

# Installation Instructions for

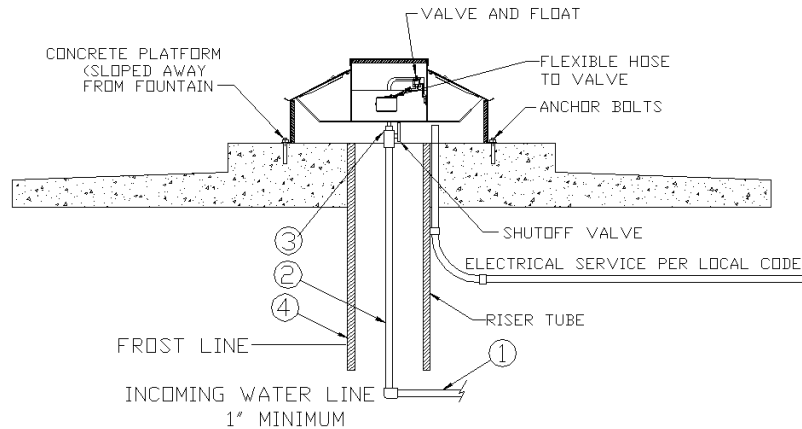


## Pork King Series

*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*

# Pork King 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. 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   |

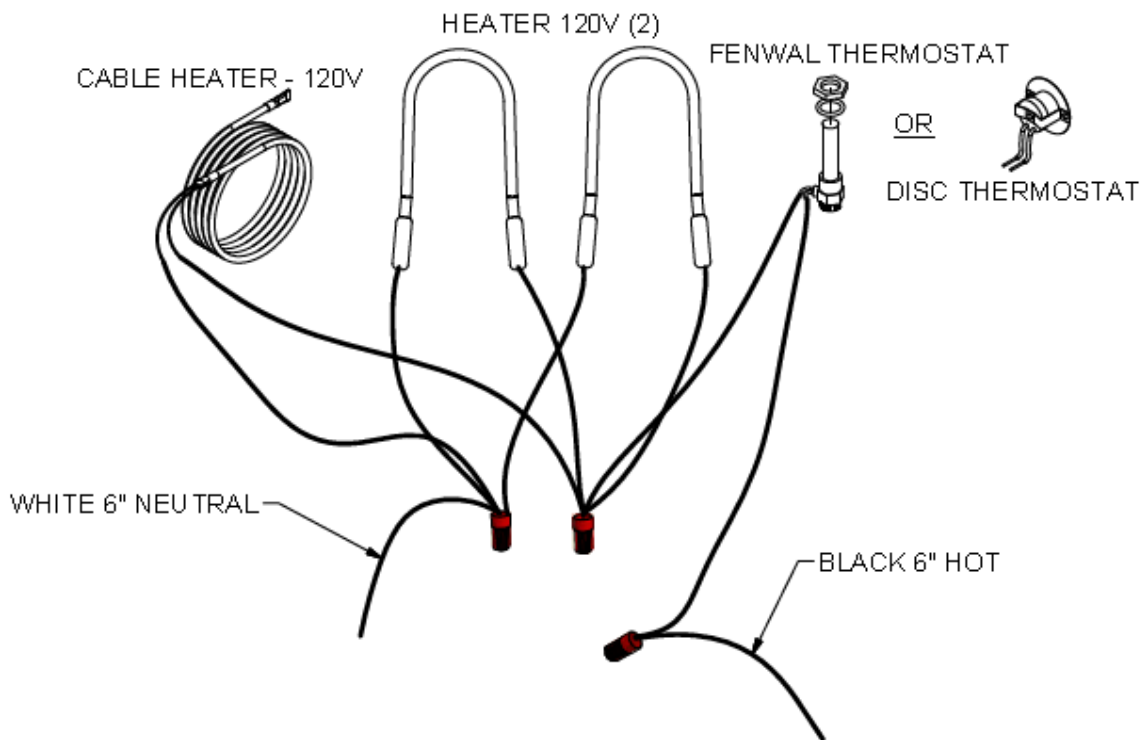
**D. Mounting Platform** - A concrete platform must be provided for all fountains. Use a minimum of 4" thick, (6" recommended thickness), and 8" square for hog fountains (otherwise large enough to accommodate fountain), and additional 4" step (on top of the platform) extending 18" out from each side of the unit. This will protect the unit from manure handling equipment, as well as discouraging animals from defecating in the fountain. 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.

