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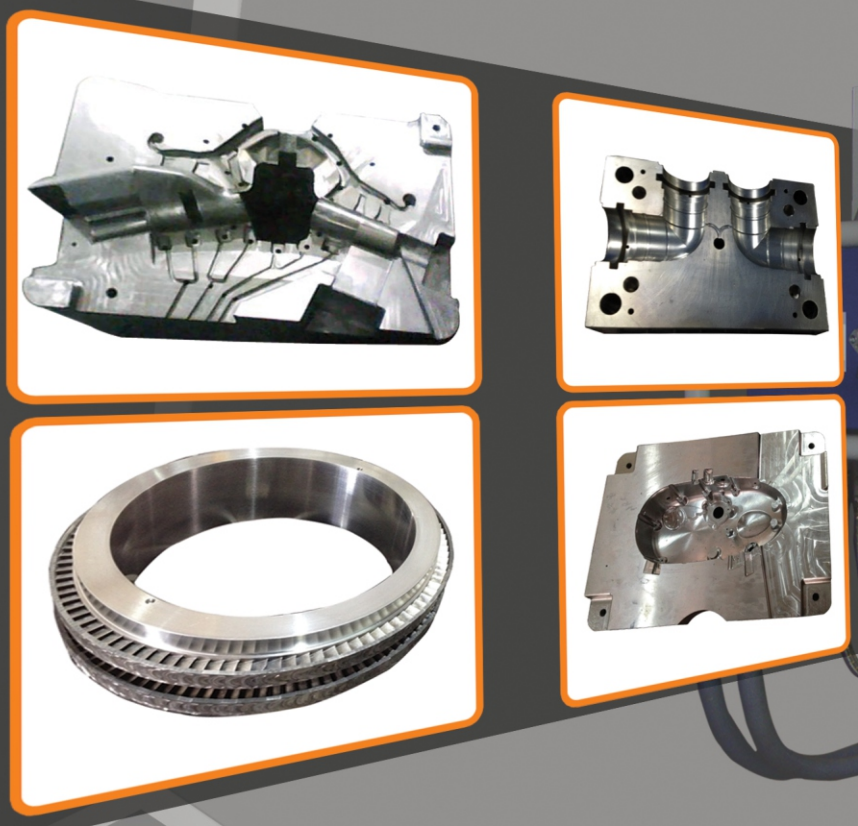
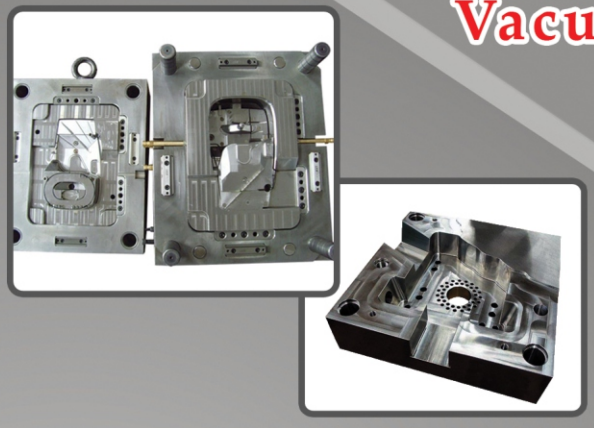
VACUUM TECHNOLOGIES



Vacuum Heat Treatment Services



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VACUUM FURNACE WITH ADVANCED CONTROL

Just as choosing the correct die steel is very important, equally important is the proper heat treatment of the same. Proper heat treatment is critical to realize the full potential of the chosen alloy and also to retain the dimensional integrity of the heat treated tools. Our supplier offers Vacuum Furnaces, with know-how from COFI Spa, Italy, that can meet the demanding process specifications of the industry.

Our Vacuum Furnaces are suitable for a wide range of Heat Treatment for Tool and Die Steels including Hardening, Tempering, Annealing and Stress Relieving as well as Vacuum Sintering and Brazing. Heating is done under Vacuum up to 10^{-5}millibar range and quenching is done in-situ using Nitrogen gas with pressures ranging up to 10 Bar (absolute).

