



**ALD-Dynatech Furnaces PVT LTD.**

High Tech is our Business

## **Dual Chamber Vacuum Carburizing Furnace with Oil Quench (DTO) for ultimate Quality**

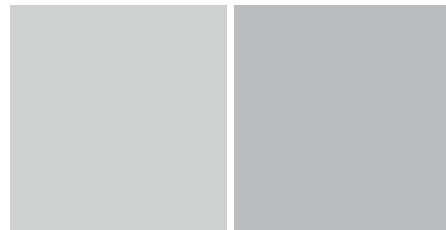
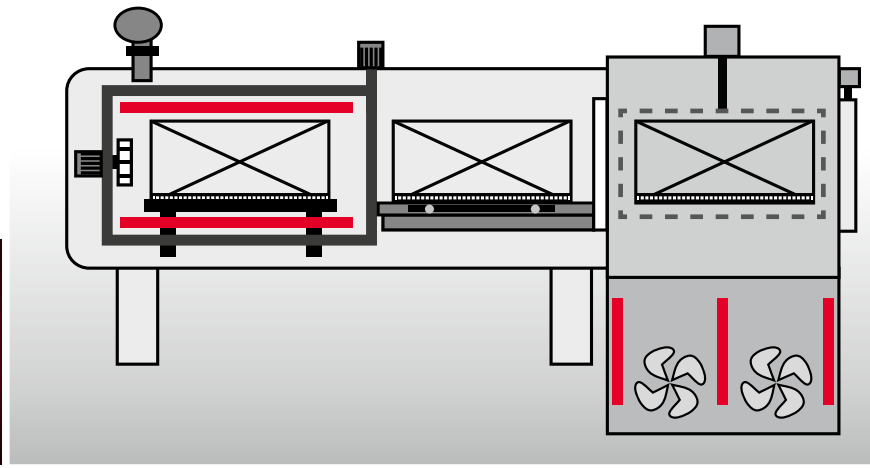
German Engineering & Design – Indian Manufacturing



### **Increased Flexibility and Quality, Reduced Costs**

ALD Vacuum Technologies has more than 15 years experience in the technology of vacuum carburizing and high pressure gas quenching. These systems are operating at nearly all major car and gear maker worldwide. The usage of lower alloyed steel requires the necessity of oil quenching, a well known technology in the heat treatment of steel.

The combination of vacuum carburizing and oil quenching combines modern with traditional technology using the advantage of both without the danger of open flames and hazard of emissions.



The sophisticated process of gas carburizing by using endo gas generator, catalysts, burners and heat exchanger will be replaced by the software controlled process of vacuum carburizing using Acetylene. Easy to program, to control and to change.

The quenching in oil will remain, but without any danger of fire and hazard oily atmosphere.

#### Charge Sizes

- 600 x 1,000 x 750 mm | 1,000 kg
- 1,000 x 1,500 x 1,000 mm | 2,000 kg

#### Process

- Vacuum level  $5 \times 10^{-2}$  mbar
- Partial pressure: 5–20 mbar
- Carburizing gas: Acetylene
- Massflow controlled

#### Oil Quenching

- Oil tank from 6,000 – 21,000 l
- 2 or 4 agitation motors
- Oil temperature adjustable
- Oil cooler

#### Others

- Convective heating system
- Carbo nitriding
- Nitrogen cooling with 1.5 bar

#### Accessories

- Loading cart
- Cooling water re-cooling system
- Gas supply

#### Services

- Process support
- Production support
- Maintenance contracts
- Local services from India, China, Singapore and Thailand

#### Advantages of the Vacuum System

- No surface and intergranular oxidation
- No de-carburizing
- Change of the carburizing depth immediately
- Decrease of the carburizing time up to 50 %
- Less maintenance
- Higher productivity
- Lower production costs

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