Introduction

The following instructions apply to all standard Type FZ drives with standard motor brackets. These standard brackets are slotted to accommodate the drive/motor combinations listed in the selection guide and the couplings listed in Engineering Manuals 317-351, 317-352, 317-353 and 317-354. Refer to Factory for all other combinations. Determine appropriate drive size – bracket – fastener combinations from Tables 1, 3 and 4.

Rexnord motor brackets provide an economical "soft" mounting for standard NEMA T & U-frame induction type electric motors. It is expected that the weight, location, and starting torque of the motor will cause cantilevered motor brackets to deflect downward or twist to varying degrees. The gear drive/motor/coupling selections found in the Rexnord selection guide are engineered to be within acceptable deflection limits as determined by Rexnord. However, because the motor bracket is a "soft" motor support, deflection and vibration magnitude of the bracket may exceed levels normally considered acceptable for rigidly, "hard" mounted machinery.

For applications using other than pre-selected standard gear drive/motor/coupling combinations, the use of a motor plate is recommended. If a motor bracket is to be used, it becomes the customer's responsibility to support the rear of the motor bracket as necessary to diminish motor bracket deflection and vibration to within satisfactory levels determined by the customer. For recommended bracket support, contact the Factory.

Dependable operation of a gear drive requires careful installation of accessories and accurate alignment of the connecting shafts. Check final alignment of motor shaft, coupling and drive input shaft after the assembled drive is in the final working position.

Use of oversized motors, the extending or modifying of the motor brackets, addition of clutches, brakes, etc., require Factory approval. Motor plates are recommended for these applications.

CAUTION: 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.

FOR SATISFACTORY PERFORMANCE, CAREFULLY FOLLOW THESE INSTRUCTIONS

1. ASSEMBLY OF PRE-SLOTTED MOTOR BRACKETS TO DRIVES WITHOUT FANS OR EXTERNAL BACKSTOPS

   For assembly of pre-slotted motor brackets to drives with fans, refer to Step 5 on Page 7.

   BOLTED BRACKETS (Motor Frame Sizes 143 thru 326)

   A. Remove appropriate H.S. end fasteners as instructed in Figure 1 on Page 4.

   B. From Table 1, opposite the drive size and motor frame size, determine the motor bracket assembly number and refer to that assembly number in Table 5, Page 4 for the correct motor bracket assembly view. See Figure 2, Page 5 for motor bracket part identification and Table 3, opposite the drive size and motor frame for individual bracket assembly part numbers.

   C. Loosely assemble the side plates to the H.S. end of the drive using the longer fasteners, flat washers and lock washers included in Bracket to Drive Fastener Kit found in Table 3 on Page 3.
   NOTE: Sizes 2070FZ2, 2080FZ3, and 2090FZ2 require TWO flat washers at each fastener.

   D. Assemble the base plate to the side plates making sure to align the appropriate set of bolt holes shown in Table 5 on Page 4. Insert fasteners and locknuts (without lock washers) included in Base to Side Plate Fastener Kit found in Table 3 on Page 3. Torque fasteners to value shown in Table 2 on Page 2.

   E. Center the motor bracket so that each side plate is an equal distance from the high speed shaft. Torque bracket-to-drive fasteners to value shown in Table 2.

