**CHMING 15KW**

# CHMING 15KW High Frequency Induction Heating Machine User Manual

Model: 15KW

## 1. Introduction

This manual provides essential information for the safe and efficient operation of your CHMING 15KW High Frequency Induction Heating Machine. Please read this manual thoroughly before installation, operation, or maintenance to ensure proper usage and to prevent damage or injury.

### Product Overview

The CHMING 15KW High Frequency Induction Heating Machine is a robust and efficient device designed for various metal processing applications. It utilizes high-frequency electromagnetic induction to generate heat directly within the workpiece, offering precise control and rapid heating.


Figure 1: CHMING 15KW High Frequency Induction Heating Machine, front view with induction coil.

## Key Features

- **Output Power:** 15KW
- **Output Current:** 200-600A
- **Fluctuating Frequency:** 30-100KHz
- **Heating Time:** 1-99S (auto)
- **Input Voltage:** Single phase 220V
- **Cooling:** Water cooling system required
- **Advanced Protection:** Automatic protection for over-current, over-voltage, overheating, water shortage, and phase loss.
- **Efficiency:** Energy-saving, fast heating speed, and high efficiency.

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# 2. Safety Information

Operating high-frequency induction heating equipment involves significant electrical and thermal hazards. Adhere strictly to the following safety guidelines to prevent injury or damage.

- **Electrical Safety:** Ensure the machine is connected to a properly grounded 220V single-phase power supply. All electrical connections must be secure and conform to local electrical codes. Never operate the machine with damaged power cords or exposed wiring.
- **Thermal Safety:** The induction coil and workpiece become extremely hot during operation. Always use appropriate personal protective equipment (PPE), including heat-resistant gloves, eye protection, and protective clothing. Allow heated materials to cool completely before handling.
- **Cooling System:** A functional water cooling system is mandatory for operation. Operating without adequate cooling will lead to overheating and severe damage to the machine. Regularly check water flow and temperature.
- **Electromagnetic Fields:** High-frequency induction generates strong electromagnetic fields. Individuals with pacemakers or other medical implants should avoid operating or being in close proximity to the machine during operation.
- **Flammable Materials:** Keep flammable materials, liquids, and gases away from the induction heating area. The high temperatures can ignite such substances.
- **Ventilation:** Ensure adequate ventilation in the work area to dissipate heat and any fumes generated during heating processes.
- **Emergency Procedures:** Familiarize yourself with the location of emergency power shut-offs. In case of malfunction or emergency, immediately disconnect power to the machine.

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# 3. Product Components and Specifications

## Package Contents

Upon unpacking, verify that all the following items are included:

- 1 x CHMING 15KW High Frequency Induction Heater Furnace
- 1 x Heating Coil (standard)
- 1 x Foot Switch
- 1 x English User Manual

Note: Additional heating coils can be customized according to specific application needs.


Figure 2: Illustration of the included components: main unit, heating coil, foot switch, and manual.

## Technical Specifications

| Parameter | Value |
|---|---|
| Output Power | 15KW |
| Output Current | 200-600A |
| Fluctuating Frequency | 30-100KHz |
| Heating Time | 1-99S (auto) |
| Input Voltage | Single phase 220V |
| Flow Rate of Cooling Water | 0.06-0.12Mpa, 7.5 L/min |
| Water Temperature Protection Point | 40℃ (104℉) |
| Load Duration | 100% |
| Cooling Method | Water cooling |
| Item Weight | 57.9 pounds (approx. 26.26 kg) |
| Package Dimensions | 23.9 x 21.7 x 11.9 inches (approx. 60.7 x 55.1 x 30.2 cm) |


| High Frequency Induction Heater Furnace | |
|---|---|
| Output Power: 15 KW | Water Temp. Protection Point: 40 ℃(104 ℉) |
| Output Current: 200-600 A | Water flow: >6L/MIN |
| Fluctuating Frequency: 30-100 KHz | Load Duration: 100% |
| Heating Time: 1-99s(auto) | Cooling: Water Cooling |
| Input Voltage: Single Phase 220V 50Hz | Package Size: 68x64x34.5cm(26.8x25x13.6in) |
| Flow Rate of Cooling Water: 0.06-0.12Mpa, 7.5 L/Min | G.W.: 34KG |

Figure 3: Detailed product dimensions and key specifications.

## 4. Setup and Installation

Proper setup is crucial for the safe and effective operation of your induction heating machine.

