

## BTL Taper bushing

Taper bushing is a new type of component part used for jointing mechanical transmission. It changed traditional design, easy-on, easy-off, compact in construction and high standardization. The grip is tightened through its taper surface, excellent concentricity and nonclearance joint, its transmission efficiency can be raised.

The sizes of taper bushings are designed in a standard series. The bore, Keyway and thread are machined in accordance with ISO standard. It is interchangeable and the customers can make their own choice according to his purpose and usage. This new type taper bushing is widely used.

Grey cast iron is the common material for BTL taper bushings. If high tensional bushing is required, ductile iron, steel and forged steel can be used. Bushing made of stainless steel can be used together with sprockets, clutches, gears and other transmission parts which are also made of stainless steel.

When taper bushing is used with other transmission parts, in the starting and frequent inversion, it will cause damages to the bore and keyway, 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 ta-

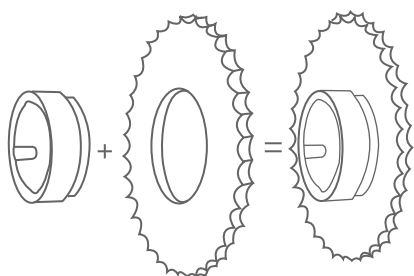


per bushing is used. In case the bore and keyway are damaged, it will resume to service so long as remove the old bushing and assemble a new one. The lifetime of the transmission part can be raised, so the maintenance expenses are reduced.

BTL Taper bushing includes: taper bushing itself and tightening screws. (also including packaging)

The range for its usage can be enlarged if a weld-on taper hub is used.

If more detailed information about taper bushing is required, please contact the manufacturer.



## ***BTL Taper bushing***

Taper-lock Bushing (abbreviated as "Bushing") is a new type of elasticity components in shaft-hub connection, and is widely used in belts, timing belts, sprockets, gears, bevels, couplings, rollers, sheaves and agitators, impellers, fan rotors and other products which need to be shaft mounted. Its features are as follows:

- 1) extremely secure fit on the shaft, excellent concentricity;
- 2) without interference elasticity clip, easy on easy off, and low maintenance;
- 3) better shock resistance, long life-time, good reliability, using in the situation of frequent starting and inversion, heavy load, and other severe operating conditions;
- 4) It is widely used in many circumstances, and offers widely mounting between all kinds of transmission components and different diameter shafts only by a few specifications; easy standardization, easy serialiation and suitable for large scale of special productions, the cost then be reduced.

At present, traditional connection method by key is widely used in mechanical transmission. But its reliability is bad, for its concentricity is not very good, the installation is inconvenient, and keyway connection is easy to lose effectiveness under shock loads. Anyway, bushing has conquered all these defects completely, so it has been propagated soon after the bushing was invented in 1980's, it becomes very popular in USA and Europe, and Japanese people use more and more since 1990s. So, we can say, all over the world, bushing has taken place of traditional key connection in many places, and becomes new type of mechanical basic components.

1. Basic construction and working principal of bushing connection. Bushing mates with taper bore in transmission hub through 4 semi-taper angle surface, Its keyway is used to increase elasticity. The tightening press on the shaft is caused by tighten screws. The screws' structure and quantity depend on bushing's type and specification. When bushing and hub being tightened, bushing's bore shrinked

and pressed on the shaft. Therefore, the torque will be transmitted through frictional force. Key connection will only be the subsidiary transmission parts then. To conquer bushing's self-locking feature, screws used for installation have been set which can make the bushing removed from the shaft.

### 2. Bushing structure selection

Bushing can be divided into three types, which can be used according to the features.

#### 2.1 General bushing

This kind of Bushing can achieve hub connection without increasing the transmission components' outside dimensions, its structure is very compact. Located in the hub looks even and beautiful at two ends, Using cap screws as setting screw, there is a semi-screw on the hub to comply with it. Bushing can be connected with taper bored standard transmission parts directly or through taper weld-on hub. This type is the basic type, and is most widely used.

#### 2.2 Flange type

This type's structure is simply, and installation is easier. Using hex screw as tightening screw, made it easier to adopt loosening-resistance construction and more reliable. But its dimension is little bigger than normal, so it's only suitable for use where there have low requirements on dimension or weight, and where the hub is shorter.

#### 2.3 Adapters

Adapters for Taper-lock bushings are recommended for usage where the hub bore is straight. Especially to the rolling bearing, always meet with such circumstance, like closely mating with the shaft, too much insert, difficult installation, or easy damaging to the finish surface.

If the adapter is used to connect with bushing, all the questions will be solved then. But it should be told that, using adapters will increase radial dimension, so it will be more suitable where the shaft diameter is decided by bearing dimension, not by shaft itself's strength of rigidity. Select adapters' type according to related bushings' type.

## ***BTL Taper bushing***

3. Bushing's type and loading capacity.

3.1 General type

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

1) light series: type 1008-3030

Have two un-tapped half-holes for tightening screws and one semi-tapped holes for unloading.

2) Medium series: type 3535-5050

Have three half-holes for tightening screws and two half-tapped holes for unloading.

