



A BRIEF PRESENTATION OF FACILITIES



The Symbol Of Excellence

Our Plants :



UNIT - I



UNIT - II

About Us :

The company was established in 1988 in Rajkot - India, to manufacture antifriction bearings. The company always held its conviction of manufacturing high quality bearings and gives value addition to all its customers. TURBO currently manufactures various types of bearings.

TURBO bearings have excellent acceptability of performance in India as well as in International markets. We maintain the best quality of our products by using prime material and adopting latest manufacturing technology with sophisticated CNC machines. We improve our product quality, by continuous research and development activities in our plant.

1. View of Manufacturing Lines

Automatic, Fully Inter-Connected - Versatile Grinding Line
Toyo (Japan) CNC Grinding & Thielenhaus (Germany) Super Finishing Machines



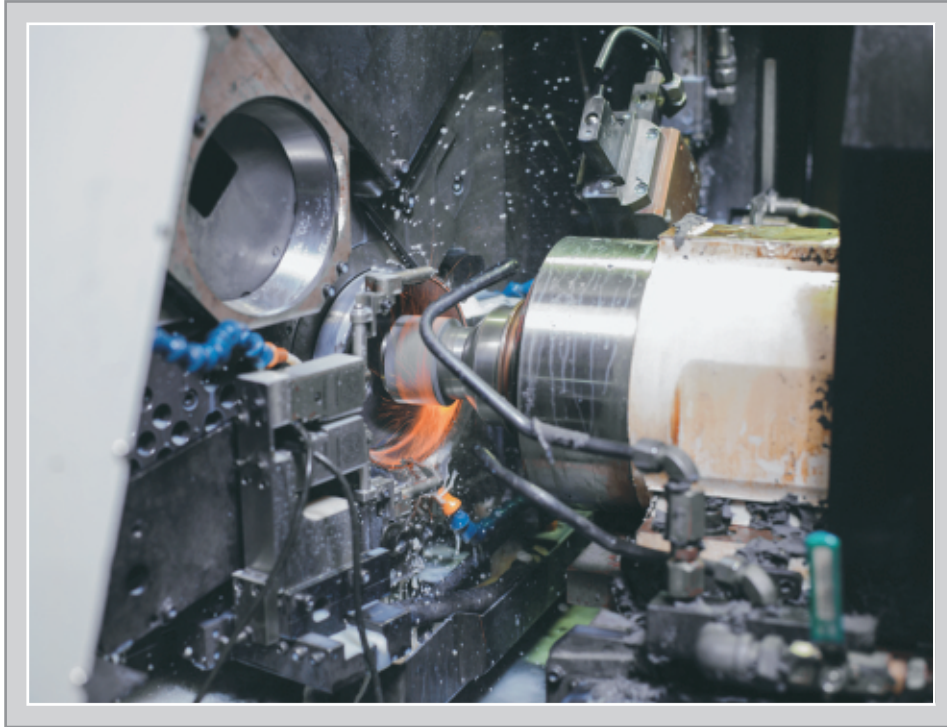
Automatic, Fully Inter-Connected Tapered Roller Bearing Grinding & Super-Finishing Line



Automatic, Fully Inter-Connected Ball Bearing Grinding & Super-Finishing Line



Each Machine Has An On-Line Marposs (Italy) Gauge Controls



Post Process Marposs (Italy) Gauge Controls



Automatic, Fully Inter-Connected Tapered Roller Bearing Assembly Line



Bearing Laser Marking Machine - IPG (Germany) Make



By Batch coding, every bearing is traceable to its manufacturing batch & the related material / process details

2. View of Quality Test Facilities

State of the art Metrology Lab



Trimos (Switzerland) Make Universal Measuring Machine



Talyrond - Taylor Hobson (UK) Make - Roundness & Cylindricity Measuring Machine



Form Talysurf - Taylor Hobson (UK) Make - Surface Roughness & Track Profile Measuring Machine



