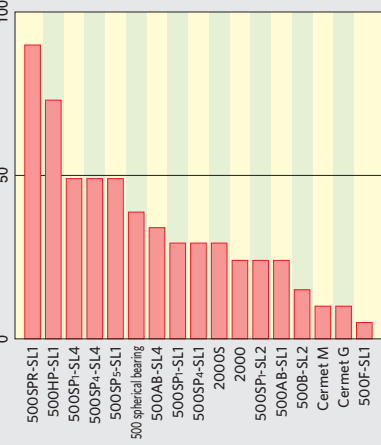
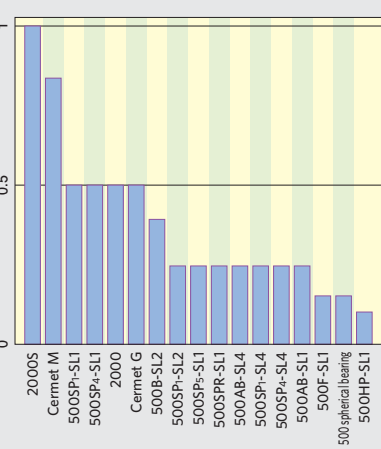


Selection Guide

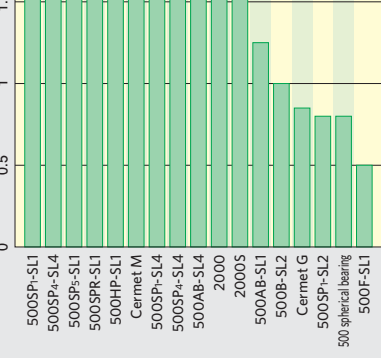
■ Allowable Pressure P (under high load applications) N/mm²



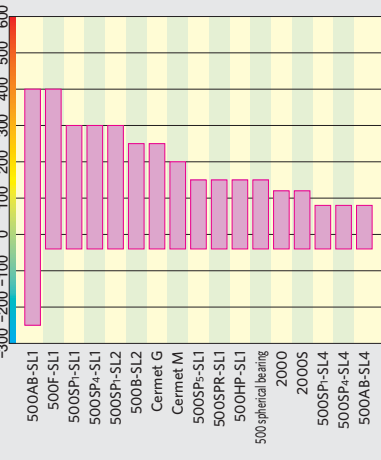
■ Allowable Velocity V (under high speed condition) m/s



■ Allowable PV Value N/mm² · m/s



■ Temperature Range (From low to high temperature range) °C



These graphs show the standard characteristics of bearings that can be used under self-lubricating conditions. Above temperature range includes the range which is not responded by standard grade.

Scope of Application

The value shown below are obtained in shaft rotation condition in the atmosphere.

Product	Product Name	Allowable max pressure P N/mm ² (kgf/cm ²)	Allowable max velocity V m/s (ft/min)	Allowable max PV value N/mm ² · m/s (kgf/cm ² · ft/min)	Temperature range °C (°F)
	Oiles 500SP1-SL1	29 (296) ※ 150 ※ (1,530)	Dry 0.50 (30) Periodic lubrication 1.00 (60)	Dry 1.65 (1,010) Periodic lubrication 3.25 (1,990)	-40 ~ +300 (-40 ~ +572) -40 ~ +150 (-40 ~ +302)
	Oiles 500SP1-SL2	24 (245) ※ 150 ※ (1,530)	Dry 0.25 (15) Periodic lubrication 0.50 (30)	Dry 0.80 (490) Periodic lubrication 1.65 (1,010)	-40 ~ +300 (-40 ~ +572) -40 ~ +150 (-40 ~ +302)
	Oiles 500SP1-SL4	49 (500) ※ 150 ※ (1,530)	0.25 (15)	1.65 (1,010)	-40 ~ +80 (-40 ~ +176)
	Oiles 500SP4-SL1	29 (296) ※ 150 ※ (1,530)	Dry 0.50 (30) Periodic lubrication 1.00 (60)	Dry 1.65 (1,010) Periodic lubrication 3.25 (1,990)	-40 ~ +300 (-40 ~ +572) -40 ~ +150 (-40 ~ +302)
	Oiles 500SP4-SL4	49 (500) ※ 150 ※ (1,530)	0.25 (15)	1.65 (1,010)	-40 ~ +80 (-40 ~ +176)

※: Static bearing pressures defined: Bearing pressures in applications with no motion or very small motion (≤ 0.0017 m/s (0.1 m/min)).