**E. Anchoring Fountain** – Pork King 2 & 4 are provided with built in hold-downs to anchor your unit securely to the concrete. Pork King 1 and 2-1 have built in hold-downs as well as 2 stainless steel hold down angles which are provided. Screw the hold down angles on to the unit as needed, 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.

**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.

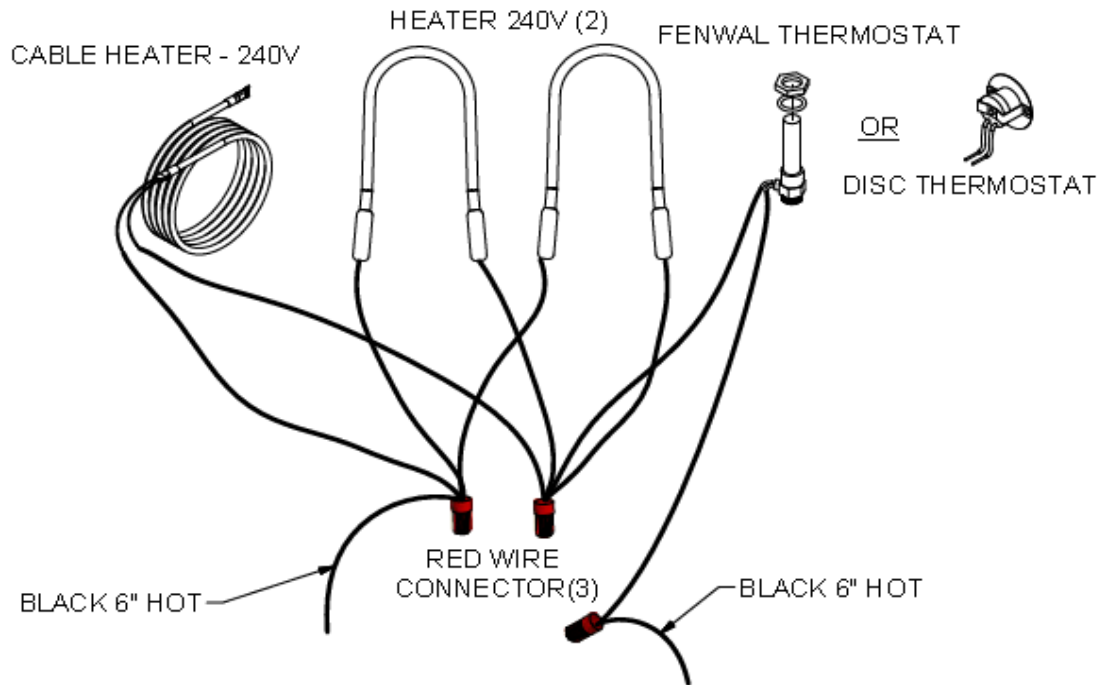
**G. Electrical Connection** - The electrical installation should be made and maintained by a qualified electrician conforming to national and local codes. A means for disconnection must be incorporated in the fixed wiring in accordance with the wiring rules. For cord connected units, connection must be made only to a properly grounded circuit protected by a ground-fault circuit-interrupter (GFCI). For wiring connections, see wiring diagram. Make connections according to the wiring diagram below.



#### WIRING DIAGRAM 120V SINGLE PHASE

**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 inspection authorities.

**WARNING:** This Installation must be made and maintained in strict conformity with a 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.

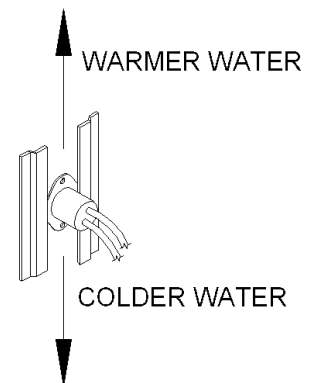


**WIRING DIAGRAM 240V SINGLE PHASE**

**H. Cable Heater** – Uncoil cable heater and attach the cable heater to the water supply-line, as far down the riser tube as possible, with the cable ties provided. 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. Also, do not wrap additional insulation around heater.

