

Installation Instructions for



WaterMatic Fountains

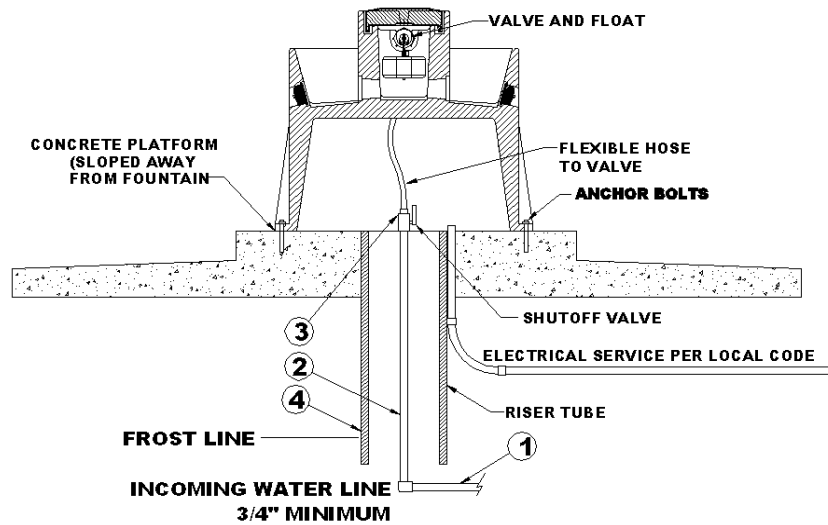
Congratulations, you have just purchased the finest watering fountain on the market. This unit is built to give you excellent service when properly installed and maintained. Please follow instructions carefully. Read and understand all instructions before installing

Ritchie Industries, Inc.
800-747-0222

    @RitchieWaterers

Part # 17736
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Models 100, 150, 150S, 300, & 1000 WaterMatic Fountain Installation Instructions



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 below.**

*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.*

D. **Electrical Connection (Optional)** – 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. Electrical connections should be installed under the unit.

WARNING: 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. **Preparing the Bottom** - Apply the foam weather stripping to the bottom of the unit, along the outside edge of the fountain.

G. **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.

H. **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.

I. **Seal the Base** - After the unit is completely installed, apply a bead of caulking around the base of the fountain to ensure no wind enters through the base of the unit.

NOTE: *Sealing the bottom of the unit from cold air is an important aspect of the unit's thermal performance.*

J. **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.*

K. **Install Valve Cover/Plug** – With the valve functioning properly and the water level set at the proper level, you may install the valve cover. Install the small drain plug into the drain hole of the water seal. Fill the water seal groove with liquid to seal against air infiltration. Then drop in the valve cover. This plug may be removed during non-freezing periods to allow water seal to drain.

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.*

L. **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.

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.

Immersion Heaters			Self Regulating Heat Cable		
Part #	Volts	Watts	Part #	Volts	Watts
16311	120	250	16276	120	30
17960	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.

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.

1/2"	Part #	GPM	Pressure Range
White	12574	4.8	Low, 5-40 psi
Red	12575	3.4	Moderate, 40-60 psi
Green	13597	1.45	High, 60-80 psi

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

Our larger 3/4" valves are used with the 300 and 1000. A green valve is standard with the 300 and 1000 to ensure adequate refill rate at the most common input pressures. The water pressure of your installation may require you to change which valve you are using.

