INSTRUCTIONS

RPD INFORMATION

Address  
5218 Barthel Industrial Drive  
Albertville, MN 55301

Website  
www.rpdinc.com

Email  
sales@rpdinc.com

Phone  
763-497-2071 or 800-497-2071

Fax  
763-497-2295

RPD PRODUCT INFORMATION

Item Number  
878-060

Digital Alloy Melting Dispensers

1.5 Gal. 158°/203°F  
120 VAC, 665 Watts, 5.6 Amps  
Fuse: 8 Amp, 250 VAC Fast/Acting, 5 mm x 20 mm

878-065

1.5 Gal. 158°/203°F  
208/240 VAC, 576/665 Watts, 3.2/2.8 Amps  
Fuse: 4 Amp, 250 VAC Fast/Acting  
5 mm x 20 mm
CERTIFICATION

Radiation Products Design Inc, as the manufacturer, certifies that all components used to manufacture the Alloy Melting Dispensers have UL listed approved parts. This includes the electronic control, heating element, faucet heater, switch, fuse, indicators and wiring. The units are grounded to the inside container and outside shell and then connected to a hospital grade three prong cord.

The units are tested as follows:

- The resistances of the heating element and faucet heater are verified and values are recorded.
- Total current draw is checked and recorded.
- Leakage current is taken to UL specification in four modes with all values being recorded. Radiation Products Design's maximum leakage current never exceeds 250 uAmp.

This product is not ISO certified or UL listed.

INTRODUCTION

The Compact yet rugged design makes it universally ideal for clinical use. It features polished stainless steel corrosion-resistant interior and exterior housing, a stainless steel cover and a side mounted, easy to view temperature control. Power switch, fuses and cord receptacle are mounted on the back side.

The EZ-Zone® Digital Proportional-Integral-Derivative (PID) Temperature Controller has two digital readouts, temperature and set point. It can maintain alloy at controlled temperature sets at a maximum of 250°F (121°C). The heating element provides even temperatures throughout the entire unit.

Controlling the power to the heater is done with a heavy duty Triac with Zero Crossover Switching to prevent noise from being induced into other equipment thru the AC Line.

The units are constructed with a ball valve faucet with hose barb connector for easy alloy removal. An optional 3/8" ID x 18" long (0.96 x 45.88 cm) drain tube (Item 878-158) can be attached to the faucet hose barb fitting when the dispenser is set on a shelf over the alloy blocks.

A 6' (1.8 m) AC Cord with grounded hospital grade plug is standard.

All units are single phase.
FEATURES

- Alloy Temperature Stability ± 4°
- Microprocessor PID Temperature Control
- “J” Thermocouple
- Open Thermocouple Sensor Will Shut Unit Down
- Temperature is Displayed in Fahrenheit or Celsius
- Easy View Temperature Controls
- Set Point Reading Is Green and Alloy Temperature Is Red
- Insulated Container Preserves Power Consumption
- Exterior Stays Cool Even After Hours of Operation
- Easy to Clean Round Container
- Stainless Steel Corrosion-Resistant Interior and Exterior

SAFETY INSTRUCTIONS

Read all safety and operating instructions before operating the alloy dispenser.

- Power Source. This unit should be operated only from the type of power source indicated on the identification label. If you are not sure of the type of power supplied to your building, consult your Engineering department or local power company.
- Plug the unit into a properly grounded outlet having a ground fault circuit interrupter either in the receptacle or in the immediate power line. In some cases a dedicated line may be preferred.
- Power Cord Protection: Power-supply cords should be routed so that they are not likely to be walked on or pinched by items placed upon or against them. Pay particular attention so that the unit is placed within a convenient distance from electrical receptacles.
- Alloy Dispensers are very heavy. Be sure table will handle the weight.
- Unplug the electrical cord before cleaning or working on the Alloy Dispenser.
- Always wear safety glasses with side shields.
- Avoid breathing alloy dust. Use a dust mask.
- Vent area to the outside of a building for Styrofoam cutting.
- Wash hands before eating.
- Wear, leather apron, jeans, leather shoes (no vent holes on the top of the shoe) and gloves for protection against hot alloy.

