JIASHAN MINQIN OILLESS BUSHING CO.,LTD.

5th Edition Solid Lubrication

Jiashan Minqin Oilless Bushing Co.,Ltd.

a professional manufactory of oilless sliding Bushing,set up May.2007.

Now our products are exported to more than 15 countries and regions in EU, America, Asia, etc. and set up & doing the QC system strictly!

our belief: Quality, Service, Price!

Quality: Better and stable quality!

Service: In time and meet the customer's requirement as possible as we can!

Price: Reasonable prices as the market

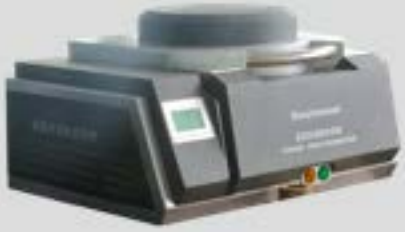
The products are applied to metallurgy extensively, automobile, mine, petroleum, such various kinds of machinery as rolling mill, chemical industry, electrical machinery, shipping, printing, plastic machinery,office equipment,health and fitness facilities, light industry and machinery, irrigation works, hydraulic pressure machinery, locomotive, rotate, slip, etc.

Certificates:

Hardness Testing

3 points ID testing

chemical elements testing



Metallographical testing

Measurement

Workshop

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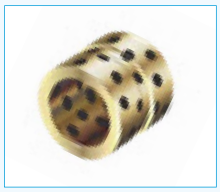

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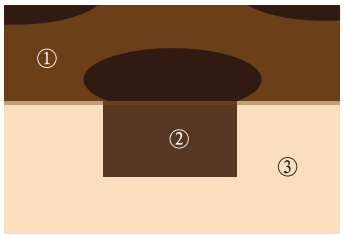
Solid-lubricants Bushings

Product Features

1. No need to oil installations, the filling hole processing tank
The cost of oil installations, processing fees, assembly fees, the extra cost and time savings can significantly reduce manufacturing costs.
2. Lower operating costs
Substantially reduce the use of lubricants and equipment maintenance costs, while also eliminating the risk caused due to insufficient oil supply.
3. The shortening of design time
Non-oil can make the design, structure, and greatly simplify and reduce costs, save design time and to obtain significant results, in addition, the use of self-lubricating bearings can also improve the mechanical properties and extend the service life and higher reliability.
4. Lubricating oil recycling and environmental protection
No need to waste oil recycling, are environmentally friendly.
JDB (500#SP), self-lubricating bearing parts of the machinery industry, the use of certain generalized. In order to make the mechanical drive is operating normally, a lot of effort. The bearing area is divided into Rolling and plain bearings. Sliding bearings in high-load movement, foreign substances, temperature, fuel, maintenance, imperfect circumstances, can cause galling.
Like sliding bearings can not be used under harsh conditions, the solid inlaid metal self-lubricating bearings, wear resistance, resistance to galling, to play the bearings of the due performance, the role of mechanical performance and maintenance-free.

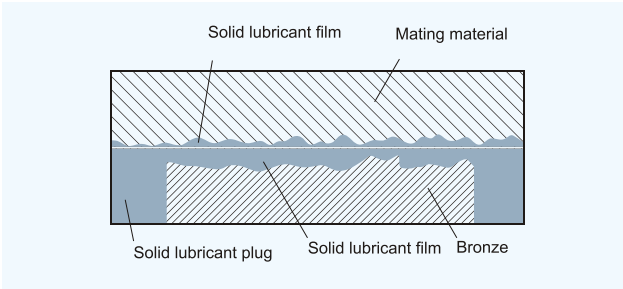
Material Structure



①Solid lubricant film

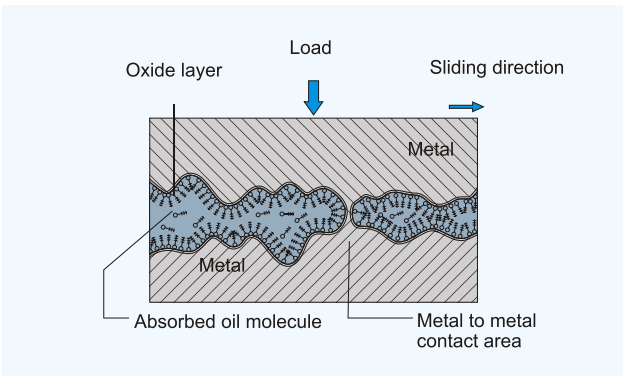
②Solid lubricant plug

③Bronze backing



MQ650# materials consist of highly wear-resistance copper cast alloy whose sliding surfaces are evenly provided with a certain percentage of solid lubricant plugs according to work condition, high-strength copper alloy provides a high load-bearing capacity and the solid lubricant can be formation of low friction film. Under technical dry running conditions, the bearing surface is designed with thick running-in film which enables the solid lubricant to be transferred to the counter material at the first contact.

When the mutual friction occurs between two non-lubricated surfaces. the two contacts with the unevensurface of the peak by the shear. stick-slip and plastic the conventionallubricant will be more and more squeezed out of the contact area with increasing surface which formed the dry friction or boundary lubrication. With MQ650. the lubrication is etfected by the sliding material itself. The solid lubricant is released from the fnction material by micro-movement This gives the sliding partners under heavyloads The embedded solid lubricant plugs can be continuously provided to the friction surface to reduce friction resistance and wear, thus make the bearing can be worked under low wear rate and long.life service.



Solid-lubricants Bushings

The Advantages of The Solid-Lubricant Bushing

1. Properly and simply designed, widely used;
Oil offering system is an energy waste and time waste set in mechanical design. There is no needs for considering the oil-putting set in design when using the solid lubricant bushing so it can save the oil-putting equipment and at the same time it also design the solid-lubricant-inlaid bushing into alt kinds of shapes in order to meet various needs in special places. Using solid-lubricant. inlaid bushing can reduce the costs of the machinery mending and the oil in wide range.
2. Being used without oil;
Because of the linear coefficient expansion of the solid lubricant is bigger than that of the metal basement, when the solid-lubricant-inlaid bushing starts to operate, the oil film can transfer to the corresponding friction set to make out self-lubricant. So the solid-lubricant-inlaid bushing can be used in places where the oil or grease cannot be added. It can make out the self-lubricant function even though under high load conditions.
3. Low cost for usage;
Traditional mechanical design asks for frequently aiding oil and checking if the oil watch and the offering set are through in certain period. Because adding oil at regular intervals causes the pollution to the machine itself and the nearby surroundings and increase the maintenance cost. And when the self-lubricant is made out, it can not only make the surroundings clean but also decrease the cost of using the lubricant.
4. The superior functions can be brought into play under high load and low rotati ng speed.
The solid-lubricant-inlaid bushing is based on the high intensity brass that is centrifuge cast. And then make out the loading function. Use special graphite that has good self-lubricant properties as lubricant to make out the self-lubricant so that the bushing has included all of their advantages. It can still bring the superior properties into play even under high load and low rotating speed.
5. The wear resistance can be brought into play even In places the oil film form into difficulties because of the reciprocating and rocking movement, starting and stopping;
The arrangement principle of the lubricant of the solid-lubricant-inlaid bushing is to ensure that all the parts of the corresponding friction sets have the lubricant function in the operating procession. So the arrangement place 0f the lubricant should be depended upon the operating direction of the corresponding friction sets.
6. Superior chemical resistance and corrosion resistance;
Bushings inlaid with solid lubricants,graphite and PTFE lubricants. It has steady molecule structures. The metal basement can be chosen according to the different chemical resistance and corrosion resistance of the metal appliance. So the solid-lubricant-inlaid bushing has the superior chemical resistance and corrosion resistance.
7. The products is more competitive, comparing to the similar kinds of products, comparing to the similar products. Such products feature longer working life and good performance but rarely require maintenance.

Application Notes

1. Use standard designation when designing if possible;
2. Note if there are any foreign matters on the surface when assembling;
3. Do not erase the black or grey phenomenon on the sliding surface caused by the oil film that is formed by the solid lubricant after using;
4. It is good for mechanical operation and running if lay the lubricant on the corresponding friction set before installing;
5. Pressing should be carried out slowly when installing. Do not beat in the event of damaging the bushing or causing the distortion to the bushing;
6. Using proper material in different parts when designing in order to enhance the mechanical properties and prolong the service life of the bushing;
7. It would be better to fix with bolt in high load and reciprocating motion;
8. It is recommended to use stainless steel or plate chrome on the surface of the corresponding friction shaft when working in the water or in the sea.

Solid-lubricants Bushings

Material Compostion and Properties

Standard	JDB Casted Bronze (MQ650)	JDB -1 Bronze (MQ650S1)	JDB -2 Bronze (MQ650S2)	JDB -3 Bronze (MQ650S3)	JDB -5 Bronze (MQ650S4)
Material	CuZn25Al5Mn3Fe3	CuSn5Pb5Zn5	CuAl10Ni5Fe5	CuSn12	CuZn25Al5Mn4Fe3
Density	8.0	8.9	7.8	8.9	8.0
Hardness HB	> 210	> 70	> 150	> 95	> 250
Tensile strength N/mm^2	> 750	> 200	> 600	> 260	> 800
Yield strength N/mm^2	> 450	> 90	> 260	> 150	> 450
Elongation%	> 12	> 15	> 10	> 8	> 8
Coefficien of linear expansion 10^{-5}/℃	1.9	1.8	1.6	1.8	1.9
Limit Temp ℃	-40~+300	-40~+400	-40~+400	-40~+400	-40~+150
Max.load N/mm^2	100	60	50	70	120
Max.speed (Dry) m/min	15	10	20	10	15
Max.PV N/mm^2*m/min	200	60	60	80	200
Compression of permanent deformation 300N/mm^2	< 0.01	< 0.05	< 0.04	< 0.05	< 0.05

* Big damand with special materials is available

Base Material Interchange

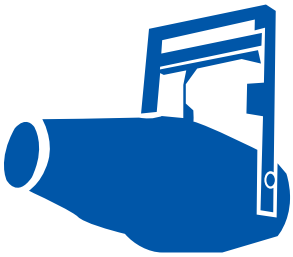
Material Codes	China Brands GB1176-87	Intenational ISO 1338	Germany DIN	Japan JIS	America ASTM(UNS)	England BS	Italy JM	Applicable conditions
JDB Casted Bronze	ZCuZn25Al5 Fe3Mn3	GCuZn25Al6 Fe3Mn3	DIN1709 G-CuZn25Al5	H5102 CAC304	B30-92 C86300	HTB2	JM18-1	High-load，low speed Commonly used
JDB -1Bronze	ZCuSn5 Pb5Zn5	GCuPb5 Sn5Zn5	DIN1705 G-CuSn5ZnPb	H5111 BC6	B30-92 C83600	LG2	JM7-15	Mid-load，low speed Commonly used
JDB -2Bronze	ZCuAl9Fe4 Ni4Mn2	GCuAl10 FeNi5	DIN17656 G-CuAl10Ni	H5114 AlBC3	B30-92 C95500	AB2	JM3-15	Mid-load，mid-speed，Commonly used
JDB -3Bronze	ZCuSn12		G-CuSn12	CAC503B	B30-92 C90800	PB2	JM1-15	Mid-load，low speed，Commonly used
JDB -5 高力黄铜 (高硬)	ZCuZn25Al6 Fe3Mn3	GCuZn25Al6 Fe3Mn3	DIN1709 G-CuZn25Al5	H5102 CAC304	B30-92 C86300	HTB2	JM18-1	Over high load，low speed，High load used

Solid Lubricant

Lubricant	Features	Typical application
SL1 Graphite+add	Excellent resistance against chemical attacks and low friction, Temp limit 400℃	Suit for general machines and under atmosphere
SL4 PTFE+add	Lowest in friction and good of water Lubrication,Temp limit 300℃	Ship, hydraulic turbine, gas turbine, etc.

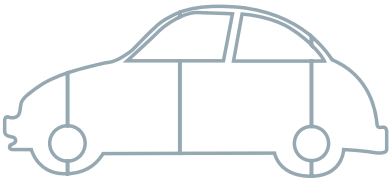
Solid-lubricants Bushings

Applications



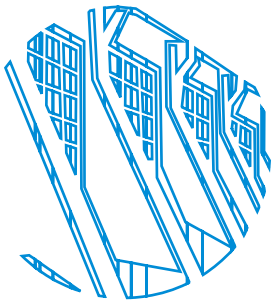
High temperature

◎ steel plant
◎ melting furnace
◎ Drying equipment
◎ baking oven
◎ Thermal controller



Automobile manufacturing

◎ punch mold
◎ welding
◎ paint and drying lines
◎ metal conveyor belt
◎ machine tool

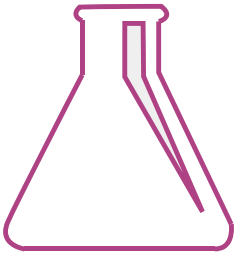


Waterproof

◎ dam gate
◎ submersible pump
◎ fluid door structure
◎ offshore structure
◎ Dock and sludge equipment

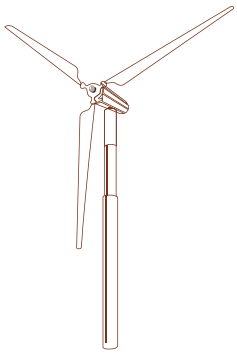
Ship

◎ deck cranes
◎ windlass
◎ hatch cover
◎ Rudder arm
◎ lifting machinery and rings equipment



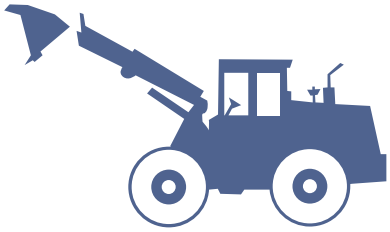
Anti-chemical

◎ chemical factory
◎ electroplating equipment
◎ wastewater treatment equipment
◎ dyeing machinery
◎ oil and chemical refining equipment



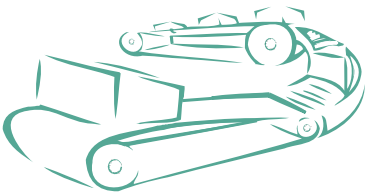
Wind power generation

◎ wind power generation
◎ new energy



Heavy industry

◎ steel pipe factory machinery
◎ Tires and paper mills
◎ power plant
◎ mold injection machine connection elbow



Construction, mining, loading

◎ Mixer, grinder, grinder
◎ Construction machinery
◎ mining equipment
◎ connecting rod bearings
◎ power sleeve

Bridges and rails

◎ bridge bearing
◎ beam, bridge, suspension bridge
◎ nuclear-related reactors
◎ steam generator

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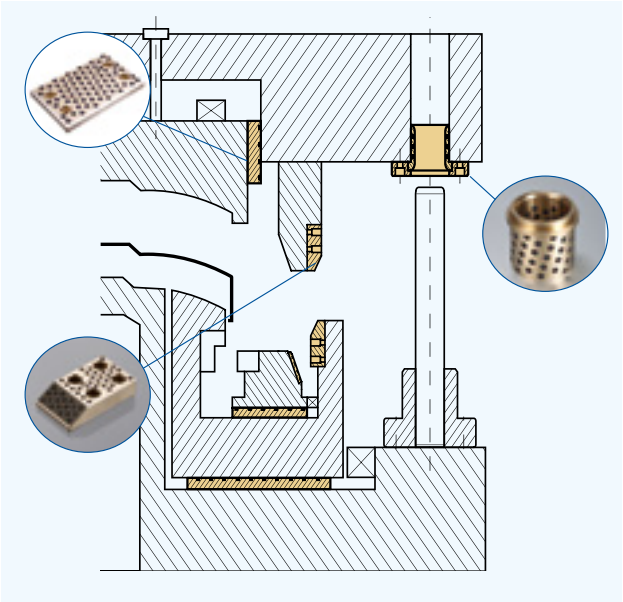
Solid-lubricants Bushings

Advantages of MQ650# Slide Elements:

※ Maintenance free
※ Wear resistant
※ Low frictional resistance
※ Resistant against temperatures up to approx. 300℃ (approx.572°F)
※ No impurity through discharge of lubrication
※ Environmentally friendly
※ Corrosion resistant
※ Insensitive to impact stress
※ Specially suited for oscillating slide motions
※ Stick, slip free sliding
※ Long life



Typical Aplications:

※ Automotive industry-tool support, die
※ Injection molding-machines and tool
※ Construction machinery
※ Agricultural machinery
※ Forestry machinery
※ Steel and/or rolling mills
※ Hydraulic machinery
※ Machine building and stone industry
※ Weir plants / ship building
※ Heavy duty machine industry
※ Welding engineering
※ Packaging industry
※ Lift and/or conveying engineering

Solid-lubricants Bushings

The Life The Bushing

The life of JDB(500#) Solid-lubricant-inlaid depends on the wear depth of the inside diameter of the bushing except such condition as acute Singe, etc. The wear depth is influenced by the load speed, foreign matter, material, surface roughness, working temperature, different operating methods and the lubricant used. So the wear depth is only a theoretical estimate value and the life of the bushing depends on all kinds of the complex conditions.

If it is not greased properly, it is hard to estimat the abrasion state when the foreign matters intermingling. the following formula is the computing method.

$$W=K\times P\times V\times T$$

K: Coefficient of Friction
[mm/(N/mm^2·m/min. hr]

W: Wear Depth (mm)

P: Load Pressure (N/mm^2)

V: Linear speed (m/min)

T: Wear Time (hr)

From the above formula you can see that if the coefficient of the friction "K" is known the real wear depth can be computed according to the pressure "P". linear speed "V" and wear time "T". But it is very difficult to calculate "K" under various actual conditions. Under ideal conditions. "K" depends on the factor "Ci" which influences it.

i. e. $K=Ci\times k$

Ci: $Ci=C1\times C2\times C3\times\cdots\cdots$Factor genes that influence the wear depth.

K: And k is the coefficient of friction under ideal conditions.
$K=(1\text{-}5)\times 10^{-8}$[mm/(N/mm^2·m/min. hr)]

C_0: Coefficient of sliding conditions

C_0		Linear speed V(m/min)		
		≤1	1~10	10~30
Loading pressure P(N/mm^2)	≤5	8~10	10~12	12~18
	5~25	12~18	18~25	25~30
	25~50	18~25	25~30	30~40

C_1: Coefficient of temperature conditions

Working temperature(℃)	≤100	100 ~ 200	200 ~ 400
C_1	1~2	3~5	5~10

C2: Coefficient of surrounding temperature

Surrounding	general place	outside	Places with much powder
C_2	1~2	5~10	10~30

C2: Coefficient of surrounding temperature

Surrounding	general place	outside	Places with much powder
C_2	1~2	5~10	10~30

C3: Coefficient of places used

Places used	Atmosphere	Water	Sea
C_3	1.9	0.8	1.2

Working Conditions

1. Loading pressure

The so-called loading pressure generally means that when the bushing is loading, the max load it bears divides the pressed area. And the loading pressed area means the projection area of
the connecting parts when the bushing is cylindrical.

2. Linear speed

The heat radiated by the bushing is mainly caused by the friction of the bushing. According to the experience we know that the sliding speed "V" affects more than load pressure "P" to the surface temperature. If the bushing uses the same PV value, the higher speed the more quickly temperature ascends. So it would be better to provide lubricant to enlarge the cooling effect and liquid lubricant by using high temperature in order to reduce the coefficient of the friction and to prevent the high abrasion and burning.

3. PV value

PV value is an important guideline to weigh the abrasion limit and the service life of the bushing. It is shown by the load pressure P multiplying the line speed V.

In the Unit time the friction heat q caused by the Unit area of the bushing can be shown by the following formula.

$$Q=\frac{\mu\cdot p\cdot v}{J}\ \text{kcal/min}$$

J: Heat equivalent of work≈ 4270(N/mm^2·Kcal)

P: Load Pressure (N/mm^2)

V: Linear speed (m/s)

μ : coefficient of the friction

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Solid-lubricants Bushings

If the coefficient of the friction " μ " is a little bigger, the friction heat and the PV value are in the direct ratio. Then the caused heat Q is commonly considered as the important principle in the solid lubricant bushing design.

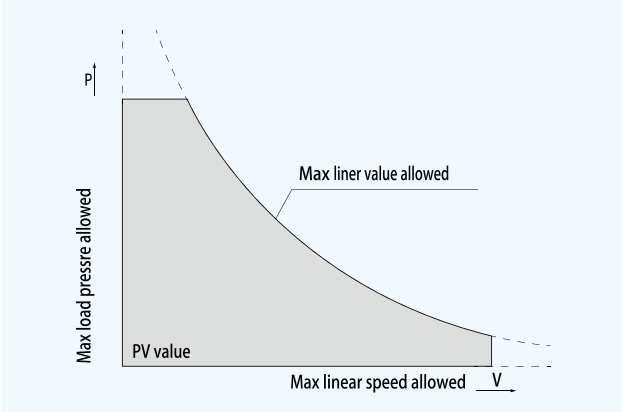
When the bushing is running the heat and the heat radiation can be fixed at a certain temperature. If there are foreign matters in the running process, the lubricant property may be reduced and the friction shape may be changed because of the effect of the friction powder and the fatigue of the material. The enhancement of the coefficient of the friction and the ascending of the bushing temperature cause the damage of the friction surface and it will burn at last. Considering such cases, the load property of the bushing will be better and the service life will be longer if the operating temperature of the bushing is lower i.e.using lower PV value. So when designing, use lower PV value to ensure it is safe. Otherwise, it is also possible to use max PV value by carefully analyzing cooling methods, material of the shaft and the roughness of the surface,etc.

PV The calculating method of the PV value:

	Load pressure $P(N/mm^2)$	Linear speed
bushing	F/dl	$\pi dn/10^3$ $\pi d \theta c/1.8\times10^3$
washer	$4F/\pi(D^2-d^2)$	$\pi n\sqrt{2(D^2+d^2)}/2\times10^3$ $\pi\ \theta\sqrt{2(D^2+d^2)}/3.6\times10^3$
sliding plate	F/BL	$60S/T\times10^3$

4. Max PV value

The so-called max PV value means the max value of the load in the Unit projection of the bushing multiplying the linear speed. Do not exceed the value when using it. When designing please be in the range of Fig 1.



The Condition To The Corresponding Friction shaft

The service life, wear depth, max value and max using temperature of the #500 solid-lubricant-inlaid bushing are all influenced by the corresponding friction shaft material.

1. The material and hardness of the corresponding bushing

In most cases, the material of the corresponding friction shaft can be the upwards #35 superior carbon structure steel, Cr12 steel alloy or 9SiCr tool steel alloy. All the above materials are quenched, mixed and surface dealt to reach an ideal effect. But when foreign matters come into, higher hardness bushing materials should be used in order to get better effects.

2. The surface roughness

When the surface roughness of the corresponding friction shaft is too large, the bulge of the shaft and the bushing may cut down the oil film so it may cause the direct connection between the two parts. So enhancing the surface roughness of the corresponding. Friction shaft can reduce the space of the oil film and be close to the lubricant state so that it can prolong the service life of the bushing.

