Lathe turning

Relief angle

Rake angle

Nose radius (mm)

Speed (m/min)

Cut depth (mm)

Feed (mm/rev)

carbide tool (JIS)

Some products require application of solid

lubricants on the sliding surface after

*Contact us for grinding and milling information.

Machining accuracy (bushing)

0.D.

class 7 to 8 class 6 to 7 class 8 to 9

This product demonstrates satisfactory

performance at the slide surface roughness

Classes here are in JIS standard.

5~10°

2~5°

0.40~0.80

100~200

0.05~0.30

0.08~0.30

Length

Feature

- 500SP4 is a self-lubricating bearing with embedded solid lubricant and metal base that conforms to the universally-acknowledged ASTM Standards (C86300).
- Serviceable without the need for lubrication.
- Demonstrates high performance under high-load and 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.
- Superior chemical resistance and corrosion resistance.

Service range	500SP4 SL1			
Lubrication condition	Dry periodic lubric			
Service temperature range °C	-40~+300 -40~+150			
Allowable max. pressure P N/mm² {kgf/cm²}	29 (150) {296 (1,530)}			
Allowable max. velocity V m/s {m/min}	0.50 {30}	1.00 (60)		
Allowable max. PV value N/mm² · m/s {kgf/cm² · m/min}	1.65 {1,010}	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]).

*Above values are applicable when solid lubricants SL1 are used.

*Use the solid lubricant SL464 (lead-free) in water or in environments where the bearings are always exposed to water splashes. The operating temperature range is from -40°C to +80°C (-40°F to 176°F).

Mechanical properties				
Density	g/cm ³		7.8	
Tensile strength	JIS Z 2241	N/mm ² {kgf/mm ² }	755 {77}	
Tensile elongation at break	JIS Z 2241	%	12	
Compressive strength		N/mm ² {kgf/mm ² }	345 {35} (Note)	
Impact strength	JIS Z 2242	J/cm ² {kgfm/cm ² }	19 {1.9}	
Hardness	JIS Z 2243	HBW	223	
Modulus of longitudinal elasticity		N/mm ² {kgf/mm ² }	105,000 {10,700}	
Co-efficient of linear expansion		×10 ^{−5} °C ^{−1}	2.2	
Thermal conductivity		W/m°C {cal/sec°Ccm}	87.8 {0.21}	

※The values shown above are typical values,	not the standard values.
(Note) Compressive strength is 0.1%	

▲ Solid lubricant, SL401 and SL403 are not lead-free.

Oiles 500SPR (Hard special copper alloy bearings with embedded solid lubricant



Features

- Applicable to higher pressure than 500HP.
- Help realize a long-life operation or a compact design.







Service range	500SPR SL1		
Lubrication condition	Dry periodic lubricati		
Service temperature range °C	−40~+150		
Allowable max. pressure P N/mm² {kgf/cm²}	90 (200) {918 (2,041)}		
Allowable max. velocity V m/s {m/min}	0.25 {15} 0.50 {30}		
Allowable max. PV value N/mm² · m/s (kgf/cm² · m/min)	1.65 {1,010}	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]).

*Above values are applicable when solid lubricants SL1 are used.

Mechanical properties							
Density		g/cm³	7.49	Hardness	JIS Z 2243	HBW	280
Tensile strength	JIS Z 2241	N/mm² {kgf/mm²}	780 {79}	Modulus of longitudinal elasticity.		N/mm² {kgf/mm²}	105,000 {10,720}
Tensile elongation at break	JIS Z 2241	%	1.0	Co-efficient of linear expansion		×10 ^{−5} °C ^{−1}	1.97
Compressive strength		N/mm² {kgf/mm²}	460 {47} (Note)	*The values shown above are typical values, not the standard values. (Note) Compressive strength is 0.1%			

A Please indicate the type of motion (rotation, reciprocating, rotation & reciprocating) for custom-made products.

A Solid lubricant, SL401 and SL403 are not lead-free.

Journal oscillation test 500SPR-SL1 <Testing conditions> Bearing dimension : $\phi 60 \times \phi 75 \times \ell 42$

Mating material: SCM440 quenched by high frequency induction hardening

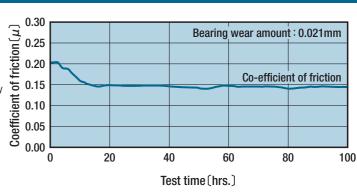
Pressure: 90N/mm²{918kgf/cm²} Volocity: 0.008m/s{0.47m/min}

Oscillation cycle: 5cpm Oscillation angle: ±45° Test time: 100hrs.

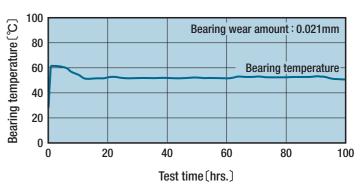
Test data

Ambience: in the atmosphere, room temp.

Lubricataion: initially-greased only



Metallic Bearing



A Please indicate the type of motion (rotation, reciprocating, rotation & reciprocating) for custom-made products.

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