

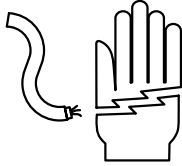
# INSTRUCTIONS

## REPAIR PARTS LIST AND WARRANTY INFORMATION

# WPO6E, WPO6N MPO6E, MPO6N POLY, ELECTRIC DRINKERS

**READ ALL DIRECTIONS CAREFULLY BEFORE BEGINNING INSTALLATION**

## ⚠ WARNING ⚠



1. INSTALLATION MUST BE MADE AND MAINTAINED IN STRICT ACCORDANCE WITH NATIONAL/LOCAL PLUMBING AND NATIONAL/LOCAL ELECTRICAL CODES (CSA IN CANADA). INSTALLATION MUST BE MADE BY A QUALIFIED ELECTRICIAN. THE APPLICABLE PROVISIONS OF THE ABOVE MENTIONED CODES TAKE PRECEDENT. IMPROPER ELECTRICAL INSTALLATION AND MAINTENANCE MAY RESULT IN SERIOUS INJURY OR DEATH FOR PERSONNEL OR LIVESTOCK.
2. EACH ELECTRICAL UNIT MUST BE WIRED THROUGH A FUSED SWITCH BOX AND FUSED ACCORDING TO AMPS REQUIRED FOR EACH SPECIFIED ELECTRICAL UNIT. SEE EXHIBIT A. CANADIAN ELECTRICAL CODE--PART 1 REQUIRES LIVESTOCK WATERERS INSTALLED IN FEEDLOTS IN OPEN FEEDING AREAS TO BE GROUNDED BY A SEPARATE STRANDED COPPER GROUNDING CONDUCTOR OF AT LEAST NO. 6 AWG TERMINATING AT A POINT WHERE THE BRANCH CIRCUIT RECEIVES ITS SUPPLY.
3. THIS UNIT MUST BE GROUNDED TO A COPPER GROUND ROD 5/8" (1.6CM) DIAMETER BURIED AT LEAST 10 FEET (3.1 METERS) IN UNDISTURBED SOIL. SEE EXHIBIT A.

### REPAIR PARTS LIST - See Exhibits G & I on PAGES 5 & 6 for location of parts.

Ref. No.	Part No.	Description	Qty	Ref. No.	Part No.	Description	Qty
1	WPO610	Utility Drinker Base, Blue	1	19	WPO621	3/4" x 8" Sch. 40 PVC	1
1	MP0610	Utility Drinker Base, Red	1		<b>VT100</b>	<b>Float Valve - Non-replacement parts description on page 5 Includes Ref. Nos. 20 thru 23</b>	
2	WPO6SRLID	Top Cover, Stainless Steel Lid	1	20	VT103	Valve Body	1
3	OF514	1/4"-20 x 1/2" Slotted Indented Washer Head Machine Screw	2	21	VT104	O-Ring Clamp	1
4	OP210	1-1/2" NPT Plug, Plastic (Already installed)	2	22	VF13	Plunger Disc .125" x 13/32" DIA. OB	1
5	WT208	Foam Pipe Insulation, 36"	1	23	VT101	Float Arm	1
6	OP284P	C250 Utility De-Icer	1		<b>WPO614</b>	<b>1-1/2" Base Stand Pipe Assembly (Already installed) includes Ref. Nos. 24-28</b>	
	<b>WPO612</b>	<b>Hardware Bag Assembly Includes Ref. Nos. 7 thru 23</b>		24	OP119	O-Ring, 1-3/4" ID x 2-1/8" OD x 3/16"	1
7	OP93	11" Tywrap	2	25	OP118	1-1/2" MIP Adapter	1
8	WPO613	Base Seal, 56"	1	26	WPO616	1-1/2" x 5" Schedule 40 PVC	1
9	OP120	#11 Rubber Stopper	1	27	OP281	1-1/2" x 1-1/2" Female Adapter Thread x Slip	1
10	OP320	2" Rubber Stopper	1	28	OP308	1-1/2" Close Nipple Thread x Thread	1
11	OP317	3/4" PVC-40 x 1/2" F.I.P. Adapter	1		<b>WPO620</b>	<b>Heater Line Pipe Assembly (Already installed) Includes Ref. Nos. 29-32</b>	
12	OP326	1/2" MIP X 1/4" OD Nylon Hose Barb	1	29	OP119	O-Ring, 1-3/4" ID x 2-1/8" OD x 3/16"	1
13	OP124	1/4" Clamp, SS	2	30	OP118	1-1/2" MIP Adapter	1
14	WPO113.A	Water Supply Line, 1/4" x 36"	1	31	WPO619	1-1/2" x 13" Schedule 40 PVC	1
	<b>WPO622</b>	<b>3/4" Upper Stand Pipe Includes Ref. Nos. 15 thru 19</b>		32	OP281	1-1/2" x 1-1/2" Female Adapter Thread x Slip	1
15	B83	3/4" Conduit Locknut	1	33	OP291	1-1/2" x 1-1/2" x 1" Slip Tee, Split	1
16	WPO615	1-1/2" PVC Threaded Cap, Drilled	1		ISHWPO6	Instruction Sheet	1
17	OP325	O-Ring 214 EPDM	1				
18	OP116-P	3/4" PVC Sch. 40 Male Adapter	1				

