



## NSPT Taper Bushings

NSPT Taper Bushing series include three standard Bushings: BTL, QTL and STL. They are widely used together with Sprockets, V-belt Pulleys, Timing Pulleys, Couplings, Gears and other mechanical parts with taper bore connections.



NSPT Taper Bushing series are made of high-quality engineered materials with great tolerance. The feature is easy to use and needs no additional alteration. These bushings can suit almost all kinds of assemblies and sizes. They are the best choice in design for mechanical connections.





## BTL Taper Bushings

1008 - 5050 6050 - 12100



TL Taper bushing supplied by NSPT is ade of high-quality engineered materials. With precisemachining, it is sold with set crews imported from Japan and packed in ce cartons individually.

## he Specifications for BTL Taper ushing:

1008-5050 items can be sold off-the-shelf based on the stock with immediate delivery.

Taper holes can be in BS or UNC standard; bores and keyways are available both in metric and standard.

They are suitable for European, the United States and Japanese markets.



6050-12100 bushings are produced made-to-order and delivered with the fastest arrangment possible. Bores and keyways can be in metric and/or in nch according to BS and UNC standard.





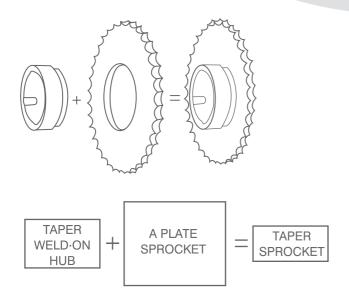
## BTL Taper Bushings

Taper bushing is a new way of joining mechanical transmission. It has changed the traditional way of design: easy-on, easy-off, compact construction and high standardization. The grip is tightened through its taper surface with excellent concentricity and nonclearance joint; its transmission efficiency is better than the old way.

They are designed in standard series. The bore, keyway and thread are machined in accordance of ISO standard. It is interchangeable, and the customers can make their own choice according to the purposes and usages. This new type of joint is widely used today.

The gray cast iron is the common material. If high tensional bushing is required, ductile iron, steel or forged steel may be used. Bushings made of stainless steel can be used together with sprockets, clutches, gears and other transmission parts that are also made of stainless steel.

When shaft hub is used with other transmission parts, in the starting and frequent reversed movements, it will likely cause damages to the bore and keyway or degrade precision due to pressing loads. If the case is a severe one, the whole transmission part will be ruined. This would be largely reduced if BTL taper bushing is used.





In case the bore and keyway are damaged; the production will be resumed as long as the old bushing is removed and the new one is assembled. The lifetime of the transmission will be increased sharply, and the maintenance expense will be reduced greatly.

The BTL Taper bushing sold by NSPT, INC. includes taper bushing itself and relevant tightening screws (also includes packaging).

If more detailed information is required, please contact us directly.







## **BTL** Taper Bushings

Taper Bushing (abbreviated as "Bushing") is a new type of elastic components in shaft-hub connection. It is widely used in pulleys, timing belt pulleys, gears, sprockets, bevels, couplings, rollers, sheaves, agitators, impellers, fan rotors and other products that need to be shaft mounted.

Characteristics:

- 1) Extremely secure fitting on shaft with excellent concentricity;
- 2) Easy on and easy off without interference elastic clip and requires low maintenance;
- 3) Better shocking resistance, longer lifetime, and better reliability and stability. Used under frequent starting and inversion situations, heavy pressing load and other severe operating conditions;
- 4) Widely used in many circumstances and offers large range of mounting between all kinds of transmission components and shafts with different diameters. Easy to standardize, easy to disassemble and good for large-scale productions for cost reduction purpose.

Nowadays, traditional connection method by keys is still widely used in mechanical transmissions. However, it has bad concentricity that causes low reliability and stability. The installation is inconvenient, and the keyway connection is easy to be worn out under heavy load. All of the disadvantages have been change in the 1980s since the invention of taper bore bushings, which have become an increasingly popular new type of mechanical joint component in European, the United States, and Japanese markets year after year.

1. Basic structure and working principles of bushing connections:

Bushings mate with taper holed hubs through 4° semi-taper angle surfaces. The shaft is secured by the frictional force through tightened screws, not through keys like in the traditional method. The torque will be transmitted when the bushing bores shrink during the tightening of the screws. Therefore, the structure and quality of tightening

screws depend on the type and specification of bushings. The keys are only the secondary feature and the keyway is more useful for increasing elasticity. The bushings are removable and durable if installed with the original screws provided by NSPT.

#### 2. Bushing structure selection

There are three different types of NSPT bushings: BTL, QTL and STL. The right bushing type should be chosen based on features and usages.

#### 2.1 Common Type (BTL Bushings)

The outside dimension of the transmission parts will not be increased if this type of bushing is used. It is hub connected with a compact structure and sold with matching cap screws. This type of bushing has an even and nice outlook. BTL bushings are used to connect with taper bored transmission devices or used together with taper weld-on hubs. This type of bushing is the most common one with the largest amount of users worldwide.

#### 2.2 Flange Type (QTL Bushings)

This type of bushing has simple structure and is designed for easy installation. It is mated with hex screws as tightening screws for increased loosening resistance and reliability. However, the outside dimension of the transmission parts will be bigger than normal. This disadvantage makes QTL bushings more suitable for shorter hubs or devices with low requirements on dimension and weight.

#### 2.3 Adapters

NSPT Taper bore adapters are recommended for mating with straight bore hubs. By adopting NSPT adapters, problems such as close mating with shaft, over-inserting, difficult installation or easy damaging to the finish surface (especially for rolling bearings) will be solved. However, the radial dimension will increase when using this type of bushing. This disadvantage makes NSPT adapters more suitable for conditions when bearing dimensions decide the shaft diameters, not the shaft itself or strength of rigidity. Adapters have to be selected based on the relevant bushing types.





## BTL Taper Bushing

3. Bushing types and loading capacities.

3.1 Common type (BTL Bushing)

3.1.1 Dimension series: this type is divided into three series according to its load-bearing capacity and number of tapped holes:

Light series: type 1008-3030
 Have two un-tapped half-holes for tightening screws and one semi-tapped holes for unloading.

 Medium series: type 3535-5050
 Have three half-holes for tightening screws and two half-tapped holes for unloading.

 Heavy series: type 6050-120100
 Have four half-holes for tightening screws and two half-tapped holes for unloading.

3.1.2 Expressions:

Each type of bushing has different matching standard shaft size.

If the NSPT code is written in four digits, eg. 2517, the initial two digits divided by ten indicate Max. bore of the bushing (in inches); the other two digits divided by ten indicate the length through bore (in inches). In this example, the Max. bore of the bushing is 2.5 inches ( $2.5 \times 25.4$ mm), length through the bore is 1.7 inches ( $1.7 \times 25.4$ mm).

If the code is written in six digits, eg. 120100, the initial three digits divided by ten indicate the Max. bore of the bushing (in inches). The other three divided by ten indicate the length through the bore (in inches). In this example, 120 indicates that the Max bore of bushing is 12 in-ches (12 x 25.4mm); 100 indicates that the length through the bore is 10 inches (10x 25.4mm).

If the code is written in five digits, the initial three digits indicate the Max. bore of bushing; the other two digits indicate the length through the bore.

3.1.3 Rating load-bearing capacity

See torque capacity parameters for common types in the following table:

Bush.No	Torque C	apacity	Bush.No	Torqu	e Capacity
	lbf.in	N.m		lbf.in	N.m
1008	1,200	136	3535	44,800	5,060
1108	1,300	147	4040	77,300	8,740
1210	3,600	407	4545	110,000	12,400
1215	0,000	407	7070	110,000	12,400
1310	3,850	435	5050	126,000	14,200
1315	0,000	400	3030	120,000	14,200
1610	4,300	486	6050	282,000	31,900
1615	4,000	400	7060	416,000	47,000
2012	7,150	808	8065	456,000	51,500
2517	11,600	1,310	10085	869,000	98,200
2525	11,000	1,010	10005	009,000	30,200
3020	24,000	2,710	120100	1,520,000	172,000
3030	2-1,000	2,710	120100	1,020,000	172,000

lbf.in=0.113N.m





## BTL & QTL Taper Bushing

Please notice that bushing's load-bearing capacity is related with tightening torque and shaft size. In this catalog the related tightening torques have been given. The load-bearing capacity increases as the shaft size enlarges. Please consult with NSPT if more detailed information is required.

- 3.2 Flange type (QTL Bushing)
- 3.2.1 Dimension series: QTL Bushings can be divided into two series according to its reversibility.
- Reversable mounting series: type JA-J Have three screws and three bores on the flange.
- Un-reversable mounting series: type M-W.
  Have only four tapped holes on the flange, but no un-tapped holes.

3.2.2 Type and load -bearing capacity
Due to different dimensions and load-bearing
capacity, QTL Bushings have thirteen
specifications. See torque capacity parameters
and related screw tightening torques in the table
below:

Bush.No	Torque (	Capacity	Screw Tighte	ening Torque
	lbf∙in	N.m	lbf∙in	N.m
JA	1,000	113	54	6.1
SH	3,500	396	108	12.2
SDS	5,000	565	108	12.2
SK	7,000	791	180	20.3
SF	11,000	1,243	360	40.8
E	20,000	2,260	720	81.4
F	30,000	3,390	900	102
J	45,000	5,090	1,620	183
M	85,000	9,600	2,700	305
N	150,000	17,000	3,600	408
Р	250,000	28,300	5,400	610
W	375,000	42,400	7,200	814
S	625,000	70,600	9,000	1,020

#### 4. Selection

To select the right bushing type, features and working condition have to be considered. The selection mainly depends on the torque and

See loading coefficient K for bushing connection below:

loading force.

K	Load type
1.0	light loading start,work even
1.5	light loading start,work uneven
2.0	medium loading start,work even or uneven
2.5	light or heavy loading start,medium shock
3.0	lighty or heavy loading start,heavy shock or rotating

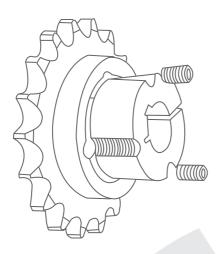
Working torque on shaft: T=63025N/n (lbf·in) N-transmission torque (house);

n-shaft revolutions per minute(RPM) Calculation torque  $T_0$ =KT,K-loading coefficient When selecting bushing type, it should comply with  $T_H \leq T_O$ . Bushing torque capacity can be got from the given table.





## BTL Taper Bushing



BUSH	SCREW		SCREV			
	TIGHTENING	OTV	SI	ZE		
NO	TORQUES(Nm)	QTY	In-Bore	mm-Bore		
1008			1/4"	1/4"		
1108	5.6	2	UNC	BSW		
1210	00		3/8"	3/8"		
1215	20	2	UNC	BSW		
1310	00		3/8"	3/8"		
1315	20	2	UNC	BSW		
1610	00	0	3/8"	3/8"		
1615	20	2	UNC	BSW		
2012	0.1		7/16"	7/16"		
2017	31	2	UNC	BSW		
2517	48	2	1/2"	1/2"		
2525	40		UNC	BSW		
3020	90	2	5/8"	5/8"		
3030	90		UNC	BSW		
3525	112	3	1/2"	1/2"		
3535	112	3	UNC	BSW		
4030	170	3	5/8"	5/8"		
4040	170	3	UNC	BSW		
4535	192	3	3/4"	3/4"		
4545	192	0	UNC	BSW		
5040	271	3	7/8"	7/8"		
5050	<u></u>		UNC	BSW		

The BTL taper bushing are registered patented products. Any production and sales must be authorized first.

