



# *Martin* BUSHINGS

QD Bushings

Taper Bushings

Weld-On Hubs

Bolt-On Hubs/Adapters



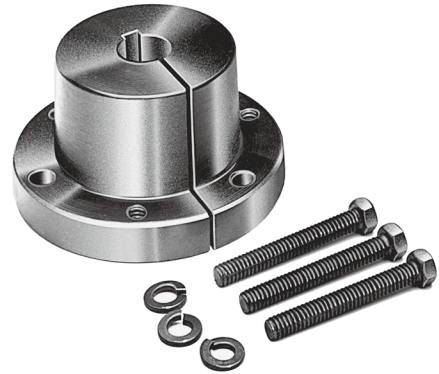




**SECTION B**

**INTERCHANGEABLE  
BUSHINGS**

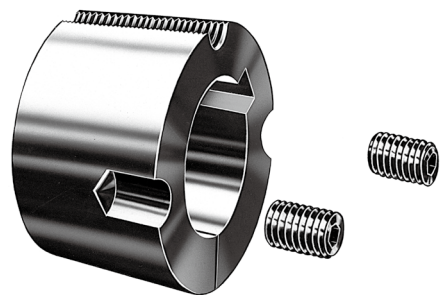
*Martin*  
Sprocket & Gear, Inc.  
**CATALOG 2001-I**



**QD BUSHINGS**



**QD ADAPTERS**



**TAPER BUSHINGS**



**TAPER BUSHED ADAPTERS**

# Warning & Safety Reminder



## WARNING & SAFETY REMINDER

Safety must be considered a basic factor in machinery operation at all times. Most accidents are the result of carelessness or negligence. All rotating power transmission products are potentially dangerous and must be guarded by the contractor, installer, purchaser, owner, and user as required by applicable laws, regulations, standards, and good safety practice. Additional specific information must be obtained from other sources including the latest editions of American Society of Mechanical Engineers; Standard A.N.S.I. B15.1. A copy of this standard may be obtained from the American Society of Mechanical Engineers at 345 East 47th Street, New York, NY 10017 (212-705-7722).

It is the responsibility of the contractor, installer, purchaser, owner, and user to install, maintain, and operate the parts or components manufactured and supplied by *Martin* Sprocket & Gear, Inc., in such a manner as to comply with the Williams-Steiger Occupational Safety Act and with all state and local laws, ordinances, regulations, and the American National Standard Institute Safety Code.

## CAUTION

Guards, access doors, and covers must be securely fastened before operating any equipment.

If parts are to be inspected, cleaned, observed, or general maintenance performed, **the motor driving the part or components is to be locked out electrically in such a manner that it cannot be started by anyone**, however remote from the area. Failure to follow these instructions may result in personal injury or property damage.

## WARNING

### NOTE: CATALOGUE DIMENSIONS

Every effort is made to keep all catalogue dimensions and styles current in the catalogue, however from time to time, it is necessary because of manufacturing changes to alter stock products dimensionally.

If any stock product dimension or style shown in this catalogue is critical to your application please consult factory for certification.

## **INTERCHANGEABLE BUSHINGS**

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# Interchangeable Bushings



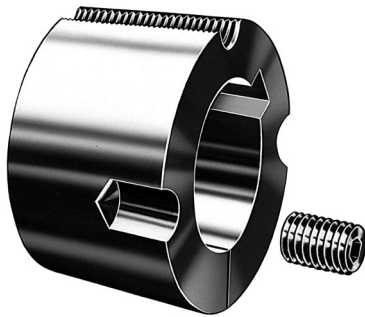
*Martin*'S QD BUSHING LINE NOT ONLY INCLUDES  
A COMPLETE RANGE OF SEMI-STEEL  
FROM JA-S BUT ALSO STEEL IN  
SIZES SF-N



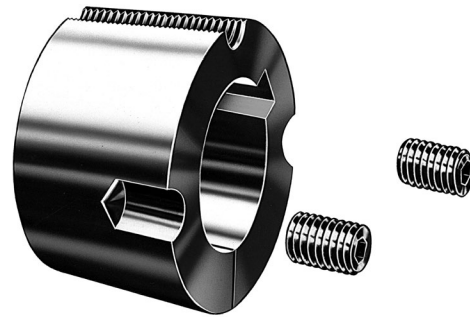
## WELD-ON ADAPTORS



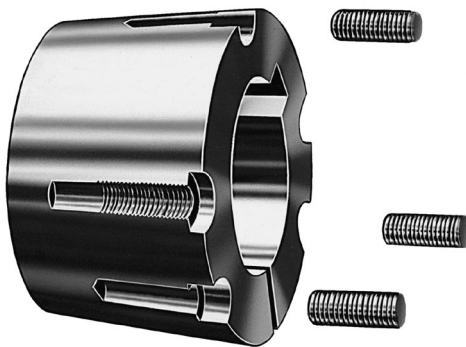
*Martin* HAS THE MOST COMPLETE LINE OF TAPER BUSHINGS IN THE INDUSTRY, INCLUDING SEMI-STEEL, STEEL, AND STAINLESS STEEL



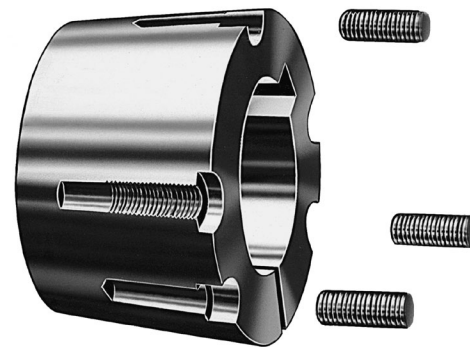
TAPER BUSHING  
(Inch-Bore)



TAPER BUSHING  
(mm-Bore)



TAPER BUSHING  
(Steel)\*



TAPER BUSHING  
(Stainless Steel)\*



WELD-ON HUB  
TAPER BUSHED  
TYPEWH



WELD-ON HUB  
TAPER BUSHED  
TYPE WM

# Stock "QD" Bushings

The *Martin* "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 H have a set screw over the key to help maintain the bushings position on the shaft until the cap screws are securely tightened.

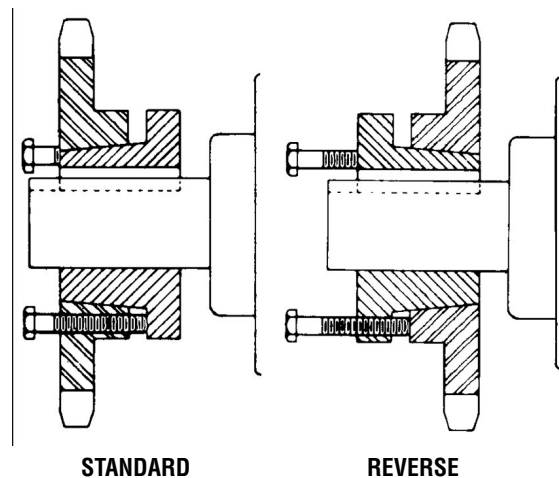
## Installation

1. Be sure the tapered cone surfaces of the bushing and the inside of sprocket are clean. ★
2. Place bushing in sprocket, sheave, pulley, or other *Martin* QD parts. On **M** through **S** bushings, the mating part and bushing **MUST** be assembled so the two threaded holes in the mating part are located as far as possible from the sawcut in the bushing.
3. Place cap screws and lock washers loosely in pull-up holes. Bushing remains fully expanded to assure sliding fit on shaft.
4. With key on shaft, slide sprocket to desired position on shaft. Be Sure heads of capscrews are on outside.
5. Align sprocket. Tighten screws alternately and progressively until they are pulled up tight. To increase leverage, use wrench or length of pipe (see wrench torque chart on page B-5). Do not allow sprocket to be drawn in contact with flange of bushing; there should be a gap of 3.2 to 6.4 mm.

**CAUTION:** When mounting screws, apply pressure by hand only. If extreme tightening forces are applied, bursting pressures will be created in the sprocket hub. There should be a gap of 3.2 to 6.4mm between the face of the sprocket hub and the flange of the QD bushing. **This gap must not be closed.** If the gap is closed under normal tightening, the shaft is seriously undersized.

## Removal

1. Loosen and remove cap screws.
2. Insert cap screws in tapped removal holes.
3. Tighten inserted screws until sprocket is loose on shaft.
4. Remove sprocket from shaft.



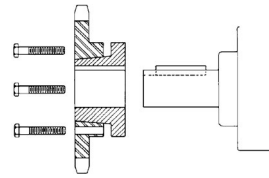
★ **WARNING:** USE OF ANTI-SEIZE LUBRICANT ON TAPERED CONE SURFACES MAY RESULT IN DAMAGE TO SHEAVES AND SPROCKETS.



