Expect Service

Radiation Products Design Inc

INSTRUCTIONS

RPD INFORMATION

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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	**Digital Alloy Melting Dispensers**
878-021	1.5 Gal. 158°/203°F, 120 VAC, 4.3 Amps 15 Amp Receptacle Required Fuse: 10 Amp, 250 VAC, Fast
878-023	1.5 Gal. 158°/203°F, 220/240 VAC, 2.2 Amps 15 Amp Receptacle Required Fuse: 5 Amp, 250 VAC, Fast
878-036	3 Gal. 158°/203°F, 120 VAC, 6.6 Amps 15 Amp Receptacle Required Fuse: 10 Amp, 250 VAC, Fast
878-038	3 Gal. 158°/203°F, 220/240 VAC, 3.4 Amps 15 Amp Receptacle Required Fuse: 5 Amp, 250 VAC, Fast

International Orders Must Specify Voltage
All plugs on units are country specific
All units are single phase, 50/60 Hz

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 double grounded to the inside container and outside shell and then connected to a hospital grade three prong cord.

The units are tested as follow:

- The resistances of the heating element and faucet heater are verified and values are recorded.
- Temperature controls are adjusted approximately to temperature setting.
- 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 uA.

This product is not ISO certified or UL listed.

INTRODUCTION

The Digital Alloy Melting Dispensers have a 1.5 or 3.0 Gallon tank to accommodate 120 or 220 pounds (55 or 100 kg) Alloy in the insulated stainless steel tank. This easy to clean round container has no hard to clean corners.

The rugged design makes it universally ideal for clinical use. It features polished stainless steel housing, a stainless steel cover and a side mounted, easy to view control panel.

The Digital Temperature Controller displays alloy temperature in red LED’s. The set temperature is read by pressing the “PUSH TO SET” key.

The Digital Temperature Controller can maintain temperatures between 50°F to 230°F (10°C to 110°C).

A wrap around heating element provides even temperatures throughout the entire unit.

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

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

standard. The units are constructed with a heated faucet for easy alloy removal.

All units need special plugs and receptacles depending on the country. The temperature displayed is set to Fahrenheit at the factory; however, this can be changed to Celsius by the end user. All units are single phase, 50/60 Hz.

FEATURES

- Alloy Temperature Stability ± 4°F
- Open Temperature Sensor, Unit Shuts Down Automatically
- Temperature Displayed in Fahrenheit or Celsius
- Control Panel is Removable by a Qualified Service Engineer
- Insulated so Exterior Stays Cool
- Easy to Clean Round Container – No Corners
- Stainless Steel Corrosion-Resistant Interior and Exterior

SPECIFICATIONS

Alloy Temperature Range: 50°F to 230°F (10°C to 110°C)

Temperature Accuracy: ± 4°F

High Limit Temperature: 230°F (110°C)

Electronic Switching: Triac with Zero Crossover Switching

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

Drain: Ball Valve with Hose Barb

Base: Aluminum

Environmental Conditions
Altitude Limits: 2000 Meters
Ambient Temperature Range: 0-40°C
Relative Humidity Range: 75%
Pollution Degree: 2

1.5 Gallon Alloy Melting Dispenser
Interior Dimension: 7.125" Dia. x 8.625" Deep (18 x 21.9 cm)
Exterior Dimension: 10.5" Dia. x 14.5" High (26.7 x 36.8 cm)
Weight: 18 lbs (8.2 kg)

3.0 Gallon Alloy Melting Dispenser
Interior Dimension: 9" Dia. x 10.875" Deep (22.9 x 27.6 cm)

Exterior Dimension: 15" Dia. x 17.5" High (38.1 x 44.5 cm)
Weight: 30 lbs (13.7 kg)

FOR INDOOR USE ONLY

Item	Gal	120 VAC 50/60 Hz	220/240 VAC 50/60 Hz	Watts	Amps	Facet Heater Watts	Alloy Capacity in Pounds
878-021	1.5	x		500	4.3	15	120
878-023	1.5		X	500	2.2	20	120
878-036	3.0	x		750	6.6	15	220
878-038	3.0		x	750	3.4	20	220

International Orders Must Specify Voltage

SAFETY INSTRUCTIONS

- Read all safety and operating instructions before operating the alloy dispenser.
- Place the unit on a secure counter or table.
- Power Source. Refer to Item Number and Description.
- 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.
- DO NOT position the equipment so that it is difficult to operate the power switch.
- 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.
- If this equipment is used in a manner NOT specified by the manufacture, the protection provided by the equipment may be impaired.
- Always wear safety glasses with side shields.
- Avoid breathing alloy dust - use dust mask.