**(No Heat Models are shipped without WPO618 Heater Assembly Hardware Bag and without WPO620 Heater Line Pipe Assembly and with one additional Ref. No. 4 (OP210 1 -1/2" Plug))**

### MODEL NUMBER

The MODEL NUMBERS are: WPO6E, WPO6N, MPO6E, MPO6N Drinkers

### WHEN ORDERING PARTS

- (1) Show MODEL NUMBER and NAME: Example - WPO6E Poly Drinker
- (2) Show PART NUMBER and FULL DESCRIPTION of part: Example - OP210 1 1/2" NPT Plug, Plastic

### HOW TO ORDER PARTS

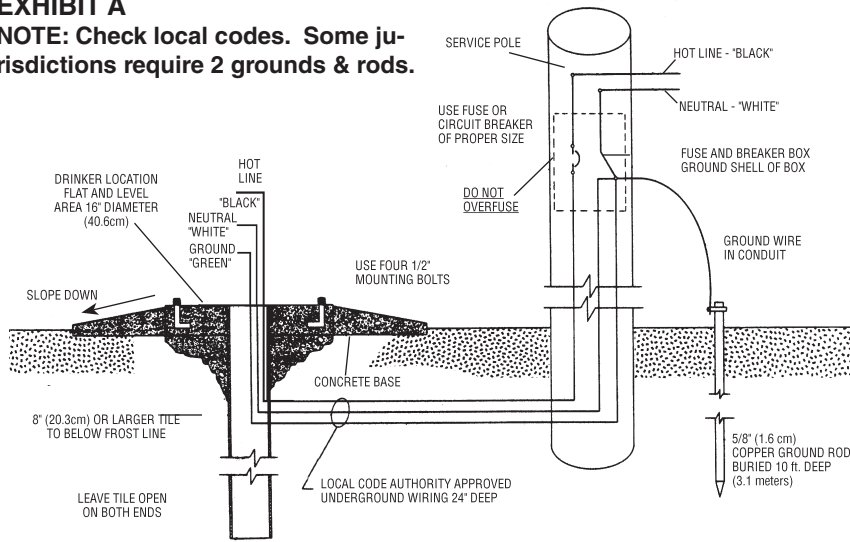
Repair parts may be ordered from your dealer.



PO BOX 2000 • HOUGHTON, IOWA 52631 • USA  
PHONE: 319-469-4141 FAX: 319-469-4402  
www.hawkeyesteel.com E-MAIL: sales@hawkeyesteel.com

**EXHIBIT A**

**NOTE: Check local codes. Some jurisdictions require 2 grounds & rods.**



The following is intended to be used as a general guide for wiring electricity heated drinkers.

Paragraph 5, 6, and 7 are taken from ASAE Engineering Practice: ASAE EP 342. Safety for Electrically Heated Livestock Waterers, March 1995. Installation can only be completed by a qualified electrician.

