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VEVOR DMJ-0002

VEVOR Vacuum Investing Casting Machine with Melting Furnace

Model: DMJ-0002
Brand: VEVOR

1. Introduction

This manual provides essential instructions for the safe and efficient operation, maintenance, and troubleshooting of your VEVOR Vacuum Investing Casting Machine with Melting Furnace, Model DMJ-0002. Please read this manual thoroughly before operating the machine to ensure proper usage and to prevent damage or injury.
This machine is designed for combining melting, vacuuming, and molding functions, suitable for jewelry creation and casting various metals like silver, gold, and copper.

2. Safety Instructions

WARNING: Failure to follow these safety instructions may result in serious injury or property damage.

- Always wear appropriate personal protective equipment (PPE), including heat-resistant gloves, eye protection, and protective clothing, when operating the machine, especially during melting and casting processes.
- Ensure the machine is placed on a stable, non-combustible surface in a well-ventilated area.
- Do not operate the machine near flammable materials or liquids.
- Verify that the power supply matches the machine's requirements before plugging it in.
- Never touch hot surfaces. Allow the machine to cool completely before handling components or performing maintenance.
- Keep children and unauthorized personnel away from the operating area.
- Do not turn off the vacuum motor until the vacuum is fully released.
- Only use the machine for its intended purpose of melting and vacuum investing casting.
- Regularly inspect the power cord for damage. Do not operate with a damaged cord.

3. Product Overview

The VEVOR Vacuum Investing Casting Machine with Melting Furnace is an integrated system designed for efficient jewelry casting. It features a vacuum pump for de-gassing investment and vacuum-assisted casting, alongside an integrated melting furnace.

Key Components:

- **Vacuum Hood:** Large, thickened hood for effective air extraction and bubble removal.
- **Melting Furnace:** Integrated furnace capable of reaching high temperatures for various metals.
- **Casting Chamber:** Area for placing molds during vacuum casting.
- **Investment Table:** Platform for de-gassing investment.
- **Precision Pressure Gauge:** For real-time monitoring of vacuum levels.
- **Control Panel:** Includes On/Off switch, temperature display, and adjustment controls.
- **Oil Injection Port:** Conveniently located for easy vacuum oil replenishment.
- **Heat Dissipation Back Panel:** Designed for efficient cooling during operation.



Figure 3.1: Overview of the VEVOR Vacuum Investing Casting Machine with Melting Furnace. This image shows the complete machine with its vacuum hood, melting furnace, and control panel.



Figure 3.2: The machine's 3-in-1 functionality, highlighting its vacuum, melting, and casting capabilities.

4. Setup

1. **Unpacking:** Carefully remove all components from the packaging. Inspect for any shipping damage. Retain packaging for future transport or storage.
2. **Placement:** Position the machine on a sturdy, level, and heat-resistant workbench in a well-ventilated area. Ensure adequate clearance around the machine for heat dissipation and safe operation.
3. **Power Connection:** Connect the power cord to a grounded electrical outlet that matches the machine's voltage requirements.
4. **Vacuum Oil (Not Included):** Locate the upgraded oil injection port on the top of the machine. Fill the vacuum pump with appropriate vacuum oil (not included) according to the manufacturer's specifications. Do not overfill.



Figure 4.1: The upgraded oil injection port, designed for convenient oil filling without disassembling the back panel.

5. **Accessory Placement:** Ensure all accessories, such as crucibles and tongs, are clean and ready for use.

5. Operating Instructions

This section outlines the general procedure for using the VEVOR Vacuum Investing Casting Machine. Specific casting techniques may vary based on material and mold type.

5.1. Melting Process

1. Place the metal to be melted into the crucible.
2. Carefully place the crucible into the melting furnace.

3. Close the furnace lid securely.
4. Turn on the melting furnace using its dedicated switch.
5. Set the desired temperature using the control panel. Monitor the real-time temperature display. The furnace can heat up to 2102°F (1150°C).



Figure 5.1: Detail of the melting furnace in operation and the real-time temperature display.

6. Once the metal is fully molten, carefully remove the crucible using appropriate tongs.

5.2. Vacuum Investing (De-gassing Investment)

1. Prepare your investment material according to its manufacturer's instructions.
2. Place the flask with the investment on the investment table under the vacuum hood.
3. Close the vacuum hood.
4. Turn on the vacuum pump using the main On/Off switch.
5. Monitor the precision pressure gauge to ensure proper vacuum is achieved. The vacuum will extract air, removing bubbles from the investment.