3. Bearings Test Facilities

Noise and Vibration Testing Machine

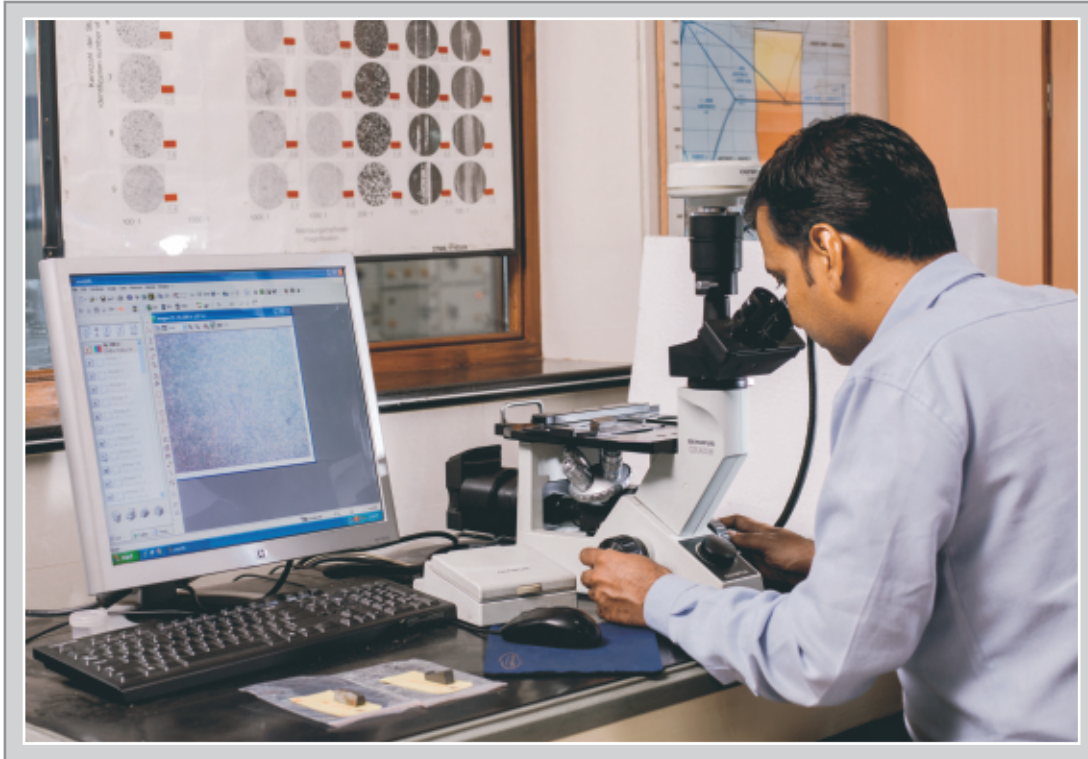


Bearing Endurance & Life Testing Machine



4. Other Test Facilities

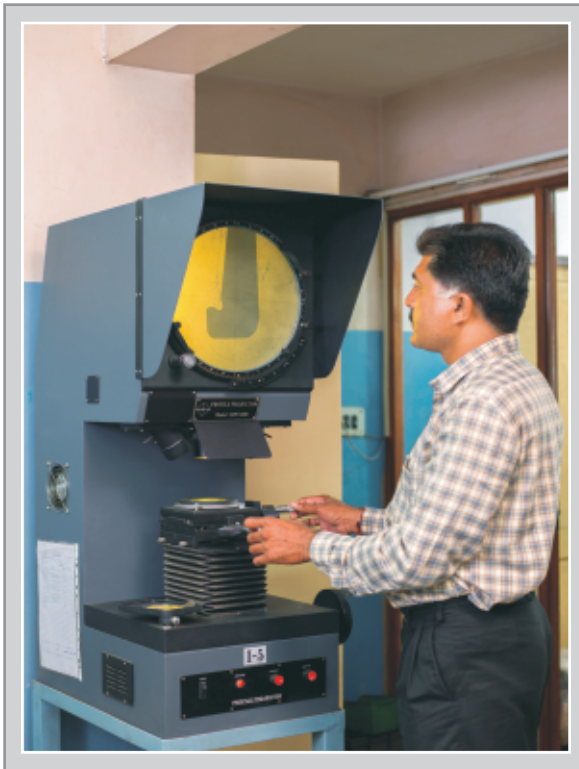
Olympus (Japan) Make Microscope, with Image Analyzer - For Material Microstructure Testing
We Follow SEP 1520 (German Standard) Chart For Microstructure of Rings & Rolling Elements



