

多用无氧化渗碳炉

Batch Type Non-Oxidizing Carburizing Furnace



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前进工业炉

专业提供热处理解决方案

Specialize in Heat-treatment Solution.



JEON JIN FURNACE

jjfurnace.com

1. 设备概述

该设备可实现气体渗碳，碳氮共渗和无氧化淬火。炉内使用电加热方式的两区结构，气氛用RX卤代烷气体或甲醇均可，炉内温度和CP值通过电脑或触摸面板来调节程序及监控，实现自动完成投料-渗碳-淬火-退出等一些列动作。（进行工件的渗碳、淬火和调质处理）

2. 设备特点

该设备的特殊设计，使得气氛气体使用量较其他普通渗碳炉更少，大大节约能源，并能实现“渗碳”及“碳氮共渗”。

项目	普通热处理炉	前进工业炉	节能量
RX卤代烷气体	16~18m ³ /h	10~12m ³ /h	30%节减
CH ₃ OH（甲醇）	2,500~3,000cc/h	1,500~2,000cc/h	20~30%
吊式炉前门动作次数	4次	2次	50%
点火器嘴	2个气嘴	1个气嘴	50%

*前进工业炉的优点:

- ① 均匀的温度分布（空炉时持续保持在920℃±5℃）
- ② 气氛用RX卤代烷气体用量减少30%（节能型）
- ③ 研究改良了原有的油槽搅拌装置，获得卓越的冷却能力和搅拌速度（可生产国内最大油槽8600L。搅拌装置左右安装共4套，分别可调节速度。在热处理产品底部直接喷射冷却油。）
- ④ 采用电脑或触摸屏控制板进行调节和监控。（保持产品质量一致，并能随时查询过去的作业条件表，还具有作业记录/输出/分析功能）
- ⑤ 没有全面爆炸的危险（避免防爆装置的误操作，安全装置卓越）
- ⑥ 维修方便（工作过程中可进行热交换、气动装置的维修，作动中或售后检修时，也不必停炉）
- ⑦ One HANDLER式移动方式，便于作业（一次性到位移动方式）
- ⑧ 设备所占面积最小化（可装配在中小型厂房）



3. 设备规格

型号	规格 (WxLxH)	装入量
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)

4. 基本参数 (Specifications)

使用温度：780℃~930℃
 最高温度：950℃
 温度分布：±5@920℃ (空炉时)
 耗电量：最大170Kw(平均 60%=100Kw),
 220V/380V

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1. Outline

This is used for Gas Carburizing, Nitrocementation and Non-Oxidizing Quenching. The heat source is tube electric heater and furnace is consists of two 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 PC value. A process of Feeding- Carburizing-Expelling can be carried out automatically. To Carburize Quench and do Modifying Treatment.

2. 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%

* Merits of JeonJin Furnace :

- ① Uniform temperature distribution (920℃ ± 5 ℃ 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 re pairing.)
- 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)

3. 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)

4. Specifications

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

无氧化渗碳炉设备概要

Non-Oxidizing Carburizing Furnace

工件装载移动台车 (製品積載移動大車)

PPC/CTC-Charge Transfer Car

1. 设备概述

用于托盘及工件的搬运。

移动台车的行驶、工件的装入、装出，均可用手动或自动操作。

2. 设备特点

每个所需位置上都装感应装置，可以用手动或自动移动到所需位置，

用于投料的电动机有异常时可以应急复救，故障时也方便修理，并可使用手动操作。



1. Outline

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

2. 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.

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回火炉 Tempering Furnace

1. 设备概述

用于所有工业炉生产工件的回火处理。
热处理加热源是电热丝式加热器，炉内采用时间/温度PID控制，炉衬可以保持 $\pm 5^{\circ}\text{C}$ （空炉升温时）。



2. 设备规格

型号	规格 (WxLxH)	装入量
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)

3. 基本参数 (Specifications)

使用温度： $150^{\circ}\text{C} \sim 680^{\circ}\text{C}$

最高温度： 750°C

温度分布： ± 5 @ 620°C (空炉时)

耗电量：最大70Kw(平均 60%=42Kw), 220V/380V

1. Outline

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.

2. 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)

3. 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 the maximum(average 60% = 42kw),
220V/380V

无氧化渗碳炉设备概要 清洗机 Alkali Washing Machine

Non-Oxidizing Carburizing Furnace

1. 设备概述

本设备是Chamber Type清洗装置，用于去除处理工件上加工时残留的切割液及淬火油等。移动热处理工件的chamber台设置在washing chamber前侧，气嘴最大限度地去除热处理工件上沾到的碱性液。按构成方式设计成1chamber或2chambers。

2. 设备规格

型号	规格 (WxLxH)	装入量
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)

3. 设备基本参数 (Specifications)

- 1) 加热方式: Pipe Heater Type-20kw 220V/380V(10kw*2EA)
- 2) CAPACITY: 1,000kg-Gross/ch (按用量), 处理时间30分
- 3) 清洗方式: ALKALI SPRAY
- 4) TANK用量: ALKALI TANK = 2,000Liter, 安装油 skimer
- 5) 温度: ALKALI TANK = 常用 60-80℃
- 6) 耗电量: 最大25.7Kw(平均60%=15.42Kw), 220V/380V

1. Outline

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.

