Wood's Metric Sure-Grip® QD Bushings

(with metric hardware)

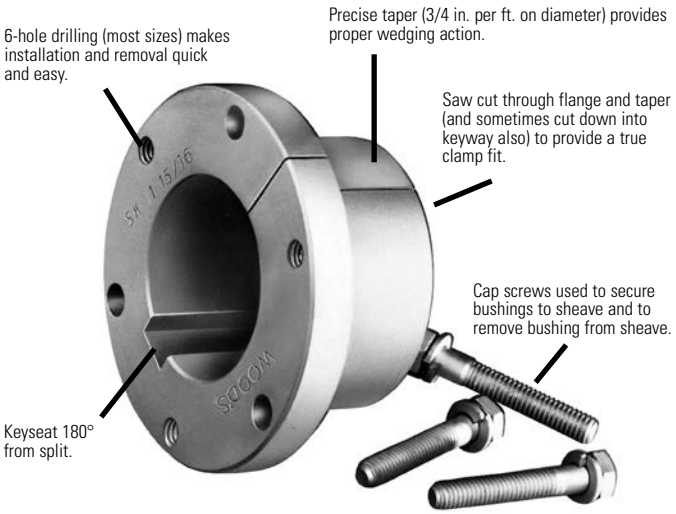
A2

- **Provide a True Clamp Fit**
- **Are Easy to Install and Remove**
- **Permit Four-Way Mounting**

Metric Sure-Grip® Bushings

Features

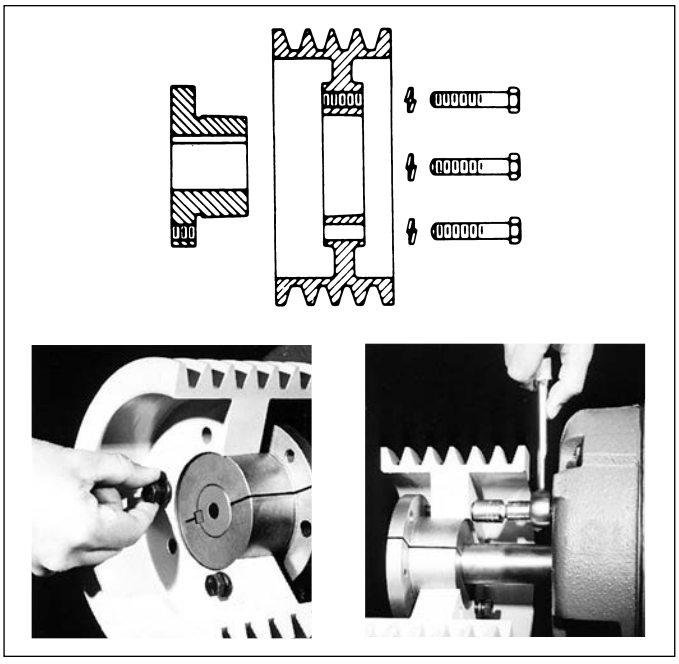
Sure-Grip® "Quick Detachable" bushings are easy to install and remove. They are split through flange and taper to provide a true clamp on the shaft that is the equivalent of a shrink fit. All sizes except JA and QT have a setscrew over the key to help maintain the bushing's position on the shaft until the cap screws are securely tightened. Sure-Grip bushings have a very gradual taper (3/4-inch taper per ft. on the diameter) which is about half the inclined angle of many other bushings. The result is the Sure-Grip securely clamps the shaft, with twice the force of those competitive bushings, to provide extreme holding power.



Versatile Sure-Grip bushings permit the mounting of the same mating part on shafts of different diameters, and the mounting of different sheaves on the same shaft using the same bushing. Their interchangeability extends through sheaves, pulleys, timing pulleys, sprockets, flexible and rigid couplings, made-to-order items by Wood's, and to product lines of several other mechanical power transmission manufacturers.

