

**JIASHAN ZHENGTONG COMPOSITE
SELF-LUBRICATING BEARING FACTORY**



 **SWB**
GLOBAL SOLUTIONS, LOCAL SERVICE

THE COMPANY

ZTOM- Your Best Self-lubricating Bearing Partner

Quality First, Service First, Clients First

Established in 1999, one of the top brand in the domain of self-lubricating bearing factory, Jiashan ZHENGTONG Composite Self-lubricating Bearing Factory (ZTOM Bearing) specializes in manufacturing and selling a wide range of self-lubricating bearings, the products such as ZTOM10 self-lubricating bearings, ZTOM20 marginally lubricating bearings, ZTOM30 bimetal bearings, ZTOM40 bronze mesh(FR) , ZTOM50 solid lubricant embedded bearing, self-lubricating wear plates and automobile dies , ZTOM90 bronze bearing, etc.

Our bearings are used in a wide variety of applications and industries. E.g. light industry, heavy industry, machine industry, plastic injection mold machine, lifting equipment, machine tools, construction machinery, aviation, irrigation machinery, metallurgic and mining machinery, electrical machinery, pharmaceutical machinery, food machinery, agricultural machinery, textile machinery, hydraulic machinery, automobile industry, printing and packaging machinery, etc. In brief, our bearings can be used wherever there is rotation or linear motion between mechanical parts where lubricating is not allowed or external lubricating accessibility is limited.

ZTOM bearing has the Certifications of ISO9001:2015 and IATF16949:2016 Quality Management System. Our products are sold not only all over China, but also in the US, Germany, Japan, Italy, Korea, India and Southeast Asia, etc. We will research and develop different kinds of self-lubricating bearings for various uses, so as to further meet users' requirements and continue to serve our customers and friends wholeheartedly. We are looking forward to doing business with you. Welcome to visit our factory.



Quality

All the products described in this handbook are manufactured under IATF16949:2016 and ISO9001:2015 approved quality management systems.



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Product Guide — Main Properties of ZTOM Bearing Materials

| ZTOM® |  |  |  |  |  | |  |  |  |  |  |
|------------------------------|---|---|--|---|---|--|---|---|---|---|---|
| | ZTOM10 PTFE Composite Bearings | ZTOM20 POM Composite Bearings | ZTOM 30 Bi-metallic Composite Bearings | ZTOM40 Bronze Mesh with PTFE Bearings | ZTOM50 Solid-lubricant- inlaid Bearings | | ZTOM60 Ball Retainer Bearings | ZTOM70 Plastic Bearings | ZTOM80 Sintered Bronze Bearings | ZTOM 90 Bronze Wrapped Bearings | ZTOM100 Solid Bronze Turned Bearings |
| Self-lubricating performance | ++ | + | + | ++ | ++ | | - | ++ | + | - | - |
| Maintenance-free operation | ++ | + | - | ++ | + | | - | ++ | + | 0 | - |
| Dirty environment | - | 0 | - | - | + | | - | - | 0 | ++ | + |
| Corrosion resistant | 0 | 0 | + | 0 | + | | + | 0 | 0 | + | + |
| High temperature | ++ | 0 | + | + | + | | ++ | ++ | - | + | + |
| High load | + | ++ | ++ | + | ++ | | ++ | + | - | + | + |
| Shock loads/vibrations | 0 | 0 | 0 | 0 | + | | + | 0 | 0 | + | + |
| High sliding velocity | + | 0 | + | + | - | | + | + | ++ | 0 | - |
| Low friction | ++ | ++ | ++ | ++ | ++ | | ++ | ++ | + | - | - |
| Poor shaft surface finish | - | 0 | - | - | + | | - | - | - | 0 | + |
| Small operating clearance | ++ | + | + | ++ | - | | + | ++ | 0 | 0 | - |
| Insensitive to misalignment | - | 0 | - | - | + | | - | - | 0 | 0 | + |
| Low price level | ++ | ++ | - | ++ | 0 | | - | + | + | + | 0 |

Excellent (++)

Good (+)

Suitable (0)

Not suitable (-)

Product Guide — Main Products



ZTOM11
Metal-Polymer Composite Bearings-PTFE Composite



ZTOM12
Bronze Backed With Bronze Powder PTFE Plain Bearing



ZTOM11F
Metal-Polymer Composite Flanged Bearings-PTFE Composite



ZTOM10W
Metal-Polymer Composite Thrust Washer-PTFE Composite



ZTOM50
Solid-Lubricant-Inlaid Bearing



ZTOM50F
Solid-Lubricant-Inlaid Flanged Bearing



ZTOM50FA
Solid-Self-Lubricating Flanged Bearing



ZTOM50W
Solid-Lubricant-Inlaid Thrust Washer



ZTOM21
Lead Free Marginally Lubricated Bearing



ZTOM23
Lead Free Marginally Lubricated Bearing



ZTOM20W
Lead Free Marginally Lubricated Thrust Washer



ZTOM30
Bi-metallic Composite Bearing



ZTOM50P
Self-Lubricating Wear Plate (Bronze)



ZTOM50PA
Self-Lubricating Wear Plate (Fe)



ZTOM70
Plastic Bearings



ZTOM40
FR Bronze Mesh with PTFE Bearing



ZTOM31(08G)
Solid-Lubricant-Inlaid Bimetal Bearing



ZTOM90
Bronze Wrapped Bearing



ZTOM92
Bronze Wrapped Bearing with Holes



ZTOM91(09G)
Bronze Wrapped Bearing with Graphite



ZTOM50X
Guide Components U&V Blocks



ZTOM50T
Cam Dwell Wear Plate



ZTOM60
Ball Retainer Bearing



ZTOM80
Sintered Bronze Bearing

ZTOM10 (SF-1)

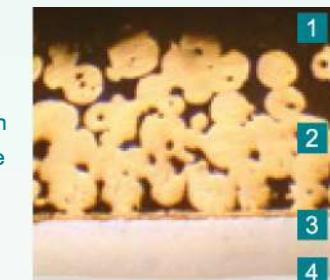
Self-lubricating PTFE Composite Bearing



Product Brief

The solid lubricants produce a lubricant film between the sliding surfaces, which provides low-noise operation with constantly low friction values throughout the entire service life.

Structure



1. PTFE and additives thickness
0.01 ~ 0.03mm
2. Sintered bronze powder thickness
0.20 ~ 0.35mm
3. Lower-carbon steel
4. Copper/Tin plating thickness
0.002mm

Tech. Data

| Max. Load | Static | 250N/mm ² | Friction coefficient | 0.03~0.20 μ |
|-------------|----------------------|---------------------------|------------------------|------------------------|
| | Low speed | 140N/mm ² | | |
| PV Limit | Rotating oscillating | 60N/mm ² | Max Speed | Dry running |
| | Short term operation | 3.6N/mm ² *m/s | | Hydrodynamic operation |
| | Continuous operation | 1.8N/mm ² *m/s | Thermal conductivity | |
| Temp. Range | | -195°C ~ +280°C | 42W(m*k) ⁻¹ | |

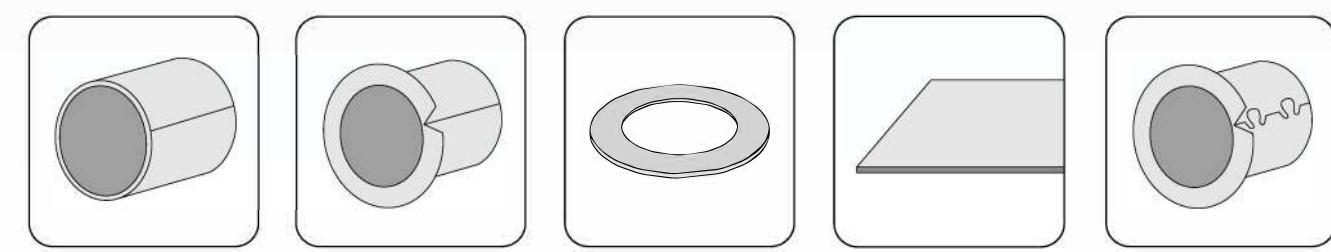
Characteristics and Advantages

1. Long maintenance-free operating life due to low friction.
2. Operated without lubricant and very suited for high load & medium speed applications.
3. Lower vibration, lower noise and non-pollution in operation.
4. Electroplating is to protect the bearings from corrosion.

Typical Applications

- Rotary motion, oscillating motion and short stroke linear motion:
Automotive, Wiper arms, Door hinges, Compressor, Agricultural equipments, Combines, Tractors, Lawn mowers, Construction equipments, Calipers and pistons, Shock absorbers, Crop sprayers
- Prevention of oil pollution is required: Textile machines, Food industry equipments, Tobacco machinery, printing machines, Electrical appliances, Air conditioners, Vending machines, Microwave ranges
- Where lubricating is difficult or impossible: Copy machines, Facsimiles, printers, type writers, Mail sorters, Tooling machines, industrial robots, dryer, oil pumps, table lifters, elevators

Availability



Cylindrical

Flanged

Thrust washer

Strip

Non-standard parts as design

ZTOM10 Series



ZTOM11(SF-1) Pb-Free self-lubricating bearing

ZTOM11 is without Pb, so this bushing has clean lubricating condition and accord with environmental request. It has been widely applied to automobile, food-processing machinery, pharmacy machinery, beverage machinery, medical equipment etc.

Pb-free



ZTOM13(SF-1S) Stainless steel self-lubricating bearing

ZTOM13 is based on stainless steel backing with sintered porous bronze layer and its surface is coated of PTFE. It is characterized by acid-resistant, alkaline-resistant, ocean water resistant. It is widely used as fluid valve of measuring acid and alkalinizing flow in chemical industry, and corrosion resisting sliding position in marine industry.



ZTOM14(SF-1T) Gear pump bearing

ZTOM14 is composed of a specially designed surface layer of PTFE formulations and is specially applied for the high PV bushes of gear pump. It is to be used in hydrodynamic or boundary lubricating condition of medium or high pressure gear pumps. It shows the benefit of low friction coefficient, wear resistant and anti-impact properties. It is widely used in gear pumps, plunger pumps and vane pumps etc.

Pb-free



ZTOM15(SF-1P) Reciprocating absorber bearing

ZTOM15 is developed according to reciprocating motion of shock absorber and high pressure in flank. It can offer low friction coefficient and good anti-abrasion. It is applied to shock absorber of automobile, motorcycles and various hydraulic motors and pneumatic cylinder etc.

Pb-free



ZTOM16(SF-1D) Hydraulic pump bearing

ZTOM16 improved the friction and better wear resistance over the ZTOM 10 series under lubricated operation. This product is developed for high duty, oil lubricated, hydraulic applications. It is designed mainly for using under lubricated conditions and it performs excellent wear resistance and low static/dynamic friction coefficient. It is suitable for the places of big sides force of frequently reciprocate.

Pb-free

ZTOM12 (SF-1B)

Bronze Backed With Bronze Powder PTFE Plain Bearings



Product Brief

ZTOM12 is developed from ZTOM10. Using Bronze backing instead of steel backing. The bronze backing provides a high corrosion resistance, anti magnetic properties and a good thermal conductivity. The bearings are particularly appropriate for high temperature environment where no oil is efficient and the machine must be under successive long period working condition.

Structure



1. PTFE and additives thickness
0.01 ~ 0.03mm
2. Sintered bronze powder thickness
0.20 ~ 0.35mm
3. Bronze backing

Tech. Data

| | | | | |
|----------------------|----------------------|---------------------------|----------------------------------|--|
| Max. Load | Static | 250N/mm ² | Friction coefficient | 0.03~0.20 μ |
| | Low speed | 140N/mm ² | | 2m/s |
| PV Limit | Rotating oscillating | 60N/mm ² | Max Speed | >2m/s |
| | Short term operation | 3.6N/mm ² *m/s | | Thermal conductivity $60W(m^*k)^{-1}$ |
| Continuous operation | Continuous operation | 1.8N/mm ² *m/s | Coefficient of thermal expansion | $18*10^{-6}*K^{-1}$ |
| | Temp. Range | -195°C~+280°C | | |

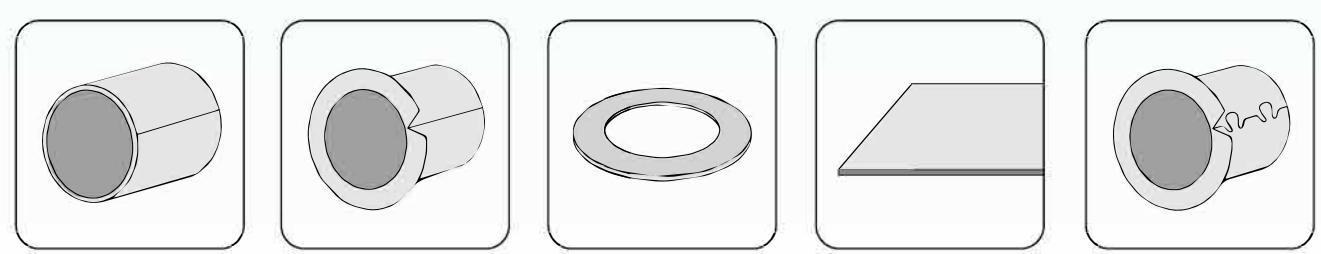
Characteristics and Advantages

1. Maintenance-free operation
2. Exceptionally high load carrying capacity
3. Improved corrosion resistance compared to ZTOM10

Typical Applications

The typical applications covered are steel metallurgy industry such as bushes for roter grooves of successive casting machines, cement grouting pumps and screw conveyers for cement and so on.

Availability



Cylindrical

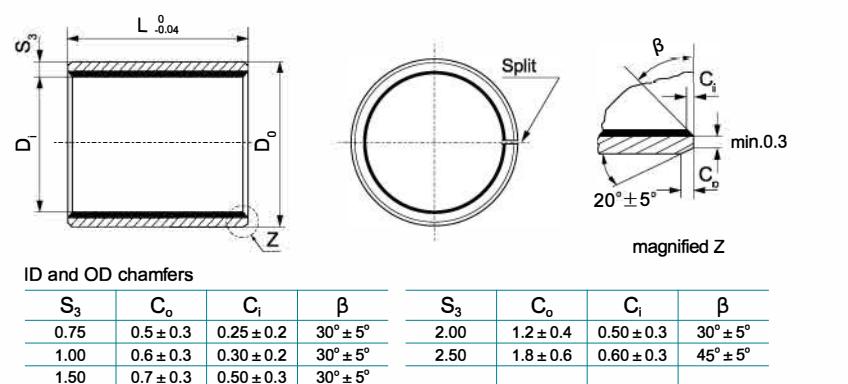
Flanged

Thrust washer

Strip

Non-standard parts as design

Metric Standard Cylindrical Bearings Size



| Shaft(f7) D _s | Housing (H7) D _H | OD tolerance D _o | ID after fixed D _{i,a} | Clearance | Wall thickness S ₃ | Length ⁰ _{-0.40} (d≤Φ30 L-0.30) | | | | | | | | | | |
|-----------------------------|-----------------------------------|-----------------------------------|------------------------------------|----------------|-------------------------------------|---|------|------|------|------|------|------|------|------|------|------|
| | | | | | | 6 | 8 | 10 | 12 | 15 | 20 | 25 | 30 | 40 | 50 | |
| 6 -0.010 -0.022 | 8 +0.015 | 8 +0.055 +0.025 | 6.055 5.990 | 0.077 0.000 | 1.005 0.980 | 0606 | 0608 | 0610 | | | | | | | | |
| 8 -0.013 -0.028 | 10 +0.015 | 10 +0.055 +0.025 | 8.055 7.990 | 0.083 0.003 | | 0806 | 0808 | 0810 | 0812 | 0815 | | | | | | |
| 10 -0.013 -0.028 | 12 +0.018 | 12 +0.065 +0.030 | 10.058 9.990 | 0.086 0.003 | | 1006 | 1008 | 1010 | 1012 | 1015 | 1020 | | | | | |
| 12 -0.016 -0.034 | 14 +0.018 | 14 +0.065 +0.030 | 12.058 11.990 | 0.092 0.006 | | 1206 | 1208 | 1210 | 1212 | 1215 | 1220 | 1225 | | | | |
| 13 -0.016 -0.034 | 15 +0.018 | 15 +0.065 +0.030 | 13.058 12.990 | | | | 1310 | | | 1320 | | | | | | |
| 14 -0.016 -0.034 | 16 +0.018 | 16 +0.065 +0.030 | 14.058 13.990 | | | | 1410 | 1412 | 1415 | 1420 | 1425 | | | | | |
| 15 -0.016 -0.034 | 17 +0.018 | 17 +0.065 +0.030 | 15.058 14.990 | | | | 1510 | 1512 | 1515 | 1520 | 1525 | | | | | |
| 16 -0.016 -0.034 | 18 +0.018 | 18 +0.065 +0.030 | 16.058 15.990 | | | | 1610 | 1612 | 1615 | 1620 | 1625 | | | | | |
| 17 -0.016 -0.034 | 19 +0.021 | 19 +0.075 +0.035 | 17.061 16.990 | 0.095 0.006 | 1.505 1.475 | | 1710 | 1712 | | 1720 | | | | | | |
| 18 -0.016 -0.034 | 20 +0.021 | 20 +0.075 +0.035 | 18.061 17.990 | | | | 1810 | 1812 | 1815 | 1820 | 1825 | | | | | |
| 20 -0.020 -0.041 | 23 +0.021 | 23 +0.075 +0.035 | 20.071 19.990 | | | | 2010 | 2012 | 2015 | 2020 | 2025 | 2030 | | | | |
| 22 -0.020 -0.041 | 25 +0.021 | 25 +0.075 +0.035 | 22.071 21.990 | | | | 2210 | 2212 | 2215 | 2220 | 2225 | 2230 | | | | |
| 24 -0.020 -0.041 | 27 +0.021 | 27 +0.075 +0.035 | 24.071 23.990 | | | | | | 2415 | 2420 | 2425 | 2430 | | | | |
| 25 -0.020 -0.041 | 28 +0.021 | 28 +0.075 +0.035 | 25.071 24.990 | 0.126 0.010 | 2.005 1.970 | | 2510 | 2512 | 2515 | 2520 | 2525 | 2530 | 2540 | 2550 | | |
| 28 -0.020 -0.041 | 32 +0.025 | 32 +0.085 +0.045 | 28.085 27.990 | | | | | | 2815 | 2820 | 2825 | 2830 | 2840 | | | |
| 30 -0.020 -0.041 | 34 +0.025 | 34 +0.085 +0.045 | 30.085 29.990 | | | | | | 3012 | 3015 | 3020 | 3025 | 3030 | 3040 | | |
| 32 -0.025 -0.050 | 36 +0.025 | 36 +0.085 +0.045 | 32.085 31.990 | | | | | | | 3220 | | 3230 | 3240 | | | |
| 35 -0.025 -0.050 | 39 +0.025 | 39 +0.085 +0.045 | 35.085 34.990 | | | | | | | 2512 | 2515 | 2520 | 2525 | 2530 | 2540 | 3550 |
| 38 -0.025 -0.050 | 42 +0.025 | 42 +0.085 +0.045 | 38.085 37.990 | 0.135 0.015 | | | | | | 3815 | | 3830 | 3840 | | | |
| 40 -0.025 -0.050 | 44 +0.025 | 44 +0.085 +0.045 | 40.085 39.990 | | | | | | | 4012 | 4020 | 4025 | 4030 | 4040 | 4050 | |

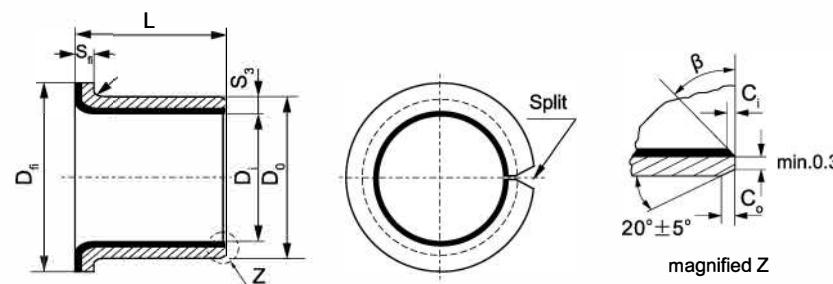
Metric Standard Cylindrical Bearings Size

Unit:mm

| Shaft (f7) D _s | Housing (H7) D _H | OD tolerance D _o | ID after fixed D _{i,a} | Clearance | Wall thickness S ₃ | Length ⁰ _{-0.40} | | | | | | | | | | |
|------------------------------|-----------------------------------|-----------------------------------|------------------------------------|----------------|-------------------------------------|--------------------------------------|------|------|------|-------|-------|------|-------|-------|--------|--|
| | | | | | | 20 | 25 | 30 | 40 | 50 | 60 | 70 | 80 | 100 | 115 | |
| 45 -0.050 -0.025 | 50 +0.025 | 50 +0.085 +0.045 | 45.105 44.990 | 0.155 0.015 | 2.505 2.460 | 4520 | 4525 | 4530 | 4540 | 4550 | | | | | | |
| 50 -0.050 -0.025 | 55 +0.030 | 55 +0.100 +0.055 | 50.110 49.990 | 0.160 0.015 | | 5020 | | 5030 | 5040 | 5050 | 5060 | | | | | |
| 55 -0.060 -0.030 | 60 +0.030 | 60 +0.100 +0.055 | 55.110 54.990 | 0.170 0.020 | | | | 5530 | 5540 | 5550 | 5560 | | | | | |
| 60 -0.060 -0.030 | 65 +0.030 | 65 +0.100 +0.055 | 60.110 59.990 | 0.170 0.020 | | | | 6030 | 6040 | 6050 | 6060 | 6070 | | | | |
| 65 -0.060 -0.030 | 70 +0.030 | 70 +0.100 +0.055 | 65.110 64.990 | 0.170 0.020 | | | | 6530 | 6540 | 6550 | 6560 | 6570 | | | | |
| 70 -0.060 -0.030 | 75 +0.030 | 75 +0.100 +0.055 | 70.110 69.990 | 0.170 0.020 | | | | 7040 | 7050 | 7060 | 7070 | 7080 | | | | |
| 75 -0.060 -0.030 | 80 +0.030 | 80 +0.100 +0.055 | 75.110 74.990 | 0.170 0.020 | | | | 7530 | 7540 | 7550 | 7560 | 7570 | 7580 | | | |
| 80 -0.045 | 85 +0.035 | 85 +0.120 +0.070 | 80.155 80.020 | 0.201 0.020 | | | | | 8040 | 8050 | 8060 | 8070 | 8080 | 80100 | | |
| 85 -0.054 | 90 +0.035 | 90 +0.120 +0.070 | 85.155 85.020 | 2.490 2.440 | | | | | 8540 | | 8560 | | 8580 | 85100 | | |
| 90 -0.054 | 95 +0.035 | 95 +0.120 +0.070 | 90.155 90.020 | | | | | | 9040 | 9050 | 9060 | | 9080 | 90100 | | |
| 95 -0.054 | 100 +0.035 | 100 +0.120 +0.070 | 95.155 95.020 | | | | | | | 9550 | 9560 | | | 9580 | 95100 | |
| 100 -0.054 | 105 +0.035 | 105 +0.120 +0.070 | 100.155 100.020 | | | | | | | 10050 | 10060 | | | 10080 | 100115 | |
| 105 -0.054 | 110 +0.035 | 110 +0.120 +0.070 | 105.155 105.020 | | | | | | | | 10560 | | 10580 | | 105115 | |
| 110 -0.054 | 115 +0.035 | 115 +0.120 +0.070 | 110.115 110.020 | 2.465 2.415 | | | | | | | 11060 | | 11080 | | 110115 | |
| 120 -0.054 | 125 +0.040 | 125 +0 | | | | | | | | | | | | | | |

ZTOM10F

Metric Standard Flanged Bearings Size

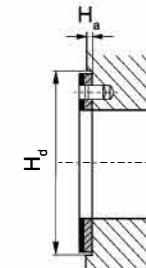
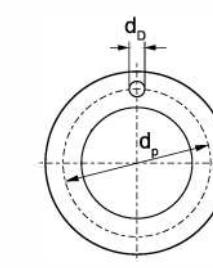


| S_3 | 1.0 | 1.5 | 2.0 | 2.5 |
|-------|------------|-------------|---------------|-------------|
| r | $1^{+0.5}$ | 1 ± 0.5 | 1.5 ± 0.5 | 2 ± 0.5 |

| Shaft D_s | Housing D_h | OD Tolerance D_o | ID After fixed $D_{i,a}$ | Clearance | Designation | Wall thickness S_3 | Dimension | | | | | Unit:mm |
|-------------------------|------------------|--------------------------|--------------------------------|----------------|-------------|----------------------------|-----------|-------|-----------------|--------------|-----------------|---------|
| | | | | | | | D_i | D_o | $D_{i \pm 0.5}$ | $L \pm 0.25$ | $S_{i \pm 0.2}$ | |
| 6 -0.013 -0.028 | 8 $+0.015$ | 8 $+0.055$ $+0.025$ | 6.055 5.990 | 0.077 0.000 | 06040 | 1.005 0.980 | 6 | 8 | 12 | 4 | 7 | 1 |
| | | | | | 06070 | | | | | 5.5 | | |
| | 10 $+0.015$ | 10 $+0.055$ $+0.025$ | 8.055 7.990 | 0.083 0.003 | 08055 | | 8 | 10 | 15 | 7.5 | | |
| | | | | | 08075 | | | | | 7 | | |
| | 12 $+0.018$ | 12 $+0.055$ $+0.025$ | 10.058 9.990 | 0.086 0.003 | 10070 | | | | | 9 | | |
| | | | | | 10090 | | | | | 12 | | |
| | | | | | 10120 | | | | | 7 | | |
| | | | | | 12070 | | 10 | 12 | 18 | 9 | | |
| | | | | | 12090 | | | | | 12 | | |
| 10 -0.016 -0.034 | 12 $+0.018$ | 12 $+0.055$ $+0.025$ | 10.058 9.990 | 0.086 0.003 | 12120 | | | | | 12 | | |
| | | | | | 14120 | | | | | 17 | | |
| | | | | | 14170 | | | | | 9 | | |
| | | | | | 15090 | | | | | 12 | | |
| | | | | | 15120 | | | | | 17 | | |
| | | | | | 15170 | | | | | 17 | | |
| | | | | | 16120 | | | | | 12 | | |
| | | | | | 16170 | | | | | 17 | | |
| | | | | | 18120 | | | | | 12 | | |
| | | | | | 18170 | | | | | 17 | | |
| 12 -0.016 -0.034 | 14 $+0.018$ | 14 $+0.065$ $+0.030$ | 12.058 11.990 | 0.092 0.006 | 18200 | | | | | 20 | | |
| | | | | | 20115 | | 20 | 23 | 30 | 11.5 | | |
| | | | | | 20165 | | | | | 16.5 | | |
| | | | | | 20215 | | | | | 21.5 | | |
| | | | | | 22150 | | | 22 | 25 | 32 | 15 | |
| | | | | | 22200 | | | | | 20 | | |
| | | | | | 25115 | | | | | 11.5 | | |
| | | | | | 25165 | | | | | 16.5 | | |
| | | | | | 25215 | | | | | 21.5 | | |
| 14 -0.016 -0.034 | 16 $+0.018$ | 16 $+0.065$ $+0.030$ | 14.058 13.990 | 0.126 0.010 | 30160 | 2.005 1.970 | 30 | 34 | 42 | 16 | 26 | 2 |
| | | | | | 30260 | | | | | 26 | | |
| | | | | | 35160 | | | | | 16 | | |
| | | | | | 35260 | | | | | 26 | | |
| | | | | | 40260 | | | | | 26 | | |
| | | | | | 40400 | | | | | 40 | | |
| | | | | | 30260 | | | | | 26 | | |
| | | | | | 35160 | | | | | 26 | | |
| | | | | | 35260 | | | | | 40 | | |
| | | | | | 40400 | | | | | 26 | | |