## BTL TAPER BUSHING INSTALLATION INSTRUCTIONS

#### TO ASSEMBLE

- 1. Clean and degrease the bore and taper surfaces of the bush and the taper bore of the wheel. Insert the bush into the hub and the wheel to line up holes (half thread holes must be lined up with half unloading holes)
- 2. Lightly oil the grub screws (bush size 1008 to 3030) or the cap screws (bush size upto 5050) and then screw them into the holes. Do not tighten vet.
- 3. Clean and degrease the shaft. Fit the wheel with taper bush onto the shaft and locate it in desired position.
- 4. When using a key, it should first be fitted in the shaft keyway. A tap clearance should be between the key and the keyway in the bore.
- 5. Using a hexagon socket wrench (DIN911) gradually tighten the grub cap screws in accordance to the torques as listed in the schedule of screw tightening torques on the left.
- 6. When the drive has been operating under load for a short period (half to one hour), check to make sure that the screws remain at the appropriate tightening torque.
- 7. In order to eliminate the ingress of dirt, fill all empty holes with grease.

#### To REMOVE

- 1. Loosen and remove all screws and place them in the holes of the bushing.
- 2. Tighten the screws alternatively till the hub's grip on the bushing is loosened. The inner bore of the bushing can be slid off the shaft.
- 3. Remove the bushing from the shaft.

#### -Special Note-

BTL bushings are made of GG25 cast iron. Other materials are available according to customers' requirements.

Surface coating is optional upto the customers' requirements. (such as painting, black phosphating, black oxidizing and so on)

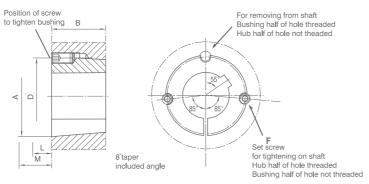
Each part is individually boxed.

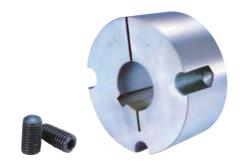
BTL bushings are sold with high quality screws imported from Japan.





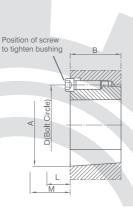
## BTL Taper Bushings



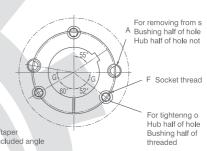


#### 1008 thru 3030 sizes









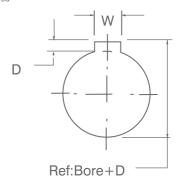
## **Dimensions for 1008 thru** 3030 BTL Taper Bushings

Bush No	A	В	D	Set Screws
1008	1.386	7/8	<b>1</b> 21/64	1/4x1/2
1108	1.511	7/8	129/64	1/4x1/2
1210	17/8	1	13/4	3/8x5/8
1215	<b>1</b> 7/8	1 1/2	13/4	3/8x5/8
1310	2	1	17/8	3/8x5/8
1610	21/4	1	21/8	3/8x5/8
1615	21/4	11/2	21/8	3/8x5/8
2012	23/4	11/4	25/8	7/16x7/8
2517	33/8	13/4	31/4	1/2x1
2525	33/8	21/2	31/4	1/2x1
3020	41/4	2	4	5/8x <b>1</b> 1/4
3030	41/4	3	4	5/8x <b>1</b> 1/4

## **Dimensions for 1008 thru** 5050 BTL Taper Bushings

Bush No	A	В	D	Set Screws	G
3535	5	31/2	4.83	1/2x <b>1</b> 1/2	3
4040	53/4	4	5.54	5/8x <b>1</b> 3/4	4
4545	63/8	41/2	6.13	3/4x2	4
5050	7	5	6.72	7/8x21/4	3

Two screws required



MM Bore Keyway and dimensions conform to ISO standard Depth measured at centerline