Sure-Grip bushings are manufactured with the drilled and tapped holes located at a precise distance from the keyseat; thus, a wide mating part having a bushing in each end can be mounted on a common shaft with the two keyways in line. This feature not only facilitates installation but also permits both bushings to carry an equal share of the load.

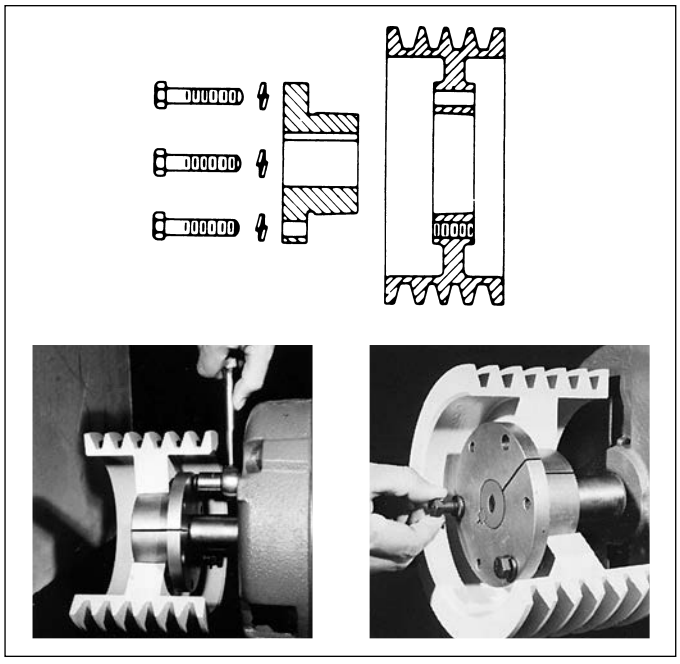
STANDARD MOUNTING



1. Cap screws from outside through drilled holes in the mating part and into threaded holes in the bushing flange located on the inside of the assembly. Or the complete assembly reversed on the shaft and;

2. Cap screws from inside through drilled holes in the mating part and into threaded holes in the bushing flange located on the outside of the assembly.

REVERSE MOUNTING



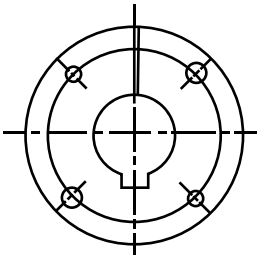
3. Cap screws from inside through drilled holes in the bushing flange located on the inside of the assembly and into threaded holes in the mating part.

4. Cap screws from outside through drilled holes in the bushing flange-located on the outside of the assembly and into threaded holes in the mating part.

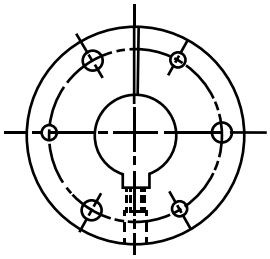
Dimensions

Sure-Grip bushings are designed to transmit the rated torque capacity listed in the table below when the cap screws are tightened as indicated. The bushings are stocked in all popular bore sizes, including metric bores, within the bore range for a particular bushing.

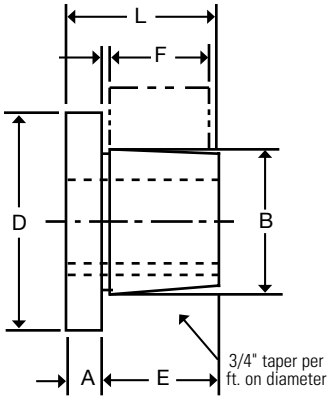
NOTE: Mating hub must have metric drilling.