ZTOM10W

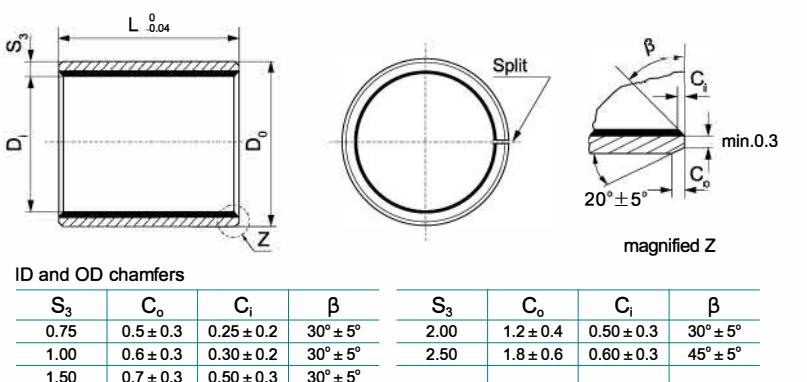
Metric Standard Thrust Washers Size



Unit:mm

| Shaft D_s | Specification | Washer dimension | | | | Installation size | $H_d + 0.12$ |
|----------------|---------------|------------------|--------------|--------------|-----------------|-------------------|--------------|
| | | $D_i + 0.25$ | $D_o - 0.25$ | $S_T - 0.05$ | $d_p \pm 0.125$ | | |
| 8 | W10 | 10 | 20 | 1.5 | 15 | 1.5 | 20 |
| 10 | W12 | 12 | 24 | | 18 | | |
| 12 | W14 | 14 | 26 | | 20 | | |
| 14 | W16 | 16 | 30 | | 23 | | |
| 16 | W18 | 1 | | | | | |

Inch Standard Cylindrical Bearings Size



| Shaft D_s | Housing D_H | ID After fixed $D_{i,a}$ | Clearance C_o | Length ± 0.010 | | | | |
|------------------|------------------|--------------------------------|--------------------|--------------------|---------|--------|----------|--------|
| 0.1243 0.1236 | 0.1878 0.1873 | 0.1268 0.1243 | 0.0032 0.0000 | 02IB02 | 02IB03 | | | |
| 0.1554 0.1547 | 0.2191 0.2186 | 0.1581 0.1556 | 0.0034 0.0002 | 025IB025 | 025IB04 | | | |
| 0.1865 0.1858 | 0.2503 0.2497 | 0.1893 0.1867 | 0.0035 0.0002 | 03IB03 | 03IB04 | 03IB06 | | |
| 0.2490 0.2481 | 0.3128 0.3122 | 0.2518 0.2492 | 0.0037 0.0002 | 04IB04 | 04IB06 | | | |
| 0.3115 0.3106 | 0.3753 0.3747 | 0.3143 0.3117 | | 05IB06 | 05IB08 | | | |
| 0.3740 0.3731 | 0.4591 0.4684 | 0.3769 0.3117 | 0.0038 0.0002 | 06IB03 | 06IB04 | 06IB06 | 06IB08 | 06IB10 |
| 0.4365 0.4355 | 0.5316 0.5309 | 0.4394 0.4367 | 0.0039 0.0002 | 07IB08 | 07IB12 | | | |
| 0.4990 0.4980 | 0.5941 0.5934 | 0.5019 0.4367 | | 08IB04 | 08IB06 | 08IB08 | 08IB10 | 08IB12 |
| 0.5615 0.5605 | 0.6566 0.6559 | 0.5019 0.4992 | | 09IB06 | 09IB08 | 09IB10 | 09IB12 | |
| 0.6240 0.6230 | 0.7192 0.7184 | 0.5644 0.5617 | | 10IB04 | 10IB08 | 10IB10 | 10IB12 | 10IB14 |
| 0.6865 0.6855 | 0.7817 0.7809 | 0.6270 0.6242 | | 11IB04 | | | | |
| 0.7491 0.7479 | 0.8755 0.8747 | 0.6895 0.6867 | 0.0046 0.0002 | 12IB14 | 12IB06 | 12IB08 | 12IB10 | 12IB12 |
| 0.8116 0.8104 | 0.9380 0.9372 | 0.7525 0.7493 | | 13IB12 | 13IB18 | | | |
| 0.8741 0.8729 | 1.0005 0.9997 | 0.8775 0.8743 | | 14IB04 | 14IB06 | 14IB12 | 14IB16 | 14IB20 |
| 0.9991 0.9979 | 1.1255 1.1247 | 1.0025 0.9993 | | 16IB06 | 16IB08 | 16IB12 | 16IB16 | 16IB20 |
| 1.1238 1.1226 | 1.2818 1.2808 | 1.1278 1.1240 | | 18IB06 | 18IB10 | 18IB12 | 18IB16 | |
| 1.2488 1.2472 | 1.4068 1.4058 | 1.2528 1.2490 | 0.0056 0.0002 | 20IB06 | 20IB12 | 20IB14 | 20IB16 | 20IB20 |
| 1.3738 1.3722 | 1.5318 1.5308 | 1.3778 1.3740 | | 22IB12 | 22IB12 | 22IB24 | 20IB1628 | |
| 1.4988 1.4972 | 1.6568 1.6558 | 1.5028 1.4990 | | 24IB08 | 24IB16 | 24IB18 | 24IB20 | 24IB24 |
| 1.6238 1.6222 | 1.7818 1.7808 | 1.6278 1.6240 | | 26IB16 | 26IB24 | | | |
| 1.7487 1.7471 | 1.9381 1.9371 | 1.7535 1.7489 | | 28IB16 | 28IB24 | 28IB32 | | |

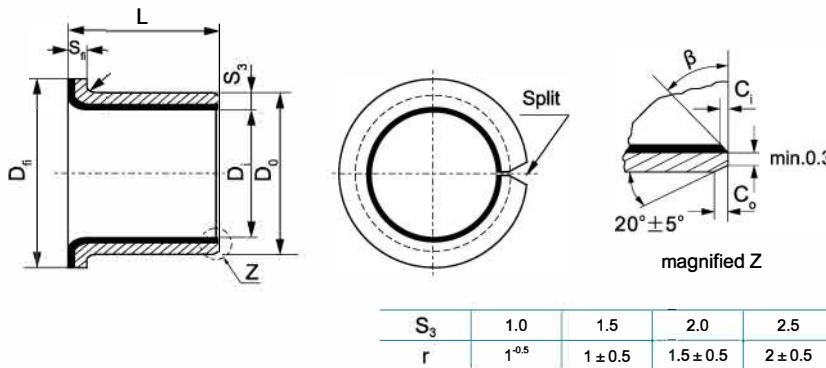
Inch Standard Cylindrical Bearings Size

Unit:mm

| Shaft D_s | Housing D_H | ID After fixed $D_{i,a}$ | Clearance C_o | Length ± 0.010 | | | | | | |
|------------------|------------------|--------------------------------|--------------------|--------------------|---------|---------|---------|---------|---------|---------|
| 1.8737 1.8721 | 2.0633 2.0621 | 1.8787 1.8739 | 0.0066 0.0002 | 30IB12 | 30IB16 | 30IB36 | | | | |
| 1.9987 1.9969 | 2.1883 2.1871 | 2.0037 1.9989 | 0.0068 0.0002 | 32IB08 | 32IB16 | 32IB24 | 32IB28 | 32IB32 | 32IB40 | |
| 2.1257 2.1239 | 2.3130 2.3118 | 2.1326 2.1262 | 0.0085 0.0002 | 34IB48 | | | | | | |
| 2.2507 2.1239 | 2.4377 2.4365 | 2.2573 2.2509 | | 32IB28 | 32IB32 | 32IB40 | 32IB48 | 32IB56 | 32IB60 | 32IB64 |
| 2.5011 2.4993 | 2.6881 2.6869 | 2.5077 2.5013 | | 40IB16 | 40IB26 | 40IB32 | 40IB40 | 40IB48 | 40IB56 | 40IB60 |
| 2.7500 2.7482 | 2.9370 2.9358 | 2.7566 2.7502 | | 44IB32 | 44IB36 | 44IB40 | 44IB48 | 44IB56 | 44IB60 | 44IB64 |
| 2.8752 2.8734 | 3.0623 3.0610 | 2.8819 2.8754 | | 46IB32 | 46IB36 | 46IB40 | 46IB48 | 46IB56 | 46IB60 | 46IB64 |
| 3.0000 3.2480 | 3.1872 3.1858 | 3.0068 3.0002 | 0.0086 0.0002 | 48IB32 | 48IB36 | 48IB40 | 48IB48 | 48IB56 | 48IB60 | 48IB64 |
| 3.2500 3.2480 | 3.4372 3.4358 | 3.2568 3.2502 | 0.0088 0.0002 | 52IB32 | 52IB36 | 52IB40 | 52IB48 | 52IB56 | 52IB60 | 52IB64 |
| 3.5000 3.4978 | 3.6872 3.6858 | 3.5068 3.5002 | 0.0090 0.0002 | 56IB32 | 56IB36 | 56IB40 | 56IB48 | 56IB56 | 56IB60 | 56IB64 |
| 3.6250 3.6228 | 3.8122 3.8108 | 3.6318 3.6252 | | 58IB32 | 58IB36 | 58IB40 | 58IB48 | 58IB56 | 58IB60 | 58IB64 |
| 3.7500 3.7478 | 3.9372 3.9358 | 3.7568 3.7502 | | 60IB32 | 60IB36 | 60IB40 | 60IB48 | 60IB56 | 60IB60 | 60IB64 |
| 4.0000 3.9978 | 4.1858 4.1858 | 4.0068 4.0002 | | 64IB32 | 64IB36 | 64IB40 | 64IB48 | 64IB56 | 64IB60 | 64IB64 |
| 4.2500 4.2478 | 4.4372 4.4358 | 4.2568 4.2502 | | 68IB32 | 68IB36 | 68IB40 | 68IB48 | 68IB56 | 68IB60 | 68IB64 |
| 4.3750 4.3728 | 4.5622 4.5608 | 4.3818 4.3752 | 0.0094 0.0002 | 70IB32 | 70IB36 | 70IB40 | 70IB48 | 70IB56 | 70IB60 | 70IB64 |
| 4.5000 4.4978 | 4.6872 4.6858 | 4.5068 4.5002 | | 72IB32 | 72IB36 | 72IB40 | 72IB48 | 72IB56 | 72IB60 | 72IB64 |
| 4.7500 4.7478 | 4.9374 4.9358 | 4.7572 4.7502 | | 76IB32 | 76IB36 | 76IB40 | 76IB48 | 76IB56 | 76IB60 | 76IB64 |
| 4.9986 4.9961 | 5.1860 5.1844 | 5.0056 4.9988 | | 80IB32 | 80IB36 | 80IB40 | 80IB48 | 80IB56 | 80IB60 | 80IB64 |
| 5.2500 5.2475 | 5.4374 5.1844 | 5.2570 5.2502 | | 84IB32 | 84IB36 | 84IB40 | 84IB48 | 84IB56 | 84IB60 | 84IB64 |
| 5.5000 5.4975 | 5.6874 5.6858 | 5.5070 5.5002 | 0.0095 0.0002 | 88IB32 | 88IB36 | 88IB40 | 88IB48 | 88IB56 | 88IB60 | 88IB64 |
| 5.7500 5.7475 | 5.9374 5.9358 | 5.7570 5.7502 | | 92IB32 | 92IB36 | 92IB40 | 92IB48 | 92IB56 | 92IB60 | 92IB64 |
| 6.0000 5.9975 | 6.1874 6.1858 | 6.0070 6.0002 | | 96IB32 | 96IB36 | 96IB40 | 96IB48 | 96IB56 | 96IB60 | 96IB64 |
| 6.2500 6.2475 | 6.4374 6.4358 | 6.2570 6.2502 | | 100IB32 | 100IB36 | 100IB40 | 100IB48 | 100IB56 | 100IB60 | 100IB64 |
| 6.5000 6.4975 | 6.6874 6.6858 | 6.5070 6.5002 | | 104IB32 | 104IB36 | 104IB40 | 104IB48 | 104IB56 | 104IB60 | 104IB64 |
| 6.7500 6.7475 | 6.9374 6.9358 | 6.7570 6.7502 | 0.0097 0.0002 | 108IB32 | 108IB36 | 108IB40 | 108IB48 | 108IB56 | 108IB60 | 108IB64 |
| 6. | | | | | | | | | | |

ZTOM10F

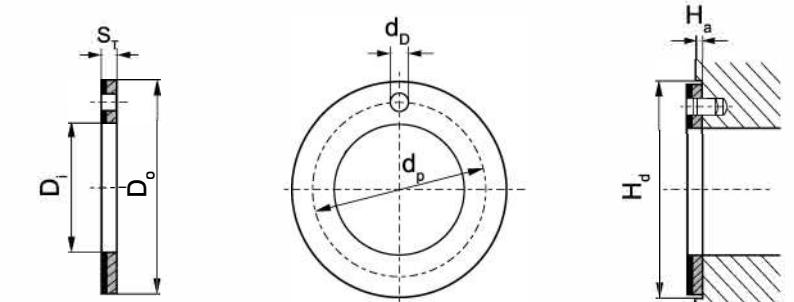
Inch Standard Flanged Bearings Size



| Shaft D_s | Housing D_H | ID After fixed $D_{i.a}$ | Clearance C_o | Nominal Flange D_f | Flange Thickness S_f | Length ± 0.010 | | | |
|------------------|------------------|--------------------------------|--------------------|----------------------------|------------------------------|--------------------|---------|---------|---------|
| | | | | | | 06FIB04 | 06FIB06 | 06FIB08 | 06FIB12 |
| 0.3750 0.3740 | 0.4691 0.4684 | 0.3779 0.3752 | 0.0039 0.3752 | 0.7075 0.6675 | 0.052 0.044 | | | | |
| 0.5000 0.4990 | 0.5941 0.5934 | 0.5029 0.5002 | 0.5029 0.5002 | 0.8325 0.7925 | 0.052 0.044 | 08FIB04 | 08FIB06 | 08FIB08 | 08FIB12 |
| 0.6250 0.6240 | 0.7192 0.7184 | 0.6280 0.6252 | 0.6280 0.6252 | 0.9575 0.9175 | 0.052 0.044 | 10FIB06 | 10FIB08 | 10FIB10 | 10FIB12 |
| 0.7500 0.7488 | 0.8755 0.8747 | 0.7534 0.7502 | 0.7534 0.7502 | 1.1450 1.1050 | 0.068 0.060 | 12FIB06 | 12FIB08 | 12FIB12 | 12FIB16 |
| 0.8750 0.8738 | 1.0005 0.9997 | 0.8784 0.8752 | 0.8784 0.8752 | 1.2200 1.1800 | 0.068 0.060 | 14FIB08 | 14FIB12 | 14FIB16 | 14FIB20 |
| 1.0000 0.9988 | 1.1255 1.1247 | 1.0034 1.0002 | 1.0034 1.0002 | 1.3850 1.3550 | 0.068 0.060 | 16FIB08 | 16FIB12 | 16FIB16 | 16FIB20 |
| 1.2500 1.2484 | 1.4068 1.4058 | 1.2540 1.2502 | 1.2540 1.2502 | 1.7700 1.7300 | 0.083 0.075 | 20FIB16 | 20FIB20 | 20FIB24 | |
| 1.5000 1.4984 | 1.6568 1.6558 | 1.5040 1.5002 | 1.5040 1.5002 | 2.0200 1.9800 | 0.083 0.075 | 24FIB16 | 24FIB24 | 24FIB32 | |
| 1.7500 1.7484 | 1.9381 1.9371 | 1.7548 1.7502 | 1.7548 1.7502 | 2.3950 2.3550 | 0.098 0.090 | 28FIB16 | 28FIB24 | 28FIB32 | |

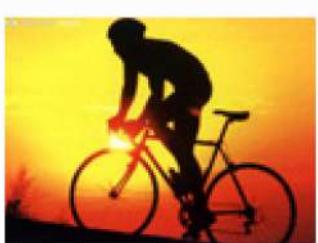
ZTOM10W

Inch Standard Thrust Washers Size



| Designation | Inside- ϕ D_i | | Outside- ϕ D_o | Wall thickness S_t | Dowel hole- ϕ d_p | Dowel hole PCD- ϕd_p | Recess Depth H_a |
|-------------|-------------------------|-------|--------------------------|-------------------------|-----------------------------|-------------------------------|-----------------------|
| | max. | min. | max. min. | | | | |
| ZTOM10WZ06 | 0.510 | 0.500 | 0.875 0.865 | | | 0.077 0.067 | 0.692 0.682 |
| ZTOM10WZ07 | 0.572 | 0.562 | 1.000 0.990 | | | | 0.786 0.776 |
| ZTOM10WZ08 | 0.635 | 0.625 | 1.125 1.115 | | | | 0.880 0.870 |
| ZTOM10WZ09 | 0.697 | 0.687 | 1.187 1.177 | | | | 0.942 0.932 |
| ZTOM10WZ10 | 0.760 | 0.750 | 1.250 1.240 | | | | 1.005 0.995 |
| ZTOM10WZ11 | 0.822 | 0.812 | 1.375 1.365 | | | | 1.099 1.089 |
| ZTOM10WZ12 | 0.885 | 0.875 | 1.500 1.490 | | | 0.140 0.130 | 1.192 1.182 |
| ZTOM10WZ14 | 1.010 | 1.000 | 1.750 1.740 | | | | 1.380 1.370 |
| ZTOM10WZ16 | 1.135 | 1.125 | 2.000 1.990 | | | | 1.567 1.557 |
| ZTOM10WZ18 | 1.260 | 1.250 | 2.125 2.115 | | | | 1.692 1.682 |
| ZTOM10WZ20 | 1.385 | 1.375 | 2.250 2.240 | | | | 1.817 1.807 |
| ZTOM10WZ22 | 1.510 | 1.500 | 2.500 2.490 | | | | 2.005 1.995 |
| ZTOM10WZ24 | 1.635 | 1.625 | 2.625 2.615 | | | | 2.130 2.120 |
| ZTOM10WZ26 | 1.760 | 1.750 | 2.750 2.740 | | | | 2.255 2.245 |
| ZTOM10WZ28 | 2.010 | 2.000 | 3.000 2.990 | | | | 2.505 2.495 |
| ZTOM10WZ30 | 2.135 | 2.125 | 3.125 3.115 | | | | 2.630 2.620 |
| ZTOM10WZ32 | 2.260 | 2.250 | 3.250 3.240 | | | | 2.755 2.745 |

Typical Application Examples



Bicycle



Car



Hydraulic pump



Hydraulic ram



Print machine



Textile machine



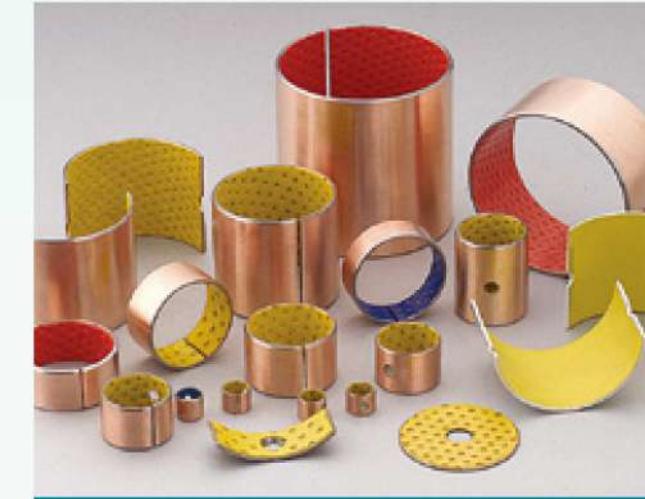
Body-building apparatus



Motorcycle

ZTOM20 (SF-2)

Marginally lubricated Bearings-POM Composite



Product Brief

ZTOM20 is made of high quality low-carbon steel, with a interlayer of porous bronze and POM on its surface. The bearing surface carries a pattern of circular indents which should be filled with grease on assembly of the bearing. It is suitable for rotary, oscillating, reciprocating and sliding movement.

Structure



1. POM thickness 0.30 ~ 0.50 mm
2. Sintered bronze powder thickness 0.20 ~ 0.35 mm
3. Low-carbon steel
4. Copper/Tin plating thickness 0.002mm

Tech. Data

| Max. Load | Static | 250N/mm ² |
|-----------|----------------------------------|---|
| | Low speed | 140N/mm ² |
| | Rotating oscillating | 70N/mm ² |
| | Max. PV | 2.8N/mm ² *m/s |
| | Coefficient of thermal expansion | $11 \times 10^{-6} \text{ }^{\circ}\text{C}^{-1}$ |
| | Temp. Range | -195°C ~ +280°C |

| Max Speed | Temp. Range | | -40°C ~ +130°C |
|----------------------|----------------|--|----------------|
| | Pre-lubricated | 2m/s | |
| | Oiling Grease | Continuous | >2m/s |
| Thermal conductivity | | $50\text{W}(\text{m}^{\ast}\text{k})^{-1}$ | |
| Friction coefficient | | 0.05~0.20 μ | |

Initial pre-lubrication at assembly is strongly recommended.

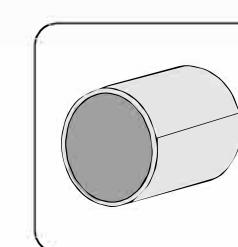
Characteristics and Advantages

1. Low-maintenance operation, it is especially well-suited for applications where lubricant can not be supplied continuously or repeated
2. Low friction and low wear rate
3. High load capacity and high sliding velocity
4. Good chemical resistance
5. Small operating clearance
6. No absorption of water and therefore no swelling
7. Good damping behaviours
8. Good resistance to shock loads

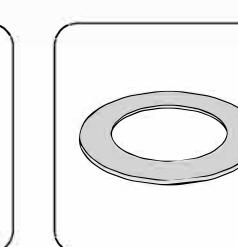
Typical Applications

- Automotive
- Machine tool building industry
- Agricultural equipment
- Construction machinery
- Materials handling equipment
- Home appliances and consumer goods

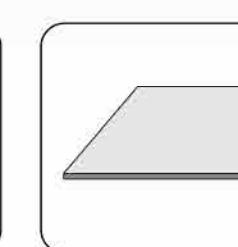
Availability



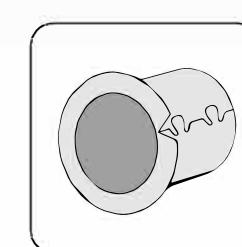
Cylindrical



Thrust washer



Strip



Non-standard parts as design



ZTOM21 Lead free marginally lubricated bearing

ZTOM21 is developed as the requirement of international environment protection on the basis of ZTOM20. The product is particularly applicable for food machine, pharmacy machine and tobacco plant machine in addition to application for ordinary machine. Lead free is in accord with European health standard.

Pb-free



ZTOM22 Lead free marginally lubricated bearing

ZTOM 22 is an improved product used steel back as base, sintered porous bronze as its interlayer, surface rolled by resin and polymer material containing fiber and perform well on low friction factor, well wear performance and oil free condition lubrication. It has been widely applied to winding engines, printing machinery, punch, winch truck, traveling crane etc.

Pb-free



ZTOM23 Lead free marginally lubricated bearing

ZTOM 23 is made of high quality low-carbon steel, with a interlayer of sintered porous bronze and POM on it's surface. It has been widely used in metallurgy machinery, mining machinery, water conservancy industries, automotive industry, agricultural machinery, etc.

Pb-free

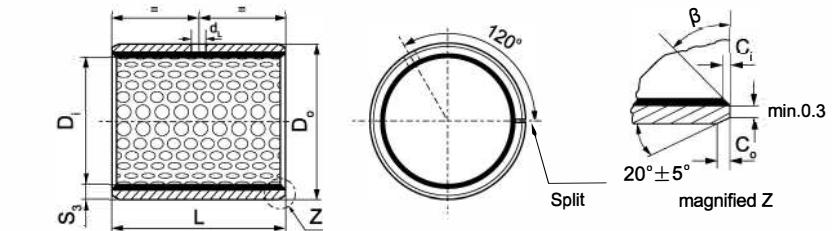


ZTOM24 Lead free marginally lubricated bearing

ZTOM 24 is improved from ZTOM 23, with a tin plating outside which provides good corrosion resistance, it has been widely used in milling machines, gearbox, clutch, bale trips and wheel caster swivels for bale accumulators, kingpin bearings for harvesters, etc.

