

Bushings for Locating Pins

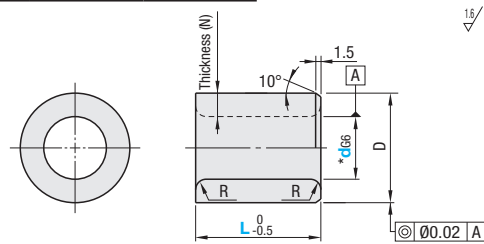
Copper Alloy, Straight / Flanged

■Features: Suitable for preventing pin abrasion and rust since it is softer than steel.

■Copper Alloy, Straight



Material	Type	
	Dp6	Dm6
EN CC762S Equiv. (High-tensile Brass)	JBAD	JBADM



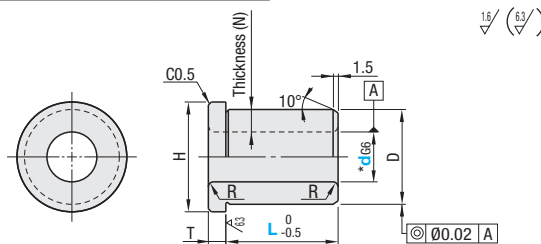
RoHS10 * For hole machining, please note that inner diameter shrinkage of p6 Type is more than that of m6 Type. (See "Variance of I.D. after Press-fitting Bushings for Locating Pins" below.)

Part Number			L Selection			Thickness (N)	R	D	D Tolerance		Unit Price	
Type	d	D Tolerance							p6	m6	JBAD	JBADM
(Dp6) JBAD	5	+0.012	5 6 8 10 12 15	2.5	0.5	10			+0.024	+0.015		
	6	+0.004	5 6 8 10 12 15 16	2					+0.015	+0.006		
	8	+0.014	5 6 8 10 12 15 16 20	2		12						
	10	+0.005	6 8 10 12 15 16 20 25	2.5		15			+0.029	+0.018		
(Dm6) JBADM	12		8 10 12 15 16 20 25 30	3		18			+0.018	+0.007		
	13	+0.017	10 12 15 16 20 25 30	4.5	1	22						
	15	+0.006	12 15 16 20 25 30	5		25			+0.035	+0.021		
	16		12 15 16 20 25 30	5		26			+0.022	+0.008		
	20	+0.020	12 15 16 20 25 30	5	2	30						
	25	+0.007	16 20 25 30 35	5		35			+0.035	+0.021		

■Copper Alloy, Flanged



Material	Type	
	Dp6	Dm6
EN CC762S Equiv. (High-tensile Brass)	JBHD	JBHDM

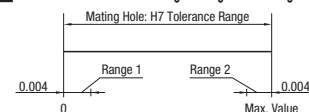


RoHS10 * For hole machining, please note that inner diameter shrinkage of p6 Type is more than that of m6 Type. (See "Variance of I.D. after Press-fitting Bushings for Locating Pins" below.)

Part Number			L Selection			Thickness (N)	R	H	T	D	D Tolerance		Unit Price	
Type	d	D Tolerance									p6	m6	JBHD	JBHDM
(Dp6) JBHD	5	+0.012	5 6 8 10 12	2.5	0.5	14	3	10			+0.024	+0.015		
	6	+0.004	5 6 8 10 12 15	2							+0.015	+0.006		
	8	+0.014	5 6 8 10 12 15 16 20	2		16								
	10	+0.005	6 8 10 12 15 16 20 25	2.5		19	4	15			+0.029	+0.018		
(Dm6) JBHDM	12		8 10 12 15 16 20 25 30	3		22		18			+0.018	+0.007		
	13	+0.017	10 12 15 16 20 25 30	4.5	1	26		22						
	15	+0.006	12 15 16 20 25 30	5		30	5	25			+0.035	+0.021		
	16		12 15 16 20 25 30	5		26		26			+0.022	+0.008		
	20	+0.020	12 15 16 20 25 30	5	2	35	6	30						
	25	+0.007	16 20 25 30 35	5		40		35			+0.035	+0.021		

Ordering Example Part Number - L
JBAD6 - 10
JBHDM10 - 20

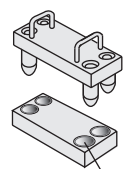
■Variance of I.D. after Press-fitting Bushings for Locating Pins (Reference)



Housing Bore Diameter Tolerance: in Range 1	
D Tolerance	
m6	99.90%
p6	99.83%
Housing Bore Diameter Tolerance: in Range 2	
D Tolerance	
m6	99.99%
p6	99.92%

*Data above are not guaranteed but experimental values.

Example



Bushing for Locating Pin - Copper Alloy
Bushings - Copper Alloy

Bushings for Locating Pins

Ceramic / Inner Groove Straight / Shouldered

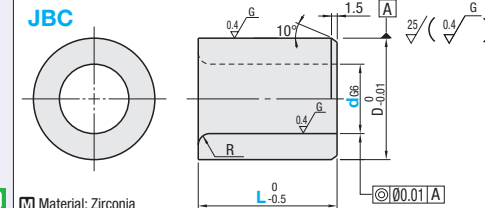
■Features: Bushings for Locating Pins - Ceramics - excel in heat resistance, insulation, and abrasion resistance.