Generally, the surface roughness we recommended is above Ra0.4.

3. The surface treatment

In most cases, the purpose of the treatment to the correspon-ding friction shaft can be divided into 3 items:

a. Enhance the corrosion resistance;
b. Enhance the SU rface hardness of the surface;
c. Make the surface flat and enhance the lubricant properties.

It can enhance the corrosion resistance and prevent the roughness wear by the treatment to the corresponding friction shaft, it can also enhance the lubricant property. When the corresponding friction shaft is stain, the coming of the hard oxygen and the foreign matters may also cause an increase in the wear. So we recommend the users plate rigidity chrome on the corresponding friction shaft. Besides, it will get a good result by proper heat treatment on the corresponding friction shaft. It is also necessary to plate two or three rigidity chrome on the corresponding friction shaft.

The Wall-Thickness and The Height of The Bushing

1. The height of the bushing

The inside diameter of the bushing depends on the shaft diameter of the corresponding friction shaft. So under the load conditions, the heigth of the bushing depends on the load pressure the bushing bears. Thicker the bushing is, lower the intensity of the pressure is. But it may cause the Lean cortact or the decrease of the cooling effect and reduce the bushing life.Contrarily, if the length of the bushing is too short, the lubricant may flow out quickly so that may be difficult to form the oil filmand decrease the bushing property accordingly.

Generally, the proportion of the height of the bushing and the inside diameter of the bushing should be in the scale of 0.5 to 3. But special attention should be paid that heat condition may cause under high load lean contact and high running speed.Then L/d should be below 1.

2. The wall-thickness of the bushing

Comparing to the sliding bushing, the wall-thickness of thiskind of bushing has little limit Thin wall-thickness is one of themain advantage.

In most cases, the wall-thickness

t= (0.05-0.07)d+ (2-5)mm

When the bushing is pressed into the housing, as Fig 2, the pressure put into makes the contraction of both the inside and outside diameter. Then the relation of the OD surplus " δ " and the ID shrinkage "△"is affected by the strength material, the roughness of the surface and the pressing method of the hole.

When the strength of the housing is enough, the material is iron and the bushing material is brass alloy, the shrinkage can be shown as the following formula.

$$\triangle = \frac{10D_B d_0}{7D_B^2+3d_0^2} \times \delta$$

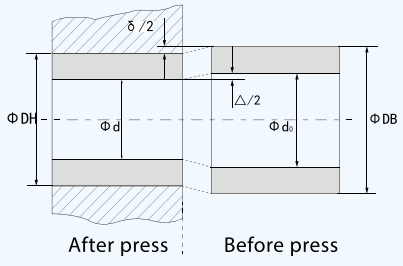


Figure 2: bearing press diagram

In the formula:

△:The shrinkage of the bushing inside diameter(mm)
δ :The surplus quantity of the bushing outside diameter(mm)
d_0:The inside diameter of the bushing before pressing into
D_B:The outside diameter of the bushing before pressing into(=D_B-D_N) (mm)
D_H: The inside diameter of the housing(mm)
D: The inside diameter of the bushing after pressing into(d_0-△)

e.g. calculate the shrinkage of the inside diameter after pressing JDB 40 50 30 bushing into the 50H7 housing

1. The dimension of the JDB 40 50 30 before pressing into

The inside diameter of the bushing:
$d_0 = \Phi 40F7 = \Phi 40^{+0.050}_{+0.025}$
The outside diameter of the bushing:
$D_B = \Phi 50m6 = \Phi 50^{+0.025}_{+0.009}$
The inside diameter of the hole:
$D_H = \Phi 50H7 = \Phi 50^{+0.025}_{0}$

2. The outside diameter surplus quantity of the bushing after pressing into δ

$\delta_{max} = D_{Bmax} - D_{Hmin} = 50.025 - 50 = 0.025mm$
$\delta_{min} = D_{Bmin} - D_{Bmax} = 50.009 - 50.025 = -0.016mm$

3. The inside diameter shrinkage of the bushing after pressing into△

$$\triangle = \frac{10D_B d_0}{7D_B^2+3d_0^2} \times \delta = \frac{10 \times 50 \times 40}{7 \times 50^2+3 \times 40^2} \times \delta$$
$$= 0.89686 \times \delta$$
$\triangle_{max} = 0.89686 \times \delta_{max} \approx 0.022mm$
$\triangle_{min} = 0$

4. The inside diameter of bushing after pressing into

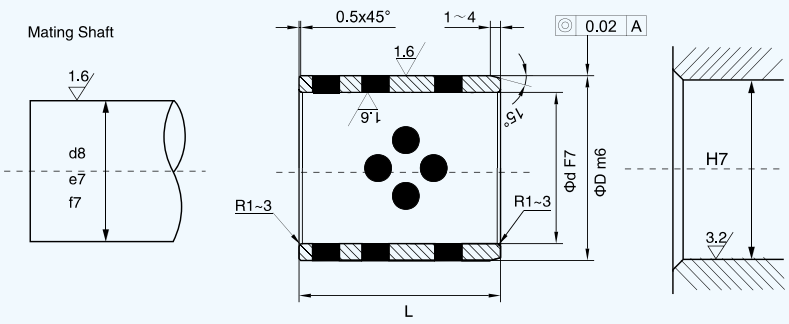
$d = d_0 - \triangle$
$D_{max} = d_{0max} - \triangle_{min} = 40.050 - 0 = 40.050$
$D_{min} = d_{min} - \triangle_{max} = 40.025 - 0.022 = 40.003$

The tolerance of the inside diameter after the bushing putting into the housing

$\Phi d = \Phi 40^{+0.050}_{+0.003}$

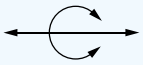
JDB650 Solid-lubricants Bushings

Material: CuZn25Al5Mn3Fe3/
CuZn5Sn5Pb5/CuSn12/
CuAl10Ni5Fe5+Graphite(500#SP)
Housing tollerance recommended H7



Tollerance recommended

d8 high load
e7 light load
f7 high precision



Slide direction

Unit:mm

I.D. Φd F7		O.D. ΦD m6		L -0.10 -0.30											
				8	10	12	15	16	20	25	30	35	40	50	60	70	80
8	+0.028 +0.013	12	+0.018 +0.007	●	●	●	●										
10	”	14	”	●	●	●	●		●								
12	+0.034 +0.016	18	”		●	●	●	●	●	●	●						
13	”	19	+0.021 +0.008		●		●	●									
14	”	20	”		●	●	●		●	●	●						
15	”	21	”		●	●	●	●	●	●	●						
16		22	”		●	●	●	●	●	●	●	●	●				
18		24	”			●	●	●	●	●	●	●	●				
20	+0.041 +0.020	28	”		●	●	●	●	●	●	●	●	●	●			
20	”	30	”			●	●	●	●	●	●	●	●				
22	”	32	+0.025 +0.009			●	●		●	●							
25	”	33	”			●	●	●	●	●	●	●	●	●	●		
30	”	38	”			●	●		●	●	●	●	●	●	●		
30	”	40	”			●	●		●	●	●	●	●	●			
32	+0.050 +0.025	42	”			●	●	●	●	●	●	●	●	●	●		
35	”	44	”					●	●	●	●	●	●	●	●		
35	”	45	”						●	●	●	●	●	●	●		
40	”	50	”						●	●	●	●	●	●	●	●	●
45	”	55	+0.030 +0.011								●	●	●	●	●		
50	”	60	”								●	●	●	●	●	●	●

JDB650 Solid-lubricants Inaid Bushings

I.D. Φd F7		O.D. ΦD m6		L -0.10 -0.30											
				30	35	40	50	60	70	80	100	120	130	140	150
50	+0.050 +0.025	62	+0.030 +0.011	●	●	●	●	●	●						
50	”	65	”	●		●	●	●	●	●	●				
55	+0.060 +0.030	70	”			●	●	●	●						
60	”	74	”	●	●	●	●	●	●	●					
60	”	75	”	●	●	●	●	●	●	●	●				
63	”	75	”					●	●	●					
65	”	80	”				●	●	●	●					
70	”	85	+0.035 +0.013		●	●	●	●	●	●	●				
70	”	90	”				●	●	●	●					
75	”	90	”					●	●	●	●				
75	”	95	”					●	●	●	●				
80	”	96	”			●	●	●	●	●	●	●			
80	”	100	”			●	●	●	●	●	●	●		●	
90	+0.071 +0.036	110	”				●	●	●	●	●	●			
100	”	120	”					●	●	●	●	●		●	
110	”	130	+0.040 +0.015							●	●	●			
120	”	140	”							●	●	●		●	
125	+0.083 +0.043	145	”								●	●			
130	”	150	”								●		●		
140	”	160	”								●			●	
150	”	170	”								●				●
160	”	180	”								●				●

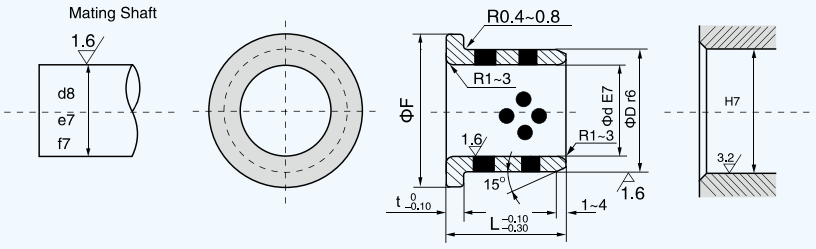
How to order: Code d D L
JDB 08 10 12

Big demand with special sizes & drawings or material is available

www.mqbearing.com pan@mqbearing.com junmingpan@hotmail.com

JFB650 Flanged Oilless Bushing

Material: CuZn25Al5Mn3Fe3/
CuZn5Sn5Pb5/CuSn12/
CuAl10Ni5Fe5+Graphite(500#SP)
Housing tollerance recommended H7



Tollerance recommended

d8 high load
e7 light load
f7 high precision

Slide direction

Unit:mm

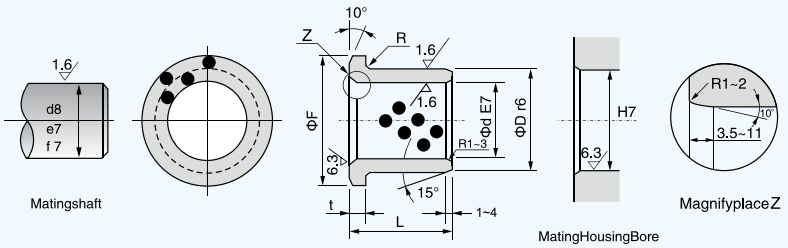
I.D. Φd E7		O.D. ΦD r6		Flange		L -0.10 -0.30									
				ΦF	t 0 -0.10	15	20	25	30	35	40	50	60	80	100
10	+0.040 +0.025	14	+0.034 +0.023	22	2	●	●								
12	+0.050 +0.032	18	"	25	3	●	●								
13	"	19	+0.041 +0.028	26	"	●	●								
14	"	20	"	27	"	●	●								
15	"	21	"	28	"	●	●	●	●						
16	"	22	"	29	"	●	●	●	●						
18	"	24	"	32	"	●	●	●	●						
20	+0.061 +0.040	28	"	40	5	●	●	●	●		●				
20	"	30	"	40	"	●	●	●	●		●				
25	"	35	+0.050 +0.034	45	"	●	●	●	●		●				
30	"	38	"	40	"		●	●	●	●	●	●			
30	"	40	"	50	"		●	●	●	●	●	●			
31.5	+0.075 +0.050	40	"	"	"		●			●					
35	"	45	"	60	"		●		●		●	●			
40	"	50	"	65	"		●		●		●	●			
45	"	55	+0.060 +0.041	70	"				●		●	●	●		
50	"	60	"	75	"				●		●	●	●		
55	+0.090 +0.060	65	"	80	"						●		●		
60	"	75	+0.062 +0.043	90	7.5						●	●		●	
63	"	75	"	95	"									●	
70	"	85	+0.073 +0.051	105	"							●		●	
75	"	90	"	110	"								●		
80	"	100	"	120	10								●	●	●
90	+0.107 +0.072	110	+0.076 +0.054	130	"								●	●	
100	"	120	"	150	"									●	●
120	"	140	+0.088 +0.063	170	"									●	●

How to order: Code d D L
JFB 10 14 15

Big demand with special sizes & drawings or material is available

JFBB Flanged Bushing

Material: CuZn25Al5Mn3Fe3/
CuZn5Sn5Pb5/CuSn12/
CuAl10Ni5Fe5+Graphite(500#SP)
Housing tollerance recommended H7



Tollerance recommended

d8 high load
e7 light load
f7 high precision

Unit:mm

Part No.	I.D. Φd E7	O.D. ΦD r6	ΦF	t	L -0.10 -0.30
JFBB-1211	12 +0.050 +0.032	18 +0.034 +0.023	30 0 -0.3	3 0 -0.03	11
JFBB-1223	"	"	"	"	23
JFBB-1513	15 +0.050 +0.032	21 +0.041 +0.028	35 0 -0.3	"	13
JFBB-1613	16 +0.050 +0.032	22 +0.041 +0.028	"	"	13
JFBB-1618	"	"	"	"	18
JFBB-1818	18 +0.050 +0.032	24 +0.041 +0.028	40 0 -0.3	"	18
JFBB-2020	20 +0.061 +0.040	28 +0.041 +0.028	45 0 -0.3	5 0 -0.03	20
JFBB-2025	"	"	"	"	25
JFBB-2520	25 +0.061 +0.040	33 +0.050 +0.034	50 0 -0.3	"	20
JFBB-2525	"	"	"	"	25
JFBB-3025	30 +0.061 +0.040	38 +0.050 +0.034	55 0 -0.3	"	25
JFBB-3035	"	"	"	"	35
JFBB-3525	35 +0.075 +0.050	44 +0.050 +0.034	62 0 -0.3	"	25
JFBB-3535	"	"	"	"	35
JFBB-4027	40 +0.075 +0.050	50 +0.050 +0.034	70 0 -0.3	7 0 -0.03	27
JFBB-4037	"	"	"	"	37
JFBB-4047	"	"	"	"	47
JFBB-5038	50 +0.075 +0.050	62 +0.060 +0.041	90 0 -0.3	8 0 -0.04	38
JFBB-5048	"	"	"	"	48
JFBB-5058	"	"	"	"	58
JFBB-6038	60 +0.090 +0.060	74 +0.062 +0.043	110 0 -0.3	"	38
JFBB-6068	"	"	"	"	68
JFBB-7050	70 +0.090 +0.060	85 +0.073 +0.051	120 0 -0.3	10 0 -0.04	50
JFBB-7080	"	"	"	"	80
JFBB-8060	80 +0.090 +0.060	96 +0.073 +0.051	140 0 -0.3	"	60
JFBB-8090	"	"	"	"	90

How to order: Part No. d L
JFBB 12 11

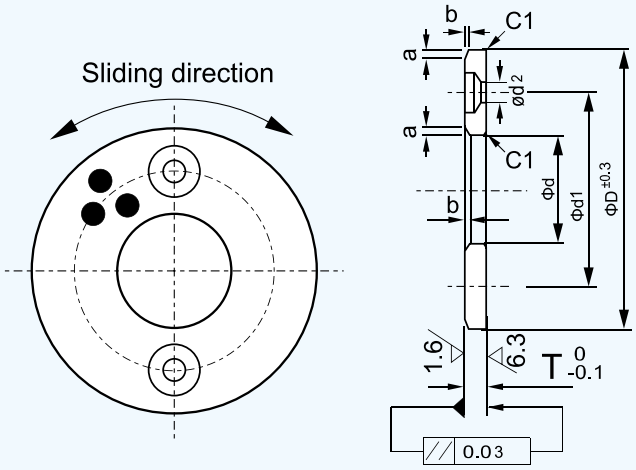
Big demand with special sizes & drawings or material is available

www.mqbearing.com pan@mqbearing.com junmingpan@hotmail.com

JTW/JTWN Metric Thrust Washer

JTW Type with holes

Material: CuZn25Al5Mn3Fe3+Graphite (500#SP)



Unit:mm

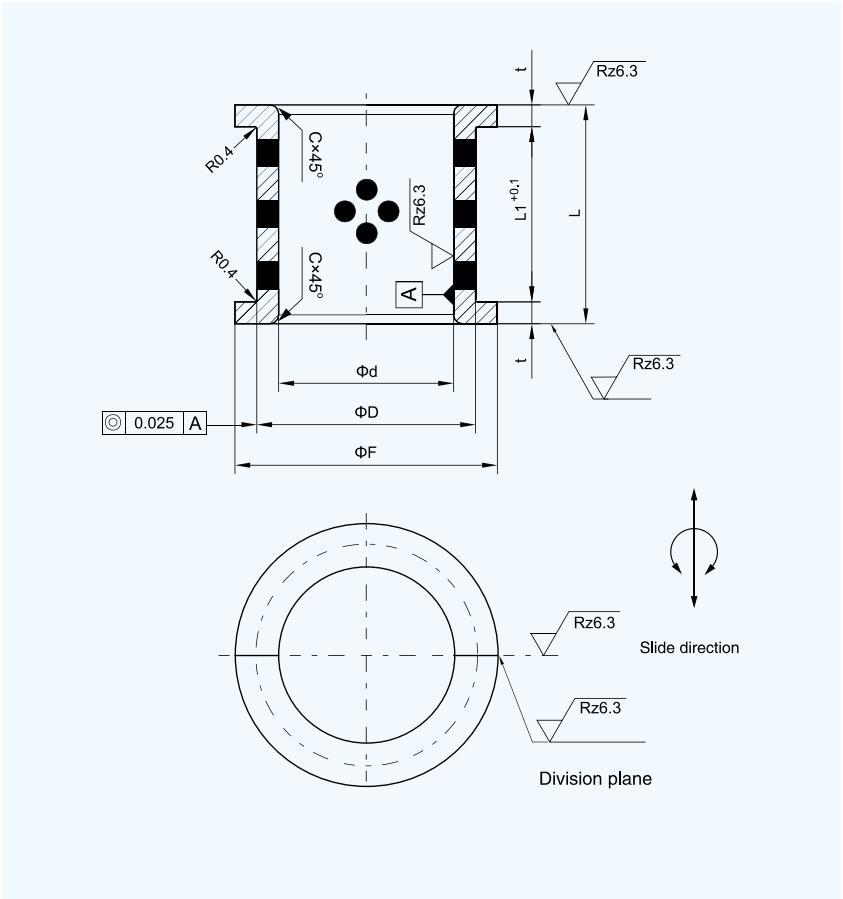
Part No.	I.D. Φd	O.D. ΦD	T 0 -0.1	Bolt			d2	Chamfer	
				d1	Q'ty	Size		a	b
JTW -10	10.2 +0.2 +0.1	30	3	20	2	M3	3.5	1.5	0.3
JTW -12	12.2 ”	40	”	28	”	”	”	2	0.4
JTW -1203N	12.2 ”	”	”	-	-	-	-	”	”
JTW -1303	13.2 ”	”	”	28	2	M3	3.5	”	”
JTW -1403	14.2 ”	”	”	”	”	”	”	”	”
JTW -1503	15.2 ”	50	”	35	”	”	”	”	”
JTW -1603	16.2 ”	”	”	”	”	”	”	”	”
JTW -1603N	16.2 ”	”	”	-	-	-	-	”	”
JTW -1803	18.2 ”	”	”	35	2	M3	3.5	”	”
JTW -2005	20.2 ”	”	5	”	”	M5	6	2.5	”
JTW -2505	25.2 ”	55	”	40	”	”	”	”	”
JTW -3005	30.2 ”	60	”	45	”	”	”	”	”
JTW -3505	35.2 ”	70	”	50	”	”	”	”	”
JTW -4007	40.2 ”	80	7	60	”	M6	7	3	0.5
JTW -4507	45.2 +0.3 +0.1	90	”	70	”	”	”	”	”
JTW -5008	50.3 ”	100	8	75	4	”	”	4	0.6
JTW -5508	55.3 ”	110	”	85	”	”	”	”	”
JTW -6008	60.3 ”	120	”	90	”	M8	9	5	0.8
JTW -6508	65.3 ”	125	”	95	”	”	”	”	”
JTW -7010	70.3 ”	130	10	100	”	”	”	”	”
JTW -7510	75.3 ”	140	”	110	”	”	”	”	”
JTW -8010	80.3 ”	150	”	120	”	”	”	”	”
JTW -9010	90.5 ”	170	”	140	”	M10	11	”	”
JTW -10010	100.5 ”	190	”	160	”	”	”	”	”
JTW -12010	120.5 ”	200	”	175	”	”	”	4	”

How to order: Part No. d
JTW 10

Big demand with special sizes & drawings or material is available

JFBB Half-Bearing

Material: CuZn25Al5Mn3Fe3/
CuZn5Sn5Pb5/CuSn12/
CuAl10Ni5Fe5+Graphite(500#SP)
Housing tollerance recommended H7



Unit:mm

Part No.	I.D. Φd H7	O.D. ΦD		ΦF d11	L h12	L1 +0.1 0	t	C
JFFB-030	30	38	s6	48	34	22	6	1
JFFB-035	35	45	"	55	45	32	6.5	"
JFFB-040	40	50	"	60	50	35	7.5	"
JFFB-045	45	55	"	65	55	40	7.5	"
JFFB-050	50	60	"	70	60	45	7.5	"
JFFB-060	60	70	"	80	70	50	10	2
JFFB-070	70	85	"	95	80	60	10	"
JFFB-080	80	95	"	110	95	70	12.5	"
JFFB-090	90	105	"	120	105	80	12.5	"
JFFB-100	100	115	"	130	115	90	12.5	"
JFFB-110	110	125	r6	140	125	100	12.5	"
JFFB-120	120	135	"	150	140	110	15	"
JFFB-140	140	160	"	175	160	120	20	"
JFFB-160	160	180	"	200	180	140	20	"

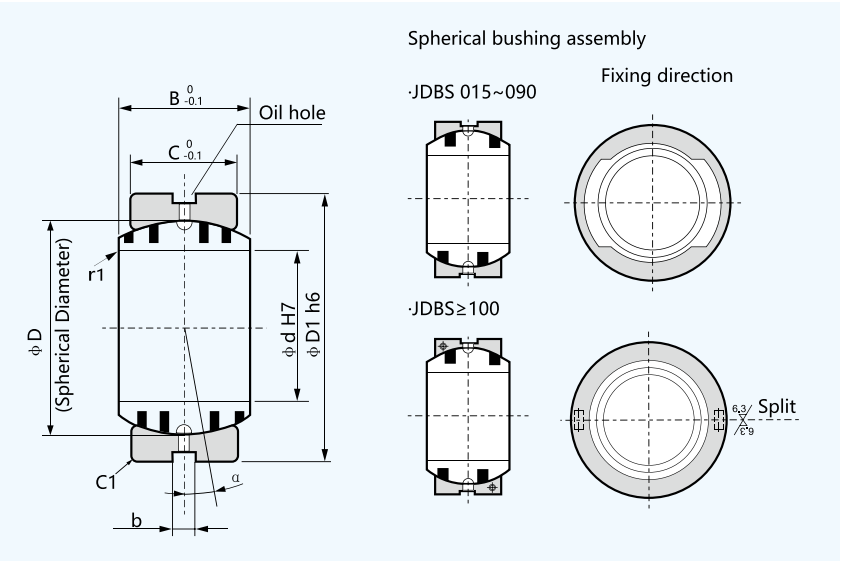
How to order: Part No. d
JFFB 030

Big demand with special sizes & drawings or material is available

www.mqbearing.com pan@mqbearing.com junmingpan@hotmail.com

JDBS Metric Spherical Bushing

Inner ring
Material: CuZn25Al5Mn3Fe3
+Graphite (500#SP)
Outer ring Material: S45C
Hardness: HRC 25~30



