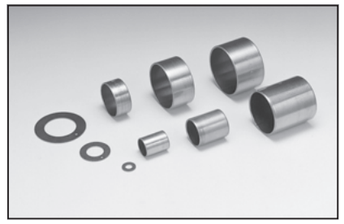
Oiles Drymet ST

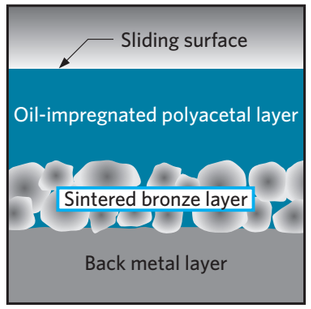
Oil-impregnated polyacetal multi-layer bearings with back metals



RoHS2 ELV Lead Free

Feature

- Serviceable without the need for lubrication and demonstrates low coefficient of friction and superior load performance.
- Demonstrates superior wear resistance in applications where oil film is seldom produced such as reciprocating motions, oscillation, frequent starts and stops, etc.
- Thin bearing allows compact design.
- Superior dimensional stability, mechanical strength, and thermal conductivity.
- The standard products and plate material of various sizes are available.



Image

Service range

Lubrication condition	Dry
Service temperature range ℃	−40～+120
Allowable max. pressure P N/mm² {kgf/cm²}	24.5 (137) {250 (1,400)}
Allowable max. velocity V m/s {m/min}	1.15 {69}
Allowable max. PV value N/mm² · m/s {kgf/cm² · m/min}	3.25 {1,990}

The values in parentheses are static bearing pressures, which are the bearing pressures in applications with no motion or very small motion (≦0.0017m/s[0.1m/min]).

Mechanical properties

Tensile strength	JIS Z 2241	N/mm² {kgf/cm²}	380 {3,875}
Elongation	JIS Z 2241	%	27
Hardness	JIS Z 2244	HV	107

※The values shown above are typical values, not the standard values.
※The values shown above are values of back metal.

Lathe turning

Cutting tool	carbide tool (JIS)	
	Relief angle	5～10°
	Rake angle	10～20°
	Nose radius (mm)	0.10～0.20
Condition	Speed (m/min)	60～200
	Cut depth (mm)	0.05～0.10
	Feed (mm/rev)	0.05～0.20

Attention should be paid to dimensional variances due to thermal expansion, chucking, and bend of the material.

Machining accuracy (bushing)

I.D.	O.D.	Length
class 7 (Note)	—	class 8 to 9

(Note) Accuracy after press fitting.

Classes here are in JIS standard.

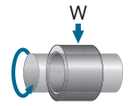
This product demonstrates satisfactory performance at the slide surface roughness of Rz6.3 to 12.5μm.

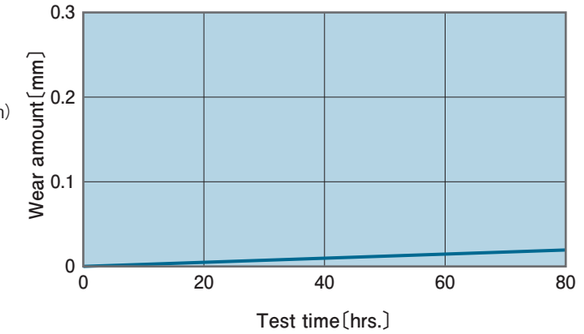
Dimensions may change due to thermal expansion, chucking pressure, moisture absorption deformation, etc. High accuracy is ensured if the product is installed on the housing and then ground.

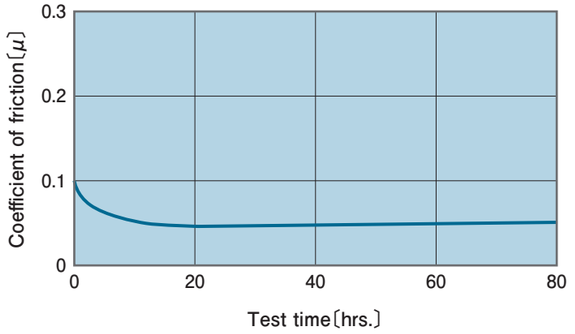
Test data

Journal rotation test

<Testing conditions>
Bearing dimension : φ40×φ44× ℓ 30
Mating material : S45C (surface roughness Rz0.6μm)
Pressure : 10.3N/mm² {105.0kgf/cm²}
Velocity : 0.922m/s {55.3m/min}
Test time : 80hrs.
Lubrication : grease is applied at assembley