TABLE 1 — Complete ★ Bolted & Welded Motor Brackets

DRIVE SIZE	Motor Frame Size Types T & U[H]	Assembly No.	Bracket B/M No.	Complete Bracket Approx. Wt-lb
1020F2 & 3 & 1030F2&3	140	1	775950	31
	180	2	775950	31
	210	2	775951	39
2040F2 & 3 & 2050F2 & 3	140	3	775952	55
	180	4	775952	55
	210	5	775953	59
	250	2	775954	70
	280	6	775955	85
	320 †	7	775956	93
2060F2 & 3	140	3	775957	51
	180	4	775957	51
	210	5	775958	55
	250	2	775959	66
	280	6	775960	81
	320	7 ●	775961	89
	360	...	776046	141
2070F2 & 3	140	3	775962	51
	180	4	775962	51
	210	5	775963	55
	250	2	775964	66
	280	6	775965	81
	320	8	775966	89
	360	...	776047	141
	400	...	776048	237
2080F2	140	3	775967	61
	180	4	775967	61
	210	5	775968	66
	250	2	775969	79
	280	6	775970	92
	320	8	775971	101
	360	...	776049	142
	400	...	776050	238
	440	...	776051	299
2080F3	140	3	775972	61
	180	4	775972	61
	210	5	775973	66
	250	2	775974	79
	280	6	775975	92
	320	8	775976	101
	360	...	785027	142
2090F2	140	3	775977	61
	180	4	775977	61
	210	5	775978	66
	250	2	775979	79
	280	6	775980	92
	320	8	775981	101
	360 ■	...	776052	142
	360 ■	...	785353	242
	400	...	776053	238
	440	...	776054	299
2090F3	140	3	775982	61
	180	4	775982	61
	210	5	775983	66
	250	2	775984	79
	280	6	775985	92
	320	8	775986	101
2100F2 & 3 & 2110F3	140	9	775987	59
	180	10	775987	59
	210	11	775988	63
	250	12	775989	74
	280	13	775990	89
	320	‡	775991	97
	360	...	776055	269
	400	...	776056	322
	440	...	776057	401
2110F2	140	9	775992	59
	180	10	775992	59
	210	11	775993	63
	250	12	775994	74
	280	13	775995	89
	320	14	775996	97
	360	...	776058	269
	400	...	776059	322
	440	...	776060	401
2120F2 & 3 & 2130F3	140	9	775997	69
	180	10	775997	69
	210	11	775998	74
	250	12	775999	87
	280	13	776000	100
	320	14	776001	109
	360	...	776061	270
	400	...	776062	323
	440	...	776063	402
2130F2	140	9	776002	69
	180	10	776002	69
	210	11	776003	74
	250	12	776004	87
	280	13	776005	100
	320	14	776006	109
	360	...	776064	270
	400	...	776065	323
	440	...	776066	402

★ Gear Drives selected for T-frame motors will also accommodate NEMA U-frame motors under conditions stated in the selection guide. Brackets listed for Motor Frame Series 140 thru 320 are bolted type brackets; brackets listed for Motor Frame Series 360 thru 440 are welded one-piece brackets.

† Motor Frames 324 & 326 will not fit on Size 2040.

‡ For Size 2100, use Assembly No. 15; for Size 2110, use Assembly No. 14.

● Base plate to side plate fasteners are assembled with cap screw head inside the bracket.

■ Size 2090FZ2 with 360 motor selection and SHAFT FAN (use 785353), requires an oversized BLANK bracket to provide adequate fan clearance. Shim kit and shim blocks are provided.

WELDED BRACKETS (Motor Frame Sizes 364 thru 445)

A. Remove appropriate H.S. end fasteners as instructed in Figure 1 on Page 4.

B. Loosely assemble motor bracket to H.S. end of drive using the longer fasteners, flat washers and lock washers included in Fastener Kit found in Table 3. **NOTE:** Sizes 2070FZ2 & 2090FZ2 require TWO flat washers at each fastener.

C. Center motor bracket so that each side plate is an equal distance from the H.S. shaft. Torque fasteners to value shown in Table 2. Sizes 2100 thru 2130 — When a Rexnord coupling guard is installed, mount the coupling guard support plate and fasteners supplied in the coupling guard kit as illustrated in Figure 3 on Page 5. **NOTE:** Threaded holes are provided in the motor bracket face plate for mounting the coupling guard support plate.

TABLE 2 — Motor Bracket Fastener Tightening Torque ♦ — lb-ft

DRIVE SIZE	1020 &1030	2040-2070	2080-2100	2120-2130
Bracket-to-Drive Tightening Torque — lb-ft	27	67	134	242
Base-to-Side Plate Tightening Torque — lb-ft	21	50	50	50

♦ Tolerance on tightening torque is ± 5%.