2. 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)

3. Basic Specifications

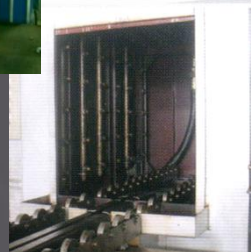
- 1) Heating Method : Pipe Heater Type -20kw 220V/380V (10kw x 2ea)
- 2) Capacity : 1,000Kg-Gross/ch (capacity), 30 minutes
- 3)Washing Method : ALKALI SPRAY
- 4) Tank Capacity : ALKALI TANK = 2,000LITER, Oil Skimmer installed
- 5) Temperature : ALIKALI TANK = Normally 60 - 80℃
- 6) Power : 25.7Kw to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



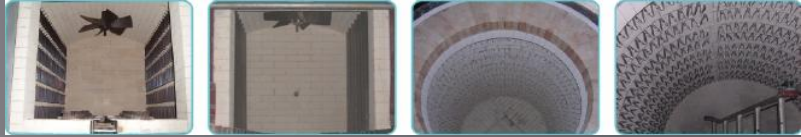
2 chamber



1 chamber



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安全装置器具 Safety Device

*本设备使用爆炸性气氛气体，所以在作业途中，设备操作或暂停时，都不应有操作失误。
本设备的安全装置配置如下：

- 1) 长明火器灭火警报
- 2) 燃烧用气体压力下降警报
- 3) 冷却水压力下降警报
- 4) 气体发生器停止警报
- 5) 高压气体的压力下降警报
- 6) 炉内温度超过上限温度，或热电偶失效时温度警报回路启动
- 7) 本设备需要备用电源，用于停电时供应电控板，RC风扇等所需的最小限度的电力

* 本设备的制造参数以KS, JIS规格及国内质量示样为标准

*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.

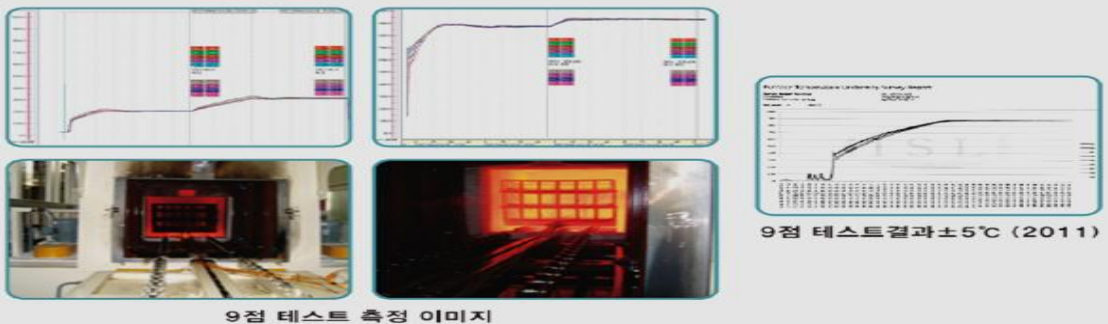
This is for minimum power requirement of controller, panel, RC fan and so on.

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

● 方便的安防、辅助设备 Convenient Safety Apparatus / Fittings



● 炉内9点温度分布度测定 Temperature Distribution in Furnace: 9 Points Measurement



※ 主要顾客 (中國设置事例)



A. (山东省青岛市)

湖成热处理

* 对待品目：汽车零件

* 设置日期：2007年6月 9日



B. (江苏省靖江市)

靖江巨成汽车配件有限公司

* 对待品目：汽车零件

* 设置日期：2007年 9月 27日



C. (江苏省莱陽)

达圆机械厂

* 对待品目：汽车零件

* 设置日期：2008年 6月 27日



D. (山东省青岛市 姑密)

韩华成(青岛)精密工业有限公司

* 对待品目：汽车零件

* 设置日期：2009年 10月 31日



E. (辽宁省大连市) 大连迪日坤船舶用品有限公司

* 对待品目：船舶零件

* 设置日期：2010年 10月 12日

F. (越南) 胡志明 SAMRYONG VINA M-TEK CO., LTD

* 对待品目：本田汽车公司零件

* 设置日期：2011年 11月 3日



G. (吉林省吉林市) 龍山集团

* 对待品目：汽车零件

* 设置日期：2013年 05月18日

✧ BASKET & TRAY





无氧化渗碳炉设备概要

Non-Oxidizing Carburizing Furnace

● 容器制造供应 Fitting Parts



● 设备维修 / 工厂自动化 Equipment Maintenance/Plant Automation



* 韩国第一名无氧化渗碳炉企业

The top Korean manufacture of Non-Oxidizing Carburizing Furnace.

至2013年12月31日，已有50套五氧化渗透炉、120套淬火炉、31套碳氮共渗炉，30套正火炉，55套正火炉在韩国市场使用。

120 sets of Non-Oxidizing Carburizing Furnace, 31 sets of Quenching Furnace, 30 sets of Nitrocementation Furnace, 55 sets of Normalizing Furnace were used in Korea until December 31, 2013.

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