**I. Disc Thermostat** – The disc thermostat is mounted in a bracket in valve chamber, 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.



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

**K. Float Adjustment** – Open water-supply shut-off valve, check for and fix any leaks. Adjust float for desired water depth by adjusting the wingnut.

**L. Install Cover** – Once all water line connections have been checked for leaks and electrical hook-up is complete, drop the valve cover into the groove on the top of the unit.

## Ritchie Valves

Pork King valves come in three pressure ratings - 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. Different pressure rated valves may be used in these fountains.

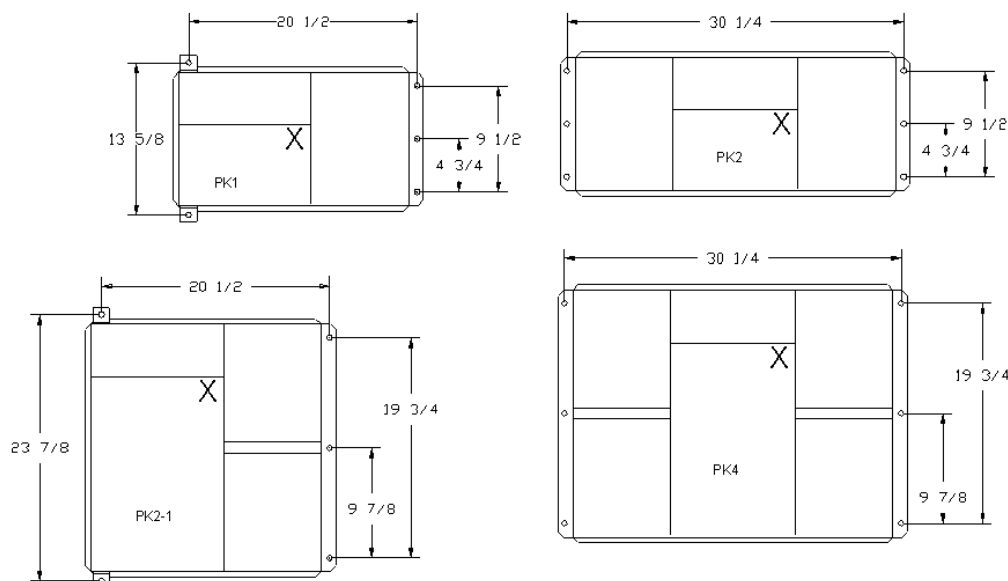
**NOTE:** Three color-coded orifice sizes are available for Pork King Fountains.

| 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.     |

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.

### Hold Down Anchor Bolt Locations

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



## 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 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 transferrable.** 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%.