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TABLE 3 – Motor Bracket Components (Bolted & Welded)

DRIVE SIZE	Motor Frame Size Types T & U★	Slotted Base Plate	Side Plates			Bracket-to-Drive Fastener Kit B/M No. ‡		Motor Shim Kit Part No.
		Base Plate Part No.	Left Hand	Right Hand	Base to Side Plate Fastener Kit B/M No. ‡	FZ2	FZ3	
1020 & 1030	140 180 210	421969 421969 421968	421966 421966 421966	421967 421967 421967	742460	742462	742462	706950 706950 706950
2040 & 2050	140 180 210 250 280 320 †	421728 421728 421788 421786 421726 421724	421964 421964 421964 421964 421964 421964	421965 421965 421965 421965 421965 421965	742461	742463	742463	706950 706950 706950 706950 706950 706951
2060 & 2070	140 180 210 250 280 320	421728 421728 421788 421786 421726 421724	421716 421716 421716 421716 421716 421716	421717 421717 421717 421717 421717 421717	742461	Size 2060 742464 Size 2070 742465	742462	706950 706950 706950 706950 706950 706951
2060	360	. . .	. . .	. . .		742463	. . .	706951
2070	360 400	. . . . . .	. . . . . .	. . . . . .		742471 742471	. . . . . .	706951 706951
2080 & 2090	140 180 210 250 280 320	421729 421729 421789 421787 421727 421725	421718 421718 421718 421718 421718 421718	421719 421719 421719 421719 421719 421719	742461	Size 2080 742468 Size 2090 756695	Size 2080 742467 Size 2090 756696	706950 706950 706950 706950 706950 706951
	360 400 440	. . . .	. . . .	. . . .		Size 2080 756689 Size 2090 756690	Size 2080 756695	706951 706951 706951
2100 & 2110	140 180 210 250 280 320	421728 421728 421788 421786 421726 421724	421720 421720 421720 421720 421720 421720	421721 421721 421721 421721 421721 421721	742461	Size 2100 756697 Size 2110 756698	756697	706950 706950 706950 706950 706950 706951
	360 400 440	. . . .	. . . .	. . . .		Size 2100 756691 Size 2110 756692	756691	706951 706951 706951
2120 & 2130	140 180 210 250 280 320	421729 421729 421789 421787 421727 421725	421722 421722 421722 421722 421722 421722	421723 421723 421723 421723 421723 421723	742461	Size 2120 742470 Size 2130 742474	742470	706950 706950 706950 706950 706950 706951
	360 400 440	. . . .	. . . .	. . . .	. . . .	Size 2120 742475 Size 2130 756693	742475	706951 706951 706951

★ Gear Drives selected for T-frame motors will also accommodate NEMA U-frame motors under conditions stated in the selection guide. Brackets listed for Motor Frame Series 140 thru 320 are bolted type brackets; brackets listed for Motor Frame Series 360 thru 440 are welded one-piece brackets.

† Motor Frames 324 & 326 will not fit on Size 2040.

‡ For B/M contents, see Table 4, Page 4.

TABLE 4 — Motor Bracket Fastener & Washer Sizes

Fastener Kit B/M No.	Qty. Each	Fastener Size (Grade 5, UNC)	Washer Size † (ID x OD x Thk.)	Lock Washer Size (Spring)	Locknut Size (UNC)
742460	6	3/8-16 x 1 1/4	...	...	3/8-16
742461	6	1/2-13 x 1 1/2	...	...	1/2-13
742462	6	3/8-16 x 2	7/16 x 1 x .08	3/8	...
742463	6	1/2-13 x 2 1/4	9/16 x 1 3/8 x .10	1/2	...
742464	6	1/2-13 x 1 3/4	9/16 x 1 3/8 x .10	1/2	...
742465	6★	1/2-13 x 2	9/16 x 1 3/8 x .10	1/2	...
742467	6★	5/8-11 x 2	11/16 x 1 3/4 x .13	5/8	...
742468	6	5/8-11 x 2 1/4	11/16 x 1 3/4 x .13	5/8	...
742470	6	3/4-10 x 2 3/4	13/16 x 2 x .14	3/4	...
742471	6★	1/2-13 x 2 1/2	9/16 x 1 3/8 x .10	1/2	...
742474	6	3/4-10 x 3	13/16 x 2 x .14	3/4	...
742475	6	3/4-10 x 3 1/4	13/16 x 2 x .14	3/4	...
756689	6	5/8-11 x 2 3/4	11/16 x 1 3/4 x .13	5/8	...
756690	6★	5/8-11 x 3	11/16 x 1 3/4 x .13	5/8	...
756691	6	5/8-11 x 3	11/16 x 1 3/4 x .13	5/8	...
756692	6	5/8-11 x 3 1/4	11/16 x 1 3/4 x .13	5/8	...
756693	6	3/4-10 x 3 1/2	13/16 x 2 x .14	3/4	...
756695	6★	5/8-11 x 2 1/2	11/16 x 1 3/4 x .13	5/8	...
756696	6	5/8-11 x 2	11/16 x 1 3/4 x .13	5/8	...
756697	6	5/8-11 x 2 1/2	11/16 x 1 3/4 x .13	5/8	...
756698	6	5/8-11 x 2 3/4	11/16 x 1 3/4 x .13	5/8	...

