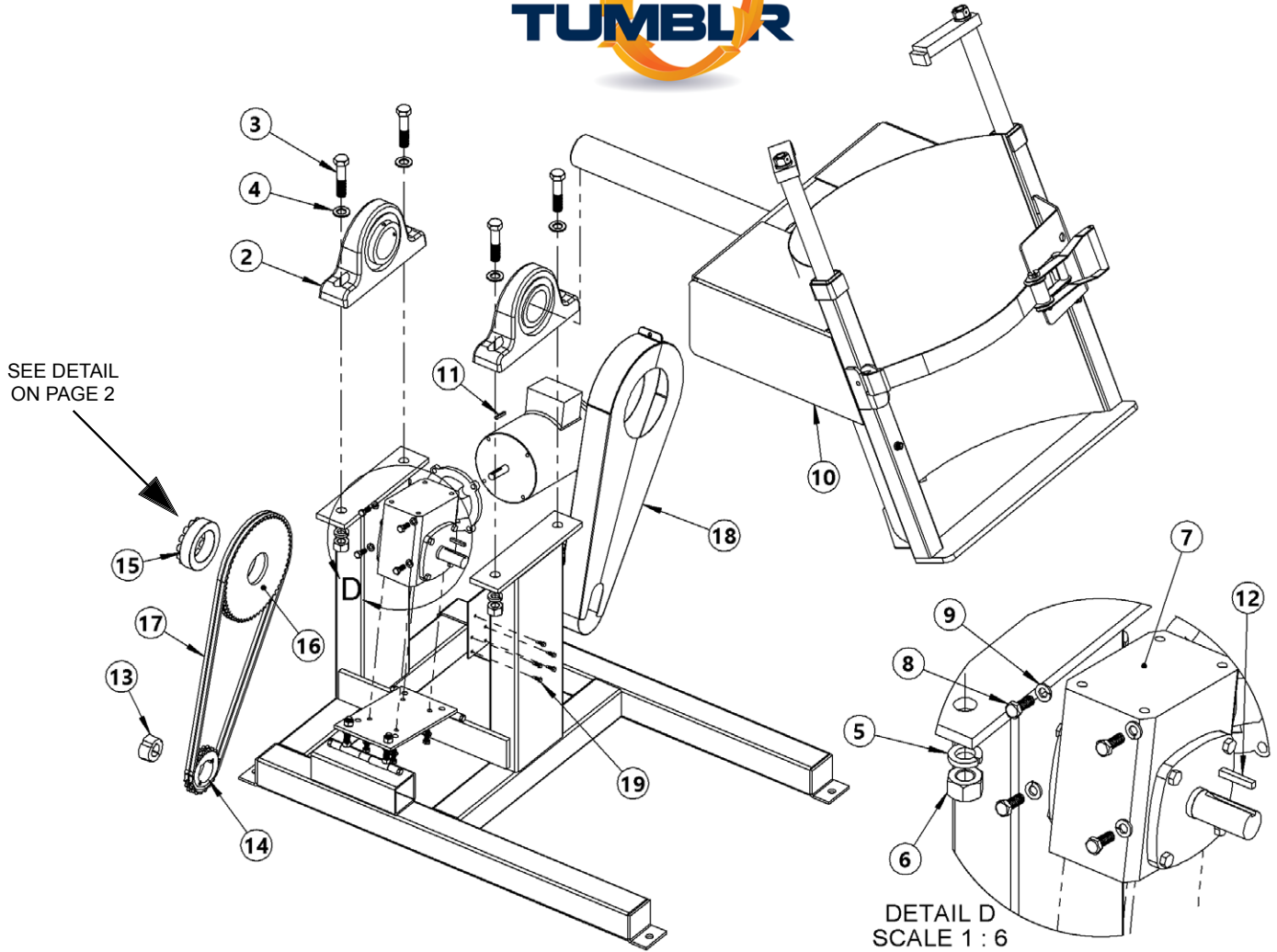


### Parts List and Diagram for Morse 309 Series Serial number 200000 to 277358



ITEM #	MODEL #	QTY.	PART #	DESCRIPTION
2 *		2	2654-P	BEARING, 2-15/16" PILLOW BLOCK
3		4	3318-P	HHCS, 3/4-10 X 3-1/2 GR5
4		4	55-P	WASHER, 3/4 SAE FL 1-1/2 OD
5		4	3319-P	WASHER, 3/4 SPLIT LOCK
6		4	2452-P	NUT, 3/4-10 FIN HEX
7		1	4549-P	SPEED REDUCER, 1-300, 40:1
8		8	1572-P	HHCS, 3/8-16 X 1 GR2
9		8	1474-P	WASHER, 3/8 SPLIT LOCK
10		1	5363-P	SADDLE ASM, 309, 310
11		1	1638-P	KEY, SQUARE, 3/16 X 1-3/8"
12		1	1646-P	KEY, SQUARE, 1/4 X 1-1/2"
13 *		1	4548-P	BUSHING, 1-1/8" TAPER LOCK 309
14 *		1	3127-P	SPROCKET #40D 20T, TAPER 310

ITEM #	MODEL #	QTY.	PART #	DESCRIPTION
15 *		1	3124-P	HUB, 2-15/16" KEYLESS, 309 310
16 *		1	3117-P	SPROCKET #40D 60T, 309, 310
17 *		1	3132-P	CHAIN, ROLLER, #40D 115 PITCH
18		2	5382-P	CHAIN COVER PIECE, 309, 310
19		5	193-P	SCREW, TEK, 12-14 X 3/4 3 PT
20	309-3	1	4733-P	MOTOR, 1HP, 3PH, INV DUTY
20	309-E1	1	290-E1-2P	MOTOR, 1HP, 1PH, 56C, EXP
20	309-E1-50	1	290-E1-50-2P	MOTOR, 1HP, 1PH, 56C, 50HZ EXP
20	309-E3	1	290-E3-2P	MOTOR, 1HP, 3PH, 56C, EXP
20	309-E3-50	1	290-E3-50-2P	MOTOR, 1HP, 3PH, 56C, 50HZ EXP