3) Heavy series: type 6050-120100

Have four half-holes for tightening screws and two half-tapped holes for unloading.

3.1.2 Type and nomenclatures

For each type of bushing, there will be different standard shaft sizes for selection.

Written in four numbers, eg. 2517, the initial two are divided by ten indicating Max. bore of Bushing

(in inches); the other two are divided by ten indicating length through bore (in inches). For example, the Max. bore of Bushing is 2.5 inches (2.5 x 25.4 mm), length through bore is 1.7 inches (1.7 x 25.4 mm).

Written in six numbers, eg. 120100, the initial three divided by ten indicating Max. bore of Bushing (in inches), the other three are divided by ten indicating length through bore (in inches). For example, 120 indicates that the Max bore of Bushing is 12 inches (12 x 25.4mm); 100 indicates that length through bore is 10 inches (10 x 25.4mm).

Written in five numbers, the initial three indicates Max. bore of bushing, the other two indicates length through bore, for example, 10085.

3.1.3 Rating load-bearing capacity

See torque capacity parameters for general type in the following table:

Bush.No	Torque Capacity		Bush.No	Torque 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 1215	3,600	407	4545	110,000	12,400
1310 1315	3,850	435	5050	126,000	14,200
1610 1615	4,300	486	6050 7060	282,000 416,000	31,900 47,000
2012	7,150	808	8065	456,000	51,500
2517 2525	11,600	1,310	10085	869,000	98,200
3020 3030	24,000	2,710	120100	1,520,000	172,000

1lbf.in=0.113N.m

## BTL Taper bushing

It should be noted that bushing's load-bearing capacity has some relations with screw tightening torque and shaft size. In this catalogue the related tightening torque has been given, The load-bearing capacity raised as the shaft size enlarged. Please consult with the factory if more detailed information needed.

### 3.2 Flange type (QD bushing)

3.2.1 Dimension series: QD Bushings can be divided into two series according to whether they can be reversed mounting or not.

1) reversable mounting series: type JA-J

There are three screws and three bores on the flange.

2) un-reversable mounting series: type M-W.

Only with four tapped holes on the flange, without un-tapped holes.

### 3.2.2 Type and load -bearing capacity

According to the dimensions and load-bearing capacity, QD Bushings have thirteen specifications, see torque capacity and related screw tightening torque in the table below:

Bush.No	Torque Capacity		Screw Tightening Torque	
	1bf.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
P	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

After selecting bushing type according to bushings' features under different using condition, the selection to the type mainly depends on the torque and

loading force.

See loading coefficient K for bushing connection below:

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)

Where, N-transmission torque (house);

n-shaft revolutions perminute(RPM)

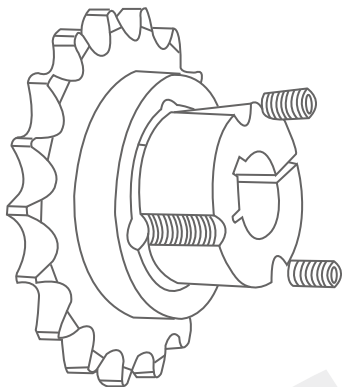
calculation torque  $T_0 = KT$ , K-loading coefficient

When using  $T_0$  to select Bushing type, it should comply with  $T_H \leq T_0$ ,  $T_H$ -Bushing torque capacity, can be got from the given table.



## BTL Taper bushing

### BTL TAPER BUSHING INSTALLATION INSTRUCTIONS



#### TO ASSEMBLE

1.Clean and degrease the bore and taper surfaces of the bush and the tapered bore of the pulley. Insert the bush into the pulley hub and line up holes (half thread holes must line up with half unloading holes)

2.Lightly oil the grub screws (bush size 1008 to 3030) or the cap screws (bush size to 5050) and screw them in, not tighten yet.

3.Clean and degrease the shaft. Fit pulley with taper bush on shaft and locate in desired position.

4.When using a key it should firstly be fitted in the shaft Keyway. There should be a top clearance between the key and the keyway in the bore.

5.Using a hexagon socket wrench (DIN911) gradually tighten the grub cap screws in accordance with the torques as listed in the schedule of screw tightening torques.

6.When the drive has been operating under load for a short period (half to one hour) check and ensure that the screws remain at the appropriate tightening torque.

7.In order to eliminate the ingress of dirt, fill all empty holes with grease.

#### REMOVAL

1.Loose and remove all the screws and place them in holes of bushing.

2.Tighten the screws alternatively till the hub's grip on bushing is loosen. The inner bore of bushing can be slid on the shaft.

3.Remove the bushing from the shaft.

BUSH NO	SCREW TIGHTENING TORQUES(Nm)	SCREW	
		QUANTITY	SIZE
1008	5.6	2	1/4"
1108			BSW
1210			3/8"
1215	20	2	BSW
1310			3/8"
1315			BSW
1610	20	2	3/8"
1615			BSW
2012	31	2	7/16"
2517			BSW
3020			1/2"
3030	90	2	BSW
3535			5/8"
4040			BSW
4545	192	3	3/4"
5050			BSW
			7/8"
	271	3	BSW

The BTL taper bushing are registered patent products. Any production and sale should be authorised and permitted.