- Vent area to outside of building for Styrofoam cutting.
- Wash hands before eating.
- Alloy pots are very heavy, be sure table will handle weight.
- Wear leather apron, jeans, leather shoes and gloves for protection against hot alloy.

SAFETY SYMBOLS

WARNING Hot Faucet

WARNING DO NOT OPERATE WITHOUT THIS COVER ON

Ground

OPERATIONS INSTRUCTIONS

- Read all safety and operating instructions before operating the unit.
- Always wear safety glasses with side shields.
- Place the unit on a secure counter or table.
- Make sure the ball valve is in a closed position before filling with alloy.
- Fill alloy pot with alloy.
- Always replace stainless steel cover to retain heat. This prevents surface alloy from becoming stiff (not at flowing consistency).
- Place alloy blocks gently into melting dispenser to prevent splashing alloy out.
- Stir alloy before pouring – this will prevent alloy from crystallizing.
- Use slotted spoon to remove masking tape, Styrofoam pieces and depleted alloy.
- Wash hands before eating.

Plug the unit into a properly grounded outlet having a ground fault circuit interrupter either in the receptacle or somewhere in the immediate power line.

Turn alloy dispenser Power Switch On.

TEMPERATURE ADJUSTMENT

Turn alloy dispenser Power Switch On:

- Press and hold **"PUSH TO SET"** key in while pressing "Up Arrow Key" to increase the set point or "Down Arrow Key" to decrease the set point. Release the **"PUSH TO SET"** key and temperature is set.
- Press **"PUSH TO SET"** key and the red LED Display indicates set point temperature.
- The normal red LED display is alloy temperature.

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.

FAHRENHEIT OR CELSIUS

To change, hold down both the "Up Arrow Key" and the "Down Arrow Key" for ten seconds. After five seconds CAL will appear and in five seconds more the display will show F or C for two seconds. Adjust the units with the "Up Arrow Key" or "Down Arrow Key". The new value will take effect three seconds after the last key stroke. The display will blink, and then return to the primary display after five seconds. The set point value, process value and offset will automatically adjust to the new temperature scale.

The "CAL" calibration offset is set to +1.

CLEANING ALLOY DISPENSER

- Turn Unit OFF and Unplug Unit From Receptacle.
- To remove hot alloy, drain alloy into small pans and allow it to cool.
- Remove alloy once a month and clean inside of container with Scotch-Brite Cleaning Pads Item 878-160, to remove scale.
- Keep alloy and dispenser clean at all times.
- **DO NOT** immerse dispenser in water.
- **DO NOT** use a metal scouring pad as it is too abrasive and

will leave carbon metal deposits on the stainless steel which will rust.

- **DO NOT** use bleach or iodine based products to clean with as such products can quickly corrode the stainless steel resulting in pin holes and leaking alloy.