**5. Electrical Service**

- 5.1 Service conductors should conform to the following:
  - 5.1.1 Conductors shall have sufficient ampacity for the load to be served.
  - 5.1.2 Overhead conductors shall have mechanical strength for the distance spanned. The conductors shall not be smaller than No. 8 American wire gage, AWG, copper or NO. 6 AWG aluminum or copper clad aluminum.
  - 5.1.3 Buried connectors shall be of type USE (or UF when protected as a feeder or branch circuit) and shall be buried at least 610mm (24 in.) below the ground surface. Wet rated conductors in non-metallic conduit are also acceptable for providing service.

5.2 Waterer installed near or in a building may be served by a branch circuit from the service equipment of the building.

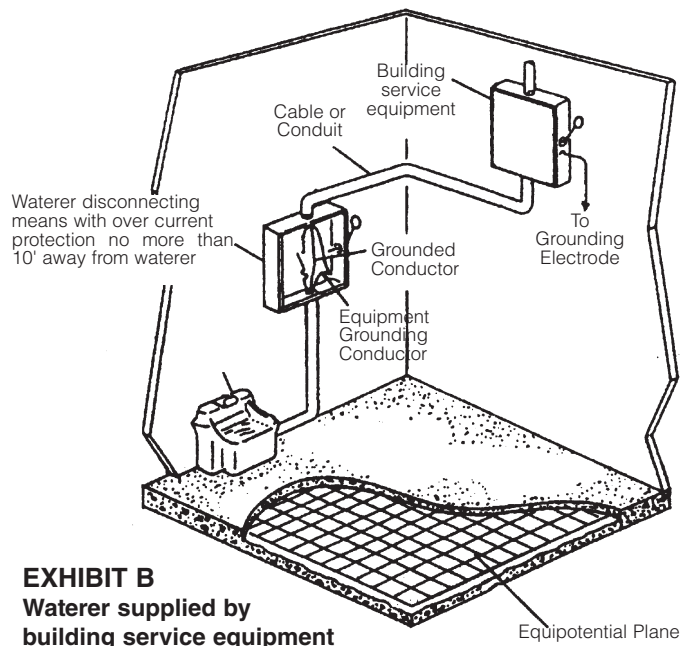
**6. Supply Circuits**

- 6.1 Waterers installed within or near a building and served by a branch circuit from the service equipment of the building shall be connected as in Exhibit B.
  - 6.1.1 The equipment grounding conductor shall originate at the service equipment of the building.
  - 6.1.2 The equipment grounding conductor shall be connected to the equipment grounding terminal of the waterer and bonded to any intermediate enclosure or device that requires grounding. The equipment grounding conductor shall be isolated from the grounded (neutral) conductor at every point beyond service equipment.
  - 6.1.3 The entire electrical supply service to the waterer shall be protected by means of a ground fault inductance circuit. This can be accomplished through a ground fault inductance (GFI) outlet, or a ground fault inductance (GFI) circuit breaker.
- 6.2 An individual waterer installed in a lot and served by separate service equipment shall conform to the following: (see Exhibit C).
  - 6.2.1 Overhead conductors shall be firmly attached to support points and conform to 5.1.1 and 5.1.2. Buried conductors shall conform to 5.1.3.
  - 6.2.2 The incoming grounded conductor shall be bonded to the service equipment enclosure and to a grounding electrode conductor at the grounding bar in the service equipment. The grounding electrode conductor shall extend to a grounding electrode (a ground rod or other effective electrode).
  - 6.2.3 An equipment grounding conductor shall originate at this service equipment and shall be installed with the circuit conductors to the waterer.
  - 6.2.4 The equipment grounding conductor shall be installed as described in 6.1.2.
  - 6.2.5 The ground fault inductance protection shall be installed as explained in 6.1.3.

