



Qualival Factory and Refurbishment Plant Advantages to Recover “Scrap” Cylinders

March, 2022.



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- 1. Qualival Unit**
- 2. Refurbishing Process**
- 3. Manufacturing Process**
- 4. Recovery Process**
- 5. Advantages to Recovery**

Qualival Unit

Established: 1992

Valve refurbishing

**Self Regulation Code
1996**

Facility area: 45 thousand m²

Brazil's largest refurbishing plant

1997

Cylinder refurbishing start

Production Volume: 1.7 MM per year.

2012

New plant

1.350 days without accidents

2014

Cylinder manufacturing

2015

Qualival acquired by Supergasbras

2016 a 2022

Business remodeling, focusing on the core business



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P13 Cylinder manufacturing

ABNT NBR 8460 - Cylinder Manufacturing

ABNT NBR ISO 9001 - Quality Management System

ABNT NBR 17025 - Evaluation of testing laboratories

Cylinders Refurbishing, Recovery and Maintenance

ABNT NBR 8865 - Cylinders Requalification

ABNT NBR 14909 – Cylinders Maintenance

ABNT NBR ISO 9001 - Quality Management System

Working Territory



P13



residential application



P20



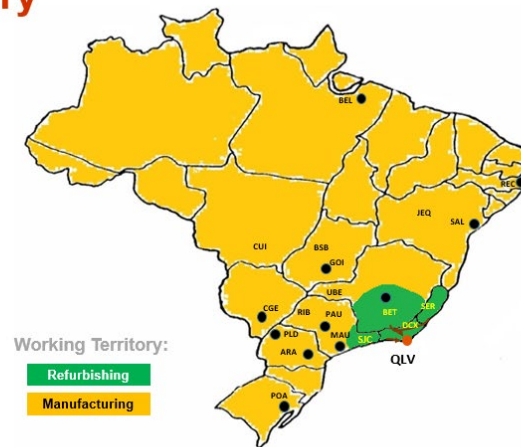
Industrial Forklifts



P45



Commercial Application



Working Territory:

Refurbishing

Manufacturing

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Cylinders Scrapping

ANP - Inutilization Agent

Reasons to refurbish a cylinder



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Refurbishing Process Steps



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Refurbishing / Manufacturing Process Steps



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Refurbishing / Manufacturing Process Steps



Assembly torque check / Coating thickness check



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Refurbishing Process


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Manufacturing Process



Products and Process laboratory analysis



Manufacturing Process



Recovery processes

UNDENTING



CIRCUMFERENTIAL WELDING SEAM REPAIR



ZINC METALIZATION



LOWER SHELL REPLACEMENT



Hot repair services require
Normalization heat treatment.

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“Scrap” Recovery Process


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Advantages to Recovery Process

- Cost Reduction;
- Consumption Reduction;
- Environmental Friendly;
- 50 to 70% of Scrap Reduction;
- Capex Avoidance





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