



6. Fit shrink disc on gear drive hollow shaft to position shown on in Figure 10 on Page 7.
7. Tighten all locking screws gradually and in succession. Do not tighten in a diametrically opposite sequence. Several passes are required until all screws are tightened. Ensure that all inner and outer ring faces are in-line and the torque values show in Table 8 on Page 7 are achieved.
8. Fit protective cover.

**Note:** When the hollow output shaft is to operate in a vertical position it is essential that the shaft of the driven machine is provided with a shoulder. When the thrust load is not taken by the shoulder on the driven shaft, an end plate, a shown in Figure 10, must be fitted.

It is recommended that customers' shafts at the non-clamped end of the sleeve should be coated with Molykote 321R or equivalent.

**Removal**

1. Removal procedure is similar to the reverse of installation.
  - Note:** Do not remove shrink disc locking screws completely.
2. Remove any rust and dirt from gear drive hollow shaft.
3. Withdraw gear drive from driven shaft.

**Note:** Shrink disc should be removed and cleaned thoroughly, and Molykote 321R or similar applied to the tapered surfaces of inner ring and locking collar before re-use.

**Note:** Protective covers are supplied with all shrink discs. Assembly or removal kits and thrust plates are not provided by the Falk Corporation.

**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 for triple reduction ratios of 0-45:1, 7E for all other triple and quintuple ratio drives.

For selection of oil grade based on actual operating conditions, refer to Table 11, Page 9 — Series UB Oil Grades.

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 12, Page 9 — 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.

**Extreme Pressure (EP) Mineral Lubricants**

**Mineral (EP) Lubricants (Table 12)** — 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 USDA "H1" classification are suitable for food processing applications.

**Extreme Pressure (EP) Synthetic Lubricants**

**Synthetic (EP) Lubricants (Table 12)** — 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 USDA "H1" classification are suitable for food processing applications.

**Table 9 — Approximate Oil Quantities – Liters ★**

Mounting Position	DRIVE SIZE								
	Triple Reduction								
	03UB3	04UB3	05UB3	06UB3	07UB3	08UB3	09UB3	10UB3	12UB3
1	0.8	1.0	1.5	1.7	3.5	4.5	8.8	14	22
2	1.0	1.3	1.85	2.8	5.8	8.0	15	24	36
3	1.0	1.3	1.85	2.8	5.8	8.0	15	24	36
4	1.3	1.7	2.4	3.3	6.8	9.1	17.5	28.6	41
5	1.7	2.2	3.1	4.2	8.7	10.4	20.9	33	49
6	1.0	1.3	1.9	2.9	5.8	9.1	16.3	25.6	35.9

Obtain Quantities for Primary Stage Quintuple Reduction Drives (Separate Oil Sumps)

Mounting Position	DRIVE SIZE									
	Quintuple Reduction									
	03UB5		04UB5		05UB5		06UB5		07UB5	
	Primary†	Secondary	Primary†	Secondary	Primary†	Secondary	Primary†	Secondary	Primary†	Secondary
	201UC2	03UB3	201UC2	04UB3	203UC2	05UB3	203UC2	06UB3	203UC2	07UB3
1	0.7	0.8	0.7	1.0	0.8	1.5	0.8	1.7	0.8	3.5
2	0.7	1.0	0.7	1.3	0.8	1.85	0.8	2.8	0.8	5.8
3	0.7	1.0	0.7	1.3	0.8	1.85	0.8	2.8	0.8	5.8
4	0.7	1.3	0.7	1.7	0.8	2.4	0.8	3.3	0.8	9.1
5	1.0	1.7	1.0	2.1	1.4	3.1	1.4	4.2	1.4	10.4
6	1.1	1.0	1.1	1.3	1.5	1.9	1.5	2.9	1.5	9.1

Mounting Position	DRIVE SIZE							
	Quintuple Reduction							
	08UB5		09UB5		10UB5		12UB5	
	Primary†	Secondary	Primary†	Secondary	Primary†	Secondary	Primary†	Secondary
	205UC2	08UB3	205UC2	09UB3	207UC2	10UB3	207UC2	12UB3
1	1.6	4.5	1.6	8.8	2.8	14.0	2.8	22.0
2	1.6	9.3	1.6	15.0	2.8	24.0	2.8	36.0
3	1.6	6.2	1.6	15.0	2.8	24.0	2.8	36.0
4	1.6	9.1	1.6	17.5	2.8	28.6	2.8	41.0
5	1.9	10.4	1.9	20.9	3.2	33.0	3.2	49.0
6	2.5	9.1	2.5	16.3	4.9	25.6	4.9	35.9

★ 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.

† Primary drives filled with Grade 6E lubricant suitable for all ambient temperatures between 32°C and 95°F (0°C and 35°C).

**TABLE 10 — Oil Change Intervals Based on Operating Temperature**

Operating Temperature	Oil Change Intervals	
	Mineral Oil	Synthetic Oil
150°F (66°C) or less	17000 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)	8500 Hours or 3 Years	21000 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)	2100 Hours or 8 Months	6200 Hours or 2 Years
212°F (100°C)	1500 Hours or 6 Months	5200 Hours or 18 Months

**TABLE 11 — Series UB Oil Grades**

DRIVE TYPE	Ratio Range •	Ambient Temperature Range †			
		23°F to 68°F (-5°C to 20°C)	-22°F to 68°F (-30°C to 20°C)	32°F to 95°F (-0°C to 35°C)	68°F to 122°F (20°C to 50°C)
Triple	0 - 45 50 - 160	5E 6E	5H 5H	6E (5H) 7E (6H)	7E (6H) 8E (7H)
Quintuple	All	6E	5H	7E (6H)	8E (7H)

† Consult Falk representative for other ambient temperatures.

• Consult Falk representative for input speeds below 500 rpm.

**TABLE 12 — Typical Lubricants Recommendations & Specifications**

Mineral Lubricants Extreme Pressure		AGMA Viscosity Grade			
		5EP	6EP	7EP	8EP
		ISO Viscosity Grade			
		220	320	460	680
		Nameplate Designation			
		5E	6E	7E	8E
		Ambient Temperature Range °F			
Manufacturer	Lubricant	+23 to +77	+32 to +104	+50 to +122	+68 to +122
Chevron USA, Inc.	Gear Compound EP	220	320	460	680
Exxon Co. USA	Spartan EP	220	320	460	680
Mobil Oil Corp.	Mobilgear	630	632	634	...
Shell Oil Co.	Omala Oil	220	320	460	680

  

Synthetic Lubricants † Extreme Pressure (Except where noted) ‡		AGMA Viscosity Grade			
		5S	6S	7S	8S
		ISO Viscosity Grade			
		220	320	460	680
		Nameplate Designation			
		5H	6H	7H	8H
		Ambient Temperature Range °F			
Manufacturer	Lubricant	+14 to +86	+32 to +113	+50 to +122	+68 to +122
Canaco Inc.	Syncon R & O	220	...	460	...
Exxon Co. USA	Teresstic SHP	220	320	460	680
	Spartan Synthetic EP SHC	220	320	460	680
Mobil Oil Corp.	Mobil SHC	630	632	634	636
	Mobilgear SHC	220	320	460	680
Pennzail Products Co.	Pennzgear SHD	220	320	460	680
	Super Maxol "S"	220	320	460	...

† Consult lubricant supplier/manufacturer for maximum operating temperature.

‡ Lubricant does not contain EP (extreme pressure) additives. Consult your lubricant supplier for additional lubricant recommendations.