INTRODUCTION — This sheet is for use when a flange mounted 5407 - 5608JF drive is to be used and manufacture of a tapered driven shaft is not feasible. For JF drive shaft recommendations with tapered drive shafts, use Sheet 377-140. Use this sheet to retrofit existing applications, or for outfitting new installations. Parts required are the Basic drive, TA Taper bushing, and a special thrust plate kit.

TABLE 1 — Special Thrust Plate Kit Part Numbers ★

JF Drive Size	Special Thrust Plate Part Number
5407	0778780
5415	0778781
5507	0778782
5608	0778763

★ A special thrust plate kit with long fastener and extra retaining ring is required. The standard J thrust plate kit will not work. Specify the special thrust plate kit by Part Number.

This sheet will allow the use of a straight drive shaft with the tapered bushing (without spanner nut) on flange mounted applications. Provided are dimensions (Table 4, Page 2) for shaft recommendations and instructions for the installation and removal of the assembly. All bushing bore sizes, which are available in the standard J-Drives, are possible with this setup.

FIGURE 2 — 5407-5608JF drives are furnished with a flange adapter installed. The hollow shaft of the gear drive has a tapered bore which accepts the tapered bushing. When the bushing is drawn into the taper, a clamping force is applied to the drive shaft. The shaft is drawn into the drive via a fastener in the thrust plate. The bushing seats against a shoulder on the driven shaft and is drawn into the drive with the shaft. Removal is accomplished by using a jackscrew in the thrust plate and forcing the shaft out of the drive. The retaining ring in the drive shaft assures that the bushing will be removed along with the shaft.

DRIVE SHAFT RECOMMENDATIONS — The recommendations for the drive shaft consist of two major features. The first is the shoulder which must be provided in the location shown in Figure 2, Page 2. This shoulder provides the backing necessary to draw the bushing into the taper. A permanently fixed shoulder must be provided in order for this design to be effective. The shoulder may be a welded collar or an integral step. Set collars are not acceptable. A retaining ring may be used, in the driven shaft, to provide the shoulder, but stress concentrations occur at the groove and therefore shaft stresses must be checked. The second major feature on the shaft is the retaining ring groove in the shaft end. This feature is recommended to ensure positive removal of the bushing when the shaft is removed. The threaded hole in the end accepts the thrust plate fastener.

WARNING: Lock out power source and remove all external loads from system before servicing drive or accessories.

INSTALLATION PROCEDURE — With the shaft manufactured per the recommendations shown, and the bushing selected for the proper shaft diameter, remove and discard the retaining ring and spanner nut from the bushing assembly

5407JF — Use of the tapered bushing requires that the flange of the bushing be removed to clear the adapter, Figure 2. A flangeless bushing is available for the 3.4375" diameter shaft only. (Falk™ Part No. 0766048)

All JF Drives — Slide the bushing (flange end first) onto the drive shaft until it contacts the shoulder on the shaft. Insert the key through the bushing and into the shaft keyway. Install the retaining ring into the groove in the drive shaft. Bring the drive into position, line up the keyway with the key and slide the unit over the bushing and shaft.

5407JF — Tighten the seal cage fasteners to 3960 lb-in.

ALL JF DRIVES — Attach the drive to the mounting surface with the fasteners provided. Assemble the thrust plate and retaining ring into the counterbore in the hollow shaft. Insert the thrust plate fastener through the thrust plate and thread into the shaft end. Tighten to the torque given in Table 2. Install all covers and guards.

REMOVAL PROCEDURE — Remove LS. input cover. Remove the fastener, retaining ring, and thrust plate from the hollow shaft. Refer to Table 3, and select a backing bolt and flat washer, and install them into the drive shaft as illustrated in Figure 1. The bolt head provides a working surface for the removal bolt. Reinsert the thrust plate and retaining ring into the hollow shaft and select a removal bolt from Table 3. Thread the removal bolt into the thrust plate until it contacts the backing bolt head. If the driven shaft is fixed axially by a support other than the Quadrive, loosen but do not remove the driven mounting fasteners. Tighten to the torque indicated in Table 3. (If the thrust plate rotates in the shaft, align the slot in the plate with the hollow shaft keyway and insert a screw driver or piece of key stock to prevent rotation of the plate.) If the bushing has not become unseated from the taper, apply one sharp blow to the head of the fastener. Re-torque the bolt and repeat until the bushing unseats.

