

Installation Instructions for



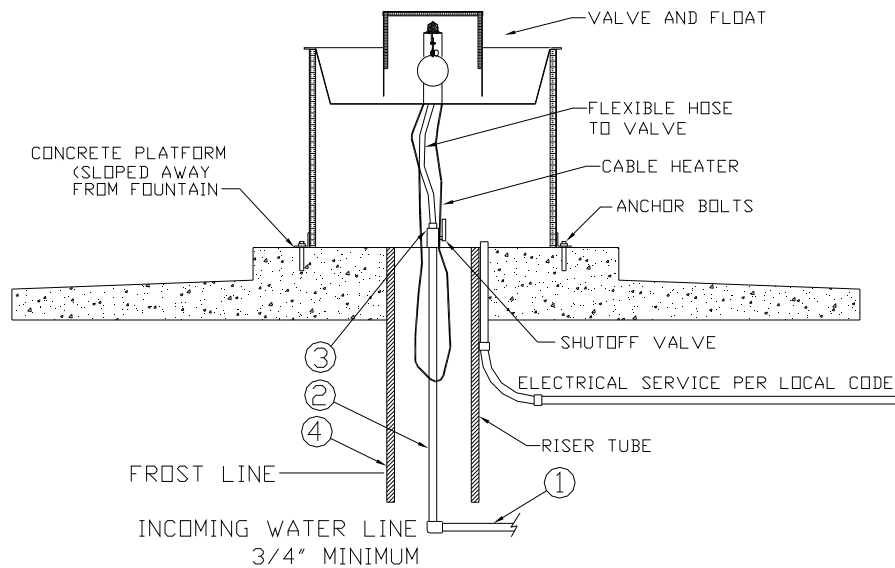
Cattle Fountain Series, Combination Fountain Series, & AC Series

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.

Part # 17837
17 October, 2012

Cattle Fountain, Combination Fountains, AC Series

Installation Instructions



A. Location - Putting the fountain in a location that offers protection from the wind will enhance the performance of the fountain. Livestock will tend to gather in this protected area, enticing them to drink more. Access panel should be opposite of prevailing winter wind to give additional protection to the supply line.

B. Water Supply Line - Horizontal underground water line (1) should be sized to account for pressure drop, relating to distance, and placed well below frost line. A one-inch vertical supply pipe (2) is recommended. A shut-off valve (3) should be installed under fountain to allow for easier servicing. For optimum serviceability, a stop and waste valve can be installed below frost level to drain water back when unit is not in use. Vertical supply line must be centered in riser tube (4) to provide an air space between the line and frozen ground outside of tube. Flush water supply line thoroughly before connection to fountain. Water supplies with foreign material such as sand, rust, etc. may require a filter to keep fountain valve working properly.

C. Electric Supply – It is usually most cost effective to run your electrical line the same time you are trenching your water supply. **Any electrical service must be installed and maintained by a qualified electrician.**

D. Riser Tube - Install a riser tube and extend it at least one foot below frost line or down to horizontal underground water line. For optimum water line protection, use the 12” diameter insulated Ritchie Thermal Tube, part numbers and sizes are shown to the left. Tube opening must be kept clear. **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.**

Ritchie Thermal Tube	
Part #	Description
18158	1' Top Section
16417	2' Top Section
16612	4' Top Section
16416	2' Extension
Use in combination to reach desired depth	

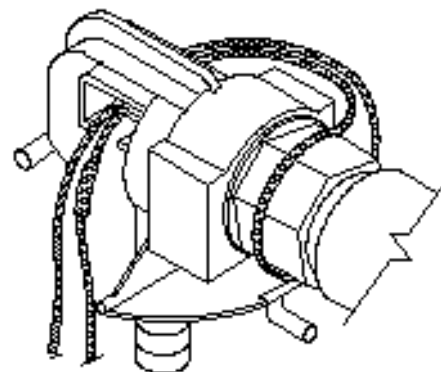
E. Mounting Platform - A concrete platform must be provided for all fountains. Use a minimum of 4" thick, (6" recommended), large enough to accommodate fountain, and additional 4" step (on top of the platform) extending 18" out from each side of the unit. This will protect the unit from manure handling 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. The concrete step and platform should slope away from the fountain for drainage. A rough broom finish to concrete surface provides better footing for livestock.

F. Hose Connection - Connect hose fitting to shut-off valve at top of concrete. Slip on barb fitting with furnished clamps. Hose should not touch insulation or outside surface of fountain. Place the hose under the fountain as you move the unit in place over the riser tube.

G. Anchoring Fountain - Steel fountains are provided with four hold-downs to anchor your unit securely to the concrete. Screw the hold down angles on to the unit then anchor down the unit. Use of 3/8" x 3-1/2" stainless steel expansion anchor bolts (not included) is recommended for concrete installations. Anchor bolts are available from Ritchie in a two pack, part # 14261. Use an all-weather sealant under the outside edge when anchoring to concrete to keep air from leaking under fountain.

H. Final Water Connection - Connect the top of the supplied hose to the valve, 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. Cable Heater - Uncoil cable heater and loop around the valve. Attach the remaining part of the cable heater to the water supply, as far down the riser tube as possible, with the cable twist ties provided. (See drawing on previous page.) This heater is water tight, but should not be immersed in water.

