

SPACEA™ Series High Corrosion-resistant Resin Bearings Aqua-Bearing™

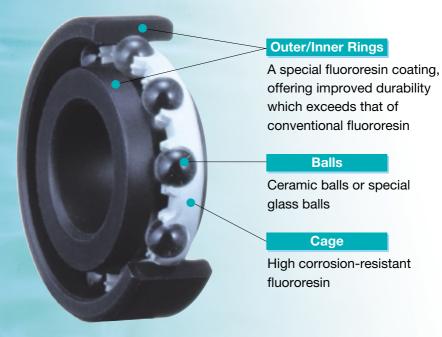
A new bearing featuring a special fluororesin coat equipped to meet a broad range of applications in water, alkali and strong acid environments.





High Corrosion-resistant Resin Bearings "Aqua-Bearing™"

The NSK High Corrosion-resistant Resin Bearings "Aqua-Bearing™" is one of the special environments bearings SPACEA™ Series "Corrosion-resistant Bearings" suitable for a broad range of applications in environments which include water, alkali and strong acid environments.



1. Features of the Aqua-Bearing™

High corrosion-resistance

Compared to conventional resin bearings, such as polyethylene (PE) and polyphenylene sulfide (PPS), the high corrosion-resistance of the new bearings is equivalent to that of ceramics (see Table 1).

Long life

Excellent durability in acid solvents, in excess of 1,000 fold the resistance of stainless steel bearings (SUS440C), and five times or more that of conventional PE bearings (see Figure 1).

Oil free

No need to supply grease or oil because of the special fluororesin is self-lubricating.



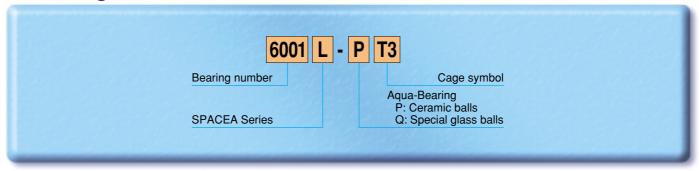
Applications

- Cleaning equipment for semiconductor
- Cleaning equipment for liquid crystal
- Cleaning equipment for hard disk
- Metal plating equipment
- Etching equipment
- Food processing equipment





2. Bearing Nomenclature



3. Standard Bearing Numbers

Bearing Numbers	Boundary Dimensions (mm)				
	Bore Diameter	Outside Diameter	Width		
	d +0.05	D -0.05	B -0.12		
6000	10	26	8		
6001	12	28	8		
6002	15	32	9		
6003	17	35	10		
6004	20	42	12		
6005	25	47	12		

Note: Radial internal clearance is 0.04-0.18 mm.

Bearing Numbers	Boundary Dimensions (mm)				
	Bore Diameter $d^{+0.05}$	Outside Diameter D -0.05	Width <i>B</i> -0.12		
6900	10	22	6		
6901	12	24	6		
6902	15	28	7		
6903	17	30	7		
6904	20	37	9		
6905	25	42	9		

Note: Radial internal clearance is 0.04-0.18 mm.

4. Performance

Table 1 Corrosion Resistance

The corrosion resistance of the Aqua-Bearing is superior to that of conventional resin bearings (PE and PPS), and equivalent to that of ceramic bearings.

	Aqua-Bearing	PE	PPS	Ceramics
Strong sulfuric acid	0	Δ	Δ	0
Hydrochloric acid	0	0	0.	0
Aqua regalis	0	Δ	×	0
15% Acetic acid	0	Δ	Δ	0
75% Aqua fortis	0	×	×	0
40% Chromic acid	0	×	Δ	0
Halogen gas	0	×	0.	0

Corrosion-resistance evaluation ○: Not corroded; △: Partially corroded; ×: Corroded

Figure 1 Results of Durability Tests in Strong Acid Environments Compared to the other bearing types, durability of the Aqua-Bearing in strong acid environments is excellent.

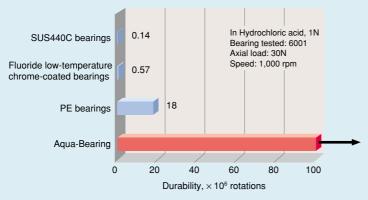
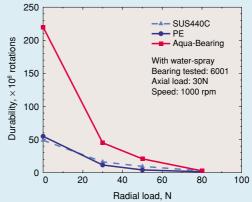


Figure 2 Results of Water-spray Durability Tests Remarkable endurance can be observed under light-load conditions.



- 3. Bearing load should be less than approximately 1% of the basic dynamic load rating. 4. Limiting speed should be less than approximately 20,000 dmn where:

- 1. Specifications for fluoride or organic solvent environments, please contact NSK.
 2. Environments with elevated temperatures (40°C or more), please contact NSK for fitting