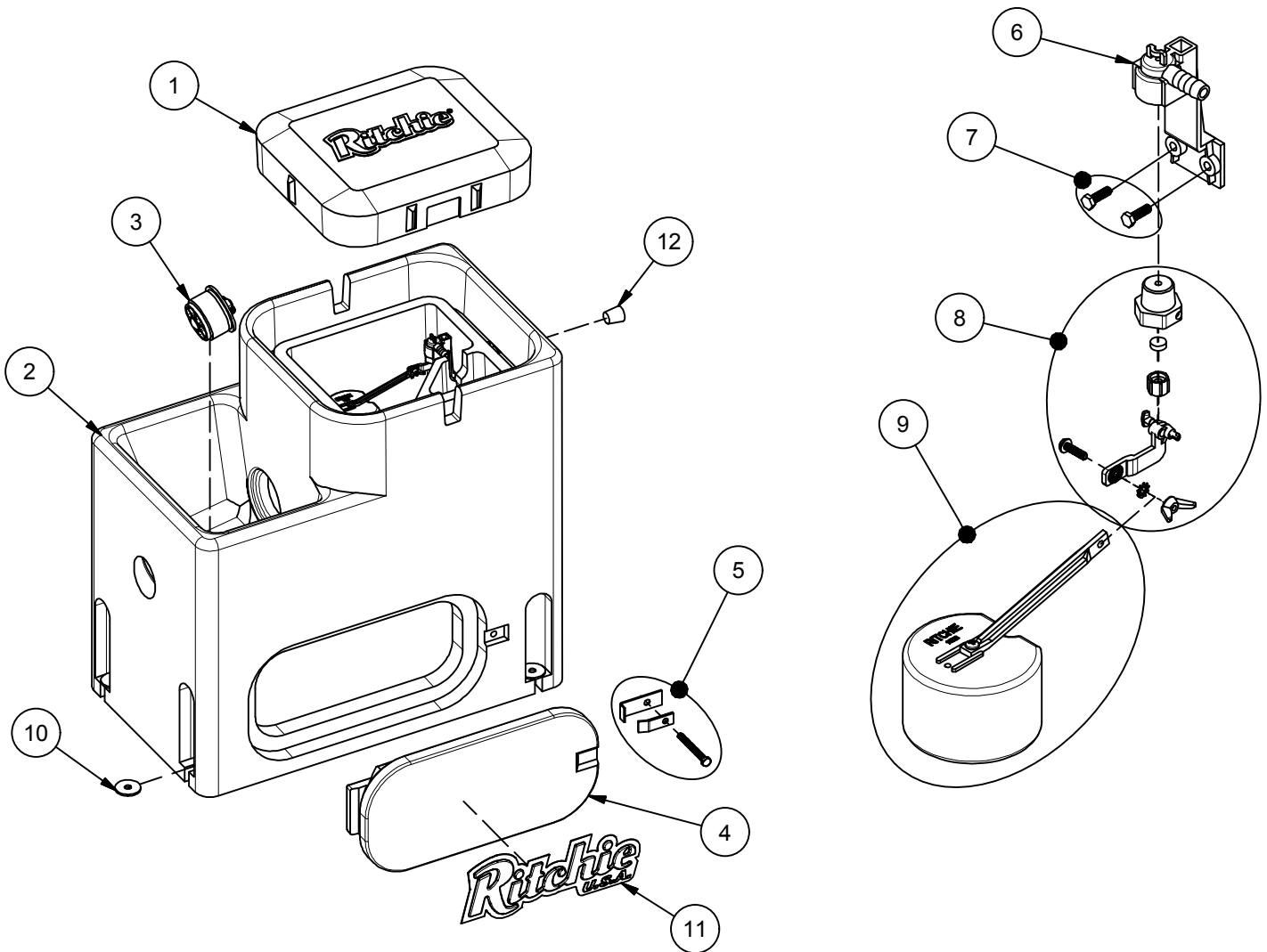
If water pressure is very high and if the valve does not shut off, a pressure-reducing valve may be needed. Your individual situations may require a change from the standard valve supplied with your fountain, see your Ritchie Dealer if this is needed.

Product Specifications

Product Name	100	150	150S	300	1000
Part #	18165	18166	18222	18050	18460
Drink Height - <i>in/cm</i>	18/46	18/46	13/33	26/66	26/66
Width - <i>in/cm</i>	14/36	14/36	14/36	21.5/55	42/107
Length - <i>in/cm</i>	24.5/62	33.5/85	33.5/85	36/91	42/107
Shipping Weight - <i>lbs/kg</i>	38/17	50/23	41/19	71/32	129/59
Operating Capacity - <i>gal/liter</i>	2.8/11	4.2/16	4.2/16	8.2/31	22/83
Herd Capacity - <i>head</i>	20 beef, 20 horses	40 beef, 40 horses	100 Goats or Sheep	125 beef 60 dairy	275 beef, 135 dairy

