How to Use This Manual

This manual provides detailed instructions on installation and maintenance of gear drives and couplings. Use the table of contents below to locate required information.

CAREFULLY FOLLOW THE INSTRUCTIONS IN THIS MANUAL FOR OPTIMUM PERFORMANCE AND TROUBLE FREE SERVICE.

Table of Contents

Introduction

Credit for long service and dependable operation of a gear drive is often given to the engineers who designed it, or the craftsmen who constructed it, or the sales engineer who recommended the type and size. Ultimate credit belongs to the mechanic on the job who worked to make the foundation rigid and level, who accurately aligned the shafts and carefully installed the accessories, and who made sure that the drive received lubrication at prescribed intervals. The details of this important job are the subject of this manual.

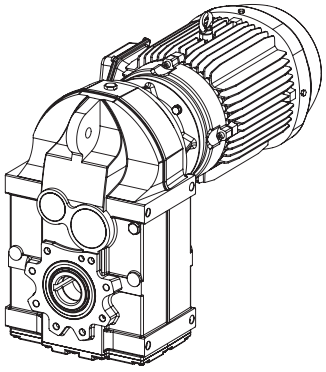
NAMEPLATE — Operate gear drives only at horsepower, speed and ratio shown on nameplate and in the mounting position for which it was ordered. Before changing any one of these, submit complete nameplate data and new application conditions to the Factory for correct oil level, parts and application approval.

WARNING: *Consult applicable local and national safety codes for proper guarding of rotating members. Lock out power source and remove all external loads from drive before servicing drive or accessories.*

Warranty

Rexnord Industries, LLC (the "Company") warrants that Ultramite gear drives (I) conform to Company's published specifications, and (II) are free from defects of material for three years from the date of shipment.

Company does not warrant any non-Company branded products or components (manufacturer's warranty applies) or any defects in, damage to, or failure of products caused by: (I) dynamic vibrations imposed by the drive system in which such products are installed unless the nature of such vibrations has been defined and accepted in writing by Company as a condition of operation; (II) failure to provide suitable installation environment; (III) use for purposes other than those for which designed, or other abuse or misuse; (IV) unauthorized attachments, modifications or disassembly, or (V) mishandling during shipping.



Type UJ

General Information

The following instructions apply to standard Falk Type UJ drives shown above. If a drive is furnished with special features, refer to the supplementary instructions shipped with the drive.

WELDING — Do not weld on the gear drive or accessories without prior approval from the Factory. Welding on the drive may cause distortion of the housing or damage to the bearings and gear teeth. Welding without prior approval could void the warranty.

EFFECTS OF SOLAR ENERGY — If the gear drive operates in the sun at ambient temperatures over 100°F (38°C), then special measures should be taken to protect the drive from solar energy. This protection can consist of a canopy over the drive or reflective paint on the drive. If neither is possible, consult the Factory.

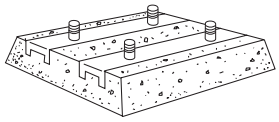
MOUNTING (Figure 13 and 19) — Unit sizes 308UJ and above are furnished without oil. Refer to Table 16 for a list of typical lubricants meeting Rexnord specifications. Fill drives to the oil level plug. Refer to Table 11 for the approximate quantities of oil by the drive mounting position.

Unit sizes 307UJ and below are factory filled with oil. Refer to Figure 13 and 19 for the placement of the breather, drain and oil level plugs based on the drive mounting position.

FOUNDATION GENERAL — To facilitate oil drainage, elevate the gear drive foundation above the surrounding floor level. If desired, replace the drive oil drain plug with a valve, but provide a guard to protect the valve from accidental opening or breakage.

FOUNDATION, STEEL — When mounting gear drive on structural steel, it is recommended that an engineered design be utilized for a pedestal, adapter base or bed to provide sufficient rigidity, to prevent induced loads from distorting the housing and causing gear misalignment. In the absence of an engineered design, it is recommended that a base plate, with thickness equal to or greater than the thickness of the drive feet, be securely bolted to steel supports and extend under the entire drive.

FOUNDATION, CONCRETE — If a concrete foundation is used, allow the concrete to set firmly before bolting down the gear drive. For the best type of mounting, grout structural steel mounting pads into the mounting base, as illustrated, rather than grouting the drive directly into the concrete.



Motors and other components mounted on motor plates may become misaligned during shipment. ALWAYS check alignment after installation.

GEAR DRIVE ALIGNMENT — Align drive with driven equipment by placing broad, flat shims under all mounting pads. Start at the low speed shaft end and level across the length and then the width of the drive. Check with a feeler gauge to make certain that all pads are supported to prevent distortion of housing when drive is bolted down. After drive is aligned with driven equipment and bolted down, align prime mover to drive input shaft. Refer to Page 10 for coupling alignment.

Check high speed shaft coupling alignment. If the coupling is misaligned, the drive is shimmed incorrectly. Re-shim drive and recheck high speed coupling alignment. If necessary, realign motor.

Drive Assembly Instructions

Important — The high speed motor adapters (All NEMA/IEC motors) will initially be assembled and sealed with Loctite® at the Factory, unless otherwise specified. During assembly, *DO NOT* break Loctite Seal.

When NEMA and IEC C-Face motors are to be used, the motor bushing must first be mounted to the motor before getting mounted to the gear drive. In these configurations, the drive unit will be furnished to the customer without oil. This applies to those gearmotors not furnished with motors from the Factory and where the customer is to fit motor to drive. The customer will be responsible for filling the drive with the proper amount of lubricant as listed in Table 11, Page 10 — Approximate Oil Quantities.

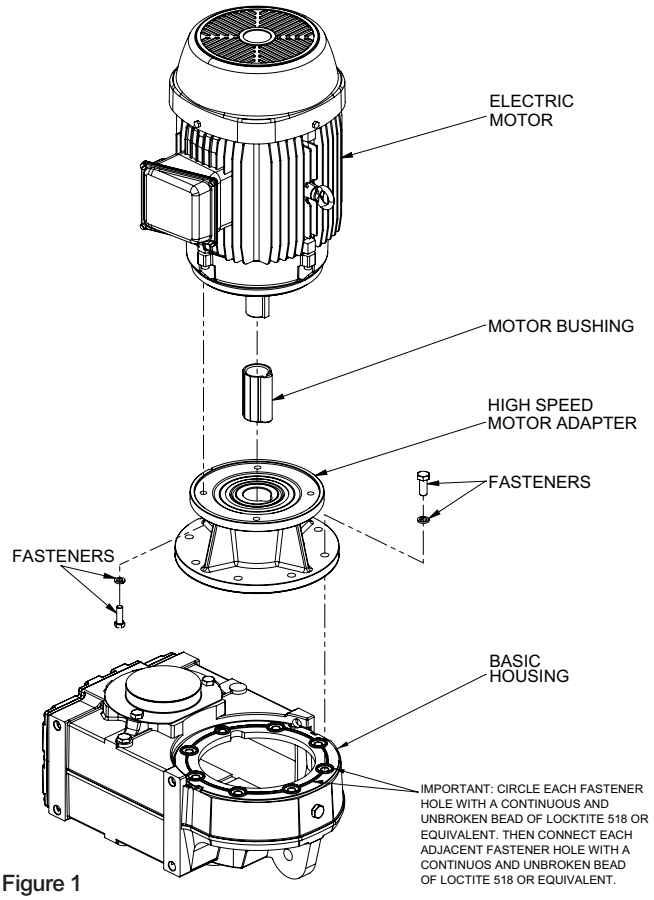


Figure 1

DRIVE ASSEMBLY INSTRUCTIONS — Figure 1

Important — The high speed motor adapters for drives will initially be assembled and sealed with Loctite at the Factory, unless otherwise specified. During assembly, *Do Not* break Loctite Seal.