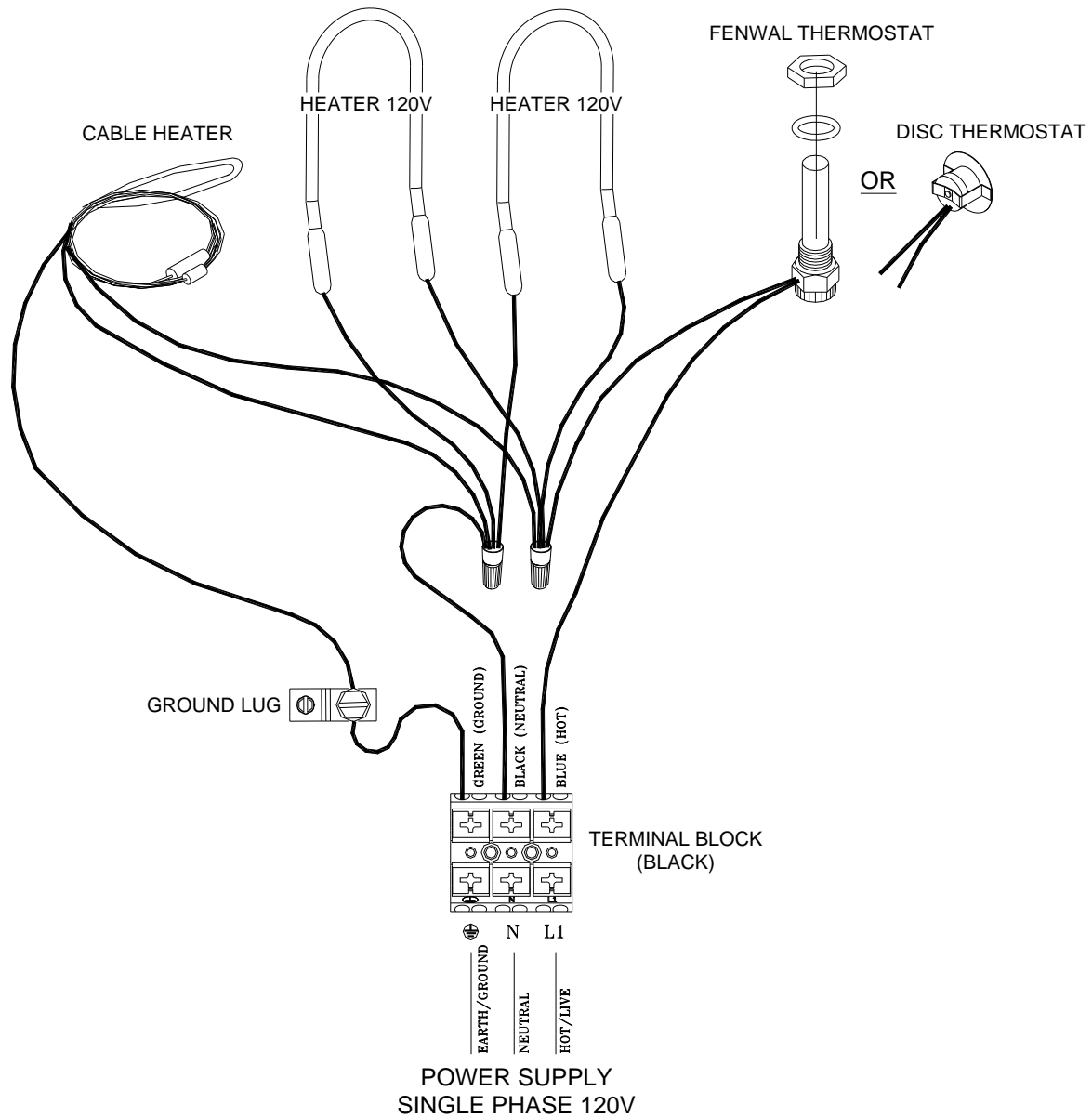


CAUTION: Installation must not cause any strain on heater wiring connections. Do not cross the cable over itself along the water line. Avoid heater damage caused by hot spots due to its leads lying close to each other. Do not wrap additional insulation around heater.

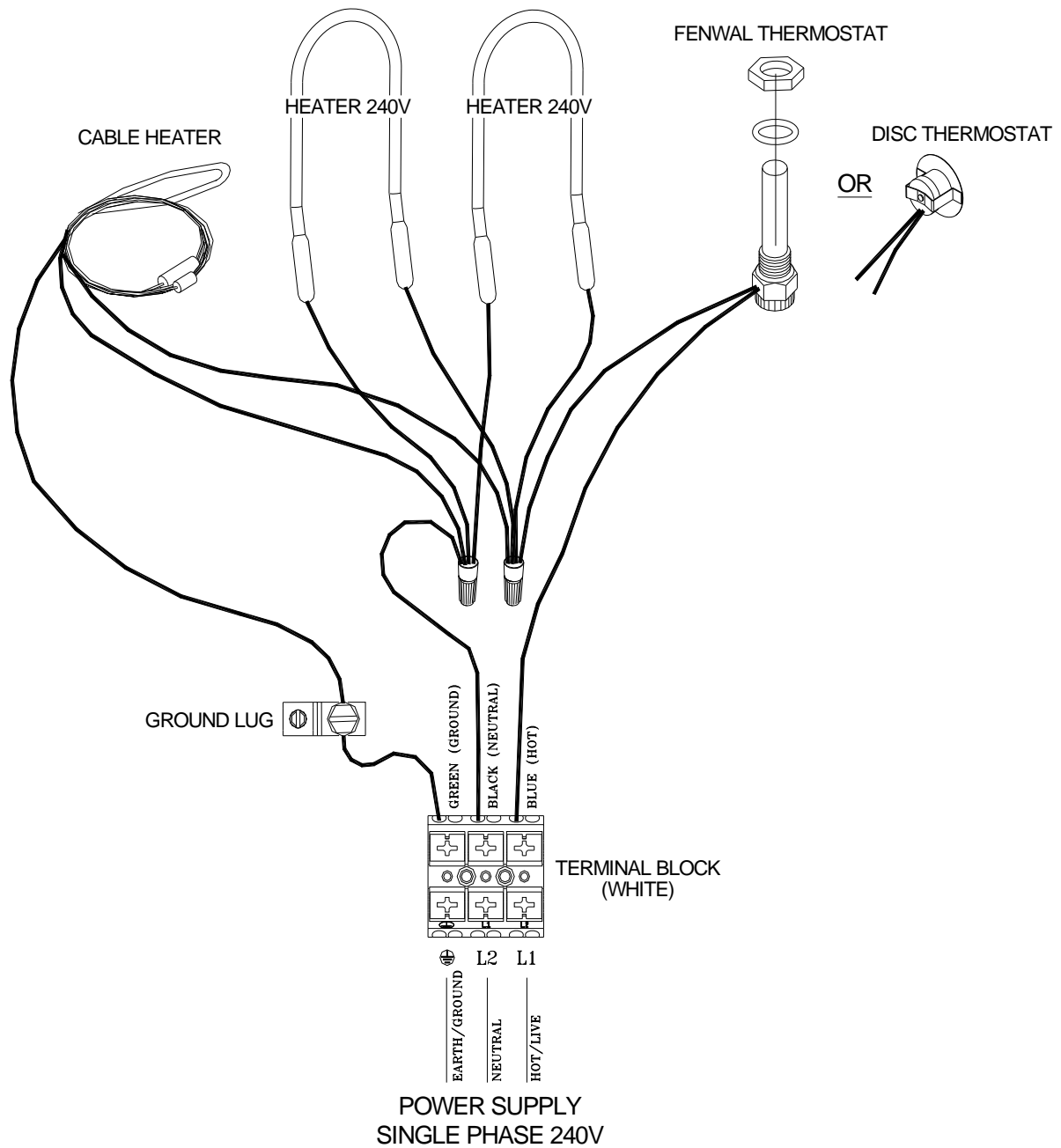
J. Electrical Connection - The electrical installation should be made and maintained by a qualified electrician conforming to national and local codes. A means for disconnection must be incorporated in the fixed wiring in accordance with the wiring rules. A suitable fuse or circuit breaker with properly sized wire must protect the 3-wire power to the fountain. For wiring connections, see wiring diagram. Do not by-pass the terminal block to power unit. Make connections according to the wiring diagram below.

WARNING: DISCONNECT POWER IF THE WATER SUPPLY IS TO BE SHUT OFF FOR AN EXTENDED AMOUNT OF TIME. FAILURE TO TURN OFF POWER CAN RESULT IN DAMAGE TO THE WATERING FOUNTAIN.

