

MQ-10 Oilless Bushing



available if need



MQ-10 Carbon Steel Self-lubricating Bushing

With low carbon steel as the backing, sintered bronze as medial layer, mixed PTFE with fibers as self-lubricating layer.

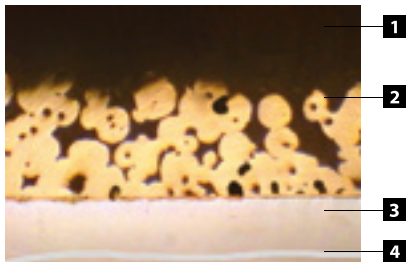
Suitable for dry running with low coefficient of friction, low wear rate, good sliding characteristics, the transfer film created will protect the mating metal surface.

Suitable for rotary and oscillating movement, high chemical resistance, lower absorption of water and reduced swelling. Also performs well with lubrication.

(also known as SF-1 or DU)



Material Structure



1. PTFE with fibers 0.01-0.03mm
 2. Sintered bronze powder 0.2-0.35mm
 3. Low carbon steel 0.7-2.3mm
 4. Cu or Tin coating 0.008
- (the actual thickness of metallographic structure as the negotiation)

Application case



Rotary motion, oscillating motion and short stroke linear motion.
Automotive, Calipers, Shock absorbers, Textile Door hinges, Compressor, Agriculture equipments, OA equipment, Construction equipments.....

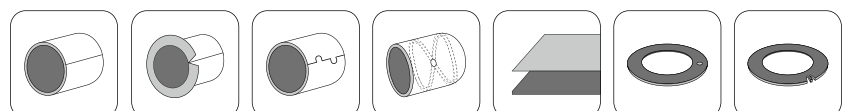
Application Feature

1. Suitable for oilless or few grease working conditions;
2. Long maintenance-free ; Long operating life due to low friction;
4. low vibration, low noise and non-pollution in operation;
5. Thin wall thickness & low weight for the machine with compact design;
6. low hardness of mating shaft can be mated, so the shafts processing is easy;
7. PTFE film is transferred to the mating shaft, to protect the mating metal surface, also improve running properties;
8. lower absorption of water, heat dissipation, and reduced swelling, to keep the exact sizes;
9. Cu or Tin plated in outer surface, for good anti-corrosion.

Technical Data

Max.Loading	Static	250N/mm ²
	Low speed	140N/mm ²
	Rotating Oscillation	60N/mm ²
Max.PV limit(Dry)	Short term operation	3.6N/mm ² ·m/s
	Continuous operation	1.8N/mm ² ·m/s
Temperature Range		-195℃~+280℃
Friction Coefficient		0.02~0.20
Max.Speed	Dry running	2m/s
	Hydrodynamic	>2m/s
Thermal conductivity		42 W(m·k) ⁻¹
Coefficient of thermal expansion		11 × 10 ⁻⁶ ·K ⁻¹

Available Types



MQ-1B Bronze Backing Pb-free Self-lubricating Bushing

MQ-1B with the common characteristics of MQ-10, with more features:

more green & healthier excellent heat dissipation, Very high chemical resistance,

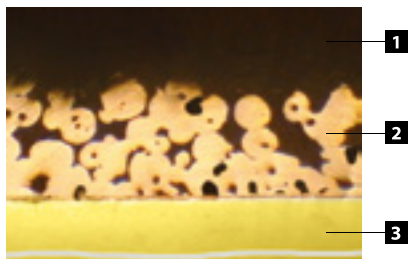
lower absorption of water and swelling, also performs very good lubrication feature!

bronze backing also can be as the self-lubricating materials, while PTFE layer be worked out, then with more long lifes!