### SAFETY SYMBOLS

### SPECIFICATIONS

<table>
<thead>
<tr>
<th>Item</th>
<th>878-060</th>
<th>878-065</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gallons</td>
<td>1.5</td>
<td>1.5</td>
</tr>
<tr>
<td>120 VAC 50/60 Hz</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>208/240 VAC 50/60 Hz</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Watts</td>
<td>665</td>
<td>576/665</td>
</tr>
<tr>
<td>Amps</td>
<td>5.6</td>
<td>3.2/2.8</td>
</tr>
<tr>
<td>Alloy Capacity</td>
<td>120 lb (54 kg)</td>
<td>120 lb (54 kg)</td>
</tr>
</tbody>
</table>

**Alloy Temperature Range:** 0° to 250°F (-18° to 121°C)

**Temperature Accuracy:** ± 4°F

**Temperature Controller Type:** PID

**Thermocouple:** J

**Power Source:**
- 120 VAC at 6 Amps
- 208/240 VAC at 3.2/2.8 Amps
**Line Frequency:** 50-60 HZ

**Wattage:** 665 at 120 VAC and 576/665 at 208/240 VAC

**Electronic Switching:** Triac with Zero Crossover Switching

**On/Off Switch:** 10 Amp Rating

**Fused:** Two Line Fuses for AC Lines

**Power Cord:** 6' (1.8 m) 3 Wire, 10 Amp, 300 Volt, SJT, with Hospital Grade Plug

**Faucet:** Ball Valve with Hose Barb

**Optional Faucet Hose:** 3/8" ID x 1' (1 cm x 30 cm)

**Interior Dimension:** 7 1/8" Dia. x 8 5/8" Deep (18 x 21.9 cm)

**Interior Material:** Stainless Steel

**Exterior Dimensions:** 9 3/4" x 12" x 14 1/2" High (25 x 30.5 x 37 cm)

**Exterior Material:** Stainless Steel

**Weight:** 17.5 lbs (8 kg)

**Environmental Conditions**

Altitude Limits: 2000 Meters

Ambient Temperature Range: 32° - 104°F (0° - 40°C)

Relative Humidity Range: 0 to 75%

Pollution Degree: 2

**FOR INDOOR USE ONLY**

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**OPERATIONS INSTRUCTIONS**

- Fill Alloy Dispenser with alloy and cover with lid.
- 158° alloy may be covered with water to 1" below top of dispenser to prevent oxidization.
- Always replace stainless steel cover to retain heat and water vapors.
- Place alloy blocks gently into melting dispenser to prevent splashing.
- Surface alloy may seem stiff, not at all flowing consistency. Temperature can be raised to melt alloy, then stir alloy to mix.
- Use a slotted spoon to remove masking tape, Styrofoam pieces and depleted alloy.
FAHRENHEIT OR CELSIUS

On the EZ-Zone® Digital Temperature Controller press the GREEN button marked “C”. On the screen will appear “H” or “C”. Press the down arrow to change to “F” for Fahrenheit or “C” for Celsius. Keep pressing the down arrow until your selection appears on the screen. Press the button marked ∞ to set the temperature to “F” for Fahrenheit or “C” for Celsius.

CLEANING ALLOY DISPENSER

- Remove alloy once a month and clean the inside of the dispenser with scotch-brite (Item 878-160).
- Keep alloy and dispenser clean at all times.
- DO NOT immerse dispenser in water.
- DO NOT use bleach or iodine based products to clean the Alloy Dispenser as such products can quickly corrode the stainless steel resulting in pin holes.