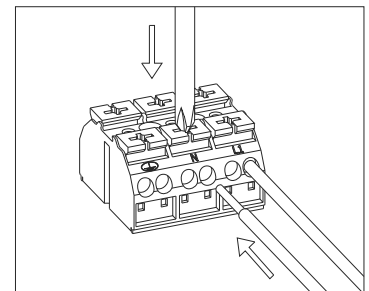
NOTE: National/Local electrical codes may require livestock waterers installed in feedlots in open feeding area to be grounded by a separate stranded copper grounding conductor or at least no.6 AWG terminating at a point where the branch circuit receives its supply. Check with local authorities.



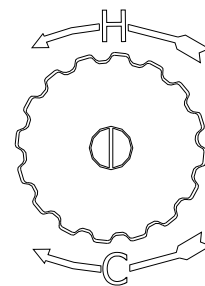
WARNING This installation must be made and maintained in strict conformity with National/Local plumbing codes and National/Local electrical codes (CSA in Canada). The applicable provisions of these codes take precedent. Failure to make and maintain all installations properly may result in loss of livestock, personal injury, or death.



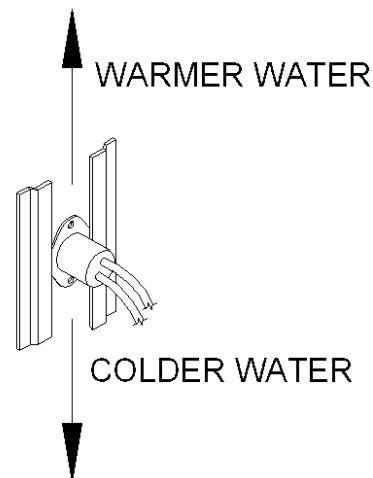
K. Terminal Block – The terminal block is provided for easy and quick connection to the power source. The push buttons provide quick connection with a screwdriver or by hand. If you are using solid wire then you will be able to just push the wire into the slot. Stranded wire will require you to press the button down.



L. Fenwal Thermostat (Cattle Fountains and Combination) - The adjustable range is from 0° F (-18° C) to 100° F (38° C). Thermostat is not preset at factory. Fill the trough to proper water level. Check the water temperature with a thermometer. The next morning, check the water temperature again. If the water is warmer than desired, turn the thermostat down. If there is ice forming on the surface of the water, turn the thermostat up. Only slight adjustments should be made to the thermostat at any time. A 1/16 turn on the thermostat will change the water temp. 7° F (4° C). 44° F (7° C) in the trough represents the most economical operation. Counter clockwise raises the thermostat setting.



M. Disc Thermostat (AC Series) – The disc thermostat is mounted in a bracket under the trough, which allows it to be moved relative to the heater. To ease movement of thermostat turn ¼ turn. To lock in position after adjustment turn ¼ turn back. As the thermostat is moved toward the heater, the water temperature in the trough is lowered. The best location is determined by checking the trough temperature several times during the heating season.



N. Drain Plug – Insert the drain plug firmly into the drain hole in the center of the trough.

O. Float Adjustment – Open water-supply shut-off valve, check for and fix any leaks. Adjust float for a water depth of 2 inches below top of trough or overflow pipe by adjusting the thumbscrew or wing nut.

P. Install Side Access Panel and Cover – Once all water line connections have been checked for leaks and electrical hook-up is complete, the side access door may be installed. With the valve functioning properly and the water level set at the proper level, you may install the valve cover.

Q. Children should be supervised to ensure that they do not play with the appliance – This appliance is not intended for use by persons (including children) with reduced physical, sensory or mental capabilities, or lack of experience and knowledge, unless they have been given supervision or instructions concerning use of the appliance by a person responsible for their safety.

R. Cleaning Your Fountain – To clean your watering fountain you will need a good stiff bristled brush. Remove the cover then brush the valve area to remove any build-up then brush the tank. Remove the plug that is located in the valve chamber area under the float to drain out the water and debris. You can shut off the water with the shut-off valve located under the unit or by holding the float in the up position. After the water and debris has drained reinstall the plug and let the tank refill. Now is a good time to readjust the float if needed. Reinstall cover and you are done.

Ritchie Valves

Ritchie valves come in two sizes and four pressure ratings – blue for very high pressure, green for high supply line pressure, red for moderate supply pressure, and white for low-pressure applications. Differences in the size of trough also impacts valve choice. Although different pressure rated valves may be used in a fountain, each fountain will only accommodate one size and configuration of valve. If water pressure is over 60 psi, 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.

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.
Blue	18197	5	Very High, 80-100 psi.

NOTE: Four orifice sizes are available for multi-purpose fountains and two sizes are available for cattle fountain valves. They are color-coded.

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 improperly installed, 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%.

Hydrants

All component parts:

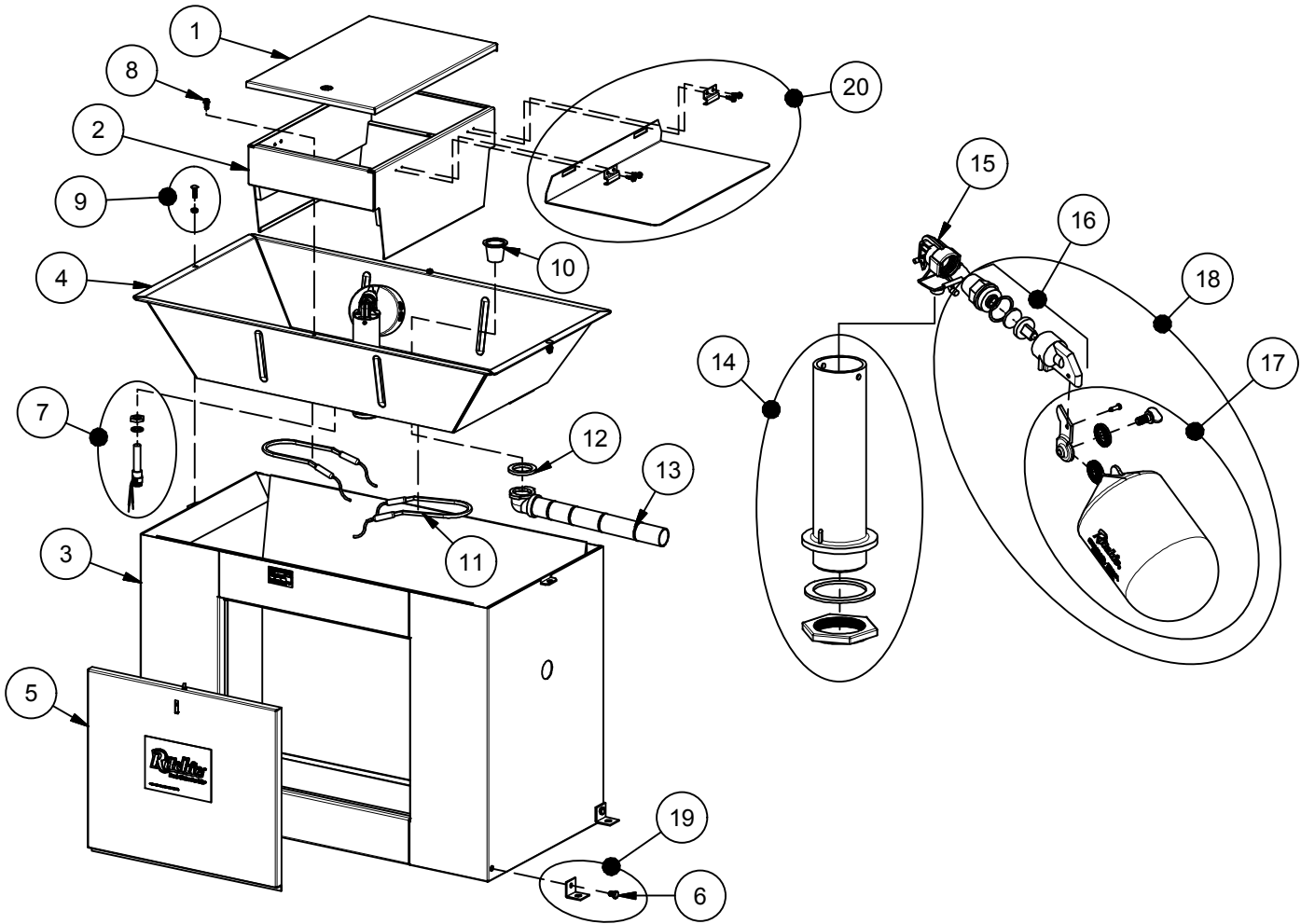
One year from the date of purchase against manufacturing defect, 100%.