### 4.1 Power Connection

- The machine requires a single-phase 220V power supply.
- Ensure the power circuit is rated for at least 30 amps to prevent tripping, especially during high-load operations.
- Use a 4 square copper wire for the power cord (to be provided by yourself) to ensure adequate current capacity.
- Connect the power cord securely to the machine's input terminal and a suitable 220V outlet.

### 4.2 Cooling Water System Setup

A circulating water cooling system is essential. This typically consists of a water pump and a water tank (both to be provided by yourself).

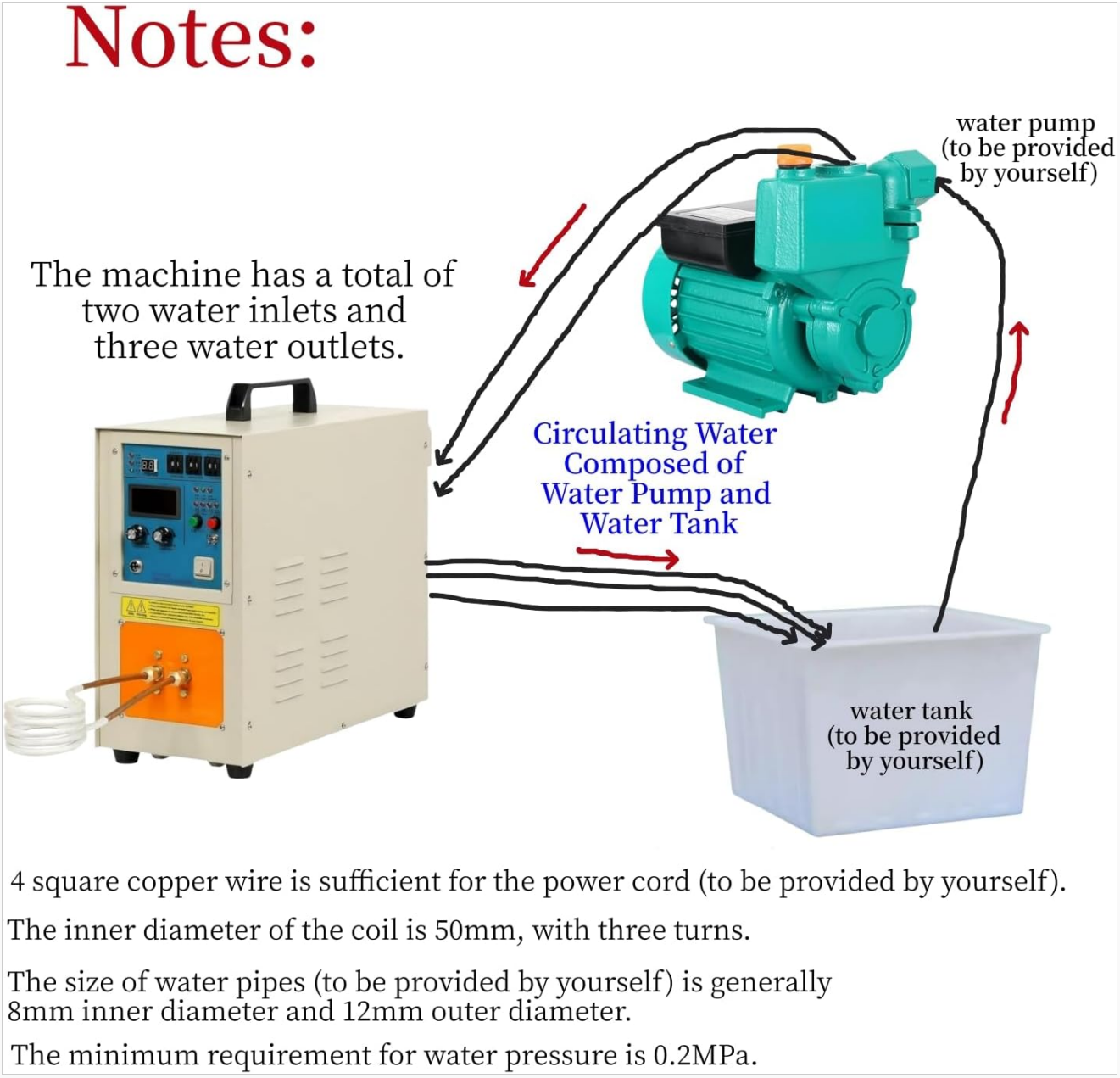


Figure 4: Diagram illustrating the connection of the water pump and water tank to the induction heating machine.