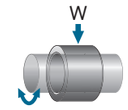


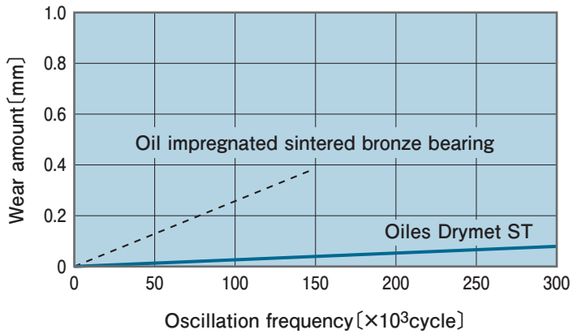




Journal oscillation test

<Testing conditions>
Bearing dimension :
φ40×φ44× ℓ 30 (Oiles Drymet ST)
φ40×φ50× ℓ 30 (Oil impregnated sintered bronze bearing)
Mating material : S45C (surface roughness Rz1.5μm)
Pressure : 19.6N/mm² {200.0kgf/cm²}
Velocity : 0.023m/s {1.40m/min}
Oscillating cycle : 100cpm
Oscillating angle : 20°
Oscillating frequency : 300,000cycle
Lubrication : grease is applied at assembly





Oiles Drymet ST

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Press-fitting (Rolled bushing)

Press-fitting jig

Generally, as shown in the figure 1, a mandrel is used for the press-fitting. However use of a guide ring facilitates easier press-fitting. Use of a guide ring prevents damage of a bushing at the time of press-fitting. The dimension of a guide ring should be calculated from the table below.

Inner diameter of the guide ring should be the size so that the bushing can be inserted by hands. Length of the guide ring should be more than one-third of the bushing, or if possible, it should be the same length as the bushing.

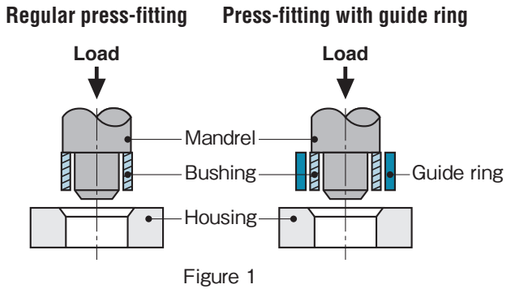


Figure 1

The dimension of mandrel should be calculated from table below.

Dimension of bushing	Dimension of mandrel
I.D. D_0	$d_0=D_0-(0.05\ \text{to}\ 0.10)$
O.D. D_1	$d_1=D_1-(0.20\ \text{to}\ 0.30)$
Length L	$\ell \geqq L$

The dimension of guide ring should be calculated from table below.

Dimension of bushing	Guide ring I.D.	Guide ring O.D.
Up to ϕ40	D1+(0.1 to 0.3)	D1+(10 to 15)
ϕ42 to ϕ60	D1+(0.2 to 0.5)	
Over ϕ65	D1+(0.5 to 1.0)	

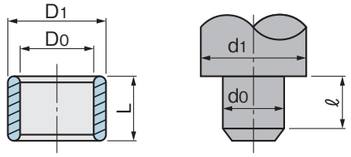


Figure 2

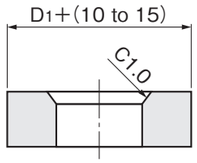


Figure 3

Inner diameter of the guide ring should be the size that bushing can be inserted by hands. The length of the guide ring should be more than one-third of the bushing, or if possible, it should be the same length as the bushing.

Housing chamfer

For the housing chamfer, either a round chamfer or a tapered chamfer is recommended. In case of a C-surface chamfer, (more than C1.0) make sure there is no burr. Smoother press-fitting is possible by applying small amount of grease or lubricant.

Press-fit force

Press-fit smoothly with hydralic (pressure), pneumatic pressure, or a vice. Avoid press-fit by use of impact such as use of a hammer. It might induce damage of the bushing, or change the size of the inner diameter after press-fit.

