



Iwaki America Direct Drive Pump RD Series Instruction Bulletin

Please read this document before use of product

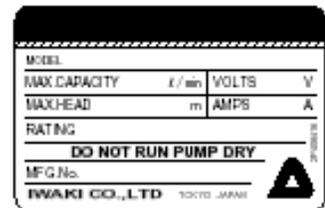
For a complete instruction manual on this series please visit our web site at;

<http://iwakiamerica.com/Literature/RD/RDmanual.pdf>

Unpacking and Inspection

After unpacking the product, check the following points.

- Does the model, flow and head indicated on the nameplate correspond with your order?
- Has the pump or any part of it been damaged as a result of accident or handling during shipment?



Installation, Piping and Wiring

Installation

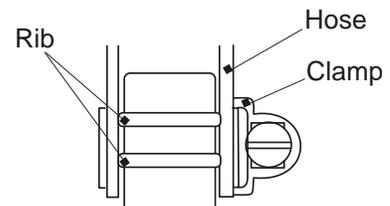
The base of the pump must be secured to mounting surface.

The pump should be installed in a position lower than the liquid level of the suction tank. Adequate liquid level should be maintained above pump suction to prevent vortexing or sucking in of air. If necessary, baffles should be used to prevent entrained air from entering pump.

Piping

To minimize friction loss, the shortest possible length of suction pipe with the minimum number of bends should be used.

Select a hose in accordance with the diameter of the pump port using hose clamps or similar device to secure hose to pump connections. **DO NOT OVER TIGHTEN.** A reliable connection is necessary to ensure leak free operation and prevention of air being drawn into pump. Attention should be paid in particular to selection of suction hose. The use of a braided hose is recommended.

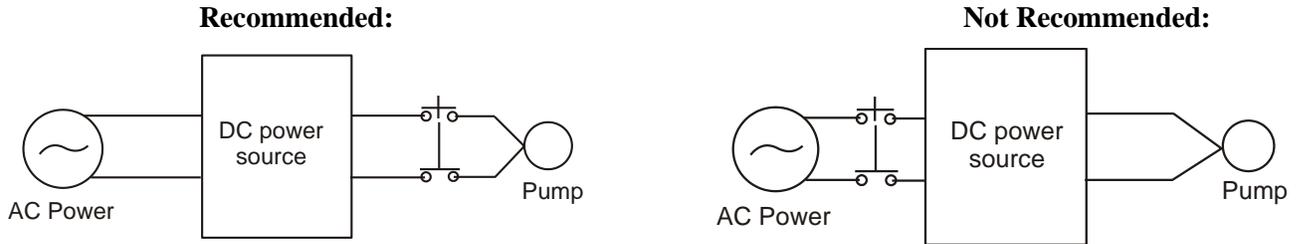


(In the case of higher temperature liquids, special attention must be paid to the selection of a hose to prevent the hose from collapsing and restricting flow to pump.)

Wiring

1. Before you start wiring, make sure the main power is switched off.
2. Use appropriate wiring materials and abide with all local and national standard for electrical codes.
3. Use specified voltage written on pump nameplate. Minimum starting voltage is 22 V. Usable voltage range is 13 – 26.4 V DC.
4. Pump does not have an ON/OFF switch. Pump will start when power is applied.
5. Note polarity on wiring (red is plus and black is minus). Note, the motor will not simply rotate in reverse direction if the polarity is reversed. **Reversing polarity will damage the motor.**

6. If pump is to be switched ON and OFF, the switch must be installed on the secondary side of DC power source (between power source and pump). If power is switched ON and OFF at the primary side of the DC power source, it is possible pump will not start. See diagram below:



7. Three (3) Wire Pumps

Red = 24 VDC

Black = GND * *Note*: Common for both the main power supply and speed control input

White = 0-5 VDC speed control

If two (2) power sources are not available, the white wire can be connected directly to 24 VDC to achieve full speed operation.

* *Note*: Must be less than 26.4 VDC or damage can occur.

Motor Specifications:

RD pumps use DC brushless motors that incorporate the following protective functions:

Locked impeller assembly - when the impeller is locked by debris coming into pump suction (or for any other reason) the motor circuitry detects this condition and will stop the pump.

Protection against high temperature. – the pump will stop when the motor temperature increases a result of an increase in the ambient temperature or from an increase in the liquid temperature.

In both cases, the power needs to be switched off, and after correcting reason for the unit stopping; the power can be switched back on to re-start the pump.

Current limiting circuit - driving circuitry is protected from starting current and excessive current. (RD-05 has no current limiting circuitry because of its small output. Pumps utilize a fuse in the driving circuit. The built-in fuse is equipped to minimize electrical noise and to avoid fire should the drive circuitry be damaged. The built-in fuse cannot be replaced. It is recommend that an external fuse be used in installation. Rated and starting currents are provided below for proper external fuse selection.

Rated current, starting current

Model	Rated current	Starting current
RD-05V24	0.4A	1.5A
RD-05HV24	1.6A	4.0A
RD-20V24	2.5A	8.0A
RD-30V24	3.2A	10.0A
RD-12	1.0A	3.2A
RD-12Z	1.0A	5.0A
RD-40	5.5A	10.0A
RD-40x	5.3A	10.0A