TEMPERATURE ADJUSTMENT

Turn the Alloy Dispenser power switch on:
The EZ-Zone® Digital Temperature Controller can adjust the alloy temperature set point from 0 to 250°F (38°C to 88°C) by pressing the up arrow to increase temperature and pressing the down arrow to decrease temperature. On the screen the set point is displayed in GREEN and the current alloy temperature is displayed in RED.

Controlling the power to the heater is done with a solid state, heavy duty triac with Zero Crossover Switching to prevent noise from being induced into other equipment thru the AC Line

NOTE

- For 158°F alloy set temperature between 168° and 180°F.
- For 203°F alloy set temperature between 213° and 225°F.
- Old alloy may take higher temperatures to melt.
CHANGE THE FUSE

Remove the power cord (fuse drawer will not open with the power cord attached). Use a small flat blade, such as a screwdriver, to pry the drawer open. Remove the old fuses and install new fuses. Shut the fuse drawer and attach the power cord.

<table>
<thead>
<tr>
<th>Item #</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>878-060</td>
<td>120 VAC, Fuse 8 Amp,</td>
</tr>
<tr>
<td></td>
<td>250 VAC Fast/Acting 5mm x 20mm</td>
</tr>
<tr>
<td>878-065</td>
<td>208/240 VAC, Fuse 4 Amp,</td>
</tr>
<tr>
<td></td>
<td>250 VAC Fast/Acting 5mm x 20mm</td>
</tr>
</tbody>
</table>

QUALIFIED SERVICE PERSONNEL/BIOMEDICAL ENGINEER CAN REMOVE THE TEMPERATURE CONTROL PANEL OR BASE FOR SERVICE

Empty the alloy dispenser. Turn the power switch off and unplug the dispenser.

The temperature control can be removed from the front by pressing the tabs outward on two sides releasing the control and allowing it to slide out. The temperature control has a small LED indicator light on the right side that flashes or is on steady when the unit is heating. This causes the Triac LED indicator light to be on at the same time and heater power is applied.

Turn the dispenser upside down. The base can be removed by removing the screws around the outside edge. The Triac is mounted to the base plate and has an input LED indicator light. When illuminated power is sent to the heater.
START HERE

PLUG IN UNIT AND TURN ON POWER

REPLACE FUSE

TURN POWER OFF, UNPLUG UNIT, CHECK FUSES

CONTROL IS ON

NO

YES

IS FAUCET HOT OR COLD

HOT

CARTRIDGE HEATER IS GOOD

IS SWITCH TURNED ON

YES

REPLACE TRIAC

DOES OUTLET HAVE POWER

NO

CHECK ROOM CIRCUIT BREAKER

CHECK HEATER RESISTANCE

UNPLUG UNIT

REPLACE HEATER

HEATER OK

ERROR MESSAGE
TROUBLESHOOTING FLOWCHART

1. Replace thermocouple or open connection
   - OK
   - YES → Cartridge heater
   - NO → Replace cartridge heater

2. Unplug unit
   - Check faucet resistance heater
   - NO → Replace cartridge heater
   - YES → Increase temperature

3. Increase temperature
   - NO → Replace control
   - YES → Does load indicator stay on?

4. Does load indicator stay on?
   - NO → Replace control
   - YES → Triac indicator light

5. Triac indicator light
   - OFF → Check triac output
   - ON → Does inside wall of pot get hot?

6. Does inside wall of pot get hot?
   - NO → Check triac output
   - YES → Unit is good adjust temperature
ELECTRICAL SCHEMATIC

208/240 VAC, 50/60Hz
**REPAIRS**

Call RPDinc if any problem occurs. All repairs must be arranged in advance by contacting RPDinc directly for a return merchandise authorization number (RMA).

If the unit needs to be returned contact RPDinc directly, and we will make arrangements and send you a carton for returning the unit to our factory. When the unit is received by RPDinc, if warranty doesn’t apply, an estimate of repairs will be made and you will be contacted.