- The machine has two water inlets and three water outlets. Refer to the diagram for correct connections.
- The recommended size for water pipes is 8mm inner diameter and 12mm outer diameter.
- The minimum water pressure requirement is 0.2MPa. Ensure your water pump can meet this specification.
- Connect the water pump to the water inlets and the water tank to the water outlets, forming a closed-loop circulation system.
- Fill the water tank with clean, distilled water or a suitable coolant.
- Ensure there is sufficient water flow (7.5 L/min) and pressure (0.06-0.12Mpa) to prevent overheating.
- It may be necessary to add a valve on the return line to create back pressure and satisfy the internal pressure sensor, preventing water shortage alarms.

## 4.3 Heating Coil and Foot Switch Installation

- Connect the heating coil to the designated terminals on the front panel of the machine. Ensure connections are tight.
- The standard heating coil has an inner diameter of 50mm with three turns.
- Plug the foot switch into its dedicated port on the machine.

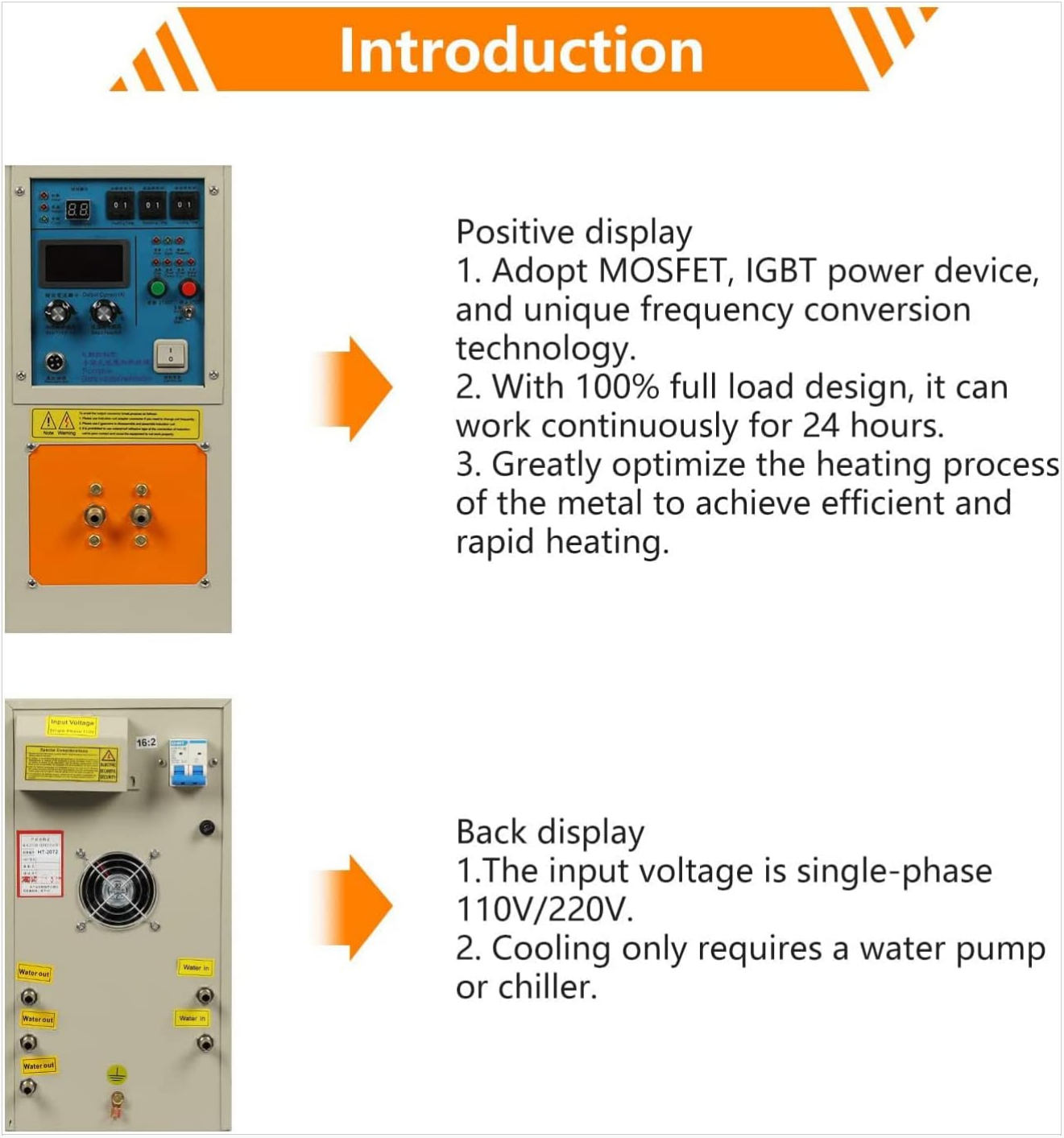


Figure 5: Front panel with controls and heating coil connections, and back panel with power and water connections.

