

Oiles 500F Cast iron bearings with embedded solid lubricant

Standard product / Custom-made product



Feature

- Serviceable without the need for lubrication.
- Demonstrates high performance under low- and middle-load, low-speed operations.
- Demonstrates superior wear resistance in applications where oil film is seldom produced such as reciprocating motions, oscillation, frequent starts and stops, etc.
- Lower prices than the bearings with copper alloy bases.
- Standard products are available in various sizes.

Service range	500F SL1	
Lubrication condition	Dry	periodic lubrication
Service temperature range °C	-40~+400	-40~+150
Allowable max. pressure P N/mm ² {kgf/cm ² }	5 (73.5) {51 (750)}	8 (73.5) {82 (750)}
Allowable max. velocity V m/s {m/min}	0.15 {9}	0.25 {15}
Allowable max. PV value N/mm ² · m/s {kgf/cm ² · m/min}	0.50 {306}	0.80 {490}

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

Mechanical properties		500F ₁	500F ₂
Density	—	g/cm ³	7.3 7.1
Tensile strength	JIS Z 2241	N/mm ² {kgf/mm ² }	250 {26} 150 {15}
Compressive strength	—	N/mm ² {kgf/mm ² }	740 {75} 440 {45}
Impact strength	JIS Z 2242	J/cm ² {kgf/cm ² }	4 {0.4} 1 {0.1}
Hardness	JIS Z 2243	HBW	190 160
Modulus of longitudinal elasticity	—	N/mm ² {kgf/mm ² }	107,800 {11,000} 78,000 {8,000}
Co-efficient of linear expansion	—	$\times 10^{-5} \text{ }^\circ\text{C}^{-1}$	1.2 1.2
Thermal conductivity	—	W/m°C {cal/sec°Ccm}	50.2 {0.12} 50.2 {0.12}

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

- ⚠ When you use standard 500F series in the temperature of 150°C and over, contact us for more information.
- ⚠ Please indicate the type of motion (rotation, reciprocating, rotation & reciprocating) for custom-made products.
- ⚠ Solid lubricant, SL401 and SL403 are not lead-free.

Lathe turning		
Cutting tool	carbide tool (JIS)	
	Relief angle	5~10°
	Rake angle	2~5°
Condition	Nose radius (mm)	0.40~0.80
	Speed (m/min)	100~200
	Cut depth (mm)	0.05~0.30
	Feed (mm/rev)	0.08~0.30

Apply solid lubricant or grease to the sliding surface after machining.

※Contact us for grinding and milling information.

Machining accuracy (bushing)		
I.D.	O.D.	Length
class 7 to 8	class 6 to 7	class 8 to 9

Classes here are in JIS standard.

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

Test data

Reciprocation test

<Testing conditions>

Bearing dimension : □40×□40×t20

Mating material : FC250 ground

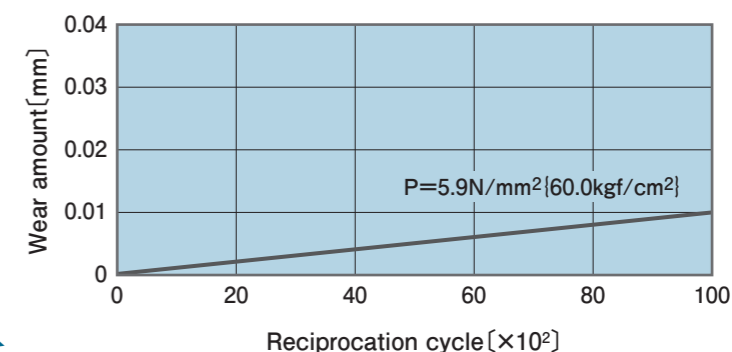
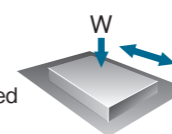
Pressure : 5.9N/mm² {60.0kgf/cm²}

