



Reconditioning and Repair of Rolling Bearings

INDUSTRIAL AND RAILWAY SOLUTIONS FROM BES

Local service using world leading technology
to keep Australian Industry on the move



SCHAEFFLER



MAKE YOUR USED BEARINGS AS GOOD AS NEW WITH BES



Schaeffler is a world leader in rolling bearing design and manufacturing. The company's commitment to Australian industry includes locally based rolling bearing assessment and reconditioning services that bring Schaeffler's extensive skills and technology to Australian industry.

Bearing Engineering Services (BES) is a wholly owned division of Schaeffler Australia with high tech bearing reconditioning and service facilities located in Auburn, Sydney.

The services provided are not exclusive to Schaeffler manufactured bearings, BES will recondition rolling bearings from all bearing manufacturers.



BY USING BES, YOUR COMPANY IS ABLE TO:

- Accurately assess the condition of current and replacement (spare) rolling bearings.
- Undertake reconditioning at significantly reduced cost compared to new bearing replacements as part of your preventative maintenance program.
- Reduce machine downtime for replacement bearings as they are returned in a condition that is ready for mounting.

In many cases, rolling bearings are replaced at high cost despite not having reached the limits of their performance capacity.

Reconditioning of rolling bearings by BES represents an economically attractive and local alternative.

BES reconditions all cylindrical, spherical and tapered roller bearings, up to 3 meters in diameter for a range of industrial applications.

The BES service portfolio also includes the reconditioning of all railway journal bearings, along with various railway axle boxes.

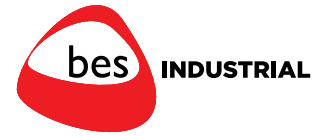
**BES IS AN AUTHORISED REPAIRER OF
BRENCO, SCHAEFFLER AND TIMKEN
RAILWAY BEARINGS.**

SCHAEFFLER



SCHAEFFLER'S INDUSTRIAL CAPABILITIES

INDUSTRIAL CAPABILITIES BES GUIDES YOU THROUGH EVERY STEP



With the technical and engineering data support of one of the world's largest and most successful rolling bearing manufacturers, BES guides you through every step of the reconditioning service.



LEVEL 1 REQUALIFICATION

- Assessment of the bearing suitability for reconditioning
- Cleaning, inspection, reporting, re-packing

LEVEL 2 REFURBISHMENT

- Assessment of the bearing suitability for reconditioning
- Cleaning, inspection, measuring, raceway/roller polishing, reporting, re-packing

LEVEL 3 & 4 REMANUFACTURING

- If assessed and deemed suitable, bearings sent to Germany
- Quotes are generated locally and work coordinated with Germany

PROCESSING STEPS	LEVEL			
	1	2	3	4
Removal of fretting corrosion	✓	✓	✓	✓
Polishing of raceways	-	✓	-	-
Manufacture of rolling elements	-	-	✓	✓
Replacement of cage	-	-	o	✓
Grinding of rolling bearing rings	-	-	✓	✓
Replacement of rolling bearing rings	-	-	-	✓
Assembly	✓	✓	✓	✓
Preservation or greasing	✓	✓	✓	✓
Long term packaging	o	o	o	o
Despatch	✓	✓	✓	✓

- Not Done | ✓ Always Done | o Done if Needed

LONG TERM PACKAGING SOLUTION FROM BES

- Expected storage life: 5 - 10 years in difficult climates
- Ideal for insurance spares in remote locations
- Custom made boxes, sealed foiled bags and humidity indicators

Additional features BES can offer:

- Treated timbers to avoid insect damage to boxes
- Special strapping of rings for long road transport

RECONDITIONING OF RAILWAY BEARINGS

COMPREHENSIVE SERVICE AND TOTAL TRACEABILITY

The reconditioning of railway bearings offers both economical and time saving benefits as an alternative to bearing replacement. Although this is not a new concept to major fleet owners and operators in Australia, BES takes this concept to a new level, offering a high standard of bearing inspection, damage assessment and reporting with unparalleled traceability, to ensure our clients maximise their bearing investments with a high degree of quality and reliability.

BES is an authorised **Brenco, Timken** and **Schaeffler (FAG)** bearing reconditioner. We are able to draw on the expertise of these manufactures and our own to provide a high level of damage assessment and bearing repair. As OEM authorised repairers, we only use OEM approved components in our BES railway reconditioning services. Our railway reconditioning portfolio includes **all metric and inch TAROL sizes from Class C to GG Locomotive specials.**



Additionally, BES recondition Spherical Roller Bearings and Axle Boxes, including sleeving, crown repairs and box conversion projects.

The BES **Jupiter** Inspection and Data Management system offers complete transparency and traceability of bearing inspection history in our database with a high level of detail. This is one of the most important tools in helping our clients get the most out of their investment. Bearing trending data can assist our clients with optimising maintenance intervals; identifying in-service issues; to verify/optimize wayside detection systems.