#### Special Note

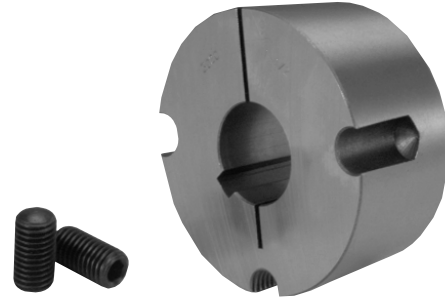
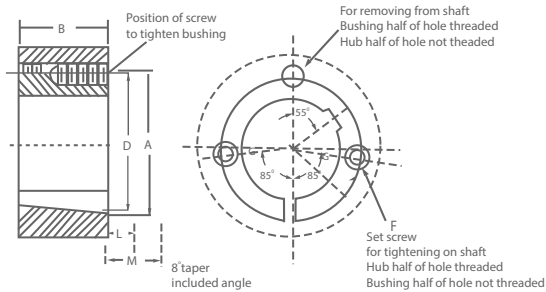
BTL bushing are made of GG25 cast iron. We can also offer other materials according to customers' requirements.

We can do surface coating according to the customers' requirements. \*(such as painting, black phosphating, black oxidizing and so on)

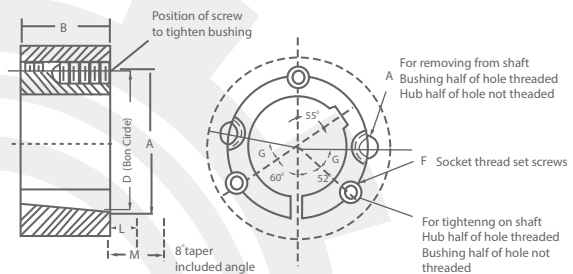
Each part is individually boxed.

BTL bushings are inserted with high quality screws made in Japan.

## BTL Taper bushing



3535 thru 5050 sizes



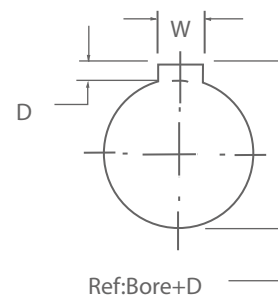
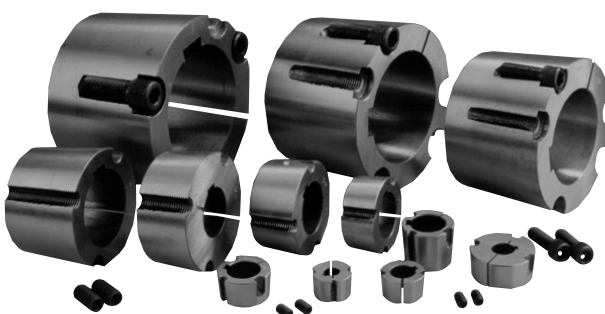
Dimensions for 1008 thru 3030 BTL Taper Bushings

BUSH NO	A	B	D	Set Screws
1008	1.386	7/8	1 21/64	1/4x1/2
1108	1.511	7/8	1 29/64	1/4x1/2
1210	1 7/8	1	1 3/4	3/8x5/8
1215	1 7/8	1 1/2	1 3/4	3/8x5/8
1310	2	1	1 7/8	3/8x5/8
1610	2 1/4	1	2 1/8	3/8x5/8
1615	2 1/4	1 1/2	2 1/8	3/8x5/8
2012	2 3/4	1 1/4	2 5/8	7/16x7/8
2517	3 3/8	1 3/4	3 1/4	1/2x1
2525	3 3/8	2 1/2	3 1/4	1/2x1
3020	4 1/4	2	4	5/8x1 1/4
3030	4 1/4	3	4	5/8x1 1/4

Dimensions for 1008 thru 5050 BTL Taper Bushings

BUSH NO	A	B	D	Set Screws	G
3535	5	3 1/2	4.83	1/2x1 1/2	40°
4040	5 3/4	4	5.54	5/8x1 3/4	40°
4545	6 3/8	4 1/2	6.13	3/4x2	40°
5050	7	5	6.72	7/8x2 1/4	37°

Two screws required  
Three screws required



MM Bore Key way dimensions conform to ISO standard  
Depth measured at centerline

