

"Why not make good things better, why not Made in Australia" ?

"Performance improvements, is our bread and butter"

Refined OEM Spare Parts Design & Manufacture

www.weservices.com.au

WES-Refined OEM Spare Parts Design was been established due to the need for supply of specialist performance products which were previously only available from overseas and NOT Australian Made. Excessive lead times, lack of quality control, inefficient supplier communication were just a few of the problems Clients faced if components are not manufactured locally. In 2016 WES developed its own process to manufacture train Bogie Wheels. The result was a better performing, longer lasting key component which was made in WA. It requires a high level of engineering understanding, process capabilities and an ability to address unknown variables, to design a process required for contoured surface hardening without through hardening of the flanges.

"Just imagine how WES could improve your product."

Capabilities:

- ◆ Existing design assessments with focus on performance improvement
- ◆ FEA analysis and design calculations
- ◆ Material technology
- ◆ Surface contour case hardening
- ◆ Supply chain analysis
- ◆ Manufacturing process design for production
- ◆ Prototype manufacturing
- ◆ Field testing & Report
- ◆ Automated stock and delivery to site on demand





Performance Specifications

- ◆ Machined in accordance with the drawing sizes and tolerances
- ◆ Normalized prior to machining
- ◆ Running surface is hardened to 58-62 RC and a case depth of 4-5mm.
- ◆ The hardening process will provide a contoured case hardening on the running surface and inside the flange faces, by way of a process that produces a gradual hardness and micro structure gradient from running surface through to the base metal.
- ◆ Finished hardened wheels will have a minimum drop of 8 RC from inside the flange surface to the central core of the flange at the middle of the flange radius.

Material Specifications

- ◆ Hot Forged AISI 1055 Medium Carbon Steel
- ◆ Fine grained
- ◆ Fully killed ingot
- ◆ Vacuum degassed
- ◆ Hydrogen content less than 3ppm
- ◆ Forging ratio >3:1

Quality Specifications

- ◆ Quality inspection for forgings to AS2574
- ◆ Chemical analysis of material using Optical Emission Spectrometry
- ◆ Mechanical properties as per AS 1391-2007, EN10083 and EN10250
- ◆ Macro structure as per ASTM E381
- ◆ Grain size as per ASTM E112 size 5-8
- ◆ Ultrasonic Testing Sep 1921 classes C/c and D/d
- ◆ Non-metal inclusion as per ASTM E45, method A
- ◆ Hardness test to AS-1815