## 5. Operation

Once the machine is properly set up and all safety checks are complete, you can begin operation.

### 5.1 Control Panel Overview

The front panel features a positive display for output current, heating time settings, and various control buttons. The machine supports both manual and automatic adjustment modes.

### 5.2 Basic Operation Steps

1. **Power On:** Turn on the main power switch. The display should illuminate.
2. **Set Parameters:** Adjust the desired heating time (1-99 seconds) and output current using the controls on the front panel. Start with lower settings and gradually increase as needed for your specific application.

3. **Place Workpiece:** Carefully place the metal workpiece within the heating coil. Ensure it is centered and does not touch the coil directly.
4. **Start Heating:** Press the START button or activate the foot switch to begin the heating cycle. The machine will automatically stop after the set heating time.
5. **Monitor:** Observe the heating process. The machine has automatic protection features that will trigger an alarm and shut down if issues like over-current, over-voltage, overheating, water shortage, or phase loss occur.
6. **Cool Down:** After heating, allow the workpiece to cool down safely. Do not touch hot materials with bare hands.

### 5.3 Applications

This high-frequency induction heating equipment is versatile and suitable for various industrial and workshop applications:

- Heat treatment for gear wheels and axes.
- Continuous annealing for steel wire.
- Heating and hot press molding for dishware.
- Forging and molding for standard workpieces.
- Melting metals with a melting point below 900 degrees Celsius, such as copper, aluminum, tin, silver, and gold.


Figure 6: Various applications of the induction heating machine, demonstrating its versatility.

## 6. Maintenance

Regular maintenance ensures the longevity and optimal performance of your CHMING induction heating machine.

- **Cooling System:** Regularly inspect the water cooling system for leaks, blockages, or reduced flow. Ensure the water tank is clean and filled with appropriate coolant. Periodically clean the water pump filter.
- **Machine Exterior:** Keep the machine's exterior clean and free from dust and debris. Use a dry cloth for

cleaning. Do not use abrasive cleaners or solvents.

- **Ventilation Openings:** Ensure all ventilation openings on the machine are clear and unobstructed to allow for proper airflow and heat dissipation.
- **Electrical Connections:** Periodically check all electrical connections for tightness and signs of wear or damage.
- **Heating Coils:** Inspect heating coils for damage or deformation. Replace damaged coils immediately to maintain efficiency and safety.

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# 7. Troubleshooting

This section provides guidance on common issues and their potential solutions. The machine is equipped with automatic protection features to prevent severe damage.

## Common Issues and Solutions

- **Machine Shuts Down with Alarm:** The machine has automatic protection for over-current, over-voltage, overheating, water shortage, and phase loss. Identify the specific alarm indicator on the control panel.
- **Over-current Protection:** This may occur if the workpiece is too large, the coil is too close to the workpiece, or the power setting is too high. Reduce power, adjust workpiece position, or use a larger coil.
- **Overheating Protection:** Indicates insufficient cooling. Check the water flow rate, water pressure, and water temperature. Ensure the water pump is functioning correctly and the water tank has enough coolant. Clean any blockages in the cooling lines.
- **Water Shortage Alarm:** The water pressure sensor detects insufficient water flow. Verify the water pump is running, the tank is full, and there are no kinks in the hoses. Adjust the back pressure valve on the return line if necessary to maintain adequate pressure.
- **No Heating:** Check power supply, foot switch connection, and heating coil integrity. Ensure the machine is not in a protection state.
- **Inaccurate Timer:** If the timer appears to be operating incorrectly, ensure the settings are correctly applied. If the issue persists, contact customer support.

If troubleshooting steps do not resolve the issue, or if you encounter a problem not listed here, please contact customer service for assistance. Do not attempt to repair internal components unless you are a qualified technician.

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# 8. Warranty and Support

CHMING is committed to providing reliable products and excellent customer service.

- **Warranty:** Specific warranty terms and duration may vary. Please refer to your purchase documentation or contact the seller for detailed warranty information.
- **Technical Support:** Professional customer service is available to assist you. If you have any questions, suggestions, or require technical assistance, please feel free to message us on Amazon or through the contact information provided with your purchase.
- **Replacement Parts:** In the event of a faulty part, CHMING may provide replacement components and support for installation.

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