20	309-E3-575	1	290-E575-2P	MOTOR, 1HP, 3PH, 56C, 575V EXP
20	309-A	1	290-A-2P	MOTOR, 2HP, AIR, 56C

\* Recommended spare parts.

### B400 INSTALLATION AND REMOVAL INSTRUCTIONS FOR B-LOC® KEYLESS BUSHING SERIES B400

**B-LOC®** Keyless Bushings provide a high capacity, zero-backlash shaft/hub or coupling connection by means of a mechanical interference fit. Please follow these **INSTALLATION AND REMOVAL INSTRUCTIONS** carefully to ensure proper performance of this **B-LOC®** unit.

#### ⓘ WARNING ⓘ

When installing or removing **B-LOC®** products, always adhere to the following safety standards:

1. Be sure that the system is de-energized using proper lockout/tagout procedures.
2. Wear proper personal protective equipment.

#### INSTALLATION

(Refer to Figure 1)

**B-LOC®** Keyless Bushings are supplied lightly oiled and ready for installation. The frictional torque capacity of these devices is based on a coefficient of friction of 0.12 for lightly oiled screw, taper, shaft and bore contact areas.

Therefore, it is important **not** to use Molybdenum Disulfide (e.g., Molykote, Never-Seeze or similar lubricants) in any Keyless Bushing installation.