Trouble Shooting

Problem	Solution	
Water in Trough Too Warm	Adjust thermostat to lower temperature	
	Check to see if thermostat has failed by contacts burning closed	
Ice in Trough	Check fuses or circuit breakers	
	Check all heating elements to make sure they are working and hot	
	Adjust thermostat to higher temperature	
	Check for voltage from thermostat output	
	Check voltage to fountain with and without electrical load	
	Check that heaters are wired properly	
Valve Freezing	Check that cable heater is installed properly and fastened to water supply line and is working when heaters are hot	
	Check for missing or damaged insulation	
	Check for air gaps for wind penetrations	
Supply line Freezing	Check that the cable heater is uncoiled and fastened around valve, to supply line and is working when heaters are hot	
	Check that supply piping is centered in riser tube	
	Check that riser tube is free of water and mud that may freeze	
	Check that flexible hose does not touch side of casing or frame	
	Check casing for air leaks	
Valve won't stop dripping	Check float adjustment. Check for waterlogged float, or float rubbing on side of valve compartment	
	<p>Disassemble valve and check for sand or scale in valve rubber. Also check valve orifice outlet for wear and damage. A screen or filter may be required with sandy or scaly water</p>	<p style="text-align: center;">1/2" Valve</p> <p style="text-align: center;">3/4" Valve</p>
	<p>Turn valve rubber over and re-assemble</p>	
Check for excessive water system pressure		
Low water flow	Check that valve inlet is not plugged or supply hose is not kinked	
	Check system pressure from supply hose by installing a tee and a pressure gauge directly in front of the valve to check pressure drop when valve is open. A severe pressure drop indicates a restriction or undersized supply system.	
	Check that shutoff valves are fully open	

