

Oiles 500 Spherical Bearings Unit bearings



Feature

- Conforms to the ISO Standard E type bearings. Compatible with them dimensionally. High precision.
- The inner surface of the inner race is subject to sliding. The outer surface of the inner race bears self-aligning.
- Applicable to higher loads than other self-lubricating spherical bearings.
- Applicable to large oscillating angles in circumferential oscillating motion.
- Serviceable without the need for lubrication. Features quite long service life.

Service range

Lubrication condition	Dry
Service temperature range °C	-40~+150
Allowable max. pressure P N/mm ² [kgf/cm ²]	39.2 [400]
Allowable max. velocity V m/s [m/min]	0.15 [9]
Allowable max. PV value N/mm ² · m/s [kgf/cm ² · m/min]	0.80 [490]

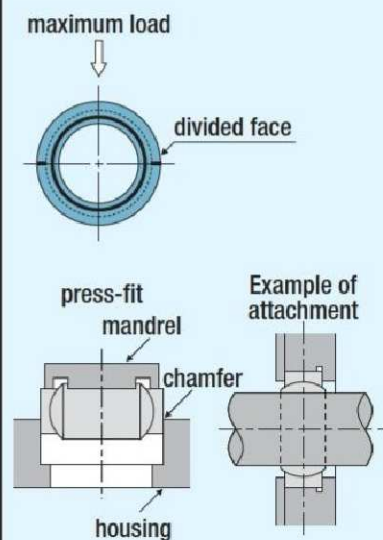
Parts No.	Allowable dynamic load (Note 1) N [kgf]	Allowable static load (Note 2) N [kgf]
SPS-2035E	9,410 { 960}	23,500 { 2,400}
SPS-2542E	15,600 { 1,600}	39,200 { 4,000}
SPS-3047E	21,100 { 2,160}	52,900 { 5,400}
SPS-3555E	27,400 { 2,800}	68,600 { 7,000}
SPS-4062E	34,500 { 3,520}	86,200 { 8,800}
SPS-4568E	44,100 { 4,500}	109,000 {11,200}
SPS-5075E	54,900 { 5,600}	137,000 {14,000}
SPS-6090E	84,700 { 8,640}	211,000 {21,600}
SPS-70105E	109,000 {11,200}	274,000 {28,000}
SPS-80120E	141,000 {14,400}	353,000 {36,000}
SPS-90130E	176,000 {18,000}	441,000 {45,000}
SPS-100150E	215,000 {22,000}	539,000 {55,000}
SPS-110160E	237,000 {24,200}	593,000 {60,500}
SPS-120180E	329,000 {33,600}	823,000 {84,000}

(Note 1) The allowable dynamic loads are calculated based on the allowable bearing pressure in oscillating motion, which is 39.2 N/mm² [400 kgf/cm²]. They apply to the long-term loads under normal conditions.

(Note 2) The allowable static loads are calculated based on the allowable static bearing pressure 98.0 N/mm² [1,000 kgf/cm²] (i.e., allowable bearing pressure when accompanied with no sliding or accompanied with sliding at quite low speed not more than 0.0017 m/s [0.1 m/min.]). They apply to the accidental short-term loads under abnormal conditions.

Bearing Fixing Method

The outer race is split into two parts. Assemble them as shown below so that the split parts are not located at the maximum load point. the bearing to fix it. Press it slowly with a vice or press by the intermediation of a as shown below. Chamfering the housing end is more effective.



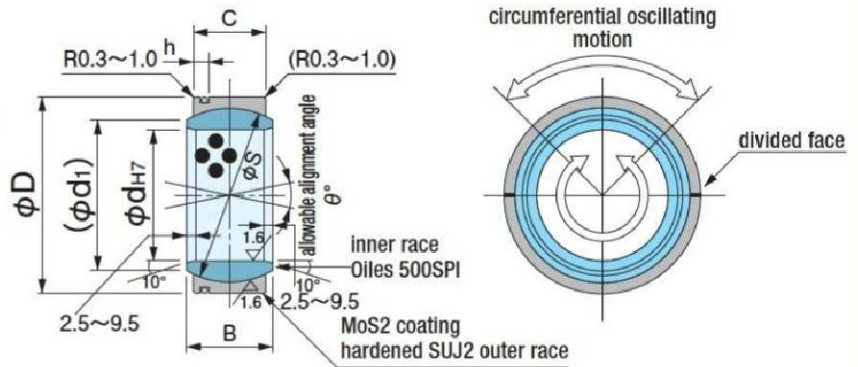
SPS Oiles 500 Spherical Bearings



Specify Part No. by required I.D. and O.D.
 (e.g.) I.D. is 50mm and O.D. is 75mm.

SPS - 5075 E
Parts No.