WaterMatic 100

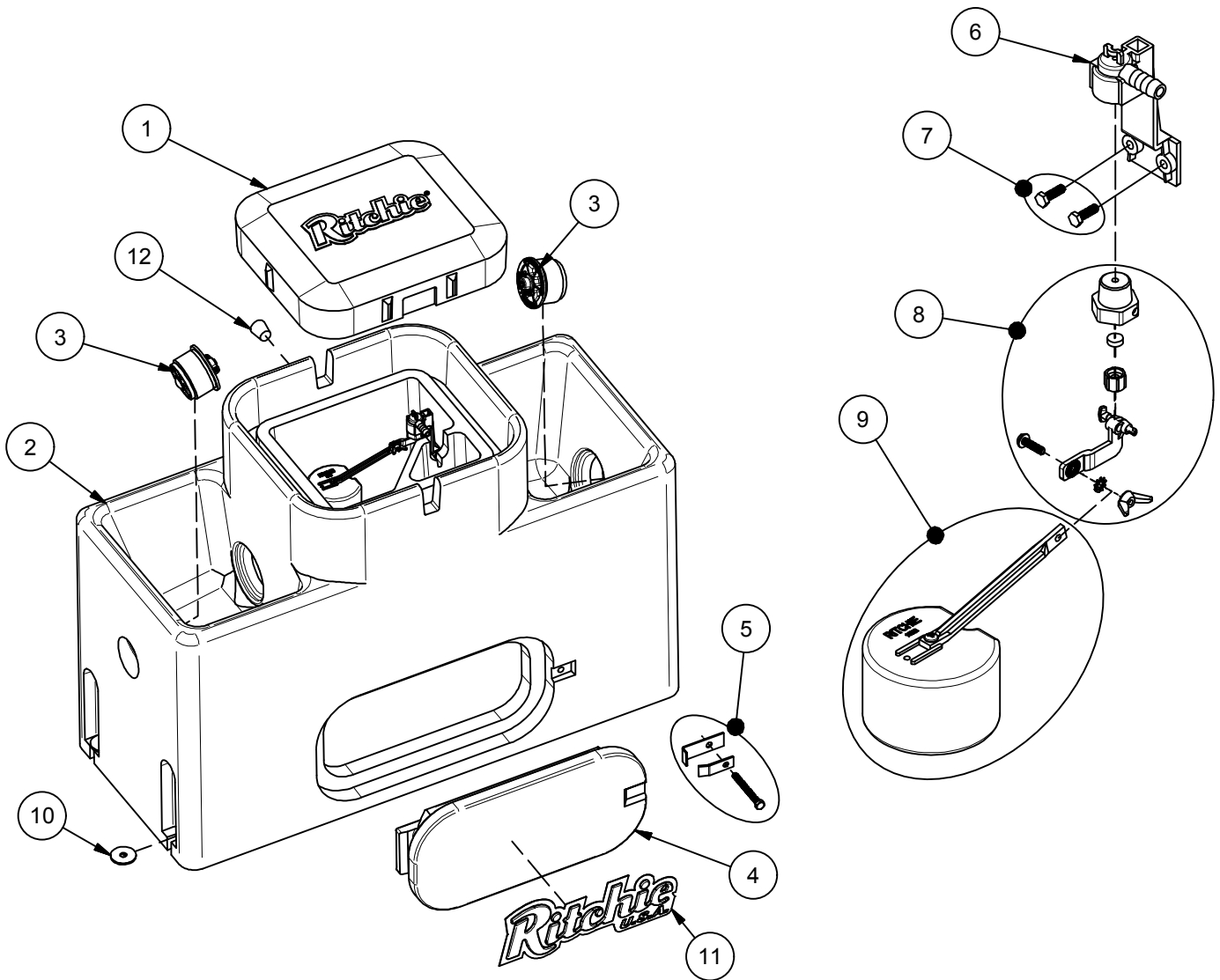
Part # 18165



Item	Part #	Description	Qty	Item	Part #	Description	Qty
1	18167	WaterMatic 100/150 Cover	1	9	12836	Float with Long Arm pkg	1 pkg
2	18168	WaterMatic 100 Base	1	10	18318	Bolt Down Washer (4/pkg)	1 pkg
3	18470	Drain Plug Ritchie 3"	1 pkg	11	18653	Ritchie Label 12" (1/pkg)	1 pkg
4	16621	Access Panel 6"x14"	1	12	18633	Plug #3 - Channel Plug	1 pkg
5	18147	Access Panel Hardware pkg	1 pkg	NS	14866	Seal Foam 10' Roll	1
6	11515	Valve Bracket w/ screw pkg	1 pkg	NS	15930	Hose Clamp 7/8" SS (5/pkg)	1 pkg
7	18066	Screw Valve Mount (6/pkg)	1 pkg	NS	18613	Adapter 1/2" x 3/8" HB	1 pkg
8	12575	Red Valve 1/2" pkg	1 pkg	NS	18174	WMatic 100 Accessory pkg	1 pkg