1. Place basic housing on a workbench so that high speed end is facing up as illustrated in Figure 1. If necessary, block housing so that it is stable and level.
2. Remove high speed motor adapter from basic housing *ONLY* if replacing.
3. Clean mating surfaces of basic housing, high speed motor adapter, and electric motor (use Loctite 7070 Super Clean or equivalent). Check for and remove any burrs from mating surfaces.
4. If unit size is 308UJ or larger, fill basic housing with lube type as specified in Table 13, Page 11 to the oil level plug. Refer to Table 11, Page 10 for the approximate quantities of oil by the drive mounting shaft.
5. Apply anti-fretting compound (Dow Corning Molykote® G-n Metal Assembly Paste/Spray for non-food grade applications or Dow Corning Molykote P-1900 Food Grade Assembly Paste for food grade applications or equivalent) to bore of high speed motor adapter.
6. Fit metal key into keyway of motor shaft. Apply anti-fretting compound (Dow Corning Molykote G-n Metal Assembly Paste/Spray for non-food grade applications or Dow Corning Molykote P-1900 Food Grade Assembly Paste for food grade applications or equivalent) to motor shaft. Install bushing on motor shaft. This assembly will be inserted into the bore of high speed motor adapter after applying sealant.
7. Apply liquid gasket material (Loctite 518, Rexnord Part Number #10093848) furnished to flange face of basic housing as illustrated in Figure 1, Page 2.
   Caution: *This step must be followed to prevent leakage.*
8. Align mounting holes of high speed motor adapter with threaded holes of basic housing while assembling motor adapter to basic housing. Secure high speed motor adapter to basic housing using fasteners with copper washers (when provided). Torque fasteners to value specified in Table 5, Page 6 — Tightening Torques.
9. Determine appropriate position that motor conduit box must be in once motor is assembled to basic housing. Refer to Figure 2, Page 3. Slide motor shaft into high speed motor adapter, aligning key of shaft with keyway in motor adapter bore.
10. Align threaded mounting holes of high speed motor adapter with holes of electric motor. Secure motor to basic housing using fasteners with copper washers (when provided). Torque fasteners to the value specified in Table 5, Page 6 — Tightening Torques.

Rexnord
3001 W. Canal St., Milwaukee, WI 53208-4200
Phone: 414-342-3131 Fax: 414-937-4359 www.rexnord.com

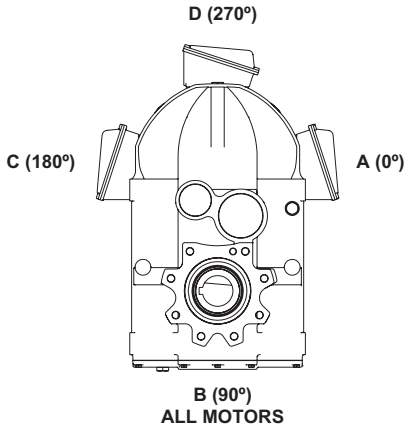


Figure 2

STUB SHAFT INSTALLATION AND REMOVAL INSTRUCTIONS

Installation

1. Install thrust plate and retaining ring into hollow shaft as illustrated in Figure 3.

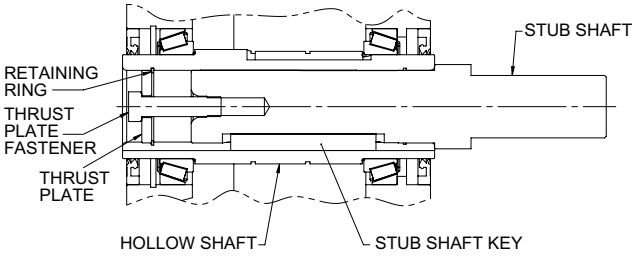


Figure 3

2. Insert key into stub shaft and slide stub shaft into hollow shaft. Make certain that stub shaft key seats into hollow shaft keyway. DO NOT hammer or use excessive force.
3. Install thrust plate fastener through the thrust plate and into the threaded hole of the stub shaft. Torque fastener to the value specified in Table 1.
4. Install key in stub shaft extension.

Table 1 — Thrust Plate Fastener Data for Solid and Straight Hollow Low Speed Shafts (Non-Lubricated Fasteners)

DRIVE SIZE	Shaft Bore Size (in)	Fastener Size ★	Torque lb-ft (Nm)
302	1.000	.375-16 UNC x 1.75	37 (50)
	1.250		
304	1.250	.375-16 UNC x 2	37 (50)
	1.375		
306	1.500	.625-11 UNC x 2.5	183 (248)
307	2.000	.625-11 UNC x 2.75	183 (248)
308	2.375	.750-10 UNC x 3.00	330 (448)
309	2.750	.750-10 UNC x 3.00	330 (448)
310	3.250	.750-10 UNC x 3.00	330 (448)
312	4.000	1.000-8 UNC x 3.75	792 (1074)

★ Fasteners listed are Grade 8.

Removal

1. Remove thrust plate fastener, retaining ring and thrust plate from hollow shaft. Refer to Table 2 to select the appropriate backing bolt, nut and flat washer required.

Table 2 — Removal & Backing Bolt Data – Solid Shaft

DRIVE SIZE	Removal Bolt Size & Minimum Length (Inches)	Maximum Tightening Torque lb-ft (Nm)	Backing Bolt Size & Maximum Length (Inches)
302	.375-16 UNC x 1.00	37 (50)	.375-16 UNC x 1.25
304	.375-16 UNC x 1.00	37 (50)	.375-16 UNC x 1.25
306	.625-11 UNC x 1.50	183 (248)	.625-11 UNC x 1.75
307	.750-10 UNC x 1.75	330 (448)	.750-10 UNC x 2.00
308	.750-10 UNC x 1.75	330 (448)	.750-10 UNC x 2.00
309	.750-10 UNC x 1.75	330 (448)	.750-10 UNC x 2.00
310	1.000- 8UNC x 2.25	792 (1074)	1.000- 8UNC x 2.50
312	1.000- 8UNC x 2.25	792 (1074)	1.000- 8UNC x 2.50

2. Install backing bolt, nut and flat washer into drive shaft as illustrated in Figure 4, Page 3 The head of the backing bolt provides a working surface for the removal bolt.
3. Reinsert the thrust plate and retaining ring into the hollow shaft. Refer to Table 2 to select the appropriate removal bolt required. Thread removal bolt into thrust plate until it contacts the backing bolt head. Torque the removal bolt to the value specified in Table 2. Note: If thrust plate rotates in shaft, align the slot in the plate with the hollow shaft keyway and insert a screwdriver or piece of key stock to prevent rotation of the plate.

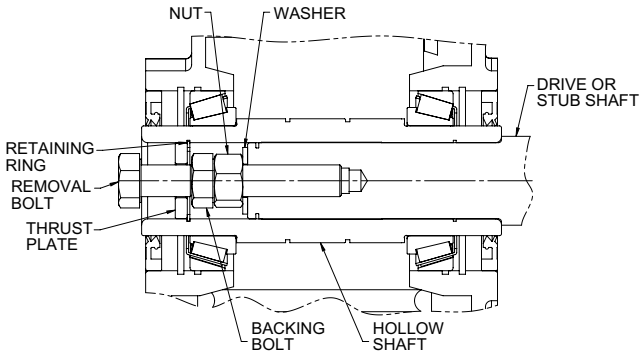


Figure 4

4. After torquing the removal bolt as instructed, if the shaft does not separate from the drive, strike the bolt sharply with a hammer and retorque the bolt. Repeat this procedure, retorquing the bolt after each strike of a hammer until separation occurs.

Caution: *Failure to follow this procedure may result in the destruction of threads in thrust plate.*

INSTALLATION AND REMOVAL OF TYPE TA TAPER® BUSHING

Installation

1. The tapered bore hollow output shaft is designed for use with a tapered bushing for mounting on a driven shaft with a straight outside diameter. Refer to Table 3 for driven shaft tolerances.

Table 3 — Driven Shaft Tolerances ★

Shaft Diameter — Inches	Maximum Undersize — Inches
Up to 1.500	.004
1.500 - 2.500 incl.	.005
2.500 - 3.000 incl.	.006

★ Millimeters = h 10 tolerance.

2. Rotate driven shaft so that keyway is in the 12 o'clock position.

   THIN WALL BUSHING (with keyway slot through bushing wall) — With driven shaft keyway at the 12 o'clock position, slide bushing assembly onto driven shaft, nut end first, and position keyway slot over shaft keyway (bushing may have to be pried open slightly). Insert drive key furnished with bushing into shaft keyway. Proceed to Step 3.

   THICK WALL BUSHING (with separate internal and external keyways) — Insert driven shaft key into driven shaft keyway. If driven shaft has an open-ended keyway, stake keyway as illustrated in Figure 5 to prevent axial dislocation of shaft key under operating conditions. Slide bushing assembly onto driven shaft (bushing may have to be pried open slightly). Rotate shaft so that external keyway in bushing is at the 12 o'clock position. Insert drive key furnished with bushing into bushing keyway. Proceed to Step 3.

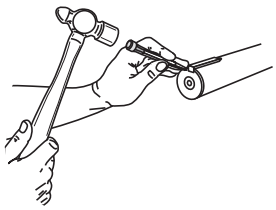


Figure 5

3. Using a sling, safely lift gear drive so that hollow output shaft is in the horizontal position. Rotate hollow shaft so that keyway is aligned with driven shaft/bushing key. Position and slide drive onto driven shaft taking care that driven shaft key seats into hollow shaft keyway. DO NOT hammer or use excessive force.
4. Thread bushing nut onto hollow shaft one to two turns. Note: The bushing nut threads have been coated with an anti-seize compound at the Factory. This compound should not be removed. Before re-installing a previously used nut, recoat the nut threads (only) with an anti-seize compound. KEEP TAPERED SURFACE OF BUSHING AND HOLLOW SHAFT BORE FREE FROM ALL ANTI-SEIZE OR LUBRICATING COMPOUNDS.
5. Tighten nut as instructed in one of the following methods.