Our CEO Profile :

The mentor of our company **Mr.M.V.Sudakar,M.Tech.(Metallurgy)** is a highly knowledgeable and pioneering individual, possessing a hands on experience in the field of heat treatment since last 25 years. Under the dynamic and farsighted leadership of our CEO, we have already established a stronghold for ourselves in the field of conventional heat treatment of tools and die steels by providing high quality, reliable and prompt services to customers of Precision Metal Treaters, Precision Metal Technics and Sushmitha Metal Treaters in Hyderabad thereby earning high applause and eventually taking the 3 companies to the zenith of success. Under the able & inspiring guidance of our CEO, we are confident of achieving similar success in the field of vcuu heat treatment also.

ULTRASONIC CLEANING TECHNOLOGY :

We take pride in the fact that we are the pioneers in introducing Ultrasonic Cleaning in today's fast changing technology and which is essential for an effective and scientific cleaning of the job prior to vacuum heat treatment & which is possible only with this technology thereby ensuring better heat treatment results.

THE VACUUM ADVANTAGE:

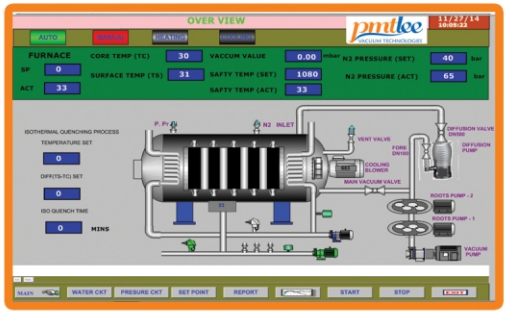
Advantages of Vacuum Technology over conventional heat treatment :

- Eco friendly and clean process involving zero emission and zero Solid/liquid wastes
- Isothermal quenching makes distortion free heat treatment possible
- Prevents oxidation and decarburization of the job resulting in brighter surface finish
- Rapid quenching makes maximum hardness possible and also increases the depth of hardenability
- Process automation possible from start to finish for improving the reliability and repeatability of results
- Ability to define different processes for different steels
- Incase of martensitic and precipitation hardening stainless steels, you can heat treat finished components without any post treatment operations.

OUR FURNACE ADVANTAGE :

Our Vacuum Furnace is built to perform consistently and the modular structure of the furnace make it easy to install and maintain effectively.

- Graphite foil boned carbon composite lining of the heating chamber, along with the graphite heating elements, is designed to deliver fast, uniform and efficient heating.
- The unique double heat exchanger Cooling System (DECS) together with the high powered fan results in rapid and uniform quenching for achieving the maximum attainable hardness with maximum transformation of martensite.
- Effective Uniform quenching is possible with equally distributed Molybdenum nozzles both from top and bottom and exiting the Nitrogen gas from both the ends through double heat exchanger.
- The double walled structure with water jacketing lowers the skin temperature.



SYSTEM FOR PRECISION HEAT TREATMENT RESULTS

We follow NADCA Standards & ASM Standards

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Cryogenic Treatment (Sub-Zero Quenching):

To convert and minimize the retained austenite and to gain full martensitic structure, for good strength and better mechanical properties this treatment is very much important and is to be followed immediately after Quenching. Our sub zero chamber is capable of attaining -120^{0}C.

Our Mission :

Providing Vacuum Heat Treatment services with modern technology to our esteemed customers without any additional financial burden.

Our Vision :

Others' future technology is our present technology.

PROCESS CONTROL :

With our Vacuum Furnace providing uniform heating and controlled cooling, achieving the right balance between wear resistance and toughness is no longer an art but a sure science.