Pb-free

Metric Standard Cylindrical Bushes



ID and OD chamfers

| S_3 | C_o | C_i | β | S_3 | C_o | C_i | β |
|-------|-----------|------------|----------|-------|-----------|------------|----------|
| 1.0 | 0.6 ± 0.3 | 0.30 ± 0.2 | 30° ± 5° | 2.00 | 1.2 ± 0.4 | 0.50 ± 0.3 | 30° ± 5° |
| 1.5 | 0.7 ± 0.3 | 0.50 ± 0.2 | 30° ± 5° | 2.50 | 1.8 ± 0.6 | 0.60 ± 0.3 | 45° ± 5° |

Unit:mm

| Shaft D_s h8 | Housing $H7$ D_H | OD tolerance D_o | ID after fixed $D_{i,a}$ | Clearance | Wall thickness S_3 | Oil hole d_L | Length $^0_{-0.40}$ | | | | | | | | | |
|----------------------|--------------------------|--------------------------|-----------------------------|------------------|----------------------------|-------------------|---------------------|------|------|------|------|------|------|------|------|----|
| | | | | | | | 10 | 15 | 20 | 25 | 30 | 35 | 40 | 45 | 50 | 60 |
| 10 -0.022 | 12 $^{+0.018}$ | 12 $^{+0.065}_{-0.030}$ | 10.108 10.040 | 0.130 0.040 | 0.980 0.955 | 4 | 1010 | 1015 | 1020 | | | | | | | |
| | 12 $^{-0.027}$ | 14 $^{+0.018}$ | 14 $^{+0.065}_{-0.030}$ | 12.108 12.040 | | | 1210 | 1215 | 1220 | | | | | | | |
| | 14 $^{-0.027}$ | 16 $^{+0.018}$ | 16 $^{+0.065}_{-0.030}$ | 14.108 14.040 | | | 1415 | 1420 | | | | | | | | |
| | 15 $^{-0.027}$ | 17 $^{+0.018}$ | 17 $^{+0.065}_{-0.030}$ | 15.108 15.040 | | | 1515 | 1520 | 1525 | | | | | | | |
| | 16 $^{-0.027}$ | 18 $^{+0.018}$ | 18 $^{+0.065}_{-0.030}$ | 16.108 16.040 | | | 1615 | 1620 | 1625 | | | | | | | |
| | 18 $^{-0.027}$ | 20 $^{+0.021}$ | 20 $^{+0.075}_{-0.035}$ | 18.111 18.040 | 0.138 0.040 | | 1815 | 1820 | 1825 | | | | | | | |
| 20 -0.033 | 23 $^{+0.021}$ | 23 $^{+0.075}_{-0.035}$ | 20.131 20.050 | 0.164 0.050 | 1.475 1.445 | 6 | 2015 | 2020 | 2025 | 2030 | | | | | | |
| | 22 $^{-0.033}$ | 25 $^{+0.021}$ | 25 $^{+0.075}_{-0.035}$ | | | | 2215 | | 2225 | | | | | | | |
| | 25 $^{-0.033}$ | 28 $^{+0.021}$ | 28 $^{+0.075}_{-0.035}$ | | | | 2515 | 2520 | 2525 | 2530 | | | | | | |
| | 28 $^{-0.033}$ | 32 $^{+0.025}$ | 32 $^{+0.085}_{-0.045}$ | | | | | 2820 | | 2830 | | | | | | |
| | 30 $^{-0.033}$ | 34 $^{+0.025}$ | 34 $^{+0.085}_{-0.045}$ | | | | | 3020 | 3025 | 3030 | | 3040 | | | | |
| | 35 $^{-0.039}$ | 39 $^{+0.025}$ | 39 $^{+0.085}_{-0.045}$ | 0.188 0.060 | | | | 3520 | | 3530 | 3535 | 3540 | | | | |
| 40 -0.039 | 44 $^{+0.025}$ | 44 $^{+0.085}_{-0.045}$ | 40.155 40.060 | 0.194 0.060 | 1.970 1.935 | 8 | | 4020 | | 4030 | | 4040 | | 4050 | | |
| | 45 $^{-0.039}$ | 50 $^{+0.025}$ | 50 $^{+0.085}_{-0.045}$ | 0.234 0.080 | | | | 4520 | | 4530 | | 4540 | 4545 | 4550 | | |
| | 50 $^{-0.039}$ | 55 $^{+0.030}$ | 55 $^{+0.100}_{-0.055}$ | 0.239 0.080 | | | | | | 5030 | | 5040 | | 5050 | 5060 | |
| | 55 $^{-0.046}$ | 60 $^{+0.030}$ | 60 $^{+0.100}_{-0.055}$ | 0.246 0.080 | | | | | | 5530 | | 5540 | | 5550 | 5560 | |
| | 60 $^{-0.046}$ | 65 $^{+0.030}$ | 65 $^{+0.100}_{-0.055}$ | 0.246 0.080 | | | | | | 6030 | | 6040 | | 6050 | 6060 | |

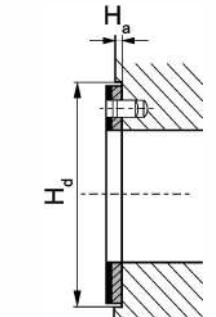
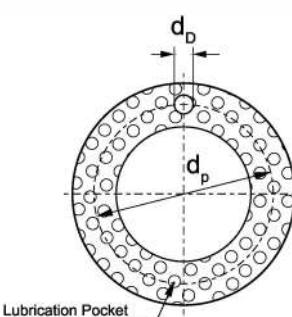
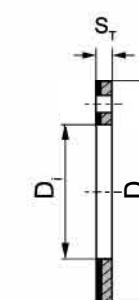
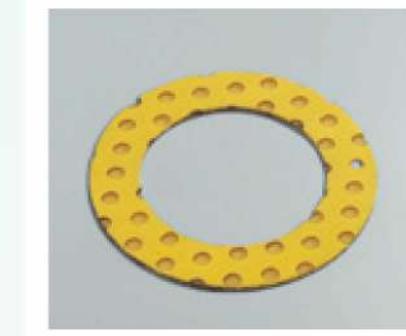
ZTOM20 / 21 / 22 / 23 / 24

Metric Standard Cylindrical Bearings Size

| Shaft D _s h8 | Housing H7 D _H | OD tolerance D _O | ID after fixed D _{i,a} | Clearance | Wall thickness S ₃ | Oil hole d _L | Length ⁰ _{-0.40} | | | | | | | | |
|-------------------------------|---------------------------------|-----------------------------------|------------------------------------|----------------|-------------------------------------|----------------------------|--------------------------------------|-------|-------|------|--------|--------|--------|--------|-----|
| | | | | | | | 40 | 50 | 60 | 80 | 90 | 95 | 100 | 110 | 120 |
| 65 -0.046 | 70 +0.030 | 70 +0.100 +0.055 | 65.200 65.080 | 0.246 0.080 | 2.460 2.415 | 8 | 6540 | 1015 | 6560 | | | | | | |
| 70 -0.046 | 75 +0.030 | 75 +0.100 +0.055 | 70.200 70.080 | | | | 7040 | 1215 | | 7080 | | | | | |
| 75 -0.046 | 80 +0.030 | 80 +0.100 +0.055 | 75.200 75.080 | | | | 7540 | 1415 | 7560 | 7580 | | | | | |
| 80 -0.046 | 85 +0.035 | 85 +0.120 +0.070 | 80.265 80.100 | 0.313 0.100 | 9.5 | 12 | 8040 | 1515 | 8060 | 8080 | | | | | |
| 85 -0.054 | 90 +0.035 | 90 +0.120 +0.070 | 85.265 85.100 | | | | 8540 | 1615 | 8560 | 8580 | | | | | |
| 90 -0.054 | 95 +0.035 | 95 +0.120 +0.070 | 90.265 90.100 | | | | 9040 | 1815 | 9060 | 9080 | 9090 | | | | |
| 100 -0.054 | 105 +0.035 | 105 +0.120 +0.070 | 100.265 100.100 | | | | 2015 | | 10080 | | 10095 | | | | |
| 105 -0.054 | 110 +0.035 | 110 +0.120 +0.070 | 105.265 105.100 | | | | 2215 | 10560 | 10580 | | 10595 | | 105110 | | |
| 110 -0.054 | 115 +0.035 | 115 +0.120 +0.070 | 110.265 110.110 | | | | 2515 | 11060 | 11080 | | 11095 | | 110110 | | |
| 120 -0.054 | 125 +0.040 | 125 +0.170 +0.100 | 120.270 120.110 | | | | | 12060 | 12080 | | | 120110 | | | |
| 125 -0.063 | 130 +0.040 | 130 +0.170 +0.100 | 125.270 125.110 | | | | | 12560 | | | | 125110 | | | |
| 130 -0.063 | 135 +0.040 | 135 +0.170 +0.100 | 130.270 130.110 | | | | 13050 | 13060 | 13080 | | 130100 | | | | |
| 140 -0.063 | 145 +0.040 | 145 +0.170 +0.100 | 140.270 140.110 | | | | 14050 | 14060 | 14080 | | | 140100 | | | |
| 150 -0.063 | 155 +0.040 | 155 +0.170 +0.100 | 150.270 150.110 | 0.324 0.100 | 2.450 2.385 | 18 | 15050 | 15060 | 15080 | | | 150100 | | | |
| 160 -0.063 | 165 +0.040 | 165 +0.170 +0.100 | 160.270 160.110 | | | | 16050 | 16060 | 16080 | | | 160100 | | | |
| 170 -0.063 | 175 +0.040 | 175 +0.170 +0.100 | 170.270 170.110 | | | | 17050 | | 17080 | | | 170100 | | | |
| 180 -0.063 | 185 +0.046 | 185 +0.210 +0.130 | 180.270 180.110 | | | | 18050 | 18060 | 18080 | | | 180100 | | | |
| 190 -0.072 | 195 +0.046 | 195 +0.210 +0.130 | 190.276 190.110 | | | | 19050 | 19060 | 19080 | | | 190100 | | 190120 | |
| 200 -0.072 | 205 +0.046 | 205 +0.210 +0.130 | 200.276 200.110 | | | | 20050 | 20060 | 20080 | | | 200100 | | 200120 | |
| 220 -0.072 | 225 +0.046 | 225 +0.210 +0.130 | 220.276 220.110 | | | | 22050 | 22060 | 22080 | | | 220100 | | 220120 | |
| 240 -0.072 | 245 +0.046 | 245 +0.210 +0.130 | 240.276 240.110 | | | | 24050 | 24060 | 24080 | | | 240100 | | 240120 | |
| 250 -0.072 | 255 +0.052 | 255 +0.260 +0.170 | 250.282 250.110 | | | | 25050 | 25060 | 25080 | | | 250100 | | 250120 | |
| 260 -0.081 | 265 +0.052 | 265 +0.260 +0.170 | 260.282 260.110 | | | | 26050 | 26060 | 26080 | | | 260100 | | 260120 | |
| 280 -0.081 | 285 +0.052 | 285 +0.260 +0.170 | 280.282 280.110 | 0.354 0.110 | 9.5 | 28 | 28050 | 28060 | 28080 | | | 280100 | | 280120 | |
| 300 -0.081 | 305 +0.052 | 305 +0.260 +0.170 | 300.282 300.110 | | | | 30050 | 30060 | 30080 | | | 300100 | | 300120 | |

ZTOM20W

Metric Standard Thrust Washers Size

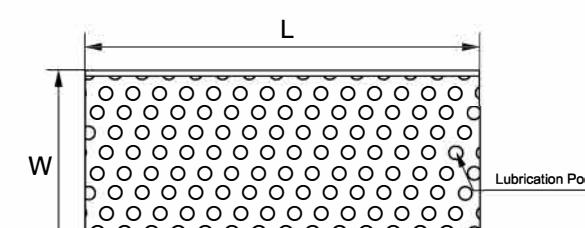
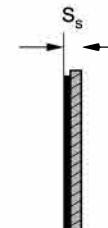


Unit:mm

| Shaft D _s | Specification | Washes dimension | | | | Installation size | | |
|-------------------------|---------------|----------------------|----------------------|----------------------|-----------------------|--|---------------------|----------------------|
| | | D _i +0.25 | D _o -0.25 | S _T -0.05 | d _p ±0.125 | d _D ^{+0.4} _{-0.1} | H _a ±0.2 | H _d +0.12 |
| 8 | W10 | 10 | 20 | | | 15 | | 20 |
| 10 | W12 | 12 | 24 | | | 18 | | 24 |
| 12 | W14 | 14 | 26 | | | 20 | | 26 |
| 14 | W16 | 16 | 30 | | | 23 | | 30 |
| 16 | W18 | 18 | 32 | | | 25 | | 32 |
| 18 | W20 | 20 | 36 | | | 28 | | 36 |
| 20 | W22 | 22 | 38 | | | 30 | | 42 |
| 22 | W24 | 24 | 42 | | | 33 | | 44 |
| 24 | W26 | 26 | 44 | | | 35 | | 48 |
| 26 | W28 | 28 | 48 | | | 38 | | 54 |
| 30 | W32 | 32 | 54 | | | 43 | | 62 |
| 36 | W38 | 38 | 62 | | | 50 | | 66 |
| 40 | W42 | 42 | 66 | | | 54 | | 74 |
| 46 | W48 | 48 | 74 | | | 61 | | 78 |
| 50 | W52 | 52 | 78 | | | 65 | | 90 |
| 60 | W62 | 62 | 90 | | | 76 | | |

ZTOM20S

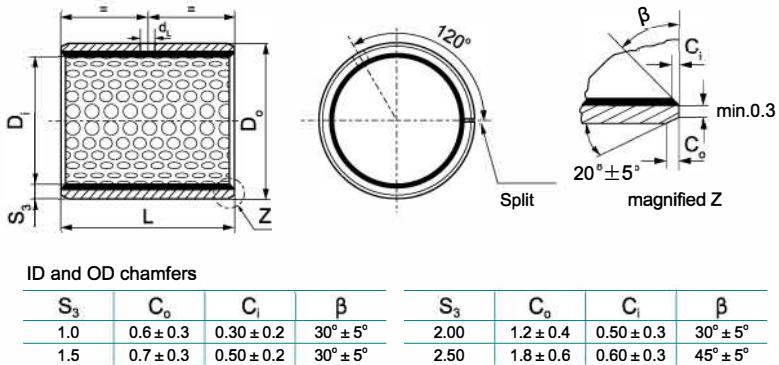
Metric Standard Strips Size



Unit:mm

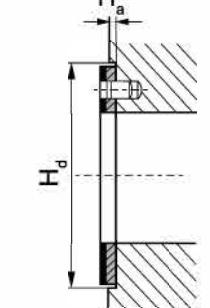
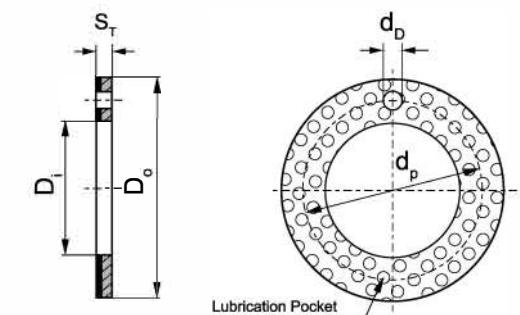
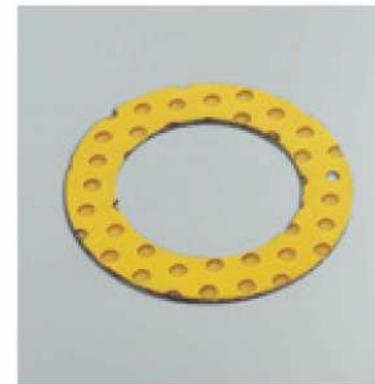
| Type | Length(L) ± 1 | Width(W) ± 1 | Thickness(S _s)-0.05 |
|------|---------------|--------------|---------------------------------|
| 20S | 500 | 150 | 1.0 |
| 20S | 500 | 150 | 1.5 |

Inch Standard Cylindrical Bearings Size



| D_i | D_o | Shaft D_s | Housing D_h | ID After fixed $D_{i,a}$ | Clearance C_o | Wall thickness S_3 | Oil hole D_L | Length ± 0.010 | | | |
|-------|---------|------------------|------------------|--------------------------|------------------|----------------------|----------------|--------------------|--------|--------|--------|
| | | | | | | | | 06IB06 | 06IB08 | 06IB12 | |
| 3/8 | 15/32 | 0.3648 0.3639 | 0.4694 0.4687 | 0.3694 0.3667 | 0.0055 0.0019 | 0.0510 0.0500 | — | 06IB06 | 06IB08 | 06IB12 | |
| 7/16 | 17/32 | 0.4273 0.4263 | 0.5319 0.5312 | 0.4319 0.4292 | 0.0056 0.0019 | | | 07IB08 | 07IB12 | | |
| 1/2 | 19/32 | 0.4897 0.4887 | 0.5944 0.5937 | 0.4944 0.4917 | 0.0057 0.0020 | | | 08IB06 | 08IB08 | 08IB10 | 08IB14 |
| 9/16 | 21/32 | 0.5522 0.5512 | 0.6569 0.6562 | 0.5569 0.5542 | 0.0057 0.0020 | | | 09IB08 | 09IB12 | | |
| 5/8 | 23/32 | 0.6146 0.6136 | 0.7195 0.7178 | 0.6195 0.6167 | 0.0059 0.0021 | | | 10IB08 | 10IB10 | 10IB12 | 10IB14 |
| 11/16 | 25/32 | 0.6770 0.6760 | 0.7820 0.7812 | 0.6820 0.6792 | 0.0060 0.0022 | | | 11IB14 | | | |
| 3/4 | 7/8 | 0.7370 0.7378 | 0.8758 0.8750 | 0.7444 0.7412 | 0.0066 0.0022 | | | 12IB08 | 12IB12 | 12IB16 | |
| 7/8 | 1 | 0.8639 0.8627 | 1.0008 1.0000 | 0.8694 0.8662 | 0.0067 0.0023 | | | 14IB12 | 14IB14 | 14IB16 | |
| 1 | 1 1/8 | 0.9888 0.9876 | 1.1258 1.1250 | 0.9944 0.9912 | 0.0068 0.0024 | | | 16IB12 | 16IB16 | 16IB24 | |
| 1 1/8 | 1 9/32 | 1.1138 1.1126 | 1.2822 1.2812 | 1.1202 1.1164 | 0.0076 0.0026 | | | 18IB12 | 18IB16 | | |
| 1 1/4 | 1 13/32 | 1.2387 1.2371 | 1.4072 1.4062 | 1.2452 1.2414 | 0.0081 0.0027 | 0.0824 0.0810 | 1/4 | 20IB12 | 20IB16 | 20IB20 | 20IB28 |
| 1 3/8 | 1 17/32 | 1.3635 1.3619 | 1.5322 1.5312 | 1.3702 1.3664 | 0.0083 0.0029 | | | 22IB16 | 22IB22 | 22IB28 | |
| 1 1/2 | 1 21/32 | 1.4884 1.4846 | 1.6572 1.6562 | 1.4952 1.4914 | 0.0084 0.0030 | | | 24IB16 | 24IB20 | 24IB24 | |
| 1 5/8 | 1 25/32 | 1.6133 1.6117 | 1.7822 1.7812 | 1.6202 1.6164 | 0.0085 0.0031 | | | 26IB16 | 26IB24 | | 24IB32 |
| 1 3/4 | 1 15/16 | 1.7383 1.7367 | 1.9385 1.9375 | 1.7461 1.7415 | 0.0094 0.0032 | | | 28IB16 | 28IB24 | 28IB28 | |
| 1 7/8 | 2 1/16 | 1.8632 1.8616 | 2.0637 2.0625 | 1.8713 1.8665 | 0.0097 0.0033 | | | 30IB16 | 30IB30 | 30IB36 | 28IB32 |
| 2 | 2 3/16 | 1.9881 1.9863 | 2.1887 2.1875 | 1.9963 1.9915 | 0.0100 0.0034 | | | 32IB16 | 32IB24 | 32IB32 | |
| 2 1/4 | 2 7/16 | 2.2378 2.2360 | 2.4387 2.4375 | 2.2463 2.2415 | 0.0103 0.0037 | | | 36IB32 | 36IB36 | 36IB40 | 32IB40 |
| 2 1/2 | 2 11/16 | 2.4875 2.4857 | 2.6887 2.6875 | 2.4963 2.4915 | 0.0106 0.0040 | | | 40IB32 | 40IB40 | | |
| 2 3/4 | 2 15/16 | 2.7351 2.7333 | 2.9387 2.9375 | 2.7457 2.7393 | 0.0124 0.0042 | | | 44IB32 | 44IB40 | 44IB48 | |
| 3 | 3 3/16 | 2.9849 2.9831 | 3.1889 3.1875 | 2.9959 2.9893 | 0.0128 0.0044 | 0.0991 0.0965 | 3/8 | 48IB32 | 48IB48 | 48IB60 | |
| 3 1/2 | 3 11/16 | 3.4844 3.4822 | 3.6889 3.6875 | 3.4959 3.4893 | 0.0137 0.0049 | | | 56IB40 | 56IB48 | 56IB60 | 44IB56 |
| 4 | 4 3/16 | 3.9839 3.9817 | 4.1889 4.1875 | 3.9959 3.9893 | 0.0142 0.0054 | | | 64IB48 | 64IB60 | 64IB76 | |

Inch Standard Thrust Washers Size



| Specification | Dimension | | | | Installation Size | | |
|---------------|------------------------|---------------------|------------------|--------------|-------------------|-----------------|--------------|
| | inner side $D_i+0.010$ | outside $D_o-0.010$ | S_T | $d_p -0.010$ | $d_o +0.010$ | $H_a \pm 0.010$ | $H_d +0.010$ |
| WC06IB | 0.500 | 0.875 | 0.0660 0.0625 | 0.692 | 0.067 | 0.875 | 1.000 |
| WC07IB | 0.562 | 1.000 | | 0.786 | | | |
| WC08IB | 0.625 | 1.125 | | 0.880 | | | |
| WC09IB | 0.687 | 1.187 | | 0.942 | | | |
| WC10IB | 0.750 | 1.250 | | 1.005 | | | |
| WC11IB | 0.812 | 1.375 | | 1.099 | | | |
| WC12IB | 0.875 | 1.500 | | 1.192 | | | |
| WC13IB | 0.937 | 1.625 | | 1.286 | 0.130 | 1.625 | 1.750 |
| WC14IB | 1.000 | 1.750 | | 1.380 | | | |
| WC16IB | 1.125 | 2.000 | | 1.567 | | | |
| WC18IB | 1.250 | 2.125 | | 1.692 | 0.161 | 2.125 | 2.250 |
| WC20IB | 1.375 | 2.250 | | 1.817 | | | |
| WC22IB | 1.500 | 2.500 | | 2.005 | | | |
| WC24IB | 1.625 | 2.625 | | 2.130 | | | |
| WC26IB | 1.750 | 2.750 | | 2.255 | 0.192 | 2.750 | 3.000 |
| WC28IB | 2.000 | 3.000 | | 2.505 | | | |
| WC30IB | 2.125 | 3.125 | | 2.630 | | | |
| WC32IB | 2.250 | 3.250 | | 2.755 | | | |

ZTOM30 (JF)

Bi-metallic Composite Bearings



Product Brief

Steel shell backed with a lead bronze lining bearing material for oil lubricated applications. This material has high load capacity and good fatigue properties. The bronze layer surface can be machined with various of grooves, oil pockets and oil holes in terms of different work condition, so as to meet the demanding criteria for long life with or without lubrication.

Structure



1. Sinter bronze powder
2. Steel backing

Tech. Data

| Material | Alloy composition | Alloy hardness | Max. Load P (N/mm ²) | Max Speed(m/s) | | Max. PV(N/m ² ·m/s) | | Friction coefficient (μ) | | Max Working Temperature | |
|------------------|------------------------|----------------|----------------------------------|----------------|-----|--------------------------------|-----|--------------------------------|-----------|-------------------------|-----------|
| | | | | Grease | Oil | Grease | Oil | Grease | Oil | Grease | Lurcation |
| ZTOM30 | Steel+ CuPb10Sn10 | 70~90HB | 150 | 2.5 | 10 | 2.8 | 10 | 0.05~0.15 | 0.05~0.20 | 150°C | 250°C |
| ZTOM31 | Steel+ Graphite(08G) | 70~100HB | 140 | 2.5 | 10 | 2.8 | 10 | 0.05~0.15 | 0.06~0.16 | 150°C | 250°C |
| ZTOM32 (Pb free) | Steel+ CuSn8Ni | 70~90HB | 140 | 2.5 | 10 | 2.8 | 10 | 0.05~0.15 | 0.05~0.20 | 150°C | 250°C |
| ZTOM33 (Pb free) | Steel+ CuSn8Ni(Groove) | 70~90HB | 140 | 2.5 | 10 | 2.8 | 10 | 0.05~0.15 | 0.06~0.18 | 150°C | 250°C |
| ZTOM34 | AlSn20Cu | 30~40HB | 100 | / | 25 | / | 25 | / | 0.08~0.17 | 150°C | 250°C |

Characteristics and Advantages

1. Capable of supporting high specific loads.
2. Excellent fatigue strength under dynamic and shock load conditions.
3. Superior performance under oscillating movement.
4. Thin wall construction permits compact bearing assembly.
5. Applicable in rough operation conditions.

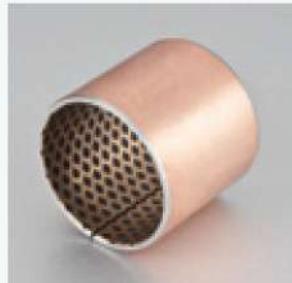
Typical Applications

It is widely used in automotive applications such as compressors, steering gear, power steering, pedal bearings, king-pin bushes, tailgate pivots, mechanical handling and lifting equipment, hydraulic motors, agricultural machinery, track rollers bushes, carrier rollers bushes, front idler bushes, leaf spring bushes, front axle bushes, power steering bushes, etc.



ZTOM 30 Bi-metallic Composite Bearings

It is made of high quality low-carbon steel, sintered and rolled copper alloy on its surface. This material has high load capacity, good fatigue properties and excellent impact strength. It is widely used in con-rod of automobile engines, transmission gearbox, engineering and agriculture machinery etc.



ZTOM31(08G) Solid-Lubricant-Inlaid Bimetal Bearing

It is made of high quality low-carbon steel, sintered and rolled copper alloy on its surface. It has high fatigue strength, load capacity and impact strength. The product is used in con-rod of automobile engines, transmission gearbox, engineering and agriculture machinery, etc.



ZTOM 32 Bi-metallic Composite Bearings

It is made of high quality low-carbon steel, sintered and rolled with tin-lead-bronze alloy on its surface. It has high fatigue strength, load capacity, excellent surface property. It is mainly applied to main shaft and con-rod shaft of internal combustion engine.

Pb-free



ZTOM 33 Bi-metallic Composite Bearings

It is made of high quality low-carbon steel, sintered and rolled copper alloy on its surface. It could add groove as client's needs. It has high fatigue strength, load capacity and impact strength. The product is used in con-rod of automobile engines, transmission gearbox, engineering and agriculture machinery, etc.

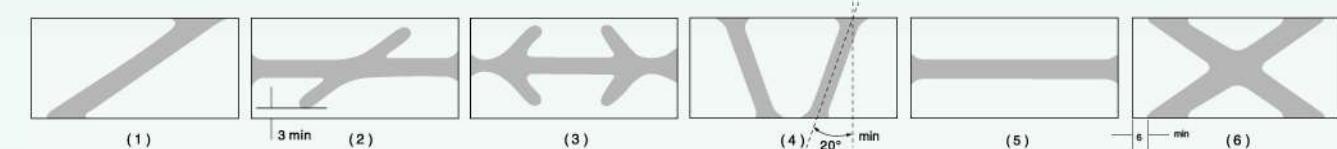
Pb-free



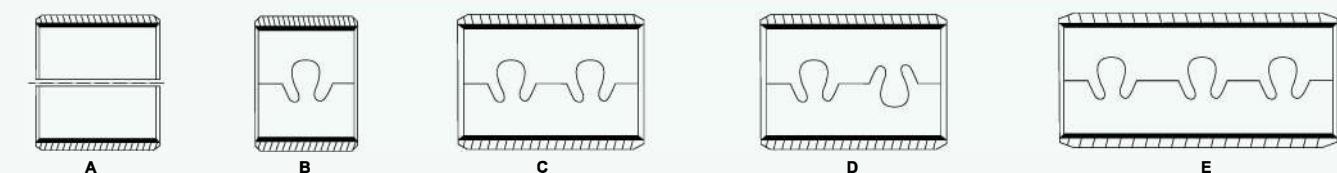
ZTOM 34 Bi-metallic Composite Bearings

It is made of high quality low-carbon steel, sintered and rolled with aluminum-tin alloy on its surface. It has medium fatigue strength, load capacity, good corrosion-resistance and super surface property. It is mainly applied to main shaft and con-rod shaft of internal combustion engine, pressure squeeze machine and cooling machine.