Velocity : 0.12m/s {7.0m/min}

Stroke : 80mm

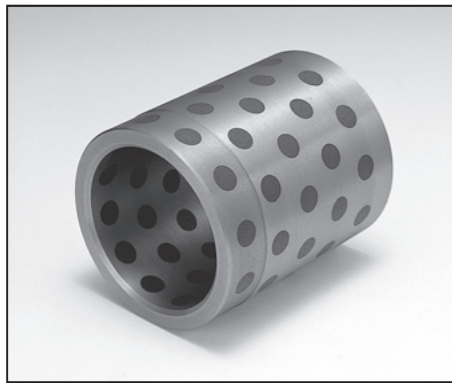
Test cycle : 100,000cycle

Lubrication : initial grease applied



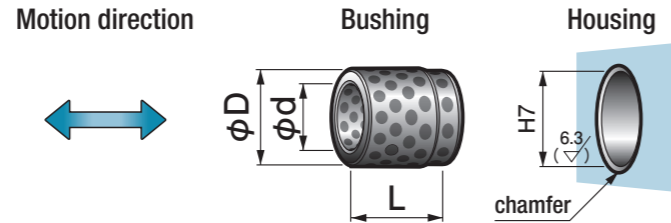
Selection Guide | Product Information | Plastic Bearing | Multi-layer Bearing | Metallic Bearing | Air Bearings | Slide Shifter | Technical Information | Corporate Profile

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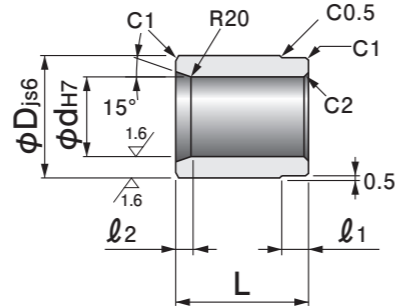


Specify Part No. by required I.D., O.D. and Length.
(e.g.) I.D. is 60mm, O.D. is 80mm, and length is 90mm.

FGB - 608090
Part No.

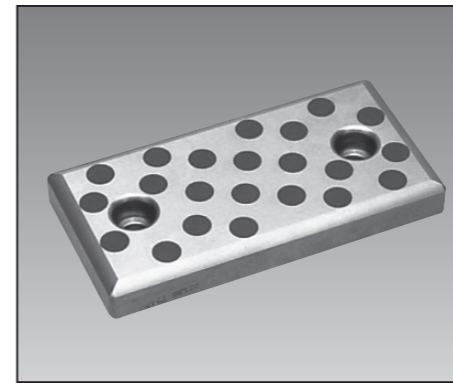


- 500F, is used as base steel.
- Applicable to reciprocating motion.
- It is recommended to use a set screw to prevent dislocation.



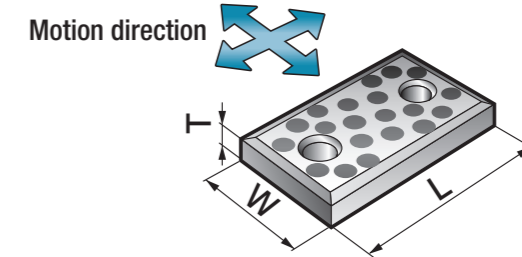
Part No.	I.D.		O.D.		Length		l ₁	l ₂
	φd	Tolerance	φD	Tolerance	L	Tolerance		
FGB-254040	25	+0.021 0	40	±0.008	40	0 -0.2	10	5
FGB-305050	30	+0.021 0	50	±0.008	50	0 -0.2	10	5
FGB-356055	35	+0.025 0	60	±0.0095	55	0 -0.2	15	5
FGB-406055	40	+0.025 0	60	±0.0095	55	0 -0.2	15	5
FGB-406060	40	+0.025 0	60	±0.0095	60	0 -0.2	10	5
FGB-507075	50	+0.025 0	70	±0.0095	75	0 -0.2	15	10
FGB-608090	60	+0.030 0	80	±0.0095	90	0 -0.2	20	10
FGB-80100120	80	+0.030 0	100	±0.011	120	0 -0.2	25	10
FGB-100120150	100	+0.035 0	120	±0.011	150	0 -0.2	25	10
FGB-120140180	120	+0.035 0	140	±0.0125	180	0 -0.2	25	10

▲ The dimensional tolerances are the values measured at +25°C.



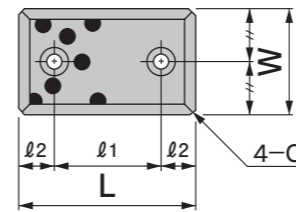
Specify Part No. by required width and length.
(e.g.) Width is 100mm and length is 100mm.

FWPT - 100100
Part No.



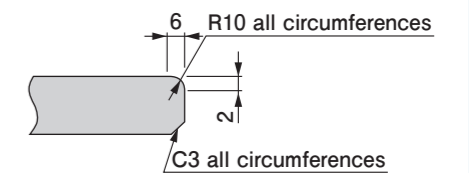
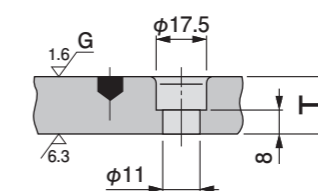
- 500F, is used as base steel.