# BTL Taper bushing KEYWAY

# A

DIN 6885

JIS B 1301-1976

UNI 6604-1969

GB 1095-1979

Bush 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 No	Bore	Bushing Keyway
1008	10	3x1.40	1610	14	5x2.30	2517	20	6x2.80	3020	25	8x3.30	3535	35	10x3.30	4545	55	16x4.30
	11	4x1.80		16			22			28			38			60	18x4.40
	12			18	6x2.80		24	8x3.30		30	10x3.30		40	12x3.30		65	20x4.90
	14	5x2.30		19			25			32			42			70	22x5.40
	16			20			28			35	14x3.80		45	16x4.30		75	25x5.40
	18	6x2.80		22	8x3.30		30	10x3.30		38	12x3.30		48	14x3.80		80	28x6.40
	19			24			32			40			50			85	
	20			25			35			42			55			90	
	22			28			38			45			60			95	
	24	8x2.00		30	10x3.30		40	12x3.30		48	14x3.80		65	18x4.40		100	
1180	25	8x1.30	1615	32	12x2.20	2525	42	16x4.30	3030	50	18x4.40	4040	70	20x4.90	5050	105	28x6.40
	10	3x1.40		35			45			55			75			110	
	11	4x1.80		38	6x2.80		48	14x3.80		60	16x4.30		80	18x4.40			
	12			40	8x3.30		50			65			85				
	14	5x2.30		24	5x2.30		20	6x2.80		25	8x3.30		40	12x3.30		60	18x4.40
	16			18			22			28			42			65	20x4.90
	18	6x2.80		19	6x2.80		24			30	10x3.30		45	14x3.80		70	22x5.40
	19			20			25	8x3.30		32	12x3.30		48	16x4.30		75	25x5.40
	20			22			28			35			50			80	
	22			24			30			38			55			85	
1210	24	8x3.30	2012	25	8x3.30	2012	32	10x3.30	2012	40	12x3.30	2012	60	18x4.40	2012	100	28x6.40
	25			28			35			42			65			105	
	28	8x2.00		30	10x3.30		38	12x3.30		45	14x3.80		70	16x4.30		110	32x7.40
	11	4x1.80		32	12x2.20		40	16x4.30		48	18x4.40		75	20x4.90		115	
	12			42			50			55			80			120	
	14	5x2.30		44	6x2.80		52	14x3.80		60	16x4.30		85	18x4.40		125	
	16			46			54			62			90				
	18	6x2.80		48	6x2.80		56	8x3.30		64	10x3.30		95	12x3.30			
	19			50			58			66			100				
	20			52			60			68			105				
1215	22		2012	54	8x3.30	2012	62	10x3.30	2012	70	12x3.30	2012	100	14x3.80	2012	125	
	24	8x3.30		56	8x3.30		64	10x3.30		72	12x3.30		105	14x3.80			
	25			58			66			74			110				
	28			60			68			76			115				
	30			62			70			78			120				
	32	10x3.30		64	10x3.30		72	12x3.30		80	14x3.80		125	16x4.30			
	11	4x1.80		66	12x3.30		74	14x3.80		82	16x4.30		130	18x4.40			
	12			68	12x3.30		76	14x3.80		84	16x4.30		135	18x4.40			
	14	5x2.30		70	12x3.30		78	14x3.80		86	16x4.30		140	18x4.40			
	16			72	12x3.30		80	14x3.80		88	16x4.30		145	18x4.40			
1310	18	6x2.80	2012	74	12x3.30	2012	82	14x3.80	2012	90	16x4.30	2012	150	20x4.90	2012	175	
	19			76	12x3.30		84	14x3.80		92	16x4.30		155	20x4.90			
	20			78			86			94			160				
	22			80			88			96			165				
	24	8x3.30		82	8x3.30		90	10x3.30		98	12x3.30		170	14x3.80			
	25			84			92			100			175				
	28			86			94			102			180				
	30			88			96			104			185				
	32	10x3.30		90	10x3.30		98	12x3.30		106	14x3.80		190	16x4.30			
	35			92	10x3.30		100	12x3.30		108	14x3.80		195	16x4.30			