Press-fit force is obtained by below formula.

$$F=(0.9\ \text{to}\ 1.2)\times 10^4\cdot\frac{t\cdot L\cdot S}{D_1}\ (\text{kg})$$

t : thickness of the steel backing
L : length of the bushing
S : average interference
D1 : O.D. of bushing

Backing steel thickness

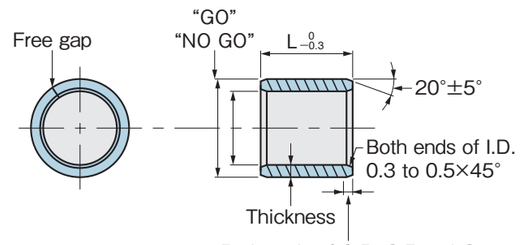
I.D.of bushing	t
Up to ϕ18	0.5
ϕ19 to ϕ25	0.95
ϕ26 to ϕ40	1.38
ϕ42 and over ϕ42	1.88

Unit : mm

Dimensional inspection and chamfering of Oiles Drymet ST

Oiles Drymet ST is dimensionally inspected before shipping as indicated below:

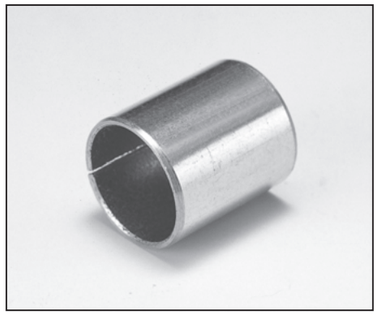
1. The O.D. is cheeked by "GO" and "NO GO" ring gauges.
2. The I.D.mounted in the "GO" ring gauge is checked by plug gauges.
3. The "GO" ring gauge stands for the upper limit and the "NO GO" ring gauge the lower limit of the O.D. tolerance.
4. Chamfering: Both ends of the I.D. and O.D. are chamfered as shown in the right diagram except those with the ID of 9mm or less which are not chamfered.



Thickness 1.0mm : 0.5mm
Thickness 1.5mm : 0.8mm
Thickness 2.0mm : 1.0mm
Thickness 2.5mm : 1.0mm

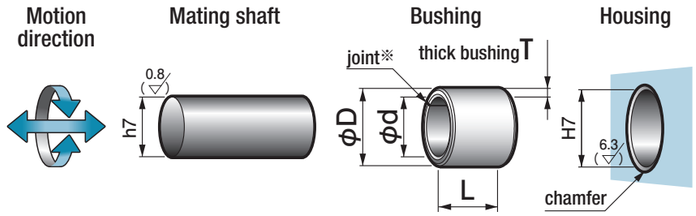
70B Oiles Drymet ST Bushings (I.D. ϕ5~ϕ30)

RoHS2 ELV Lead Free

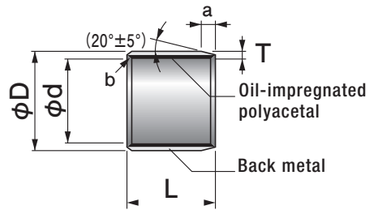


Specify Part No. by required I.D. and length.
(e.g.) I.D. is 15mm and length is 10mm.

70B - 1510
Part No.



※The joint causes no influences upon rotation of the shaft. Be careful when press-fitting so that the joint is not at the position to which the maximum load is applied.



a: O.D. chamfering for the bushing I.D. of ϕ10 or more

T	1.0	1.5	2.0	
a	0.5	0.8	1.0	(mm)

b: I.D. chamfering for the bushing I.D. of ϕ10 or more

T	1.0	1.5	2.0	
b	C0.3	C0.5	C0.5	(mm)

※Chamfering of inner or outer diameters less than ϕ10 mm is done only to remove burrs.

