TIMKEN

# TIMKEN® ADAPT™ BEARING

## A BETTER OPTION FOR HANDLING MISALIGNMENT AND AXIAL FLOAT

Sometimes you need the self-aligning ability of a spherical roller bearing and the axial freedom of a cylindrical bearing, and that is why Timken designed one bearing for both requirements. From paper dryers to shaker screens and blowers and fans, ADAPT bearings outperform in tough environments.

Timken ADAPT bearings combine a cylindrical inner ring with a proprietary profiled outer ring and rollers. This unique three-point contact design geometry provides simultaneous misalignment and axial displacement performance, optimizes contact stress distribution and helps promote roller stability. The result is a more dynamic, more reliable bearing.

### Design Validation

To further demonstrate the superior performance of ADAPT bearings, Timken conducted extensive in-house testing against equivalent-size toroidal bearings from leading brands. Results confirm ADAPT bearings offer:

| HIGHER LOAD RATING UP TO | LOWER OPERATING TEMPERATURES | LESS RUNNING TORQUE BETWEEN | LONGER SERVICE LIFE UP TO |
|---|---|---|---|
| 7% | 5°-10°C COOLER | 5-10% | 30% |

Including 21 heat generation and bearing life tests conducted on 170 ADAPT and 50 competitor bearings; over 70,000 testing hours and over 8 years; bearings manufactured to ISO 2212 boundary dimensions (60 & 110 x 28 mm); speeds ranging from 1200 to 4800 RPM; loads between 10 and 50 percent of ISO calculated C1 rating

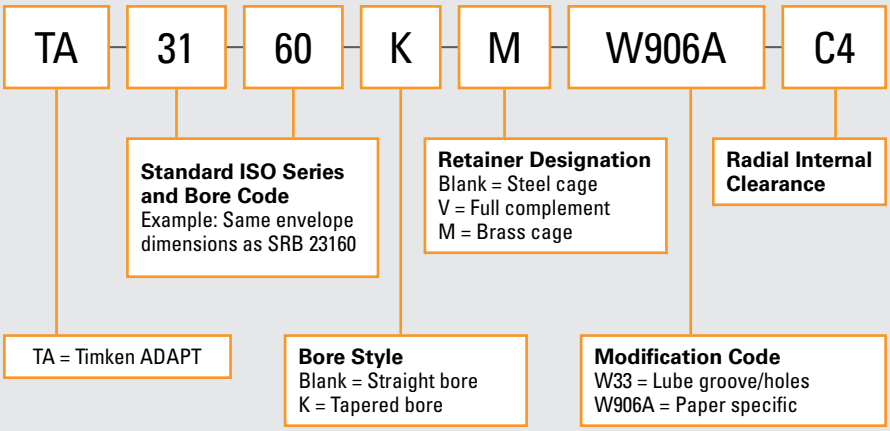
ADAPT bearings combine the axial float performance of a cylindrical bearing and the misalignment performance of a spherical roller bearing to deliver:

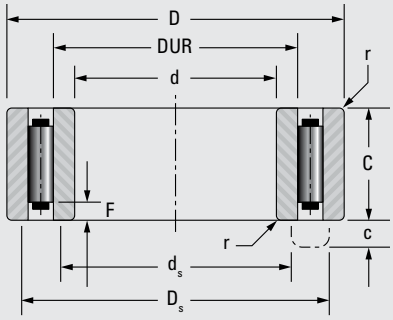
**LOWER OPERATING TEMPERATURES**
**LESS RUNNING TORQUE**
**LONGER LIFE**




**NOTE:** For standard mounting, when the ADAPT bearing is located at the blind end of the shaft, the shaft end plate or bearing locknut must have a diameter that is large enough to retain the bearing outer ring and roller assembly and housing on the roll.