(also known as SF-1B or DU-B)

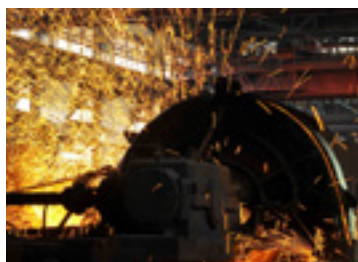


Material Structure



1. PTFE with fibers 0.01-0.03mm
2. Sintered bronze powder 0.2-0.35mm
3. Bronze backing 0.7-2.3mm (the actual thickness of metallographic structure as the negotiation)

Application case



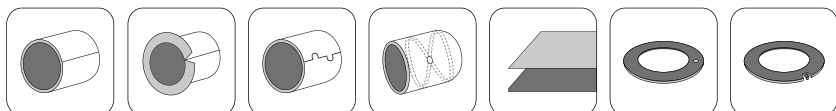
Application Feature

1. The transfer film created can protect the mating metal Surface ;perfect sliding;
2. Excellent thermal conductivity, particularly appropriate for high temperature environment;
3. Suit for dry running and the machine must be under successive long period working ;
4. Better corrosion resistance;
5. high loading capacity;
6. Bronze backing with self-lubrication feature, then with longer working lifes;
7. Environment-friendly ,Anti-magnetic.

Technical Data

Max.Loading	Static	250N/mm ²
	Low speed	140N/mm ²
	Rotating Oscillationg	60N/mm ²
Max.PV limit(Dry)	Short term operation	3.6N/mm ² ·m/s
	Continuous operation	1.8N/mm ² ·m/s
Temperature Range		-195℃~+280℃
Friction Coefficient		0.02~0.20
Max.Speed	Dry running	2m/s
	Hydrodynamic	>2m/s
Thermal conductivity		60 W(m·k) ⁻¹
Coefficient of thermal expansion		18 × 10 ⁻⁶ ·K ⁻¹

Available types



MQ-1S Stainless Steel Pb-free Self-lubricating Bushing

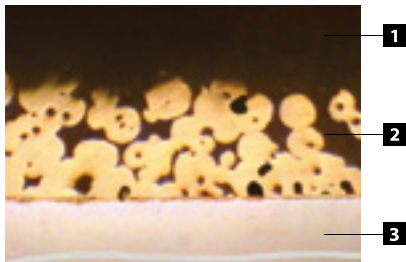
MQ-1S is based on stainless steel backing(Aisi 304,316 or 316L)with sintered porous bronze layer mixed with PTFE and fibers.

It is characterized by acid-resistant ,alkaline-resistant, ocean water resistant,etc.

Widely used as fluid valve of measuring acid and alkalinizing flow in chemical industry,and corrosion resisting sliding position in marine industry.(also known as SF-1S)



Material Structure



1. PTFE with fibers 0.01-0.03mm
2. Sintered bronze powder 0.2-0.35mm
3. Stainless steel backing 0.7-2.3mm (the actual thickness of metallographic structure as the negotiation)

Application case



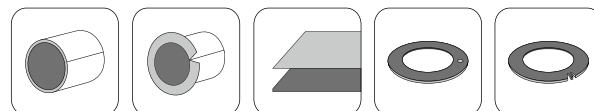
Application Feature

1. PTFE with oil fibres can protect the shaft in operation;
2. Low friction coefficient,good anti-wear;
3. High loading capacity ,working well in motions of rotation ,rock or advance and return movements;
4. Excellent anti-corrosion;
5. green features,used in food machine,pharmaceuticals industry etc;
6. Mainly used in the condition of strong acid and alkali,such as chemical industry,pumps, valves,etc.

Technical Data

Max.Loading	Static	280N/mm ²
	Low speed	160N/mm ²
	Rotating Oscillationg	80N/mm ²
Max.PV limit(Dry)	Short term operation	3.6N/mm ² ·m/s
	Continuous operation	1.8N/mm ² ·m/s
Temperature Range		-195℃~+280℃
Friction Coefficient		0.02~0.20
Max.Speed	Dry running	2m/s
	Hydrodynamic	>2m/s
Thermal conductivity		42 W/(m·k) ⁻¹
Coefficient of thermal expansion		11 × 10 ⁻⁶ ·K ⁻¹

Available types



MQ-1T Carbon Steel Gear Pump Self-lubricating Bushing

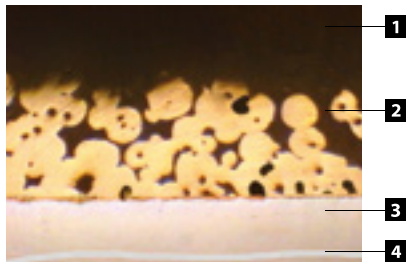
MQ-1T is composed of a specially designed Surface layer of PTFE formulations and is specially applied for the high PV bushings of gear pump.