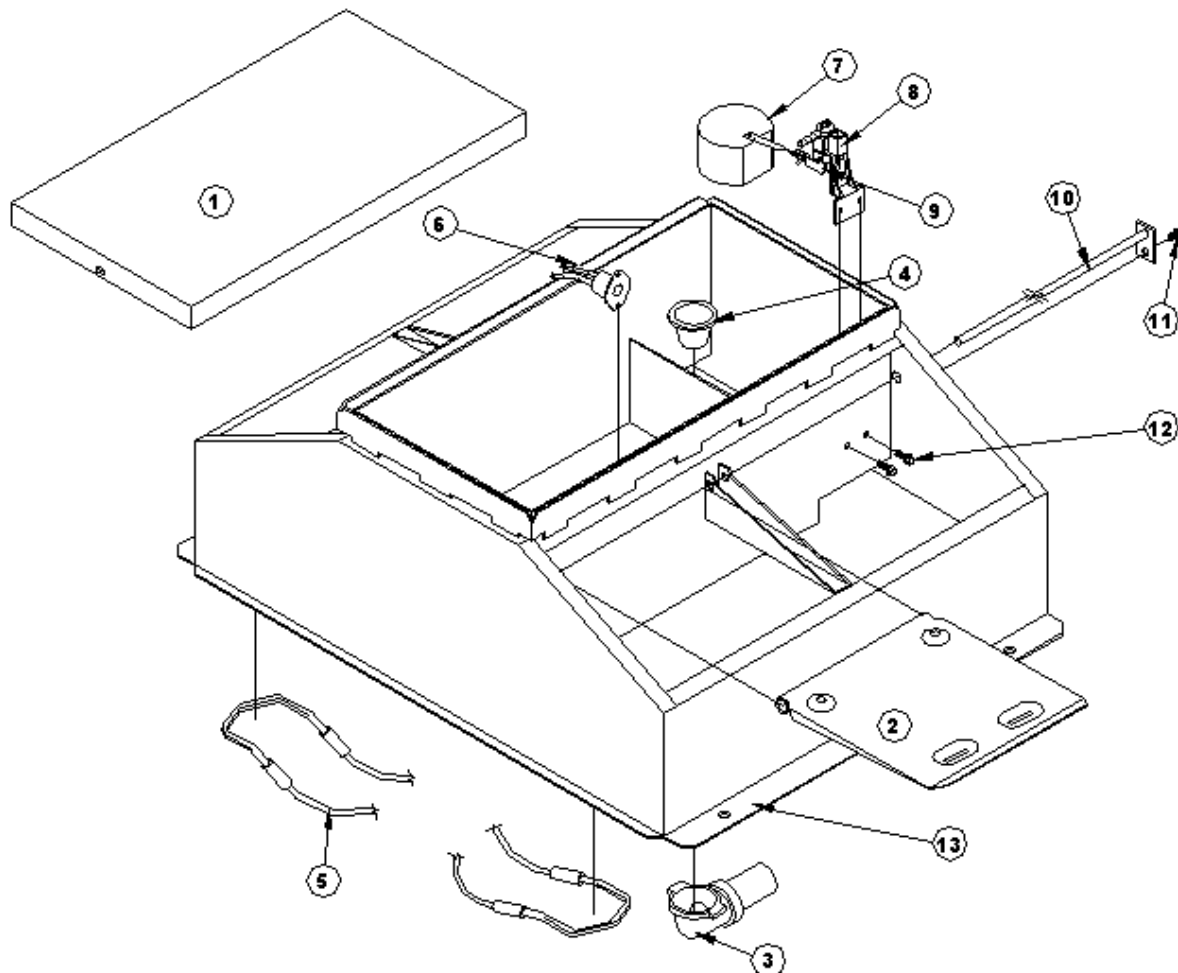
### Hydrants

#### All component parts:

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

# Pork King 4

Part # 16459



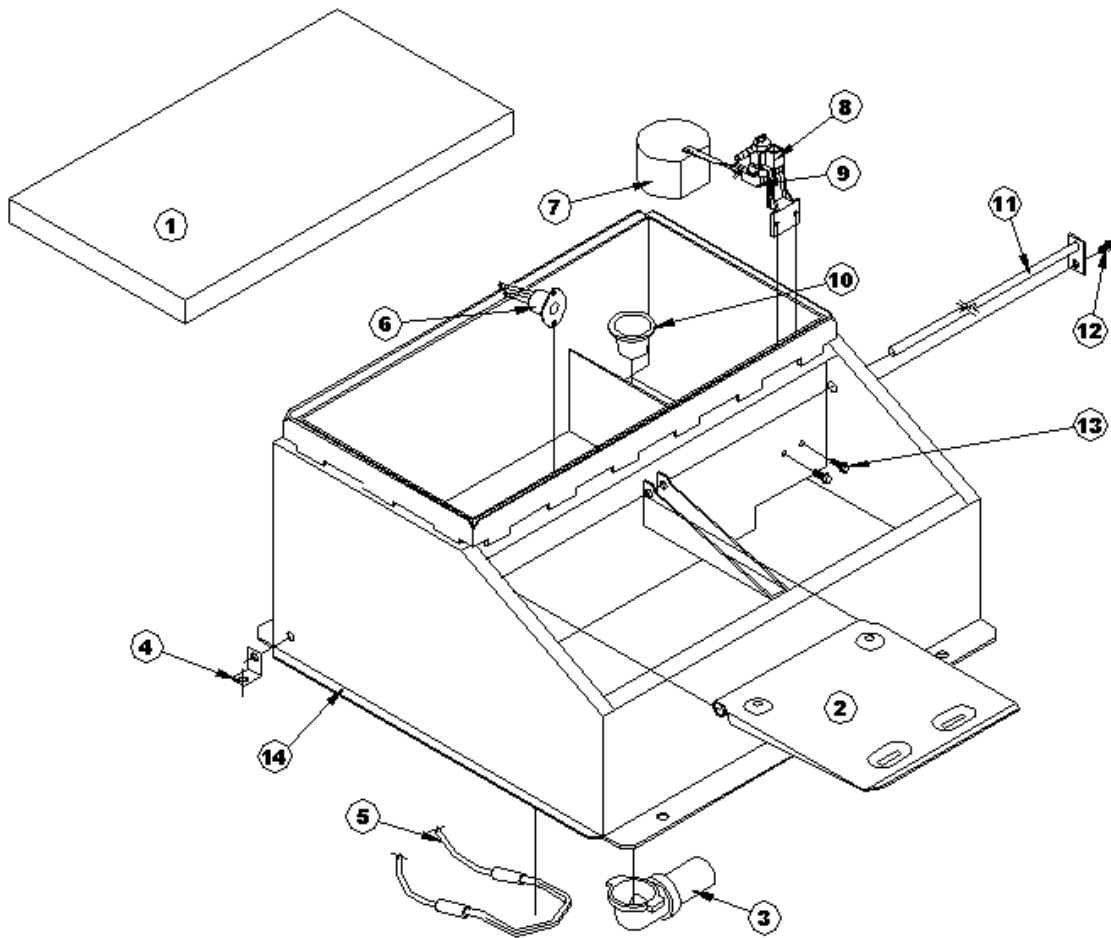
| Item | Part # | Description                 | Qty    | Item  | Part # | Description                     | Qty    |
|------|--------|-----------------------------|--------|---|--------|---------------------------------|--------|
| 1    | 16451  | Cover – PK 4                | 1      | 12  | 15154  | Screw – Valve Bracket (10/Pkg.) | 1 Pkg. |
| 2    | 16092  | Lifting Lid Only PK         | 4      | 13  | 16576  | Casing W/Insulation             | 1      |
| 3    | 16172  | Drain W/Elbow               | 1      | NS  | 16366  | Insulation Pkg.                 | 1 Pkg. |
| 4    | 18628  | Drain Plug (2/Pkg.)         | 1 Pkg. | NS  | 13830  | 48W Cable Heater (120 Volt)     | 1 Pkg. |
| 5    | 14150  | 125W Element (120 Volt)     | 4 Pkg. | NS  | 12584  | Supply Hose Assembly            | 1 Pkg. |
| 6    | 11885  | Disc Thermostat – Red       | 1 Pkg. | NS  | 18075  | Drain Washers (6/Pkg.)          | 1 Pkg. |
| 7    | 13613  | Float W/ Short Arm          | 1 Pkg. | NS  | 16128  | Complete Accessory Pkg.         | 1 Pkg. |
| 8    | 11515  | Valve Bracket 1/2" Pkg.     | 1 Pkg. | For 240 Volt Pork King 4 Part #16845, See Parts Below |        |                                 |        |
| 9    | 12575  | Red Valve 1/2" Pkg.         | 1 Pkg. |   |        |                                 |        |
| 10   | 16326  | Hinge Rod Only PK4          | 2      | NS  | 16664  | 200W Element (240 Volt)         | 4 Pkg. |
| 11   | 15155  | Screw – Hinge Rod (10/Pkg.) | 1 Pkg. | NS  | 16424  | 48W Cable Heater (240 Volt)     | 1 Pkg. |