# BTL Taper Bushings KEYWAY

USAS B 17.1 1967 **KEYS AND KEYWAYS** 

No	Bore	Bushing Keyway	Bush No	Bore	Bushing Keyway	Bush No	Bore	Bushing Keyway	Bush No	Bore	Bushing Keyway	Bush No	Bore	Bushing Keyway	Bush	Bore	Bushing Keyway
	1/2 9/16	1/8x1/16		1/2 9/16	1/8x1/16		1/2 5/8	1/8x1/16		7/8 15/16	3/16x3/32		1-3/16 1-1/4	1/4x1/8		1-15/16 2	1/2x1/4
	5/8		1	5/8		1	11/16			1			1-3/8	5/16x5/32	†	2-3/16	1,2,7,1
	11/16			11/16			3/4	3/16x3/32		1-1/8	1/4x1/8		1-7/16	3/10/3/02	1	2 3/8	
1008		3/16x3/32		3/4	3/16x3/32		13/16			1-3/16	.,, -		1-1/2			2-7/16	
	13/16	, ,		13/16	, ,		7/8			1-1/4			1-5/8	3/8x3/16		2-5/8	5/8x5/16
	7/8			7/8			15/16			1-5/16			1-11/16	0/0/0/10		2-3/4	0,0,0,10
$\wedge$	15/16		1	15/16			1			1-3/8	5/16x5/32		1-3/4			2 7/8	
	1	1/4x1/16		1			1-1/16			1-7/16			1-7/8		1	2-15/16	
	1/2	1/0.4/10	1610	1-1/16	1/4/1/0		1-1/8	1/4x1/8		1-1/2			1-15/16			3-1/8	3/4x3/8
	9/16	1/8x1/16		1-1/8	1/4x1/8		1-3/16			1-9/16	3/8x3/16		2			3-3/16	
	5/8			1-3/16			1-1/4		_	1-5/8	3/0,3/10		2-1/8	1/2x1/4		3-1/4	
	11/16			1-1/4			1-5/16	5/16x5/32		1-11/16			2-3/16			3-3/8	
	3/4	3/16x3/32		1-5/16	5/16x5/32		1-3/8	0,10,0,02		1-3/4			2-1/4		4545	3-7/16	
1108	· '			1-3/8	-,,		1-7/16			1-13/16			2-5/16		1	3-1/2	7/8x7/16
	7/8		-	1-7/16	3/8x3/16		1-1/2			1-7/8			2-3/8			3-5/8	
	15/16	1/4x1/8		1-1/2		2517		3/8x3/16	3020	1-15/16		3535	2-7/16			3-3/4	
$\wedge$	1 1/16		-	1-9/16	3/8x1/8		1-5/8			2	1/2x1/4		2-1/2	5/8x5/16		3-7/8	
	1-1/16	1/4x1/16		1-5/8			1-11/16			2-1/16			2-5/8			3-15/16	
	1-1/8		-	1-2 9/16	1/8x1/16		1-3/4		-	2-1/8			2-11/16			4	
	9/16	1/8x1/16		5/8		-	1-13/16 1-7/8			2-1/4			2-3/4			4-1/8	1x1/2
	5/8		-	11/16			1-15/16			2-1/4			2-7/8		1	4-3/16	
	11/16			3/4	3/16x3/32		2			2-3/10			2-15/16			4-1/4	
	3/4	3/16x3/32		13/16	0/10/0/02		2-1/16	1/2X1/4		2-7/16			3		$\rightarrow$	4-3/8	
	13/16	0,10,0,02		7/8			2-1/8	1/2/(1/1		2-1/2	5/8x5/16		3-1/8	3/4x3/8	$\rightarrow$	4-7/16	1x1/4
1210				15/16		1	2-3/16			2-5/8	,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,		3-3/16			4-1/2	
	15/16			1			2-1/4			2-11/16		_	3-1/4			2-7/16	5/8x5/16
	1		1615	1-1/16			2-5/16			2-3/4		$  \triangle  $	3-5/16			2-15/16	3/4x3/8
	1-1/16			1-1/8	1/4x1/8		2-3/8	E (0, 0 (4 0		2-13/16		$\downarrow \downarrow \downarrow$	3-3/8	7/0 4/4		3-3/8	7/0,7/16
	1-1/8	1/4x1/8		1-3/16		$\langle \rangle$	2-7/16	5/8x3/16		2-7/8	0/4:4/4		3-7/16	7/8x1/4		3-7/16 3-5/8	7/8x7/16
	1-3/16			1-1/4			2-1/2		$\downarrow$	2-15/16	3/4x1/4		3-1/2			3-5/8	
	1-1/4		1	1-5/16	5/16x5/32		3/4	3/16x3/32	$\triangle$	3			1-7/16			3-15/16	
	1/2	1/8x1/16		1-3/8	3/10/3/02		7/8	-,,	_	15/16			1-1/2		5050	· 1	
	9/16	., 6, ,	-	1-7/16	3/8x3/16		1			1			1-5/8	3/8x3/16		4-1/8	1x1/2
	5/8			1-1/2	0,000,10	-	1-1/8	1/4x1/8		1-1/8	1/4x1/8		1-11/16			4-3/8	,=
	11/16	0/40 0/00		1-9/16	3/8x1/8		1-3/16			1-3/16			1-3/4			4-7/16	
	3/4	3/16x3/32		1-5/8			1-1/4	E/16vE/00		1-1/4			1-7/8			4-1/2	
1215	13/16			1/2	1/8x1/16		1-3/8	5/16x5/32	-	1-5/16	5/16x5/32		1-15/16			4-7/8	
1215	7/8 15/16			0/16						1-3/0			2		1 / \		
	13/10			9/16		-								1/2x1/4		4-15/16	1-1/4x7/16
	1			5/8			1-1/2	3/8×3/16		1-7/16			2-1/8	1/2x1/4		4-15/16 5	1-1/4x7/16
	1 1-1/16			5/8 11/16	3/16x3/32		1-1/2 1-5/8	3/8x3/16		1-7/16 1-1/2			2-3/16	1/2x1/4			1-1/4x7/16
	1-1/16	1/4x1/8	-	5/8 11/16 3/4	3/16x3/32		1-1/2 1-5/8 1-11/16	3/8x3/16		1-7/16 1-1/2 1-9/16	3/8x3/16		2-3/16 2-1/4	1/2x1/4		5	
		1/4x1/8	-	5/8 11/16	3/16x3/32		1-1/2 1-5/8	3/8x3/16		1-7/16 1-1/2	3/8x3/16		2-3/16 2-1/4 2-3/8	1/2x1/4		5	
	1-1/16 1-1/8	1/4x1/8	_	5/8 11/16 3/4 13/16	3/16x3/32		1-1/2 1-5/8 1-11/16 1-3/4	3/8x3/16		1-7/16 1-1/2 1-9/16 1-5/8	3/8x3/16		2-3/16 2-1/4 2-3/8 2-7/16	1/2x1/4		5 	
	1-1/16 1-1/8 1-3/16			5/8 11/16 3/4 13/16 7/8	3/16x3/32		1-1/2 1-5/8 1-11/16 1-3/4 1-13/16			1-7/16 1-1/2 1-9/16 1-5/8 1-11/16	3/8x3/16		2-3/16 2-1/4 2-3/8 2-7/16 2-1/2	1/2x1/4 5/8x5/16		5  	
	1-1/16 1-1/8 1-3/16 1-1/4	1/4x1/8 1/8x1/16		5/8 11/16 3/4 13/16 7/8 15/16		0505	1-1/2 1-5/8 1-11/16 1-3/4 1-13/16 1-7/8 1-15/16	3/8x3/16 1/2x1/4		1-7/16 1-1/2 1-9/16 1-5/8 1-11/16 1-3/4	3/8x3/16		2-3/16 2-1/4 2-3/8 2-7/16 2-1/2 2-5/8			5  	
	1-1/16 1-1/8 1-3/16 1-1/4 1/2			5/8 11/16 3/4 13/16 7/8 15/16	3/16x3/32 1/4x1/8	2525	1-1/2 1-5/8 1-11/16 1-3/4 1-13/16 1-7/8 1-15/16 2 2-1/8			1-7/16 1-1/2 1-9/16 1-5/8 1-11/16 1-3/4 1-13/16	3/8x3/16	4040	2-3/16 2-1/4 2-3/8 2-7/16 2-1/2 2-5/8 2-11/16			5   	
	1-1/16 1-1/8 1-3/16 1-1/4 1/2 9/16 5/8 11/16		-	5/8 11/16 3/4 13/16 7/8 15/16 1		2525	1-1/2 1-5/8 1-11/16 1-3/4 1-13/16 1-7/8 1-15/16 2 2-1/8 2-3/16		3030	1-7/16 1-1/2 1-9/16 1-5/8 1-11/16 1-3/4 1-13/16 1-7/8 1-15/16 2	3/8x3/16	4040	2-3/16 2-1/4 2-3/8 2-7/16 2-1/2 2-5/8 2-11/16 2-3/4			5   	
	1-1/16 1-1/8 1-3/16 1-1/4 1/2 9/16 5/8 11/16 3/4		2012	5/8 11/16 3/4 13/16 7/8 15/16 1 1-1/16 1-1/8 1-3/16 1-1/4		2525	1-1/2 1-5/8 1-11/16 1-3/4 1-13/16 1-7/8 1-15/16 2-1/8 2-3/16 2-1/4		3030	1-7/16 1-1/2 1-9/16 1-5/8 1-11/16 1-3/4 1-13/16 1-7/8 1-15/16 2 2-1/16	3/8x3/16 1/2x1/4	4040	2-3/16 2-1/4 2-3/8 2-7/16 2-1/2 2-5/8 2-11/16 2-3/4 2-7/8			5	
	1-1/16 1-1/8 1-3/16 1-1/4 1/2 9/16 5/8 11/16 3/4 13/16	1/8x1/16	2012	5/8 11/16 3/4 13/16 7/8 15/16 1 1-1/16 1-1/8 1-3/16 1-1/4 1-5/16	1/4x1/8		1-1/2 1-5/8 1-11/16 1-3/4 1-13/16 1-7/8 1-15/16 2-1/8 2-3/16 2-1/4 2-5/16		3030	1-7/16 1-1/2 1-9/16 1-5/8 1-11/16 1-3/4 1-13/16 1-7/8 1-15/16 2 2-1/16 2-1/8		4040	2-3/16 2-1/4 2-3/8 2-7/16 2-1/2 2-5/8 2-11/16 2-3/4 2-7/8 2-15/16			5	
	1-1/16 1-1/8 1-3/16 1-1/4 1/2 9/16 5/8 11/16 3/4 13/16 7/8	1/8x1/16	2012	5/8 11/16 3/4 13/16 7/8 15/16 1 1-1/16 1-3/16 1-1/4 1-5/16 1-3/8			1-1/2 1-5/8 1-11/16 1-3/4 1-13/16 1-7/8 1-15/16 2-1/8 2-3/16 2-1/4 2-5/16 2-3/8	1/2x1/4	3030	1-7/16 1-1/2 1-9/16 1-5/8 1-11/16 1-3/4 1-13/16 1-7/8 1-15/16 2 2-1/16 2-1/8 2-3/16		4040	2-3/16 2-1/4 2-3/8 2-7/16 2-1/2 2-5/8 2-11/16 2-3/4 2-7/8 2-15/16 3			5	
	1-1/16 1-1/8 1-3/16 1-1/4 1/2 9/16 5/8 11/16 3/4 13/16 7/8 15/16	1/8x1/16	2012	5/8 11/16 3/4 13/16 7/8 15/16 1 1-1/16 1-3/16 1-1/4 1-5/16 1-3/8 1-7/16	1/4x1/8		1-1/2 1-5/8 1-11/16 1-3/4 1-13/16 1-7/8 1-15/16 2-1/8 2-3/16 2-1/4 2-5/16 2-3/8 2-7/16		3030	1-7/16 1-1/2 1-9/16 1-5/8 1-11/16 1-3/4 1-13/16 1-7/8 1-15/16 2 2-1/16 2-1/8 2-3/16 2-1/4		4040	2-3/16 2-1/4 2-3/8 2-7/16 2-1/2 2-5/8 2-11/16 2-3/4 2-7/8 2-15/16 3 3-1/8	5/8x5/16		5	
1010	1-1/16 1-1/8 1-3/16 1-1/4 1/2 9/16 5/8 11/16 3/4 13/16 7/8 15/16 1	1/8x1/16	2012	5/8 11/16 3/4 13/16 7/8 15/16 1 1-1/16 1-1/8 1-3/16 1-1/4 1-5/16 1-3/8 1-7/16 1-1/2	1/4x1/8	2525	1-1/2 1-5/8 1-11/16 1-3/4 1-13/16 1-15/16 2 2-1/8 2-3/16 2-1/4 2-5/16 2-3/8 2-7/16 2-1/2	1/2x1/4 5/8X3/16	3030	1-7/16 1-1/2 1-9/16 1-5/8 1-11/16 1-3/4 1-13/16 1-7/8 1-15/16 2 2-1/16 2-1/8 2-3/16 2-1/4 2-5/16		4040	2-3/16 2-1/4 2-3/8 2-7/16 2-1/2 2-5/8 2-11/16 2-3/4 2-7/8 2-15/16 3 3-1/8 3-3/16	5/8x5/16		5	
1310	1-1/16 1-1/8 1-3/16 1-1/4 1/2 9/16 5/8 11/16 3/4 13/16 7/8 15/16 1 1-1/16	1/8x1/16	2012	5/8 11/16 3/4 13/16 7/8 15/16 1 1-1/16 1-1/8 1-3/16 1-1/4 1-5/16 1-3/8 1-7/16 1-1/2 1-9/16	1/4x1/8		1-1/2 1-5/8 1-11/16 1-3/4 1-13/16 1-15/16 2 2-1/8 2-3/16 2-1/4 2-5/16 2-3/8 2-7/16 2-1/2 	1/2x1/4 5/8X3/16	3030	1-7/16 1-1/2 1-9/16 1-5/8 1-11/16 1-3/4 1-13/16 1-7/8 1-15/16 2 2-1/16 2-1/8 2-3/16 2-1/4 2-5/16 2-3/8		4040	2-3/16 2-1/4 2-3/8 2-7/16 2-1/2 2-5/8 2-11/16 2-3/4 2-7/8 2-15/16 3 3-1/8 3-3/16 3-1/4	5/8x5/16		5	
1310	1-1/16 1-1/8 1-3/16 1-1/4 1/2 9/16 5/8 11/16 3/4 13/16 7/8 15/16 1 1-1/16 1-1/8	1/8x1/16	2012	5/8 11/16 3/4 13/16 7/8 15/16 1 1-1/16 1-1/8 1-3/16 1-1/4 1-5/16 1-7/16 1-1/2 1-9/16 1-5/8	1/4x1/8 5/16x5/32		1-1/2 1-5/8 1-11/16 1-3/4 1-13/16 1-7/8 1-15/16 2 2-1/8 2-3/16 2-1/4 2-5/16 2-3/8 2-7/16 2-1/2 	1/2x1/4 5/8X3/16	3030	1-7/16 1-1/2 1-9/16 1-5/8 1-11/16 1-3/4 1-13/16 1-7/8 1-15/16 2 2-1/16 2-1/8 2-3/16 2-1/4 2-5/16 2-3/8 2-7/16	1/2x1/4	4040	2-3/16 2-1/4 2-3/8 2-7/16 2-1/2 2-5/8 2-11/16 2-3/4 2-7/8 2-15/16 3 3-1/8 3-3/16 3-3/8	5/8x5/16		5	
1310	1-1/16 1-1/8 1-3/16 1-1/4 1/2 9/16 5/8 11/16 3/4 13/16 7/8 15/16 1 1-1/16 1-1/8 1-3/16	1/8x1/16 3/16x3/32	2012	5/8 11/16 3/4 13/16 7/8 15/16 1 1-1/16 1-1/8 1-3/16 1-1/4 1-5/16 1-7/16 1-1/2 1-9/16 1-5/8 1-11/16	1/4x1/8 5/16x5/32		1-1/2 1-5/8 1-11/16 1-3/4 1-13/16 1-7/8 1-15/16 2-1/8 2-3/16 2-1/4 2-5/16 2-3/8 2-7/16 2-1/2 	1/2x1/4 5/8X3/16	3030	1-7/16 1-1/2 1-9/16 1-5/8 1-11/16 1-3/4 1-13/16 1-7/8 1-15/16 2 2-1/16 2-1/8 2-3/16 2-1/4 2-5/16 2-3/8 2-7/16 2-1/2		4040	2-3/16 2-1/4 2-3/8 2-7/16 2-1/2 2-5/8 2-11/16 2-3/4 2-7/8 2-15/16 3-3/16 3-3/16 3-3/8 3-7/16	5/8x5/16		5	
1310	1-1/16 1-1/8 1-3/16 1-1/4 1/2 9/16 5/8 11/16 3/4 13/16 7/8 15/16 1 1-1/16 1-1/8 1-3/16 1-1/4	1/8x1/16 3/16x3/32	2012	5/8 11/16 3/4 13/16 7/8 15/16 1 1-1/16 1-1/8 1-3/16 1-1/4 1-5/16 1-7/16 1-1/2 1-9/16 1-5/8 1-1/16 1-5/8	1/4x1/8 5/16x5/32		1-1/2 1-5/8 1-11/16 1-3/4 1-13/16 1-7/8 1-15/16 2-1/8 2-3/16 2-1/4 2-5/16 2-3/8 2-7/16 2-1/2 	1/2x1/4 5/8X3/16	3030	1-7/16 1-1/2 1-9/16 1-5/8 1-11/16 1-3/4 1-13/16 1-7/8 1-15/16 2 2-1/16 2-1/8 2-3/16 2-1/4 2-5/16 2-3/8 2-7/16 2-1/2 2-5/8	1/2x1/4	4040	2-3/16 2-1/4 2-3/8 2-7/16 2-1/2 2-5/8 2-11/16 2-3/4 2-7/8 2-15/16 3-1/8 3-3/16 3-1/4 3-3/8 3-7/16 3-1/2	5/8x5/16		5	
1310	1-1/16 1-1/8 1-3/16 1-1/4 1/2 9/16 5/8 11/16 3/4 13/16 7/8 15/16 1 1-1/16 1-1/8 1-3/16 1-1/4 1-5/16	1/8x1/16 3/16x3/32	2012	5/8 11/16 3/4 13/16 7/8 15/16 1 1-1/16 1-1/8 1-3/16 1-1/4 1-5/16 1-7/16 1-1/2 1-9/16 1-5/8 1-1/16 1-3/4 1-13/16	1/4x1/8 5/16x5/32		1-1/2 1-5/8 1-11/16 1-3/4 1-13/16 1-7/8 1-15/16 2-1/8 2-3/16 2-1/4 2-5/16 2-3/8 2-7/16 2-1/2 	1/2x1/4 5/8X3/16	3030	1-7/16 1-1/2 1-9/16 1-5/8 1-11/16 1-3/4 1-13/16 1-7/8 1-15/16 2 2-1/16 2-1/8 2-3/16 2-1/4 2-5/16 2-3/8 2-7/16 2-1/2 2-5/8 2-1/16	1/2x1/4	4040	2-3/16 2-1/4 2-3/8 2-7/16 2-1/2 2-5/8 2-11/16 2-3/4 2-7/8 2-15/16 3-3/16 3-3/16 3-3/8 3-7/16 3-1/2 3-5/8	5/8x5/16 3/4x3/8		5	
1310	1-1/16 1-1/8 1-3/16 1-1/4 1/2 9/16 5/8 11/16 3/4 13/16 7/8 15/16 1 1-1/16 1-1/8 1-3/16 1-1/4 1-5/16 1-3/8	1/8x1/16 3/16x3/32 1/4x1/8 5/16x5/32	2012	5/8 11/16 3/4 13/16 7/8 15/16 1-1/16 1-1/4 1-5/16 1-3/8 1-7/16 1-1/2 1-9/16 1-5/8 1-1/16 1-3/4 1-13/16 1-7/8	1/4x1/8 5/16x5/32 3/8x3/16		1-1/2 1-5/8 1-11/16 1-3/4 1-13/16 1-7/8 1-15/16 2-1/8 2-3/16 2-1/4 2-5/16 2-3/8 2-7/16 2-1/2  	1/2x1/4  5/8X3/16	3030	1-7/16 1-1/2 1-9/16 1-5/8 1-11/16 1-3/4 1-13/16 1-7/8 1-15/16 2 2-1/16 2-1/8 2-3/16 2-1/4 2-5/16 2-1/2 2-5/16 2-1/2 2-5/8 2-1/16 2-1/2	1/2x1/4	4040	2-3/16 2-1/4 2-3/8 2-7/16 2-1/2 2-5/8 2-11/16 2-3/4 2-7/8 2-15/16 3-1/8 3-3/16 3-1/4 3-3/8 3-7/16 3-1/2 3-5/8 3-11/16	5/8x5/16 3/4x3/8		5	
1310	1-1/16 1-1/8 1-3/16 1-1/4 1/2 9/16 5/8 11/16 3/4 13/16 7/8 15/16 1 1-1/16 1-1/8 1-3/16 1-1/4 1-5/16 1-3/8 	1/8x1/16 3/16x3/32 1/4x1/8 5/16x5/32	2012	5/8 11/16 3/4 13/16 7/8 15/16 1 1-1/16 1-1/8 1-3/16 1-1/4 1-5/16 1-1/2 1-9/16 1-5/8 1-1/16 1-3/4 1-13/16 1-7/8 1-15/16	1/4x1/8 5/16x5/32 3/8x3/16		1-1/2 1-5/8 1-11/16 1-3/4 1-13/16 1-7/8 1-15/16 2-1/8 2-3/16 2-1/4 2-5/16 2-3/8 2-7/16 2-1/2  	1/2x1/4  5/8X3/16	3030	1-7/16 1-1/2 1-9/16 1-5/8 1-11/16 1-3/4 1-13/16 1-7/8 1-15/16 2 2-1/16 2-1/8 2-3/16 2-1/4 2-5/16 2-1/2 2-5/16 2-1/2 2-5/8 2-1/16 2-1/2 2-5/8 2-1/16	1/2x1/4 5/8x5/16	4040	2-3/16 2-1/4 2-3/8 2-7/16 2-1/2 2-5/8 2-11/16 2-3/4 2-7/8 2-15/16 3-1/8 3-3/16 3-1/4 3-3/8 3-7/16 3-1/2 3-5/8 3-11/16 3-3/4	5/8x5/16 3/4x3/8		5	
1310	1-1/16 1-1/8 1-3/16 1-1/4 1/2 9/16 5/8 11/16 3/4 13/16 7/8 15/16 1 1-1/16 1-1/8 1-3/16 1-1/4 1-5/16 1-3/8	1/8x1/16 3/16x3/32 1/4x1/8 5/16x5/32	2012	5/8 11/16 3/4 13/16 7/8 15/16 1-1/16 1-1/4 1-5/16 1-3/8 1-7/16 1-1/2 1-9/16 1-5/8 1-1/16 1-3/4 1-13/16 1-7/8	1/4x1/8 5/16x5/32 3/8x3/16 1/2x1/4		1-1/2 1-5/8 1-11/16 1-3/4 1-13/16 1-7/8 1-15/16 2-1/8 2-3/16 2-1/4 2-5/16 2-3/8 2-7/16 2-1/2  	1/2x1/4  5/8X3/16	3030	1-7/16 1-1/2 1-9/16 1-5/8 1-11/16 1-3/4 1-13/16 1-7/8 1-15/16 2 2-1/16 2-1/8 2-3/16 2-1/4 2-5/16 2-1/2 2-5/16 2-1/2 2-5/8 2-1/16 2-1/2	1/2x1/4	4040	2-3/16 2-1/4 2-3/8 2-7/16 2-1/2 2-5/8 2-11/16 2-3/4 2-7/8 2-15/16 3-1/8 3-3/16 3-1/4 3-3/8 3-7/16 3-1/2 3-5/8 3-11/16	5/8x5/16 3/4x3/8		5	





