Troubleshooting Procedures
To save time and money, check the troubleshooting procedures before you call for service. CAUTION: Only trained technicians should perform service repairs on your machine.

<table>
<thead>
<tr>
<th>Problem</th>
<th>Remedy</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Machine Does Not Operate</strong></td>
<td>No power—check circuit breaker or fuse. Check that the unit is plugged in properly. Check main power fuse (22). Change fuse if necessary with a 250V/1-amp fuse.</td>
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<tr>
<td><strong>Wax Does Not Melt</strong></td>
<td>Check wax pot heater fuse (24). Change fuse if necessary with a 250V/10-amp fuse. Check wax pot temperature control. Setting should be 70°C (158°F) for most waxes.</td>
</tr>
<tr>
<td><strong>Nozzle Does Not Heat</strong></td>
<td>Check nozzle heater fuse (25). Change fuse if necessary with a 250V/3-amp fuse. Check nozzle temperature control. Setting should be 70°C (158°F) for most waxes.</td>
</tr>
<tr>
<td><strong>Vacuum Pump Does Not Operate</strong></td>
<td>Check vacuum pump fuse (23). Replace with a 250V/10-amp fuse.</td>
</tr>
<tr>
<td><strong>Unit Has No Vacuum</strong></td>
<td>Check that vacuum release valve (5) is shut. Check vacuum chamber O-ring for proper seal. Check vacuum hose connection for tightness. Check for wax in vacuum chamber.</td>
</tr>
<tr>
<td><strong>Unit Has Vacuum Only (No Wax Injection)</strong></td>
<td>• Check injection time setting (13); reset to proper time.</td>
</tr>
<tr>
<td></td>
<td>• Check auto/manual switch (16); place it in auto position.</td>
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<td></td>
<td>• Check the wax in the wax pot. If not melted, raise the temperature slightly. Allow proper time for wax to melt. Refer to “Nozzle does not heat,” above.</td>
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<td></td>
<td>• Check the wax pot pressure. Adjust the control valve (2) to the proper setting.</td>
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<tr>
<td></td>
<td>• Wax injection nozzle may be clogged; raise the wax pot temperature setting to 85°C (185°F) and increase wax pot pressure to 20–25psi. Place the auto/manual switch to manual. Depress the foot switch and hold it down. When the present vacuum cycle is completed, the injection cycle will begin and continue as long as the foot switch is depressed. Carefully eject wax into a large container such as a small pail or rubber mixing bowl. Once wax begins to flow freely, reset for normal operation.</td>
</tr>
<tr>
<td><strong>Nozzle Constantly Leaks Wax</strong></td>
<td>Raise nozzle temperature then step on foot switch several times. Cycling several times will frequently free the mechanism from unmelted wax or dust. CAUTION: Don't activate foot switch unit until all wax is melted.</td>
</tr>
<tr>
<td><strong>Nozzle Constantly Has Vacuum</strong></td>
<td>This can result for the same reason as in the problem listed above; the same remedy is recommended.</td>
</tr>
</tbody>
</table>
Set-Up and Operating Instructions

Please Note: Compressed air supply and vacuum source are sold separately. We recommend using #700-364 vacuum pump.

Set-Up Procedures

1. Select a bench or table and a chair of comfortable height for the person who will be operating the unit.
2. Set the unit on a bench or table. It is not necessary that the unit be screwed or bolted.
3. Connect the Foot Control Switch (29) to the unit at the socket provided (10).
4. Check the wax pot drain valve (7) to be sure it is closed (the handle should be parallel to unit).
5. Remove wax pot lid (19) by releasing both nuts (3) and turning lid counterclockwise, one-quarter turn.
6. Check the pot and remove any dust or loose wax that might be present. Please Note: Some wax residue may remain in the pot since all units are thoroughly tested before shipping.
7. Connect the air hose to the barb on the air control gauge (1).
8. Connect the hose to the vacuum chamber gauge barb (17). Please Note: A vacuum seal is very important; if necessary, add a hose clamp.
9. Connect other ends of air and vacuum hose to the compressed air supply and vacuum source. Do not introduce air pressure or vacuum at this time.
10. Check the wing nuts (28) on the vacuum chamber. They should be securely tightened.

11. With the wax pot lid removed, add wax to the pot.
12. Plug the line cord (20) into an electrical outlet.
13. Turn the main power switch (8) on.
14. Check power indicator light (26); it should be glowing.
15. Set the wax pot temperature control (11) to 155–160°F and allow time for the wax to become liquid. This may require 3–5 hours. Add additional wax until pot is 7/8–3/4 full. Please Note: Pre-melted wax will speed this operation considerably.
16. Once the wax is liquid, replace the wax pot lid (19) and tighten the nuts (3).
17. Set the nozzle temperature control (12) to 155°F. Allow 15 minutes for the nozzle to reach temperature.
18. See separate instructions (following) for the air pressure control valve. Introduce air pressure and turn the control valve (2) to set indicator gauge (4) at 10psi. Excess air pressure may be relieved by pulling the ring on the safety valve (6). Please Note: If a central air supply is used, be certain a cut-off is available on the line for this unit. Also, the line should be well trapped for water which can be troublesome to wax patterns.
19. If you are using a dedicated vacuum pump for this unit, the line cord for it must be inserted into the receptacle (21), and the control switch (9) turned on. (If you are using a central vacuum source, the vacuum gauge should indicate that vacuum is being achieved.)
20. Be certain the auto/manual control switch (16) is in the auto position.
21. Set the injection time control switch (13) to 2 seconds; set the vacuum time control switch (14) to 2 seconds.
22. While holding a small can or box in front of the injection nozzle, press on the foot control (29). Please Note: Remove your foot immediately. The vacuum cycle should be activated for 2 seconds; then the wax injection cycle will force wax from nozzle for 2 seconds.
23. If cycling occurs as above, the unit is ready for operation.
24. CAUTION: Always release vacuum by loosening the release valve (5) before turning the vacuum pump off. Otherwise, wax will be sucked into the vacuum chamber (27). Even if this does not happen, wax will accumulate inside the chamber; a collection unit is provided for this purpose. Periodic cleaning is necessary to ensure proper functioning of vacuum system. To clean, loosen the nuts (28) and remove the lid. Lift the collection unit out of the chamber and remove the wax from unit and chamber. When replacing the collection unit, be sure to align the arrows on the unit and lids of vacuum chamber.
25. The auto/manual switch (16) allows you to extend the injection time beyond what the timer will allow. When set on manual, step on the foot switch and hold through the preset vacuum cycle. The injection cycle will then operate and last as long as the foot switch is depressed.