NS = Not Shown

*Italicized text = Not included or optional configuration add-ons*

# Pork King 2-1

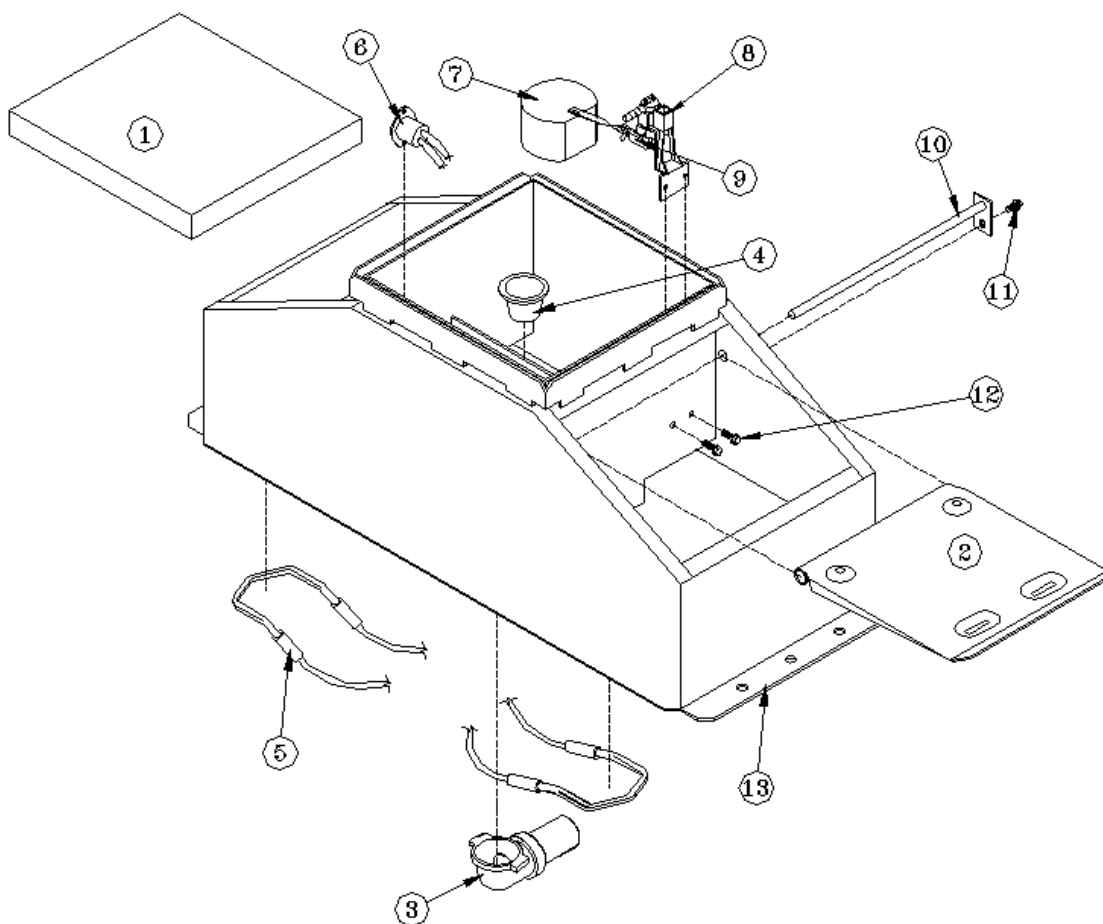
Part # 16458



| Item | Part # | Description                  | Qty    | Item  | Part # | Description                     | Qty    |
|------|--------|------------------------------|--------|---|--------|---------------------------------|--------|
| 1    | 16451  | Cover – PK 2-1               | 1      | 12  | 15155  | Screw Hinge Rod (10/Pkg.)       | 1 Pkg. |
| 2    | 16092  | Lifting Lid Only – PK        | 2      | 13  | 15154  | Screw – Valve Bracket (10/Pkg.) | 1 Pkg. |
| 3    | 16172  | Drain W/Elbow                | 1      | 14  | 16575  | Casing W/Insulation             | 1      |
| 4    | 13775  | SS Hold Down W/Bolt (4/Pkg.) | 1 Pkg. | NS  | 16365  | Insulation Pkg.                 | 1 Pkg. |
| 5    | 14150  | 125 W Element (120 Volt)     | 2 Pkg. | NS  | 13830  | 48W Cable Heater (120 Volt)     | 1 Pkg. |
| 6    | 11885  | Disc Thermostat – Red        | 1 Pkg. | NS  | 12584  | Supply Hose Assembly            | 1 Pkg. |
| 7    | 13613  | Float W/ Short Arm           | 1 Pkg. | NS  | 18075  | Drain Washers (6/Pkg.)          | 1 Pkg. |
| 8    | 11515  | ½” Valve Bracket Pkg.        | 1 Pkg. | NS  | 16123  | Complete Accessory Pkg.         | 1 Pkg. |
| 9    | 12575  | ½” Red Valve Pkg.            | 1 Pkg. | For 240 Volt Pork King 2-1 Part #16846, See Parts Below |        |                                 |        |
| 10   | 18628  | Drain Plug (2/Pkg.)          | 1 Pkg. | NS  | 16664  | 200W Element (240 Volt)         | 2 Pkg. |
| 11   | 16326  | Hinge Rod Only PK 2-1        | 1      | NS  | 16424  | 48W Cable Heater (240 Volt)     | 1 Pkg. |