# BTL Taper Bushings KEYWAY

DIN 6885 JIS B 1301-1976 UNI 6604-1969 GB 1095-1979

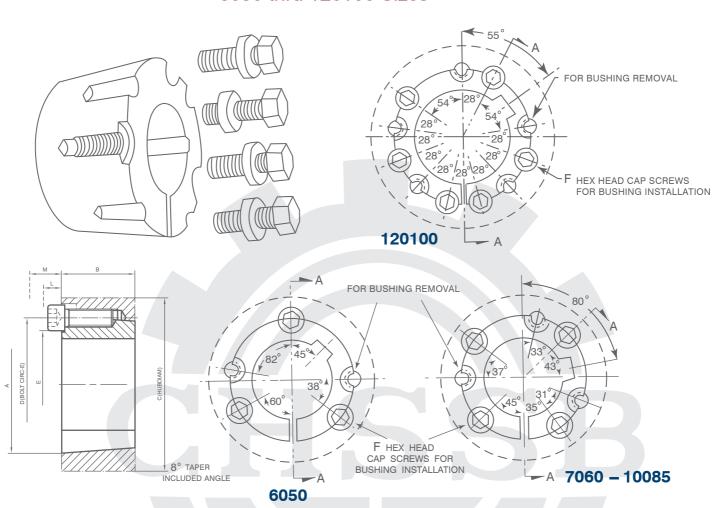
No	Bush	Bore	Bushing	Bush	Bore	Bushing	Bush	Bore	Bushing	Bush	Bore	Bushing	Bush	Bore	Bushing	Bush	Bore	Bushing
10   31.40			_	1		_			_	1		_			_	1		
1		10			14			20			25			35			55	
14			4x1.80			382.30			0x2.60	-		8x3.30			10x5.50			18x4 40
106   50,230   106   1				-									_		12x3.30			10,4.10
100   18   18   22   24   25   28   28   33   30   38   38   44   12   12   23   28   28   33   28   38   30   38   38   44   12   12   23   30   42   12   23   30   42   12   23   30   44   12   23   30			5x2.30			6x2.80			8x3.30			10v3 30				-		20x4.90
19	1008			-								1005.50			14x3.80			
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1180		-		1610					12x3.30			14x3.80			10% 1. 10	-		20
1						10x3.30				-		16x4 30			20x4.90			28X0.40
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14			4x1.80									18x4.40		85	22x5.40			
16				$\triangle$	42	12x2.20			16x4.30			20x4.90	2525	90	25x5.40			
1180 19			5x2.30				2517	60	18x4.40	3020	75		3535			4545		
20 6x2.80 22 24 8x3.30 25 8x2.00  11 4x1.80 20 6x2.80 22 28 8x3.30 20 22 24 25 8x3.30 20 20 20 20 20 20 20 20 20 20 20 20 20	1																	
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11			8x3.30			5x2.30												
12		28	8x2.00		18													
1210			4x1.80			6x2.80												
1210   16   5x2.30   24   25   28   8x3.30   20   20   6x2.80   25   28   8x3.30   30   22   24   25   28   8x3.30   30   25   28   8x3.30   30   30   30   30   30   30   30			121.00															
1210   20   6x2.80   25   8x3.30   25   6x2.80   25   8x3.30   20   6x2.80   25   8x3.30   20   6x2.80   25   8x3.30   20   6x2.80   25   8x3.30   20   6x2.80   22   4x5			5x2.30															
1210				1		0,72.20												
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12   25				-		10x3 30		20	6x2.80		25			40	12x3.30		60	18v4 40
28 8x3.30 30 42 12x3.20 42 12x2.20 42 12x3.30 42 12x3.3				\		1000.50			0,12.00			8x3.30			12/3.30			1074.40
30			8x3.30		40	12x3.30		24		1				45			-	20x4.90
11					42	12x2.20									14x3.80			
12 4x1.80		32	10x3.30						8x3.30			10x3.30			16.420			22x5.40
12			4x1.80													-		25×5 40
1215   16   5x2.30   18   19   6x2.80   20   6x2.80   22   22   22   22   22   22   22									10x3.30			12x3.30			10%1.10			23,40
1215			5x2.30		18						$\overline{}$		-					
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22   24   25   8x3.30   28   8x3.30   28   30   32   35   10x3.30   38   40   12x3.30   45   48   14x3.80   50   32   22   24   25   28   8x3.30   30   32   33   33   33   34   34   34   34	1215	20	0.00		$\overline{}$				14v3 80			16x4.30	-			-		2277 40
24									1485.00			18x4.40			23,73,70			32X7.4U
28 8X3.30 30 32 10x3.30 14 5x2.30 18 19 6x2.80 2012 1310 22 2 4 25 28 8x3.30 30 32 10x3.30 40 42 12x3.30 45 48 14x3.80 50 50						8X3.30	2525		16x4.30	2020		20.400		100	28x6.40			
30   32   10x3.30   38   38   40   42   12x3.30   45   48   14x3.80   50   30   32   10x3.30   3			8x3.30		30		2525	60	18x4.40	3030	75	20x4.90	4040			5050		
32 10x3.30 14 5x2.30 18 19 6x2.80 20 22 4 25 28 8x3.30 30 32 10x3.30																		
1310   10   10   10   10   10   10   10		_	10x3.30	1		10x3.30												
1310   16   12   12   12   13   14   14   15   14   14   15   14   15   16   16   16   16   16   16   16			5x2.30	2012														
1310   45   48   14x3.80   50     45   48   48   4x3.80   50     45   48   48   4x3.80   50   48   4x3.80   50   48   4x3.80   50   50   4x3.80   50   50   50   50   50   50   50						12x3.30												
1310 20 6x2.80 48 14x3.80 50 50 50 50 50 50 50 50 50 50 50 50 50																		
1310 22 50 50 70 70 70 70 70 70 70 70 70 70 70 70 70			6x2.80			14x3.80												
24 25 28 8x3.30 30 32 10x3.30	1210				50													
28 8X3.30 30 32 10×3.30	1310			1														
28 30 32 10×3 30			8x3 30															
32 10×3 30			0.0.00															
1   1003 30				-														
			10x3.30															