★ Use 12 flat washers (two per bolt, plus one lock washer) for Drive Sizes 2070FZ2, 2080FZ3, and 2090FZ2.

† All washers except those specified on B/M 742462 are special carburized and hardened washers.

The following instructions are to be used in conjunction with Figure 1 below.

DRIVES WITHOUT FANS — Remove fasteners numbered 1 and 2 only and install the motor bracket at these locations.

DRIVES WITH FANS — NOTE: For Sizes 2120 & 2130, support the motor bracket during Steps B and C to reduce weight on fasteners.

A. Remove all numbered fasteners.

B. Install motor bracket with fasteners at locations numbered 1.

C. Install fan shroud with fasteners and spacers at locations numbered 2.

D. Complete fan shroud installation with fasteners and spacers at locations numbered 3.

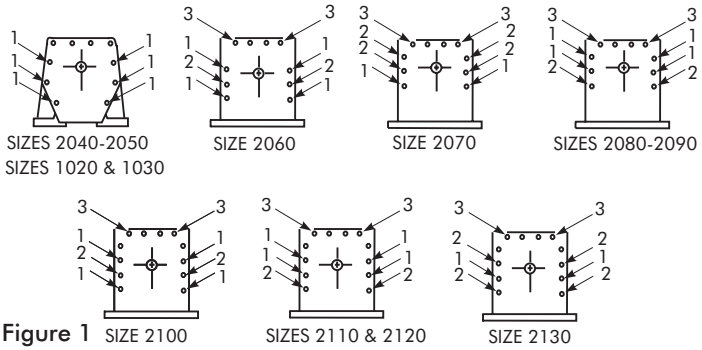
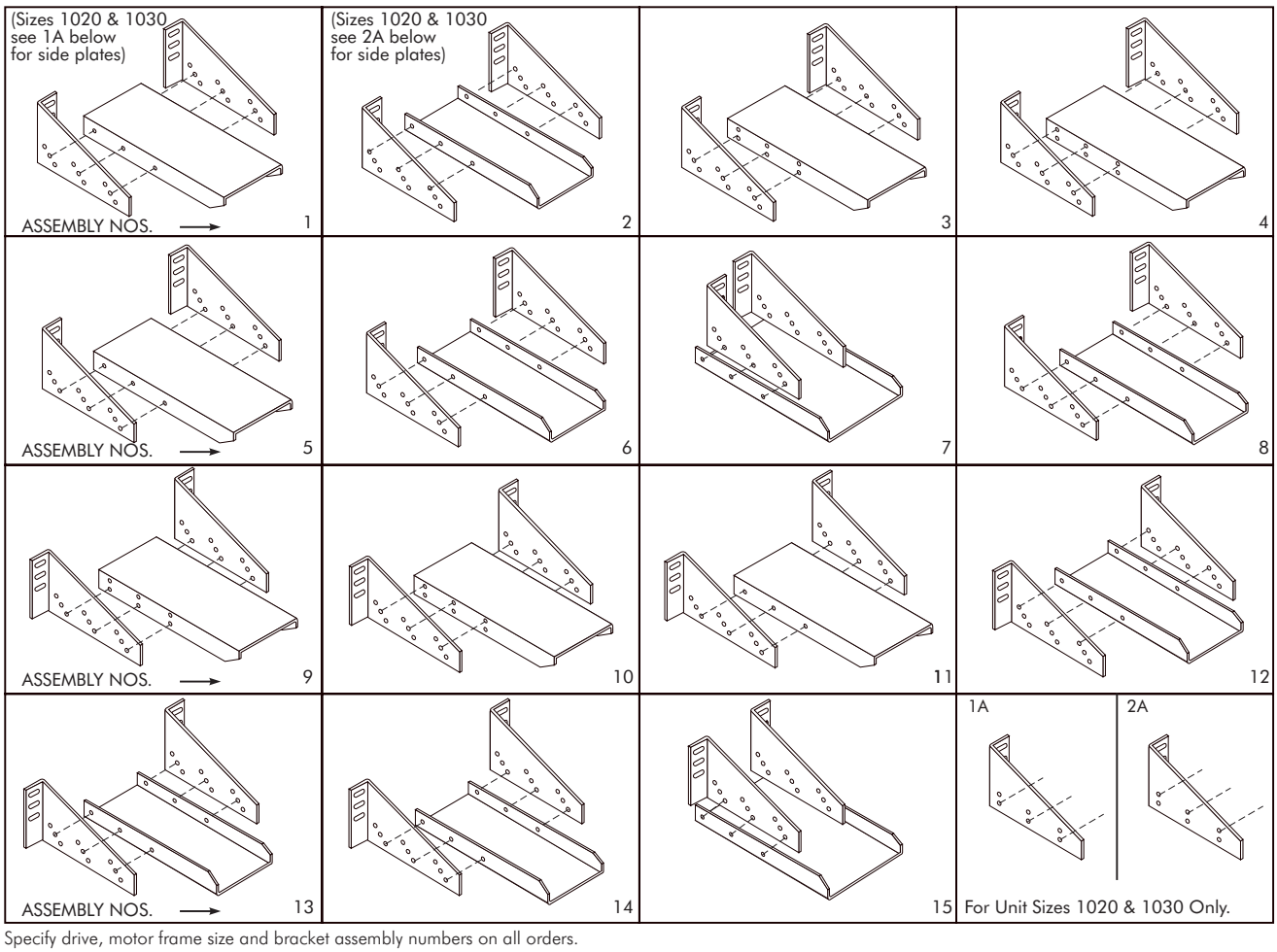


Figure 1

TABLE 5 — Standard Bracket Assemblies ‡



‡ Specify drive, motor frame size and bracket assembly numbers on all orders.

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2. COUPLING HUB MOUNTING INSTRUCTIONS

Mount the drive coupling hub on the drive H.S. shaft and the motor coupling hub on the motor shaft as instructed in the manual shipped with the coupling. Refer to the appropriate manual listed below to determine if coupling hub overhang is required. For installation instructions of couplings with interference fit hubs, refer to Manual 458-830. If coupling is not a Rexnord product, refer to the manufacturer's literature for installation instructions.

COUPLING MOUNTING DIMENSIONS FOR:

Type T for Sizes 1020 & 1030 317-352
Type T for Sizes 2040 - 2130 317-351
Type G for Sizes 1020 & 1030. 317-354
Type G for Sizes 2040 - 2130 317-353

3. COUPLING GUARD MOUNTING INSTRUCTIONS

The following instructions are to be used in conjunction with Manual 148-114.

A. Assemble sleeves and enclosure plates, if required, to the coupling guard halves using the fasteners provided in the coupling guard kit. Do not assemble the coupling guard cover at this time.

B. Locate coupling guard mounting holes per one of the following methods.

METHOD 1 — Temporarily mount motor to motor bracket with the proper shaft gap specified in the appropriate manual listed in Step 2. For non-slotted (blank) brackets, position the motor and scribe motor foundation bolt holes as instructed in Step 4. Position the guard halves on the motor bracket around the coupling hubs. Engage alignment clips of guard halves and center guard within the limits specified in Figures 4 thru 6 on Page 6. Shim guard if necessary.