# Pork King 2

Part # 16457



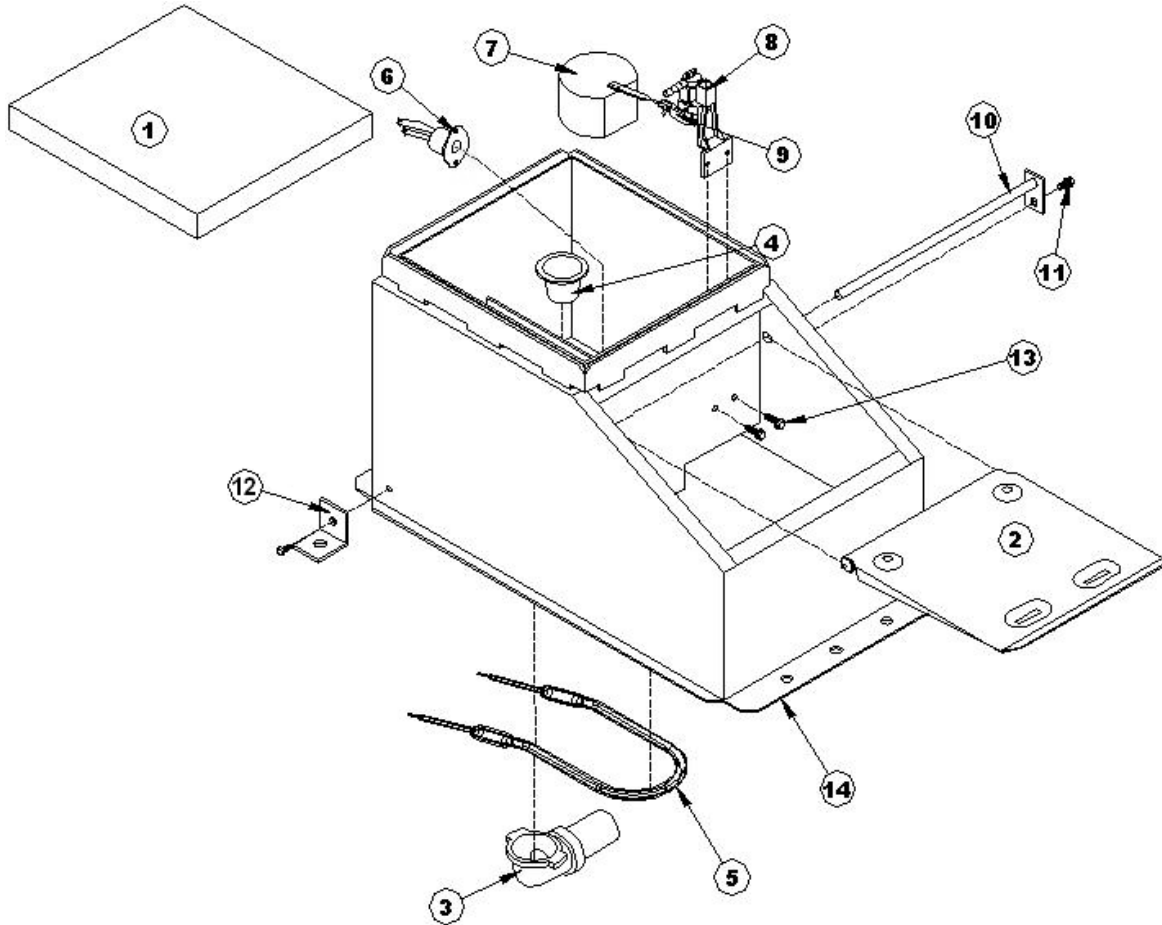
| Item | Part # | Description                 | Qty    | Item  | Part # | Description                     | Qty    |
|------|--------|-----------------------------|--------|---|--------|---------------------------------|--------|
| 1    | 16449  | Cover – PK2                 | 1      | 12  | 15154  | Screw – Valve Bracket (10/Pkg.) | 1 Pkg. |
| 2    | 16092  | Lifting Lid Only – PK       | 2      | 13  | 16574  | Casing W/Insulation             | 1      |
| 3    | 16172  | Drain W/Elbow               | 1      | NS  | 16364  | Insulation Pkg.                 | 1 Pkg. |
| 4    | 18628  | Drain Plug (2/Pkg.)         | 1 Pkg. | NS  | 13830  | 48W Cable heater (120 Volt)     | 1 Pkg. |
| 5    | 14150  | 125 W Element (120 Volt)    | 2 Pkg. | NS  | 12584  | Supply Hose Assembly            | 1 Pkg. |
| 6    | 11885  | Disc Thermostat – Red       | 1 Pkg. | NS  | 18075  | Drain Washers (6/Pkg.)          | 1 Pkg. |
| 7    | 13613  | Float W/ Short Arm          | 1 Pkg. | NS  | 16128  | Complete Accessory Pkg.         | 1 Pkg. |
| 8    | 11515  | ½” Valve Bracket Pkg.       | 1 Pkg. | For 240 Volt Pork King 2 Part #16847, See Parts Below |        |                                 |        |
| 9    | 12575  | ½” Red Valve Pkg.           | 1 Pkg. |   |        |                                 |        |
| 10   | 16093  | Hinge Rod Only – PK2        | 2      | NS  | 16664  | 200W Element (240 Volt)         | 2 Pkg. |
| 11   | 15155  | Screw – Hinge Rod (10/Pkg.) | 1 Pkg. | NS  | 16424  | 48W Cable Heater (240 Volt)     | 1 Pkg. |

