

HOW TO USE THIS MANUAL

This manual provides detailed instructions on motor bracket installation. Use the table of contents below to locate required information.

TABLE OF CONTENTS

1 Introduction Page 1
2 Motor Bracket Installation Page 1
3 Coupling Installation Page 4
4 Coupling Guard Installation Page 4
5 Motor Installation Page 5

1 INTRODUCTION

The following instructions apply to all standard Type MDX units with standard motor brackets. These standard brackets are slotted to accommodate the reducer/motor combinations listed in the bulletin. Refer to Factory for all other combinations. Determine appropriate unit size—bracket—fastener combinations from Tables 1, 2 and 3.

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 unit input shaft after the assembled unit is in the final working position.

WARRANTY—The Falk Corporation (the "Company") warrants that for a period of one year from the date of shipment, the product described herein will deliver successfully its rated output as indicated on the nameplate, provided, that these assembly instructions are followed and that the unit is properly installed, maintained, correctly lubricated and operated in the environment and within the limits of speed, torque or other load conditions for which it was sold. Such product is expressly not warranted against failure or unsatisfactory operation resulting from dynamic vibrations imposed upon it by the drive system in which it is installed unless the nature of such vibrations has been fully defined and expressly accepted in writing by the Company as a condition of operation.

CAUTION

Consult applicable local and national safety codes for proper guarding of rotating members.

Lock out power source and remove all external loads from unit before servicing unit or accessories.

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

2 MOTOR BRACKET INSTALLATION

ASSEMBLY OF PRE-SLOTTED MOTOR BRACKETS FOR UNIT SIZE 300MDX

BOLTED BRACKETS (Motor Frame Sizes 140 thru 320)

- A. Remove appropriate H.S. end fasteners as instructed in Figure 1.
- B. From Table 1, opposite the unit size and motor frame size, determine the motor bracket assembly number and refer to that assembly number in Table 4 for the correct motor bracket assembly view. See Figure 2 for motor bracket part identification and Table 2 for individual bracket assembly part numbers.
- C. Loosely assemble the side plates to the H.S. end of the unit using the longer fasteners, flat washers and lockwashers shown in Table 1.

- D. Assemble the base plate to the side plates making sure to align the appropriate set of bolt holes shown in Table 4. Insert fasteners and lock nuts (without lockwashers) shown in Table 2. Torque fasteners to value shown in Table 2.

- E. Center the motor bracket so that each side plate is on equal distance from the high speed shaft. Torque bracket-to-unit fasteners to value shown in Table 1.

WELDED BRACKETS (Motor Frame Sizes 360 thru 440)

- A. Remove appropriate H.S. end fasteners as instructed in Figure 1.
- B. Loosely assemble motor bracket to H.S. end of unit using the longer fasteners, flat washers and lockwashers shown in Table 1.
- 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 1.

ASSEMBLY OF PRE-SLOTTED MOTOR BRACKETS FOR UNIT SIZES 400 thru 900MDX

BOLTED BRACKETS (Motor Frame Sizes 140 thru 320)

- A. Remove appropriate H.S. end fasteners as instructed in Figure 1.
- B. Position the left hand adapter bar on the left side of the H.S. shaft as viewed from the H.S. end of the unit. Align clearance hole in the adapter bar with holes where H.S. end fasteners have been removed. Countersunk holes, if present, are to be away from unit. Assemble the adapter bar to the unit using the longer fasteners and lockwashers shown in Table 1. Repeat this procedure for the right hand adapter bar. Torque fasteners to the values shown in Table 1.
- C. From Table 1, opposite the unit size and motor frame size, determine the motor bracket assembly number and refer to that assembly number in Table 4 for the correct motor bracket assembly view. See Figure 2 for motor bracket part identification and Table 2 for individual bracket assembly part numbers.
- D. Loosely assemble the side plates to the adapter bars using the fasteners, flat washers and lockwashers shown in Table 1.
- E. Assemble the base plate to the side plates making sure to align the appropriate set of bolt holes shown in Table 4. Insert fasteners and lock nuts (without lockwashers) shown in Table 2. Torque fasteners to value shown in Table 2.
- F. Center the motor bracket so the each side plate is an equal distance from the high speed shaft. Torque bracket-to-adapter bar fasteners to value shown in Table 1.