WaterMatic 150

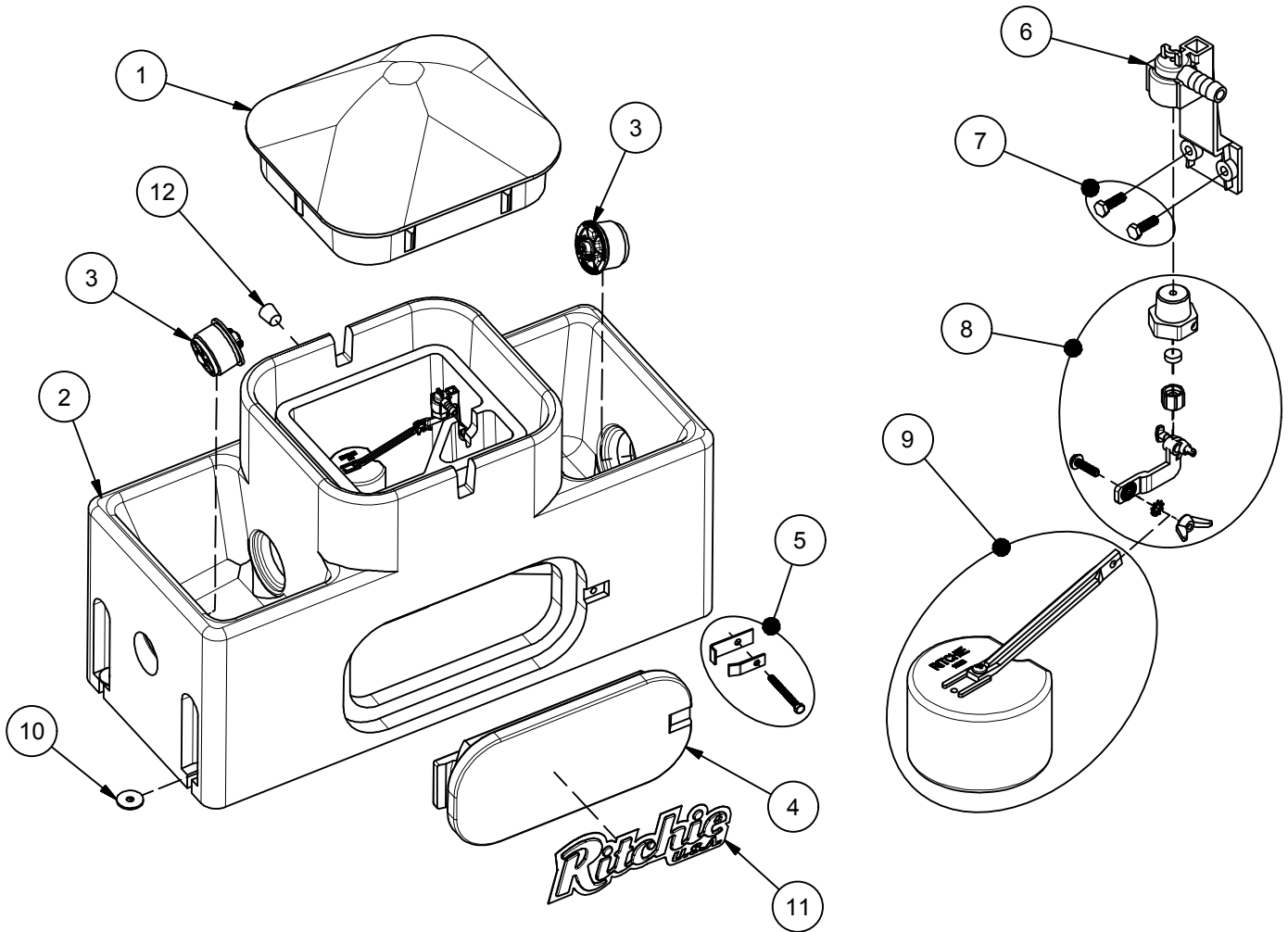
Part # 18166



Item	Part #	Description	Qty	Item	Part #	Description	Qty
1	18167	WaterMatic 100/150 Cover	1	9	12836	Float with Long Arm pkg	1 pkg
2	18169	WaterMatic 150 Base	1	10	18318	Bolt Down Washer (4/pkg)	1 pkg
3	18470	Drain Plug Ritchie 3"	2 pkg	11	18653	Ritchie Label 12" (1/pkg)	1 pkg
4	16621	Access Panel 6"x14"	1	12	18633	Plug #3 - Channel Plug	1 pkg
5	18147	Access Panel Hardware pkg	1 pkg	NS	14866	Seal Foam 10' Roll	1
6	11515	Valve Bracket w/ screw pkg	1 pkg	NS	15930	Hose Clamp 7/8" SS (5/pkg)	1 pkg
7	18066	Screw Valve Mount (6/pkg)	1 pkg	NS	18613	Adapter 1/2" x 3/8" HB	1 pkg
8	12575	Red Valve 1/2" pkg	1 pkg	NS	18187	WMatic 150/150S Accessory pkg	1 pkg