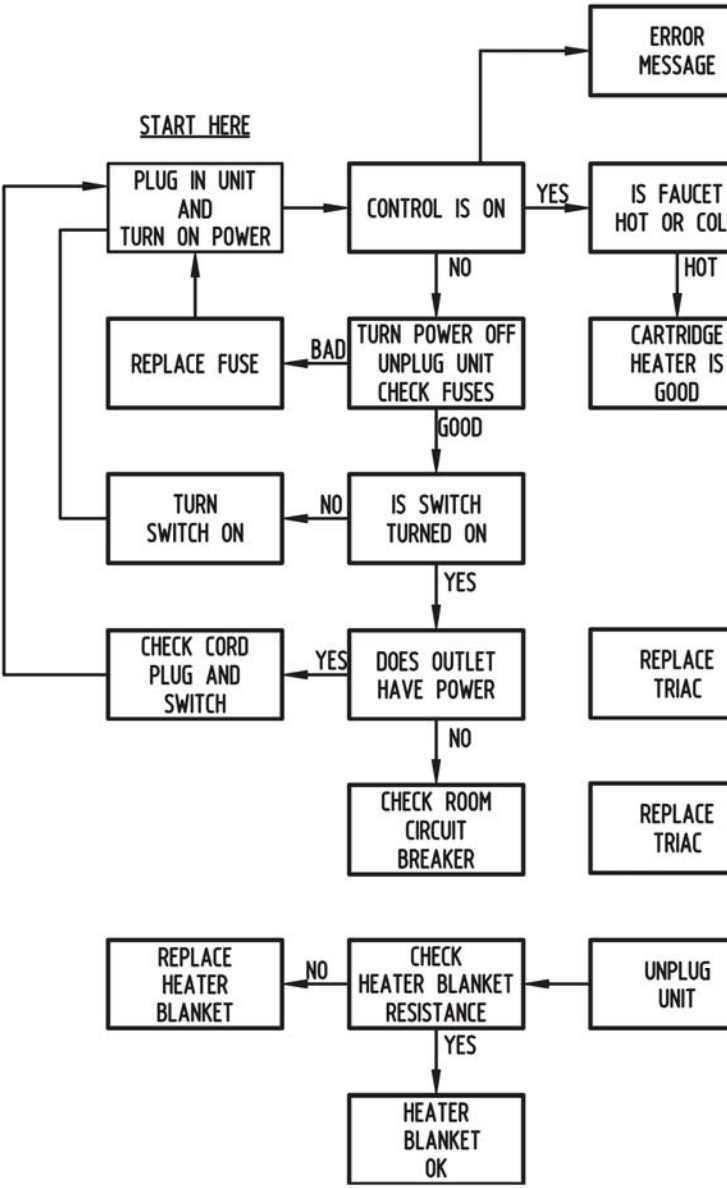
QUALIFIED SERVICE PERSONNEL/BIOMEDICAL ENGINEER CAN SERVICE

Turn the power switch off and unplug the Alloy Dispenser before starting. The control box houses the temperature controller and the triac switch for the heater element power. To remove the control box, remove two Philips screws located on the sides.

The base can be removed by turning the unit upside down and removing two hex nuts. This will allow accesses to heaters, indicators, switch, fuse holders and power cord.

If the unit has alloy in it that can not be melted and removed, use the emergency alloy melter (Item 875-250) to melt the alloy for removal. This will lighten the unit so it can be turned over.