METHOD 2 — Position the guard halves on the motor bracket (without motor) around the coupling hub. Engage alignment clips of guard halves and center guard within the limits specified in Figures 4 thru 6 on Page 6. Shim guard if necessary. Follow the steps on Page 6 to be certain that when motor is mounted with specified coupling gap, a maximum of .38" motor shaft and drive H.S. shaft is exposed.

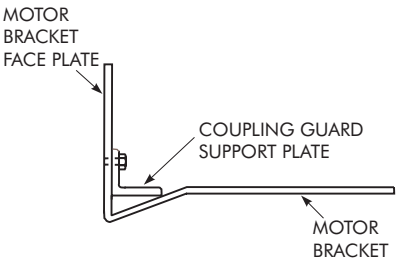

Figure 3

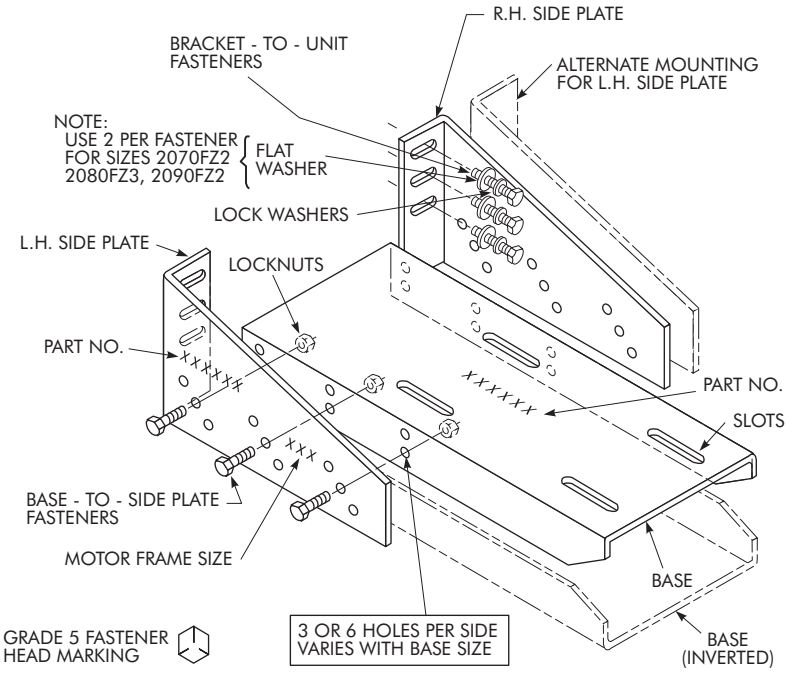

Figure 2

1. Measure the remaining guarded length to determine a value X.
2. Measure motor shaft length plus coupling hub overhang (if any) plus specified coupling gap to determine a value Y.
3. Value Y must be greater than X and less than X + .38".

C. Scribe the guard mounting hole locations on the motor bracket mounting surface.

D. Remove guard and drill mounting holes with a clearance drill or a tap drill if threaded holes are preferred.

E. Assemble coupling guard cover to the appropriate guard half. Do not assemble coupling guard to the motor bracket at this time.

