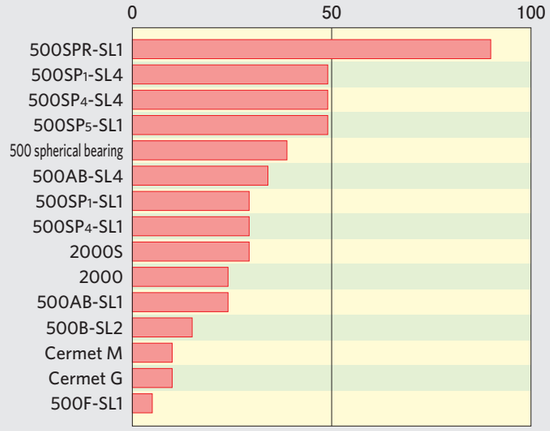
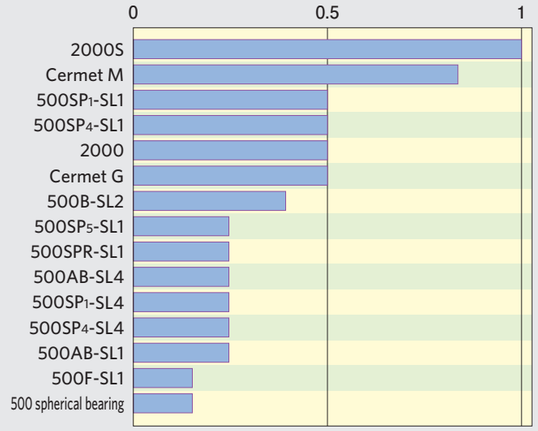
Selection Guide

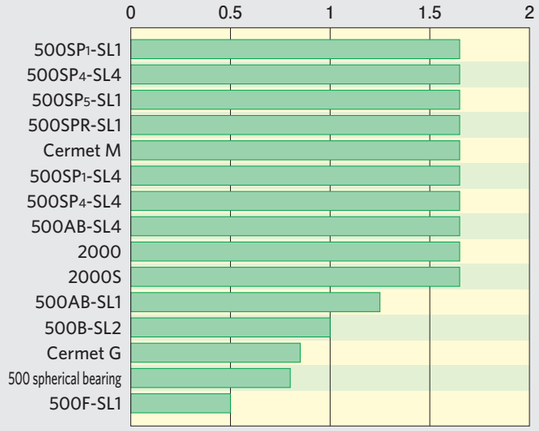
■ Allowable Pressure P (under high load applications) N/mm²



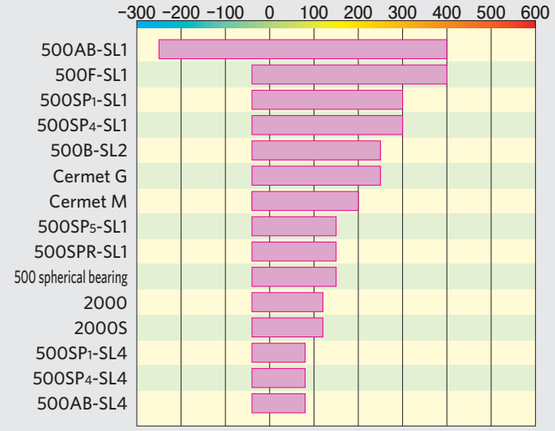
■ Allowable Velocity V (under high speed condition) m/s



■ Allowable PV Value N/mm²・m/s



■ Temperature Range (From low to high temperature range) ℃



These graphs show the standard characteristics of bearings that can be used under self-lubricating conditions.
Above termperature 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/mm² {kgf/cm²}	Allowable max velocity V m/s {m/min}	Allowable max PV value N/mm²・m/s {kgf/cm²・m/min}	Temperature range ℃ {°F}
	RoHS2 ELV **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}
	RoHS2 ELV **Oiles** **500SP1-SL4**	49 {500} ※150 ※{1,530}	0.25 {15}	1.65 {1,010}	−40 ～ +80 {−40 ～ +176}
	RoHS2 ELV **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}
	RoHS2 ELV **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 (≦0.0017m/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.183	P.185 P.191 P.193 P.195 P.197 P.199 P.201 P.203 P.205
Periodic lubrication	○	—	—	—	△				
Dry	○	○	△	△	△	500SP SL-4 Bushings — SPBL	P.54	P.183	P.189
Dry	○	×	×	×	△	Custom-made	P.54	P.206	—
Periodic lubrication	○	—	—	—	△				
Dry	○	○	△	△	△	Custom-made	P.54	P.206	—