WaterMatic 150S

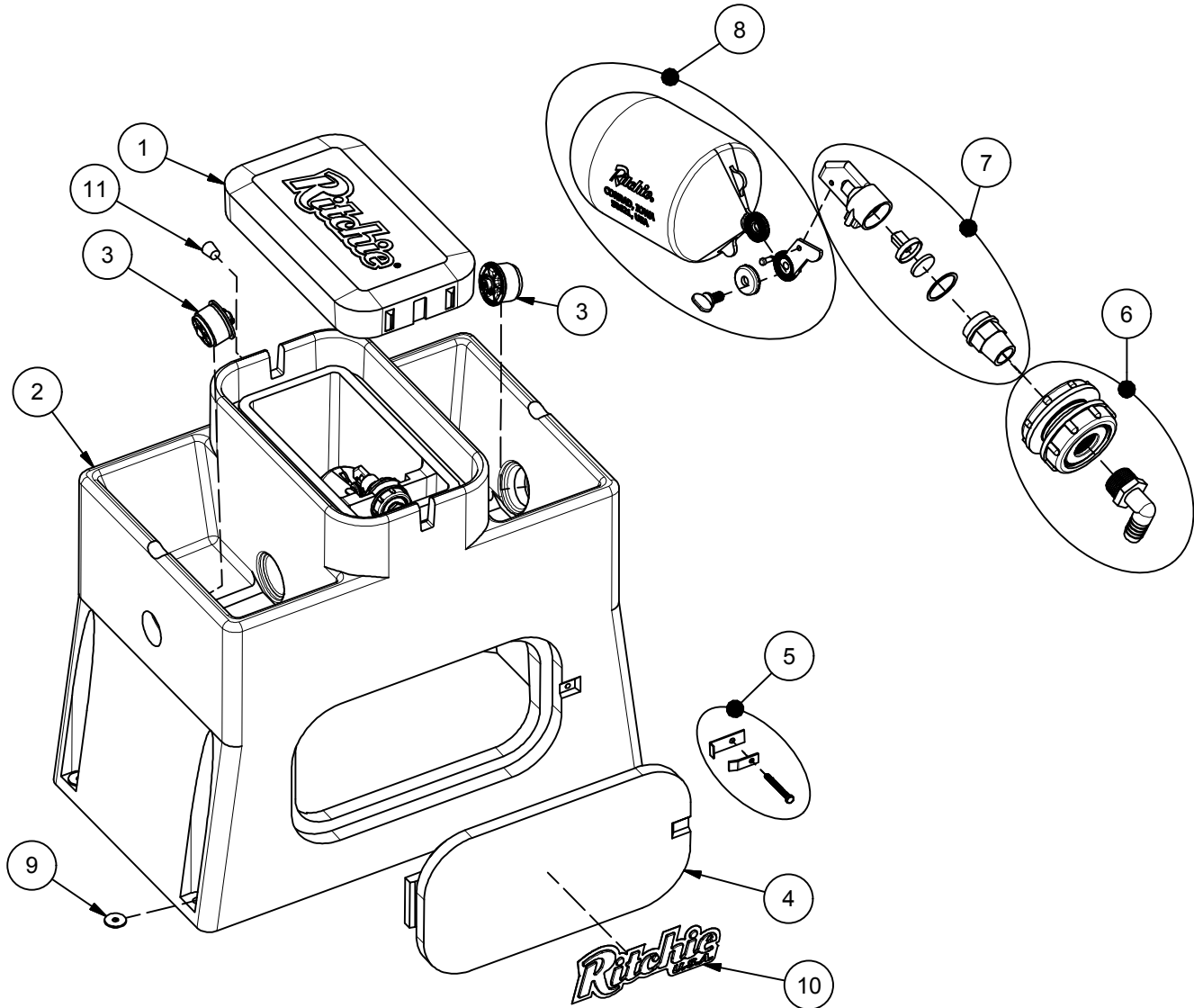
Part # 18222



Item	Part #	Description	Qty	Item	Part #	Description	Qty
1	18223	WaterMatic 150S Cover	1	9	12836	Float with Long Arm pkg	1 pkg
2	18224	WaterMatic 150S Base	1	10	18318	Bolt Down Washer (4/pkg)	1 pkg
3	18470	Drain Plug Ritchie 3"	2 pkg	11	18653	Ritchie Label 12" (1/pkg)	1 pkg
4	16621	Access Panel 6"x14"	1	12	18633	Plug #3 - Channel Plug	1 pkg
5	18147	Access Panel Hardware pkg	1 pkg	NS	14866	Seal Foam 10' Roll	2
6	11515	Valve Bracket w/ screw pkg	1 pkg	NS	15930	Hose Clamp 7/8" SS (5/pkg)	1 pkg
7	18066	Screw Valve Mount (6/pkg)	1 pkg	NS	18613	Adapter 1/2" x 3/8" HB	1 pkg
8	12575	Red Valve 1/2" pkg	1 pkg	NS	18187	WMatic 150/150S Accessory pkg	1 pkg