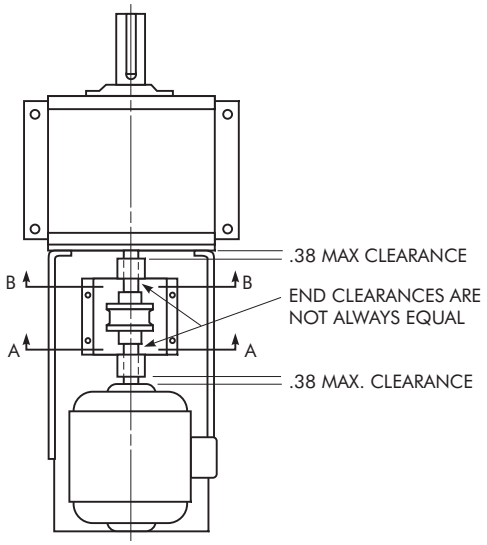

Figure 4 — TOP VIEW OF GUARD WITH COVER OFF

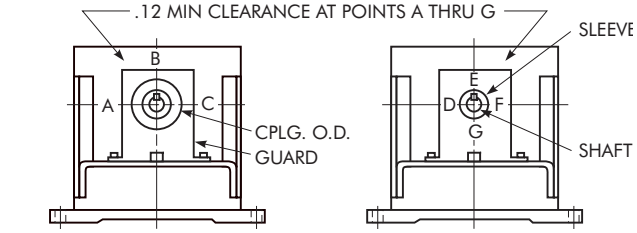

Figure 5 — VIEW A-A

Figure 6 — VIEW B-B

4. MOTOR MOUNTING INSTRUCTIONS

The weight, location and starting torque of the motor will cause some brackets to deflect downward and to twist. This movement is within allowable engineered limits for drive/motor selections from the Rexnord Selection Guide. If the customer considers the movement excessive, jackscrew supports for the bracket extension are available from the Factory. (Refer to Introduction on Page 1.)

A. Position motor on motor bracket with the proper shaft gap specified in the appropriate manual listed in Step 2. For non-slotted (blank) brackets, scribe the motor foundation bolt holes on the mounting surface of the motor bracket. Remove motor and drill holes .125" larger than the motor foundation bolt diameter. Replace motor on motor bracket.

B. Shim motor feet as required to obtain shaft alignment using the required motor shim kit shown in Table 6. To compensate for possible motor bracket deflection when using larger motor frames AND to get CORRECT COUPLING ALIGNMENT, use more shims under the rear feet than the front feet.

TABLE 6 — Motor Frame Shim Kits

Motor Frame	Shim Kit No.
140-280	706950
320-440	706951

C. Insert motor foundation fasteners listed in Table 7. Always place flat washers against the slot or hole on the underside of the motor bracket base. Before final tightening of motor foundation fasteners, check coupling alignment as instructed in the installation manual shipped with the coupling. Torque motor foundation fasteners to value specified in Table 7. Recheck coupling alignment and readjust if necessary.

TABLE 7 — Motor Foundation Fastener Torques

Motor Frame	Fastener Dia-Inches	Tightening Torque – lb ft ★
140T	.312	15
180T	.375	27
210T	.375	27
250T	.500	67
280T	.500	67
280TS	.500	67
320T	.625	108
320TS	.625	108
360T	.625	108
360TS	.625	108
400T	.750	194
400TS	.750	194
440T	.750	194
440TS	.750	194

★ Tightening torques listed are Grade 5. If higher quality bolts are employed, use comparable higher tightening torques. Tolerance on tightening torque is ± 5%.

D. After drive is in the final working position, check coupling alignment and adjust if necessary.

E. Complete the coupling assembly per coupling assembly instructions. Install coupling guard halves and fasten guard to base of bracket.

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5. ASSEMBLY OF PRE-SLOTTED MOTOR BRACKETS TO DRIVES WITH FANS (Refer to Figure 7)

DRIVES PREVIOUSLY EQUIPPED WITH FANS

When adding a motor bracket to a drive that has been previously outfitted with a fan and fan shroud, disassemble and reassemble the fan and fan shroud with the motor bracket as follows:

A. Remove coupling, sprocket or sheave from the high speed shaft, if so equipped.

B. Remove fan shroud from drive.

C. Loosen the setscrew and machine screws with locknuts located at the fan hub and remove fan from high speed shaft.

D. Remove additional high speed end fasteners shown in Figure 1 on Page 4, at locations marked No. 1.

E. Assemble the motor bracket, fan and fan shroud as instructed in the following section; C thru E.

DRIVES NOT PREVIOUSLY EQUIPPED WITH FANS

A. **SIZES 2100 THRU 2130** — When a Rexnord coupling guard is installed, mount the coupling guard support plate and fasteners supplied in the coupling guard kit as illustrated in Figure 3 on Page 5. **NOTE:** Threaded holes are provided in the motor bracket face plate for mounting the coupling guard support plate.