# BTL Taper bushing KEYWAY B

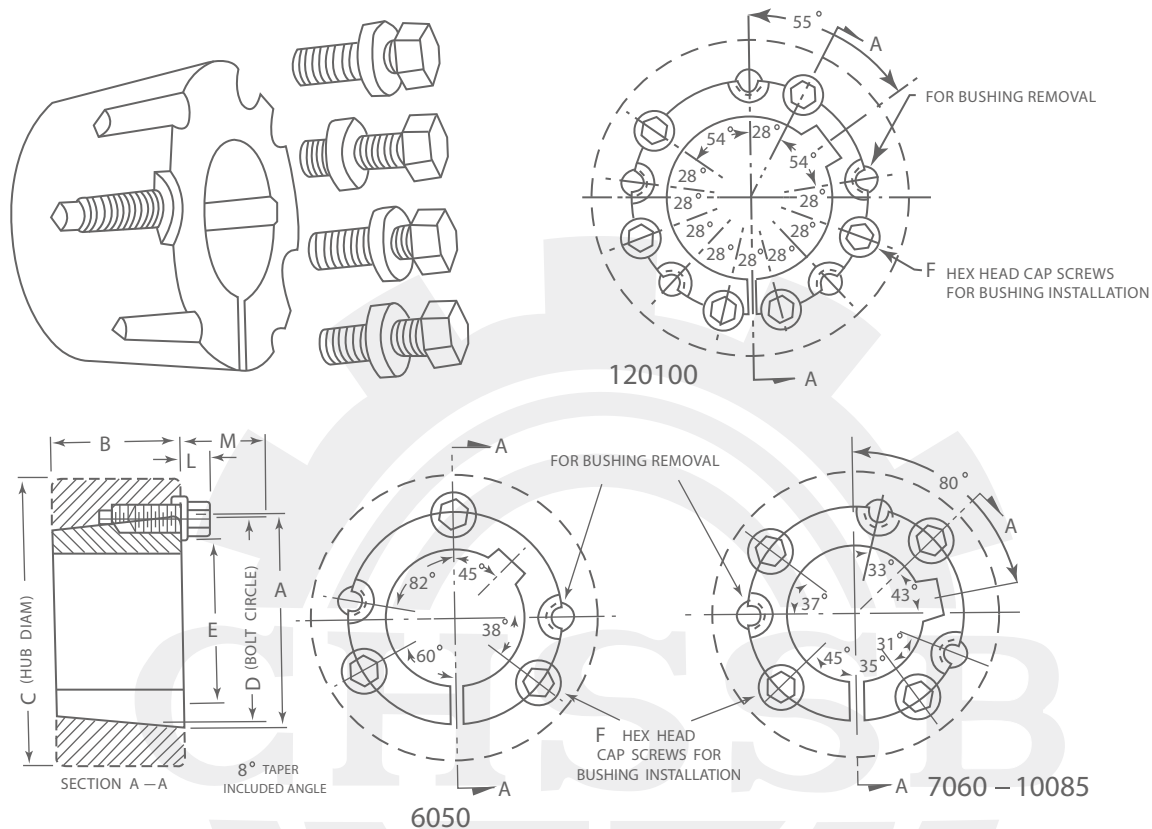
B.S.46:Part:1958  
KEYS AND KEYWAYS

Bush No	Bore	Keyway		Bush No	Bore	Keyway		Bush No	Bore	Keyway		Bush No	Bore	Keyway		Bush No	Bore	Keyway									
		WIDTH	DEPTH			WIDTH	DEPTH			WIDTH	DEPTH			WIDTH	DEPTH			WIDTH	DEPTH								
1008	1/2	0.125	0.062	1610	1/2	0.125	0.062	2517	1/2	0.125	0.062	3020	7/8	0.25	0.125	3535	1 3/16	0.312	0.125	4545	1 15/16	0.50	0.156				
	9/16				9/16				5/8	0.187	0.093		15/16	1	0.125		1 1/4	0.312	0.125		2	0.625	0.218				
	5/8	0.187	0.093		5/8	0.187	0.093		11/16	0.187	0.093		1	0.125	1 3/8		0.375	0.125	2 3/16		0.625	0.218					
	11/16				11/16				3/4				1 1/8	0.312	0.125		1 7/16	0.375	0.125		2 3/8	0.625	0.218				
	3/4				3/4				13/16				1 3/16	0.312	0.125		1 1/2				2 7/16						
	13/16	0.25	0.125		13/16	0.25	0.125		7/8	0.25	0.125		1 5/16				1 1/4	0.437	0.156		1 5/8	0.437	0.156	2 5/8	0.75	0.25	
1108	7/8	0.25	0.125	1615	7/8	0.25	0.125	2557	7/8	0.25	0.125	3030	1 5/16	0.375	0.125	3545	1 11/16	0.437	0.156	5050	2 3/4	0.75	0.25				
	15/16	0.25	0.125		15/16	0.25	0.125		15/16	0.25	0.125		1 3/8	0.375	0.125		1 3/4	0.375	0.125		2 1/2	0.625	0.218				
1210	1	0.312	0.078	1615	1	0.312	0.078	2557	1	0.312	0.078	3030	2	0.75	0.250	3545	2	0.75	0.250	5050	3	1.0	0.375				
	1 1/16	0.312	0.078		1 1/16	0.312	0.125		1 1/16	0.312	0.125		2 1/16				2 1/2	0.875	0.312		3 1/8	0.875	0.312	4	1.25	0.437	
	1 1/8				1 1/8				1 3/4	0.437	0.156		2 1/8				3 1/4	0.875	0.312		3 3/8	1.0	0.375	4 1/8	1.25	0.437	
	1 1/4				1 3/4				2 1/4	0.625	0.218		2 3/8	0.75	0.218		3 1/2	0.875	0.25		4 1/4	1.25	0.25	4 3/4	1.25	0.25	
	1 1/16	0.312	0.125		1 1/16	0.312	0.125		2 3/8	0.625	0.187		2 5/8	0.75	0.218		3 1/2	0.875	0.25		4 3/8	1.25	0.25	4 7/8	1.25	0.312	
	1 1/8	0.312	0.125		1 1/8	0.312	0.125		2 7/16	0.625	0.187		2 11/16	0.75	0.218		3 1/2	0.875	0.25		4 7/16	1.25	0.312	5	1.25	0.312	
1215	1/2	0.125	0.062	2012	1/2	0.125	0.062	2525	1/2	0.125	0.062	3030	15/16	0.25	0.125	4040	1 7/16	0.375	0.125	5050	1 15/16	0.50	0.156				
	9/16				9/16				7/8	0.25	0.125		1	0.25	0.125		1 1/2	0.375	0.125		1 5/8	0.437	0.156	3 7/8	1.0	0.375	
	5/8	0.187	0.093		5/8	0.187	0.093		1				1 1/8	0.312	0.125		1 3/16	0.312	0.125		1 11/16	0.437	0.156	3 15/16	1.0	0.375	
	11/16				11/16				1 1/2				1 3/16	0.312	0.125		1 3/4	0.312	0.125		1 3/8	0.437	0.156	4	1.25	0.437	
	3/4				3/4				1 5/8	0.437	0.125		1 1/4				1 7/8	0.50	0.156		1 15/16	0.50	0.156	4 1/4	1.25	0.437	
	13/16	0.25	0.125		13/16	0.25	0.125		7/8	0.25	0.125		1 1/16	0.437	0.156		1 5/16	0.375	0.125		2	0.625	0.218	4 3/8	1.25	0.437	