TROUBLESHOOTING FLOWCHART



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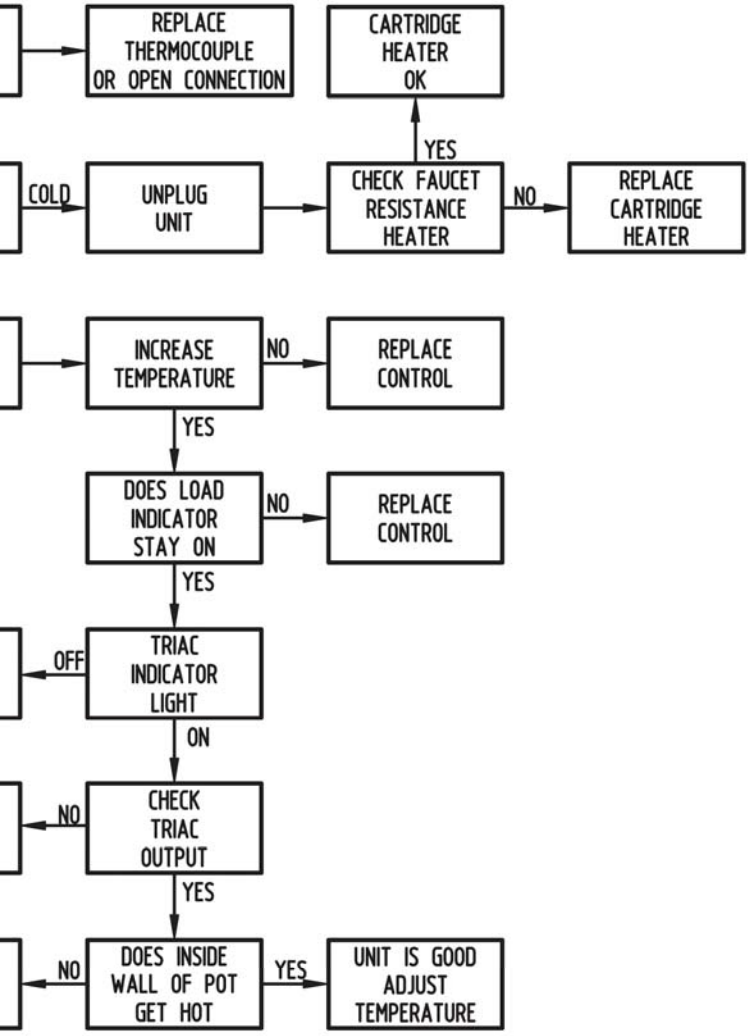
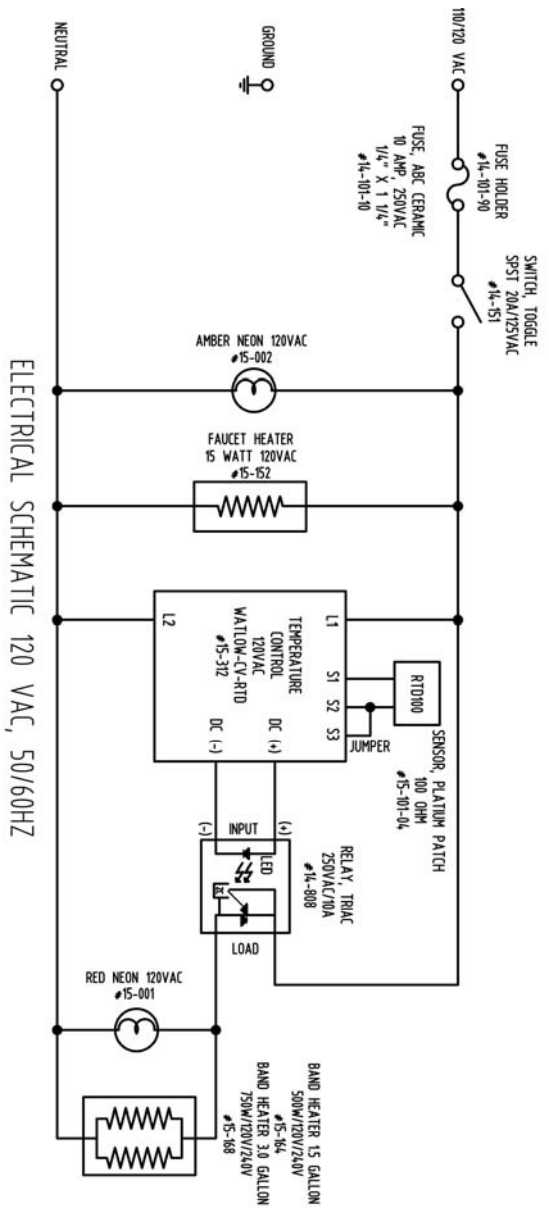
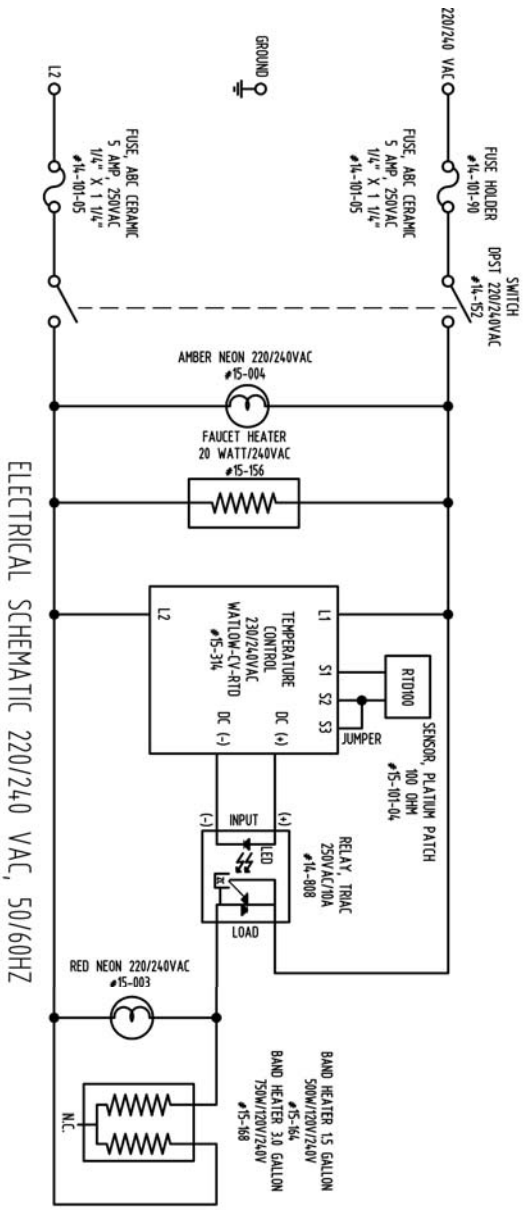