Unit:mm

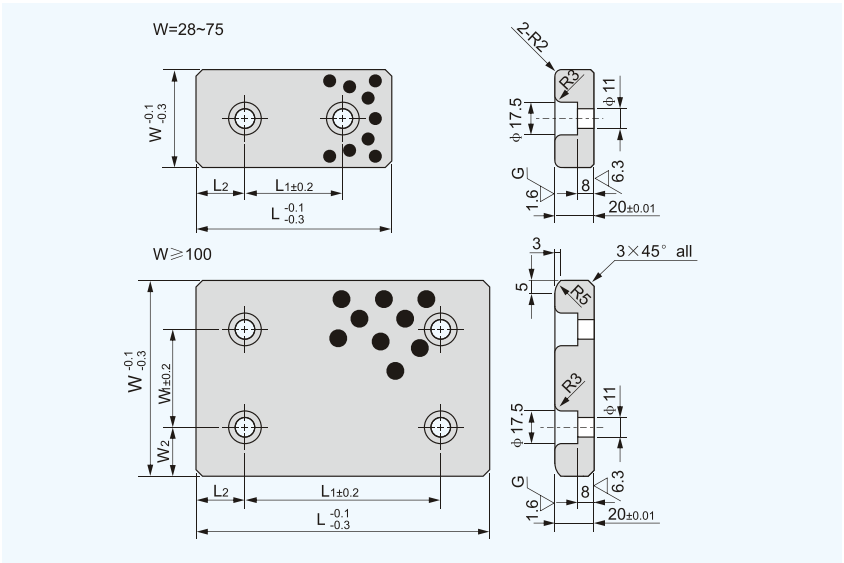
Part No.	d H7	D1	h6	B	C	D	b	Alignment Angle α°	Allowable Radial Load (kN)	Allowable Thrust Load (kN)
JDBS-015	15 $^{+0.018}_{0}$	26	$^{0}_{-0.013}$	12	9	22	4	8	6.5	0.5
JDBS-020	20 $^{+0.021}_{0}$	32	$^{0}_{-0.016}$	16	14	28	”	4	12.6	1.4
JDBS-025	25 ”	42	”	21	18	36	”	5	21.8	2.5
JDBS-030	30 ”	50	”	27	23	44	”	6	32.0	3.5
JDBS-035	35 $^{+0.025}_{0}$	55	$^{0}_{-0.019}$	30	26	49	”	5	43.7	4.8
JDBS-040	40 ”	62	”	33	28	55	”	6	54.7	5.7
JDBS-045	45 ”	72	”	36	31	62	”	5	69.7	7.2
JDBS-050	50 ”	80	”	42	36	70	”	”	92.4	10
JDBS-060	60 $^{+0.030}_{0}$	100	$^{0}_{-0.022}$	53	45	90	”	6	143	16
JDBS-070	70 ”	110	”	58	50	99	”	5	181	20
JDBS-080	80 ”	130	”	70	60	115	”	6	254	30
JDBS-090	90 $^{+0.035}_{0}$	140	$^{0}_{-0.025}$	76	65	125	”	”	313	36
JDBS-100	100 ”	160	”	88	75	145	6	”	544	64
JDBS-110	110 ”	170	”	93	80	155	”	5	642	73
JDBS-120	120 ”	190	$^{0}_{-0.029}$	105	90	17	”	6	797	94
JDBS-130	130 $^{+0.040}_{0}$	200	”	110	95	180	”	5	880	105
JDBS-140	140 ”	210	”	90	70	”	”	7	668	56
JDBS-150	150 ”	220	”	120	105	200	”	5	1135	129
JDBS-160	160 ”	230	”	105	80	”	”	8	891	73
JDBS-180	180 ”	260	$^{0}_{-0.032}$	105	”	225	”	6	1002	74
JDBS-200	200 $^{+0.046}_{0}$	290	”	130	100	250	”	7	1434	117
JDBS-220	220 ”	320	$^{0}_{-0.036}$	135	”	275	”	8	1577	118
JDBS-240	240 ”	340	”	140	”	300	9	”	1720	”
JDBS-260	260 $^{+0.052}_{0}$	370	”	150	110	325	”	7	2072	143
JDBS-280	280 ”	400	”	155	120	350	”	6	2455	172
JDBS-300	300 ”	430	$^{0}_{-0.040}$	165	120	375	”	7	2630	”

How to order: Part No. d
JDBS 015

Big demand with special sizes & drawings or material is available

JESW Oilless Wear Plate

Material: 650#+Graphite



Unit:mm

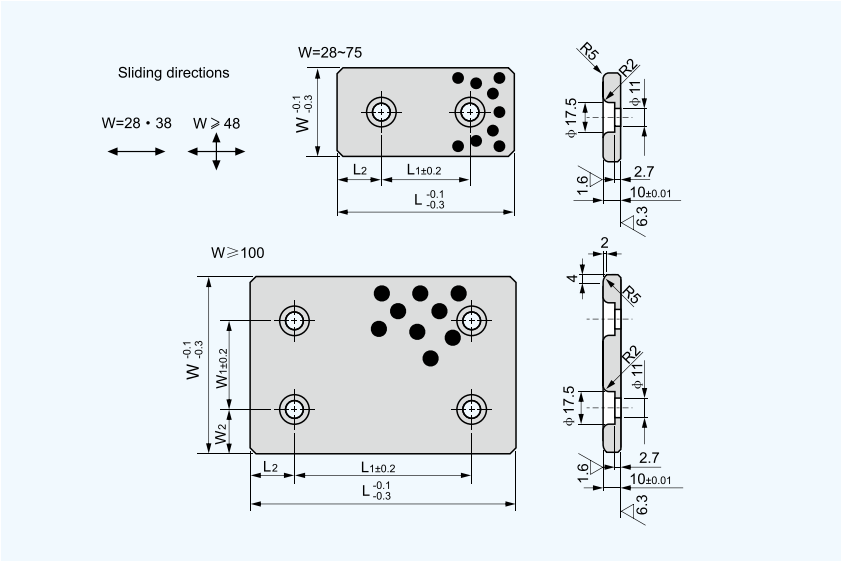
Standard No.	W	L	W_1	W_2	L_1	L_2
JESW-28 × 75	28	75	-	-	45	15
JESW-28 × 100		100			50	25
JESW-28 × 150		150			100	
JESW-38 × 75	38	75			45	15
JESW-38 × 100		100			50	25
JESW-38 × 150		150			100	
JESW-48 × 75	48	75			45	15
JESW-48 × 100		100			50	25
JESW-48 × 125		125			75	
JESW-48 × 150		150			100	
JESW-48 × 200		200			150	
JESW-58 × 75	58	75			45	15
JESW-58 × 100		100			50	25
JESW-58 × 150		150			100	
JESW-75 × 75	75	75			25	
JESW-75 × 100		100			50	
JESW-75 × 125		125			75	
JESW-75 × 150		150			100	
JESW-75 × 200		200			150	
JESW-100 × 100	100	100	50	25	50	25
JESW-100 × 125		125			75	
JESW-100 × 150		150			100	
JESW-100 × 200		200			150	
JESW-100 × 250		250			200	
JESW-100 × 300		300			200	50
JESW-125 × 125	125	125		37.5	75	25
JESW-125 × 150		150			100	
JESW-125 × 200		200			150	
JESW-125 × 250		250			200	
JESW-125 × 300		300			200	50
JESW-125 × 350		350			200	75
JESW-150 × 150	150	150	100	25	100	25
JESW-150 × 200		200			150	
JESW-150 × 250		250			200	

How to order: Part No. d L
JFBB 12 11

www.mqbearing.com pan@mqbearing.com junmingpan@hotmail.com

JUWP Oilless Wear Plate

Material: 500 # + Graphite

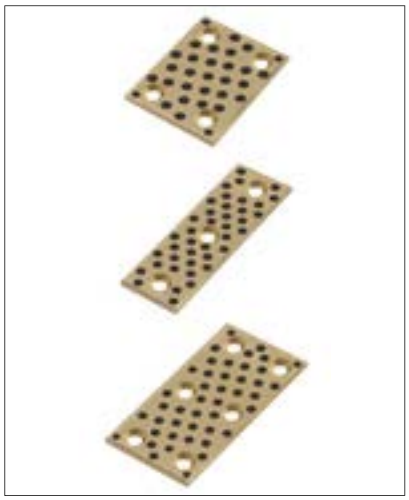


Unit:mm

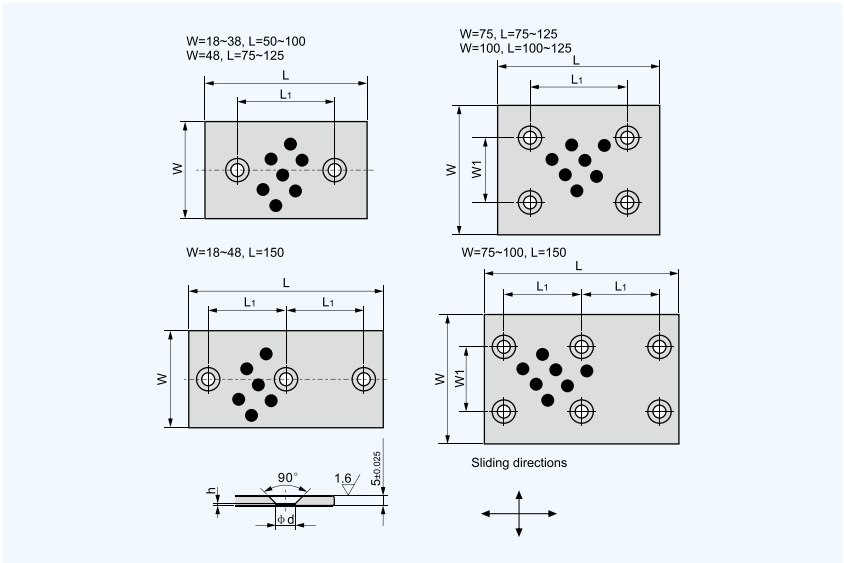
Standard No.	W	L	W_1	W_2	L_1	L_2
JTWP-28 × 75	28	75	-	-	45	15
JTWP-28 × 100		100			50	25
JTWP-28 × 125		125			75	
JTWP-28 × 150		150			100	
JTWP-38 × 75	38	75			45	15
JTWP-38 × 100		100			50	25
JTWP-38 × 125		125			75	
JTWP-38 × 150		150			100	
JTWP-48 × 75	48	75			45	15
JTWP-48 × 100		100			50	25
JTWP-48 × 125		125			75	
JTWP-48 × 150		150			100	
JTWP-48 × 200		200			150	
JTWP-58 × 75	58	75			45	15
JTWP-58 × 100		100			50	25
JTWP-58 × 150		150			100	
JTWP-75 × 75	75	75	-	-	25	25
JTWP-75 × 100		100			50	
JTWP-75 × 125		125			75	
JTWP-75 × 150		150			100	
JTWP-75 × 200		200			150	
JTWP-100 × 100	100	100	50	25	50	
JTWP-100 × 125		125			75	
JTWP-100 × 150		150			100	
JTWP-100 × 200		200			150	
JTWP-100 × 250		250			200	
JTWP-125 × 150		150		37.5	100	
JTWP-125 × 200		200			150	
JTWP-125 × 250		250			200	
JTWP-150 × 150	150	150	100	25	100	
JTWP-150 × 200		200			150	

How to order: Part No. d L
JFBB 12 11

JUWP Oilless Wear Plate



Material: 650#+Graphite



Unit:mm

Standard No.	W	L	W_1	L_1	d	h	Mounting Bolt
JUWP 18 × 50	18	50	-	20	6.5	1.5	M6
JUWP 18 × 75		75		45			
JUWP 18 × 100		100		70			
JUWP 18 × 150		150		60			
JUWP 28 × 50	28	50	-	20	10	0.8	M8
JUWP 28 × 75		75		45			
JUWP 28 × 100		100		70			
JUWP 28 × 150		150		60			
JUWP 38 × 50	38	50	-	20			
JUWP 38 × 75		75		45			
JUWP 38 × 100		100		70			
JUWP 38 × 150		150		60			
JUWP 48 × 75	48	75	-	45	10	0.8	M8
JUWP 48 × 100		100		70			
JUWP 48 × 125		125		95			
JUWP 48 × 150		150		60			
JUWP 75 × 75	75	75	45	45			
JUWP 75 × 100		100		70			
JUWP 75 × 125		125		95			
JUWP 75 × 150		150		60			
JUWP 100 × 100	100	100	70	70			
JUWP 100 × 125		125		95			
JUWP 100 × 150		150		60			

How to order: Part No. d L
JFBB 12 11

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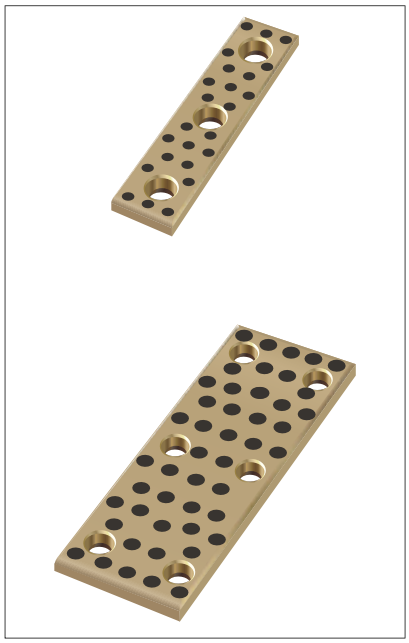
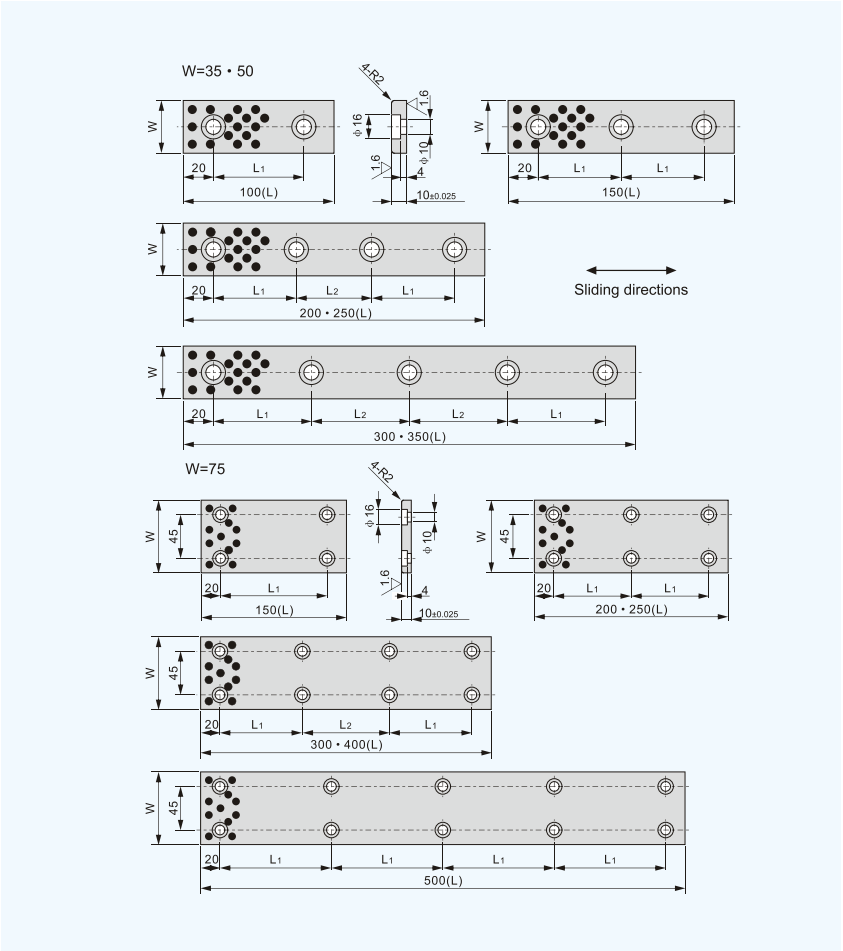
JOLP Oilless Wear Plate



Material: 650#+Graphite



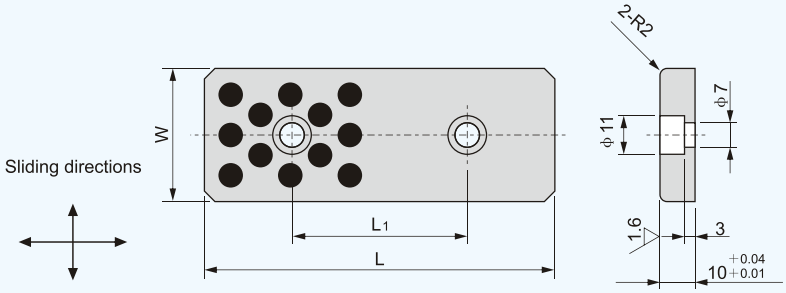
Unit:mm

Standard No.	W	L	Bolt Position		Bolt Q'ty
			L_1	L_2	
JOLP-35 × 100	35	100	60	-	2
JOLP-35 × 150		150	55	-	3
JOLP-35 × 200		200	55	50	4
JOLP-35 × 250		250	70	70	5
JOLP-35 × 300		300	65	65	
JOLP-35 × 350		350	80	75	
JOLP-50 × 100	50	100	60	-	2
JOLP-50 × 150		150	55	-	3
JOLP-50 × 200		200	55	50	4
JOLP-50 × 250		250	70	70	
JOLP-50 × 300		300	65	65	5
JOLP-50 × 350		350	80	75	4
JOLP-75 × 150	75	150	110	-	
JOLP-75 × 200		200	80	-	6
JOLP-75 × 250		250	105	-	
JOLP-75 × 300		300	85	90	8
JOLP-75 × 400		400	120	120	
JOLP-75 × 500		500	115	-	10

How to order: Part No. d L
JFBB 12 11

JOML Oilless Wear Plate

Material: 650#+Graphite



Unit:mm

Standard No.	W	L	L_1
JOML-18x75	18	75	45
JOML-18x100		100	50
JOML-18x125		125	75
JOML-18x150		150	100
JOML-28x75	28	75	45
JOML-28x100		100	50
JOML-28x125		125	75
JOML-28x150		150	100
JOML-38x75	38	75	45
JOML-38x100		100	50
JOML-38x125		125	75
JOML-38x150		150	100
JOML-48x75	48	75	45
JOML-48x100		100	50
JOML-48x125		125	75
JOML-48x150		150	100

How to order: Part No. d L
JFBB 12 11

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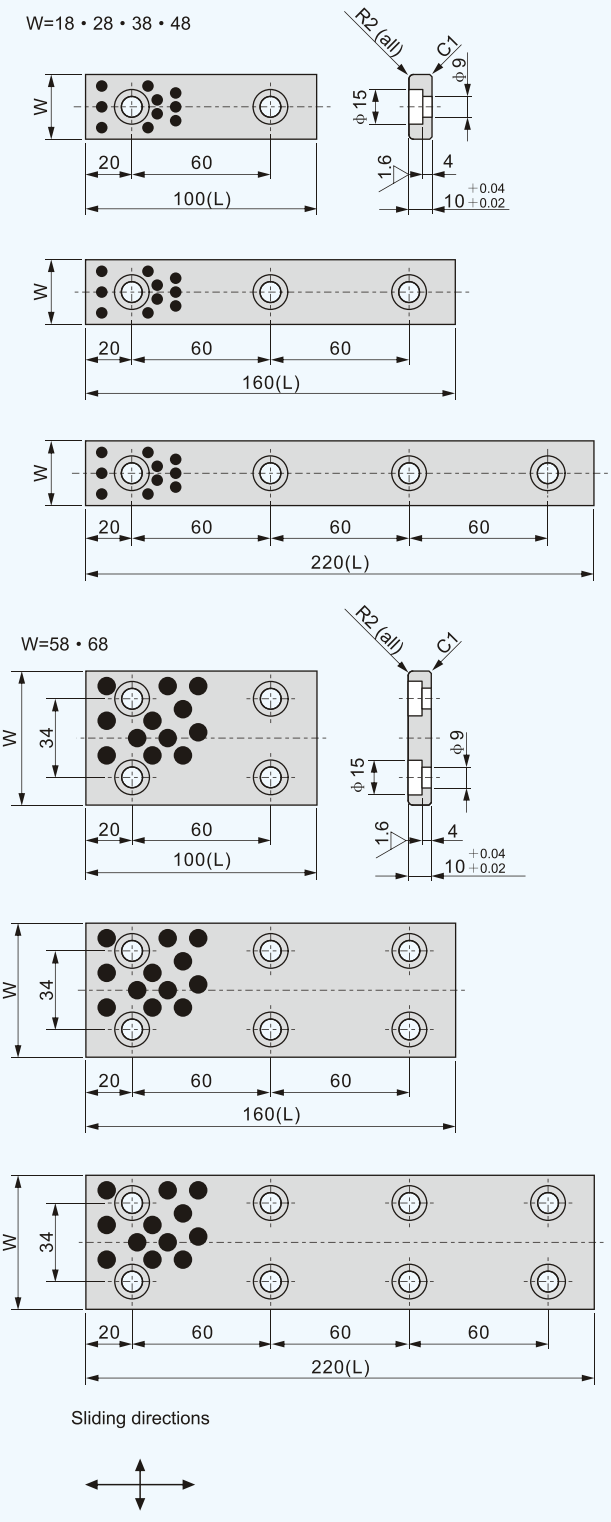
JTLP Oilless Wear Plate