Figure 1

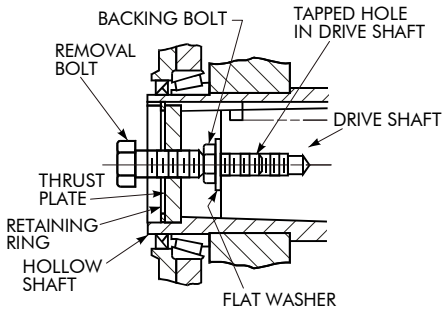

TABLE 2 — Thrust Plate Fastener Data ★ (Non-Lubricated Fasteners)

DRIVE SIZE	Fasteners Size and Grade	Torque (lb-in)	Min Thread Depth-Inches
5407	1.000-8 UNC x 5.50, GR.8	6800	2.75
5415	1.250-6 UNC x 6.00, GR.8	12600	3.00
5507	1.250-6 UNC x 6.00, GR.8	12600	3.00
5608	1.250-6 UNC x 8.00, GR.8	12600	3.50

★ Fasteners may be hex socket head or hex head except for Size 5307, which must be a hex head to clear input end cover.

TABLE 3 — Removal & Backing Bolt Size and Length – Inches

DRIVE SIZE	Removal Bolt Size & Min Length	Max Tightening Torque (lb-in)	Backing Bolt Size & Max Length
5407	1.125-7 UNC x 3.00	8900	1.000-8 UNC x 2.50
5415	1.500-6 UNC x 3.75	22100	1.250-7 UNC x 2.75
5507	1.500-6 UNC x 3.75	22100	1.250-7 UNC x 2.75
5608	1.500-6 UNC x 3.75	22100	1.250-7 UNC x 2.75

