

VIBRATION AND NOISE

The vibration and noise in bearings fall under one of three classes, Z1, Z2, or Z3. Both are measured using the SO910-II instrument. For special requirements, the BVT-1 is used, and the results are classified as V1, V2, or V3. Please refer to the charts shown below.

MAXIMUM VIBRATION ACCELERATION OF SINGLE BEARING AND NOMINAL 3mm~60mm

Tolerance in dB

| d/mm Bore diameter | (0) Diameter Series (2) | | | | (2) Diameter Series (2) | | | | (3) Diameter Series (2) | | | | | |
|--------------------------|----------------------------|----|----|----|----------------------------|----|----|----|----------------------------|----|----|----|----|----|
| | z | z1 | z2 | z3 | z | z1 | z2 | z3 | z | z1 | z2 | z3 | | |
| 5 | 37 | 36 | 34 | 30 | 38 | 37 | 34 | 32 | -- | 39 | 37 | 35 | 33 | -- |
| 6 | 37 | 36 | 34 | 30 | 38 | 37 | 34 | 32 | -- | 39 | 37 | 35 | 33 | -- |
| 7 | 39 | 38 | 35 | 31 | 40 | 38 | 36 | 34 | -- | -- | -- | -- | -- | -- |
| 8 | 39 | 38 | 35 | 31 | 40 | 38 | 36 | 34 | -- | -- | -- | -- | -- | -- |
| 9 | 41 | 40 | 36 | 32 | 42 | 40 | 37 | 35 | -- | -- | -- | -- | -- | -- |
| 10 | 43 | 42 | 38 | 33 | 44 | 42 | 39 | 35 | 30 | 46 | 44 | 40 | 37 | 32 |
| 12 | 44 | 43 | 39 | 34 | 45 | 43 | 39 | 35 | 30 | 47 | 45 | 40 | 37 | 32 |
| 15 | 45 | 44 | 40 | 35 | 46 | 44 | 41 | 46 | 31 | 48 | 46 | 42 | 38 | 33 |
| 17 | 46 | 44 | 40 | 35 | 47 | 45 | 41 | 46 | 31 | 49 | 47 | 42 | 38 | 33 |
| 20 | 47 | 45 | 41 | 36 | 48 | 46 | 42 | 38 | 33 | 50 | 48 | 43 | 39 | 34 |
| 22 | 47 | 45 | 41 | 36 | 48 | 46 | 42 | 38 | 33 | 50 | 48 | 43 | 39 | 34 |
| 25 | 48 | 46 | 42 | 38 | 49 | 47 | 43 | 40 | 36 | 51 | 49 | 44 | 41 | 37 |
| 28 | 49 | 47 | 43 | 39 | 50 | 48 | 44 | 41 | 37 | 52 | 50 | 45 | 42 | 38 |
| 30 | 49 | 47 | 43 | 39 | 50 | 48 | 44 | 41 | 37 | 52 | 50 | 45 | 42 | 38 |
| 32 | 50 | 48 | 44 | 40 | 51 | 49 | 45 | 42 | 38 | 53 | 51 | 46 | 43 | 39 |
| 35 | 51 | 49 | 45 | 56 | 52 | 50 | 46 | 43 | 39 | 54 | 52 | 47 | 44 | 40 |
| 40 | 53 | 51 | 46 | 42 | 54 | 52 | 47 | 44 | 40 | 56 | 54 | 49 | 45 | 41 |
| 45 | 55 | 53 | 48 | 45 | 41 | 54 | 49 | 46 | 43 | 58 | 56 | 51 | 47 | 44 |
| 50 | 57 | 54 | 50 | 47 | 58 | 55 | 51 | 48 | 45 | 60 | 57 | 53 | 49 | 46 |
| 65 | 59 | 56 | 52 | 49 | 60 | 57 | 53 | 50 | 47 | 62 | 59 | 54 | 51 | 48 |
| 60 | 61 | 58 | 54 | 51 | 62 | 59 | 54 | 51 | 48 | 64 | 61 | 56 | 53 | 50 |

MAXIMUM VIBRATION ACCELERATION OF SINGLE BEARING AND NOMINAL 65mm~80mm

Tolerance in dB

| d/mm Bore diameter | (0) Diameter Series(2) | | | (2) Diameter Series(2) | | | | (3) Diameter Series(2) | | | |
|--------------------------|---------------------------|----|----|---------------------------|----|----|----|---------------------------|----|----|----|
| | z | z1 | z2 | z | z1 | z2 | z3 | z | z1 | z2 | z3 |
| 65 | 49 | 48 | 46 | 50 | 49 | 47 | 42 | 51 | 50 | 48 | 43 |
| 70 | 50 | 49 | 47 | 51 | 50 | 48 | 43 | 52 | 51 | 49 | 44 |
| 75 | 51 | 50 | 48 | 52 | 51 | 49 | 44 | 53 | 52 | 50 | 45 |
| 80 | 52 | 51 | 49 | 53 | 52 | 50 | 45 | 54 | 53 | 51 | 46 |

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TOLERANCE DATA FOR VIBRATION OF SINGLE BEARING AND NOMINAL 3mm~60mm