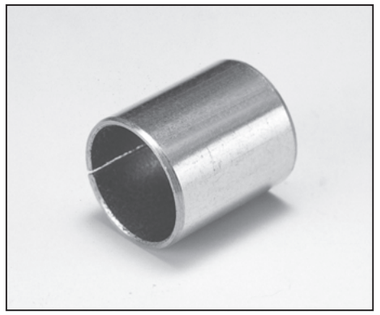
Shaft		Housing		I.D.	O.D.		Wall thickness		Length L Tolerance $^{0}_{-0.3}$					
Size	h7 Tolerance	Size	H7 Tolerance	ϕd	ϕD	Tolerance	T	Tolerance	4	5	6	7	8	10
5	$^{0}_{-0.012}$	7	$^{+0.015}_{0}$	5	7	$^{+0.055}_{+0.025}$	1.0	$^{-0.030}_{-0.075}$	0504	0505	0506		0508	
6	$^{0}_{-0.012}$	8	$^{+0.015}_{0}$	6	8	$^{+0.055}_{+0.025}$	1.0	$^{-0.030}_{-0.075}$		0605	0606	0607	0608	0610
7	$^{0}_{-0.015}$	9	$^{+0.015}_{0}$	7	9	$^{+0.055}_{+0.025}$	1.0	$^{-0.030}_{-0.075}$		0705		0707		0710
8	$^{0}_{-0.015}$	10	$^{+0.015}_{0}$	8	10	$^{+0.055}_{+0.025}$	1.0	$^{-0.030}_{-0.075}$			0806		0808	0810
9	$^{0}_{-0.015}$	11	$^{+0.018}_{0}$	9	11	$^{+0.060}_{+0.030}$	1.0	$^{-0.030}_{-0.075}$						0910
10	$^{0}_{-0.015}$	12	$^{+0.018}_{0}$	10	12	$^{+0.060}_{+0.030}$	1.0	$^{-0.030}_{-0.075}$			1006	1007	1008	1010
12	$^{0}_{-0.018}$	14	$^{+0.018}_{0}$	12	14	$^{+0.060}_{+0.030}$	1.0	$^{-0.030}_{-0.075}$			1206		1208	1210
13	$^{0}_{-0.018}$	15	$^{+0.018}_{0}$	13	15	$^{+0.060}_{+0.030}$	1.0	$^{-0.030}_{-0.075}$						
14	$^{0}_{-0.018}$	16	$^{+0.018}_{0}$	14	16	$^{+0.065}_{+0.035}$	1.0	$^{-0.030}_{-0.075}$						1410
15	$^{0}_{-0.018}$	17	$^{+0.018}_{0}$	15	17	$^{+0.065}_{+0.035}$	1.0	$^{-0.035}_{-0.085}$						1510
16	$^{0}_{-0.018}$	18	$^{+0.018}_{0}$	16	18	$^{+0.070}_{+0.035}$	1.0	$^{-0.035}_{-0.085}$						1610
17	$^{0}_{-0.018}$	19	$^{+0.021}_{0}$	17	19	$^{+0.070}_{+0.035}$	1.0	$^{-0.035}_{-0.085}$						
18	$^{0}_{-0.018}$	20	$^{+0.021}_{0}$	18	20	$^{+0.075}_{+0.040}$	1.0	$^{-0.035}_{-0.085}$						1810
19	$^{0}_{-0.021}$	22	$^{+0.021}_{0}$	19	22	$^{+0.075}_{+0.040}$	1.5	$^{-0.035}_{-0.085}$						
20	$^{0}_{-0.021}$	23	$^{+0.021}_{0}$	20	23	$^{+0.080}_{+0.045}$	1.5	$^{-0.035}_{-0.085}$						2010
22	$^{0}_{-0.021}$	25	$^{+0.021}_{0}$	22	25	$^{+0.080}_{+0.045}$	1.5	$^{-0.035}_{-0.085}$						2210
24	$^{0}_{-0.021}$	27	$^{+0.021}_{0}$	24	27	$^{+0.080}_{+0.045}$	1.5	$^{-0.035}_{-0.085}$						
25	$^{0}_{-0.021}$	28	$^{+0.021}_{0}$	25	28	$^{+0.085}_{+0.050}$	1.5	$^{-0.035}_{-0.085}$						2510
26	$^{0}_{-0.021}$	30	$^{+0.021}_{0}$	26	30	$^{+0.080}_{+0.050}$	2.0	$^{-0.035}_{-0.090}$						
28	$^{0}_{-0.021}$	32	$^{+0.025}_{0}$	28	32	$^{+0.090}_{+0.050}$	2.0	$^{-0.035}_{-0.090}$						
30	$^{0}_{-0.021}$	34	$^{+0.025}_{0}$	30	34	$^{+0.090}_{+0.050}$	2.0	$^{-0.035}_{-0.090}$						

