

Transfer Furnaces with Built-in Quench Tank

insertec
Furnaces & Refractories

Transfer Furnaces - En

INSERTEC manufactures and supplies Transfer Furnaces gas-tight designed with built-in oil quench tank for batch heat treatment under controlled atmosphere (synthetic, exogas or endogas), such as:

- Hardening.
- Tempering and Annealing.
- Carburising.
- Carbonitriding.
- Other industrial applications.

and combined with our own professional Technical Assistance on site.

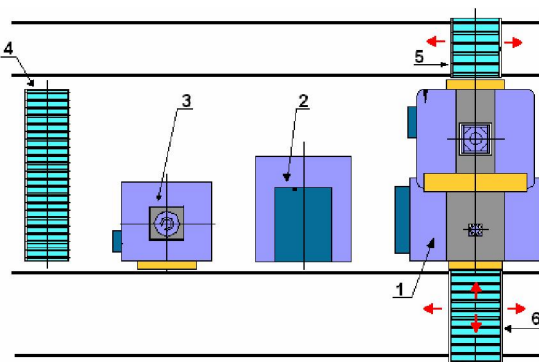
Transfer Furnaces can be mainly divided into the following series:

- TTIG Series, are gas fired Furnaces.
- TTIE Series, are electrically heated Furnaces.

Full Installations:

On request, Heat Treatment installation can be fully supplied, taking base on the following equipments:

- Transfer Furnace (Figure 1).
- Washing Machine for degreasing prior to hardening or removing quenching oil prior to tempering (Figure 2).
- Tempering Furnace (Figure 3).
- Loading-Unloading table (Figure 4).
- Charging machine (Figure 5).
- Charging-Discharging machine (Figure 6).
- Process Control and Supervision computer system.



Heat Treatment Installation general arrangement.



General view of Transfer Furnace provided with charging and discharging machines.

Furnace main parts:

- **Heating Chamber** provided with fully automated charge transfer system onto quench chamber, designed for working up to 1100°C and equipped with atmosphere recirculating system by means of a forced recirculation fan located on chamber roof.
- **Quench Chamber**, or exit module, equipped with atmosphere recirculating system for cooling charge slowly.
- **Quench Tank** provided with an elevator type mechanism for lowering charge into quenching oil bath and equipped with symmetrically mounted mixers, recirculation centrifugal pump and heat exchanger.



Electric Control Panel with computer system.



Furnace diagram.



View from Furnace unloading side.

Ingeniería y Servicios Técnicos, S.A.

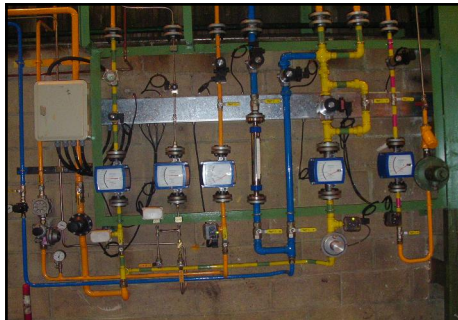
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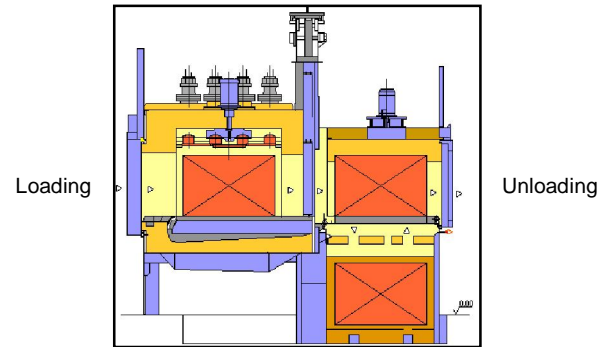
Supply Options:

- Indirectly gas fired heating system by means of high thermal efficiency recuperative burners, or electrically heated by means of resistances, mounted inside radiant tubes made of highly heat-resistant cast steel or ceramic material.
- Oil quench tank (40÷180°C).
- One more additional cooling chamber.
- Front and rear doors for loading and unloading operations respectively, or one only front door for both operations.
- Atmosphere recirculation internal muffle can be optionally supplied for heating chamber.
- Fully automated, semi-automated or manual Furnace control mode.
- Gases panel for Furnace controlled atmosphere preparation.

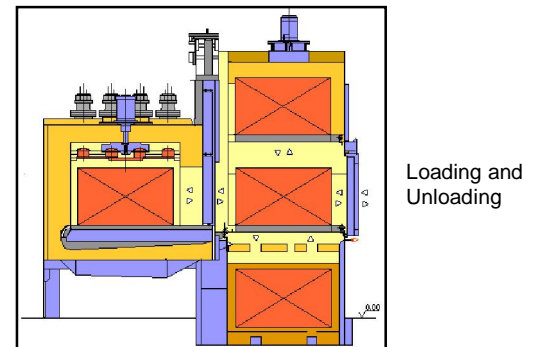
Gases panel for typical synthetic atmosphere (N₂+CH₃OH) with optional addition of NH₃.



General arrangement of Transfer Furnace provided with one only heating chamber and two doors.



General arrangement of Transfer Furnace provided with one more additional cooling chamber and one only door.



Main Features:

- High quality of heat treatment processes as working under uniform controlled atmosphere composition.
- High thermal efficiency.
- Customised installations and capable of being fully integrated into existing production lines on site.
- Low environmental impact due to used atmosphere and minimum noise level.
- Maximum production capacity complying with high safety standards.
- After-sales and skilled site services related to all Furnace matters throughout its service life.

STANDARD TRANSFER FURNACES SIZES

TRANSFER Furnaces				
TTI Model	Gross Load Capacity (Kg)	Load Dimensions (mm)		
		Width	Length	Height
60/40/90	350	610	910	460
60/50/90	450	610	910	560
70/50/120	600	760	1220	510
70/60/120	600	760	1220	610
70/70/120	1000	760	1220	760
90/60/120	1000	910	1220	610
90/70/120	1000	910	1220	760
90/90/120	1200	910	1220	910