Material: 650#+Graphite

Unit:mm

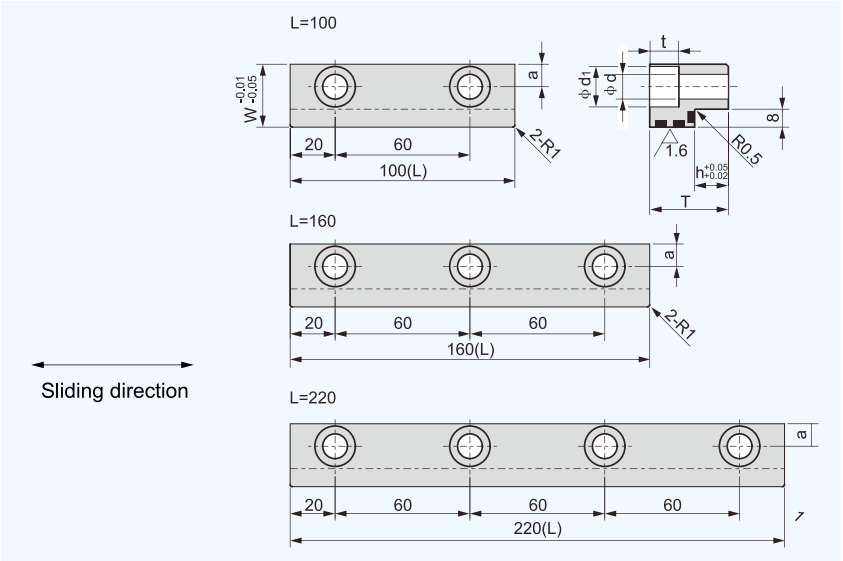
Standard No.	W	L
JTLP-18x100	18	100
JTLP-18x160		160
JTLP-18x220		220
JTLP-28x100	28	100
JTLP-28x160		160
JTLP-28x220		220
JTLP-38x100	38	100
JTLP-38x160		160
JTLP-38x220		220
JTLP-48x100	48	100
JTLP-48x160		160
JTLP-48x220		220
JTLP-58x100	58	100
JTLP-58x160		160
JTLP-58x220		220
JTLP-68x100	68	100
JTLP-68x160		160
JTLP-68x220		220

How to order: Part No. d L
JFBB 12 11



JGLDW Oilless Guide Rail

Material: 650#+Graphite



Unit:mm

Standard No.	W	L	T	a	d	d_1	h	t
JGLDW-23x100	23	100	30	7.5	7	11	15	7
JGLDW-23x160		160						
JGLDW-23x220		220						
JGLDW-23x100		100	41				26	
JGLDW-23x160		160						
JGLDW-23x220		220						
JGLDW-28x100	28	100	25	10	11	18	10	13
JGLDW-28x160		160						
JGLDW-28x220		220						
JGLDW-28x100		100	35				15	
JGLDW-28x160		160						
JGLDW-28x220		220						
JGLDW-28x100		100	56				26	
JGLDW-28x160		160						
JGLDW-28x220		220						

How to order: Part No. d L
JFBB 12 11

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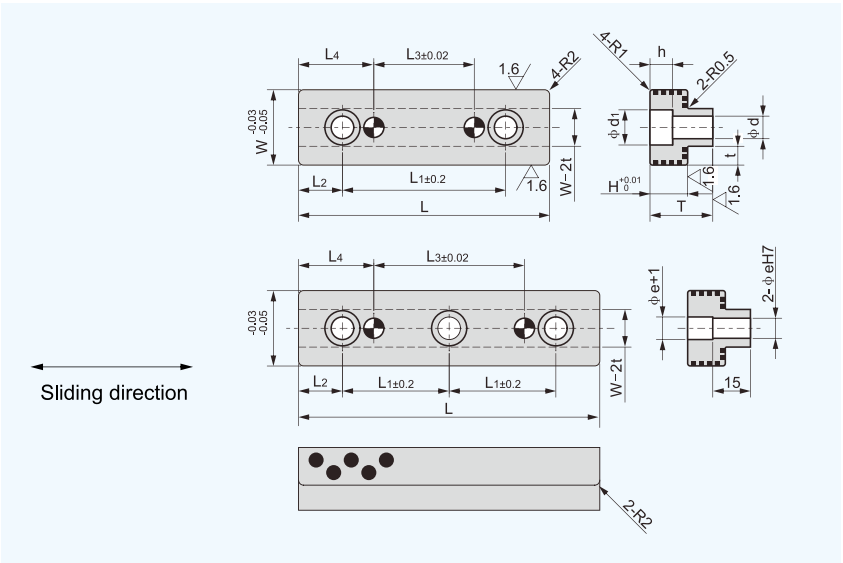
JTGLW Oilless Guide Rail

Material: 650#+Graphite



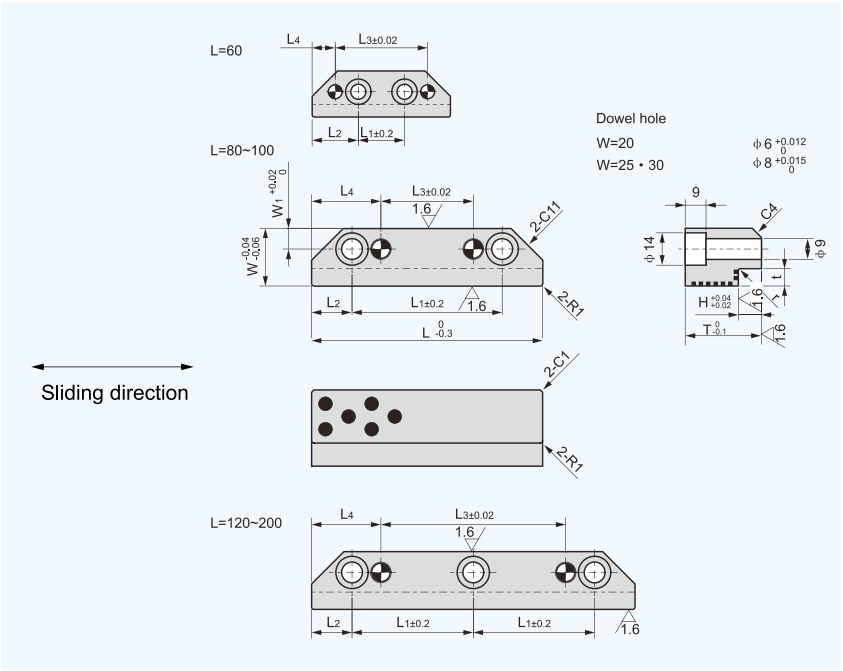
Unit:mm

Standard No.	W	L	L_1	L_2	L_3	L_4	T	H	t	d	d_1	h	e H7
JTGLW-20x60	20	60	35	12.5	15	22.5	15	8	4.5	5.5	9.5	6	$6^{+0.012}_{0}$
JTGLW-20x80		80	55		35								
JTGLW-20x100		100	75		55								
JTGLW-25x80	25	80	50	15	20	30	20	8	5.5	6.5	11	7	
JTGLW-25x100		100	70		40								
JTGLW-25x120		120	45		60								
JTGLW-30x100	30	100	65	17.5	40	30	25	10	7.5	9	14	9	$8^{+0.015}_{0}$
JTGLW-30x120		120	42.5		60								
JTGLW-30x140		140	52.5		80								
JTGLW-40x120	40	120	40	20	40	40	30	15	11	11	18	11	
JTGLW-40x140		140	50		60								
JTGLW-40x160		160	60		80								
JTGLW-40x180		180	70		100								

How to order: Part No. d L
JFBB 12 11

JGLXS Oilless Wear Plate

Material: 650#+Graphite



Unit:mm

Standard No.	W	L	T	W_1	L_1	L_2	L_3	L_4	H	t	r
JGLXS-20x60xT	20	60	23	9	20	20	40	10	8	5.5	0.5
JGLXS-20x80xT		80			50	15	20	30			
JGLXS-20x100xT		100			70		40				
JGLXS-20x120xT		120			45		60				
JGLXS-20x140xT		140			55		80				
JGLXS-20x160xT		160			65		100				
JGLXS-25x80xT	25	80	28 33 43		45	17.5	20		10	7.5	0.8
JGLXS-25x100xT		100			65		40				
JGLXS-25x120xT		120			42.5		60				
JGLXS-25x140xT		140			52.5		80				
JGLXS-25x160xT		160			62.5		100				
JGLXS-25x180xT		180			72.5		120				
JGLXS-25x200xT		200			82.5		140				
JGLXS-30x100xT	30	100	43 53	11	60	20	20	40	15	11	
JGLXS-30x120xT	30	120			40		40				
JGLXS-30x140xT	30	140			50		60				
JGLXS-30x160xT	30	160			60		80				
JGLXS-30x180xT	30	180			70		100				
JGLXS-30x200xT	30	200			80		120				

How to order: Part No. d L
JFBB 12 11

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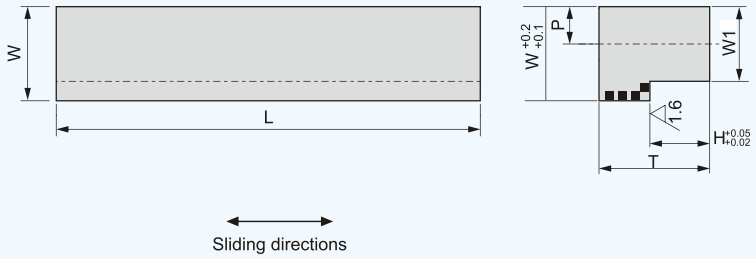
JGLX Oilless Wear Plate

Material: 650#+Graphite



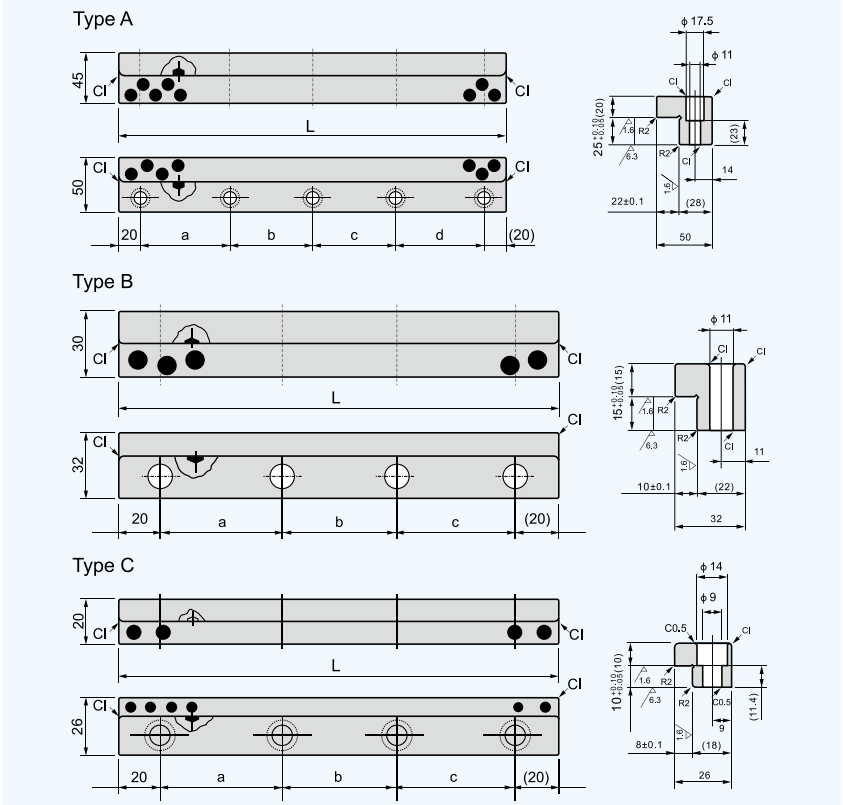
Unit:mm

Standard No.	W	L	T	W_1	H	Recommended Mounting Hole	
						P	Size
JGLX-20 × 15	20	320	15	14.5	5	8	M8
JGLX-20 × 20			20				
JGLX-20 × 25			25				
JGLX-20 × 23			23		8		
JGLX-20 × 28			28				
JGLX-25 × 28	25	320 605	28	17.5	10	10	
JGLX-25 × 33			33				
JGLX-25 × 43			43				
JGLX-30 × 38	30		38	19	15		
JGLX-30 × 43			43				
JGLX-30 × 53			53				
JGLX-35 × 43	35		43	23		12	M10
JGLX-35 × 53			53				
JGLX-35 × 63			63		20		
JGLX-40 × 45	40		45	28		14	M12
JGLX-40 × 55			55				
JGLX-40 × 65			65				

How to order: Part No. d L
JFBB 12 11

JSOL Oilless Wear Plate

Material: 650#+Graphite



Unit:mm

Standard No.	W	L	Bolt Position		Mounting Bolt	
			L_1	L_1	Size	Quantity
JSOL-26 × 100	26	100	60	-	M8	2
JSOL-26 × 150		150	55	-		3
JSOL-26 × 200		200	55	50		4
JSOL-32 × 100	32	100	60	-	M10	2
JSOL-32 × 150		150	55	-		3
JSOL-32 × 200		200	55	50		4
JSOL-32 × 250		250	70	70		
JSOL-50 × 200	50	200	55	50		
JSOL-50 × 250		250	70	70		
JSOL-50 × 300		300	65	65		5
JSOL-50 × 350		350	80	75		

How to order: Part No. d L
JFBB 12 11

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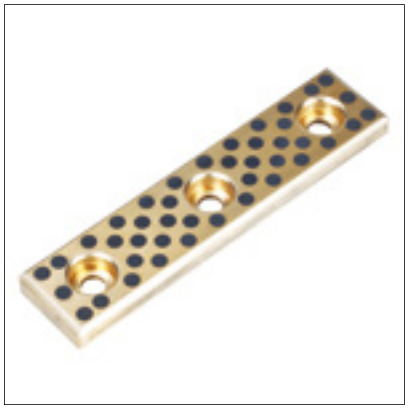
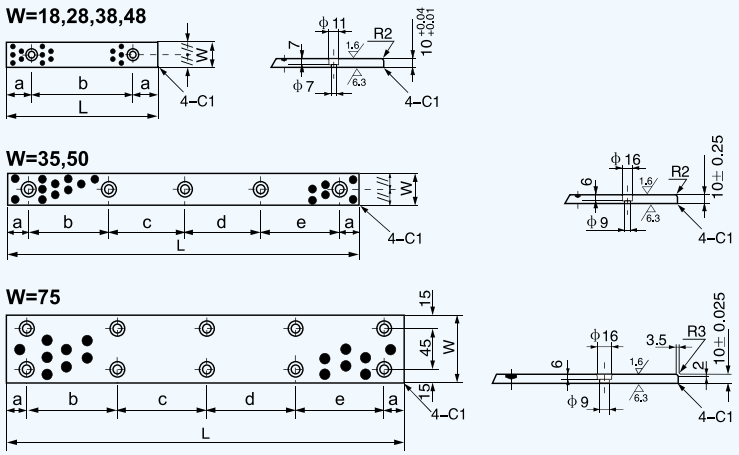
JSP Wear Plate



Material: CuZn25Al5Mn3Fe3
+Graphite (500#SP)



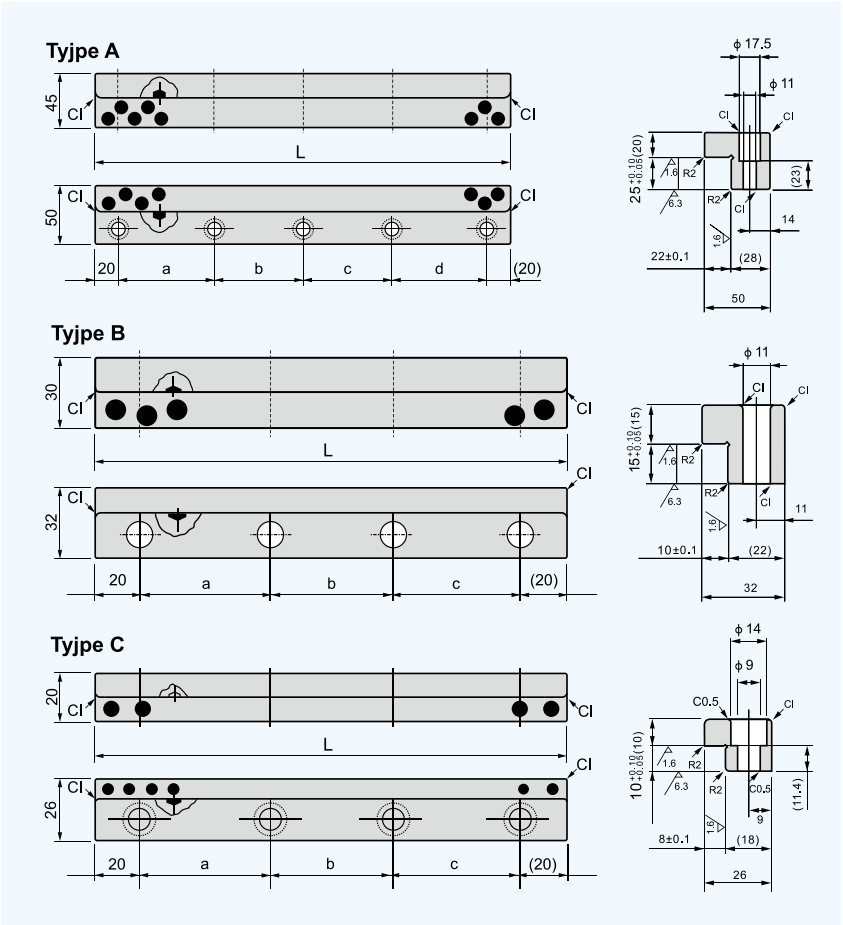
Unit:mm

Part No.	W	L	a	b	c	d	e	Flat Head Screw Choose	Q'ty of Holes
JSP-1875	18	75	15	45	—	—	—	M6	2
JSP-18100	”	100	25	50	”	”	”	”	”
JSP-18125	”	125	”	75	”	”	”	”	”
JSP-18150	”	150	”	100	”	”	”	”	”
JSP-2875	28	75	15	45	”	”	”	”	”
JSP-28100	”	100	25	50	”	”	”	”	”
JSP-28125	”	125	”	75	”	”	”	”	”
JSP-28150	”	150	”	100	”	”	”	”	”
JSP-35100	35	100	20	60	”	”	”	M8	”
JSP-35150	”	150	”	55	55	”	”	”	3
JSP-35200	”	200	”	55	50	55	”	”	4
JSP-35250	”	250	”	70	70	70	”	”	”
JSP-35300	”	300	”	65	65	65	65	”	5
JSP-35350	”	350	”	80	75	75	80	”	”
JSP-3875	38	75	15	45	—	—	—	M6	2
JSP-38100	”	100	25	50	”	”	”	”	”
JSP-38125	”	125	”	75	”	”	”	”	”
JSP-38150	”	150	”	100	”	”	”	”	”
JSP-4875	48	75	15	45	”	”	”	”	”
JSP-48100	”	100	25	50	”	”	”	”	”
JSP-48125	”	125	”	75	”	”	”	”	”
JSP-48150	”	150	”	100	”	”	”	”	”
JSP-50100	50	100	20	60	—	—	—	M8	”
JSP-50150	”	150	”	55	55	”	”	”	3
JSP-50200	”	200	”	”	50	55	”	”	4
JSP-50250	”	250	”	70	70	70	”	”	”
JSP-50300	”	300	”	65	65	65	65	”	5
JSP-50400	”	400	”	90	90	90	90	”	”
JSP-75150	75	150	”	110	—	—	—	”	4
JSP-75200	”	200	”	80	80	”	”	”	6
JSP-75250	”	250	”	105	105	”	”	”	”
JSP-75300	”	300	”	85	90	85	”	”	8
JSP-75400	”	400	”	120	120	120	”	”	”
JSP-75500	”	500	”	115	115	115	115	”	10

How to order: Part No. W L
JSP 18 75

JSL L Shape Oilless Wear Plate

Material: CuZn25Al5Mn3Fe3
+Graphite (500#SP)



Unit:mm

Part No.	Type	W	L	a	b	c	d	Bolt	
								Size	Q'ty
JSL-26100	C	26	100	60	---	---	---	M8	2
JSL-26150	”	”	150	55	55	---	---	”	3
JSL-26200	”	”	200	”	50	55	---	”	4
JSL-32100	B	32	100	60	---	---	---	M10	2
JSL-32150	”	”	150	55	55	---	---	”	3
JSL-32200	”	”	200	”	50	55	---	”	4
JSL-32250	”	”	250	70	70	70	---	”	”
JSL-50200	A	50	200	55	50	55	---	”	”
JSL-50250	”	”	250	70	70	70	---	”	”
JSL-50300	”	”	300	65	65	65	65	”	5
JSL-50350	”	”	350	80	75	75	80	”	”

How to order: Part No. W L
JSL 26 100

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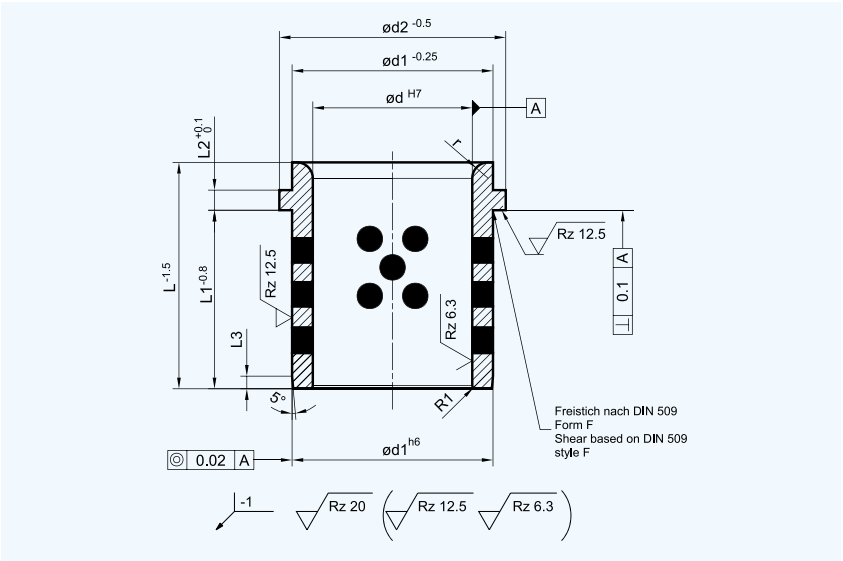
MGB9834 DIN9843 Guide Bushings&Clamps

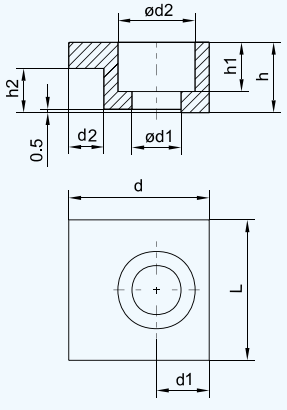
Material: CuZn25Al5Mn3Fe3
+Graphite (500#SP)



Unit:mm

Part No.	d	d1	d2	L	L1	L2	L3	r
MGB9834 798	25	32	40	32	22	6,3	4	3
MGB9834 799	”	”	”	40	30	”	”	”
MGB9834 797	”	”	”	”	32	”	”	”
MGB9834 796	24	”	”	”	”	”	”	”
MGB9834 800	32	40	50	50	40	”	”	”
MGB9834 801	40	50	63	63	50	”	5	”
MGB9834 802	50	63	71	71	56	”	6,3	5
MGB9834 803	63	80	90	80	63	10	8	6
MGB9834 804	80	100	112	100	80	”	10	8
MGB9834 808	100	125	140	125	100	”	12,5	10
MGB9834 805	”	”	”	”	106	”	”	”
MGB9834 806	125	160	180	160	132	”	16	12
MGB9834 807	160	200	220	200	170	”	”	18

How to order: Part No. d L L1
MGB9834 25 32 22



Unit:mm

Part No.	d h9	L 0 -0.4	h h11	d1	d2 +0.3 0	h1 +0.2 0	h2 0 -0.3	d1 +0.2 0	d2 +0.2 0
MGB9832 798	20	20	10	7,5	5	7	6,3	7	11
MGB9832 799	32	32	16	11	10	11,5	10	11,5	17,5
MGB9832 784	25	20	12	10	5	8,5	6,3	9	15
MGB9832 785	32	25	16	11	10	11,5	6,3	11	18

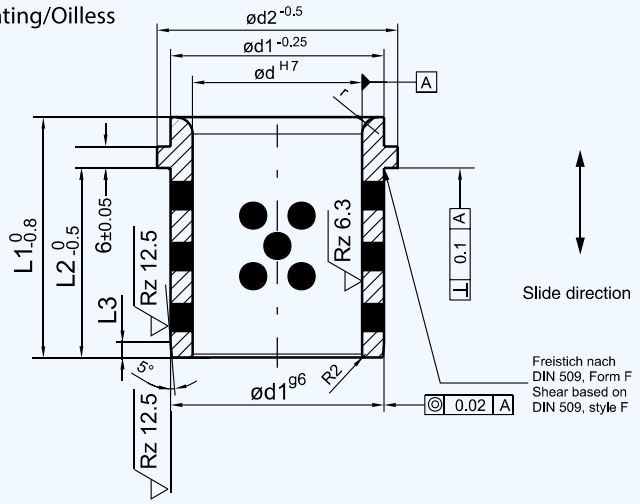
How to order: Part No. d
MGB9832 20

Clamp ident. with DIN 9832

MGB61 NAAMS Standard Guide Bushing

Material: CuZn25Al5Mn3Fe3
+Graphite (500#SP)
According to NAAMS standard design and production, general replaceability.