Cross-section



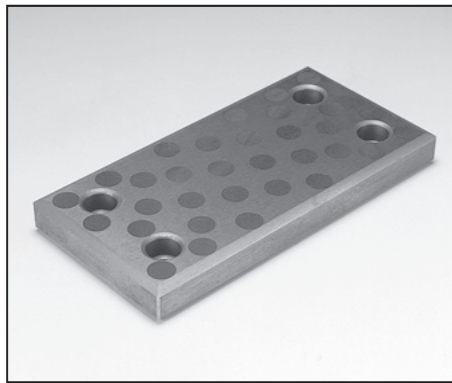
Chamfering

Type A



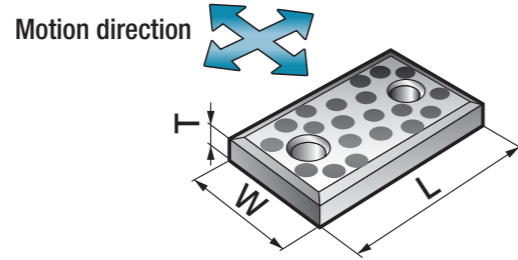
Part No.	Width		Length		Thickness		Mounting hole intervals		Attach bolts		Chamfering
	W	Tolerance	L	Tolerance	T	Tolerance	l ₁	Tolerance	l ₂	Type Qty	
FWPT-100100	100	-0.1 -0.3	100	-0.1 -0.3	20	±0.01	50	±0.2	25	M10 Hexagon socket head 2	A
FWPT-100125	100	-0.1 -0.3	125	-0.1 -0.3	20	±0.01	75	±0.2	25	M10 Hexagon socket head 2	A
FWPT-100150	100	-0.1 -0.3	150	-0.1 -0.3	20	±0.01	100	±0.2	25	M10 Hexagon socket head 2	A
FWPT-100200	100	-0.1 -0.3	200	-0.1 -0.3	20	±0.01	150	±0.2	25	M10 Hexagon socket head 2	A
FWPT-100250	100	-0.1 -0.3	250	-0.1 -0.3	20	±0.01	200	±0.2	25	M10 Hexagon socket head 2	A
FWPT-125125	125	-0.1 -0.3	125	-0.1 -0.3	20	±0.01	75	±0.2	25	M10 Hexagon socket head 2	A
FWPT-125150	125	-0.1 -0.3	150	-0.1 -0.3	20	±0.01	100	±0.2	25	M10 Hexagon socket head 2	A
FWPT-125200	125	-0.1 -0.3	200	-0.1 -0.3	20	±0.01	150	±0.2	25	M10 Hexagon socket head 2	A
FWPT-125250	125	-0.1 -0.3	250	-0.1 -0.3	20	±0.01	200	±0.2	25	M10 Hexagon socket head 2	A
FWPT-150150	150	-0.1 -0.3	150	-0.1 -0.3	20	±0.01	100	±0.2	25	M10 Hexagon socket head 2	A
FWPT-150200	150	-0.1 -0.3	200	-0.1 -0.3	20	±0.01	150	±0.2	25	M10 Hexagon socket head 2	A
FWPT-150250	150	-0.1 -0.3	250	-0.1 -0.3	20	±0.01	200	±0.2	25	M10 Hexagon socket head 2	A
FWPT-150300	150	-0.1 -0.3	300	-0.1 -0.3	20	±0.01	250	±0.2	25	M10 Hexagon socket head 2	A

FWP Oiles 500F SL1 Wear Plates

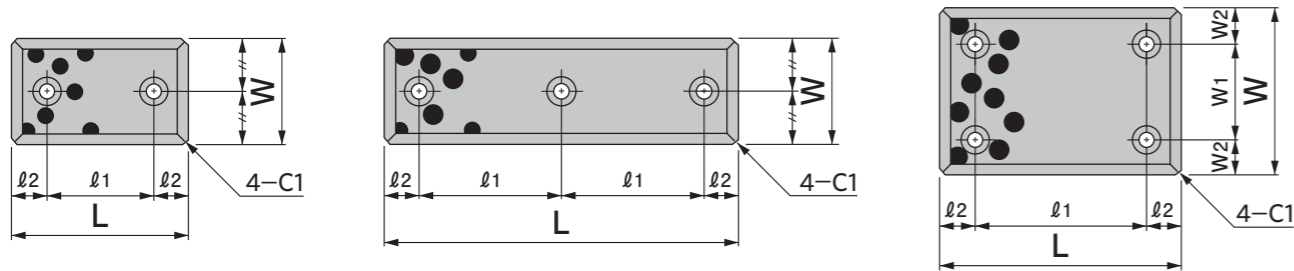


Specify Part No. by required width and length.
(e.g.) Width is 58mm and length is 100mm.