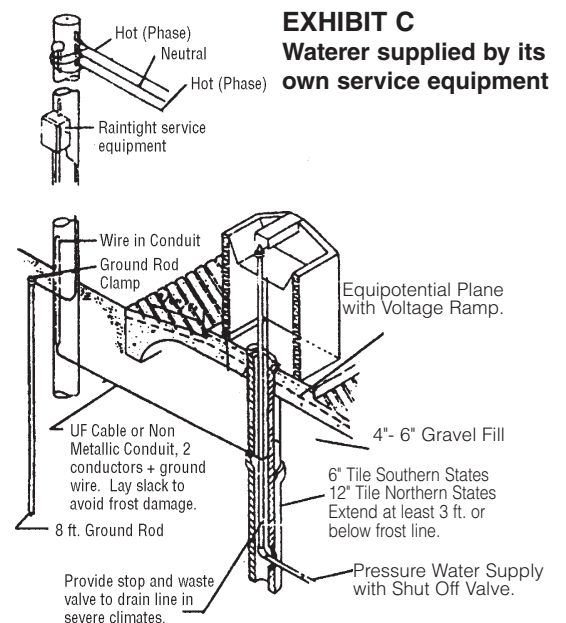
**7. Multiple Installations**

- 7.1 When more than one waterer is to be served from a central service, the service equipment should be located near the load center.
- 7.2 Each waterer shall be connected as specified in 6.2.

**NOTE: THE USE OF THE RISER PIPE AS A GROUNDING MEANS IS NOT RECOMMENDED**

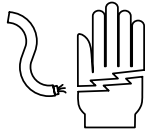


**EXHIBIT B**  
Waterer supplied by building service equipment



**EXHIBIT C**  
Waterer supplied by its own service equipment

**HEATER OPERATION:**



**⚠ WARNING ⚠**

**DISCONTINUE ELECTRICAL SERVICE TO ELECTRIC SUPPLY LINE BEFORE REMOVING THE HEATER.**

Farm Innovators Model C250 Utility De-Icer standard specifications are 250 Watts / 120 VAC / 2.0 AMPS. The heat range is about 34° F to 45° F. The de-icers only works when the temperature approaches freezing. It is thermostatically controlled to turn on at freezing and to turn off when the temperature is above freezing.

If unit freezes in the drinker due to the loss of power, allow unit adequate time to melt itself free. Do not chop or cut at unit while plugged in.

Low voltage is a possible cause for failure or poor performance. Measure voltage at receptacle with unit energized. Voltage drop means wattage reduction. Extension cords cause voltage drop and are unsafe.

**IMPORTANT! DO NOT ALLOW DEPOSITS TO BUILD UP ON THE HEATING ELEMENT.** This can cause "hot spots" which is a primary reason of failure and voids the warranty. White vinegar or "Lime Away" can be used to clean the tubular element.

When taking unit out of service, disconnect power supply cord, remove unit from tank, clean element (see above), store indoors.

**ALSO, PLEASE NOTE:**

1. Do not energize the heater until the drinker is filled with water.
2. Do not operate the unit out of water (except to test - See 3 below.)
3. Here's how you can check to see if your heater is working--
  - a) Set unit in freezer for one hour or outside for one hour if temperature is below 35 degrees F.
  - b) Connect heater to an electrical source. Hold the heater by the cord set. Within seconds, the element should begin to heat. Listen for the thermostat to "click" off. Disconnect the unit. The unit is working properly.