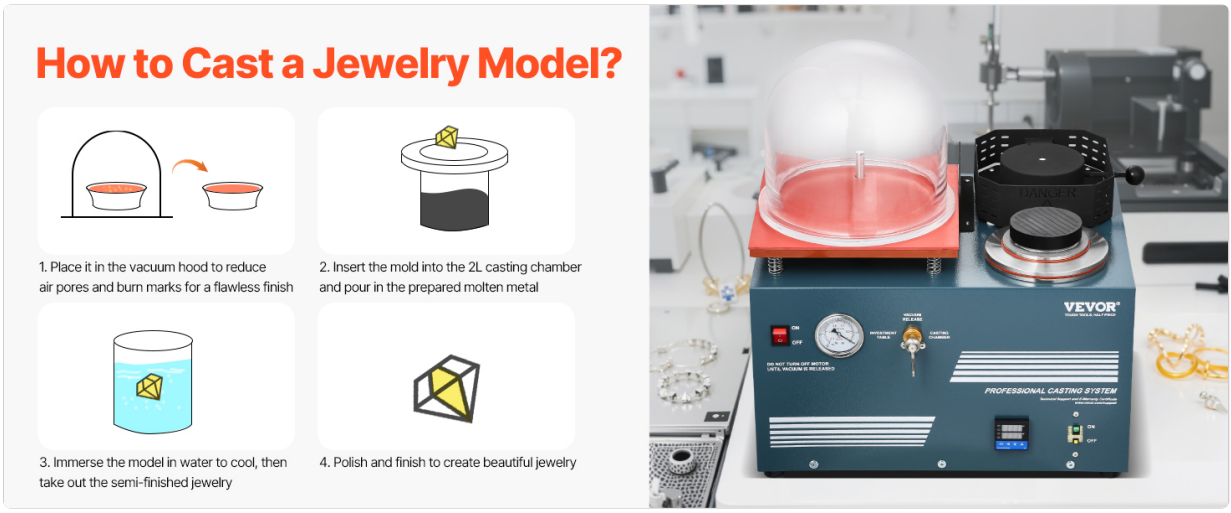


Figure 5.2: The precision pressure gauge for real-time vacuum monitoring, along with the On/Off switch and adjustable toggle lever.

6. Once de-gassing is complete, release the vacuum using the designated lever or switch.**Do not turn off the motor until the vacuum is fully released.**
7. Remove the flask and proceed with the burnout cycle as required by your investment material.

5.3. Vacuum Casting

1. Place the pre-heated flask (from burnout) onto the casting chamber.
2. Ensure the vacuum hood is properly positioned over the casting chamber. The casting chamber accommodates objects up to 5 x 7 inches.



Figure 5.3: The 5 x 7 inch casting chamber, showing the maximum object size it can accommodate.

3. Turn on the vacuum pump.
4. Quickly and carefully pour the molten metal from the crucible into the flask. The vacuum will assist in drawing the metal into the mold, reducing porosity.
5. Allow the metal to solidify under vacuum for the recommended time.
6. Release the vacuum and carefully remove the cast piece.
7. Quench the cast piece in water (if applicable for your metal/investment) and clean as necessary.



Figure 5.4: Visual guide illustrating the steps for casting a jewelry model using the machine.

6. Maintenance

Regular maintenance ensures the longevity and optimal performance of your VEVOR Vacuum Investing Casting Machine.

- **Cleaning:** After each use, allow the machine to cool down. Clean any metal spills or investment residue from the casting chamber, investment table, and vacuum hood. Use a soft cloth and mild cleaner. Do not

use abrasive materials.

- **Vacuum Pump Oil:** Regularly check the vacuum pump oil level. Replenish or replace the oil as needed, typically every 20-50 hours of operation or if it appears cloudy/discolored. Use only recommended vacuum pump oil.
- **Seals and Gaskets:** Inspect the rubber seals and gaskets around the vacuum hood and casting chamber for wear or damage. Replace them if they show signs of cracking or deterioration to maintain proper vacuum.
- **Electrical Connections:** Periodically check all electrical connections and the power cord for any signs of wear, fraying, or damage.
- **Heat Dissipation:** Ensure the heat dissipation vents on the back panel are clear of dust and debris to prevent overheating.

7. Troubleshooting

This section addresses common issues you might encounter with your VEVOR Vacuum Investing Casting Machine.