WELDED BRACKETS (Motor Frame Sizes 360 thru 440)

- A. Remove appropriate H.S. end fasteners as instructed in Figure 1.
- B. Position the left hand adapter bar on the left side of the H.S. shaft as viewed from the H.S. end of the unit. Align clearance hole in the adapter bar with holes where H.S. end fasteners have been removed. Countersunk holes, if present, are to be away from unit. Assemble the adapter bar to the unit using the longer fasteners and lockwashers shown in Table 1. Repeat this procedure for the right hand adapter bar. Torque fasteners to values shown in Table 1.
- C. Loosely assemble motor bracket to adapter bars using the fasteners, flat washers and lockwashers shown in Table 1.
- D. Center motor bracket so that each side plate is an equal distance from the H.S. shaft. Torque fasteners to value shown in Table 1.

Sizes 800 & 900MDX—When a Falk coupling guard is installed, mount the coupling guard support plate and fasteners supplied in the coupling guard kit as illustrated in Figure 3. NOTE: Threaded holes are provided in the motor bracket face plate for mounting the coupling guard support plate.

TABLE 1 – MOTOR BRACKET ASSEMBLIES

UNIT SIZE	Motor Frame Size *	Motor Bracket*		Approx. Wt.-lb. Brkt. & T10 Cplg.	Bracket-to-Unit Fastener Kit B/M No.‡		Bracket-to-Adapter Bar Fastener Tightening Torque lb-in.	Adapter Bar-to-Unit Fastener Tightening Torque lb-in.
		Assem. No.	B/M No.†		MDX2	MDX3, 4		
300	140	3	741523	60	742463	742463	825	825
	180	4	740523	60				
	210	5	740524	65				
	250	2	740525	80				
	280	6	740526	100				
	320	7	740527	110				
400	140	3	740481	59	768201	768201	825	825
	180	4	740481	63				
	210	5	740482	67				
	250	2	740483	81				
	280	6	740484	95				
	320	8	740485	104				
	360	...	421710	180					768209	768209
500	140	3	740481	59	768202	768203	825	825
	180	4	740481	63				
	210	5	740482	67				
	250	2	740483	81				
	280	6	740484	95				
	320	8	740485	104				
	400	...	426801	270					768210	768211
600	140	3	740491	65	768204	768205	1640	1640
	180	4	740491	65				
	210	5	740492	80				
	250	2	740493	100				
	280	6	740494	115				
	320	8	740495	120				
	400	...	426801	270					768212	768213
700	140	3	740491	65	768206	768207	1640	1640
	180	4	740491	65				
	210	5	740492	80				
	250	2	740493	100				
	280	6	740494	115				
	320	8	740495	120				
	440	...	426802	340					768214	768215
800 & 900	140	9	740501	70	768208	768208	1640	1640
	180	10	740501	85				
	210	11	740502	90				
	250	12	740503	110				
	280	13	740504	120				
	320	15	740505	135				
	440	...	426641	310					768216	768216	2940

* Motor brackets selected for T-frame motors will also accommodate NEMA U-frame motors under certain conditions stated in the Falk bulletin. 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.

† Refer to Table 2 for individual bracket assembly part numbers.

‡ Refer to Table 3 for detailed information concerning adapter bar numbers & location and fastener sizes & locations.

TABLE 2 – BRACKET BASE & SIDE PLATE NOS. *

B/M No. From Table 1	Base Part No.	Side Plate Part Nos.		Base-to-Side Plate Fastener Kit B/M No.	Fastener Tightening Torque lb-in.‡
		Left Hand	Right Hand		
740481 740482 740483 740484 740485	421728 421788 421786 421726 421724	421716	421717	742461	925
740491 740492 740493 740494 740495	421729 421789 421787 421727 421725	421718	421719	742461	925
740501 740502 740503 740504 740505	421728 421788 421786 421726 421724	421720	421721	742461	925
740521 740522	421969 421968	421966	421967	742460	380
740523 740524 740525 740526 740527	421728 421788 421786 421726 421724	421964	421965	742461	925

* Refer to Table 1 for bracket-to-unit fastener kit B/M numbers.