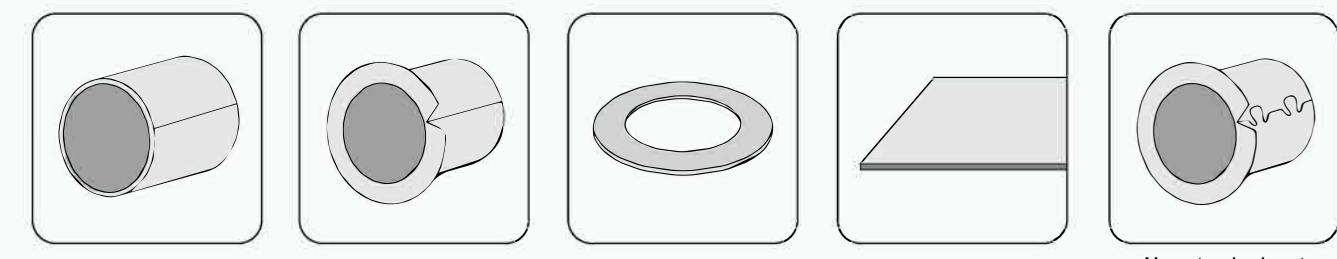
Grooves Type of bimetal bearing



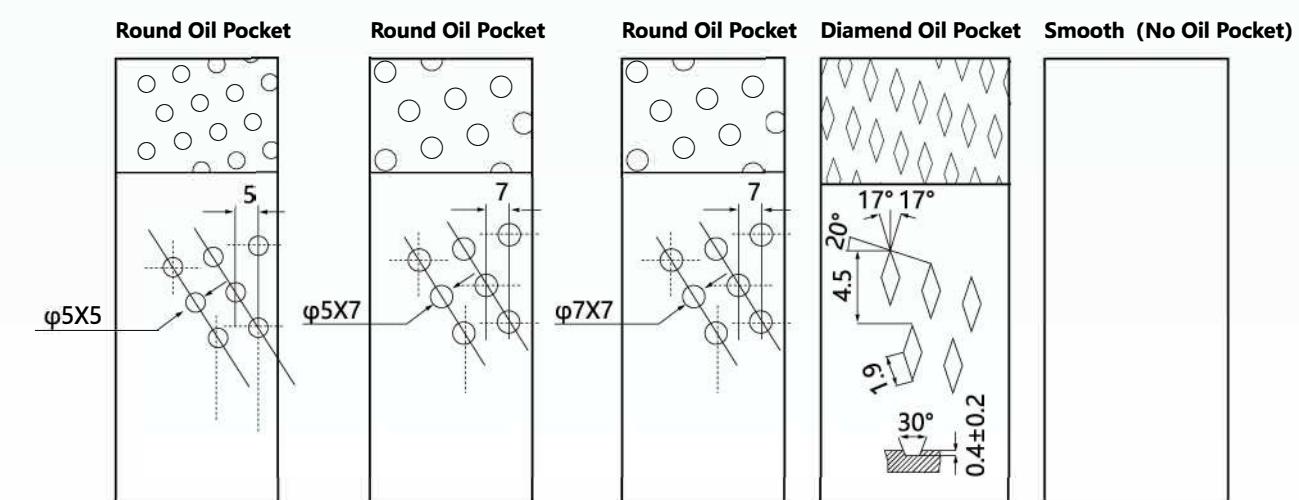
Clinch lock of bimetal bearing



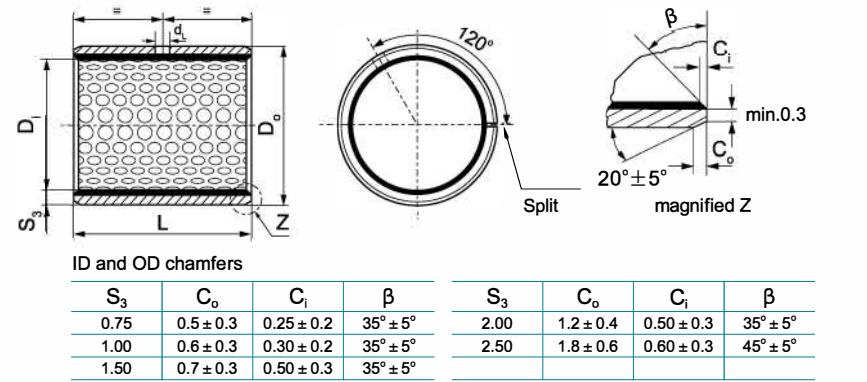
Availability



Parts types for oil pockets of bimetal bushing



Metric Standard Cylindrical Bearings Size



| D_i ϕd | D_o ϕD | ID and OD chamfers (h8) D_s | Housing (H7) D_H | ID after fixed $D_{i,a}$ | Clearance C_D | Wall thickness S_3 | Oil hole d_L | Length $^0_{-0.40}$ | | | | | | |
|-------------------|-------------------|--|--------------------------|--------------------------------|--------------------|----------------------------|-------------------|---------------------|------|------|------|------|----|----|
| | | | | | | | | 10 | 15 | 20 | 25 | 30 | 40 | 50 |
| 10 | 12 | 10 $_{-0.022}$ | 12 $^{+0.018}$ | +0.170 0.010 | 0.148 +0.010 | 0.995 0.935 | 4 | 1010 | 1015 | 1020 | | | | |
| 12 | 14 | 12 $_{-0.027}$ | 14 $^{+0.018}$ | | | | | 1210 | 1215 | 1220 | | | | |
| 14 | 16 | 14 $_{-0.027}$ | 16 $^{+0.018}$ | | | | | 1410 | 1415 | 1420 | | | | |
| 15 | 17 | 15 $_{-0.027}$ | 17 $^{+0.018}$ | | | | | 1510 | 1515 | 1520 | | | | |
| 16 | 18 | 16 $_{-0.027}$ | 18 $^{+0.018}$ | | | | | 1610 | 1615 | 1620 | | | | |
| 18 | 20 | 18 $_{-0.027}$ | 20 $^{+0.021}$ | | | | | 1810 | 1815 | 1820 | 1825 | | | |
| 20 | 23 | 20 $_{-0.033}$ | 23 $^{+0.021}$ | | | | | 2010 | 2015 | 2020 | 2025 | | | |
| 22 | 25 | 22 $_{-0.033}$ | 25 $^{+0.021}$ | | | | | 2210 | 2215 | 2220 | 2225 | | | |
| 24 | 27 | 24 $_{-0.033}$ | 27 $^{+0.021}$ | | | | | 2410 | 2415 | 2420 | 2425 | 2430 | | |
| 25 | 28 | 25 $_{-0.033}$ | 28 $^{+0.021}$ | | | | | 2515 | 2520 | 2525 | 2530 | | | |
| 26 | 30 | 26 $_{-0.033}$ | 30 $^{+0.021}$ | +0.181 0.040 | 0.214 0.040 | 1.490 1.430 | 6 | 2615 | 2620 | 2625 | 2630 | | | |
| 28 | 32 | 28 $_{-0.033}$ | 32 $^{+0.025}$ | 2815 | 2820 | | | 2825 | 2830 | 2840 | | | | |
| 30 | 34 | 30 $_{-0.033}$ | 34 $^{+0.025}$ | 3015 | 3020 | | | 3025 | 3030 | 3040 | | | | |
| 32 | 36 | 32 $_{-0.039}$ | 36 $^{+0.025}$ | 3215 | 3220 | | | 3225 | 3230 | 3240 | | | | |
| 35 | 39 | 35 $_{-0.039}$ | 39 $^{+0.025}$ | | 3520 | | | 3525 | 3530 | 3540 | 3550 | | | |
| 38 | 42 | 38 $_{-0.039}$ | 42 $^{+0.025}$ | | 3820 | | | 3825 | 3830 | 3840 | 3850 | | | |
| 40 | 44 | 40 $_{-0.039}$ | 44 $^{+0.025}$ | | 4020 | | | 4025 | 4030 | 4040 | 4050 | | | |

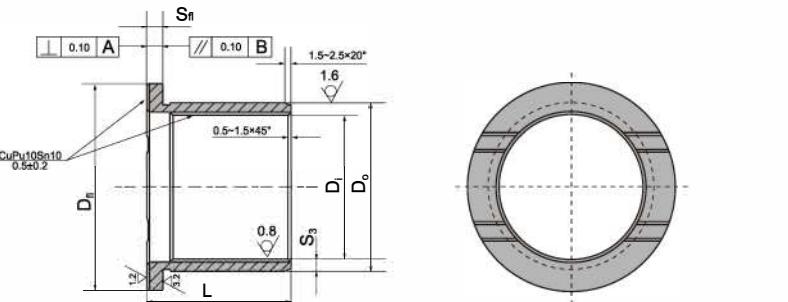
Metric Standard Cylindrical Bearings Size

Unit:mm

| D_i ϕd | D_o ϕD | ID and OD chamfers (h8) D_s | Housing (H7) D_H | ID after fixed $D_{i,a}$ | Clearance C_D | Wall thickness S_3 | Oil hole d_L | Length $^0_{-0.40}$ | | | | | | | | |
|-------------------|-------------------|--|--------------------------|--------------------------------|--------------------|----------------------------|-------------------|---------------------|------|------|------|-------|-------|-------|--------|-------|
| | | | | | | | | 25 | 30 | 40 | 50 | 60 | 80 | 90 | | |
| 45 | 50 | 45 $_{-0.039}$ | 50 | +0.025 +0.080 | +0.225 +0.080 | 0.264 0.080 | 8 | 4525 | 4530 | 4540 | 4550 | | | | | |
| 50 | 55 | 50 $_{-0.039}$ | 55 | | +0.030 | 0.269 0.080 | | | 5030 | 5040 | 5050 | 5060 | | | | |
| 55 | 60 | 55 $_{-0.046}$ | 60 | | +0.030 | +0.230 +0.080 | | | 5530 | 5540 | 5550 | 5560 | | | | |
| 60 | 65 | 60 $_{-0.046}$ | 65 | | +0.030 | | | | 6030 | 6040 | 6050 | 6060 | | | | |
| 65 | 70 | 65 $_{-0.046}$ | 70 | | +0.030 | | | | 6530 | 6540 | 6550 | 6560 | | | | |
| 70 | 75 | 70 $_{-0.046}$ | 75 | | +0.030 | | | | 7030 | 7040 | 7050 | 7060 | 7080 | | | |
| 75 | 80 | 75 $_{-0.046}$ | 80 | | +0.030 | | | | | 7530 | 7540 | 7550 | 7560 | | | |
| 80 | 85 | 80 $_{-0.046}$ | 85 | | +0.035 | +0.235 +0.080 | 9.5 | | | 8040 | 8050 | 8060 | 8080 | | | |
| 85 | 90 | 85 $_{-0.054}$ | 90 | | +0.035 | | | | | 8530 | | 8550 | 8560 | 8580 | | 85100 |
| 90 | 95 | 90 $_{-0.054}$ | 95 | | +0.035 | | | | | | 9050 | 9060 | 9080 | | 90100 | |
| 95 | 100 | 95 $_{-0.054}$ | 100 | | +0.035 | | | | | | | 9560 | 9580 | 9590 | 95100 | |
| 100 | 105 | 100 $_{-0.054}$ | 105 | | +0.035 | | | | | | | 10060 | 10080 | 10090 | 100100 | |
| 105 | 110 | 105 $_{-0.054}$ | 110 | | +0.035 | | | | | | | 10560 | 10580 | | 105100 | |
| 110 | 115 | 110 $_{-0.054}$ | 115 | | +0.035 | +0.240 +0.080 | 3.03 0.080 | | | | | 11060 | 11080 | | 110100 | |
| 115 | 120 | 115 $_{-0.054}$ | 120 | | +0.035 | | | | | | | 11550 | | 11580 | | |
| 120 | 125 | 120 $_{-0.054}$ | 125 | | +0.040 | | | | | | | 12050 | 12030 | | 120100 | |
| 125 | 130 | 125 $_{-0.063}$ | 130 | | +0.040 | | | | | | | | | | 125100 | |
| 130 | 135 | 130 $_{-0.063}$ | 135 | | +0.040 | | | | | | | 13060 | | | 130100 | |
| 135 | 140 | 135 $_{-0.063}$ | 140 | | +0.040 | | | | | | | 13560 | 13580 | | | |
| 140 | 145 | 140 $_{-0.063}$ | 145 | | +0.040 | +0.240 +0.080 | 3.03 0.080 | | | | | | | | | |

ZTOM30F

Metric Standard Welding Flanged Bearings Size



Unit:mm

| D _f | S _f | D _o | D _i | L | S ₃ |
|----------------|----------------|----------------|----------------|----|----------------|
| 42 | 3.5 | 37 | 30 | 30 | 3.5 |
| 43 | 2 | 34 | 30 | 28 | 2 |
| 44 | 3.5 | 39 | 32 | 35 | 3.5 |
| 47 | 3.5 | 39 | 32 | 50 | 3.5 |
| 48 | 2 | 39 | 35 | 37 | 2 |
| 52 | 3 | 41 | 35 | 35 | 3 |
| 55 | 3.5 | 42 | 35 | 35 | 3.5 |
| 55 | 3.5 | 45 | 38 | 35 | 3.5 |
| 55 | 3.5 | 45 | 38 | 40 | 3.5 |
| 60 | 3 | 41 | 35 | 42 | 3 |
| 60 | 3 | 46 | 40 | 62 | 3 |
| 63 | 3.5 | 47 | 40 | 40 | 3.5 |
| 65 | 3.5 | 52 | 45 | 40 | 3.5 |
| 68 | 3.5 | 54 | 47 | 35 | 3.5 |
| 70 | 3.5 | 54 | 47 | 40 | 3.5 |
| 70 | 3.5 | 57 | 50 | 48 | 3.5 |
| 72 | 3.5 | 57 | 50 | 45 | 3.5 |
| 72 | 3.5 | 57 | 50 | 50 | 3.5 |
| 75 | 3.5 | 57 | 50 | 50 | 3.5 |
| 77 | 3 | 60 | 54 | 55 | 3 |
| 83 | 3.5 | 66 | 59 | 53 | 3.5 |
| 85 | 3.5 | 65 | 58 | 60 | 3.5 |
| 87 | 3.5 | 67 | 60 | 53 | 3.5 |
| 87 | 3.5 | 67 | 60 | 60 | 3.5 |

| D _f | S _f | D _o | D _i | L | S ₃ |
|----------------|----------------|----------------|----------------|------|----------------|
| 87 | 3.5 | 67 | 60 | 65 | 3.5 |
| 87 | 4 | 68 | 60 | 60 | 4 |
| 94 | 3.5 | 72 | 65 | 60 | 3.5 |
| 87 | 3.5 | 72 | 65 | 65 | 3.5 |
| 87.5 | 1.95 | 69.12 | 65.22 | 64.5 | 2 |
| 88 | 3.5 | 67 | 60 | 60 | 3.5 |
| 88 | 3.5 | 72 | 65 | 65 | 3.5 |
| 92 | 3.5 | 77 | 70 | 67 | 3.5 |
| 93 | 3.5 | 75 | 68 | 60 | 3.5 |
| 94 | 3.5 | 77 | 70 | 70 | 3.5 |
| 95 | 3.5 | 77 | 70 | 65 | 3.5 |
| 95 | 4 | 78 | 70 | 70 | 4 |
| 97 | 3.48 | 77.14 | 70.18 | 62 | 3.5 |
| 97 | 3.5 | 82 | 75 | 74 | 3.5 |
| 100 | 5 | 85 | 75 | 70 | 5 |
| 103 | 3.525 | 70.8 | 63.75 | 73 | 3.5 |
| 105 | 3.5 | 82 | 75 | 75 | 3.5 |
| 105 | 3.5 | 87 | 80 | 70 | 3.5 |
| 107 | 4 | 83 | 75 | 74 | 4 |
| 115 | 5 | 100 | 90 | 75 | 5 |
| 128 | 3.8 | 92.6 | 85 | 103 | 4 |
| 108 | 3.5 | 72 | 65 | 75 | 3.5 |
| 108 | 3.5 | 77 | 70 | 98 | 3.5 |
| 108 | 5 | 80 | 70 | 90 | 5 |



ZTOM 90 (FB)

Bronze Wrapped Bearings with Oil Pockets



Product Brief

The bearings are made completely of bronze (CuSn8). The working surface is provided with diamond shape indentations all over its sliding surface. These indentations serve as lubricant reservoirs to build up a lubrication film at the start of movement and then reduce the running friction. They are intended to be lubricated with grease or oil.

Features

1. High load capacity
2. Insensitive to dirty environments
3. Resistant to corrosive conditions
4. High level thermal conductivity
5. Chemical resistance
6. Initial pre-lubrication at assembly required

Chemical Compositions

| Material | Cu% | Sn% | P% | Pb% | Zn% |
|----------|------|-----|-----|-----|-----|
| CuSn8 | 91.3 | 8.5 | 0.2 | / | / |

Tech. Data

| | | |
|-------------------------|-----------|---------------------------|
| Max. Load | Static | 120N/mm ² |
| | Low speed | 40N/mm ² |
| Max. speed(Lubrication) | | 2m/s |
| Max. PV | | 2.8N/mm ² ·m/s |
| Tensile strength | | 450N/mm ² |
| Hardness | | HB 110-150 |

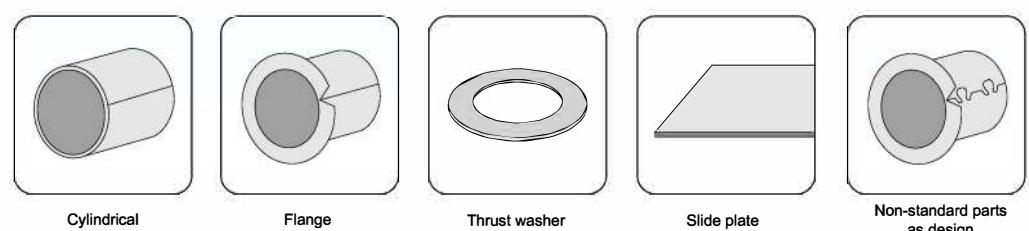
Bushes Tolerance

| I.D. | 10< d ≤ 18 | 18 < d ≤ 30 | 30 < d ≤ 50 | 50 < d ≤ 80 | 80 < d ≤ 120 | 120 < d ≤ 180 | 180 < d ≤ 250 | 250 < d ≤ 300 |
|------------------------|------------------|------------------|------------------|------------------|------------------|------------------|------------------|------------------|
| O.D tolerance | +0.065 +0.030 | +0.075 +0.035 | +0.085 +0.045 | +0.100 +0.055 | +0.120 +0.070 | +0.170 +0.100 | +0.210 +0.130 | +0.260 +0.170 |
| Installed I.D.H9 | +0.043 0 | +0.052 0 | +0.062 0 | +0.074 0 | +0.087 0 | +0.100 0 | +0.100 0 | +0.130 0 |
| Housing: H7, Shaft: d7 | | | | | | | | |

Typical Applications

Construction machinery, Hoisting equipment, Agricultural machinery, Forest machinery, Tractors, Machines tools, Mineral engines, Trucks

Availability



Cylindrical

Flange

Thrust washer

Slide plate

Non-standard parts as design

ZTOM 91

Bronze Wrapped Bearings with Graphite



Product Brief

The bearings are similar to ZTOM90, except there are solid lubricants embedded into the diamond shaped lubrication indents on the bearing surface, which provide good lubrication conditions at the start up stage, even with a lack of oil.

Features

1. Can work under dry/marginal lubrication for short period, lower friction factor at initial moving
2. High load capacity
3. Insensitive to dirty environments
4. Resistant to corrosive conditions
5. High level thermal conductivity
6. Chemical resistance
7. Initial pre-lubrication at assembly required

Chemical Compositions

| Material | Cu% | Sn% | P% | Pb% | Zn% |
|----------|------|-----|-----|-----|-----|
| CuSn8 | 91.3 | 8.5 | 0.2 | / | / |

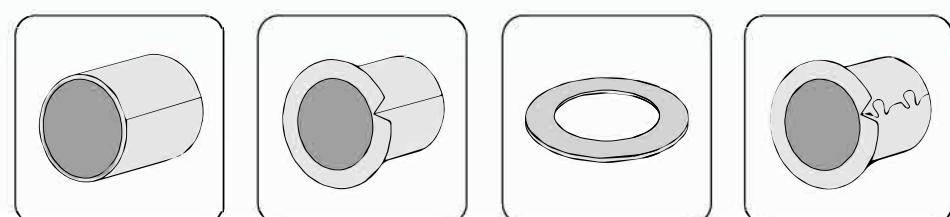
Tech. Data

| | | |
|-------------------------|-----------|---------------------------|
| Max. Load | Static | 120N/mm ² |
| | Low speed | 40N/mm ² |
| Max. speed(Lubrication) | | 2m/s |
| Max. PV | | 2.8N/mm ² ·m/s |
| Tensile strength | | 450N/mm ² |
| Hardness | | HB 110-150 |

Typical Applications

Construction machinery, Hoisting machines, Gear boxes, Automotive clutch parts, Mineral Engines, machines tools, automobiles, Trucks

Availability



Cylindrical

Flange

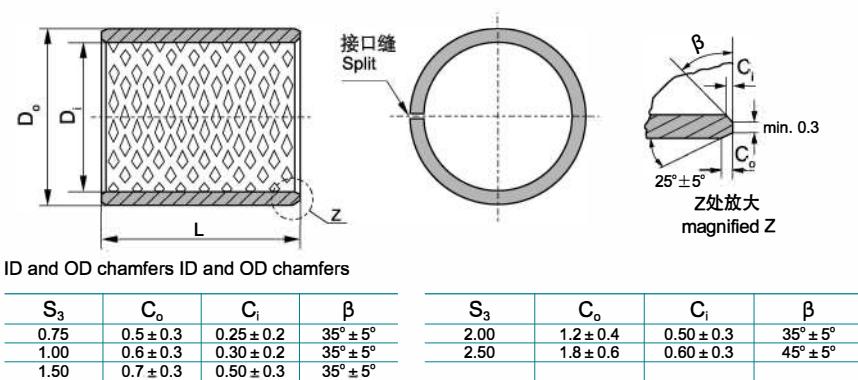
Thrust washer

Non-standard parts as design

* ZTOM91 supplied by customer ordering, the tolerance and size is according to ZTOM90 standard dimension.

ZTOM 90

Metric Standard Cylindrical Bearings Size



| D_i ϕd | D_o ϕD | Length $^0_{-0.40}$ | | | | | | | | | | | | |
|-------------------|-------------------|---------------------|------|------|------|------|------|------|------|------|------|------|------|------|
| | | 10 | 15 | 20 | 25 | 30 | 35 | 40 | 50 | 60 | 70 | 80 | 90 | 100 |
| 10 | 12 | 1010 | 1015 | 1020 | | | | | | | | | | |
| 12 | 14 | 1210 | 1215 | 1220 | | | | | | | | | | |
| 14 | 16 | 1410 | 1415 | 1420 | 1425 | | | | | | | | | |
| 15 | 17 | 1510 | 1515 | 1520 | 1525 | | | | | | | | | |
| 16 | 18 | 1610 | 1615 | 1620 | 1625 | | | | | | | | | |
| 18 | 20 | 1810 | 1815 | 1820 | 1825 | | | | | | | | | |
| 20 | 23 | 2010 | 2015 | 2020 | 2025 | | | | | | | | | |
| 22 | 25 | 2210 | 2215 | 2220 | 2225 | 2230 | | | | | | | | |
| 24 | 27 | | 2415 | 2420 | 2425 | 2430 | | | | | | | | |
| 25 | 28 | | 2515 | 2520 | 2525 | 2530 | | | | | | | | |
| 28 | 31 | | 2815 | 2820 | 2825 | 2830 | | | | | | | | |
| 30 | 34 | | 3015 | 3020 | 3025 | 3030 | 3035 | 3040 | | | | | | |
| 32 | 36 | | 3215 | 3220 | 3225 | 3230 | 3235 | 3240 | | | | | | |
| 35 | 39 | | 3515 | 3520 | 3525 | 3530 | 3535 | 3540 | | | | | | |
| 40 | 44 | | | 4020 | 4025 | 4030 | 4035 | 4040 | 4050 | | | | | |
| 45 | 50 | | | | 4520 | 4525 | 4530 | 4535 | 4540 | 4550 | | | | |
| 50 | 55 | | | | | 5020 | 5025 | 5030 | 5035 | 5040 | 5050 | 5060 | | |
| 55 | 60 | | | | | | 5520 | 5525 | 5530 | 5535 | 5540 | 5550 | 5560 | |
| 60 | 65 | | | | | | | 6025 | 6030 | 6035 | 6040 | 6050 | 6060 | 6070 |
| 65 | 70 | | | | | | | | 6530 | 6535 | 6540 | 6550 | 6560 | 6570 |
| 70 | 75 | | | | | | | | | 7030 | 7035 | 7040 | 7050 | 7060 |
| 75 | 80 | | | | | | | | | | 7530 | 7535 | 7540 | 7550 |
| 80 | 85 | | | | | | | | | | | 8030 | 8035 | 8040 |
| 85 | 90 | | | | | | | | | | | | 8530 | 8535 |
| 90 | 95 | | | | | | | | | | | | | 9030 |
| 95 | 100 | | | | | | | | | | | | | |

ZTOM 90

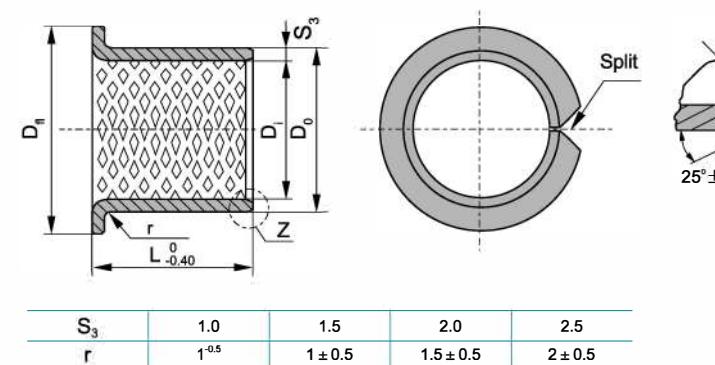
Metric Standard Cylindrical Bearings Size

Unit: mm

| D_i ϕd | D_o ϕD | Length $^0_{-0.40}$ | | | | | | | | | |
|-------------------|-------------------|---------------------|----|----|----|----|----|----|-------|-------|-------|
| | | 25 | 30 | 35 | 40 | 50 | 60 | 70 | 80 | 90 | 100 |
| 100 | 105 | | | | | | | | 10050 | 10060 | 10070 |
| 105 | 110 | | | | | | | | 10550 | 10560 | 10570 |
| 110 | 115 | | | | | | | | 11050 | 11060 | 11070 |
| 115 | 120 | | | | | | | | 11550 | 11560 | 11570 |
| 120 | 125 | | | | | | | | | 12060 | 12070 |
| 125 | 130 | | | | | | | | | 12560 | 12570 |
| 130 | 135 | | | | | | | | | 13060 | 13070 |
| 135 | 140 | | | | | | | | | 13560 | 13570 |
| 140 | 145 | | | | | | | | | 14060 | 14070 |
| 145 | 150 | | | | | | | | | 14560 | 14570 |
| 150 | 155 | | | | | | | | | 15060 | 15070 |
| 155 | 160 | | | | | | | | | 15560 | 15570 |
| 160 | 165 | | | | | | | | | 16060 | 16070 |
| 165 | 170 | | | | | | | | | 16560 | 16570 |
| 170 | 175 | | | | | | | | | 17060 | 17070 |
| 175 | 180 | | | | | | | | | 17560 | 17570 |
| 180 | 185 | | | | | | | | | 18060 | 18070 |
| 185 | 190 | | | | | | | | | 18560 | 18570 |
| 190 | 195 | | | | | | | | | 19060 | 19070 |
| 195 | 200 | | | | | | | | | 19560 | 19570 |
| 200 | 205 | | | | | | | | | 20060 | 20070 |
| 205 | 210 | | | | | | | | | 20560 | 20570 |
| 215 | 220 | | | | | | | | | 21560 | 21570 |
| 225 | 230 | | | | | | | | | 22560 | 22570 |
| 230 | 235 | | | | | | | | | 23060 | 23070 |
| 240 | 245 | | | | | | | | | 24060 | 24070 |
| 250 | 255 | | | | | | | | | 25060 | 25070 |
| 260 | 265 | | | | | | | | | 26060 | 26070 |
| 270 | 275 | | | | | | | | | 27060 | 27070 |
| 280 | 285 | | | | | | | | | 28060 | 28070 |
| 290 | 295 | | | | | | | | | 29060 | 29070 |
| 300 | 305 | | | | | | | | | 30060 | 30070 |

ZTOM 90F

Metric Standard Flanged Bearings Size



| S_3 | 1.0 | 1.5 | 2.0 | 2.5 |
|-------|------------|-------------|---------------|-------------|
| r | $1^{-0.5}$ | 1 ± 0.5 | 1.5 ± 0.5 | 2 ± 0.5 |

Unit: mm

| D_i ϕd | D_o ϕD | D_f | Length $^0_{-0.40}$ | | | | | | | | | | |
|-------------------|-------------------|-------|---------------------|-------|-------|-------|--------|--------|--------|--------|--------|----|----|
| | | | 15 | 20 | 25 | 30 | 35 | 40 | 50 | 60 | 70 | 80 | 90 |
| 25 | 28 | 35 | 25150 | 25200 | 25250 | | | | | | | | |
| 30 | 34 | 45 | | 30200 | 30250 | 30300 | | | | | | | |
| 35 | 39 | 50 | | 35200 | 35250 | 35300 | 35350 | | | | | | |
| 40 | 44 | 55 | | | 40250 | 40300 | 40350 | 40400 | | | | | |
| 45 | 50 | 60 | | | | 45300 | 45350 | 45400 | 45500 | | | | |
| 50 | 55 | 65 | | | | 50300 | 50350 | 50400 | 50500 | | | | |
| 55 | 60 | 70 | | | | 55300 | 55350 | 55400 | 55500 | | | | |
| 60 | 65 | 75 | | | | 60300 | 60350 | 60400 | 60500 | 60600 | | | |
| 65 | 70 | 80 | | | | 65300 | 65350 | 65400 | 65500 | 65600 | | | |
| 70 | 75 | 85 | | | | 70350 | 70400 | 70500 | 70600 | 70700 | | | |
| 75 | 80 | 90 | | | | 75350 | 75400 | 75500 | 75600 | 75700 | | | |
| 80 | 85 | 100 | | | | 80350 | 80400 | 80500 | 80600 | 80700 | 80800 | | |
| 90 | 95 | 110 | | | | | 90500 | 90600 | 90700 | 90800 | 90900 | | |
| 100 | 105 | 120 | | | | | 100500 | 100600 | 100700 | 100800 | 100900 | | |
| 110 | 115 | 130 | | | | | 110500 | 110600 | 110700 | 110800 | 110900 | | |
| 120 | 125 | 140 | | | | | 120500 | 120600 | 120700 | 120800 | 120900 | | |
| 130 | 135 | 155 | | | | | 130600 | 130700 | 130800 | 130900 | | | |
| 140 | 145 | 165 | | | | | 140600 | 140700 | 140800 | 140900 | | | |
| 150 | 155 | 180 | | | | | 150600 | 150700 | 150800 | 150900 | | | |
| 160 | 165 | 190 | | | | | 160600 | 160700 | 160800 | 160900 | | | |
| 170 | 175 | 200 | | | | | 170600 | 170700 | 170800 | 170900 | | | |
| 180 | 185 | 215 | | | | | 180600 | 180700 | 180800 | 180900 | | | |
| 190 | 195 | 225 | | | | | 190600 | 190700 | 190800 | 190900 | | | |
| 200 | 205 | 235 | | | | | 200600 | 200700 | 200800 | 200900 | | | |
| 225 | 230 | 260 | | | | | 225600 | 225700 | 225800 | 225900 | | | |
| 250 | 255 | 290 | | | | | 250600 | 250700 | 250800 | 250900 | | | |
| 265 | 270 | 305 | | | | | 265600 | 265700 | 265800 | 265900 | | | |
| 285 | 290 | 325 | | | | | 285600 | 285700 | 285800 | 285900 | | | |
| 300 | 305 | 340 | | | | | 300600 | 300700 | 300800 | 300900 | | | |

ZTOM 92

Bronze Wrapped Bearings with Holes



Product Brief

The bearings are similar to ZTOM90, except there are holes, which are dispersed in a special way over the whole bearing surface. These holes serve as lubricant reservoirs to rapidly build up a lubrication film at the start of movement and thereafter reduce the running friction.