○＝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/mm² {kgf/cm²}	Allowable max velocity V m/s {m/min}	Allowable max PV value N/mm² · m/s {kgf/cm² · m/min}	Temperature range ℃ {°F}
	RoHS2 ELV **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}
	RoHS2 ELV **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
	RoHS2 ELV **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}
	RoHS2 ELV **Oiles 500AB-SL4**	34 {347} ※100 ※{1,020}	0.25 {15}	1.65 {1,010}	−40 ～ +80 {−40 ～ +176}
	RoHS2 ELV **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]).

Lubrication	Atmosphere	In water	In seawater	In chemical	Corrosive condition	Standard part codes	Product outline	Product detail	Dimensions
Dry	○	×	×	×	△	500SP5 SL1 Bush (thin wall) —— SP5B	P.54	P.207	P.208
Periodic lubrication	○	—	—	—	△				
Dry	○	×	×	×	△	500SPR SL1 Bushings ———— SPRB	P.55	P.209	P.210
Periodic lubrication	○	—	—	—	△				
Dry	○	×	×	×	△	Custom-made	P.55	P.211	—
Periodic lubrication	○	—	—	—	△				
Dry	○	○	○	△	△	Custom-made	P.55	P.211	—
Dry	○	△	△	△	△	500B Bushings ———— BCB (base metal of 500B1 is used)	P.55	P.213	P.215
Periodic lubrication	○	—	—	—	△				

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

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
500SP5	special high-strength brass alloy	high load, low to medium velocity
500SPR	hard special copper alloy	extra 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

Types and Feature of Solid lubricant

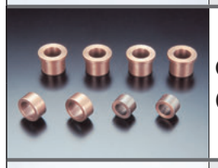
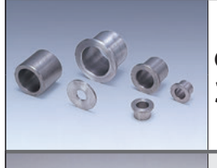
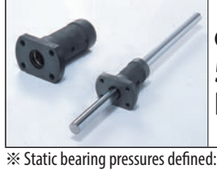
Type	Application	Temperature range ℃ {°F}	Additional lubricant	
			grease	coating
SL101	general use	−40 ～ +150 {−40 ～ +302}	—	—
SL103	high temp.	−250 ～ +400 {−418 ～ +752}	—	SL2L
SL201	general use, medium to high temp	−40 ～ +250 {−40 ～ +418}	(SL2g)	SL2L
SL464	general use, underwater	−40 ～ +80 {−40 ～ +176}	SL464g	SL464L

