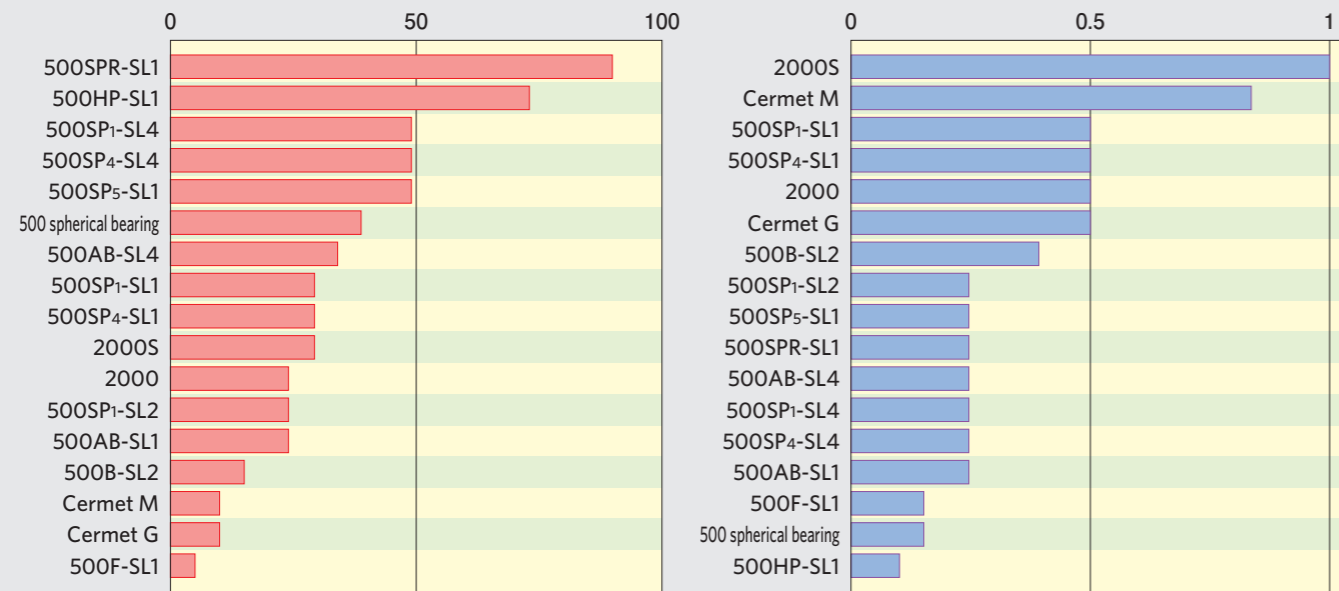
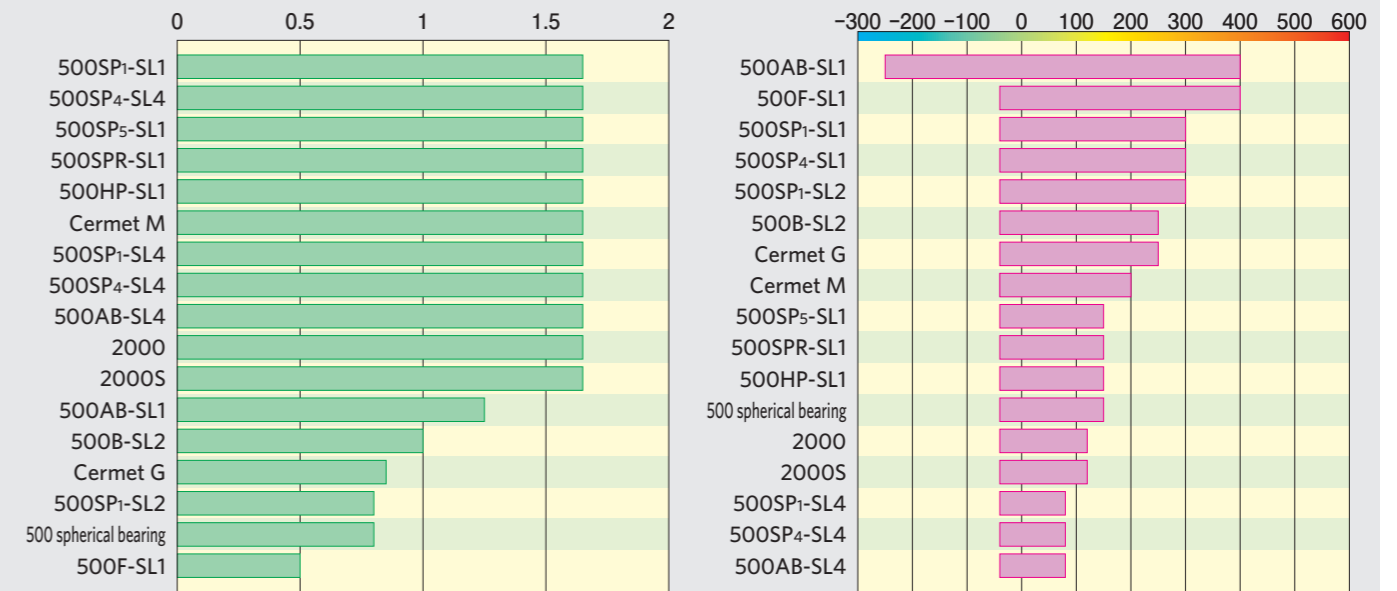