Features

1. Suitable for high load and slow movement occur
2. Extended service life and lubrication intervals than ZTOM90 bearing
3. High load capacity
4. Insensitive to dirty environments
5. Resistant to corrosive conditions
6. High level thermal conductivity
7. Collection of dust and rub off particles in the holes
8. Initial pre-lubrication at assembly required

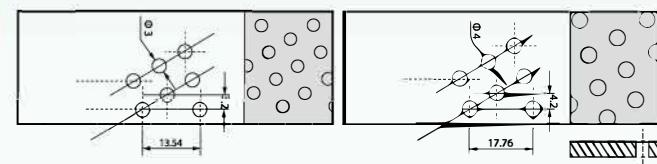
Chemical Compositions

| Material | Cu% | Sn% | P% | Pb% | Zn% |
|----------|------|-----|-----|-----|-----|
| CuSn8 | 91.3 | 8.5 | 0.2 | / | / |

Tech. Data

| Max. Load | Static | 120N/mm ² |
|-------------------------|-----------|---------------------------|
| | Low speed | 40N/mm ² |
| Max. speed(Lubrication) | | 2m/s |
| Max. PV | | 2.8N/mm ² ·m/s |
| Tensile strength | | 450N/mm ² |
| Hardness | | HB 110-150 |

Oil Pocket Type



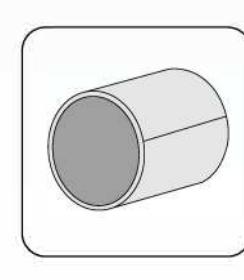
Bearings Tolerance

| I.D. | 10< d ≤ 18 | 18< d ≤ 30 | 30< d ≤ 50 | 50< d ≤ 80 | 80< d ≤ 120 | 120< d ≤ 180 | 180< d ≤ 250 | 250< d ≤ 300 |
|---------------------|------------------|------------------|------------------|------------------|------------------|------------------|------------------|------------------|
| O.D tolerance | +0.065 +0.030 | +0.075 +0.035 | +0.085 +0.045 | +0.100 +0.055 | +0.120 +0.070 | +0.170 +0.100 | +0.210 +0.130 | +0.260 +0.170 |
| Installed I.D.H9 | +0.043 0 | +0.052 0 | +0.062 0 | +0.074 0 | +0.087 0 | +0.100 0 | +0.100 0 | +0.130 0 |

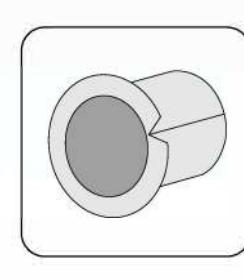
Housing: H7, Shaft: d7

Typical Applications

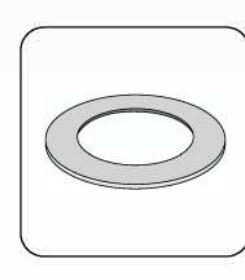
Construction machinery, Hoisting machines, Automotive, Mineral Engines, Machines tools, Automobiles, Truck.



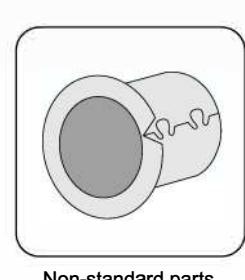
Cylindrical



Flange



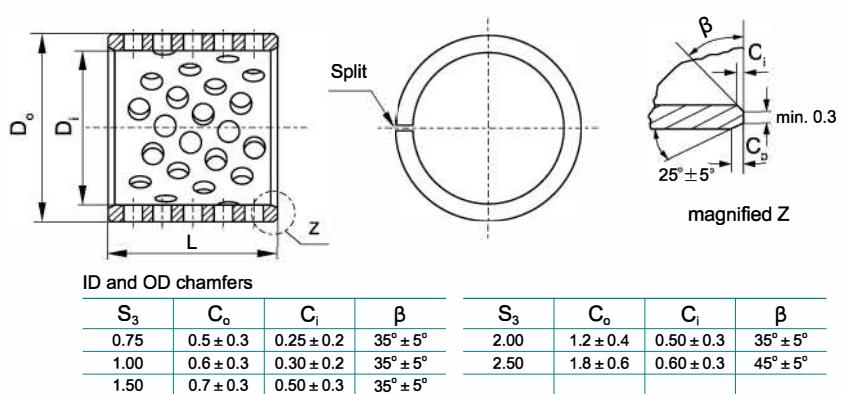
Thrust washer



Non-standard parts
as design

ZTOM 92

Metric Standard Cylindrical Bearings Size



| D_i ϕd | D_o ϕD | Length $^0_{-0.40}$ | | | | | | | | | | | | |
|-------------------|-------------------|---------------------|------|------|------|------|------|------|------|------|------|------|------|-------|
| | | 10 | 15 | 20 | 25 | 30 | 35 | 40 | 50 | 60 | 70 | 80 | 90 | 100 |
| 10 | 12 | 1010 | 1015 | 1020 | | | | | | | | | | |
| 12 | 14 | 1210 | 1215 | 1220 | | | | | | | | | | |
| 14 | 16 | 1410 | 1415 | 1420 | 1425 | | | | | | | | | |
| 15 | 17 | 1510 | 1515 | 1520 | 1525 | | | | | | | | | |
| 16 | 18 | 1610 | 1615 | 1620 | 1625 | | | | | | | | | |
| 18 | 20 | 1810 | 1815 | 1820 | 1825 | | | | | | | | | |
| 20 | 23 | 2010 | 2015 | 2020 | 2025 | | | | | | | | | |
| 22 | 25 | 2210 | 2215 | 2220 | 2225 | 2230 | | | | | | | | |
| 24 | 27 | | 2415 | 2420 | 2425 | 2430 | | | | | | | | |
| 25 | 28 | | 2515 | 2520 | 2525 | 2530 | | | | | | | | |
| 28 | 31 | | 2815 | 2820 | 2825 | 2830 | | | | | | | | |
| 30 | 34 | | 3015 | 3020 | 3025 | 3030 | 3035 | 3040 | | | | | | |
| 32 | 36 | | 3215 | 3220 | 3225 | 3230 | 3235 | 3240 | | | | | | |
| 35 | 39 | | 3515 | 3520 | 3525 | 3530 | 3535 | 3540 | | | | | | |
| 40 | 44 | | | 4020 | 4025 | 4030 | 4035 | 4040 | 4050 | | | | | |
| 45 | 50 | | | 4520 | 4525 | 4530 | 4535 | 4540 | 4550 | | | | | |
| 50 | 55 | | | 5020 | 5025 | 5030 | 5035 | 5040 | 5050 | 5060 | | | | |
| 55 | 60 | | | 5520 | 5525 | 5530 | 5535 | 5540 | 5550 | 5560 | | | | |
| 60 | 65 | | | | 6025 | 6030 | 6035 | 6040 | 6050 | 6060 | 6070 | | | |
| 65 | 70 | | | | | 6530 | 6535 | 6540 | 6550 | 6560 | 6570 | | | |
| 70 | 75 | | | | | 7030 | 7035 | 7040 | 7050 | 7060 | 7070 | 7080 | | |
| 75 | 80 | | | | | 7530 | 7535 | 7540 | 7550 | 7560 | 7570 | 7580 | | |
| 80 | 85 | | | | | 8030 | 8035 | 8040 | 8050 | 8060 | 8070 | 8080 | | |
| 85 | 90 | | | | | 8530 | 8535 | 8540 | 8550 | 8560 | 8570 | 8580 | 8590 | |
| 90 | 95 | | | | | 9030 | 9035 | 9040 | 9050 | 9060 | 9070 | 9080 | 9090 | |
| 95 | 100 | | | | | | | 9540 | 9550 | 9560 | 9570 | 9580 | 9590 | 95100 |

ZTOM 92

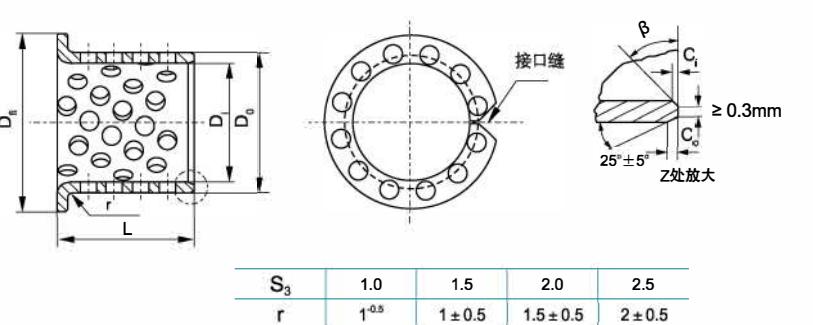
Metric Standard Cylindrical Bearings Size

Unit:mm

| D_i ϕd | D_o ϕD | Length $^0_{-0.40}$ | | | | | | | | | |
|-------------------|-------------------|---------------------|----|----|----|----|----|----|-------|-------|-------|
| | | 25 | 30 | 35 | 40 | 50 | 60 | 70 | 80 | 90 | 100 |
| 100 | 105 | | | | | | | | 10050 | 10060 | 10070 |
| 105 | 110 | | | | | | | | 10550 | 10560 | 10570 |
| 110 | 115 | | | | | | | | 11050 | 11060 | 11070 |
| 115 | 120 | | | | | | | | 11550 | 11560 | 11570 |
| 120 | 125 | | | | | | | | | 12060 | 12070 |
| 125 | 130 | | | | | | | | | 12560 | 12570 |
| 130 | 135 | | | | | | | | | 13060 | 13070 |
| 135 | 140 | | | | | | | | | 13560 | 13570 |
| 140 | 145 | | | | | | | | | 14060 | 14070 |
| 145 | 150 | | | | | | | | | 14560 | 14570 |
| 150 | 155 | | | | | | | | | 15060 | 15070 |
| 155 | 160 | | | | | | | | | 15560 | 15570 |
| 160 | 165 | | | | | | | | | 16060 | 16070 |
| 165 | 170 | | | | | | | | | 16560 | 16570 |
| 170 | 175 | | | | | | | | | 17060 | 17070 |
| 175 | 180 | | | | | | | | | 17560 | 17570 |
| 180 | 185 | | | | | | | | | 18060 | 18070 |
| 185 | 190 | | | | | | | | | 18560 | 18570 |
| 190 | 195 | | | | | | | | | 19060 | 19070 |
| 195 | 200 | | | | | | | | | 19560 | 19570 |
| 200 | 205 | | | | | | | | | 20060 | 20070 |
| 205 | 210 | | | | | | | | | 20560 | 20570 |
| 215 | 220 | | | | | | | | | 21560 | 21570 |
| 225 | 230 | | | | | | | | | 22560 | 22570 |
| 230 | 235 | | | | | | | | | 23060 | 23070 |
| 240 | 245 | | | | | | | | | 24060 | 24070 |
| 250 | 255 | | | | | | | | | 25060 | 25070 |
| 260 | 265 | | | | | | | | | 26060 | 26070 |
| 270 | 275 | | | | | | | | | 27060 | 27070 |
| 280 | 285 | | | | | | | | | 28060 | 28070 |
| 290 | 295 | | | | | | | | | 29060 | 29070 |
| 300 | 305 | | | | | | | | | 30060 | 30070 |

ZTOM 92F

Metric Standard Flange Bearings Size



Unit:mm

| D_i ϕd | D_o ϕD | D_f | Length $^0_{-0.40}$ | | | | | | | | | | |
|-------------------|-------------------|-------|---------------------|-------|-------|--------|--------|--------|--------|--------|----|----|----|
| | | | 15 | 20 | 25 | 30 | 35 | 40 | 50 | 60 | 70 | 80 | 90 |
| 25 | 28 | 35 | 25150 | 25200 | 25250 | | | | | | | | |
| 30 | 34 | 42 | | 30200 | 30250 | 30300 | | | | | | | |
| 35 | 39 | 47 | | 35200 | 35250 | 35300 | 35350 | | | | | | |
| 40 | 44 | 53 | | 40250 | 40300 | 40350 | 40400 | | | | | | |
| 45 | 50 | 60 | | | 45300 | 45350 | 45400 | 45500 | | | | | |
| 50 | 55 | 65 | | | 50300 | 50350 | 50400 | 50500 | | | | | |
| 55 | 60 | 70 | | | 55300 | 55350 | 55400 | 55500 | | | | | |
| 60 | 65 | 75 | | | 60300 | 60350 | 60400 | 60500 | 60600 | | | | |
| 65 | 70 | 80 | | | 65300 | 65350 | 65400 | 65500 | 65600 | | | | |
| 70 | 75 | 85 | | | 70350 | 70400 | 70500 | 70600 | 70700 | | | | |
| 75 | 80 | 90 | | | 75350 | 75400 | 75500 | 75600 | 75700 | | | | |
| 80 | 85 | 95 | | | 80350 | 80400 | 80500 | 80600 | 80700 | 80800 | | | |
| 90 | 95 | 105 | | | | 90500 | 90600 | 90700 | 90800 | 90900 | | | |
| 100 | 105 | 115 | | | | 100500 | 100600 | 100700 | 100800 | 100900 | | | |
| 110 | 115 | 125 | | | | 110500 | 110600 | 110700 | 110800 | 110900 | | | |
| 120 | 125 | 135 | | | | 120500 | 120600 | 120700 | 120800 | 120900 | | | |
| 130 | 135 | 145 | | | | | 130600 | 130700 | 130800 | 130900 | | | |
| 140 | 145 | 155 | | | | | 140600 | 140600 | 140800 | 140900 | | | |
| 150 | 155 | 165 | | | | | 150600 | 150700 | 150800 | 150900 | | | |
| 160 | 165 | 175 | | | | | 160600 | 160700 | 160800 | 160900 | | | |
| 170 | 175 | 185 | | | | | 170600 | 170700 | 170800 | 170900 | | | |
| 180 | 185 | 195 | | | | | 180600 | 180700 | 180800 | 180900 | | | |
| 190 | 195 | 205 | | | | | 190600 | 190700 | 190800 | 190900 | | | |
| 200 | 205 | 215 | | | | | 200600 | 200700 | 200800 | 200900 | | | |
| 225 | 230 | 240 | | | | | 225600 | 225700 | 225800 | 225900 | | | |
| 250 | 255 | 265 | | | | | 250600 | 250700 | 250800 | 250900 | | | |
| 265 | 270 | 280 | | | | | 265600 | 265700 | 265800 | 265900 | | | |
| 285 | 290 | 300 | | | | | 285600 | 285700 | 285800 | 285900 | | | |
| 300 | 305 | 315 | | | | | 300600 | 300700 | 300800 | 300900 | | | |



ZTOM 50(JDB)

Solid-lubricant-inlaid Bearings



Product Brief

ZTOM50 is made of strong cast bronze based metal with solid lubricants embedded. The base metal withstands high load and the solid lubricants provide self-lubrication. The strengthening brass backing has pretty good anti-erosion ability in air, fresh water and seawater. The surface is regularly and finely machined with sockets in which particular solid lubricant is filled.

Features

1. Maintenance free, particularly appropriate for high load and low speed
2. Suitable for reciprocating, oscillation, or intermittent motion where oil film is hard to be formed.
3. Good Chemical resistant and anti-corrosion characteristics.
4. Lower friction and good anti-wear ability.

Chemical Compositions

| Product NO. | Chemical Compositions | | | | | | | | | |
|-----------------|-----------------------|-------|---------|---------|---------|------|------|------|------|--|
| | Cu | Zn | Al | Fe | Mn | Si | Ni | Sn | Pb | |
| CuZn25Al6Mn4Fe3 | Remainder | 22~28 | 5.0~7.5 | 2.0~4.0 | 2.5~5.0 | <0.1 | <0.5 | <0.2 | <0.2 | |

Physical and Mechanical Performance

| | | | | | |
|------------------------------|-----------------------|---------|-------------------------|--------------------|---------|
| Density | g/cm ³ | 8.0 | Hardness | ≥HB | 210 |
| Linear Expansion Coefficient | 10 ⁻⁵ /° C | 1.6~2.0 | Flexibility Coefficient | KN/mm ² | 100~140 |
| Heat-conducting Coefficient | W/(m.k) | 38~55 | Tensility | ≥% | 12 |
| Tensile Strength | ≥N/mm ² | 755 | Friction | Oil Lubrication | 0.03 |
| Anti-compact Tenacity | ≥KJ/m ³ | 400~500 | | Dry Friction | μ |

Application Condition Limits

| Lubrication Conditions | | Non-lubrication | Periodical Lubrication | Consecutive Lubrication |
|----------------------------|------------------------|-----------------|------------------------|-------------------------|
| Working Temperature Limits | ° C | -40~+300 | -40~+150 | -40~+150 |
| Max Losd Pressure | N/mm ² | 100 | 100 | 100 |
| Max Linear Velocity | m/s | 0.50 | 1.00 | 1.50 |
| Max PV Value | N/mm ² .m/s | 1.65 | 3.25 | 3.25 |

Typical Applications

- Automotive products line
- Plastic industries
- Mineral machines
- Hydraulic turbines
- Injection molding machines
- Consecutive casting and rolling machines
- Mine-exploiting equipments
- Ships
- Steam engine
- Turbo generators
- Bridge oilless bearing
- Conveyors
- Wood handing machines
- Cranes
- Packing machines
- Port machines
- Construction machine

ZTOM 50(JDB)

Solid-lubricant-inlaid Bearings



ZTOM 51 Solid-lubricant-inlaid Bearings

It is backed with tin-bronze. The surface is regularly and finely machined with sockets in which particular solid lubricant is filled. It is mainly applied on the anti-abrasion and anti-erosion parts, which work in conditions with heavier load and mediate running velocity. Applications covered are light industrial machines, machine tools, moving belt in the drying machine, door of the fireplace, etc.



ZTOM 52 Steel Shell Cast Bronze Bearing with Graphite

Steel shell with cast bronze bearing material liner with specially formulated solid lubricants embedded into the holes in the liner material. It achieves an integral metallurgical structure between bronze and steel with an increased carrying capacity while the material cost is reduced. The solid lubricant can reduce the coefficient of friction. It is particularly good for low-speed and high load applications, where external lubrication is not practical. Applications covered are successive casing machinery, mineral machinery, injection molding machinery, dock machinery, etc.



ZTOM 53 Steel Bearing with Graphite

This material provides a maintenance-free design solution, particularly for high load, intermittent or oscillating motion with lower speed and excellent wear resistance required. It has stronger anti-pressure ability so they can be applied on the pro-up positions on auto molds, excavators and other similar conditions. As steel backing, so it is not suitable to water acid or alkali working conditions.

| Standard No. | Base material | Linear expansion coef. | Temp. range ° C | Hardness | Max. Load |
|--------------|---------------|-----------------------------|-----------------|----------|----------------------|
| ZTOM 53A | S45C | 1.1 × 10 ⁻⁵ /° C | -100~+300 | HRC≥40 | 100N/mm ² |
| ZTOM 53B | GCr15 | 1.1 × 10 ⁻⁵ /° C | -100~+300 | HRC≥50 | 200N/mm ² |



ZTOM 54 Cast Iron Bearing with Graphite

It is made of cast iron based metal with special lubricants embedded. The base metal withstands high load and the solid lubricants provide for self-lubrication. The bearing shows excellent performance without pre-lubrication under conditions of extreme high or low temperature with low speed. Applications covered are automotive production equipments, moulds & dies, plastic machinery industry etc.



ZTOM 55 Solid-lubricant-inlaid Bearings

It is backed with aluminum-bronze alloy(CuAl10Fe3) with good capability of mechanics, castings and anti-erosion. The surface is regularly and finely machined with sockets in which particular solid lubricant is filled. The product is widely used in conditions with medium load but higher temperature and condition with medium running velocity.

ZTOM 50(JDB)

Solid-lubricant-inlaid Bearings

Tech. data

| Type | ZTOM—50 | ZTOM—51 | ZTOM—52 | ZTOM—53 | ZTOM—54 | ZTOM—55 |
|----------------------|---|---|---|--|---|---|
| Item |  |  |  |  |  |  |
| Material | CuZn25Al6Mn4Fe3 | CuSn6Zn6Pb3 | Steel+CuSn6Zn6Pb3 | GCr-15 | HT250 | CuAl10Fe3 |
| Density | 8.3 | 8.9 | 8.9 | 7.8 | 7.8 | 8.1 |
| HB Hardness | 220~260HB | 80~100HB | 60~90HB | HRC55~60 | 190~230HB | 160~180HB |
| Max. Temp. | 300°C | 350°C | 300°C | 350°C | 400°C | 400°C |
| Max. Load | 100N/mm² | 60N/mm² | 70N/mm² | 250N/mm² | 60N/mm² | 50N/mm² |
| | 22N/mm² | 15N/mm² | 25N/mm² | 70N/mm² | 15N/mm² | 20N/mm² |
| Max. Speed | Dry 0.4m/s Oil 1m/s | 2m/s | 2m/s | 0.1m/s | 0.5m/s | 1m/s |
| Friction Coefficient | < 0.16 μ | < 0.15 μ | < 0.15 μ | < 0.17 μ | < 0.18 μ | < 0.16 μ |
| Max PV Dry | 1.8N/mm²·m/s | 0.5N/mm²·m/s | 0.6N/mm²·m/s | 2.5N/mm²·m/s | 0.8N/mm²·m/s | 1.25N/mm²·m/s |
| Max PV Lubrication | 3.8N/mm²·m/s | 3.8N/mm²·m/s | 3.8N/mm²·m/s | 3.8N/mm²·m/s | 3.8N/mm²·m/s | 2.45N/mm²·m/s |

Wear Performance (Compared with Traditional bronze bearing)

| Load Applied | | 62N/mm² | | 24.5N/mm² | | 14.7N/mm² | |
|--|-------------|------------|---------|------------|---------|------------|---------|
| Item | | Wear depth | | Wear depth | | Wear depth | |
| Type | Lubrication | (mm) | (hrs) | (mm) | (hrs) | (mm) | (hrs) |
| Traditional bronze bearing CuSn6Zn6Pb3 | oil | 0.098 | 10 | 0.125 | 100 | 0.10 | 100 |
| ZTOM50 | dry | 0.075 | 100 | 0.015 | 100 | 0.012 | 100 |
| ZTOM51 | dry | 0.025 | 30 | 0.065 | 100 | 0.025 | 100 |
| ZTOM52 | dry | 0.03 | 30 | 0.12 | 100 | 0.015 | 100 |
| ZTOM53 | dry | 0.022 | 10 | 0.013 | 100 | 0.01 | 100 |
| ZTOM54 | dry | 0.03 | 10 | 0.25 | 20 | 0.011 | 100 |
| ZTOM55 | dry | 0.055 | 80 | 0.035 | 100 | 0.018 | 100 |

Typical Application Examples



Excavating machinery



Wind power



Agricultural machine

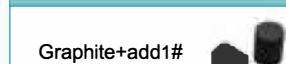


Port machinery

Alloy International Code

| Chinese Code GB1776-87 | International Counterparts | | | | Applications |
|---------------------------|----------------------------|-----------------|------------------|-------------------------------|--|
| | International ISO 1338 | Japan JIS | USA ASTM(UNS) | German DIN | |
| CuZn25Al6FeMn3 | CuZn25Al6FeMn3 | H5102 CAC304 | B30-92 C86300 | DIN1709 G-CuZn25A/2.0598 | High-load, low speed, general use |
| CuZn25Al6FeMn3 | CuZn25Al6FeMn3 | H3102 CAC304 | B30-92 C86300 | DIN1709 G-CuZn25A/2.0598 | Super high load, low-speed, high duty |
| CuSn6Pb6Zn3 | QSn6-6-3 | H5111 CAC406 | B92-92 C83600 | DIN1705 G-Cu6ZnPb/2.1096 | Medium load, medium-speed |
| CuSn5Pb5Zn5 | QSn5-5-5 | H5111 CAC406 | B92-92 C83600 | DIN1705 G-Cu5ZnPb/2.1096 | Medium load, medium-speed |
| GCr-15 | - | SUJ2 | 52100 | 100Cr6 | High-load, high-speed |
| HT250 | - | FC250 | Class40 | - | Low-load, low-speed |
| CuAl10Fe3 | CuAl10Fe3 | H5114 CAC703 | B30-92 C95500 | DIN17656 G-CuAl10Ni/2.1096 | Medium load, medium-speed, general use |

Solid Lubricants

| Solid Lubricant | Features | Typical application |
|--|---|--|
| Graphite+add1#  | Excellent resistance against chemical attacks and low friction. Temp limit 400° C | Suitable for general machines and under atmosphere |
| PTFE+add2#  | Lowest in friction and good of water lubrication, Temp. limit 300° C | Suitable for ship, hydraulic turbine, gas turbine etc. |



Logistic machinery



Injection molding machine



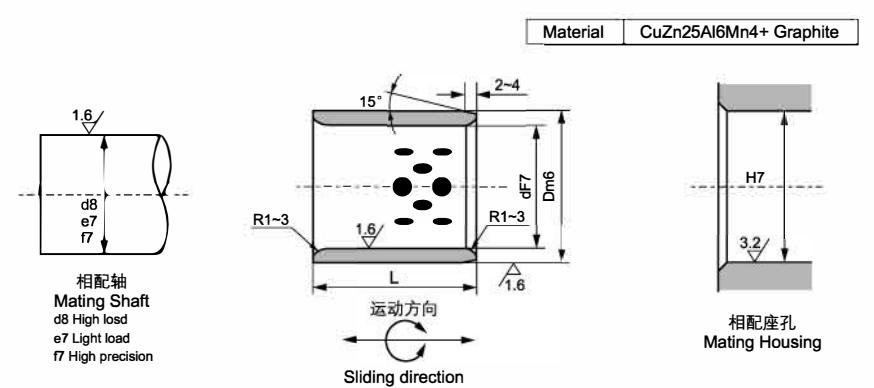
Truck



Hydropower Engineering

ZTOM 50(JDB)