Length L Tolerance $^{0}_{-0.3}$							I.D. tolerance after press fitting (reference)	I.D.
12	15	20	25	30	35	40		ϕd
							$^{+0.165}_{+0.060}$	5
							$^{+0.165}_{+0.060}$	6
0712							$^{+0.165}_{+0.060}$	7
0812							$^{+0.165}_{+0.060}$	8
							$^{+0.168}_{+0.060}$	9
1012	1015	1020					$^{+0.168}_{+0.060}$	10
1212	1215	1220					$^{+0.168}_{+0.060}$	12
	1315						$^{+0.168}_{+0.060}$	13
1412	1415	1420					$^{+0.168}_{+0.060}$	14
1512	1515	1520	1525				$^{+0.188}_{+0.070}$	15
1612	1615	1620	1625				$^{+0.188}_{+0.070}$	16
	1715	1720					$^{+0.191}_{+0.070}$	17
1812	1815	1820	1825				$^{+0.191}_{+0.070}$	18
	1915						$^{+0.191}_{+0.070}$	19
2012	2015	2020	2025	2030			$^{+0.191}_{+0.070}$	20
2212	2215	2220	2225	2230			$^{+0.191}_{+0.070}$	22
	2415	2420	2425	2430			$^{+0.191}_{+0.070}$	24
2512	2515	2520	2525	2530	2535		$^{+0.191}_{+0.070}$	25
	2615	2620		2630			$^{+0.201}_{+0.070}$	26
2812	2815	2820	2825	2830		2840	$^{+0.205}_{+0.070}$	28
3012	3015	3020	3025	3030		3040	$^{+0.205}_{+0.070}$	30

※Outer diameter is measrued by exclusive gauge.
※The I.D. tolerance after press fitting is for reference only.
※I.D. ϕ31~ϕ160 are shown on pages 147 to 148.

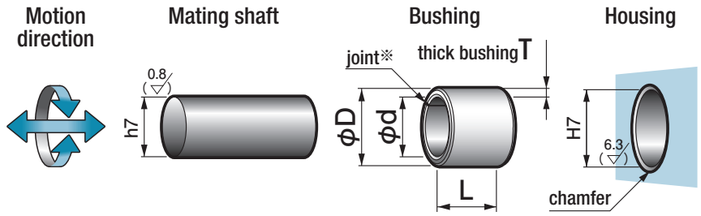
70B Oiles Drymet ST Bushings (I.D. ϕ31~ϕ160)

RoHS2 ELV Lead Free

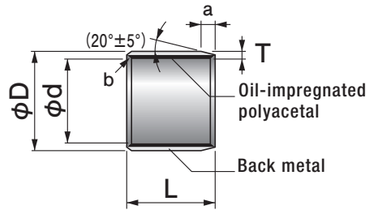


Specify Part No. by required I.D. and length.
(e.g.) I.D. is 60mm and length is 50mm.

70B - 6050
Part No.



※The joint causes no influences upon rotation of the shaft. Be careful when press-fitting so that the joint is not at the position to which the maximum load is applied.



a: Chamfering for O.D.

T	2.0	2.5
a	1.0	1.0

(mm)

b: Chamfering for I.D.

T	2.0	2.5
b	C0.5	C0.5

(mm)