#5E Cattle Fountain

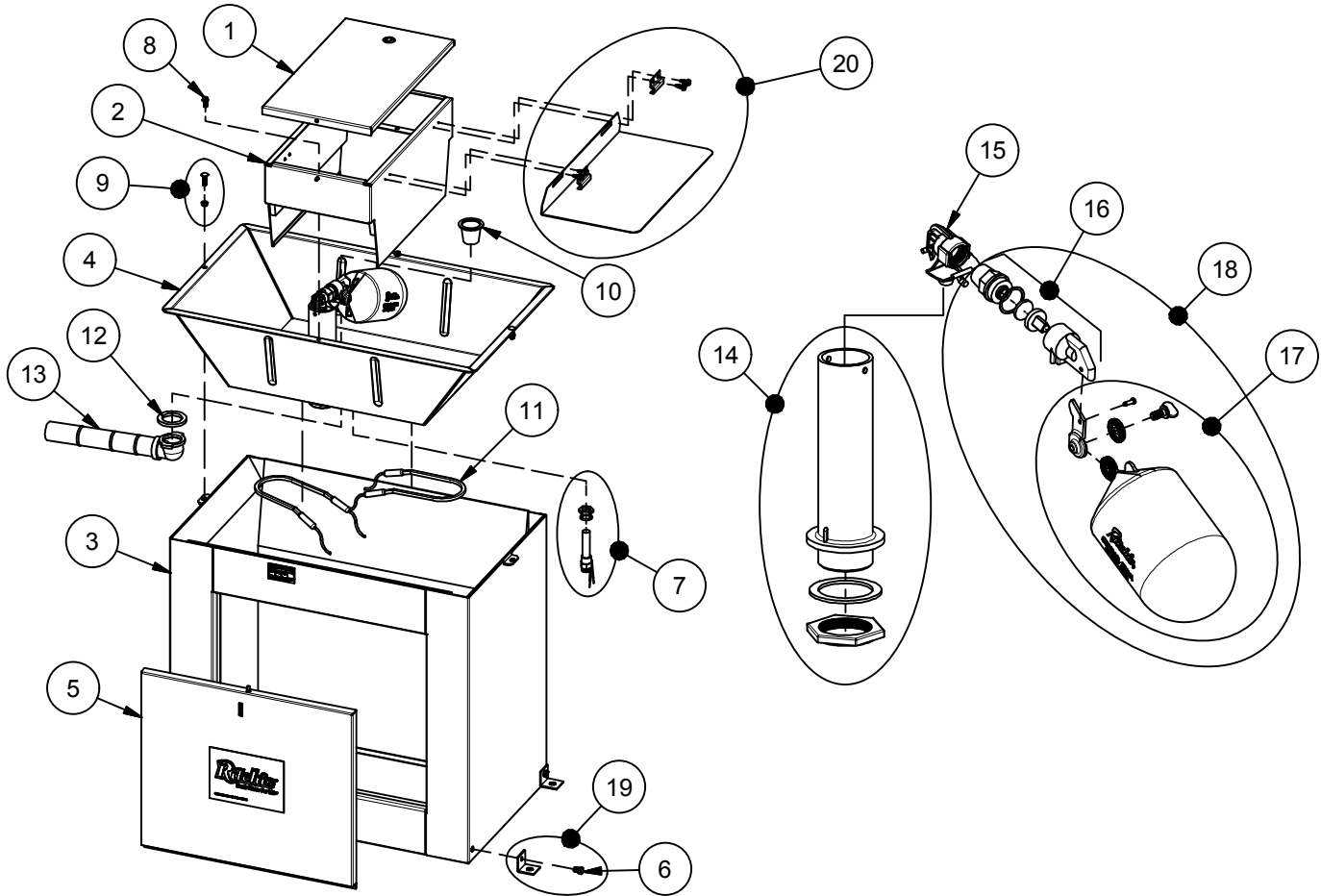
Part # 16745



Item	Part #	Description	Qty	Item	Part #	Description	Qty
1	13374	5E Cover	1	15	11514	Valve Bracket 3/4" pkg	1 pkg
2	16590	5E Frame	1	16	15377	Green Male Valve 3/4" pkg	1 pkg
3	13823	5E Casing Pkg	1 pkg	17	18314	Float with Hardware pkg	1 pkg
4	16746	5E Trough pkg	1 pkg		18313	Hardware for Float pkg	1 pkg
5	11154	Access Pnl 17"x20" Assembled	1	18	16993	Green Valve & Float pkg	1 pkg
6	15299	Bolt 3/8"x1/2" SS (4/pkg)	1 pkg	19	13775	Hold Down Angle SS (4/pkg)	1 pkg
7	16534	Fenwal Thermostat SS pkg	1 pkg	20	16975	Flipper/Hinge (2/pkg) - Optional	1 PKG
	18320	O-Ring Fenwal (6/pkg)	1 pkg	NS	12583	Valve Supply Line pkg	1 pkg
	18074	Nut Brass Fenwal (6/pkg)	1 pkg	NS	13830	Cable Htr 120V 48W (1/pkg)	1 pkg
8	15154	Screw 1/4"x5/8" TC SS (10/pkg)	1 pkg	NS	15632	5E Casing Insulation pkg	1 pkg
9	18114	Trough Bolt & Nut (5/pkg)	1 pkg	NS	13790	5E Frame Inulation pkg	1 pkg
10	18628	Drain Plug (2/pkg)	1 pkg	NS	11107	5E Accessory pkg	1 pkg
11	11419	Heater 120V 250W (1/pkg)	2 pkg				
12	18075	Drain Washer (6/pkg)	1 pkg		16824	5E 240V	
13	11473	Drain Pipe with Elbow	1	NS	11403	Heater 240V 300W (1/pkg)	2 pkg
14	16629	Standpipe pkg	1 pkg	NS	16424	Cable Htr 240V 48W (1/pkg)	1 pkg