   PREFERRED METHOD — Using a spanner (Table 4) chain or pipe wrench, tighten bushing nut to the torque value specified in Table 4. Note: For applications where external vibratory or transient loads may act on drive and cause setscrews to become loose, apply Loctite 243 or equivalent to threads of setscrew. Tighten setscrew on bushing nut.

   ALTERNATE METHOD — (Use this method when torque cannot be measured.) Using a spanner (Table 4), chain or pipe wrench, tighten bushing nut just until drive can no longer be moved by hand axially on the driven shaft. Loosen nut ONLY until it can be turned by hand but do not unseat the taper. Retighten nut hand tight. Mark a spot on top of driven shaft. Mark a spot on bushing nut 180° from the driven shaft mark (90° CCW for Sizes 04UJ & 06UJ). Using a spanner wrench, tighten nut CW one half turn until the two marks are aligned (one quarter turn for Sizes 04UJ & 06UJ). Note: For applications where external vibratory or transient loads may act on drive and cause setscrew to become loose, apply Loctite 243 or equivalent to threads of setscrew. Tighten setscrew on bushing nut.

Table 4 — Spanner Wrench Type & Spanner Nut Tightening Torque

DRIVE SIZE	Adjustable Hook Spanner Wrench		Spanner Nut Tightening Torque lb-ft (Nm)
	Armstrong Tools	Williams	
302, 304	34-307 (2.00" - 4.75")	474	83 (113)
306	34-307 (2.00" - 4.75")	474	83 (113)
307	34-307 (2.00" - 4.75")	474	167 (226)
308	34-310 (4.50" - 6.25")	474A	167 (226)
309	34-310 (4.50" - 6.25")	474A	250 (339)
310	34-310 (4.50" - 6.25")	474A	250 (339)

Removal

WARNING: *Drive must be supported during removal process. Use a sling around the gear drive and take up slack before proceeding.*

1. Loosen setscrew on bushing nut located at output end of hollow shaft.
2. Use a spanner (Table 4) pipe or chain wrench to loosen bushing nut. Initially, bushing nut will freely rotate counter clockwise approximately 180° as the nut moves from the locked position to the removal position. At this point anticipate resistance which indicates unseating of the bushing. Continue to turn bushing nut until it is free from the hollow shaft.
3. Prepare drive for lifting by disconnecting torque arm at drive end. Slide drive from bushing. Note: Bushing can be left in place or removed, as required. If bushing will not slide off of shaft, insert a small pry bar into split of bushing and pry split open slightly to loosen bushing and remove from shaft.

Rexnord
3001 W. Canal St., Milwaukee, WI 53208-4200
Phone: 414-342-3131 Fax: 414-937-4359 www.rexnord.com

ASSEMBLE OUTPUT FLANGE TO DRIVE — Figure 6

1. Place drive on a workbench so that the side to which the output flange will be installed is facing up. If necessary, block drive so that it is stable and level.
2. Clean mating surfaces of drive housing and output flange thoroughly using Loctite 7070 Super Clean or equivalent. Check for and remove any burrs from mating surfaces.
3. Assemble output flange to drive and secure using the fasteners furnished. Torque fasteners to the value shown in Table 4, Page 4 — Tightening Torques.

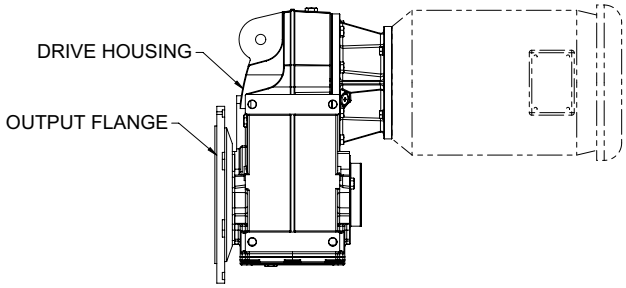


Figure 6

TORQUE ARM INSTALLATION AND REMOVAL INSTRUCTIONS

Installation

1. Identify parts from torque arm kit shown in Figure 7. Note: One rod end has left hand threads and the other has right hand threads. The jam nuts and turnbuckle must be matched accordingly. If it is necessary to shorten the torque arm, excess length can be cut from threaded rod ends. For corrosive environments, consideration should be given to use of an anti-seize compound on rod end threads.

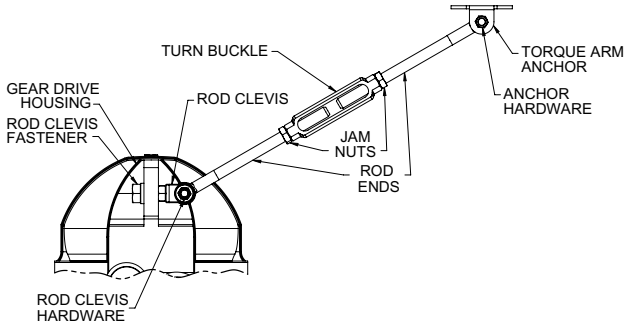


Figure 7

2. Thread jam nuts on rod ends far enough to allow for assembly of the turnbuckle. Install rod ends into turnbuckle so that length of threads exposed in turnbuckle are equal for both rod ends. Do not tighten jam nuts at this time.
3. Assemble rod clevis to rod end prior to connection with gear drive housing. Rod clevis hardware for Sizes 07UJ, 08UJ & 09UJ includes nylon washers which are installed between rod clevis and rod end. Tighten fastener until seated against rod clevis. DO NOT bend clevis as clearance between rod clevis and torque arm is necessary.
4. Note: Install rod clevis on gear drive housing so that head (not nut) of rod clevis fastener is adjacent to gear drive housing and that angular motion of torque arm is consistent with Figure 8.

   Clean threads on rod clevis fastener and rod clevis. Install lockwasher on fastener and insert through clearance hole of gear drive housing. Apply several drops of Loctite 262 thread lock or equivalent to fastener at area of engagement with rod clevis. Thread fastener into rod clevis and torque to value specified in Table 5.

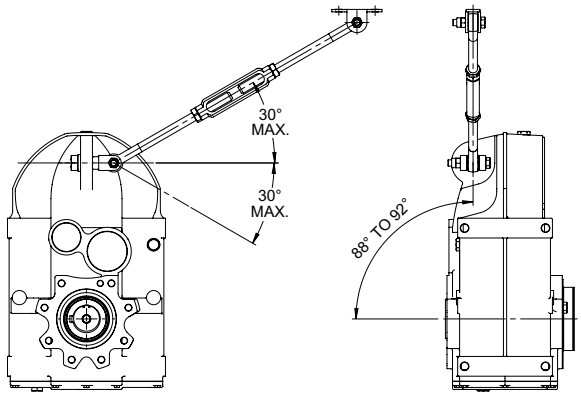


Figure 8

Table 5 — Torque Arm Tightening Torques – lb-ft (Nm)

DRIVE SIZE	Foundation Hardware‡		
	Fastener Size Grade 5	Steel Foundation	Concrete Foundation
302	0.375-16UNC	28 (38)	21 (28)
304	0.375-16UNC	28 (38)	21 (28)
306	0.375-16UNC	28 (38)	21 (28)
307	.500-13UNC	69 (94)	53 (72)
308	.500-13UNC	69 (94)	53 (72)
309	.625-11UNC	137 (186)	107 (145)
310	.750-10UNC	245 (332)	191 (259)
312	1.000-8UNC	567 (769)	467 (633)

‡ Fasteners listed are Grade 8

5. Identify a torque arm anchor location such that torque arm angle will be within the limits illustrated in Figure 8 and the supporting structure will be capable of withstanding the toque arm reactions specified in Table 6. Secure anchor to foundation using SAE grade 5 fasteners torqued to value specified in Table 5.

Table 6 — Torque Arm Load Reaction – lbs (N) ★

DRIVE SIZE	Max Reaction Load
302	1200 (5335)
304	1700 (7560)
306	2800 (12455)
307	4100 (18235)
308	5700 (25355)
309	9300 (41365)
310	12100 (53820)
312	15890 (70700)

★ Load includes torque at startup (100% overload) with torque arm at maximum angle.

