planer Tilting Hoists	II	II	II
Centrifugal Discharge	I	I	II	Rolls- Live-off brg. - Roll Cases	III	III	III
Escalators	I	I	II	Sorting Table	II	II	II
Freight	I	II	II	Tipple Hoist	II	II	II
Gravity Discharge	I	I	II	Transfers			
EXTRUDERS				Chain	II	II	III
General	II	II	II	Craneway	II	II	III
Plastics				Tray Drives	II	II	II
Variable Speed Drive	III	III	III	Veneer Lathe Drives	II	II	II
Fixed Speed Drive	III	III	III	METAL MILLS			
Rubber				Draw Bench Crg. & Main Drive	II	II	II
Continuous Screw Operation	III	III	III	Runout Table			
Intermittent Screw Operation	III	III	III	Non-reversing			
				Group Drives	II	II	II
				Individual Drives	III	III	III
				Reversing	III	III	III
				Slab Pushers	II	II	II
				Shears	III	III	III
				Wire Drawing	II	II	II
				Wire Winding Machine	II	II	II

SERVICE CLASSIFICATION

Electric Or Hydraulic Motors ⁴

APPLICATION	CLASS NO.			APPLICATION	CLASS NO.		
	< 3 HRS DAY	3-10 HRS DAY	>10 HRS DAY		< 3 HRS DAY	3-10 HRS DAY	>10 HRS DAY
METAL STRIP PROC. MACH.				PLASTICS - SECONDARY PROC.			
Bridles	II	II	II	Blow Molders	II	II	II
Coilers & Uncoilers	I	I	II	Coating	II	II	II
Edge Trimmers	I	II	II	Film	II	II	II
Flatteners	II	II	II	Pipe	II	II	II
Loopers (Accumulators)	I	I	I	Pre-Plasticizers	II	II	II
Pinch Rolls	II	II	II	Rods	II	II	II
Scrap Choppers	II	II	II	Sheet	II	II	II
Shears	III	III	III	Tubing	II	II	II
Slitters	I	II	II	PULLERS - BARGE HAUL	II	II	II
MILLS, ROTARY TYPE				PUMPS			
Ball & Rod				Centrifugal	I	I	II
Spur Ring Gear	III	III	III	Proportioning	II	II	II
Helical Ring Gear	II	II	II	Reciprocating			
Direct Connected	III	III	III	Single Acting, > 3 cylinders	II	II	II
Cement Kilns	II	II	II	Double Acting, > 2 cylinders	II	II	II
Dryers & Coolers	II	II	II	Rotary			
MIXERS, CEMENT	II	II	II	Gear Type	I	I	II
PAPER MILLS				Lobe	I	I	II
Agitator (Mixer)	II	II	II	Vane	I	I	II
Agitator for Pure Liquors	II	II	II	RUBBER INDUSTRY			
Barking Drums	III	III	III	Intensive Internal Mixers			
Barkers, Mechanical	III	III	III	Batch Mixers	III	III	III
Beater	II	II	II	Continuous Mixers	II	II	II
Breaker Stack	II	II	II	Mixing Mill			
Calender ²	II	II	II	2 smooth rolls	II	II	II
Chipper	III	III	III	1 or 2 corrugated rolls	III	III	III
Chip Feeder	II	II	II	Batch Drop Mill - 2 smooth rolls	II	II	II
Coating Rolls	II	II	II	Cracker Warmer - 2 roll;			
Conveyors				1 corrugated roll	III	III	III
Chip, Bark, Chemical	II	II	II	Cracker - 2 corrugated rolls	III	III	III
Log (including Slab)	III	III	III	Holding, Feed & Blend Mill-2 rolls	II	II	II
Couch Rolls II	II	II	II	Refiner - 2 rolls	II	II	II
Cutter	III	III	III	Calenders	II	II	II
Cylinder Molds	II	II	II	SAND MULLER	II	II	II
Dryers ²				SEWAGE DISPOSAL EQUIPMENT			
Paper Machine	II	II	II	Bar Screens	II	II	II
Conveyor Type	II	II	II	Chemical Feeders	II	II	II
Embosses	II	II	II	Dewatering Screens	II	II	II
Extruder	II	II	II	Scum Breakers	II	II	II
Fourdrinier Rolls (Includes				Slow or Rapid Mixers	II	II	II
lump breaker, dandy roll,				Sludge Collectors	II	II	II
wire turning, & return rolls)	II	II	II	Thickener	II	II	II
Jordan	II	II	II	Vacuum Filters	II	II	II
Kiln Drive	II	II	II	SCREENS			
Mt. Hope Roll	II	II	II	Air Washing	I	I	II
Paper Rolls	II	II	II	Rotary - Stone or Gravel	II	II	II
Platter	II	II	II	Traveling Water Intake	I	I	I
Presses - Felt & Suction	II	II	II	SCREW CONVEYORS			
Pulper	III	III	III	Uniformly Loaded or Fed	I	I	II
Pumps - Vacuum	II	II	II	Heavy Duty	I	II	II
Reel (Surface Type)	II	II	II	SUGAR INDUSTRY			
Screens				Beet Slicer	III	III	III
Chip	II	II	II	Cane Knives	II	II	II
Rotary	II	II	II	Crushers	II	II	II
Vibrating	III	III	III	Mills (low speed end)	III	III	III
Size Press	II	II	II	TEXTILE INDUSTRY			
Supercalender ²	II	II	II	Batchers	II	II	II
Thickener (AC Motor)	II	II	II	Calenders	II	II	II
(DC Motor)	II	II	II	Cards	II	II	II
Washer (AC Motor)	II	II	II	Dry Cans	II	II	II
(DC Motor)	II	II	II	Dyeing Machinery	II	II	II
Wind and Unwind Stand	I	I	I	Looms	II	II	II
Winders (Surface Type)	II	II	II	Mangles	II	II	II
Yankee Dryers ²	II	II	II	Nappers	II	II	II
PLASTICS - PRIMARY PROC.				Pads	II	II	II
Intensive Internal Mixers				Slashers	II	II	II
Batch Mixers	III	III	III	Soapers	II	II	II
Continuous Mixers	II	II	II	Spinners	II	II	II
Batch Drop Mill - 2 smooth rolls	II	II	II	Tenter Frames	II	II	II
Continuous Feed, Holding &				Washers	II	II	II
Blend Mill	II	II	II	Winders	II	II	II
Calenders	II	II	II				

NOTES

¹ The values given are based on Dorris Company experience. All crane applications should be pitting limited. Consult the Dorris Company for duty cycle loading or if people are occasionally transported.

² Anti-friction bearings only.

³ A Class number of I may be applied at base speed of a supercalender operating over a speed range of part-range constant horsepower and part-range constant torque where the constant horsepower speed range is greater than 1.5 to 1. A Class number of II is applicable to supercalenders operating over the entire speed range at constant torque or where the constant horsepower speed range is less than 1.5 to 1.

⁴ Table I is derived from ANSI/AGMA 6021-G89, the applicable standard at the time of publication of this catalog. It is the responsibility of the user of this catalog to verify that the most current and applicable service classifications are in accordance with Table I except as noted that Dorris experience dictates otherwise.

⁵ For further discussion of service factors and other derating factors affecting life and reliability, see ANSI/AGMA 6021-G89 and ANSI/AGMA 2001-C95.

Contact AGMA as follows:

American Gear Manufacturers Assoc.
Suite 201
1500 King Street
Alexandria VA 22314
(703) 684-0211
(703) 684-0242 Fax

HORSEPOWER RATINGS FOR CLASS I SERVICE

HORSE-POWER	OUTPUT SPEED (RPM)	MODEL	NOMINAL GEAR DRIVE RATIO
1	175-350	107	5
	13-174	107	10 to 40
	8-10	115	10 to 40
	5-7	203	10 to 40
1 1/2	175-350	107	5
	20-174	107	10 to 40
	12-19	115	10 to 40
	8-11	203	10 to 40
2	5-7	207	10 to 40
	175-350	107	5
	26-174	107	10 to 40
	16-25	115	10 to 40
	11-15	203	10 to 40
3	7-10	207	10 to 40
	5-6	215	10 to 40
	175-350	107	5
	41-174	107	10 to 40
	25-40	115	10 to 40
	16-24	203	10 to 40
5	11-15	207	10 to 40
	6-10	215	10 to 40
	5	307	10 to 40
	164-350	107	5
	72-163	107	10
	42-71	115	10 to 40
	27-41	203	10 to 40
7 1/2	18-26	207	10 to 40
	10-17	215	10 to 40
	7-9	307	10 to 40
	5-6	315	10 to 40
	175-350	107	5
	136-174	115	5
	66-135	115	10 to 30
	42-65	203	10 to 40
10	27-41	207	10 to 40
	16-26	215	10 to 40
	10-15	307	10 to 40
	7-9	315	10 to 40
	5-6	407	15 to 250
	148-350	115	5
	93-147	115	10
	56-92	203	10 to 35
	36-55	207	10 to 40
	21-35	215	10 to 40
15	14-20	307	10 to 40
	10-13	315	10 to 40
	6-9	407	15 to 250
	5	415	15 to 250

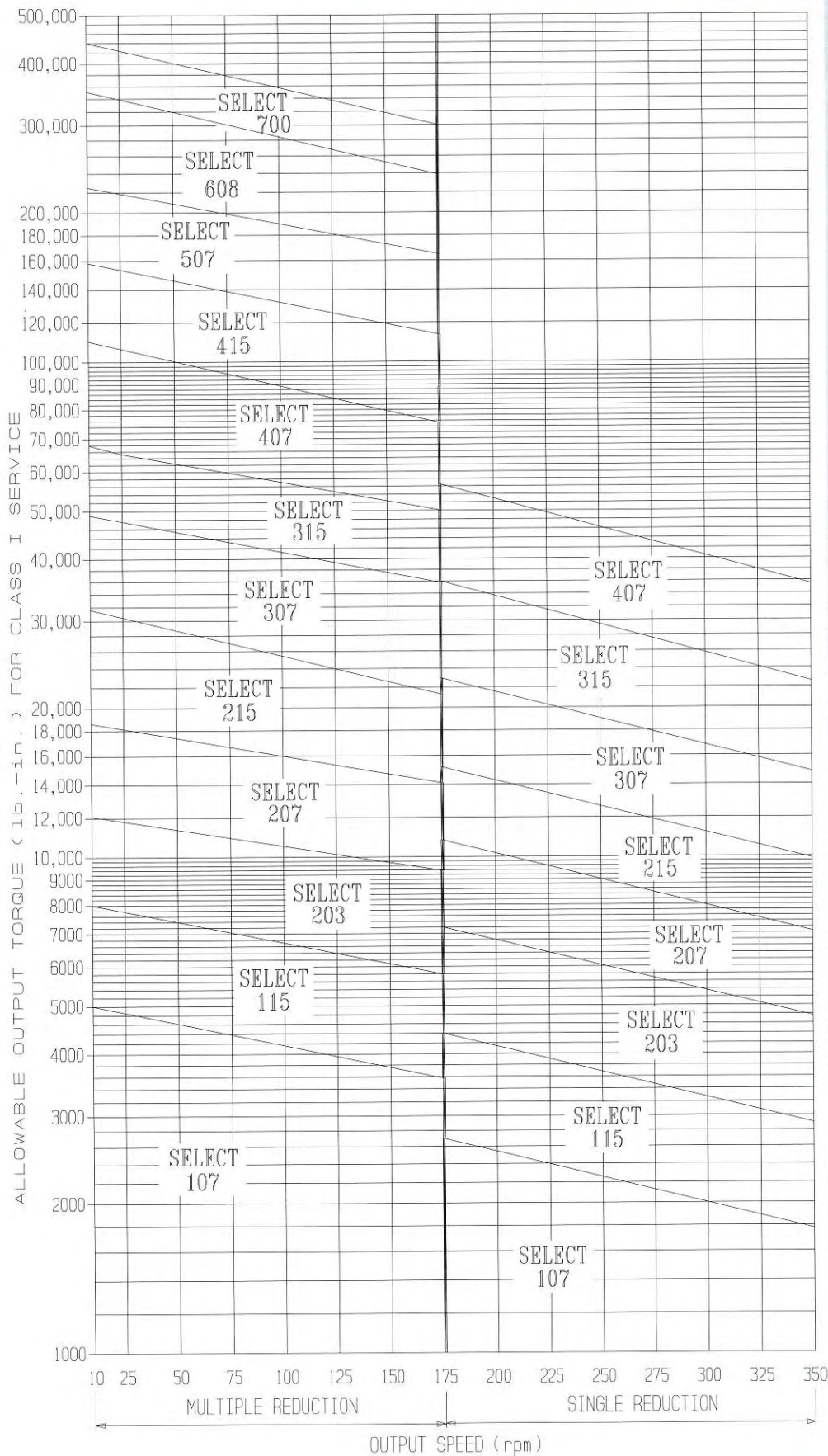
HORSE-POWER	OUTPUT SPEED (RPM)	MODEL	NOMINAL GEAR DRIVE RATIO
15	145-350	203	5
	89-144	203	10
	55-88	207	10 to 35
	32-54	215	10 to 40
	21-31	307	10 to 40
	15-20	315	10 to 40
	9-14	407	15 to 225
	6-8	415	15 to 250
20	175-350	203	5
	128-174	207	5
	76-127	207	10 to 25
	44-75	215	10 to 40
	27-43	307	10 to 40
	19-26	315	10 to 40
	12-18	407	15 to 175
	8-11	415	15 to 250
	5	608	15 to 225
	25	5-6	608
30	6-8	608	15 to 225
	5	700	15 to 225
40	8-10	608	15 to 225
	6-7	700	15 to 225
50	9-13	608	15 to 200
	8	700	15 to 225
60	11-16	608	15 to 175
	9-10	700	15 to 225
75	14-20	608	15 to 125
	11-13	700	15 to 200
100	19-28	608	15 to 80
	15-18	700	15 to 175
125	24-36	608	15 to 80
	19-23	700	15 to 100
150	29-44	608	15 to 60
	23-28	700	15 to 80
200	39-140	608 ⁴	15 to 40
	30-38	700	15 to 60
250	50-140	608 ⁴	15 to 30
	39-49	700 ⁴	15 to 40
300	60-140	608 ⁴	15 to 25
	47-59	700 ⁴	15 to 30

NOTES

1. Use motor nameplate horsepower rating - not a calculated or measured "drawn" horsepower.
2. Choose the gear drive ratio so that the high speed shaft is turning less than 2100 rpm.
3. Contact the Dorris Company if output speed of single reduction is less than shown.
4. Synthetic oil required due to thermal considerations.
5. Inform the Dorris Company if output speed is slower than 40 rpm when placing order to ensure proper lubrication.
6. Double reduction (15, 25 and 40:1 ratios) and triple reduction (60 through 250:1 ratios) are available on 407TR and 415TR.

For example, if a Class I application required a 10 HP motor and a gear drive output speed of 40 rpm, a 207 model would be required, with the nominal gear drive ratios of 10:1 through 40:1 available.

TORQUE RATINGS FOR CLASS I SERVICE



$$\text{Output Torque (in-lbs.)} = \frac{63,025 * \text{motor horsepower}}{\text{output speed (rpm)}}$$

For example, if a Class I application uses a 10 HP motor and a gear drive output speed of 40 rpm, the gear drive output torque is:

$$\frac{(63,025) (10)}{(40)} = 15,756 \text{ in-lbs.}$$

Upon drawing a horizontal line from 15,756 in-lbs and a vertical line from 40 rpm, they meet in the region that says "Select 207" - therefore choose a double reduction 207 model with a nominal gear drive ratio such that the input speed is less than 2100 rpm.

HORSEPOWER RATINGS FOR CLASS II SERVICE

HORSE-POWER	OUTPUT SPEED (RPM)	MODEL	NOMINAL GEAR DRIVE RATIO
1	175-350	107	5
	19-174	107	10 to 40
	11-18	115	10 to 40
	7-10	203	10 to 40
	5-6	207	10 to 40
1 1/2	175-350	107	5
	28-174	107	10 to 40
	17-27	115	10 to 40
	12-16	203	10 to 40
	7-11	207	10 to 40
5-6	215	10 to 40	
2	175-350	107	5
	38-174	107	10 to 40
	23-37	115	10 to 40
	15-22	203	10 to 40
	10-14	207	10 to 40
	6-9	215	10 to 40
	5	307	10 to 40
	3	175-350	107
59-174		107	10 to 30
35-58		115	10 to 40
23-34		203	10 to 40
15-22		207	10 to 40
9-14		215	10 to 40
6-8		307	10 to 40
5	315	10 to 40	
5	164-350	107	5
	108-163	107	10
	61-107	115	10 to 30
	39-60	203	10 to 40
	25-38	207	10 to 40
	15-24	215	10 to 40
	9-14	307	10 to 40
	7-8	315	10 to 40
5-6	407	15 to 250	
7 1/2	175-350	115	5
	99-174	115	10 to 15
	60-98	203	10 to 30
	38-59	207	10 to 40
	22-37	215	10 to 40
	14-21	307	10 to 40
	10-13	315	10 to 40
	7-9	407	15 to 250
5-6	415	15 to 250	
10	250-350	115	5
	175-249	203	5
	82-174	203	10 to 25
	51-81	207	10 to 40
	30-50	215	10 to 40
	19-29	307	10 to 40
	14-18	315	10 to 40
	9-13	407	15 to 225
6-8	415	15 to 250	

HORSE-POWER	OUTPUT SPEED (RPM)	MODEL	NOMINAL GEAR DRIVE RATIO
15	235-350	203	5
	133-234	207	5
	81-132	207	10 to 25
	46-80	215	10 to 40
	28-45	307	10 to 40
	21-27	315	10 to 40
	13-20	407	15 to 150
20	9-12	415	15 to 250
	5	608	15 to 225
	175-350	207	5
	114-174	215	5
	64-113	215	10 to 30
	38-63	307	10 to 40
	28-37	315	10 to 40
25	17-27	407	15 to 100
	12-16	415	15 to 175
	152-350	215	5
	84-151	215	10 to 20
	49-83	307	10 to 35
	35-48	315	10 to 40
	21-34	407	15 to 80
30	15-20	415	15 to 125
	166-350	215	5
	106-165	215	10
	60-105	307	10 to 25
	42-59	315	10 to 40
	25-41	407	15 to 80
	18-24	415	15 to 100
40	161-325	307	5
	85-160	307	10 to 25
	58-84	315	10 to 35
	34-57	407	15 to 60
	24-33	415	15 to 80
	113-346	315	5
	74-112	315	10 to 35
50	44-73	407	15 to 25
	31-43	415	15 to 60
	175-346	315	5
	92-174	315	10 to 20
	56-91	407	15 to 25
	38-55	415	15 to 40
	175-346	315	5
75	120-174	315	10
	77-119	407	15
	48-76	415	15 to 40
	140-334	407	5
	68-139	415	15 to 25
	27-41	608	15 to 60
	21-26	700	15 to 100
100			

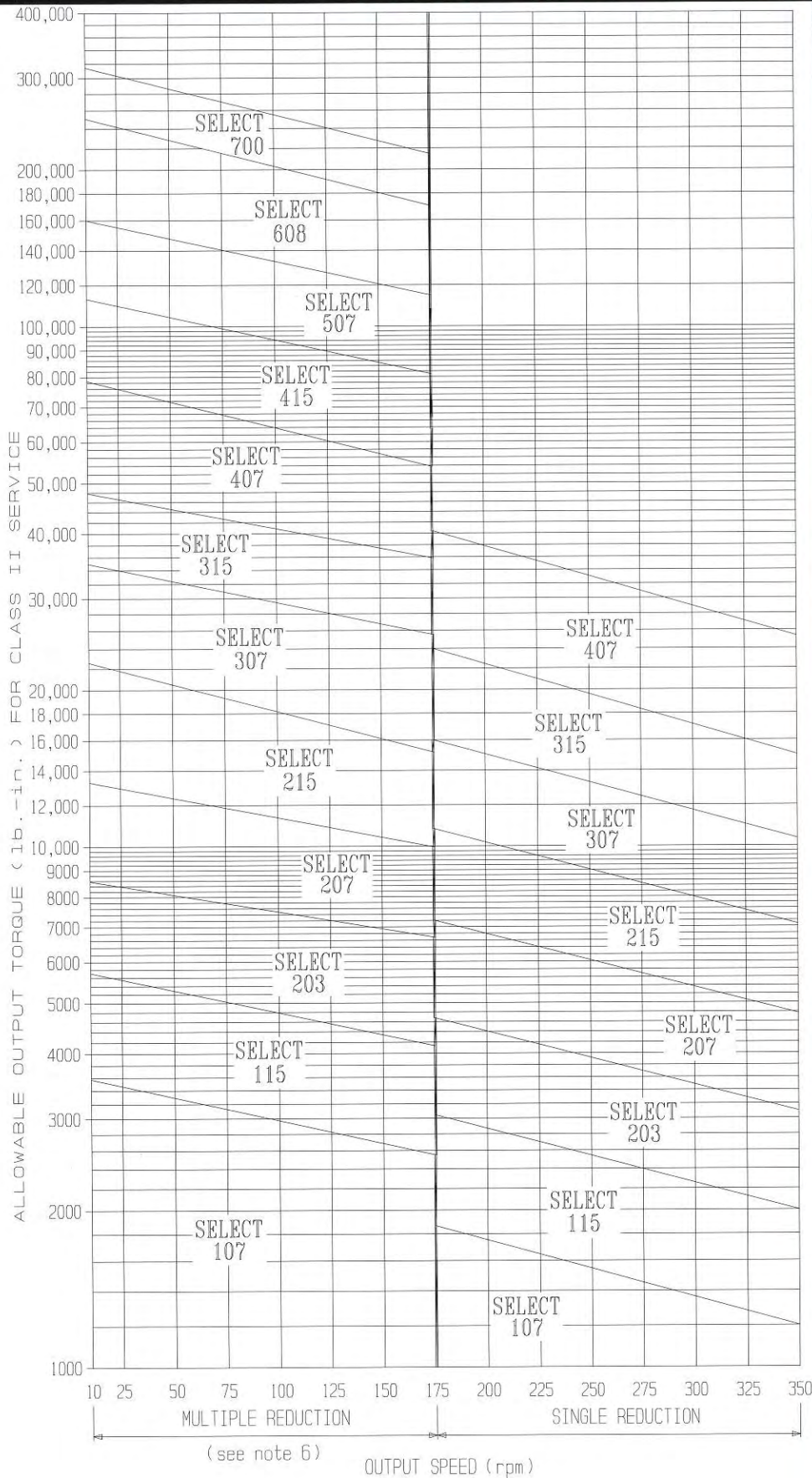
HORSE-POWER	OUTPUT SPEED (RPM)	MODEL	NOMINAL GEAR DRIVE RATIO
125	55-140	507	15 to 25
	35-54	608	15 to 40
	27-34	700	15 to 60
150	42-66	608	15 to 30
	32-41	700	15 to 40
200	56-140	608 ⁴	15 to 30
	44-55	700	15 to 40
250	73-140	608 ⁴	15 to 25
	56-72	700 ⁴	15 to 30

NOTES

1. Use motor nameplate horsepower rating - not a calculated or measured "drawn" horsepower.
2. Choose the gear drive ratio so that the high speed shaft is turning less than 2100 rpm.
3. Contact the Dorris Company if output speed of single reduction is less than shown.
4. Synthetic oil required due to thermal considerations.
5. Inform the Dorris Company if output speed is slower than 40 rpm when placing order to ensure proper lubrication.
6. Double reduction (15, 25 and 40:1 ratios) and triple reduction (60 through 250:1 ratios) are available on 407TR and 415TR.

For example, if a Class II application required a 10 HP motor and a gear drive output speed of 40 rpm, a 215 model would be required, with the nominal gear drive ratios of 10:1 through 40:1 available.

TORQUE RATINGS FOR CLASS II SERVICE



$$\text{Output Torque (in lbs.)} = \frac{63,025 * \text{motor horsepower}}{\text{output speed (rpm)}}$$

For example, if a Class II application uses a 10 HP motor and a gear drive output speed of 40 rpm, the gear drive output torque is:

$$\frac{(63,025) (10)}{(40)} = 15,756 \text{ in lbs.}$$

Upon drawing a horizontal line from 15,756 in lbs and a vertical line from 40 rpm, they meet in the region that says "Select 215" therefore choose a double reduction 215 model with a nominal gear drive ratio such that the input speed is less than 2100 rpm.

HORSEPOWER RATINGS FOR CLASS III SERVICE

HORSE-POWER	OUTPUT SPEED (RPM)	MODEL	NOMINAL GEAR DRIVE RATIO
1	175-350	107	5
	27-174	107	10 to 40
	16-26	115	10 to 40
	11-15	203	10 to 40
	7-10	207	10 to 40
	5-6	215	10 to 40
1 1/2	175-350	107	5
	41-174	107	10 to 40
	25-40	115	10 to 40
	17-24	203	10 to 40
	10-16	207	10 to 40
	6-9	215	10 to 40
5	307	10 to 40	
2	175-350	107	5
	56-174	107	10 to 35
	33-55	115	10 to 40
	22-32	203	10 to 40
	14-21	207	10 to 40
	8-13	215	10 to 40
5-7	307	10 to 40	
3	175-350	107	5
	89-174	107	10 to 15
	52-88	115	10 to 40
	33-51	203	10 to 40
	21-32	207	10 to 40
	13-20	215	10 to 40
8-12	307	10 to 40	
6-7	315	10 to 40	
5	407	15 to 250	
5	175-350	115	5
	93-174	115	10 to 20
	56-92	203	10 to 35
	35-55	207	10 to 40
	21-34	215	10 to 40
	14-20	307	10 to 40
10-13	315	10 to 40	
6-9	407	15 to 250	
5	415	15 to 250	
7 1/2	175-350	203	5
	89-174	203	10 to 20
	54-88	207	10 to 35
	32-53	215	10 to 40
	21-31	307	10 to 40
	15-20	315	10 to 40
9-14	407	15 to 225	
6-8	415	15 to 250	
5	507	15 to 200	

HORSE-POWER	OUTPUT SPEED (RPM)	MODEL	NOMINAL GEAR DRIVE RATIO
10	175-350	203	5
	125-174	203	10 to 15
	74-124	207	10 to 25
	44-73	215	10 to 40
	27-43	307	10 to 40
	20-26	315	10 to 40
15	12-19	407	15 to 175
	8-11	415	15 to 250
	6-7	507	15 to 200
	5	608	15 to 225
	175-350	207	5
	120-174	215	5
20	69-119	215	10 to 25
	41-68	307	10 to 40
	30-40	315	10 to 40
	18-29	407	15 to 100
	12-17	415	15 to 175
	9-11	507	15 to 175
25	6-8	608	15 to 200
	5	700	15 to 225
	175-350	215	5
	99-174	215	10 to 20
	57-98	307	10 to 35
	40-56	315	10 to 40
30	24-39	407	15 to 80
	17-23	415	15 to 100
	12-16		
	135-325	307	5
	73-134	307	10 to 20
	51-72	315	10 to 40
40	30-50	407	15 to 60
	22-29	415	15 to 80
	15-21		
	175-325	307	5
	90-174	307	10 to 20
	62-89	315	10 to 30
50	37-61	407	15 to 40
	26-36	415	15 to 80
	18-25		
	156-346	315	5
	87-155	315	10 to 20
	52-86	407	15 to 40
70	36-51	415	15 to 40
	23-35		
	175-346	315	5
	113-174	315	10 to 15
	70-112	407	15 to 25
	47-69	415	15 to 40
30-46			

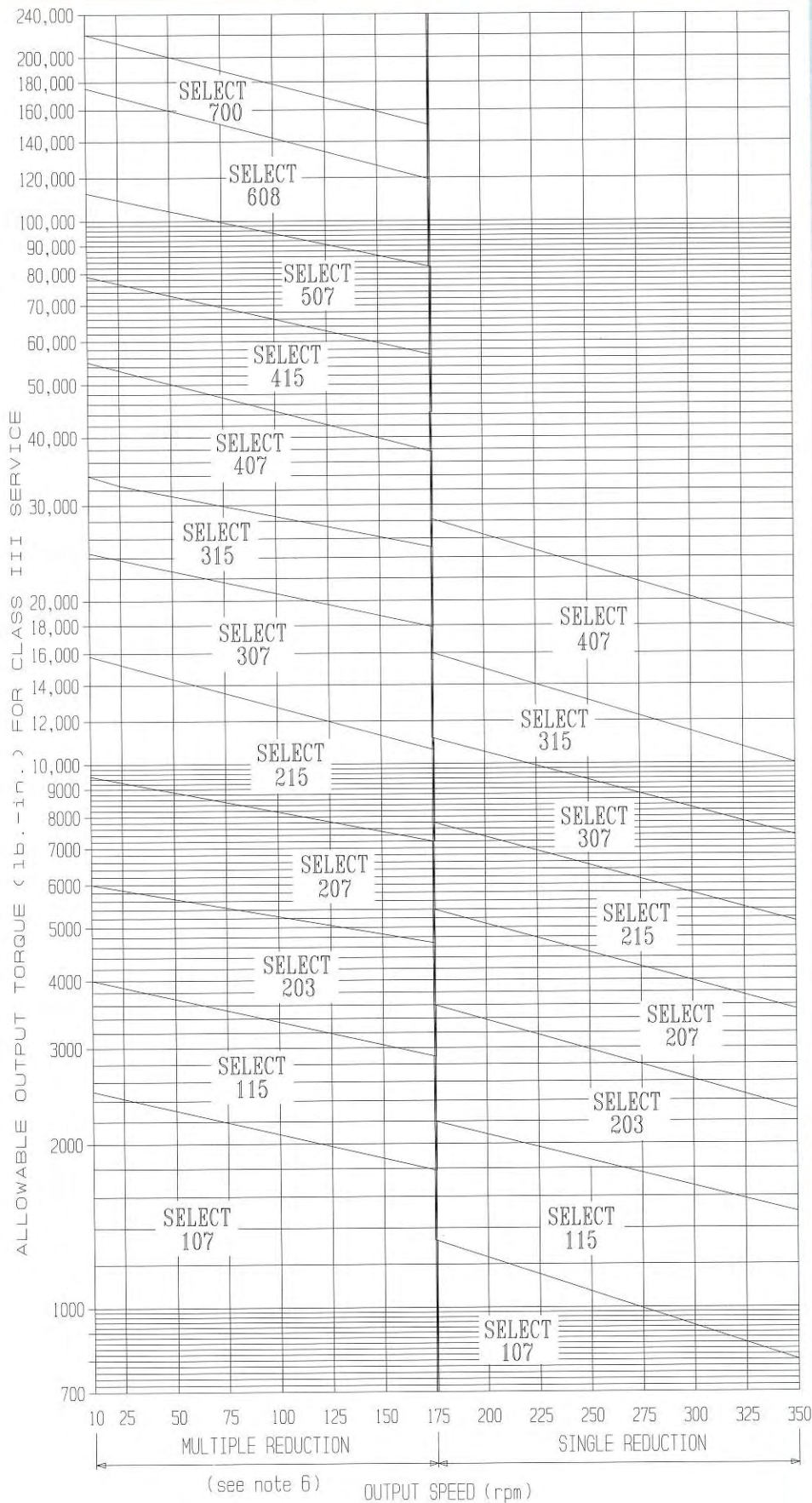
HORSE-POWER	OUTPUT SPEED (RPM)	MODEL	NOMINAL GEAR DRIVE RATIO
60	175-346	315	5
	143-174	315	10
	90-142	407	15
	56-89	415	15 to 25
	37-55		
	140-334	407	5
75	75-139	415	15 to 25
	45-74	507	15 to 60
	62-140	507	15 to 80
	39-61	608	15 to 40
	30-38	700	15 to 60
	50-140	608	15 to 30
100	39-49	700	15 to 40
	50-140	608	15 to 30
	39-49	700	15 to 40
	50-140	608	15 to 30
	39-49	700	15 to 40
	86-1490	608	15
200	66-85	700	15 to 25

NOTES

1. Use motor nameplate horsepower rating - not a calculated or measured "drawn" horsepower.
2. Choose the gear drive ratio so that the high speed shaft is turning less than 2100 rpm.
3. Contact the Dorris Company if output speed of single reduction is less than shown.
4. Synthetic oil required due to thermal considerations.
5. Inform the Dorris Company if output speed is slower than 40 rpm when placing order to ensure proper lubrication.
6. Double reduction (15, 25 and 40:1 ratios) and triple reduction (60 through 250:1 ratios) are available on 407TR and 415TR.

For example, if a Class III application required a 10 HP motor and a gear drive output speed of 40 rpm, a 307 model would be required, with the nominal gear drive ratios of 10:1 through 40:1 available.