WaterMatic 300

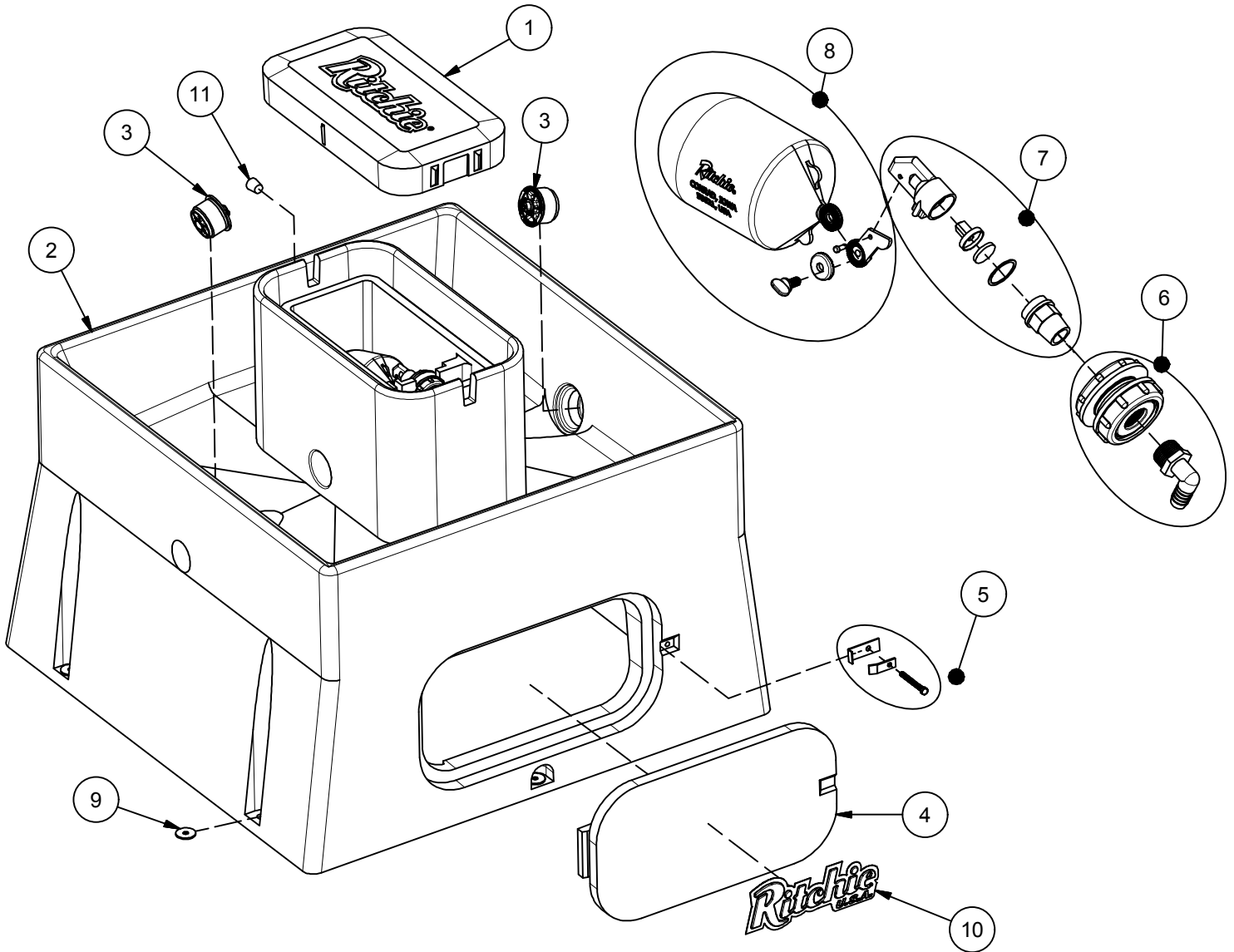
Part # 18050



Item	Part #	Description	Qty	Item	Part #	Description	Qty
1	18048	WaterMatic 300 Cover	1		18313	Hardware for Float pkg	1 pkg
2	18049	WaterMatic 300 Base	1	9	18318	Bolt Down Washer (4/pkg)	2 pkg
3	18470	Drain Plug Ritchie 3"	2 pkg	10	18653	Ritchie Label 12" (1/pkg)	1 pkg
4	16562	Access Panel 10"x20"	1	11	18633	Plug #3 - Water Channel	1 pkg
5	18147	Access Panel Hardware pkg	1 pkg	NS	14866	Seal Foam 10' Roll	2
6	16898	Bulkhead with Elbow	1 pkg	NS	15931	Hose Clamp 1" SS (5/pkg)	1 pkg
7	15377	Green Valve 3/4" Male pkg	1 pkg	NS	18614	Adapter 3/4" x 5/8" HB	1 pkg
8	18314	Float with Hardware pkg	1 pkg	NS	18096	WMatic 300 Accessory pkg	1 pkg

