



## Electromagnetic High Frequency Induction Heating System

### The Principle of Electromagnetic Induction Heating System

Multi-function microcomputer electromagnetic induction heating controller adopts the principle of electromagnetic induction heating to turn electrical energy into thermal energy. Firstly, change 50Hz alternating current into direct current through the internal rectification filter circuit. And then through the PFM control circuit transfer DC to high frequency of 3-30 KHz and high voltage. The rapid changing current will produce high-speed changing magnetic field through the coil. It will be produced countless small eddy inside heating metal object when the magnetic field lines inside the heated metal object, so the heated metal object itself will get high fever.

### Structure of Electromagnetic Induction Heating System

- ① Induction Heater: also called electromagnetic induction heater, induction heating main control, induction heating main circuit control, etc.
- ② Induction Heating Coil: also called induction coil/heating coil
- ③ Temperature Control: can be installed on the induction heater box
- ④ External Control: PLC etc.



①

+



②

+ ③ Temperature Control

+ ④ Temperature Control



**3-20KHZ**  
**ENERGY SAVING 30%~50%**  
 Compared to the traditional electric heaters  
 heating barrel/pipe/screw of plastic machine  
 diffusion pump oil heating  
 water/gasoline/oil heating  
 boiler/warmer heating  
 heating/annealing/tempering  
 induction cooker heating  
 + PID temperature control  
 + PLC



## Electromagnetic High Frequency Induction Heating System

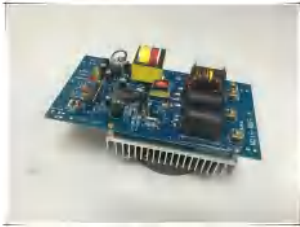
### Technical Parameters & Specifications

Model No.	Input Voltage (V)	Rated Power (KW)	Input Current (A/Phase)	Loading Inductance (uH)	Induction Coil Wire Request	
					Sq. Area (mm2)	Effective L. (m)
ZG-EH02	220V-1P	2	9	130-140	4	12-14
[full bridge]				100-150	4	22-25
ZG-EH2.5	220V-1P	2.5	10-11	130-140	4	12-14
[full bridge]				100-150	4	20-23
ZG-EH3.5	220V-1P	3.5	14-15	120-130	6	10-12
[full bridge]				130-140	6	15-17
ZG-EH05	220V-1P	5	20-22	65-75	10	9-11
[full bridge]				60-80	10	13-15
ZG-EH3.5-1	380V-3P	5	4-5	130-250	6	25-55
ZG-EH05-1	380V-3P	5	4-5	130-250	6	25-55
ZG-EH05-2	380V-3P	5	8	130-250	6	25-55
ZG-EH06	380V-3P	6	9-10	130-250	6	25-55
ZG-EH08	380V-3P	8	12	130-250	8	25-55
ZG-EH10	380V-3P	10	15	170-200	10	42-45
ZG-EH12	380V-3P	12	18	140-170	16	38-42
ZG-EH15	380V-3P	15	23	140-170	16	38-42
ZG-EH20	380V-3P	20	30	110-130	25	34-38
ZG-EH25	380V-3P	25	38	90-110	25	32-35
ZG-EH30	380V-3P	30	45	200-220	16-20	55-60
ZG-EH30	380V-3P	30	45	80-90	25	30-32
ZG-EH40	380V-3P	40	60	170-190	20-25	50-55
ZG-EH50	380V-3P	50	75	150-170	25	45-50
ZG-EH60	380V-3P	60	90	130-150	35	40-45
ZG-EH70	380V-3P	70	105	110-130	35	37-42
ZG-EH80	380V-3P	80	120	90-110	35	33-37
ZG-EH90	380V-3P	90	120	90-110	35-50	33-37
ZG-EH100	380V-3P	100	120	90-110	35-50	33-37



## Electromagnetic High Frequency Induction Heating System

### 220V-1P : Induction Heating Main Control



**2KW/220V-1P  
Main Circuit Board**



**2.5KW/220V-1P  
Main Circuit Board**



**3.5KW/220V-1P  
Main Circuit Board**



**5KW/220V-1P  
Main Circuit Board**



**2~2.5KW/220V-1P**  
+ steel box  
+ green/red light



**2~3.5KW/220V-1P**  
+ steel box  
+ temperature control & sensor  
+ on/off & green light  
+ A/V gauge



**5KW/220V-1P X 2sets**  
+ steel box  
+ temperature control & sensor  
+ on/off  
+ induction coil



**2-2.5KW/220V-1P full bridge**  
+ steel box  
+ display



**3.5KW/220V-1P full bridge**  
+ steel box  
+ display



**5KW/220V-1P full bridge**  
+ steel box  
+ display



## Electromagnetic High Frequency Induction Heating System

### 380V-3P : Induction Heating Main Control



**3~6KW/380V-3P**  
**Wall-mounted Type**  
 + steel box  
 + display



**10KW/380V-3P**  
**Wall-mounted Type**  
 + steel box  
 + display



**12KW/380V-3P**  
**Wall-mounted Type**  
 + steel box  
 + display



**15KW/380V-3P**  
**Wall-mounted Type**  
 + steel box  
 + display



**20~25KW/380V-3P**  
**Wall-mounted Type**  
 + steel box (S)  
 + display



**30~60KW/380V-3P**  
**Wall-mounted Type**  
 + steel box (M)  
 + display



**70~100KW/380V-3P**  
**Wall-mounted Type**  
 + steel box (L)  
 + display



**Cabinet Type 1**  
 15~50KW/380V-3P



**Cabinet Type 2**  
 30~100KW/380V-3P



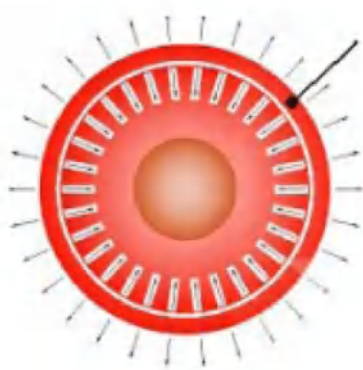
**Cabinet Type 3**  
 3sets in 1 cabinet  
 20~100KW/380V-3P