#3E Cattle Fountain

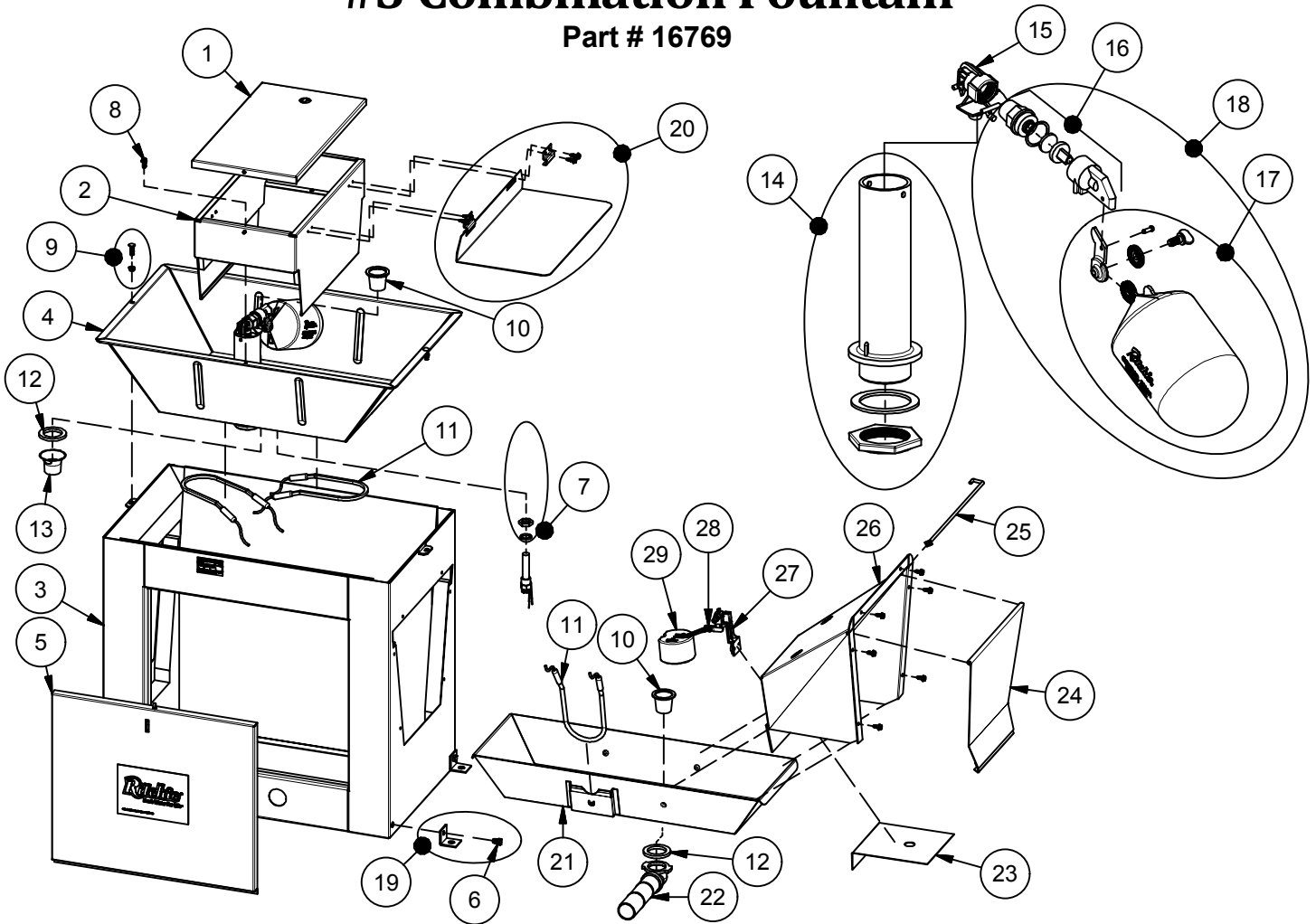
Part # 16743



Item	Part #	Description	Qty	Item	Part #	Description	Qty
1	13373	3E Cover	1	15	11514	Valve Bracket 3/4" pkg	1 pkg
2	16589	3E Frame	1	16	15377	Green Male Valve 3/4" pkg	1 pkg
3	12657	3E Casing Pkg	1 pkg	17	18314	Float with Hardware pkg	1 pkg
4	16744	3E Trough pkg	1 pkg		18313	Hardware for Float pkg	1 pkg
5	11154	Access Pnl 17"x20" Assembled	1	18	16993	Green Valve & Float pkg	1 pkg
6	15299	Bolt 3/8"x1/2" SS (4/pkg)	1 pkg	19	13775	Hold Down Angle SS (4/pkg)	1 pkg
7	16534	Fenwal Thermostat SS pkg	1 pkg	20	16974	Flipper/Hinge (2/pkg) - Optional	1 pkg
	18320	O-Ring Fenwal (6/pkg)	1 pkg	NS	12583	Valve Supply Line pkg	1 pkg
	18074	Nut Brass Fenwal (6/pkg)	1 pkg	NS	13830	Cable Htr 120V 48W (1/pkg)	1 pkg
8	15154	Screw 1/4"x5/8" TC SS (10/pkg)	1 pkg	NS	15634	3E Casing Insulation pkg	1 pkg
9	18114	Trough Bolt & Nut (5/pkg)	1 pkg	NS	13789	3E Frame Inulation pkg	1 pkg
10	18628	Drain Plug (2/pkg)	1 pkg	NS	11107	3E Accessory pkg	1 pkg
11	11419	Heater 120V 250W (1/pkg)	2 pkg		16826	3E 240V	
12	18075	Drain Washer (6/pkg)	1 pkg		11403	Heater 240V 300W (1/pkg)	2 pkg
13	11472	Drain Pipe with Elbow	1	NS	16424	Cable Htr 240V 48W (1/pkg)	1 pkg
14	16629	Standpipe pkg	1 pkg				

#3 Combination Fountain

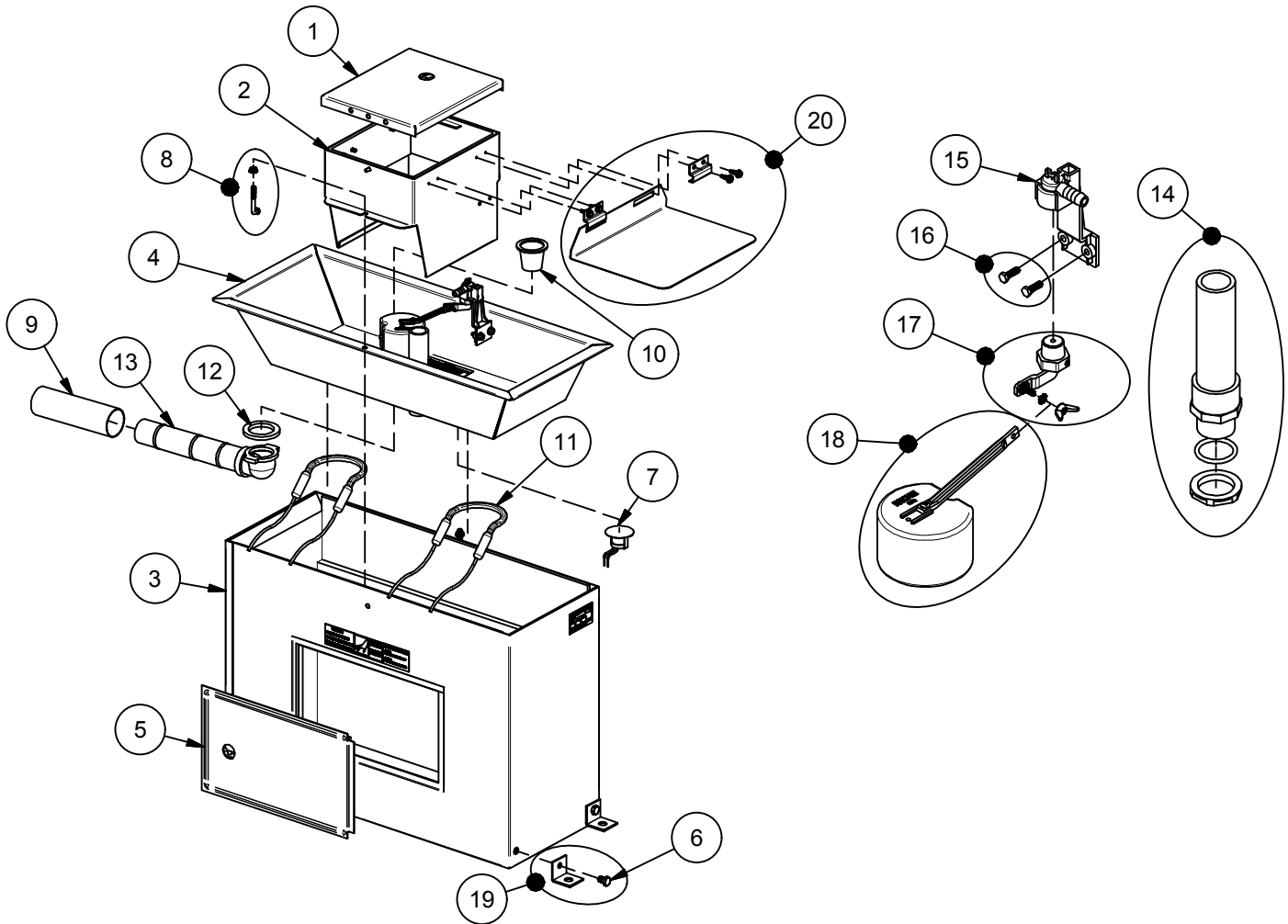
Part # 16769



Item	Part #	Description	Qty	Item	Part #	Description	Qty
1	13373	3C Cover	1	18	16993	Green Valve & Float pkg	1 pkg
2	16589	3C Frame	1	19	13775	Hold Down Angle SS (4/pkg)	1 pkg
3	12656	3C Casing Pkg	1 pkg	20	16974	Flipper/Hinge (2/pkg) - Optional	1 pkg
4	16744	3C Trough pkg	1 pkg	21	16767	3C Lower Trough SS	1
5	11154	Access Pnl 17"x20" Assembled	1	22	11472	Drain Pipe with Elbow	1
6	15299	Bolt 3/8"x1/2" SS (4/pkg)	1 pkg	23	12404	Grate - Clean out	2
7	16534	Fenwal Thermostat SS pkg	1 pkg	24	12801	Swing Door w/Rod	2
	18320	O-Ring Fenwal (6/pkg)	1 pkg	25	13166	Rod with Nut for Swing Door	2
	18074	Nut Brass Fenwal (6/pkg)	1 pkg	26	11118	3C Innerhood	2
8	15154	Screw 1/4"x5/8" TC SS (10/pkg)	1 pkg	27	11515	Valve Bracket 1/2" w/ screws	1 pkg
9	18114	Trough Bolt & Nut (5/pkg)	1 pkg	28	12575	Red Valve 1/2"	1 pkg
10	18628	Drain Plug (2/pkg)	1 pkg	29	13613	Float with Short Arm	1 pkg
11	11419	Heater 120V 250W (1/pkg)	3 pkg	NS	12583	Valve Supply Line pkg	1 pkg
12	18075	Drain Washer (6/pkg)	1 pkg	NS	13830	Cable Htr 120V 48W (1/pkg)	1 pkg
13	18603	Drain Fitting Flared	1	NS	15633	3C Casing Insulation pkg	1 pkg
14	16629	Standpipe pkg	1 pkg	NS	13789	3E Frame Inulation pkg	1 pkg
15	11514	Valve Bracket 3/4" pkg	1 pkg	NS	18326	3C Accessory pkg	1 pkg
16	15377	Green Male Valve 3/4" pkg	1 pkg		16816	3C 240V	
17	18314	Float with Hardware pkg	1 pkg	NS	11403	Heater 240V 300W (1/pkg)	2 pkg
	18313	Hardware for Float pkg	1 pkg	NS	16424	Cable Htr 240V 48W (1/pkg)	1 pkg