- Mating shaft
 For general: e7 (Recommended housing K7)
 For high load: d8 (Recommended housing N7)



Parts No.	I.D.		O.D.		φd ₁	B	C	Tolerance	φS	h	θ°
	φd	Tolerance	φD	Tolerance							
SPS-2035E	20	$\begin{smallmatrix} +0.021 \\ 0 \end{smallmatrix}$	35	$\begin{smallmatrix} 0 \\ -0.011 \end{smallmatrix}$	24	16	12	$\begin{smallmatrix} 0 \\ -0.24 \end{smallmatrix}$	29	3.5	9
SPS-2542E	25	$\begin{smallmatrix} +0.021 \\ 0 \end{smallmatrix}$	42	$\begin{smallmatrix} 0 \\ -0.011 \end{smallmatrix}$	29	20	16	$\begin{smallmatrix} 0 \\ -0.24 \end{smallmatrix}$	35.5	5.0	7
SPS-3047E	30	$\begin{smallmatrix} +0.021 \\ 0 \end{smallmatrix}$	47	$\begin{smallmatrix} 0 \\ -0.011 \end{smallmatrix}$	34	22	18	$\begin{smallmatrix} 0 \\ -0.24 \end{smallmatrix}$	40.7	5.0	6
SPS-3555E	35	$\begin{smallmatrix} +0.025 \\ 0 \end{smallmatrix}$	55	$\begin{smallmatrix} 0 \\ -0.013 \end{smallmatrix}$	40	25	20	$\begin{smallmatrix} 0 \\ -0.3 \end{smallmatrix}$	47	6.0	6
SPS-4062E	40	$\begin{smallmatrix} +0.025 \\ 0 \end{smallmatrix}$	62	$\begin{smallmatrix} 0 \\ -0.013 \end{smallmatrix}$	45	28	22	$\begin{smallmatrix} 0 \\ -0.3 \end{smallmatrix}$	53	6.0	7
SPS-4568E	45	$\begin{smallmatrix} +0.025 \\ 0 \end{smallmatrix}$	68	$\begin{smallmatrix} 0 \\ -0.013 \end{smallmatrix}$	51	32	25	$\begin{smallmatrix} 0 \\ -0.3 \end{smallmatrix}$	60	6.0	7
SPS-5075E	50	$\begin{smallmatrix} +0.025 \\ 0 \end{smallmatrix}$	75	$\begin{smallmatrix} 0 \\ -0.013 \end{smallmatrix}$	56	35	28	$\begin{smallmatrix} 0 \\ -0.3 \end{smallmatrix}$	66	6.0	6
SPS-6090E	60	$\begin{smallmatrix} +0.030 \\ 0 \end{smallmatrix}$	90	$\begin{smallmatrix} 0 \\ -0.015 \end{smallmatrix}$	67	44	36	$\begin{smallmatrix} 0 \\ -0.4 \end{smallmatrix}$	80	6.0	6
SPS-70105E	70	$\begin{smallmatrix} +0.030 \\ 0 \end{smallmatrix}$	105	$\begin{smallmatrix} 0 \\ -0.015 \end{smallmatrix}$	78	49	40	$\begin{smallmatrix} 0 \\ -0.4 \end{smallmatrix}$	92	7.0	6
SPS-80120E	80	$\begin{smallmatrix} +0.030 \\ 0 \end{smallmatrix}$	120	$\begin{smallmatrix} 0 \\ -0.015 \end{smallmatrix}$	89	55	45	$\begin{smallmatrix} 0 \\ -0.4 \end{smallmatrix}$	105	7.0	6
SPS-90130E	90	$\begin{smallmatrix} +0.035 \\ 0 \end{smallmatrix}$	130	$\begin{smallmatrix} 0 \\ -0.018 \end{smallmatrix}$	98	60	50	$\begin{smallmatrix} 0 \\ -0.5 \end{smallmatrix}$	115	7.0	5
SPS-100150E	100	$\begin{smallmatrix} +0.035 \\ 0 \end{smallmatrix}$	150	$\begin{smallmatrix} 0 \\ -0.018 \end{smallmatrix}$	110	70	55	$\begin{smallmatrix} 0 \\ -0.5 \end{smallmatrix}$	130	7.0	7
SPS-110160E	110	$\begin{smallmatrix} +0.035 \\ 0 \end{smallmatrix}$	160	$\begin{smallmatrix} 0 \\ -0.018 \end{smallmatrix}$	121	70	55	$\begin{smallmatrix} 0 \\ -0.5 \end{smallmatrix}$	140	8.0	6
SPS-120180E	120	$\begin{smallmatrix} +0.035 \\ 0 \end{smallmatrix}$	180	$\begin{smallmatrix} 0 \\ -0.018 \end{smallmatrix}$	136	85	70	$\begin{smallmatrix} 0 \\ -0.5 \end{smallmatrix}$	160	8.0	6

※ φD tolerance is nominal.

▲ The dimensional tolerances are the values measured at +25°C.

- Selection Guide
- Product Information
- Plastic Bearing
- Multi-layer Bearing
- Metallic Bearing
- Air Bearings
- Slide Shifter
- Technical Information
- Corporate Profile