Metric Standard Cylindrical Bearings Size



| ID F7 φ d | | OD m6 φ D | | Length -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 | 081208 | 081210 | 081212 | 081215 | | | | | | | | | | | |
| 10 | | | | 101408 | 101410 | 101412 | 101415 | 101416 | 101420 | | | | | | | | | |
| 12 | +0.034 +0.016 | 18 | +0.021 +0.008 | 121810 | 121812 | 121815 | 121816 | 121820 | 121825 | 121830 | | | | | | | | |
| 13 | | | | 131910 | 131912 | 131915 | 131916 | 131920 | 131925 | 131930 | | | | | | | | |
| 14 | +0.041 +0.020 | 20 | +0.025 +0.009 | 142010 | 142012 | 142015 | 142016 | 142020 | 142025 | 142030 | | | | | | | | |
| 15 | | | | 152110 | 152112 | 152115 | 152116 | 152120 | 152125 | 152130 | 152135 | | | | | | | |
| 16 | +0.050 +0.025 | 22 | +0.021 +0.008 | 162210 | 162212 | 162215 | 162216 | 162220 | 162225 | 162230 | 162235 | 162240 | | | | | | |
| 18 | | | | 182410 | 182412 | 182415 | 182416 | 182420 | 182425 | 182430 | 182435 | 182440 | | | | | | |
| 20 | +0.041 +0.020 | 28 | +0.025 +0.009 | 202810 | 202812 | 202815 | 202816 | 202820 | 202825 | 202830 | 202835 | 202840 | 202850 | | | | | |
| 22 | | | | 223212 | 223215 | 223216 | 223220 | 223225 | 223230 | 223235 | 223240 | 223250 | | | | | | |
| 25 | +0.050 +0.025 | 33 | +0.025 +0.009 | | | 253312 | 253315 | 253316 | 253320 | 253325 | 253330 | 253335 | 253340 | 253350 | 253360 | | | |
| 30 | | | | | | 303812 | 303815 | 303816 | 303820 | 303825 | 303830 | 303835 | 303840 | 303850 | 303860 | | | |
| 35 | +0.050 +0.025 | 45 | +0.025 +0.009 | | | | | | 354520 | 354525 | 354530 | 354535 | 354540 | 354550 | 354560 | 354570 | | |
| 40 | | | | | | | | | 405020 | 405025 | 405030 | 405035 | 405040 | 405050 | 405060 | 405070 | 405080 | |
| 45 | +0.050 +0.025 | 55 | +0.025 +0.009 | | | | | | | 455530 | 455535 | 455540 | 455550 | 455560 | 455570 | 455580 | | |
| 50 | | | | | | | | | | 506030 | 506035 | 506040 | 506050 | 506060 | 506070 | 506080 | | |

ZTOM 50(JDB)

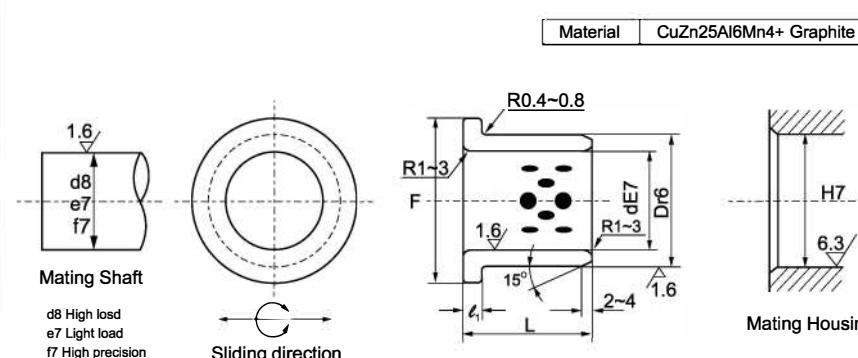
Metric Standard Cylindrical Bearings Size

Unit: mm

| ID F7 φ d | OD m6 φ D | Length -0.10 -0.30 | | | | | | | | | | | |
|--------------|------------------|-----------------------|----|----|----|----|----|----|-----|-----|-----|-----|-----|
| | | 30 | 35 | 40 | 50 | 60 | 70 | 80 | 100 | 120 | 130 | 140 | 150 |
| 50 | +0.050 +0.025 | 62 | | | | | | | | | | | |
| 50 | +0.050 +0.025 | 65 | | | | | | | | | | | |
| 55 | +0.030 +0.011 | 70 | | | | | | | | | | | |
| 60 | +0.030 +0.011 | 75 | | | | | | | | | | | |
| 60 | +0.030 +0.011 | 75 | | | | | | | | | | | |
| 63 | +0.035 +0.013 | 80 | | | | | | | | | | | |
| 65 | +0.035 +0.013 | 85 | | | | | | | | | | | |
| 70 | +0.060 +0.030 | 90 | | | | | | | | | | | |
| 75 | +0.035 +0.013 | 90 | | | | | | | | | | | |
| 75 | +0.035 +0.013 | 95 | | | | | | | | | | | |
| 80 | +0.035 +0.013 | 96 | | | | | | | | | | | |
| 80 | +0.035 +0.013 | 100 | | | | | | | | | | | |
| 90 | +0.071 +0.036 | 110 | | | | | | | | | | | |
| 100 | +0.071 +0.036 | 120 | | | | | | | | | | | |
| 110 | +0.071 +0.036 | 130 | | | | | | | | | | | |
| 120 | +0.071 +0.036 | 140 | | | | | | | | | | | |
| 125 | +0.040 +0.015 | 145 | | | | | | | | | | | |
| 130 | +0.040 +0.015 | 150 | | | | | | | | | | | |
| 140 | +0.063 +0.043 | 160 | | | | | | | | | | | |
| 150 | +0.063 +0.043 | 170 | | | | | | | | | | | |
| 160 | +0.063 +0.043 | 180 | | | | | | | | | | | |

ZTOM 50F(JFB)

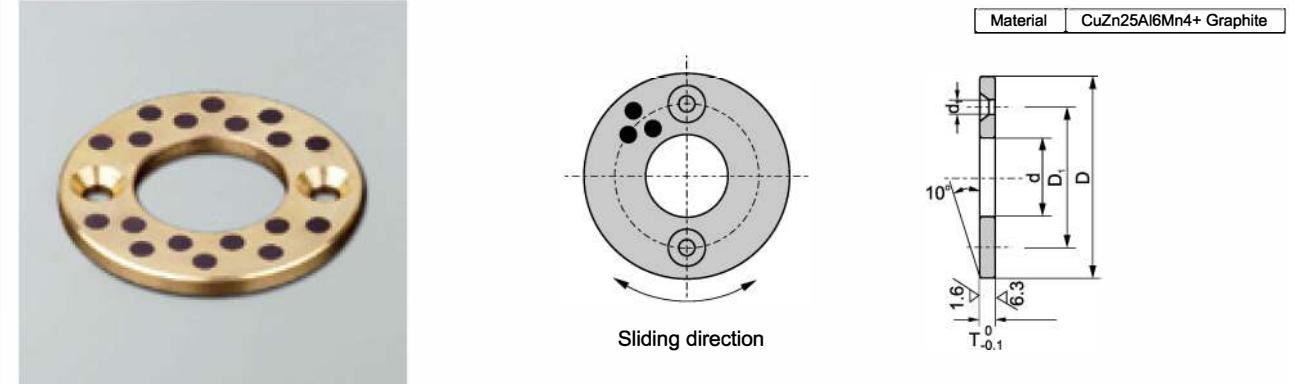
Metric Standard Flanged Bearings Size



| ID E7 φ d | | OD r6 φ D | | Flange | | Length ^{-0.10} _{-0.30} | | | | | | | | | |
|--------------|------------------|--------------|------------------|--------|-------------------|--|-------|-------|-------|-------|-------|--------|---------|--------|-----|
| | | | | F | ℓ_1 -0.10 | 15 | 20 | 25 | 30 | 35 | 40 | 50 | 60 | 80 | 100 |
| 10 | +0.040 +0.025 | 14 | +0.034 +0.023 | 22 | 2 | 1015F | 1020F | | | | | | | | |
| 12 | | 18 | | 25 | | 1215F | 1220F | | | | | | | | |
| 13 | | 19 | | 26 | | 1315F | 1320F | | | | | | | | |
| 14 | +0.050 +0.032 | 20 | | 27 | | 1415F | 1420F | | | | | | | | |
| 15 | | 21 | +0.041 +0.028 | 28 | | 1515F | 1520F | 1525F | 1530F | | | | | | |
| 16 | | 22 | | 29 | | 1615F | 1620F | 1625F | 1630F | | | | | | |
| 20 | | 30 | | 40 | | 2015F | 2020F | 2025F | 2030F | | 2040F | | | | |
| 25 | +0.061 +0.040 | 35 | | 45 | | 2515F | 2520F | 2525F | 2530F | | 2540F | | | | |
| 30 | | 40 | | 50 | | 3020F | 3025F | 3030F | 3035F | 3040F | 3050F | | | | |
| 31.5 | | 40 | +0.050 +0.034 | | 60 | 3120F | | | 3135F | | | | | | |
| 35 | | 45 | | 65 | | 3520F | | 3530F | | 3540F | 3550F | | | | |
| 40 | +0.075 +0.050 | 50 | | 70 | | 4020F | | 4030F | | 4040F | 4050F | | | | |
| 45 | | 55 | +0.060 +0.041 | | 75 | | | 4530F | | 4540F | 4550F | 4560F | | | |
| 50 | | 60 | | | 80 | | | | 5030F | | 5040F | 5050F | 5060F | | |
| 55 | | 65 | | | 80 | | | | | 5540F | | 5560F | | | |
| 60 | | 75 | +0.062 +0.043 | 90 | | | | | | 6040F | 6050F | | 6080F | | |
| 63 | +0.090 +0.060 | 75 | | 85 | | | | | | | | | 6367F | | |
| 70 | | 85 | | 105 | | | | | | | 7050F | | 7080F | | |
| 75 | | 90 | +0.073 +0.051 | 110 | | | | | | | | 7560F | | | |
| 80 | | 100 | | 120 | | | | | | | | 8060F | 8080F | 80100F | |
| 90 | +0.107 +0.072 | 110 | +0.076 +0.054 | 130 | | | | | | | | 9060F | 9080F | | |
| 100 | | 120 | | 150 | | | | | | | | 10080F | 100100F | | |
| 120 | | 140 | +0.088 +0.063 | 170 | | | | | | | | 12080F | 120100F | | |

ZTOM 50W(JTW)

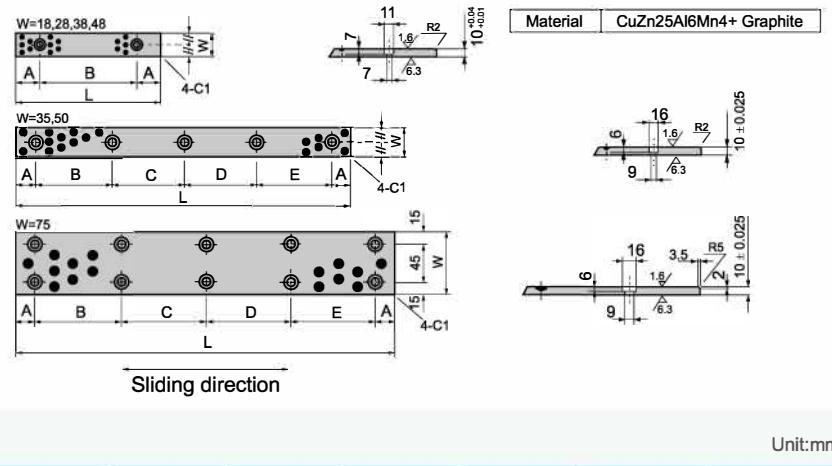
Metric Standard Thrust Washers Size



| Standard No. | d | D | T ⁰ _{-0.1} | Bolt | | | |
|--------------|-------|-----|----------------------------------|----------------|----------|------|----------------|
| | | | | D ₁ | Quantity | size | d ₁ |
| JTW-10 | 10.2 | 30 | | 20 | 2 | M3 | 3.5 |
| JTW-12 | 12.2 | | | | | | |
| JTW-13 | 13.2 | 40 | | | | | |
| JTW-14 | 14.2 | | | | | | |
| JTW-15 | 15.2 | 50 | | | | | |
| JTW-16 | 16.2 | | | | | | |
| JTW-16N | | | | | | | |
| JTW-18 | 18.2 | | | 20 | 2 | M3 | 3.5 |
| JTW-20 | 20.2 | | | | | M5 | 6 |
| JTW-20N | | | | | | | |
| JTW-25 | 25.2 | 55 | | 40 | 2 | M5 | 6 |
| JTW-25N | | | | | | | |
| JTW-30 | 30.2 | 60 | | 45 | | | |
| JTW-35 | 35.2 | 70 | | 50 | | | |
| JTW-40 | 40.2 | 80 | | 60 | | | |
| JTW-45 | 45.3 | 90 | | 67.5 | | | |
| JTW-50 | 50.3 | 100 | | 75 | | | |
| JTW-55 | 55.3 | 110 | | 85 | | | |
| JTW-60 | 60.3 | 120 | | 90 | | | |
| JTW-65 | 65.3 | 125 | | 95 | | | |
| JTW-70 | 70.3 | 130 | | 100 | | | |
| JTW-75 | 75.3 | 140 | | 110 | | | |
| JTW-80 | 80.3 | 150 | | 120 | | | |
| JTW-90 | 90.5 | 170 | | 140 | | | |
| JTW-100 | 100.5 | 190 | | 160 | | | |
| JTW-120 | 120.5 | 200 | | 175 | | | |

ZTOM 50P(JSP)

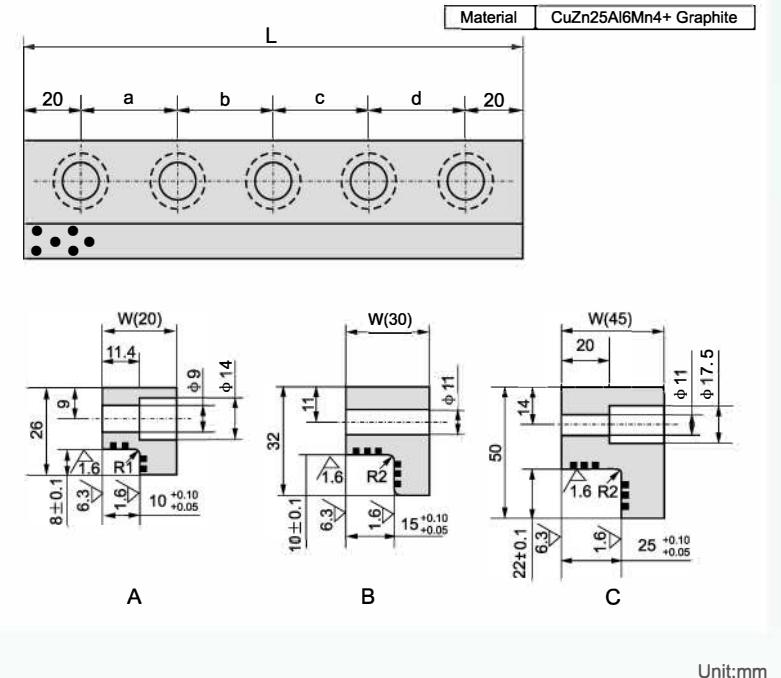
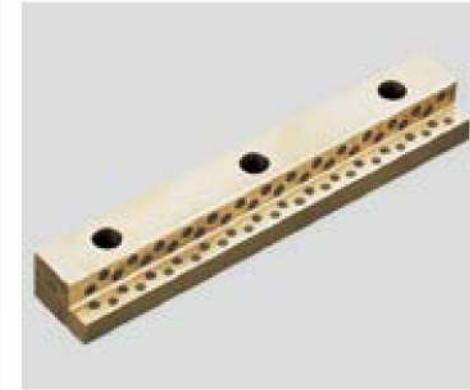
Metric Standard Wear Plates Size



| Standard No. | W | L | A | B | C | D | E | Flat head screw | No. of holes |
|--------------|----|-----|----|-----|-----|-----|-----|-----------------|--------------|
| JSP-1875 | 18 | 75 | 15 | 45 | | | | M6 | 2 |
| JSP-18100 | | 100 | | 60 | | | | | |
| JSP-18125 | | 125 | | 75 | | | | | |
| JSP-18150 | | 150 | | 100 | | | | | |
| JSP-2875 | | 75 | 15 | 45 | | | | | |
| JSP-28100 | | 100 | | 50 | | | | | |
| JSP-28125 | | 125 | | 75 | | | | | |
| JSP-28150 | | 150 | | 100 | | | | | |
| JSP-35100 | | 100 | | 60 | | | | | |
| JSP-35150 | | 150 | | 55 | 55 | | | | |
| JSP-35200 | 35 | 200 | | 55 | 50 | 55 | | M8 | 3 |
| JSP-35250 | | 250 | | 70 | 70 | 70 | | | |
| JSP-35300 | | 300 | | 65 | 65 | 65 | 65 | | |
| JSP-35350 | | 350 | | 80 | 75 | 75 | 80 | | |
| JSP-3875 | 38 | 75 | 15 | 45 | | | | M6 | 2 |
| JSP-38100 | | 100 | | 50 | | | | | |
| JSP-38125 | | 125 | | 75 | | | | | |
| JSP-38150 | | 150 | | 100 | | | | | |
| JSP-4875 | 48 | 75 | 15 | 45 | | | | M6 | 2 |
| JSP-48100 | | 100 | | 50 | | | | | |
| JSP-48125 | | 125 | | 75 | | | | | |
| JSP-48150 | | 150 | | 100 | | | | | |
| JSP-50100 | 50 | 100 | | 60 | | | | M8 | 3 |
| JSP-50150 | | 150 | | 55 | 55 | | | | |
| JSP-50200 | | 200 | | 55 | 50 | 55 | | | |
| JSP-50250 | | 250 | | 70 | 70 | 70 | | | |
| JSP-50300 | | 300 | | 65 | 65 | 65 | 65 | | |
| JSP-50400 | | 400 | | 90 | 90 | 90 | 90 | | |
| JSP-75150 | 75 | 150 | | 110 | | | | M8 | 4 |
| JSP-75200 | | 200 | | 80 | 80 | | | | |
| JSP-75250 | | 250 | | 105 | 105 | | | | |
| JSP-75300 | | 300 | | 85 | 90 | 85 | | | |
| JSP-75400 | | 400 | | 120 | 120 | 120 | | | |
| JSP-75500 | | 500 | | 115 | 115 | 115 | 115 | | |

ZTOM 50L(JSL)

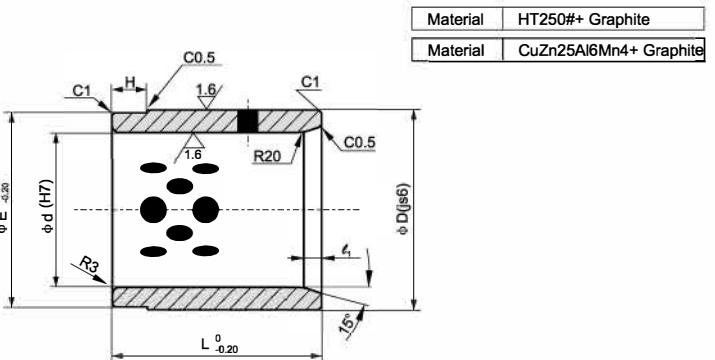
Metric Standard Wear Plates Size



| Standard No. | W | L | Bolt | | | | | Size | Quantity | Sketch |
|--------------|----|-----|------|-----|-----|-----|-----|------|----------|--------|
| | | | a | b | c | d | | | | |
| JSL 20×100 | 20 | 100 | 60 | --- | --- | --- | M8 | 2 | A | |
| JSL 20×150 | | 150 | 55 | 55 | --- | --- | | 3 | | |
| JSL 20×200 | | 200 | 55 | 50 | 55 | --- | | 4 | | |
| JSL 30×100 | 30 | 100 | 60 | --- | --- | --- | M10 | 2 | B | |
| JSL 30×150 | | 150 | 55 | 55 | --- | --- | | 3 | | |
| JSL 30×200 | | 200 | 55 | 50 | 55 | --- | | 4 | | |
| JSL 30×250 | | 250 | 70 | 70 | 70 | --- | | 4 | | |
| JSL 45×200 | 45 | 200 | 55 | 50 | 55 | --- | M10 | 4 | C | |
| JSL 45×250 | | 250 | 70 | 70 | 70 | --- | | 4 | | |
| JSL 45×300 | | 300 | 65 | 65 | 65 | 65 | | 5 | | |
| JSL 45×350 | | 350 | 80 | 75 | 75 | 80 | | 5 | | |

ZTOM 54

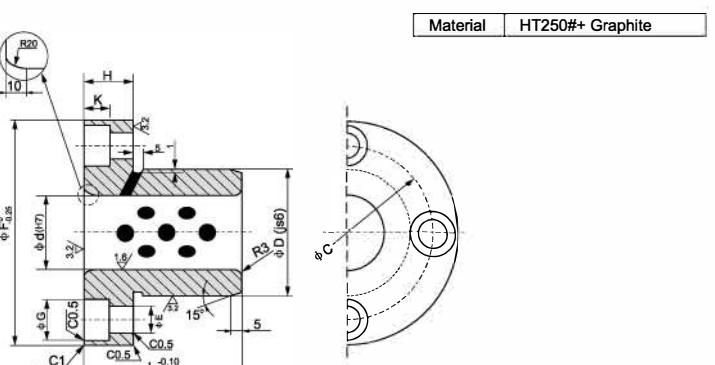
Metric Standard Guide Post Bearings Size



| Standard No. | Dimension | Φ D | Φ d | L | Φ E | H | Φ C ₁ |
|--------------|-----------------|-----|-----|-----|-----|----|------------------|
| 30 | 50 × 30 × 50 | 50 | 30 | 50 | 49 | 10 | 10 |
| 40 | 60 × 40 × 50 | 60 | 40 | 60 | 59 | 10 | |
| 50 | 70 × 50 × 50 | 70 | 50 | 75 | 69 | 15 | |
| 60 | 80 × 60 × 90 | 80 | 60 | 90 | 79 | 20 | |
| 80 | 100 × 80 × 120 | 100 | 80 | 120 | 99 | 25 | |
| 100 | 120 × 100 × 130 | 120 | 100 | 150 | 119 | 25 | |
| 120 | 140 × 120 × 180 | 140 | 120 | 180 | 139 | 25 | |

ZTOM 54F

Self-lubricating Bearing Standard Metric Size



| Standard No. | Dimension | Φ F | Φ D | Φ d | H | L | Φ C | Φ E | Φ G | K |
|--------------|-----------------------|-----|-----|-----|----|-----|-----|-----|------|------|
| 30 | 90 × 50 × 30 × 50 | 90 | 50 | 30 | 20 | 50 | 70 | 11 | 17.5 | 10.8 |
| 40 | 100 × 60 × 40 × 65 | 100 | 60 | 40 | 20 | 65 | 80 | 11 | 17.5 | 10.8 |
| 50 | 125 × 75 × 50 × 80 | 125 | 75 | 50 | 20 | 80 | 100 | 11 | 17.5 | 10.8 |
| 60 | 135 × 85 × 60 × 100 | 135 | 85 | 60 | 20 | 100 | 110 | 11 | 17.5 | 10.8 |
| 80 | 170 × 110 × 80 × 130 | 170 | 110 | 80 | 25 | 130 | 140 | 14 | 20 | 13 |
| 100 | 190 × 130 × 100 × 160 | 190 | 130 | 100 | 25 | 160 | 160 | 14 | 20 | 13 |

ZTOM 100

Solid Bronze Turned Bearings



Product Brief

Machined cast bronze bearings offer technically and economically, low weight and economically favorable bearings solutions. It is with high load capability, low weight and good corrosion resistance. ZTOM can offer different types of bronze alloys according to the required life time, service etc. The tolerance is much tighter than wrapped bronze bushes.

Oil Groove



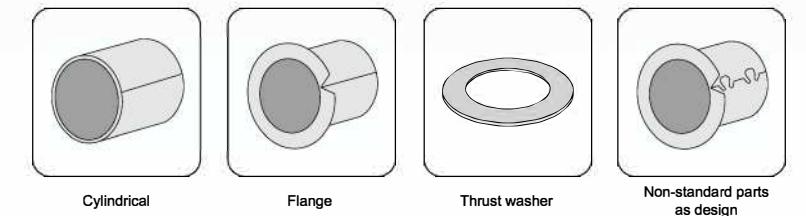
Tech. Data

| Material | ZTOM100A | ZTOM100B | ZTOM100C | ZTOM100D | ZTOM100E |
|------------------------------------|-----------------|-------------|--------------|----------|------------|
| | CuZn25Al6Mn4Fe3 | CuSn6Pb6Zn3 | CuAl10Ni5Fe5 | CuSn12 | CuSn10Pb10 |
| Density | 8.0 | 8.9 | 7.8 | 8.9 | 8.9 |
| Yield point N/mm ² | >450 | >124 | >260 | >150 | >100 |
| Tensile strength N/mm ² | >750 | >241 | >590 | >295 | >210 |
| Elongation % | >12 | >20 | >10 | >5 | >8 |
| Hardness HB | >210 | >80 | >160 | >90 | >75 |

Typical Applications

- Agricultural machines
- Cranes
- Electric motorcycles
- Spring bolts
- Transmission Systems

Availability





ZTOM 70(A)

Plastic Plain Bearing



Product Brief

ZTOM70A(GPB) is the preferable material with high wear resistance and very low cost. Typical applications include medium to high loads, medium sliding speeds and medium temperatures.

Characteristics and Advantages

1. Suitable for medium and high load operation
2. Maintenance-free dry operation
3. Good for rotation and oscillating operation
4. Resistance to dust and dirt
5. Applicable for various shaft materials but chrome plated shaft is recommended for better operation

Tech. Data

| Material Properties | GPB |
|---|--------------------------------------|
| Density | 1.46 g/cm ³ |
| Color | Dark Grey |
| Dynamic friction coefficient against steel | 0.08~0.15 |
| Max.PV (dry) | 0.42 N/mm ² x m/s |
| Max. rotating velocity | 1.0 m/s |
| Max. oscillating velocity | 0.7 m/s |
| Max. linear velocity | 4.0 m/s |
| Tensile strength | 200 MPa |
| Compressive strength (Axial) | 80 MPa |
| Max. static pressure of the surface (20°C) | 80 MPa |
| Shore hardness | 81 D |
| Continuous work temperature range | -40°C ~+130°C |
| Short-time work temperature range | -40°C ~+220°C |
| Thermal conductivity | 0.24 W / m x k |
| Linear coefficient of thermal expansion | 9 K ⁻¹ x 10 ⁻⁵ |

Typical Applications



Agricultural machines



Construction machinery industry



Sports and leisure



Automotive industry

Plastic Plain Bearing



Product Brief

ZTOM70B(JPB) is the combination of low friction and high wear resistance. It could maintain a good stable wear resistance and friction factor for the rotation, linear and oscillation movement. With a permissible maximum surface pressure of 35 MPa, JPB is not suitable for extreme loads.

