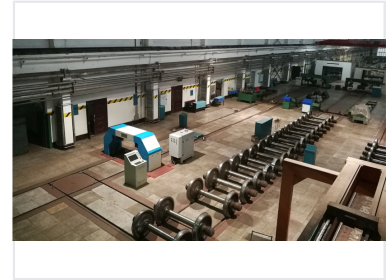


Bearing Condition Tester for Wheelset Bearings

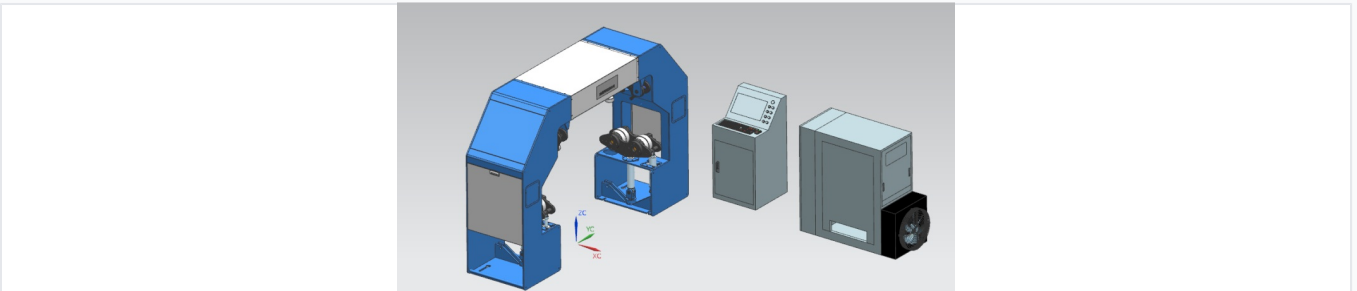
This bearing condition test jig is installed at a depot workshop to detect bearing conditions when the bearings are fixed on the wheelset. The jig rotates the bearing cup to generate relative movement between bearing components, which are then analyzed for defects.



ADDITIONAL IMAGES



Overview



The bearing condition test jig installed at a depot workshop for wheelset bearing analysis.

Bearing Condition Diagnostic System

This specialized test jig is designed for depot workshop environments to assess the condition of bearings while they remain fixed on the wheelset. By rotating the bearing cup to generate vibration signals, the system utilizes advanced algorithms to detect defects such as spalls and scratches on the cup, cone, and rollers. It provides a comprehensive, non-destructive diagnostic solution that enhances maintenance efficiency and ensures the safety of rolling stock operations.

Technical Specifications

Load Capacity

2.5 T

Load Capacity

Rotation Speeds

- 250 ± 30 rpm
- 450 ± 30 rpm

Power Supply

380VAC, 50Hz

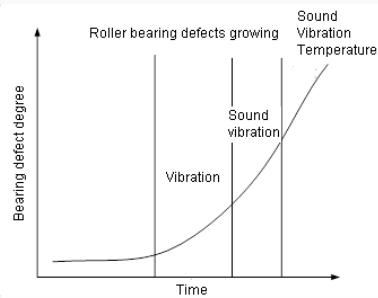
Power Consumption

35 KW

Hydraulic Oil Type

46# antiwear hydraulic oil

Performance



Visualization of bearing defect progression, showing the correlation between vibration, sound, and temperature.

Result Classification

OK • Defect on Cup • Defect on Cone • Defect on Roller • TBD

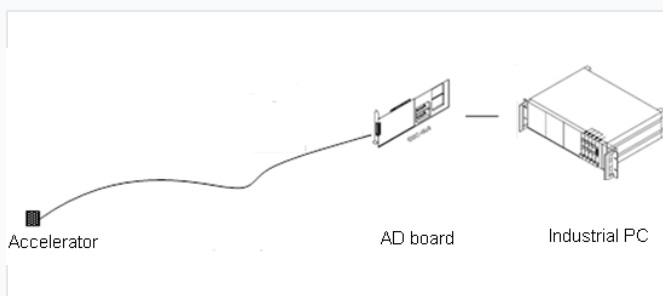
Test Duration

2.7 minutes per wheelset

Detectable Defects

Spall on cup, Scratches on cup, Cone defects, Roller defects

System Composition



The vibration signal collector comprises an acceleration sensor, cable, AD board, and an industrial PC.



The hydraulic unit provides the necessary force for lifting and rotating the wheelset during testing.

Core System Components

- Wheelset Jig
- Control Console
- Hydraulic Unit
- Vibration Signal Collector
- Data Processing Unit

Maintenance

Maintenance Schedule

Item	Action
Hydraulic Filter	Replace every 3 months
Hydraulic Oil	Replace 30L every year