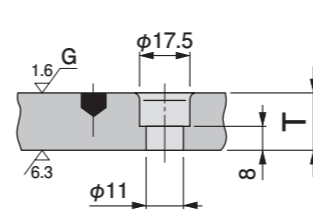
FWP - 58100
Part No.



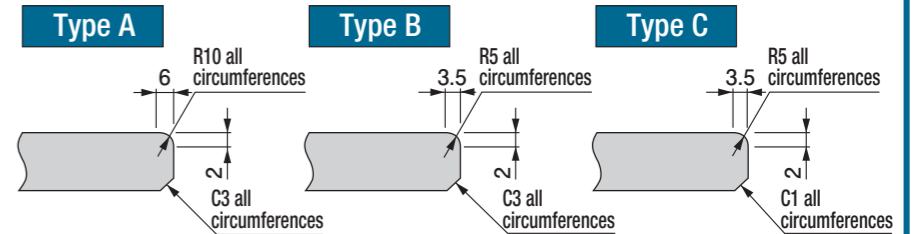
- 500F, is used as base steel.
- Motion directions for FWP-4875 to FWP-200300 are width and length.
- Motion directions for FWP-2875 to FWP-38200 are length direction only.



Cross-section



Chamfering



Part No.	Width		Length		Thickness		Mounting hole intervals			Attach bolts		Chamfering
	W	Tolerance	L	Tolerance	T	Tolerance	l1	Tolerance	l2	Type	Qty	
FWP-2875	28	-0.1/-0.3	75	-0.1/-0.3	20	±0.01	45	±0.2	15	M10 Hexagon socket head	2	C
FWP-28100	28	-0.1/-0.3	100	-0.1/-0.3	20	±0.01	50	±0.2	25	M10 Hexagon socket head	2	C
FWP-28125	28	-0.1/-0.3	125	-0.1/-0.3	20	±0.01	75	±0.2	25	M10 Hexagon socket head	2	C
FWP-28150	28	-0.1/-0.3	150	-0.1/-0.3	20	±0.01	100	±0.2	25	M10 Hexagon socket head	2	C
FWP-28200	28	-0.1/-0.3	200	-0.1/-0.3	20	±0.01	150	±0.2	25	M10 Hexagon socket head	2	C
FWP-3875	38	-0.1/-0.3	75	-0.1/-0.3	20	±0.01	45	±0.2	15	M10 Hexagon socket head	2	C
FWP-38100	38	-0.1/-0.3	100	-0.1/-0.3	20	±0.01	50	±0.2	25	M10 Hexagon socket head	2	C
FWP-38125	38	-0.1/-0.3	125	-0.1/-0.3	20	±0.01	75	±0.2	25	M10 Hexagon socket head	2	C
FWP-38150	38	-0.1/-0.3	150	-0.1/-0.3	20	±0.01	100	±0.2	25	M10 Hexagon socket head	2	C
FWP-38200	38	-0.1/-0.3	200	-0.1/-0.3	20	±0.01	150	±0.2	25	M10 Hexagon socket head	2	C
FWP-4875	48	-0.1/-0.3	75	-0.1/-0.3	20	±0.01	45	±0.2	15	M10 Hexagon socket head	2	B
FWP-48100	48	-0.1/-0.3	100	-0.1/-0.3	20	±0.01	50	±0.2	25	M10 Hexagon socket head	2	B
FWP-48125	48	-0.1/-0.3	125	-0.1/-0.3	20	±0.01	75	±0.2	25	M10 Hexagon socket head	2	B
FWP-48150	48	-0.1/-0.3	150	-0.1/-0.3	20	±0.01	100	±0.2	25	M10 Hexagon socket head	2	B
FWP-48200	48	-0.1/-0.3	200	-0.1/-0.3	20	±0.01	100	±0.2	50	M10 Hexagon socket head	2	B
FWP-48200A	48	-0.1/-0.3	200	-0.1/-0.3	20	±0.01	150	±0.2	25	M10 Hexagon socket head	2	B
FWP-48250	48	-0.1/-0.3	250	-0.1/-0.3	20	±0.01	100	±0.2	25	M10 Hexagon socket head	3	B
FWP-5875	58	-0.1/-0.3	75	-0.1/-0.3	20	±0.01	45	±0.2	15	M10 Hexagon socket head	2	B
FWP-58100	58	-0.1/-0.3	100	-0.1/-0.3	20	±0.01	50	±0.2	25	M10 Hexagon socket head	2	B
FWP-58125	58	-0.1/-0.3	125	-0.1/-0.3	20	±0.01	75	±0.2	25	M10 Hexagon socket head	2	B
FWP-58150	58	-0.1/-0.3	150	-0.1/-0.3	20	±0.01	100	±0.2	25	M10 Hexagon socket head	2	B