## BTL Taper Bushings

# TAPER BUSHING DIMENSIONS(Con t.) 6050 thru 120100 Sizes



#### Dimensions for 6050 thru 120100 BTL Taper Bushings

Bush.No.	А	В	D	Socket Head Cap Screws	Е	L	М
6050	9.250	5	9	3-11/4x31/2	63/4	15/8	43/8
7060	10.250	6	10	4-1 <sub>1/4</sub> x3 <sub>1/2</sub>	73/4	<b>1</b> 5/8	43/8
8065	11.250	61/2	11	4-1 <sub>1/4</sub> x3 <sub>1/2</sub>	83/4	<b>1</b> 5/8	43/8
10085	14.750	81/2	141/2	4-11/2x41/4	113/4	2	53/8
120100	17.250	10	17	6-1 <sub>1/2</sub> x4 <sub>1/4</sub>	141/4	2	53/8

#### **Dimensions forTAPER Bushings Metric.Inches Bore**

Bush.No	inches	s bore	metric bore					
Dusii.No	Min.	Max.	Min.	Max.				
6050	47/16	6	80	150				
7060	415/16	7	90	175				
8065	57/16	8	110	200				
10085	7	10	175	250				
12100	8	12	200	300				

Bore and keyway dimensions conform to ISO standard recommendation R773. for "free" fit

If complete instructions is needed, refer to instruction sheet packed with each bushing.





## QTL Taper Bushings

JA - S





QTL Taper bushings are made of high-quality engineered materials, and the surface is phosphated. They are fixed with UNC bolts of 12.9 grade, and packed into boxes individually.

Among QTL Taper bushings, type JA-E with inner bores and keyways in inches can be sold off-the-shelf based on the stock with immediate delivery. Type F-S are produced made-to-order with prompt delivery.

QTL Taper bushings in metric dimensions can be produced as well.





## QTL Taper Bushing

The QTL bushings are commonly used throughout the industry for convenience and design flexibility. They are made of quality gray or ductile iron and are easily installed by tightening cap screws.

The bushing is inserted into the components that compress the bore of the bushing, gripping the shafts so that no external keys are required. QTL bushings can be easily re-moved by using the cap screws as well.

Double-drilled holes are furnished in QTL bushings for mounting the component in the conventional or reverse positions. This allows cap screws to be installed through the hub or bushing flange, whichever is more convenient. No matter which way the component is installed, cap screws are always inserted from the outside where they can be easily assembled.

QTL bushings are available in stock for all popular bores within the range of each bushing size.



Some power transmission products that may use QTL bushings are pulleys, sprockets, sheaves, couplings, unlimited-fans, inpellers, and/or other products that need to be shaft mounted.

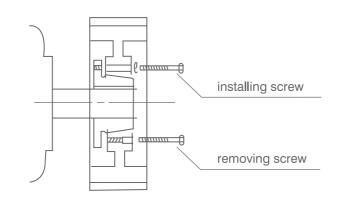
#### TYPICAL INSTALLATION OF QTL BUSHING ON A MOTOR SHAFT

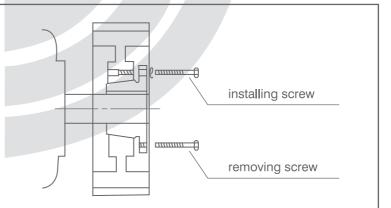
#### Reverse Mounting:

Make sure the small end of taper bushing toward the motor as shown in diagram below.

To assemble, place cap screws into bushing flange through drilled holes. Finger tighten the screws into the hub. Slip assembled unit into desired position on shaft, small taper end first. Tighten all cap screws to specified wrench torque.

To remove, simply draw cap screws. As they are loosened up, the grip between bushing and hub will be released.





#### **Conventional Mounting:**

Make the bushing flange toward the motor as shown in diagram above.

To assemble, place QTL bushing in the hub and insert cap screws into the hub through drilled holes. Finger tighten cap screws into holes in bushing flange. Slip assemble unit into desired position on shaft, flange end first. Tighten all cap screws to specified wrench torque.

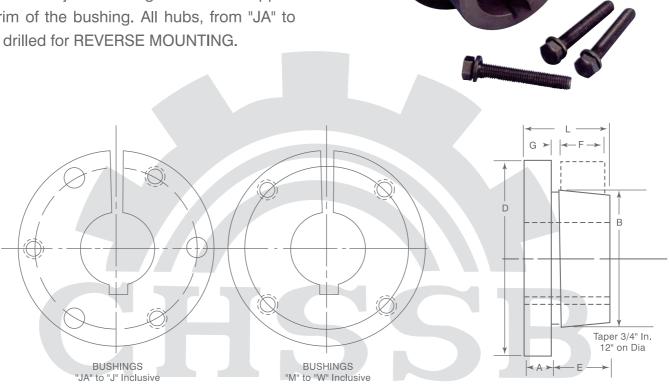
To remove, simply draw cap screws. As they are loosened up, the grip between bushing and hub will be released.





## QTL Taper Bushings

The "QTL" Bushing easily fits over the taper hub. A tight press can be produced on the shaft by tightening the cap screws. The bushing is easily removeable from the hub by using the pull-up bolts as jack bushing in the holes tapped in the rim of the bushing. All hubs, from "JA" to "J", are drilled for REVERSE MOUNTING.



#### STOCK QTL BUSHINGS DIMENSIONS

				DIMENSIO	NS (Inches)				Cap STOCK BORE RANGE			ANGE	Average
Bush-					*	* *		Bolt	Screws	Mini-	MAXI	MAXIMUM	
ing	Α	В	D	E	F	G	L	Circle	Required	mum	Standard	Shallow	Weight
l liig								Official		mam	Keyway	Keyway	(Approx)
JA	5/16	1.375	2	11/16	9/16	0.20	1	1.656	3-10×1	3/8	1	<b>1</b> 3/16	0.9
SH	7/16	1.871	211/16	7/8	13/16	0.23	15/16	21/4	3-1/4x13/8	1/2	13/8	15/8	1.0
SDS	7/16	2.187	31/8	7/8	3/4	0.23	<b>1</b> 5/16	211/16	3-1/4x13/8	1/2	15/8	<b>1</b> 15/16	1.0
SD	7/16	2.187	31/8	13/8	13/4	0.23	113/16	211/16	3-1/4x17/8	1/2	15/8	<b>1</b> 15/16	1.5
SK	9/16	2.812	37/8	13/8	11/4	0.23	115/16	35/16	3-5/16x2	1/2	21/8	21/2	2.0
SF	5/8	3.125	45/8	<b>1</b> 7/16	11/4	0.23	21/16	37/8	3-3/8x2	1/2	21/4	27/8	4.0
Е	7/8	3.834	6	17/8	15/8	0.28	23/4	5	3-1/2x23/4	7/8	27/8	31/2	10.5
F	1	4.437	65/8	23/4	21/2	0.34	33/4	55/8	3-9/16x35/8	1	31/4	315/16	15
J	11/8	5.148	71/4	31/2	33/16	0.31	45/8	61/4	3-5/8x41/2	<b>1</b> 1/2	313/16	41/2	23
М	11/4	6.494	9	51/2	53/16	0.34	63/4	77/8	4-3/4×63/4	2	411/16	51/2	55
N	11/2	6.992	10	65/8	61/4	0.56	81/8	81/2	4-7/8x8	27/16	51/16	57/8	73
P+	13/4	8.242	113/4	<b>7</b> 5/8	71/4	0.63	93/8	10	4-1x91/2	215/16	513/16	7	120
W+	2	10.437	15	93/8	9	0.69	113/8	123/4	4-11/8x111/2	4	71/2	81/2	250
S+	31/4	12.125	173/4	121/2	12	0.75	153/4	15	5-11/4x151/2	6	81/4	10	400

- +Consult NSPT for delivery
- \*F = Length of Mating Bore
- $_{*} * G = Gap$  Between " QTL " Bushing and Mating Hub