Bushing
QTM



Bushings
JAM to FM inclusive w/
Setscrew
Except JAM



SURE-GRIP BUSHING
TORQUE RATINGS AND DIMENSIONS

Metric Bushing	Torque Capacity (NM)	Max. Bore (Note 1)	DIMENSIONS IN MILLIMETERS						Cap Screw Bolt Circle	Screws Required
			A	B	D	E	F*	L		
QTM	198	30	6.4	41.3	63.5	25.4	22.2	31.8	50.8	2 - M6
JAM	198	23	7.9	34.9	50.8	17.5	14.3	25.4	42.1	3 - M5
SHM	395	36	9.5	47.5	68.3	22.2	20.6	31.8	57.2	3 - M6
SDSM	565	42	11.1	55.6	81.0	22.2	19.1	33.3	68.3	3 - M6
SDM	565	42	11.1	55.6	81.0	34.9	31.8	46.0	68.3	3 - M6
SKM	791	56	12.7	71.4	98.4	34.9	31.8	47.6	84.1	3 - M8
SFM	1243	63	12.7	79.4	117.5	38.1	31.8	50.8	98.4	3 - M10
EM	2260	78	19.1	97.4	152.4	47.6	41.3	66.7	127.0	3 - M12
FM	4519	90	20.6	112.7	168.3	71.4	63.5	92.1	142.9	3 - M16

* Mating hub length.
1. MAX MM BORE WITH STANDARD KEYSEAT.

See pages A2–4 for Bore and Keyseat information and weights.

Metric Sure-Grip® Bushings

Bore And Keyseat Dimensions

Product No.	Bore (mm)	Key	Wt.
QTM BUSHINGS			
QTMMPB	10	NONE	0.6
QTM10MM	10	4 x 4	0.6
QTM11MM	11	4 x 4	0.6
QTM14MM	14	5 x 5	0.6
QTM15MM	15	5 x 5	0.6
QTM16MM	16	5 x 5	0.6
QTM19MM	19	6 x 6	0.6
QTM20MM	20	6 x 6	0.6
QTM24MM	24	8 x 7	0.6
QTM25MM	25	8 x 7	0.6
QTM28MM	28	8 x 7	0.6
QTM30MM	30	8 x 7	0.6
QTM32MM	32	10 x 6†	0.6
QTM38MM	38	10 x 6†	0.6
JAM BUSHINGS			
JAMMPB	10	NONE	0.8
JAM10MM	10	4 x 4	0.8
JAM11MM	11	4 x 4	0.8
JAM14MM	14	5 x 5	0.8
JAM15MM	15	5 x 5	0.8
JAM19MM	19	6 x 6	0.8
JAM20MM	20	6 x 6	0.8
JAM24MM	24	8 x 6†	0.8
JAM25MM	25	8 x 6†	0.8
JAM28MM	28	8 x 5†	0.8
SHM BUSHINGS			
SHMMPB	10	NONE	1.1
SHM10MM	10	4 x 4	1.1
SHM11MM	11	4 x 4	1.1
SHM14MM	14	5 x 5	1.1
SHM15MM	15	5 x 5	1.1
SHM19MM	19	6 x 6	1.0
SHM20MM	20	6 x 6	1.0
SHM24MM	24	8 x 7	1.0
SHM25MM	25	8 x 7	1.0
SHM28MM	28	8 x 7	0.9
SHM30MM	30	8 x 7	0.8
SHM32MM	32	10 x 8	0.8
SHM35MM	35	10 x 8	0.7
SHM38MM	38	10 x 7†	0.7
SHM40MM	40	12 x 6†	0.6