26. For the ultimate in high quality and high production from your vacuum wax injector, use it in conjunction with the Rio Grande Auto Clamp #700-902. This automatic mold clamp virtually eliminates rejects, gives consistent pattern weights and requires less operator training. Full interconnection instructions are provided with the auto clamp.

Useful Information
• Different waxes inject at different temperatures and the correct injection temperature depends on the wax being used and the mold.
• Temperature of wax in the tank and nozzle are important and must be adjusted by the operator. The same is true of the vacuum time and injection time. The type of wax being used, the size and complexity for the mold and room temperature all affect these settings.
• Keep molds clean and free of hardened wax at all times.
• Lubricate the mold with very light application of mold release compound as required.
• Air pressure requirements vary depending on size and complexity of the mold. Such information should be written on the outside of each mold.
• From time to time, tank should be drained and cleaned. Old contaminated wax should be discarded and replaced. Do not re-use dirty or contaminated wax because this could cause nozzle stoppage and poor fidelity in the pattern.
• To add new wax, turn wax pot temperature control up to 85°C (185°F) for one hour, then return to original setting. Allow one hour for wax to return to normal temperature.
• Many operators find that it is desirable to have the nozzle temperature set 3–5°F higher than the wax pot temperature.

• Be certain the vacuum release valve (5) is open before you shut off vacuum pump.
• In case of a malfunction, check power inlet and all fuses. Do not attempt repairs; call your dealer.
• Keep a minimum of 8” of open space at the back and all sides of unit.
• Clean the cooling fan intake for the electronic circuitry at least once every two (2) weeks.
• If not will not be used within 24 hours, turn it off completely.
• Do not depress the foot control switch before the nozzle and pot have been heated. Since units are factory-tested, some wax residue remains in the nozzle and the mechanism must be freed before operating.

Regulator Instructions

Installation
1. Install as close as possible to the air equipment.
2. Install in the direction of the arrow mark.
3. The pressure gauge is set both to the front or the back side of the regulator. Use the included plug for the non-use side.

Pressure Adjustment
1. Turning the pressure control knob clockwise will increase air-line pressure.
2. Keep the regulator in operation and set the required pressure.
3. Push and lock the knob after the pressure set-up.

Caution
1. Temperature and operating air pressure should not exceed the limits as shown on the label.
2. Do not turn the handle forcibly. To adjust pressure, pull knob out, then turn. To lock knob, push in.

Warnings
• Electrical plug must be properly grounded at electrical outlet. Otherwise, warranties are void.
• Do not remove cover lid with air pressure in the tank.
• Do not allow the wax level to get below 1 kg (2 lbs.) because this could cause air bubbles in wax patterns.
• Do not use bottled oxygen to supply air pressure.
• Hot wax can cause painful burns. Use good judgment at all times.
Wax Injector Components
1. Compressed air inlet barb
2. Air pressure control valve
3. Cover lid hold-down nuts (2)
4. Air pressure indicator gauge
5. Vacuum release valve
6. Safety and pressure release valve
7. Drain cock
8. Main power switch
9. Vacuum pump switch
10. Foot switch socket
11. Wax pot temperature control knob
12. Nozzle temperature control knob
13. Injection time control knob
14. Vacuum time control knob
15. Wax injection nozzle
16. Auto & manual injection toggle switch
17. Vacuum air outlet barb
18. Vacuum indicator gauge
19. Wax pot cover lid
20. Main power line cord
21. Vacuum pump power source socket
22. Main power fuse (1 amp)
23. Vacuum pump fuse (120V/10 amps, 240V/5 amps)
24. Wax pot heater fuse (120V/10 amps, 240V/5 amps)
25. Nozzle heater fuse (120V/3 amps, 240V/2 amps)
26. Power on indicator light
27. Vacuum chamber
28. Vacuum chamber lid nuts
29. Foot control switch
30. Connector for Auto Clamp

Specifications
Power .................. 120V AC/10 amps or 240V AC/5 amps
Wax Capacity ..................... .6 lbs (2.7 Kg)
Overall Dimensions ............ .21½” W x 15” D x 17½” H
                                  (55 cm x 38 cm x 45 cm)
Air Pressure ................... .30psi maximum; not supplied
Vacuum ......................... .27Hg or higher; not supplied
Shipping Weight .................. .61 lbs. (28 Kg)