### **A1**

## QTL BUSHING DIMENSIONS AND RANGES FOR INNER BORES AND KEYWAY

USAS B 17.1 1967 KEYS AND KEYWAYS

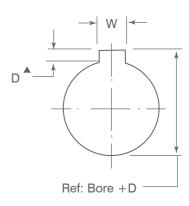
	1			1 1		1								1\L1		ID ILL	/WAYS
Bush	Bore	Keyway	Bush	Bore	Keyway	Bush		Keyway	Bush		Keyway	Bush		Keyway	Bush	Bore	Keyway
	3/8 7/16	None	SDS	17/8 115/16	1/2x1/16		<b>1</b> 7/16 <b>1</b> 1/2			213/16 27/8	3/4x3/8		<b>1</b> 1/2 <b>1</b> 9/16			213/16 27/8	
	1/2	1/8x1/16	SD	2	None		<b>1</b> 9/16	3/8x3/16		215/16			15/8	3/8x3/16		25/16	
	9/16					-	15/8	-,,		3	2/4 4/2		111/16			3	3/4x3/8
	5/8 11/16			1/2 9/16	1/8x1/16		111/16 13/4		E	31/8 33/16	3/4x1/8		13/4 113/16		-	31/8 33/16	
	3/4	3/16x3/32		5/8		1	13/4 113/16		-	31/4			17/8			31/4	
JA	13/16	0,10,0,02		11/16			17/8			35/16		1	<b>1</b> 15/16			35/16	
	7/8			3/4	3/16x3/32		<b>1</b> 15/16			33/8	7/02/1/16		2	1/0×1/4		33/8	
	15/16	1/4x1/8		<b>1</b> 3/16			2	1/2x1/4		37/16	7/8x1/16		21/16	1/2x1/4		37/16	
	1	1/4/1/0		7/8			21/16	1/2×1/4		31/2			21/8			31/2	7/8x7/16
	11/16			<b>1</b> 5/16			21/8			1			23/16			35/8	
	11/8	1/4x1/16		1 11/16			23/16 21/4			11/16			21/4		-	33/4 37/8	
	<b>1</b> 3/16 <b>1</b> 1/4	None		11/18	1/4x1/8		25/16		-	11/8 13/16	1/4x1/8		25/16 23/8			315/16	
	1/2			13/16			23/8			13/16			27/16		M	4	
	9/16	1/8X1/16		11/4		SF	27/16	5/8x3/16		15/16			21/2			41/8	
	5/8		1	15/16	5/16x5/32		21/2			13/8	5/16x5/32		29/16	5/8x5/16		43/16	1x1/2
	11/16			13/8	0/10/0/32		29/16			17/16			25/8			41/4	
	3/4	3/16X3/32	SK	17/16			25/8	5/8x1/16		11/2		J	211/16			43/8	
	13/16			11/2	2/2 2/42		211/16	0,0,11,10		19/16	3/8x3/16		23/4		-	47/16	
	7/8 15/16			19/16 15/8	3/8x3/16		23/4 213/16	3/4x1/16	-	15/8	-, -,,,,,		213/16 27/8			41/2 45/8	<b>1</b> 1/4x5/8
	15/16			111/16			27/8	3/4X1/10		111/16 13/4			215/16			43/4	11/4x5/6
	1 <sub>1/16</sub>			13/4						13/4			3	3/4x3/8		47/8	
SH	11/8	1/4X1/8		113/16			215/16	None		17/8			31/8	5/ 17.5/5		415/16	
	<b>1</b> 3/16			17/8			7/8	3/16x3/32		<b>1</b> 15/16			33/16			5	<b>1</b> 1/4x1/4
	11/4			<b>1</b> 15/16	1/2x1/4		15/16			2	1/2x1/4		31/4			51/4	
	<b>1</b> 5/16	5/16X5/32		2	1/2X1/4		1			21/16	1/2X1/4		35/16			53/8	
	13/8	, ,		21/16			11/16	1/4x1/8		21/8			33/8			57/16	
	17/16 11/2			21/8 23/16		-	11/8 13/16			23/16			37/16 31/2	7/8x7/16		51/2	
	1 1/2 19/16	3/8X1/16		21/4	1/2x1/8		11/4		F	21/4 25/16		-	35/8			27/16 21/2	
	15/8			25/16			15/16			23/8			33/4			29/16	
	<b>1</b> 11/16	None		23/8			13/8	5/16x5/32		27/16			37/8	7		25/8	5/8x5/16
	1/2	1/8x1/16		27/16	5/8x1/16		17/16			21/2	E/O E/13		315/16			211/16	
	9/16	1/3/1/10		21/2			<b>1</b> 1/2			29/16	5/8x5/16		4			23/4	
	5/8			29/16	None		19/16	3/8x3/16		25/8			41/8	1x1/8		213/16	
	11/16	0/10:0/00		25/8		-	15/8			211/16			43/8			27/8	
	3/4 13/16	3/16x3/32		1/2 9/16	1/8x1/16		111/16 13/4			23/4 213/16			47/16 41/2			215/16	3/4x3/8
	7/8			5/8			113/16			27/8			2		1	31/8	0/470/0
	15/16		1	11/16			17/8			215/16			21/16		N	33/16	
	1		SF	3/4	3/16x3/32	Е	<b>1</b> 15/16			3	3/4x3/8		21/8	1/2x1/4		31/4	
SDS	11/16	1/4x1/8		13/16			2	1/2x1/4		31/8			23/16			35/16	
SD	11/8	1/7/1/0		7/8		-	21/16	1/6/1/7		33/16			21/4		-	33/8	
	13/16			15/16			21/8			31/4			25/16			37/16	7/8x7/16
	11/4		-	1 <b>1</b> 1/16			23/16 21/4			35/16		M	23/8 27/16			31/2 35/8	
	15/16 <b>1</b> 3/8	5/16x5/32		11/18	1/4x1/8		25/16		1	33/8 37/16			21/10			33/4	
	<b>1</b> 7/16		1	13/16			23/8			31/2	7/8x3/16		29/16	5/8x5/16		31/8	
	11/2	0/00/0/46		11/4			27/16			35/8			25/8			315/16	
	<b>1</b> 9/16	3/8x3/16		<b>1</b> 5/16	5/16x5/32		21/2	5/8x5/16		33/4			211/16			4	
	15/8			13/8	J/ 10XJ/3Z	-	29/16	0,000,10		37/8	1x1/8		23/4		1	41/8	1x1/2
	111/16	3/8x1/8					25/8			315/16	171/0	-				43/16	
	13/4		_				211/16			4	None					41/4	
	<b>1</b> 13/16	1/2x1/8					23/4									43/8	





### A2 BORES AND KEYWAY

Bush	Bore	Keyway	Bush	Bore	Keyway	Bush	Bore	Keyway	Bush	Bore	Keyway
	47/16			37/8			<b>6</b> 5/8			65/8	
	41/2	1x1/2		315/16		Р	63/4	1011110		63/4	
	45/8			4		Р	67/8	<b>1</b> 3/4x1/8		67/8	
	43/4			41/8			7			7	13/4x7/8
	47/8	<b>1</b> 1/4x5/8		43/16	1x1/2		4			71/4	
	415/16			41/4			41/8			73/8	
N	5			43/8			43/16		W	71/2	
l IN	51/4			47/16			41/4	1x1/2		75/8	
	53/8	<b>1</b> 1/4x1/4	P	41/2			43/8			73/4	
	57/16	1 1/4X1/4		45/8			47/16			77/8	
	51/2			43/4			41/2			8	2x1/4
	<b>5</b> 5/8			47/8			<b>4</b> 5/8			81/4	
	53/4	<b>1</b> 1/2x1/4		415/16			<b>4</b> 3/4			83/8	
	57/8			5	<b>1</b> 1/4x5/8	W	47/8			81/2	
	215/16			51/4		VV	415/16				
	3	3/4x3/8		53/8			5	<b>1</b> 1/4x5/8			
	31/8			57/16			51/4				
	33/16			51/2			53/8				
	31/4			55/8	14/0.0/4		57/16				
l <sub>P</sub>	35/16			53/4	11/2x3/4		51/2				
	33/8	7/8x7/16		57/8			55/8				
	37/16	7/0X7/10		515/16			53/4				
	31/2			6			57/8				
	35/8			61/4			515/16	14/0.0/4			
	33/4			63/8			6	<b>1</b> 1/2x3/4			
				61/2			61/4				
							63/8				
							61/2				



ISO STANDARD METHOD FOR MEASURING KEYSEAT DEPTH

▲ Depth measured at center line

#### **BORE RANGE FOR QTL BUSHING**

Bush.	Min.	M	ax.Bore wit	th:
No.	Bore	Full	Shallow	No
INO.	Dore	Keyway	Keyway	Keyway
JA	3/8	1	13/16	11/4
SH	1/2	13/8	15/8	111/16
SDS	1/2	15/8	<b>1</b> 15/16	2
SD	1/2	15/8	<b>1</b> 15/16	2
SK	1/2	21/8	21/2	25/8、29/16
SF	1/2	21/4	27/8	2 15/16
E	7/8	27/8	31/2	_
F	1	31/4	315/16	4
J	11/2	313/16	41/2	_
M	2	411/16	51/2	_
N	27/16	51/16	57/8	_
P	215/16	513/16	7	_
W	4	7/12	81/2	_
S	6	81/4	10	

#### **SHALLOW KEY DIMENSION**

Key Seat	Key	Key Seat	Key
3/8x1/16	3/8x1/4	7/8x3/16	7/8x5/8
3/8x1/8	3/8x5/16	1x1/16	<b>1</b> x9/16
1/2x1/32	1/2x9/32	1x1/8	1x5/8
1/2x1/16	1/2x5/16	11/4x1/4	<b>1</b> 1/4x3/4
1/2x1/8	1/2x3/8	11/4x1/4	<b>1</b> 1/4x7/8
5/8x1/16	5/8x3/8	<b>1</b> 1/2x1/8	11/2x1
5/8x3/16	5/8x1/2	13/4x3/8	13/4x3/4
3/4x1/8	3/4x1/2	13/4x3/8	13/4x1
7/8x1/16	7/8x1/2	2x5/16	2x1

Dimensions:inch

#### STANDARD KEYWAY & KEY DIMEMSION

Bores	Key Seat	Key
1/2-9/16	1/8x1/16	1/8x1/8
5/8-7/8	3/16x3/32	3/16x3/16
15/16- <b>1</b> 1/4	1/4x1/8	1/4x1/4
15/16-13/8	5/16x5/32	5/16x5/16
17/16-13/4	3/8x3/16	3/8x3/8
113/16-21/4	1/2x1/4	1/2x1/2
25/16-23/4	5/8x5/16	5/8x5/8
213/16-31/4	3/4x3/8	3/4x3/4
35/16-33/4	7/8x7/16	7/8x7/8
313/16-41/2	1x1/2	1x1
49/16-51/2	<b>1</b> 1/4x5/8	11/4x11/4
59/16-61/2	1 1/2x3/4	11/2x11/2
69/16-71/2	13/4x7/8	13/4x13/4

Dimensions:inch





# STL Taper Bushings

G-Yo



STL Taper bushings are made of tough malleable iron with indestructible keys on both shaft and hub. It has high torque carrying capacity and the external key provides enough force with no torque on the capscrews. The double split barrel assures true concentricity grips.

The standard bore sizes are from 3/8"~10".

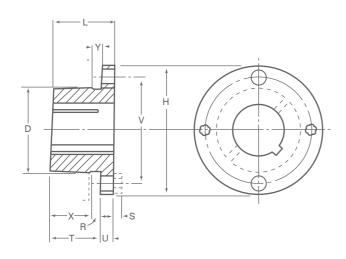


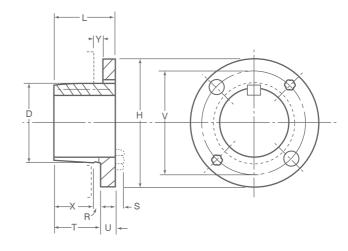




## **STL** Taper bushing

G-H





TYPE 1 TYPE 2

#### TYPE 1

### **Bushing Specifications**

					Din	nensi	ons							Cap	Screws	۸۰۰	\//ramah
Part					)								Type 1			Av.	Wrench
No.	L	U	Т	Large	Small	Н	V	W	Х	Υ	R	S	Bore Range	No.	Size	Wt.	Torque
	_			End	End			• • •			• •				0.20	Lbs.	InLbs.
G	1"	1/4"	3/4"	1.172"	1.133"	2"	<b>1</b> 9/16"	_	5/8"	3/16"	1/8"	3/16"	3/8" - 15/16"	2	1/4" x 5/8"	0.5	95
Н	11/4	1/4	1	1.625	1.570	21/2	2	_	7/8	3/16	1/8	3/16	3/8 - 13/8	2	1/4 x 3/4	0.8	95

### **TYPE 2**

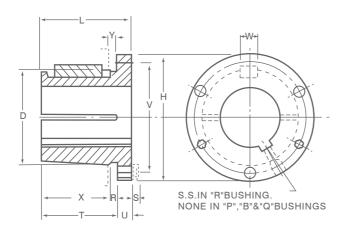
					Din	nensi	ons						_	Cap	Screws	۸۰٬	Wrongh
Part					)					Type 2			Av.	Wrench			
No.	L	U	Т	Large	Small	Н	V	W	Χ	Υ	R	S	Bore Range	No.	Size	Wt.	Torque
				End	End											Lbs.	InLbs.
G	1"	1/4"	3/4"	1.172"	1.133"	2"	<b>1</b> 9/16"	_	5/8"	3/16"	1/8"	3/16"	1"	2	1/4" x 5/8"	0.5	95
Н	<b>1</b> 1/4	1/4	1	1.625	1.570	21/2	2	_	7/8	3/16	1/8	3/16	17/16 - 11/2	2	1/4 x 3/4	0.8	95