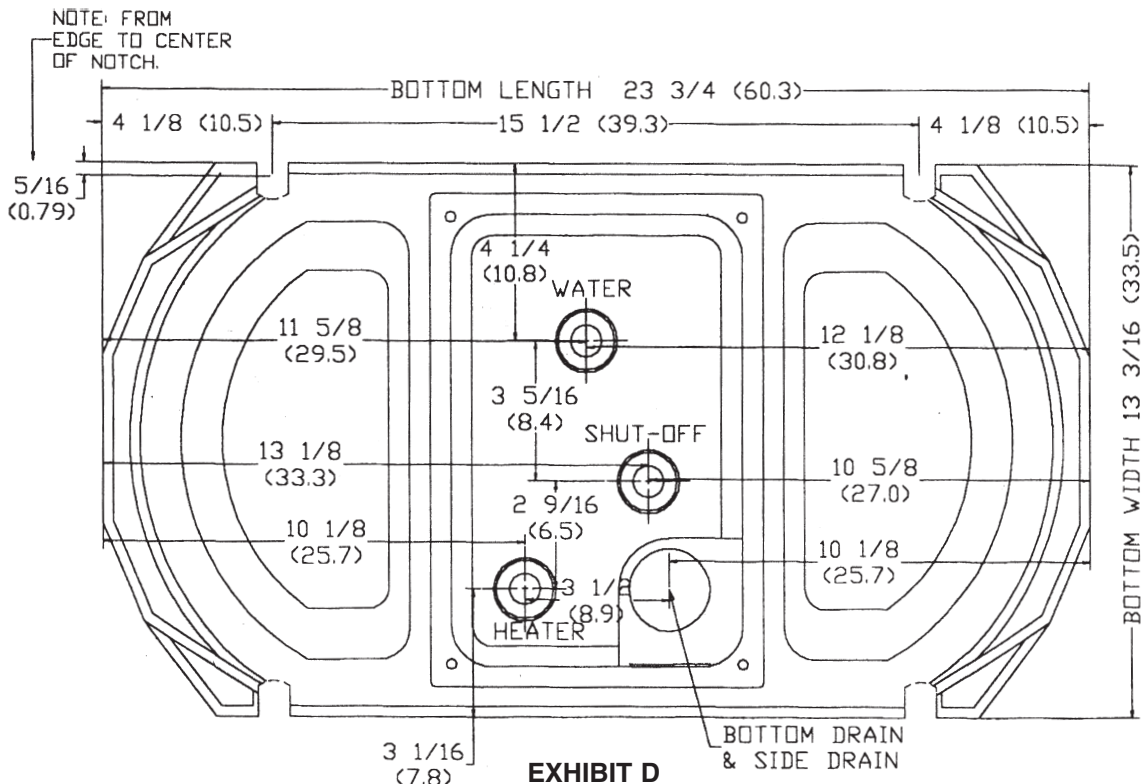
**OTHER MANAGEMENT TIPS**

For extra assurances that your supply line will not freeze up during the severest conditions:

1. Make sure you have an airtight and water tight connection between the mounting pad and drinker base.
2. Make sure your riser tile is flush with the top of the platform.

When tank needs to be cleaned, stir up solids so they are in suspension. Remove plugs (or push in plugs through outside openings). The valve will activate giving a flushing action.

When servicing during cold weather, use artificial inseminator's plastic sleeve to keep hands and clothing dry.



**EXHIBIT D**  
**TOP DOWN VIEW OF WPO6/MPO6**  
 Base Dimensions in Inches (cm)

## INSTALLATION INSTRUCTIONS:

STEP 1: Get your qualified electrician involved in the planning of your installation. Review Exhibits A, B and C on page 2.

STEP 2: RISER TILE - The ideal size of riser depends on the installation, source of water and geography. If you are replacing an existing waterer and have had no supply line freezing problems and have been using no supplemental heat on your supply line, you can probably use your existing tile as long as it is large enough to accommodate the pipe insulation. For best protection, we recommend that a new riser tile of at least 8 inches (20.3 cm) diameter be installed.

INSTALLATION MUST BE MADE WITHOUT THE SUPPLY LINE TOUCHING THE RISER TILE AND THERE MUST BE NO DEBRIS OR DIRT IN THE RISER TILE. DO NOT STUFF YOUR RISER TILE WITH INSULATION AS IT CAN BECOME WATER LOGGED RESULTING IN FROST PENETRATION. If the installation is north of Interstate 90 or if frost heaving is a problem in your area, use a flexible supply line, such as 3/4 inch (1.9 cm) braided vinyl tubing available at most plumbing supply outlets. Also using a flexible supply line will facilitate valve hookup under STEP 5 below. If your water supply line is flexible and you are concerned that the flex may cause it to touch the riser tile, use a deep well submersible cable guard (a nylon plate that slips over the supply line and keeps it centered). Ask for a deep well submersible cable guard at your local plumbing supply outlet. BE SURE TO USE THE PROVIDED FOAM PIPE INSULATION AROUND YOUR SUPPLY LINE. Make sure the insulation does not touch the riser tile as well.

