Universal Pump

INSTALLATION INSTRUCTIONS
It is the installer’s responsibility to read, understand, and comply with these instructions.
A Guide to Your Universal Pump

Available in ¾ hp/115V, 1¼ hp/115V, 1¼ hp/230V, and 2.0 hp/230V models, construction consists of 304 stainless steel housings, dual mechanical seals, thermal protection, stainless steel diffuser and impellers, external starting capacitor and a 45 foot power cord. The pump is particularly quiet and durable from its solid construction. The water end is installed under the motor which keeps the motor cooled with the pumped water. The stainless steel impellers and diffusers offer high abrasion resistance while the Italian double mechanical seals ensure long life and enhanced reliability. The oil chamber is filled with non-toxic cooling oil. Ball bearings are self-lubricating and internal cast iron components are electro-coated with polybutadiene varnish to prevent corrosion which is sometimes associated with the typical lower pH of rainwater. Installation may be oriented either vertical or horizontal so long as water is available at the intake to prevent a run-dry condition.

**PERFORMANCE SPECIFICATIONS**

<table>
<thead>
<tr>
<th></th>
<th>RF075-115V</th>
<th>RF125-115V</th>
<th>RF125-230V</th>
<th>RF200-230V</th>
</tr>
</thead>
<tbody>
<tr>
<td>Horsepower</td>
<td>¾</td>
<td>1¼</td>
<td>2.0</td>
<td></td>
</tr>
<tr>
<td>Nominal voltage</td>
<td>115V, 60Hz, 8.6A max.</td>
<td>115V, 60Hz, 14A max.</td>
<td>230V, 60Hz, 9A max.</td>
<td>230V, 60Hz, 9A max.</td>
</tr>
<tr>
<td>P1kW</td>
<td>1.0</td>
<td>1.24</td>
<td>2.3</td>
<td></td>
</tr>
<tr>
<td>P2kW</td>
<td>0.6</td>
<td>0.95</td>
<td>1.6</td>
<td></td>
</tr>
<tr>
<td>Impeller stages</td>
<td>2</td>
<td>3</td>
<td>5</td>
<td></td>
</tr>
<tr>
<td>Maximum flow</td>
<td>29 GPM</td>
<td>34 GPM</td>
<td>36 GPM</td>
<td></td>
</tr>
<tr>
<td>GPM at 50 PSI (0 Head)</td>
<td>See curve</td>
<td>17 GPM</td>
<td>29 GPM</td>
<td></td>
</tr>
<tr>
<td>GPM at 40 PSI (0 Head)</td>
<td>8 GPM</td>
<td>22 GPM</td>
<td>31 GPM</td>
<td></td>
</tr>
<tr>
<td>Maximum head</td>
<td>105’ TDH</td>
<td>180’ TDH</td>
<td>310’ TDH</td>
<td></td>
</tr>
<tr>
<td></td>
<td>RF075-115V</td>
<td>RF125-115V</td>
<td>RF125-230V</td>
<td>RF200-230V</td>
</tr>
<tr>
<td>------------------------</td>
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</tr>
<tr>
<td><strong>System pressure</strong></td>
<td>up to 46 PSI</td>
<td>up to 78 PSI</td>
<td>up to 135 PSI</td>
<td></td>
</tr>
<tr>
<td><strong>Inlet/outlet size</strong></td>
<td>1¼” FPT</td>
<td>1¼” FPT</td>
<td>1¼” FPT</td>
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</tr>
<tr>
<td><strong>Weight</strong></td>
<td>36 lbs.</td>
<td>41 lbs.</td>
<td>46 lbs.</td>
<td></td>
</tr>
<tr>
<td><strong>Dimensions</strong></td>
<td>7” x 7” x 20” (incl. base)</td>
<td>7” x 7” x 22” (incl. base)</td>
<td>7” x 7” x 24” (incl. base)</td>
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<tr>
<td><strong>Thermal protection</strong></td>
<td>yes</td>
<td></td>
<td></td>
<td></td>
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<tr>
<td><strong>Motor</strong></td>
<td>2-pole induction, continuous duty</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>RPM</strong></td>
<td>3450</td>
<td>3450</td>
<td>3450</td>
<td></td>
</tr>
<tr>
<td><strong>Cooling</strong></td>
<td>Water cooled/intake</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Insulation class</strong></td>
<td>F</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Protection</strong></td>
<td>IP68</td>
<td></td>
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<td></td>
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<tr>
<td><strong>Certifications</strong></td>
<td>CE</td>
<td></td>
<td></td>
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<tr>
<td><strong>Warranty</strong></td>
<td>1 year</td>
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</tbody>
</table>

**INSTALLATION**

**Mounting Location**
The pump may be mounted vertically or horizontally and may be fully or partially submersed or mounted externally on the ground or other sturdy platform. When mounted externally, the pump must be safely and securely mounted in a manner which prevents exposure to electrical connections and in a location which prevents damage and exposure to freezing temperatures.

**Environmental Considerations**
If the pump may be exposed to freezing temperatures, the pump must be fully drained and protected with a food-grade antifreeze. The pump start box offers water resistance but should be mounted in a location away from direct exposure to rain, humidity, snow, excessive heat and direct sunlight.
**Pump to Start Box Wiring**

All electrical connections should be made by a licensed professional. The pump ships pre-wired to the pump start box as shown below. Excess wire between the pump and pump start box can be removed so long as the wires are re-connected properly.