TORQUE RATINGS FOR CLASS III SERVICE



$$\text{Output Torque (in lbs.)} = \frac{63,025 * \text{motor Horsepower}}{\text{Output speed (rpm)}}$$

For example, if a Class III application uses a 10 HP motor and a gear drive output speed of 40 rpm, the gear drive output torque is:

$$\frac{(63,025) (10)}{(40)} = 15,756 \text{ in. lbs.}$$

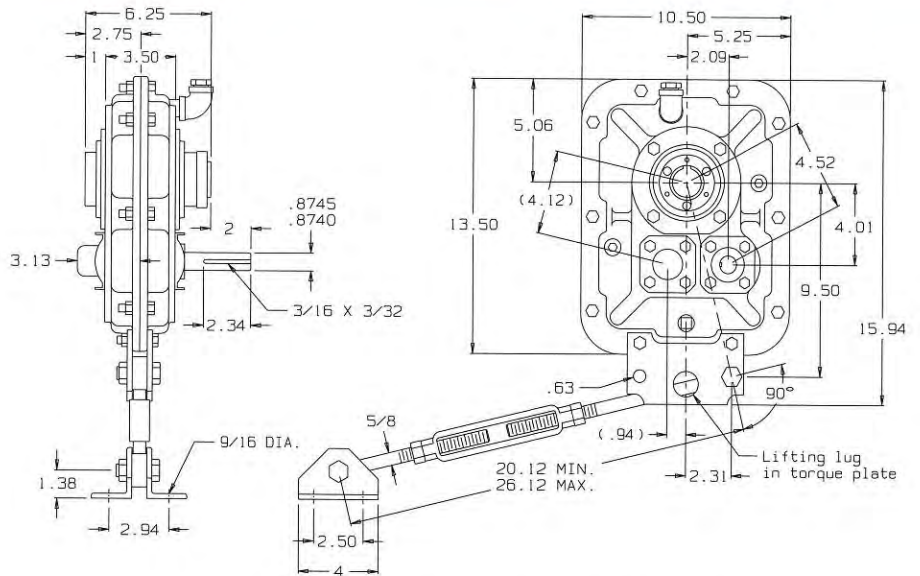
Upon drawing a horizontal line from 15,756 in. lbs. and a vertical line from 40 rpm, they meet in the region that says "Select 307" therefore choose a double reduction 307 model with a nominal gear drive ratio such that the input speed is less than 2100 rpm.

107TR



SHAFT MOUNTED GEAR DRIVE

The preferred position for the torque arm is 90° to a line between the point of attachment of the torque arm to the drive and the low speed shaft. The torque arm must be in tension. Keep the torque plate in the position shown.

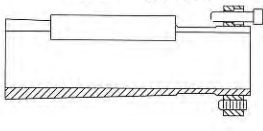


DOUBLE REDUCTION, 10:1 thru 40:1 ratios
(SINGLE REDUCTION, 5:1 ratio, dimensions in parentheses)

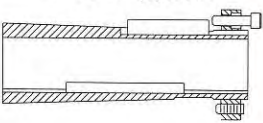
MODEL	107TR05	107TR10	107TR15	107TR20	107TR25	107TR30	107TR35	107TR40
ACTUAL RATIOS	5.923	10.051	15.163	20.435	25.086	30.239	34.493	39.882
SHIPPING WEIGHT (LBS.)	65	69	69	69	69	69	69	69

QUICK RELEASE TAPERED BUSHINGS

TYPE 1 - (1) KEY



TYPE 2 - (2) KEYS



BUSHING KIT NO. *	TYPE	DRIVEN SHAFT DIMENSIONS (INCHES)			
		DIA.	KEYWAY WIDTH X DEPTH	RECOMMENDED KEYWAY LENGTH	MINIMUM DRIVEN SHAFT LENGTH
107T107	1	1 7/16	3/8 x 3/16	5 1/8	4 3/8
107T106	2	1 3/8	5/16 x 5/32	5 1/4	5 1/4
107T105	2	1 5/16	5/16 x 5/32	5 1/4	5 1/4
107T104	2	1 1/4	1/4 x 1/8	5 1/8	4 1/2
107T103	2	1 3/16	1/4 x 1/8	5 1/8	4 1/2
107T102	2	1 1/8	1/4 x 1/8	5 1/8	4 1/2
107T101	2	1 1/16	1/4 x 1/8	5 1/8	4 1/2
107T100	2	1	1/4 x 1/8	5 1/8	4 1/2

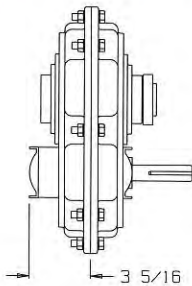
* The bushing kit contains a bushing, nut, key(s) and mounting screws.

The recommended driven shaft length is 6.25 inches and uses the recommended keyway length. When an application requires the minimum driven shaft length, the keyway must be keyed along the entire length.

Consult factory for bore sizes not shown.

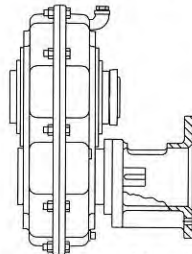
OPTIONS AND ACCESSORIES

EXTERNAL BACKSTOP KIT



Backstop extensions are standard on double reduction drives and can be supplied on single reduction drives if specified when order is placed. See Engineering Information section for backstop torque capacity.
Kit no. BS107TR - 10:1 thru 40:1 ratios
Kit no. BS107TR-5- 5:1 ratio

C-FACE MOTOR MOUNTING

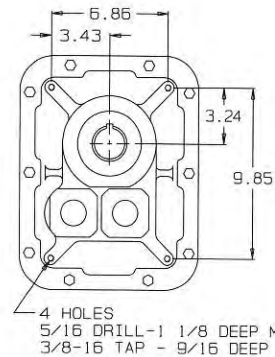


This model can be ordered from the factory to adapt a c-face motor, frames 56C to 213TC. The required flexible coupling is available from Dorris.

HYDRAULIC MOTOR MOUNTING

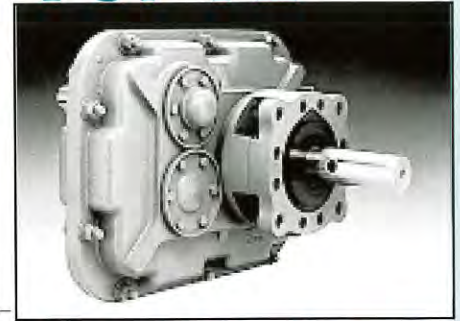
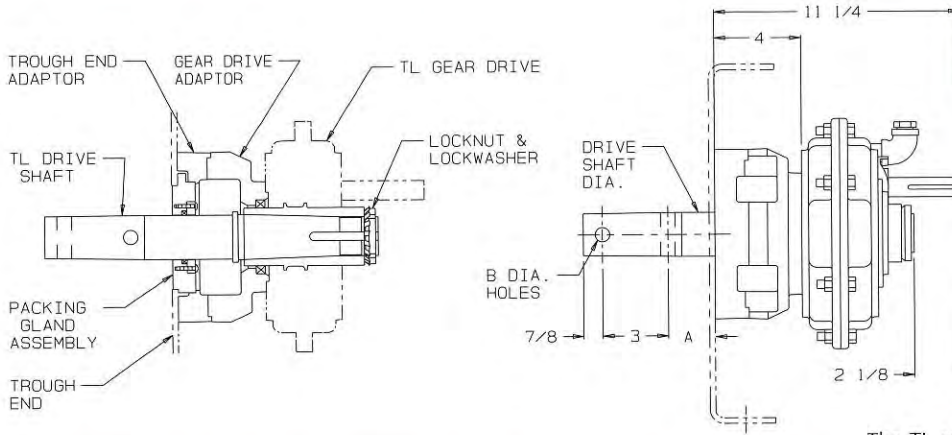
Consult factory for availability of adaptation to hydraulic motors with SAE A (9 tooth) spline or keyed shafts of similar design.

DIMENSIONS FOR FACE MOUNTING



Face mounting holes are not drilled on standard units - contact factory if face mounting is desired. Dimensions are typical for either face.

107TL



SCREW CONVEYOR DRIVE

The TL screw conveyor drive consists of a component gear drive (which equals the TR gear drive plus the gear drive adaptor and minus the torque arm assembly), a drive shaft kit and a trough end adaptor kit.

To convert a TR to a TL, a TR/TL conversion kit, along with a drive shaft kit and trough end adaptor kit is required.

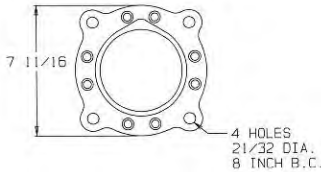
The TL drive shaft kit contains a removable shaft, locknut, lockwasher and key. TL drive shafts have a tapered output end to avoid binding.

The trough end adaptor kit contains the trough end adaptor and packing gland assembly. Dorris trough ends are available.

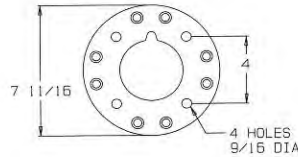
DRIVE SHAFT DIA.	FOR CONVEYOR DIAMETER	107TL SCREW CONVEYOR DRIVE WITH REMOVABLE DRIVE SHAFT			DIMENSIONS (INCHES)		SHIPPING WEIGHT (LBS.)	
		DRIVE SHAFT KIT	TROUGH END ADAPTOR KIT		A	B	5:1 RATIO	10-40:1 RATIO
1 1/2	6, 9	K10708-1 1/2	DORRIS KD624-1 1/2	CEMA KC69-1 1/2	2 1/8	17/32	86	90
2	9, 12	K10708-2	DORRIS KD624-2	CEMA KC924-2	2 1/8	21/32	89	93
2 7/16	12, 14	K10708-2 7/16	DORRIS KD624-2 7/16	CEMA KC924-2 7/16	2 3/4	21/32	93	97
3	12 thru 20	K10708-3	DORRIS KD624-3	CEMA KC924-3	2 7/8	25/32	100	104

TROUGH END ADAPTORS

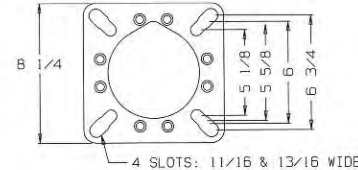
D624 ADAPTOR FOR DORRIS TROUGH ENDS (FLANGE 1" THICK)



C69 ADAPTOR FOR CEMA 6-9 INCH TROUGH ENDS (FLANGE 1" THICK)



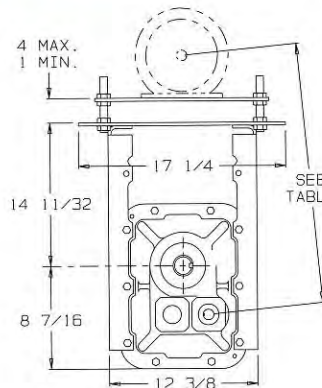
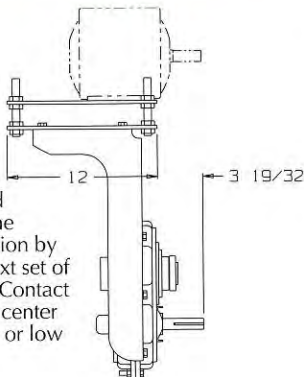
C924 ADAPTOR FOR CEMA 9-24 INCH TROUGH ENDS (FLANGE 1 1/4" THICK)



All dimensions are typical. All trough end adaptors can use either the standard or high performance packing gland assembly. C69 adaptor uses 1 1/2 inch drive shaft; C924 adaptor uses 2 thru 3 7/16 inch drive shaft.

MOTOR MOUNTS (1MM)

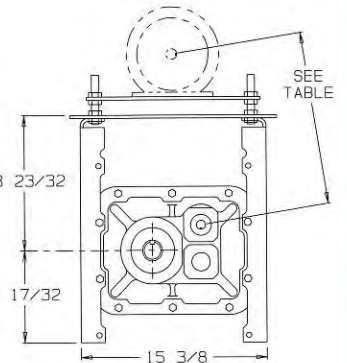
Motor brackets are shown in the intermediate position. The brackets can be raised or lowered 4 5/8 inches to the high or low position by moving to the next set of mounting holes. Contact factory for v-belt center distances in high or low position.



6 O'CLOCK ORIENTATION

The motor brackets can be mounted on either the long (6 o'clock) or short (3 o'clock) sides of the housing as shown.

Consult factory for trough end clearances for the other motor mounting positions not shown.



3 O'CLOCK ORIENTATION

V-BELT CENTER DISTANCES FOR INTERMEDIATE MOUNTING POSITION (INCHES)

MOTOR MOUNT ORIENTATION		MOTOR FRAME SIZE					DORRIS TROUGH END CLEARANCES *			
		56/143T/145T		182T/184T		213T	'U' FLANGE (TF) & FLUSH END (FE) TROUGH ENDS	FLARED (FL) TROUGH ENDS	TUBULAR (TU) TROUGH ENDS	
		MIN.	MAX.	MIN.	MAX.	MIN.				MAX.
SINGLE REDUCTION	6:00	22.87	25.87	23.87	26.87	24.62	27.62	9 - 16 - 20	6 - 16 - 20	6 - 16 - 20
	3:00	19.29	22.28	20.29	23.27	21.03	24.02	9 - 16 - 20	X - 14 - 20	6 - 14 - 20
DOUBLE REDUCTION	6:00	22.95	25.94	23.94	26.93	24.69	27.68	9 - 16 - 20	6 - 16 - 20	6 - 16 - 20
	3:00	16.29	19.26	17.28	20.26	18.02	21.00	9 - 16 - 20	X - 14 - 20	6 - 14 - 20

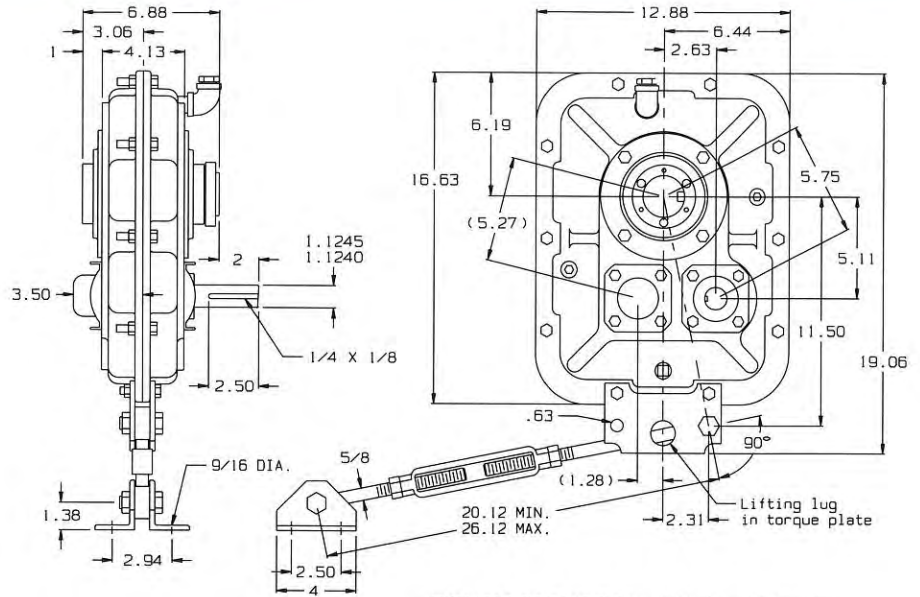
* Values shown are the largest conveyor diameters that the motor mounts will clear in the low-intermediate-high motor bracket positions. X = Does not clear any size trough end.

115TR



SHAFT MOUNTED GEAR DRIVE

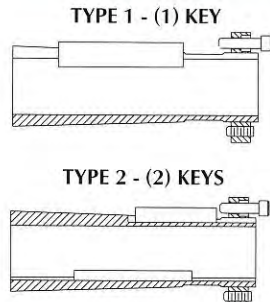
The preferred position for the torque arm is 90° to a line between the point of attachment of the torque arm to the drive and the low speed shaft. The torque arm must be in tension. Keep the torque plate in the position shown.



DOUBLE REDUCTION, 10:1 thru 40:1 ratios
(SINGLE REDUCTION, 5:1 ratio, dimensions in parentheses)

MODEL	115TR05	115TR10	115TR15	115TR20	115TR25	115TR30	115TR35	115TR40
ACTUAL RATIOS	5.929	10.700	15.377	20.294	25.062	29.955	34.176	38.832
SHIPPING WEIGHT (LBS.)	99	106	106	106	106	106	106	106

QUICK RELEASE TAPERED BUSHINGS



BUSHING KIT NO. *	TYPE	DRIVEN SHAFT DIMENSIONS (INCHES)			
		DIA.	KEYWAY WIDTH X DEPTH	RECOMMENDED KEYWAY LENGTH	MINIMUM DRIVEN SHAFT LENGTH
115T115	1	1 15/16	1/2 x 1/4	5 5/8	4 7/8
115T112	2	1 3/4	3/8 x 3/16	5	4 7/8
115T111	2	1 11/16	3/8 x 3/16	5	4 7/8
115T110	2	1 5/8	3/8 x 3/16	5	4 7/8
115T108	2	1 1/2	3/8 x 3/16	5	4 7/8
115T107	2	1 7/16	3/8 x 3/16	5	4 7/8
115T106	2	1 3/8	5/16 x 5/32	5 1/2	5 1/4
115T105	2	1 5/16	5/16 x 5/32	5 1/2	5 1/4
115T104	2	1 1/4	1/4 x 1/8	6 3/4	6 3/4
115T103	2	1 3/16	1/4 x 1/8	6 3/4	6 3/4
115T102	2	1 1/8	1/4 x 1/8	6 3/4	6 3/4
115T101	2	1 1/16	1/4 x 1/8	6 3/4	6 3/4
115T100	2	1	1/4 x 1/8	6 3/4	6 3/4

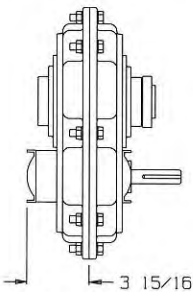
* The bushing kit contains a bushing, nut, key(s) and mounting screws.

The recommended driven shaft length is 6.88 inches and uses the recommended keyway length. When an application requires the minimum driven shaft length, the keyway must be keyed along the entire length.

Consult factory for bore sizes not shown.

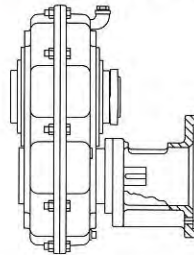
OPTIONS AND ACCESSORIES

EXTERNAL BACKSTOP KIT



Backstop extensions are standard on double reduction drives and can be supplied on single reduction drives if specified when order is placed. See Engineering Information section for backstop torque capacity.
Kit no. BS115TR - 20:1 thru 40:1 ratios
Kit no. BS115TR-1 -10:1 thru 15:1 ratios
Kit no. BS115TR-5 - 5:1 ratio

C-FACE MOTOR MOUNTING

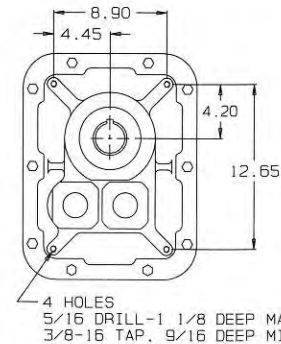


This model can be ordered from the factory to adapt a c-face motor, frames 56C to 215TC. The required flexible coupling is available from Dorris.

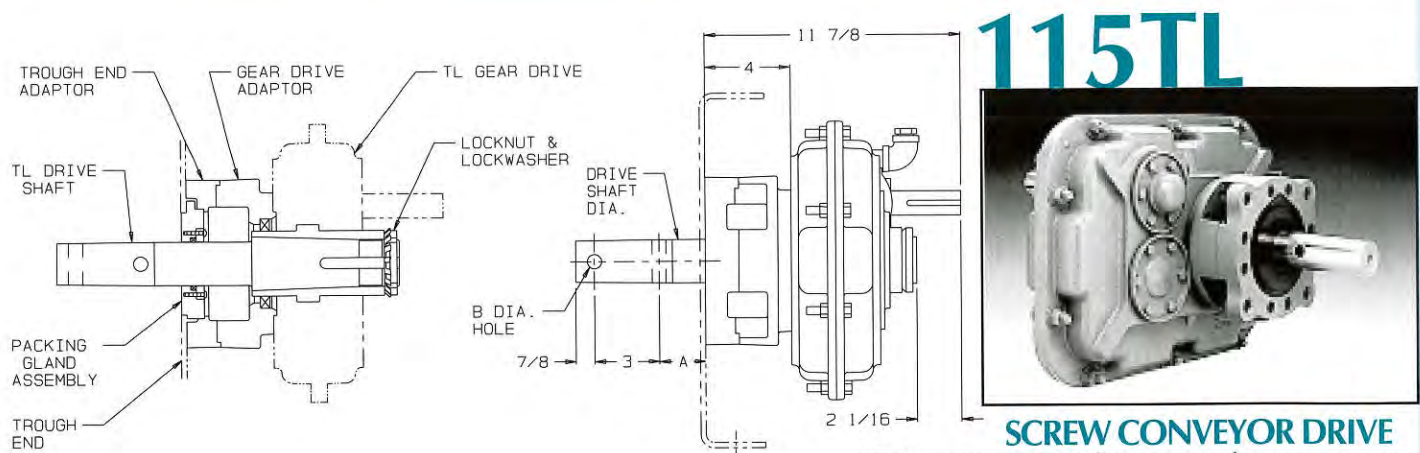
HYDRAULIC MOTOR MOUNTING

Consult factory for availability of adaptation to hydraulic motors with SAE A (9 tooth) spline or keyed shafts of similar design.

DIMENSIONS FOR FACE MOUNTING



Face mounting holes are not drilled on standard units - contact factory if face mounting is desired. Dimensions are typical for either face.



DRIVE SHAFT DIA.	FOR CONVEYOR DIAMETER	115TL SCREW CONVEYOR DRIVE WITH REMOVABLE DRIVE SHAFT				DIMENSIONS (INCHES)		SHIPPING WEIGHT (LBS.)	
		DRIVE SHAFT KIT	TROUGH END ADAPTOR KIT		A	B	5:1 RATIO	10-40:1 RATIO	
			DORRIS	CEMA					
1 1/2	6, 9	K11508-1 1/2	KD624-1 1/2	KC69-1 1/2	2 1/8	17/32	125	132	
2	9, 12	K11508-2	KD624-2	KC924-2	2 1/8	21/32	129	136	
2 7/16	12, 14	K11508-2 7/16	KD624-2 7/16	KC924-2 7/16	2 3/4	21/32	133	140	
3	12 thru 20	K11508-3	KD624-3	KC924-3	2 7/8	25/32	140	147	

The TL screw conveyor drive consists of a component gear drive (which equals the TR gear drive plus the gear drive adaptor and minus the torque arm assembly), a drive shaft kit and a trough end adaptor kit.

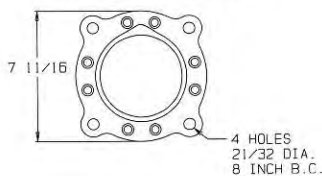
To convert a TR to a TL, a TR/TL conversion kit, along with a drive shaft kit and trough end adaptor kit is required.

The TL drive shaft kit contains a removable shaft, locknut, lockwasher and key. TL drive shafts have a tapered output end to avoid binding.

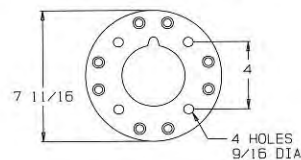
The trough end adaptor kit contains the trough end adaptor and packing gland assembly. Dorris trough ends are available.

TROUGH END ADAPTORS

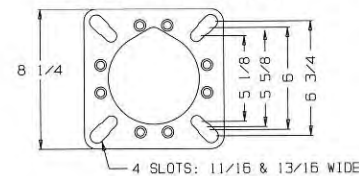
D624 ADAPTOR FOR DORRIS TROUGH ENDS (FLANGE 1" THICK)



C69 ADAPTOR FOR CEMA 6-9 INCH TROUGH ENDS (FLANGE 1" THICK)



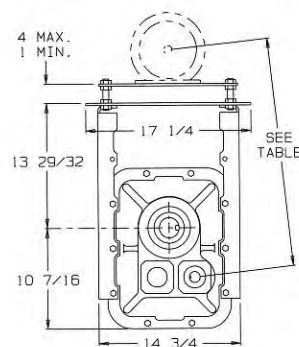
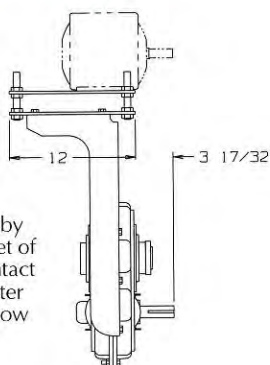
C924 ADAPTOR FOR CEMA 9-24 INCH TROUGH ENDS (FLANGE 1 1/4" THICK)



All dimensions are typical. All trough end adaptors can use either the standard or high performance packing gland assembly. C69 adaptor uses 1 1/2 inch drive shaft; C924 adaptor uses 2 thru 3 7/16 inch drive shaft.

MOTOR MOUNTS (1MM)

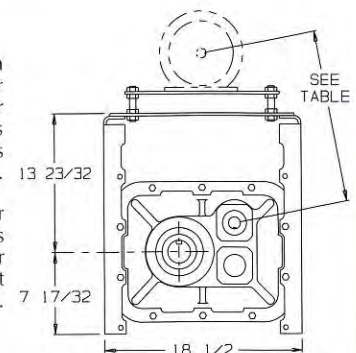
Motor brackets are shown in the intermediate position. The brackets can be raised or lowered 4 5/8 inches to the high or low position by moving to the next set of mounting holes. Contact factory for v-belt center distances in high or low position.



6 O'CLOCK ORIENTATION

The motor brackets can be mounted on either the long (6 o'clock) or short (3 o'clock) sides of the housing as shown.

Consult factory for trough end clearances for the other motor mounting positions not shown.



3 O'CLOCK ORIENTATION

V-BELT CENTER DISTANCES FOR INTERMEDIATE MOUNTING POSITION (INCHES)

MOTOR MOUNT ORIENTATION	MOTOR FRAME SIZE						DORRIS TROUGH END CLEARANCES *			
	56/143T/145T		182T/184T		213T/215T		'U' FLANGE (TEF) & FLUSH END (FE) TROUGH ENDS	FLARED (FL) TROUGH ENDS	TUBULAR (TU) TROUGH ENDS	
	MIN.	MAX.	MIN.	MAX.	MIN.	MAX.				
SINGLE REDUCTION	6:00	23.55	26.55	24.55	27.55	25.30	28.30	9 - 16 - 20	X - 14 - 20	6 - 14 - 20
	3:00	19.73	22.70	20.72	23.69	21.46	24.43	9 - 16 - 20	X - 14 - 20	6 - 14 - 20
DOUBLE REDUCTION	6:00	23.66	26.65	24.66	27.64	25.40	28.39	9 - 16 - 20	X - 14 - 20	6 - 14 - 20
	3:00	15.87	18.83	16.85	19.81	17.59	20.56	9 - 16 - 20	X - 14 - 20	6 - 14 - 20

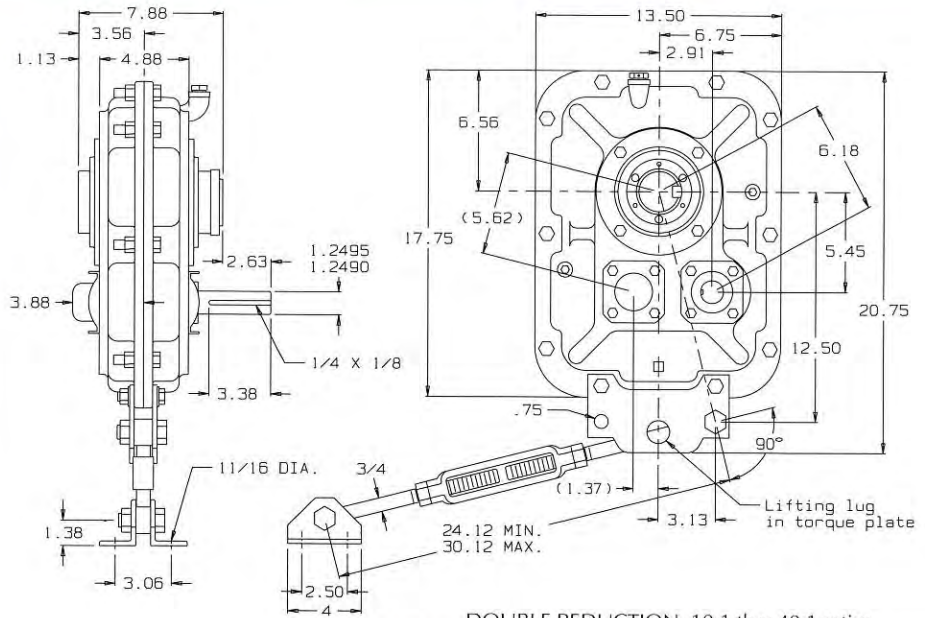
* Values shown are the largest conveyor diameters that the motor mounts will clear in the low-intermediate-high motor bracket positions. X = Does not clear any size trough end.

203TR



SHAFT MOUNTED GEAR DRIVE

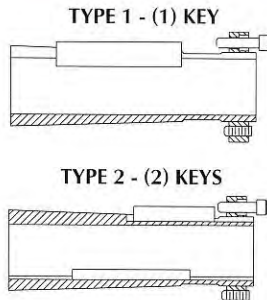
The preferred position for the torque arm is 90° to a line between the point of attachment of the torque arm to the drive and the low speed shaft. The torque arm must be in tension. Keep the torque plate in the position shown.



DOUBLE REDUCTION, 10:1 thru 40:1 ratios
(SINGLE REDUCTION, 5:1 ratio, dimensions in parentheses)

MODEL	203TR05	203TR10	203TR15	203TR20	203TR25	203TR30	203TR35	203TR40
ACTUAL RATIOS	5.867	9.890	14.775	20.673	25.178	29.613	35.526	39.949
SHIPPING WEIGHT (LBS.)	134	145	145	145	145	145	145	145

QUICK RELEASE TAPERED BUSHINGS



BUSHING KIT NO. *	TYPE	DRIVEN SHAFT DIMENSIONS (INCHES)			
		BORE	KEYWAY WIDTH X DEPTH	RECOMMENDED KEYWAY LENGTH	MINIMUM DRIVEN SHAFT LENGTH
203T203	1	2 3/16	1/2 x 1/4	6 5/8	5 7/8
203T200	2	2	1/2 x 1/4	5 7/8	5 7/8
203T115	2	1 15/16	1/2 x 1/4	5 7/8	5 7/8
203T114	2	1 7/8	1/2 x 1/4	5 7/8	5 7/8
203T112	2	1 3/4	3/8 x 3/16	5 7/8	5 7/8
203T111	2	1 11/16	3/8 x 3/16	5 7/8	5 7/8
203T110	2	1 5/8	3/8 x 3/16	5 7/8	5 7/8
203T108	2	1 1/2	3/8 x 3/16	5 7/8	5 7/8
203T107	2	1 7/16	3/8 x 3/16	5 7/8	5 7/8
203T106	2	1 3/8	5/16 x 5/32	6 1/2	6 1/4
203T105	2	1 5/16	5/16 x 5/32	6 1/2	6 1/4
203T104	2	1 1/4	1/4 x 1/8	7 3/4	7 3/4
203T103	2	1 3/16	1/4 x 1/8	7 3/4	7 3/4

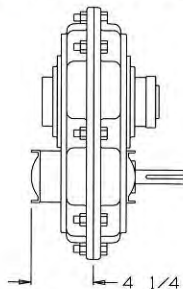
* The bushing kit contains a bushing nut, key(s) and mounting screws.

The recommended driven shaft length is 7.88 inches and uses the recommended keyway length. When an application requires the minimum driven shaft length, the keyway must be keyed along the entire length.

Consult factory for bore sizes not shown.

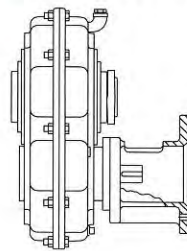
OPTIONS AND ACCESSORIES

EXTERNAL BACKSTOP KIT



Backstop extensions are standard on double reduction drives and can be supplied on single reduction drives if specified when order is placed. See Engineering Information section for backstop torque capacity.
Kit no. BS203TR - 25:1 thru 40:1 ratios
Kit no. BS203TR-1-10:1 thru 20:1 ratios
Kit no. BS203TR-5- 5:1 ratio

C-FACE MOTOR MOUNTING

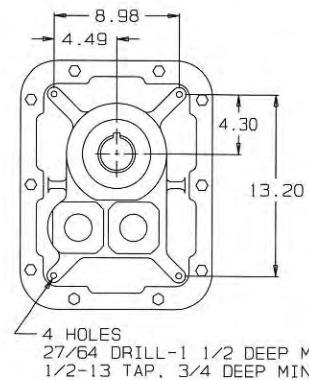


This model can be ordered from the factory to adapt a c-face motor, frames 56C to 215TC. The required flexible coupling is available from Dorris.

