



# Bell furnaces

# ProfiTherm



100% Electric Heating

🇨🇭 Innovative. Reliable. Precise.

A unique, multifunctional arrangement of bell furnaces and multiple quench tanks, with a direct and rapid transfer of the load from the furnace(s) to the quench tank. A modular design enables easy expansions with all types of atmospheres and quench media. Temperature up to 1050°C. Available versions: Manual/Semi-automatic/Fully-automated.



Models	P50	P80	P150	P300	P500
Batch gross weight (kg)	50	80	150	300	500
Max height (mm)	300	600	700	700/1100	700/1100
Useful dimensions (mm)	□300x300	□300x300	□400x400	Ø500	Ø700

**FURNACE**

- Austenitisation with neutral or with controlled atmosphere
- Carburising
- Carbonitriding
- Nitriding
- Nitrocarburizing
- Oxynitriding
- Annealing
- Tempering
- Brazing
- Black superficial oxidation

**Equipment**

- Cascades temperature regulation
- Metallic retort
- Electrical heating
- Automatic quenching
- Axial turbine
- Oxygen-probe
- AMS 2750, CQI9 & Industry 4.0 (upon request)

**QUENCH TANK**

- Water / Polymer
- Oil 60-180°C
- Salt 180-500°C
- High ratio between volume and load (weight > 10)

**Equipment**

- Adjustable liquid circulation
- Adjustable lift speed
- Heat exchanger
- Media level control
- Door
- N<sub>2</sub> injection (option)

**GAS DISTRIBUTION**

- N<sub>2</sub> purging, safety and cycle
- CH<sub>3</sub>OH direct injection
- Carbon potential regulation with air/propane (mass-flow meter)
- All security for gas injection
- Safety double valves

**Major options**

- NH<sub>3</sub> for carbonitriding (volumetric or mass-flow meter)
- Infra-red CO/CO<sub>2</sub> analyzer for O<sub>2</sub> probe control or carbon potential regulation
- Methanol pump

**PROCESS CONTROL****Control hardware**

- PLC and I/O hot swap Siemens S7
- Siemens industrial PC with 22" touch screen
- Siemens WinCC management system
- MS-SQL relational database
- Remote access for diagnostics
- UPS for PC and PLC
- Data backup system (NAS)
- Air-conditioned desk for the PC

**Basic software features**

- Piloting by the programmable PLC: the process flow is automatic
- Security management
- Diffusion profile simulation
- Recipe library, library of model parts and corresponding recipes
- Loads planning consisting of mixed parts
- Animated synoptics for each station
- Archive (ISO 9000 compatible) of loads history with data planning, processed parts, curves, alarms, events. Search filters.
- Generation of processing reports
- Access to features by user profile

**Add-ons**

- AMS 2750 - CQI9
- Industry 4.0 Module
- ERP-link Module

**ADDITIONAL EQUIPMENT**

- |   |                                    |                  |
|---|------------------------------------|------------------|
| ■ Additional hardening furnace          | ■ Salt recovery system             | ■ Water injector |
| ■ Tempering furnaces                    | ■ Loading material                 | ■ Water chiller  |
| ■ Washing machines with 1, 2 or 3 tanks | ■ Robot for full automatic version | ■ Methanol pump  |
|   | ■ Fork lift for other versions     |                  |

## DIFFERENT CONFIGURATIONS

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1 manual furnace



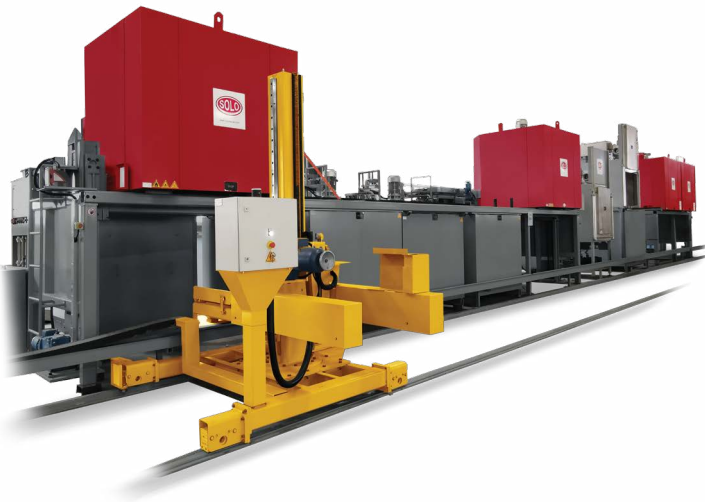
1 semi-automatic furnace and 1 quench tank



2 semi-automatic furnaces and 1 quench tank



3 semi-automatic furnaces and 2 quench tanks



Full automatic line of 4 furnaces and 4 quench tanks



Full automatic line of 3 furnaces and 2 quench tanks

## CONTACT

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