1310	7/8	0.25	0.125	2012	7/8	0.25	0.125	2525	7/8	0.25	0.125	3030	1 7/16	0.437	0.156	4040	2 3/16	0.625	0.218	5050	2 7/16	0.625	0.218				
	15/16	0.25	0.125		15/16	0.25	0.125		1 1/2				1 7/16	0.375	0.125		1 1/2	0.375	0.125		2 1/8	0.625	0.218	4 7/16	1.25	0.312	
	1				1				1 5/8	0.437	0.156		1 3/4	0.437	0.156		1 5/16	0.375	0.125		2 3/8	0.625	0.218	4 1/2	1.25	0.312	
	1 1/16	0.312	0.125		1 1/16	0.312	0.125		1 13/16				1 9/16	0.437	0.156		1 7/8	0.50	0.156		2 1/4	0.625	0.218	4 3/4	1.25	0.312	
	1 1/8				1 1/8				1 7/8	0.50	0.156		1 11/16	0.437	0.156		2 1/16	0.50	0.156		2 7/16	0.625	0.218	5	1.25	0.312	
	1 3/16				1 3/16				1 15/16	0.50	0.156		2	0.625	0.218		2 1/8	0.50	0.156		2 3/4	0.75	0.25				
1310	1 1/4			2012	1 1/4			2525	1 1/4			3030	2 1/16			4040	2 15/16			5050	3			5050	3 1/8	0.875	0.312
	1 1/2	0.125	0.062		1 1/2	0.125	0.062		2 1/8	0.625	0.218		2 3/16	0.625	0.218		2 1/2	0.625	0.218		3 1/16	0.875	0.312		3 1/2	1.0	0.375
	9/16	0.187	0.093		9/16	0.187	0.093		2 3/8	0.625	0.187		2 5/16	0.625	0.187		2 3/4	0.625	0.218		3 3/8	0.875	0.312		3 3/4	1.0	0.375
	5/8	0.187	0.093		5/8	0.187	0.093		2 7/16	0.625	0.187		2 1/2	0.625	0.187		2 5/8	0.75	0.250		3 7/8	1.0	0.375		4 1/8	1.25	0.437
	11/16				11/16				2 1/4				2 3/16	0.625	0.218		2 7/8	0.75	0.218		4 1/4	1.25	0.437		4 3/8	1.25	0.437
	3/4				3/4				2 5/16	0.625	0.187		2 3/8	0.625	0.187		2 1/2	0.625	0.218		3 1/8	0.875	0.312		4 7/8	1.25	0.312
1310	13/16	0.25	0.125	2012	13/16	0.25	0.125	2525	13/16	0.25	0.125	3030	2 5/8	0.75	0.250	4040	3 1/16	0.875	0.312	5050	4 1/16	1.25	0.437				
	7/8	0.25	0.125		7/8	0.25	0.125		2 7/16	0.625	0.187		2 3/4	0.625	0.218		3 3/16	0.875	0.312		4 3/16	1.25	0.437	4 3/4	1.25	0.437	
	15/16	0.25	0.125		15/16	0.25	0.125		2 1/2	0.625	0.187		2 5/8	0.75	0.250		3 7/16	0.875	0.312		4 7/16	1.25	0.437	4 7/8	1.25	0.312	
	1				1				2 3/4	0.625	0.218		2 7/8	0.75	0.218		4 1/8	1.0	0.375		4 15/16	1.25	0.312				
	1 1/16	0.312	0.125		1 1/16	0.312	0.125		2 1/4	0.625	0.218		2 3/8	0.625	0.187		4 3/4	1.25	0.437		5	1.25	0.312				
	1 1/8				1 1/8				2 5/8	0.75	0.250		2 7/16	0.625	0.187		5	1.25	0.312								
1310	1 3/8	0.375	0.125	2012	1 3/8	0.375	0.125	2525	1 3/8	0.375	0.125	3030	3	0.75	0.218	4040	4 1/16	1.25	0.437	5050	4 3/8	1.25	0.437				
	1 1/2	0.125	0.062		1 1/2	0.125	0.062		3 1/8	0.875	0.312		3 1/4	0.875	0.312		4 3/16	1.25	0.437		4 7/8	1.25	0.312				
	9/16	0.187	0.093		9/16	0.187	0.093		3 1/4	0.875	0.312		3 3/8	0.875	0.312		4 7/16	1.25	0.437		5	1.25	0.312				
	5/8	0.187	0.093		5/8	0.187	0.093		3 3/8	0.875	0.312		3 7/8	1.0	0.375		5	1.25	0.312								
	11/16				11/16				3 7/8	1.0	0.375		4 1/8	1.25	0.437												
	3/4				3/4				4 1/8	1.25	0.437		4 3/4	1.25	0.437												