It is to be used in Hydrodynamic or boundary lubricating condition of medium or high pressure gear pumps.

(also known as SF-1T)



Material Structure



1. PTFE with special fibers 0.01-0.03mm
2. Sintered bronze powder 0.2-0.35mm
3. Low carbon steel 0.7-2.3mm
4. Cu or Tin coating 0.008 (the actual thickness of metallographic structure as the negotiation)

Application case



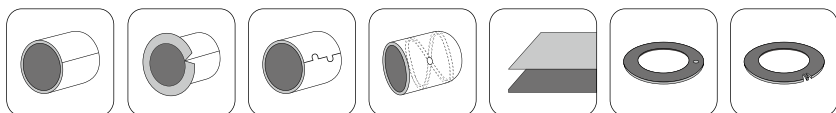
Application Feature

- 1.Low friction & working stable under oil condition;
- 2.Perfect wear resistant,also good shock resistance;
- 3.In hydrodynamic lubrication,Max.PV reaches to120N/mm²·m/s;
- 4.Widely used in gear pumps,plungers and vane pumps,special in midium or high pressure gear pumps.

Technical Data

Max.Loading	Static	250N/mm ²
	Low speed	140N/mm ²
Max.PV limit(Dry)	Rotating Oscillationg	60N/mm ²
	Short term operation	3.6N/mm ² ·m/s
Max.PV limit(Hydrodynamic)	Continuous operation	1.8N/mm ² ·m/s
		120N/mm ² ·m/s
Temperature Range		-195°C~+280°C
Friction Coefficient		0.02~0.20
Max.Speed	Dry running	2m/s
	Hydrodynamic	>3m/s
Thermal conductivity		42 W(m·k) ⁻¹
Coefficient of thermal expansion		11 × 10 ⁻⁶ ·K ⁻¹

Available types



MQ-1D Hydraulic Pb-free Self-lubricating Bushing

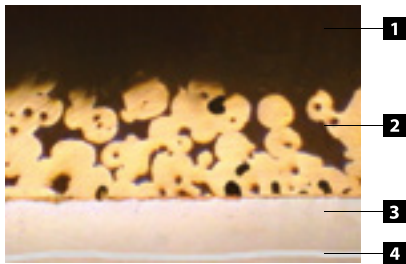
MQ-1D is developed for high duty, oil lubricated, hydraulic applications;

With excellent wear resistance and low static/dynamic friction coefficient, special suitable for frequently reciprocating motion, with or without the strong stocks from side directions.

(also known as SF-1D or similar to DP4)



Material Structure



1. PTFE mixed Polymer fibers 0.01-0.03mm
2. Sintered bronze powder 0.2-0.35mm
3. Low carbon steel 0.7-2.3mm
4. Cu or Tin coating 0.008 (the actual thickness of metallographic structure as the negotiation)

Application case



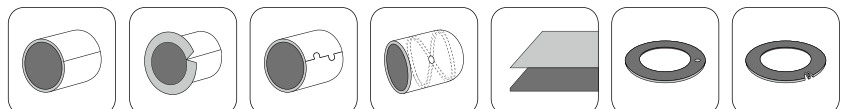
Application Feature

1. PTFE and Polymer fibers created the lubricated film and it is transferred to the mating shaft to improve running properties, also protect the mating surface of shaft;
2. Perfect wear resistant, lower friction, suitable for the working conditions of with or without lubricating oil, and keep the lubricating oil clear after long period of working;
3. Particularly suitable for bushes in reciprocating motions, also for other motions;
4. Used in Automotive suspension structures, shock absorbers, Hydraulic cylinders, gear pumps, motors, axial and radial piston pumps & motors.