Where water is 54°F (12°C) or higher, you will probably not need to use a tile larger than 8 inches (20.3 cm) diameter. If entering water is 50°F (10°C) or colder, we recommend a tile of about 12 inches (30.5 cm) diameter. If incoming water has a temperature of the lower 40's (about 4°C), use a 14 inch (35.6 cm) tile.

STEP 3: MOUNTING PAD - Review Exhibit F. Concrete pad should be about 4 inches (10.2 cm) thick. Surface area where drinker sits should be smooth and level to provide a good seal. From the edge of the drinker, pad should slope about one-quarter inch per foot (about 1 cm per 48 cm). The size of the pad is left to the user's discretion but we suggest you pour a pad large enough for livestock to stand on while drinking (about 19 inches (48 cm) beyond the edge of unit on all four sides). A rough broom finish provides better livestock footing. NOTE: The area where drinker sits should be smooth. A styrofoam barrier should be provided around the riser tile. Supply line should be at least 3/4 inch (1.9 cm) diameter. However, line should be sized to account for any pressure drop relating to distance. Water lines over 50 feet (15 meters) should be one inch (2.54 cm) or larger. Use of undersized supply line may cause loss of recovery capability.

STEP 4: The drinker components you need for installation are located underneath the top cover (Ref. No. 2, Exhibit G). Remove and save the 1/4-20 x 1/2 slotted screws (Ref. No. 3).

STEP 5: VALVE AND SUPPLY LINE ASSEMBLY - Your drinker should have Ref. Nos. 23 through 27 already installed.

WITHOUT sticking the base seal to the bottom of the drinker, place your drinker over the supply line (supply line should be inserted into the hole marked "WATER"). This will give a reference to where the incoming supply line needs to be cut. Remove drinker and cut supply line such that the line is inside the drinker but far enough down that when Ref. Nos. 11 and 12 (3/4" x 1/2" adapter and 1/2" x 1/4" hose barb) are installed they do not interfere with Ref. No. 15-19 upper stand pipe.

At this time, connect the Ref. No. 12 - 1/4" hose barb to the Ref. No. 14 - 1/4" braided hose, fully inserting the braided hose onto the barb. Secure using Ref. No. 13 - 1/4" stainless clamp. Tighten.

Attach Ref. No. 14-18 upper stand pipe to top of Ref. No. 27 1-1/2" closed nipple thread. Tighten.

STEP 6: FOR WARM CLIMATE INSTALLATIONS ONLY - Some warm geographic areas do not use a riser tile and may only have a buried supply line protruding through a concrete pad. Our drinker has a cavity which can accommodate such setups. See Exhibit H. You can connect from a 1/2" or 3/4" supply line by using a bushing, an elbow, and a thread by 1/4" barb assembled inside the cavity with a connection to the 1/4" braided hose (Ref. No. 14) provided.

STEP 7: HEATER ASSEMBLY - Ref. Nos. 29 through 32 should already be installed in your drinker. Run your electric supply into the 1-1/2" x 10 1/2" PVC pipe.

Snap on Ref. No. 33 PVC Clip. This is used to help support the heater on the 12" tube. Move the clip so that the bottom of the heater is about 2" off the bottom.

STEP 8: MOUNTING DRINKER AND FINALIZING CONNECTIONS

1. Slide Ref. No. 5 pipe insulation down over supply tube making it even with the top of the riser tile. Hold in place at the top with Ref. No. 7 tywrap.