SCHAEFFLER



CUSTOMER BENEFITS

RAILWAY BEARING TRACEABILITY

Through our inspection data management and reporting system, our clients are able to identify any in-service issues; and optimise wheelset maintenance intervals to get the most out of their investment.

PLANNED MAINTENANCE

As a part of planned maintenance the reconditioned rolling bearing can be put into use immediately and the bearing that has been dismantled can be sent for reconditioning.

DELIVERY TIME

In general, delivery times are significantly shorter than those for new bearings.

- Industrial L1 - L2 - typically 3 - 4 weeks
- Industrial L3 - L4 - typically 6 - 8 weeks
- Reconditioning - typically 6 - 8 months using sea freight.

LONG TERM PACKAGING

Not every rolling bearing is put into use immediately after delivery. In some cases, the bearing must be stored at a dusty mine site or in a warehouse. Under extreme environmental influences - the standard packaging is not sufficient to secure the high quality level achieved with BES long term packaging solutions.

Schaeffler has developed long term packaging suitable for storage of 5-10 years. This involves the use of special preservatives and desiccants. The air in the packaging is removed in order to prevent the formation of condensation.

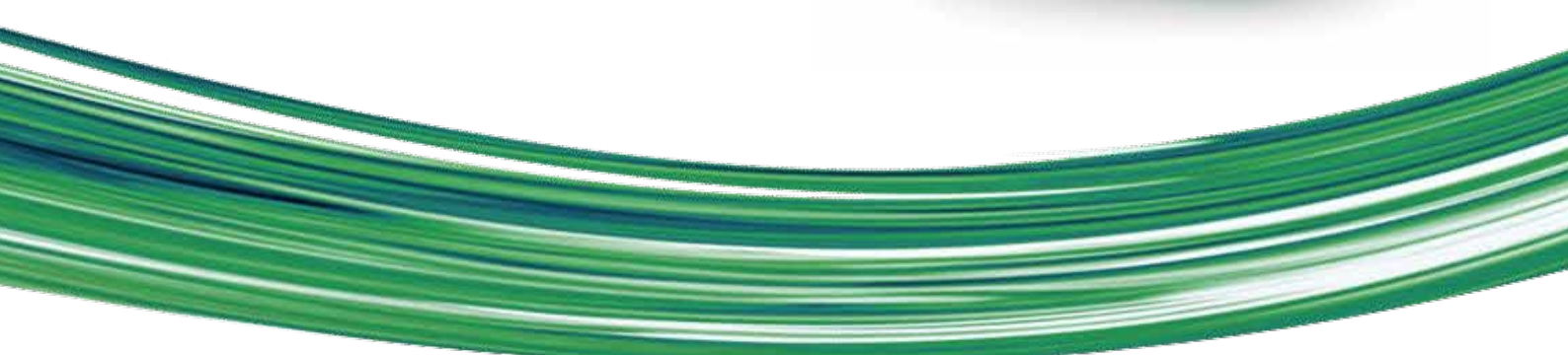
For protection against mechanical influences, the bearing is packed in a wooden crate. The condition of the desiccant is checked via a small opening in the crate where a humidity indicator monitors storage conditions inside the packaging.

BES Long Term Packaging solutions provide piece of mind for your "critical spares", with the knowledge that the bearing you have invested in storage is in the right condition and ready for use when you need it most.

ENVIRONMENT

Bearing reconditioning makes a considerable and ongoing contribution to the sparing use of resources and the protection of the environment compared with new bearing production processes.

Regardless of the activities we are carrying out, Schaeffler endeavours to minimise environmental impact by taking suitable measures in advance. We consume raw materials and energy sparingly and make every effort to minimise waste, waste water, noise and other emissions. We manufacture environmentally-friendly products taking into account the entire product lifecycle.



RECONDITIONED BEARINGS – AS GOOD AS NEW!

BES offers local assessment and repairs of large rolling bearings used in industrial applications. Whether it's open pit mining, excavators, crushing machines, rolling mills, paper machines and other similar applications, offering significant reductions in maintenance costs.

Local facilities ensure prompt service. Completed BES services are accompanied by a warranty statement reflecting the bearing condition and level of repair offered.

BES offers specialised services such as raceway and rolling element polishing, raceway regrinding and rolling element replacement along with custom bearing repackaging and crating.

With bearing assessments and reconditioning services offered for all brands and backed by the peace of mind of the industrial and technical expertise of the Schaeffler Group, accompanied by local experts who understand the need to reduce costs, reduce downtime and provide premium quality preventative maintenance solutions on a local level, there is no better choice than BES.

**BEARING ENGINEERING SERVICES (BES)
– A DIVISION OF SCHAEFFLER AUSTRALIA
PTY LTD**

9-10 Melissa Street
Auburn, NSW 2144, Australia
Tel: 02 8717 8111 Fax: 02 8717 8100



SCHAEFFLER



Schaeffler Australia Pty Ltd

Level 1, Building 8, 49 Frenchs Forest Road, Frenchs Forest, NSW 2086
Direct - +61 2 8977 1000 | Fax - +61 2 9452 4242

WWW.SCHAEFFLER.COM.AU