Technical Data

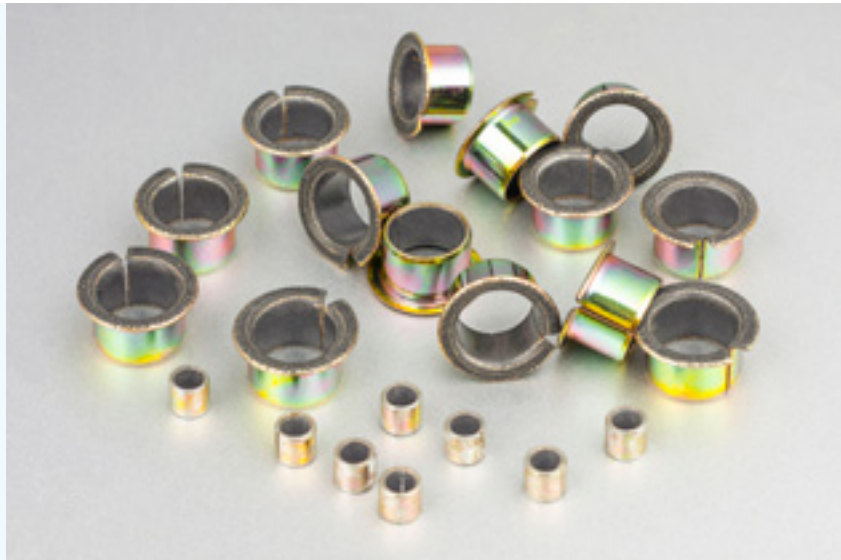
Max.Loading	Static	250N/mm ²
	Low speed	140N/mm ²
	Rotating Oscillating	60N/mm ²
Max.PV limit(Dry)	Short term operation	3.6N/mm ² ·m/s
	Continuous operation	1.8N/mm ² ·m/s
Max.PV limit(Hydraulic)		30N/mm ² ·m/s
Temperature Range		-195°C~+280°C
Friction Coefficient	Dry running	0.08~0.20
	Hydraulic	0.03~0.08
Max.Speed	Dry running	2m/s
	Hydrodynamic	>2m/s
Thermal conductivity		42 W(m·k) ⁻¹
Coefficient of thermal expansion		11 × 10 ⁻⁶ ·K ⁻¹

Available types

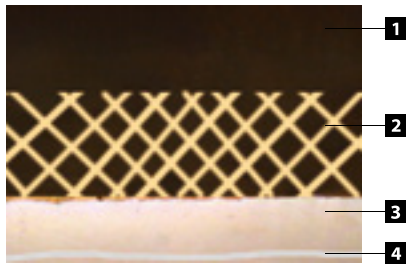


MQ-1W Low Carbon Steel Base Sintered Bronze Mesh Bushing

MQ-1W with low carbon steel as the backing, sintered bronze mesh, mixed with PTFE and fibers, with more firm & stable lubrication layer, accordingly with higher loading capacity and working lifes.



Material Structure



1. PTFE with fibers 0.01-0.03mm
2. Sintered bronze mesh 0.2-0.35mm
3. Low carbon steel 0.7-2.3mm
4. Cu, Tin or Zinc coating 0.008 (the actual thickness of metallographic structure as the negotiation)

Application case



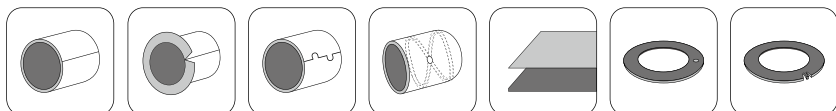
Application Feature

1. PTFE and oil fiber created the lubricated film and it will be transferred to the mating shaft to improve running properties, also protect the Surface of mating shaft ;
2. Low friction, wear resistant and anti-impact;
3. Firm and stable structure, with high loading capacity and more wear resistant;
4. Used for pedal rod, Gearshift rod, clutch brake lever, control rod and other parts.

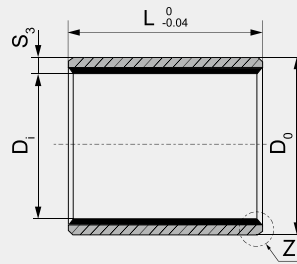
Technical Data

Max.Loading	Static	250N/mm ²
	Low speed	140N/mm ²
	Rotating Oscillationg	60N/mm ²
Max.PV limit(Dry)	Short term operation	3.6N/mm ² ·m/s
	Continuous operation	1.8N/mm ² ·m/s
Temperature Range		-195℃~+280℃
Friction Coefficient		0.02~0.20
Max.Speed	Dry running	2m/s
	Hydrodynamic	>2m/s
Thermal conductivity		42 W/(m·k) ⁻¹
Coefficient of thermal expansion		11 × 10 ⁻⁶ ·K ⁻¹