Characteristics and Advantages

1. Suitable for high speds
2. High wear resistance at low to medium pressures
3. Maintenance-free dry operation
4. Low moisture absorption
5. Good chemical resistance
6. Low wear against different shafts but best performance with soft shaft materials

Tech. Data

| Material Properties | JPB |
|---|--------------------------------------|
| Density | 1.49 g/cm ³ |
| Color | Yellow |
| Dynamic friction coefficient against steel | 0.06~0.18 |
| Max.PV (dry) | 0.34 N/mm ² x m/s |
| Max. roatating velocity | 1.5 m/s |
| Max. oscillating velocity | 1.1 m/s |
| Max. linear velocity | 8.0 m/s |
| Tensile strength | 75 MPa |
| Compressive strength (Axial) | 60 MPa |
| Max. static pressure of the surface (20°C) | 35 MPa |
| Shore hardness | 74 D |
| Continuous work temperature range | -50°C ~+90°C |
| Short-time work temperature range | -50°C ~+120°C |
| Thermal conductivity | 0.25 W / m x k |
| Linear coefficient of thermal expansion | 10 K ¹ x 10 ⁻⁵ |

Typical Applications



Printing industry

Beverage technology

Aerospace engineering

Automation

ZTOM 70A(GPB) Metric Standard Bearing Size

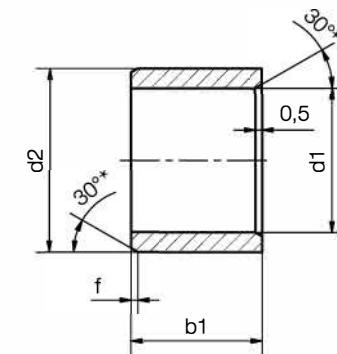


Chamfer in relation to the d1

| d1 [mm]: | Ø 1-6 | Ø 6-12 | Ø 12-30 | Ø > 30 |
|----------|-------|--------|---------|--------|
| f [mm]: | 0.3 | 0.5 | 0.8 | 1.2 |

*Thickness<1mm, chamfer=20°

Particular size also could produce as you required



| Order PN | d1 | d1-Tolerance | d2 | b1 | Order PN | d1 | d1-Tolerance | d2 | b1 |
|-------------|----|---------------|----|----|-------------|----|---------------|----|----|
| GPB-0507-05 | 5 | +0.020/+0.068 | 7 | 5 | GPB-1416-08 | 14 | +0.032/+0.102 | 16 | 8 |
| GPB-0507-08 | 5 | +0.020/+0.068 | 7 | 8 | GPB-1416-10 | 14 | +0.032/+0.102 | 16 | 10 |
| GPB-0507-10 | 5 | +0.020/+0.068 | 7 | 10 | GPB-1416-15 | 14 | +0.032/+0.102 | 16 | 15 |
| GPB-0507-18 | 6 | +0.020/+0.068 | 8 | 18 | GPB-1416-20 | 14 | +0.032/+0.102 | 16 | 20 |
| GPB-0608-04 | 6 | +0.020/+0.068 | 8 | 4 | GPB-1416-25 | 14 | +0.032/+0.102 | 16 | 25 |
| GPB-0608-06 | 6 | +0.020/+0.068 | 8 | 6 | GPB-1517-10 | 15 | +0.032/+0.102 | 17 | 10 |
| GPB-0608-08 | 6 | +0.020/+0.068 | 8 | 8 | GPB-1517-15 | 15 | +0.032/+0.102 | 17 | 15 |
| GPB-0608-10 | 6 | +0.020/+0.068 | 8 | 10 | GPB-1517-17 | 15 | +0.032/+0.102 | 17 | 17 |
| GPB-0608-11 | 6 | +0.020/+0.068 | 8 | 11 | GPB-1517-20 | 15 | +0.032/+0.102 | 17 | 20 |
| GPB-0810-05 | 8 | +0.025/+0.083 | 10 | 5 | GPB-1517-25 | 15 | +0.032/+0.102 | 17 | 25 |
| GPB-0810-06 | 8 | +0.025/+0.083 | 10 | 6 | GPB-1618-10 | 16 | +0.032/+0.102 | 18 | 10 |
| GPB-0810-08 | 8 | +0.025/+0.083 | 10 | 8 | GPB-1618-12 | 16 | +0.032/+0.102 | 18 | 12 |
| GPB-0810-10 | 8 | +0.025/+0.083 | 10 | 10 | GPB-1618-15 | 16 | +0.032/+0.102 | 18 | 15 |
| GPB-0810-11 | 8 | +0.025/+0.083 | 10 | 11 | GPB-1618-20 | 16 | +0.032/+0.102 | 18 | 20 |
| GPB-0810-12 | 8 | +0.025/+0.083 | 10 | 12 | GPB-1618-25 | 16 | +0.032/+0.102 | 18 | 25 |
| GPB-0810-15 | 8 | +0.025/+0.083 | 10 | 15 | GPB-1820-08 | 18 | +0.032/+0.102 | 20 | 8 |
| GPB-0812-09 | 8 | +0.040/+0.130 | 12 | 9 | GPB-1820-10 | 18 | +0.032/+0.102 | 20 | 10 |
| GPB-1012-04 | 10 | +0.025/+0.083 | 12 | 4 | GPB-1820-12 | 18 | +0.032/+0.102 | 20 | 12 |
| GPB-1012-05 | 10 | +0.025/+0.083 | 12 | 5 | GPB-1820-15 | 18 | +0.032/+0.102 | 20 | 15 |
| GPB-1012-06 | 10 | +0.025/+0.083 | 12 | 6 | GPB-1820-20 | 18 | +0.032/+0.102 | 20 | 20 |
| GPB-1012-08 | 10 | +0.025/+0.083 | 12 | 8 | GPB-1820-25 | 18 | +0.032/+0.102 | 20 | 25 |
| GPB-1012-10 | 10 | +0.025/+0.083 | 12 | 10 | GPB-1820-30 | 18 | +0.032/+0.102 | 20 | 30 |
| GPB-1012-12 | 10 | +0.025/+0.083 | 12 | 12 | GPB-2022-10 | 20 | +0.040/+0.124 | 22 | 10 |
| GPB-1012-15 | 10 | +0.025/+0.083 | 12 | 15 | GPB-2022-10 | 20 | +0.040/+0.124 | 22 | 10 |
| GPB-1012-18 | 10 | +0.025/+0.083 | 12 | 18 | GPB-2022-12 | 20 | +0.040/+0.124 | 22 | 12 |
| GPB-1012-20 | 10 | +0.025/+0.083 | 12 | 20 | GPB-2022-15 | 20 | +0.040/+0.124 | 22 | 15 |
| GPB-1216-12 | 12 | +0.050/+0.160 | 16 | 12 | GPB-2022-20 | 20 | +0.040/+0.124 | 22 | 28 |
| GPB-1315-07 | 13 | +0.032/+0.102 | 15 | 7 | GPB-2022-25 | 20 | +0.040/+0.124 | 22 | 25 |
| GPB-1315-10 | 13 | +0.032/+0.102 | 15 | 10 | GPB-2022-30 | 20 | +0.040/+0.124 | 22 | 30 |

ZTOM 70A(GPB)/ ZTOM 70B(JPB)

ZTOM 70A(GPB) Metric Standard Bearing Size

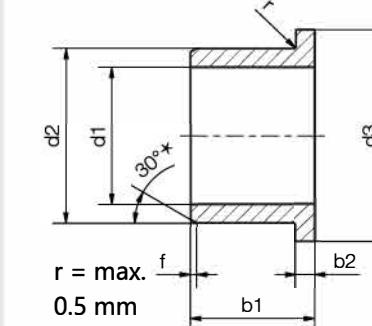
| Order PN | d1 | d1-Tolerance | d2 | b1 |
|-------------|----|---------------|----|----|
| GPB-2023-10 | 20 | +0.040/+0.124 | 23 | 10 |
| GPB-2023-15 | 20 | +0.040/+0.124 | 23 | 15 |
| GPB-2023-20 | 20 | +0.040/+0.124 | 23 | 20 |
| GPB-2023-23 | 20 | +0.040/+0.124 | 23 | 23 |
| GPB-2023-25 | 20 | +0.040/+0.124 | 23 | 25 |
| GPB-2023-30 | 20 | +0.040/+0.124 | 23 | 30 |
| GPB-2025-15 | 20 | +0.040/+0.124 | 25 | 15 |
| GPB-2025-30 | 20 | +0.040/+0.124 | 25 | 30 |
| GPB-2225-15 | 22 | +0.040/+0.124 | 25 | 15 |
| GPB-2225-20 | 22 | +0.040/+0.124 | 25 | 20 |
| GPB-2225-25 | 22 | +0.040/+0.124 | 25 | 25 |
| GPB-2225-30 | 22 | +0.040/+0.124 | 25 | 30 |
| GPB-2528-10 | 25 | +0.040/+0.124 | 28 | 10 |
| GPB-2528-12 | 25 | +0.040/+0.124 | 28 | 12 |
| GPB-2528-15 | 25 | +0.040/+0.124 | 28 | 15 |
| GPB-2528-20 | 25 | +0.040/+0.124 | 28 | 20 |
| GPB-2528-25 | 25 | +0.040/+0.124 | 28 | 25 |
| GPB-2528-30 | 25 | +0.040/+0.124 | 28 | 30 |
| GPB-2530-20 | 25 | +0.040/+0.124 | 30 | 25 |
| GPB-2530-25 | 25 | +0.040/+0.124 | 30 | 25 |
| GPB-2530-30 | 25 | +0.040/+0.124 | 30 | 30 |
| GPB-2830-20 | 28 | +0.040/+0.124 | 30 | 30 |
| GPB-2830-30 | 28 | +0.040/+0.124 | 30 | 20 |
| GPB-2832-15 | 28 | +0.040/+0.124 | 32 | 15 |
| GPB-2832-20 | 28 | +0.040/+0.124 | 32 | 20 |
| GPB-2832-25 | 28 | +0.040/+0.124 | 32 | 25 |
| GPB-2832-30 | 28 | +0.040/+0.124 | 32 | 30 |
| GPB-3034-10 | 30 | +0.040/+0.124 | 34 | 10 |
| GPB-3034-15 | 30 | +0.040/+0.124 | 34 | 15 |
| GPB-3034-20 | 30 | +0.040/+0.124 | 34 | 20 |
| GPB-3034-25 | 30 | +0.040/+0.124 | 34 | 25 |
| GPB-3034-30 | 30 | +0.040/+0.124 | 34 | 30 |
| GPB-3236-15 | 32 | +0.050/+0.150 | 36 | 15 |
| GPB-3236-20 | 32 | +0.050/+0.150 | 36 | 20 |
| GPB-3236-25 | 32 | +0.050/+0.150 | 36 | 25 |
| GPB-3236-30 | 32 | +0.050/+0.150 | 36 | 30 |
| GPB-3236-40 | 32 | +0.050/+0.150 | 36 | 40 |
| GPB-3539-15 | 35 | +0.050/+0.150 | 39 | 15 |

Unit:mm

| Order PN | d1 | d1-Tolerance | d2 | b1 |
|----------------|-----|---------------|-----|-----|
| GPB-3539-20 | 35 | +0.050/+0.150 | 39 | 20 |
| GPB-3539-25 | 35 | +0.050/+0.150 | 39 | 25 |
| GPB-3539-30 | 35 | +0.050/+0.150 | 39 | 30 |
| GPB-3539-40 | 35 | +0.050/+0.150 | 39 | 40 |
| GPB-3539-50 | 35 | +0.050/+0.150 | 39 | 50 |
| GPB-4044-20 | 40 | +0.050/+0.150 | 44 | 20 |
| GPB-4044-30 | 40 | +0.050/+0.150 | 44 | 30 |
| GPB-4044-40 | 40 | +0.050/+0.150 | 44 | 40 |
| GPB-4044-50 | 40 | +0.050/+0.150 | 44 | 50 |
| GPB-4550-25 | 45 | +0.050/+0.150 | 50 | 25 |
| GPB-4550-35 | 45 | +0.050/+0.150 | 50 | 30 |
| GPB-4550-40 | 45 | +0.050/+0.150 | 50 | 40 |
| GPB-4550-50 | 45 | +0.050/+0.150 | 50 | 50 |
| GPB-5055-20 | 50 | +0.050/+0.150 | 55 | 20 |
| GPB-5055-30 | 50 | +0.050/+0.150 | 55 | 30 |
| GPB-5055-40 | 50 | +0.050/+0.150 | 55 | 40 |
| GPB-5055-50 | 50 | +0.050/+0.150 | 55 | 50 |
| GPB-5560-20 | 55 | +0.060/+0.180 | 60 | 20 |
| GPB-5560-30 | 55 | +0.060/+0.180 | 60 | 30 |
| GPB-5560-40 | 55 | +0.060/+0.180 | 60 | 40 |
| GPB-5560-50 | 55 | +0.060/+0.180 | 60 | 50 |
| GPB-5560-60 | 55 | +0.060/+0.180 | 60 | 60 |
| GPB-6065-30 | 60 | +0.060/+0.180 | 65 | 30 |
| GPB-6065-40 | 60 | +0.060/+0.180 | 65 | 40 |
| GPB-6065-50 | 60 | +0.060/+0.180 | 65 | 50 |
| GPB-6065-60 | 60 | +0.060/+0.180 | 65 | 60 |
| GPB-6065-70 | 60 | +0.060/+0.180 | 65 | 70 |
| GPB-6570-100 | 65 | +0.060/+0.180 | 70 | 100 |
| GPB-7075-100 | 70 | +0.060/+0.180 | 75 | 100 |
| GPB-8085-100 | 80 | +0.060/+0.180 | 85 | 100 |
| GPB-8590-100 | 85 | +0.072/+0.212 | 90 | 100 |
| GPB-9095-100 | 90 | +0.072/+0.212 | 95 | 100 |
| GPB-100105-100 | 100 | +0.072/+0.212 | 105 | 100 |
| GPB-105110-100 | 105 | +0.072/+0.212 | 110 | 100 |
| GPB-110115-100 | 110 | +0.072/+0.212 | 115 | 100 |
| GPB-120125-100 | 120 | +0.072/+0.212 | 125 | 100 |
| GPB-110115-100 | 110 | +0.072/+0.212 | 115 | 100 |
| GPB-120125-100 | 120 | +0.072/+0.212 | 125 | 100 |

ZTOM 70A(GPB)/ ZTOM 70B(JPB)

ZTOM 70A(GPBF) Metric Standard Flange Bearing Size



Chamfer in relation to the d1

| d1 [mm]: | Ø 1-6 | Ø 6-12 | Ø 12-30 | Ø > 30 |
|----------|-------|--------|---------|--------|
| f [mm]: | 0.3 | 0.5 | 0.8 | 1.2 |

*Thickness<1mm, chamfer=20°

Particular size also could produce as you required

Unit:mm

| Order PN | d1 | d1-Tolerance | d2 | b1 | Flange diameter b3 | Flange thickness b2 |
|--------------|----|---------------|----|----|--------------------|---------------------|
| GPBF-0507-04 | 5 | +0.020/+0.068 | 7 | 4 | 11 | 1 |
| GPBF-0507-05 | 5 | +0.020/+0.068 | 7 | 5 | 11 | 1 |
| GPBF-0507-08 | 5 | +0.020/+0.068 | 7 | 8 | 11 | 1 |
| GPBF-0507-10 | 5 | +0.020/+0.068 | 7 | 10 | 11 | 1 |
| GPBF-0507-15 | 5 | +0.020/+0.068 | 7 | 15 | 11 | 1 |
| GPBF-0608-04 | 6 | +0.020/+0.068 | 8 | 4 | 12 | 1 |
| GPBF-0608-06 | 6 | +0.020/+0.068 | 8 | 6 | 12 | 1 |
| GPBF-0608-08 | 6 | +0.020/+0.068 | 8 | 8 | 12 | 1 |
| GPBF-0608-10 | 6 | +0.020/+0.068 | 8 | 10 | 12 | 1 |
| GPBF-0608-15 | 6 | +0.020/+0.068 | 8 | 15 | 12 | 1 |
| GPBF-0608-20 | 6 | +0.020/+0.068 | 8 | 20 | 12 | 1 |
| GPBF-0810-05 | 8 | +0.025/+0.083 | 10 | 5 | 15 | 1 |
| GPBF-0810-07 | 8 | +0.025/+0.083 | 10 | 7 | 15 | 1 |
| GPBF-0810-09 | 8 | +0.025/+0.083 | 10 | 9 | 15 | 1 |
| GPBF-0810-10 | 8 | +0.025/+0.083 | 10 | 10 | 15 | 1 |
| GPBF-0810-12 | 8 | +0.025/+0.083 | 10 | 12 | 15 | 1 |
| GPBF-0810-15 | 8 | +0.025/+0.083 | 10 | 15 | 18 | 1 |
| GPBF-0810-20 | 8 | +0.025/+0.083 | 10 | 20 | 18 | 1 |
| GPBF-0810-30 | 8 | +0.025/+0.083 | 10 | 30 | 18 | 1 |
| GPBF-1012-05 | 10 | +0.025/+0.083 | 12 | 5 | 18 | 1 |
| GPBF-1012-06 | 10 | +0.025/+0.083 | 12 | 6 | 18 | 1 |
| GPBF-1012-07 | 10 | +0.025/+0.083 | 12 | 7 | 18 | 1 |
| GPBF-1012-08 | 10 | +0.025/+0.083 | 12 | 8 | 18 | 1 |
| GPBF-1012-09 | 10 | +0.025/+0.083 | 12 | 9 | 18 | 1 |
| GPBF | | | | | | |

ZTOM 70A(GPB)/ ZTOM 70B(JPB)

ZTOM 70A(GPBF) Metric Standard Flange Bearing Size

| Order PN | d1 | d1-Tolerance | d2 | b1 | Flange diameter b3 | Flange thickness b2 |
|--------------|----|---------------|----|----|--------------------|---------------------|
| GPBF-1012-20 | 10 | +0.025/+0.083 | 12 | 20 | 18 | 1 |
| GPBF-1012-30 | 10 | +0.025/+0.083 | 12 | 30 | 18 | 1 |
| GPBF-1012-17 | 10 | +0.025/+0.083 | 12 | 17 | 18 | 1 |
| GPBF-1012-20 | 10 | +0.025/+0.083 | 12 | 20 | 18 | 1 |
| GPBF-1012-30 | 10 | +0.025/+0.083 | 12 | 30 | 18 | 1 |
| GPBF-1214-04 | 12 | +0.032/+0.102 | 14 | 4 | 20 | 1 |
| GPBF-1214-05 | 12 | +0.032/+0.102 | 14 | 5 | 20 | 1 |
| GPBF-1214-06 | 12 | +0.032/+0.102 | 14 | 6 | 20 | 1 |
| GPBF-1214-07 | 12 | +0.032/+0.102 | 14 | 7 | 20 | 1 |
| GPBF-1214-09 | 12 | +0.032/+0.102 | 14 | 9 | 20 | 1 |
| GPBF-1214-10 | 12 | +0.032/+0.102 | 14 | 10 | 20 | 1 |
| GPBF-1214-12 | 12 | +0.032/+0.102 | 14 | 12 | 20 | 1 |
| GPBF-1214-13 | 12 | +0.032/+0.102 | 14 | 13 | 20 | 1 |
| GPBF-1214-15 | 12 | +0.032/+0.102 | 14 | 15 | 20 | 1 |
| GPBF-1214-17 | 12 | +0.032/+0.102 | 14 | 17 | 20 | 1 |
| GPBF-1214-18 | 12 | +0.032/+0.102 | 14 | 18 | 20 | 1 |
| GPBF-1214-20 | 12 | +0.032/+0.102 | 14 | 20 | 20 | 1 |
| GPBF-1214-25 | 12 | +0.032/+0.102 | 14 | 25 | 20 | 1 |
| GPBF-1214-30 | 12 | +0.032/+0.102 | 14 | 30 | 20 | 1 |
| GPBF-1416-06 | 14 | +0.032/+0.102 | 16 | 6 | 22 | 1 |
| GPBF-1416-08 | 14 | +0.032/+0.102 | 16 | 8 | 22 | 1 |
| GPBF-1416-10 | 14 | +0.032/+0.102 | 16 | 10 | 22 | 1 |
| GPBF-1416-12 | 14 | +0.032/+0.102 | 16 | 12 | 22 | 1 |
| GPBF-1416-17 | 14 | +0.032/+0.102 | 16 | 17 | 22 | 1 |
| GPBF-1416-20 | 14 | +0.032/+0.102 | 16 | 20 | 22 | 1 |
| GPBF-1416-30 | 14 | +0.032/+0.102 | 16 | 30 | 22 | 1 |
| GPBF-1517-05 | 15 | +0.032/+0.102 | 17 | 5 | 23 | 1 |
| GPBF-1517-09 | 15 | +0.032/+0.102 | 17 | 9 | 23 | 1 |
| GPBF-1517-12 | 15 | +0.032/+0.102 | 17 | 12 | 23 | 1 |
| GPBF-1517-17 | 15 | +0.032/+0.102 | 17 | 17 | 23 | 1 |
| GPBF-1517-20 | 15 | +0.032/+0.102 | 17 | 20 | 23 | 1 |
| GPBF-1517-25 | 15 | +0.032/+0.102 | 17 | 25 | 23 | 1 |
| GPBF-1618-06 | 16 | +0.032/+0.102 | 18 | 6 | 24 | 1 |
| GPBF-1618-09 | 16 | +0.032/+0.102 | 18 | 9 | 24 | 1 |
| GPBF-1618-12 | 16 | +0.032/+0.102 | 18 | 12 | 24 | 1 |
| GPBF-1618-17 | 16 | +0.032/+0.102 | 18 | 17 | 24 | 1 |
| GPBF-1618-21 | 16 | +0.032/+0.102 | 18 | 21 | 24 | 1 |
| GPBF-1618-25 | 16 | +0.032/+0.102 | 18 | 25 | 24 | 1 |
| GPBF-1820-04 | 18 | +0.032/+0.102 | 20 | 4 | 26 | 1 |
| GPBF-1820-06 | 18 | +0.032/+0.102 | 20 | 6 | 26 | 1 |
| GPBF-1820-09 | 18 | +0.032/+0.102 | 20 | 9 | 26 | 1 |

ZTOM 70A(GPB)/ ZTOM 70B(JPB)

ZTOM 70A(GPBF) Metric Standard Flange Bearing Size

| Order PN | d1 | d1-Tolerance | d2 | b1 | Flange diameter b3 | Flange thickness b2 |
|--------------|----|---------------|----|----|--------------------|---------------------|
| GPBF-1820-12 | 18 | +0.032/+0.102 | 20 | 12 | 26 | 1 |
| GPBF-1820-17 | 18 | +0.032/+0.102 | 20 | 17 | 26 | 1 |
| GPBF-1820-17 | 18 | +0.032/+0.102 | 20 | 17 | 26 | 1 |
| GPBF-1820-20 | 18 | +0.032/+0.102 | 20 | 20 | 26 | 1 |
| GPBF-1820-30 | 18 | +0.032/+0.102 | 20 | 30 | 26 | 1 |
| GPBF-2022-10 | 20 | +0.040/+0.124 | 22 | 10 | 25 | 1 |
| GPBF-2022-20 | 20 | +0.040/+0.124 | 22 | 20 | 25 | 1 |
| GPBF-2022-25 | 20 | +0.040/+0.124 | 22 | 25 | 25 | 1 |
| GPBF-2023-07 | 20 | +0.040/+0.124 | 23 | 7 | 30 | 1.5 |
| GPBF-2023-11 | 20 | +0.040/+0.124 | 23 | 11 | 30 | 1.5 |
| GPBF-2023-16 | 20 | +0.040/+0.124 | 23 | 16 | 30 | 1.5 |
| GPBF-2023-21 | 20 | +0.040/+0.124 | 23 | 21 | 30 | 1.5 |
| GPBF-2023-25 | 20 | +0.040/+0.124 | 23 | 25 | 30 | 1.5 |
| GPBF-2528-11 | 25 | +0.040/+0.124 | 28 | 11 | 35 | 1.5 |
| GPBF-2528-16 | 25 | +0.040/+0.124 | 28 | 16 | 35 | 1.5 |
| GPBF-2528-21 | 25 | +0.040/+0.124 | 28 | 21 | 35 | 1.5 |
| GPBF-2528-30 | 25 | +0.040/+0.124 | 28 | 30 | 35 | 1.5 |
| GPBF-2830-10 | 28 | +0.040/+0.124 | 30 | 10 | 35 | 1 |
| GPBF-2830-20 | 28 | +0.040/+0.124 | 30 | 20 | 35 | 1 |
| GPBF-3034-09 | 30 | +0.040/+0.124 | 34 | 9 | 42 | 2 |
| GPBF-3034-16 | 30 | +0.040/+0.124 | 34 | 16 | 42 | 2 |
| GPBF-3034-20 | 30 | +0.040/+0.124 | 34 | 20 | 42 | 2 |
| GPBF-3034-26 | 30 | +0.040/+0.124 | 34 | 26 | 42 | 2 |
| GPBF-3034-37 | 30 | +0.040/+0.124 | 34 | 37 | 42 | 2 |
| GPBF-3236-16 | 32 | +0.050/+0.150 | 36 | 16 | 40 | 2 |
| GPBF-3236-26 | 32 | +0.050/+0.150 | 36 | 26 | 40 | 2 |
| GPBF-3539-10 | 35 | +0.050/+0.150 | 39 | 10 | 47 | 2 |
| GPBF-3539-12 | 35 | +0.050/+0.150 | 39 | 12 | 47 | 2 |
| GPBF-3539-16 | 35 | +0.050/+0.150 | 39 | 16 | 47 | 2 |
| GPBF-3539-26 | 35 | +0.050/+0.150 | 39 | 26 | 47 | 2 |
| GPBF-3539-40 | 35 | +0.050/+0.150 | 39 | 40 | 47 | 2 |
| GPBF-4044-20 | 40 | +0.050/+0.150 | 44 | 20 | 52 | 2 |
| GPBF-4044-30 | 40 | +0.050/+0.150 | 44 | 30 | 52 | 2 |
| GPBF-4044-40 | 40 | +0.050/+0.150 | 44 | 40 | 52 | 2 |
| GPBF-4044-50 | 40 | +0.050/+0.150 | 44 | 50 | 52 | 2 |
| GPBF-4550-20 | 45 | +0.050/+0.150 | 50 | 20 | 58 | 2 |
| GPBF-4550-25 | 45 | +0.050/+0.150 | 50 | 25 | 58 | 2 |
| GPBF-4550-30 | 45 | +0.050/+0.150 | 50 | 30 | 58 | 2 |
| GPBF-4550-50 | 45 | +0.050/+0.150 | 50 | 50 | 58 | 2 |

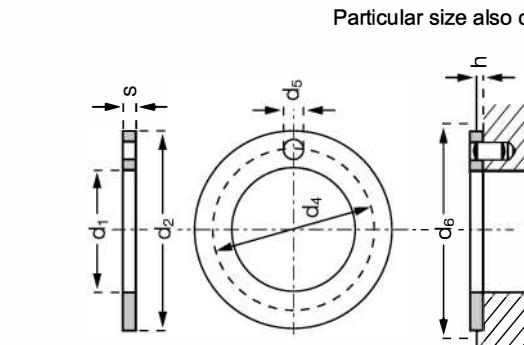
ZTOM 70A(GPB)/ ZTOM 70B(JPB)

ZTOM 70A(GPBF) Metric Standard Flange Bearing Size

| Order PN | d1 | d1-Tolerance | d2 | b1 | Flange diameter b3 | Flange thickness b2 |
|-----------------|-----|---------------|-----|-----|--------------------|---------------------|
| GPBF-5055-07 | 50 | +0.050/+0.150 | 55 | 7 | 63 | 2 |
| GPBF-5055-10 | 50 | +0.050/+0.150 | 55 | 10 | 63 | 2 |
| GPBF-5055-20 | 50 | +0.050/+0.150 | 55 | 20 | 63 | 2 |
| GPBF-5055-30 | 50 | +0.050/+0.150 | 55 | 30 | 63 | 2 |
| GPBF-6065-15 | 60 | +0.060/+0.180 | 65 | 15 | 73 | 2 |
| GPBF-6065-20 | 60 | +0.060/+0.180 | 65 | 20 | 73 | 2 |
| GPBF-6065-25 | 60 | +0.060/+0.180 | 65 | 25 | 73 | 2 |
| GPBF-6065-30 | 60 | +0.060/+0.180 | 65 | 30 | 73 | 2 |
| GPBF-6065-40 | 60 | +0.060/+0.180 | 65 | 40 | 73 | 2 |
| GPBF-6065-50 | 60 | +0.060/+0.180 | 65 | 50 | 73 | 2 |
| GPBF-6065-60 | 60 | +0.060/+0.180 | 65 | 60 | 73 | 2 |
| GPBF-6570-100 | 65 | +0.060/+0.180 | 70 | 100 | 78 | 2 |
| GPBF-7075-100 | 70 | +0.060/+0.180 | 75 | 100 | 83 | 2 |
| GPBF-7580-100 | 75 | +0.060/+0.180 | 80 | 100 | 88 | 2 |
| GPBF-8085-100 | 80 | +0.060/+0.180 | 85 | 100 | 93 | 2.5 |
| GPBF-8590-100 | 85 | +0.072/+0.212 | 90 | 100 | 98 | 2.5 |
| GPBF-9095-100 | 90 | +0.072/+0.212 | 95 | 100 | 103 | 2.5 |
| GPBF-95100-100 | 95 | +0.072/+0.212 | 100 | 100 | 108 | 2.5 |
| GPBF-100105-100 | 100 | +0.072/+0.212 | 105 | 100 | 113 | 2.5 |
| GPBF-110115-100 | 110 | +0.072/+0.212 | 115 | 100 | 123 | 2.5 |
| GPBF-120125-100 | 120 | +0.072/+0.212 | 125 | 100 | 133 | 2.5 |