6. Connect rod end to anchor using anchor hardware provided. Tighten fastener until seated against anchor. DO NOT bend anchor as clearance between clevis and torque arm is necessary.
7. Adjust length of torque arm by rotating turnbuckle until proper orientation of gear drive with angle of torque arm is consistent with limits illustrated in Figure 8. Tighten jam nuts against turnbuckle and torque to value specified in Table 5.

Removal

For many types of gear drive service, it will not be necessary to completely remove and/or disassemble the torque arm. However, if necessary, the following procedure should be followed:

1. Disconnect rod end from torque arm anchor by removing anchor hardware.
2. Disconnect rod clevis from gear drive housing. It may be necessary to heat the rod clevis using a torch to loosen rod clevis fastener.
3. Remove rod clevis from torque arm, loosen jam nuts and remove rod ends from turnbuckle.

SCREW CONVEYOR INSTALLATION AND REMOVAL INSTRUCTIONS

Installation

1. Separate contents from drive shaft kit. Install thrust plate and retaining ring in hollow shaft as illustrated in Figure 9. For sizes 302UJ and 304UJ drives with either 2.437" (61.9 mm) or 3.000" (76.2 mm) diameter drive shaft, place two (2) gaskets and trough end spacer, packaged separately, over trough end surface of seal housing as illustrated in Figure 10. Continue assembling based on type of trough end seal to be installed: (a) Waste Packing Seal, or (b) Lip Seal.

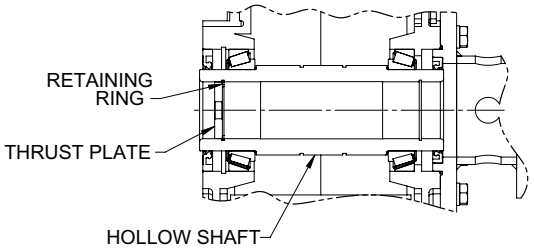


Figure 9

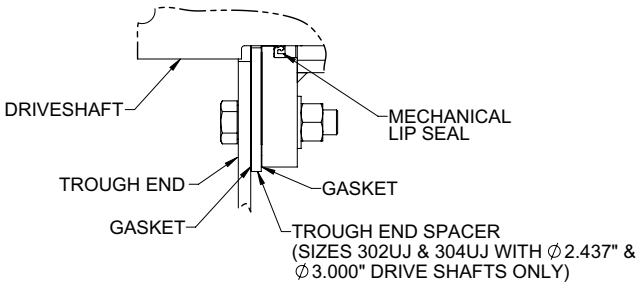


Figure 10

(a) Waste Packing Seal (Figure 11) — Slide drive shaft through seal housing. Insert key into drive shaft. Align drive shaft key with keyway in hollow shaft and slide drive shaft into hollow shaft. The seal housing has a register fit with the basic drive. Install drive shaft thrust plate fastener through thrust plate and torque to the value specified in Table 5. Install seal housing fasteners to secure seal housing to basic drive housing. Refer to Table 7 for proper torque value. Pack seal housing with waste packing through seal housing windows. Proceed to Step 2.

(b) Lip Seal (Figure 10) — Coat outside diameter of seal with Permatex #3 or equivalent. Drive seal into seal housing with spring loaded seal lip away from the driver. Wrap keyway on tapered shank of drive shaft with masking tape or light weight Kraft paper to protect against damaging seal lips. Coat seal lips and straight portion of drive shaft with bearing grease. Insert drive shaft into seal housing. Remove protective wrap and install drive shaft key. Align drive shaft key with keyway in hollow shaft and insert drive shaft into hollow shaft. The seal housing has a register fit with the basic drive. Install drive shaft thrust plate fastener through thrust plate and torque to the value specified in Table 5. Install seal housing fasteners to secure

Rexnord
3001 W. Canal St., Milwaukee, WI 53208-4200
Phone: 414-342-3131 Fax: 414-937-4359 www.rexnord.com

seal housing to basic drive housing. Refer to Table 7 for proper torque value. Proceed to Step 2.

2. Fasten trough end to seal housing using fasteners included in drive shaft kit. Refer to Table 7 for torque value.
3. Assemble drive to trough and install drive shaft coupling fasteners per screw conveyor manufacturer's instructions.

Table 7 — Seal Housing & Trough End Fastener Data (Non-Lubricated Fasteners)

DRIVE SIZE	Seal Housing Fasteners		Trough End Fasteners					
			1.500" Dia Drive Shaft		2.000" & 2.437" Dia Drive Shafts		3.000" & 3.437" Dia Drive Shafts	
	Size*	Torque lb-ft (Nm)	Size (with Nuts)‡	Torque lb-ft (Nm)	Size (with Nuts)‡	Torque lb-ft (Nm)	Size (with Nuts)‡	Torque lb-ft (Nm)
302	M8x1.25x25	12 (16)	0.500-13x1.00	69 (94)	0.625-11x2.25	137 (186)	N/A	
304							0.750-10 x 2.750	245 (332)
306	M12x1.75x35	40 (54)						
307								
308	M16x2.0x45	100 (136)						
309	M16x2.0x50	100 (136)	N/A					
310								
312					N/A			

* Fasteners listed are Grade 8.8
‡ Fasteners listed are Grade 5

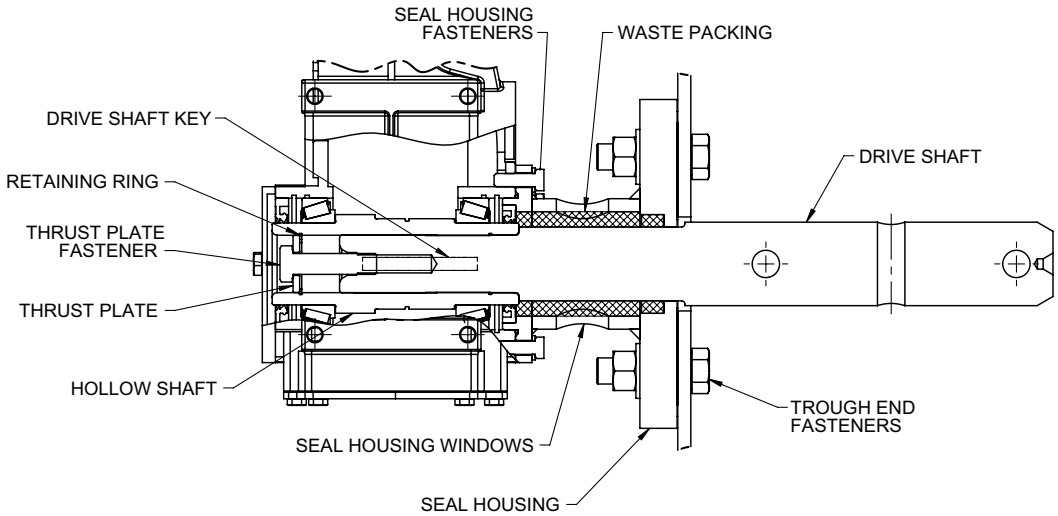


Figure 11

Removal

WARNING: *Drive must be supported during removal process. Use a sling around the gear drive and take up slack before proceeding.*

1. If drive is to be removed from drive shaft, remove seal housing fasteners as illustrated in Figure 11, Page 7. If drive is to be removed with drive shaft attached, remove trough end mounting fasteners and drive shaft coupling fasteners. Remove assembly from trough.
2. Remove thrust plate fastener, retaining ring and thrust plate from hollow shaft. Refer to Table 2, Page 3 to select the appropriate backing bolt, nut and flat washer required.
3. Install backing bolt, nut and flat washer into drive shaft as illustrated in Figure 4, Page 3. The head of the backing bolt provides a working surface for the removal bolt.
4. Reinsert thrust plate and retaining ring into hollow shaft. Refer to Table 3, Page 4 to select the appropriate removal bolt required. Thread removal bolt into the thrust plate until it contacts the backing bolt head. Torque removal bolt to the value specified in Table 3, Page 4. Note: If thrust plate rotates in shaft, align slot in plate with hollow shaft keyway and insert a screwdriver or piece of key stock to prevent rotation of plate.
5. After torquing the removal bolt as instructed, if the shaft does not separate from the drive, strike the bolt sharply with a hammer and retorque the bolt. Repeat this procedure, retorquing the bolt after each strike of a hammer until separation occurs.

   Caution: *Failure to follow this procedure may result in the destruction of threads in thrust plate.*
6. If the drive was removed with seal housing and drive shaft attached, remove seal housing fasteners to separate seal housing and drive shaft from gear drive. Determine the type of seal in the seal housing; (a) Waste Packing Seal, or (b) Lip Seal. Proceed as follows for removal of drive shaft from seal housing:
   (a) Waste Packing Seal (Figure 11, Page 7) — Remove key from drive shaft keyway. Remove waste packing material and remove seal housing toward tapered end of drive shaft.
   (b) Lip Seal (Figure 10, Page 6) — Remove key from drive shaft keyway. Remove any burrs from tapered end of shaft and wrap entire length with masking tape or a light weight Kraft paper to protect seal lips during removal. Carefully remove seal housing toward tapered end of drive shaft.