Problem	Possible Cause	Solution
Machine does not power on.	No power supply; Power switch off; Faulty power cord.	Check power outlet and connections; Ensure power switch is ON; Inspect and replace power cord if damaged.
Vacuum not reaching desired level.	Loose vacuum hood; Worn seals/gaskets; Low vacuum oil level; Vacuum pump issue.	Ensure vacuum hood is properly seated; Inspect and replace seals/gaskets; Check and replenish vacuum oil; Contact support if pump is faulty.
Melting furnace not heating.	Furnace switch off; Incorrect temperature setting; Heating element failure.	Ensure furnace switch is ON; Verify temperature setting; Contact support for heating element replacement.
Poor casting quality (e.g., porosity, incomplete fill).	Insufficient vacuum; Incorrect metal temperature; Flask temperature too low/high; Improper investment preparation.	Check vacuum system; Verify metal and flask temperatures; Ensure investment is properly mixed and de-gassed.
Machine overheating.	Blocked ventilation; Prolonged continuous operation.	Clear ventilation openings; Allow machine to cool down between cycles.

8. Specifications

Feature	Detail
Model Number	DMJ-0002
Brand	VEVOR
Machine Maximum Power	1900W
Melting Furnace Maximum Power	1600W
Melting Furnace Maximum Temperature	1150°C (2102°F)

Feature	Detail
Maximum Object Size (Casting)	4 x 6 in / 102 x 152 mm
Vacuum Hood Platform Size	11 x 11 in / 280 x 280 mm
Transparent Dome Cover Material	Acrylic
Vacuum Oil Capacity	400ml
Vacuum Oil Type	46#
Main Material	Cold-Rolled Steel Sheet
Product Weight	84.88 lbs / 38.5 kg
Item Dimensions (L x W x H)	20.47 x 16.14 x 15.75 inches / 520 x 410 x 400 mm
Melting Furnace Dimensions (Inner diameter x Depth)	Φ6.5 x 8.5 in / Φ165 x 217 mm
Casting Chamber (Inner diameter x Depth)	Φ5 x 7 in / Φ127 x 177.8 mm
Included Components	Casting machine, Melting furnace

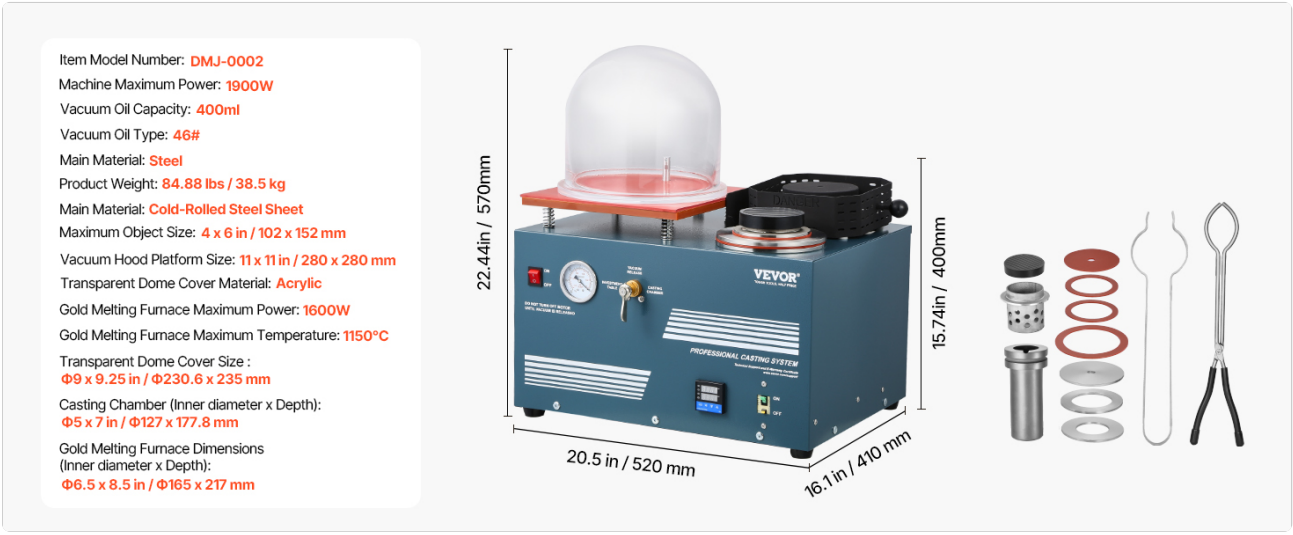


Figure 8.1: Detailed dimensions of the machine and a visual representation of included accessories.

9. Warranty and Support

VEVOR provides a return policy of 30 days for this product. For technical support, warranty claims, or any operational assistance, please refer to the official VEVOR support channels.
You can find more information and contact support at:VEVOR Support
Please have your model number (DMJ-0002) and purchase information ready when contacting support.

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