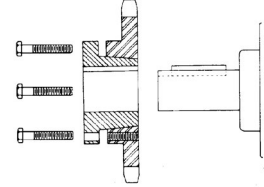
## REVERSE Mounting Assembly for QD Sheaves and Sprockets using JA, SH, SD, SDS, SK, SF, E, F, & J Bushings

These bushings, as well as the sprockets and sheaves for them, are each drilled with six holes (three drilled and three tapped) to allow pull-up bolts to be inserted from either side. This enables variations of mounting characteristics to suit a particular installation.

STANDARD MOUNTING

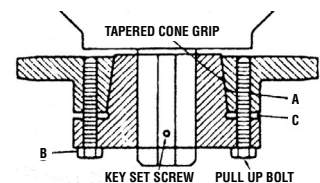
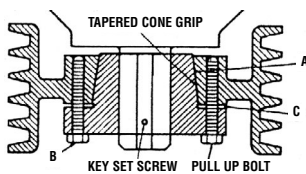


REVERSE MOUNTING



### MOUNTING

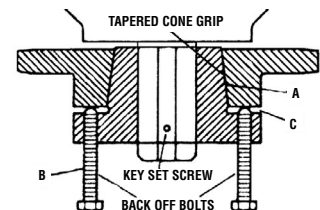
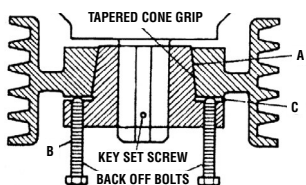
1. Assemble sheave or sprocket with bolts inserted (But not tightened) through DRILLED holes in bushing flange into TAPPED holes in sheave or sprocket.
2. With key in shaft keyseat, slide assembly into approximate position on shaft with flange end of bushing away from bearing.
3. Position QD bushing on shaft by tightening set screw over key "hand tight" with standard Allen wrench only. Do not use excessive force.



4. Tighten pull-up bolts alternately and evenly to indicated in torque table below. Do not use extensions on wrench handles. There should be a gap between the face of the sheave or sprocket hub and the flange of the QD Bushing to insure a satisfactory cone grip and press fit. CAUTION: THIS GAP MUST NOT BE CLOSED.

### DISMOUNTING

1. Remove pull-up bolts and screw them into TAPPED holes in bushing flange and against hub of sheave or sprocket to break cone grip.
2. Loosen set screw in bushing flange and slide QD bushing from shaft.



### Bushing Installation Torque

When a wrench or length of pipe is used to increase leverage in tightening bushing screws, it is imperative to adhere to the wrench torque values given in the chart below.

This adherence is important — because, in mounting the bushing, the tightening force of the screw is multiplied many times by the wedging action of the tapered surface. This action compresses the bushing for a snug fit on the shaft. The bushing screws should always be tightened alternately and progressively.

### Wrench Torque Values For Tightening Bushings

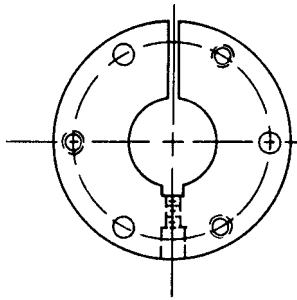
QD Bushing Size	Size of Cap Screw (Inch)	Force to apply with torque wrench (Nm)	Proper Wrench Pull With Open End or Socket Wrench	
			Wrench Length (mm)	Wrench Pull (kg)
JA	10-24	6.8	101.6	6.8
SH, SDS, SD	1/4-20	12.2	101.6	12.3
SK	5/16-18	20.3	152.4	13.6
SF	3/8-16	40.7	152.4	27.2
E	1/2-13	81.3	304.8	27.2
F	9/16-12	101.7	304.8	34.0
J	5/8-11	183.0	304.8	61.3
M	3/4-10	305.0	381.0	81.7
N	7/8-9	406.7	381.0	108.9
P	1-8	610.1	457.2	136.1
W	1-1/8-7	813.5	609.6	136.1
S	1-1/4-7	1016.8	762.0	136.1

### CAUTION

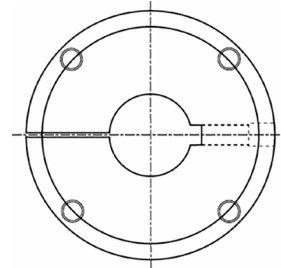
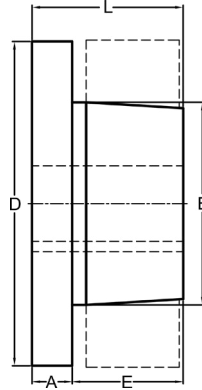
- A. Be sure cone surfaces are free of paint, grease and dirt.
  - B. Tighten pull-up bolts alternately and evenly per bolt torque table.
  - C. Never close gap between sheave or sprocket and QD Bushing.
- WARNING:** use of Anti-seize lubricant on tapered cone surfaces when mounting sheaves voids all mfg. warranties.

See A, B, C on drawings.

# All Steel "QD" Bushings



Bushings  
"JA" to "J" Inclusive



Bushings  
"M" to "S" Inclusive

## QD Bushings — Steel

Bushing	Dimensions (inches)						Screws Required	Stock Bore Range			Average Weight Approx. (Kg)
	A	B	D	E	L	Cap Bolt Circle		Minimum	Maximum		
									Standard Keyway	Shallow Keyway	
SF-STL	9/16	3.125	4 5/8	1.438	2	3 7/8	(3) 3/8 x 2	1/2	2 5/16	2 13/16	3.0
E-STL	3/4	3.843	6	1 7/8	2 5/8	5	(3) 1/2 x 2 3/4	7/8	2 7/8	3 1/2	10.0
F-STL	14/16	4.437	6 5/8	2 3/4	3 5/8	5 5/8	(3) 9/16 x 3 5/8	1	3 5/16	4	11.5
J-STL	1	5.148	7 6/25	3 1/2	4 1/2	6 1/4	(3) 5/8 x 4 1/2	1 7/16	3 3/4	4 1/2	18.0
M-STL	1 1/4	6.500	9	5 1/2	6 3/4	7 7/8	(4) 3/4 x 6 3/4	2	4 3/4	5 1/2	37.0
N-STL	1 1/2	7.000	10	6 5/8	8 1/8	8 1/2	(4) 7/8 x 8 1/2	2 1/2	5 1/8	5 7/8	57.0

Bushing	Bores	Keyway
SF-STL	2 3/8 - 2 9/16	5/8 x 3/16
	2 5/8 - 2 3/4	5/8 x 1/16
	2 13/16 - 2 7/8	3/4 x 1/16
E-STL	2 15/16	3/4 x 1/32
	7/8 - 2 7/8	STD.
	2 15/16 - 3 1/4	3/4 x 1/8
F-STL	3 5/16 - 3 1/2	7/8 x 1/16
	1 - 3 5/16	STD.
	3 3/8 - 3 3/4	7/8 x 3/16
J-STL	3 7/8 - 3 15/16	1 x 1/8
	4	NONE
	3 7/16 - 3 3/4	STD.
M-STL	3 13/16 - 4 1/2	1 x 1/8
	2 - 4 3/4	STD.
	4 13/16 - 5 1/2	1 1/4 x 1/4
N-STL	5 9/16 - 5 7/8	1 1/2 x 1/4
	2 1/2 - 5 1/8	STD.
	5 3/16 - 5 1/2	1 1/4 x 1/4
	5 9/16 - 5 7/8	1 1/2 x 1/4

Imperial Shallow Key Dimension - Standard			
Key Seat	Key	Keyway	Key
1/4 x 1/32	1/4 x 5/32	3/4 x 1/8	3/4 x 1/2
1/4 x 1/16	1/4 x 3/16	7/8 x 1/16	7/8 x 1/2
3/8 x 1/32	3/8 x 7/32	7/8 x 3/16	7/8 x 5/8
3/8 x 1/16	3/8 x 1/4	1 x 1/8	1 x 5/8
3/8 x 1/8	3/8 x 5/16	1 1/4 x 1/4	1 1/4 x 7/8
1/2 x 1/32	1/2 x 9/32	1 1/2 x 1/8	1 1/2 x 7/8
1/2 x 1/16	1/2 x 5/16	1 1/2 x 1/4	1 1/2 x 1
1/2 x 1/8	1/2 x 3/8	1 3/4 x 1/8	1 3/4 x 3/4
5/8 x 1/16	5/8 x 3/8	1 3/4 x 1/4	1 3/4 x 7/8
3/4 x 1/16	3/4 x 7/16	2 x 1/4	2 x 1