Which Mataince-free/
Self-lubricating/Oilless



Unit:mm

Part No.	NAAMS Code	DANLY Part Number	GM Part Number	Chrysler Part Number	Ford Part Number	d	d1	d2	L1	L2	L3	r
MGB61 2540	—	NM25	90.30.05-25	19-029-1010	—	25	32	40	40	30	4	3
MGB61 3250	G613250	NM32	90.30.05-32	19-029-1011	WDX13-60-08032	32	40	50	50	40	”	”
MGB61 4063	G614063	NM40	90.30.05-40	19-029-1012	WDX13-60-08040	40	50	63	63	50	5	”
MGB61 5071	G615071	NM50	90.30.05-50	19-029-1013	WDX13-60-08050	50	63	71	71	56	6	5
MGB61 6380	G616380	NM63	90.30.05-63	19-029-1014	WDX13-60-08063	63	80	90	80	63	8	6
MGB61 80100	G618010	NM80	90.30.05-80	19-029-1015	WDX13-60-08080	80	100	112	100	80	10	8
MGB61 100125	G611012	NM100	90.30.05-100	19-029-1016	WDX13-60-08100	100	125	140	125	106	12	10
MGB61 115140	G611114	NM115	—	19-029-1017	—	115	140	155	140	120	”	”
MGB61 125160	G611216	NM125	90.30.05-125	19-029-1018	WDX13-60-08125	125	160	180	160	132	”	12

How to order: Part No. d L1
MGB61 25 40

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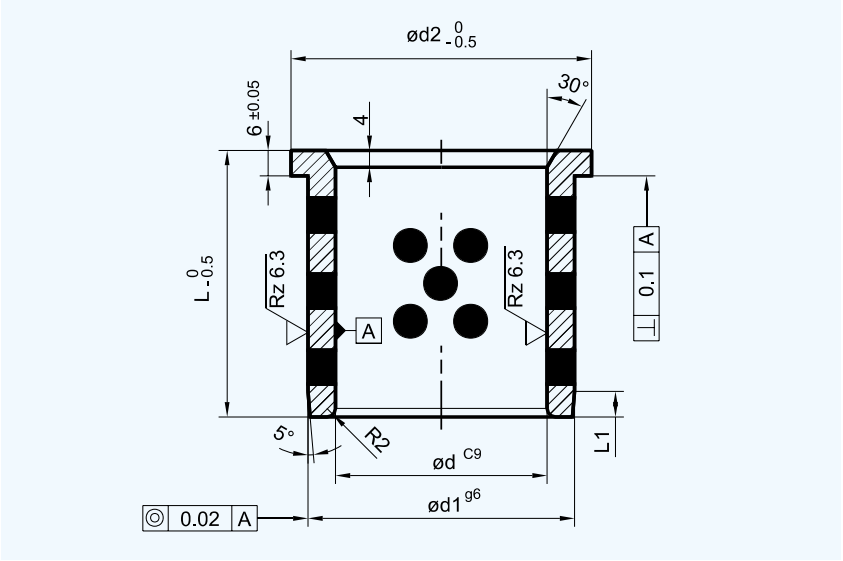
MGB71 NAAMS Standard Guide Bushing



Material: CuZn25Al5Mn3Fe3
+Graphite (500#SP)

According to NAAMS standard design and production, general replaceability.

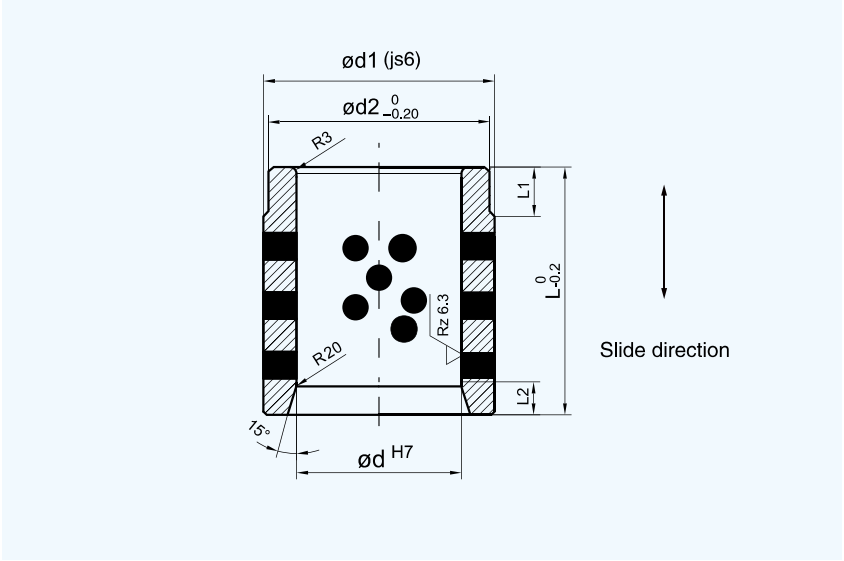
Unit:mm

Part No.	NAAMS Code	DANLY Part Number	GM Part Number	Chrysler Part Number	Ford Part Number	d	d1	d2	L	L1
MGB71 2540	G712540	NM25PAD	90.30.10-25	19-029-0102	—	25	32	40	40	4
MGB71 3250	G713250	NM32PAD	90.30.10-32	19-029-0103	WDX13-80-09032	32	40	50	50	”
MGB71 4055	G714055	NM40PAD	90.30.10-40	19-029-0104	WDX13-80-09040	40	50	63	55	5
MGB71 5063	G715063	NM50PAD	90.30.10-50	19-029-0105	WDX13-80-09050	50	63	71	63	6
MGB71 6375	G716375	NM63PAD	90.30.10-63	19-029-0106	WDX13-80-09063	63	80	90	75	8
MGB71 8090	G718090	NM80PAD	90.30.10-80	19-029-0108	WDX13-80-09080	80	100	112	90	10
MGB71 100115	G711011	NM100PAD	90.30.10-100	19-029-0110	WDX13-80-09100	100	125	140	115	12
MGB71 125138	G711213	NM125PAD	90.30.10-125	19-029-0112	—	125	160	180	138	12

How to order: Part No. d L
MGB71 25 40

MGPBW/MGPBF Standard Guide Bushing

Material: CuZn25Al5Mn3Fe3
+Graphite (500#SP)



Unit:mm

Part No.	Part No.	d	d1	d2	L	L1	L2
MGPBW-30	MGPBF-30	30	50	49	50	10	5
MGPBW-35	MGPBF-35	35	60	59	55	15	”
MGPBW-40	MGPBF-40	40	”	”	60	10	”
MGPBW-50	MGPBF-50	50	70	69	75	15	10
MGPBW-60	MGPBF-60	60	80	79	90	20	”
MGPBW-80	MGPBF-80	80	100	99	120	25	”
MGPBW-100	MGPBF-100	100	120	119	150	”	”
MGPBW-120	MGPBF-120	120	140	139	180	”	”

How to order: Part No. d L
MGPBW 30 50

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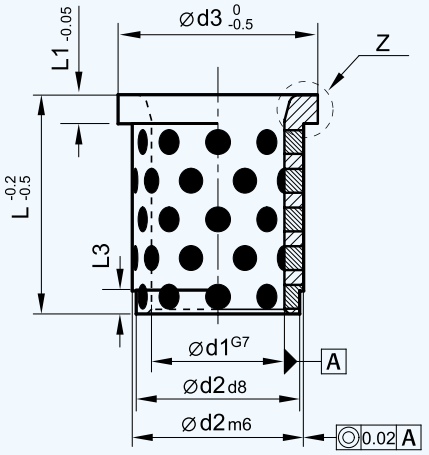
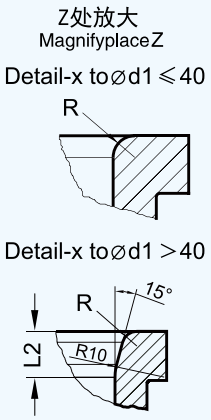
MFB 2102.70. Oilless Guide Bushing
MFB 2102.71. Solid Bronze Bushings with Oil-groove

MFB 2102.70
Material: CuZn25Al5Mn3Fe3
+Graphite (500#SP)
Housing tollerance recommended H6

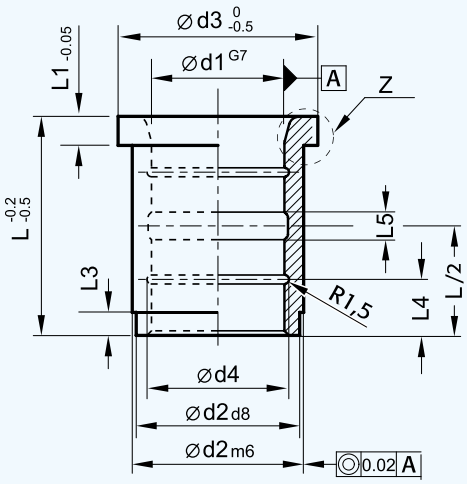
MFB 2102.71
Soilde Bronze
Material: CuZn25Al5Mn3Fe3
Housing tollerance recommended H6

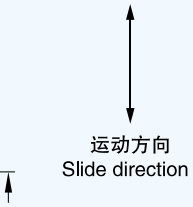
MFB 2102.70





MFB 2102.71





Unit:mm

Part No.									
MFB 2102.70	MFB 2102.71								
d1	d1	20	25	32	40	50	63	80	100
d2	d2	28	35	44	52	63	80	100	125
d3	d3	32	40	50	60	71	90	112	140
d4	d4	22	27	34	42	52	65	82	102
L	L	40	50	63	80	100	125	160	20
L1	L1	4	5	6	8	10	12	16	20
L3	L3	3	5	8	8	8	10	10	10
	L4	——	——	12	16	20	25	32	40
	L5	5	5	5	8	10	12	16	20
R	R	2	2	3	3	3	3	4	4

How to order: Part No. d1
MFB 2102.70. 20

How to order: Part No. d1
MFB 2102.71. 20

MFB 2081.74. Headed Guide Bushes,Bronze with solid lubrication rings

Note:

Headed Guide Bushes are to be held in H6-retainer bores. Three screw clamps are provided for fixing; sizes d_1=38 mm and over have four.

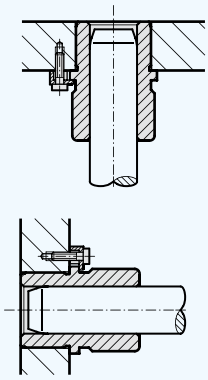
Material:

Bronze

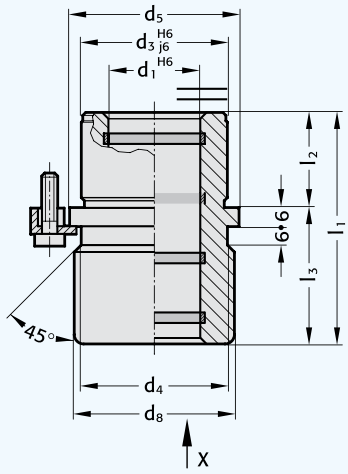
Execution:

Contact surfaces with solid lubricant rings. Diameter d_3 and collar face precision ground.

Mounting Example

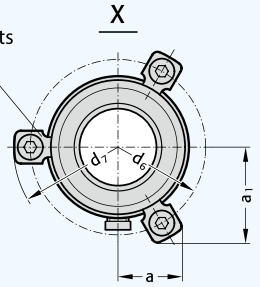


MFB 2081.74



MFB 207.45

Order No. for replacement parts
Screw clamp
with cap screws
M6 × 20 similar
DIN 6912,
head Φ13,
(four clamps for size
Φd_1 = 38 mm and over)



Unit:mm

MFB2081.74.

d_1	19	20	24	25	30	32	38	40	48	50	60	63	80
d_3	32		40		48		58		70		85		105
d_4	32		40		48		58		70		85		105
d_5	40		48		56		66		80		95		118
d_6	52		60		67		77		91		106		129
d_7	64.7		72.7		79.7		89.7		103.7		118.7		141.7
d_8	39		46		53		63		77		92		115
a	20.7		22.65		24.4		35.3		40.2		45.5		54.5
a_1	30		33.4		36.4		35.3		40.2		45.5		54.5
l_1	43		59		75		82		97		116		120
l_2	23		23		30		37		47		60		60
l_3	20		36		45		45		50		56		60

Ordering Code(example):
Headed Guide Bushes,Bronze = 2081.74.

d1= 25mm	= 025
Order No	= 2081.74.025

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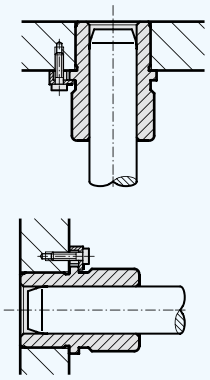
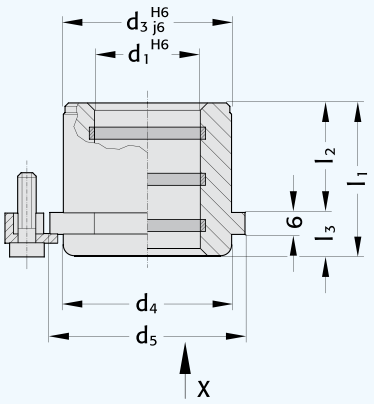
MFB 2081.75. Headed Guide Bushes,Bronze with solid lubrication rings

Mounting Example



MFB 2081.75



Note:

Headed Guide Bushes are to be held in H6-retainer bores. Three screw clamps are provided for fixing; sizes d_1=38 mm and over have four.

Material:

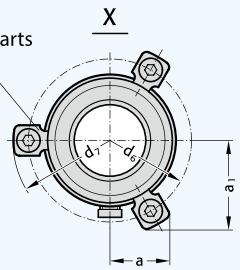
Bronze

Execution:

Contact surfaces with solid lubricant rings. Diameter d_3 and collar face precision ground.

MFB 207.45

Order No. for replacement parts
Screw clamp
with cap screws
M6 × 20 similar
DIN 6912,
head Φ13,
(four clamps for size
Φd_1 = 38 mm and over)



Unit:mm

MFB2081.75.												
d_1	19	20	24	25	30	32	38	40	48	50	60	63	80
d_3	32		40		48		58		70		85		105
d_4	32		40		48		58		70		85		105
d_5	40		48		56		66		80		95		118
d_6	52		60		67		77		91		106		129
d_7	64.7		72.7		79.7		89.7		103.7		118.7		141.7
d_8	39		46		53		63		77		92		115
a	20.7		22.65		24.4		35.3		40.2		45.5		54.5
a_1	30		33.4		36.4		35.3		40.2		45.5		54.5
l_1	35		35		42		52		65		80		80
l_2	23		23		30		37		47		60		60
l_3	12		12		12		15		18		20		20

Ordering Code(example):
Headed Guide Bushes,Bronze = 2081.75.

d1= 63mm = 063

Order No = 2081.75.063

MPW VDI3357 Wear Plate

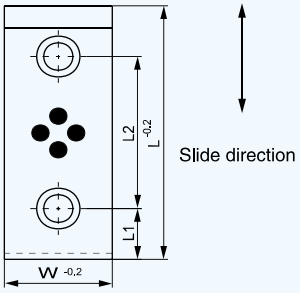
MPW

Material: CuZn25Al5Mn3Fe3

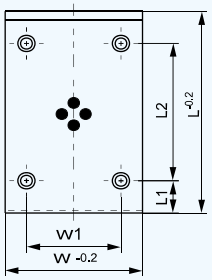
+Graphite (500#sp)

Countersunk bore hole	ϕ d	ϕ D	t
	H13		
M8 × 25	9	15	9
M12 × 25	13.5	20	13

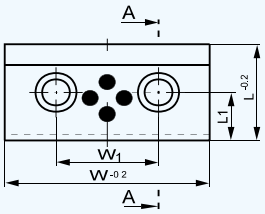
Shape： A



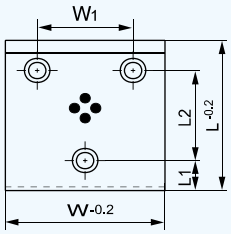
Shape： D



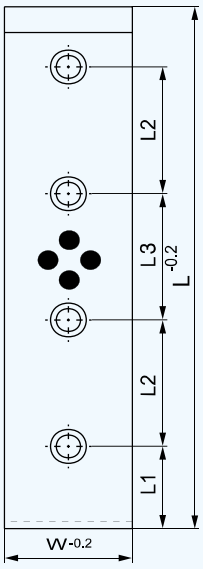
Shape： B

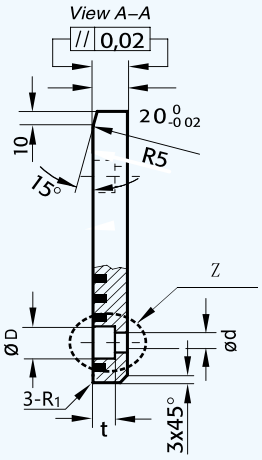


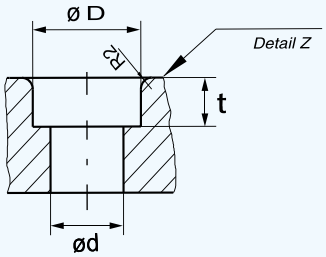
Shape： C



Shape： E







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MPW VDI3357 Wear Plate

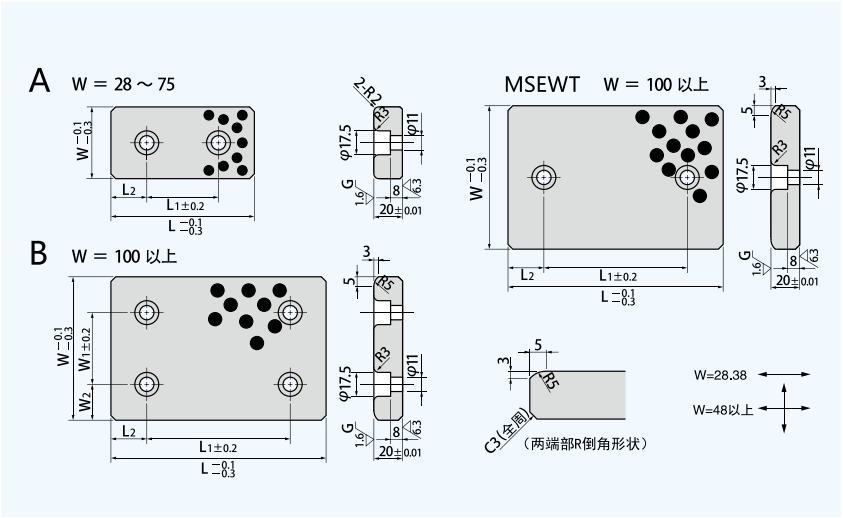
Unit:mm

Part No.	W - 0.2	L - 0.2	W1 ± 0.2	L1 ± 0.2	L2 ± 0.2	L3 ± 0.2	Shape	Head Screw Choose	
								DIN 912 DIN ENISO 4762	Q'ty
MPW - 50 × 80	50	80	-	25	30	-	A	M8 × 25	2
MPW - 50 × 100	50	100	-	”	50	-	”	M12 × 25	”
MPW - 50 × 125	50	125	-	”	75	-	”	”	”
MPW - 50 × 160	50	160	-	”	110	-	”	”	”
MPW - 50 × 200	50	200	-	”	150	-	”	”	”
MPW - 50 × 250	50	250	-	”	60	80	E	”	4
MPW - 50 × 300	50	300	-	”	80	90	”	”	”
MPW - 50 × 350	50	350	-	”	100	100	”	”	”
MPW - 50 × 400	50	400	-	”	120	110	”	”	”
MPW - 50 × 450	50	450	-	”	140	120	”	”	”
MPW - 50 × 500	50	500	-	”	150	150	”	”	”
MPW - 80 × 50	80	50	30	25	-	-	B	M8 × 25	2
MPW - 80 × 80	80	80	-	”	30	-	A	M12 × 25	”
MPW - 80 × 100	80	100	-	”	50	-	”	”	”
MPW - 80 × 125	80	125	-	”	75	-	”	”	”
MPW - 80 × 160	80	160	-	”	110	-	”	”	”
MPW - 80 × 200	80	200	-	”	150	-	”	”	”
MPW - 80 × 250	80	250	-	40	170	-	”	”	”
MPW - 80 × 315	80	315	-	”	235	-	”	”	”
MPW - 80 × 250	80	250	-	25	60	80	E	”	4
MPW - 80 × 300	80	300	-	”	80	90	”	”	”
MPW - 80 × 350	80	350	-	”	100	100	”	”	”
MPW - 80 × 400	80	400	-	”	120	110	”	”	”
MPW - 80 × 450	80	450	-	”	140	120	”	”	”
MPW - 80 × 500	80	500	-	”	150	150	”	”	”
MPW - 100 × 50	100	50	50	25	-	-	B	M12 × 25	2
MPW - 100 × 80	100	80	”	40	-	-	”	”	”
MPW - 100 × 100	100	100	-	25	50	-	A	”	”
MPW - 100 × 125	100	125	-	”	75	-	”	”	”
MPW - 100 × 160	100	160	-	”	110	-	”	”	”
MPW - 100 × 200	100	200	-	”	150	-	”	”	”
MPW - 100 × 250	100	250	-	40	170	-	”	”	”
MPW - 100 × 315	100	315	-	”	235	-	”	”	”
MPW - 100 × 450	100	450	-	25	140	120	E	”	4
MPW - 100 × 500	100	500	-	”	150	150	”	”	”
MPW - 125 × 50	125	50	75	25	-	-	B	M12 × 25	2
MPW - 125 × 80	125	80	”	40	-	-	”	”	”
MPW - 125 × 100	125	100	”	25	50	-	C	”	3
MPW - 125 × 125	125	125	”	”	75	-	”	”	”
MPW - 125 × 160	125	160	”	”	110	-	”	”	”
MPW - 125 × 200	125	200	”	”	150	-	”	”	”
MPW - 125 × 250	125	250	”	40	170	-	”	”	”
MPW - 125 × 315	125	315	”	”	235	-	”	”	”
MPW - 125 × 450	125	450		25	140	120	E	”	4
MPW - 125 × 500	125	500		”	150	150	”	”	”
MPW - 160 × 50	160	50	110	25	-	-	B	M12 × 25	2
MPW - 160 × 80	160	80	”	40	-	-	”	”	”
MPW - 160 × 100	160	100	”	25	50	-	C	”	3
MPW - 160 × 125	160	125	”	”	75	-	”	”	”
MPW - 160 × 160	160	160	”	”	110	-	”	”	”
MPW - 160 × 200	160	200	”	”	150	-	”	”	”
MPW - 160 × 250	160	250	”	40	170	-	D	”	4
MPW - 160 × 315	160	315	”	”	235	-	”	”	”