2AC

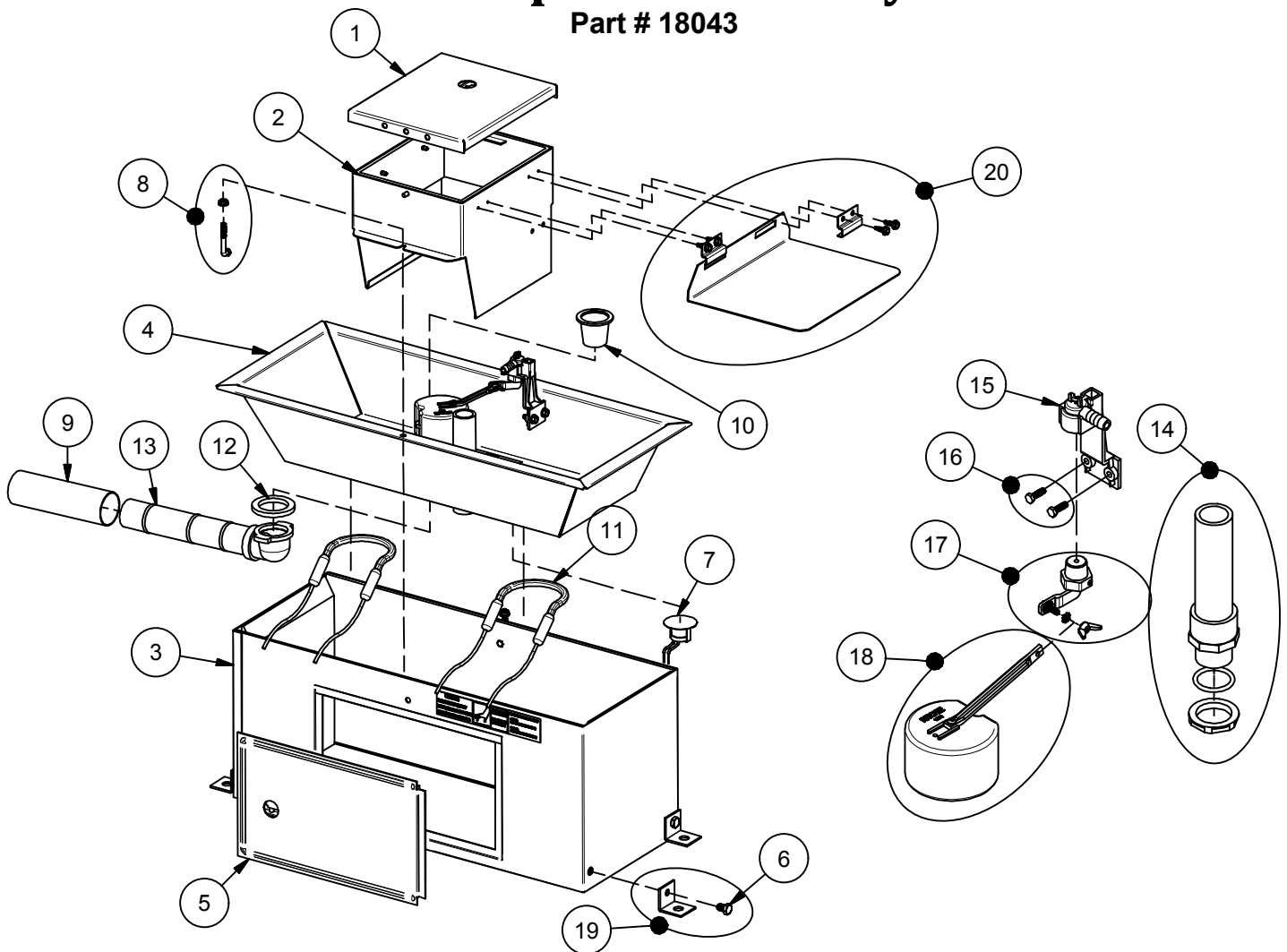
Part # 18033



Item	Part #	Description	Qty	Item	Part #	Description	Qty
1	13379	2AC Cover	1	15	11515	Valve Bracket 1/2" w/ Scrws pkg	1 pkg
2	13449	2AC Frame pkg	1 pkg	16	15154	Screws Valve Bracket (6/ pkg)	1 pkg
3	18035	2AC Casing	1 pkg	17	12575	Red Valve 1/2" pkg	1 pkg
4	18036	2AC Trough	1 pkg	18	13613	Float with Short Arm pkg	1 pkg
5	12140	Access Panel 8" Assembly	1	19	13775	Hold Down Angle SS (4/pkg)	1 pkg
6	15299	Bolt 3/8"x1/2" SS (4/pkg)	1 pkg	20	16973	Flipper/Hinge (2/pkg) - Optional	1 pkg
7	11885	Disc Thermostat pkg	1 pkg	NS	13830	Cable Htr 120V 48W (1/pkg)	1 pkg
8	15158	J-Bolt & Nut ZP (10/pkg)	1 pkg	NS	18323	2AC Accessory pkg	1 pkg
9	17500	Drain Pipe Guard	1	NS	15652	2AC Casing Insulation pkg	1 plg
10	18628	Drain Plug (2/pkg)	1 pkg	NS	13850	2AC Frame Insulation pkg	1 pkg
11	14150	Heater 120V 125W (1/pkg)	2 pkg				
12	18075	Drain Washer (6/pkg)	1 pkg		16839	2AC 240V	
13	11471	Drain Pipe with Elbow	1	NS	16664	Heater 240V 200W (1/pkg)	2 pkg
14	16866	Standpipe pkg	1 pkg	NS	16424	Cable Htr 240V 48W (1/pkg)	1 pkg