## Electromagnetic High Frequency Induction Heating System

### Electromagnetic Heating Compared with Traditional Heating

#### X Traditional Heating

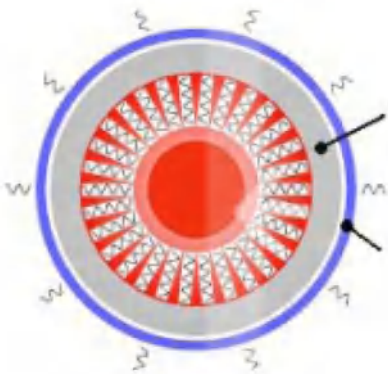


Heating coil

X A lot of heat exhausted in the air!

X The working environment temperature is hot!

#### ✓ Electromagnetic High Frequency Induction Heating



Insulation Protection Wool

✓ Keep the heat inside, no heat exhaustion!

Induction heating coil

✓ Induction heating make heat more efficiently!

### Main Features & Advantages of Electromagnetic Heating

- 1, Save electricity at least 30% and highest to 80%, especially for big power machine;
- 2, No influence on working environment;
- 3, High efficiency: high frequency heating system has heat energy utilization rate of 95%+;
- 4, Heating fast, accurate temperature control;
- 5, Can work for a long time in harsh environments;
- 6, Low cost of power consumption compare to traditional resistance wire heating;
- 7, No unsafe factors compare to traditional heating: surface temperature only about 50°C~80°C;
- 8, External control like PLC can be connected.

## Electromagnetic High Frequency Induction Heating System

### Application Range

✓ **Plastics and rubber industry**

Induction heating for plastic puffing machines, wire-drawing machine, injection molding machine, extruding machine, vulcanizing machine.

✓ **Pharmaceutical and chemical industry**

Induction heating for production line of medical infusion bag and plastic equipment.

✓ **Energy and food industry**

Induction heating for crude oil pipeline, machine for food industry.

✓ **Building materials industry**

Induction heating for production lines of gas pipe, plastic pipe, PVC tube, Polystyrene foam pipe;

Induction heating for PP transparent sheet extrusion;

Induction heating for PE plastic rigid flat screen, Geonet unit, automatic hollow molding machine;

Induction heating for single and double wall corrugated pipe extrusion production line;

Induction heating for composite air cushion film unit.

✓ **Dry heating of printing equipment**

✓ **Heating and other similar industries**

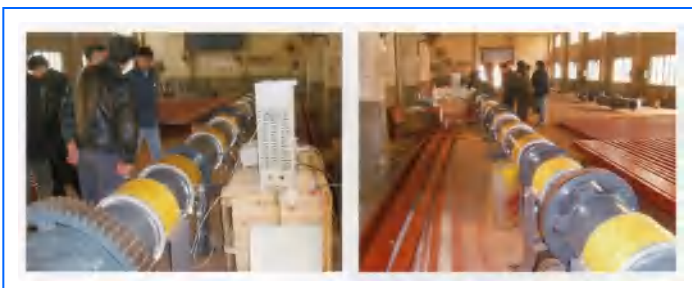
### Installation Site



L.K. Injection Molding Machine



Taichung Seiki Injection Molding Machine



Crude Oil/Gasoline Pipe



Plastic Drawing Machine



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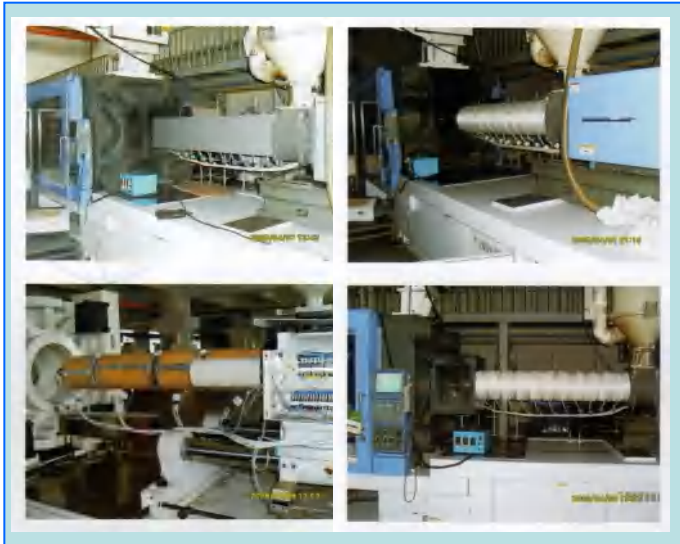
New Induction Heating Project Working Site





## Electromagnetic High Frequency Induction Heating System

### Induction Heating Reform Project



Big-sized Injection Molding Machine



Old Injection Molding Machine



Plastic Blowing Molding Machine



### Inquiry Guide

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