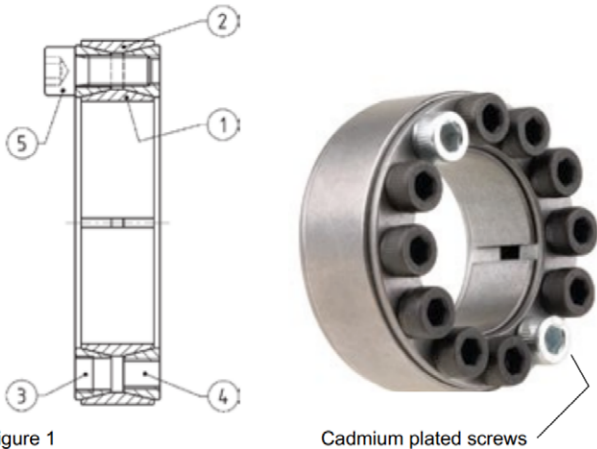


Figure 1

1. Make sure that locking screw, taper, shaft and bore contact areas are clean and lightly oiled with a light machine oil.
2. Insert Keyless Bushing into hub counterbore prior to shaft installation.
3. After confirming correct hub position, hand-tighten three (3) or four (4) equally spaced locking screws until initial contact with shaft and hub bore is established.
4. Use torque wrench and set it approximately 5% higher than specified tightening torque ( $M_a$ ). Tighten locking screws in either a clockwise or counterclockwise sequence (it is not necessary to tighten in a diametrically opposite pattern), using only 1/4 (i.e., 90°) turns for several passes until 1/4 turns can no longer be achieved.
5. Continue to apply overtorque for 1 to 2 more passes. This is required to compensate for a system-related relaxation of locking screws since tightening of a given screw will always relax adjacent screws. Without overtorquing, an infinite number of passes would be needed to reach specified tightening torque.
6. Reset torque wrench to specified torque ( $M_a$ ) and check all locking screws. No screw should turn at this point, otherwise repeat Steps 5 and 6.

- NOTE:**
1. It is not necessary to re-check tightening torque after equipment has been in operation.
  2. In applications subject to extreme corrosion, the slits in all collars can be sealed with a suitable caulking compound or equivalent.

#### INSTALLATION OF B-LOC® KEYLESS BUSHING OVER SHAFT KEYWAYS

The Keyless Bushing should be positioned so that slits in Keyless Bushing collars that contact the shaft are located approximately opposite the keyway. In addition, a locking screw should be centered directly over the keyway.

When tightening locking screws, it is important to follow the installation procedure outlined above, which specifies equal 1/4 turns of each locking screw. Failure to follow these instructions could result in excessive tightening of the screw over the keyway, possibly causing permanent deformation of the Keyless Bushing collars.

#### REMOVAL

(Refer to Figure 2)

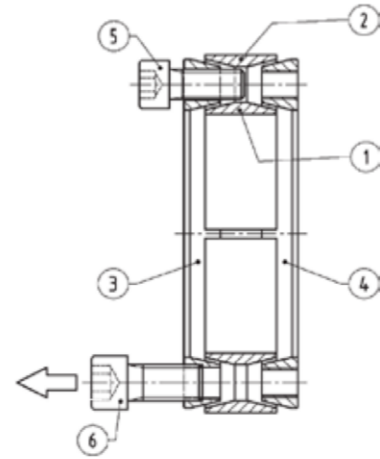


Figure 2

**Prior to initiating the following removal procedure, check to ensure that no torque or thrust loads are acting on the Keyless Bushing, shaft or any mounted components.**

1. Loosen locking screws in several stages by using approx. 1/4 turns, following either a clockwise or counterclockwise sequence.
- NOTE:** **B-LOC®** Series B400 Keyless Bushings feature self-releasing tapers, meaning collars should release during Step 1. However, if for some reason the thrust collars jam, a light tap on three (3) equally spaced heads of loosened locking screws will positively release the connection.
2. Hub and Keyless Bushing are normally removed together. Removal of Keyless Bushing only from deep counterbores is accomplished by inserting pull-off screws (not provided) into threads located under plated locking screws. These threads are NOT to be used for high pulling forces, as thrust collar is only partially threaded.

#### LOCKING SCREW SIZES AND SPECIFIED TIGHTENING TORQUE $M_a$ B400 KEYLESS BUSHINGS

Metric Series	Inch Series	Tightening Torque $M_a$ (ft lb)	Screw Size	Hex Key Size (mm)	Pull-off Thread dB
20 x 47 to 40 x 65	3/4 to 1-1/2	11	M6	5	M8
42 x 75 to 65 x 95	1-5/8 to 2-9/16	26	M8	6	M10
70 x 110 to 95 x 135	2-5/8 to 3-3/4	51	M10	8	M12
100 x 145 to 160 x 210	3-7/8 to 6	91	M12	10	M14
170 x 225 to 200 x 260	6-7/16 to 8	138	M14	12	M16
220 x 285 to 260 x 325		214	M16	14	M20
280 x 355 to 300 x 375		293	M18	14	M22
320 x 405 to 340 x 425		420	M20	17	M24
360 x 455 to 420 x 515		565	M22	17	M27
440 x 545 to 1000 x 1110		725	M24	19	M30

dB = pull-off thread, located only under cadmium plated screws of front thrust collar