Magnetic Crack Detection



Profile Projector for Profile Test



Roller Diameter Sorting Machine



In House R & D is Capable of Developing Custom Built Types & Sizes of Bearings



5. Details of Bearings Manufactured

5.1 Types

- Tapered Roller Bearings
- Cylindrical Roller Bearings
- Needle Roller Bearings
- Deep Groove Ball Bearings
- Angular Contact Ball Bearings
- Four Point Contact Ball Bearings
- Thrust Ball And Roller Bearings
- Clutch Release Bearings
- Spherical Roller Bearings

[The Bearings are also manufactured in Two Row Configuration]

5.2 Range

- 15 mm ID minimum Size
- 200 mm OD maximum Size

5.3 Quality

- ISO / TS 16949 Certified Company
- Self-Control At Each Stage
- Best Quality Concept – Every Stage

5.4 Materials

Rings

- SAE 52100 / 100 Cr 6 (Modified) Prime Steel Of International Acceptability
[O₂ <15 ppm / Impurity Controlled]

Rolling Elements

- SAE 52100 / 100 Cr 6 Prime Steel From Diado-Japan, Ascometal-France or Equivalent
[O₂ <15 ppm / Impurity Controlled]

5.5 Capacity

- Total = 5 Million Bearings per Annum

6. Process Details

Duplex - Face Grinding Mc - Gardner (USA) Make

6.1 Face Grinding

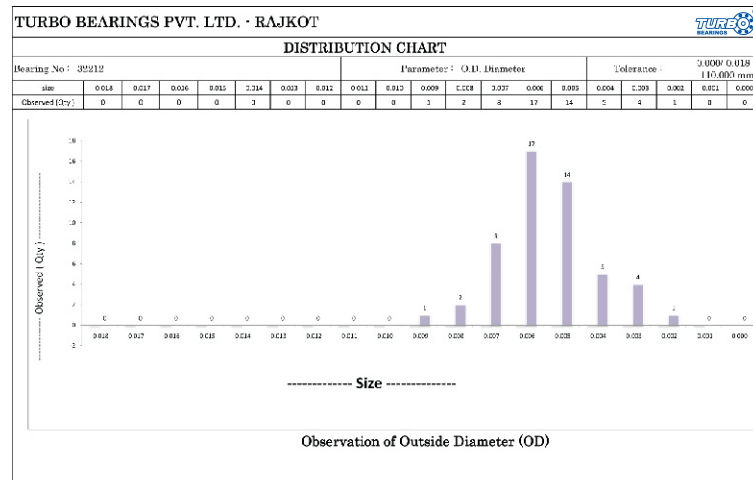


OD Centerless Grinding Mc - WMW Microsa (Germany) Make

6.2 OD Centerless Grinding



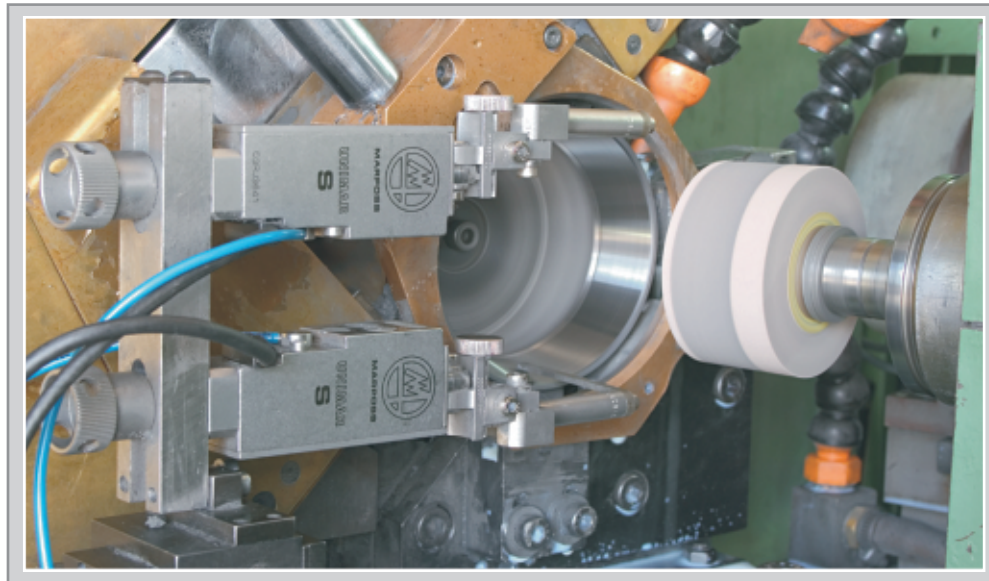
Perfect Size Control in Closer Range



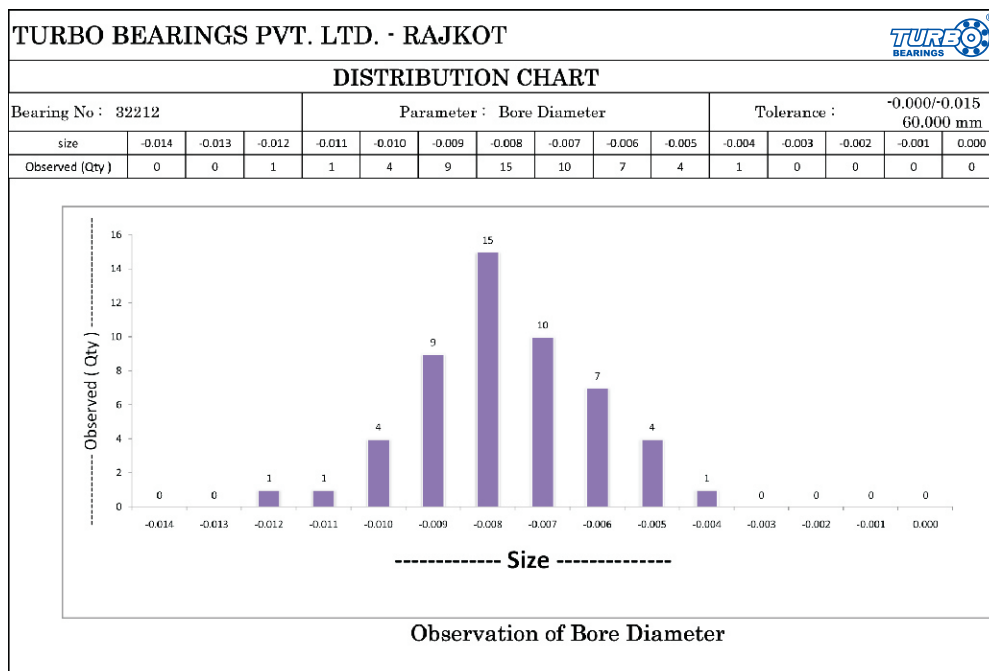
6.3 Bore Grinding Machines

- CNC Grinding Machines
- Marposs In-Process Gauging
- On-Line Size Control
- Consistent Accuracies