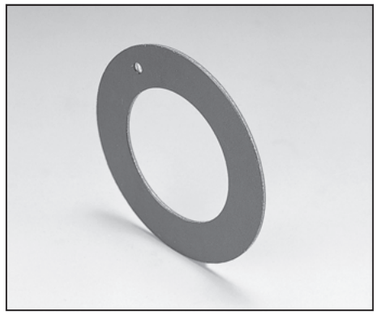
Shaft Size	Shaft h7 Tolerance	Housing Size	Housing H7 Tolerance	I.D. ϕd	O.D. ϕD	O.D. Tolerance	Wall thickness T	Wall thickness Tolerance	Length L Tolerance $^{0}_{-0.3}$ 12	15	20	25	30	40	50
31	0 −0.025	35	+0.025 0	31	35	+0.090 +0.050	2.0	−0.035 −0.090				3125		3140	
32	0 −0.025	36	+0.025 0	32	36	+0.090 +0.050	2.0	−0.035 −0.090			3220	3225	3230	3240	
35	0 −0.025	39	+0.025 0	35	39	+0.095 +0.055	2.0	−0.035 −0.090	3512	3515	3520	3525	3530	3540	3550
38	0 −0.025	42	+0.025 0	38	42	+0.095 +0.055	2.0	−0.035 −0.090			3820		3830	3840	3850
40	0 −0.025	44	+0.025 0	40	44	+0.095 +0.055	2.0	−0.035 −0.090	4012		4020	4025	4030	4040	4050
42	0 −0.025	47	+0.025 0	42	47	+0.095 +0.055	2.5	−0.040 −0.105						4240	4250
45	0 −0.025	50	+0.025 0	45	50	+0.100 +0.060	2.5	−0.040 −0.105			4520	4525	4530	4540	4550
50	0 −0.025	55	+0.030 0	50	55	+0.105 +0.060	2.5	−0.040 −0.105			5020		5030	5040	
55	0 −0.030	60	+0.030 0	55	60	+0.110 +0.065	2.5	−0.040 −0.105					5530	5540	
60	0 −0.030	65	+0.030 0	60	65	+0.120 +0.070	2.5	−0.040 −0.105					6030	6040	6050
65	0 −0.030	70	+0.030 0	65	70	+0.125 +0.075	2.5	−0.045 −0.095					6530	6540	
70	0 −0.030	75	+0.030 0	70	75	+0.125 +0.075	2.5	−0.045 −0.095						7040	
75	0 −0.030	80	+0.030 0	75	80	+0.130 +0.075	2.5	−0.045 −0.095					7530	7540	
80	0 −0.030	85	+0.035 0	80	85	+0.130 +0.075	2.5	−0.045 −0.095						8040	
85	0 −0.035	90	+0.035 0	85	90	+0.130 +0.075	2.5	−0.045 −0.095						8540	
90	0 −0.035	95	+0.035 0	90	95	+0.130 +0.075	2.5	−0.045 −0.095						9040	
100	0 −0.035	105	+0.035 0	100	105	+0.140 +0.080	2.5	−0.060 −0.110							10050
110	0 −0.035	115	+0.035 0	110	115	+0.140 +0.080	2.5	−0.060 −0.110							11050
120	0 −0.035	125	+0.040 0	120	125	+0.145 +0.090	2.5	−0.060 −0.110							12050
130	0 −0.040	135	+0.040 0	130	135	+0.145 +0.090	2.5	−0.060 −0.110							13050
140	0 −0.040	145	+0.040 0	140	145	+0.165 +0.100	2.5	−0.060 −0.110							14050
150	0 −0.040	155	+0.040 0	150	155	+0.185 +0.120	2.5	−0.060 −0.110							15050
160	0 −0.040	165	+0.040 0	160	165	+0.185 +0.120	2.5	−0.060 −0.110							16050

Length L Tolerance $^{0}_{-0.3}$ 55	60	65	70	80	90	95	100	125	I.D. tolerance after press fitting (reference)	I.D. ϕd
									+0.205 +0.070	31
									+0.205 +0.070	32
									+0.205 +0.070	35
									+0.205 +0.070	38
									+0.205 +0.070	40
									+0.235 +0.080	42
	4560								+0.235 +0.080	45
5055	5060	5065							+0.240 +0.080	50
	5560		5570						+0.240 +0.080	55
	6060			6080					+0.240 +0.080	60
	6560								+0.220 +0.090	65
	7060			7080					+0.220 +0.090	70
	7560			7580					+0.220 +0.090	75
	8060			8080					+0.225 +0.090	80
	8560			8580					+0.225 +0.090	85
	9060				9090				+0.225 +0.090	90
			10070			10095			+0.255 +0.120	100
			11070			11095			+0.255 +0.120	110
			12070			12095			+0.260 +0.120	120
				13080				130125	+0.260 +0.120	130
				14080			140100	140125	+0.260 +0.120	140
				15080			150100	150125	+0.260 +0.120	150
				16080			160100	160125	+0.260 +0.120	160

※Outer diameter is measrued by exclusive gauge.
※The I.D. tolerance after press fitting is for reference only.
※I.D. ϕ5~ϕ30 are shown on pages 145 to 146.