FASTENER TIGHTENING TORQUES

Use tightening torque values specified in Table 8 for fastening gear drives, motors and accessories to their mounting surfaces with non-lubricated fasteners. DO NOT use these values for "torque locking" fasteners or for fastening components with aluminum feet or with soft gaskets or vibration dampers on the mounting surface. If the tightening torque exceeds the capacity of the torque wrench, use a torque multiplier. Use Grade 5 fasteners for diameters through 1.50".

Table 8 — Tightening Torques – lb-in (Nm) ±5%
DO NOT Lubricate Fasteners

Thread Dia – UNC	Metal to Metal	Metal to Concrete
.250-20	90 (10)	70 (7)
.3125-18	185 (20)	145 (16)
.375-16	330 (37)	255 (28)
.500-13	825 (93)	640 (72)
.625-11	1640 (185)	1280 (144)
.750-10	2940 (332)	2290 (258)
1.000-8	6800 (769)	5700 (644)

Metric Fasteners	Feet to Drive †	Feet to Customer Equipment, Output Flange †	High Speed Motor Adapter
M6	. . .	88 (9)	88 (9)
M8	. . .	220 (24)	160 (18)
M10	450 (50)	450 (50)	330 (37)
M12	750 (84)	750 (84)	570 (64)
M16	1770 (200)	1770 (200)	1330 (150)
M20	3100 (350)	3100 (350)	. . .

† Fasteners listed are Grade 8.

For assembling motors, high speed adapters, feet or output flanges to drives, refer to the tightening torque values listed in Table 8 for metric fasteners. Use ISO grade 8.8 minimum fasteners for securing feet, output flanges or torque arms to drives.

Table 9 lists the minimum bolt diameter requirements for securing drive to the support structure using mounting feet accessory kit. Bolt length is dependent on mounting structure and is to be determined by installation personnel.

Table 9 — Foot Mounted Hold Down Fasteners †

Metric Fastener	Standard Fastener
M10	.375-16 UNC
M12	.500-13 UNC
M16	.625-11 UNC
M20	.750-10 UNC

† Fasteners listed are Grade 8.

Rexnord
3001 W. Canal St., Milwaukee, WI 53208-4200
Phone: 414-342-3131 Fax: 414-937-4359 www.rexnord.com

SHAFT CONNECTIONS

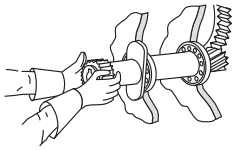
WARNING: *Provide suitable guards in accordance with OSHA standards.*

Input and output shaft extension diameter tolerance is +.0000"; -.0005" for shafts up to 1.750" diameter and +.0000"; -.0010" for shafts larger than 1.750" diameter. The fitted component must be machined to ensure proper fit. DO NOT drive coupling hub, pinion, sprocket or pulley on the shaft. An endwise blow on the shaft may damage gears and bearings. Coupling hubs, pinions, sprockets or pulleys must be pushed onto the shaft using a screw jack device fitted into the threaded hole provided in the end of the shaft, see Table 1 below.

Table 10 — Shaft End Threaded Holes – Inches

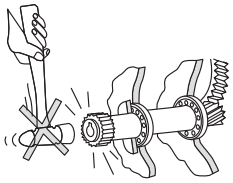
DRIVE SIZE	Input Shaft	Output Shaft
302	0.375-16 UNC-2B	0.375-16 UNC-2B
304	0.375-16 UNC-2B	0.375-16 UNC-2B
307	0.375-16 UNC-2B	0.625-11 UNC-2B
308	0.500-13 UNC-2B	0.750-10 UNC-2B
309	0.500-13 UNC-2B	0.750-10 UNC-2B
310	0.750-10 UNC-2B	0.750-10 UNC-2B
312	0.750-10 UNC-2B	1.000-8 UNC-2B

COUPLING CONNECTIONS — The performance and life of any coupling depends largely upon how well the coupling is installed and serviced. Refer to the coupling manufacturer's manual for specific instructions.



CORRECT METHOD

Heat interference fitted coupling hubs, pinions, sprockets or pulleys to a maximum of 275°F (135°C) and slide onto gear drive shaft.



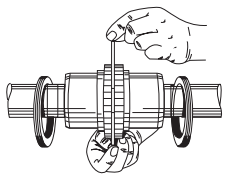
INCORRECT METHOD

DO NOT drive coupling hub, pinion, sprocket or pulley onto the shaft. An endwise blow on the shaft/coupling may damage gears and bearings.

– CAUTION –
DO NOT HAMMER

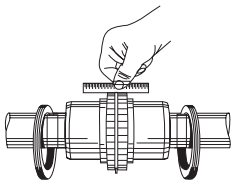
FALK COUPLINGS — Detailed installation manuals are available from the Factory, your local Rexnord Representative or Distributor; just provide size and type designations stamped on the coupling. For lubricant requirements and a list of typical lubricants meeting Rexnord specifications, refer to appropriate coupling service manual.

GAP AND ANGULAR ALIGNMENT — If possible, after mounting coupling hubs, position the driving and driven equipment so that the distance between shaft ends is equal to the coupling gap. Align the shafts by placing a spacer block, equal in thickness to required gap, between hub faces, as shown, and also at 90° intervals around the hub. Check with feelers.



STEELFLEX® ILLUSTRATED

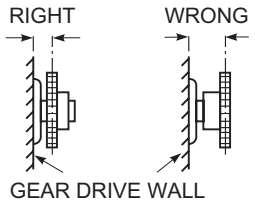
OFFSET ALIGNMENT — Align driving and driven shafts so that a straight edge will rest squarely on both coupling hubs as shown to the right and also at 90° intervals. Tighten foundation bolts of the connected equipment and recheck alignment and gap.



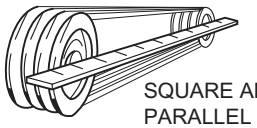
STEELFLEX ILLUSTRATED

SPROCKETS, PULLEYS OR SHEAVES — Mount power take-offs as close to the gear drive housing as possible to avoid undue bearing load and shaft deflection.

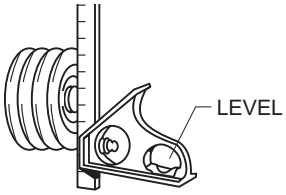
Align the output shaft of the gear drive square and parallel with the driven shaft by placing a straightedge across the face of the sprockets or sheaves as illustrated.



Check horizontal shaft alignment by placing one leg of a square against the face of the sheave or sprocket with the spirit level on the horizontal leg of the square.



SQUARE AND PARALLEL



DO NOT overtighten belts or chains. Adjust chains to manufacturer's specifications. Adjust belts as follows:

The ideal tension is the lowest tension at which the belt will not slip under peak load conditions. Check the belt tension frequently during the first 24 to 48 hours of run-in operation. Overtightening belts shortens belt and bearing life. Keep belts free from foreign material which may cause slippage. Inspect the V-belts periodically; tighten the belts if they are slipping.

PINION MOUNTING — Mount pinion as close to the drive as possible to avoid undue bearing load and shaft deflection. Refer to the Factory for pinion alignment instructions.

Refer to Figure 12 for methods of retaining shaft mounted drives.

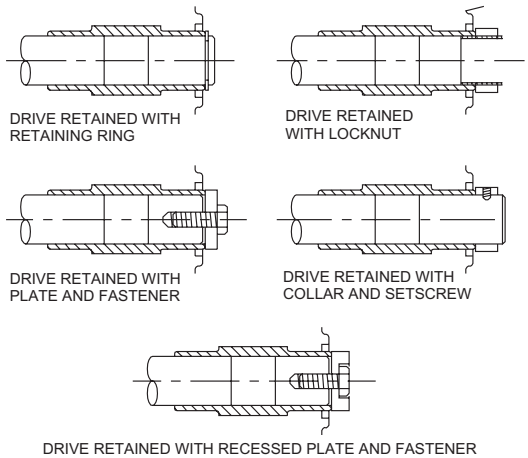


Figure 12

Lubrication Recommendations

Carefully follow lubrication instructions on warning tags and installation manuals furnished with the gear drive. Nameplates are stamped with a designation for recommended lubricant; standard is 6E.

Lubricants listed in this manual are typical ONLY and should not be construed as exclusive recommendations. Refer to your lubricant supplier for additional lubricants meeting the indicated specifications. Industrial type extreme pressure (EP) gear lubricants are the recommended lubricants for ambient temperatures of 15°F to 125°F (-9°C to +52°C).