Imperial Shallow Key Dimension - Steel			
Key Seat	Key	Keyway	Key
1/4 x 1/32	1/4 x 5/32	3/4 x 1/16	3/4 x 7/16
1/4 x 1/16	1/4 x 3/16	3/4 x 1/8	3/4 x 1/2
3/8 x 1/32	3/8 x 7/32	7/8 x 1/16	7/8 x 1/2
3/8 x 1/16	3/8 x 1/4	7/8 x 3/16	7/8 x 5/8
3/8 x 1/8	3/8 x 5/16	1 x 1/8	1 x 5/8
1/2 x 1/32	1/2 x 3/32	1 1/4 x 1/4	1 1/4 x 7/8
1/2 x 1/16	1/2 x 5/16	1 1/2 x 1/4	1 1/2 x 1
1/2 x 1/8	1/2 x 3/8	1 3/4 x 1/8	1 3/4 x 3/4
5/8 x 1/16	5/8 x 3/8	1 3/4 x 3/8	1 3/4 x 1
5/8 x 3/16	5/8 x 1/2	2 x 1/4	2 x 1

Standard Imperial Keyway and Key Dimension		
Bores	Keyway	Key
7/8	3/16 x 3/32	3/16 x 3/16
15/16 - 1 1/4	1/4 x 1/8	1/4 x 1/4
1 5/16 - 1 3/8	5/16 x 5/32	5/16 x 5/16
1 7/16 - 1 3/4	3/8 x 3/16	3/8 x 3/8
1 3/16 - 2 1/4	1/2 x 1/4	1/2 x 1/2
2 5/16 - 2 3/4	5/8 x 5/16	5/8 x 5/8
2 13/16 - 3 1/4	3/4 x 3/8	3/4 x 3/4
3 5/16 - 3 3/4	7/8 x 7/16	7/8 x 7/8
3 13/16 - 4 1/2	1 x 1/2	1 x 1
4 9/16 - 5 1/2	1 1/4 x 5/8	1 1/4 x 1 1/4
5 9/16 - 6 1/2	1 1/2 x 3/4	1 1/2 x 1 1/2
6 9/16 - 7 1/2	1 3/4 x 3/4	1 3/4 x 1 1/2
7 9/16 - 9	2 x 3/4	2 1/2 x 1 1/2
9 1/16 - 11	2 1/2 x 7/8	—
11 1/16 - 13	3 x 1	—

QD bushings made of stainless steel are available as made to order.

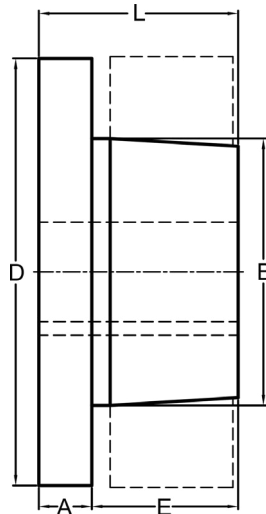
Bushing	Plain Bores Not Split
SH-STL	1/2
SD-STL	1/2
SK-STL	1/2
SF-STL	1 15/16
E-STL	7/8 - 1 15/16
F-STL	1 - 2 7/16 - 2 15/16
J-STL	1 7/16 - 2 15/16
M-STL	2 - 2 15/16
N-STL	2 7/16 - 4 15/16

Bushing	Dimensions (Inch)						Cap Screws Required	Stock Bore Range (mm)			Set Screw Size (In)	Average Weight Approx. (Kg)
	A	B	D	E	L	Bolt Circle		Minimum	Maximum			
									Standard Keyway	Shallow Keyway		
H	6.35	41.3	63.5	25.4	31.8	50.8	2-1/4 x 3/4	12.7	31.8	38.1	1/4	0.32
JA	8.0	34.9	50.8	17.4	25.4	42.16	3-10 x 1	9.5	25.4	31.8	10-24	0.41
SH	11.1	47.5	68.0	22.6	31.8	57.2	3-1/4 x 1 3/8	12.7	34.9	42.9	1/4	0.45
SDS	11.1	55.6	80.7	22.3	33.4	68.3	3-1/4 x 1 3/8	12.7	42.9	50.8	1/4	0.45
SD	11.1	55.6	80.7	35.0	46.1	68.3	3-1/4 x 1 7/8	12.7	42.9	49.2	1/4	0.68
SK	14.3	71.4	98.2	33.3	47.6	84.1	3-5/16 x 2	12.7	54.0	63.5	5/16	0.91
SF	14.3	79.4	117.2	36.5	50.8	98.4	3-3/8 x 2	12.7	58.7	71.4	5/16	1.36
E	19.1	97.4	152.0	47.6	66.7	127.0	3-1/2 x 2 3/4	22.2	73.0	88.9	3/8	4.54
F	22.23	112.7	168.0	69.85	92.1	142.9	3-9/16 x 3 5/8	25.4	84.1	100.0	1/2	5.22
J	25.4	130.8	183.0	88.9	114.3	158.8	3-5/8 x 4 1/2	31.75	95.3	114.3	5/8	8.17
M	31.8	165.1	228.4	139.7	171.5	200.0	4-3/4 x 6 3/4	50.81	120.7	139.7	3/4	16.79
N	38.1	177.8	253.8	168.3	206.4	215.9	4-7/8 x 8 1/2	61.9	130.2	152.4	3/4	25.86
P	44.5	209.6	298.2	193.7	238.1	254.0	4-1 x 9 1/2	74.6	150.8	177.8	7/8	54.45
W	50.8	265.1	380.8	238.1	288.9	323.9	4-1 1/8 x 11 1/2	101.6	190.5	215.9	1	113.43
S	82.6	308.0	450.9	317.5	400.1	381.0	5-1 1/4 x 15 1/2	152.4	206.8	254.0	1	181.49

## Inch Bore

Bushing	Bores	Keyway
JA	3/8 - 7/16	NO K.W.
	1/2 - 1	STD.
	1 1/16 - 1 1/8	1/4 - 1/16
	1 3/16	1/4 - 1/16
SH	1 1/4	NO K.W.
	1/2 - 1 3/8	STD.
	1 7/16 - 1 1/2	3/8 x 1/16
	1 9/16 - 1 5/8	3/8 x 1/16
SDS	1 11/16	NO K.W.
	1/2 - 1 11/16	STD.
	1 3/4	3/8 x 1/8
	1 13/16	1/2 x 1/8
SD	1 7/8 - 1 15/16	1/2 x 1/16
	2	NO K.W.
	1/2 - 1 11/16	STD.
	1 3/4	3/8 x 1/8
SK	1 13/16	1/2 x 1/8
	1 7/8	1/2 x 1/16
	1 15/16	1/2 x 1/16
	2	NO K.W.
SF	1/2 - 2 1/8	STD.
	2 3/16 - 2 1/4	1/2 x 1/8
	2 5/16 - 2 1/2	5/8 x 1/16
	2 9/16 - 2 5/8	NO K.W.
E	1/2 - 2 1/4	STD.
	2 5/16 - 2 1/2	5/8 x 3/16
	2 9/16 - 2 3/4	5/8 x 1/16
	2 13/16 - 2 7/8	3/4 x 1/16
F	2 15/16	3/4 x 1/32
	7/8 - 2 7/8	STD.
	2 15/16 - 3 1/4	3/4 x 1/8
	3 3/8 - 3 1/2	7/8 x 1/16
J	1 - 3 5/16	STD.
	3 3/8 - 3 3/4	7/8 x 3/16
	3 7/8 - 3 15/16	1 x 1/8
	4	NONE
M	1 1/4 - 3 3/4	STD.
	3 13/16 - 4 1/2	1 x 1/8
N	2 - 4 3/4	STD.
	4 13/16 - 5 1/2	1 1/4 x 1/4
	2 7/16 - 5	STD.
	5 1/8 - 5 1/2	1 1/4 x 1/4
P	5 9/16 - 6	1 1/2 x 1/4
	2 15/16 - 5 15/16	STD.
	6 - 6 1/2	1 1/2 x 1/4
	6 9/16 - 7	1 3/4 x 1/8
W	4 - 7 1/2	STD.
	7 9/16 - 8 1/2	2 x 1/4

Keystock provide for nonstandard keyways.