How to order: Part No. W L
MPW 50 80

MSEW JIS 20mm Wear Plate

Material: CuZn25Al5Mn3Fe3
+Graphite (500#sp)



Unit:mm

Part No.	W	L	W_1	L_1	L_2	Catalog No.	
MSEW - 2875	28	75	-	45	15	A	MSEW
MSEW - 28100	”	100	-	50	25		
MSEW - 28150	”	150	-	100	”		
MSEW - 3875	38	75	-	45	15		
MSEW - 38100	”	100	-	50	25		
MSEW - 38150	”	150	-	100	”		
MSEW - 4875	48	75	-	45	15		
MSEW - 48100	”	100	-	50	25		
MSEW - 48125	”	125	-	75	”		
MSEW - 48150	”	150	-	100	”		
MSEW - 48200	”	200	-	150	”		
MSEW - 5875	58	75	-	45	15		
MSEW - 58100	”	100	-	50	25		
MSEW - 58150	”	150	-	100	”		
MSEW - 7575	75	75	-	25	”		
MSEW - 75100	”	100	-	50	”		
MSEW - 75125	”	125	-	75	”		
MSEW - 75150	”	150	-	100	”		
MSEW - 75200	”	200	-	150	”		
MSEW - 100100	100	100	50	50	”	B	MSEW MSEWT
MSEW - 100125	”	125	50	75	”		
MSEW - 100150	”	150	50	100	”		
MSEW - 100200	”	200	50	150	”		
MSEW - 100250	”	250	50	200	”		
MSEW - 100300	”	300	50	”	50		
MSEW - 125125	125	125	50	75	25		
MSEW - 125150	”	150	50	100	”		
MSEW - 125200	”	200	50	150	”		
MSEW - 125250	”	250	50	200	”		
MSEW - 125300	”	300	50	”	50		
MSEW - 125350	”	350	50	”	75		
MSEW - 150150	150	150	100	100	25		
MSEW - 150200	”	200	100	150	”		
MSEW - 150250	”	250	100	200	”		

How to order: Part No. W L
MSEW 28 75

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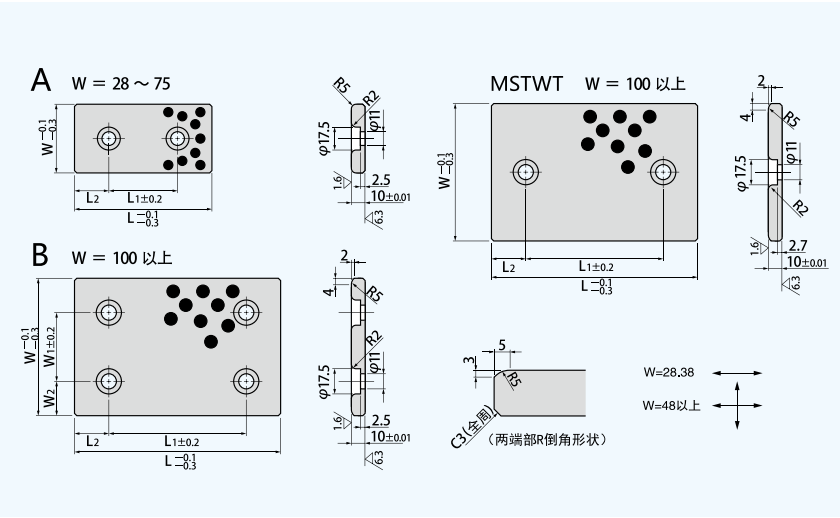
MSTW JIS 10mm Wear Plate

Material: CuZn25Al5Mn3Fe3
+Graphite (500#sp)



Unit:mm

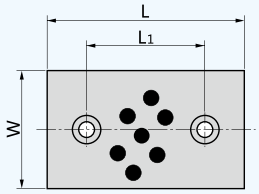
Part No.	W ± 0.2	L ± 0.2	W_1 ± 0.2	L_1 ± 0.2	L_2 ± 0.2	Catalog No.	
MSTW - 2875	28	75	-	45	15	A	MSTW
MSTW - 28100	”	100	-	50	25		
MSTW - 28125	”	125	-	75	”		
MSTW - 28150	”	150	-	100	”		
MSTW - 3875	38	75	-	45	15		
MSTW - 38120	”	100	-	50	25		
MSTW - 38125	”	125	-	75	”		
MSTW - 38150	”	150	-	100	”		
MSTW - 4875	48	75	-	45	15		
MSTW - 48100	”	100	-	50	25		
MSTW - 48125	”	125	-	75	”		
MSTW - 48150	”	150	-	100	”		
MSTW - 48200	”	200	-	150	15		
MSTW - 5875	58	75	-	45	25		
MSTW - 58100	”	100	-	50	”		
MSTW - 58150	”	150	-	100	”		
MSTW - 7575	75	75	-	25	”		
MSTW - 75100	”	100	-	50	”		
MSTW - 75120	”	125	-	75	”		
MSTW - 75150	”	150	-	100	”		
MSTW - 75200	”	200	-	150	”		
MSTW - 100100	100	100	50	50	”	B	MSTW MSTWT
MSTW - 100125	”	125	50	75	”		
MSTW - 1008150	”	150	50	100	”		
MSTW - 100200	”	200	50	150	”		
MSTW - 1002500	”	250	50	200	”		
MSTW - 125150	125	150	50	100	”		
MSTW - 125200	”	200	50	150	”		
MSTW - 125250	”	250	50	200	”		
MSTW - 1258150	150	150	100	100	”		
MSTW - 1258200	”	200	100	150	”		

How to order: Part No. W L
MSTW 28 75

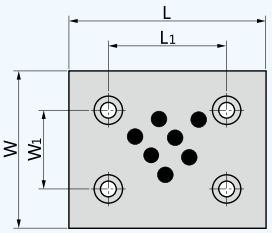
MUWP JIS 10mm Wear Plate

Material: CuZn25Al5Mn3Fe3
+Graphite (500#sp)

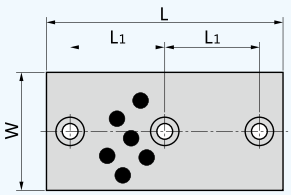
● W=18 ~ 38、L=50 ~ 100
W=48 、 L=75 ~ 125



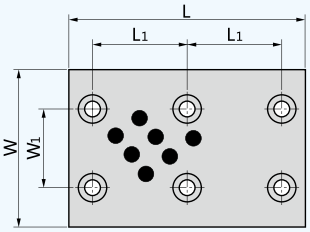
● W=75、 L=75 ~ 125
W=100、L=100 · 125



● W=18 ~ 48、L=150



● W=75 · 100、L=150



Unit:mm

W1	L1	d	h	取	Catalog No.	W	L
—	20	6.5	1.5	M6	MUWP	18	50
	45	”	”	”		”	75
	70	”	”	”		”	100
	60	”	”	”		”	150
—	20	10	0.8	M8		28	50
	45	”	”	”		”	75
	70	”	”	”		”	100
	60	”	”	”		”	150
—	20	”	”	”		38	50
	45	”	”	”		”	75
	70	”	”	”		”	100
	60	”	”	”		”	150
—	45	”	”	”		48	75
	70	”	”	”		”	100
	95	”	”	”		”	125
	60	”	”	”		”	150
45	45	”	”	”		75	75
”	70	”	”	”		”	100
”	95	”	”	”		”	125
”	60	”	”	”		”	150
70	70	”	”	”		100	100
”	95	”	”	”		”	125
”	60	”	”	”		”	150

How to order: Part No. W L
MUWP 18 50

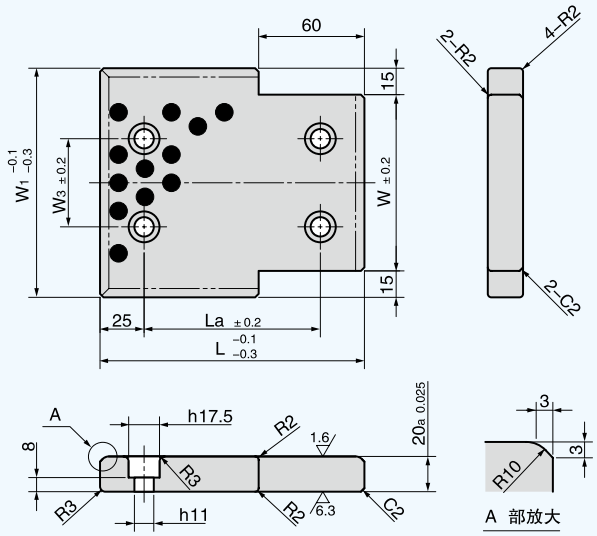
www.mqbearing.com pan@mqbearing.com junmingpan@hotmail.com

MCPRP、MCPRPL、MCPRPR JIS 20mm Wear Plate

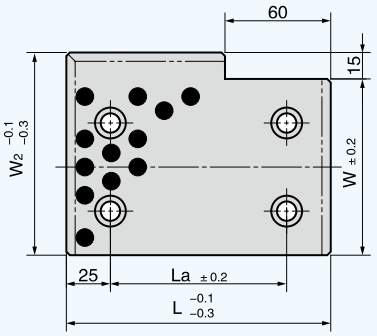
MCPRP
MCPRPL
MCPRPR

Material: CuZn25Al5Mn3Fe3
+Graphite (500#sp)

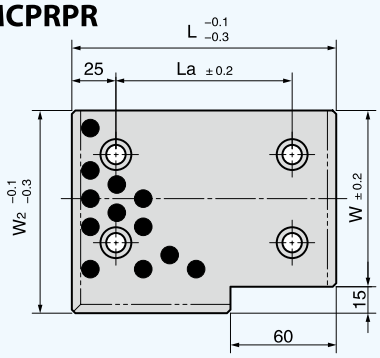
MCPRP



MCPRPL



MCPRPR

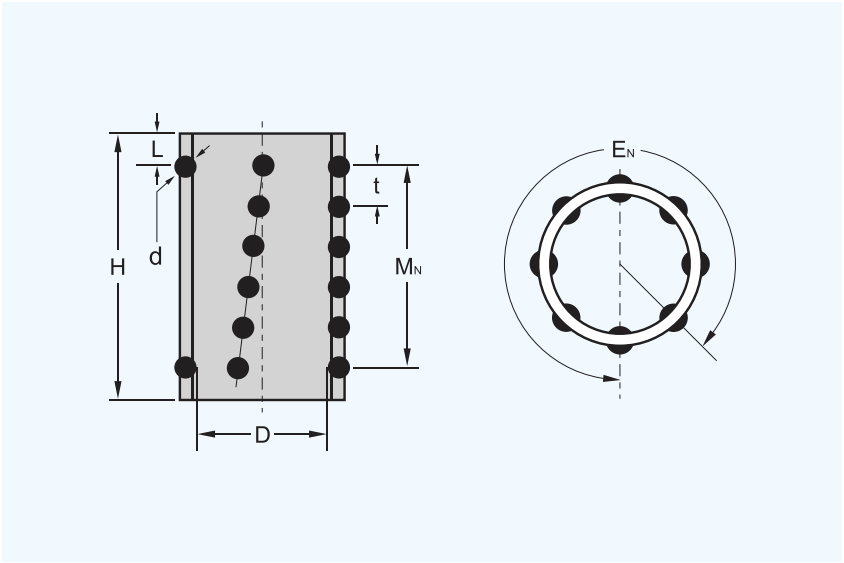


Unit:mm

Material	Part No.	W	L	W1	W2	W3	La
MCPRP MCPRPL MCPRPR	75 × 100	75	100	105	90	40	50
	75 × 125	”	125	105	”	”	75
	75 × 150	”	150	105	”	”	100
	100 × 125	100	125	130	115	50	75
	100 × 150	”	150	130	”	”	100
	125 × 150	125	”	155	140	75	”
	125 × 200	”	200	155	”	”	150
	125 × 250	”	250	155	”	”	200
	150 × 200	150	200	180	165	100	150
	150 × 250	”	250	180	”	”	200

How to order: Part No. W L
MCPRP 75 100

MFZ Ball Retainers



Copper alloy cage MFZ
Aluminum alloy cage MFZL
POM resin cage MFZP

Unit:mm

Part No.	D	H	d	E_N	M_N	BALLS	t	L
MFZ(*)1950	19	50	3	12	8	96	5.5	5.75
MFZ(*)1960	”	60	”	”	10	120	”	5.25
MFZ(*)2050	20	50	”	”	8	96	”	5.75
MFZ(*)2060	”	60	”	”	10	120	”	5.25
MFZ(*)2250	22	50	”	14	8	112	”	5.75
MFZ(*)2260	”	60	”	”	10	140	”	5.25
MFZ(*)2360	23	60	”	”	10	208	”	5.25
MFZ(*)2475	24	75	”	16	13	128	”	4.50
MFZ(*)2550	25	50	”	”	8	112	”	5.75
MFZ(*)2560	”	60	”	”	10	160	”	5.25
MFZ(*)2575	”	75	”	”	13	208	”	4.50
MFZ(*)2775	27	75	”	”	13	208	”	4.50
MFZ(*)2860	28	60	4	14	8	112	6.5	7.25
MFZ(*)2875	”	75	”	”	11	154	”	5.00
MFZ(*)3060	30	60	”	”	8	112	”	7.25
MFZ(*)3075	”	75	”	”	11	154	”	5.00
MFZ(*)3260	32	60	”	16	8	128	”	7.25
MFZ(*)3275	”	75	”	”	11	192	”	5.00
MFZ(*)3390	”	90	”	”	13	208	”	6.00
MFZ(*)3685	36	85	”	”	12	192	”	6.75
MFZ(*)3690	”	90	5	”	13	208	8.0	6.00
MFZ(*)3870	38	70	”	”	8	128	”	7.00
MFZ(*)3890	”	90	”	”	11	176	”	5.00
MFZ(*)4090	40	90	”	”	11	176	”	5.00
MFZ(*)4590	45	90	”	18	11	198	”	5.00
MFZ(*)45110	”	110	”	”	13	234	”	7.00
MFZ(*)5090	50	90	”	20	11	220	”	5.00
MFZ(*)50110	”	110	”	”	13	260	”	7.00
MFZ(*)6090	60	90	”	22	11	242	”	5.00
MFZ(*)60110	”	110	”	”	13	286	”	7.00
MFZ(*)80130	80	130	”	28	15	420	”	9.00

How to order: Part No. D H
MFZ 19 50

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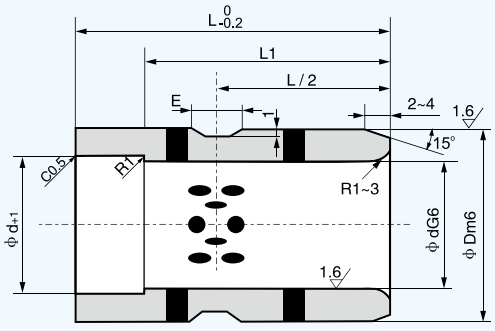
MJGB Oilless Ejector Guide Bushings

Material: CuZn25Al5Mn4Fe3
+Graphite (500#SP)



Sliding direction

Unit:mm

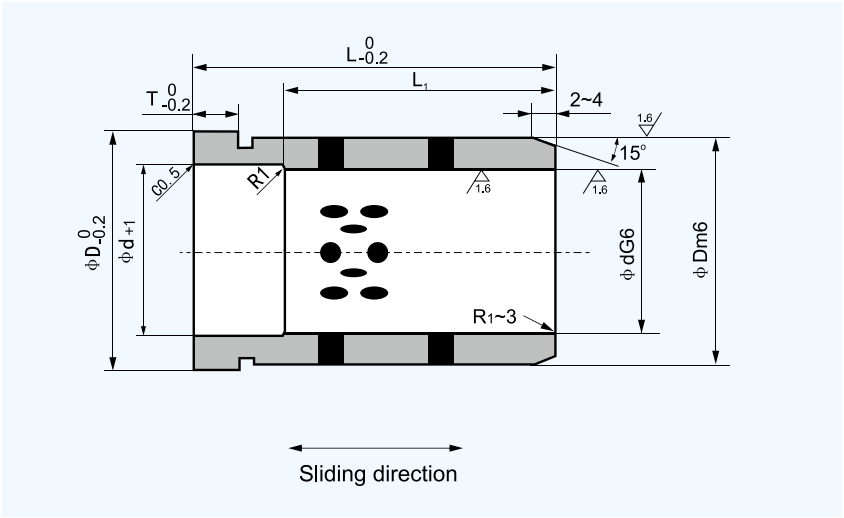
Part No.	d	L	d G6	D m6	L1	E
MJGB-12 × 9	12	9	12 +0.017 +0.006	18 +0.018 +0.007	9	4
MJGB-12 × 14	”	”	” ”	” ”	14	”
MJGB-12 × 19	”	”	” ”	” ”	19	”
MJGB-12 × 24	”	”	” ”	” ”	24	”
MJGB-16 × 14	16	14	16 ”	25 +0.021 +0.008	14	6
MJGB-16 × 19	”	”	” ”	” ”	19	”
MJGB-16 × 24	”	”	” ”	” ”	24	”
MJGB-16 × 29	”	”	” ”	” ”	29	”
MJGB-16 × 34	”	”	” ”	” ”	34	”
MJGB-16 × 39	”	”	” ”	” ”	35	”
MJGB-20 × 14	20	14	20 +0.020 +0.007	30 ”	14	”
MJGB-20 × 19	”	”	” ”	” ”	19	”
MJGB-20 × 24	”	”	” ”	” ”	24	”
MJGB-20 × 29	”	”	” ”	” ”	29	”
MJGB-20 × 34	”	”	” ”	” ”	34	”
MJGB-20 × 39	”	”	” ”	” ”	39	”
MJGB-20 × 49	”	”	” ”	” ”	40	”
MJGB-25 × 24	25	24	25 ”	35 +0.025 +0.009	24	”
MJGB-25 × 29	”	”	” ”	” ”	29	”
MJGB-25 × 34	”	”	” ”	” ”	34	”
MJGB-25 × 39	”	”	” ”	” ”	39	”
MJGB-25 × 49	”	”	” ”	” ”	49	”
MJGB-25 × 59	”	”	” ”	” ”	50	”
MJGB-30 × 29	30	29	30 ”	42 ”	29	”
MJGB-30 × 34	”	”	” ”	” ”	34	”
MJGB-30 × 39	”	”	” ”	” ”	39	”
MJGB-30 × 49	”	”	” ”	” ”	49	”
MJGB-30 × 59	”	”	” ”	” ”	59	”
MJGB-30 × 69	”	”	” ”	” ”	60	”
MJGB-30 × 79	”	”	” ”	” ”	”	”

How to order: Part No. d L
MJGB 12 19

Part No.	d	L	d G6	D m6	L1	E
MJGB-35 × 29	35	29	35 +0.025 +0.009	48 +0.025 +0.009	29	8
MJGB-35 × 39	”	34	” ”	” ”	34	”
MJGB-35 × 39	”	39	” ”	” ”	39	”
MJGB-35 × 49	”	49	” ”	” ”	49	”
MJGB-35 × 59	”	59	” ”	” ”	59	”
MJGB-35 × 69	”	69	” ”	” ”	69	”
MJGB-35 × 79	”	79	” ”	” ”	70	”
MJGB-40 × 39	40	39	40 ”	55 +0.030 +0.011	39	10
MJGB-40 × 49	”	49	” ”	” ”	49	”
MJGB-40 × 59	”	59	” ”	” ”	59	”
MJGB-40 × 69	”	69	” ”	” ”	69	”
MJGB-40 × 79	”	79	” ”	” ”	79	”
MJGB-40 × 89	”	89	” ”	” ”	80	”
MJGB-50 × 49	50	49	50 ”	70 ”	49	”
MJGB-50 × 59	”	59	” ”	” ”	59	”
MJGB-50 × 69	”	69	” ”	” ”	69	”
MJGB-50 × 79	”	79	” ”	” ”	79	”
MJGB-50 × 89	”	89	” ”	” ”	89	”
MJGB-50 × 99	”	99	” ”	” ”	90	”
MJGB-60 × 59	60	59	60 +0.029 +0.010	80 ”	59	”
MJGB-60 × 69	”	69	” ”	” ”	69	”
MJGB-60 × 79	”	79	” ”	” ”	79	”
MJGB-60 × 89	”	89	” ”	” ”	89	”
MJGB-60 × 99	”	99	” ”	” ”	90	”
MJGB-60 × 109	”	109	” ”	” ”	”	”
MJGB-80 × 69	80	69	80 ”	100 +0.035 +0.013	69	”
MJGB-80 × 79	”	79	” ”	” ”	79	”
MJGB-80 × 89	”	89	” ”	” ”	89	”
MJGB-80 × 99	”	99	” ”	” ”	99	”
MJGB-80 × 109	”	109	” ”	” ”	100	”
MJGB-80 × 119	”	119	” ”	” ”	”	”

MJGBF Oilless Ejector Guide Bushings

Material: CuZn25Al5Mn4Fe3
+Graphite (500#SP)



