

Batch Type Non-Oxidizing Carburizing Furnace



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JEON JIN FURNACE

Specialize in Heat-treatment Solution.

jjfurnace.com

PPC/CTC-Charge Transfer Car

This equipment is used to loading products and pallets. All the actions, loading, discharging and PPC running, can be manually operated or automatically.

❖ Features

- Possible to transfer products manually or automatically by attaching the sensor at necessary locations.
- Possible to recover from emergency of drive motor breakdown.
- Possible to recover manually and conveniently.



Tempering Furnace

This furnace is used to temper semi-treated products. The heating source is electric strip heater. The lining in the furnace can make $\pm 5^{\circ}\text{C}$ (at vacant chamber) with a time-proportionate PID controller within the effective dimension in the furnace.

❖ Type

| Model | Size (WxLxH) | Charging W.T.(kgs) |
|----------------------------|--------------------------|----------------------------|
| JJT-750 | 600 X 1,200 X 600 | 750 |
| JJT-1000 (Standard) | 700 X 1,200 X 700 | 1,000 (1,300kg max) |
| JJT-1500 | 800 X 1,200 X 850 | 1,500 (1,800kg max) |

❖ Basic Specifications

Service Temperature : $150^{\circ}\text{C} \sim 680^{\circ}\text{C}$
 Maximum Temperature : 700°C
 Temperature Distribution : ± 5 @ 650°C (Vacant chamber)
 Power : 70Kw to maximum (average 60%=42Kw), 220V/380V



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Heating Furnace & Quenching Tank

This is used for Gas Carburizing, Nitrocementation and Non-Oxidizing Quenching.

The heat source is tube electric heater and furnace consists of one heating zones.

RX gas (Denatured Gas) or CH₃OH (Methanol) are available.

You can use PC or touch screen panel to control and monitor temperature, operate program or adjust CP(Carbon Potential) value.

A process of Feeding-Carburizing-Expelling can be carried out automatically.

To Carburize, Quench and do Modifying Treatment.

Merits of JeonJin Furnace:

- ① Uniform temperature distribution (920°C ± 5°C at vacant chamber)
- ② 30% energy saving of consumed atmosphere gas. (energy saving)
- ③ Excellent cooling capability and agitating speed. We improved previous oil groove agitator, can produce largest oil groove of 8600L in Korea. Each equipment has 4 sets agitators and it's easy to adjust speed. Cooling oil ejects to the bottom of heat-treated products directly.
- ④ Controlling and monitoring with PC/touch screen(Guarantee all the products having accordant quantity. You can find out the previous parameters/records and do some analysis.)
- ⑤ No danger of explosion. (Excellent safety device to avoid any operation mistakes.)
- ⑥ Convenience in maintenance (This machine can keeping on working when heat exchanging, cylinder repairing.)
- ⑦ It's convenient to operate for one handler-type movement system. (One-touch location type)
- ⑧ Minimizes equipment dimension. (Possible to install in a mid-size plant)

❖ Features

This equipment is a "Carburizing & Carbonitriding furnace", which is more energy efficient in the use of gases to create atmospheres than normal ones.

| Terms | Common furnace | Jeonjin Furnace | Reduction rate |
|------------------------------------|-------------------------|-------------------------|----------------|
| RX (denatured gas) | 16~18 m ³ /h | 10~12 m ³ /h | 30% Reduction |
| CH ₃ OH (methanol) | 2,500~3,000cc/h | 1,500~2,000cc/h | 20~30% |
| No. of Operation of Curtain Burner | 4 times | 2 times | 50% |
| No. of Pilots | 2 | 1 | 50% |

❖ Type

| Model | Size (WxLxH) | Charging W.T.(kgs) |
|----------------------------|--------------------------|----------------------------|
| JJF-750 | 600 X 1,200 X 600 | 750 |
| JJF-1000 (Standard) | 700 X 1,200 X 700 | 1,000 (1,300kg max) |
| JJF-1500 | 800 X 1,200 X 850 | 1,500 (1,800kg max) |

❖ Basic Specifications

Service Temperature: 780°C ~ 930°C
Maximum Temperature: 950°C
Temperature Distribution: ±5@920°C(Vacant chamber)
Power: 170Kw to the maximum (average 60%=100Kw), 220V/380V



Alkali Washing Machine

This chamber-type washing machine can remove impurities from heat treated products totally. Such as cutting oil and quenching oil.

