

Chamber Furnaces

Batch Heat Treatments

insertec
Furnaces & Refractories

Chamber Furnaces - En

INSERTEC manufactures and supplies Chamber Furnaces for batch heat treatment, specially aimed at industrial sectors, such as:

- Metalworking.
- Energy (Wind, Hydraulic, etc.).
- Petrochemical.
- Mechanical.
- Heat Treating.

and combined with our own professional Technical Assistance on site.

Chamber Furnaces can be mainly divided into the following series:

- **TMCG Series** are directly gas fired Furnaces.
- **TMCE Series** are electrically heated Furnaces.

being technically designed depending on the type of load to be heat-treated.



General view of Heat Treatment Installation.

Available Heat Treatments:

- Hardening.
- Tempering at low and high temperature.
- Annealing.
- Normalising.
- Austenitising.
- Stress relieving.
- Preheating prior to Hot Forging.



Chamber Furnaces provided with sliding front door.



General Description:

Chamber Furnaces are provided with one only sliding type front door for batch loading and unloading. Door support structure is also provided with electromechanical or hydraulic driving system, being supplied by request the door tightening system in order to improve the sealing against the heating chamber frame.

Pieces to be heat-treated, placed over metallic trays or inside of baskets, are charged into the Furnace by means of a **Charging Machine** which leaves them upon the existing load supports, made of refractory concrete pre-shaped pieces, or heat-resistant alloy steel, in accordance with process technical requirements.



Construction detail of Furnace heating chamber.

Ingeniería y Servicios Técnicos, S.A.

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Heat insulation of Furnace is usually made of pressed ceramic fiber for roof, sidewalls and front door, and refractory concrete and insulating bricks on floor.

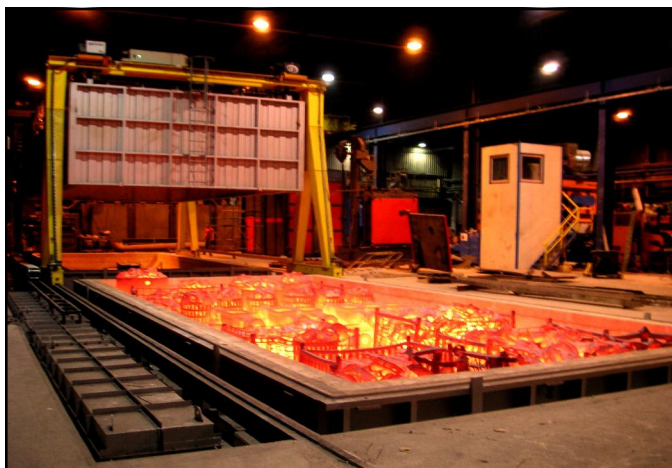
The heating system of Furnace consists of:

- Gas fired open burners operating under different combustion control modes depending on process temperature range, such as, sequential pulsating or combustion air fixed gas regulating modes.
- Heating elements by means of wire or strip type electric resistances, depending on the total electric power required for process.

Available types of Furnaces:

Depending on both available space on site and operating requirements of Installation, other possible solutions for Furnace lay-out could be proposed:

- Tilting Bell type Chamber Furnace capable of revolving around one fixed pivoting axis.
- Vertical Bell type Chamber Furnace provided with bell lifting system or specially designed bell for being handled by existing bridge crane on site.
- Travelling Bell type Chamber Furnace provided with a double driven-head bridge crane.



Travelling Bell type Chamber Furnace provided with two load-unload bases.

Auxiliary Equipments of Installation:

The following ones can be mainly showed:



Charging Machine (3 or 4 Movements).



Forced Air Cooling Chamber.



Quenching Tank (water, oil or polymer).