For drives operating outside the above temperature range, refer to "Synthetic Lubricants" paragraphs. Synthetic lubricants can also be used in normal climates.

VISCOSITY (IMPORTANT) — The proper grades of EP Mineral and EP synthetic lubricants are found in Table 13, Page 11 — Typical Lubricants. For cold climates refer to "EP Synthetic Lubricant" paragraphs. Select a lubricant which has a pour point at least 10°F (5.5°C) below the expected minimum ambient starting temperature. Usable temperature ranges can sometimes be widened if specific applications are known.

Lubricants in Table 13, Page 11 that do not contain extreme pressure additives have been approved for use based on laboratory bench tests or factory testing.

Extreme Pressure (EP) Mineral Lubricants

Mineral (EP) Lubricants (Table 13, Page 11) — Industrial type petroleum based extreme pressure lubricants are preferred. The EP lubricants currently recommended are of the sulfur-phosphorus type.

WARNING: *EP LUBRICANTS IN FOOD PROCESSING INDUSTRY — EP lubricants may contain toxic substances and should not be used in the food processing industry without the lubricant manufacturer's approval. Lubricants which meet NSF "H1" classification are suitable for food processing applications.*

Extreme Pressure (EP) Synthetic Lubricants

Synthetic (EP) Lubricants (Table 13, Page 11) — Polyalphaolefin type extreme pressure lubricants are recommended for cold climate operation, high temperature applications, extended temperature range (all season) operation and/or extended lubricant change intervals.

WARNING: *SYNTHETIC LUBRICANTS IN FOOD PROCESSING INDUSTRY — Synthetic lubricants may contain toxic substances and should not be used in the food processing industry without the lubricant manufacturer's approval. Lubricants which meet NSF "H1" classification are suitable for food processing applications.*

Oil Levels

Unit sizes 308UJ and above are furnished without oil. Oil levels are determined by drive mounting position.

Location of the vent, drain and oil level plugs are determined by the drive mounting position and are shown in Figures 18 and 19. Refer to Table 11 for approximate quantities of oil by drive mounting position.

NOTE: When NEMA and IEC motors are to be used and the motor adapter is to be mounted first to the motor, the drive will be furnished to customer without oil. This applies to those gearmotors not furnished with motors from the Factory and where the customer is to fit motor to drive. The customer will be responsible for filling the drive with the proper amount of lubricant as listed in Table 11.

Table 11 — 300UJ Series Approximate Oil Quantities – Liters‡

Mounting Postions	DRIVE SIZE											
	Double Reduction							Triple Reduction				
	302UJ2	304UJ2	306UJ2	307UJ2	308UJ2	309UJ2	310UJ2	307UJ3	308UJ3	309UJ3	310UJ3	312UJ3
1	1.10	1.70	3.20	6.10	12.2	20.0	29.5	6.10	12.2	20.0	29.5	35.0
2	0.80	1.40	3.20	7.90	13.0	19.0	29.0	7.90	13.0	19.0	29.0	34.0
3	1.10	1.70	2.60	5.50	9.30	16.0	27.0	5.50	9.30	16.0	27.0	32.0
4	1.10	1.70	2.60	5.50	9.30	16.0	27.0	5.50	9.30	16.0	27.0	32.0
5	1.30	1.90	3.00	7.00	12.300	23.0	34.0	7.00	12.3	23.0	34.0	54.0
6	1.30	1.90	4.00	9.60	14.2	25.0	36.5	9.60	14.2	25.0	36.5	58.0

Mounting Postions	DRIVE SIZE							
	Quad and Quint Reductions★							
	302UJAQ4A	304UJAQ4A	306UJAQ4A	307UJAQ4A	308UJAQ5A	309UJAQ5A	310UJAQ5A	312UJAQ5A
1	1.10 + 0.45	1.70 + 0.45	3.20 + 0.45	6.10 + 0.45	12.2 + 0.45	20.0 + 1.40	29.5 + 1.40	35.0 + 1.40
2	0.80 + 0.85	1.40 + 0.85	3.20 + 0.85	7.90 + 0.85	13.0 + 0.85	19.0 + 4.00	29.0 + 4.00	34.4 + 4.00
3	1.10 + 0.85	1.70 + 0.85	2.60 + 0.85	5.50 + 0.85	9.30 + 0.85	16.0 + 2.70	27.0 + 2.70	32.0 + 2.70
4	1.10 + 0.80	1.70 + 0.80	2.60 + 0.80	5.50 + 0.80	9.30 + 0.80	16.0 + 2.70	34.0 + 4.50	32.0 + 2.70
5	1.30 + 1.20	1.90 + 1.20	3.00 + 1.20	7.00 + 1.20	12.3 + 1.20	23 .0+ 4.50	34.0 + 4.50	54.0 + 4.50
6	1.30 + 1.40	1.90 + 1.40	4.00 + 1.40	9.60 + 1.40	14.2 + 1.40	25.0 + 4.90	36.5 + 4.90	58.0 + 4.90

‡ Convert quantities using the following: Liters to US Gallons = liters x 0.26, Liters to Imperial Gallons = liters x 0.22, Liters to US Quarts = liters x 1.057

★ The first value is the oil quantity of the offset parallell gear unit and the second value is the oil quantity of the preliminary, inline gear unit.

Rexnord
3001 W. Canal St., Milwaukee, WI 53208-4200
Phone: 414-342-3131 Fax: 414-937-4359 www.rexnord.com

MOUNTING (CAUTION) — Mount drive only in the position for which it was ordered. Refer to Pages 15 and 16 for the placement of the vent, drain and oil level plugs based on drive size and mounting position. If it is necessary to mount the drive in a special orientation not shown on Pages 15 and 16, including rotated and tilted drives, consult the Factory for changes necessary to provide proper lubrication. Refer to Table 11, Page 10 for approximate quantities of oil by the drive mounting position.

Table 12 — Oil Change Intervals Based on Operating Temperature

Operating Temperature	Oil Change Intervals	
	Mineral Oil	
150°F (65°C) or less	18000 Hours or 3 Years	26000 Hours or 3 Years
158°F (70°C)	12000 Hours or 3 Years	26000 Hours or 3 Years
167°F (75°C)	9000 Hours or 3 Years	22000 Hours or 3 Years
176°F (80°C)	6000 Hours or 2 Years	15000 Hours or 3 Years
185°F (85°C)	4200 Hours or 17 Months	10500 Hours or 3 Years
194°F (90°C)	3000 Hours or 12 Months	7500 Hours or 2-1/2 Years
203°F (95°C)	2000 Hours or 8 Months	6000 Hours or 2 Years
212°F (100°C)	1500 Hours or 6 Months	4500 Hours or 18 Months

Lubricant Changes

All drive sizes require regular oil changes as instructed in this manual.

OIL ANALYSIS REPORT — Checking oil condition at regular intervals is recommended. In the absence of more specific limits, the guidelines listed below may be used to indicate when to change oil:

1. Water content is greater than 0.05% (500 ppm).
2. Iron content exceeds 150 ppm.
3. Silicon (dust/dirt) exceeds 25 ppm.
4. Viscosity changes more than 15%.
5. Oil temperature; unit operating under load.
6. Lubricant type.
7. Operating conditions; shock, loading, etc.
8. Mineral oil content exceeds 10% of oil fill quantity.

The effective life of an oil is greatly reduced at elevated temperatures. This is most pronounced with oils containing fatty and EP additives. To prevent damage to the drive through lubricant breakdown, the oil should be changed at the intervals shown in Table 12 — Oil Change Intervals. Intervals shown are for oil temperatures when the drive has attained normal running temperature when operating under load. These intervals are based on normal running. Where conditions are particularly severe, it may be necessary to change the oil more frequently. When changing oil, if the same oil is not used, flush drive and fill with only one type of oil.

The initial oil should be changed in a new gear drive after 1000 hours of operation or one year or half the above life, whichever occurs first.

