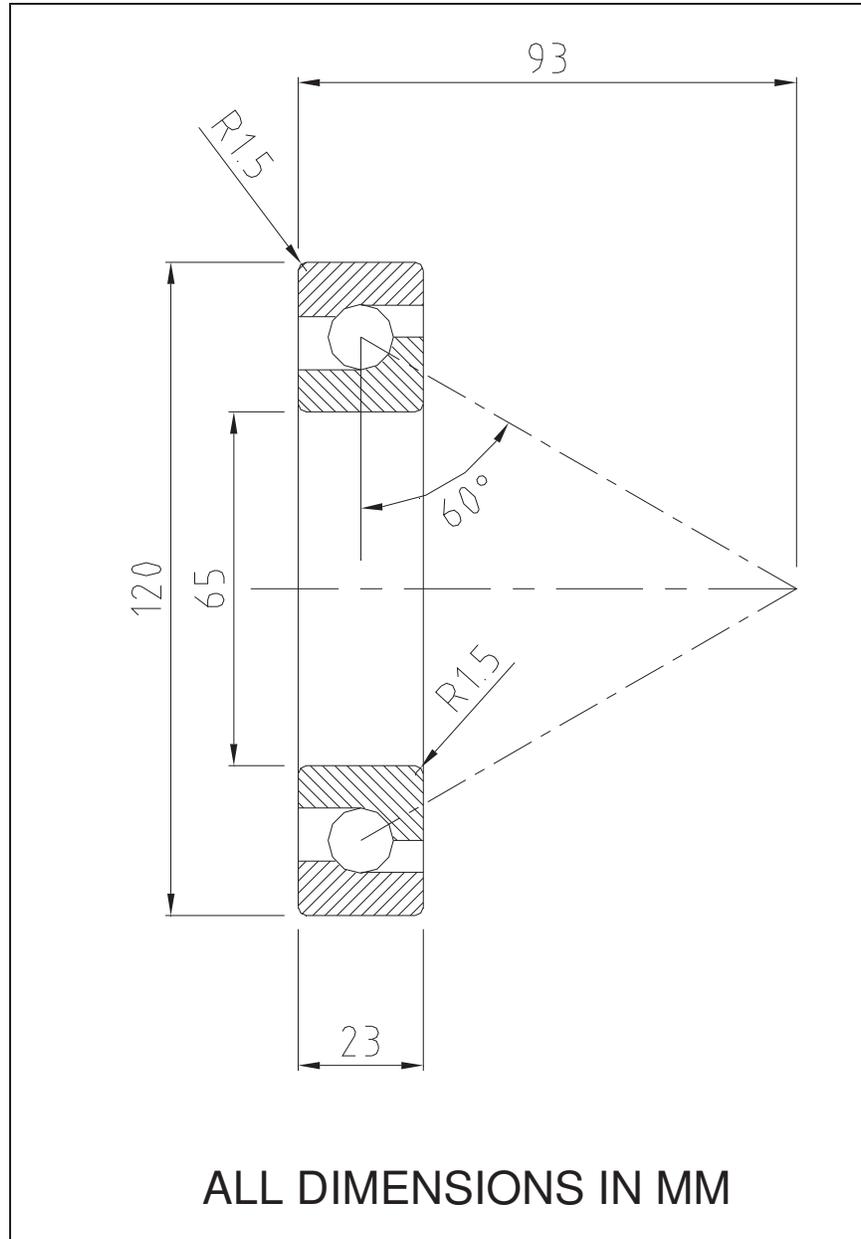


Specification of Aerospace Grade Super PrecisionAngular Contact Ball Bearing

1. Type : Aerospace Grade, Super Precision  
Angular Contact, Ballscrew support Bearing
2. Class : ABEC 7
3. Material : Aerospace grade  
Rings : AFNOR : X40CrMoVN16-2, Stainless Steel XD15NW, 58 HRC min.  
Balls : AFNOR : X40CrMoVN16-2, S.Steel XD15NW or AISI440C, >58HRC  
Retainer : Standard Phenolic resin base cotton / PEEK
3. Lubrication : Grease (MIL-G-25013E)
4. Bore diameter : 65 mm
5. Width : 23 mm
6. Contact angle : 60 deg.
7. Static load (axial) : Greater than 120 kN
6. Dynamic load (axial) : Greater than 40 kN
7. Fatigue limit load (axial) : 15 kN
8. Maximum speed (grease) : 1800 RPM
9. Preload : 7000 N
10. Frictional torque : 0.41 Nm max.
11. Mass : 1,2 Kg
12. Dimensions : As per ANNEXURE-II
13. Environmental conditions : As per ANNEXURE-III
14. Other conditions
  - (a) Certificate of conformity should be provided along with all bearings
  - (b) Each bearing should be individually packed in Polyethylene sealed (under vacuum) packet, which should be inside a Kraft Aluminium bag
  - (c) Each packet should contain manufacturers name, part number, assembly date, serial number etc.
  - (d) One year warranty should be provided from the date of acceptance
  - (e) The technical quote should strictly include the following,

- Material quality and its source, ultrasonic inspection levels, detailed specification including mechanical properties & chemical composition for rings, balls and cages
- Heat treatment cycle of ring material & typical case hardness profile
- Source of balls & its tolerances in dimension, hardness & Sphericity
- Detailed drawing with geometrical and dimensional tolerances.

ANNEXURE - II



ANNEXURE – III

Sl. No.	Test	Qualification
1	Humidity (IS:8252 Part III-1978)	
2	Hot soak	Maintain 70°C for 5½ hrs Last ½ hr operational
3	Cold soak	Maintain +8°C for 5½ hrs Last ½ hr operational
4	Vibration	Sine Vibration
		<table border="1"> <tr> <td> <u>Longitudinal</u>                      10-16 Hz 20mmDA                      16-100 Hz 10g                      Sweep rate: 2Oct/min                 </td> <td> <u>Lateral</u>                      10-16 Hz 12mmDA                      16-100 Hz 6g                      Sweep rate: 2Oct/min                 </td> </tr> </table>
<u>Longitudinal</u> 10-16 Hz 20mmDA 16-100 Hz 10g Sweep rate: 2Oct/min	<u>Lateral</u> 10-16 Hz 12mmDA 16-100 Hz 6g Sweep rate: 2Oct/min	
		<u>Random Vibration</u> 0.002 g <sup>2</sup> /Hz - 20 Hz 0.002 g <sup>2</sup> /Hz - 60 Hz 0.138 g <sup>2</sup> /Hz - 250 Hz 0.138 g <sup>2</sup> /Hz - 1000 Hz 0.034 g <sup>2</sup> /Hz - 2000Hz g (RMS) level – 13.5 Duration – 120 sec/axis All three axes
5	Shock	Acceleration : 50g Duration : 10 msec Shape : Semi sinusoidal No of shock : one / axis / direction All three axes
6	Vacuum	Vacuum : 1 bar to10 <sup>-5</sup> mbar Duration at : 1 hr lower pressure ½ hr passive, last ½ hr operational