- MANUFACTURED FOR THE AIRCRAFT INDUSTRY
- MATCH BEARING AND APPLICATION
- ENSURE RELIABLE PERFORMANCE
- ESTABLISH A HIGHER LEVEL OF QUALITY

THE TIMKEN COMPANY

TIMKEN

Aircraft Landing Wheel Bearings

Critical applications call for exceptional bearing reliability. When 500 tons of airplane touches down on the runway, all that load is transmitted from the air frame to the ground through the landing wheels. The wheels accelerate from 0 to 2,000 RPM. Under these severe conditions, the wheel bearings are required to operate flawlessly to assure the safety of the airplane, its passengers and crew.

The Timken Company is certified with Part Manufacturer Approval (PMA) from the FAA. This means Timken bearings are qualified to meet the stringent performance demands of aircraft wheel bearings in everything from the largest commercial jets to small private airplanes (see the complete listing at www.timken.com/pma). To signify that level of quality, Timken marks these bearings with "2-629" (inch) or "N-629" (metric), identifying a bearing that is designed and manufactured to meet the tough demands of the aircraft industry.

For 2001, Timken has raised the standard in aircraft landing wheel bearings with an all-new performance code 629 revision. The original performance code 629 bearings met high quality and exacting standards, but the revised code raises those standards to an even higher level.

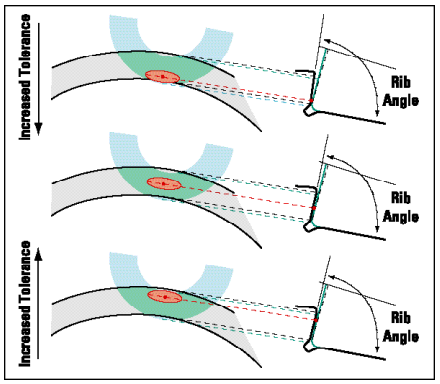
The revised performance code 629 still calls for these manufacturing specifications:

- Honed cup races, cone races, and rollers
- 100 percent hardness check
- 100 percent visual inspection
- Optimized roller size variation for more uniform load distribution between rollers.

Now, the revised performance code 629 raises the bar with these new standards:

- Reduces cone large rib angle tolerance range by 40 percent
- Tightens cone large rib maximum surface finish requirement by 50 percent.

The point where the roller spherical end makes contact with the cone is called the rib/roller end contact. For maintaining bearing life, the rib/roller end contact "footprint" should not deviate too near the edges of the cone large rib face or the roller spherical end (as shown in the figure). Deviation near the edges results in poor lubrication between the roller and the rib face, which can result in scuffing and scoring of the mating surfaces. These deviations are the result of bearing manufacturing tolerances. The revised performance code 629 calls for a tighter rib/angle tolerance range, providing improved control of the rib/roller end-contact location.



Similarly, improving the surface finish of the bearing rib results in improved lubricant film separation between the roller spherical end and the cone large rib. By improving the rib surface finish by 50 percent, the rib surface itself is smoother, reducing the potential for scuffing and scoring, and reducing operating torque, and heat generation.

For more information, consult your Timken sales representative. To locate your nearest sales office or authorized distributor, call us at 1-800-223-1954, ext. 5649, or visit our Web site at www.timken.com.

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