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Instruction Manual for

Ritchie® Fresh Water For Life™

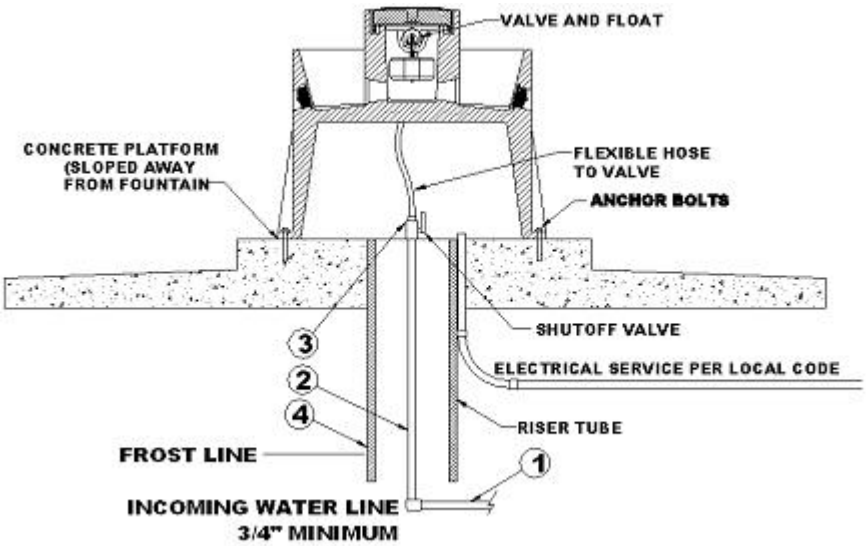
WaterMatic

Fountains

Models 100, 150 150S*, 300*, and 1000*

(For parts breakdown and trouble shooting please click here)

Watch our online installation video.



A. Location - Putting the fountain in a location that offers protection from the wind will enhance the performance of the unit. Livestock will tend to gather in a protected area, enticing them to drink more. If possible, the side that supply line enters the fountain should be opposite of prevailing wind for additional protection to the supply line.

B. Water Supply Line – The horizontal underground water line (#1) should be sized to account for pressure drop, relating to distance, at least 3/4" in diameter and 1' below normal frost depth. A 3/4" vertical supply pipe (#2) is recommended. A shut-off valve (#3) may be installed under the fountain for servicing. For optimum serviceability a stop and waste valve can be installed below frost level to drain water back when the unit is not in use. This can be obtained from your local plumber. **Flush water supply line before connecting to fountain.** Water supplies with material such as sand, rust, etc. may require a filter to keep valve working properly.

C. Riser Tube – Install a riser tube (#4) around pipe to provide room for plumbing and to accommodate optional shut-off valve. Ensure that the water supply line is centered in the riser tube. Do not add any insulation in the riser tube, as it provides a path for frost. For optimum water line protection, use the 12" outside diameter insulated Ritchie Thermal Tube. Use whatever combination of Thermal Tubes is required to reach at least 1' below frost line. **For the 100, 150, and 150S units, the riser tube must NOT extend above the concrete platform, see drawing to the right. Learn more about our thermal tubes.**

Top view of WaterMatic 100 shown with Riser Tube underneath

Ritchie Thermal Tubes
18158 1' top section
16417 2' top section
16612 4' top section
16416 2' extension

NOTE: *The supply line touching the riser tube is the most common cause of the supply line freezing. Do not surround the supply line with insulation, wood, or other foreign material. Any foreign material in the tube may cause frost to migrate to the supply line causing it to freeze. For a picture of the Ritchie Thermal Tubes, please visit our Hydrants/ Accessories page*

D. Electrical Connection – In many areas, supplemental heat is required, it is easiest to run the electrical line at the same time you lay the waterline for your fountain. **Any electrical service must be installed and maintained by a qualified electrician**.

E. Mounting Platform – A concrete platform should be provided for all fountains. It should be at least 4" thick and large enough to accommodate fountain. An additional 4" high step 18" out from each side of the unit will protect the unit from manure handling equipment, as well as discouraging animals from defecating in the fountain. Extending the platform provides animals a place to stand while drinking, consider the size of your animals when determining the dimensions of your platform. Slope the platform away from the fountain for drainage. A rough broom finish on the concrete surface provides better footing for animals.

F. Hold-Downs - The 100, 150, 150S, and 300 fountains are provided with four built-in hold-downs, and the 1000 fountain is provided with six built-in hold-downs to anchor your unit securely to the platform. Use of 3/8" x 5" stainless steel expansion anchor bolts (not included) is recommended for concrete installations. Anchor bolts are available from Ritchie in a two pack, part # 16555. Fender washers are supplied for use with anchors. Use an all-weather sealant under the outside edge of the unit when anchoring to the platform to keep cold air from blowing in under the fountain. **Note: sealing the bottom of the unit from cold air is an important aspect of the unit's thermal performance.**

G. Hose Connection – Connect hose to customer supplied shutoff valve at the top of the concrete. Cut hose to proper length and slip onto the barb fitting of the valve assembly. Clamps and fittings are furnished to secure the connection.

