



Spherical Plain Bearing Tolerances

Spherical Plain Bearing tolerances apply to outer ring **without** surface treatment or splitting. Some bearings receive a phosphate coating and/or a MoS₂ coating, both of which will add to the bearing's OD dimension.

The outer rings become slightly out-of-round due to splitting. The roundness of the outer ring is restored once it is fitted in a housing bore produced in accordance with the specifications.

Please note that measurements taken of the outside diameter of the unfitted, split bearing cannot be used as the original actual values for the outside diameter.

Below are the various tolerances for inner and outer rings of spherical plain bearings supplied by AST Bearings and are organized by product series:

Tolerances for all AST Radial Spherical Plain Bearings (Except for Series GEBK-S, GEBJ-S, GEBJ-C, GEFZ-S, GEFZ-C, GEFZ-T, GEK-XS-2RS)

Inner Ring Tolerances

| d (mm) | | Δ dmp (μm) | | Δ dmp* (μm) | | Vdp (μm) | Vdmp (μm) | Vdp* (μm) | Vdmp* (μm) | Δ Bs (μm) | | Δ Bs* (μm) | |
|-----------|-------|---------------|-----|----------------|-----|-------------|--------------|--------------|---------------|--------------|------|---------------|------|
| over | incl. | max | min | max | min | max | max | max | max | max | min | max | min |
| — | 18 | 0 | -8 | 18 | 0 | 8 | 6 | 18 | 14 | 0 | -120 | 0 | -180 |
| 18 | 30 | 0 | -10 | 21 | 0 | 10 | 8 | 21 | 16 | 0 | -120 | 0 | -210 |
| 30 | 50 | 0 | -12 | 25 | 0 | 12 | 9 | 25 | 19 | 0 | -120 | 0 | -250 |
| 50 | 80 | 0 | -15 | 30 | 0 | 15 | 11 | 30 | 22 | 0 | -150 | 0 | -300 |
| 80 | 120 | 0 | -20 | 35 | 0 | 20 | 15 | 35 | 26 | 0 | -200 | 0 | -350 |
| 120 | 180 | 0 | -25 | 40 | 0 | 25 | 19 | 40 | 30 | 0 | -250 | 0 | -400 |
| 180 | 250 | 0 | -30 | 46 | 0 | 30 | 23 | 46 | 35 | 0 | -300 | 0 | -460 |
| 250 | 315 | 0 | -35 | 52 | 0 | 35 | 26 | 52 | 39 | 0 | -350 | 0 | -520 |
| 315 | 400 | 0 | -40 | 57 | 0 | 40 | 30 | 57 | 43 | 0 | -400 | 0 | -570 |
| 400 | 500 | 0 | -45 | — | — | 45 | 34 | — | — | 0 | -450 | — | — |
| 500 | 630 | 0 | -50 | — | — | 50 | 38 | — | — | 0 | -500 | — | — |
| 630 | 800 | 0 | -75 | — | — | 75 | 56 | — | — | 0 | -750 | — | — |

*Tolerances apply to the GEEW-ES series only

Outer Ring Tolerances

| D (mm) | | ΔD_{mp} (μm) | | V_{Dp} (μm) | V_{Dmp} (μm) | ΔC_s (μm) | |
|-----------|-------|--------------------------------|------|-------------------------|--------------------------|-----------------------------|-------|
| over | incl. | max | min | max | max | max | min |
| — | 18 | 0 | -8 | 10 | 6 | 0 | -240 |
| 18 | 30 | 0 | -9 | 12 | 7 | 0 | -240 |
| 30 | 50 | 0 | -11 | 15 | 8 | 0 | -240 |
| 50 | 80 | 0 | -13 | 17 | 10 | 0 | -300 |
| 80 | 120 | 0 | -15 | 20 | 11 | 0 | -400 |
| 120 | 150 | 0 | -18 | 24 | 14 | 0 | -500 |
| 150 | 180 | 0 | -25 | 33 | 19 | 0 | -500 |
| 180 | 250 | 0 | -30 | 40 | 23 | 0 | -600 |
| 250 | 315 | 0 | -35 | 47 | 26 | 0 | -700 |
| 315 | 400 | 0 | -40 | 53 | 30 | 0 | -800 |
| 400 | 500 | 0 | -45 | 60 | 34 | 0 | -900 |
| 500 | 630 | 0 | -50 | 67 | 38 | 0 | -1000 |
| 630 | 800 | 0 | -75 | 100 | 56 | 0 | -1100 |
| 800 | 1000 | 0 | -100 | 135 | 75 | 0 | -1200 |
| 1000 | 1250 | 0 | -125 | 190 | 125 | 0 | -1300 |