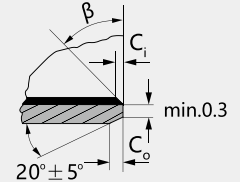
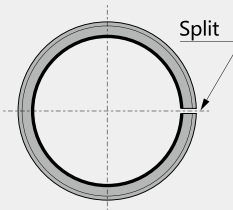
Available types



MQ-10 Series Metric Cylindrical Bushing Specification & Tolerance



ID and OD chamfers



magnified Z



available if need

S ₃	C _o	C _i	β
0.75	0.5 ± 0.3	0.25 ± 0.2	30° ± 5°
1.00	0.6 ± 0.3	0.30 ± 0.2	30° ± 5°
1.50	0.7 ± 0.3	0.50 ± 0.3	30° ± 5°

S ₃	C _o	C _i	β
2.00	1.2 ± 0.4	0.50 ± 0.3	30° ± 5°
2.50	1.8 ± 0.6	0.60 ± 0.3	45° ± 5°

Unit: mm

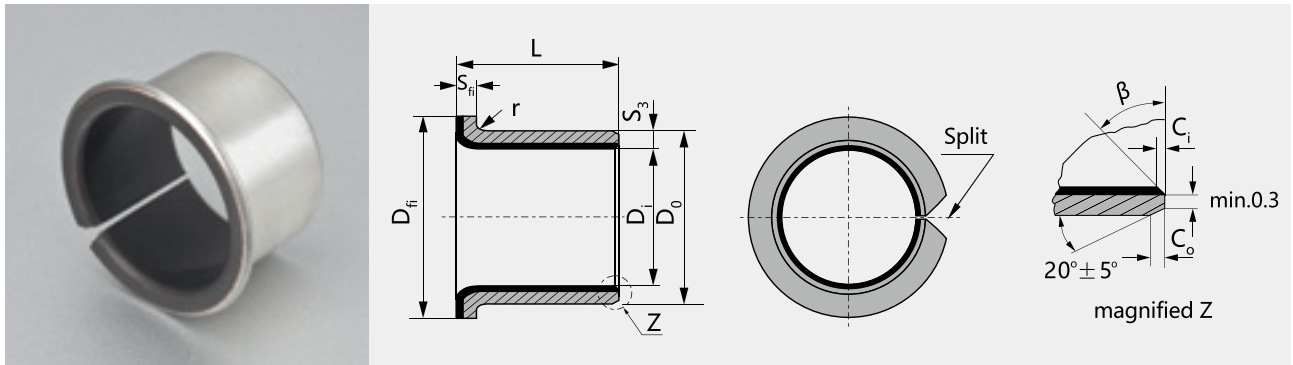
Shaft (f7) D _s	Housing (H7) D _h	Tolerance (OD) D _o	After fixed (ID) D _{i,a}	Clearance D _b	Wall thickness S ₃	Length L ⁰ / _{-0.40} (d ≤ Ø 28 L-0.30 d > Ø 30 L-0.40)														
						6	8	10	12	15	20	25	30	40	50					
6 -0.010 -0.022	8 +0.015	8 +0.055 +0.025	6.055 5.990	0.077 0.000	1.005 0.980	0606	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	1312	1315	1320	1325										
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	0.095 0.006		1610	1612	1615	1620	1625										
17 -0.016 -0.034	19 +0.021	19 +0.075 +0.035	17.061 16.990			1710	1712	1715	1720	1725										
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		0.112 0.010	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	2410		2412	2415	2420	2425	2430										
25 -0.020 -0.041	28 +0.021	28 +0.075 +0.035	25.071 24.990	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	0.126 0.010	2812	2815	2820	2825	2830	2840	2850									
30 -0.020 -0.041	34 +0.025	34 +0.085 +0.045	30.085 29.990		3012	3015	3020	3025	3030	3040	3050									
32 -0.025 -0.050	36 +0.025	36 +0.085 +0.045	32.085 31.990		0.135 0.015	3212	3215	3220	3225	3230	3240	3250								
35 -0.025 -0.050	39 +0.025	39 +0.085 +0.045	35.085 34.990			3512	3515	3520	3525	3530	3540	3550								
38 -0.025 -0.050	42 +0.025	42 +0.085 +0.045	38.085 37.990	3812		3815	3820	3825	3830	3840	3850									
40 -0.025 -0.050	44 +0.025	44 +0.085 +0.045	40.085 39.990	4012		4015	4020	4025	4030	4040	4050									