Part No.	Width		Length		Thickness		Mounting hole intervals					Attach bolts		Chamfering	
	W	Tolerance	L	Tolerance	T	Tolerance	W1	Tolerance	W2	l1	Tolerance	l2	Type		Qty
FWP-7575B	75	-0.1/-0.3	75	-0.1/-0.3	20	±0.01	—	—	—	25	±0.2	25	M10 Hexagon socket head	2	A
FWP-75100B	75	-0.1/-0.3	100	-0.1/-0.3	20	±0.01	—	—	—	50	±0.2	25	M10 Hexagon socket head	2	A
FWP-75125	75	-0.1/-0.3	125	-0.1/-0.3	20	±0.01	—	—	—	75	±0.2	25	M10 Hexagon socket head	2	A
FWP-75150	75	-0.1/-0.3	150	-0.1/-0.3	20	±0.01	—	—	—	100	±0.2	25	M10 Hexagon socket head	2	A
FWP-75200	75	-0.1/-0.3	200	-0.1/-0.3	20	±0.01	—	—	—	150	±0.2	25	M10 Hexagon socket head	2	A
FWP-100100	100	-0.1/-0.3	100	-0.1/-0.3	20	±0.01	50	±0.2	25	50	±0.2	25	M10 Hexagon socket head	4	A
FWP-100125	100	-0.1/-0.3	125	-0.1/-0.3	20	±0.01	50	±0.2	25	75	±0.2	25	M10 Hexagon socket head	4	A
FWP-100150	100	-0.1/-0.3	150	-0.1/-0.3	20	±0.01	50	±0.2	25	100	±0.2	25	M10 Hexagon socket head	4	A
FWP-100200	100	-0.1/-0.3	200	-0.1/-0.3	20	±0.01	50	±0.2	25	150	±0.2	25	M10 Hexagon socket head	4	A
FWP-100250	100	-0.1/-0.3	250	-0.1/-0.3	20	±0.01	50	±0.2	25	200	±0.2	25	M10 Hexagon socket head	4	A
FWP-125125	125	-0.1/-0.3	125	-0.1/-0.3	20	±0.01	75	±0.2	25	75	±0.2	25	M10 Hexagon socket head	4	A
FWP-125125A	125	-0.1/-0.3	125	-0.1/-0.3	20	±0.01	50	±0.2	37.5	75	±0.2	25	M10 Hexagon socket head	4	A
FWP-125150	125	-0.1/-0.3	150	-0.1/-0.3	20	±0.01	50	±0.2	37.5	100	±0.2	25	M10 Hexagon socket head	4	A
FWP-125200	125	-0.1/-0.3	200	-0.1/-0.3	20	±0.01	50	±0.2	37.5	150	±0.2	25	M10 Hexagon socket head	4	A
FWP-125250	125	-0.1/-0.3	250	-0.1/-0.3	20	±0.01	50	±0.2	37.5	200	±0.2	25	M10 Hexagon socket head	4	A
FWP-150150	150	-0.1/-0.3	150	-0.1/-0.3	20	±0.01	100	±0.2	25	100	±0.2	25	M10 Hexagon socket head	4	A
FWP-150200	150	-0.1/-0.3	200	-0.1/-0.3	20	±0.01	100	±0.2	25	150	±0.2	25	M10 Hexagon socket head	4	A
FWP-150250	150	-0.1/-0.3	250	-0.1/-0.3	20	±0.01	100	±0.2	25	200	±0.2	25	M10 Hexagon socket head	4	A
FWP-200200	200	-0.1/-0.3	200	-0.1/-0.3	20	±0.01	150	±0.2	25	150	±0.2	25	M10 Hexagon socket head	4	A
FWP-200250	200	-0.1/-0.3	250	-0.1/-0.3	20	±0.01	150	±0.2	25	200	±0.2	25	M10 Hexagon socket head	4	A
FWP-200300	200	-0.1/-0.3	300	-0.1/-0.3	20	±0.01	150	±0.2	25	250	±0.2	25	M10 Hexagon socket head	4	A