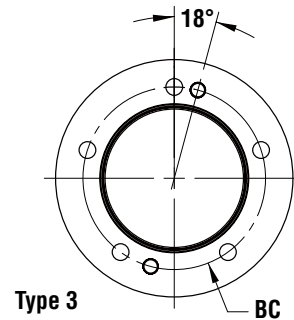
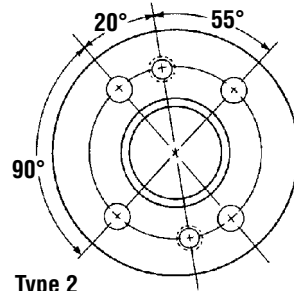
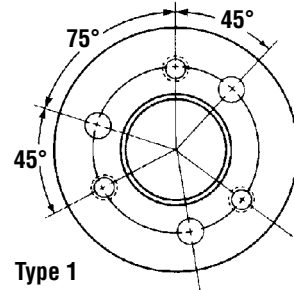
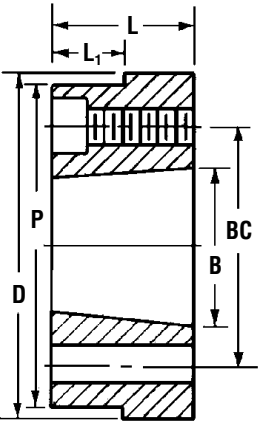
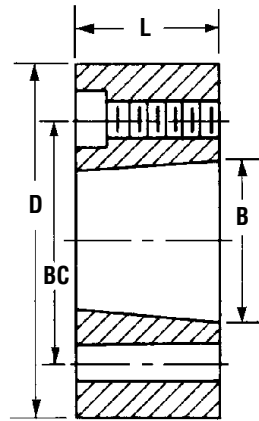
★ **Important** — The metric system does not refer to keyseat or keyway dimensions as does the English system; instead dimensions are given for the key itself which is rectangular in shape, not square as in the English system.

**NOTE:**  
 .03937"=1mm  
 EX-24mm=0.94488"  
**TO ORDER**  
 SH 24mm

## Millimeter Bore

Bushing	Bores MM	Keyway* WXT
SH	24.25	8x7
	28.30	10x8
	32.35	10x8
SDS	24.25	8x7
	28.30	10x8
	32.35	10x8
	38	12x8
SD	40.42	12x8
	24.25	8x7
	28.30	10x8
	32.35	10x8
SK	38	10x8
	40.42	12x8
	48.50	14x9
	55	16x10
SF	28.30	8x7
	32.35	10x8
	38	10x8
	40.42	12x8
	48.50	14x9
	55	16x10
E	60	18x11
	35.38	10x8
	40.42	12x8
	48.50	14x9
F	55	16x10
	60.65	18x11
	70.75	20x12
	48.50	14x9
	55	16x10
	60.65	18x11
J	70.75	20x12
	80.85	22x14
	90	25x14
	50	14x9
	55	16x10
	60.65	18x11
P	70.75	20x12
	80.85	22x14
	90.95	25x14
	100	28x16

# "QD" Weld-On Hubs



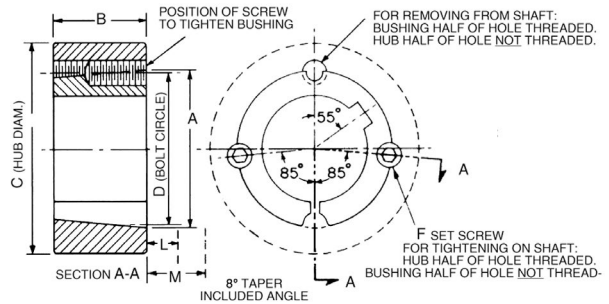
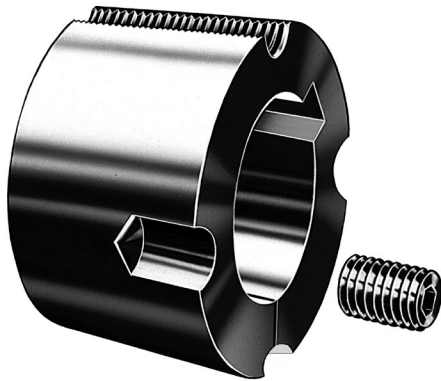
Martin QD weld-on hubs are suitable for use in many applications, such as welding to plate steel sprockets.

Weld-on hubs are made of steel, drill tapped and taper bored for QD bushings.

## QD Type 1 and Type 2 Weld-On Hubs

Catalogue Number	Dimensions - (MM)						Type Drilling	Approx. Weight Kg	Mounting
	D *	L	B	P	L <sub>1</sub>	BC			
JA-A	57.2	14.3	34.9	-	-	42.1	1	.18	STD or Reverse Mount ↓
SH-A	76.2	20.6	47.5	-	-	57.2	1	.45	
SDS-A	88.9	19.1	55.6	-	-	68.3	1	.57	
SK-A	111.1	31.8	71.5	-	-	84.1	1	1.36	
SF-A	127.0	31.8	79.4	-	-	98.4	1	1.81	
E-A	158.8	41.3	97.3	-	-	127.0	1	4.08	
F-A	177.8	63.5	112.7	-	-	142.9	1	7.26	
J-A	196.9	81.0	130.6	-	-	158.8	1	10.21	
M-A	241.3	131.8	164.9	235.0	90.5	200.0	2	22.69	
N-A	266.7	158.8	177.5	260.4	114.3	215.9	2	34.03	
P-A	330.2	184.2	209.3	-	-	254.0	2	70.33	STD Mount Only
W-A	393.7	228.6	265.1	-	-	323.9	2	136.12	
S-A	495.3	304.8	308.0	476.3	190.5	381.0	3	253.18	

★ Tolerance of D Dimension  
 JA-A Thru J-A = (+.000-.050)  
 M-A Thru S-A = (+.000-.076)



## Dimensions

Bushing Number	A	B	C Ø			D	F(t) (in)	L*		M**	
			Class 20 Gray Iron	Class 30 Gray Iron	Steel			Standard Hex. Key	Standard Short Key‡	Hex. Key	Short Key
1008	35.2	22.3	60.3	55.6	49.2	33.7	1/4 x 1/2	28.6	15.9	31.8	44.5
1108	38.4	22.3	63.5	58.7	52.4	36.9	1/4 x 1/2	28.6	15.9	31.8	44.5
1210	47.6	25.4	92.1	82.6	73.0	44.4	3/8 x 5/8	34.9	20.6	41.3	27.0
1215	47.6	38.1	79.4	73.0	66.7	44.4	3/8 x 5/8	34.9	20.6	41.3	27.0
1310	50.8	25.4	95.3	85.7	76.2	47.6	3/8 x 5/8	34.9	20.6	41.3	27.0
1610	57.2	25.4	101.6	101.6	82.6	54.0	3/8 x 5/8	34.9	20.6	41.3	27.0
1615	57.2	38.1	88.9	82.6	76.2	54.0	3/8 x 5/8	34.9	20.6	41.3	27.0
2012	69.9	31.8	120.7	116.8	98.4	66.7	7/16 x 7/8	39.7	23.8	50.8	34.9
2517	85.7	44.5	139.7	123.8	111.1	82.6	1/2 x 1	41.3	25.4	57.2	41.3
2525	85.7	63.5	120.7	114.3	108.0	82.6	1/2 x 1	41.3	25.4	57.2	41.3
3020	108.0	50.8	177.8	158.8	142.9	101.6	5/8 x 1 1/4	46.0	30.2	68.3	52.4
3030	108.0	76.2	158.8	146.1	136.5	101.6	5/8 x 1 1/4	46.0	30.2	68.3	52.4

**Bushings cannot be bored larger than largest bore listed.  
For detail dimensions required for machining hubs, consult factory.**

Ø For general reference. Severe conditions may require larger hub. Heavy well-located web may permit smaller hub. Hub diameter required depends on the particular application. Consult *Martin* giving full information on the proposed design. Hub diameters shown are based on 1400, 2110 and 3500 Kg/Cm<sup>2</sup>. Minimum ultimate tensile strength respectively for Class 20 gray iron, Class 30 gray iron and steel hubs.

† 2 screws required. Use in positions shown for tightening bushing on shaft. In removing bushing from shaft, remove screws and use one of them in the other hole. Bushing price includes screws. Screws are BSW threads.

★ Space required to tighten bushing. Also space required to loosen screws to permit removal of hub by puller.

★★ Space required to loosen bushing using one screw as jackscrew — no puller required.

‡ Standard hex key cut to minimum usable length.