HYDRAULIC MOTOR MOUNTING

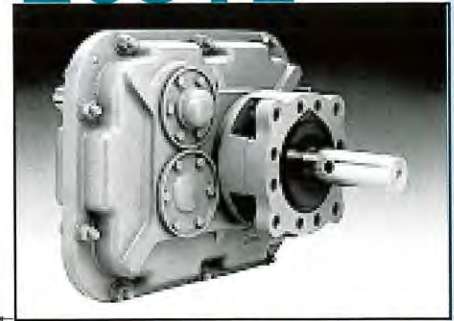
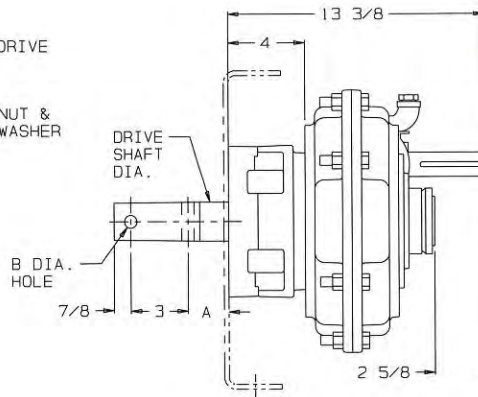
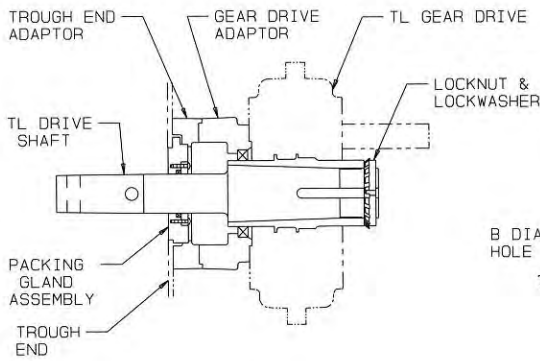
Consult factory for availability of adaptation to hydraulic motors with SAE A (9 tooth) and SAE B (13 tooth) splines or keyed shafts of similar design.

DIMENSIONS FOR FACE MOUNTING



Face mounting holes are not drilled on standard units - contact factory if face mounting is desired. Dimensions are typical for either face.

203TL



SCREW CONVEYOR DRIVE

The TL screw conveyor drive consists of a component gear drive (which equals the TR gear drive plus the gear drive adaptor and minus the torque arm assembly), a drive shaft kit and a trough end adaptor kit.

To convert a TR to a TL, a TR/TL conversion kit, along with a drive shaft kit and trough end adaptor kit is required.

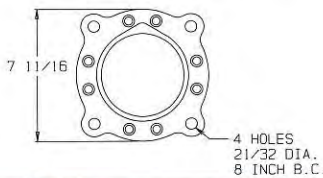
The TL drive shaft kit contains a removable shaft, locknut, lockwasher and key. TL drive shafts have a tapered output end to avoid binding.

The trough end adaptor kit contains the trough end adaptor and packing gland assembly. Dorris trough ends are available.

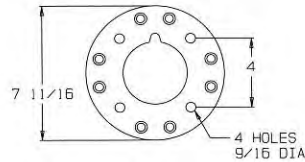
DRIVE SHAFT DIA.	FOR CONVEYOR DIAMETER	203TL SCREW CONVEYOR DRIVE WITH REMOVABLE DRIVE SHAFT				DIMENSIONS (INCHES)		SHIPPING WEIGHT (LBS.)	
		DRIVE SHAFT KIT	TROUGH END ADAPTOR KIT		A	B	5:1 RATIO	10-40:1 RATIO	
			DORRIS	CEMA					
1 1/2	6, 9	K20308-1 1/2	KD624-1 1/2	KC69-1 1/2	2 1/8	17/32	160	171	
2	9, 12	K20308-2	KD624-2	KC924-2	2 1/8	21/32	163	174	
2 7/16	12, 14	K20308-2 7/16	KD624-2 7/16	KC924-2 7/16	2 3/4	21/32	168	179	
3	12 thru 20	K20308-3	KD624-3	KC924-3	2 7/8	25/32	175	186	

TROUGH END ADAPTORS

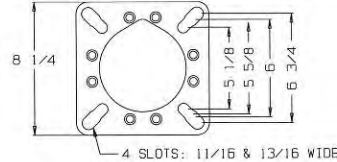
D624 ADAPTOR FOR DORRIS TROUGH ENDS (FLANGE 1" THICK)



C69 ADAPTOR FOR CEMA 6-9 INCH TROUGH ENDS (FLANGE 1" THICK)



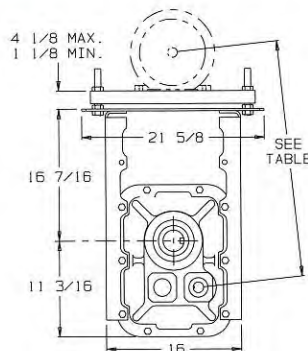
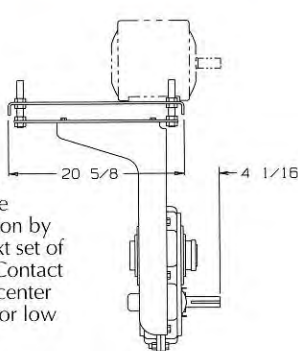
C924 ADAPTOR FOR CEMA 9-24 INCH TROUGH ENDS (FLANGE 1 1/4" THICK)



All dimensions are typical. All trough end adaptors can use either the standard or high performance packing gland assembly. C69 adaptor uses 1 1/2 inch drive shaft; C924 adaptor uses 2 thru 3 7/16 inch drive shaft.

MOTOR MOUNTS (2MM)

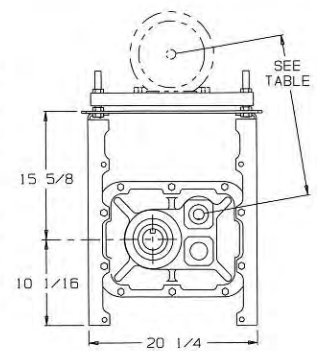
Motor brackets are shown in the intermediate position. The brackets can be raised or lowered 6 1/4 inches to the high or low position by moving to the next set of mounting holes. Contact factory for v-belt center distances in high or low position.



6 O'CLOCK ORIENTATION

The motor brackets can be mounted on either the long (6 o'clock) or short (3 o'clock) sides of the housing as shown.

Consult factory for trough end clearances for the other motor mounting positions not shown.



3 O'CLOCK ORIENTATION

V-BELT CENTER DISTANCES FOR INTERMEDIATE MOUNTING POSITION (INCHES)

MOTOR MOUNT ORIENTATION	MOTOR FRAME SIZE								DORRIS TROUGH END CLEARANCES *			
	143T/145T		182T/184T		213T/215T		254T/256T		'U' FLANGE (TEF) & FLUSH END (FE) TROUGH ENDS	FLARED (FL) TROUGH ENDS	TUBULAR (TU) TROUGH ENDS	
	MIN.	MAX.	MIN.	MAX.	MIN.	MAX.	MIN.	MAX.				
SINGLE REDUCTION	6:00	26.55	29.54	27.55	30.54	28.30	31.29	29.30	32.29	9 - 16 - 24	X - 16 - 24	9 - 16 - 24
	3:00	21.85	24.82	22.84	25.81	23.58	26.56	24.57	27.55	9 - 16 - 24	X - 12 - 24	9 - 16 - 24
DOUBLE REDUCTION	6:00	26.67	29.66	27.67	30.65	28.41	31.40	29.41	32.39	9 - 16 - 24	X - 16 - 24	9 - 16 - 24
	3:00	17.62	20.58	18.60	21.57	19.34	22.31	20.33	23.30	9 - 16 - 24	X - 12 - 24	9 - 16 - 24

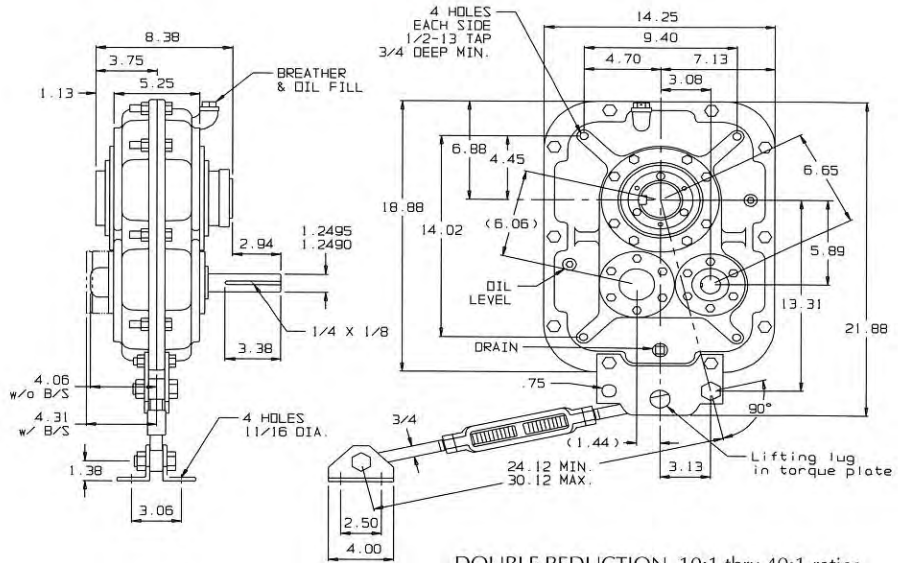
* Values shown are the largest conveyor diameters that the motor mounts will clear in the low-intermediate-high motor bracket positions. X = Does not clear any size trough end.

207TR



SHAFT MOUNTED GEAR DRIVE

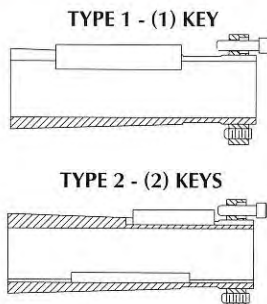
The preferred position for the torque arm is 90° to a line between the point of attachment of the torque arm to the drive and the low speed shaft. The torque arm must be in tension. Keep the torque plate in the position shown.



DOUBLE REDUCTION, 10:1 thru 40:1 ratios
(SINGLE REDUCTION, 5:1 ratio, dimensions in parentheses)

MODEL	207TR05	207TR10	207TR15	207TR20	207TR25	207TR30	207TR35	207TR40
ACTUAL RATIOS	5.846	10.690	15.806	19.572	24.923	30.327	35.495	39.124
SHIPPING WEIGHT (LBS.)	163	175	175	175	175	175	175	175

QUICK RELEASE TAPERED BUSHINGS



BUSHING KIT NO. *	TYPE	DRIVEN SHAFT DIMENSIONS (INCHES)			
		DIA.	KEYWAY WIDTH X DEPTH	RECOMMENDED KEYWAY LENGTH	MINIMUM DRIVEN SHAFT LENGTH
207T207	1	2 7/16	5/8 x 5/16	7 1/8	6 1/4
207T204	2	2 1/4	1/2 x 1/4	7 3/8	7
207T203	2	2 3/16	1/2 x 1/4	7 3/8	7
207T202	2	2 1/8	1/2 x 1/4	7 3/8	7
207T200	2	2	1/2 x 1/4	7 3/8	7
207T115	2	1 15/16	1/2 x 1/4	7 3/8	7
207T114	2	1 7/8	1/2 x 1/4	7 3/8	7
207T112	2	1 3/4	3/8 x 3/16	8	8
207T111	2	1 11/16	3/8 x 3/16	8	8
207T110	2	1 5/8	3/8 x 3/16	8	8
207T108	2	1 1/2	3/8 x 3/16	8	8
207T107	2	1 7/16	3/8 x 3/16	8	8
207T106	2	1 3/8	5/16 x 5/32	8 3/8	8 3/8

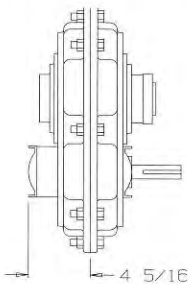
* The bushing kit contains a bushing nut, key(s) and mounting screws.

The recommended driven shaft length is 8.38 inches and uses the recommended keyway length. When an application requires the minimum driven shaft length, the keyway must be keyed along the entire length.

Consult factory for bore sizes not shown.

OPTIONS AND ACCESSORIES

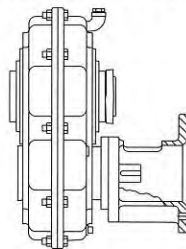
EXTERNAL BACKSTOP KIT



Backstop extensions are standard on double reduction drives and can be supplied on single reduction drives if specified when order is placed. See Engineering Information section for backstop torque capacity.

Kit no. BS207TR - 25:1 thru 40:1 ratios
Kit no. BS207TR-1-10:1 thru 20:1 ratios
Kit no. BS207TR-5- 5:1 ratio

C-FACE MOTOR MOUNTING

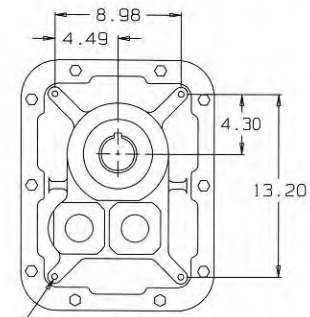


This model can be ordered from the factory to adapt a c-face motor, frames 56C to 254TC. The required flexible coupling is available from Dorris.

HYDRAULIC MOTOR MOUNTING

Consult factory for availability of adaptation to hydraulic motors with SAE A (9 tooth) and SAE B (13 tooth) splines or keyed shafts of similar design.

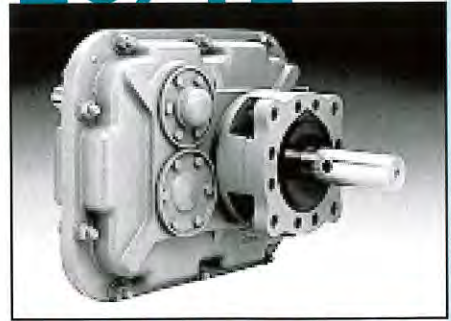
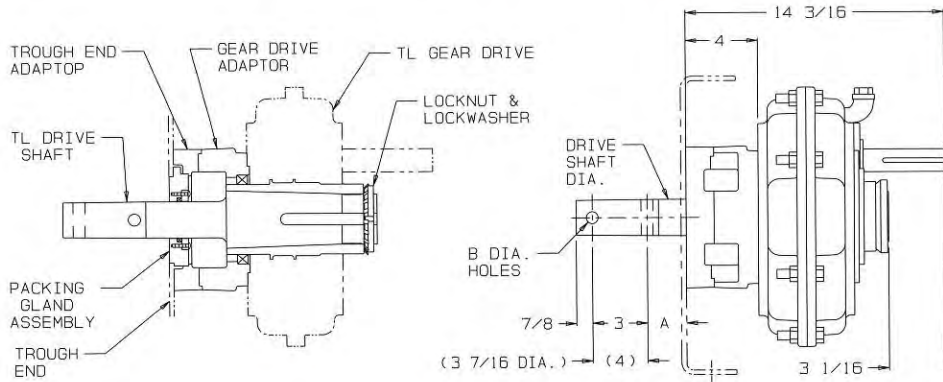
DIMENSIONS FOR FACE MOUNTING



4 HOLES
27/64 DRILL-1 1/2 DEEP MAX.
1/2-13 TAP, 3/4 DEEP MIN

Face mounting holes are not drilled on standard units - contact factory if face mounting is desired. Dimensions are typical for either face.

207TL



SCREW CONVEYOR DRIVE

The TL screw conveyor drive consists of a component gear drive (which equals the TR gear drive plus the gear drive adaptor and minus the torque arm assembly), a drive shaft kit and a trough end adaptor kit.

To convert a TR to a TL, a TR/TL conversion kit, along with a drive shaft kit and trough end adaptor kit is required.

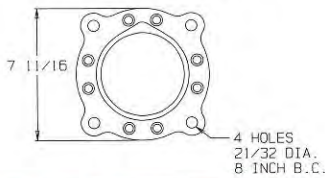
The TL drive shaft kit contains a removable shaft, locknut, lockwasher and key. TL drive shafts have a tapered output end to avoid binding.

The trough end adaptor kit contains the trough end adaptor and packing gland assembly. Dorris trough ends are available.

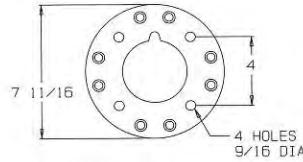
DRIVE SHAFT DIA.	FOR CONVEYER DIAMETER	207TL SCREW CONVEYOR DRIVE WITH REMOVABLE DRIVE SHAFT			DIMENSIONS (INCHES)		SHIPPING WEIGHT (LBS.)	
		DRIVE SHAFT KIT	TROUGH END ADAPTOR KIT		A	B	5:1 RATIO	10-40:1 RATIO
			DORRIS	CEMA				
1 1/2	6, 9	K20708-1 1/2	KD624-1 1/2	KC69-1 1/2	2 1/8	17/32	191	203
2	9, 12	K20708-2	KD624-2	KC924-2	2 1/8	21/32	194	206
2 7/16	12, 14	K20708-2 7/16	KD624-2 7/16	KC924-2 7/16	2 3/4	21/32	199	211
3	12 thru 20	K20708-3	KD624-3	KC924-3	2 7/8	25/32	205	217
3 7/16	18 thru 24	K20708-3 7/16	KD624-3 7/16	KC924-3 7/16	3 7/8	29/32	216	228

TROUGH END ADAPTORS

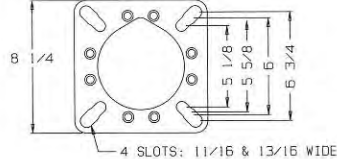
D624 ADAPTOR FOR DORRIS TROUGH ENDS (FLANGE 1" THICK)



C69 ADAPTOR FOR CEMA 6-9 INCH TROUGH ENDS (FLANGE 1" THICK)



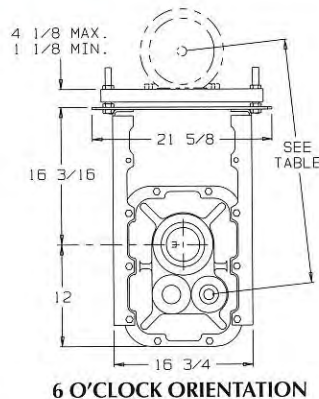
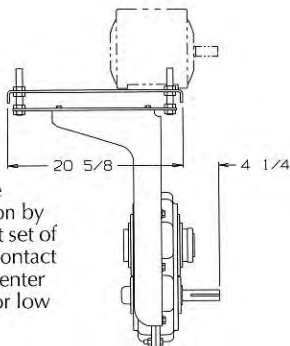
C924 ADAPTOR FOR CEMA 9-24 INCH TROUGH ENDS (FLANGE 1 1/4" THICK)



All dimensions are typical. All trough end adaptors can use either the standard or high performance packing gland assembly. C69 adaptor uses 1 1/2 inch drive shaft; C924 adaptor uses 2 thru 3 7/16 inch drive shaft.

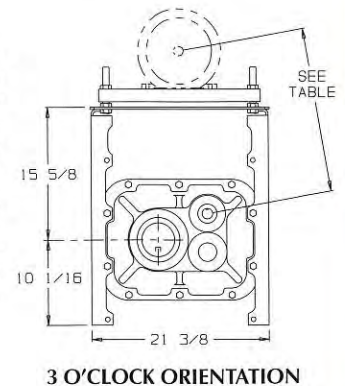
MOTOR MOUNTS (2MM)

Motor brackets are shown in the intermediate position. The brackets can be raised or lowered 6 1/4 inches to the high or low position by moving to the next set of mounting holes. Contact factory for v-belt center distances in high or low position.



The motor brackets can be mounted on either the long (6 o'clock) or short (3 o'clock) sides of the housing as shown.

Consult factory for trough end clearances for the other motor mounting positions not shown.



V-BELT CENTER DISTANCES FOR INTERMEDIATE MOUNTING POSITION (INCHES)

MOTOR MOUNT ORIENTATION		MOTOR FRAME SIZE										DORRIS TROUGH END CLEARANCES *		
		143T/145T		182T/184T		213T/215T		254T/256T		284T/286T		'U' FLANGE (TEF) & FLUSH END (FE) TROUGH ENDS	FLARED (FL) TROUGH ENDS	TUBULAR (TU) TROUGH ENDS
		MIN.	MAX.	MIN.	MAX.	MIN.	MAX.	MIN.	MAX.	MIN.	MAX.			
SINGLE REDUCTION	6:00	26.74	29.73	27.74	30.73	28.49	31.48	29.49	32.48	30.23	33.23	9 - 16 - 24	X - 14 - 24	9 - 14 - 24
	3:00	21.94	24.91	22.93	25.90	23.67	26.65	24.66	27.64	25.41	28.38	9 - 16 - 24	X - 12 - 24	9 - 14 - 24
DOUBLE REDUCTION	6:00	26.88	29.86	27.87	30.85	28.62	31.60	29.61	32.60	30.36	33.34	9 - 16 - 24	X - 14 - 24	9 - 14 - 24
	3:00	17.49	20.44	18.47	21.43	19.21	22.17	20.19	23.16	20.93	23.90	9 - 16 - 24	X - 12 - 24	9 - 14 - 24

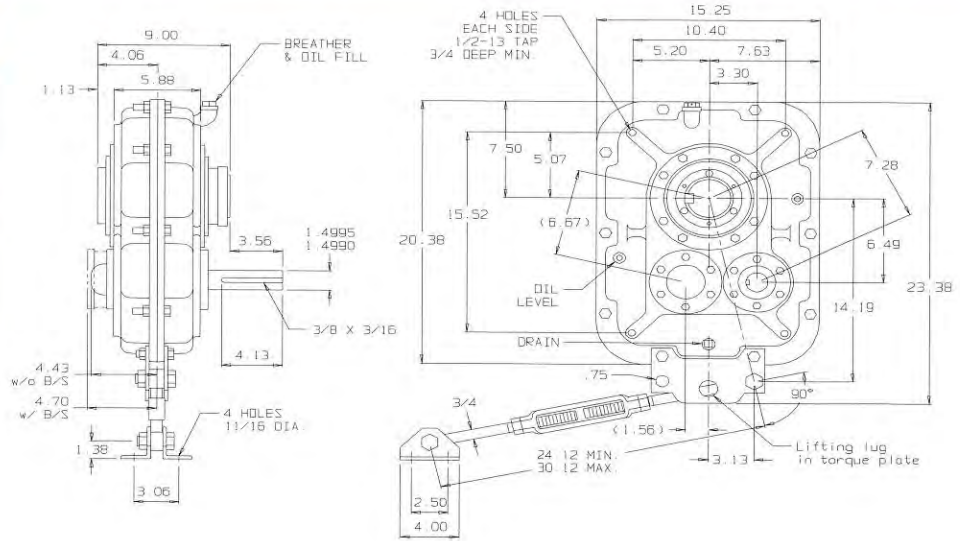
* Values shown are the largest conveyor diameters that the motor mounts will clear in the low-intermediate-high motor bracket positions. X = Does not clear any size trough end.

215TR



SHAFT MOUNTED GEAR DRIVE

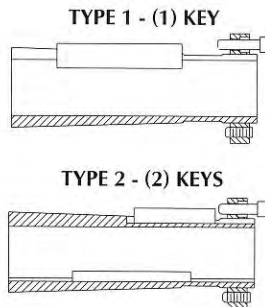
The preferred position for the torque arm is 90° to a line between the point of attachment of the torque arm to the drive and the low speed shaft. The torque arm must be in tension. Keep the torque plate in the position shown.



DOUBLE REDUCTION, 10:1 thru 40:1 ratios
(SINGLE REDUCTION, 5:1 ratio, dimensions in parentheses)

MODEL	215TR05	215TR10	215TR15	215TR20	215TR25	215TR30	215TR35	215TR40
ACTUAL RATIOS	5.867	10.229	14.383	20.289	25.520	31.059	35.982	38.971
SHIPPING WEIGHT (LBS.)	178	195	195	195	195	195	195	195

QUICK RELEASE TAPERED BUSHINGS



BUSHING KIT NO. *	TYPE	DRIVEN SHAFT DIMENSIONS (INCHES)			
		DIA.	KEYWAY WIDTH X DEPTH	RECOMMENDED KEYWAY LENGTH	MINIMUM DRIVEN SHAFT LENGTH
215T215	1	2 15/16	3/4 x 3/8	7 3/4	6 7/8
215T211	2	2 11/16	5/8 x 5/16	8 3/8	8 3/8
215T208	2	2 1/2	5/8 x 5/16	8 3/8	8 3/8
215T207	2	2 7/16	5/8 x 5/16	8 3/8	8 3/8
215T204	2	2 1/4	1/2 x 1/4	8 7/8	8 7/8
215T203	2	2 3/16	1/2 x 1/4	8 7/8	8 7/8
215T202	2	2 1/8	1/2 x 1/4	8 7/8	8 7/8
215T200	2	2	1/2 x 1/4	8 7/8	8 7/8
215T115	2	1 15/16	1/2 x 1/4	8 7/8	8 7/8

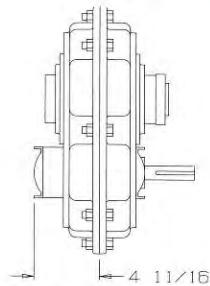
* The bushing kit contains a bushing nut, key(s) and mounting screws.

The recommended driven shaft length is 9.00 inches and uses the recommended keyway length. When an application requires the minimum driven shaft length, the keyway must be keyed along the entire length.

Consult factory for bore sizes not shown.

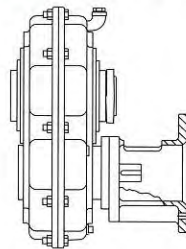
OPTIONS AND ACCESSORIES

EXTERNAL BACKSTOP KIT



Backstop extensions are standard on double reduction drives and can be supplied on single reduction drives if specified when order is placed. See Engineering Information section for backstop torque capacity.
Kit no. BS215TR - 30:1 thru 40:1 ratios
Kit no. BS215TR-1-10:1 thru 25:1 ratios
Kit no. BS215TR-5- 5:1 ratio

C-FACE MOTOR MOUNTING

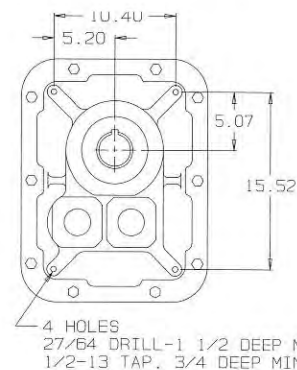


This model can be ordered from the factory to adapt a c-face motor, frames 56C to 254TC. The required flexible coupling is available from Dorris.

HYDRAULIC MOTOR MOUNTING

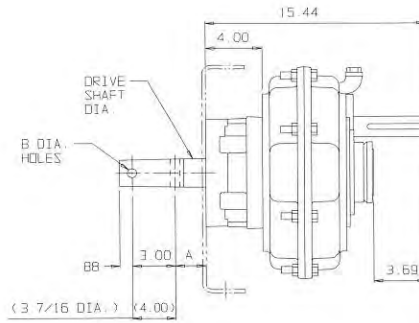
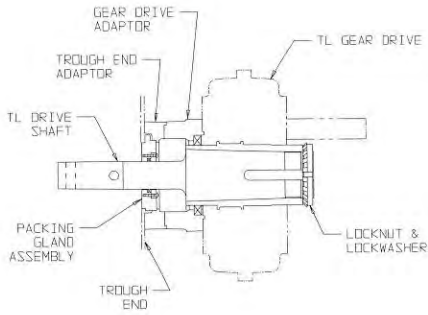
Consult factory for availability of adaptation to hydraulic motors with SAE A (9 tooth), SAE B (13 tooth) and SAE C (14 tooth) splines or keyed shafts of similar design.

DIMENSIONS FOR FACE MOUNTING



Face mounting holes are not drilled on standard units - contact factory if face mounting is desired. Dimensions are typical for either face.

215TL



SCREW CONVEYOR DRIVE

The TL screw conveyor drive consists of a component gear drive (which equals the TR gear drive plus the gear drive adaptor and minus the torque arm assembly), a drive shaft kit and a trough end adaptor kit.

To convert a TR to a TL, a TR/TL conversion kit, along with a drive shaft kit and trough end adaptor kit is required.

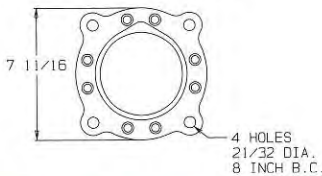
The TL drive shaft kit contains a removable shaft, locknut, lockwasher and key. TL drive shafts have a tapered output end to avoid binding.

The trough end adaptor kit contains the trough end adaptor and packing gland assembly. Dorris trough ends are available.

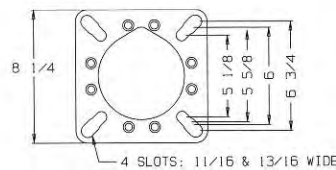
DRIVE SHAFT DIA.	FOR CONVEYOR DIAMETER	215TL SCREW CONVEYOR DRIVE WITH REMOVABLE DRIVE SHAFT				DIMENSIONS (INCHES)		SHIPPING WEIGHT (LBS.)	
		DRIVE SHAFT KIT	TROUGH END ADAPTOR KIT		A	B	5:1 RATIO	10-40:1 RATIO	
			DORRIS	CEMA					
2	9, 12	K21508-2	KD624-2	KC924-2	2 1/8	21/32	214	231	
2 7/16	12, 14	K21508-2 7/16	KD624-2 7/16	KC924-2 7/16	2 3/4	21/32	219	236	
3	12 thru 20	K21508-3	KD624-3	KC924-3	2 7/8	25/32	226	243	
3 7/16	18 thru 24	K21508-3 7/16	KD624-3 7/16	KC924-3 7/16	3 7/8	29/32	237	254	

TROUGH END ADAPTORS

D624 ADAPTOR FOR DORRIS TROUGH ENDS (FLANGE 1" THICK)



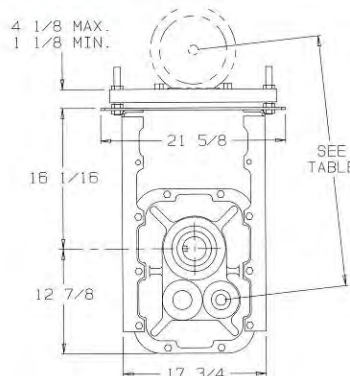
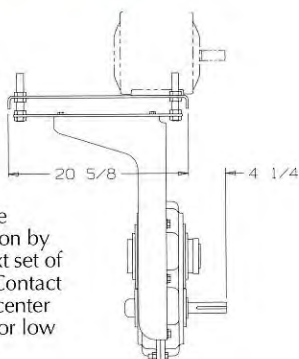
C924 ADAPTOR FOR CEMA 9-24 INCH TROUGH ENDS (FLANGE 1 1/4" THICK)



All dimensions are typical. All trough end adaptors can use either the standard or high performance packing gland assembly.

MOTOR MOUNTS (2MM)

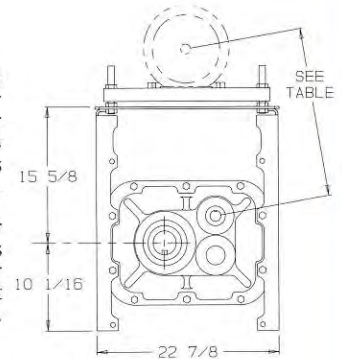
Motor brackets are shown in the intermediate position. The brackets can be raised or lowered 6 1/4 inches to the high or low position by moving to the next set of mounting holes. Contact factory for v-belt center distances in high or low position.



6 O'CLOCK ORIENTATION

The motor brackets can be mounted on either the long (6 o'clock) or short (3 o'clock) sides of the housing as shown.

Consult factory for trough end clearances for the other motor mounting positions not shown.



3 O'CLOCK ORIENTATION

V-BELT CENTER DISTANCES FOR INTERMEDIATE MOUNTING POSITION (INCHES)

MOTOR MOUNT ORIENTATION		MOTOR FRAME SIZE										DORRIS TROUGH END CLEARANCES *				
		143T/145T		182T/184T		213T/215T		254T/256T		284T/286T		324T/326T		'U' FLANGE (TEF) & FLUSH END (FE) TROUGH ENDS	FLARED (FL) TROUGH ENDS	TUBULAR (TU) TROUGH ENDS
		MIN.	MAX.	MIN.	MAX.	MIN.	MAX.	MIN.	MAX.	MIN.	MAX.	MIN.	MAX.			
SINGLE REDUCTION	6:00	27.22	30.22	28.22	31.22	28.97	31.96	29.97	32.96	30.72	33.71	31.71	34.71	9 - 16 - 24	6 - 14 - 24	9 - 14 - 24
	3:00	22.14	25.10	23.13	26.09	23.87	26.83	24.85	27.82	25.60	28.57	26.58	29.56	9 - 16 - 24	6 - 14 - 24	9 - 14 - 24
DOUBLE REDUCTION	6:00	27.38	30.36	28.37	31.35	29.11	32.10	30.11	33.09	30.85	33.84	31.85	34.83	9 - 16 - 24	6 - 14 - 24	9 - 14 - 24
	3:00	17.38	20.31	18.35	21.30	19.09	22.03	20.07	23.02	20.81	23.76	21.79	24.75	9 - 16 - 24	6 - 14 - 24	9 - 14 - 24

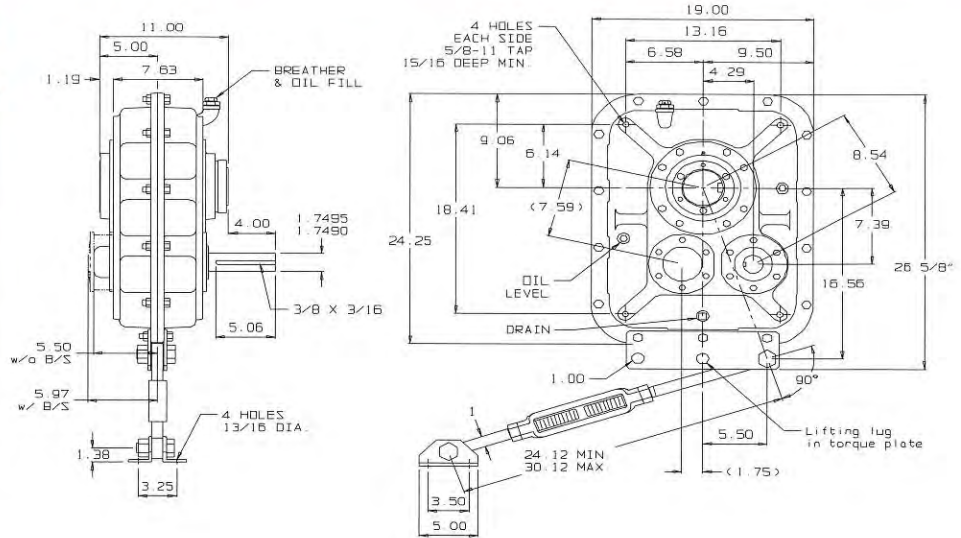
* Values shown are the largest conveyor diameters that the motor mounts will clear in the low-intermediate-high motor bracket positions.

