

## Installation Instructions

The Sure-Grip tapered, QD-type interchangeable bushing offers flexible and easy installation while providing exceptional holding power. To ensure that the bushing performs as specified, it must be installed properly.

Before beginning, make sure the correct size and quantity of parts are available for the installation. The bushing has been manufactured to accept a setscrew over the key and its use is optional. It is packaged with the hardware on sizes SH to M and loosely installed in the bushing on sizes N to S.

### To Install:

#### IMPORTANT:

#### DO NOT USE LUBRICANTS IN THIS INSTALLATION!

1. Inspect the tapered bore of the sheave and the tapered surface of the bushing. Any paint, dirt, oil, or grease **MUST** be removed.
2. Select the type of mounting (See Fig. 1 or 2) that best suits your application.

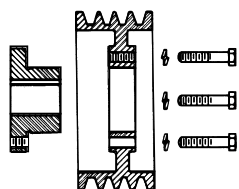


Fig. 1

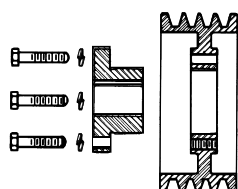
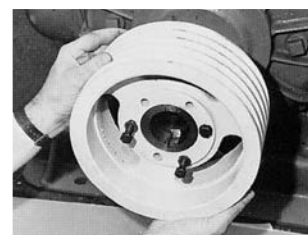
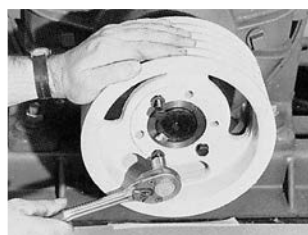


Fig. 2

3. **STANDARD MOUNTING:** Install shaft key. (Note: If key was furnished with bushing, you must use that key.) Install bushing on clean shaft, flange end first. If bushing will not freely slide on the shaft, insert a screwdriver or similar object into the flange sawcut to act as a wedge to open the bushing's bore. **Caution: Excessive wedging will split the bushing.** If using the setscrew, tighten it just enough to prevent the bushing from sliding on the shaft. **Caution: Do not over-tighten setscrew!** Slide sheave into position on bushing aligning the drilled holes in the sheave with the tapped holes in the bushing flange. (Note: Install M thru S bushings so that the two tapped holes in the sheave are located as far away as possible from the bushing's sawcut.) Loosely thread the cap screws with lockwashers into the assembly. **DO NOT USE LUBRICANT ON THE CAP SCREWS!**
4. **REVERSE MOUNTING:** With large end of the taper out, slide sheave onto shaft as far as possible. Install shaft key. (See shaft key note in #3 above.) Install bushing onto shaft so tapered end will mate with sheave. (See wedging note in #3 above.) If using the setscrew, tighten it enough to prevent the bushing from sliding on the shaft. **Caution: Do not over-tighten setscrew!** Pull the sheave up on the bushing, aligning the drilled holes in the bushing flange with the tapped holes in the sheave. Loosely thread the cap screws with lockwashers into the assembly. **DO NOT USE LUBRICANT ON THE CAP SCREWS!**
5. Using a torque wrench, tighten all cap screws evenly and progressively in rotation to the torque value in Table. There must be a gap between the bushing flange and sheave hub when installation is complete. **DO NOT OVER-TORQUE! DO NOT ATTEMPT TO CLOSE GAP BETWEEN BUSHING FLANGE AND SHEAVE HUB!**

### To Remove:

1. Relieve drive tension by shortening the center distance between driver and driven sheaves.
2. Lift off belts.
3. Loosen and remove cap screws. If the bushings have keyway setscrews, loosen them.
4. As shown below, insert cap screws (three in JA through J bushings, two in QT and M thru W bushings and four in S bushing) in tapped removal holes and progressively tighten each one until mating part is loose on bushing. (Exception: If mating part is installed with cap screw heads next to motor, with insufficient room to insert screws in tapped holes, loosen cap screws and use wedge between bushing flange and mating part.)
5. Remove mating part from bushing and, if necessary, bushing from shaft.



### SURE-GRIP BUSHINGS SCREW TIGHTENING INFORMATION

Tapered Bushing	Size & Thread of Cap Screw	Ft.-Lbs. To Apply With Torque Wrench
QT	1/4 x 20	9
JA	No. 10 - 24	5
SH-SDS-SD	1/4 - 20	9
SK	5/16 - 18	15
SF	3/8 - 16	30
E	1/2 - 13	60
F	9/16 - 12	110
J	5/8 - 11	135
JS	5/8 - 11	100
M	3/4 - 10	225
MS	3/4 - 10	150
N	7/8 - 9	300
NS	7/8 - 9	200
P	1 - 8	450
PS	1 - 8	300
W	1-1/8 - 7	600
WS	1-1/8 - 7	400
S	1-1/4 - 7	750
SS	1-1/4 - 7	500

**CAUTION:** The tightening force on the screws is multiplied many times by the wedging action of the tapered surface. If extreme tightening force is applied, or if a lubricant is used, bursting pressures will be created in the hub of the mating part.

