

For New Technology Network

NTN[®]

NTN corporation

Miniature Plastic Sliding Screws

BEAREE

CAT. No. 5112-III/E



BEAREE AS 5000 sliding screws are low-noise sliding screws that combine a nut made of polyphenylene sulfide (PPS) with a stainless steel (SUS304) rolled thread shank to enable use in a wide range of environments.



1. Features

- Can be used in a wide range of environments. (Corrosion and heat resistant, doesn't require lubrication.)
- Produces less noise than ball screws.
- Low-friction plastic nut offers high screw efficiency.

	Grease	Corrosion resistant	Screw precision	Screw efficiency	Noise	Working temperature
NTN plastic sliding screws (AS 5000)	Not required (combined use)	◎	○	○	◎	◎
General purpose sliding screws (oil impregnated POM)	Not required (combined use)	△	△~○	△~○	○	△
Ball screws	Required	×	◎	◎	△	△

◎: Excellent ○: Good △: Fair ×: Poor

2. Nut material characteristics

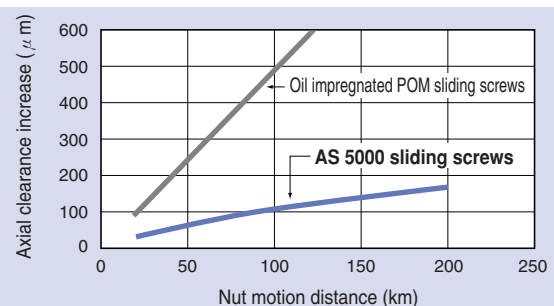
	Unit	AS 5000
Specific gravity	—	1.53
Hardness	Rockwell R	110
Tensile strength	MPa {kgf/cm ² }	51 {510}
Elongation	%	3
Modulus of rupture	MPa {kgf/cm ² }	61 {610}
Coefficient of water absorption	%	0.05

The figures provided in the table are representative values for all materials.

4. Specifications

Type	: Single flange, single nut
Material/plastic nut	: BEAREE AS 5000 (PPS)
Screw shank	: SUS304
Precision class	: Ct10 {JIS B 1192}
Cumulative lead error	: ±0.21/300mm

3. Wear data



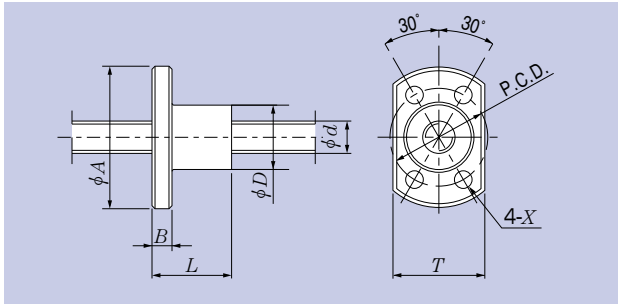
Plastic sliding screw nut motion distance and axial clearance increase

Comparison of AS 5000 and oil impregnated POM sliding screws
Axial load: 100N, rotational speed: 500 min⁻¹, dry

5. Applications

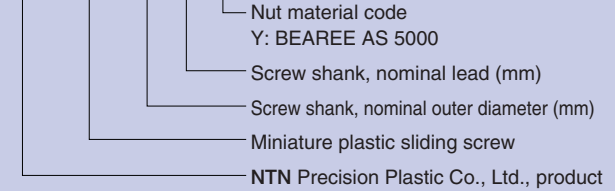
Optical measurement devices, semiconductor manufacturing equipment, medical equipment, measurement devices, industrial food processing equipment, automatically controlled equipment, industrial robots, automobiles, electrical accessories, amusement machines, ticket vending machines, etc.

6. Dimensions



How to read the product No.

R - MSS 04 01 Y



Product No.	Screw shank		Plastic nut									Standard shank length ^①
	Nominal diameter <i>d</i>	Nominal lead	Outer diameter <i>D</i> _{±0.2}	Overall length <i>L</i>	Flange		Mounting holes			Width across flat <i>T</i>	Number of threads	
					<i>A</i>	<i>B</i>	P.C.D.	Hole diameter <i>X</i>	No. of holes			
R-MSS0401Y	4	1	10	11.5	23	3.5	15	2.9	4	15	1	200
R-MSS0402Y		2									2	
R-MSS0601Y	6	1	12	14.5	26	3.5	18	3.4	4	17	1	300
R-MSS0602Y		2									1	
R-MSS0609Y		9									4	
R-MSS0618Y		18									6	
R-MSS0801Y	8	1	14	18	29	4	21	4.5	4	18	1	400
R-MSS0802Y		2									4	
R-MSS0812Y		12									6	
R-MSS0824Y		24									6	
R-MSS1002Y	10	2	16	22	33	5	24	4.5	4	21	1	300
R-MSS1015Y		15									4	
R-MSS1030Y		30									6	
R-MSS1202Y		2									1	
R-MSS1218Y	12	18	18	25	35	5	26	4.5	4	22	1	300
R-MSS1236Y		36									6	

① The ends of standard screw shanks are not machined. Machining can be requested.

7. Technical data

Product No.	Screw diameter (nominal)	Screw shank		Allowable axial load ^② N {kgf}	Allowable rotational speed ^② min ⁻¹	Fastening torque (max) ^③ N · mm	Screw efficiency ^① %
		Leads	Number of threads				
R-MSS0401Y	4	1	1	50 {5.1}	2 500	180	45
R-MSS0402Y		2	2	60 {6.1}			70
R-MSS0601Y	6	1	1	120 {12.2}	2 000	400	40
R-MSS0602Y		2	1	60 {6.1}			55
R-MSS0609Y		9	4	90 {9.1}			85
R-MSS0618Y		18	6	110 {11.2}			85
R-MSS0801Y	8	1	1	200 {20.4}	2 000	400	30
R-MSS0802Y		2	1	290 {29.6}			45
R-MSS0812Y		12	4	210 {21.4}			80
R-MSS0824Y		24	6	210 {21.4}			85
R-MSS1002Y	10	2	1	460 {46.9}	1 500	500	40
R-MSS1015Y		15	4	410 {41.8}			80
R-MSS1030Y		30	6	440 {44.9}			85
R-MSS1202Y	12	2	1	660 {67.3}	1 000	500	35
R-MSS1218Y		18	6	750 {76.5}			75
R-MSS1236Y		36	6	540 {55.1}			80

① Screw efficiency is calculated by the following formula whereby rotational torque of the screw shank is measured when the plastic nut is turned while applying an axial load.

$$\eta = \frac{R \cdot Q \cdot \tan \beta}{M} \times 100 \quad \tan \beta = \frac{\text{Lead}}{2\pi R}$$

Where, η : Screw efficiency, %; R : Screw effective radius; Q : Axial load; β : Lead angle; M : Rotational torque

② The values for axial load and allowable rotational speed are those obtained when tested under the following conditions:

- 1) Tester : NTN sliding screw endurance tester
- 2) Conditions : Room temperature, no lubrication, screw shank turned
- 3) Allowable value determination standards : Using R-MSS0824Y with axial load of 98N, rotational speed of 2000 min⁻¹, screw is tested by motion distance of 200 km to make sure there is no abnormal wear. Other standards are calculated.

③ Mounting screw fastening torque is fastening torque when the plastic nut is fastened to the other part.