Selection Guide

■ 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 {m/min}	Allowable max PV value N/mm ² · m/s {kgf/cm ² · m/min}	Temperature range °C {°F}
	Oiles 500SP1-SL1	29 {296}	Dry 0.50 {30}	Dry 1.65 {1,010}	-40 ~ +300 {-40 ~ +572}
		*150 *{1,530}	Periodic lubrication 1.00 {60}	Periodic lubrication 3.25 {1,990}	-40 ~ +150 {-40 ~ +302}
	Oiles 500SP1-SL2	24 {245}	Dry 0.25 {15}	Dry 0.80 {490}	-40 ~ +300 {-40 ~ +572}
		*150 *{1,530}	Periodic lubrication 0.50 {30}	Periodic lubrication 1.65 {1,010}	-40 ~ +150 {-40 ~ +302}
	Oiles 500SP1-SL4	49 {500}	0.25 {15}	1.65 {1,010}	-40 ~ +80 {-40 ~ +176}
	Oiles 500SP4-SL1	29 {296}	Dry 0.50 {30}	Dry 1.65 {1,010}	-40 ~ +300 {-40 ~ +572}
		*150 *{1,530}	Periodic lubrication 1.00 {60}	Periodic lubrication 3.25 {1,990}	-40 ~ +150 {-40 ~ +302}
	Oiles 500SP4-SL4	49 {500}	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 (≤0.0017m/s[0.1m/min]).

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 ————— SPB Flange bushings ————— SPF Thrust bushings ————— SPFG Thrust washers ————— SPW Flange guide·Guide bushings — SGF·SGB Wear plates ————— SWP Flat plates ————— SFP L type plates ————— SLP Slide guide rails ————— SLC·SLI	P.54	P.185	P.187 P.193 P.195 P.197 P.199 P.201 P.203 P.205 P.207
Periodic lubrication	○	—	—	—	△				
Dry	○	△	△	△	△	Custom-made	P.54	P.185	—
Periodic lubrication	○	—	—	—	△				
Dry	○	○	△	△	△	500SP SL-4 Bushings ————— SPBL	P.54	P.185	P.191
Dry	○	×	×	×	△	Custom-made	P.54	P.209	—
Periodic lubrication	○	—	—	—	△				
Dry	○	○	△	△	△	Custom-made	P.54	P.209	—

○ = usable △ = usable under some condition × = unusable — = N/A, For detail, please refer to page 370.