Grinding Machine with Marposs (Italy) Size Control Gauge



Perfect Size Control in Closer Range



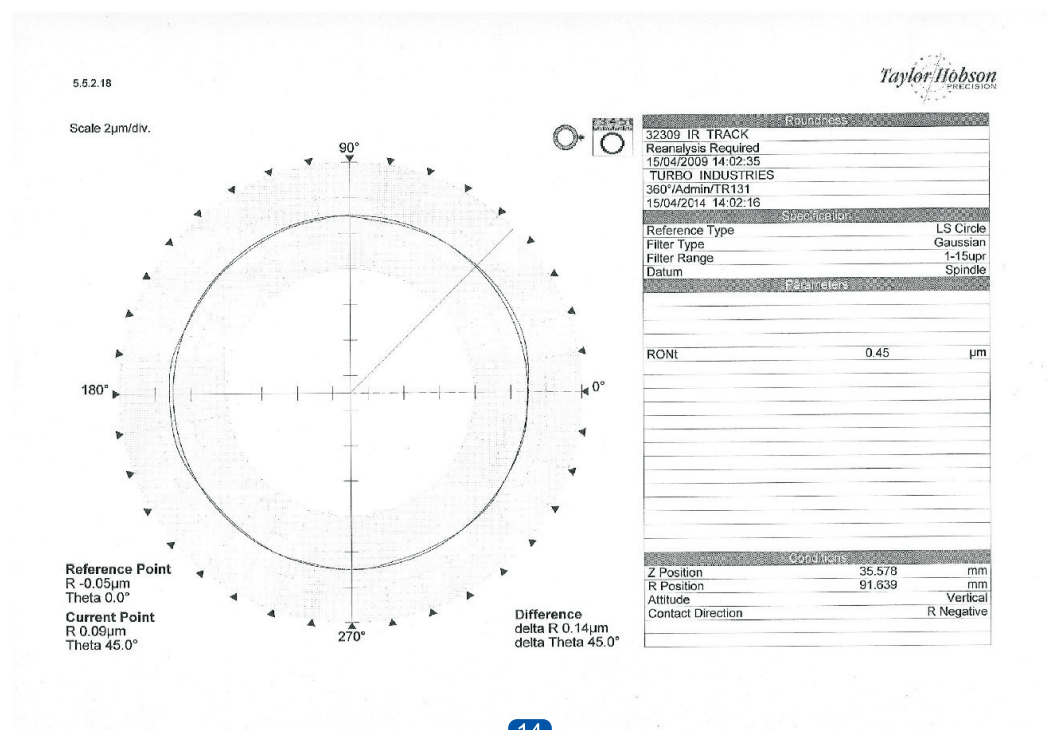
6.4 Track Grinding Machines

- CNC Versatile Grinding Machines
- Consistent Tracks Accuracies
- Controlled Track Profiles

CNC Track Grinding Machine with Marposs (Italy) Size Control



Fine Control of Circularity of Track (Results in Smooth Rotation of Rollers)



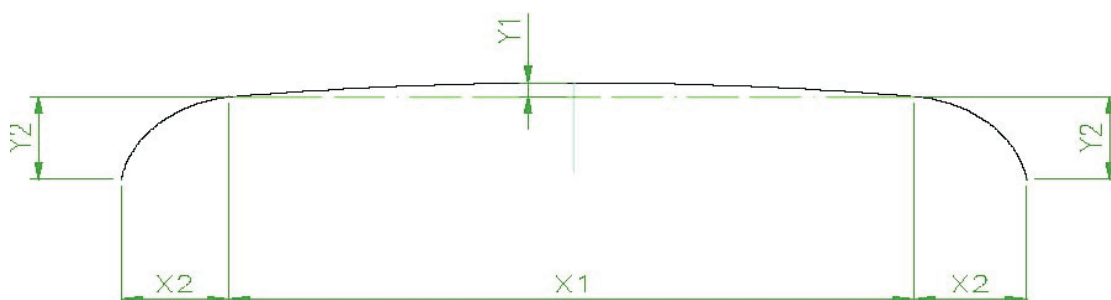
6.5 Ring Super-Finishing

- Outer Ring Raceway With Crowned Profile
- Inner Ring Raceway With Logarithmic Profile
- Inner Ring Rib Super-Finishing Is A Unique Feature