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METALLIC BEARINGS

Caution

- The allowable values shown below are obtained when tested in the standard bearing test methods of Oiles Corporation. Please contact us when you use products under conditions over the allowable values.
- Conditions differ with machines. Consider that these values are for reference only.

Lubrication	Atmosphere	In water	In seawater	In chemical	Corrosive condition	Standard part codes	Product outline	Product detail	Dimensions
Dry	○	×	×	×	△	500SP Bushings 500SP Thrust bushings 500SP Flange guide 500SP Flange guide-Guide bushings 500SP Wear plates 500SP Flat plates 500SP S-type plates 500SP Slide guide rails	P55	P185	P187 P193 P195 P196 P199 P201 P203 P205 P207
Periodic lubrication	○	—	—	—	△				
Dry	○	△	△	△	△	Custom-made	P55	P185	—
Periodic lubrication	○	—	—	—	△				
Dry	○	○	△	△	△	500SP SL-4 Bushings	P55	P185	P191
Dry	○	×	×	×	△	Custom-made	P55	P209	—
Periodic lubrication	○	—	—	—	△				
Dry	○	○	△	△	△	Custom-made	P55	P209	—

○ = usable △ = usable under some condition × = unusable — = N/A. For detail, please refer to page 362.

Selection Guide

Scope of Application

The value shown below are obtained in shaft rotation condition in the atmosphere.

Product	Product name	Allowable max pressure P N/mm ² kgf/cm ²	Allowable max velocity V m/s in/min	Allowable max PV value N/mm ² ·m/s kgf/cm ² ·m/min	Temperature range °C °F
	Oiles 500SPR-SL1	Dry	0.25 {115}	Dry 1.65 {1,010}	-40 ~ +150
		Periodic lubrication	0.50 {30}	Periodic lubrication 3.25 {1,990}	
	Oiles 500SPs-SL1	Dry	0.25 {115}	Dry 1.65 {1,010}	-40 ~ +150 {-40 ~ +302}
		Periodic lubrication	0.50 {30}	Periodic lubrication 3.25 {1,990}	
	Oiles 500HP-SL1	Dry	0.10 {6}	Dry 1.65 {1,010}	-40 ~ +150 {-40 ~ +302}
		Periodic lubrication	0.25 {15}	Periodic lubrication 3.25 {1,990}	
	Oiles 500AB-SL1	Dry	0.25 {115}	Dry 1.25 {765}	-250 ~ +400 {-418 ~ +752}
		Periodic lubrication	0.50 {30}	Periodic lubrication 2.45 {1,500}	
	Oiles 500AB-SL4	Dry	0.25 {115}	1.65 {1,010}	-40 ~ +80 {-40 ~ +176}
		Periodic lubrication	0.85 {51}	Periodic lubrication 1.65 {1,010}	
	Oiles 500B-SL2	Dry	0.40 {24}	Dry 1.00 {612}	-40 ~ +250 {-40 ~ +482}
		Periodic lubrication	0.85 {51}	Periodic lubrication 1.65 {1,010}	

* Static bearing pressures defined: Bearing pressures in applications with no motion or very small motion (≤ 0.0017 m/s (0.1 in/min)).

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Base Metal for Oiles 500

Type	Material	Application
500SP1	high-strength brass alloy	general use, medium to high load
500SP4	high-strength brass alloy	general use, medium to high load
500SPR	hard special copper alloy	extra high load, low to medium velocity
500SP5	special high-strength brass alloy	high load, low to medium velocity
500HP	hard special copper alloy	high load, low to medium velocity
500F	cast iron	low velocity, low to medium load,
500B1	bronze cast	general use, medium load
500B2	bronze cast	high temperature, medium load
500AB	aluminum bronze	high temperature, corrosive condition, medium load

METALLIC BEARINGS

Selection Guide

Product Information

Plastic Bearing

Multi-layer Bearing

Metallic Bearing

Air Bearings

Slide Shifter

Technical Information

Corporate Profile

36

Lubrication	Atmosphere	In water	In seawater	In chemical	Corrosive condition	Standard part codes	Product outline	Product detail	Dimensions
Dry	○	×	×	×	△	Custom-made	P55	P210	—
Periodic lubrication	○	—	—	—	△				
Dry	○	×	×	×	△	500SPs-SL1 Bush (thin wall) — SP5B	P56	P211	—
Periodic lubrication	○	—	—	—	△				
Dry	○	×	×	×	△	500HP Bushings — HPB	P56	P213	P214
Periodic lubrication	○	—	—	—	△				
Dry	○	×	×	×	△	Custom-made	P56	P215	—
Periodic lubrication	○	—	—	—	△				
Dry	○	○	○	△	△	Custom-made	P56	P215	—
Periodic lubrication	○	—	—	—	△				
Dry	○	△	△	△	△	500B Bushings (base metal of 500B) is used	P57	P217	P219
Periodic lubrication	○	—	—	—	△				

○ = usable △ = usable under some condition × = unusable — = N/A. For detail, please refer to page 362.