‡ The complete lock nut must be coated with SAE 20 or heavier mineral oil.

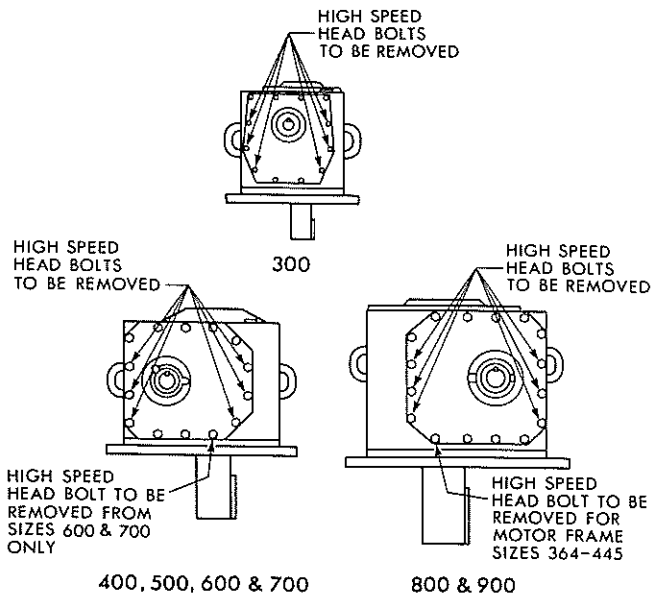


Figure 1

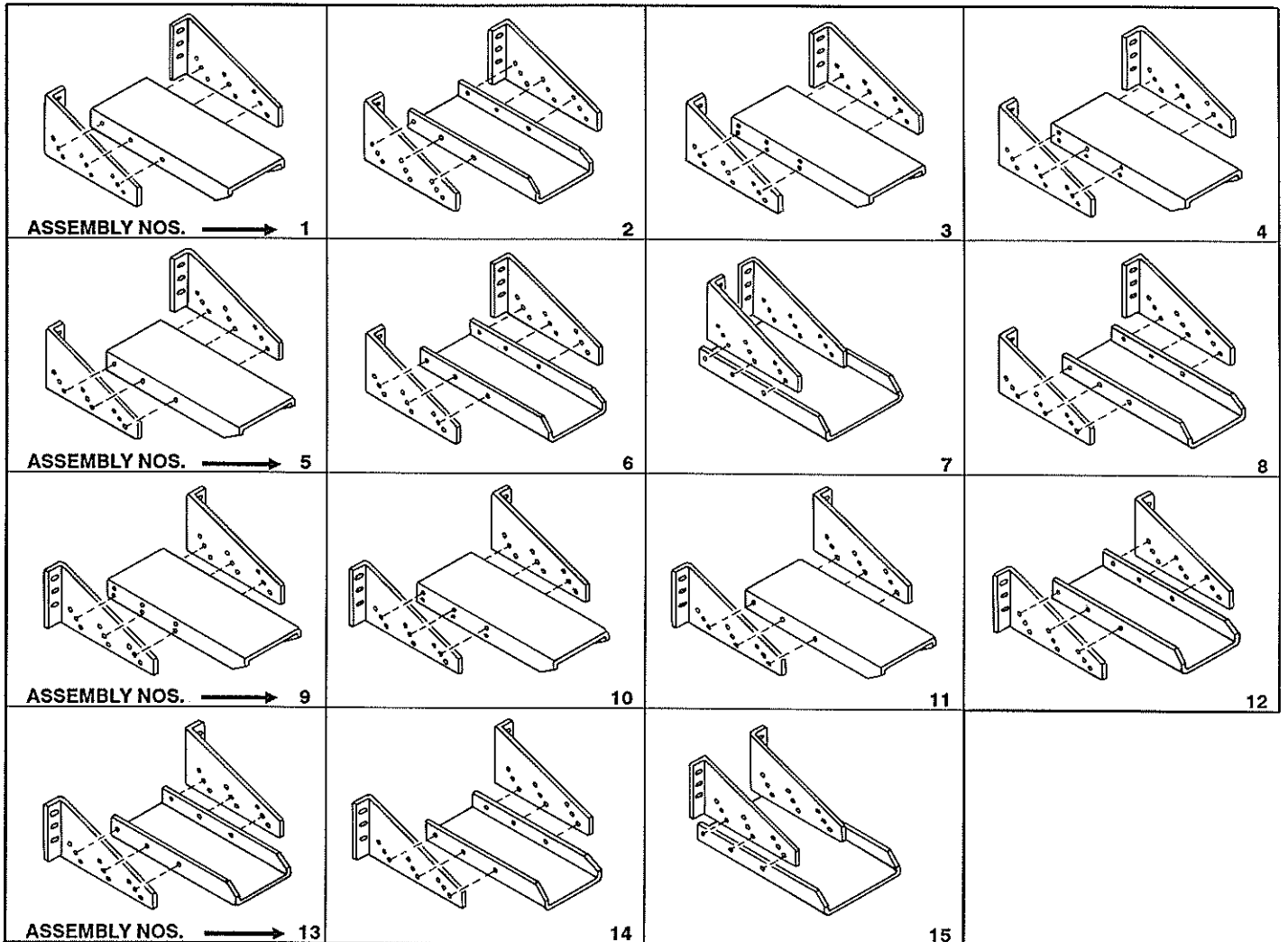
TABLE 3 – FASTENER & WASHER SIZES

Fastener Kit B/M No.	Adapter Bars			Adapter Bar-to-Unit Mounting Hardware			Motor Bracket-to-Adapter Bar Mounting Hardware			
	Qty. Each	Left Hand	Right Hand	Qty. Each	Fastener Size (Grade 5, UNC)	Lockwasher Size (Spring)	Qty. Each	Fastener Size (Grade 5, UNC)	Washer Size (IDxODxThk.)	Lockwasher Size (Spring)
742463	...	...	...	...	...	..	6	.500-13x2.25	.56x1.38x.10	.500
768201	1	1228750	1228751	6	.500-13x2.00	.500	6	.500-13x1.25	.56x1.38x.10	.500
768202	1	1228752	1228753	6	.500-13x2.25	.500	6	.500-13x1.25	.56x1.38x.10	.500
768203	1	1228752	1228753	6	.500-13x2.00	.500	6	.500-13x1.25	.56x1.38x.10	.500
878204	1	1228754	1228755	6	.625-11x2.50	.625	5	.625-11x1.25	.68x1.75x.13	.625
							1*	.625-11x3.50	.68x1.75x.13	.625