**115V Pump Start Box Wiring**

**230V Pump Start Box Wiring**

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**Pump Start Box to Pump Controller Wiring**

The pump start box serves as housing for the start capacitor and on/off control for maintenance and is not intended for regular pump starting and stopping operation. For regular pump control and run-dry protection, an intelligent pump control such as the RainFlo Pump Control or a pressure switch assembly should be used. The pump controller is wired between the main electrical power source and the GND/N/L(115V) or GND/L1/ L2(230V) terminals inside the pump start box. Follow the wiring instructions for your particular pump control device. When wiring is complete, the plastic watertight fittings on each end of the pump start box should be hand-tightened and the cover re-secured. Do not over-tighten the fittings or they can possibly break.
**SCHEMATIC DIAGRAMS**

**RainFlo ¾ HP Pump 115V and Controller Detail**

*Note: RainFlo Pump Control should be mounted in upright position with arrows pointed up and mounted in a dry location.*

Output to Pressure Tank and Filtration, etc.

Power Connection Between Pump Control and Pump Start Box Supplied by User. (See Figure A for Connections)

**115v 15amp Power Supply**

**Note: Power supply wire should be up sized to allow for line loss/ voltage drop in long runs**

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Figure A
Terminal Strip in Pump Start Box and Power Supply Connections from Pump Control (By User)
RainFlo 1¼ HP Pump 115V and Controller Detail

*Note: RainFlo Pump Control should be mounted in upright position with arrows pointed up and mounted in a dry location.

*RainFlo Pump Controller, Provides Automatic Operation and Run Dry Protection. (See Figure B for Connections)

- Air Filled Ball
- Extractor Screen (1200 micron)
- Stainless Steel Hose Clamp
- 1-1¼” Schedule 40 PVC Pump Discharge
- Check Valve (Optional Installed by User)
- PVC Threaded-Adapters Typical

1-1¼” Suction Line Length Sized for Tank

Stainless Steel Hose Clamp
- 1-1¼” Poly Hose Barb
- 1-1¼” Threaded Pump Intake

Pump and Controller Detail

Output to Pressure Tank and filtration, etc.

Power Connection Between Pump Control and Pump Start Box Supplied by User. (See Figure A for Connections)

- Pump On Off Switch
- Pump Circuit Breaker
- Pump Start Connection Box, Usually Mounted to Wall or Other Location Near Pump Control

**115v 15amp Power Supply

**Note: Power supply wire should be up sized to allow for line loss/voltage drop in long runs

RainFlo Pump 25 HP Universal Pump RF-125S
Performance Range: Flow up to 34 GPM and Head up to 180 ft..

Figure A
Terminal Strip in Pump Start Box and Power Supply Connections from Pump Control (By User)
RainFlo 1¼ HP Pump 230V and Controller Detail

"Note: RainFlo Pump Control should be mounted in upright position with arrows pointed up and mounted in a dry location.

*RainFlo Pump Controller. Provides Automatic Operation and Run Dry Protection. (See Figure B for Connections)

Air Filled Ball

Extractor Screen (1200 micron)

Stainless Steel Hose Clamp

1-1/4" Schedule 40 PVC Pump Discharge

Check Valve (Optional Installed by User)

PVC Threaded Adapters Typical

1-1/4" Suction Line Length Sized for Tank

Stainless Steel Hose Clamp

1-1/4" Poly Hose Barb

1-1/4" Threaded Pump Intake

Pump and Controller Detail

Output to Pressure Tank and Filtration, etc.

Power Connection Between Pump Control and Pump Start Box Supplied by User. (See Figure A for Connections)

Pump On Off Switch

Pump Circuit Breaker

Pump Start Connection Box. Usually Mounted to Wall or Other Location Near Pump Control

**230v 15amp Power Supply

**Note: Power supply wire should be up sized to allow for line loss/voltage drop in long runs

Figure A
Terminal Strip in Pump Start Box and Power Supply Connections from Pump Control (By User)

RainFlo Pump 1.25 HP Universal Pump
RF-125S
Performance Range: Flow up to 34 GPM and Head up to 180 ft.
**Note:** RainFlo Pump Control should be mounted in upright position with arrows pointed up and mounted in a dry location.

*RainFlo Pump Controller, Provides Automatic Operation and Run Dry Protection. (See Figure B for Connections)*

- **Output to Pressure Tank and filtration, etc.**
- **Power Connection Between Pump Control and Pump Start Box Supplied by User. (See Figure A for Connections)**
- **Air Filled Ball**
- **Extractor Screen (1200 micron)**
- **Stainless Steel Hose Clamp**
- **Union**
- **Pump On Off Switch**
- **Pump Circuit Breaker**
- **Pump Start Connection Box, Usually Mounted to Wall or Other Location Near Pump Control**
- **230v 15amp Power Supply**

**Note:** Power supply wire should be up sized to allow for line loss/voltage drop in long runs.

- **1-1/4" Schedule 40 PVC Pump Discharge**
- **Check Valve (Optional Installed by User)**
- **PVC Threaded Adapters Typical**
- **1-1/4" Suction Line Length Sized for Tank**

**Figure A**
Terminal Strip in Pump Start Box and Power Supply Connections from Pump Control (By User)

- **RainFlo Pump 2 HP Universal Pump RF-200S**
- **Performance Range: Flow up to 36 GPM and Head up to 300 ft.**

**Pump and Controller Detail**