Types and Feature of Solid Lubricant

Type	Application	Temperature range °C (°F)	Additional lubricant	
			grease	coating
SL101	general use	-40 ~ +150 {-40 ~ +302}	—	—
SL103	high temp.	-250 ~ +400 {-418 ~ +752}	—	SL-20
SL201	general use, medium to high temp	-40 ~ +250 {-40 ~ +418}	(SL-2g)	SL-20
SL202	nuclear, high temp.	-40 ~ +300 {-40 ~ +572}	—	SL-20, mB
SL464	general use, underwater	-40 ~ +80 {-40 ~ +176}	SL-464g	SL-464L

* The additional lubricant grease contains the same chemicals as the solid lubricant plugs.

* These lubricants are used for break-in conditions.

* Use grease with lithium soap thickening agent obtainable in the market in the temperature range from -40°C to +120°C (-104°F to 248°F) for the solid lubricants marked with no exclusive lubricants or with (SL-2g).

* A non-soap based polyurea or non-bentonite containing high temperature break-in greases should be used for temperatures between 150°C to 200°C (302°F to 392°F). These greases can solidify at higher temperatures, so careful consideration is required.

* SL401 and SL403 solid lubricants for underwater applications are available.

Selection Guide

Product Information

Plastic Bearing

Multi-layer Bearing

Metallic Bearing

Air Bearings

Slide Shifter

Technical Information










Corporate Profile

35

Selection Guide

Scope of Application

The value shown below are obtained in shaft rotation condition in the atmosphere.

Product	Product Name	Allowable max pressure P N/mm ² kgf/cm ²	Allowable max velocity V m/s in/min	Allowable max PV value N/mm ² ·m/s kgf/cm ² ·m/min	Temperature range °C (°F)
	Oiles 500F-SL1	Dry 5 *73.5 (151) **1750)	Dry 0.15 (9)	Dry 0.50 (306)	-40 ~ +400 (-40 ~ +752)
		Periodic lubrication 8 *73.5 (82) **1750)	Periodic lubrication 0.25 (15)	Periodic lubrication 0.80 (490)	-40 ~ +150 (-40 ~ +302)
	Oiles 500 spherical bearings	39.2 (400)	0.15 (9)	0.80 (490)	-40 ~ +150 (-40 ~ +302)
	Oiles 2000	Dry 24.5 *73.5 (250) **1750)	Dry 0.50 (30)	Dry 1.63 (1,010)	-40 ~ +120 (-40 ~ +248)
		Periodic lubrication 49 *73.5 (1500) **1750)	Periodic lubrication 1.00 (60)	Periodic lubrication 2.45 (1,500)	-40 ~ +120 (-40 ~ +248)
	Oiles 2000S	29 (296) *49 **1500)	1.00 (60)	1.63 (1,010)	-40 ~ +120 (-40 ~ +248)
	Oiles Cermet M	10 (102)	Dry 0.85 (51)	Dry 1.65 (1,010)	-40 ~ +200 (-40 ~ +392)
		Periodic lubrication 1.65 (99)	Periodic lubrication 1.00 (60)	Periodic lubrication 2.45 (1,500)	-40 ~ +200 (-40 ~ +392)
	Oiles Cermet G	10 (102)	Dry 0.50 (30)	Dry 0.86 (490)	-40 ~ +250 (-40 ~ +482)
		Periodic lubrication 0.85 (51)	Periodic lubrication 0.85 (51)	Periodic lubrication 1.65 (1,010)	-40 ~ +250 (-40 ~ +482)
	Oiles 300	10 (102)	Periodic lubrication 1.00 (60)	Periodic lubrication 1.25 (765)	-40 ~ +150 (-40 ~ +302)
		Oil lubrication 3.35 (201)	Oil lubrication 3.35 (201)	Oil lubrication 3.25 (1,990)	-40 ~ +150 (-40 ~ +302)
	Oiles 600	15 (153)	Periodic lubrication 1.65 (99)	Periodic lubrication 1.65 (1,010)	-40 ~ +150 (-40 ~ +302)
		Oil lubrication 5.00 (300)	Oil lubrication 5.00 (300)	Oil lubrication 3.25 (1,990)	-40 ~ +150 (-40 ~ +302)
	Oiles 500 Guide units BK type	Allowable weight W N/kgf dynamic 2,060~14,700 (210~1,500) static 6,180~44,100 (630~4,500)	PV values are equivalent to those of 500SP. Contact us for details.		