**REPLACEMENT PARTS**

<table>
<thead>
<tr>
<th>Item #</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>878-015-52</td>
<td>Cover for 1.5 Gallon Dispenser</td>
</tr>
<tr>
<td>14-399</td>
<td>Cord, 9 ft. (3 m) 10 Amp Hospital Grade North Am. Set w/C13</td>
</tr>
<tr>
<td>14-157</td>
<td>Switch Toggle, Two Fuse, 10 A Rating</td>
</tr>
<tr>
<td>14-100-04</td>
<td>Fuse, 4 Amp Fast Acting 250 VAC, 5 x 20 mm (240 VAC Unit)</td>
</tr>
<tr>
<td>14-100-08</td>
<td>Fuse, 8 Amp Fast Acting 250 VAC, 5 x 20 mm (120 VAC Unit)</td>
</tr>
<tr>
<td>14-808</td>
<td>Relay, Triac, 250 VAC, 10 Amps</td>
</tr>
<tr>
<td>15-152</td>
<td>15 Watt, 120 VAC Cartridge Heater 1/4&quot; D x 1&quot; w/ 12&quot; Leads</td>
</tr>
<tr>
<td>15-156</td>
<td>20 Watt, 240 VAC Cartridge Heater, 3/8&quot; D x 1.5” w/ 12” Leads.</td>
</tr>
<tr>
<td>15-165</td>
<td>Mica Band Heater 17&quot; x 4&quot; x 7&quot; Dia. 665 W, 120/240 VAC</td>
</tr>
<tr>
<td>878-060-99</td>
<td>Temperature Control - Watlow EZ-ZONE</td>
</tr>
<tr>
<td>878-060-12</td>
<td>Thermocouple Type&quot;J&quot; Patch Assembly</td>
</tr>
<tr>
<td>878-109-111</td>
<td>Valve, Steel, with Pipe Thread for 120 VAC and 158/203°F Alloy, 1/4&quot; Dia. with 15 Watt Heater and Set Screw</td>
</tr>
<tr>
<td>878-109-114</td>
<td>Valve, Steel with Pipe Thread, for 240 VAC and 158°/203°F Alloy, with 20 Watt Heater and Set Screw</td>
</tr>
</tbody>
</table>
# ACCESSORIES

<table>
<thead>
<tr>
<th>Item #</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>123-010</td>
<td>Masking Tape - 3M 1” x 60 yards</td>
</tr>
<tr>
<td>869-100</td>
<td>Huestis Styro-Former®</td>
</tr>
<tr>
<td>869-180</td>
<td>Alignment System For Huestis Styro-Former®</td>
</tr>
<tr>
<td>869-900</td>
<td>Electron Block Foam Cutter, 110 VAC</td>
</tr>
<tr>
<td>869-902</td>
<td>Electron Block Foam Cutter, 220/240 VAC</td>
</tr>
<tr>
<td>870-708 to 874-811</td>
<td>Styrofoam Blocks</td>
</tr>
<tr>
<td>875-026</td>
<td>Nic-Chrome Cutting Wire (26 Ga) for Styro-Foamer®</td>
</tr>
<tr>
<td>875-100</td>
<td>Solder Gun (220/260 Watts) used to fill voids in alloy blocks</td>
</tr>
<tr>
<td>875-200</td>
<td>Soldering Iron with Chisel Tip (175 Watts)</td>
</tr>
<tr>
<td>875-240</td>
<td>Stand for Soldering Iron</td>
</tr>
<tr>
<td>875-250</td>
<td>Emergency Alloy Melter</td>
</tr>
<tr>
<td>876-125</td>
<td>Silicone Spray, Stoner Brand, 12 oz</td>
</tr>
<tr>
<td>876-400</td>
<td>D-Lead Hand Soap w/ Hand Pump, 8 oz</td>
</tr>
<tr>
<td>876-402</td>
<td>D-Lead Hand Soap Refill, 32 oz</td>
</tr>
<tr>
<td>876-405</td>
<td>D-Lead® All Purpose Cleaner Concentrate, 32 oz Bottle</td>
</tr>
<tr>
<td>877-115</td>
<td>Lead Vacuum-U.L.P.A. Filtered, 115 VAC, 60</td>
</tr>
<tr>
<td>877-900</td>
<td>Sticky Mats - 40/pkg</td>
</tr>
<tr>
<td>877-901</td>
<td>Sticky Mat Frame</td>
</tr>
<tr>
<td>878-153</td>
<td>PTFE-Coated Safety Thermometer -Spirit Filled</td>
</tr>
<tr>
<td>878-155</td>
<td>Thermometer, T-Handle, Waterproof, Drop-Proof</td>
</tr>
<tr>
<td>878-156</td>
<td>Faucet Cleaning Brush, 1/4&quot; to 3/8&quot; Dia.</td>
</tr>
<tr>
<td>878-158</td>
<td>Optional Drain Tube, 18&quot; Long (45.88 cm)</td>
</tr>
<tr>
<td>878-160</td>
<td>Scotch Brite Cleaning Pads, 3” x 4 1/2”, used to clean inside of dispenser</td>
</tr>
<tr>
<td>878-163</td>
<td>Wire Strainer for Alloy, 5&quot; diameter</td>
</tr>
<tr>
<td>878-164</td>
<td>Skimming Spoon, used to remove sludge from</td>
</tr>
</tbody>
</table>
top of alloy dispenser