† SHALLOW KEY FURNISHED

Product No.	Bore (mm)	Key	Wt.
SDSM BUSHINGS			
SDSMMPB	10	NONE	1.7
SDSM15MM	15	5 x 5	1.6
SDSM19MM	19	6 x 6	1.6
SDSM20MM	20	6 x 6	1.6
SDSM24MM	24	8 x 7	1.5
SDSM25MM	25	8 x 7	1.5
SDSM28MM	28	8 x 7	1.4
SDSM30MM	30	8 x 7	1.4
SDSM32MM	32	10 x 8	1.4
SDSM35MM	35	10 x 8	1.2
SDSM38MM	38	10 x 8	1.1
SDSM40MM	40	12 x 8	1.0
SDSM42MM	42	12 x 8	1.0
SDSM48MM	48	14 x 7†	0.9
SDM BUSHINGS			
SDMMPB	15	NONE	2.0
SDM15MM	15	5 x 5	2.0
SDM19MM	19	6 x 6	1.9
SDM20MM	20	6 x 6	1.9
SDM24MM	24	8 x 7	1.9
SDM25MM	25	8 x 7	1.9
SDM28MM	28	8 x 7	1.7
SDM30MM	30	8 x 7	1.7
SDM35MM	35	10 x 8	1.5
SDM38MM	38	10 x 8	1.4
SDM40MM	40	12 x 8	1.3
SDM42MM	42	12 x 8	1.2
SDM48MM	48	14 x 7†	1.0
SKM BUSHINGS			
SKMMPB	15	NONE	3.6
SKM19MM	19	6 x 6	3.5
SKM20MM	20	6 x 6	3.5
SKM24MM	24	8 x 7	3.4
SKM28MM	28	8 x 7	3.2
SKM30MM	30	8 x 7	3.2
SKM32MM	32	10 x 8	3.2
SKM35MM	35	10 x 8	1.5
SKM38MM	38	10 x 8	2.9
SKM40MM	40	12 x 8	2.8
SKM42MM	42	12 x 8	2.7
SKM48MM	48	14 x 9	2.4
SKM50MM	50	14 x 9	2.3
SKM55MM	55	16 x 10	2.0
SKM60MM	60	18 x 8†	1.7

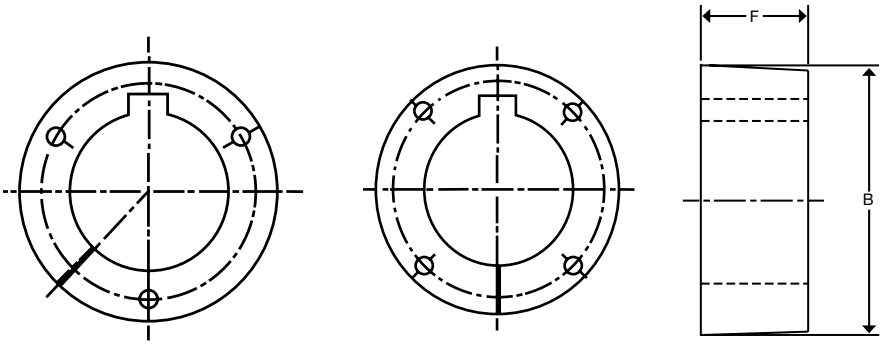
Product No.	Bore (mm)	Key	Wt.
SFM BUSHINGS			
SFMMPB	15	NONE	5.1
SFM20MM	20	6 x 6	5.0
SFM24MM	24	8 x 7	4.8
SFM28MM	28	8 x 7	4.7
SFM30MM	30	8 x 7	4.6
SFM35MM	35	10 x 8	4.4
SFM38MM	38	10 x 8	4.2
SFM40MM	40	12 x 8	4.2
SFM42MM	42	12 x 8	4.1
SFM48MM	48	14 x 9	3.7
SFM50MM	50	14 x 9	3.5
SFM55MM	55	16 x 10	3.2
SFM60MM	60	18 x 11	3.0
EM BUSHINGS			
EMMPB	20	NONE	10.8
EM28MM	28	8 x 7	10.6
EM30MM	30	8 x 7	10.5
EM38MM	38	10 x 8	10.0
EM40MM	40	12 x 8	9.9
EM42MM	42	12 x 8	9.8
EM48MM	48	14 x 9	9.3
EM50MM	50	14 x 9	9.2
EM55MM	55	16 x 10	8.6
EM60MM	60	18 x 11	8.1
EM70MM	70	20 x 12	7.1
FM BUSHINGS			
FMMPB	20	NONE	18.0
FM30MM	30	8 x 7	17.6
FM38MM	38	10 x 8	16.9
FM40MM	40	12 x 8	16.8
FM42MM	42	12 x 8	16.7
FM48MM	48	14 x 9	18.0
FM50MM	50	14 x 9	15.7
FM55MM	55	16 x 10	15.0
FM60MM	60	18 x 11	14.3
FM70MM	70	20 x 12	12.9