*: Static bearing pressures defined; Bearing pressures in applications with no motion or very small motion (≤ 0.0017 m/s (0.1 m/min)).

Free Lead = Lead free

METALLIC BEARINGS

Lubrication	Atmosphere	In water	In seawater	In chemical	Corrosive condition	Standard part codes	Product outline	Product detail	Dimensions
Dry	○	×	×	△	△	500F Guide bushings — FGB Wear plates — FWPT General purpose wear plates — FWP	P57	P221	P223 P224 P225
Periodic lubrication	○	—	—	—	△	500 Spherical bearings — SPS	P57	P227	P228
Dry	○	×	×	×	△	2000 Bushings (high precision type) — CBB Flange bushings (high precision type) — CLB Wear plates — CWX Wear plates 10mm thickness — CWXT Wear plates 15mm thickness — CWXT Wear plates (general purpose) — CWX Wear plates (general purpose) — CWXT Wear plates 20mm thickness — CWX Wear plates for additional machining — CWI	P58	P229	P231 P234 P235 P236 P237 P238 P239 P240 P241 P243 P244
Periodic lubrication	○	—	—	—	△				
Dry	○	×	×	×	×	Custom-made	P58	P247	—
Dry	○	△	△	△	△	Cermet M Bushings — 54B Flange bushings — 54F Bar stock — 54M Bushing material — 54S	P59	P249	P251 P252 P253 P254
Periodic lubrication	○	—	—	—	△				
Dry	○	△	△	△	△	Cermet G Bar stock — 55M Bushing material — 55S	P59	P255	P257 P259
Periodic lubrication	○	—	—	—	△				
Periodic lubrication	○	—	—	—	△	300 Bushings (thin wall) — 30B Bushings — 30P Flange bushings — 30F Washers — 30W Bar stock — 30M Bushing material (thick wall) — 30S	P59	P259	P261 P263 P265 P266 P267 P268
Oil lubrication	○	—	—	—	△				
Periodic lubrication	○	—	—	—	△	600 Bar stock — 36M Bushing material — 36S	P60	P269	P270 P270
Oil lubrication	○	—	—	—	△				
Dry	○	×	×	×	×	500 Guide units BK type — BBFK	P64	P319	P321
Periodic lubrication	○	—	—	—	×				

○ = usable △ = usable under some condition × = unusable — = N/A. For detail, please refer to page 362. (Oiles 500 spherical bearing and Oiles 500 Guide units BK type only)





Selection Guide

METALLIC BEARINGS



AIR BEARINGS


Scope of Application

The value shown below are obtained in shaft rotation condition in the atmosphere.

Product	Product Name	Allowable max pressure P N/mm ² kgf/cm ²	Allowable max velocity V m/s in/min	Allowable max PV value N/mm ² · m/s kgf/cm ² · m/min	Temperature range °C (°F)
	Oiles 500 Guide units BT type 	Allowable weight W N/kgf dynamic 2,060~14,700 static 6,180~44,100 1630~4,500!	PV values are equivalent to those of 500SP. Contact us for details.		
	Oiles Shoe units 	PV values are equivalent to those of the Oiles 2000. Contact us for details.			

Air Bearings

Product	Product Name	Allowable max pressure P N/mm ² kgf/cm ²	Allowable max velocity V m/s in/min	Allowable max PV value N/mm ² · m/s kgf/cm ² · m/min	Temperature range °C (°F)
	Oiles Air Bearings 	Contact us for details and product design according to your needs.			

 Lead free

Lubrication	Atmosphere	In water	In seawater	In chemical	Corrosive condition	Standard part codes	Product outline	Product detail	Dimensions
Dry	○	×	×	×	×	500 Guide units BT type ——— BBT	P64	P323	P325
Periodic lubrication	○	—	—	—	×				
Dry	○	×	×	×	△	Shoe units ——— PAC	P58	P245	P246
Periodic lubrication	○	—	—	—	△				

○ = usable △ = usable under some condition × = unusable — = N/A. For detail, please refer to page 362. (Oiles 500 Guide units BT type only)

Lubrication	Atmosphere	In water	In seawater	In chemical	Corrosive condition	Standard part codes	Product outline	Product detail	Dimensions
—	○	×	×	×	△	Custom-made	P61	P273	—