H. Drain Plug – Install pre-assembled drain plugs from inside of trough. Plugs should be pushed in flush to prevent accidental removal by animals. Wetting the plug can aid proper installation. Note: A third plug is supplied with the 1000 to allow for temporary shut-off of the valve chamber.

I. Float Adjustment – Adjust float for a water depth of 2 inches below top of trough using the thumbscrew or wingnut.

J. Install Valve Cover – With the valve functioning properly and the water level set at the proper level, you may install the valve cover. Fill the water seal groove around valve chamber with liquid to seal against air infiltration. Then drop in the valve cover.

> ***Tip:*** *You may use vegetable oil to fill the water seal groove, or coat the inside of the groove with baking pan coating spray before filling with water to make the cover easier to remove and reinstall during freezing weather.*

K. Supplemental Heat –Immersion heaters are available for cold weather climates. 500-watt heaters #14158 are recommended for the WaterMatic 1000. The 250-watt heater #16311 should be adequate for WaterMatic 100, 150, and 300. Also, self-regulating heat cables are available to protect supply hose from freezing, 120V, #16276.
(Please visit our Hydrants and Accessories page to view heaters)

Immersion heaters should be placed flat on the bottom of the valve chamber. Ensure that the placement of the heater and its power cable do not interfere with the motion of the float assembly. Supply line heat cables should wrap around the valve and follow the supply line

down into the riser tube. You may use nylon ties to anchor the heat cable to the supply line.

Installation Variations

Incoming water temperature and pressure will vary, and will affect the performance of your fountain. Well water will be between 45° and 50°, but rural water from a water tower may be substantially cooler. Supplemental heaters and alternate valves are available for these variations.

Supplemental Heat

Both the valve chamber and the water supply line should be protected from freezing. To protect the valve chamber, immersion heaters should be placed flat on the bottom of the chamber. Ensure the heater and power cable does not interfere with the motion of the float. Self-regulating heat cables protect the supply line from freezing. Heat cables should wrap around the valve, and follow the supply line down into the riser tube. You may use nylon ties to anchor the cable to the supply line. Both immersion heaters and supply line heaters are thermostatically controlled, using power only when needed. Neither heater will get hot enough to melt the plastic of the fountain. (To view images of the Immersion Heater and the Self Regulating heat cable, visit our Hydrants/Accessories page)

Immersion Heaters			Self Regulating Heat Cable		
Part #	Volts	Watts	Part #	Volts	Watts
16311	120	250	16276	120	30
16710	240	250	16713	240	30
14158	120	500			

The higher power heaters should be used for larger troughs or where there may be electrical losses in the line due to long transmission distances. A stainless steel heater stand, is included and should be used with the Ritchie 500W heater to protect the fountain in the event of water supply failure. The stand may be purchased separately to be used with any immersion heater, #16636.

Valves

Ritchie valves come in two sizes and three pressure ratings as shown below. Although different pressure rated valves may be used in a fountain, each fountain will only accommodate one size and configuration of valve.

1/2"	Part #	GPM	Pressure Range
White	12574	4.8	Low, 5-40 psi
Red	12575	3.4	Moderate, 40-60 psi
Green	13597	1.46	High, 60-80 psi

The 100, 150, and 150S units use the smaller 1/2" valves. A red valve is standard with both the 100 & 150. This valve accommodates most common operating pressures, and provides more than adequate water flow rates for the number of animals that could be drinking at any one time from these troughs.

Our larger 3/4" valves are used with the 300 and 1000. A red valve is standard with the 1000 to ensure adequate refill rate at the most common input pressures. The 300 comes standard with the green valve, since it has shut-off capability for a wider range of input pressures, and still has adequate flow rate at lower pressures for the smaller trough.

3/4"	Part #	GPM	Pressure Range
White	16697	33	Low, 5-40 psi
Red	11101	20	Moderate, 40-60 psi
Green	15377	16.5	High, 60-80 psi
Blue	18197	5	Very High, 80-100 psi

If water pressure is very high, and if the valve does not shut off, a pressure-reducing valve may be needed. Your individual situations may require a change from the standard valve supplied with your fountain.

Parts breakdown for each unit and Trouble Shooting/Warranty for the WaterMatic Family

(All Links are in PDF format)

WaterMatic 100	**WaterMatic 150**	**WaterMatic 150S**	**WaterMatic 300**	**WaterMatic 1000**	**Trouble Shooting**
Parts breakdown	Parts breakdown	Parts breakdown	Parts breakdown	Parts breakdown	and Warranty

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