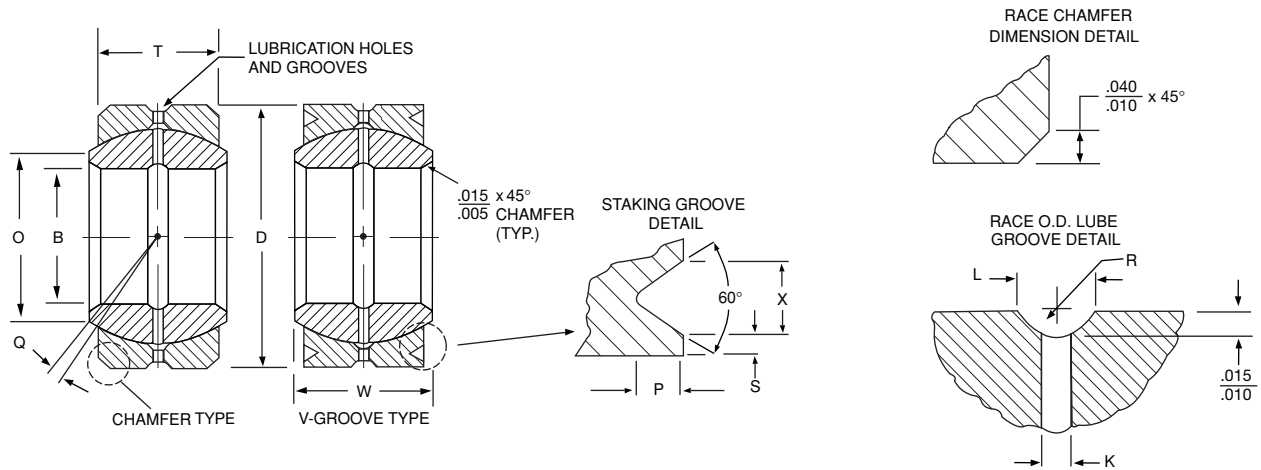


SPHERICAL BEARINGS – Metal-to-Metal

MIL-B-8976 (proposed as AS8976) – Narrow



| Part Number V-Grooved* Steel Race | Part Number V-Grooved* Bronze Race | (B) | (D) | (W) | (T) | (O) | Ball Diameter | | (K) | (L) | (Q) |
|---|--|---------------|------------------|------------|------------|-------------------|---------------|------------|--------------------|---|--------------|
| | | Bore Diameter | Outside Diameter | Ball Width | Race Width | Shoulder Diameter | Bronze Race | Steel Race | Lube Hole Diameter | Groove Width ID & OD of Race & ID of Ball | Misalignment |
| | | Inch | Inch | Inch | Inch | Inch | Inch | Inch | Inch | Inch | Min. |
| | | + .0000 | + .0000 | + .000 | + .005 | Min. | Max. | Max. | + .010 | + .005 | |
| | | - .0005 | - .0005 | - .002 | - .005 | | | | - .010 | - .005 | |
| MS21154S(**) | MS21154B(**) | | | | | | | | | | |
| ABG3VA(L) | ABG3VA-501(L) | .1900 | .5625 | .281 | .218 | .293 | .438 | .407 | .047 | .062 | 10° |
| ABG4VA(L) | ABG4VA-501(L) | .2500 | .6562 | .343 | .250 | .364 | .501 | .501 | .047 | .062 | 10° |
| ABG5VA(L) | ABG5VA-501(L) | .3125 | .7500 | .375 | .281 | .419 | .594 | .563 | .062 | .078 | 10° |
| ABG6VA(L) | ABG6VA-501(L) | .3750 | .8125 | .406 | .312 | .475 | .657 | .657 | .062 | .078 | 9° |
| ABG7VA(L) | ABG7VA-501(L) | .4375 | .9062 | .437 | .343 | .530 | .719 | .719 | .062 | .078 | 8° |
| ABG8VA(L) | ABG8VA-501(L) | .5000 | 1.0000 | .500 | .390 | .600 | .814 | .814 | .062 | .078 | 8° |
| ABG9VA(L) | ABG9VA-501(L) | .5625 | 1.0937 | .562 | .437 | .670 | .907 | .907 | .062 | .078 | 8° |
| ABG10VA(L) | ABG10VA-501(L) | .6250 | 1.1875 | .625 | .500 | .739 | 1.001 | .907 | .078 | .093 | 8° |
| ABG12VA(L) | ABG12VA-501(L) | .7500 | 1.4375 | .755 | .593 | .920 | 1.251 | 1.188 | .078 | .093 | 8° |
| ABG14VA(L) | ABG14VA-501(L) | .8750 | 1.5625 | .875 | .703 | .980 | 1.376 | 1.313 | .078 | .093 | 8° |
| ABG16VA(L) | ABG16VA-501(L) | 1.0000 | 1.7500 | 1.000 | .797 | 1.118 | 1.563 | 1.501 | .078 | .093 | 9° |

* For chamfered version MS21155, delete 'V' from part number.
 ** Add bore codes in multiples of 1/16.