## ADAPT Bearing Nomenclature




**ADAPT bearings are interchangeable with ISO toroidal and spherical roller bearings.**

**ADAPT bearings have a misalignment capability of +/-0.5 degrees (8.7 millirads).**

**For additional sizes and designs, consult your Timken sales representative.**

## Expanded Offering ADAPT Bearing Parts List

| | d | D | C | DUR | C0 | C | F | r | $d_s$ | $D_s$ | c | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Timken PN | Bore (mm) | OD (mm) | Width (mm) | DUR (mm) | Static Capacity (kN) | Dynamic Capacity (kN) | Float (mm) | Fillet (mm) | Shoulder (mm) | Shoulder (mm) | Retainer Clearance (mm) | Weight (kg) | Number of Rollers | Maximum Operating Temperatures | | Thermal Speed Ratings* RPMs | |
| | | | | | | | | | | | | | | C | F | Oil | Grease |
| TA2220 | 100 | 180 | 46 | 120.17 | 478 | 424 | 5.5 | 2.0 | 117.1 | 164.0 | 6 | 5.0 | 18 | 121° | 250° | 2600 | 2200 |
| TA2222 | 110 | 200 | 53 | 131.89 | 640 | 509 | 6.0 | 2.0 | 128.5 | 182.0 | 7 | 6.9 | 18 | 121° | 250° | 2300 | 2000 |
| TA2238 | 190 | 340 | 92 | 227.42 | 1820 | 1330 | 11.0 | 3.0 | 221.1 | 309.0 | 9 | 35.5 | 18 | 121° | 250° | 1300 | 1200 |
| TA2322M | 110 | 240 | 80 | 139.90 | 1050 | 908 | 7.5 | 2.5 | 135.9 | 212.9 | 8 | 17.6 | 13 | 121° | 250° | 2000 | 1800 |
| TA2322 | 110 | 240 | 80 | 139.90 | 1050 | 908 | 7.5 | 2.5 | 135.9 | 212.9 | 8 | 17.0 | 13 | 121° | 250° | 2000 | 1800 |
| TA3036 | 180 | 280 | 74 | 205.05 | 1330 | 953 | 17.3 | 2.0 | 200.2 | 261.0 | 7 | 15.7 | 23 | 121° | 250° | 1400 | 1200 |
| TA3040 | 200 | 310 | 82 | 228.39 | 1710 | 1070 | 8.5 | 2.0 | 223.5 | 285.7 | 8 | 21.7 | 24 | 121° | 250° | 1200 | 1100 |
| TA3044 | 220 | 340 | 90 | 250.73 | 2000 | 1364 | 10.5 | 2.5 | 245.0 | 316.0 | 8 | 28.2 | 24 | 121° | 250° | 1000 | 920 |
| TA3048M | 240 | 360 | 92 | 270.89 | 2180 | 1300 | 11.0 | 2.5 | 265.2 | 337.0 | 7 | 31.6 | 26 | 121° | 250° | 940 | 840 |
| TA3048 | 240 | 360 | 92 | 270.89 | 2180 | 1300 | 11.0 | 2.5 | 265.1 | 337.0 | 7 | 29.3 | 26 | 121° | 250° | 940 | 840 |
| TA3136 | 180 | 300 | 96 | 210.44 | 1800 | 1190 | 10.0 | 2.5 | 204.7 | 275.5 | 8 | 25.1 | 20 | 121° | 250° | 1300 | 1100 |
| TA3140 | 200 | 340 | 112 | 235.21 | 2370 | 1730 | 11.0 | 2.5 | 229.0 | 311.0 | 8 | 39.5 | 19 | 121° | 250° | 1100 | 980 |
| TA3144 | 220 | 370 | 120 | 257.00 | 2860 | 1870 | 12.5 | 3.0 | 249.9 | 341.0 | 9 | 49.6 | 20 | 121° | 250° | 930 | 850 |
| TA3148 | 240 | 400 | 128 | 280.58 | 3450 | 2390 | 12.0 | 3.0 | 273.7 | 367.0 | 10 | 62.9 | 21 | 121° | 250° | 800 | 740 |
| TA3152 | 260 | 440 | 144 | 304.90 | 4150 | 2630 | 14.0 | 3.0 | 296.9 | 404.0 | 11 | 86.0 | 20 | 121° | 250° | 710 | 660 |
| TA3160M | 300 | 500 | 160 | 350.68 | 5140 | 3180 | 15.0 | 4.0 | 342.7 | 455.8 | 12 | 126.4 | 15 | 121° | 250° | 600 | 550 |

*This criteria is based on industry standard reference conditions outlined in ISO 15312: 2003.

**NOTE:** ADAPT bearing installation and mounting requirements should be reviewed by Timken Engineering.

TIMKEN

The Timken team applies their know-how to improve the reliability and performance of machinery in diverse markets worldwide. The company designs, makes and markets bearings, gear drives, automated lubrication systems, belts, brakes, clutches, chain, couplings, linear motion products and related industrial motion rebuild and repair services.

Stronger. By Design.

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