# Taper Bushings Dimensions



## Metric Bores and Keyways

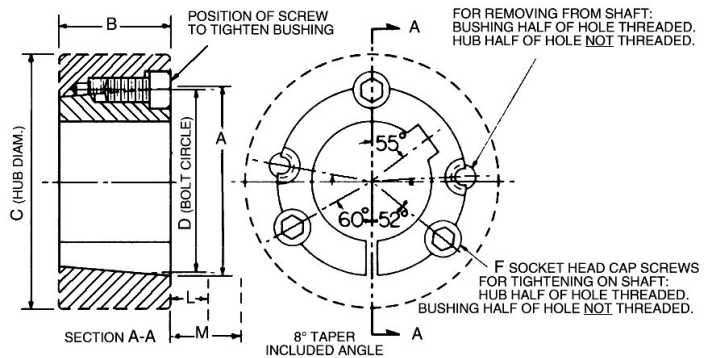
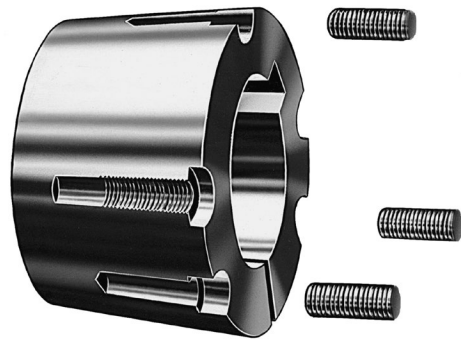
Bore Dia. (mm)	Keyway		Shallow Keyway Depth	Bore Sizes Available								
	Width (mm)	Depth (mm)		1008	1108	1210	1610	1615	2012	2517	3020	3030
9	3	1.4	—	•	•							
10	3	1.4	—	•	•							
11	4	1.8	—	•	•	•						
12	4	1.8	—	•	•	•						
14	5	2.3	—	•	•	•	•	•	•			
15	5	2.3	—	•	•	•	•	•	•			
16	5	2.3	—	•	•	•	•	•	•	•		
18	6	2.8	—	•	•	•	•	•	•	•		
19	6	2.8	—	•	•	•	•	•	•	•		
20	6	2.8	—	•	•	•	•	•	•	•		
22	6	2.8	—	•	•	•	•	•	•	•		
24	8	3.3	1.3	•	•	•	•	•	•	•		
25	8	3.3	1.3	•*	•	•	•	•	•	•	•	
28	8	3.3	1.3		•*	•	•	•	•	•	•	
30	8	3.3	—			•	•	•	•	•	•	
32	10	3.3	—			•	•	•	•	•	•	
35	10	3.3	—				•	•	•	•	•	•
38	10	3.3	—				•	•	•	•	•	•
40	12	3.3	—				•	•	•	•	•	•
42	12	3.3	2.2				•	•*	•	•	•	•
45	14	3.8	—						•	•	•	•
48	14	3.8	—						•	•	•	•
50	14	3.8	—						•	•	•	•
55	16	4.3	—						•	•	•	•
60	18	4.4	—						•	•	•	•
65	18	4.4	—								•	•
70	20	4.9	—								•	•
75	20	4.9	—								•	•

\*Items marked with\*\* have a shallow keyway.

## Inch Bore and Keyways

Bore Dia. (In.)	Keyway		Shallow Keyway Depth	Bore Sizes Available								
	Width (In.)	Depth (In.)		1008	1108	1210	1610	1615	2012	2517	3020	3030
0.375	0.125	0.06	-	•	•							
0.500	0.125	0.06	-	•	•		•	•				
0.625	0.187	0.09	-	•	•	•	•	•				
0.750	0.187	0.09	-	•	•	•	•	•	•	•		
0.875	0.250	0.12	-	•	•	•	•	•	•	•		
1.000	0.250	0.12	0.052	•*	•	•	•	•	•	•		
1.125	0.312	0.11	0.064		•*	•	•	•	•	•		
1.250	0.312	0.11	-			•	•	•	•	•	•	•
1.375	0.375	0.11	-				•	•	•	•	•	•
1.500	0.375	0.11	-				•	•	•	•	•	•
1.625	0.437	0.13	0.103				•	•*	•	•	•	•
1.750	0.437	0.13	-						•	•	•	•
1.875	0.500	0.13	-						•	•	•	•
2.000	0.500	0.13	-						•	•	•	•
2.125	0.625	0.18	-							•	•	•
2.250	0.625	0.18	-							•	•	•
2.375	0.625	0.18	-							•	•	•
2.500	0.625	0.18	-							•	•	•
2.625	0.750	0.21	-							•	•	•
2.750	0.750	0.21	-							•	•	•
2.875	0.750	0.21	-								•	•
3.000	0.750	0.21	-								•	•

\*Items marked with\*\* have a shallow keyway.



## No.3525 to 4040 Bushings

Bushing Number	Bore	Approx. Wgt. (Kg)	Bushing Keyseat	Shaft Keyseat	A	B	C Ø			D	F† (in)	G	R
							Class 20 Gray Iron	Class 30 Gray Iron	Steel				
3525	30 to 38	4.5	10 × 3.3	10 × 5.0	127	63.5	197	178	165	123	1/2 × 1 1/2	39°	▲
	38 to 44	4.2	12 × 3.3	12 × 5.0									
	44 to 50	4.2	14 × 3.8	14 × 5.5									
	50 to 58	4.1	16 × 4.3	16 × 6.0									
	58 to 65	3.6	18 × 4.4	18 × 7.0									
	65 to 75	3.2	20 × 4.9	20 × 7.5									
	75 to 85	2.7	22 × 5.4	22 × 9.0									
	85 to 95	2.2	25 × 5.4	25 × 9.0									
95 to 110	2.1	28 × 4.5	28 × 10.0										
3535	30 to 38	6.4	10 × 3.3	10 × 5.0	127	89	197	178	165	123	1/2 × 1 1/2	39°	▲
	38 to 44	6.2	12 × 3.3	12 × 5.0									
	44 to 50	5.9	14 × 3.8	14 × 5.5									
	50 to 58	5.4	16 × 4.3	16 × 6.0									
	58 to 65	5.0	18 × 4.4	18 × 7.0									
	65 to 75	4.5	20 × 4.9	20 × 7.5									
	75 to 85	4.0	22 × 5.4	22 × 9.0									
	85 to 95	3.6	25 × 5.4	25 × 9.0									
95 to 110	3.2	28 × 4.5	28 × 10.0										
4030	38 to 44	7.7	12 × 3.3	12 × 5.0	146	76.2	241	216	197	141	5/8 × 1 3/4	40°	▲
	44 to 50	7.3	14 × 3.8	14 × 5.5									
	50 to 58	6.8	16 × 4.3	16 × 6.0									
	58 to 65	6.4	18 × 4.4	18 × 7.0									
	65 to 75	5.9	20 × 4.9	20 × 7.5									
	75 to 85	5.4	22 × 5.4	22 × 9.0									
	85 to 95	5.0	25 × 5.4	25 × 9.0									
	95 to 110	4.8	28 × 6.4	28 × 10.0									
111 to 115	4.5	32 × 5.5	32 × 11.0										
4040	38 to 44	10.0	12 × 3.3	12 × 5.0	146	102	241	216	197	141	5/8 × 1 3/4	40°	▲
	44 to 50	9.5	14 × 3.8	14 × 5.5									
	50 to 58	9.0	16 × 4.3	16 × 6.0									
	58 to 65	8.6	18 × 4.4	18 × 7.0									
	65 to 75	8.2	20 × 4.9	20 × 7.5									
	75 to 85	7.7	22 × 5.4	22 × 9.0									
	85 to 95	6.8	25 × 5.4	25 × 9.0									
	95 to 110	6.4	28 × 4.4	28 × 10.0									
111 to 115	5.9	32 × 4.4	32 × 11.0										

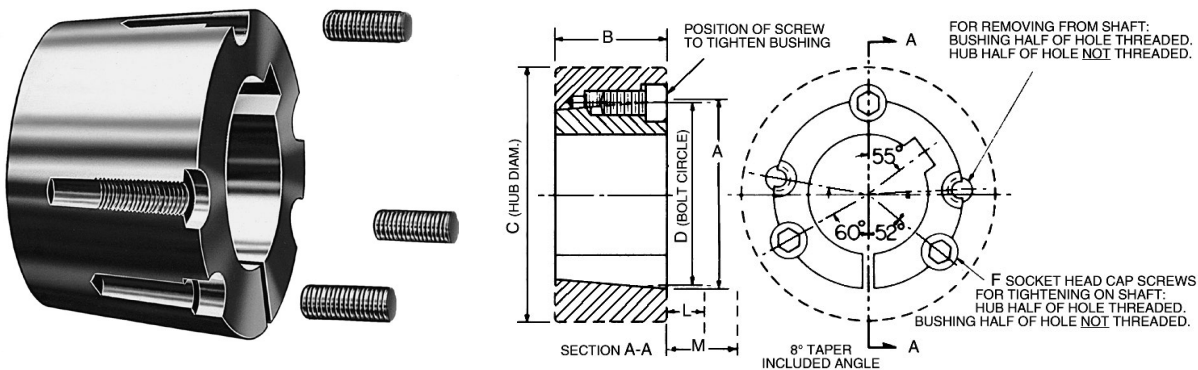
**Bushings cannot be bored larger than largest bore listed.  
For detail dimensions required for machining hubs, consult factory.**

Ø For general reference. Severe conditions may require larger hub. Heavy well-located web may permit smaller hub. Hub diameter required depends on the particular application. Consult factory giving full information on the proposed design. Hub diameters shown are based on 20,000, 30,000 and 50,000 P.S.I. minimum ultimate tensile strength respectively for Class 20 gray iron, Class 30 gray iron and steel hubs.