Unit:mm

Part No.	d	L	d G6	D m6	D_1	T	L_1
MJGBF-12×19	12	19	12 +0.016 +0.006	18 +0.018 +0.007	25	4	19
MJGBF-12×24	”	24	” ”	” ”	”	”	24
MJGBF-12×29	”	29	” ”	” ”	”	”	29
MJGBF-12×34	”	34	” ”	” ”	”	”	34
MJGBF-16×19	16	19	16 ”	25 +0.025 +0.009	30	6	19
MJGBF-16×24	”	24	” ”	” ”	”	”	24
MJGBF-16×29	”	29	” ”	” ”	”	”	29
MJGBF-16×34	”	34	” ”	” ”	”	”	30
MJGBF-16×39	”	39	” ”	” ”	”	”	”
MJGBF-16×49	”	49	” ”	” ”	”	”	”
MJGBF-20×24	20	24	20 +0.020 +0.007	30 ”	35	8	24
MJGBF-20×29	”	29	” ”	” ”	”	”	29
MJGBF-20×34	”	34	” ”	” ”	”	”	34
MJGBF-20×39	”	39	” ”	” ”	”	”	39
MJGBF-20×49	”	49	” ”	” ”	”	”	40
MJGBF-20×59	”	59	” ”	” ”	”	”	”
MJGBF-25×24	25	24	25 ”	35 +0.025 +0.009	40	”	24
MJGBF-25×29	”	29	” ”	” ”	”	”	29
MJGBF-25×34	”	34	” ”	” ”	”	”	34
MJGBF-25×39	”	39	” ”	” ”	”	”	39
MJGBF-25×49	”	49	” ”	” ”	”	”	49
MJGBF-25×59	”	59	” ”	” ”	”	”	50
MJGBF-25×69	”	69	” ”	” ”	”	”	”
MJGBF-30×29	30	29	30 ”	42 ”	47	10	29
MJGBF-30×34	”	34	” ”	” ”	”	”	34
MJGBF-30×39	”	39	” ”	” ”	”	”	39
MJGBF-30×49	”	49	” ”	” ”	”	”	49
MJGBF-30×59	”	59	” ”	” ”	”	”	59
MJGBF-30×69	”	69	” ”	” ”	”	”	60
MJGBF-30×79	”	79	” ”	” ”	”	”	”

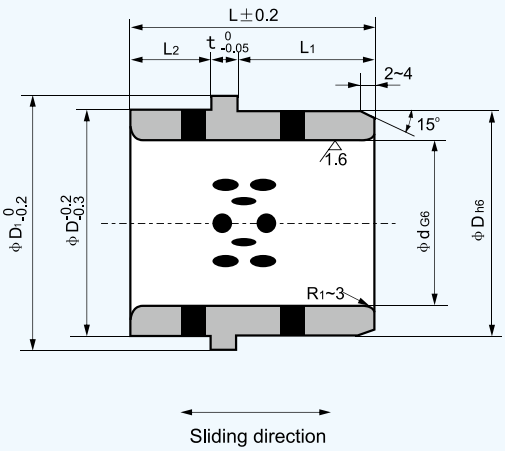
Part No.	d	L	d G6	D m6	D_1	T	L_1
MJGBF-35×39	35	39	35 +0.025 +0.009	48 +0.025 +0.009	54	10	39
MJGBF-35×49	”	49	” ”	” ”	”	”	49
MJGBF-35×59	”	59	” ”	” ”	”	”	59
MJGBF-35×69	”	69	” ”	” ”	”	”	69
MJGBF-35×79	”	79	” ”	” ”	”	”	70
MJGBF-35×89	”	89	” ”	” ”	”	”	”
MJGBF-35×99	”	99	” ”	” ”	”	”	”
MJGBF-40×39	40	39	40 ”	55 +0.030 +0.011	61	”	39
MJGBF-40×49	”	49	” ”	” ”	”	”	49
MJGBF-40×59	”	59	” ”	” ”	”	”	59
MJGBF-40×69	”	69	” ”	” ”	”	”	69
MJGBF-40×79	”	79	” ”	” ”	”	”	79
MJGBF-40×89	”	89	” ”	” ”	”	”	80
MJGBF-40×99	”	99	” ”	” ”	”	”	”
MJGBF-40×109	”	109	” ”	” ”	”	”	”
MJGBF-50×49	50	49	50 ”	70 ”	76	12	49
MJGBF-50×59	”	59	” ”	” ”	”	”	59
MJGBF-50×69	”	69	” ”	” ”	”	”	69
MJGBF-50×79	”	79	” ”	” ”	”	”	79
MJGBF-50×89	”	89	” ”	” ”	”	”	89
MJGBF-50×99	”	99	” ”	” ”	”	”	90
MJGBF-50×109	”	109	” ”	” ”	”	”	”
MJGBF-50×119	”	119	” ”	” ”	”	”	”
MJGBF-60×99	60	99	60 +0.029 +0.010	80 ”	86	15	99
MJGBF-60×109	”	109	” ”	” ”	”	”	109
MJGBF-60×119	”	119	” ”	” ”	”	”	110
MJGBF-60×129	”	129	” ”	” ”	”	”	”
MJGBF-60×149	”	149	” ”	” ”	”	”	”

How to order: Part No. d L
MJGBF 12 19

www.mqbearing.com pan@mqbearing.com junmingpan@hotmail.com

MJEGB / MJEGBK Oilless Ejector Guide Bushing

Material: CuZn25Al5Mn4Fe3
+Graphite (500#SP)



Unit:mm

Part No.	d	L	d G6	D h6	D_1	L_1	L_2	t
MJEGB-16×26	16	26	16 +0.017 +0.006	25 0 -0.013	30	12	10	4
MJEGB-16×28	”	28	” ”	” ”	”	14	”	”
MJEGB-16×33	”	33	” ”	” ”	”	19	”	”
MJEGB-16×38	”	38	” ”	” ”	”	24	”	”
MJEGB-20×26	20	26	20 +0.020 +0.007	30 ”	35	12	”	”
MJEGB-20×28	”	28	” ”	” ”	”	14	”	”
MJEGB-20×33	”	33	” ”	” ”	”	19	”	”
MJEGB-20×38	”	38	” ”	” ”	”	24	”	”
MJEGB-25×26	25	26	25 ”	35 0 -0.016	40	12	”	”
MJEGB-25×28	”	28	” ”	” ”	”	14	”	”
MJEGB-25×33	”	33	” ”	” ”	”	19	”	”
MJEGB-25×38	”	38	” ”	” ”	”	24	”	”
MJEGB-30×33	30	33	” ”	” ”	45	14	15	”
MJEGB-30×38	”	38	35 +0.025 +0.009	46 ”	”	19	”	”
MJEGB-30×46	”	43	” ”	” ”	”	24	”	”
MJEGB-35×38	35	38	” ”	” ”	50	19	”	”
MJEGB-35×43	”	43	” ”	” ”	”	24	”	”
MJEGB-35×48	”	48	40 ”	52 0 -0.019	”	29	”	”
MJEGB-40×48	40	48	” ”	” ”	57	24	20	”
MJEGB-40×53	”	53	” ”	” ”	”	29	”	”
MJEGB-50×48	50	48	50 ”	62 ”	67	24	”	”
MJEGB-50×53	”	53	” ”	” ”	”	29	”	”

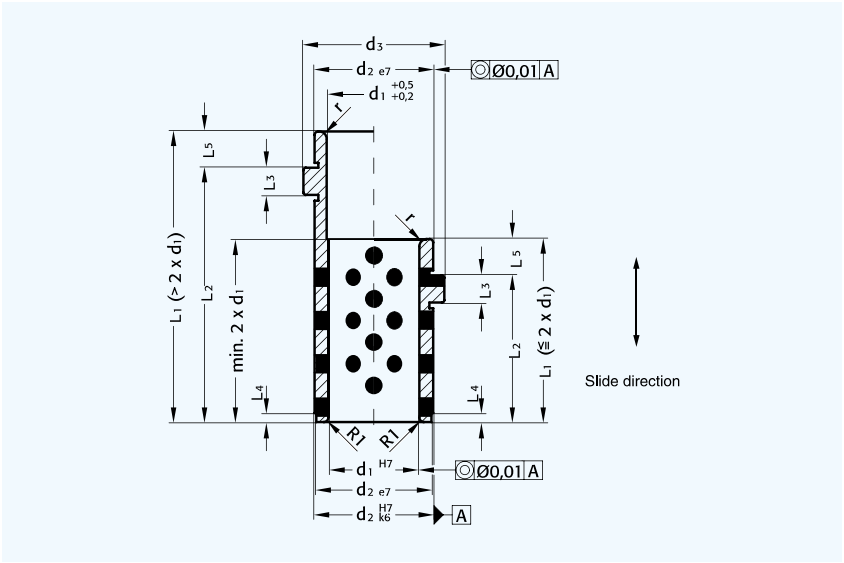
Part No.	d	L	d G6	D h6	D_1	L_1	L_2	t
MJEGBK-25×33	25	33	25 +0.020 +0.006	35 0 -0.016	40	19	6	8
MJEGBK-25×38	”	38	” ”	” ”	”	24	”	”
MJEGBK-30×48	30	48	30 ”	40 ”	45	29	11	”
MJEGBK-30×47	”	47	” ”	42 ”	47	24	15	”
MJEGBK-30×52	”	52	” ”	” ”	”	29	”	”
MJEGBK-35×63	35	63	35 +0.017 +0.006	45 ”	50	39	16	”
MJEGBK-40×60	40	60	40 ”	50 ”	55	32	20	”
MJEGBK-40×70	”	70	” ”	” ”	”	42	”	”
MJEGBK-40×78	”	78	” ”	” ”	”	49	21	”
MJEGBK-40×57	”	57	” ”	55 0 -0.019	60	24	25	”
MJEGBK-40×67	”	67	” ”	” ”	”	29	30	”
MJEGBK-45×88	45	88	45 ”	” ”	”	59	21	”
MJEGBK-45×95	”	98	” ”	” ”	”	69	”	”
MJEGBK-50×67	50	67	50 ”	62 ”	67	29	30	”
MJEGBK-50×87	”	87	” ”	” ”	”	39	40	”
MJEGBK-60×67	60	67	60 +0.017 +0.006	74 ”	82	29	30	”
MJEGBK-60×87	”	87	” ”	” ”	”	39	40	”

How to order: Part No. d L
MJGGB 16 26

MGB 2087.70. Oilless Guide Bushing With Collar

Material: CuZn25Al5Mn3Fe3
+Graphite (500#sp)

Fit for receiving bore: H7



Unit:mm

d1		9	10	14	15	18	20	22	24	30	32	40	42
d2		14	14	20	20	26	26	30	30	42	42	54	54
d3		16	16	25	25	31	31	35	35	47	47	60	60
L3		3	3	6	6	6	6	6	6	6	6	10	10
L4		1.5	1.5	2	2	2	2	3	3	4	4	5	5
L5		3	3	6	6	8	8	8	8	8	8	12	12
r		0.5	0.5	1	1	2	2	3	3	3	3	3	3
L1	L2												
15	12	●	●										
20	17	●	●										
23	17			●	●								
25	17					●	●	●	●				
25	22	●	●										
28	22			●	●								
30	22					●	●	●	●				
30	27	●	●										
33	27			●	●								
35	27					●	●	●	●	●	●		
39	36	●	●										
42	36			●	●								
44	36					●	●	●	●	●	●		
49	46	●	●										
52	46			●	●								
54	46					●	●	●	●	●	●		
58	46											●	●
59	56	●	●										
62	56			●	●								
64	56					●	●	●	●	●	●		
68	56											●	●
69	66	●	●										
72	66			●	●								
74	66					●	●	●	●	●	●		
78	66											●	●
82	76			●	●								
84	76					●	●	●	●	●	●		
88	76											●	●
92	86			●	●								
94	86					●	●	●	●	●	●		
98	86											●	●
104	96							●	●	●	●		
108	96											●	●
124	116							●	●	●	●		
128	116											●	●
144	136									●	●		
148	136											●	●
164	156												
168	156											●	●
208	196											●	●

How to order: Part No. d1 L1
MGB70 09 15

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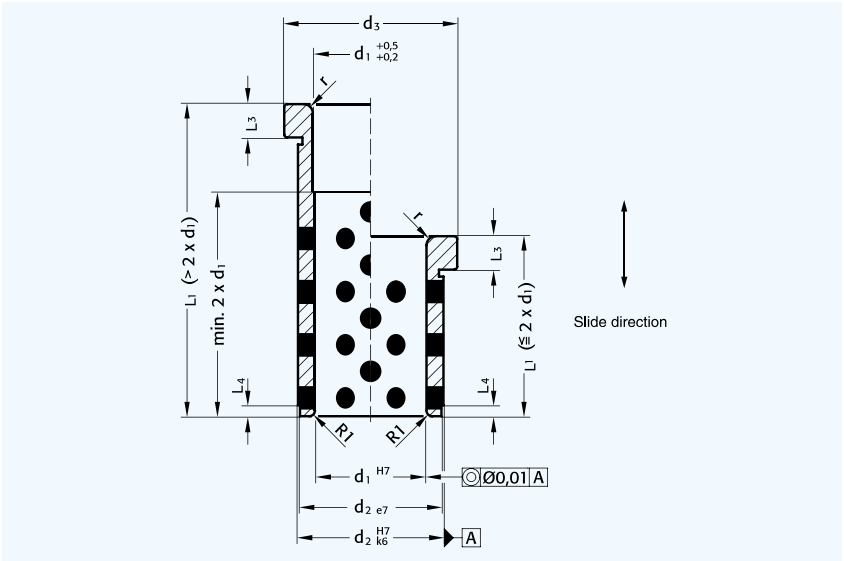
MGB 2087.72. Oilless Guide Bushing With Collar

Material: CuZn25Al5Mn3Fe3
+Graphite (500#sp)

Housing tollerance: H7



Unit:mm

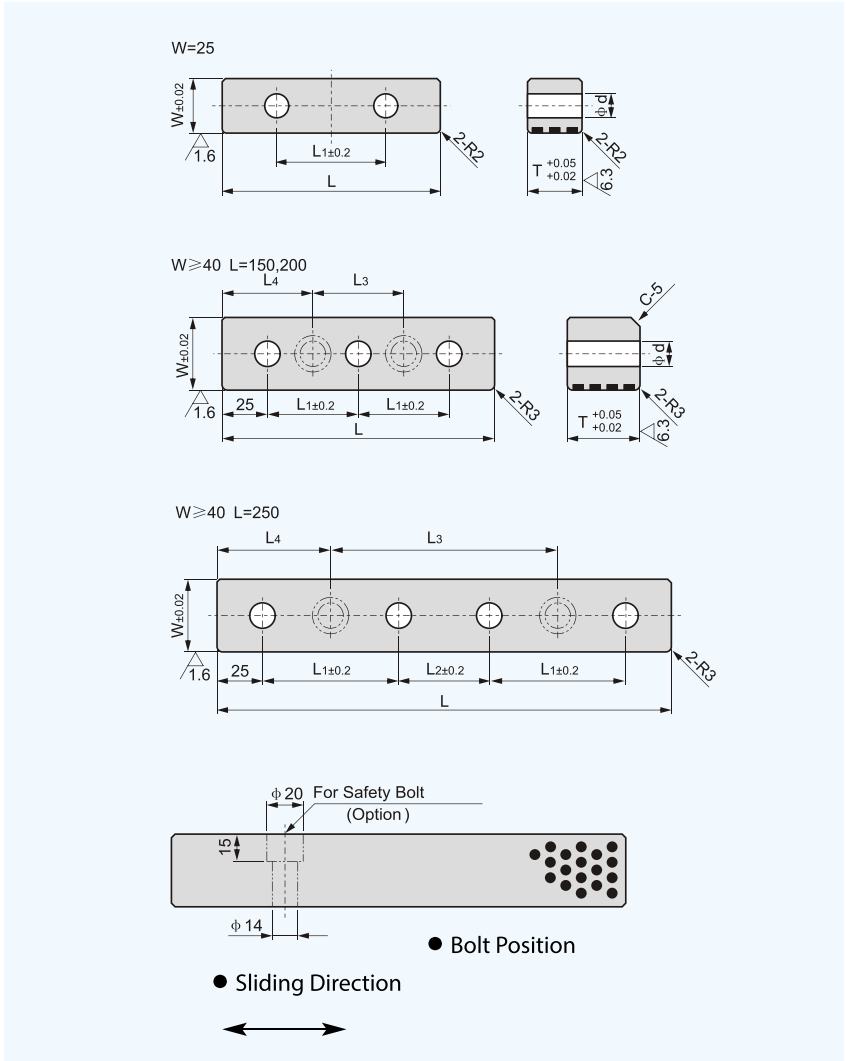
d1	9/10	12	14/15	16	18/20	22/24	25	30/32	40/42	50	60
d2	14	18	20	22	26	30	32	42	54	66	80
d3	16	23	25	27	31	35	38	47	60	72	86
r	0.5	1	1	2	2	3	3	3	3	3	3
L3	3	6	6	6	6	6	6	6	10	10	20
L4	1.5	2	2	2	2	3	3	4	5	5	5
L1											
12	●										
17	●	●	●	●	●	●					
22	●	●	●	●	●	●					
27	●	●	●	●	●	●		●			
36	●	●	●	●	●	●		●			
46	●	●	●	●	●	●	●	●	●		
56	●	●	●	●	●	●	●	●	●		
66					●	●	●	●	●		
76					●	●	●	●	●	●	
86						●	●	●	●	●	
96						●		●	●	●	●
116								●	●	●	●
136									●	●	●
156									●	●	●
196										●	●

How to order: Part No. d1 L1
MGB72 09 12

MMCSRW Oilless Wear Plate With Collar

Material: CuZn25Al5Mn3Fe3
+Graphite(500#sp)

L	Lc	Ld
150	50	50
200	75	62,5
250	125	62.5



Unit:mm

La	Lb	d	Part No.	W	L	T
45	—	11	MMCSRG	25	75	25
50					100	
75					125	
100					150	
50	—	14	MMCSRG MMCSRW	40	150	30
75					200	
	50				250	
50	—				150	40
75					200	
	50				250	
50	—	20		50	150	45
75					200	
	50				250	
50	—				150	55
75					200	
	50				250	
50	—				150	60
75					200	
	50				250	
50	—				150	70
75					200	
	50				250	

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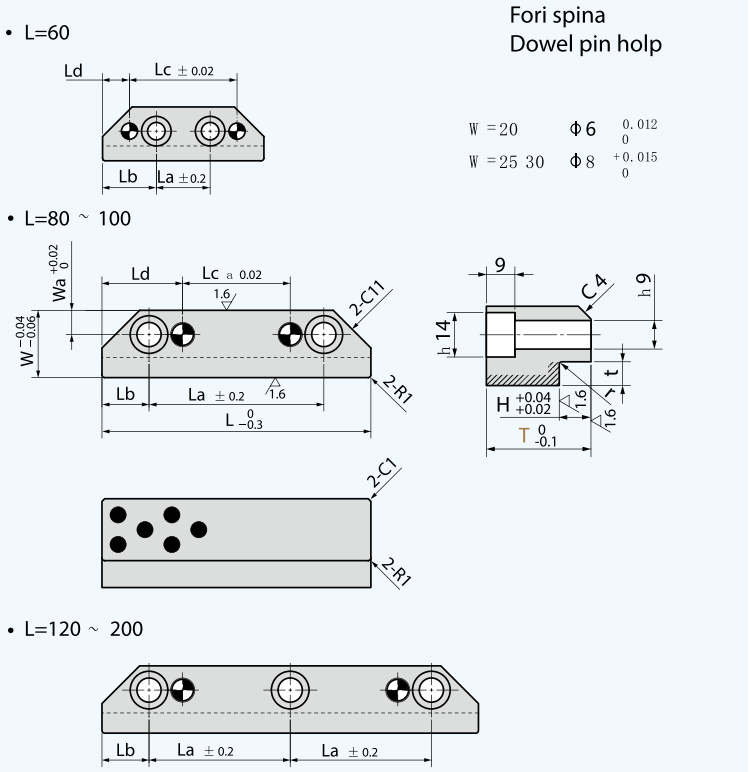
MSGLXS The Plastic Mould "L" Block

Material: CuZn25Al5Mn3Fe3
+Graphite(500#sp)



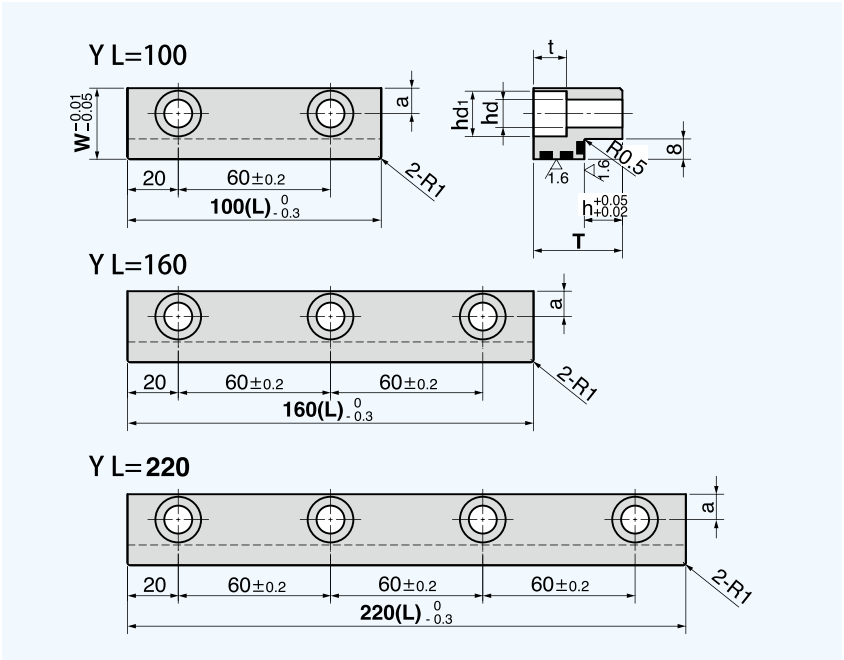
Unit:mm

W	L	Wa	La	Lb	Lc	Ld	H	t	r	Catalog No.	W	L	T
20	60	9	20	20	40	10	8	5.5	0.5	SGLXS	20	60	23 28
	80		50	15	20	30						80	
	100		70		40							100	
	120		45		60							120	
	140		55		80							140	
	160		65		100							160	
25	80		45	17.5	20		10	7.5	0.8		25	80	28 33 43
	100		65		40							100	
	120		42.5		60							120	
	140		52.5		80							140	
	160		62.5		100							160	
	180		72.5		120							180	
	200		82.5		140							200	
30	100	11	60	20	20	40	15	11			30	100	43 53
	120		40		40							120	
	140		50		60							140	
	160		60		80							160	
	180		70		100							180	
	200		80		120							200	

How to order: Part No. W L T
MSGLXS 20 120 28

MSGLDW The Plastic Mould "L" Block

Material: CuZn25Al5Mn3Fe3
+Graphite(500#sp)



Unit:mm

a	b	d1	h	t	Catalog No.	W	L	T
7.5	7	11	15	7	MSGLDW	23	100	30
							160	
							220	
			26				100	41
							160	
							220	
10	11	18	10	13		28	100	25
							160	
							220	
			15				100	35
							160	
							220	
			26				100	56
							160	
							220	