NS= Not Shown      *Italicized text = Not included or optional configuration add-ons*



# Pork King 1

Part # 16456



| Item | Part # | Description                 | Qty    | Item  | Part # | Description                     | Qty    |
|------|--------|-----------------------------|--------|---|--------|---------------------------------|--------|
| 1    | 16449  | Cover – PK1                 | 1      | 12  | 13775  | SS Hold Down W/Bolt (4/Pkg.)    | 1 Pkg. |
| 2    | 16092  | Lifting Lid Only – PK       | 1      | 13  | 15154  | Screw – Valve Bracket (10 Pkg.) | 1 Pkg. |
| 3    | 16172  | Drain W/Elbow               | 1      | 14  | 16573  | Casing W/Insulation             | 1      |
| 4    | 18628  | Drain Plug (2/Pkg.)         | 1 Pkg. | NS  | 16363  | Insulation Pkg.                 | 1 Pkg. |
| 5    | 11419  | 250W Element (120 Volt)     | 1 Pkg. | NS  | 12584  | Supply Hose Assembly            | 1 Pkg. |
| 6    | 11885  | Disc Thermostat – Red       | 1 Pkg. | NS  | 18075  | Drain Washers (6/Pkg.)          | 1 Pkg. |
| 7    | 13613  | Float W/ Short Arm          | 1 Pkg. | NS  | 16123  | Complete Accessory Pkg..        | 1 Pkg. |
| 8    | 11515  | ½" Valve Bracket Pkg.       | 1 Pkg. | For 240 Volt Pork King 1 Part #16848, See Parts Below |        |                                 |        |
| 9    | 12575  | ½" Red Valve Pkg.           | 1 Pkg. | NS  | 11403  | 300W Element (240 Volt)         | 1 Pkg. |
| 10   | 16093  | Hinge Rod Only – PK1        | 1      | NS  | 16424  | 48W Cable Heater (240 Volt)     | 1 Pkg. |
| 11   | 15155  | Screw – Hinge Rod (10/Pkg.) | 1 Pkg. |   |        |                                 |        |

NS = Not Shown

*Italicized text = Not included or optional configuration add-ons*

## Trouble Shooting

| Problem                   | Solution  |  |
|---------------------------|---|--|
| Water in Trough Too Warm  | Adjust thermostat to lower temperature by moving towards heater   |  |
|                           | 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 by moving the disc away from the heaters  |  |
|                           | 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  |  |
|                           | Check for air gaps between casing and concrete floor  |  |
| 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><b>1/2" Valve</b></p> <p>Valve Rubber</p> <p>Pin must be pushed out of valve to disassemble</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  |  |