MQ-10 Series Metric Cylindrical Bushing Specification & Tolerance

Shaft (f7) D _s	Housing (H7) D _H	Tolerance (OD) D _O	After fixed (ID) D _{I,a}	Clearance D _D	Wall thick- ness S ₃	Length L ⁰ _{-0.40} (d ≤ Ø 28 L-0.30 d > Ø 30 L-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	5025	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			6030	6040	6050	6060	6070								
65 -0.060 -0.030	70 +0.030	70 +0.100 +0.055	65.110 64.990			6530	6540	6550	6560	6570								
70 -0.060 -0.030	75 +0.030	75 +0.100 +0.055	70.110 69.990			7030	7040	7050	7060	7070	7080							
75 -0.060 -0.030	80 +0.030	80 +0.100 +0.055	75.110 74.990			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	0.209 0.020				8540	8550	8560	8570	8580	85100					
90 -0.054	95 +0.035	95 +0.120 +0.070	90.155 90.020		9040	9050	9060	9070	9080	90100								
95 -0.054	100 +0.035	100 +0.120 +0.070	95.155 95.020		9550	9560	9570	9580	95100									
100 -0.054	105 +0.035	105 +0.120 +0.070	100.155 100.020		10050	10060	10070	10080	100100	100115								
105 -0.054	110 +0.035	110 +0.120 +0.070	105.155 105.020		10560	10570	10580	105100	105115									
110 -0.054	115 +0.035	115 +0.120 +0.070	110.115 110.020					11060	11070	11080	110100	110115						
120 -0.054	125 +0.040	125 +0.170 +0.100	120.210 120.070	0.264 0.070						12060	12070	12080	120100	120115				
125 -0.063	130 +0.040	130 +0.170 +0.100	125.210 125.070	0.273 0.070						12560	12570	12580	125100	125115				
130 -0.063	135 +0.040	135 +0.170 +0.100	130.210 130.070		13060	13070	13080	130100	130115									
140 -0.063	145 +0.040	145 +0.170 +0.100	140.210 140.070		14060	14070	14080	140100	140115									
150 -0.063	155 +0.040	155 +0.170 +0.100	150.210 150.070		15060	15070	15080	150100	150115									
160 -0.063	165 +0.040	165 +0.170 +0.100	160.210 160.070		16060	16070	16080	160100	160115									
180 -0.063	185 +0.046	185 +0.210 +0.130	180.216 180.070	0.279 0.070						18060	18070	18080	180100					
190 -0.072	195 +0.046	195 +0.210 +0.130	190.216 190.070	0.288 0.070						19060	19070	19080	190100					
200 -0.072	205 +0.046	205 +0.210 +0.130	200.016 200.070		20060	20070	20080	200100										
220 -0.072	225 +0.046	225 +0.210 +0.130	220.216 220.070		22060	22070	22080	220100										
250 -0.072	255 +0.052	255 +0.260 +0.170	250.222 250.070	0.294 0.070								25080	250100					
260 -0.081	265 +0.052	265 +0.260 +0.170	260.222 260.070	0.303 0.070								26080	260100					
280 -0.081	285 +0.052	285 +0.260 +0.170	280.222 280.070		28080	280100												
300 -0.081	305 +0.052	305 +0.260 +0.170	300.222 300.070		30080	300100												