307TR



SHAFT MOUNTED GEAR DRIVE

The preferred position for the torque arm is 90° to a line between the point of attachment of the torque arm to the drive and the low speed shaft. The torque arm must be in tension. Keep the torque plate in the position shown.

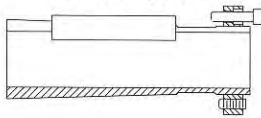


DOUBLE REDUCTION, 10:1 thru 40:1 ratios
(SINGLE REDUCTION, 5:1 ratio, dimensions in parentheses)

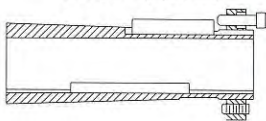
MODEL	307TR05	307TR10	307TR15	307TR20	307TR25	307TR30	307TR35	307TR40
ACTUAL RATIOS	6.467	10.974	15.669	19.169	24.742	30.928	34.797	39.140
SHIPPING WEIGHT (LBS.)	341	377	377	377	377	377	377	377

QUICK RELEASE TAPERED BUSHINGS

TYPE 1 - (1) KEY



TYPE 2 - (2) KEYS



BUSHING KIT NO. *	TYPE	DRIVEN SHAFT DIMENSIONS (INCHES)			
		DIA.	KEYWAY WIDTH X DEPTH	RECOMMENDED KEYWAY LENGTH	MINIMUM DRIVEN SHAFT LENGTH
307T307	1	3 7/16	7/8 x 7/16	8 5/8	8 3/8
307T303	1	3 3/16	3/4 x 3/8	8 5/8	8 3/8
307T300	1	3	3/4 x 3/8	8 5/8	8 3/8
307T215	2	2 15/16	3/4 x 3/8	8 3/8	8 3/8
307T214	2	2 7/8	3/4 x 3/8	8 3/8	8 3/8
307T211	2	2 11/16	5/8 x 5/16	10 7/8	10 7/8
307T208	2	2 1/2	5/8 x 5/16	10 7/8	10 7/8
307T207	2	2 7/16	5/8 x 5/16	10 7/8	10 7/8

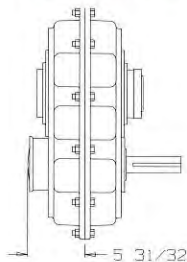
* The bushing kit contains a bushing nut, key(s) and mounting screws.

The recommended driven shaft length is 11 inches and uses the recommended keyway length. When an application requires the minimum driven shaft length, the keyway must be keyed along the entire length.

Consult factory for bore sizes not shown.

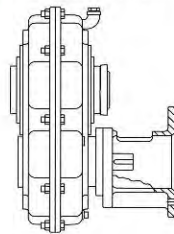
OPTIONS AND ACCESSORIES

EXTERNAL BACKSTOP KIT



Backstop extensions are standard on double reduction drives and can be supplied on single reduction drives if specified when order is placed. See Engineering Information section for backstop torque capacity.
Kit no. BS307TR - 20:1 thru 40:1 ratios
Kit no. BS307TR-1-10:1 thru 15:1 ratios
Kit no. BS307TR-5- 5:1 ratio

C-FACE MOTOR MOUNTING

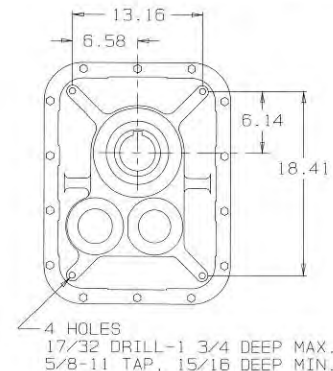


This model can be ordered from the factory to adapt a c-face motor, frames 56C to 256TC. The required flexible coupling is available from Dorris.

HYDRAULIC MOTOR MOUNTING

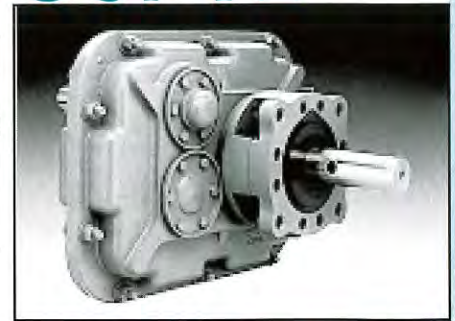
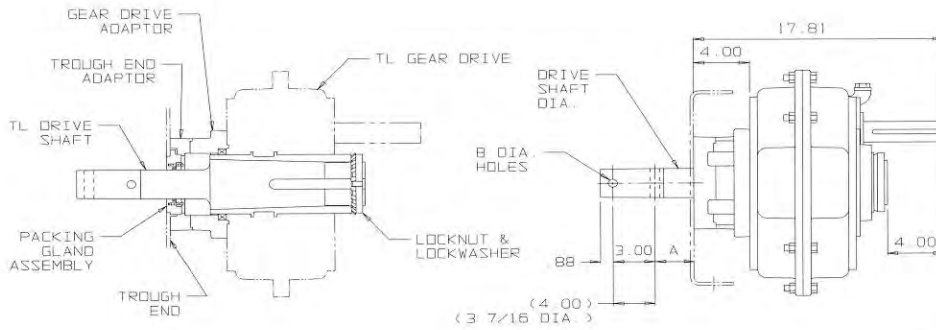
Consult factory for availability of adaptation to hydraulic motors with SAE A (9 tooth), SAE B (13 tooth) and SAE C (14 tooth) splines or keyed shafts of similar design.

DIMENSIONS FOR FACE MOUNTING



Face mounting holes are not drilled on standard units - contact factory if face mounting is desired. Dimensions are typical for either face.

307TL



SCREW CONVEYOR DRIVE

The TL screw conveyor drive consists of a component gear drive (which equals the TR gear drive plus the gear drive adaptor and minus the torque arm assembly), a drive shaft kit and a trough end adaptor kit.

To convert a TR to a TL, a TR/TL conversion kit, along with a drive shaft kit and trough end adaptor kit is required.

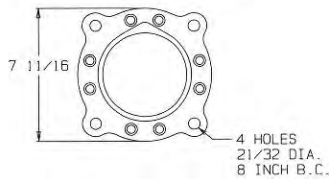
The TL drive shaft kit contains a removable shaft, locknut, lockwasher and key. TL drive shafts have a tapered output end to avoid binding.

The trough end adaptor kit contains the trough end adaptor and packing gland assembly. Dorris trough ends are available.

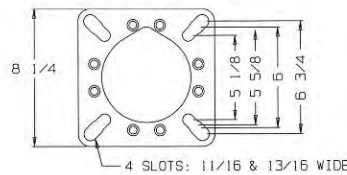
DRIVE SHAFT DIA.	FOR CONVEYOR DIAMETER	307TL SCREW CONVEYOR DRIVE WITH REMOVABLE DRIVE SHAFT				DIMENSIONS (INCHES)		SHIPPING WEIGHT (LBS.)	
		DRIVE SHAFT KIT	TROUGH END ADAPTOR KIT		A	B	5:1 RATIO	10-40:1 RATIO	
			DORRIS	CEMA					
2 7/16	12, 14	K30708-2 7/16	KD624-2 7/16	KC924-2 7/16	2 3/4	21/32	396	432	
3	12 thru 20	K30708-3	KD624-3	KC924-3	2 7/8	25/32	403	439	
3 7/16	18 thru 24	K30708-3 7/16	KD624-3 7/16	KC924-3 7/16	3 7/8	29/32	414	450	

TROUGH END ADAPTORS

D624 ADAPTOR FOR DORRIS TROUGH ENDS (FLANGE 1" THICK)



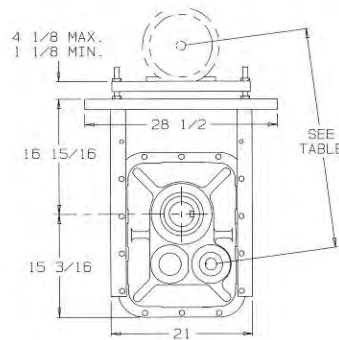
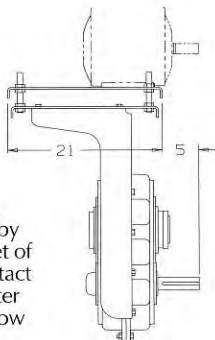
C924 ADAPTOR FOR CEMA 9-24 INCH TROUGH ENDS (FLANGE 1 1/4" THICK)



All dimensions are typical. All trough end adaptors can use either the standard or high performance packing gland assembly.

MOTOR MOUNTS (3MM)

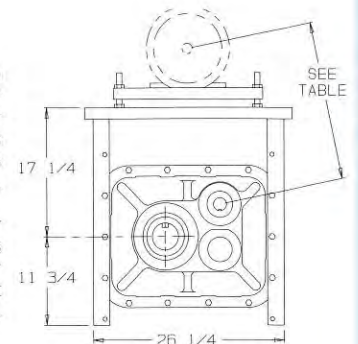
Motor brackets are shown in the intermediate position. The brackets can be raised or lowered 5 1/2 inches to the high or low position by moving to the next set of mounting holes. Contact factory for v-belt center distances in high or low position.



6 O'CLOCK ORIENTATION

The motor brackets can be mounted on either the long (6 o'clock) or short (3 o'clock) sides of the housing as shown.

Consult factory for trough end clearances for the other motor mounting positions not shown.



3 O'CLOCK ORIENTATION

V-BELT CENTER DISTANCES FOR INTERMEDIATE MOUNTING POSITION (INCHES)

MOTOR MOUNT ORIENTATION	MOTOR FRAME SIZE											DORRIS TROUGH END CLEARANCES *				
	182T/184T		213T/215T		254T/256T		284T/286T		324T/326T		364T/365T		'U' FLANGE (TEF) & FLUSH END (FE) TROUGH ENDS	FLARED (FL) TROUGH ENDS	TUBULAR (TU) TROUGH ENDS	
	MIN.	MAX.	MIN.	MAX.	MIN.	MAX.	MIN.	MAX.	MIN.	MAX.	MIN.	MAX.				
SINGLE REDUCTION	6:00	30.00	33.00	30.75	33.75	31.75	34.75	32.50	35.49	33.50	36.49	34.50	37.49	14 - 18 - 24	6 - 18 - 24	12 - 18 - 24
	3:00	25.00	27.96	25.74	28.70	26.72	29.69	27.47	30.43	28.46	31.42	29.44	32.41	12 - 18 - 24	6 - 18 - 24	12 - 18 - 24
DOUBLE REDUCTION	6:00	30.26	33.23	31.00	33.97	31.99	34.97	32.73	35.71	33.73	36.70	34.72	37.70	14 - 18 - 24	6 - 18 - 24	12 - 18 - 24
	3:00	19.08	22.01	19.81	22.75	20.79	23.73	21.52	24.47	22.50	25.45	23.49	26.44	12 - 18 - 24	6 - 18 - 24	12 - 18 - 24

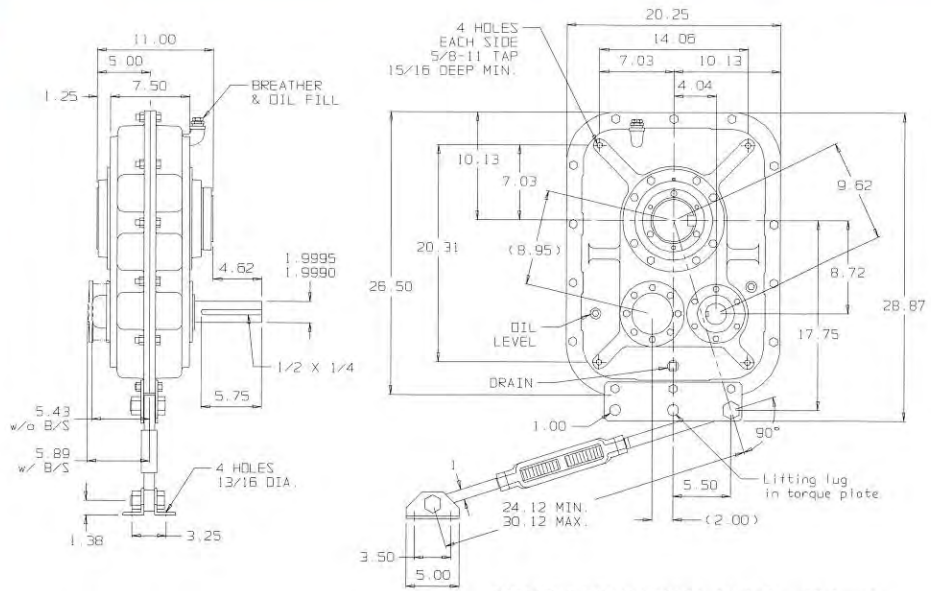
* Values shown are the largest conveyor diameters that the motor mounts will clear in the low-intermediate-high motor bracket positions.
 - 9 inch trough ends will not clear 6 o'clock orientation without modification.

315TR



SHAFT MOUNTED GEAR DRIVE

The preferred position for the torque arm is 90° to a line between the point of attachment of the torque arm to the drive and the low speed shaft. The torque arm must be in tension. Keep the torque plate in the position shown.

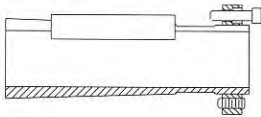


DOUBLE REDUCTION, 10:1 thru 40:1 ratios
(SINGLE REDUCTION, 5:1 ratio, dimensions in parentheses)

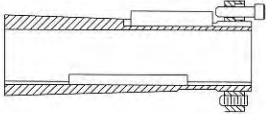
MODEL	315TR05	315TR10	315TR15	315TR20	315TR25	315TR30	315TR35	315TR40
ACTUAL RATIOS	6.071	10.815	15.543	19.849	24.562	29.301	34.304	38.790
SHIPPING WEIGHT (LBS.)	395	437	437	437	437	437	437	437

QUICK RELEASE TAPERED BUSHINGS

TYPE 1 - (1) KEY



TYPE 2 - (2) KEYS



BUSHING KIT NO. *	TYPE	DRIVEN SHAFT DIMENSIONS (INCHES)			
		DIA.	KEYWAY WIDTH X DEPTH	RECOMMENDED KEYWAY LENGTH	MINIMUM DRIVEN SHAFT LENGTH
315T315	1	3 15/16	1 x 1/2	9 5/8	8 9/16
315T307	2	3 7/16	7/8 x 7/16	8 9/16	8 9/16
315T303	2	3 3/16	3/4 x 3/8	8 9/16	8 9/16
315T300	2	3	3/4 x 3/8	8 9/16	8 9/16
315T215	2	2 15/16	3/4 x 3/8	8 9/16	8 9/16

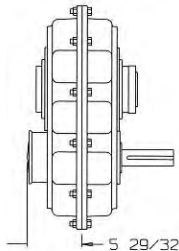
* The bushing kit contains a bushing nut, key(s) and mounting screws.

The recommended driven shaft length is 11 inches and uses the recommended keyway length. When an application requires the minimum driven shaft length, the keyway must be keyed along the entire length.

Consult factory for bore sizes not shown.

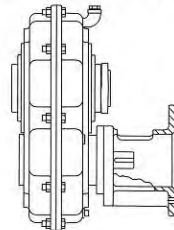
OPTIONS AND ACCESSORIES

EXTERNAL BACKSTOP KIT



Backstop extensions are standard on double reduction drives and can be supplied on single reduction drives if specified when order is placed. See Engineering Information section for backstop torque capacity.
Kit no. BS315TR - 30:1 thru 40:1 ratios
Kit no. BS315TR-1-20:1 thru 25:1 ratios
Kit no. BS315TR-2-10:1 thru 15:1 ratios
Kit no. BS315TR-5- 5:1 ratio

C-FACE MOTOR MOUNTING

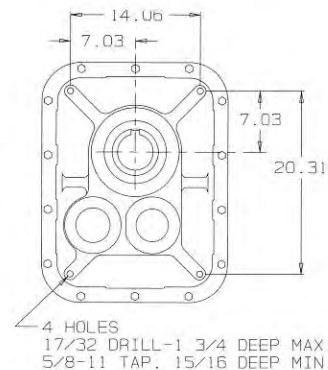


This model can be ordered from the factory to adapt a c-face motor, frames 56C to 256TC. The required flexible coupling is available from Dorris.

HYDRAULIC MOTOR MOUNTING

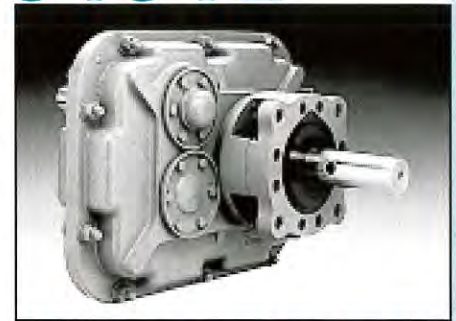
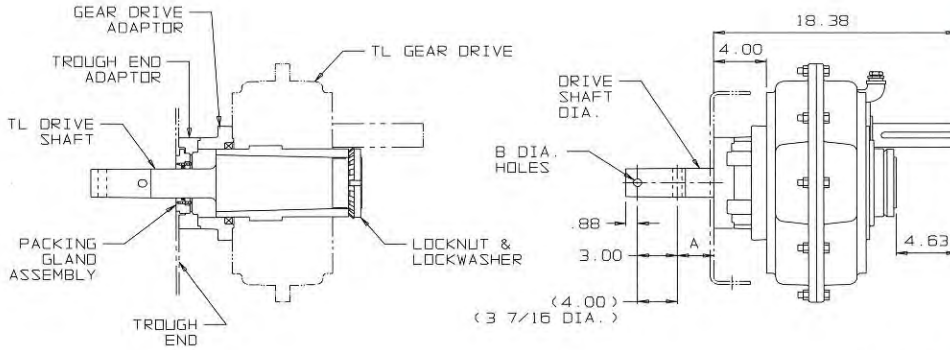
Consult factory for availability of adaptation to hydraulic motors with SAE A (9 tooth), SAE B (13 tooth) and SAE C (14 tooth) splines or keyed shafts of similar design.

DIMENSIONS FOR FACE MOUNTING



Face mounting holes are not drilled on standard units - contact factory if face mounting is desired. Dimensions are typical for either face.

315TL



SCREW CONVEYOR DRIVE

The TL screw conveyor drive consists of a component gear drive (which equals the TR gear drive plus the gear drive adaptor and minus the torque arm assembly), a drive shaft kit and a trough end adaptor kit.

To convert a TR to a TL, a TR/TL conversion kit, along with a drive shaft kit and trough end adaptor kit is required.

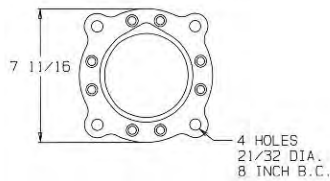
The TL drive shaft kit contains a removable shaft, locknut, lockwasher and key. TL drive shafts have a tapered output end to avoid binding.

The trough end adaptor kit contains the trough end adaptor and packing gland assembly. Dorris trough ends are available.

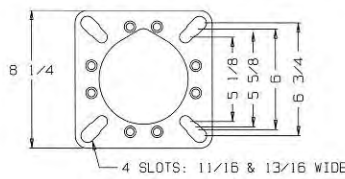
DRIVE SHAFT DIA.	FOR CONVEYOR DIAMETER	315TL SCREW CONVEYOR DRIVE WITH REMOVABLE DRIVE SHAFT			DIMENSIONS (INCHES)		SHIPPING WEIGHT (LBS.)	
		DRIVE SHAFT KIT	TROUGH END ADAPTOR KIT		A	B	5:1 RATIO	10:40:1 RATIO
			DORRIS	CEMA				
2 7/16	12, 14	K31508-2 7/16	KD624-2 7/16	KC924-2 7/16	2 3/4	21/32	460	502
3	12 thru 20	K31508-3	KD624-3	KC924-3	2 7/8	25/32	467	509
3 7/16	18 thru 24	K31508-3 7/16	KD624-3 7/16	KC924-3 7/16	3 7/8	29/32	478	520

TROUGH END ADAPTORS

D624 ADAPTOR FOR DORRIS TROUGH ENDS (FLANGE 1" THICK)



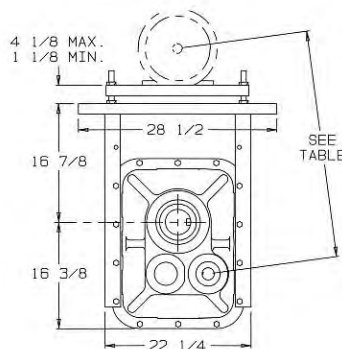
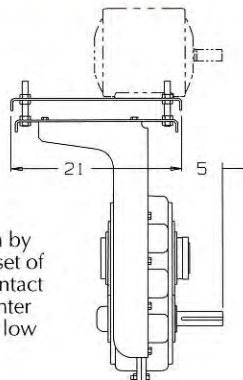
C924 ADAPTOR FOR CEMA 9-24 INCH TROUGH ENDS (FLANGE 1 1/4" THICK)



All dimensions are typical. All trough end adaptors can use either the standard or high performance packing gland assembly.

MOTOR MOUNTS (3MM)

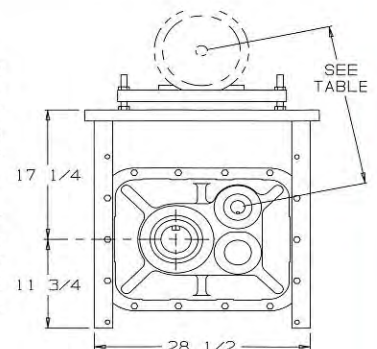
Motor brackets are shown in the intermediate position. The brackets can be raised or lowered 5 1/2 inches to the high or low position by moving to the next set of mounting holes. Contact factory for v-belt center distances in high or low position.



6 O'CLOCK ORIENTATION

The motor brackets can be mounted on either the long (6 o'clock) or short (3 o'clock) sides of the housing as shown.

Consult factory for trough end clearances for the other motor mounting positions not shown.



3 O'CLOCK ORIENTATION

V-BELT CENTER DISTANCES FOR INTERMEDIATE MOUNTING POSITION (INCHES)

MOTOR MOUNT ORIENTATION		MOTOR FRAME SIZE										DORRIS TROUGH END CLEARANCES *				
		182T/184T		213T/215T		254T/256T		284T/286T		324T/326T		364T/365T		'U' FLANGE (TEF) & FLUSH END (FE) TROUGH ENDS	FLARED (FL) TROUGH ENDS	TUBULAR (TU) TROUGH ENDS
		MIN.	MAX.	MIN.	MAX.	MIN.	MAX.	MIN.	MAX.	MIN.	MAX.	MIN.	MAX.			
SINGLE REDUCTION	6:00	31.29	34.28	32.04	35.03	33.04	36.03	33.78	36.78	34.78	37.78	35.78	38.78	14 - 18 - 24	6 - 18 - 24	6 - 18 - 24
	3:00	25.50	28.43	26.23	29.17	27.21	30.15	27.94	30.89	28.92	31.87	29.90	32.86	14 - 18 - 24	9 - 18 - 24	12 - 18 - 24
DOUBLE REDUCTION	6:00	31.49	34.46	32.23	35.21	33.22	36.20	33.97	36.95	34.96	37.94	35.95	38.94	14 - 18 - 24	6 - 18 - 24	6 - 18 - 24
	3:00	19.65	22.54	20.37	23.27	21.33	24.24	22.06	24.97	23.02	25.94	24.00	26.92	14 - 18 - 24	9 - 18 - 24	12 - 18 - 24

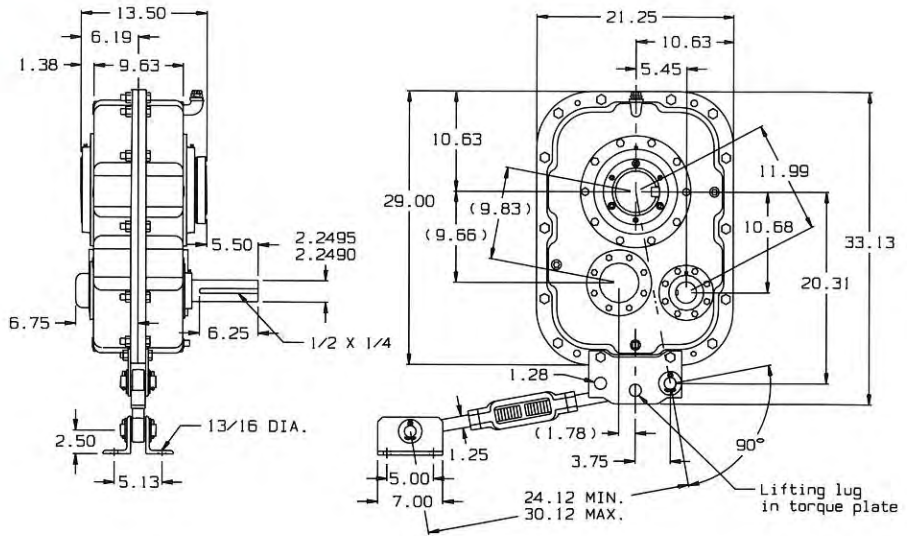
* Values shown are the largest conveyor diameters that the motor mounts will clear in the low-intermediate-high motor bracket positions. - 9 and 12 inch trough ends will not clear 6 o'clock orientation without modification.

407TR



SHAFT MOUNTED GEAR DRIVE

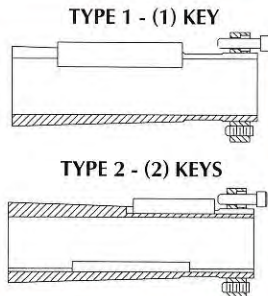
The preferred position for the torque arm is 90° to a line between the point of attachment of the torque arm to the drive and the low speed shaft. The torque arm must be in tension. Keep the torque plate in the position shown.



DOUBLE REDUCTION, 10:1 thru 40:1 ratios
(SINGLE REDUCTION, 5:1 ratio, dimensions in parentheses)

MODEL	407TR05	407TR10	407TR15	407TR20	407TR25	407TR30	407TR35	407TR40
ACTUAL RATIOS	6.533	11.8632	15.313	21.029	25.891	31.530	35.156	39.544
SHIPPING WEIGHT (lbs.)	750	800	800	800	800	800	800	800

QUICK RELEASE TAPERED BUSHINGS



BUSHING KIT NO. *	TYPE	DRIVEN SHAFT DIMENSIONS (INCHES)			
		DIA.	KEYWAY WIDTH X DEPTH	RECOMMENDED KEYWAY LENGTH	MINIMUM DRIVEN SHAFT LENGTH
407T407	1	4 7/16	1 x 1/2	11 3/8	10 1/4
407T403	2	4 3/16	1 x 1/2	11	11
407T315	2	3 15/16	1 x 1/2	11	11
407T307	2	3 7/16	7/8 x 7/16	11	11
407T215	2	2 15/16	3/4 x 3/8	12	12

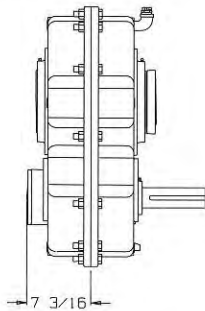
* The bushing kit contains a bushing nut, key(s) and mounting screws.

The recommended driven shaft length is 13.5 inches and uses the recommended keyway length. When an application requires the minimum driven shaft length, the keyway must be keyed along the entire length.

Consult factory for bore sizes not shown.

OPTIONS AND ACCESSORIES

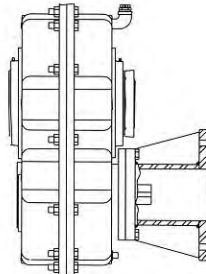
EXTERNAL BACKSTOP KIT



Backstop extensions are standard on double reduction drives. No backstop is available for single reduction drives. See Engineering Information section for backstop torque capacity.

- Kit no. BS407TR - 40:1 ratio
- Kit no. BS407TR-1-25:1 ratio
- Kit no. BS407TR-2-15:1 thru 20:1 ratios

C-FACE MOTOR MOUNTING

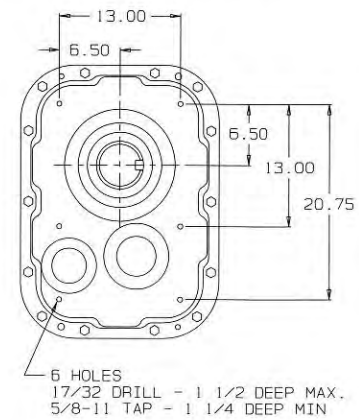


This model can be ordered from the factory to adapt a c-face motor, frames 182TC to 326TC. The required flexible coupling is available from Dorris.

HYDRAULIC MOTOR MOUNTING

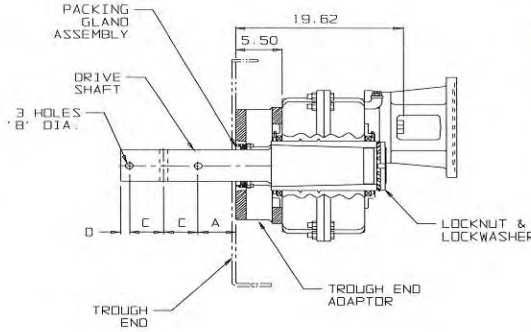
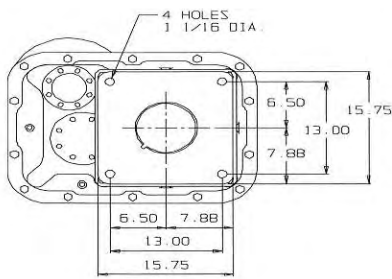
Consult factory for availability of adaptation to hydraulic motors with SAE B (13 tooth) and SAE C (14 tooth) splines or keyed shafts of similar design.

DIMENSIONS FOR FACE MOUNTING



Face mounting holes are not drilled on standard units - contact factory if face mounting is desired. Dimensions are typical for either face.

407TL



SCREW CONVEYOR DRIVE

DRIVE SHAFT DIA.	DRIVE SHAFT KIT	PACKING GLAND KIT	(A)	(B)	(C)	(D)	GEAR DRIVE APPROX. SHIPPING WEIGHT (Lbs.)
3 7/16	K40708-3 7/13 -3	KA4-64-6 7/16	3 7/8	2 9/32	4	7/8	1040
3 15/16	K40708-3 15/16 -3	KA4-64-3 15/16	3 7/8	1 1/16	7	1 1/2	1080
4 7/16	K40708-4 7/16 -3	KA4-64-4 7/16	4 1/8	1 3/16	5	1 3/4	1140
4 15/16	KA40708-4 15/16 -3	KA4-64-4 15/16	4 3/4	1 5/16	5	1 7/8	1220

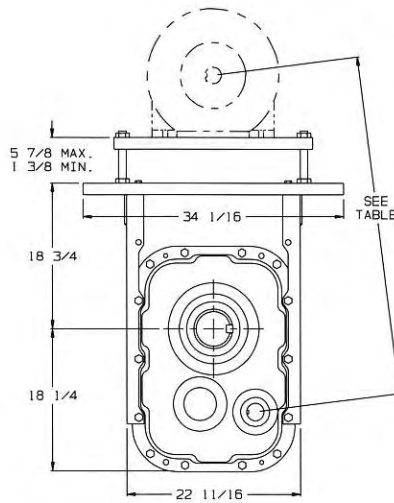
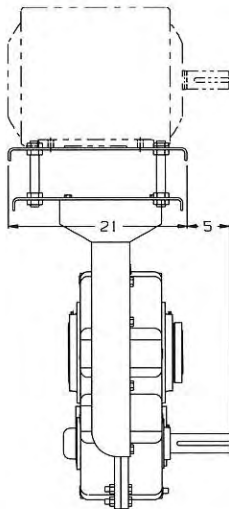
The 407TL screw conveyor drives are shipped complete from the factory.