Metric Sure-Grip® L Series Flangeless Bushings

Dimensions

Metric Bushing	Torque Capacity (NM)	Material Type	Max. Bore (Note 1)	DIMENSIONS IN MILLIMETERS		Cap screw Bolt Circle	Screws Required
				B	F		
SKLM	791	D.I.	50	71.4	28.6	60.3	3 - M6
SFLM	1243	D.I.	60	79.4	28.6	69.9	4 - M6
ELM	2260	D.I.	73	97.4	38.1	85.7	4 - M8
FLM	5084	D.I.	80	112.7	60.3	95.3	4 - M10

1. MAX BORE WITH KEYSEAT.



BUSHING SKL

BUSHINGS SFL TO FL

TAPER .75 IN 12 ON DIA.

Patent No. 5304101

Product Number	Bore	Key	Weight Lbs.
SKLMMPB	15	None	1.7
SFLMMPB	15	None	2.1
ELMMPB	20	None	4.1
FLMMPB	20	None	8.7

To Install:

IMPORTANT: DO NOT USE LUBRICANTS IN THIS INSTALLATION

1. Inspect shafts, bushing, and mating hub. Remove all nicks, paint, dirt, grease, etc. from mating surfaces.
2. Place key in shaft's keyseat.
3. Slide bushing onto shaft and key. **Small End of Taper Must Be Outboard.**
4. Slide tapered mating hub over bushing. Align (1) the shaft key with one of the slots in the mating hub and (2) the drilled holes in mating hub with the threaded holes in the bushing.
5. Put lockwashers on cap screws and insert one cap screw thru each drilled hole in the mating hub and into the threaded hole in the bushing.
6. **Use a Torque Wrench.** Tighten all cap screws evenly and progressively in rotation. Torque around all the cap screws as often as necessary until the listed torque value remains on each cap screw.

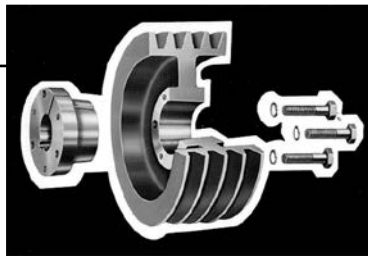
To Remove:

1. Loosen and remove all cap screws from assembly.
2. Install one cap screw in each threaded hole in the mating hub.
3. Evenly torque each cap screw in rotation to force the mating hub off the bushing.

Metric Bushing	Screws Required	Newton-Meters (Ft.Lbs.) To Apply With Torque Wrench
SKLM	3 - M6	20 (15)
SFLM	4 - M6	20 (15)
ELM	4 - M8	41 (30)
FLM	4 - M10	75 (55)

CAUTION
The use of lubricants or excessive wrench torques may cause hub stresses high enough to break the mating hub!

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.

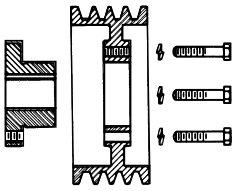


Fig. 1

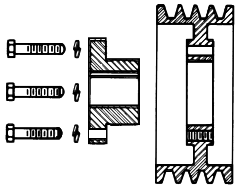


Fig. 2

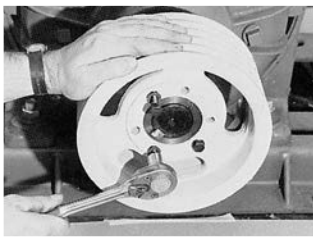
3. **STANDARD MOUNTING:** Install shaft key. (Note: If key was furnished with bushing, you must use that key.) Install bushing on clean shaft, flange end first. If bushing will not freely slide on the shaft, insert a screwdriver or similar object into the flange sawcut to act as a wedge to open the bushing's 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.