※ 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/mm² {kgf/cm²}	Allowable max velocity V m/s {m/min}	Allowable max PV value N/mm² · m/s {kgf/cm² · m/min}	Temperature range ℃ {°F}
	RoHS2 ELV **Oiles 500F-SL1**	Dry 5 {51} ※73.5 ※{750} Periodic lubrication 8 {82} ※73.5 ※{750}	Dry 0.15 {9} Periodic lubrication 0.25 {15}	Dry 0.50 {306} Periodic lubrication 0.80 {490}	−40～+400 {−40～+752} −40～+150 {−40～+302}
	RoHS2 ELV **Oiles 500 spherical bearings**	39.2 {400}	0.15 {9}	0.80 {490}	−40～+150 {−40～+302}
	RoHS2 ELV **Oiles 2000**	Dry 24.5 {250} ※73.5 ※{750} Periodic lubrication 49 {500} ※73.5 ※{750}	Dry 0.50 {30} Periodic lubrication 1.00 {60}	Dry 1.63 {1,000} Periodic lubrication 2.45 {1,500}	−40～+120 {−40～+248}
	RoHS2 ELV **Oiles 2000S**	29 {296} ※49 ※{500}	1.00 {60}	1.63 {1,000}	−40～+120 {−40～+248}
	RoHS2 ELV **Oiles Cermet M**	10 {102}	Dry 0.85 {51} Periodic lubrication 1.65 {99}	Dry 1.65 {1,010} Periodic lubrication 2.45 {1,500}	−40～+200 {−40～+392}
	RoHS2 ELV **Oiles Cermet G**	10 {102}	Dry 0.50 {30} Periodic lubrication 0.85 {51}	Dry 0.86 {490} Periodic lubrication 1.65 {1,010}	Dry −40～+250 {−40～+482} Periodic lubrication −40～+150 {−40～+302}
	RoHS2 ELV **Oiles 300**	10 {102}	Periodic lubrication 1.00 {60} Oil lubrication 3.35 {201}	Periodic lubrication 1.25 {765} Oil lubrication 3.25 {1,990}	Periodic lubrication −40～+100 {−40～+212} Oil lubrication −40～+150 {−40～+302}
	RoHS2 ELV **Oiles 600**	15 {153}	Periodic lubrication 1.65 {99} Oil lubrication 5.00 {300}	Periodic lubrication 1.65 {1,010} Oil lubrication 3.25 {1,990}	−40～+150 {−40～+302}
	RoHS2 ELV **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 (2 hole type) — FWPT Wear plates (general purpose) — FWP	P.56	P.217	P.219 P.220 P.221
Periodic lubrication	○	—	—	—	△				
Dry	○	—	—	—	△	500 Spherical bearings — SPS	P.56	P.223	P.224
Dry	○	×	×	×	△	2000 Bushings — CBB Bushings (high precision type) — CLB Flange bushings (high precision type) — CLF Wear plates 5mm thickness — CWT Wear plates 10mm thickness — CWX Wear plates (2 hole type) — CWXT Wear plates 10mm thickness — CWA Wear plates (general purpose) — CWP Wear plates (2 hole type) — CWPT Wear plates for additional machining — CWI	P.56	P.225	P.227 P.229 P.230 P.231 P.233 P.235 P.236 P.237 P.239 P.240
Periodic lubrication	○	—	—	—	△				
Dry (Initial grease)	○	×	×	×	×	Custom-made	P.57	P.243	—
Dry	○	△	△	△	△	Cermet M Bushings — 54B Flange bushings — 54F Bar stock — 54M Bushing material — 54S	P.57	P.245	P.247 P.248 P.249 P.250
Periodic lubrication	○	—	—	—	△				
Dry	○	△	△	△	△	Cermet G Bar stock — 55M Bushing material — 55S	P.58	P.251	P.253 P.254
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.255	P.257 P.259 P.261 P.261 P.263 P.264
Oil lubrication	○	—	—	—	△				
Periodic lubrication	○	—	—	—	△	600 Bar stock — 36M Bushing material — 36S	P.58	P.265	P.266 P.266
Oil lubrication	○	—	—	—	△				
Dry	○	×	×	×	×	500 Guide units BK type — BBFK	P.61	P.319	P.321
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/mm² {kgf/cm²}	Allowable max velocity V m/s {m/min}	Allowable max PV value N/mm² · m/s {kgf/cm² · m/min}	Temperature range ℃ {°F}	Lubrication	Atmosphere	In water	In seawater	In chemical	Corrosive condition	Standard part codes	Product outline	Product detail	Dimensions
	RoHS2 ELV **Oiles** **500 Guide units BT 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.			Dry	○	×	×	×	×	500 Guide units BT type ——— BBT	P.61	P.323	P.325
						Periodic lubrication	○	—	—	—	×				
	RoHS2 ELV **Oiles** **Shoe units**	PV values are equivalent to those of the Oiles 2000. Contact us for details.				Dry	○	×	×	×	△	Shoe units ——— PAC	P.57	P.241	P.242
						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/mm² {kgf/cm²}	Allowable max velocity V m/s {m/min}	Allowable max PV value N/mm² · m/s {kgf/cm² · m/min}	Temperature range ℃ {°F}	Lubrication	Atmosphere	In water	In seawater	In chemical	Corrosive condition	Standard part codes	Product outline	Product detail	Dimensions
	RoHS2 ELV **Oiles** **Air Bearings**	Contact us for details and product design according to your needs.				—	○	×	×	×	△	Custom-made	P.59	P.269	—