## BTL Taper bushing

### TAPER BUSHING DIMENSIONS(Con t.)

#### 6050 thru 120100 Sizes



Dimensions for 6050 thru 120100 BTL Taper Bushings

Bush.No.	A	B	D	Socket Head Cap Screws	E	L	M
6050	9 1/4	5	9	3-1 1/4x3 1/2	6 3/4	1 5/8	4 3/8
7060	10 1/4	6	10	4-1 1/4x3 1/2	7 3/4	1 5/8	4 3/8
8065	11 1/4	6 1/2	11	4-1 1/4x3 1/2	8 3/4	1 5/8	4 3/8
10085	14 3/4	8 1/2	14 1/2	4-1 1/2x4 1/4	11 3/4	2	5 3/8
120100	17 1/4	10	17	6-1 1/2x4 1/4	14 1/4	2	5 3/8

Dimensions for TAPER Bushings Metric. Inches Bore

Bush.No	inches bore		metric bore	
	Min.	Max.	Min.	Max.
6050	4 7/16	6	80	150
7060	4 15/16	7	90	175
8065	5 7/16	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

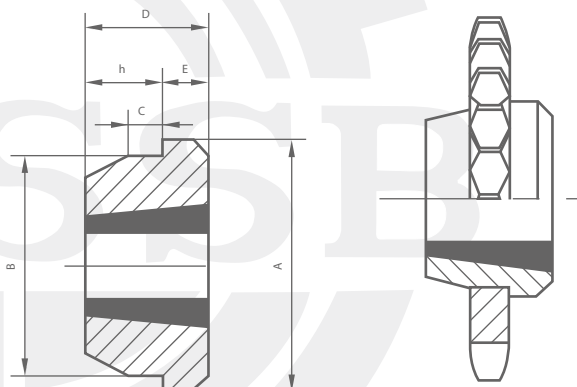
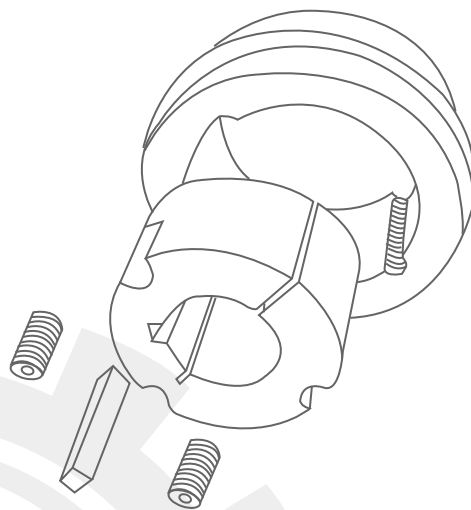
Instruction is sheet packed into each bushing box.

# **T<sub>aper</sub> B<sub>ore</sub> W/WH weld-on hubs**

**BTL**

This type of Taper BORE weld-on Hubs adopt Europe Standard.

Taper Bore Weld-on Hubs are made of steel, drilled, tapped and taper bored to receive standard Taper Bushes. The extended flange provides a convenient means of welding hubs into fan rotors, steel pulleys, plate sprockets, impellers, agitators and many other devices, which must be firmly fastened entirely suitable for usage where severe operating conditions are met. Tightening the screws contracts the bore of the bush, thereby locking it to the shaft with the equivalent of a press fit. This type of construction eliminates mounting difficulties, it also prevents loosening and wearing happened to the hub during operation.



## WH WELD-ON HUBS

Hub Rel	Bush No	A	B	C	D	E	h
WH1210	1210	73	60	10	25	9	16
WH1215	1215	76	60	11	38	16	22
WH1610	1610	83	70	10	25	9	16
WH1615	1615	83	70	11	38	16	22
WH2012	2012	96	90	12	32	10	22
WH2517	2517	127	110	13	45	19	26
WH3020	3020	152	130	18	51	24	27
WH3030	3030	152	130	19	76	25	51
WH3525	3525	184	155	25	65	25	40
WH3535	3535	184	155	25	89	32	57
WH4040	4040	225	195	35	102	32	70
WH4545	4545	254	220	40	114	38	76
WH5050	5050	276	242	40	127	38	89



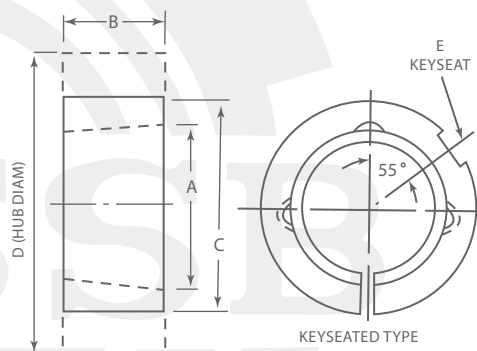
# **T<sub>B</sub><sup>aper</sup><sub>ore</sub> Adapters**

## **BTL**



Adapters for TAPER bushing are recommended for usage where it is more convenient to straight bore than to drill, tap and taper bore hubs to accommodate bushings.