How to order: Part No. w L T
MSGLDW 23 220 30

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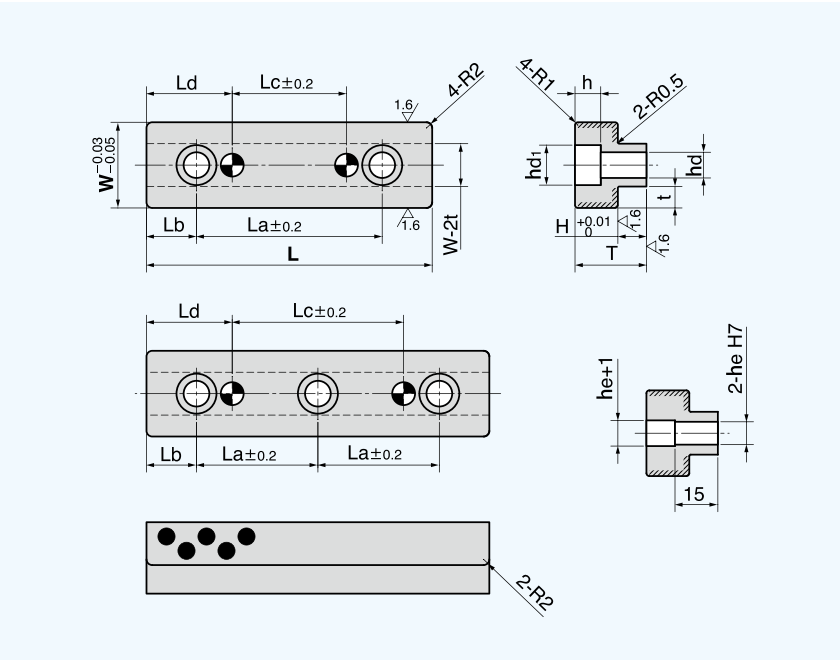
MTGLWN The Plastic Mould "T" Block

Material: CuZn25Al5Mn3Fe3
+Graphite(500#sp)



Unit:mm

La	Lb	Lc	Ld	T	H	t	d	d1	h	Catalog No.	W	L
35		15										60
55	12,5	35	22,5	15		4,5	5,5	9,5	6		20	80
75		55			8							100
50		20										80
70	15	40		20		5,5	6,5	11	7		25	100
45		60	30									120
65		40								MTGLWN		100
42.5	17,5	60		25	10	7,5	9	14	9		30	120
52.5		80										140
40		40										120
50	20	60	40	30	15	11	11	18	11		40	140
60		80										160
70		100										180

How to order: Part No. W L
MTGLWN 20 100

W	e	H7
20 ·25	6	+0.012 0
30·40	8	+0.015 0

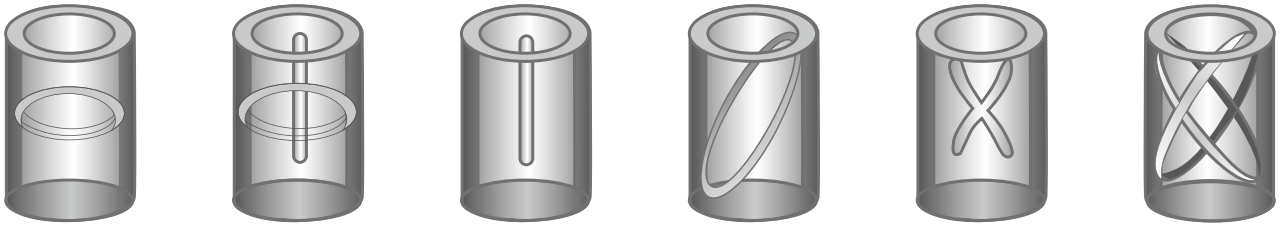
JDBU Casting Bronze Bushing

Machined cast bronze bearings offer technical!y and economicall y favorable bearings solutions. It is with hi gh load capability, low weight and good corrosion resistance. It can offer different types of bronze alloys according to the required life
time, service etc. The tolerance is much t i ghter than wrapped bronze bushes.

Material Compostion and Properties

Standard		MQ600S1 Casted Bronze	MQ600S2 Bronze	MQ600S3 Bronze	MQ600S5 Bronze
Material		CuZn25Al5Mn4Fe3	CuSn6Pb6Zn3 (CuSn5Pb5Zn5)	CuAl10Ni5Fe5	CuSn12
Density		8.0	8.9	8.9	8.5
Hardness HB		> 210	> 95	> 70	90~150
N/mm^2 Tensile strength		> 750	> 260	> 200	440
N/mm^2 Yield strength		> 450	> 150	> 90	230
Coefficien of linear expansion 10^{-5}/℃		1.9	1.8	1.6	1.9
Limit Temp ℃		-40~+300	-40~+400	-40~+400	150
Max.load N/mm^2		100	70	60	90
Guideline for assembly	Shaft Tolerance	e7			
	House Tolerance	H7			

Oil Sockets and Grooves Format(can produce as customer' s special designs)



A B C D E F

* JDB Oil Sockets and Grooves Format As JDB

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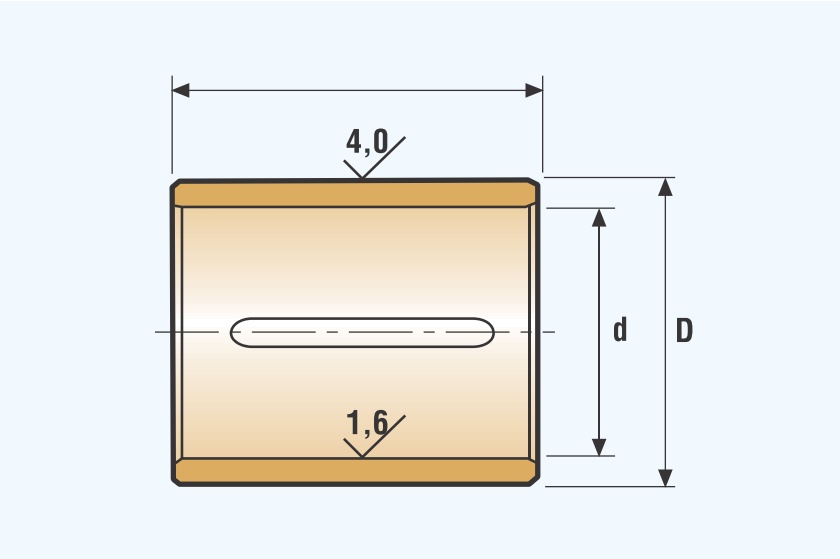
JDBU Casting Bronze Bushing



Material: Cu85 Sn5 Pb5 Zn5/
CuAl10Ni5Fe5/
CuSn12/CuZn25Al5Mn4Fe3
Tolerance：d=F7 D=p6

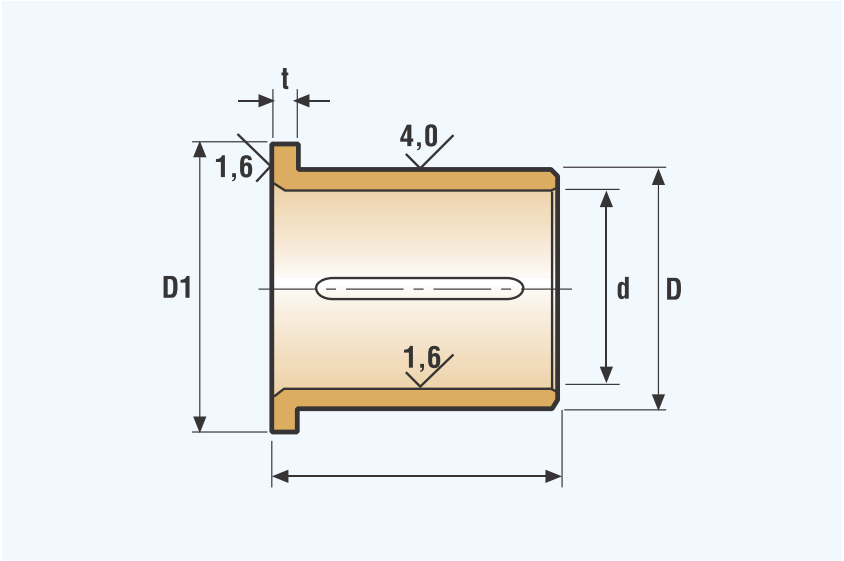
Unit:mm

d	D	Length		
5	10	6	8	10
6	10	6	8	12
7	12	8	10	12
8	14	8	12	16
9	14	10	16	20
10	16	10	16	20
12	18	12	16	25
14	20	12	20	30
15	22	16	20	30
16	22	16	20	30
17	25	16	20	30
18	25	16	20	30
20	28	20	30	40
22	32	20	30	40
25	35	25	35	50
28	40	25	35	50
30	40	30	45	60
35	45	35	50	70
40	50	40	60	80
45	55	45	60	80
50	60	50	70	100
55	70	50	70	100

d	D	Length		
60	75	60	90	120
65	80	60	90	120
70	85	60	90	120
75	90	70	100	140
80	95	70	100	140
85	100	70	100	140
90	110	80	120	160
95	115	80	120	160
100	120	80	120	160
105	125	80	120	160
110	130	80	140	200
120	140	80	140	200
130	150	90	140	200
140	160	90	160	200
150	170	100	160	240
160	180	100	160	240
170	190	100	160	240
180	200	100	160	240
190	210	120	200	300
200	220	120	200	300
210	230	120	200	300

*Non-standard dimensions & Tolerances or materials are available!

JDBU Casting Bronze Bushing



Material: Cu85 Sn5 Pb5 Zn5/
CuAl10Ni5Fe5/
CuSn12/CuZn25Al5Mn4Fe3
Tolerance：d=F7 D=p6

Unit:mm

d	D	D_1	T	长度Length	
5	10	12	2	6	-
6	12	14	2	6	-
8	14	18	3	8	-
9	14	18	3	8	10
10	16	20	3	8	10
12	18	22	3	10	12
14	20	25	3	10	12
15	22	28	3	12	16
16	22	28	4	12	16
17	25	32	4	12	16
18	25	32	4	12	16
20	28	35	4	16	20
22	32	40	5	16	20
25	35	45	5	16	25
28	40	50	5	16	25
30	40	50	5	20	30
35	45	55	5	20	35
40	50	60	6	25	40
45	55	65	6	30	45
50	60	70	6	30	50
55	70	80	8	30	50

d	D	D_1	T	长度Length	
60	75	85	8	35	60
65	80	90	8	35	60
70	90	95	8	35	60
75	95	100	8	40	70
80	100	105	8	40	70
85	110	110	8	40	70
90	115	120	8	50	80
95	120	125	8	50	80
100	125	130	8	50	80
105	130	135	8	50	80
110	135	140	8	50	80
120	140	150	8	50	80
130	150	165	10	60	90
140	160	175	10	60	90
150	170	185	10	70	100
160	180	195	10	70	100
170	190	205	10	70	100
180	200	215	10	70	100
190	210	225	10	80	120
200	220	235	10	80	120
210	230	245	10	80	120

*Non-standard dimensions & Tolerances or materials are available!

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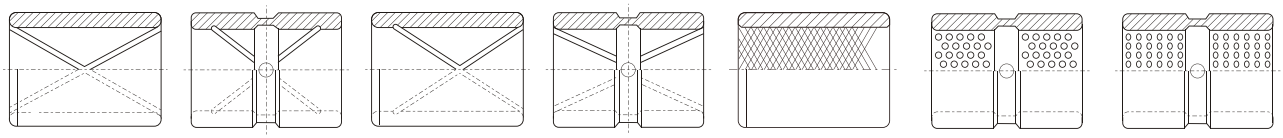
ST Steel Bushing

This product is backed with steel, and it's inner surface has many crossed oil groove, round and elliptical oil socket, After quenched and tempered, the surface toughness and wear-resistant has been improved. this product is used in engineering machinery field.

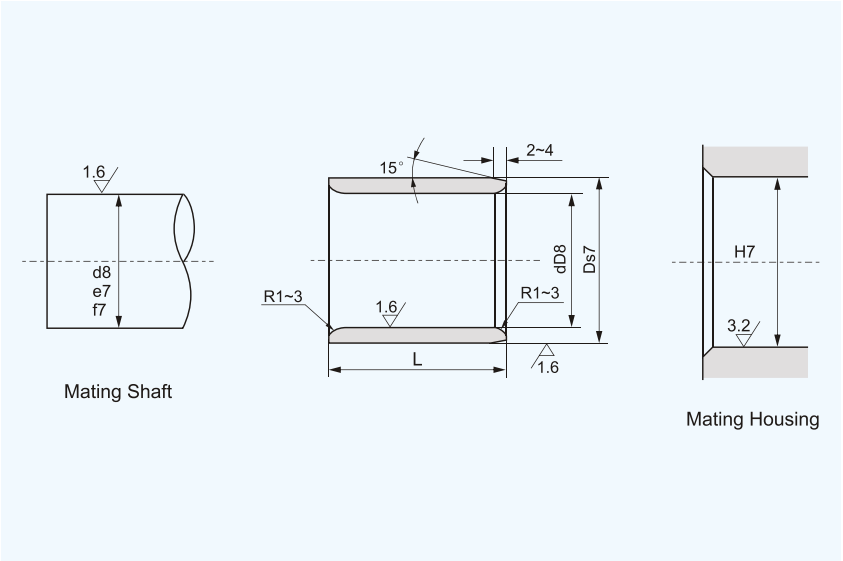
Type	ST-8	ST-9	ST-10
材质Material	**GCr15**	**42CrMo**	**20Cr**
Material Compostion and Properties			
Hardness	55HRC	HV>650 or 58~62HRC 0.8~1.0 (Carbonization depth 0.8~1.0mn)	58~62 HRC
Max load	250 N/mm^2	100 N/mm^2	100 N/mm^2
Max Linear Velocity	0.1m/s	0.1m/s	0.1m/s
Max PV Value	1.5 N/mm^2· m/s	1.5 N/mm^2· m/s	1.5 N/mm^2· m/s
Working Temperature Limit	-100℃~+350℃	-100℃~+350℃	-100℃~+350℃
Mating tolerance	Mating Housing: H7 / Mating Shaft: e7/ f7		

Typical Oil Groove Format or as Customers Designs



A B C D E F G

ST Steel Bushing



Unit:mm

d	D8	D	s7	L 0/0.5										
				20	25	30	35	40	50	60	70	80	100	120
30	+0.098 +0.065	38	+0.068 +0.043	●	●	●	●	●	●					
30		40		●	●	●	●	●	●					
32	+0.119 +0.080	42		●		●		●						
35		45		●	●	●	●	●	●	●				
38		48		●		●		●						
40		50		●	●	●	●	●	●	●	●			
40		55	+0.083 +0.053	●		●	●	●	●	●				
45		60				●	●	●	●	●	●			
50		60				●	●	●	●	●	●			
50		62				●		●	●	●	●			
50		65				●		●	●	●	●	●	●	
55	+0.146 +0.100	70	+0.089 +0.059			●	●	●	●	●	●			
60		75				●	●	●	●	●	●	●	●	
65		80				●		●	●	●	●	●	●	
70		85	+0.106 +0.071			●	●	●	●	●	●	●	●	
75		90								●	●	●	●	
75		95								●	●	●	●	
80		95						●	●	●	●	●	●	
80		100						●	●	●	●	●	●	
85	+0.174 +0.120	100								●		●		
90		110	+0.114 +0.073					●	●	●		●	●	
100		120						●	●	●	●	●	●	
110		130	+0.132 +0.092					●	●		●	●	●	●
120		140									●	●	●	●
130	+0.208 +0.145	150	+0.140 +0.100									●	●	●
140		160											●	●
150		170	+0.148 +0.108									●	●	●

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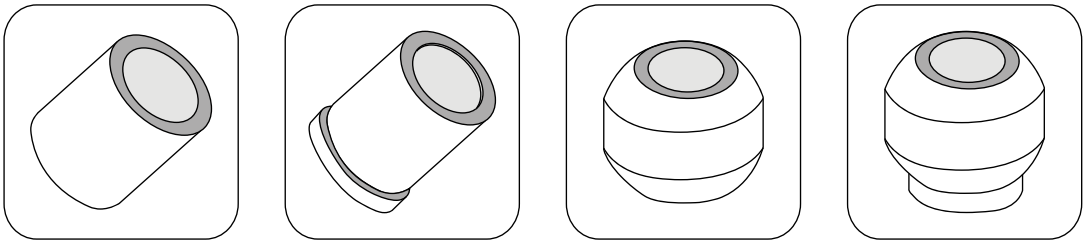
FU Self-Lubricated Sintered bearing

It's made of bronze or iron powder. mold pressed in high pressure. sintered in high temperature and soaked in oil by vacuum. It's used in domestic electric appliances, electric tools, textiles machinery, chemical machinery and automobile industry, etc.

Shape of FU Sintered Bushing



Material and Basic Metal

Material Code	Basic Metal	Alloy Composition
FU-1 Bronze Based	SAE81 ASTM B438-70 GR1 Type Ⅱ DIN30 910 PART3SintA50 Mil-B-5687C Type Ⅰ CompA	Cu87.5~90.5, Fe1.0max, Sn9.5~10.5, P1.75, Other 0.5
FU-2 Iron Based	SAE863 Type3 SATM B439-70 GR4 Mil-b-5687C Type Ⅱ CompB	Cu18.0~22.0, Fe: remainder,Other 2.0

FU Self-Lubricated Sintered bearing

Parameters			FU-1	FU-2
				
Alloy composition			Bronze Based	Iron Based
Material Compostion and Properties				
P Max. Load		N/mm^2	200	150
P Max. Load		N/mm^2	100	60
Max taxi speed		m/s	0.3	0.2
Max PV Value		$N/mm^2 \cdot m/s$	1.5	1.0
Temperature		℃	-50~150	0~600
Friction coefficient	Dry friction	-	0.13-0.18	0.30-0.45
	Water lubrication		0.11-0.16	-
HRC Shaft Diameter hardness		>	180	45
Ra Shaft surface finish		μ m	0.2-0.8	0.2-0.8
Density γ		g/cm^3	6.8	6.0
Hardness		HB	40	80
Coefficien of linear expansion α 1		$10^{-6}/K$	18	13
Tensile strength σ T		N/mm^2	50	80
Compressive strength σ C		N/mm^2	300	550
Young modulus E		N/mm^2	52000	

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Parts of Special productions

MQ650 Series


650-16


650-17


650-18


650-19


650-20


650-21


650-22


650-23

MQ600 Series


600-12


600-13


600-14


600-15


600-16


600-17


600-18


600-19


600-20


600-21


600-22


600-23

Other Types productions （ Ref.to our catalogue of wrapped bushing or website)

MQ-10 Oilless Bushing Series


10-10


10-11

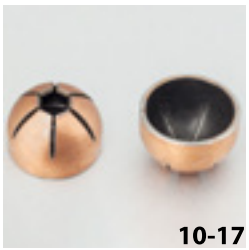

10-12


10-13


10-14


10-15

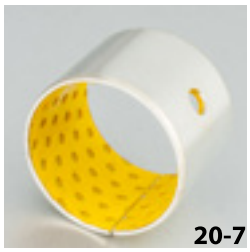

10-16

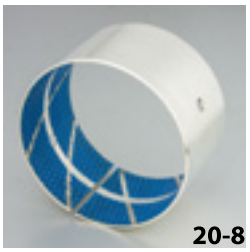

10-17


10-18


10-19

MQ-20 Marginal Bushing Series


20-7


20-8


20-9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MQ-800 Series Bimetal Bushing


800-36


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MQ-090/092 Bronze Wrapped Bushing


FB-46


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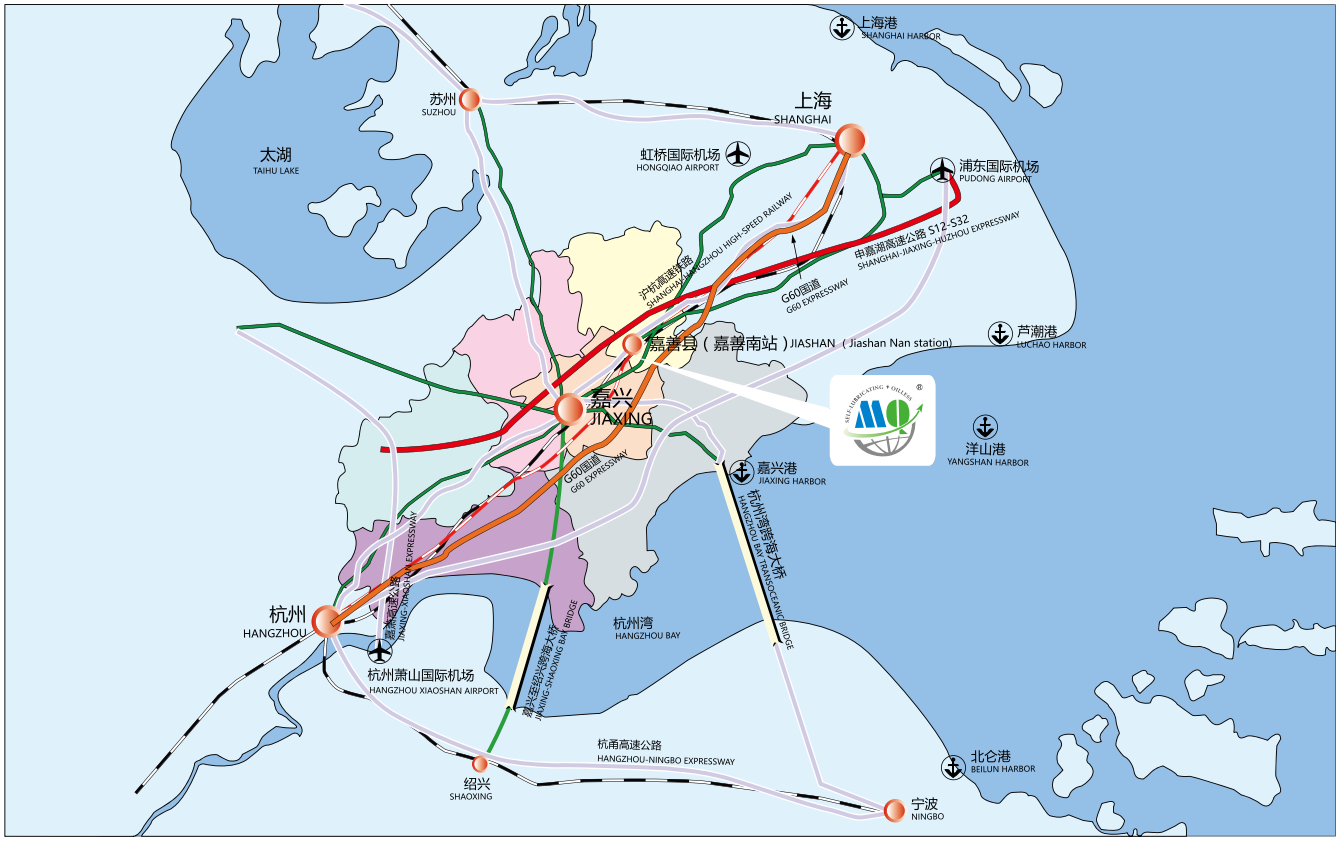

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