† 3 screws required. Use in positions shown for tightening bushing on shaft. In removing bushing from shaft, remove screws and use two of them in the other two holes. Bushing price includes screws. See following footnote.

▲ Provide sufficient space to tighten and loosen bushing. Width across flats of screw head is same as screw diameter which is shown in column F.

# Taper Bushings Dimensions



## No.4535 to 5050 Bushings

Bushing Number	Bore	Approx. Wgt. (Kg)	Bushing Keyseat	Shaft Keyseat	A	B	C Ø			D	F† (in)	G	R
							Class 20 Gray Iron	Class 30 Gray Iron	Steel				
4535	50 to 58	10.4	16 × 4.3	16×6.0	162	89	267	241	222	156	¾"×2"	40°	▲
	58 to 65	10.0	18 × 4.4	18×7.0									
	65 to 75	9.5	20 × 4.9	20×7.5									
	75 to 85	9.1	22 × 5.4	22×9.0									
	85 to 95	8.2	25 × 5.4	25×9.0									
	95 to 110	7.3	28 × 6.4	28×10.0									
4545	110 to 120	6.4	32 × 7.4	32×11.0	162	114	267	241	222	156	¾"×2"	40°	▲
	50 to 58	13.6	16 × 4.3	16×6.0									
	58 to 65	12.7	18 × 4.4	18×7.0									
	65 to 75	12.2	20 × 4.9	20×7.5									
	75 to 85	11.8	22 × 5.4	22×9.0									
	85 to 95	10.4	25 × 5.4	25×9.0									
5040	95 to 110	9.1	28 × 6.4	28×10.0	178	101.6	292	267	241	171	7/8"×2 1/4"	37°	▲
	110 to 130	10.0	32 × 7.4	32×11.0									
	130 to 140	8.9	36 × 8.4	36×12.0									
	65 to 75	13.1	20 × 4.9	20×7.5									
	75 to 85	12.7	22 × 5.4	22×9.0									
	85 to 95	11.8	25 × 5.4	25×9.0									
5050	95 to 110	10.9	28 × 6.4	28×10.0	178	127	292	267	241	171	7/8"×2 1/4"	37°	▲
	110 to 130	10.9	32 × 7.4	32×11.0									
	130 to 140	10.4	36 × 6.4	36×12.0									
	65 to 75	17.2	20 × 4.9	20×7.5									
	75 to 85	15.9	22 × 5.4	22×9.0									
	85 to 95	14.5	25 × 5.4	25×9.0									

**Bushings cannot be bored larger than largest bore listed.  
For detail dimensions required for machining hubs, consult factory.**

Ø For general reference. Severe conditions may require larger hub. Heavy well-located web may permit smaller hub. Hub diameter required depends on the particular application. Consult factory giving full information on the proposed design. Hub diameters shown are based on 20,000, 30,000 and 50,000 P.S.I. minimum ultimate tensile strength respectively for Class 20 gray iron, Class 30 gray iron and steel hubs.

† 3 screws required. Use in positions shown for tightening bushing on shaft. In removing bushing from shaft, remove screws and use two of them in the other two holes. Bushing price includes screws. See following footnote.

▲ Provide sufficient space to tighten and loosen bushing. Width across flats of screw head is same as screw diameter which is shown in column F.





# Taper Bushings Dimensions

## Metric Bores and Keyways

Bore Dia. (mm)	Keyway		Shallow Keyway Depth	Bore Sizes Available							
	Width (mm)	Depth (mm)		3525	3535	4030	4040	4535	4545	5040	5050
35	10	3.3	—	•	•						
38	10	3.3	—	•	•						
40	12	3.3	—	•	•	•	•				
42	12	3.3	—	•	•	•	•				
45	14	3.8	—	•	•	•	•				
48	14	3.8	—	•	•	•	•				
50	14	3.8	—	•	•	•	•				
55	16	4.3	—	•	•	•	•	•	•		
60	18	4.4	—	•	•	•	•	•	•		
65	18	4.4	—	•	•	•	•	•	•		
70	20	4.9	—	•	•	•	•	•	•	•	•
75	20	4.9	—	•	•	•	•	•	•	•	•
80	22	5.4	—	•	•	•	•	•	•	•	•
85	22	5.4	—	•	•	•	•	•	•	•	•
90	25	5.4	—	•	•	•	•	•	•	•	•
95	25	5.4	—	•*		•	•	•	•	•	•
100	28	6.4	4.4	•*		•	•	•	•	•	•
105	28	6.4	—			•	•	•	•	•	•
110	28	6.4	—			•	•	•	•	•	•
115	32	7.4	5.4			•*	•	•		•	•
120	32	7.4	—					•		•	•
125	32	7.4	—					•		•	•
130	32	7.4	—							•	•
140	36	8.4	6.4							•*	

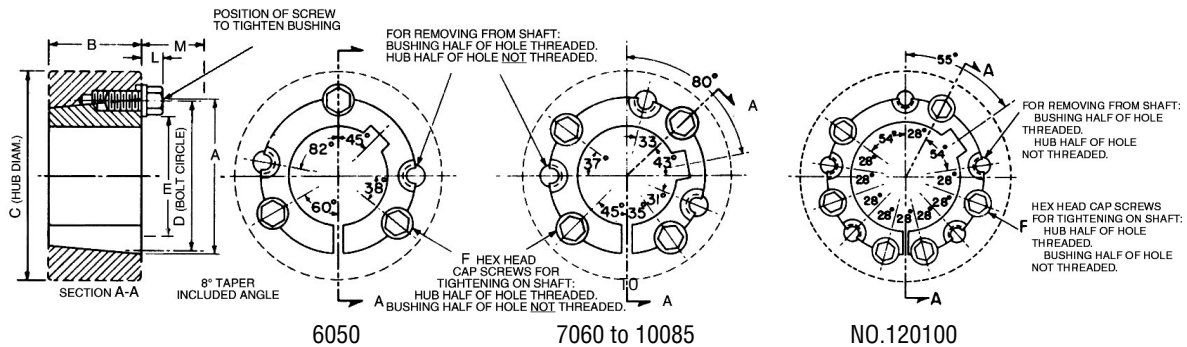
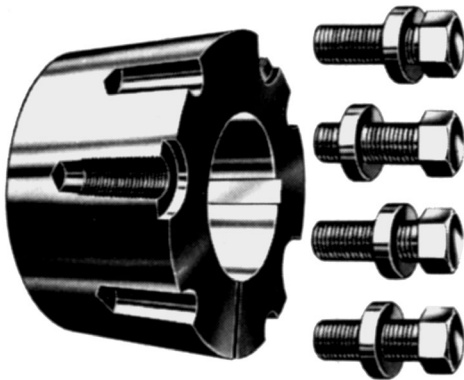
\*Items marked with "\*" have a shallow keyway.

## Inch Bores and Keyways

Bore Dia. (In.)	Keyway		Shallow Keyway Depth	Bore Sizes Available							
	Width (In.)	Depth (In.)		3525	3535	4030	4040	4535	4545	5040	5050
1.500	0.375	0.11	—	•	•						
1.625	0.437	0.13	—	•	•						
1.750	0.437	0.13	—	•	•	•	•				
1.875	0.500	0.13	—	•	•	•	•				
2.000	0.500	0.13	—	•	•	•	•				
2.125	0.625	0.18	—	•	•	•	•	•	•		
2.250	0.625	0.18	—	•	•	•	•	•	•		
2.375	0.625	0.18	—	•	•	•	•	•	•		
2.500	0.625	0.18	—	•	•	•	•	•	•		
2.625	0.750	0.21	—	•	•	•	•	•	•	•	•
2.750	0.750	0.21	—	•	•	•	•	•	•	•	•
2.875	0.750	0.21	—	•	•	•	•	•	•	•	•
3.000	0.750	0.21	—	•	•	•	•	•	•	•	•
3.125	0.875	0.26	—	•	•	•	•	•	•	•	•
3.250	0.875	0.26	—	•	•	•	•	•	•	•	•
3.375	0.875	0.26	—	•	•	•	•	•	•	•	•
3.500	0.875	0.26	—	•	•	•	•	•	•	•	•
3.750	1.000	0.32	0.245	•*		•	•	•	•	•	•
4.000	1.000	0.32	0.155	•*		•	•	•	•	•	•
4.250	1.250	0.37	—			•	•	•	•	•	•
4.500	1.250	0.37	0.255			•*	•	•	•	•	•
4.750	1.250	0.37	—					•		•	•
5.000	1.250	0.37	0.258					•*		•	•

\*Items marked with "\*" have a shallow keyway.