ELECTRICAL SCHEMATIC



ELECTRICAL SCHEMATIC



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 entire 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

Item #	Description
878-015-52	Cover – 1.5 Gallon
878-030-51	Cover – 3.0 Gallon
15-312	Controls,Temperature,120VAC, RTD-100, Switch DC Output
15-314	Controls,Temperature230/240VAC, RTD-100, Switch DC Out
14-101-90	Fuse Holder
14-101-10	Fuse, 10 Amp 250V, ABC, Fast, Ceramic Body 1/4" x 1 1/4"
14-101-05	Fuse, 5 Amp 250V, ABC Fast, Ceramic Body 1/4" x 1 1/4"
14-151	Switch, Toggle, SPST 20A/125V w/1/4" Male Tab
14-152	Switch, DPST, 220/240 VAC
15-002	Indicator Light, Amber Neon 120 VAC
15-004	Indicator Light, Amber Neon 220/240 VAC
15-001	Indicator Light, Red Neon 120 VAC
15-003	Indicator Light, Red Neon 220/240 VAC
15-101-04	Platinum Patch Sensor 100 ohm
15-152	15 Watt, 120 Volt Cartridge Heater, For 158°F/203°F Alloy
15-156	20 Watt, 240 Volt Cartridge Heater 3/8" Dia. For 158°F/203°F Alloy

15-164	Band Heater 17" x 4" x 7" Dia. 500 W, 120/240 VAC
15-168	Band Heater 23" x 6" x 9" Dia. 750 Watt, 120/240 VAC
878-109-111	Valve, Steel, with Pipe Thread for 120 VAC and 158/203°F Alloy, 1/4" Dia. with 15 Watt Heater and Set Screw
878-109-114	Valve, Steel with Pipe Thread, for 240 VAC and 158°/203°F Alloy, with 20 Watt Heater and Set Screw
14-808	Relay, Triac, 250 VAC, 10 Amps

ACCESSORIES

Item #	**Description**
123-010	Masking Tape - 3M 1” x 60 yards
869-100	Huestis Styro-Former®
869-180	Alignment System For Huestis Styro-Former®
869-900	Electron Block Foam Cutter, 110 VAC
869-902	Electron Block Foam Cutter, 220/240 VAC
870-708 to 874-811	Styrofoam Blocks
875-026	Nic-Chrome Cutting Wire (26 Ga) for Styro-Foamer®
875-100	Solder Gun (220/260 Watts) used to fill voids in alloy blocks
875-100	Soldering Gun (260/200 Watts)
875-200	Soldering Iron with Chisel Tip (175 Watts)
875-240	Stand for Soldering Iron
875-250	Emergency Alloy Melter
876-125	Silicone Spray, Stoner Brand, 12 oz
876-400	D-Lead Hand Soap w/ Hand Pump, 8 oz
876-402	D-Lead Hand Soap Refill, 32 oz
876-405	D-Lead® All Purpose Cleaner Concentrate, 32 oz Bottle

877-115	Lead Vacuum-U.L.P.A. Filtered, 115 VAC, 60
877-900	Sticky Mats - 40/pkg
877-901	Sticky Mat Frame
878-153	PTFE-Coated Safety Thermometer -Spirit Filled
878-155	Thermometer, T-Handle, Waterproof, Drop-Proof
878-156	Tube Cleaning Brush, 3/8” diameter
878-157	Faucet Cleaning Brush, 1” diameter
878-160	Scotch Brite Cleaning Pads, 3” x 4 1/2”, used to clean inside of dispenser
878-163	Wire Strainer for Alloy, 5” diameter
878-164	Skimming Spoon, used to remove sludge from 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 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 880-975	Block Storage Cabinets
880-989 to 880-9897	Block Transport Carts

End of Document