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 {m/min}	Allowable max PV value N/mm ² · m/s {kgf/cm ² · m/min}	Temperature range °C {°F}
	Oiles 500SPR-SL1	90 {918} ※ 200 ※ {2,041}	Dry 0.25 {15} Periodic lubrication 0.50 {30}	Dry 1.65 {1,010} Periodic lubrication 3.25 {1,990}	-40 ~ +150
	Oiles 500SP5-SL1	49 {500} ※ 170 ※ {1,735}	Dry 0.25 {15} Periodic lubrication 0.50 {30}	Dry 1.65 {1,010} Periodic lubrication 3.25 {1,990}	-40 ~ +150 {-40 ~ +302}
	Oiles 500HP-SL1	73 {745} ※ 180 ※ {1,837}	Dry 0.10 {6} Periodic lubrication 0.25 {15}	Dry 1.65 {1,010} Periodic lubrication 3.25 {1,990}	-40 ~ +150 {-40 ~ +302}
	Oiles 500AB-SL1	24 {245} ※ 100 ※ {1,020}	Dry 0.25 {15} Periodic lubrication 0.50 {30}	Dry 1.25 {765} Periodic lubrication 2.45 {1,500}	-250 ~ +400 {-418 ~ +752} -40 ~ +150 {-40 ~ +302}
	Oiles 500AB-SL4	34 {347} ※ 100 ※ {1,020}	0.25 {15}	1.65 {1,010}	-40 ~ +80 {-40 ~ +176}
	Oiles 500B-SL2	15 {153} ※ 49.0 ※ {500}	Dry 0.40 {24} Periodic lubrication 0.85 {51}	Dry 1.00 {612} Periodic lubrication 1.65 {1,010}	-40 ~ +250 {-40 ~ +482} -40 ~ +150 {-40 ~ +302}

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

Base Metal for Oiles 500

Type	Material	Application
500SP ₁	high-strength brass alloy	general use, medium to high load
500SP ₄	high-strength brass alloy	general use, medium to high load
500SPR	hard special copper alloy	extra high load, low to medium velocity
500SP ₅	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,
500B ₁	bronze cast	general use, medium load
500B ₂	bronze cast	high temperature, medium load
500AB	aluminum bronze	high temperature, corrosive condition, medium load

Lubrication	Atmosphere	In water	In seawater	In chemical	Corrosive condition	Standard part codes	Product outline	Product detail	Dimensions
Dry	○	×	×	×	△	Custom-made	P.54	P.210	—
Periodic lubrication	○	—	—	—	△				
Dry	○	×	×	×	△	500SP ₅ SL1 Bush (thin wall) — SP5B	P.55	P.211	—
Periodic lubrication	○	—	—	—	△				
Dry	○	×	×	×	△	500HP Bushings — HPB	P.55	P.213	P.214
Periodic lubrication	○	—	—	—	△				
Dry	○	×	×	×	△	Custom-made	P.55	P.215	—
Periodic lubrication	○	—	—	—	△				
Dry	○	○	○	△	△	Custom-made	P.55	P.215	—
Dry	○	△	△	△	△	500B Bushings — BCB (base metal of 500B ₁ is used)	P.56	P.217	P.219
Periodic lubrication	○	—	—	—	△				

○ = usable △ = usable under some condition × = unusable — = N/A, For detail, please refer to page 370.

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-2ℓ
SL201	general use, medium to high temp	-40 ~ +250 {-40 ~ +418}	(SL-2g)	SL-2ℓ
SL202	nuclear, high temp.	-40 ~ +300 {-40 ~ +572}	—	SL-2ℓ, mℓ
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 polyuria or non-bentonite containing high temperature break in grease 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.