In addition, the chamber table for transferring heat treated products is assembled in front of the washing chamber. And it also can remove alkali from heat-treated products by air spray.

It will be designed to 1 chamber or 2 chambers according to your request.

❖ Type

| Model | Size (WxLxH) | Charging W.T.(kgs) |
|--------------------------------|--------------------------|--------------------------------|
| JJW-750 | 600 X 1,200 X 600 | 750 |
| JJW-1000 (Standard) | 700 X 1,200 X 700 | 1,000 (1,300kg max) |
| JJW-1500 | 800 X 1,200 X 850 | 1,500 (1,800kg max) |

❖ Basic Specifications

- 1) Heating Method : Pipe Heater Type-20kw 220V/380V (10kw x 2EA)
- 2) Capacity : 1,000kg-Gross/ch (capacity), 30 minutes
- 3) Washing Method : ALKALI SPRAY
- 4) Tank Capacity : ALKALI TANK = 2,000Liter, Oil Skimmer installed
- 5) Temperature : ALKALI TANK = Normally 60-80?
- 6) Power : 25.7Kw to maximum (average 60%=15.42Kw), 220V/380V



2 chamber



1 chamber



* We can produce customer designed equipment.
And the appearance may be a little different with the standard ones showed here.

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Safety Device

This furnace uses explosive gas. Therefore, any mistakes or errors are allowable when operating, handling and stopping. The safety device for the equipment is designed as follows:

- 1) When flame on pilot burner is off, the alarm rings.
- 2) When combustion gas pressure falls down to limit level, the alarm rings.
- 3) When pressure of the coolant falls down to limit level, the alarm rings.
- 4) When gas generator stops, the alarm rings.
- 5) When high pressure air falls down to limit pressure level, the alarm rings.
- 6) When inner furnace temperature exceeds maximum temperature, or thermo coupler is unexpected inactivated, the temperature alarm system starts.
- 7) This equipment need reserve power supply system.

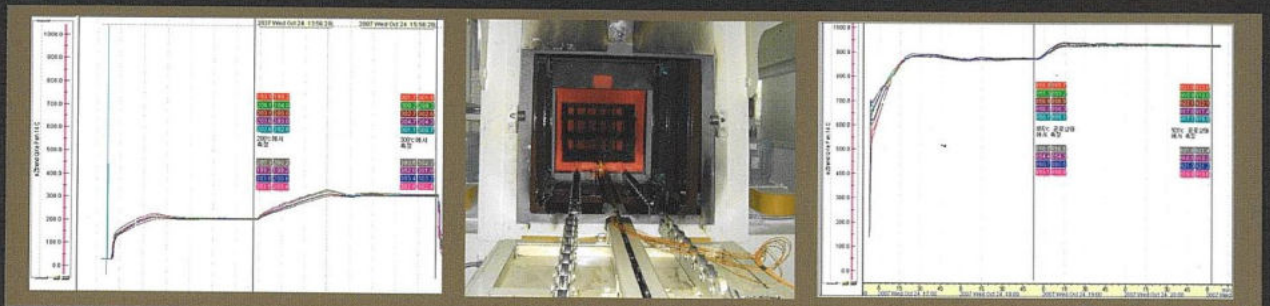
This is for minimum power requirement of controller, panel, RC fan and so on.

* The manufacture and specifications of the equipment is based on KS, JIS standards and Korean quality specifications.

Convenient Safety Apparatus



Temperature Distribution in Furnace: 9 points Measurement



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Fitting Parts



Equipment Maintenance/Plant Automation



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