# Taper Bushings Dimensions



## No.6050 to 120100 Taper Bushings

Bushing Number	Bore	Weight (Kg)	Bushing Keyseat	Shaft Keyseat	A	B	C Ø			D	E	F† (in)	L*	M**
							Class 20 Gray Iron	Class 30 Gray Iron	Steel					
6050	95 to 110	27	28 × 6.4	28 × 10	235.0	127.0	431.8	393.7	342.9	228.6	171.5	1 1/4 × 3.11	41.3	111.1
	110 to 130	25	32 × 7.4	32 × 11										
	130 to 150	23	36 × 8.4	36 × 12										
7060	110 to 130	39	32 × 7.4	32 × 11	260.3	152.4	469.9	431.8	374.7	254.0	196.9	1 1/4 × 3.11	41.3	111.1
	130 to 150	34	36 × 8.4	36 × 12										
	150 to 170	29	40 × 9.4	40 × 13										
F8065	130 to 139.7	54	36 × 8.4	36 × 12	285.7	165.1	482.6	444.5	393.7	279.4	222.3	1 1/4 × 3.11	41.3	111.1
	150 to 165.1	45	40 × 9.4	40 × 13										
	170 to 190.5	38	45 × 10.4	45 × 15										
F10085	170 to 200	118	45 × 10.4	45 × 15	374.4	215.9	596.9	558.8	495.3	368.3	298.5	1 1/2 × 4 1/4	50.8	136.5
	200 to 230	104	50 × 11.4	50 × 17										
	230 to 260	86	56 × 12.4	56 × 20										
F120100	200 to 230	186	50 × 11.4	50 × 17	438.1	254.0	711.2	660.4	584.2	431.8	362.0	1 1/2 × 4 1/4	50.8	136.5
	230 to 260	163	56 × 12.4	50 × 20										
	260 to 290	131	63 × 12.4	63 × 20										

Bushings cannot be bored larger than largest bore listed

For detail dimensions required for machining hubs, consult *Martin*.

Ø For general reference. Severe conditions may require larger hub. Heavy well-located web may permit smaller hub. Hub diameter required depends on the particular application. Consult *Martin* giving full information on the proposed design. Hub diameters shown are based on 1400, 2110 and 3500 Kg/Cm<sup>2</sup> minimum ultimate tensile strength respectively for Class 20 gray iron, Class 30 gray iron and steel hubs.

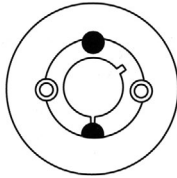
† Three screws for 6050; four for 7060 to 10085; six for 120100. Use in positions shown or tightening bushing on shaft. In loosening bushing, remove screws and use all except one in the other holes. Bushing price includes screws.

\* Space required to tighten bushing. Also space required to loosen screws to permit removal of hub by puller.

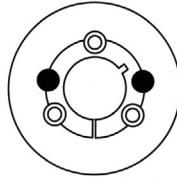
\*\* Space required to loosen bushing using screws as jackscrews - no puller required.

F Not currently stocked - Available on order.

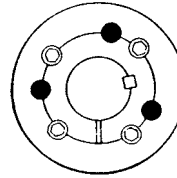
**IMPORTANT :** Follow all instructions in this manual carefully. This is necessary to insure satisfactory performance.



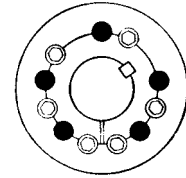
1008 to 3030



3535 to 6050



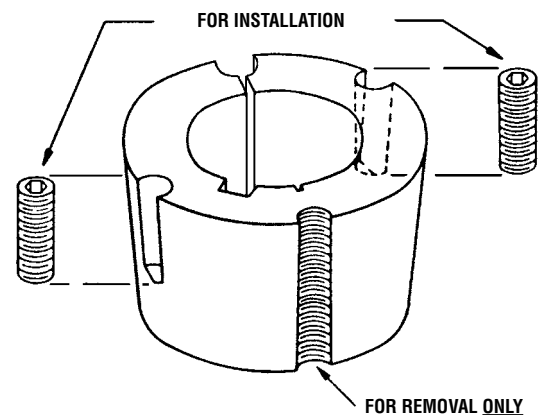
7060 to 10085



120100

### To Install :

1. Clean shaft, bore, outside of bushing and bore of hub (taking bushing from hub if already assembled). Remove any oil, lacquer, or dirt. Place bushing in hub and match half holes to make complete holes (each complete hole will be threaded on one side only).
2. Oil thread and point of set screws or thread and under head of cap screws. Place screws loosely in holes that are threaded on hub side (shown thus ⊙ in diagram).
3. Make sure bushing is free in hub. Slip assembly onto shaft and locate in position desired.
4. Tighten screws (see note★) alternately and evenly until all are pulled up very tightly. Use a piece of pipe on wrench to increase leverage. (See table for wrench torque on reverse side.)
5. Hammer against large end of bushing using hammer and block or sleeve to avoid damage. Screws can now be turned a little more using the specified wrench torque. Repeat this alternate hammering and screw re-tightening until the specified wrench torque no longer turns the screws after hammering.
6. After drive has been running under load for a short time stop and check tightness of screws. Fill other holes with grease to exclude dirt.



### To Remove:

1. Remove all screws. Oil thread and point of set screws or thread and under head of cap screws.
2. Insert screws in holes that are threaded on bushing side (shown thus • in diagram). In sizes where washers are found under screw heads, be sure to use these washers. Note that one screw in each hub is left over and is not used in this loosening operation.
3. Tighten screws alternately until bushing is loosened in hub. If bushing does not loosen immediately, tap on hub.

### Recommended Wrench Torque

Bush Size	1008	1108	1210	1610	1615	2012	2517	3020	3030	3525	3535	4030	4040	4535	4545	5040	5050	
<b>Screw Tightening Torque (Nm)</b>	5.6	5.6	20	20	20	30	50	90	90	115	115	170	170	190	190	270	270	
<b>Screw Details</b>	<b>Qty</b>	2	2	2	2	2	2	2	2	3	3	3	3	3	3	3	3	
	<b>Size (BSW)</b>	1/4	1/4	3/8	3/8	3/8	7/16	1/2	5/8	5/8	1/2	1/2	5/8	5/8	3/4	3/4	7/8	7/8
	<b>Hex. Socket Size (mm)</b>	3	3	5	5	5	6	6	8	8	10	10	12	12	14	14	14	14
<b>Large End Dia. (mm)</b>	35.0	38.0	47.5	57.0	57.0	70.0	85.5	108.0	108.0	127.0	127.0	146.0	146.0	162.0	162.0	177.5	177.5	
<b>Approx. Mass (kg)</b>	0.1	0.1	0.2	0.3	0.5	0.7	1.5	2.7	3.6	3.8	5.0	5.6	7.7	7.5	10.0	11.1	14.0	

When ordering Bushings give: Number stamped on large end of bushing, bore, and quantity.

★ If two bushings are used in the same sheaves, pulley, or other unit member, tighten one bushing on shaft per steps 4 and 5 before starting to tighten screws in other bushing.