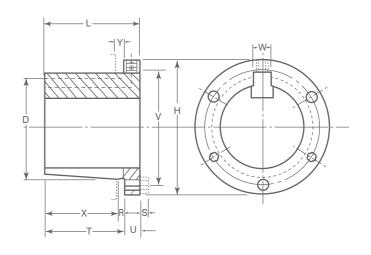




## **STL** Taper bushing

P-R





TYPE 1 TYPE 2

### TYPE 1

### **Bushing Specifications**

					Din	nensi	ons							Cap	Screws	Δ	\\
Part					)								Type 1			Av.	Wrench
No.	L	U	Т	Large	Small	Н	V	W	Χ	Υ	R	S	Bore Range	No.	Size	Wt.	Torque
				End	End											Lbs.	InLbs.
P1	<b>1</b> 15/16	13/32	<b>1</b> 17/32	1.9375	1.8555	3"	27/16	3/8"	<b>1</b> 5/16	7/32	7/32	1/4	1/2 - 17/16	3	5/16 x 1	1.3	192
P2	215/16	13/32	217/32	1.9375	1.7930	3"	27/16	3/8	25/16	7/32	7/32	1/4	3/4 <b>- 1</b> 7/16	3	5/16 x 1	1.5	192
P3	47/16	13/32	41/32	1.9375	1.6993	3"	27/16	3/8	313/16	7/32	7/32	1/4	11/8 - 13/8	3	5/16 x 1	2	192
В	<b>1</b> 15/16	1/2	<b>1</b> 7/16	2.625	2.5567	311/16	31/8	1/2	<b>1</b> 3/16	7/32	1/4	1/4	1/2 <b>1 - 1</b> 5/16	3	5/16 x <b>1</b> 1/4	1.8	192
Q1	21/2	17/32	<b>1</b> 31/32	2.875	2.7657	41/8	33/8	1/2	13/4	7/32	7/32	9/32	3/4 - 21/16	3	3/8 x <b>1</b> 1/4	3.5	348
Q2	31/2	17/32	231/32	2.875	2.7032	41/8	33/8	1/2	23/4	7/32	7/32	9/32	1" -21/16	3	3/8 x <b>1</b> 1/4	4.5	348
Q3	5	17/32	415/32	2.875	2.6094	41/8	33/8	1/2	41/4	7/32	7/32	9/32	13/8 - 21/16	3	3/8 x <b>1</b> 1/4	5.5	348
R1	27/8	5/8	21/4	4.000	3.8750	53/8	45/8	3/4	2"	1/4	1/4	9/32	11/8 - 213/16	3	3/8 x <b>1</b> 3/4	7.5	348
R2	47/8	5/8	41/4	4.000	3.7500	53/8	45/8	3/4	4"	1/4	1/4	9/32	13/8 - 213/16	3	3/8 x <b>1</b> 3/4	11	348

#### TYPE 2

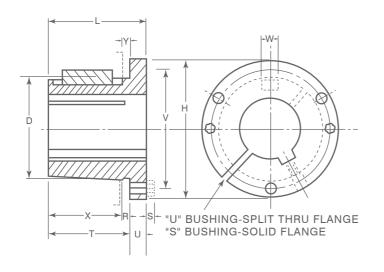
					Dir	nensi	ons						_	Cap	o Screws	Δ.,	\
Part					)								Type 2			Av.	Wrench
No.	L	U	Т	Large	Small	Н	V	W	X	Υ	R	S	Bore Range	No.	Size	Wt.	Torque
				End	End											Lbs.	InLbs.
P1	<b>1</b> 15/16	13/32	<b>1</b> 17/32	1.9375	1.8555	3	27/16	3/8"	<b>1</b> 5/16	7/32	7/32	1/4	11/2 - 13/4	3	5/16 x <b>1</b>	1.3	192
P2	215/16	13/32	217/32	1.9375	1.7930	3	27/16	3/8	25/16	7/32	7/32	1/4	11/2 - 13/4	3	5/16 x <b>1</b>	1.5	192
P3	47/16	13/32	41/32	1.9375	1.6993	3	27/16	3/8	313/16	7/32	7/32	1/4	15/8	3	5/16 x <b>1</b>	2	192
В	<b>1</b> 15/16	1/2	<b>1</b> 7/16	2.625	2.5567	311/16	31/8	1/2	13/16	7/32	1/4	1/4	2 - 27/16	3	5/16 x <b>1</b> 1/4	1.8	192
Q1	21/2	17/32	<b>1</b> 31/32	2.875	2.7657	41/8	33/8	1/2	13/4	7/32	7/32	9/32	21/8 - 211/16	3	3/8 x <b>1</b> 1/4	3.5	348
Q2	31/2	17/32	231/32	2.875	2.7032	41/8	33/8	1/2	23/4	7/32	7/32	9/32	21/8 - 25/8	3	3/8 x <b>1</b> 1/4	4.5	348
Q3	5	17/32	415/32	2.875	2.6094	41/8	33/8	1/2	41/4	7/32	7/32	9/32	21/8 - 21/2	3	3/8 x <b>1</b> 1/4	5.5	348
R1	27/8	5/8	21/4	4.000	3.8750	53/8	45/8	3/4	2	1/4	1/4	9/32	27/8 - 33/4	3	3/8 x <b>1</b> 3/4	7.5	348
R2	47/8	5/8	41/4	4.000	3.7500	53/8	45/8	3/4	4	1/4	1/4	9/32	27/8 - 35/8	3	3/8 x 13/4	11	348

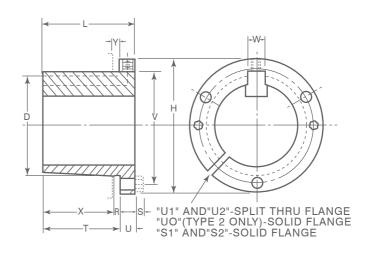




## STL Taper bushing

S-U





TYPE 1 TYPE 2

#### TYPE 1

### **Bushing Specifications**

					Din	nensi	ons							Cap	Screws	۸,,	Wrench
Part					)								Type 1			Av.	
No.	L	U	Т	Large	Small	Н	V	W	Х	Υ	R	S	Bore Range	No.	Size	Wt.	Torque
				End	End											Lbs.	InLbs.
S1	43/8	3/4	35/8	4.625	4.4180	63/8	53/8	3/4	35/16	5/16	5/16	3/8	111/16 - 33/16	3	1/2 x 21/4	13.5	840
S2	63/4	3/4	6"	4.625	4.2696	63/8	53/8	3/4	511/16	5/16	5/16	3/8	17/8 - 33/16	3	1/2 x 21/4	19	840
U0	51/4	<b>1</b> 1/16	43/16	6.000	5.7656	83/8	7"	11/4	33/4	7/16	7/16	15/32	23/8 - 31/16	3	5/8 x 23/4	30	1680
U0	415/16	3/4	43/16	6.000	5.7656	83/8	7"	11/4	33/4	7/16	7/16	15/32	31/4 - 41/4	3	5/8 x 23/4	27	1680
U1	71/8	<b>1</b> 1/16	61/16	6.000	5.6485	83/8	7"	11/4	55/8	7/16	7/16	15/32	23/8 - 41/4	3	5/8 x 23/4	40	1680
U2	101/8	<b>1</b> 1/16	91/16	6.000	5.4610	83/8	7"	11/4	85/8	7/16	7/16	15/32	27/16 - 41/4	3	5/8 x 23/4	50	1680

#### TYPE 2

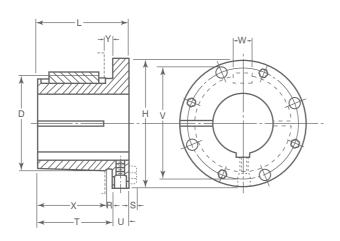
					Din	nensi	ons							Cap	Screws	Δ	\
Part					)								Type 2			Av.	Wrench
No.	L	U	Т	Large	Small	Н	V	W	Х	Υ	R	S	Bore Range	No.	Size	Wt.	Torque
				End	End										0.20	Lbs.	InLbs.
S1	43/8	3/4	35/8	4.625	4.4180	63/8	53/8	3/4	35/16	5/16	5/16	3/8	31/4 - 41/4	3	1/2 x 21/4	13.5	840
S2	63/4	3/4	6	4.625	4.2696	63/8	53/8	3/4	511/16	5/16	5/16	3/8	31/4 - 43/16	3	1/2 x 21/4	19	840
U0	51/4	<b>1</b> 1/16	43/16	6.000	5.7656	83/8	7	11/4	33/4	7/16	7/16	15/32	_	3	5/8 x 23/4	30	1680
U0	415/16	3/4	43/16	6.000	5.7656	83/8	7	11/4	33/4	7/16	7/16	15/32	43/8 - 51/2	3	5/8 x 23/4	27	1680
U1	71/8	<b>1</b> 1/16	61/16	6.000	5.6485	83/8	7	11/4	55/8	7/16	7/16	15/32	43/8 - 51/2	3	5/8 x 23/4	40	1680
U2	101/8	<b>1</b> 1/16	91/16	6.000	5.4610	83/8	7	11/4	85/8	7/16	7/16	15/32	43/8 - 5	3	5/8 x 23/4	50	1680

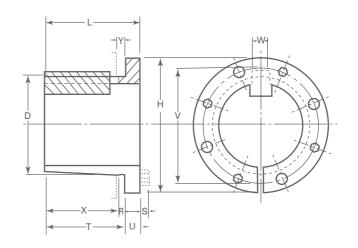




## STL Taper bushing

W-Y





TYPE 1 TYPE 2

### TYPE1

### **Bushing Specifications**

					Din	nensi	ons							Cap	o Screws	Δ.,	\A/u a va a la
Part		D Large Small H V W Y V R											Type 1			Av.	Wrench
No.	1	U	т	Large	Small	Н	V	W	Х	Υ	R	S	Bore Range	No.	Size	Wt.	Torque
	_			End	End		ľ	**	,					140.	0,20	Lbs.	InLbs.
W1	81/4	<b>1</b> 7/16	613/16	8.500	8.1016	121/2	10"	<b>1</b> 1/4	63/8	7/16	7/16	9/16	33/8 - 63/16	4	3/4 x 3	104	3000
W2	111/4	<b>1</b> 7/16	913/16	8.500	7.9141	121/2	10"	<b>1</b> 1/4	93/8	7/16	7/16	9/16	33/8 - 63/16	4	3/4 x 3	133	3000
Y0*	111/8	2"	91/8	12.000	11.4688	161/2	141/2	2	81/2	5/8	5/8	5/8	6 - 715/16	4	1 x 5	270	7200