The 407TL drive shaft has (3) holes with a cylindrical (not tapered) output end.

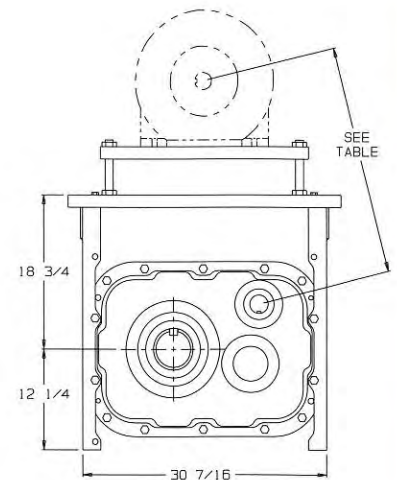
NOTE: Trough ends for this gear drive are not available from Dorris.

CAUTION: Check adaptor mounting to trough end.

MOTOR MOUNTS (407MM)



6 O'CLOCK ORIENTATION



3 O'CLOCK ORIENTATION

Motor brackets are shown in the intermediate position. The brackets can be raised or lowered 7 1/2 inches to the high or low position by moving to the next set of mounting holes. Contact factory for v-belt center distances in high or low position.

The motor brackets can be mounted on either the long (6 o'clock) or short (3 o'clock) sides of the housing as shown.

V-BELT CENTER DISTANCES FOR INTERMEDIATE MOUNTING POSITION (INCHES)

MOTOR MOUNT ORIENTATION		MOTOR FRAME SIZE											
		182T/184T		213T/215T		254T/256T		284T/286T		324T/326T		364T/365T	
		MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX
SINGLE REDUCTION	6:00	34.33	38.83	35.08	39.58	36.08	40.58	36.83	41.33	37.83	42.32	38.83	43.32
	3:00	27.03	31.44	27.76	32.18	28.74	33.16	29.48	33.90	30.46	34.89	31.44	35.87
DOUBLE REDUCTION	6:00	35.72	40.17	36.46	40.92	37.45	41.91	38.19	42.65	39.18	43.64	40.17	44.64
	3:00	20.35	24.63	21.06	25.36	22.00	26.32	22.72	27.85	23.67	28.01	24.63	28.99

NOTE: Check trough end clearance for motor mounting position chosen.

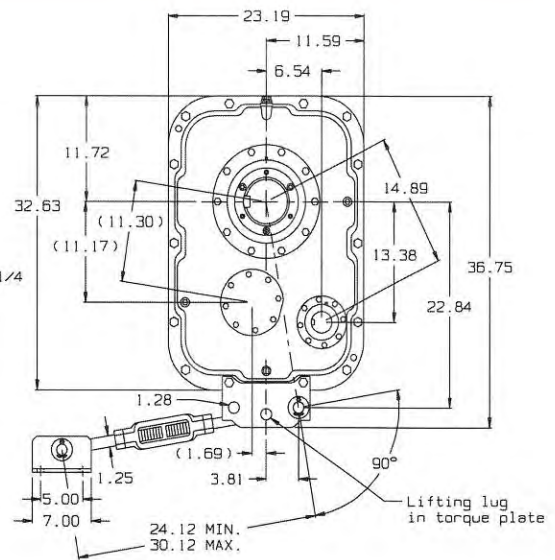
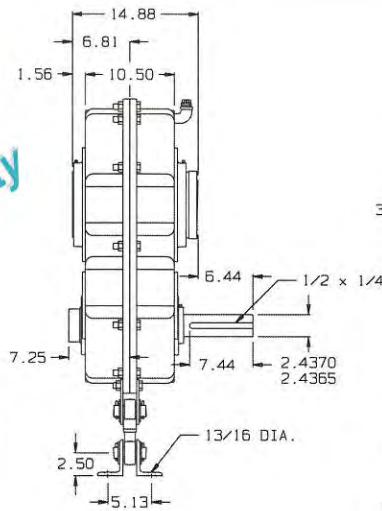
415TR



Consult Factory for Availability

SHAFT MOUNTED GEAR DRIVE

The preferred position for the torque arm is 90° to a line between the point of attachment of the torque arm to the drive and the low speed shaft. The torque arm must be in tension. Keep the torque plate in the position shown.

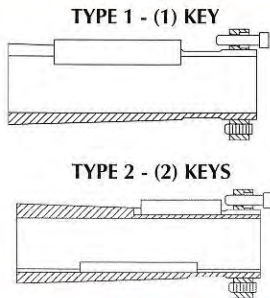


DOUBLE REDUCTION, 10:1 thru 40:1 ratios
(SINGLE REDUCTION, 5:1 ratio, dimensions in parentheses)

MODEL	415TR05	415TR15*	415TR20	415TR25*	415TR40*
ACTUAL RATIOS	6.278	14.373	20.782	24.523	40.656
SHIPPING WEIGHT (LBS.)	950	1000	1000	1000	1000

* These ratios are also available on 415TR triple reduction units. Note part number difference for triple reduction (415TR040).

QUICK RELEASE TAPERED BUSHINGS



BUSHING KIT NO.*	TYPE	DRIVEN SHAFT DIMENSIONS (INCHES)			
		DIA.	KEYWAY WIDTH X DEPTH	RECOMMENDED KEYWAY LENGTH	MINIMUM DRIVEN SHAFT LENGTH
415T415	1	4 15/16	1 1/4 x 5/8	13 3/8	12
415T407	2	4 7/16	1 x 1/2	14	14
415T403	2	4 3/16	1 x 1/2	14	14
415T315	2	3 15/16	1 x 1/2	14	14
415T307	2	3 7/16	7/8 x 7/16	14	14

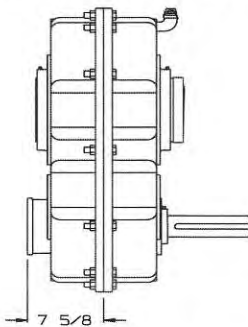
* The bushing kit contains a bushing nut, key(s) and mounting screws.

The recommended driven shaft length is 14.88 inches and uses the recommended keyway length. When an application requires the minimum driven shaft length, the keyway must be keyed along the entire length.

Consult factory for bore sizes not shown.

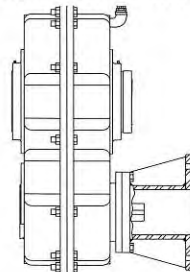
OPTIONS AND ACCESSORIES

EXTERNAL BACKSTOP KIT



Backstop extensions are standard on double reduction drives. No backstop is available for single reduction drives. See Engineering Information section for backstop torque capacity.
Kit no. BS415TR-1- 40:1 ratio
Kit no. BS415TR-2- 15:1 thru 25:1 ratios

C-FACE MOTOR MOUNTING

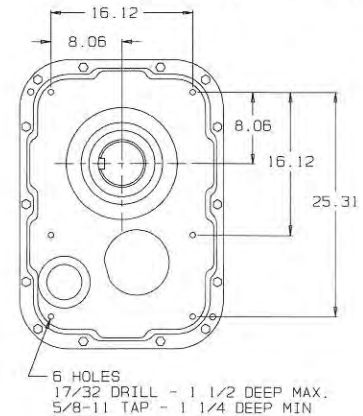


This model can be ordered from the factory to adapt a c-face motor, frames 182TC to 326TC. The required flexible coupling is available from Dorris.

HYDRAULIC MOTOR MOUNTING

Consult factory for availability of adaptation to hydraulic motors with SAE B (13 tooth) and SAE C (14 tooth) splines or keyed shafts of similar design.

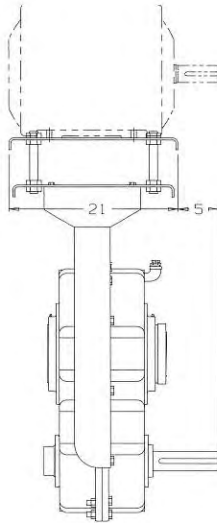
DIMENSIONS FOR FACE MOUNTING



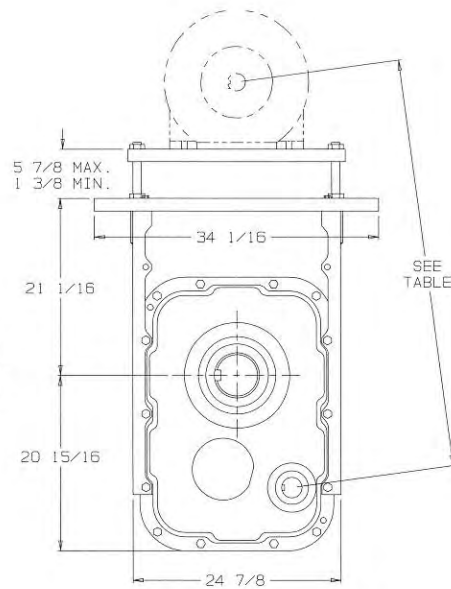
Face mounting holes are not drilled on standard units - contact factory if face mounting is desired. Dimensions are typical for either face.

415TR

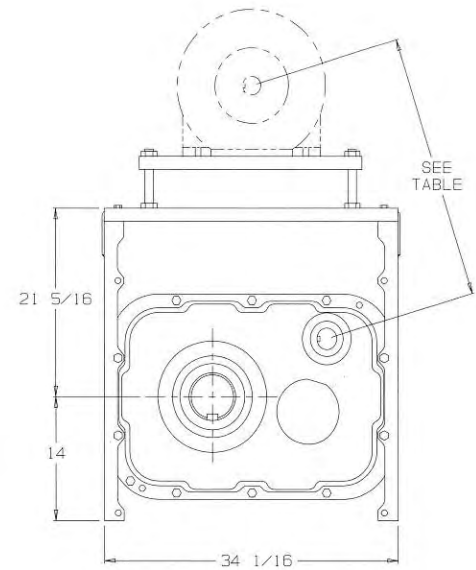
MOTOR MOUNTS (4MM)



Motor brackets are shown in the intermediate position. The brackets can be raised or lowered 8 3/4 inches to the high or low position by moving to the next set of mounting holes. Contact factory for v-belt center distances in high or low position.



6 O'CLOCK ORIENTATION



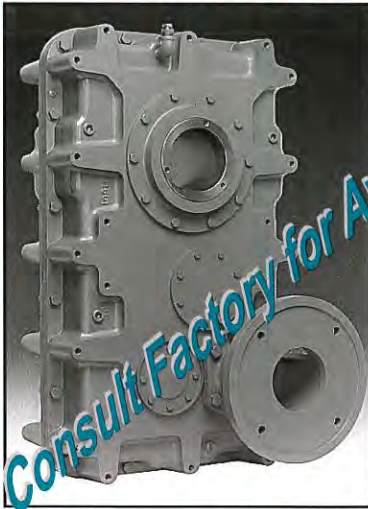
3 O'CLOCK ORIENTATION

The motor brackets can be mounted on either the long (6 o'clock) or short (3 o'clock) sides of the housing as shown.

V-BELT CENTER DISTANCES FOR INTERMEDIATE MOUNTING POSITION (INCHES)

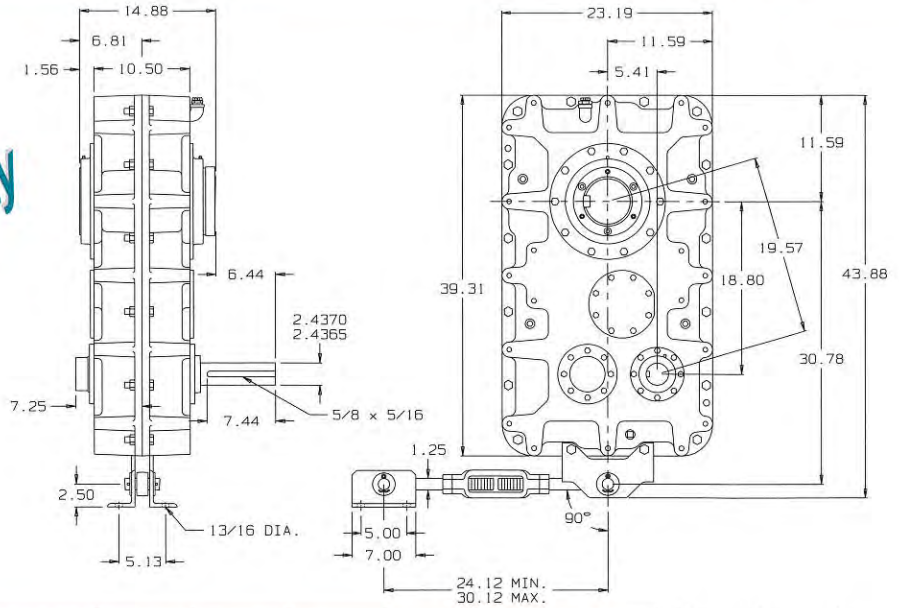
Motor Mount Orientation		Motor Frame Size											
		182T/184T		213T/215T		254T/256T		284T/286T		324T/326T		364/365T	
		Min	Max	Min	Max	Min	Max	Min	Max	Min	Max	Min	Max
Single Reduction	6:00	31.18	42.68	38.93	43.42	39.93	44.42	40.68	45.17	41.68	46.17	42.68	47.17
	3:00	29.61	34.02	30.35	34.75	31.32	35.74	32.06	36.47	33.04	37.46	34.02	38.44
Double Reduction	6:00	40.87	45.32	41.61	46.06	42.60	47.05	43.34	47.80	44.33	48.79	45.32	49.78
	3:00	22.44	26.64	23.13	27.34	24.06	28.29	24.76	29.01	25.69	29.96	26.64	30.92

415TR



TRIPLE REDUCTION SHAFT MOUNTED GEAR DRIVE

The preferred position for the torque arm is 90° to a line between the point of attachment of the torque arm to the drive and the low speed shaft. The torque arm must be in tension. Keep the torque plate in the position shown.

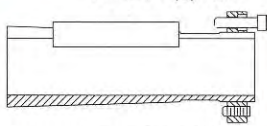


MODEL	415TR015*	415TR025*	415TR040*	415TR060	415TR080	415TR100
ACTUAL RATIOS	14.373	24.523	40.656	59.233	79.085	101.063
SHIPPING WEIGHT (LBS.)	1300	1300	1300	1300	1300	1300
MODEL	415TR125	415TR150	415TR175	415TR200	415TR225	415TR250
ACTUAL RATIOS	124.569	148.157	176.565	196.271	220.973	245.631
SHIPPING WEIGHT (LBS.)	1300	1300	1300	1300	1300	1300

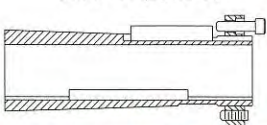
* These ratios are also available on 415TR double reduction units. Note part number difference for double reduction (415TR40).

QUICK RELEASE TAPERED BUSHINGS

TYPE 1 - (1) KEY



TYPE 2 - (2) KEYS



BUSHING KIT NO. *	TYPE	DRIVEN SHAFT DIMENSIONS (INCHES)			
		DIA.	KEYWAY WIDTH X DEPTH	RECOMMENDED KEYWAY LENGTH	MINIMUM DRIVEN SHAFT LENGTH
415T415	1	4 15/16	1 1/4 x 5/8	13 3/8	12
415T407	2	4 7/16	1 x 1/2	14	14
415T403	2	4 3/16	1 x 1/2	14	14
415T315	2	3 15/16	1 x 1/2	14	14
415T307	2	3 7/16	7/8 x 7/16	14	14

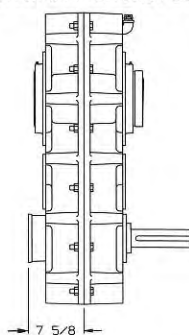
* The bushing kit contains a bushing nut, key(s) and mounting screws.

The recommended driven shaft length is 14.88 inches and uses the recommended keyway length. When an application requires the minimum driven shaft length, the keyway must be keyed along the entire length.

Consult factory for bore sizes not shown.

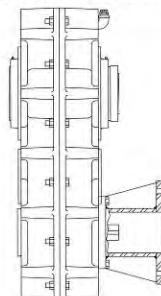
OPTIONS AND ACCESSORIES

EXTERNAL BACKSTOP KIT



Backstop extensions are standard on double and triple reduction drives. See Engineering Information section for backstop torque capacity.
Kit no. BS415TR - 60:1 thru 250:1 ratios
Kit no. BS415TR-1- 40:1 ratio
Kit no. BS415TR-2- 15:1 and 25:1 ratios

C-FACE MOTOR MOUNTING

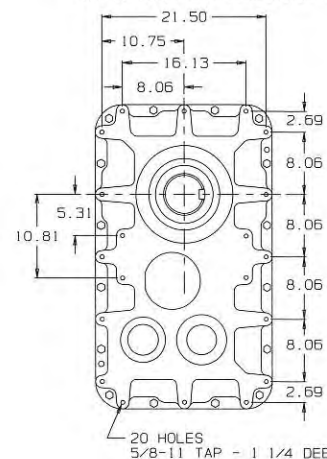


This model can be ordered from the factory to adapt a c-face motor, frames 182TC to 326TC. The required flexible coupling is available from Dorris.

HYDRAULIC MOTOR MOUNTING

Consult factory for availability of adaptation to hydraulic motors with SAE B (13 tooth) and SAE C (14 tooth) splines or keyed shafts of similar design.

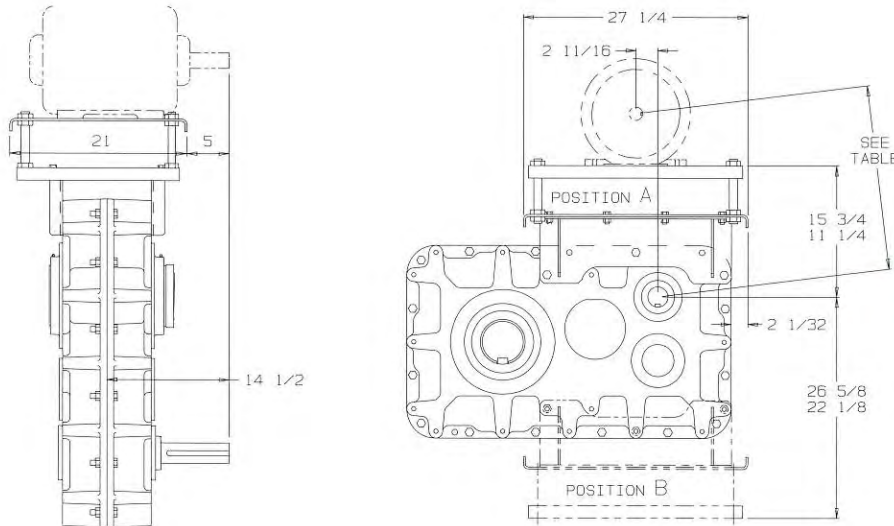
DIMENSIONS FOR FACE MOUNTING



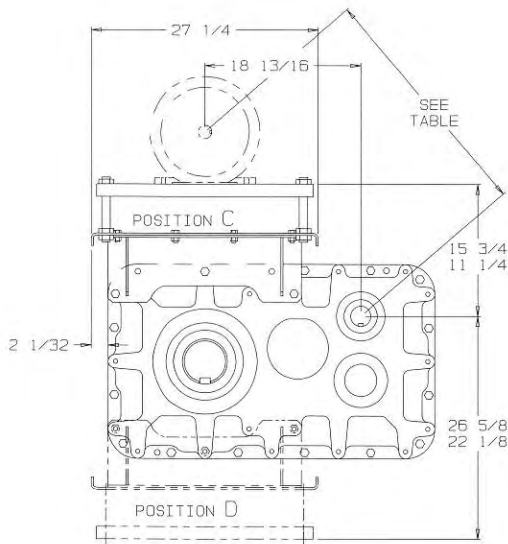
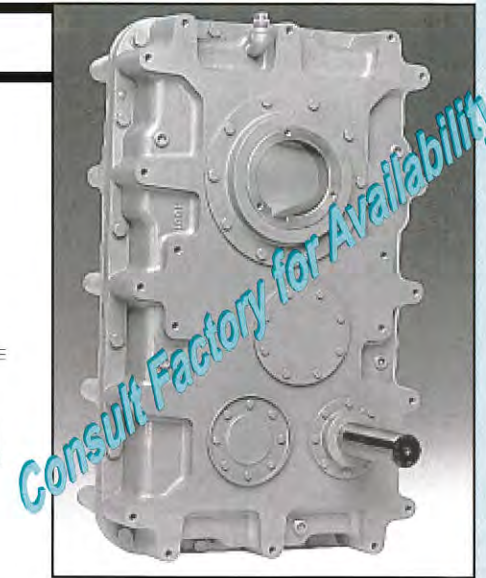
Face mounting holes are drilled on standard units. Dimensions are typical for both faces.

415TR

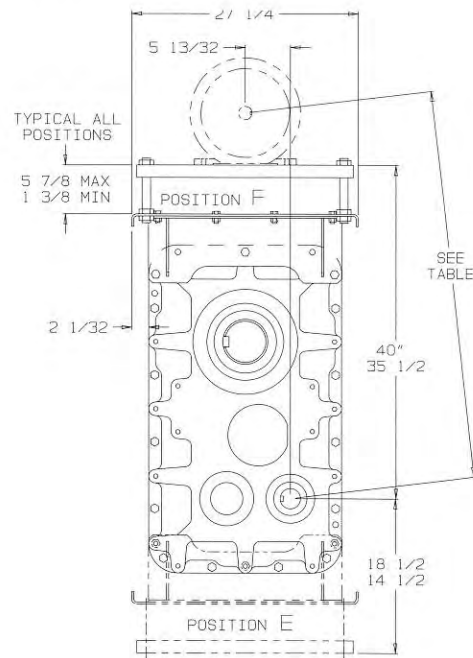
MOTOR MOUNTS (4MM)



ORIENTATION 'A' & 'B'



ORIENTATION 'C' & 'D'



ORIENTATION 'E' & 'F'

V-BELT CENTER DISTANCES FOR MOUNTING POSITIONS SHOWN (INCHES)

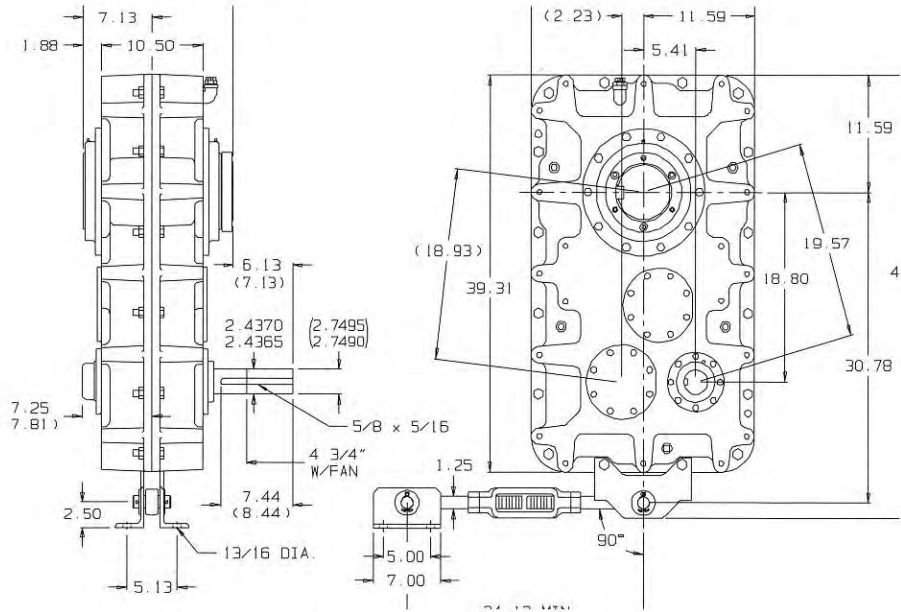
MOTOR MOUNT POSITION	182T/184T		213T/215T		254T/256T		284T/286T		324T/326T		364/365T	
	Min	Max	Min	Max	Min	Max	Min	Max	Min	Max	Min	Max
'A'	16.00	20.45	16.74	21.20	17.73	22.18	18.47	22.93	19.46	23.93	20.45	24.92
'B'	26.73	31.21	27.48	31.96	28.48	32.96	29.22	33.71	30.22	34.70	31.21	35.70
'C'	24.54	27.68	25.03	26.21	25.70	28.96	26.22	29.53	26.93	30.31	27.65	31.10
'D'	32.57	36.34	33.19	36.99	34.02	37.85	34.65	38.50	35.49	39.38	36.34	40.26
'E'	19.29	23.64	20.01	24.37	20.97	25.35	21.70	26.06	22.67	27.06	23.64	28.04
'F'	40.35	44.82	41.10	45.56	42.09	46.56	42.83	47.30	43.82	48.29	44.82	49.29

507TR



TRIPLE REDUCTION SHAFT MOUNTED GEAR DRIVE

The preferred position for the torque arm is 90° to a line between the point of attachment of the torque arm to the drive and the low speed shaft. The torque arm must be in tension. Keep the torque plate in the position shown.

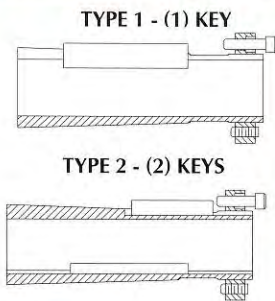


MODEL	507TR015*	507TR025*	507TR040*	507TR060	507TR080
ACTUAL RATIOS	14.956	25.357	38.474	59.384	81.776
SHIPPING WEIGHT (LBS.)	1400	1400	1400	1400	1400
MODEL	507TR100	507TR125	507TR150	507TR175	507TR200
ACTUAL RATIOS	100.681	122.412	152.766	178.264	202.346
SHIPPING WEIGHT (LBS.)	1400	1400	1400	1400	1400

* 15, 25 and 40:1 ratios are double reduction and use the 2 3/4 inch high speed shaft in alternate location shown above.

(Double Reduction dimensions in parentheses.)

QUICK RELEASE TAPERED BUSHINGS



BUSHING KIT NO. *	TYPE	DRIVEN SHAFT DIMENSIONS (INCHES)			
		DIA.	KEYWAY WIDTH X DEPTH	RECOMMENDED KEYWAY LENGTH	MINIMUM DRIVEN SHAFT LENGTH
507T507	1	5 7/16	1 1/4 x 5/8	14	12 1/2
507T415	1	4 15/16	1 1/4 x 5/8	14	12 1/2
507T407	2	4 7/16	1 x 1/2	14	14 1/2
507T403	2	4 3/16	1 x 1/2	14 1/2	14 1/2
507T315	2	3 15/16	1 x 1/2	14 1/2	14 1/2

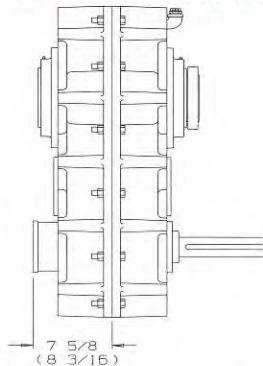
* The bushing kit contains a bushing nut, key(s) and mounting screws.

The recommended driven shaft length is 15.50 inches and uses the recommended keyway length. When an application requires the minimum driven shaft length, the keyway must be keyed along the entire length.

Consult factory for bore sizes not shown.

OPTIONS AND ACCESSORIES

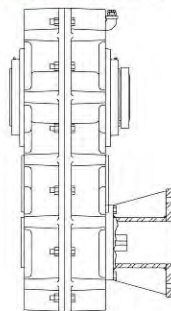
EXTERNAL BACKSTOP KIT



Backstop extensions are standard on double and triple reduction drives. See Engineering Information section for backstop torque capacity.

- Kit no. BS507TR - 60:1 thru 200:1 ratios
- Kit no. BS507TR-1 - 40:1 ratio
- Kit no. BS507TR-2 - 15:1 and 25:1 ratios

C-FACE MOTOR MOUNTING

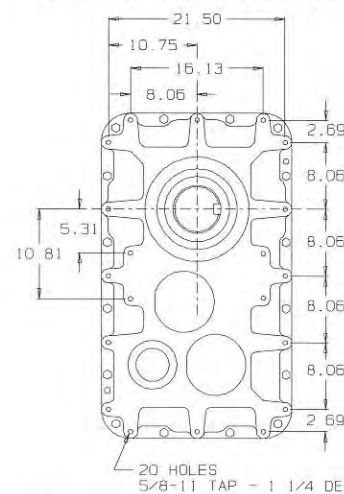


This model can be ordered from the factory to adapt a c-face motor, frames 182TC to 326TC. The required flexible coupling is available from Dorris.

HYDRAULIC MOTOR MOUNTING

Consult factory for availability of adaptation to hydraulic motors with SAE B (13 tooth) and SAE C (14 tooth) splines or keyed shafts of similar design.

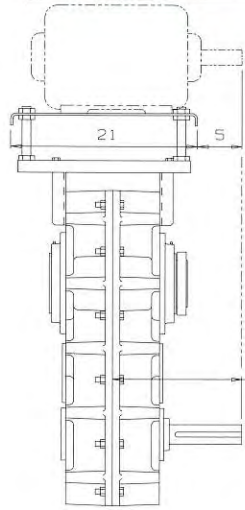
DIMENSIONS FOR FACE MOUNTING



Face mounting holes are drilled on standard units. Dimensions are typical for both faces.

507TR

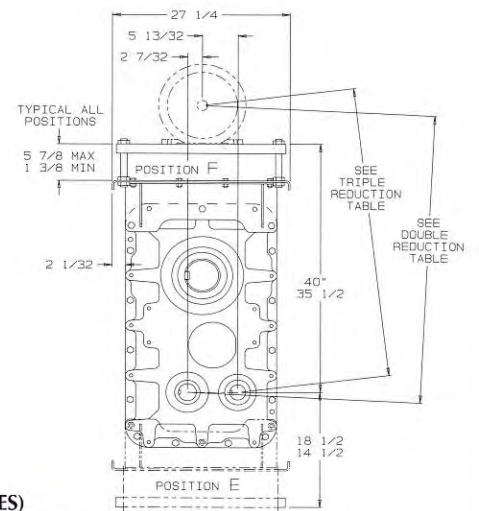
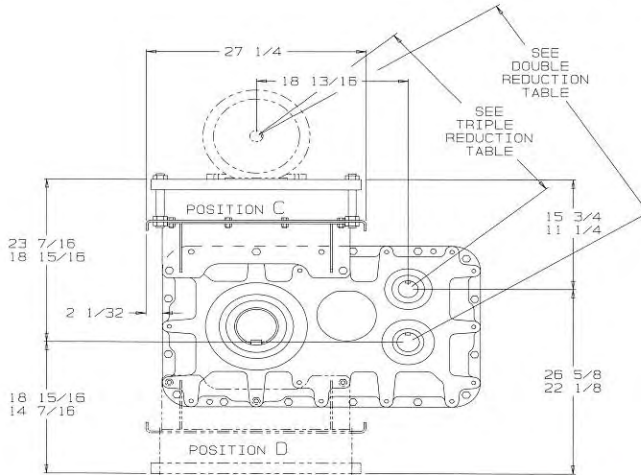
MOTOR MOUNTS (4MM)



ORIENTATION 'A' & 'B'

14 1/2
(15 1/2 FOR
DOUBLE REDUCTION)

ORIENTATION 'C' & 'D'



ORIENTATION 'E' & 'F'

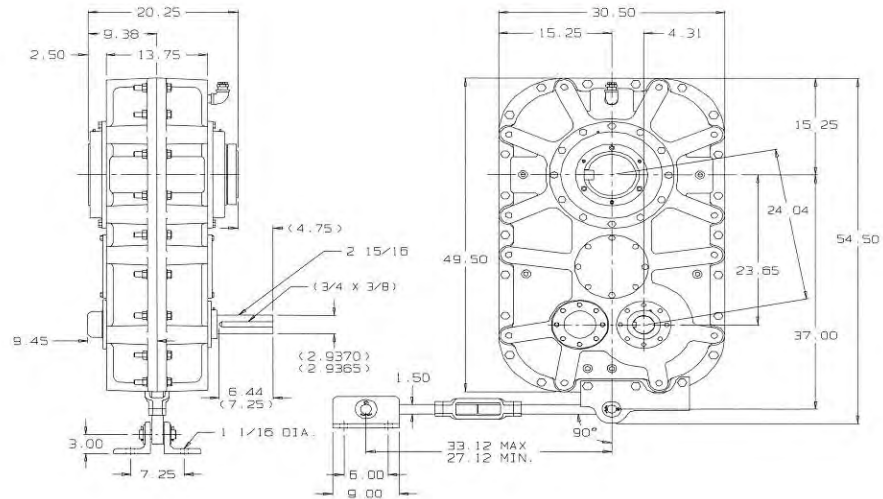
DOUBLE REDUCTION: V-BELT CENTER DISTANCES FOR MOUNTING POSITIONS SHOWN (INCHES)

Motor Mount Position	182/184T		216/215T		254/256T		284/286T		324/326T		364/365T	
	Min	Max	Min	Max	Min	Max	Min	Max	Min	Max	Min	Max
A	23.57	28.05	24.32	28.80	25.31	29.79	26.06	30.54	27.05	31.53	28.05	32.53
B	19.14	23.61	19.89	24.35	20.88	25.35	21.62	26.09	22.61	27.09	23.61	28.08
C	30.03	33.66	30.62	34.29	31.42	35.13	32.02	35.76	32.84	36.62	33.66	37.48
D	26.70	30.06	27.24	30.65	27.97	31.44	28.53	32.05	29.29	32.86	30.06	33.69
E	18.64	23.12	19.39	23.87	20.38	24.86	21.13	25.61	22.12	26.60	23.12	27.60
F	40.05	44.55	40.80	45.29	41.80	46.29	42.55	47.04	43.55	48.04	44.55	49.04

TRIPLE REDUCTION: V-BELT CENTER DISTANCES FOR MOUNTING POSITIONS SHOWN (INCHES)

Motor Mount Position	182/184T		216/215T		254/256T		284/286T		324/326T		364/365T	
	Min	Max	Min	Max	Min	Max	Min	Max	Min	Max	Min	Max
A	23.57	28.05	24.32	28.80	25.31	29.79	26.06	30.54	27.05	31.53	28.05	32.53
B	19.14	23.61	19.89	24.35	20.88	25.35	21.62	26.09	22.61	27.09	23.61	28.08
C	30.03	33.66	30.62	34.29	31.42	35.13	32.02	35.76	32.84	36.62	33.66	37.48
D	26.70	30.06	27.24	30.65	27.97	31.44	28.53	32.05	29.29	32.86	30.06	33.69
E	18.64	23.12	19.39	23.87	20.38	24.86	21.13	25.61	22.12	26.60	23.12	27.60
F	40.05	44.55	40.80	45.29	41.80	46.29	42.55	47.04	43.55	48.04	44.55	49.04

608TR



TRIPLE REDUCTION SHAFT MOUNTED GEAR DRIVE

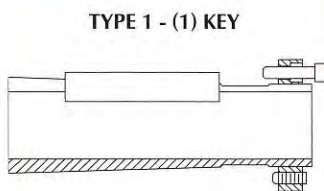
The preferred position for the torque arm is 90° to a line between the point of attachment of the torque arm to the drive and the low speed shaft. The torque arm must be in tension. Keep the torque plate in the position shown.