878-165  Rasp, 10", used to file edges of alloy blocks
878-166  Block Grip Tool, used to lower alloy blocks into alloy dispenser
878-167  Rubber Mallet for removing Styrofoam from alloy
878-168  Utility Knife with Retractable Blade
878-169  14 oz. Stainless Steel Alloy Pourer
878-170  16oz Plastic Alloy Pourer
878-174  32oz Stainless Steel Alloy Pourer
878-178  Plastic Funnel
878-182  Aluminum Tray, used under alloy dispenser
878-186  Heat Gun 120VAC, 1440 Watts (300 - 500 °F)
878-186-2 Heat Gun 120VAC (500 – 750°F)
878-220  Cordless Driver Drill w/Torque Control
878-230  3/8" Electric Drill
878-240  5/16" Hex Head Driver Socket
878-256  S.S. Screw-Hex/Washer Head - #12 x 1" - 100/pkg
878-2565 S.S. Screw-Hex/Washer Head - #12 x 1 1/2" - 100/pkg
878-264  Nylon Washer for 1/4" dia. holes - 100/pkg
878-266  Nylon Washer for 3/8" dia. holes - 100/pkg
878-270  Aluminum Cooling Plate  1" x 12" x 24"
878-271  Water Cooled Aluminum Plate  1"x12"x24"
878-273  Styrofoam Block Compressor for Maximum 12 3/4" Square Styrofoam Blocks
878-274  Styrofoam Lead Weight w/Handle, 16 lbs.
878-287  Leather Glove, Unlined - Large
878-288  Leather Glove, Unlined - X-Large
878-290  Leather Apron
878-292  Leather Gloves- Lined, heavy duty
878-294  Safety Goggles
878-296  3M Dust/Mist Respirator Mask
878-335  Head Gear with Face Shield
878-336  Head Gear
878-337  Face Shield
878-665  T-Handle Nut Driver 5/16"
878-730  Needle Nose Pliers - 4 1/2" with Cutter
878-745  62 Piece Tool Set with Tool Box
878-757  Hex Key Set, Long Arm - 13 pc, Standard (Inch)
878-758  Hex Key Set, Long Arm - 9 pc, Metric
878-930  Nut Driver, 5/16", Cushion Grip
879-158  Low Melting Alloy, 158°F
879-159  Refurbished Low Melting Alloy, 158°F
879-202  High Melting Alloy, 203°F
880-340 to  Block Storage Cabinets
880-975
880-989 to  Block Transport Carts
880-9897

End of Document