Thielenhaus (Germany) Make Ring Super-Finishing Machines



TRB Inner Ring Track Profile



**Logarithmic Profile On Raceways, With Crowning At The Middle
& With Edge Drop On Both Sides, Avoids Edge Loading**

6.6 Roller Super-Finishing

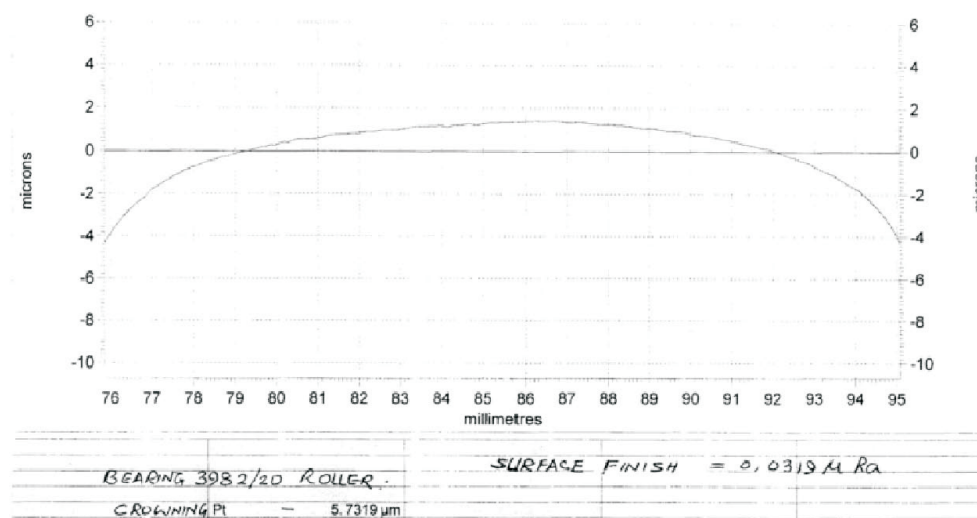
SUPFINA (Germany) Make Roller Super-Finishing Machines



Desired Crowned Profile & Fine Finish

Taylor Hobson

Modified Profile TURBO BEARING - Reanalysis Required 08/12/2014 01:59:39 PM
3982/20 ROLLER OD - 19.75mm/Admin/TURBO BEARING201401:58:53 PM



6.7 Assembly

Automatic Roller Filling Equipment



Assembly & Packing with Automatic Washing & Oiling M/Cs Oiling With Fuchs (Germany) Make Rust Preventive Oil



7.0 Accuracy Building

A) Fitment Parameters

- OD – Multi Stage Process-100% Final Inspection.
- ID – CNC Machines, IPG Control, PPG Control & 100 % Inspection.
- OD / ID Geometry Control-Good Contact
- Width – Close Control & 100 % Inspection

B) ISO Parameters

- Concentricity (OR Track To OD) <20 % Of Tolerance.
- Concentricity (IR Track To ID) <20 % Of Tolerance.
- Angularity of IR & OR Track To Face Well Controlled

C) Life Parameters

- Controlled Roundness For Tracks
- Crowned Profile on Tracks & Roller OD
- Fine Finish < 0.12 Microns Ra, on Rings
- Fine Finish < 0.08 Microns Ra, on Rollers
- Lower Face Wobble [Results In Low Wobble Of Shaft / Wheel]

8.0 Customer Base

Domestic OEMs

- Mahindra & Mahindra
- Eicher Tractors Ltd –Mandideep
- International Tractors Ltd-Hoshiarpur
- Premium Transmission Ltd -Pune & Falta
- Axleo Industries
- TAFE
- Fieldmarshal Engines
- HMT Tractors
- Windals Precision Ltd
- etc.

Overseas OEMs

- OEMs from Germany, Iran, Turkey, USA & Many Other Countries.

Order Base

- 50 % Export
- 35 % OEM
- 15 % After Market

Core Strength

- **Best Quality Material**
- **Self Control Concept**
- **Continuous Training to Operating Staff**
- **Awareness on Products**
- **Focus on Customer Needs**

Our Service

- **Best Quality Bearings**
- **Add Value to the Customers**
- **Products that give a smooth Field Performance & Longevity of Life**
- **Cost Effective Prices**

Thank You!

ISO / TS 16949 CERTIFIED COMPANY



TURBO BEARINGS (P) LTD.

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