# Taper Bushings Metric and Reborable



## Stock Reborable Taper Bushings With No Keyways

Sintered Steel		Grey Iron		Steel *		Stainless Steel *	
1008	$\frac{9}{16}$			1008	$\frac{1}{2}$	1008	$\frac{1}{2}$
1108	$\frac{1}{2}$			1108	$\frac{1}{2}$	1108	*
1210	$\frac{9}{16}$			1210	$\frac{1}{2}$	1210	$\frac{1}{2}$
1215	$\frac{1}{2}$			1215	$\frac{1}{2}$	1215	*
1310	$\frac{1}{2}$			1310	*	1310	*
1610	$\frac{1}{2}$ $1\frac{5}{16}$			1610	$\frac{1}{2}$	1610	$\frac{1}{2}$
1615	$\frac{1}{2}$ $1\frac{5}{16}$			1615	$\frac{1}{2}$	1615	*
2012	$\frac{1}{2}$			2012	$\frac{1}{2}$	2012	$\frac{1}{2}$
2517	$\frac{1}{2}$ $1\frac{9}{16}$			2517	$\frac{1}{2}$	2517	$\frac{1}{2}$
		2525	$2\frac{1}{8}$	2525	*	2525	*
3020	$\frac{15}{16}$ $1\frac{11}{16}$	3020	$\frac{15}{16}$ $1\frac{7}{16}$ $2\frac{15}{16}$	3020	$\frac{15}{16}$	3020	$\frac{15}{16}$
		3030	$\frac{15}{16}$ $2\frac{7}{16}$ $2\frac{15}{16}$	3030	*	3030	*
		3535	$1\frac{3}{16}$ $2\frac{7}{16}$ $2\frac{15}{16}$	3535	*	3535	*
		4040	$1\frac{7}{16}$ $3\frac{7}{16}$ $3\frac{15}{16}$	4040	*	4040	*
		4545	$3\frac{15}{16}$ $4\frac{7}{16}$	4545	*	4545	*
		5050	$2\frac{7}{16}$ $3\frac{15}{16}$				
		6050	$3\frac{7}{16}$ $5\frac{7}{16}$				
		7060	$3\frac{15}{16}$				
		8065	$4\frac{7}{16}$				
		10085	7				
		120100	8				

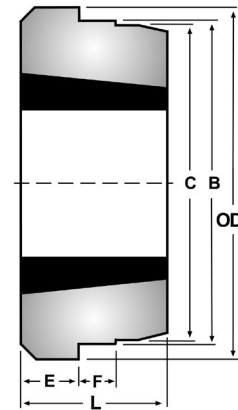
★ Not currently stocked. Consult factory for availability and pricing.

\* Stock in U.S.A

*Martin* Taper Bushed Type W Weld-On Hubs are made of steel, drilled, tapped, and taper bored to receive Tapered Bushings. They are very useful for welding into fan rotors, pulleys, plate sprockets, impellers, agitators, and many other devices which must be firmly fastened to the shaft. Cases where the attached item is of small dimensions should be referred to *Martin*.

## Taper Bushed Type W Weld-On Hubs

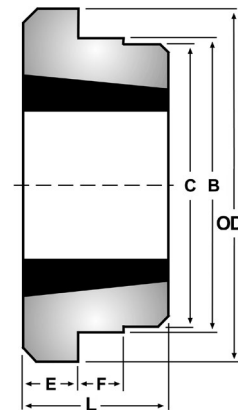
Type W							
Part Number	Bush No.	OD	B	C	L	E	F
W12	1215	73.03	63.50	62.71	38.10	15.88	9.53
W16	1615	82.55	73.03	72.24	38.10	15.88	9.53
W20	2017	101.60	88.90	88.11	44.45	19.05	11.91
W25	2517	127.00	111.13	110.34	44.45	19.05	12.70
W30	3030	149.86	133.35	132.56	76.20	25.40	19.05
W35	3535	184.15	158.75	157.96	88.90	31.75	25.40
W40	4040	225.43	196.85	196.06	101.60	31.75	31.75
W45	4545	254.00	222.25	221.46	114.30	38.10	38.10



Type W

## Taper Bushed Type WH Weld-On Hubs

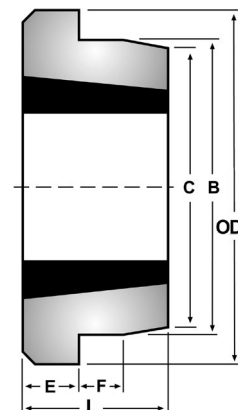
Type WH							
Part Number	Bush No.	OD	B	C	L	E	F
WH12	1210	70.00	65.00	64.50	25.00	9.00	10.00
WH16	1610	80.00	75.00	74.50	25.00	9.00	10.00
WH20	2012	95.00	90.00	89.50	32.00	12.00	12.00
WH25	2517	115.00	110.00	109.50	44.00	19.00	15.00
WH30	3020	145.00	140.00	139.50	50.00	20.00	15.00
WH35	3525	190.00	180.00	179.50	65.00	25.00	25.00
WH35-2	3535	190.00	180.00	179.50	89.00	25.00	25.00
WH40-1	4030	200.00	190.00	189.50	76.00	32.00	30.00
WH40-2	4040	200.00	190.00	189.50	101.00	32.00	30.00
WH45-1	4535	210.00	200.00	199.50	89.00	40.00	30.00
WH45-2	4545	210.00	200.00	199.50	114.00	40.00	30.00
WH50-1	5040	230.00	220.00	219.50	102.00	40.00	35.00
WH50-2	5050	230.00	220.00	219.50	127.00	40.00	35.00



Type WH

## Taper Bushed Type WM Weld-On Hubs

Type WM							
Part Number	Bush No.	OD	B	C	L	E	F
WM12	1210	70.00	60.00	58.00	25.00	9.00	10.00
WM16-1	1610	83.00	70.00	68.00	25.00	9.00	10.00
WM16-2	1615	83.00	70.00	68.00	38.00	16.00	11.00
WM20	2012	95.00	90.00	88.00	32.00	12.00	12.00
WM25	2517	127.00	110.00	108.00	44.00	19.00	13.00
WM30-1	3020	152.00	130.00	125.00	50.00	20.00	15.00
WM30-2	3030	152.00	130.00	125.00	76.00	25.00	19.00
WM35	3535	184.00	155.00	151.00	89.00	32.00	25.00
WM40	4040	225.00	195.00	187.00	102.00	32.00	32.00
WM45	4545	254.00	220.00	213.00	114.00	38.00	38.00
WM50	5050	276.00	242.00	228.00	127.00	38.00	38.00



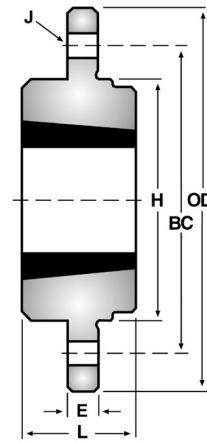
Type WM

# Bolt-on Hubs/ Adapters



## Taper Bushed Type BF Bolt-On Hubs

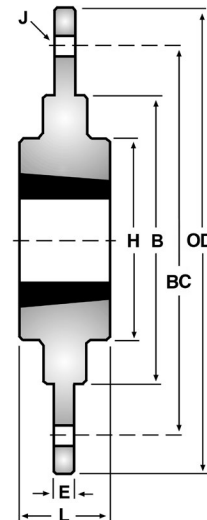
Type BF							
Part Number	Bush No.	OD	H	BC	L	E	J
BF12	1210	120.00	80.00	100.00	25.00	6.50	6 × 6.6
BF16	1610	130.00	90.00	110.00	25.00	6.50	6 × 6.6
BF20	2012	145.00	100.00	125.00	32.00	8.50	6 × 9.0
BF25	2517	185.00	130.00	155.00	44.00	11.50	6 × 11.0
BF30	3020	220.00	165.00	190.00	50.00	11.50	6 × 13.0



Type BF

## Taper Bushed Type SM Bolt-On Hubs

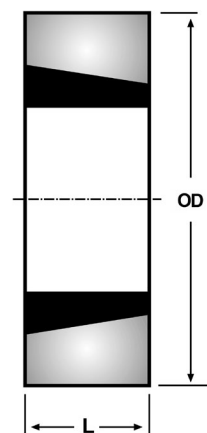
Type SM								
Part Number	Bush No.	OD	B	BC	L	E	H	J
SM12	1210	180.00	90.00	135.00	25.00	6.50	75.0	6 × 7.5
SM16	1615	200.00	110.00	150.00	38.00	7.50	85.0	6 × 7.5
SM20	2012	270.00	140.00	190.00	32.00	8.50	110.0	6 × 9.5
SM25	2517	340.00	170.00	240.00	45.00	9.50	125.0	8 × 11.5
SM30-1	3020	430.00	220.00	300.00	51.00	13.50	160.0	8 × 13.5
SM30-2	3020	485.00	250.00	340.00	51.00	13.50	160.0	8 × 13.5



Type SM

## Taper Bushed Adapters

Adapters					
Part Number	Bush No.	OD	L	Keyway	
				Width	Depth
1008BM 1008AM	1008	45	22	5.0	2.5
1210BM 1210AM	1210	60	25	6.0	3.0
1215BM 1215AM	1215	60	38	6.0	3.0
1610BM 1610AM	1610	70	25	10.0	4.0
1615BM 1615AM	1615	70	38	10.0	4.0
2517BM 2517AM	2517	105	45	16.0	4.0
3030BM 3030AM	3030	130	76	20.0	5.0
3535BM 3535AM	3535	160	89	22.0	5.0
4040BM 4040AM	4040	185	102	24.0	5.0



Adapters



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**Notes**

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**Notes**

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