■Ceramics



RoHS10

Material: Zirconia

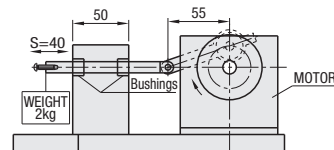


Ordering Example Part Number - L
JBC16 - 20

Part Number			L Selection		R	D	Unit Price	
Type	d6						JBC	
JBC	6	+0.012	8 10	1	10			
	8	+0.014			12			
	10	+0.005	10 12		15			
	12				18			
	13	+0.017	10 12 16	2	22			
	15	+0.006			25			
	16		16 20		26			
	20	+0.020	20	3	30			

⚠ Avoid pressing Ceramic Bushing in. It may crack when struck hard. Use of Loctite is recommended.
⚠ Strength may degrade when used at the temperature over 100°C for extended durations, or when operating temperature varies from normal to high repeatedly.
⚠ For orders larger than indicated quantity, please request a quotation.

■Bushings for Locating Pins - Ceramic Abrasion Data



Sample	Inner Diameter (Before Test)	Inner Diameter (After Test)	Difference
Ceramic JBC10-10	10.011	10.012	0.001
Steel JBA10-10	10.008	10.037	0.029

■Test Conditions

<Measuring Method>
Apply load on the bush by reciprocating Ø10 round shaft with 40mm stroke with a 2kg weight on the end in the crank mechanism (left diagram).

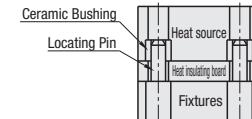
<Measuring Instrument Overview>
• Operation Hours : 60 hours each
• Lubricant: JIS Machine Oil (Tellus 32) * drip-feed every 2 hours
• Round Shaft Stroke : 40mm
• Temperature : 25~27°C

■Testing Results

Ceramics excel in abrasion resistance compared to steel. Suitable for long-term use with locating pins insertion and extraction, maintaining an excellent abrasion resistance.

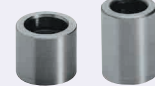
■Automotive parts welding machine

Example



How to Mount: Set a plastic board. Using a plastic hammer, press Ceramic Bushing slightly in.
Circumstance: Set it between heat source and fixtures with high accuracy but transfer minimum heat to fixtures.

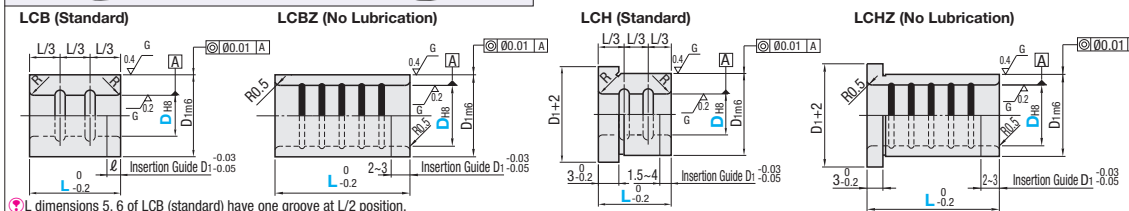
■Straight



■Shouldered



RoHS10



■Straight

Part Number			L Selection			D1m6	ℓ	R	Unit Price	
Type	DH8								LCB	LCBZ
(Standard) LCB	5	+0.018	*5 *6 *8 *10 *12 *16	10	0.021	1.5				
	6	0	6 8 10 *12 *16	12		2	0.5			
	8	+0.022	8 10 12 16 20	14	0.025	3	1			
	10	0	10 12 16 20 25	16		4	1.2			
(No Lubrication) LCBZ	12			18						
	13	+0.027		22						
	15	0	16 *20 25 30	25	0.029	1.5				
	16		16 20 25 30	26		4	2			
	20	+0.033	16 20 25 30 35	30						
	25	0		35	0.034					

⚠ L dimensions marked with * are available for LCB only. ⚠ For orders larger than indicated quantity, please check with WOS.

■Shouldered

Part Number			L Selection			D1m6	ℓ	R	Unit Price	
Type	DH8								LCH	LCHZ
(Standard) LCH	5	+0.018	*8 *10 *12 *16	10	0.021	1.5				
	6	0	8 10 *12 *16	12		2	0.5			
	8	+0.022	8 10 12 16 20	14	0.025	3	1			
	10	0	10 12 16 20 25	18		4	1.2			
(No Lubrication) LCHZ	12			22						
	13	+0.027		25						
	15	0	16 20 25 30	25	0.029	1.5				
	16		16 20 25 30	26		4	2			
	20	+0.033	16 20 25 30 35	30						
	25	0		35	0.034					

⚠ L dimensions marked with * are available for LCH only. ⚠ For orders larger than indicated quantity, please check with WOS.

Ordering Example Part Number - L
LCB10 - 12
LCBZ12 - 20
LCH25 - 30
LCHZ25 - 35