768205	1	1228754	1228755	6	.625-11x2.00	.625	5	.625-11x1.25	.68x1.75x.13	.625
							1‡	.625-11x3.25	.68x1.75x.13	.625
768206	1	1228756	1228757	7	.625-11x2.50	.625	6	.625-11x1.25	.68x1.75x.13	.625
768208	1	1228758	1228759	6	.625-11x2.75	.625	6	.625-11x1.25	.68x1.75x.13	.625
768209	1	1228750	1228751	6	.500-13x2.00	.500	6	.500-13x1.75	.56x1.38x.10	.500
768210	1	1228752	1228753	6	.500-13x2.25	.500	6	.500-13x1.75	.56x1.38x.10	.500
768211	1	1228752	1228753	6	.500-13x2.00	.500	6	.500-13x1.75	.56x1.38x.10	.500
768212	1	1228754	1228755	6	.625-11x2.50	.625	5	.625-11x1.75	.68x1.75x.13	.625
							1*	.625-11x4.00	.68x1.75x.13	.625
768213	1	1228754	1228755	6	.625-11x2.00	.625	5	.625-11x1.75	.68x1.75x.13	.625
							1*	.625-11x3.50	.68x1.75x.13	.625
768214	1	1228756	1228767	7	.625-11x2.50	.625	6	.625-11x1.75	.68x1.75x.13	.625
768215	1	1228756	1228757	7	.625-11x2.25	.625	6	.625-11x1.75	.68x1.75x.13	.625
768216	1	1228760	1228761	7	.625-11x2.50	.625	6	.750-10x2.00	.81x2.00x.15	.750