Tolerance in $\mu\text{m/s}$

| d/mm Bore diameter | V | | | V1 | | | V2 | | | V3 | | | | | |
|--------------------------|-------|--------|-------|-------|--------|-------|-------|--------|-------|-------|--------|-------|-------|--------|-------|
| | Low | Medium | High | Low | Medium | High | Low | Medium | High | Low | Medium | High | Low | Medium | High |
| | Brand | Brand | Brand | Brand | Brand | Brand | Brand | Brand | Brand | Brand | Brand | Brand | Brand | Brand | Brand |
| 5 | 110 | 72 | 60 | 74 | 48 | 40 | 58 | 36 | 30 | 35 | 21 | 18 | 32 | 11 | 11 |
| 6 | 110 | 72 | 60 | 74 | 48 | 40 | 58 | 36 | 30 | 35 | 21 | 18 | 32 | 11 | 11 |
| 7 | 130 | 96 | 80 | 92 | 66 | 54 | 72 | 48 | 40 | 44 | 28 | 24 | 38 | 12 | 12 |
| 8 | 130 | 96 | 80 | 92 | 66 | 54 | 72 | 48 | 40 | 44 | 28 | 24 | 38 | 12 | 12 |
| 9 | 130 | 96 | 80 | 92 | 66 | 54 | 72 | 48 | 40 | 44 | 28 | 24 | 38 | 12 | 12 |
| 10 | 160 | 120 | 100 | 120 | 80 | 70 | 90 | 60 | 50 | 55 | 35 | 30 | 45 | 14 | 15 |
| 12 | 160 | 120 | 100 | 120 | 80 | 70 | 90 | 60 | 50 | 55 | 35 | 30 | 45 | 14 | 15 |
| 15 | 210 | 150 | 120 | 150 | 100 | 85 | 110 | 78 | 60 | 65 | 46 | 35 | 52 | 18 | 18 |
| 17 | 210 | 150 | 120 | 150 | 100 | 85 | 110 | 78 | 60 | 65 | 46 | 35 | 52 | 25 | 25 |
| 20 | 260 | 190 | 150 | 180 | 125 | 100 | 130 | 100 | 75 | 80 | 60 | 45 | 60 | 25 | 25 |
| 22 | 260 | 190 | 150 | 180 | 125 | 100 | 130 | 100 | 75 | 80 | 60 | 45 | 60 | 30 | 32 |
| 25 | 260 | 190 | 150 | 180 | 125 | 100 | 130 | 100 | 75 | 80 | 60 | 45 | 60 | 30 | 32 |
| 28 | 260 | 190 | 150 | 180 | 125 | 100 | 130 | 100 | 75 | 80 | 60 | 45 | 60 | 35 | 40 |
| 30 | 300 | 240 | 190 | 200 | 150 | 130 | 150 | 120 | 100 | 90 | 75 | 60 | 70 | 35 | 40 |
| 32 | 300 | 240 | 190 | 200 | 150 | 130 | 150 | 120 | 100 | 90 | 75 | 60 | 70 | 35 | 40 |
| 35 | 360 | 240 | 190 | 200 | 150 | 130 | 150 | 120 | 100 | 90 | 75 | 60 | 70 | 42 | 45 |
| 40 | 360 | 300 | 260 | 240 | 180 | 160 | 180 | 150 | 130 | 110 | 90 | 80 | 82 | 50 | 50 |
| 45 | 420 | 300 | 260 | 240 | 180 | 160 | 180 | 150 | 130 | 110 | 90 | 80 | 82 | 60 | 60 |
| 50 | 420 | 320 | 320 | 280 | 200 | 200 | 210 | 160 | 160 | 125 | 100 | 100 | 95 | 70 | 70 |
| 55 | 420 | 360 | 360 | 280 | 220 | 200 | 210 | 180 | 180 | 125 | 110 | 110 | 95 | 70 | 70 |
| 60 | 480 | 360 | 440 | 320 | 220 | 240 | 240 | 180 | 200 | 145 | 110 | 130 | 100 | 80 | 80 |

TOLERANCE DATA FOR VIBRATION OF SINGLE BEARING AND NOMINAL 65mm~80mm

Tolerance in $\mu\text{m/s}$

| d/mm Bore diameter | V | | | V1 | | | V2 | | | V3 | | | | | |
|--------------------------|-------|--------|-------|-------|--------|-------|-------|--------|-------|-------|--------|-------|-------|--------|-------|
| | Low | Medium | High | Low | Medium | High | Low | Medium | High | Low | Medium | High | Low | Medium | High |
| | Brand | Brand | Brand | Brand | Brand | Brand | Brand | Brand | Brand | Brand | Brand | Brand | Brand | Brand | Brand |
| 65 | 300 | 260 | 420 | 180 | 160 | 240 | 130 | 100 | 150 | 105 | 80 | 105 | 50 | 50 | 75 |
| 70 | 360 | 310 | 460 | 200 | 180 | 280 | 150 | 120 | 200 | 110 | 90 | 135 | 58 | 58 | 88 |
| 75 | 360 | 310 | 460 | 200 | 180 | 280 | 150 | 120 | 200 | 110 | 90 | 135 | 58 | 58 | 88 |
| 80 | 420 | 360 | 540 | 540 | 210 | 180 | 180 | 120 | 240 | 130 | 110 | 160 | 65 | 65 | 100 |