Non-standard dimensions & tolerances are available

MQ-10F Series Flange Bushing Specification & Tolerance



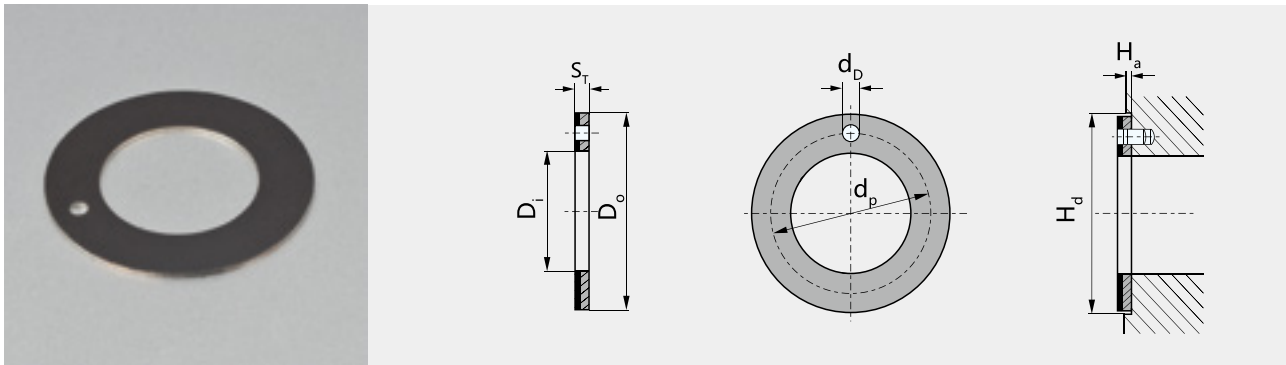
available if need

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

Shaft (f7) D_s	Housing (H7) D_H	Tolerance (OD) D_o	After fixed (ID) $D_{i,a}$	Clearance D_o	Designation	Wall thickness S_3	Dimension				
							D_i	D_o	$D_n \pm 0.5$	$L \pm 0.25$	$S_n - 0.2$
6 -0.013 -0.028	8 +0.015	8 +0.055 +0.025	6.055 5.990	0.077 0.000	MQ-1F06040	1.005 0.980	6	8	12	4	1
					MQ-1F06070						
8 -0.013 -0.028	10 +0.015	10 +0.055 +0.025	8.055 7.990	0.083 0.003	MQ-1F08055	1.005 0.980	8	10	15	5.5	1
					MQ-1F08075					7.5	
10 -0.016 -0.034	12 +0.018	12 +0.055 +0.025	10.058 9.990	0.086 0.003	MQ-1F10070	1.005 0.980	10	12	18	7	1
					MQ-1F10090					9	
12 -0.016 -0.034	14 +0.018	14 +0.065 +0.030	12.058 11.990	0.092 0.006	MQ-1F10120	1.005 0.980	12	14	20	12	1
					MQ-1F12070					7	
14 -0.016 -0.034	16 +0.018	16 +0.065 +0.030	14.058 13.990	0.092 0.006	MQ-1F12090	1.005 0.980	12	14	20	9	1
					MQ-1F12120					12	
15 -0.016 -0.034	17 +0.018	17 +0.065 +0.030	15.058 14.990	0.092 0.006	MQ-1F14120	1.005 0.980	14	16	22	12	1
					MQ-1F14170					17	
16 -0.016 -0.034	18 +0.018	18 +0.065 +0.030	16.058 15.990	0.092 0.006	MQ-1F15090	1.005 0.980	15	17	23	9	1
					MQ-1F15120					12	
18 -0.016 -0.034	20 +0.021	20 +0.075 +0.035	18.061 17.990	0.095 0.006	MQ-1F15170	1.005 0.980	15	17	23	17	1
					MQ-1F16120					12	
20 -0.020 -0.041	23 +0.021	23 +0.075 +0.035	20.071 19.990	0.112 0.010	MQ-1F16170	1.505 1.475	16	18	24	17	1.5
					MQ-1F18120					12	
22 -0.020 -0.041	25 +0.021	25 +0.075 +0.035	22.071 21.990	0.112 0.010	MQ-1F18170	1.505 1.475	18	20	26	17	1.5
					MQ-1F18200					20	
25 -0.020 -0.041	28 +0.021	28 +0.075 +0.035	25.071 24.990	0.112 0.010	MQ-1F20115	1.505 1.475	20	23	30	11.5	1.5
					MQ-1F20165					16.5	
30 -0.025 -0.050	34 +0.025	34 +0.075 +0.035	30.085 29.990	0.126 0.010	MQ-1F20215	1.505 1.475	20	23	30	21.5	1.5
					MQ-1F22150					15	
35 -0.025 -0.050	39 +0.025	39 +0.085 +0.045	35.085 34.990	0.135 0.015	MQ-1F22200	2.005 1.970	22	25	32	20	2
					MQ-1F25115					11.5	
40 -0.025 -0.050	44 +0.025	44 +0.085 +0.045	40.085 39.990	0.135 0.015	MQ-1F25165	2.005 1.970	25	28	35	16.5	2
					MQ-1F25215					21.5	
30 -0.025 -0.050	34 +0.025	34 +0.075 +0.035	30.085 29.990	0.126 0.010	MQ-1F30160	2.005 1.970	30	34	42	16	2
					MQ-1F30260					26	
35 -0.025 -0.050	39 +0.025	39 +0.085 +0.045	35.085 34.990	0.135 0.015	MQ-1F35160	2.005 1.970	35	39	47	16	2
					MQ-1F35260					26	
40 -0.025 -0.050	44 +0.025	44 +0.085 +0.045	40.085 39.990	0.135 0.015	MQ-1F40260	2.005 1.970	40	44	53	26	2
					MQ-1F40400					40	