* This fastener is used in the lower mounting hole on the right hand side. It passes through the motor bracket and adapter bar to engage threads in the unit.

‡ This fastener is used in the lower mounting hole on the right hand side. It passes through the motor bracket and adapter bar to engage threads in the unit. Two Flat washers are required on this fastener to insure proper thread engagement.

TABLE 4 – STANDARD BRACKET ASSEMBLIES †



† Specify unit, motor frame size and bracket assembly numbers on all orders.

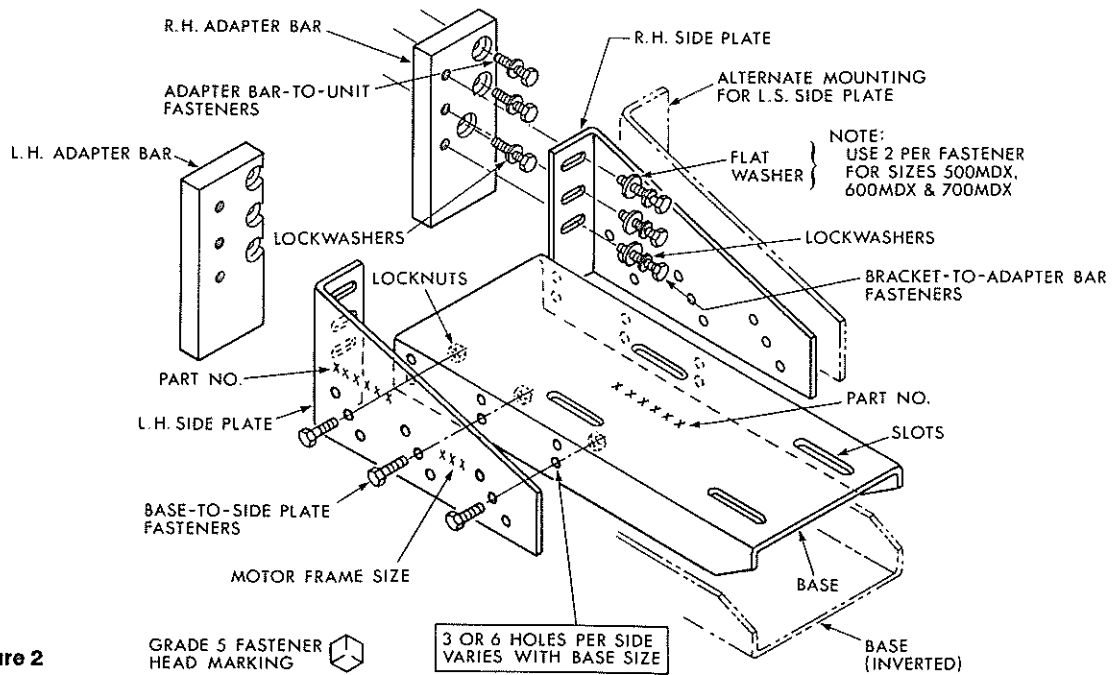


Figure 2

3 COUPLING INSTALLATION

Mount the unit coupling hub on the unit H.S. shaft and the motor coupling hub on the motor shaft as instructed in the manual shipped with the coupling. If coupling is not a Falk product, refer to the manufacturer's literature for installation instruction.

- 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.