Figure 2

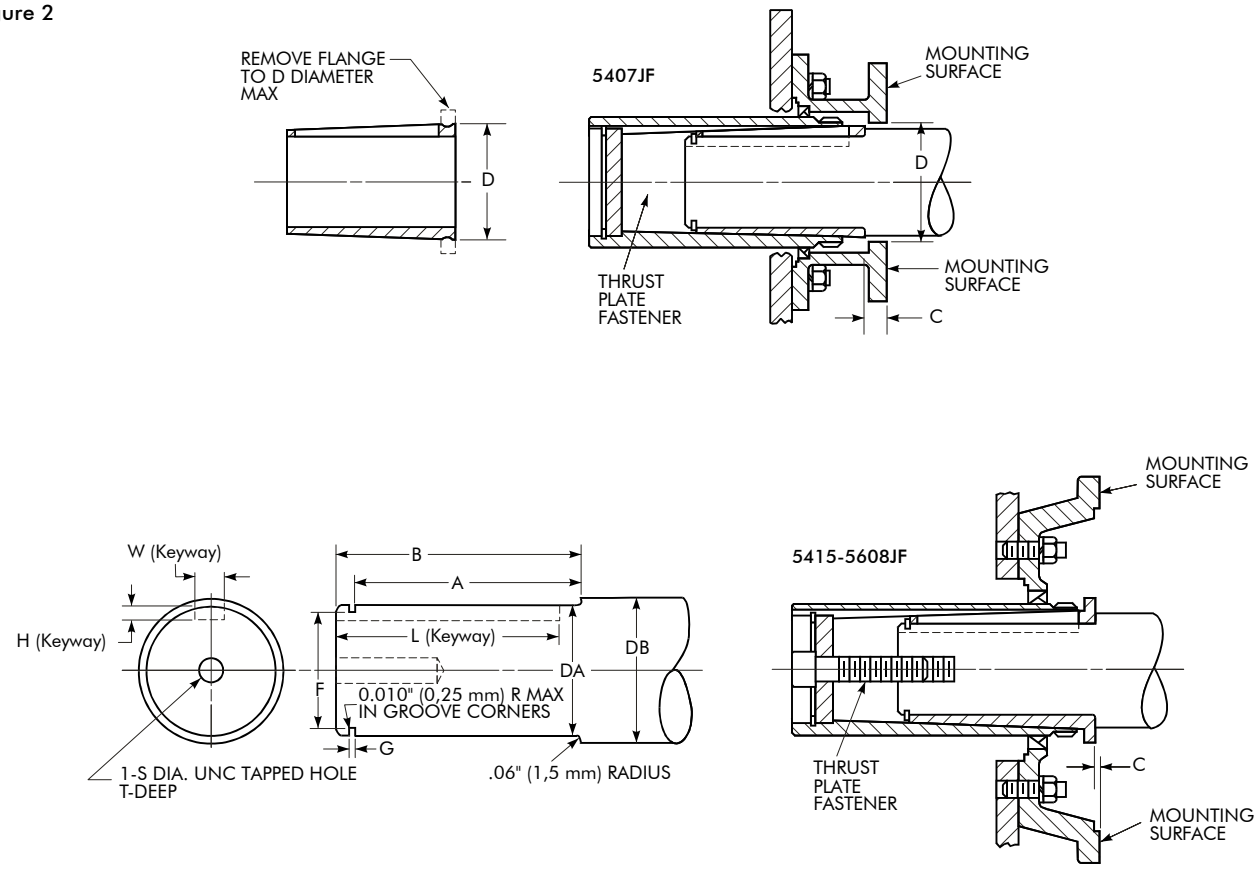

TABLE 4 — Dimensions – Inches (For Largest Bore Bushing) ★

DRIVE SIZE	A ± 0.010	B ± 0.030	C †	D ‡	DA ●	DB Min	Retaining Ring ■				Keyway ♦			S	T Min
							Groove		Spir O Lox		W	H	L Min		
							F	G	Mfg No.	Max O.D.					
5407	8.160	8.500	1.384 1.037	5.250	4.4375	4.750	4.059 4.071	0.120 0.125	RSN-425	4.688	1.000	0.5000	7.750	1.000-8	2.70
5415	10.100	10.375	0.867 0.520	. . .	4.9375	5.250	4.616 4.604	0.079 0.084	RS-475	5.125	1.250	0.6250	9.563	1.250-6	3.00
5507	10.440	10.750	0.617 0.269	. . .	5.4375	5.750	5.114 5.100	0.079 0.084	RS-525	5.688	1.250	0.6250	9.875	1.250-6	3.00
5608	12.530	13.000	2.639 2.292	. . .	6.5000	7.000	5.993 5.977	1.174 0.182	RSN-625	6.813	1.500	0.7500	12.625	1.250-6	3.50

★ For bushing bores smaller than the maximum, provide the retaining ring groove per manufactures recommendations, keyway appropriate for the shaft diameter, and DB minimum of 0.300" larger than the bushing bore to provide adequate backing.

† The range of C dimension is the variation which may occur due to axial compression and manufacturing tolerances. Negative C dimension indicates that the bushing protrudes beyond the mounting surface.

‡ The D dimension is the recommended minimum bore which clears the TA Taper bushing flange, except for Size 5407 which is provided by Falk™.

● Shaft diameter tolerances are per AGMA as follow: 1.50" = +.000", –.004"; over 1.50" to and including 2.50" = +.000", –.005"; over 2.50" to and including 4.00" = +.000", –.006"; over 4.00" to and including 6.00" = +.000", –.007"; over 6.00" to and including 8.00" = +.000", –.008".

■ Smalley retaining rings may be used instead of Spir O Lox by substituting WS for RS, WST for RST or WSM for RSN.

♦ Keyway width tolerances are as follows: .312" to and including .500" = +.0025", –.0000"; .500" to and including 1.000" = +.0030", –.0000"; 1.0000" to and including 1.500" = +.0035", –.0000". Depth tolerance is +.010", –.000".

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