B. Remove the appropriate high speed end fasteners as instructed in Figure 1 on Page 4.

C. Loosely assemble the motor bracket to the high speed end of the drive using longer fasteners at the locations marked No. 1 shown in Figure 1 on Page 4.
NOTE: Drives with fans require spacers and longer bracket-to-drive fasteners than furnished in the kits: order these parts from the Factory.

D. Center the motor bracket so that each side plate is an equal distance from the high speed shaft. Torque fasteners to value shown in Table 2 on Page 2.

E. Mount fan and fan shroud as instructed in Section 6.

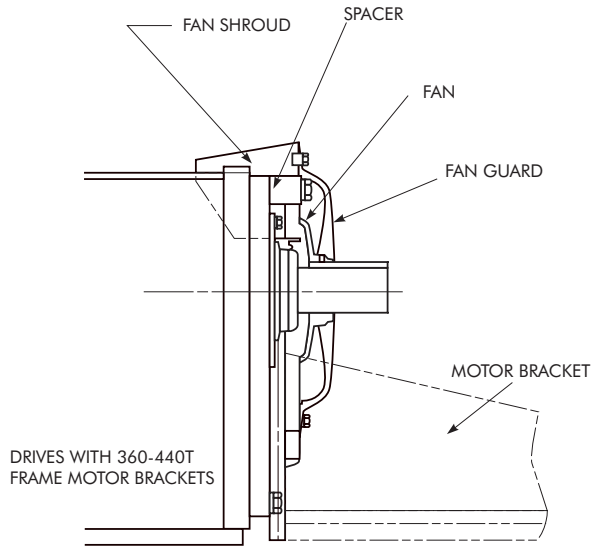

Figure 7

6. ASSEMBLY OF FAN & FAN SHROUD

A. Mount fan on high speed shaft at the axial location specified in Table 8. Torque the fasteners with locknuts and the setscrew located at the fan hub to the value shown in Table 9.

NOTE: When Type T20 Steelflex or gear couplings are used, mark the axial position of the fan on the high speed shaft (see Table 8), but do not secure the fan or install the fan guard until coupling is mounted, aligned and assembled. Temporarily slide the fan against the high speed seal cage to provide clearance for coupling hub mounting and alignment. Refer to Step 7.

B. Install fan shroud against motor bracket face plate using spacers and longer fasteners. (See Figure 1 on Page 4) Mount spacers between the fan shroud and the motor bracket face plate or drive face.

C. Center fan shroud around the high speed shaft and torque fasteners to value shown in Table 9.

D. Turn the high speed shaft by hand to make sure that there is no interference between the fan and fan guard or fan shroud.

TABLE 8 — Axial Location of Fan Hub on Drive H.S. Shaft

DRIVE SIZE	2060	2070	2080	2090	2100	2110	2120	2130	Reduction
Fan Hub to Shaft End	1.84	2.40	2.76	2.72	2.70	2.90	3.44	3.86	F2
	NA	NA	NA	NA	1.94	2.18	2.14	2.14	F3

TABLE 9 — Fan Fastener Tightening Torque

Description	Fastener Size	Tightening Torque lb-ft ★
Fan Shroud to Drive Hex Head Cap Screws	.500-13 .625-11 .750-10	67 135 245
Fan Hub Machine Screw	.250-20 .375-16	5.0 17
Fan Hub — Cup Point Setscrew	.250-20 .312-18	4.5 9.5
Fan Guard to Fan Shroud Hex Head Cap Screws	.375-16	17

★ Tolerance on tightening torque is ± 5%.

7. COUPLING HUB MOUNTING INSTRUCTIONS FOR DRIVES WITH FANS

A. **DRIVES WITH TYPE T20 STEELFLEX OR GEAR COUPLINGS** — Mark the axial position of the fan on the high speed shaft (see Table 8). Slide the fan against the high speed seal cage to provide clearance for coupling hub mounting and alignment. After completing the following steps, slide fan back to the marked position on the shaft and tighten fan hub and assemble fan shroud as instructed in Step 6.

B. **MOUNT COUPLING HUB** — Refer to Step 2, Page 5.

C. **MOUNT COUPLING GUARD** — Refer to Step 3, Page 5.

D. **MOUNT MOTOR** — Refer to Step 4, Page 6.