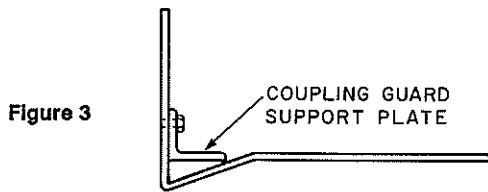


Figure 3

4 COUPLING GUARD INSTALLATION

The following instructions are to be used in conjunction with Service 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 coupling manual. For non-slotted (blank) brackets, position the motor and scribe motor foundation bolt holes as instructed in Step 5. 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. 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. Shim guard if necessary. Follow the steps below to be certain that when motor is mounted with specified coupling gap, a maximum of .38" motor shaft and unit H.S. shaft is exposed.

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".

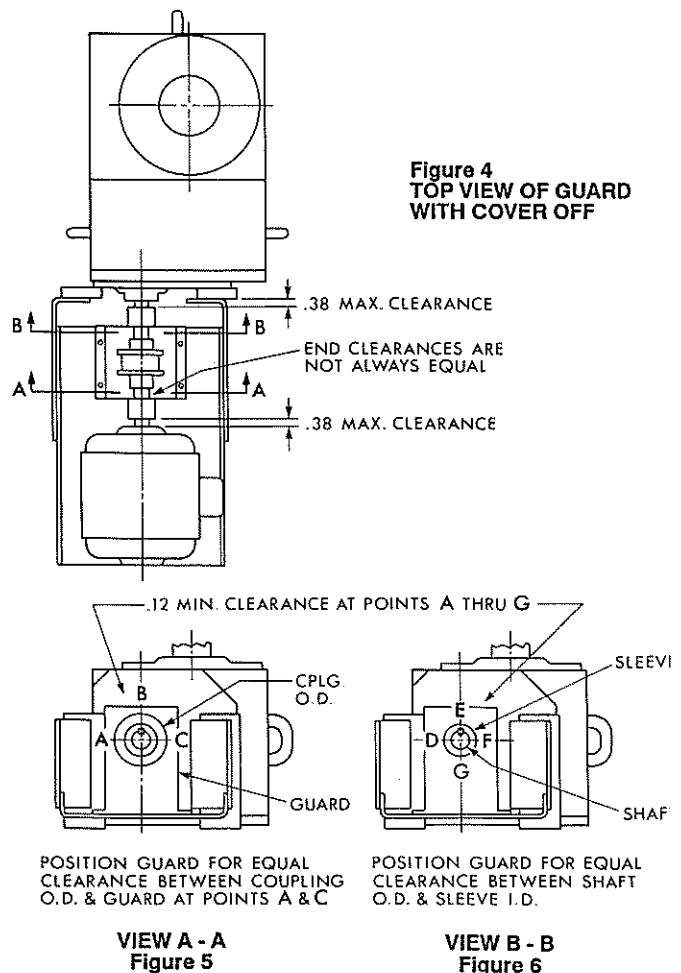


Figure 4
TOP VIEW OF GUARD
WITH COVER OFF

VIEW A - A
Figure 5

VIEW B - B
Figure 6

5 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 unit/motor selections from the Falk bulletin. If the customer considers the movement excessive, jackscrew supports for the bracket extension are available from Falk.

- A. Position motor on motor bracket with proper shaft gap specified in the appropriate coupling manual. 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 the table below. 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.

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

- C. Insert motor foundation fasteners listed in Table 5. 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 5. Recheck coupling alignment and readjust if necessary.
- D. After reducer is in the final working position, check coupling alignment and adjust if necessary.
- E. Complete the coupling assembly per coupling assembly instruction. Install coupling guard halves and fasten guard to base of bracket.

TABLE 5 – MOTOR FOUNDATION FASTENER DIAMETERS

Motor Frame	Fastener Dia Inches	Tightening Torque* lb-in.
140T	.312	85
180T	.375	145
210T	.375	145
250T	.500	360
280T	.500	360
280TS	.500	360
320T	.625	720
320TS	.625	720
360T	.625	720
360TS	.625	720
400T	.750	1290
400TS	.750	1290
440T	.750	1290
440TS	.750	1290

* Tightening torques listed are Grade 2. If higher quality bolts are employed, use comparable higher tightening torques.