Notes:

- Radial Clearance: 0.0005 to 0.0020.
- Axial Clearance: 0.010 Maximum.
- Dimensions: All dimensions apply after plating.
- Concentricity: Outside diameter (D) to bore diameter (B) within .005 FIM.
- Temperature: Operating temperature range -65° to 250°F.
- Lubrication: MIL-PRF-21164.
- Groove dimensions on ID of race and grease holes through race are before bearing assembly, but swaging shall not restrict grease flow.

Materials

| Part No. | Ball | Race |
|-----------|------------|--|
| ABG-A | ABG-VA | 52100 Alloy Steel Rc56 Min. Chrome Plated† |
| ABG-A-501 | ABG-VA-501 | 4340 STL/AMS6415 4130 STL, or 8630 STL Rc27-36, Cadmium Plated |
| | | Aluminum Bronze (AMPCO® 15), Cadmium Plated |

† Plating: When specified in materials block, ball spherical diameter and ends are hard chrome plated per AMS-QQ-C-320, CL. 2 (.0002 to .0005 inch thickness). All external surfaces of race are cadmium plated per AMS-QQ-P-416.

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Aerospace Standard P/N

MS21154 S 03

- Bore Diameter in Multiples of 1/16 Inch (2 Digits)
- Letter "S" Indicates Alloy Steel (4340, 4130 or 8630) Race Material
- Letter "B" Indicates Aluminum Bronze (AMPCO® 15) Race Material
- AS P/N Prefix Denoting Narrow, Metal on Metal Spherical Bearing with Lube Grooves and Lube Holes in Race and Ball (MS21154=V-Grooved, MS21155=Chamfered)

NHBB P/N

ABG 3 V A X X (L)

- NHBB Manufacturing Code
- Letters "CR" Indicate Optional 440C Ball Material
- "-501" Indicates Aluminum Bronze (AMPCO® 15) Race Material
- Blank Indicates Alloy Steel (4340, 4130 or 8630) Race Material
- Letter "A" Indicates Lube Groove and Lube Holes in Ball
- Letter "V" Indicates V-Grooved Outer Race (MS21154)
- No Letter "V" Indicates Chamfered Outer Race (MS21155)
- Bore Diameter in multiples of 1/16 inch
- NHBB P/N Prefix for Narrow, Metal-to-Metal Spherical Bearing

| (R) Groove Radius ID & OD of Race & ID of Ball | (S) | (P) | (X) | Limit Static Load | | | | Weight |
|---|------------------------|------------------------|------------------------|-------------------|-------|------------|-------|--------------|
| | | | | Bronze Race | | Steel Race | | |
| | | | | Radial | Axial | Radial | Axial | |
| Inch Ref. | Inch +.000 -.010 | Inch +.000 -.015 | Inch +.000 -.010 | lbs. | lbs. | lbs. | lbs. | lbs. Ref. |
| .045 | .020 | .030 | .045 | 2800 | 850 | 4600 | 2100 | .02 |
| .045 | .020 | .030 | .045 | 4300 | 1100 | 7080 | 2800 | .02 |
| .065 | .030 | .040 | .055 | 5200 | 1400 | 8500 | 3550 | .03 |
| .065 | .030 | .040 | .055 | 6750 | 1760 | 11050 | 4400 | .04 |
| .065 | .030 | .040 | .055 | 8500 | 2150 | 13900 | 5400 | .05 |
| .065 | .030 | .060 | .080 | 11500 | 2800 | 18850 | 7050 | .07 |
| .065 | .030 | .060 | .080 | 15600 | 3550 | 25500 | 8900 | .09 |
| .088 | .030 | .060 | .080 | 19500 | 4650 | 31950 | 11700 | .11 |
| .088 | .030 | .060 | .080 | 28500 | 6575 | 46750 | 16500 | .21 |
| .088 | .030 | .060 | .080 | 38300 | 9300 | 62750 | 23300 | .27 |
| .088 | .030 | .060 | .080 | 51000 | 12000 | 83350 | 30000 | .39 |