MODEL	608TR015*	608TR025*	608TR030*	608TR040*	608TR060	608TR080
ACTUAL RATIOS	14.647	25.147	31.706	36.761	58.897	80.145
SHIPPING WEIGHT (LBS.)	2600	2600	2600	2600	2710	2710
MODEL	608TR100	608TR125	608TR150	608TR175	608TR200	608TR225
ACTUAL RATIOS	99.802	125.833	148.696	169.944	197.039	217.370
SHIPPING WEIGHT (LBS.)	2710	2710	2710	2710	2710	2710

* 15, 25, 30 and 40:1 ratios are double reduction and use the 2 15/16 inch high speed shaft.

(Double Reduction dimensions in parentheses.)

QUICK RELEASE TAPERED BUSHINGS



TYPE 1 - (1) KEY

BUSHING KIT NO. *	TYPE	DRIVEN SHAFT DIMENSIONS (INCHES)			
		DIA.	KEYWAY WIDTH X DEPTH	RECOMMENDED KEYWAY LENGTH	MINIMUM DRIVEN SHAFT LENGTH
608T608	1	6 1/2	1 1/2 x 3/4	14 1/2	16 1/8
608T607	1	6 7/16	1 1/2 x 3/4	14 1/2	16 1/8
608T600	1	6	1 1/2 x 3/4	15 1/2	17
608T515	1	5 15/16	1 1/2 x 3/4	15 1/2	17
608T507	1	5 7/16	1 1/4 x 5/8	15 1/2	17

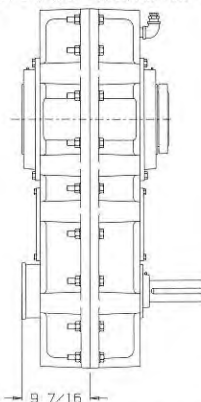
* The bushing kit contains a bushing nut, key(s) and mounting screws.

The recommended driven shaft length is 20.25 inches and uses the recommended keyway length.

Consult factory for bore sizes not shown.

OPTIONS AND ACCESSORIES

EXTERNAL BACKSTOP KIT

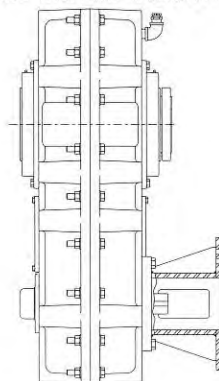


Backstop extensions are standard on double and triple reduction drives. See Engineering Information section for backstop torque capacity.

- Kit no. BS608TR - 60:1 thru 225:1 ratios
- Kit no. BS608TR-1 - 30:1 and 40:1 ratio
- Kit no. BS608TR-2 - 15:1 and 25:1 ratios

Backstop locking direction must be specified at time of order. Contact the factory for information.

C-FACE MOTOR MOUNTING

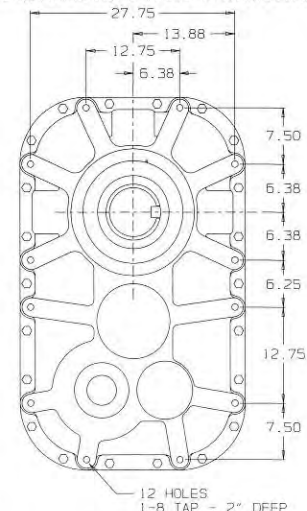


This model can be ordered from the factory to adapt a c-face motor, frames 182TC to 365TC. Supplementary support is required for 364/365TC frame motors. The required flexible coupling is available from Dorris.

HYDRAULIC MOTOR MOUNTING

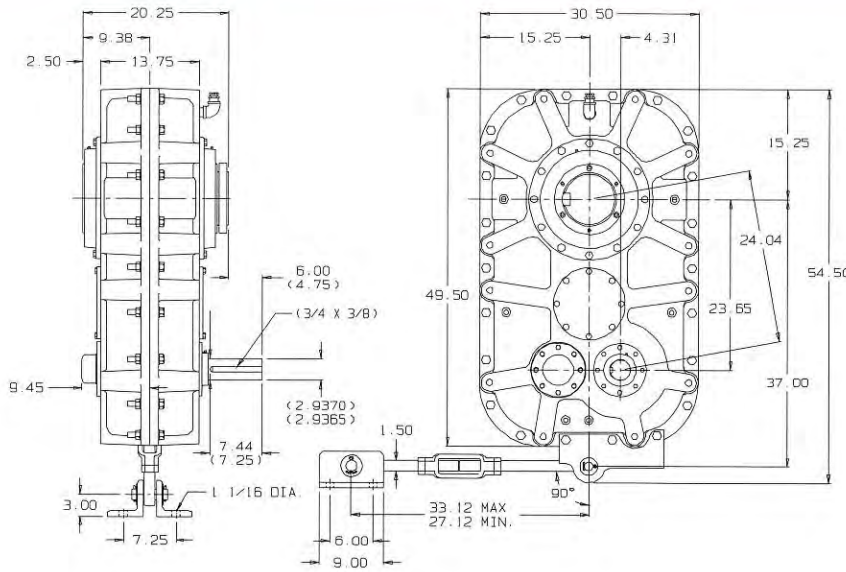
Consult factory for availability of adaptation to hydraulic motors.

DIMENSIONS FOR FACE MOUNTING



Face mounting holes are drilled on standard units. Dimensions are typical for both faces.

700TR



TRIPLE REDUCTION SHAFT MOUNTED GEAR DRIVE

The preferred position for the torque arm is 90° to a line between the point of attachment of the torque arm to the drive and the low speed shaft. The torque arm must be in tension. Keep the torque plate in the position shown.

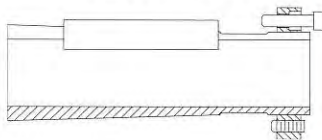
* 15, 25, 30 and 40:1 ratios are double reduction and use the 2 15/16 inch high speed shaft.

(Double Reduction dimensions in parentheses.)

MODEL	700TR015*	700TR025*	700TR030*	700TR040*	700TR060	700TR080
ACTUAL RATIOS	14.647	25.147	31.706	36.761	58.897	80.145
SHIPPING WEIGHT (LBS.)	2700	2700	2700	2700	2810	2810
MODEL	700TR100	700TR125	700TR150	700TR175	700TR200	700TR225
ACTUAL RATIOS	99.802	125.833	148.696	169.944	197.039	217.370
SHIPPING WEIGHT (LBS.)	2810	2810	2810	2810	2810	2710

QUICK RELEASE TAPERED BUSHINGS

TYPE 1 - (1) KEY



BUSHING KIT NO. *	TYPE	DRIVEN SHAFT DIMENSIONS (INCHES)			
		DIA.	KEYWAY WIDTH X DEPTH	RECOMMENDED KEYWAY LENGTH	MINIMUM DRIVEN SHAFT LENGTH
700T700	1	7	1 3/4 x 3/4	15 7/8	16 1/2
700T608	1	6 1/2	1 1/2 x 3/4	15 7/8	16 1/2
700T607	1	6 7/16	1 1/2 x 3/4	15 7/8	16 1/2
700T600	1	6	1 1/2 x 3/4	17	17 1/2
700T515	1	5 15/16	1 1/2 x 3/4	17	17 1/2

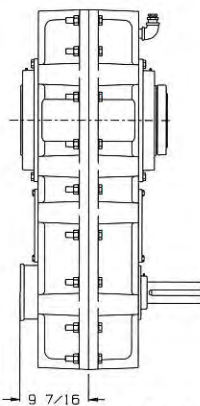
* The bushing kit contains a bushing nut, key(s) and mounting screws.

The recommended driven shaft length is 20.25 inches and uses the recommended keyway length.

Consult factory for bore sizes not shown.

OPTIONS AND ACCESSORIES

EXTERNAL BACKSTOP KIT

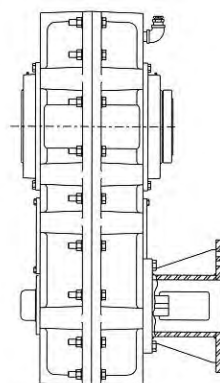


Backstop extensions are standard on double and triple reduction drives. See Engineering Information section for backstop torque capacity.

- Kit no. BS700TR - 60:1 thru 225:1 ratios
- Kit no. BS700TR-1 - 30:1 and 40:1 ratio
- Kit no. BS700TR-2 - 15:1 and 25:1 ratios

Backstop locking direction must be specified at time of order. Contact the factory for information.

C-FACE MOTOR MOUNTING

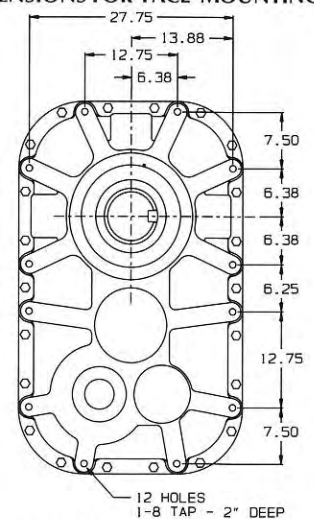


This model can be ordered from the factory to adapt a c-face motor, frames 182TC to 365TC. Supplementary support is required for 364/365TC frame motors. The required flexible coupling is available from Dorris.

HYDRAULIC MOTOR MOUNTING

Consult factory for availability of adaptation to hydraulic motors.

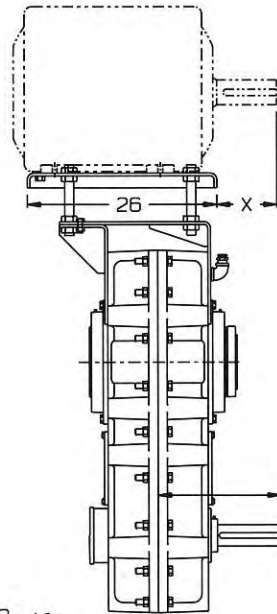
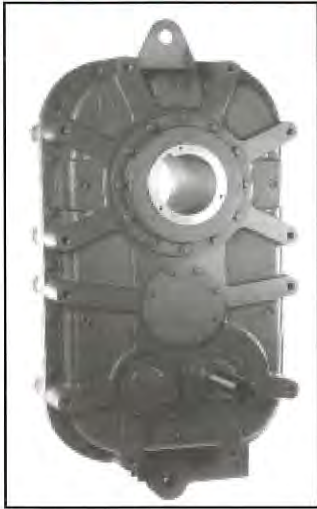
DIMENSIONS FOR FACE MOUNTING



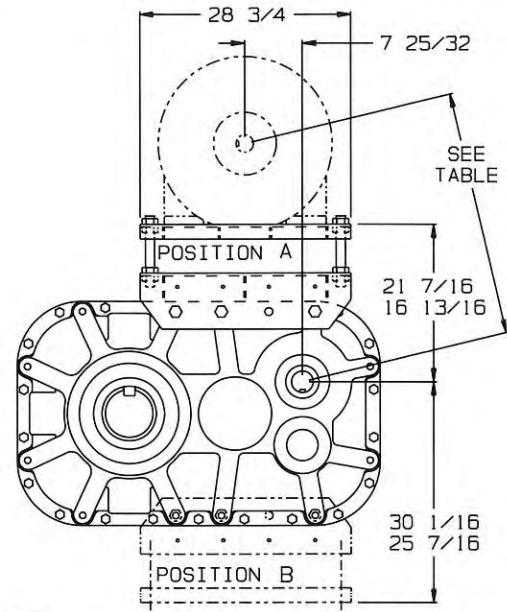
Face mounting holes are drilled on standard units. Dimensions are typical for both faces.

608-700TR

MOTOR MOUNTS (6MM and 6MM-1)

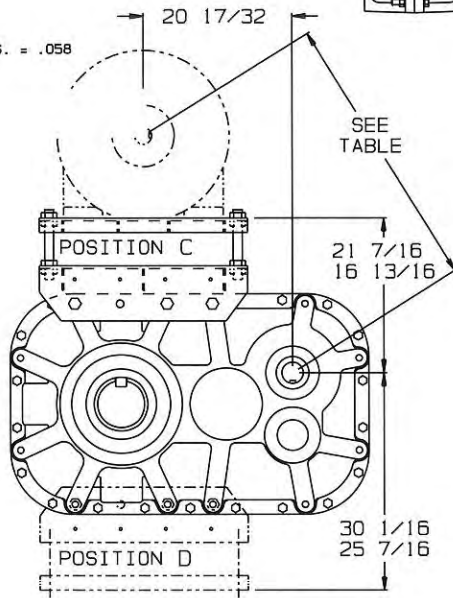


16 7/8
(15 5/8 FOR
DOUBLE REDUCTION)

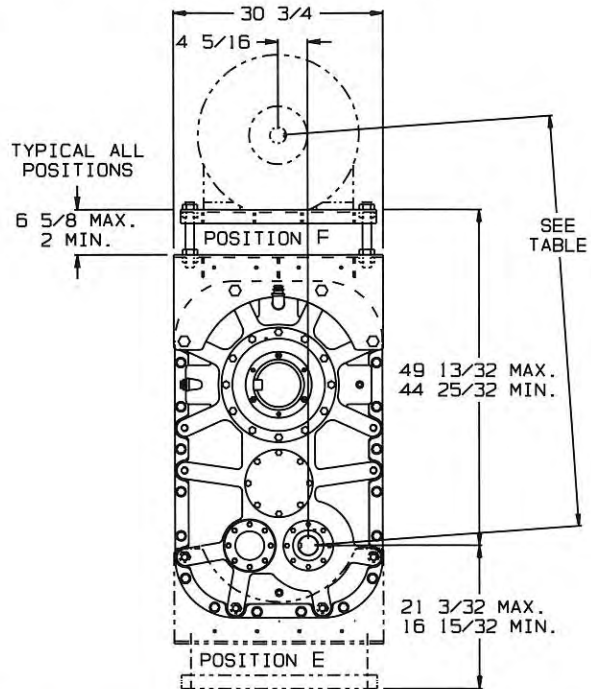


ORIENTATION 'A' & 'B' (6MM)

CATALOG P.S. = .058



ORIENTATION 'C' & 'D' (6MM)



ORIENTATION 'E' & 'F' (6MM-1)

V-BELT CENTER DISTANCES FOR MOUNTING POSITIONS SHOWN (INCHES)

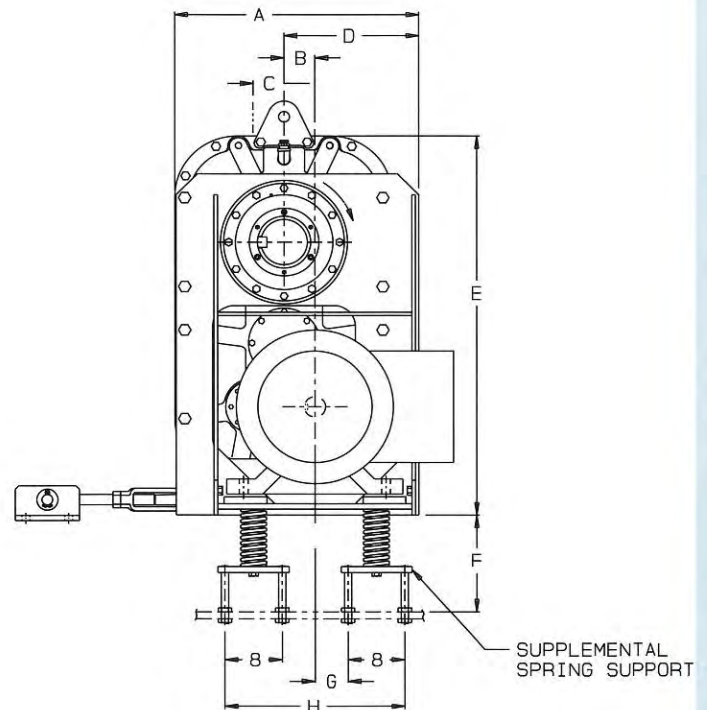
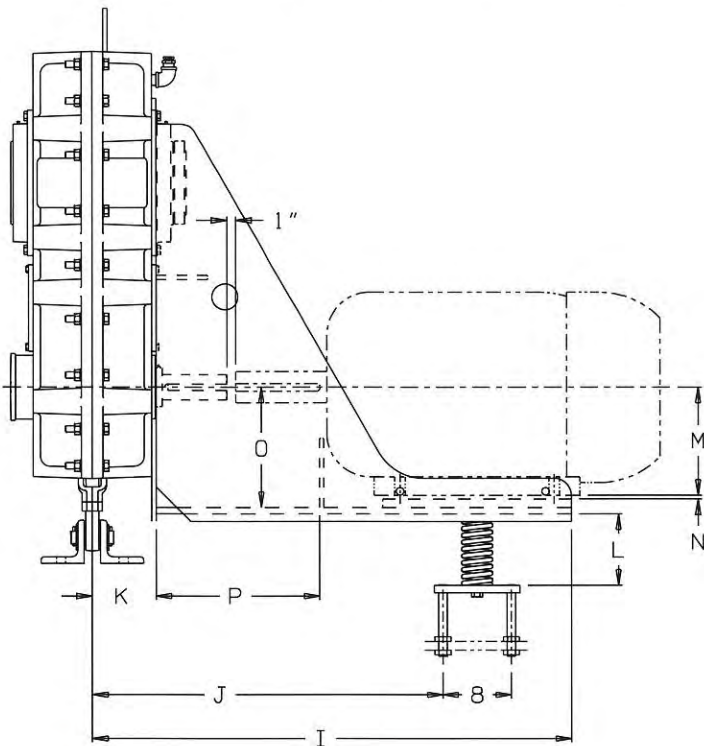
MOTOR MOUNT POSITION	254T/256T X = 6 1/2		284T/286T X = 6 1/2		324T/326T X = 6 1/2		364T/365T X = 6 1/2		404T/405T X = 7 1/2		444T/445T X = 8 1/4	
	MIN.	MAX.	MIN.	MAX.	MIN.	MAX.	MIN.	MAX.	MIN.	MAX.	MIN.	MAX.
'A'	24.34	28.76	25.05	29.48	26.00	30.45	26.96	31.42	27.92	32.38	28.88	33.36
'B'	32.63	37.14	33.36	37.87	34.33	38.85	35.30	39.83	36.28	40.81	37.26	41.79
'C'	30.87	34.47	31.44	35.07	32.20	35.89	32.98	36.71	33.77	37.54	34.57	38.39
'D'	37.75	41.71	38.39	42.37	39.23	43.24	40.09	44.13	40.95	45.01	41.82	45.91
'E'	23.13	27.69	23.87	28.43	24.85	29.42	25.84	30.41	26.82	31.40	27.81	32.39
'F'	51.21	55.82	51.96	56.57	52.95	57.56	53.95	58.56	54.95	59.56	55.94	60.55

SCOOP MOTOR MOUNT

Scoop motor mounts allow for direct coupling of large (60 to 250 HP) motors too big to c-face (up to 50 HP). The flexible spring support allows for some movement without binding. The motor weight is taken through the springs to eliminate overhung load on driven shaft bearings.

NOTES:

1. All dimensions shown for double reduction (up to 40:1) ratios and motor frames shown. Triple reduction (greater than 40:1) ratios may have different dimensions. Consult Dorris Company for dimensions of other motor frames or triple reduction ratios.
2. Scoop Motor Mounts are available only for models 415, 507, 608 & 700, and permissible only in the 6 o'clock orientation as shown.
3. Maximum motor weight: 2500 lbs.
4. Motor weight must be taken by a customer supplied structure through the two spring supports.
5. Customer to supply coupling guard and motor shim ("N" dimension). Contact Dorris Company for shim dimension to clear vertical motor adjustment screws.
6. "L" is set dimension for motor frame shown.
7. "B" dimension (for 415, 507 triple reduction, 608 and 700) and "C" dimension (for 507 double reduction only) show position of high speed shaft with respect to low speed shaft.



SCOOP MOTOR MOUNT DIMENSIONS

MODEL	MOTOR FRAME	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P
415	404T/405T	²⁹ 11/16	5.41	---	17.41	42 21/32	12 15/16 - 14 1/4	2 1/2	21	45 3/8	32 1/4	5 3/4	9.0	10	1/4	11 1/4	15 3/4
	364T/365T	26 1/2	---	2.23	11.75	42 21/32	11 11/16 - 13 1/8	3	22	46 3/8	30 3/8	5 3/4	9.13	9	1/4	9 1/4	15 1/2
507	404T/405T	26 1/2	---	2.23	11.75	42 21/32	12 15/16 - 14 1/4	2 1/2	21	46 3/8	33 1/4	5 3/4	9.0	10	1/4	11 1/4	16 3/4
	444T/445T	26 1/2	---	2.23	11.75	43 5/32	13 7/16 - 15 15/16	5	26	50 3/4	36 3/4	5 3/4	8.7	11	1/4	11 1/4	17 3/4
608 700	444T/445T	34 3/16	4.31	---	18.94	52 13/16	12 9/16 - 14 1/4	5	26	55 3/4	36 3/8	7 3/8	8.7	11	1/4	11 1/4	16 3/4
	504T/505T	34 3/16	4.31	---	18.94	54 7/16	12 9/16 - 13 7/8	4 5/8	25 1/4	55 3/4	40 3/4	7 3/8	8.25	12 1/2	3/8	13 7/8	18 15/16

DORRIS TROUGH ENDS AND PACKING ENDS

DORRIS TEF TROUGH ENDS

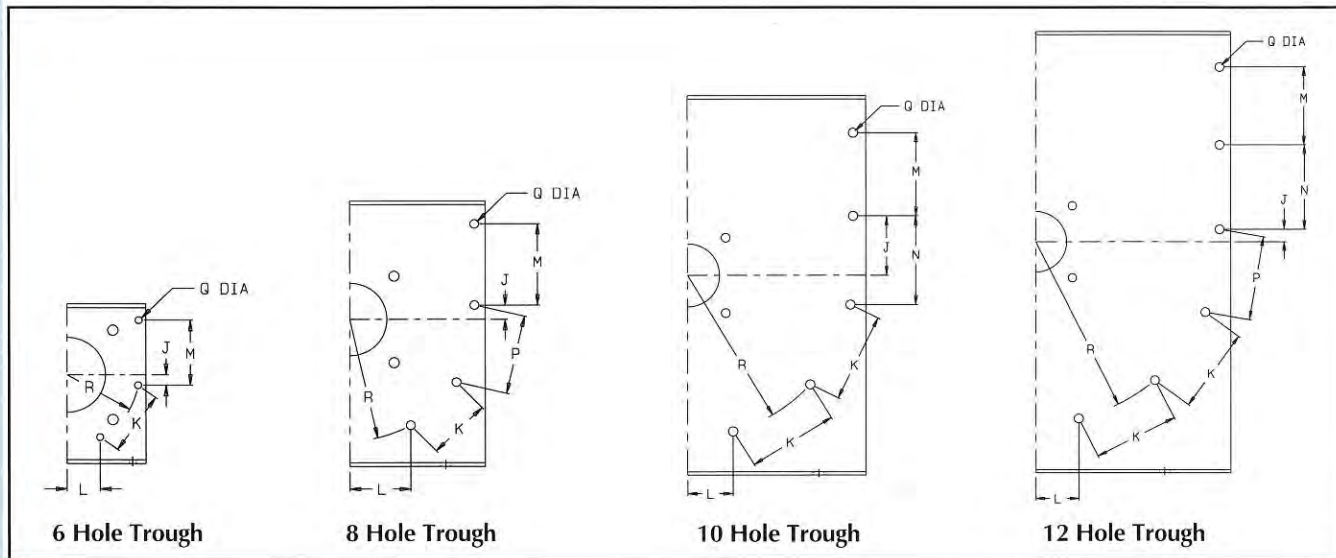
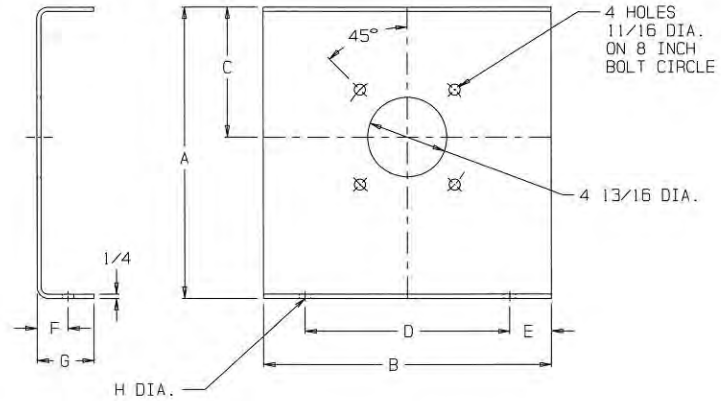
Dorris TL gear drives with the D624 trough end adaptor will fit any Dorris trough end.

When ordering Dorris trough ends, use the proper prefix and specify the conveyor diameter.

For Dorris trough ends shown on this page use the prefix TEF.

Example: TEF-12 trough end, for a 12 inch "U" end conveyor.

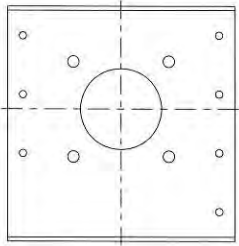
The gear drive mounting dimensions are typical for all Dorris trough ends. Use the D624 Dorris trough end adaptor to mount TL gear drives to all Dorris trough ends.



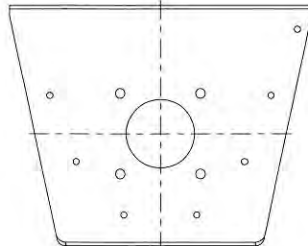
Bolt size and spacing conform to industry standards. The bolt pattern and dimensions shown are symmetrical. Bolt holes are round, not slotted.

PART NUMBER	FOR CONVEYOR DIAMETER	NO. HOLES	DIMENSIONS IN INCHES																	WEIGHT POUNDS
			A	B	C	D	E	F	G	H	J	K	L	M	N	P	Q	R		
TEF-6	6	6	10 1/8	9 3/4	4 1/2	8 1/8	13/16	1	2	7/16	21/32	4 1/16	2 1/32	4 1/8	----	----	7/16	4 7/16	9	
TEF-9	9	8	14	13 1/2	6 1/8	9 3/8	2 1/16	1 1/2	3	9/16	13/16	3 3/4	2 9/16	4 1/8	----	4 1/8	7/16	6 1/4	17	
TEF-12	12	8	17 3/8	17 1/4	7 3/4	12 1/4	2 1/2	1 5/8	3	11/16	15/16	4 1/16	3 7/8	5 5/16	----	5 3/16	9/16	7 15/16	26	
TEF-14	14	8	20 1/8	19 1/4	9 1/4	13 1/2	2 7/8	1 5/8	3	11/16	1 3/32	5 15/16	3	5 5/8	----	5 15/16	9/16	8 15/16	33	
TEF-16	16	8	22 5/8	21 1/4	10 5/8	14 7/8	3 3/16	2	3	11/16	1 5/8	6 5/8	3 3/4	6 3/8	----	6 5/8	11/16	10	40	
TEF-18	18	10	25 1/2	24 1/4	12 1/8	16	4 1/8	2	3	11/16	3 9/16	5 7/8	2 15/16	5 15/16	5 15/16	----	11/16	11	51	
TEF-20	20	10	28 1/2	26 1/4	13 1/2	19 1/4	3 1/2	2 1/4	3 1/4	13/16	4 15/32	6 11/16	3 11/32	6 1/4	6 11/16	----	11/16	12 3/16	61	
TEF-24	24	12	34 5/8	30 1/4	16 1/2	20	5 1/8	2 1/2	3 1/2	13/16	31/32	6 5/8	3 5/16	6 1/8	6 5/8	6 5/8	11/16	14 1/4	84	

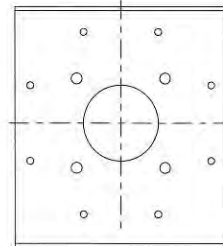
DORRIS TROUGH ENDS AND PACKING GLANDS



**Type FE
Flush End**



**Type FL
Flared End**



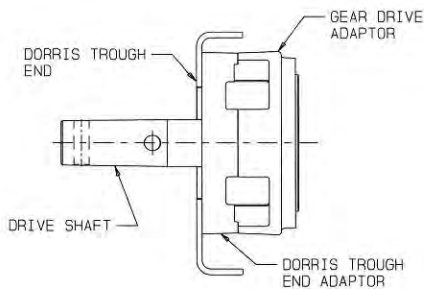
**Type TU
Tubular End**

ADDITIONAL DORRIS TROUGH ENDS AVAILABLE

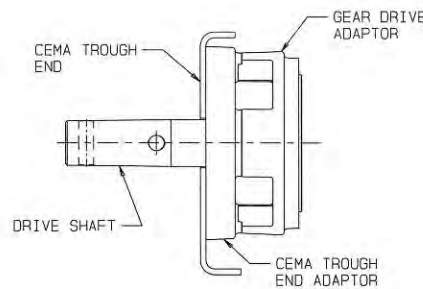
Consult the Dorris Company for dimensions of type FE, FL or TU trough ends.

Bolt size and spacing of the type FE, FL and TU trough ends conform to industry standards.

CEMA trough ends are also available. Consult the Dorris Company for dimensions.



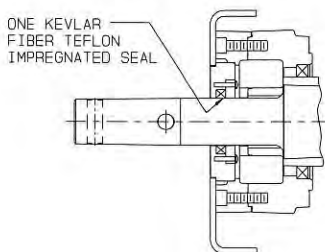
D624 Mounting



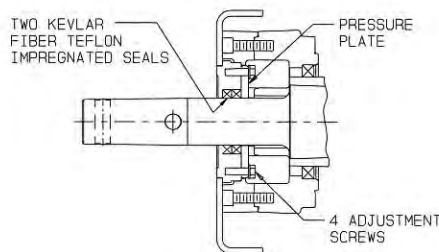
C69 & C924 Mounting

TROUGH END ADAPTOR OPTIONS (Models 107 - 315)

Dorris TL screw conveyor drives can be used on all Dorris trough ends and also on all standard CEMA trough ends when the proper trough end adaptor is used. The trough end adaptor is bolted to the gear drive adaptor. There is one gear drive adaptor for each TL screw conveyor drive model and all gear drive adaptors will accept any trough end adaptor. If a different trough end is required, simply change the trough end adaptor.



Standard Packing Gland KB-64



Optional High Performance Packing Gland KA-64

PACKING GLAND OPTIONS

There are two different types of packing glands available. The standard packing gland is made of plastic with a single, non-adjustable Kevlar® fiber, Teflon® impregnated seal. This gland can be used in the food processing industry.

The optional high performance packing gland has several advantages over the standard gland. It has two Kevlar fiber, Teflon impregnated seals which can be adjusted to compensate for normal wear. The gland is made of high strength cast iron with a steel pressure plate.

ENGINEERING INFORMATION

SHEAVE RATIO CALCULATION

To calculate the sheave ratio required, first divide the motor speed by the gear drive output speed to find the total ratio required.

Select the nominal gear drive ratio that is closest to the total ratio required. Then divide the total ratio required by the actual gear drive ratio for the model selected to find the sheave ratio required.

For example, if the motor speed is 1750 rpm and the gear drive output speed is 35 rpm, the total ratio required is 50.

