ADR
ALCEN

Integrated Bearing

Specific design
for high precision systems

INTEGRATED BEARING PERFORMANCES

- High-precision rotation and low out-of-roundness rotation;
- Improvement of repeatability (preload and torque);
- High stiffness depending on the selected design;
- Reduction of geometric and dimensional dispersions;
- Control of the thermal impact on the friction torque;
- Reduction of rejects and overall cost.

ADAPTATION OF INTERFACES & BEARING FUNCTIONS

- Simplification and reduction in the number of components in the system;
- Reduction of dimensions and weight of the system;
- Adjusted and applied hard preload;
- Simplification of assembly (« cartridge-type » bearing);
- Improvement in repeatability and reliability of the system.

technology in **motion**

UNIQUE TECHNICAL SKILLS TO DESIGN INTEGRATED BEARINGS

IMPROVED PERFORMANCE COMPARED TO A CONVENTIONAL SOLUTION OF A PAIR OF STANDARD BEARINGS

With more than 90 years of experience in high precision ball bearings technologies, ADR developed integrated bearings solutions to ensure the repeatability of the mechanical behavior and a perfect control of the complete system performances.
Integrated bearings can include mechanism features in order to simplify the final assembly and to reduce geometric and dimensional dispersions of the set by minimizing the number of interfaces.

OPTIMIZE THE PERFORMANCES OF YOUR COMPLETE SYSTEM

The integration around the bearing allows you to improve the precision of rotation and the friction torque of the overall system.
Accurate coasts can be considered when designing and manufacturing to ensure a precise positioning of the mechanical parts.
To reduce the number of interfaces and parts which localize and clamp the bearing in the equipment, ADR proposes integrated bearings with a flange on the outer and/or inner ring equipped with fixing holes.
This integration technique is used by many of our customers because it significantly reduces the dimensions and weight while achieving a better thermal behavior and a more stable friction torque of their systems.
Performances are improved compared with a pair of standard bearings, with possible stiffness and friction torque gains of up to 30%.
The internal design of these bearings remains nevertheless the same (ball diameter, ball number, and raceway)…

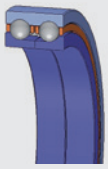
TAYLOR-MADE DESIGN FOR MAXIMUM RELIABILITY

To validate the design of bearings, we have developed an analysis and experimentation methodology that can be conducted jointly with our customers.
These calculation models specifically developed by ADR and refined through a long experience, guarantee high predictive reliability of the complete system.
Partnership working relations are enhanced by direct close contacts between ADR's engineering office and those of its clients to ensure a customized answer to the technical objectives.

Our Technical Department remains at your disposal to answer any questions you may have and/or to adapt this product to your specific needs.

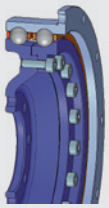
INTEGRATION EXAMPLE

Controlled preload pair of bearings.

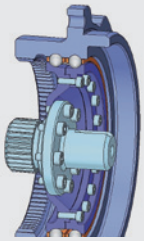


Super duplex design with a single-piece outer ring. Gain in performance, rotating precision and bearing life.

Integration of a flange. Easy to mount and time-saving, enhanced system rigidity, less critical housing precision.



Solid preloading. All the bearing's characteristics and performances are calculated, measured and under ADR's responsibility.



Design and manufacture of complete complex integrated systems at ADR to guarantee the best performances with more compact and reliable systems.

A technical and comparative testing sheet is available from our technical department. These tests were conducted by ADR between integrated bearings and standard bearing pairs.

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