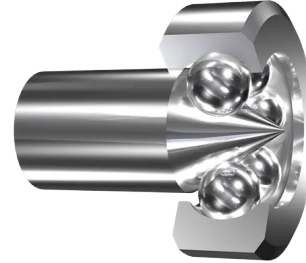


ISC Product Brochure

V2023MAY



1.1 Single row Deep Grove Ball Bearing



1.2 Pivot Ball Bearing (BCF Series)



1.3 Thrust Ball Bearing



1.4 High Speed Dental Bearings

ISC Miniature Ball Bearings are manufactured by NSK Micro Precision Co. Ltd..The rotating parts of many tools and machinery now require miniature ball bearings as important parts. ISC produced a broad range of goods with small size, light weight, low torque, low noise, and long longevity to deal with the necessary uses due to the tendency of reducing different machinery and equipment. For instance, ISC dental bearing excels as the crucial component for a dental hand piece in which extremely high accuracy and extremely high rotational speed are needed.

Table of contents

1.1 Single row Deep Grove Ball Bearing

		1.1 - 1.3
1.1.1	Series 600	1.1
1.1.2	F600	1.2
1.1.3	RW series	1.2
1.1.4	FRW series	1.3
1.1.5	SMT series	1.3

1.2 Pivot Ball Bearing (BCF Series)

1.4

1.3 Thrust Ball Bearing

1.4 - 1.5

1.3.1	F Series	1.4
1.3.2	F-W Series	1.5

1.4 High Speed Dental Bearings

1.5

1.1 Single row Deep Grove Ball Bearing

A single row deep groove ball bearing is a kind of rolling element bearing made up of a cage, a number of balls, an inner race, and an exterior race. The inner and exterior races are usually constructed of hardened steel and are intended to give the balls a smooth, low-friction surface to roll against. The cage is used to maintain the balls' uniform spacing and separation throughout the track. Depending on the needs of the application, single row deep groove ball bearings are offered in a variety of sizes and shapes with various cage designs, seal types, and lubrication choices. They are frequently utilised in fields like building, industrial, automobile, aircraft, and consumer goods like power tools and appliances.

1.1.1 SERIES 600



Selection Parameters

Parameters	Min	Max
Bore Diameter	1 mm	9 mm
Outside Diameter	3 mm	26 mm
Width	1 mm	9 mm
Static Load	23 N	1970 N
Dynamic Load	80 N	4550 N

Industries it caters to

- Medical
- Automotive
- Aerospace
- Robotics
- Agriculture

Product application

- Steering systems
- Dental tools
- Printing presses
- Toys
- Electronic tools
- Surgical instruments
- Wheel hub
- Aircraft engines

Radial ball bearings with a circular arc cross-section and a radius that is a little bit bigger than the radius of the moving ball make up the raceway grooves in the inner and outer rings. Axial weight can be applied in both directions in addition to radial load. Small friction torque makes it ideal for uses needing high-speed spinning and minimal vibration and noise.

1.1 Single row Deep Grove Ball Bearing (continued)

1.1.2 F600



Selection Parameters

Parameters	Min	Max
Bore Diameter	1 mm	9 mm
Outside Diameter	3 mm	25 mm
Outer ring Flange Diameter	3.8 mm	25 mm
Width	1 mm	7 mm
Static Load	23 N	1370 N
Dynamic Load	80 N	3300 N

Industries it caters to

Medical
Automotive
Aerospace
Robotics
Agriculture

Product application

Steering systems
Dental tools
Printing presses
Toys
Electronic tools
Surgical instruments
Wheel hub
Aircraft engines

It is a deep groove ball bearing with an exterior ring flange on one edge. When using this bearing, it is not required to provide a step on the housing's inner bore, making it feasible to accurately process the through hole. It is essential to machine the housing end face's right angle with extreme precision because this bearing is standardly affixed to the end face of the housing.

1.1.3 RW SERIES



Selection Parameters

Parameters	Min	Max
Bore Diameter	1.016 mm	7.938 mm
Outside Diameter	3.175 mm	12.7 mm
Outer ring Flange Diameter	1.191 mm	4.978 mm
Width	1.984 mm	5.711 mm
Static Load	23 N	660 N
Dynamic Load	80 N	1610 N

Industries it caters to

Medical
Automotive
Aerospace
Robotics
Agriculture

Product application

Steering systems
Dental tools
Printing presses
Toys
Electronic tools
Surgical instruments
Wheel hub
Aircraft engines

It is a deep groove ball bearing of the inch variety, with an inner ring that is 0.397mm (1/64 inch) wider on both sides than the exterior ring. The construction of the bearing and assemblage is made simpler by using this bearing.