Table 13 — Kinematic Viscosity in cSt@40ºC of Typical Lubricants Recommendations and Specifications

Mineral Lubricants Extreme Pressure		AGMA Viscosity Grade				
		. . .	. . .	5	6	7
		ISO Viscosity Grade				
		. . .	. . .	220	320	460
		Nameplate Designation				
		. . .	. . .	5E	6E	7E
		Ambient Temperature Range °F				
Manufacturer	**Lubricant**	**. . .**	**. . .**	**+23 to +77**	**+32 to +104**	**+50 to +122**
Chevron USA Inc.	Gear Compounds EP	. . .	. . .	220	320	460
Exxon Co. USA	Spartan EP	. . .	. . .	220	320	460
Mobil Oil Corp.	Mobilgear	. . .	. . .	630	632	634
Shell Oil Co.	Omala Oil	. . .	. . .	220	320	460
Synthetic Lubricants ‡ Extreme Pressure (Except where noted) †*		**AGMA Viscosity Grade**				
		0	**2**	**5**	**6**	**7**
		ISO Viscosity Grade				
		32	**68**	**220**	**320**	**460**
		Nameplate Designation				
		0H	**2H**	**5H**	**6H**	**7H**
		Ambient Temperature Range °F				
Manufacturer	**Lubricant**	**–30 to +10**	**–15 to +50**	**+14 to +86**	**+32 to 113**	**+50 to +122**
Conoco Inc	Syncon	32 †	68	220	. . .	. . .
Exxon Co. USA	Spartan Synthetic EP	. . .	. . .	220	320	460
Mobil Oil Corp.	Mobilgear SHC	. . .	. . .	220	320	460
	Mobil SHC	624 †	626 †	. . .	. . .	. . .
Pennzoil Prod. Co.	Super Maxol “S”	. . .	68	220	320	460
Shell Oil Co.	Hyperia S	. . .	. . .	220	. . .	460
Sun Company Inc.	Sunoco Challenge EP	. . .	. . .	220	320	. . .
	Sunoco Challenge AC	32 †	68 †	. . .	. . .	. . .
Exxon Mobil	Mobil SHC Cibus	. . .	. . .	198-242*	288-352*	. . .
Kluber Lubrication	Kluberoil 4 UH1 N	. . .	. . .	198-242*	288-352*	. . .
Lubriplate Lubricants Co.	Lubriplate SFGO Ultra	. . .	. . .	198-242*	288-352*	. . .
Petro-Canada	Purity FG Synthetic EP	. . .	. . .	198-242*	. . .	. . .
Total Lubricants USA, Inc.	Nevastane SL	. . .	. . .	198-242*	288-352*	. . .

‡ Consult lubricant supplier/manufacturer for maximum operating temperature.
† Lubricant does not contain EP (extreme pressure) additives. Consult your lubricant supplier for additional lubricant recommendations.
✱ Food grade PAO lubricant NSF H1 registered. Lubricant does not contain EP (extreme pressure) additives.

Table 14 — Conventional NLGI #2 Grade Grease ▲ for Grease Lubricated Bearings & Grease Purged Seals
-18° to +93°C (0° to 200°F)

Manufacturer	Lubricant
Chevron / Texaco / Caltex	Multifak EP 2
Citgo Petroleum Corp.	Lithoplex RT 2 Premium Lithium EP 2
ExxonMobil / Esso	Mobilux EP 2 Mobilith SHC 460 ■
Petro-Canada Lubricants	Precision General Purpose EP2
Phillips 66 / Conoco / 76 Lubricants / Kendall	Multiplex Red
Shell Oil Co.	Gadus S1 V220-2
Total Lubricants USA / Keystone Div. Penwalt Corp.	Multis 2 or Multis EP 2

▲ Not suitable for food grade applications.

■ High performance synthetic alternate.

Grease application or re-lubrication should be done at temperatures above -7°C (20°F). If grease must be applied at cooler temperatures consult lubricant supplier for recommendations.

Table 15 — Food Grade Grease ▲ for Grease Lubricated Bearings & Grease Purged Seals, NLGI #2 Grade
-18° to +93°C (0° to 200°F)

Manufacturer	Lubricant
Bel-Ray Company, Inc.	No-Tox HD Grease 2
Chevron USA, Inc. (Texaco/Caltex)	Chevron FM ALC EP 2
Exxon Mobil	Mobil SHC Polyrex 462
Kluber Lubrication	Klubersynth UH1 14-222
Lubriplate	Lubriplate FGL-2
Total Lubricants USA, Inc.	Nevastane HT/AW 2
Petro-Canada	Purity FG
Phillips 66 / Conoco / 76 Lubricants / Kendall	Food Machinery Grease 2

▲ NSF (National Sanitation Foundation) H1 Registered.

Grease application or re-lubrication should be done at temperatures above -7°C (20°F). If grease must be applied at cooler temperatures consult lubricant supplier for recommendations.

Grease Lubricated Seals and Bearings

Gearmotors are shipped with NLGI #2 grade grease in the seal housing cavities and in those bearings requiring grease lubrication unless otherwise specified. Refer to Table 4 for grease recommendations.

GREASE LUBRICATED SEALS — Ultramite 300UJ Motors are furnished with grease purged seals which minimize the entry of contaminants and abrasive dusts into the drive.

Grease seals during oil change intervals. Depending on the degree of contamination, it may be necessary to purge contaminated grease from seals more often (at least every 3 to 6 months). Purge grease from seals by first cleaning grease fitting and then slowly pump fresh grease, **WITH A HAND GREASE GUN**, through the seal cavity until fresh grease flows out along the shaft. Wipe off purged grease. Cooling accessories can be removed to access grease purge without removing shaft connection on motor.

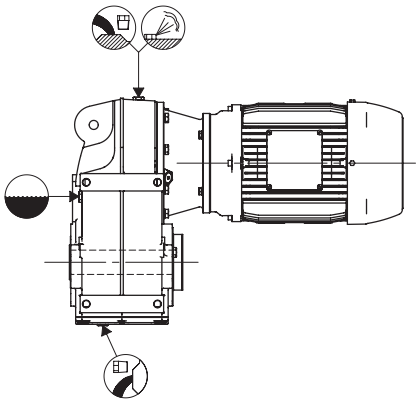
Caution: *Rapid greasing with a power grease gun can force grease inward past the seals causing seal leaks.*

If grease could contaminate the product, as in the food and drug industries, the grease originally supplied with gear drive must be removed and replaced with grease listed in Table 5. Simply purging grease with grease gun will not remove all grease and cross-contamination will likely occur. Refer to gear drive assembly/disassembly instructions. Grease registered as H1 by NSF, National Sanitation Foundation, is suitable for food processing.

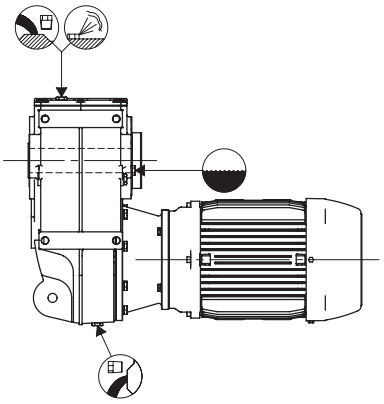
Rexnord
3001 W. Canal St., Milwaukee, WI 53208-4200
Phone: 414-342-3131 Fax: 414-937-4359 www.rexnord.com