2AC Special Assembly

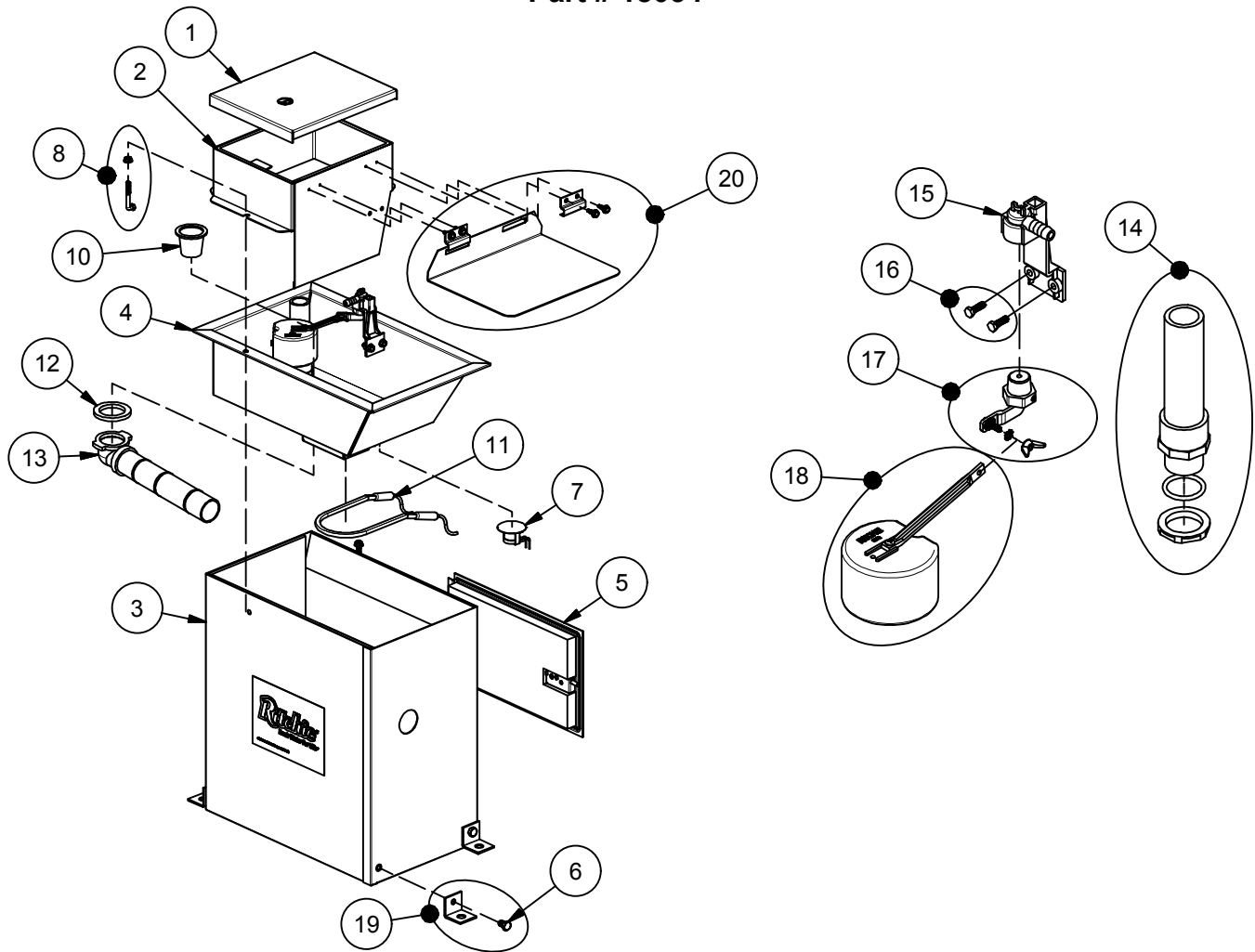
Part # 18043



Item	Part #	Description	Qty	Item	Part #	Description	Qty
1	13379	2AC Cover	1	15	11515	Valve Bracket 1/2" w/ Scrws pkg	1 pkg
2	13449	2AC Frame pkg	1 pkg	16	15154	Screws Valve Bracket (6/ pkg)	1 pkg
3	18058	2AC SP Casing	1 pkg	17	12575	Red Valve 1/2" pkg	1 pkg
4	18036	2AC Trough	1 pkg	18	13613	Float with Short Arm pkg	1 pkg
5	12140	Access Panel 8" Assembly	1	19	13775	Hold Down Angle SS (4/pkg)	1 pkg
6	15299	Bolt 3/8"x1/2" SS (4/pkg)	1 pkg	20	16973	Flipper/Hinge (2/pkg) - Optional	1 pkg
7	11885	Disc Thermostat pkg	1 pkg	NS	13830	Cable Htr 120V 48W (1/pkg)	1 pkg
8	15158	J-Bolt & Nut ZP (10/pkg)	1 pkg	NS	18323	2AC Accessory pkg	1 pkg
9	17500	Drain Pipe Guard	1	NS	18059	2AC SP Casing Insulation pkg	1 plg
10	18628	Drain Plug (2/pkg)	1 pkg	NS	13850	2AC Frame Insulation pkg	1 pkg
11	14150	Heater 120V 125W (1/pkg)	2 pkg				
12	18075	Drain Washer (6/pkg)	1 pkg		18420	2AC Special 240V	
13	11471	Drain Pipe with Elbow	1	NS	16664	Heater 240V 200W (1/pkg)	2 pkg
14	16866	Standpipe pkg	1 pkg	NS	16424	Cable Htr 240V 48W (1/pkg)	1 pkg

1AC

Part # 18034



Item	Part #	Description	Qty	Item	Part #	Description	Qty
1	13379	1AC Cover	1	16	15154	Screws Valve Bracket (6/ pkg)	1 pkg
2	18039	1AC Frame pkg	1 pkg	17	12575	Red Valve 1/2" pkg	1 pkg
3	18037	1AC Casing	1 pkg	18	13613	Float with Short Arm pkg	1 pkg
4	18038	1AC Trough	1 pkg	19	13775	Hold Down Angle SS (4/pkg)	1 pkg
5	12140	Access Panel 8" Assembly	1	20	16973	Flipper/Hinge (2/pkg) - Optional	1 pkg
6	15299	Bolt 3/8"x1/2" SS (4/pkg)	1 pkg	NS	13830	Cable Htr 120V 48W (1/pkg)	1 pkg
7	11885	Disc Thermostat pkg	1 pkg	NS	18323	1AC Accessory pkg	1 pkg
8	15158	J-Bolt & Nut ZP (10/pkg)	1 pkg	NS	15651	1AC Casing Insulation pkg	1 plg
10	18628	Drain Plug (2/pkg)	1 pkg	NS	13850	1AC Frame Insulation pkg	1 pkg
11	11419	Heater 120V 250W (1/pkg)	1 pkg				
12	18075	Drain Washer (6/pkg)	1 pkg		16841	1AC 240V	
13	11471	Drain Pipe with Elbow	1	NS	11403	Heater 240V 300W (1/pkg)	1 pkg
14	16866	Standpipe pkg	1 pkg	NS	16424	Cable Htr 240V 48W (1/pkg)	1 pkg
15	11515	Valve Bracket 1/2" w/ Scrvs pkg	1 pkg				

Hold Down Anchor Bolt Locations

Fountain Model	Part #	Hole to Hole Location
3 Cattle Fountain	16743	15-1/2" x 30"
5 Cattle Fountain	16745	18-1/8" x 38-1/2"
3 Combination Fountain	16769	15-1/2" x 30"
1 AC	18034	8-1/2" x 18"
2 AC	18033	8-7/16" x 26-3/8"
2 AC Special	18043	8-7/16" x 26-3/8"

Note: Do not drill holes for anchors before location can be verified with unit.

Anchor Bolt Locations