2. Stick base seal to reservoir bottom just inside the anchor slots across the ends.

3. Set reservoir over supply tube keeping supply tube centered in the tile

4. Run electrical supply into the heater PVC pipe assembly in the drinker

5. Run 1/4" braided hose into both base and upper stand pipe.

6. Lag drinker to pad. Use an anti-seize compound on the lag bolt and nuts.

7. Complete your electrical hookup.

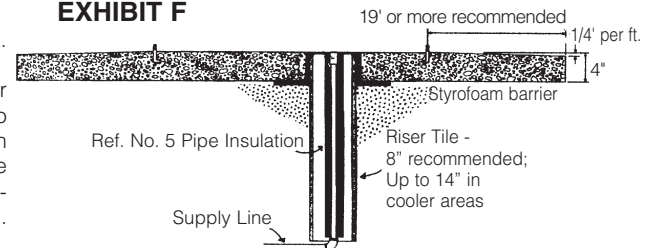
8. Run 1/4" braided hose line through stand pipe mount on valve, once through slide on 1/4" clamp on end of the 1/4" braided hose. Slide on to hose barb (already connected to valve).

**Note: 6" of braided hose is needed above upper stand pipe. Cut excess or attach hose to stand pipe with tywrap. Make sure braided hose does not interfere with valve operation and that it doesn't touch the drinker lid.**

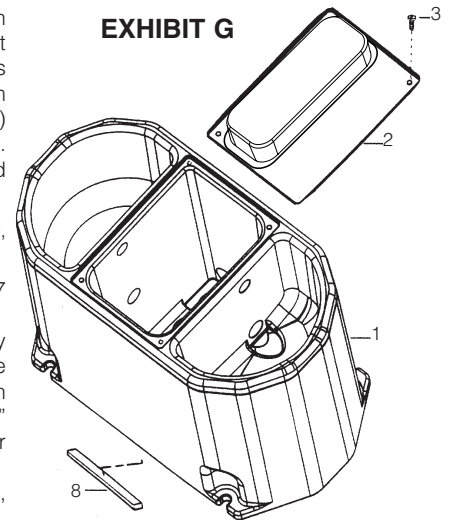
9. Slide valve onto stand pipe and tighten mounting bolts. To prevent over flow it is best to mount valve at least 1" below top of stand pipe. Once water level is known, fine tune adjustment can take place.

**Note: Drinker top has an offset cavity to allow the valve float to move. Make sure that float is aligned and centered with cavity.**