Figure 13 — Oil Service Location – Double and Triple

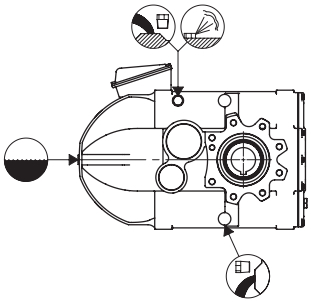
MOUNTING 1



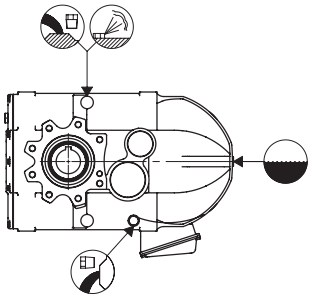
MOUNTING 2



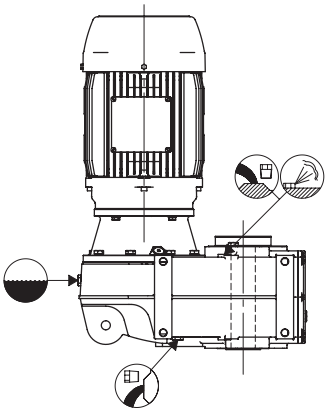
MOUNTING 3



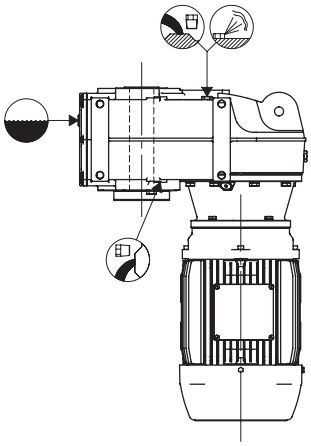
MOUNTING 4



MOUNTING 5



MOUNTING 6

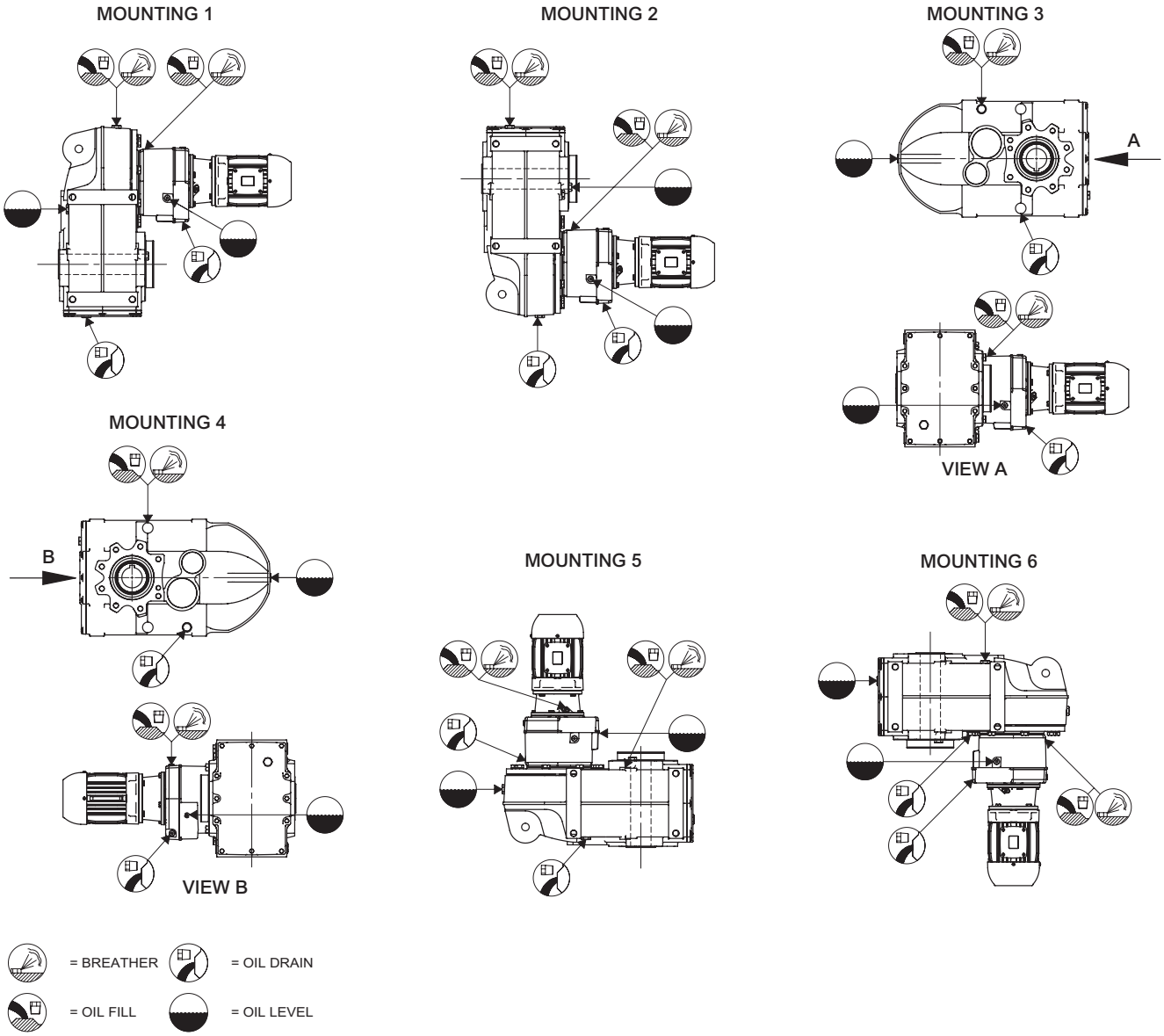


= BREATHER = OIL DRAIN

= OIL FILL = OIL LEVEL

NOTE: 302UJ and 304UJ sizes ship fully sealed and lubricated for life and do not have oil drain plugs.

Figure 14 — Oil Service Location – Quadruple and Quintuple



NOTE: 302UJ and 304UJ sizes ship fully sealed and lubricated for life and do not have oil drain plugs.

Rexnord
3001 W. Canal St., Milwaukee, WI 53208-4200
Phone: 414-342-3131 Fax: 414-937-4359 www.rexnord.com

Preventive Maintenance

AFTER FIRST WEEK — Check alignment of the total system and realign where necessary. Also, tighten all external bolts and plugs where necessary.

DO NOT readjust the internal gear or bearing settings in the drive, these were permanently set at the Factory.

PERIODICALLY — Carefully check the oil level of the drive when it is stopped and at ambient temperature, add oil if needed. If the oil level is ABOVE the oil level plug, have the oil analyzed for water content. If moisture content exceeds 500 ppm, change the oil. DO NOT fill above the oil level plug as leakage or undue heating may result. Grease drives with grease lubricated bearings monthly; refer to Table 16 — Typical Grease Recommendations & Specifications. Check coupling alignment to make certain that foundation settling has not caused excessive misalignment.

Bearing Grease

Some Ultramite gear drives have one or more grease-lubricated bearings. Whenever changing oil in the drive, grease the bearings with one of the greases listed in Table 16 — Typical Grease Recommendations & Specifications. Regrease these bearings as part of the standard maintenance program. Before installing a drive, note the location of all of the bearing grease fittings and grease labels for future maintenance reference. Note that some fittings may be above the oil level line and others below. If a grease fitting will become inaccessible after drive is installed, replace the fitting with a pipe extension (and the fitting) so that the grease fitting will be in an accessible location after the drive is installed.

Always remove the purge plug (when provided) when greasing bearings so that the old grease can escape. Wipe off purged grease and replace the plug after greasing bearings.

Some of the greases listed in Table 16 may contain toxic substances and should not be used in the food processing industry without the grease manufacturers' approval. A grease that meets the USDA "H1" classification is suitable for food processing applications.

Table 16 — Typical Grease Recommendations & Specifications

Manufacturer	Grease ★ †	Allowable Operating Temperature Range	
		Above	To
Applied Chemicals LTD	4020-220-2	32°F (0°C)	248°F (120°C)
BP Oil LTD	LS EP2	-22°F (-30°C)	266°F (130°C)
Chevron/Gulf	Crown EP	-22°F (-30°C)	248°F (120°C)
Century Oils LTD	Lupus A3	-22°F (-30°C)	257°F (125°C)
Esso Petroleum Co. LTD/ Exxon	Beacon EP2	-13°F (-25°C)	257°F (125°C)
Kluber Lubrication	Centoplex 2	-4°F (-20°C)	266°F (130°C)
Koolex International Inc.	Q8 Rembrandt EP2	-22°F (-30°C)	248°F (120°C)
Lubrication Engineers Inc.	Almaplex 1275	-22°F (-30°C)	320°F (160°C)
Mobile Oil Co. LTD	Mobilux EP2	-4°F (-20°C)	266°F (130°C)
Shell Oils	Albida R2	-4°F (-20°C)	302°F (150°C)
Texaco LTD	Multifax EP2	32°F (0°C)	248°F (120°C)

★ Greases are suitable for use with lubricant oil Types E and H.

† Consult Rexnord Application Engineering Department if:

1. Drive operates in ambient temperatures outside of range -22°F to 122°F (-30°C to 50°C).

Stored & Inactive Gear Drives

Each gear drive is protected with rust preventive that will protect parts against rust for a period of 6 months in an indoor dry shelter.

If a gear drive is to be stored, or is inactive after installation beyond the above periods, drain oil from housing and spray all internal parts with a rust preventive oil that is soluble in lubricating oil or add "Motorstor™" vapor phase rust inhibitor at the rate of one ounce per cubic foot of internal drive space (or 5% of sump capacity) and rotate the shafts several times by hand. Before operating, drives which have been stored or inactive must be filled to the proper level with oil meeting the specifications given in this manual. Refer to Manual 128-014 for "Start-up after Storage" instructions.

Periodically inspect stored or inactive gear drives and spray or add rust inhibitor every six months, or more often if necessary. Indoor dry storage is recommended.

Gear drives ordered for extended storage can be treated at the Factory with a special preservative and sealed to rust-proof parts for periods longer than those cited previously.

Material Safety Data

Drives with nameplate designation 6E are filled with Mobilgear 632. Material safety data sheets for this product are available directly from Mobil Oil Corporation at:

Products & Technology Department
3225 Gallows Road
Fairfax, VA 22037
Phone: (800) 662-4525 or (703) 849-3265

For material safety data sheets pertaining to other products used in the manufacture of the Falk Ultramite, contact:

Rexnord
Customer Service Department
3001 W. Canal Street
Milwaukee, WI 53208-4200
Phone: (414) 342-3131