MQ-10WC Series Thrust Washer Specification & Tolerance

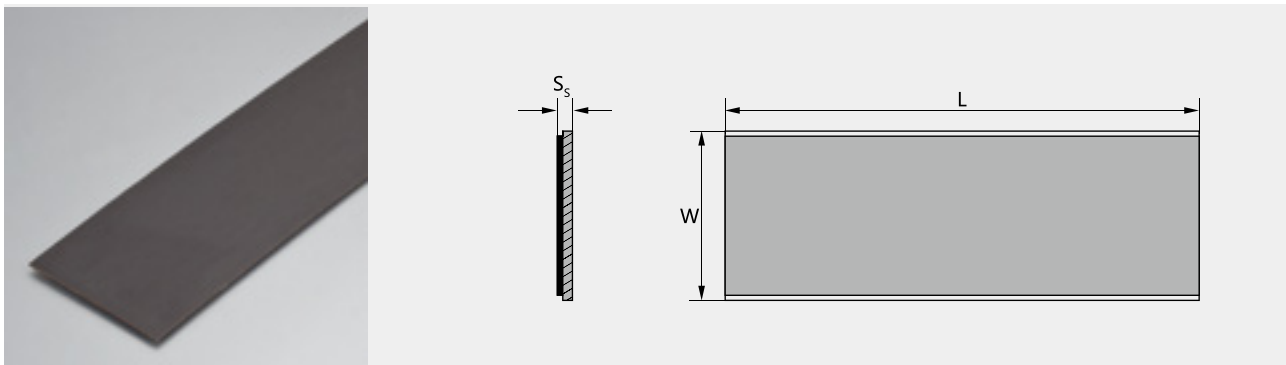


Unit: mm

Shaft D_i	Standard No.	Washer size				Assemble size		$H_d+0.12$
		$D_i+0.25$	$D_o-0.25$	$S_T-0.05$	$d_p \pm 0.125$	$d_b^{+0.4}_{+0.1}$	$H_a \pm 0.2$	
8	W10	10	20	1.5	15	1.5	1	20
10	W12	12	24		18			
12	W14	14	26		20			
14	W16	16	30		23			
16	W18	18	32		25			
18	W20	20	36		28			
20	W22	22	38		30			
22	W24	24	42		33			
24	W26	26	44		35			
26	W28	28	48		38			
30	W32	32	54	43	4	1.5	54	
36	W38	38	62	50			62	
40	W42	42	66	54			66	
46	W48	48	74	61			74	
50	W52	52	78	2	65	1.5	78	
60	W62	62	90		76		90	

Non-standard dimensions & tolerances are available

MQ-10SP Series Strip Specification & Tolerance



Unit: mm

Standard No.	Length $L \pm 1$	Width $W \pm 1$	Wall thickness $S_s-0.05$
SP	500	150	1.0
SP	500	150	1.5
SP	500	150	2.0
SP	500	150	2.5

Non-standard dimensions & tolerances are available