### TYPE 2

					Din	nensi	ons							Cap	o Screws	Λ.,	Manah
Part					)								Type 2			Av.	Wrench
No.	L	U	Т	Large	Small	Н	V	W	Χ	Υ	R	S	Bore Range	No.	Size	Wt.	Torque
				End	End										0.20	Lbs.	InLbs.
W1	81/4	17/16	613/16	8.500	8.1016	121/2	10	<b>1</b> 1/4	63/8	7/16	7/16	9/16	61/4 - 77/16	4	3/4 x 3	104	3000
W2	111/4	<b>1</b> 7/16	913/16	8.500	7.9141	121/2	10	<b>1</b> 1/4	93/8	7/16	7/16	9/16	61/4 - 77/16	4	3/4 x 3	133	3000
Y0*	<b>11</b> 1/8	2	91/8	12.000	11.4688	161/2	141/2	2	81/2	5/8	5/8	5/8	8 - 10	4	1 x 5	270	7200





## STL BUSHING DIMENSIONS AND RANGES FOR INNER BORES AND KEYWAY

### **A1**

A	l																
Bush	Bore	Keyway	Bush	Bore	Keyway	Bush	Bore	Keyway	Bush	Bore	Keyway	Bush	Bore	Keyway	Bush	Bore	Keyway
	3/8 7/16 1/2 9/16	None 1/8x1/16	P <sub>2</sub>	3/4 13/16 7/8 15/16	3/16x3/32		15/16 1 11/16 11/8	1/4x1/8	Q3	17/16 11/2 19/16 15/8	3/8x3/16	R2	13/8 17/16 11/2 19/16	5/16x5/32 3/8x3/16	S <sub>1</sub>	31/2 35/8 311/16 33/4	7/8x7/16
G	5/8 11/16 3/4	3/16x3/32		1 11/16 11/8	1/4x1/8		13/16 11/4 15/16	5/16x5/32		111/16 13/4 113/16			15/8 11/16 13/4	3/083/10		37/8 315/16 4	1x1/2
	13/16 7/8 15/16 <b>1</b>	1/4x1/8		13/16 11/4 15/16 13/8	5/16x5/32		13/8 17/16 11/2 19/16			17/8 115/16 2 21/16	1/2x1/4		113/16 17/8 115/16 2	1/2x1/4 5/8x5/16		41/8 43/16 41/4 17/8	1/2x1/4 5/8x5/16
	3/8 7/16 1/2	None 1/8x1/16		13/8 17/16 11/2		Q <sub>1</sub>	15/8 111/16 13/4	3/8x3/16		21/8 23/16 21/4			21/16 21/8 23/16			115/16 2 21/16	
	9/16 19/32 5/8 21/32			19/16 15/8 111/16 13/4	3/8x3/16		113/16 17/8 115/16 2	1/2x1/4		25/16 23/8 27/16 21/2	5/8x5/16		21/4 25/16 23/8 27/16			21/8 23/16 21/4 25/16	
	11/16 3/4 25/32 13/16	3/16x3/32		11/8 13/8 15/8	1/4x1/8 5/16x5/32 3/8x3/16		21/16 21/8 23/16 21/4	1/231/4		11/8 13/16 11/4 15/16	1/4x1/8 5/16x5/32		21/2 29/16 25/8 211/16		S <sub>2</sub>	23/8 21/16 21/2 29/16	
Н	7/8 15/16 31/32 1		_	1/2 9/16 5/8 11/16	1/8x1/16	3/32 1/8 5/32 /32 Q2	25/16 23/8 27/16 21/2	5/8x5/16		13/8 17/16 11/2 19/16	3/8x3/16		23/4 213/16 27/8 215/16	3/4x3/8	_	25/8 211/16 23/4 213/16	
	11/16 11/8 13/16 11/4	1/4x1/8		3/4 13/16 7/8 15/16	3/16x3/32		29/16 25/8 211/16			15/8 111/16 13/4 113/16	0,000,10		3 31/8 33/16 31/4	5/420/0		27/8 215/16 3 31/8	3/4x3/8
	15/16 13/8 13/8	5/16x5/32		1 1 <sub>1/16</sub> 1 <sub>1/8</sub>	1/4x1/8		11/16 11/8 13/16	1/4x1/8		17/8 115/16 2	1/2x1/4		33/8 37/16 31/2	7/8x7/16		33/16 31/4 33/8	
	17/16 11/2 1/2 9/16	3/8x3/16 1/8x1/16	- В	13/16 11/4 15/16 13/8	5/16x5/32		11/4 15/16 13/8 17/16	5/16x5/32		21/16 21/8 23/16 21/4			35/8 111/16 13/4	3/8x3/16		37/16 31/2 35/8 311/16	7/8x7/16
	9/16 5/8 21/32 11/16 3/4 25/32 13/16	3/16x3/32		13/8 17/16 11/2 19/16 15/8 111/16	3/8x5/32		11/25 19/16 15/8 111/16 13/4 113/16	3/8x3/16		25/16 23/8 27/16 21/2 29/16 25/8	5/8x5/16		17/8 115/16 2 21/16 21/8 23/16	1/2x1/4		33/4 37/8 315/16 4 41/8 43/16	1x1/2
P <sub>1</sub>	7/8 15/16 31/32 1 11/16 11/8	1/4x1/8		13/4 113/16 17/8 115/16 2 21/16	1/2x1/4		17/8 115/16 2 21/16 21/8 23/16	1/2x1/4		211/16 23/4 213/16 27/8 215/16 3	3/4x3/8		21/4 25/16 23/8 27/16 21/2 29/16	5/8x5/16		23/8 27/16 21/2 29/16 25/8 211/16	5/8x5/16
	13/16 11/4 15/16 13/8	5/16x5/32		21/8 23/16 21/4 25/16			21/4 25/16 23/8 27/16	F/0::F/40		31/8 33/16 31/4 33/8			25/8 211/16 23/4 27/8		Uo	23/4 27/8 215/16 3	0/4:0/0
	13/8 17/16 11/2	2/0-0/40		23/8 27/16 3/4	5/8x5/16		21/2 211/16 25/8	5/8x5/16		37/16 31/2 35/8	7/8x7/16		215/16 3 31/8	3/4x3/8		31/8 33/16 31/4 33/8	3/4x3/8
	19/16 15/8 111/16 13/4	3/8x3/16	Q <sub>1</sub>	13/16 7/8	3/16x3/32	Q3	<b>1</b> 5/16 <b>1</b> 3/8	5/16x5/32		311/16			33/16 31/4 33/8 37/16	7/8x7/16		33/8 37/16 31/2 35/8	7/8x7/16





Δ2

## **New Standard Power Transmission**

## STL BUSHING DIMENSIONS AND RANGES FOR INNER BORES AND KEYWAY

AZ Bush		Keyway	Bush	Bore	Keyway	Bush	Bore	Keyway	Bush	Bore	Keyway	Bush	Bore	Keyway	Bush	Bore	Keywa
	311/16			5			45/8			57/16			14			55	16x5
	33/4	7/8x7/16		51/8			411/16	11/4x5/8 11/2x3/4		51/2	11/4x5/8 11/2x3/4 13/4x3/4	P1	15	5x2.5	Q <sub>1</sub>	60	18x5.5
	37/8			53/16			<b>4</b> 3/4			55/8			16			65	1000.0
	315/16		U <sub>1</sub>	51/4	<b>1</b> 1/4x5/8		47/8			53/4			18			28	8x3.5
	4		.	53/8			415/16		W2	57/8			19	6x3		30	0.0.0
	41/8	6 1x1/2	U2	57/16			5			515/16			20			32	
	43/16 41/4			51/2 27/16			51/8 53/16			6 61/8			22	8x3.5	R1	35 36	10x4
	43/8			21/10			51/4			<b>6</b> 3/16			25			38	
Uo	47/16			29/16			53/8			61/4			28			39	-
	41/2			25/8	5/8x5/16		57/16			63/8			30			40	12x4
	45/8	45/8 411/16 43/4 47/8 415/16 5		211/16			51/2			67/16			32			42	
	411/16			23/4			55/8			61/2			35			45	
				213/16			53/4			<b>6</b> 5/8			36			48	14x4.
				27/8			57/8			63/4			38			50	
				215/16		W <sub>1</sub>	515/16			67/8			39	404		55	16x5
	5 51/8			3 31/8	3/4x3/8		6 61/8			615/16			40 42	12x4 5x2.5		60 65	18x5.
	5 <sub>1/6</sub>	1 1/4X5/6		<b>3</b> 3/16			63/16			71/8			15			70	
		51/4 53/8 57/16 51/2		31/4			61/4			73/16			16			75	20x6
				33/8			63/8			71/4			18			80	00.47
	57/16			37/16			67/16			73/8			19			85	22x7
	51/2			31/2	7/8x7/16		61/2			77/16			20			90	25x7
	23/8			35/8	1/0/1/10		65/8						22			95	ZOXI
	27/16		311/16			63/4		STOCK			24			35			
	21/2	5/8x5/16		33/4			67/8	<b>1</b> 3/4x3/4	MILLIMETER BORE			25	8x3.5		36	10x4	
	29/16 25/8			37/8 315/16			615/16 7				E		28 30			38 39	
	211/16			4			71/8		BUSHINGS			В	32	10x4		40	12x4
	23/4			41/8			73/16						35			42	
	213/16			43/16	1x1/2		71/4			10			36	10x4		45	
	27/8	6 3/4x3/8		41/4			73/8	7/8x7/16		11	None 5x2.5		38	12x4 14x4.5 16x5	- R2	48	14x4.
	215/16			43/8			77/16		G	12			39			50	
	3			47/16			33/8			14			40			55	16x5
	31/8			41/2			37/16			16			42			60	18x5.5
	33/16 31/4			45/8 411/16			31/2 35/8			18 19			45 48			65 70	
	33/8		-	43/4			311/16			20	6x3		50			75	20x6
U <sub>1</sub>	37/16			47/8	11/4x5/8		33/4			22			55			80	
	31/2	7/8x7/16		415/16			37/8			24	8x3.5		60	18x5.5		85	22x7
	35/8	35/8 311/16		5			315/16			25	0,00.0		18	6x3 8x3.5		90	25x7
	311/16			33/8			4			10			19				
-	33/4			37/16	7/8x7/16	W2	41/8	1x1/2 11/4x5/8	Н	11	None		20				
	313/16	37/8		31/2			43/16			12			22				
				35/8			41/4			14	5x2.5	Q <sub>1</sub> -	24				
	315/16 4			311/16 33/4		_	43/8 47/16			16 18	6x3 8x3.5		25 28				
	41/8		W1	37/8			41/2			19			30				
	43/16			315/16			45/8			20			32				
	41/4			4			411/16			22			35	10v4			
	43/8			41/8			43/4			24			36	10x4			
	47/16			43/16	1x1/2		47/8			25			38	12x4			
	41/2			41/4			415/16			28			39				
			1	1 100	1		5			30			40				
	45/8			43/8								1 !					
_	45/8 411/16	a		47/16			51/8			32			42				
_	45/8	<b>1</b> 1/4x5/8								32 35 36	10x4		42 45 48	14x4.5			





NSPT series of Weld-on Hubs can be used with assembled sprockets, flanges and fans. Working together with BTL, QTL or STL bushings, they can be installed in various transmission mechanisms.



NSPT series of Weld-on Hubs are made of high quality low carbon steel with excellent welding and mechanical capability. NSPT offers the whole series of BTL, QTL or STL bushings at the same time.