The nominal gear drive ratio closest to the total ratio required is 40. For a 207TR, the actual ratio is 39.124. Therefore, the sheave ratio required in this case is 1.278.

When selecting the sheave, make sure that it is larger than the minimum diameter given below and place the sheave as close as possible to the gear drive housing.

$$\frac{\text{motor speed}}{\text{gear drive output speed}} = \text{Total ratio required}$$

$$\frac{\text{total ratio required}}{\text{gear drive ratio}} = \text{Sheave ratio required}$$

$$\frac{1750}{35} = 50$$

$$\frac{50}{39.124} = 1.278$$

MINIMUM SHEAVE DIAMETERS

For other than v-belt drives, multiply the minimum v-belt sheave pitch diameter by the following factors:

- chain drive (0.67)
- gear or gear belt drive (0.83)
- flat belt drive (1.33)

For sheaves centered at positions other than the keyway midpoint, multiply the minimum v-belt sheave pitch diameter at the keyway midpoint (given in the first table) by the overhung load position factor (given in the second table).

Forexample, a flatbelt drive on a 207TR40 (40:1 nominal gear ratio) centered 2 1/2 inches from the seal face, the minimum sheave pitch diameter allowable is 2.75 inches (2.2 x 1.33 x 0.94).

Keep the sheave as close as possible to the seal face and the gear drive housing.

High speed shaft overhung loads may be limited by shaft strength, shaft deflection or the life of the tapered roller bearings used throughout these units. For those limited by bearings, these calculations are based on a minimum of 25,000 hour average life with AGMA #4 oil at 150°F bearing temperature. Cooler temperatures and/or thicker oil will increase the bearing life. If smaller sheaves are required other than shown here, contact the Dorris Company.

High Speed Shaft Minimum V-Belt Sheave Pitch Diameter (Inches)*

MODEL	SHAFT DIA. (INCHES)	DISTANCE FROM SEAL FACE TO KEYWAY MIDPOINT (INCHES)	NOMINAL GEAR DRIVE RATIO									
			5	10	15	20	25	30	35	40	60-250	
107TR	7/8	2 1/8	3.9	4.1	2.7	2.2	2.2	2.2	2.2	2.2	2.2	---
115TR	1 1/8	2	3.6	3.0	2.2	2.2	2.2	2.2	2.2	2.2	2.2	---
203TR	1 1/4	2 5/16	5.2	4.2	2.8	2.2	2.2	2.2	2.2	2.2	2.2	---
207TR	1 1/4	2 3/4	10.5	7.1	4.8	3.9	3.0	2.5	2.2	2.2	2.2	---
215TR	1 1/2	3	7.4	8.5	6.0	4.3	3.4	2.8	3.3	3.0	3.0	---
307TR	1 3/4	3 3/16	8.2	9.8	6.8	5.6	4.3	3.5	3.1	2.7	2.7	---
315TR	2	3 9/16	9.0	9.5	6.6	5.2	4.4	7.0	5.9	5.3	5.3	---
407TR	2 1/4	3 15/16	---	---	9.2	6.7	5.4	---	---	4.7	4.7	4.7
415TR	2 7/16	4 9/16	---	---	11.6	8.1	6.8	---	---	4.7	4.7	4.7

*when centered at keyway midpoint.

High Speed Shaft Overhung Load Position Factors

MODEL	DISTANCE FROM SEAL FACE TO CENTER OF OVERHUNG LOAD (INCHES)												
	1/2	1	1 1/2	2	2 1/2	3	3 1/2	4	4 1/2	5	5 1/2	6	6 1/2
107TR	0.60	0.67	0.82	0.97	1.11	1.26	---	---	---	---	---	---	---
115TR	0.86	0.86	0.92	1.00	1.14	1.28	---	---	---	---	---	---	---
203TR	0.85	0.85	0.88	0.95	1.05	1.18	1.30	---	---	---	---	---	---
207TR	0.67	0.67	0.72	0.83	0.94	1.05	1.16	1.28	---	---	---	---	---
215TR	0.69	0.69	0.69	0.79	0.90	1.00	1.11	1.22	1.33	---	---	---	---
307TR	0.71	0.71	0.71	0.76	0.86	0.96	1.06	1.16	1.26	1.36	---	---	---
315TR	0.85	0.85	0.85	0.85	0.90	0.95	0.99	1.08	1.17	1.27	---	---	---
407TR	0.75	0.78	0.83	0.86	0.90	0.94	0.97	1.01	1.05	1.08	1.13	---	---
415TR	0.73	0.77	0.80	0.83	0.86	0.90	0.93	0.96	1.00	1.03	1.08	1.12	1.16

- Identical for TL.

ENGINEERING INFORMATION

TR Backstop Torque Capacities (x10³ In-Lbs.) About Low Speed Shaft

MODEL	NOMINAL GEAR DRIVE RATIO								
	5	10	15	20	25	30	35	40	60 - 250
107TR	2.77	4.70	7.09	9.56	11.74	14.15	16.14	18.66	---
115TR	7.82	14.12	20.29	9.49	11.72	14.02	15.99	18.17	---
203TR	7.74	13.05	19.50	27.28	11.78 ¹	13.86	16.62	18.70	---
207TR	13.68	25.01	36.98	45.79	32.89	40.03	46.85	51.64	---
215TR	13.72 ¹	23.93 ¹	33.65	47.47	59.71	40.99	47.49	51.44	---
307TR	25.22	42.79 ¹	61.10	44.85 ¹	57.89	72.37	81.42	91.58	---
315TR	32.78 ¹	58.40 ¹	83.93	77.41	95.79	68.56	80.27	90.76	---
407TR	---	---	113.92	156.45	139.81	---	---	154.22	228.57
415TR	---	---	106.93 ¹	154.61 ¹	182.45	---	---	219.54	231.00

BACKSTOP TORQUE CAPACITIES

¹ For these specific models and ratios, the backstop torque capacity is less than the gear drive maximum catalog rating for Class I service. Torque capacities shown are based upon 10⁶ full load cycles. If less than 10⁶ full load cycles are required, the backstop torque capacity can be increased -- consult the Dorris Company for evaluation.

TL Series Low Speed Shaft Thrust Capacities (Lbs.)

MODEL	OUTPUT SPEED (RPM) FOR DOUBLE REDUCTION (10:1 thru 40:1)						OUTPUT SPEED (RPM) FOR SINGLE REDUCTION (5:1)				
	25	50	75	100	125	150	175	200	250	300	350
	107TL	2800	2550	2450	2400	2400	2375	2650	2650	2675	2675
115TL	4025	3700	3550	3450	3425	3400	3750	3750	3750	3750	3775
203TL	6525	5975	5700	5550	5450	5375	5800	5775	5775	5775	5775
207TL	5650	5150	4900	4800	4675	4700	5400	5400	5475	5550	5625
215TL	3550	3225	3175	3200	3275	3350	4425	4475	4575	4675	4775
307TL	5075	4575	4400	4350	4375	4375	5875	5900	5975	6025	---
315TL	5475	4875	4675	4600	4650	4650	6350	6175	5950	5825	5750
407TR	11100	10100	9850	9800	9650	9475	11600	11700	11900	12000	12200
415TR	10600	9575	9250	9175	9350	9350	11500	11700	12100	12500	12800

LOW SPEED SHAFT THRUST CAPACITIES

Low speed shaft thrust loads are limited by the life of the tapered roller bearings. These values are for pure thrust in either direction (without additional radial overhung loading) and allow a minimum of 25,000 hour average life with AGMA #4 oil at 120°F bearing temperature. Cooler temperatures and/or thicker oil will increase the bearing life. If higher thrust loads are required other than are shown, contact the Dorris Company.

Shaft Mount Model Cross Reference Table

AGMA	DORRIS	DODGE	FALK	BROWNING	FOOTE JONES
107	107TR	TXT1	4107JR	107SMT	8107H
115	115TR	TXT2	4115JR	115SMT	8115H
203	203TR	TXT3	4203JR	203SMT	8203H
207	207TR	TXT4	4207JR	207SMT	8207H
215	215TR	TXT5	4215JR	215SMT	8215H
307	307TR	TXT6	4307JR	307SMT	8307H
315	315TR	TXT7	4315JR	315SMT	8315H
407	407TR (DR)	TXT8	4407JR	407SMT	8407H
	407TR (TR)	N/A	N/A	N/A	N/A
415	415TR (DR)	TXT9	4415JR	415SMT	8415H
	415TR (TR)	N/A	N/A	N/A	N/A

COMPETITIVE DRIVE DESIGNATIONS

Shaft mount gear drive nomenclature varies from manufacturer to manufacturer. AGMA standards provide product designations which most manufacturers follow. The model number should reflect the nominal bore size (207 = 2 7/16 inch bore or 315 = 3 15/16 inch bore) followed by a product acronym (TR for **Tapered Release**) and the nominal ratio. Examples are given below the tables to the left.

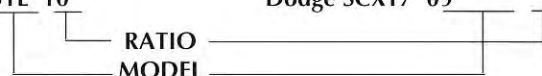
The first table gives a cross reference for shaft mounts, while the second table compares screw conveyor drive model designations. Both tables were based on information obtained in the current product catalog of each manufacturer at the time of publication of this catalog.

Screw Conveyor Drive Cross Reference Table

AGMA	DORRIS	DODGE	FALK	BROWNING	FOOTE JONES
107	107TL	SCXT1	4107JSC	107SC	8107SCT
115	115TL	SCXT2	4115JSC	115SC	8115SCT
203	203TL	SCXT3	4203JSC	203SC	8203SCT
207	207TL	SCXT4	4207JSC	207SC	8207SCT
215	215TL	SCXT5	4215JSC	215SC	8215SCT
307	307TL	SCXT6	4307JSC	307SC	8307SCT
315	315TL	SCXT7	4315JSC	315SC	8315SCT
407	407TL	N/A	4407JSC	407SC	N/A

Example: Dorris 315TL 10

Dodge SCXT7 09



INSTALLATION, LUBRICATION AND MAINTENANCE

Caution: These Installation, Lubrication and Maintenance Instructions are superseded by those shipped with the gear drive.

107-700TR SHAFT MOUNTED GEAR DRIVES

Assembly of Backstop

When an optional backstop is to be used with the shaft mounted gear drive, it should be assembled to the unit prior to mounting the unit on the driven shaft. See Figure 1.

Remove bolts (1), cupped cap (2), shim gasket (3) and spacer ring (4) from the gear housing (5). If the backstop housing (6) contains two snap rings, remove the snap ring (7) only.

CAUTION: Note direction of rotation indicated by the arrow on the backstop to allow shaft rotation in that direction.

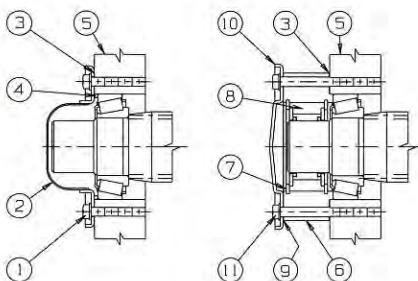
Install the backstop (8), key not shown, and the snap ring (7) if the snap ring was previously removed, into the backstop housing (6). Place the previously removed shim gasket(s) (3) on the face of the gear drive housing (5). Slide the assembled housing (6) onto the backstop shaft extension. Bolt the installed housing (6), shim gasket (3), cap gasket (9) and flat cap (10) with bolts (11) treated with a locking adhesive to the gear drive housing (5).

CAUTION: Do not reinstall bolts (1), cupped cap (2) or spacer ring (4).

Turn the input shaft by hand to ensure that it locks in the desired direction and rotates freely in the opposite direction without excessive end play. Torque bolts (11) to 25 ft-lbs.

WARNING: Never use an EP additive oil with a backstop because the enhanced lubrication properties of EP oils may cause the backstop to slip.

Figure 1 - Backstop Assembly



Installation & Removal Instructions

All Dorris tapered bushing kits include the bushing, nut, key(s) and fasteners required for installation. See Figure 2.

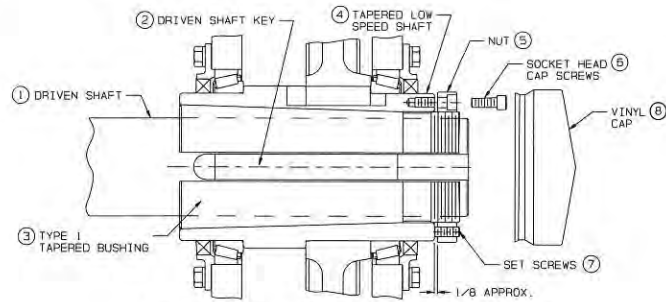


Figure 2 - Type 1 Tapered Bushing Assembly

Installation Instructions - Type 1 Bushing

Type 1 tapered bushings are used when the driven shaft diameter is the nominal diameter for that gear drive model. (For example, a 215TR unit has a nominal bore diameter of 2 15/16"). Type 1 tapered bushings have only one key.

De-burr and clean the driven shaft (1) and orient with the keyway up.

Fit and install the key (2) in driven shaft. Stake the keyway to prevent the key from moving. Position the key such that it will be centered lengthwise once the bushing is installed. Note that the key may be square, rectangular or stepped and orient it properly.

Align the bushing slot with the shaft key. Slide the tapered bushing (3) onto the driven shaft, threaded end of the bushing out. It is recommended that the tapered bushing be completely supported by the driven shaft. Apply a coat of lithium-based grease or anti-seize compound to the outside of the tapered bushing.

After aligning the key in the bore of the low speed shaft of the gear drive (4), slide the gear drive onto the tapered bushing. Do not lift the gear drive by the high speed shaft; lifting holes are provided in the torque plates.

Thread the nut (5) onto the bushing and snug it up against the low speed shaft of the gear drive hand tight. Back off the nut 1/8" and align the three clearance holes in the nut with the three tapped holes in the low speed shaft. For alignment only, loosely install the three socket head cap screws (6). Install the three set screws (7) into the threaded holes in the nut until they contact the gear drive low speed shaft. Torque them evenly to the value shown in Table 1.

Now snug up the three socket head cap screws, to prevent them from backing out of the nut. Be careful not to over tighten.

After coating the nut (5) and screws (6 & 7) thoroughly with a lithium based grease, install vinyl cap (8).

Installation Instructions - Type 2 Bushing

Type 2 tapered bushings are normally used when the driven shaft diameter is smaller than nominal for that gear drive model. Type 2 tapered bushings have two keys.

The installation procedure for a type 2 bushing is the same as for a type 1 bushing, except that one key is required between the driven shaft and the bushing, while another key is required between the bushing and the gear drive low speed shaft. Fit and install the key in the driven shaft. Stake the keyway to prevent the key from moving. Position the driven shaft key so that it will be centered lengthwise once the bushing is installed. Install the low speed shaft/bushing key until it is seated.

Removal Instructions

To remove the gear drive from the tapered bushing (3), remove the vinyl cap (8) and back the three set screws (7) off the gear drive low speed shaft (4) and into the nut (5). Making sure that at least a 1/8" clearance exists between the nut face and the end of the gear drive low speed shaft, alternately tighten the three socket head cap screws (6), that have been installed through the clearance holes in the nut and threaded into the gear drive low speed shaft, until the gear drive releases from the tapered bushing. Then remove the socket head cap screws and the nut from the bushing to allow removal of the gear drive.

Assembly of Torque Arm

Keep the torque plates in the factory installed position, away from the driven shaft. Assemble the torque rods and turnbuckle to the torque plates and base angles. Position and secure the base angles so that the torque arm assembly forms a right angle to a line through the point of attachment and the center line of the output shaft. Ensure that the torque arm is in tension when the unit is operating.

When connecting the rod ends to the base angles or to the torque plate for the 107 through 315 models, allow the rod ends some degree of freedom on the connecting bolts. All other connections should be tightened securely.

For the 407 and 415, attach the rod ends to the torque plate and base angles with the 1 1/4 diameter pin, two 1 1/4 flat washers and two 7/32 cotter pins.

The base angles must be attached to a sturdy and rigid member of the machinery frame. In locating the base angles, allow for adjustment of

Table 1 - Bushing Screw Torque

MODEL	SET SCREW THREAD	MAXIMUM TIGHTENING TORQUE (IN. - LBS.)
107, 115, 203	1/4 - 20	75
207, 215	5/16 - 24	150
307, 315	3/8 - 24	275
407, 415, 507	1/2 - 20	450
608, 700	1/2 - 20	450

INSTALLATION, LUBRICATION AND MAINTENANCE

Assembly of Motor Mount

For double reduction drives (see Figure 3), note that the two motor mount support brackets are adjustable up and down the housing flange to the low, intermediate or high mounting positions and that they may be mounted along either the long sides (6 o'clock orientation) or the short sides (3 o'clock orientation) of the housing. The motor mounts may also be mounted above the gear drive in the 12 o'clock or 9 o'clock orientation. Contact the Dorris Company for v-belt center distances for these positions.

Bolt the support brackets to the housing using either four or six housing flange bolts for sizes 107 through 215 and 407 through 415, or six or eight housing flange bolts for sizes 307 and 315. Place the support brackets on the high speed shaft extension side of the housing flange. See Figure 3.

Bolt the motor base plate to the brackets using the four nuts, bolts and lockwashers that are provided.

Figure 3 - Motor Mount Dimensions for Double Reduction Drives

For the 407 and 415 triple reduction drives

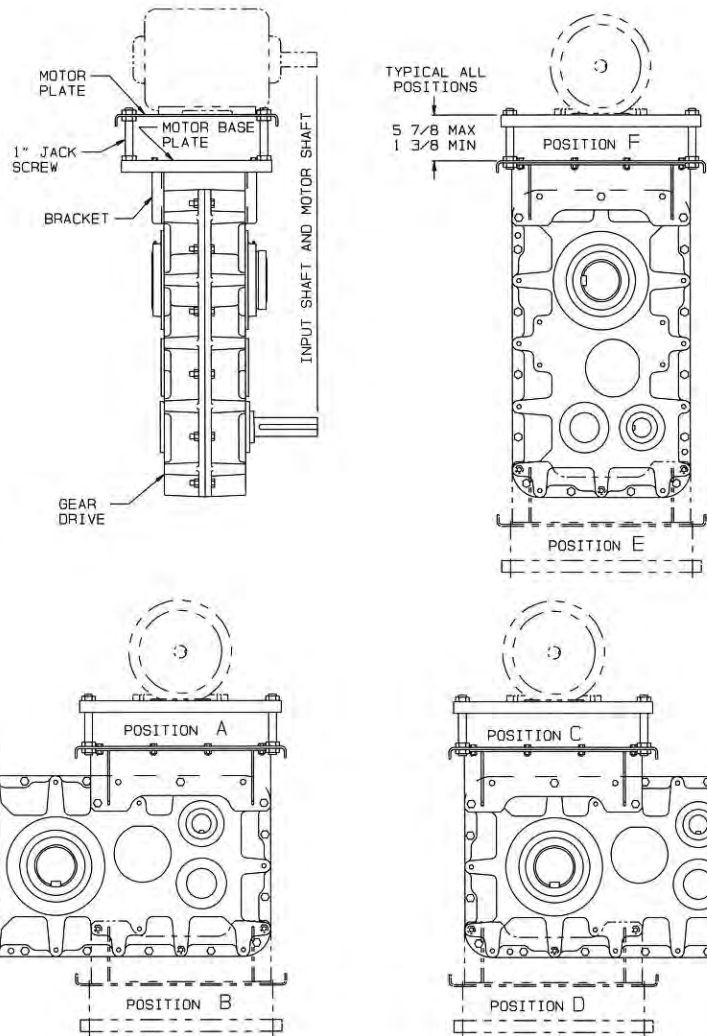
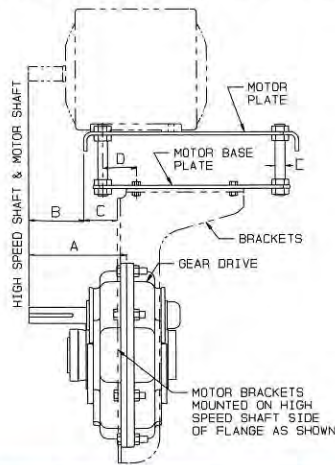


Figure 4 - Motor Mount Positions for 407 and 415 Triple Reduction Drives

MODEL	A	B	C	D	E
107	5 1/2	3 19/32	1 9/32	2 1/32	5/8
115	5 13/16	3 17/32	1 21/32	2 13/32	5/8
203	6 15/16	4 1/16	2 1/8	2 3/16	3/4
207	7 9/16	4 1/4	2 9/16	2 5/8	3/4
215	8 1/2	4 1/4	3 1/2	3 9/16	3/4
307	10	5	4 3/16	4	3/4
315	10 5/8	5	4 13/16	4 5/8	3/4
407	12 13/16	5	6 1/4	15/16	1
415	14 1/2	5	8 7/16	2 5/8	1

(see Figure 4), the motor mount may be mounted in any one of six positions--A, B, C, D, E or F. Choose the position which is best suited for ease of installation and desired v-belt center distance. See model description pages for v-belt centers for the mounting position and the motor frame chosen.

Bolt one support bracket to each side of the housing using six 5/8" bolts with lockwashers. Attach the motor base plate to the brackets using eight 1/2" bolts, nuts and lockwashers.

Assemble the four jack screws to the motor base plate with one nut on the bottom and one nut on the top side of the plate.

After threading one more nut on each jack screw, assemble the motor plate to the four jack screws, with the holes in the motor plate forming an arrowhead pointing toward the input shaft extension. The remaining nuts are then threaded on to the jack screws.

After assembly of the motor mount is complete, ensure that all nuts and bolts are securely attached and properly torqued. Tightening of the bolts prior to completing the assembly may make it difficult to align and install the bolts.

Assembly of Motor & V-belt to Motor Mount

Ensure that the electrical service to the motor is disconnected or locked out prior to proceeding with the installation.

Match the motor mounting holes with the holes in the motor plate. When properly matched, the motor shaft will be aligned with the input shaft. Securely attach the motor to the plate using the proper type and grade of fastener.

Before mounting the sheave on the input shaft extension, apply a thin coat of lithium-based grease or anti-seize compound to the shaft. To minimize the overhung load, mount the sheave as close as possible to the gear drive housing.

Before installing the sheave, check that the pitch diameter is greater than the minimum shown in the catalog.

Install the v-belts. Avoid excessive tensioning. V-belts must have a slight bow on the slack side when operating. After v-belts are properly adjusted by the jack screws on the motor mount, tighten the jack screw nuts.

Install the proper guards or other safety devices as specified in all applicable safety codes and regulations. Guards and other safety devices are neither supplied by nor are they the responsibility of the Dorris Company.

INSTALLATION, LUBRICATION AND MAINTENANCE

107-407TL SCREW CONVEYOR DRIVES

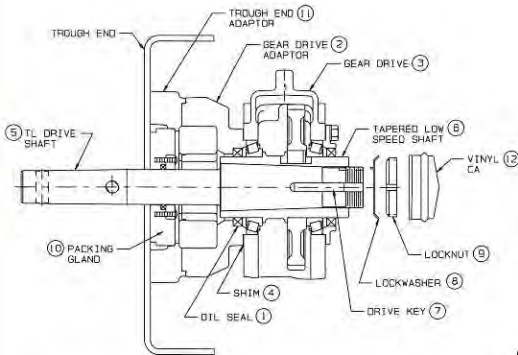
Conversion of Shaft Mount to Screw Conveyor Drive (Models 107 - 315)

The conversion from a TR shaft mounted drive to a TL screw conveyor drive is explained below for models 107 through 315. A 407TL must be ordered from the factory. See Figure 5.

After removing the tapered bushing, remove the screws from the low speed cap on the opposite side of the gear drive housing from the high speed shaft extension. Remove the shim gasket (4) from the back of the cap and apply it to the face of the gear drive housing. In addition to providing a seal, the shim gaskets establish the bearing preload and are therefore important to the operation of the unit.

Grease the oil seal lips and install the new oil seal (1) in the gear drive adaptor (2). Position the gear drive adaptor on the gear drive housing (3), making sure that the shim gasket (4) is in place on the gear drive housing. Using the long hex head screws provided, treat them with a locking adhesive and securely attach the gear drive adaptor to the gear drive housing.

Figure 5 - TL Conversion



Attach the proper trough end adaptor (11) to the gear drive adaptor, by applying locking adhesive (i.e., red loctite) to cleaned threads in the gear drive adaptor and securely tightening the eight socket head cap screws provided to 60 ft.-lbs.

After coating it with lithium-based grease or anti-seize compound, insert the TL drive shaft (5) into the hollow low speed shaft (6) of the gear drive with the drive shaft key (7) in place. Position the lockwasher (8) on the TL drive shaft with the inner tab placed in the short, narrow keyway as shown and secure it tightly with the locknut (9), using a spanner wrench. Then bend the outer tab on the lockwasher into the groove in the locknut.

After coating the locknut (9) and lockwasher (8) with a lithium based grease, install vinyl cap (12).

To remove the TL drive shaft, it is recommended to use the TR nut (part of item E1 on the TR Series Parts List in the catalog) and its mounting screws. Follow the same removal procedure as for the TR tapered bushing.

Installation to Trough End

Before assembling the gear drive to the trough end, insert the packing gland assembly (10) into the trough end adaptor (11) with the anti-rotation lug aligned with the notch in the adaptor. See Figure 5.

Bolt the trough end to the end flange of the trough. See Figure 6.

Bolt the fully assembled screw conveyor drive to the trough end. Torque the supplied bolts to 70 ft.-lbs.

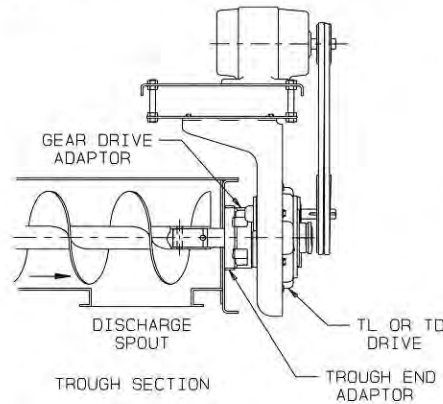


Figure 6 - Trough Assembly

ASSEMBLY OF MOTOR MOUNT

See TR Instructions.

ASSEMBLY OF MOTOR & V-BELT TO MOTOR MOUNT

See TR Instructions.

Trough End Adaptor Options

Dorris model 107 through 315 screw conveyor drives can be used on all Dorris trough ends and also on all standard CEMA trough ends, when the proper trough end adaptor is used. The trough end adaptor is bolted to the gear drive adaptor. There is one gear drive adaptor for each screw conveyor gear drive model. Any Dorris or CEMA trough end adaptor will attach to any gear drive adaptor. If a different trough end becomes necessary, simply remove the existing trough end adaptor and replace it with one that mates with the trough end to be used.

The Dorris trough end adaptor (D624) is shown in Figure 7a, while the CEMA trough end adaptor (C69 for 1 1/2 inch shaft or C924 for 2 through 3 7/16 inch shaft) is shown in Figure 7b.

Packing Gland Options

There are two different types of packing glands available and they can be used with any trough end adaptor. The standard packing gland is made of plastic with a single, non-adjustable Kevlar fiber, Teflon impregnated seal. This can be used in the food processing industry. The standard packing gland is shown in Figure 8a.

The optional high performance packing gland has several advantages over the standard gland. It has two Kevlar fiber, Teflon impregnated seals which can be adjusted to compensate for normal wear. The gland is made of high strength cast iron with a steel pressure plate. The high performance packing gland is shown in Figure 8b.

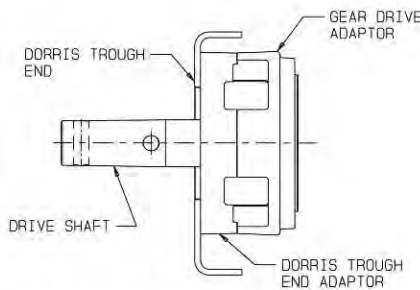


Figure 7a - Dorris Trough End Adaptor for Dorris Trough Ends

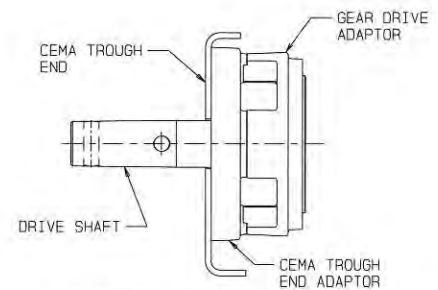


Figure 7b - CEMA Trough End Adaptor for CEMA Trough Ends

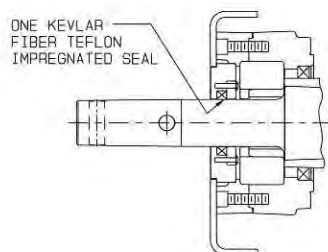


Figure 8a - Standard Packing Gland

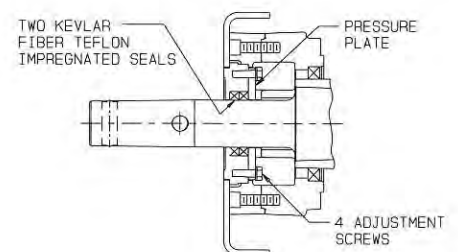


Figure 8b - High Performance Packing Gland

INSTALLATION, LUBRICATION AND MAINTENANCE

LUBRICATION

CAUTION: All Dorris gear drives are shipped without oil. Do not assume that this unit has been properly lubricated. Prior to start-up, be sure that the proper type, grade and amount of oil has been installed into the gear drive.

Lubricate the gear drive by filling the unit to the proper level, per these instructions. Select the proper type and grade of oil based on the ambient air temperature range around the gear drive. Choose an oil that meets the requirements of Table 2. Table 5 lists some oil brand names that meet the requirements in Table 2. Other oil companies may have equivalent oils to those listed.

Make sure that the lowest ambient temperature is at least 10°F greater than the pour point of the oil chosen.

Industrial petroleum-based rust and oxidation inhibited (R&O) gear oils or petroleum-based gear oils with extreme pressure (EP) additives of sulfur-phosphorus type are recommended for most applications. Automotive motor oils are not recommended.

Extreme pressure (EP) additive oils are allowed but are never to be used if the gear drive has an optional backstop installed.

Synthetic, hydrocarbon-type (polyalphaolefin base) gear oils without EP additives are recommended for ambient temperatures as low as -20°F or as high as 170°F. However, consult Dorris for proper oil selection for applications where the ambient temperature is greater than 100°F.

When the gear drive is used in the food processing industry, ensure that the lubrication is approved for the application. The oil capacity of the unit is dependent on its mounting position. See Tables 3 and 4 and Figures 9 and 10. The oil capacities are based upon the mounting position shown, assume a double or triple reduction ratio and an output speed of the gear drive being 40 rpm or more. For speeds less than 40 rpm, oil capacity for the single reduction (5:1) ratio units, inclined or vertical mounting, or other arrangements not shown, consult the Dorris Company.

Note: TL model oil capacities are the same as for the TR.