Tolerances for AST Series GEBK-S

Inner Ring Tolerances

| d (mm) | | Δd_{mp} (μm) | | ΔB_s (μm) | |
|-----------|-------|--------------------------------|-----|-----------------------------|------|
| over | incl. | max | min | max | min |
| — | 6 | 12 | 0 | 0 | -100 |
| 6 | 10 | 15 | 0 | 0 | -100 |
| 10 | 18 | 18 | 0 | 0 | -100 |
| 18 | 30 | 21 | 0 | 0 | -100 |

Outer Ring Tolerances

| D (mm) | | ΔD_{mp} (μm) | | ΔC_s (μm) | |
|-----------|-------|--------------------------------|-----|-----------------------------|------|
| over | incl. | max | min | max | min |
| 10 | 18 | 0 | -11 | 100 | -100 |
| 18 | 30 | 0 | -13 | 100 | -100 |
| 30 | 50 | 0 | -16 | 100 | -100 |
| 50 | 80 | 0 | -19 | 100 | -100 |

Tolerances for AST Series GEBJ-S, GEBJ-C

Inner Ring Tolerances

| d (mm) | | A dmp (μ m) | | A Bs (μ m) | |
|-----------|-------|---------------------|-----|--------------------|------|
| over | incl. | max | min | max | min |
| — | 6 | 12 | 0 | 0 | -100 |
| 6 | 10 | 15 | 0 | 0 | -100 |
| 10 | 18 | 18 | 0 | 0 | -100 |
| 18 | 30 | 21 | 0 | 0 | -100 |

Outer Ring Tolerances

| D (mm) | | Δ Dmp (μ m) | | Δ Cs (μ m) | |
|-----------|-------|----------------------------|-----|---------------------------|------|
| over | incl. | max | min | max | min |
| 10 | 18 | 0 | -11 | 0 | -240 |
| 18 | 30 | 0 | -13 | 0 | -240 |
| 30 | 50 | 0 | -16 | 0 | -240 |
| 50 | 80 | 0 | -19 | 0 | -300 |

Tolerances for AST Series GEZ-S, GEFZ-C

Inner Ring Tolerances

| d (mm) | | Δ dmp (μ m) | | Δ Bs (μ m) | |
|-----------|-------|----------------------------|-----|---------------------------|------|
| over | incl. | max | min | max | min |
| — | 6 | 38 | -13 | 130 | -130 |
| 6 | 10 | 38 | -13 | 130 | -130 |
| 10 | 18 | 38 | -13 | 130 | -130 |
| 18 | 30 | 38 | -13 | 130 | -130 |

Outer Ring Tolerances

| D (mm) | | Δ Dmp (μ m) | | Δ Cs (μ m) | |
|-----------|-------|----------------------------|-----|---------------------------|------|
| over | incl. | max | min | max | min |
| 10 | 18 | 0 | -18 | 130 | -130 |
| 18 | 30 | 0 | -18 | 130 | -130 |
| 30 | 50 | 0 | -18 | 130 | -130 |

Tolerances for AST Series GEK-XS-2RS

Inner Ring Tolerances

| d (mm) | | Δ dmp (μ m) | | Δ Bs (μ m) | |
|-----------|-------|----------------------------|-----|---------------------------|------|
| over | incl. | max | min | max | min |
| 18 | 30 | 33 | 0 | 50 | -110 |
| 30 | 50 | 39 | 0 | 50 | -110 |
| 50 | 60 | 46 | 0 | 50 | -140 |

Outer Ring Tolerances

| D (mm) | | Δ Dmp (μ m) | | Δ Cs (μ m) | |
|-----------|-------|----------------------------|-----|---------------------------|------|
| over | incl. | max | min | max | min |
| 50 | 80 | 30 | 11 | 0 | -130 |
| 80 | 120 | 35 | 13 | 0 | -130 |
| 120 | 150 | 40 | 15 | 0 | -130 |

Key for Tolerance Tables

| | |
|-------------------------------|---|
| d | Bearing bore diameter, nominal |
| Δdmp | Single plane mean bore diameter deviation |
| Vdp | Bore diameter variation in a single radial plane |
| Vdmp | Mean bore diameter deviation |
| ΔBs | Deviation of a single width of the inner ring |
| B | Width of the inner ring, nominal |
| D | Bearing outside diameter, nominal |
| ΔDmp | Single plane mean outside diameter deviation |
| VDp | Outside diameter variation in a single radial plane |
| VDmp | Mean outside diameter deviation |
| ΔCs | Deviation of a single width of the outer ring |
| C | Width of outer ring, nominal |