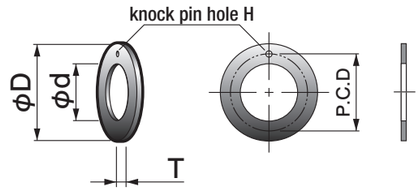
70W Oiles Drymet ST Washers

RoHS2 ELV Lead Free



Specify Part No. by required I.D. and thickness.
(e.g.) I.D. is 28mm and thickness is 1.5mm.

70W - 2815
Part No.

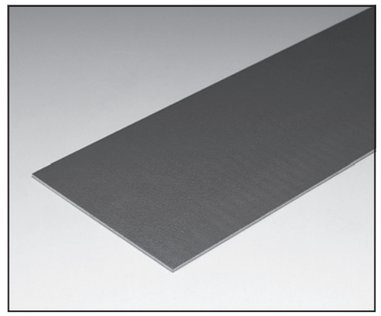


● Sliding surface consists of a plastic layer.

Part No.	I.D.		O.D.		Thickness		Knock pin hole		Position of knock pin	
	ϕd	Toleramce	ϕD	Toleramce	T	Toleramce	H	Toleramce	P.C.D	Toleramce
70W-0815	8	+0.4 +0.1	16	0 −0.3	1.5	−0.015 −0.115	1.5	+0.25 0	12	+0.1 −0.1
70W-1000	10	+0.4 +0.1	18	0 −0.3	1.5	−0.015 −0.115	1.5	+0.25 0	14	+0.1 −0.1
70W-1015	10	+0.4 +0.1	20	0 −0.3	1.5	−0.015 −0.115	1.5	+0.25 0	15	+0.1 −0.1
70W-1215	12	+0.4 +0.1	24	0 −0.3	1.5	−0.015 −0.115	1.5	+0.25 0	18	+0.1 −0.1
70W-1415	14	+0.4 +0.1	26	0 −0.3	1.5	−0.015 −0.115	2.0	+0.25 0	20	+0.1 −0.1
70W-1615	16	+0.4 +0.1	30	0 −0.3	1.5	−0.015 −0.115	2.0	+0.25 0	23	+0.1 −0.1
70W-1715	17	+0.4 +0.1	30	0 −0.3	1.5	−0.015 −0.115	2.0	+0.25 0	23.5	+0.1 −0.1
70W-1815	18	+0.4 +0.1	32	0 −0.3	1.5	−0.015 −0.115	2.0	+0.25 0	25	+0.1 −0.1
70W-2015	20	+0.4 +0.1	36	0 −0.3	1.5	−0.015 −0.115	3.0	+0.25 0	28	+0.1 −0.1
70W-2215	22	+0.4 +0.1	38	0 −0.3	1.5	−0.015 −0.115	3.0	+0.25 0	30	+0.1 −0.1
70W-2315	23	+0.4 +0.1	40	0 −0.3	1.5	−0.015 −0.115	3.0	+0.25 0	31.5	+0.1 −0.1
70W-2415	24	+0.4 +0.1	42	0 −0.3	1.5	−0.015 −0.115	3.0	+0.25 0	33	+0.1 −0.1
70W-2615	26	+0.4 +0.1	44	0 −0.3	1.5	−0.015 −0.115	3.0	+0.25 0	35	+0.1 −0.1
70W-2815	28	+0.4 +0.1	48	0 −0.3	1.5	−0.015 −0.115	3.0	+0.25 0	38	+0.1 −0.1
70W-3215	32	+0.4 +0.1	54	0 −0.3	1.5	−0.015 −0.115	3.0	+0.25 0	43	+0.1 −0.1
70W-3415	34	+0.4 +0.1	58	0 −0.3	1.5	−0.015 −0.115	3.0	+0.25 0	46	+0.1 −0.1
70W-3615	36	+0.4 +0.1	60	0 −0.3	1.5	−0.015 −0.115	3.0	+0.25 0	48	+0.1 −0.1
70W-3815	38	+0.4 +0.1	62	0 −0.3	1.5	−0.015 −0.115	3.0	+0.25 0	50	+0.1 −0.1
70W-3915	39	+0.4 +0.1	66	0 −0.3	1.5	−0.015 −0.115	3.0	+0.25 0	52.5	+0.1 −0.1
70W-4215	42	+0.4 +0.1	66	0 −0.3	1.5	−0.015 −0.115	4.0	+0.25 0	54	+0.1 −0.1
70W-4420	44	+0.4 +0.1	74	0 −0.3	2.0	−0.015 −0.115	4.0	+0.25 0	59	+0.1 −0.1
70W-4720	47	+0.4 +0.1	78	0 −0.3	2.0	−0.015 −0.115	4.0	+0.25 0	62.5	+0.1 −0.1
70W-4820	48	+0.4 +0.1	74	0 −0.3	2.0	−0.015 −0.115	4.0	+0.25 0	61	+0.1 −0.1
70W-5020	50	+0.4 +0.1	84	0 −0.3	2.0	−0.015 −0.115	4.0	+0.25 0	67	+0.1 −0.1
70W-5220	52	+0.4 +0.1	78	0 −0.3	2.0	−0.015 −0.115	5.0	+0.25 0	65	+0.1 −0.1
70W-5525	55	+0.4 +0.1	92	0 −0.3	2.5	−0.015 −0.115	5.0	+0.25 0	73.5	+0.1 −0.1
70W-6025	60	+0.4 +0.1	100	0 −0.3	2.5	−0.015 −0.115	5.0	+0.25 0	80	+0.1 −0.1
70W-6525	65	+0.4 +0.1	108	0 −0.3	2.5	−0.015 −0.115	5.0	+0.25 0	86.5	+0.1 −0.1

