



Lakshmi Vacuum

# Lakshmi Vacuum Services (P) Ltd

Vacuum Heat Treatment Services & Vacuum Furnace Manufacturers



## About Lakshmi Vacuum

LAKSHMI VACUUM SERVICES PRIVATE LIMITED is a part of the Lakshmi Vacuum group of Companies and is engaged in offering Vacuum Heat Treatment services across India. Since its inception, high standards were set in attaining the goal, of achieving, total customer satisfaction, in the commercial Vacuum heat treatment sector. LVS currently operates state-of-art vacuum furnaces at its plant located at CHENNAI.

## Salient features

- ◆ No Scaling or decarburization
- ◆ Bright surface finish.
- ◆ Uniform & gradual heating.
- ◆ Uniform temperature throughout the hot zone.
- ◆ Optimum process know – how ensures adequate soaking times, heating & cooling rate
- ◆ 360°C Gas circulations throughout the workload ensure uniform properties.
- ◆ Consistent results due to fully automatic operation.
- ◆ Best obtainable microstructure owing to all of the above criticalities.
- ◆ Entire process data can be stored & retrieved for various analyses.

## Processing Capabilities

Vacuum Hardening, Vacuum Tempering, Vacuum Annealing, Vacuum Stress-relieving, Sub-zero treatment, Vacuum Ageing, Vacuum Brazing, Post Weld Heat Treatment (PWHT)

## Areas of Application

Hardening & Tempering of Pressure Die-casting Dies, Plastic Injection Moulds, Plastic Compression Moulds, Cutting Tools, Hot & Warm Forging Dies, Hot & Cold Extrusion Dies, Blanking, Forming, Stamping, Progressive Dies, Valves.

## Steels Processed

- ◆ Hot work Steels, Cold Work Steels.
- ◆ High Speed Steels, Stainless Steels (400 Series)
- ◆ Precipitation Hardening Steels
- ◆ All Air – Hardening Steels



# IATF 16949 : 2016 Certificate by TUV - NORD.



Management Service

# CERTIFICATE

The Certification Body  
of TÜV SÜD Management Service GmbH

certifies that

**Lakshmi Vacuum Services Pvt Ltd**  
No. 604/2, 605/2A, Mahakavi Bharathi Nagar  
Thirumudivakkam - 600044, Chennai, Tamil Nadu  
India

has established and applies  
a Quality Management System for

**Providing Vacuum Heat Treatment**  
(without Product Design as per Chapter 8.3).

An audit was performed and has furnished proof  
that the requirements according to

**IATF 16949**  
First Edition 2016-10-01

are fulfilled.

Issue date: 2021-12-02

Expiry date: 2024-12-01

Certificate Registration No.: 12 111 63160 TMS

IATF Certificate No.: 0436563

Head of Certification Body  
Munich, 2021-12-02

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## VACUUM HARDENING FURNACE – VHF 01 / 02



| Characteristics               | VHF 01                   | VHF 02                   |
|-------------------------------|--------------------------|--------------------------|
| Chamber Size                  | 900mm x 600mm x 600mm    | 600mm x 600mm x 400mm    |
| Maximum Operating Temperature | 1350°C                   | 1350°C                   |
| Absolute Vacuum Level         | 5X 10 <sup>-2</sup> Torr | 5X 10 <sup>-2</sup> Torr |
| Maximum Load Per Charge       | 600Kgs                   | 450Kgs                   |

Totally PLC Controlled with Data Logger for effective process control and recording.

## VACUUM HARDENING FURNACE – VHF 03 / 04



| Characteristics               | VHF 03                   | VHF 04                   |
|-------------------------------|--------------------------|--------------------------|
| Chamber Size                  | 900mm x 900mm x 1200mm   | 600mm x 600mm x 900mm    |
| Maximum Operating Temperature | 1250°C                   | 1300°C                   |
| Absolute Vacuum Level         | 5X 10 <sup>-3</sup> mbar | 5X 10 <sup>-2</sup> mbar |
| Maximum Load Per Charge       | 1Ton                     | 600Kgs                   |

Totally PLC Controlled with Data Logger for effective process control and recording



## VACUUM TEMPERING FURNACE – VTF 01



| Characteristics               | VTF 01                   | VTF 02                   |
|-------------------------------|--------------------------|--------------------------|
| Chamber Size                  | 600mm x 600mm x 900mm    | 600mm x 600mm x 900mm    |
| Maximum Operating Temperature | 700°C                    | 700°C                    |
| Absolute Vacuum Level         | 5X 10 <sup>-1</sup> mbar | 5X 10 <sup>-1</sup> mbar |
| Maximum Load Per Charge       | 600Kgs                   | 600Kgs                   |

Totally PLC Controlled with Data Logger for effective process control and recording.

# VACUUM OIL QUENCH FURNACE



|               |                         |
|---------------|-------------------------|
| Hot Zone Size | Dia 800 x 800 H         |
| Hot Zone      | Graphite                |
| Max Temp      | 1100°C                  |
| Vacuum Level  | 5x10 <sup>-2</sup> mbar |
| Quench Media  | Oil                     |

## MATERIALS PROCESSED IN OIL QUENCH:

- HCHCR (D3)
- OHNS
- EN24, EN31, EN8, EN19, EN9, EN42, EN44, EN45, EN351, EN353

## TEMPERING FURNACE - 06 NO(S)



Stress Reliving / Tempering  
Up to 350 / 650 / 850°C



## TESTING EQUIPMENTS

### ROCKWELL HARDNESS TESTER



4 Nos

### VICKERS HARDNESS TESTER

With load selection from 5Kgs to 50 Kgs



### PORTABLE HARDNESS TESTER



TIME 5100 – 2 Nos



TIME 5100 – 1 Nos

### SURFACE TABLE (1000MM X 600MM)



# TESTING EQUIPMENTS

## METALLURGICAL MICROSCOPE



## MICRO VICKERS



Min 0.01 – 1Kgs

## METALLOGRAPHIC SAMPLE PREPARATION MACHINES



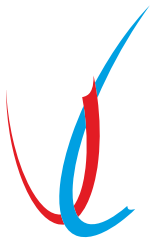
### METALLOGRAPHIC MACHINES

(CUTTING, MOULDING AND POLISHING)

## INDUSTRIES WE SERVE

- **Automobile Industries**
- **Automotive Industries**
- **Die Casting Industries**
- **Plastic Moulding Industries**
- **Valve Industries**
- **Petro Chemical Industries**
- **Pharmaceutical Industries**
- **Paper Industries**
- **And Many More...**





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# Lakshmi Vacuum Services (P) Ltd

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