1.1 Single row Deep Grove Ball Bearing (continued)

1.1.4 FRW SERIES



Selection Parameters

Parameters	Min	Max
Bore Diameter	1.191 mm	7.938 mm
Outside Diameter	3.967 mm	15.875 mm
Outer ring Flange Diameter	5.156 mm	17.526 mm
Width	1.588 mm	4.978 mm
Inner ring width	2.380 mm	5.771 mm
Static Load	35 N	660 N
Dynamic Load	138 N	1610 N

Industries it caters to

Medical
Automotive
Aerospace
Robotics
Agriculture

Product application

Steering systems
Dental tools
Printing presses
Toys
Electronic tools
Surgical instruments
Wheel hub
Aircraft engines

It is an inch-sized deep groove ball bearing with an exterior ring flange on one edge and interior ring that is 1/64 of an inch broader on both sides than the outer ring, or 0.397mm. Utilizing this bearing simplifies the assembly and building of the bearing.

1.1.5 SMT SERIES



Selection Parameters

Parameters	Min	Max
Bore Diameter	10 mm	15 mm
Outside Diameter	15 mm	20 mm
Width	3 mm	3.5 mm
Static Load	410 N	470 N
Dynamic Load	800 N	815 N

Industries it caters to

Medical
Automotive
Aerospace
Robotics
Agriculture

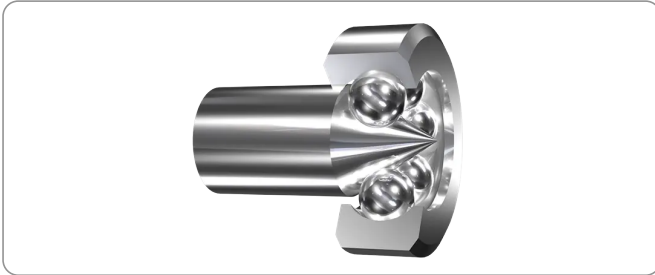
Product application

Steering systems
Dental tools
Printing presses
Toys
Electronic tools
Surgical instruments
Wheel hub
Aircraft engines

A deep groove ball bearing with an exterior diameter to interior diameter ratio that is lower than usual. The dimension and weight of the apparatus can be decreased by using this bearing.

1.2 Pivot Ball Bearing (BCF Series)

It comprises of an outer ring, several balls, and a conical portion that is supported at the spinning shaft's apex and typically pivots at a 60-degree angle. The tiny pitch width of the ball and the form of the pivot portion of the shaft both contribute to the low friction torque.



Selection Parameters

Parameters	Min	Max
Bore Diameter	0.81 mm	8.12 mm
Outside Diameter	3 mm	16 mm
Width	1.5 mm	4.5 mm
Static Load	3 N	107 N
Dynamic Load	32 N	735 N

Industries it caters to

Medical
Automotive
Aerospace
Robotics
Agriculture

Product application

Steering systems
Dental tools
Printing presses
Toys
Electronic tools
Surgical instruments
Wheel hub
Aircraft engines

1.3 Thrust Ball Bearing

Thrust ball bearings support axial loads and consist of two washers and rolling elements. They are commonly used in heavy axial load applications such as automotive, aerospace, and industrial machinery. Thrust ball bearings come in various designs, and are essential for many types of machinery and equipment.

1.3.1 F SERIES



Selection Parameters

Parameters	Min	Max
Bore Diameter	2 mm	10 mm
Outside Diameter	6 mm	18 mm
Width	3 mm	5.5 mm
Static Load	44 N	380 N
Dynamic Load	151 N	860 N

Industries it caters to

Medical
Automotive
Aerospace
Robotics
Agriculture

Product application

Steering systems
Dental tools
Printing presses
Toys
Electronic tools
Surgical instruments
Wheel hub
Aircraft engines

It comprises of a retainer with a ball and a planar bearing gasket without a raceway gap. Only radial loads can be loaded in a single plane. There is little contact force, applicable to spinning at moderate speeds.

1.3 Thrust Ball Bearing (continued)

1.3.2 F-W SERIES



Industries it caters to

Medical
Automotive
Aerospace
Robotics
Agriculture

Selection Parameters

Parameters	Min	Max
Bore Diameter	3 mm	10.2 mm
Outside Diameter	6.8 mm	20 mm
Width	3 mm	7 mm
Static Load	530 N	7550 N
Dynamic Load	570 N	5500 N

Product application

Steering systems
Dental tools
Printing presses
Toys
Electronic tools
Surgical instruments
Wheel hub
Aircraft engines

The upper and lower bearing washers are connected to raceway grooves to increase the maximum weight. Additionally, by securing a raceway channel, it lessens friction between the shaft and the housing by preventing the ball and retainer from moving while the motor is rotating.

1.4 High Speed Dental Bearings

ISC has created high-performance tooth bearings using ultra-precise machining technology, novel material development, and material selection. Available between 450,000 and 500,000 RPM. With novel steel substance, a higher anti-corrosion level has been attained. (anti-corrosion stainless steel). A cage made of polyamide-imide material maintains a greater level of durability in an autoclave. With porcelain spheres; available.



Industries it caters to

Medical
Automotive
Aerospace
Robotics
Agriculture

Selection Parameters

Parameters	Min	Max
Bore Diameter	-	3.175 mm
Outside Diameter	-	6.350 mm
Width	2.380 mm	2.779 mm
Rotational speed	450000 rpm	50000 rpm

Product application

Steering systems
Dental tools
Printing presses
Toys
Electronic tools
Surgical instruments
Wheel hub
Aircraft engines