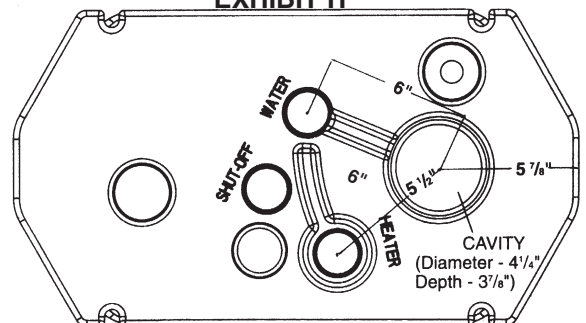
## EXHIBIT F



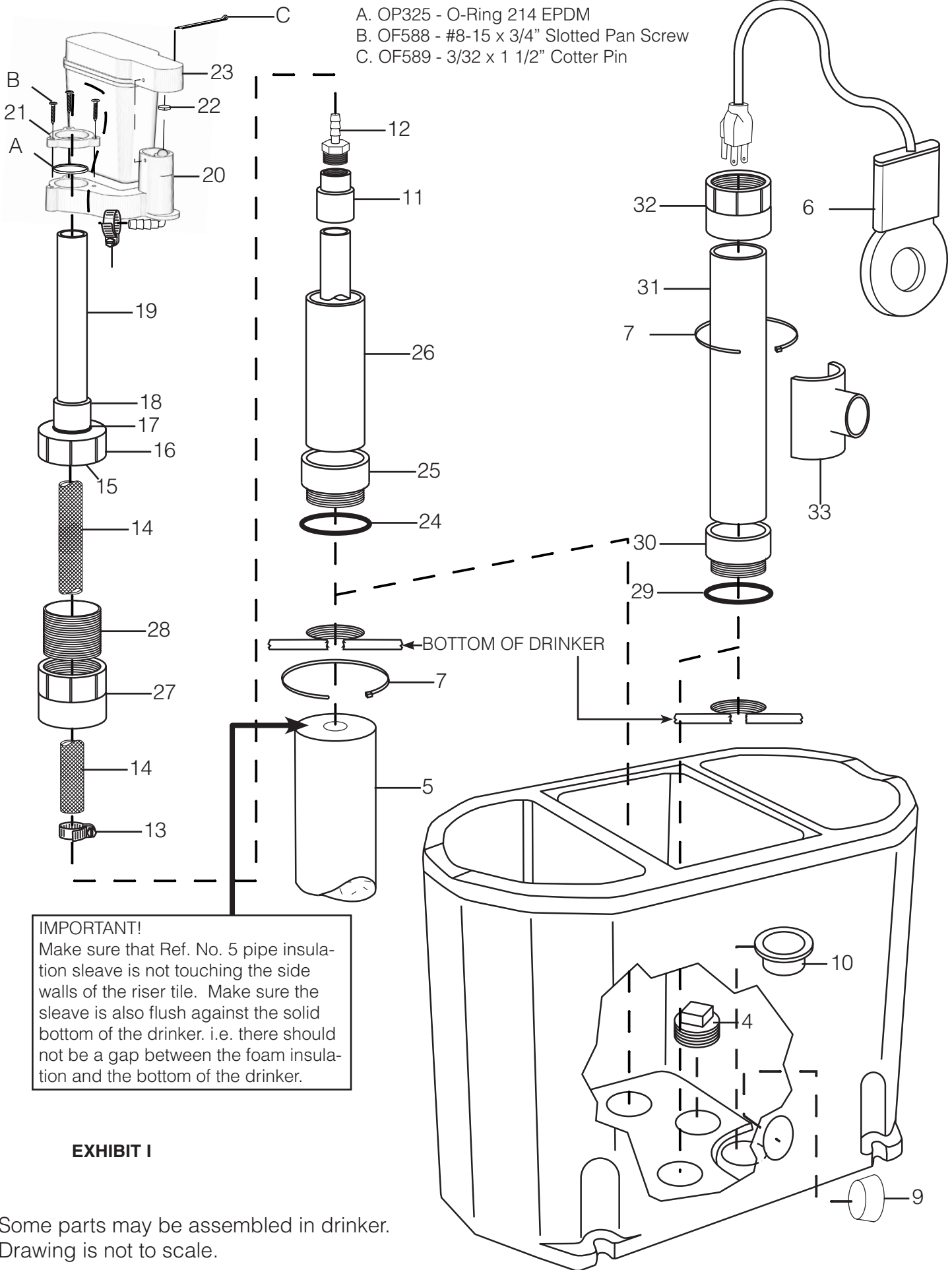
## EXHIBIT G



## EXHIBIT H



Bottom Up View of Base  
Shows cavity for possible warm weather installation.



## **LIMITED WARRANTY**

Our part no. OP284 C250 Utility Deicer (heater) and our VT100 Float Valve carry an 18 month limited warranty. All other components of Hawkeye Steel Products, Inc. Performance One E-Drinks are covered by a five year warranty and an additional 6 year pro-rated warranty. Both warranty periods are from the date of purchase. Each drinker must be registered with Hawkeye Steel Products, Inc. on the card which accompanies each drinker. Warranted components should be returned to your dealer for shipment to our factory -- Highway 16 West, P.O. Box 2000, Houghton, IA 52631 USA, Fax 319-469-4402; 800-553-1791. Warranty is limited to the repair or replacement of components. The warranty does not cover removal or reinstallation; cost to transport and retrieve components for repair; damage or loss occurring during transport; damage due to foundation design; damage caused by natural or environmental conditions (acts of God); costs associated with loss of time and/or inconvenience or any other consequential damages; injury; lack of animal performance; loss of profit, life or property; malfunction resulting from misuse, improper installation, lack of maintenance (such as not periodically removing deposits on the deicer), unauthorized alteration, or negligence. All provisions stated on the back of Hawkeye Steel Products, Inc.'s invoice apply and Hawkeye Steel Products, Inc. assumes no consequential damages.

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