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 {m/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 {51} ※{750}	Dry 0.15 {9}	Dry 0.50 {306}	-40 ~ +400 {-40 ~ +752}
		Periodic lubrication 8 ※73.5 {82} ※{750}	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} ※{750}	Dry 0.50 {30}	Dry 1.63 {1,000}	-40 ~ +120 {-40 ~ +248}
		Periodic lubrication 49 ※73.5 {500} ※{750}	Periodic lubrication 1.00 {60}	Periodic lubrication 2.45 {1,500}	
	Oiles 2000S	29 {296} ※49 ※{500}	1.00 {60}	1.63 {1,000}	-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 2.45 {1,500}	
	Oiles Cermet G	10 {102}	Dry 0.50 {30}	Dry 0.86 {490}	-40 ~ +250 {-40 ~ +482}
			Periodic lubrication 0.85 {51}	Periodic lubrication 1.65 {1,010}	
	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 3.25 {1,990}	
	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 3.25 {1,990}	
	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 (≤0.0017m/s[0.1m/min]).



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	P.56	P.221	P.223 P.224 P.225
Periodic lubrication	○	—	—	—	△				
Dry	○	—	—	—	△	500 Spherical bearings — SPS	P.56	P.227	P.228
Dry	○	×	×	×	△	2000 Bushings — CBB Bushings (high precision type) — CLB Flange bushings (high precision type) — CLF Wear plates 5mm thickness — CWT Wear plates 10mm thickness — CWXT Wear plates 10mm thickness — CWA Wear plates (general purpose) — CWP Wear plates 20mm thickness — CWPT Wear plates for additional machining — CWI	P.57	P.229	P.231 P.233 P.234 P.235 P.237 P.239 P.240 P.241 P.243 P.244
Periodic lubrication	○	—	—	—	△				
Dry	○	×	×	×	×	Custom-made	P.57	P.247	—
Dry	○	△	△	△	△	Cermet M Bushings — 54B Flange bushings — 54F Bar stock — 54M Bushing material — 54S	P.58	P.249	P.251 P.252 P.253 P.254
Periodic lubrication	○	—	—	—	△				
Dry	○	△	△	△	△	Cermet G Bar stock — 55M Bushing material — 55S	P.58	P.255	P.257 P.258
Periodic lubrication	○	—	—	—	△				
Periodic lubrication	○	—	—	—	△	300 Bushings (thin wall) — 30B Bushings — 30B Flange bushings — 30F Washers — 30W Bar stock — 30M Bushing material (thick wall) — 30S	P.58	P.259	P.261 P.263 P.265 P.266 P.267 P.268
Oil lubrication	○	—	—	—	△				
Periodic lubrication	○	—	—	—	△	600 Bar stock — 36M Bushing material — 36S	P.59	P.269	P.270 P.270
Oil lubrication	○	—	—	—	△				
Dry	○	×	×	×	×	500 Guide units BK type — BBFK	P.61	P.327	P.329
Periodic lubrication	○	—	—	—	×				

○ = usable △ = usable under some condition × = unusable — = N/A, For detail, please refer to page 370. (Oiles 500 spherical bearing and Oiles 500 Guide units BK type only)

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 {m/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 RoHS2 ELV	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.		
	Oiles Shoe units RoHS2 ELV	PV values are equivalent to those of the Oiles 2000. Contact us for details.			

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	P.61	P.331	P.333
Periodic lubrication	○	—	—	—	×				
Dry	○	×	×	×	△	Shoe units ——— PAC	P.57	P.245	P.246
Periodic lubrication	○	—	—	—	△				

○ = usable △ = usable under some condition × = unusable — = N/A, For detail, please refer to page 370. (Oiles 500 Guide units BT type only)

Air Bearings

Product	Product Name	Allowable max pressure P N/mm ² {kgf/cm ² }	Allowable max velocity V m/s {m/min}	Allowable max PV value N/mm ² · m/s {kgf/cm ² · m/min}	Temperature range °C {°F}
	Oiles Air Bearings RoHS2 ELV	Contact us for details and product design according to your needs.			

Lubrication	Atmosphere	In water	In seawater	In chemical	Corrosive condition	Standard part codes	Product outline	Product detail	Dimensions
—	○	×	×	×	△	Custom-made	P.59	P.273	—