ZTOM 70A(GPB)/ ZTOM 70B(JPB)

ZTOM 70A(GPBW) Metric Standard Thrust Washer Size



Particular size also could produce as you required

| Order PN | ID d1 +0.25 | OD d2 -0.25 | Thickness s -0.05 |
|---------------|----------------|----------------|----------------------|
| GPBW-0612-015 | 6 | 12 | 1.5 |
| GPBW-0615-015 | 6 | 15 | 1.5 |
| GPBW-0620-015 | 6 | 20 | 1.5 |
| GPBW-0815-015 | 8 | 15 | 1.5 |
| GPBW-0818-015 | 8 | 18 | 1.5 |
| GPBW-1018-015 | 10 | 18 | 1.5 |
| GPBW-1018-020 | 10 | 18 | 2 |
| GPBW-1020-015 | 10 | 20 | 1.5 |
| GPBW-1224-015 | 12 | 24 | 1.5 |
| GPBW-1226-015 | 12 | 26 | 1.5 |
| GPBW-1524-015 | 15 | 24 | 1.5 |
| GPBW-1630-015 | 16 | 30 | 1.5 |
| GPBW-1832-015 | 18 | 32 | 1.5 |
| GPBW-2644-015 | 26 | 44 | 1.5 |
| GPBW-2848-015 | 28 | 48 | 1.5 |
| GPBW-3254-015 | 32 | 54 | 1.5 |
| GPBW-3862-015 | 38 | 62 | 1.5 |
| GPBW-4266-015 | 42 | 66 | 1.5 |

| Tech. Data | Basic type | Density | Max.PV (Dry) | Coefficient of friction | Working Temp. | Max. Speed | Max. load | Static load | Dynamic load | Radial compressive strength | Rockwell hardness | Linear coef. of thermal Expansion(20~150°C) | Color |
|------------|------------|-------------------|-----------------|----------------------------|------------------|---------------|--------------|----------------|-----------------|-----------------------------------|----------------------|---|-------|
| Unit | | g/cm ³ | MPa*m/s | μ | °C | m/s | MPa | MPa | MPa | MPa | HRM | Um/m°C | |

ZTOM 70(Other Series)

Plastic Linear Bearings

LIN-01 LIN-01K LIN-02 LINE-01 LINE-02 LIN-01R LIN-02RL



LIN-01RK LIN-00 LIN-11 LIN-01R LIN-03R LIN-03RK LIN-02R



LIN-12 LIN-01RF LIN-02RFL LIN-01RT LIN-02RTL LIN-02RFM LIN-02RTM



LIN-05R LIN-05RE LIN-05RL LIN-06R LIN-06RK LIN-06RKE LIN-06RKL



LIN-01RQ LIN-01RQK LIN-01QS LIN-01QSK



LIN-01G LIN-01GK LIN-01 GL LIN-01 GKL



ZTOM 40(FR)

Bronze Mesh with PTFE Bearings



Product Brief

ZTOM40 (FR) soft strip material consists of a bronze mesh shell, laminated with compounded PTFE tape. It is widely used in car door hinges, joint bearings, medical industries, food industries, textile machines etc. The standard wall thickness is 0.48+/-0.02 mm.

Structure

1. Bronze mesh
2. PTFE

Tech. Data

| | | |
|------------|---------|---------------------|
| Max. load | Static | 80N/mm ² |
| | Dynamic | 30N/mm ² |
| Max. Speed | Dry | 0.5m/s |
| | Oil | 2m/s |

| | |
|----------------------|----------------------------|
| Temp.limit | -20°C~+250°C |
| Friction coefficient | 0.05~0.20 |
| PV Limit | 1.65N/mm ² ·m/s |

ZTOM41(FD)

Soft Strip with Copper Lubricants



Product Brief

FD Soft strip is composed of PTFE and bronze powder, it is fabricated by using mould to press and then sinter. It has the advantage of lower friction and lower wear and powerful tensile strength. FD can be used with oil or without oil, so it is the best choice for machine tool slide guide, automobile absorber, piston ring, and so on.

Structure

1. Bronze powder
2. PTFE

Tech. Data

| | | |
|------------|---------|---------------------|
| Max. load | Static | 80N/mm ² |
| | Dynamic | 40N/mm ² |
| Max. Speed | Dry | 0.5m/s |
| | Oil | 1.5m/s |

| | |
|----------------------|----------------------------|
| Temp.limit | -100°C~+250°C |
| Friction coefficient | 0.10~0.20 |
| PV Limit | 1.65N/mm ² ·m/s |

ZTOM 60(FZ)

Ball Retainer Bearings



Product Brief

ZTOM60, ZTOM61 and ZTOM62 ball retainer bearing use bronze, aluminum, POM colophony as its base. They are machined some regular holes and embedded the steel-ball in to. The new work-craft will prevent the ball getting out of the base. As the ball diameter is larger than the retainer's thickness, so it will face to face directly with guide bushing, this will bring high precision match. Now the ball retainer series items are designed to rotate on the post, as well as maintain its vertical motion.

Features

- As the traditional work-craft has some grudge between bushing with posts, and the coefficient of friction is larger. Now we have changed the work-ways to steel-ball directly face to face guide bushing, so the precision is improved.
- It composes of both active roll and lower friction coefficient.
- Suitable for rotation and vertical motion.

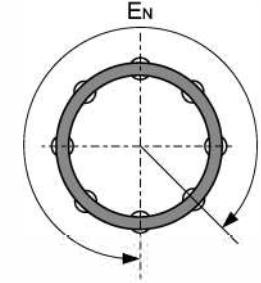
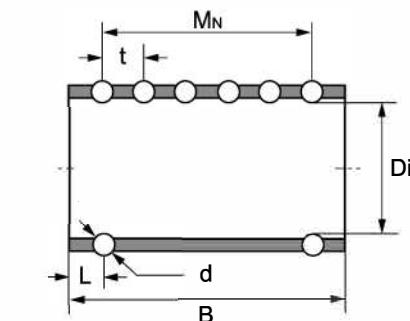
Tech. Data

| | | |
|--------------------------------------|-------------------|-----------|
| Max Load Capacity P | N/mm ² | 30 |
| Assembling Shrink | mm | 0.8~1.2 |
| Max Sliding Speed | m/s | 6 |
| Friction Coefficient | μ | 0.01~0.08 |
| Deviation of the Steel-ball Diameter | | 20~40 |



ZTOM 60 (FZ)

Metric Standard Ball Retainer Size



Unit:mm

| Standard No. | ID and OD chamfers | B | d | E _N | Mn | Steel Ball No. | t | L |
|--------------|-----------------------|-----|----|----------------|----|----------------|------|------|
| ZTOM1950T60 | 19 | 50 | 3 | 12 | 8 | 96 | 5.5 | 5.75 |
| ZTOM1960T60 | | 60 | | | 10 | 120 | | 5.25 |
| ZTOM2050T60 | | 50 | | | 8 | 96 | | 5.75 |
| ZTOM2060T60 | | 60 | | | 10 | 120 | | 5.25 |
| ZTOM2250T60 | 22 | 50 | 4 | 14 | 8 | 112 | 6.5 | 5.75 |
| ZTOM2260T60 | | 60 | | | 10 | 140 | | 5.25 |
| ZTOM2360T60 | | 60 | | | 10 | 208 | | 5.25 |
| ZTOM2475T60 | 24 | 75 | 16 | 16 | 13 | 128 | 4.50 | 4.50 |
| ZTOM2550T60 | 25 | 50 | | | 8 | 112 | | 5.75 |
| ZTOM2560T60 | | 60 | | | 10 | 160 | | 5.25 |
| ZTOM2575T60 | | 75 | | | 13 | 208 | | 4.50 |
| ZTOM2775T60 | 27 | 75 | 18 | 18 | 13 | 208 | 4.50 | 4.50 |
| ZTOM2860T60 | 28 | 60 | | | 8 | 112 | | 7.25 |
| ZTOM2875T60 | | 75 | | | 11 | 154 | | 5.00 |
| ZTOM3060T60 | | 60 | 20 | 20 | 8 | 112 | 7.25 | 7.25 |
| ZTOM3075T60 | 30 | 75 | | | 11 | 154 | | 5.00 |
| ZTOM3260T60 | 32 | 60 | | | 8 | 128 | 6.75 | 7.25 |
| ZTOM3275T60 | | 75 | | | 11 | 192 | | 5.00 |
| ZTOM3390T60 | | 90 | | | 13 | 208 | | 6.00 |
| ZTOM3685T60 | 36 | 85 | 22 | 22 | 12 | 192 | 8.0 | 6.75 |
| ZTOM3690T60 | | 90 | | | 13 | 208 | | 6.00 |
| ZTOM3870T60 | | 70 | | | 8 | 128 | | 7.00 |
| ZTOM3890T60 | 38 | 90 | 28 | 28 | 11 | 176 | 9.00 | 5.00 |
| ZTOM4090T60 | 40 | 90 | | | 11 | 176 | | 5.00 |
| ZTOM4590T60 | 45 | 90 | | | 11 | 198 | | 5.00 |
| ZTOM45110T60 | | 110 | | | 13 | 234 | | 7.00 |
| ZTOM5090T60 | 50 | 90 | 20 | 20 | 11 | 220 | 5.00 | 5.00 |
| ZTOM50110T60 | | 110 | | | 13 | 260 | | 7.00 |
| ZTOM6090T60 | 60 | 90 | 22 | 22 | 11 | 242 | 5.00 | 5.00 |
| ZTOM60110T60 | | 110 | | | 13 | 286 | | 7.00 |
| ZTOM80130T60 | 80 | 130 | 28 | 28 | 15 | 420 | 9.00 | 9.00 |

**Features**

1. Excellent compressive strength and good thermal conductivity
2. Suitable for high speed and low load
3. Good friction and silent working
4. Lower wear rate and long life
5. No oil for lubrication and maintenance free
6. Possibility of solid lubricant (Graphite or MoS₂)
7. Available in all international standards like DIN, SAE, GB, ASTM
8. Lower maintenance requirement
9. Lower material cost for large production
10. Different structures could be available against special request

Tech. Data

| Performance Index | Data |
|---------------------------------------|-------|
| Standard tolerance of inside diameter | G7 |
| Outside diameter | s7 |
| Recommended shaft tolerance | f7/g6 |
| Recommended housing tolerance | f7/g6 |

Technical Information

| Performance | Material | Unit | Bronze | Iron |
|----------------------|--------------------|------|-----------|-----------|
| Density | Gr/cm ³ | | 6.4~6.8 | 5.7~5.9 |
| Max Load | N/mm ² | | 35 | 45 |
| Temp. Range | °C | | -80 ~+160 | -80 ~+160 |
| Friction Coefficient | μ | | 0.12~0.18 | 0.15~0.20 |

Typical Applications

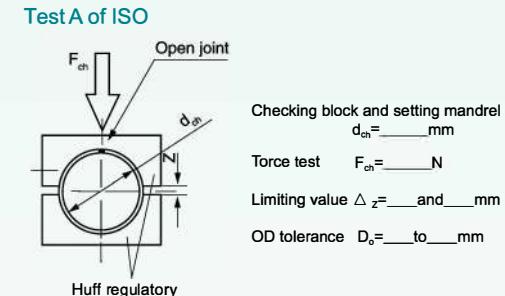
Power tools, Vacuum cleaner, Agricultural Machinery, Office Machinery, Home Appliances, Hydraulic Parts, Stove and Oven, Precision Instruments.

Availability

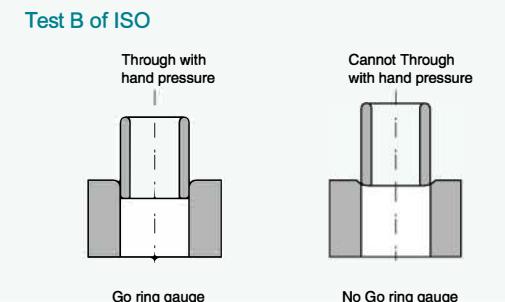
Cylindrical Bush / Flanged Bush/ Spherical/Spherical with collar/Non Standard

Checking Methods for Wrapped Bearing**External diameter test methods****Test A of ISO 3547 Part 2**

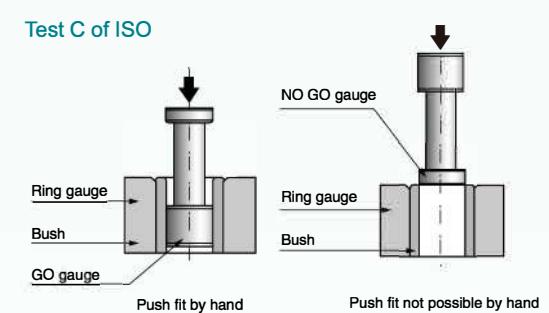
Check the outside diameter of a wrapped bush using measuring equipment as shown to the right, with a checking block consisting of upper and lower halves and setting plugs, at a determined checking load of F_{ch} , during the test the outside diameter of the bush is made smaller by the elastic reduction, however it is not a permanent deformation. The bushes outside diameter can be calculated from the difference in the value of z (Z)

**Test B of ISO 3547 Part 2**

The test is carried out with two ring gauges, a Go gauge and a No Go gauge whose diameter shall be chosen empirically from Table 6 of ISO3547-1:1999 and agreed upon. It shall be possible to press the bushes into the GO gauge and then push them through with hand pressure (maximum force 250N). On the other hand with the same force, it shall not be possible for them to go into and through the NO GO gauge (See ISO 12307-1)

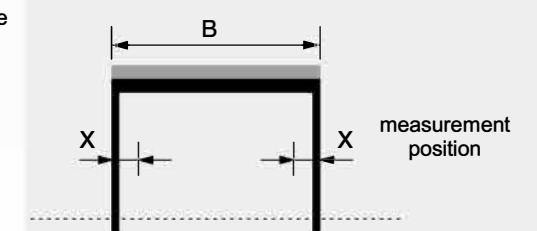
**Internal diameter test methods****Test C of ISO3547 Part 2**

To check the inside diameter, the bush is to be pressed into a ring gauge, whose nominal diameter corresponds to the dimension specified in ISO3547-1:1999. The inside diameter shall be measured with a 3-point measuring instrument or checked with a GO and NO GO plug gauge. The GO plug gauge shall be inserted by a minimum effort; the NO GO plug gauge shall not be inserted by manual pressure(maximum force 250N). In order to enable the manufacturer and the customer to compare results of this test it should be agreed whether results should be obtained by measuring or by gauging.

**Wall thickness test method**

The wall thickness is measured at once,two or three positions axially according to the bearing dimensions.The wall thickness and the inside diameter shall not be specified together on the same drawing.

| B[mm] | X[mm] | measurement position |
|------------------|-------------|----------------------|
| $B \leq 15$ | $B/2$ | 1 |
| $15 < B \leq 50$ | 4 | 2 |
| $50 < B \leq 90$ | 6 and $B/2$ | 3 |
| $B > 90$ | 8 and $B/2$ | 3 |

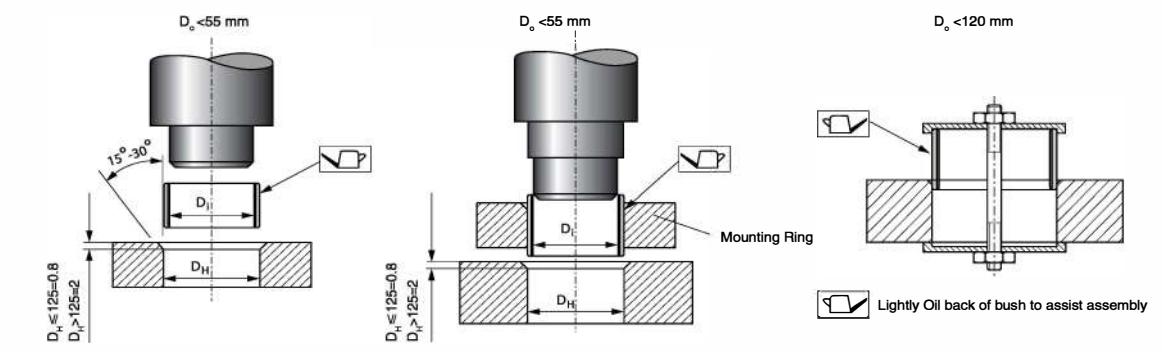


| Material | Checking Items | Checking Methods | Checking Equipments |
|---------------------------------|----------------|--|--|
| ZTOM50 Series ZTOM100 Series | Flanged O.D. | Measure with Vernier Calipers | Vernier Calipers |
| | Flanged Height | Measure with Vernier Calipers | Vernier Calipers |
| | O.D. | Measure at 2-4 evenly distributes points on the outside surface, with in 5-10mm away the end face. | Micrometer for O.D. Checking |
| | I.D. | Measure at 2-4 evenly distributed pointd on the outside surface, with in 5-10mm away the end face. If particularly required, when inside diameter 80mm is smaller than 80mm, it can be measured by a plug gauge. It requires that, with a press force no more than 250N, the 'GO' plug gauge could go though the bearing while the "NO GO" gauge can not go though. (It is not allowed to force the 'NO GO' pulg gauge go though the bearing) | Three-tongs Micrometer for ID Checking Plug Gauge |
| | Height | Measure at three evenly distributed pointd across the circle. | Vernier Calipers |

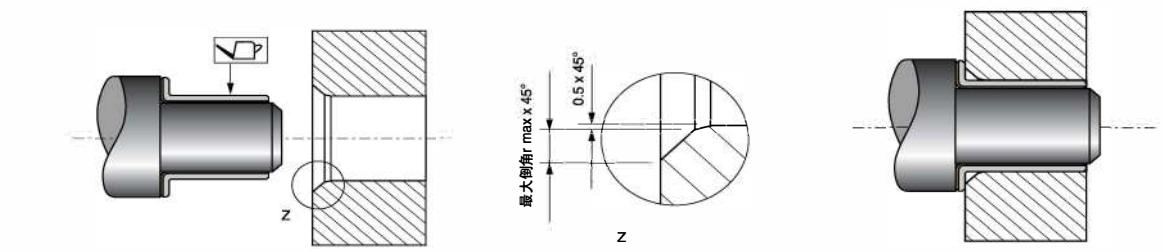
Checking for Plates and Washers

| Material | Checking Items | Checking Methods | Checking Equipments |
|--------------|----------------|---|--|
| All Products | Length, Width | Measure with Vernier Calipers | Vernier Calipers |
| | | The inner and outer diameters of the annular washer are measured. If the thrust are two half-ring, we need joint to measure the inner diameter. | Vernier Calipers |
| | Thickness | Measure with Vernier Calipers | - Micrometer for Wall Thickness Checking - Vernier Calipers |
| | Bore Diameter | Measure with micrometer for I.D. checking | - Micrometer for I.D. Checking - Vernier Calipers |
| | Bore Gap | Measure with Vernier Calipers | Vernier Calipers |

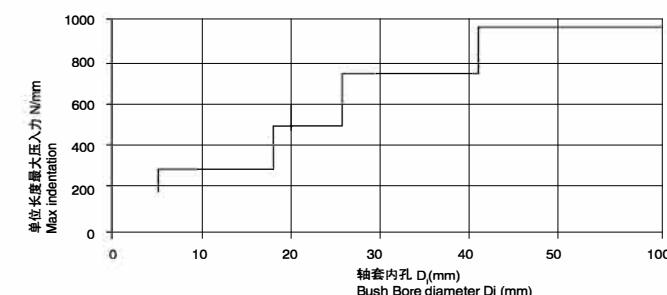
Fitting of cylindrical bearings



Fitting of flanged bearings



Insertion forces



For some special application like ZTOM50, the shrinking fitting method could be take into consideration. This is the preferred method for inserting a bearing in its housing providing an optimum interference fit without risking bearing damage during press fitting. Frozen carbon dioxide(Co2)should be packed around the bearing for up to 2 hours,depending on the cross section of bush to be cooled. Once removed from the Co2, the bush should be offered to its housing without delay. It should fit without force, gravity will usually be adequate for a vertical installation.

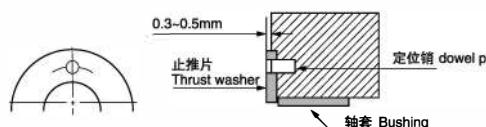
Concentricity

Degree of precision coaxial bearing the normal use for a very important requirement sleeve length in one or two degrees of the different axes and in the flange or thrust washer diameter of the different degree of control shaft within 0.02mm.

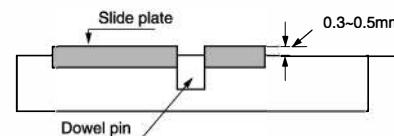
Thrust washers and sliding plates installation

It is recommended to install the thrust washers and sliding plates with the hollow indented housing. To avoid the moving of such parts, a Dowel pins is recommended to be installed.

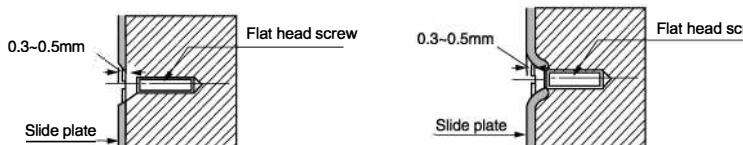
1. Dowel pin application (thrust wafer)



2. Dowel pin used on slide plate



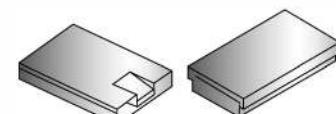
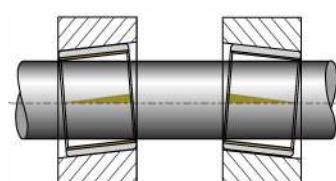
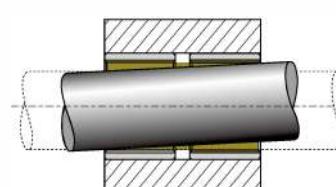
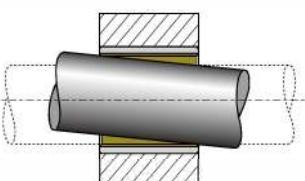
3. Flat head screw application



Other fixation methods

When the pin is not available, you can use laser welding, adhesives and brazing (temperature < 320 °C) method to be fixed; while do in this way, temperature used must not higher than the bearing material itself can be standed, the cleeve face should be prevent from contacting with adhesives.

Concentricity requirements



Bearing Installation for Plastic Bearing

Housing: The bearing housing and the fitting tools must be kept clean during the assembling. A chamfer of 25°

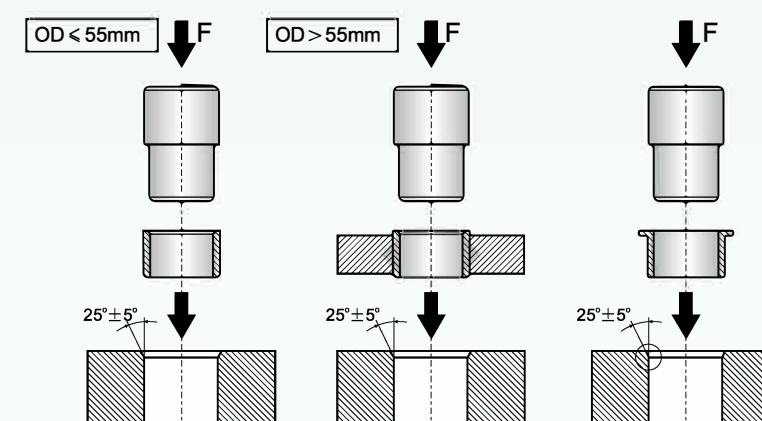
on the housing should be ensured for an easy assembling. A stepped press pin is recommended to be used for the assembling. The inner diameter of the GPB plastic bearings is measured after the bushing is fitted into the H7 housing.

Shaft: There is no critical requirement for the shaft material but chrome plated shaft is recommended for better operation. Rounded chamfer is required on the shaft for easy assembling. GPB recommend the shaft roughness to be in the range of Ra0.2~0.8. Please refer to shaft table for the relation between the surface roughness and bearing friction coefficient.

GPB plastic bearings are designed according to ISO 3547 Standard . Although the GPB plastic bearings are designed for selflubricating purpose, but the initial lubricating helps the assembling and the future operation of the bearings.

Adhesive agent: GPB plastic bearings assembly generally needn't use glue, in case the glue is necessary, please consider the used glue can also work properly at the required temperature. Relative testing is recommended in this case.

Assembly example

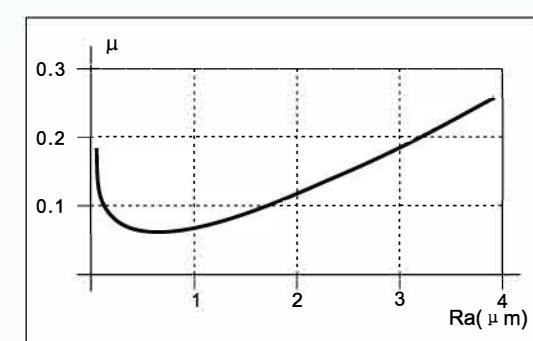


| Material | Thermal conductivity [W/m x K] |
|-------------------|--------------------------------|
| Carbon steels | 46 |
| Hardenes steel | 46 |
| Hard chrome shaft | 46 |
| Stainless steel | 16 |
| Hardened aluminum | 204 |
| Plastic | 0.24 |

Plastic plain Bearings Tolerance [mm]

| Diameter d | Tolerance after being assembled | | | Housing H7 | Shaft h9 |
|------------|---------------------------------|--------------|--------------|------------|----------|
| | E10 | F10 | D11 | | |
| >0 ~ 3 | +0.014+0.054 | +0.006+0.046 | +0.020+0.080 | 0+0.010 | 0-0.025 |
| >3 ~ 6 | +0.020+0.068 | +0.010+0.058 | +0.030+0.105 | 0+0.012 | 0-0.030 |
| >6 ~ 10 | +0.025+0.083 | +0.013+0.071 | +0.040+0.130 | 0+0.015 | 0-0.036 |
| >10 ~ 18 | +0.032+0.102 | +0.016+0.086 | +0.050+0.160 | 0+0.018 | 0-0.043 |
| >18 ~ 30 | +0.040+0.124 | +0.020+0.104 | +0.065+0.195 | 0+0.021 | 0-0.052 |
| >30 ~ 50 | +0.050+0.150 | +0.025+0.125 | +0.080+0.240 | 0+0.025 | 0-0.062 |
| >50 ~ 80 | +0.060+0.180 | +0.030+0.150 | +0.100+0.290 | 0+0.030 | 0-0.074 |
| >80 ~ 120 | +0.072+0.212 | 0.036+0.176 | +0.120+0.340 | 0+0.035 | 0-0.087 |
| >120 ~ 180 | +0.085+0.245 | +0.043+0.203 | +0.145+0.395 | 0+0.040 | 0-0.100 |

Friction coefficient μ & surface roughness Ra



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