Table 2 - Oil Selection

AMBIENT TEMP RANGE (°F)	R & O (RUST & OXIDATION INHIBITED) GEAR OIL FOR UNITS WITH OR WITHOUT A BACKSTOP		VISCOSITY RANGE	
	AGMA R & O LUBE NUMBER	ISO VG R & O GRADE	cSt (mm2/s) @ 40°C (104°F)	SUS @ 100°F
15 - 75	3	100	90 - 110	417 - 510
32 - 100	4	150	135 - 165	626 - 765
50 - 125	5	220	198 - 242	918 - 1122

Table 3 - Oil Capacity for Double Reduction Models (Quarts)

UNIT SERIES	6 O'CLOCK MOUNT	3 O'CLOCK MOUNT	12 O'CLOCK MOUNT	9 O'CLOCK MOUNT	VERTICAL MOUNT
107TR	1	1	1 1/2	1	2
115TR	2 1/2	2 1/4	3	2 3/4	3 1/2
203TR	2 1/2	2 3/4	3 3/4	3 1/4	4 1/2
207TR	3	3	4 1/4	3 3/4	5 1/2
215TR	4 1/2	4 1/2	7	6	7 1/2
307TR	6 1/2	6 1/2	12 1/4	11 1/4	15
315TR	6 1/2	7	15 1/2	11 1/2	16 1/2
407TR	13 1/2	16	18 1/2	15 3/4	22
415TR	14 1/2	23 1/2	34	23 1/2	38

Table 4 - Oil Capacity for Triple Reduction Models (Quarts)

MODEL	6 O'CLOCK MOUNT	3 O'CLOCK MOUNT	12 O'CLOCK MOUNT	9 O'CLOCK MOUNT	VERTICAL MOUNT
415TR	25	40	38	24	43
507TR	25	40	38	24	43
608TR	52	82	63	54	93
700TR	52	82	63	54	93

Table 5 - Selective Oil Brand Names

R & O Gear Oils - For Gear Drives With or Without Backstops

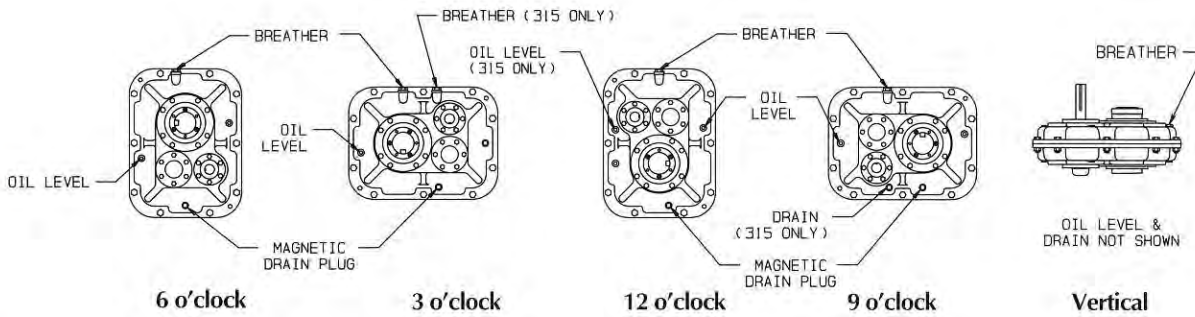
COMPANY	ISO VISCOSITY GRADE		
	100 (AGMA 3)	150 (AGMA 4)	220 (AGMA 5)
AMOCO	American Ind'l Oil 100	American Ind'l Oil 150	American Ind'l Oil 220
CHEVRON	Machine Oil R&O ISO 100	Machine Oil R&O ISO 150	RPM Gear Oil SAE 90 (ISO 220)
CITGO	Pacemaker Oil 100	Pacemaker Oil 150	Pacemaker Oil 220
CONOCO	Dectol R&O Oil 100	Dectol R&O Oil 150	Dectol R&O Oil 220
EXXON	Teresstic 100	Teresstic 150	Teresstic 220
MOBIL	DTE Heavy	DTE Extra Heavy	DTE BB
PHILLIPS	Magnus Oil ISO VG 100	Magnus Oil ISO VG 150	Magnus Oil ISO VG 220
SHELL	Morlina Oil 100	Morlina Oil 150	Morlina Oil 220
SUN	Sunvis 9100	Sunvis 9150	Sunvis 9220
TEXACO	Regal Oil R&O 100	Regal Oil R&O 150	Regal Oil R&O 220

Synthetic Hydrocarbon Type Gear Oils - For Gear Drives With or Without Backstops

COMPANY	LOW TEMP (-20° TO 75°F)	NORMAL TEMP (32° TO 125°F)	HIGH TEMP (100° TO 170°F)
MOBIL	SHC 626	SHC 629	Consult Factory
TEXACO	Pinnacle 68	Pinnacle 150	Consult Factory

INSTALLATION, LUBRICATION AND MAINTENANCE

Figure 9 - Gear Drive Orientations, Double Reduction Models



Maintenance

Change the oil after an initial period of 500 hours of operation or one month, whichever occurs first.

Thereafter, for a petroleum-based gear oil with or without EP additives, change the oil every 2500 hours of operation or every six months, whichever occurs first. If a synthetic, hydrocarbon-type gear oil without EP additives is used, the recommended oil change interval is doubled to 5000 hours or 12 months, whichever occurs first.

In cases of severe service applications, such as extreme exposure to water, high humidity, dirty or dusty environment or chemicals in the air, which react with lubrication oil, the oil change interval must be shortened depending on the severity of the conditions.

For better drainage, drain the oil when the unit is warm. Remove and examine the magnetic drain plug for metal chips and fines. An excessive amount of metal fines signals internal problems. Consult the Dorris Company if you think the amount is excessive. Small amounts of metal fines are normal and should simply be cleaned off prior to reinstallation. After draining, thoroughly flush the inside of the unit with clean oil. Remove and clean the breather plug to ensure that the air passage is clear. Reinstall the drain plug and breather plug after using a thread sealant.

For units that see a significant seasonal swing in ambient temperature, you should change the grade of oil as needed (lighter oil in the winter, heavier oil in the summer).

Do not allow the gear drive to become covered with dirt, dust or other debris. The insulating properties of these coverings could cause the unit to overheat. This will lead to a breakdown of the lubrication, causing premature failure of the gear drive components.

In environments where a buildup of unwanted surface coverings is expected, clean the outer surfaces of the gear drive often. Ensure that the breather is clear after cleaning.

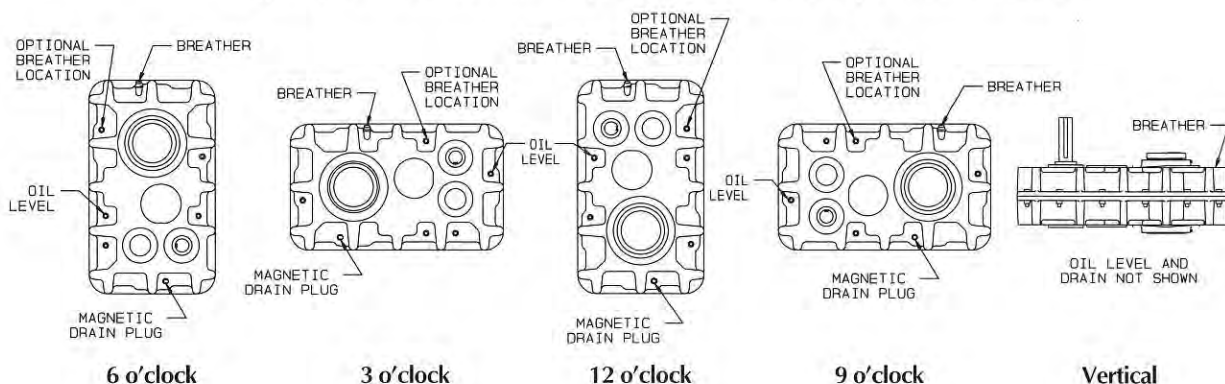
Check the unit for oil leakage and the source of that leakage. The most common leak points are pipe plugs and oil seals. Operation of the unit when full of oil causes overheating and leakage through the oil seals and the breather plug. Rather than waiting for parts during unscheduled down time, you may wish to order replacement parts when the leaks are minor. Occasionally, the breather plug is not properly located at the highest point on the unit. Relocate the breather plug, if required, especially if the lubricant is foaming out of the breather. Many leaks are caused by overfilling the unit with oil. Check for the proper level. Do not let any leak go unattended as the loss of oil will eventually cause a failure.

Storage

If the unit is not going to be operated for an extended period of time (greater than two months), you have two options. Either fill the unit completely with the proper oil for long term storage or fill it to the operating level and run it for a minimum of half an hour per week to coat the internal parts with oil. Either procedure will help prevent internal oxidation of the critical parts. Before resuming use, ensure that the oil is of the proper type and at the proper level. Operation of the unit when full of oil causes overheating and leakage through the oil seals and the breather plug.

Store the gear drive in a dry location where the temperature remains relatively constant, not passing through the dew point. Do not store the unit outdoors. If the temperature passes through the dew point, moisture will condense on the inside of the unit, reducing the life of the gear drive.

Figure 10 - Gear Drive Orientations, 407, 507, 608 and 700 Triple Reduction Models



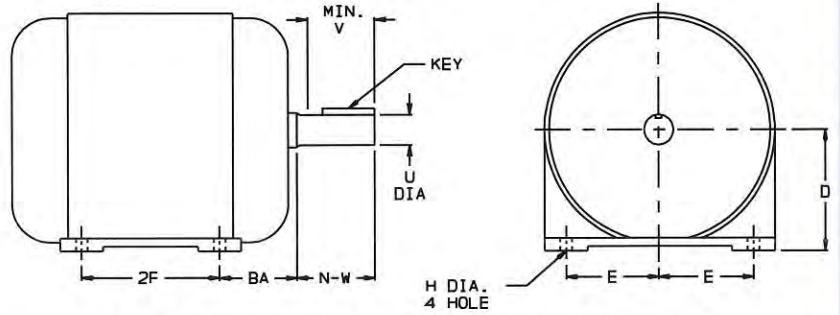
NEMA MOTOR FRAME ASSIGNMENTS AND DIMENSIONS

FRAME ASSIGNMENTS (A-C)

HP	Motor Speed, RPM		
	1800	1200	900
Fract.	56	---	---
1/2	---	---	143T
3/4	---	143T	145T
1	143T	145T	182T
1 1/2	145T	182T	184T
2	145T	184T	213T
3	182T	213T	215T
5	184T	215T	254T
7 1/2	213T	254T	256T
10	215T	256T	284T
15	254T	284T	286T
20	256T	286T	324T
25	284T	324T	326T
30	286T	326T	364T
40	324T	364T	365T
50	326T	365T	---
60	364T	---	---
75	365T	---	---

DIMENSIONS

Frame Size	D	E	2F	H	U Dia.	BA	N - W	V Min.	Key
56	3 1/2	2 7/16	3	11/32	5/8	2 3/4	1 7/8	---	3/16 x 3/16 x 1 3/8
143T	3 1/2	2 3/4	4	11/32	7/8	2 1/4	2 1/4	2	3/16 x 3/16 x 1 3/8
145T	3 1/2	2 3/4	5	11/32	7/8	2 1/4	2 1/4	2	3/16 x 3/16 x 1 3/8
182T	4 1/2	3 3/4	4 1/2	13/32	1 1/8	2 3/4	2 3/4	2 1/2	1/4 x 1/4 x 1 3/4
184T	4 1/2	3 3/4	5 1/2	13/32	1 1/8	2 3/4	2 3/4	2 1/2	1/4 x 1/4 x 1 3/4
213T	5 1/4	4 1/4	5 1/2	13/32	1 3/8	3 1/2	3 3/8	3 1/8	5/16 x 5/16 x 2 3/8
215T	5 1/4	4 1/4	7	13/32	1 3/8	3 1/2	3 3/8	3 1/8	5/16 x 5/16 x 2 3/8
254T	6 1/4	5	8 1/4	17/32	1 5/8	4 1/4	4	3 3/4	3/8 x 3/8 x 2 7/8
256T	6 1/4	5	10	17/32	1 5/8	4 1/4	4	3 3/4	3/8 x 3/8 x 2 7/8
284T	7	5 1/2	9 1/2	17/32	1 7/8	4 3/4	4 5/8	4 3/8	1/2 x 1/2 x 3 1/4
286T	7	5 1/2	11	17/32	1 7/8	4 3/4	4 5/8	4 3/8	1/2 x 1/2 x 3 1/4
324T	8	6 1/4	10 1/2	21/32	2 1/8	5 1/4	5 1/4	5	1/2 x 1/2 x 3 7/8
326T	8	6 1/4	12	21/32	2 1/8	5 1/4	5 1/4	5	1/2 x 1/2 x 3 7/8
364T	9	7	11 1/4	21/32	2 3/8	5 7/8	5 7/8	5 5/8	5/8 x 5/8 x 4 1/4
365T	9	7	12 1/4	21/32	2 3/8	5 7/8	5 7/8	5 5/8	5/8 x 5/8 x 4 1/4

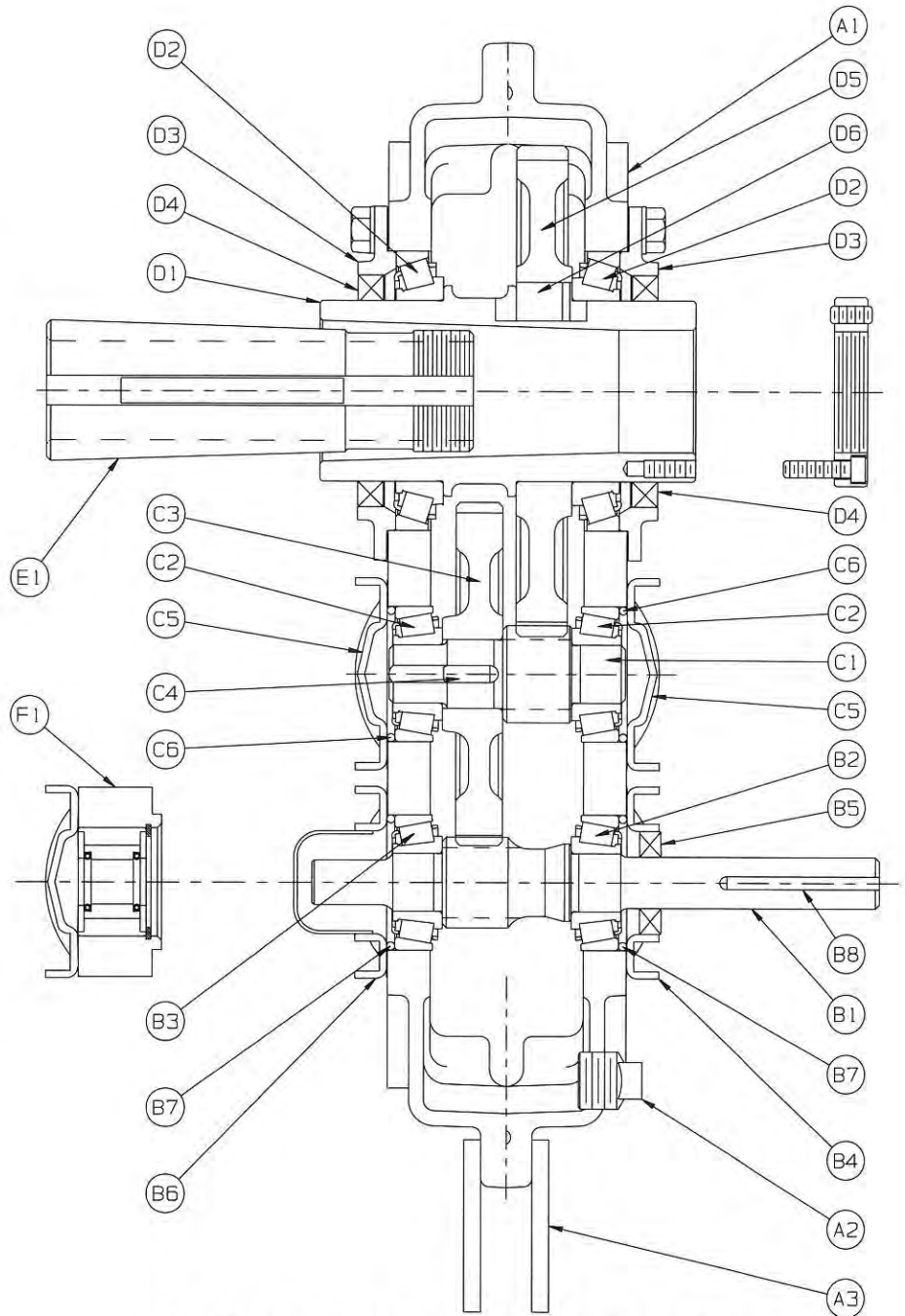


Note: Dorris motor mounts are pre-punched for the above motors. For motors not shown, consult the Dorris Company for availability.

NOTES

TR DOUBLE REDUCTION PARTS LIST

ITEM	DESCRIPTION	QTY REQ'D
A1	Housing See Note [2]	1
A2	Magnetic Drain Plug	1
A3	Torque Plate	2
A4	Breather (not shown)	1
A5	Pipe Plug (not shown) See Note [3]	6
B1	High Speed Pinion See Note [4]	1
B2	High Speed Pinion Extension Bearing	1
B3	High Speed Pinion Backstop Bearing	1
B4	Open Cap	1
B5	Oil Seal	1
B6	Closed Cap	1
B7	Spacer Ring	2
B8	Key - Extension	1
C1	Intermediate Pinion	1
C2	Intermediate Pinion Bearing	2
C3	Intermediate Gear See Note [5]	1
C4	Key - Gear	1
C5	Closed Cap	2
C6	Spacer Ring	2
D1	Tapered Low Speed Shaft	1
D2	Low Speed Bearing	2
D3	Open Cap	2
D4	Oil Seal	2
D5	Low Speed Gear	1
D6	Key - Gear	1
E1	Tapered Bushing Assembly See Note [6]	1
F1	Backstop Assembly See Note [6]	1
G1	Torque Arm Assembly (not shown) See Note [6]	1
H1	Motor Mount Assembly (not shown) See Note [6]	1
S1	Shim Set (not shown) See Note [6]	1



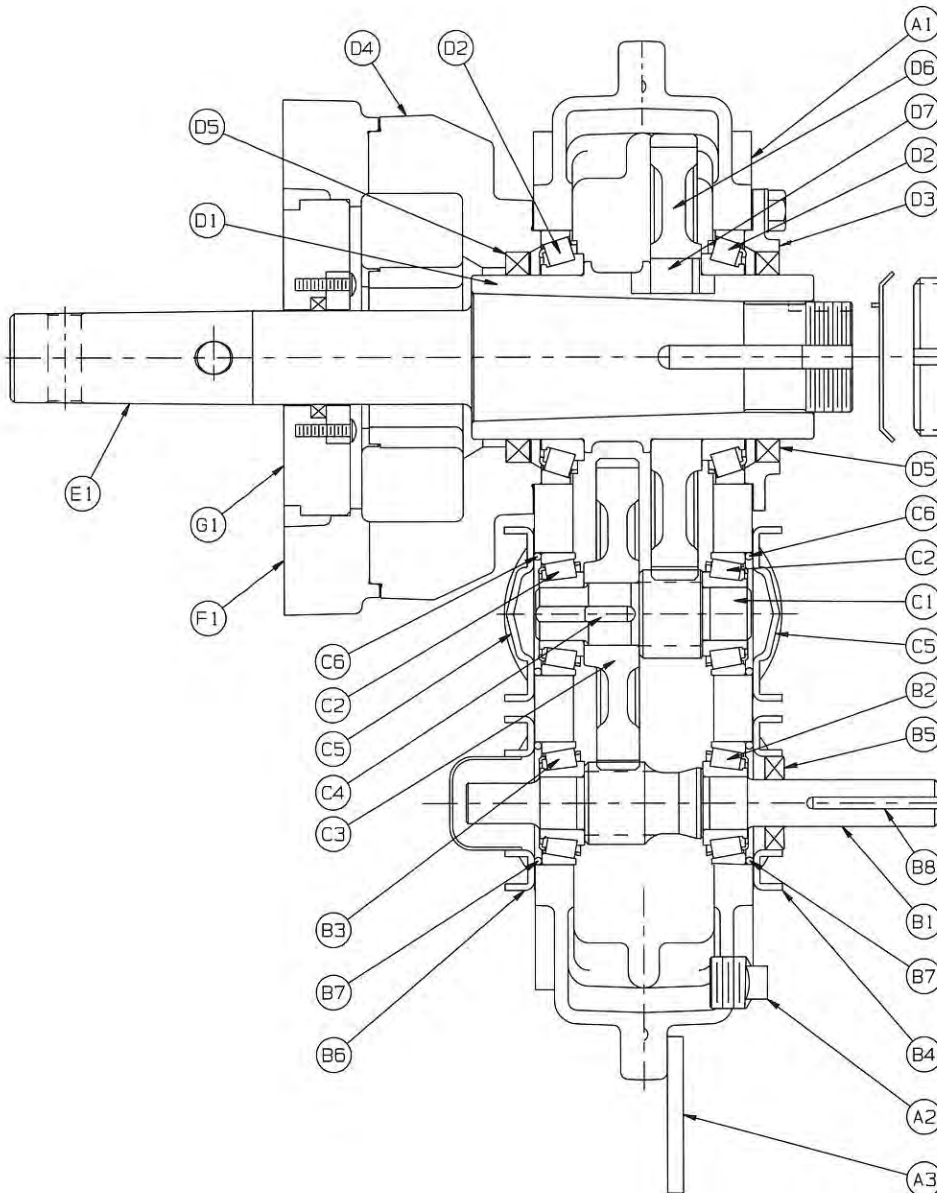
DOUBLE REDUCTION DRIVE SHOWN - See Note [1]

NOTES

- [1] For single reduction drive, eliminate "C" items or consult factory.
- [2] Oil resistant RTV sealant applied in the housing split line groove.
- [3] 5 required for models 107TR and 115TR.
- [4] 1 "B9" retaining snap ring required for 107TR40.
- [5] 1 "C7" spacer required for model 307TR10 and 307TR15.
- [6] Sold as kits.

SPECIFY MODEL, RATIO AND SERIAL NUMBER WHEN ORDERING PARTS.

TL DOUBLE REDUCTION PARTS LIST



ITEM	DESCRIPTION	QTY REQ'D
A1	Housing See Note [2]	1
A2	Magnetic Drain Plug	1
A3	Lifting Lug	1
A4	Breather (not shown)	1
A5	Pipe Plug (not shown) See Note [3]	6
B1	High Speed Pinion See Note [4]	1
B2	High Speed Pinion Extension Bearing	1
B3	High Speed Pinion Backstop Bearing	1
B4	Open Cap	1
B5	Oil Seal	1
B6	Closed Cap	1
B7	Spacer Ring	2
B8	Key - Extension	1
C1	Intermediate Pinion	1
C2	Intermediate Pinion Bearing	2
C3	Intermediate Gear See Note [5]	1
C4	Key - Gear	1
C5	Closed Cap	2
C6	Spacer Ring	2
D1	Tapered Low Speed Shaft	1
D2	Low Speed Bearing	2
D3	Open Cap	1
D4	Gear Drive Adaptor	1
D5	Oil Seal	2
D6	Low Speed Gear	1
D7	Key - Gear	1
E1	TL Drive Shaft Assembly See Note [6]	1
F1	Trough End Adaptor See Note [7]	1
G1	Packing Gland Assembly See Note [8]	1
H1	Motor Mount Assembly (not shown) See Note [6]	1
S1	Shim Set (not shown) See Note [6]	1

DOUBLE REDUCTION DRIVE SHOWN - See Note [1]

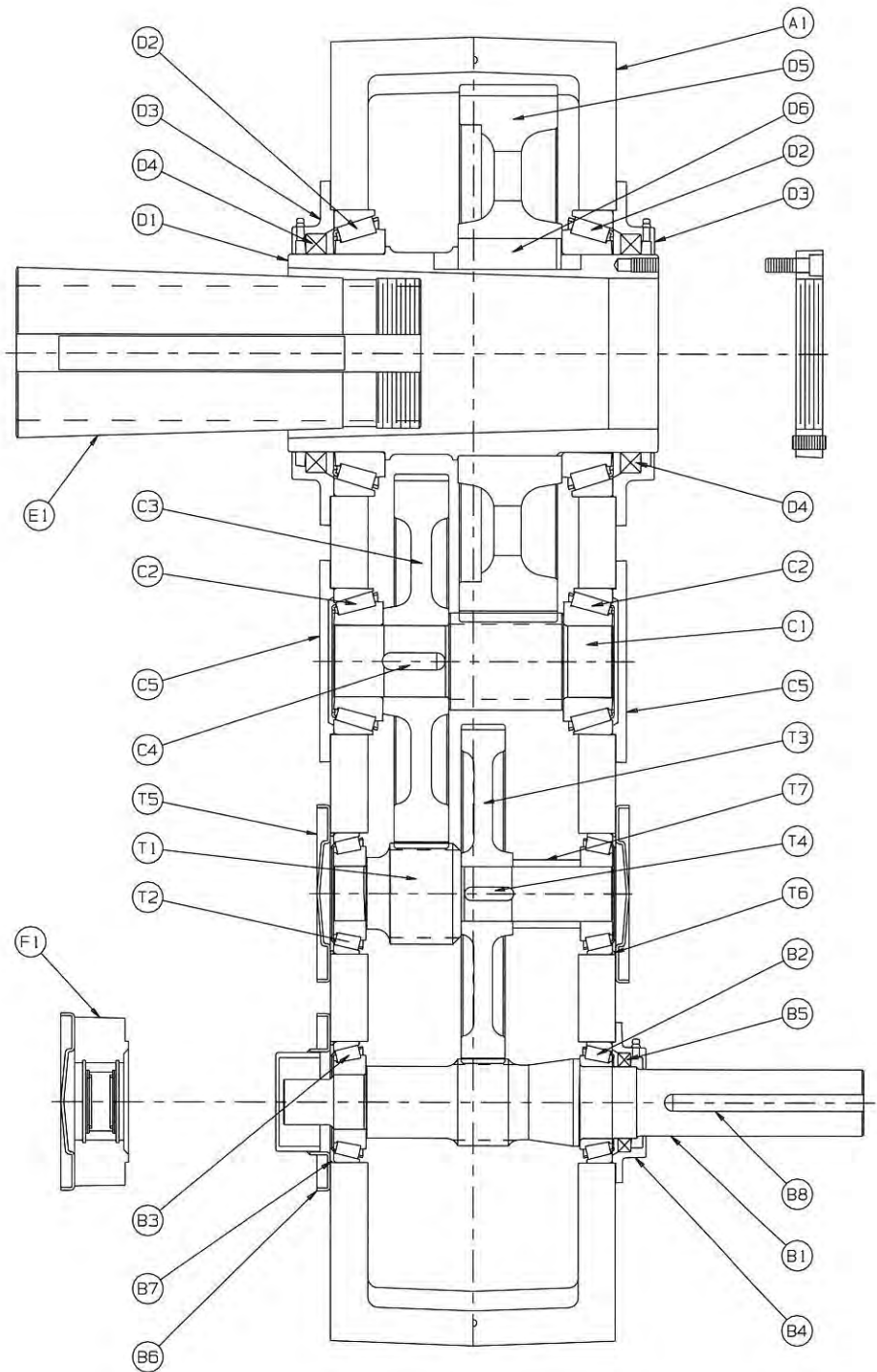
NOTES

- [1] For single reduction drive, eliminate "C" items or consult factory.
- [2] Oil resistant RTV sealant applied in the housing split line groove.
- [3] 5 required for models 107TL and 115TL.
- [4] 1 "B9" retaining snap ring required for 107TL40.
- [5] 1 "C7" spacer required for model 307TL10 and 307TL15.
- [6] Sold as kits.
- [7] Specify D624 (Dorris), C69 or C924 (CEMA).
- [8] Specify standard or high performance.

SPECIFY MODEL, RATIO AND SERIAL NUMBER WHEN ORDERING PARTS.

TR TRIPLE REDUCTION PARTS LIST

ITEM	DESCRIPTION	QTY REQ'D
A1	Housing See Note [1]	1
A2	Magnetic Drain Plug (not shown)	1
A3	Torque Plate (not shown)	2
A4	Breather (not shown)	1
A5	Pipe Plug (not shown)	10
B1	High Speed Pinion	1
B2	High Speed Pinion Extension Bearing	1
B3	High Speed Pinion Backstop Bearing	1
B4	Open Cap	1
B5	Oil Seal	1
B6	Closed Cap	1
B7	Spacer Ring	1
B8	Key - Extension	1
C1	2nd Intermediate Pinion	1
C2	2nd Intermediate Pinion Bearing	2
C3	2nd Intermediate Gear	1
C4	Key - Gear	1
C5	Closed Cap	2
D1	Tapered Low Speed Shaft	1
D2	Low Speed Bearing	2
D3	Open Cap	2
D4	Oil Seal	2
D5	Low Speed Gear	1
D6	Key - Gear	1
E1	Tapered Bushing Assembly See Note [2]	1
F1	Backstop Assembly See Note [2]	1
G1	Torque Arm Assembly (not shown) See Note [2]	1
H1	Motor Mount Assembly (not shown) See Note [2]	1
S1	Shim Set (not shown) See Note [2]	1
T1	1st Intermediate Pinion	1
T2	1st Intermediate Pinion Bearing	2
T3	1st Intermediate Gear	1
T4	1st Intermediate Gear Key	1
T5	1st Intermediate Closed Cap	2
T6	1st Intermediate Spacer Ring	2
T7	1st Intermediate Gear Spacer	1

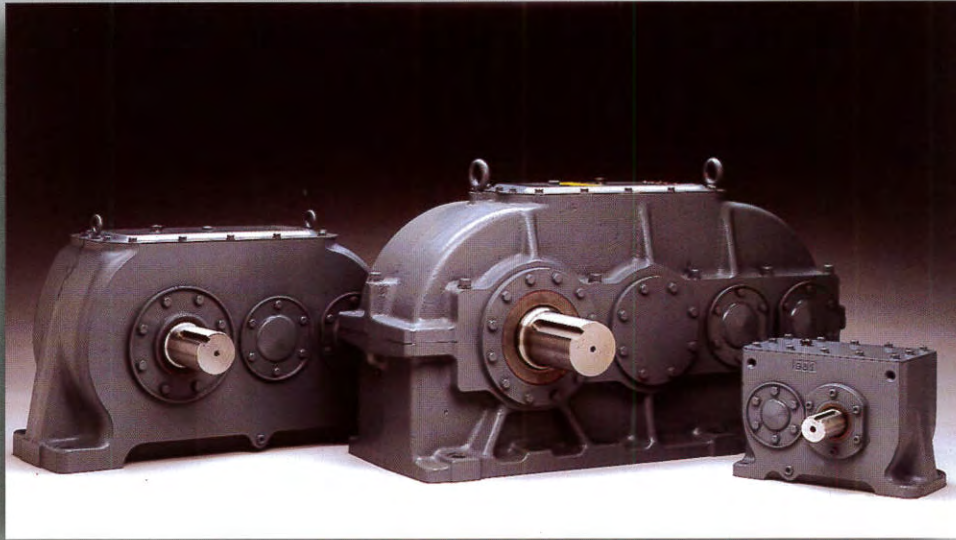


NOTES

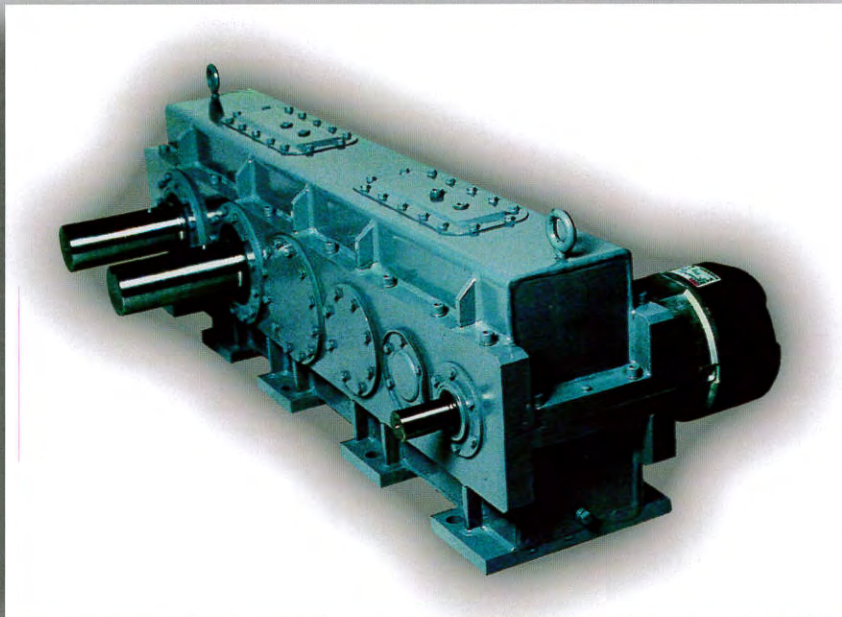
- [1] Oil resistant RTV sealant applied in the housing split line groove.
- [2] Sold as kits.

SPECIFY MODEL, RATIO AND SERIAL NUMBER WHEN ORDERING PARTS.

BASE, CUSTOM AND MODIFIED PRODUCTS



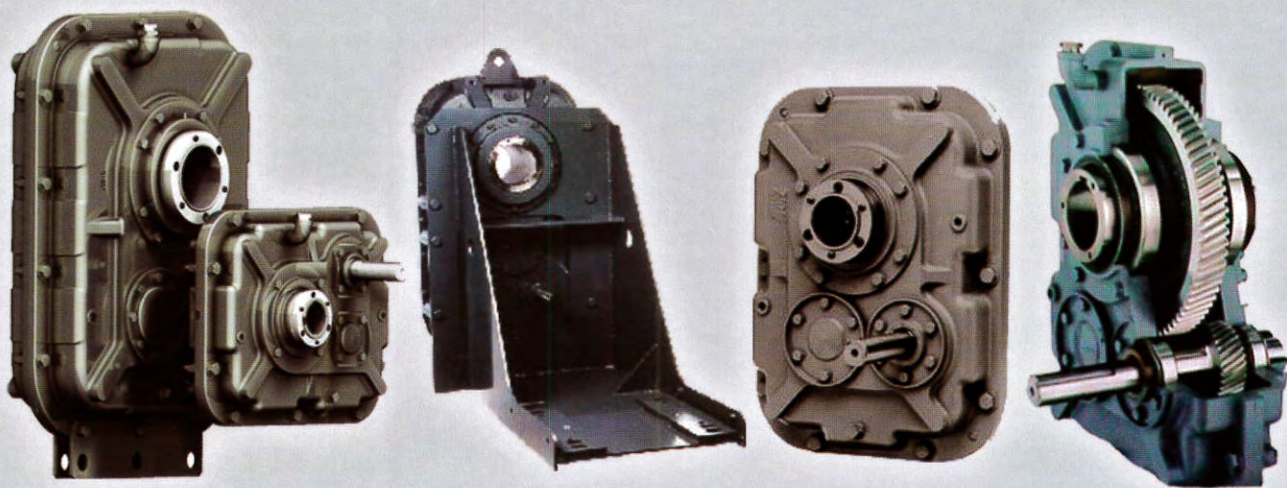
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