

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



Service range		500SPR SL1	
Lubrication condition	Dry	periodic lubrication	
Service temperature range °C	-40~+150		
Allowable max. pressure P N/mm <sup>2</sup> [kgf/cm <sup>2</sup> ]	90 (200) {918 (2,041)}		
Allowable max. velocity V m/s [m/min]	0.25 {15}	0.50 {30}	
Allowable max. PV value N/mm <sup>2</sup> · m/s [kgf/cm <sup>2</sup> · m/min]	1.65 {1,010}	3.25 {1,990}	

## Features

- Help realize a long-life operation or a compact design.

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

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

## Mechanical properties

Density	—	g/cm <sup>3</sup>	7.49	Hardness	JIS Z 2243	HBW	280
Tensile strength	JIS Z 2241	N/mm <sup>2</sup> [kgf/mm <sup>2</sup> ]	780 {79}	Modulus of longitudinal elasticity	—	N/mm <sup>2</sup> [kgf/mm <sup>2</sup> ]	105,000 {10,720}
Tensile elongation at break	JIS Z 2241	%	1.0	Co-efficient of linear expansion	—	$\times 10^{-5} \text{ } ^\circ\text{C}^{-1}$	1.97
Compressive strength	—	N/mm <sup>2</sup> [kgf/mm <sup>2</sup> ]	460 {47} (Note)	※The values shown above are typical values, not the standard values. (Note) Compressive strength is 0.1%			

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

## Test data

### Journal oscillation test 500SPR-SL1

<Testing conditions>

Bearing dimension :  $\phi 60 \times \phi 75 \times L42$

Mating material : SCM440 quenched by high frequency induction hardening

Pressure : 90N/mm<sup>2</sup> [918kgf/cm<sup>2</sup>]

Velocity : 0.008m/s [0.47m/min]

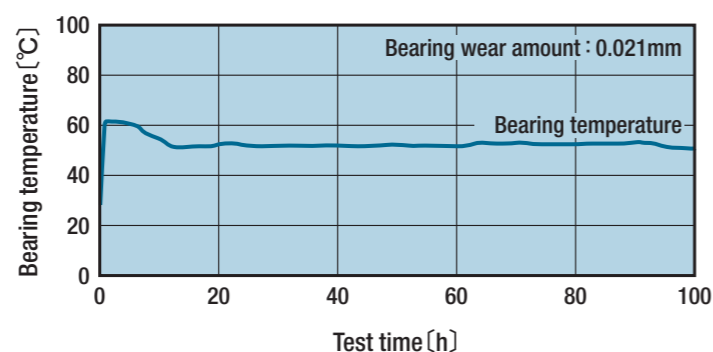
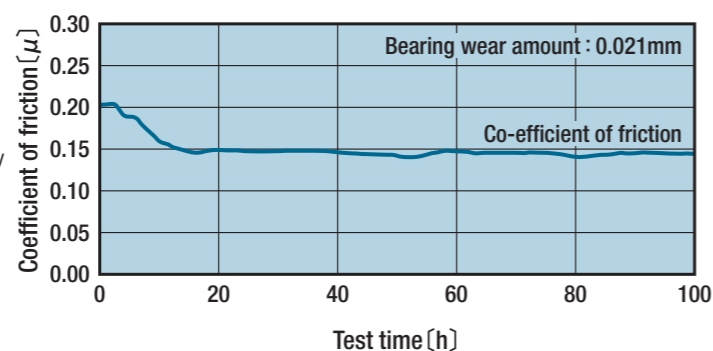
Oscillation cycle : 5cpm

Oscillation angle :  $\pm 45^\circ$

Test time : 100h

Ambience : in the atmosphere, room temp.

Lubrication : initially-greased only



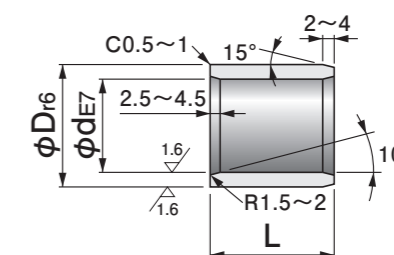
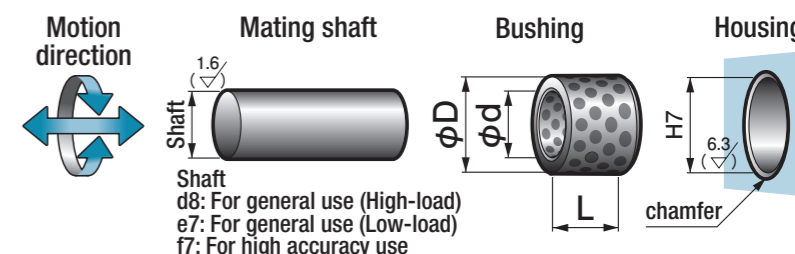
# SPRB Oiles 500SPR SL1 Bushings



Specify Part No. by required I.D., O.D. and Length.  
(e.g.) I.D. is 30mm, O.D. is 40mm, and length is 40mm.

## SPRB - 304040

Part No.



Part No.	I.D.		O.D.		Length		I.D. tolerance after press fitting (reference)
	φd	Tolerance	φD	Tolerance	L	Tolerance	
<b>SPRB-203020</b>	20	+0.061 +0.040	30	+0.041 +0.028	20	-0.1 -0.3	+0.037 +0.016
<b>SPRB-203025</b>	20	+0.061 +0.040	30	+0.041 +0.028	25	-0.1 -0.3	+0.037 +0.016
<b>SPRB-253520</b>	25	+0.061 +0.040	35	+0.050 +0.034	20	-0.1 -0.3	+0.030 +0.009
<b>SPRB-253530</b>	25	+0.061 +0.040	35	+0.050 +0.034	30	-0.1 -0.3	+0.030 +0.009
<b>SPRB-304030</b>	30	+0.061 +0.040	40	+0.050 +0.034	30	-0.1 -0.3	+0.032 +0.011
<b>SPRB-304040</b>	30	+0.061 +0.040	40	+0.050 +0.034	40	-0.1 -0.3	+0.032 +0.011
<b>SPRB-405040</b>	40	+0.075 +0.050	50	+0.050 +0.034	40	-0.1 -0.3	+0.046 +0.021
<b>SPRB-405050</b>	40	+0.075 +0.050	50	+0.050 +0.034	50	-0.1 -0.3	+0.046 +0.021
<b>SPRB-506050</b>	50	+0.075 +0.050	60	+0.060 +0.041	50	-0.1 -0.3	+0.045 +0.020
<b>SPRB-506060</b>	50	+0.075 +0.060	60	+0.060 +0.041	60	-0.1 -0.3	+0.045 +0.023
<b>SPRB-607550</b>	60	+0.090 +0.060	75	+0.062 +0.043	50	-0.1 -0.3	+0.053 +0.023
<b>SPRB-607560</b>	60	+0.090 +0.060	75	+0.062 +0.043	60	-0.1 -0.3	+0.053 +0.023

※The I.D. tolerance after press fitting is for reference only.