# Metric Sure-Grip® Bushings



## Installation Instructions

The Sure-Grip tapered, QD-type interchangeable bushing offers flexible and easy installation while providing exceptional holding power. To ensure that the bushing performs as specified, it must be installed properly.

Before beginning, make sure the correct size and quantity of parts are available for the installation. The bushing has been manufactured to accept a setscrew over the key and its use is optional. It is packaged with the hardware on sizes QT to J.

### To Install:

#### IMPORTANT:

#### DO NOT USE LUBRICANTS IN THIS INSTALLATION!

1. Inspect the tapered bore of the sheave and the tapered surface of the bushing. Any paint, dirt, oil, or grease **MUST** be removed.
2. Select the type of mounting (See Fig. 1 or 2) that best suits your application.

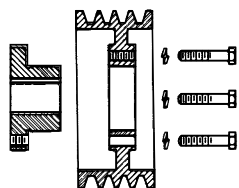


Fig. 1

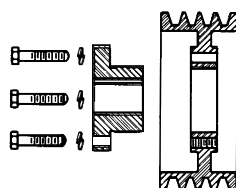


Fig. 2

3. **STANDARD MOUNTING:** Install shaft key. (Note: If key was furnished with bushing, you must use that key.) Install bushing on clean shaft, flange end first. If bushing will not freely slide on the shaft, insert a screwdriver or similar object into the flange sawcut to act as a wedge to open the bushing's bore. **Caution: Excessive wedging will split the bushing.** If using the setscrew, tighten it just enough to prevent the bushing from sliding on the shaft. **Caution: Do not over-tighten setscrew!** Slide sheave into position on bushing aligning the drilled holes in the sheave with the tapped holes in the bushing flange. Loosely thread the cap screws with lockwashers into the assembly. **DO NOT USE LUBRICANT ON THE CAP SCREWS!**
4. **REVERSE MOUNTING:** With large end of the taper out, slide sheave onto shaft as far as possible. Install shaft key. (See shaft key note in #3 above.) Install bushing onto shaft so tapered end will mate with sheave. (See wedging note in #3 above.) If using the setscrew, tighten it enough to prevent the bushing from sliding on the shaft. **Caution: Do not over-tighten setscrew!** Pull the sheave up on the bushing, aligning the drilled holes in the bushing flange with the tapped holes in the sheave. Loosely thread the cap screws with lockwashers into the assembly. **DO NOT USE LUBRICANT ON THE CAP SCREWS!**
5. Using a torque wrench, tighten all cap screws evenly and progressively in rotation to the torque value in Table. There must be a gap between the bushing flange and sheave hub when installation is complete. **DO NOT OVER-TORQUE! DO NOT ATTEMPT TO CLOSE GAP BETWEEN BUSHING FLANGE AND SHEAVE HUB!**

### To Remove:

1. Relieve drive tension by shortening the center distance between driver and driven sheaves.
2. Lift off belts.
3. Loosen and remove cap screws. If the bushings have keyway setscrews, loosen them.
4. As shown below, insert cap screws (three in JA through J bushings, two in QT bushings) in tapped removal holes and progressively tighten each one until mating part is loose on bushing. (Exception: If mating part is installed with cap screw heads next to motor, with insufficient room to insert screws in tapped holes, loosen cap screws and use wedge between bushing flange and mating part.)
5. Remove mating part from bushing and, if necessary, bushing from shaft.



### SCREW TIGHTENING INFORMATION

Tapered Bushing	Size & Thread of Cap Screw	Newton-Meters (Ft.-Lbs.) To Apply With Torque Wrench
QT	M6 x 1.0	12 (9)
JA	M5 x 0.8	7 (5)
SH-SDS-SD	M6 x 1.0	12 (9)
SK	M8 x 1.25	20 (15)
SF	M10 x 1.5	41 (30)
E	M12 x 1.75	81 (60)
F	M16 x 2.0	149 (110)
J	M16 x 2.0	183 (135)

**CAUTION:** The tightening force on the screws is multiplied many times by the wedging action of the tapered surface. If extreme tightening force is applied, or if a lubricant is used, bursting pressures will be created in the hub of the mating part.