WaterMatic 1000

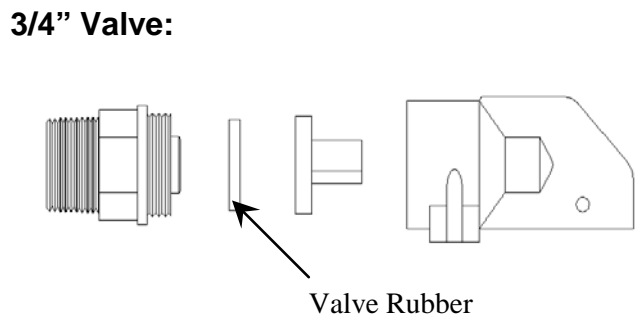
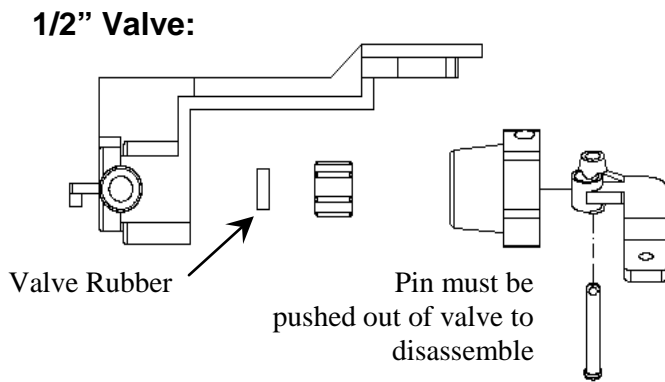
Part # 18110



Item	Part #	Description	Qty	Item	Part #	Description	Qty
1	18112	WaterMatic 1000 Cover	1	9	18318	Bolt Down Washer (4/pkg)	2 pkg
2	18111	WaterMatic 1000 Base	1	10	18653	Ritchie Label 12" (1/pkg)	1 pkg
3	18470	Drain Plug Ritchie 3"	3 pkg	11	18633	Plug #3 - Water Channel	1 pkg
4	16562	Access Panel 10"x20"	1				
5	18147	Access Panel Hardware pkg	1 pkg	NS	14866	Seal Foam 10' Roll	2
6	16898	Bulkhead with Elbow	1 pkg	NS	15931	Hose Clamp 1" SS (5/pkg)	1 pkg
7	15377	Green Valve 3/4" Male pkg	1 pkg	NS	18614	Adapter 3/4" x 5/8" HB	1 pkg
8	18314	Float with Hardware pkg	1 pkg	NS	18109	WMatic 1000 Accessory pkg	1 pkg
	18313	Hardware for Float pkg	1 pkg				

Trouble Shooting

Problem	Solution
Valve won't stop dripping	a) Check float adjustment. Ensure float moves freely.
	b) Disassemble valve and check for sand or scale in valve rubber
	c) Turn valve rubber over and re-assemble. See below.
	d) Check for excessive water system pressure.
Low Water Flow	a) Check that valve inlet is not plugged or supply hose is not kinked.
	b) Check system pressure from supply hose by installing a tee and pressure gauge in front of the valve to check pressure drop when valve is open. A severe pressure drop indicates a restriction or undersized supply system.
	c) Check that shut off valves are fully open.



Ritchie Limited Warranty

Effective September 2012

Ritchie Industries, Inc. warrants its products to be free of defective materials and workmanship. Defective part(s) will be repaired or replaced at the option of Ritchie Industries. **This warranty specifically excludes all labor and shipping charges.**

This warranty does not apply to any appearance items, to any product whose exterior has been damaged or defaced, to any product that has been installed improperly, to any product subjected to misuse, abnormal service or handling, and to any products altered or repaired with other than original equipment or manufacturer's parts.

This warranty gives you specific legal rights, and you may also have other rights which vary from state to state.

All warranty claims must be processed through an Authorized Ritchie Dealer/ Distributor. **Proof of purchase is required. This warranty is not transferable.** The period of warranty begins at original date of purchase as follows:

Poly Units

Base, top and ball closures:

10 year limited against manufacturing defect. 100% first five years, then declining 20% per year for the remaining five years.

Stainless Steel Units

Stainless trough and stainless valve chamber frame:

Ten years against manufacturing defect or corrosion. 100% all ten years.

Casing and cover:

10 year limited against manufacturing defect. 100% first year, then declining 10% per year for the remaining nine years.

Component Parts

All component parts, such as floats, valves, heating elements:

One year from the date of purchase against manufacturing defect, 100%.