- The Heat Treatment Cycle is fully PLC controlled and automatized from start to finish - eliminating human intervention and thereby improving the process reliability
- PC based on-line monitoring of process and data acquisition for analytical reports
- Different time-temperature cycles can be stored as programmes for future use thereby ensuring reliability & repeatability of processes
- The Furnace is equipped with a Variable Frequency Drive for the quench fan motor and multiple thermocouples for chamber, job surface and core temperatures for Isothermal Quenching resulting in distortion free heat treatment with best metallurgical results
- The furnace is thyristor controlled to achieve temperature uniformity of +3^{0}C.

Typical steels that can be heat treated :

High Speed Tool Steels	M2, M35, M42, T42, T2, VANADIS 10, SKH51, ASP GRADES, S390, S600, YXR33 ETC.
Cold Work Tool Steels	D2, D6, DC53, A2, K110, SLD, SWERKER 21, SKD11, SKD21, SV3 ETC.,
Hot Die Steels	H10A, H11, H12, H13, H21, ORVAR SUPREME, DAC10, DIEVAR, ESKYLOS 2083, W300, W302,STAVAX,W360.SKD SERIES, DAC SERIES, HP SERIES, CALMAX ETC.,
Stainless Steels & Plastic Mould Steels	SS420, SS440C, Precipitation Hardening, Stainless Steels, M300, P20, HPM SERIES, NIMAX ETC.,

Vacuum Tempering :

We have the Tempering Furnace with facility of not only Vacuum level of 10^{-1} m bar but also protective atmosphere of Nitrogen.

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Our USP

We (PMT Lee Vacuum Technologies) are the first in the country in providing a unique combination of all advanced facilities (like vacuum of 10^{-5} mbar, ultrasonic cleaning, 10 bar quenching, cryogenic treatment and vacuum tempering) related to vacuum heat treatment under one roof.

Managing Partner :

Mrs. M. Bhanu Padhmaja (W/o M.V. Sudhakar) :

Equipped with a degree in Commerce from Bombay University and CA Inter and backed by an experience of 20 years as proprietor of Sushmitha Metal Treaters which is engaged in heat treatment of tools and die steels, she has been actively involved in the establishment of this project right from its inception.

Process Manager: K.Shravan

An experienced metallurgical engineer, he is responsible for deciding and executing process parameters/heat treatment cycles to the satisfaction of our customers in terms of quality and delivery schedule.

- Registered vendor to BDL.
- Vendor registration process is in progress with DRDL, DMRL, DRDO, MIDHANI, NFC, ORDINANCE, ARC, ISRO, HAL.

TÜV SÜD ISO 9001:2008 Certification programme in progress.

FURNACE SPECIFICATIONS :

S.NO	DESCRIPTION	HARDENING FURNACE	TEMPERING FURNACE
1	Max. Load	450 to 500kgs	450 to 500kgs
2	Working dimensions W x D x H (Approx)	600 x 800 x 450mm	600 X 800 X 450mm
3	Max. Operating temperature	1320°C	700°C
4	Temp. Uniformity @ 500 - 700°C	± 5° C	± 5°C
5	Temp. Uniformity over 700°C	± 3° C	NA
6	Max Vacuum	10^{-5} m bar range	10^{-1} m bar range
7	Nitrogen Cooling pressure	10 bar abs	2 bar abs

GROUP COMPANIES

M/s Precision Metal Treaters

PMT

7, T.I.E, Near Andhra Bank, Balanagar,
Hyderabad - 500 037.
email : pmt.hyderabad@gmail.com
Ph : +9140-2307 8785, 6590 8785.

M/s Precision Metal Technics

PMT

Shed No. D-26/C, Phase- IV Extn., I.D.A.,
Jeedimetla, Hyderabad - 500 055.
email :pmt.hyderabad@gmail.com
Ph: +91 40 - 2309 4694, 6460 8785.

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PMT Lee Vacuum Technologies

Address : D-26/B, Phase- IV Extn., I.D.A., Jeedimetla, Hyderabad - 500 055.

Ph: +9140 - 6529 7529, 4020 8288, 09849006115, 099666 97666.

Email : info@pmtlee.com, pmtleevacuum@gmail.com.

www.pmtlee.com