The adapter is a taper-bored sleeve of grey cast iron which fits into the straight bore of a hub. The bushing simply fits inside the adapter which is tapped for the bushing screws. When tightening the locking screws, the adapter is expanded against the hub bore pressing the bushing tightly upon the shaft.



### **TAPER ADAPTERS**

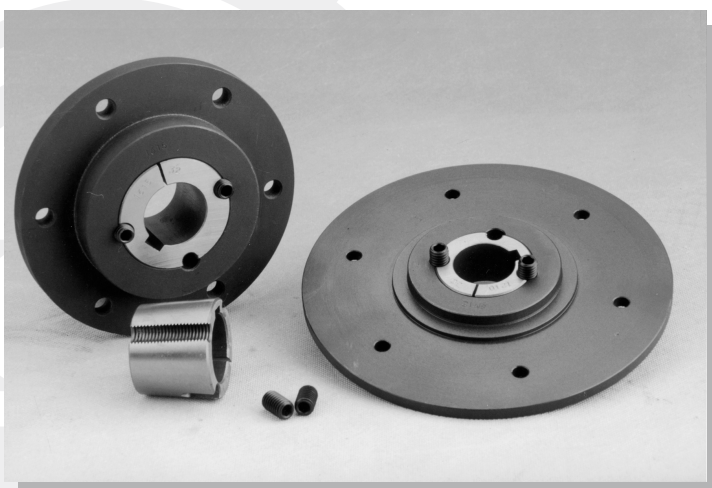
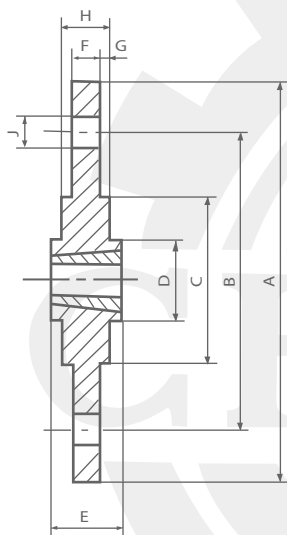
Adapter No.	Bush No.	A	B	C	D			E Keyseat	Wt
					class 20 Gray Iron	Class30 Gray Iron	Steel		
1215B	1215	1 7/8	1 1/2	2 3/8	3 5/8	3 3/8	3 1/4	1/4x1/8	0.7
1615B	1615	2 1/4	1 1/2	2 3/4	4	3 3/4	3 1/2	3/8x1/8	0.9
2517B	2517	3 3/8	1 3/4	4 1/8	5 7/8 △	5 1/2	5	5/8x1/8	2.2
2525B	2525	3 3/8	2 1/2	4 1/8	5 1/2 △	5 1/4	5	5/8x1/8	3.2
3030B	3030	4 1/4	3	5 1/8	7 3/8 △	6 7/8	6 1/4	3/4x3/16	5.8
3535B	3535	5	3 1/2	6 1/4	9 1/8	8 3/8	7 7/8	7/8x3/16	11.3
4040B	4040	5 3/4	4	7 1/4	11 1/8	10 1/8	9 3/8	1x3/16	17.3
4545B	4545	6 3/8	4 1/2	7 7/8	12	11	10 1/4	1x3/16	21.9

# **T<sub>B</sub><sup>aper</sup><sub>ore</sub> Bolt-on-hubs**

## **BTL**

Taper Bolt-on-Hub is one type of bolt-on-hubs that specially designed for bushes, its characteristics are simple structure,easy-on,easy-off,simultaneously usable on both sides and so on. it applies to vane wheels,fans and other parts which must be fixed closely with shafts.

Taper Bolt-on-Hub are made of high standard grey Cast Iron GG25. which have enough intensity. The surface is phosphated. attractive and antirust. They are seriesly standarized produced and highly interchangeable,so that the stock costs can be lowered.



### **TAPER BOLT - on - HUBS**

specification	Bush No.	main dimensions								screw hole nxj
		A	B	Ch9	D	E	F	G	H	
SM1200	1210	180	135	90	75	25	6.5	2.5	11.5	6xf7.5
SM1600	1615	200	150	110	85	38	7.5	2.5	12.5	6xf7.5
SM2000	2012	270	190	140	110	32	8.5	2.5	13.5	6xf9.5
SM2500	2517	340	240	170	125	45	9.5	2.5	14.5	8xf11.5
SM30-1	3020	430	300	220	160	51	13.5	2.5	18.5	8xf13.5
SM30-2	3020	485	340	250	160	51	13.5	2.5	18.5	8xf13.5
SM1210	1210	120	100	80	75	25	6.5	2.5	11.5	6xf7.5
SM1610	1610	130	110	90	85	25	7.5	2.5	12.5	6xf7.5
SM2012	2012	145	125	115	110	32	8.5	2.5	13.5	6xf7.5
SM2517	2517	185	155	130	125	45	9.5	2.5	14.5	8xf11.5
SM3020	3020	220	190	160	160	51	13.5	-	13.5	8xf13.5