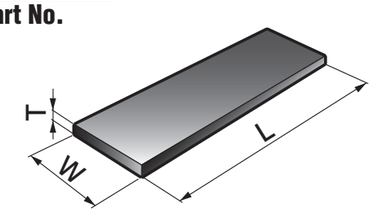
70P Oiles Drymet ST Plates

RoHS2 ELV Lead Free



Specify Part No. by required size.
(e.g.) Thickness is 1.5mm and length is 470mm.

70P - 1564
Part No.



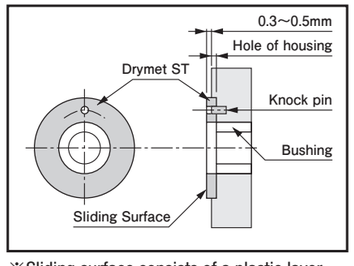
● Sliding surface consists of a plastic layer.

Part No.	Thickness		Width	Length
	T	Tolerance	W	L
70P-1064	1.0	−0.015 −0.115	120	470
70P-1067	1.0	−0.015 −0.115	120	720
70P-1564	1.5	−0.015 −0.115	120	470
70P-1567	1.5	−0.015 −0.115	120	720

Part No.	Thickness		Width	Length
	T	Tolerance	W	L
70P-2064	2.0	−0.015 −0.115	120	470
70P-2067	2.0	−0.015 −0.115	120	720
70P-2564	2.5	−0.015 −0.115	120	470
70P-2567	2.5	−0.015 −0.115	120	720

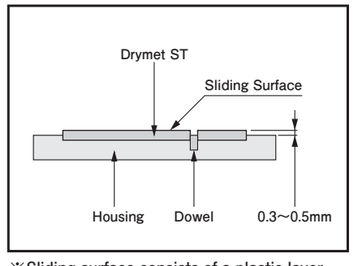
How to attach washers, plates

①Knock pin method
(Thrust washer)



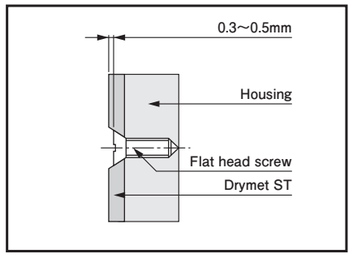
※Sliding surface consists of a plastic layer.

②Inlay method
(Plate)



※Sliding surface consists of a plastic layer.

③Flat head screw method



④Using glue

In the case of (2), the washer and plate may be inserted with glue, not a knock pin. Synthetic epoxy plastic glue is suitable, though no glue is specified, in particular. Be careful because fitting with glue only may result in separation in some cases.