

Extreme Weather Poly Electric Drinker Hardware Kit

Model AHW100 (54150158)

54900078

THANK YOU FOR PURCHASING THIS PRODUCT

Behlen Country has been in the business of providing quality products for more than 80 years. Our products will provide many years of service when maintained by the owner and used in accordance with the capabilities of the product. For questions about this product, or for parts inquiries, please contact our Customer Service Center listed below.

Before beginning, please read the instructions thoroughly to make sure you have all of the necessary components for your installation.

Location of the Drinker

If you are installing your drinker in a new location some things can be done to enhance the performance of your drinker and lower your operating costs. If the drinker can be located in a sheltered area, especially shielded from the north wind, then the heater will need to operate less and livestock will be more likely to drink more.

However, we realize that it is not always possible to locate the drinker in a sheltered area, but even if the drinker is exposed and out in the open, it would still be advantageous by locating the drinker with the access door to the south.

Water Supply Line

When installing your drinker please comply with all local plumbing codes. The horizontal underground water supply line should be 3/4" with a 3/4" supply riser pipe. A 3/4" I.D. pressure hose is supplied with your drinker. We suggest connecting the flex hose with 3/4" NPT x 3/4" hose barb connectors and hose clamps (these can be purchased locally) to the riser pipe.

If desired, a shut-off valve can be installed under the drinker to allow for easier servicing.

NOTE: If the heat is going to be shut off during the winter, a means must be provided to drain the supply line down below the frost line to prevent freezing of the riser pipe. **Tip:** Behlen Country has a Shut-Off Valve Kit (54130168) that can be used to shut off the water supply and drain the riser pipe.

Before hooking up your drinker, the supply line **MUST BE** flushed to ensure that no contaminants will foul the valve upon start up of your drinker. **NOTE:** Your drinker is equipped with an MC valve that is easy to clean and adjust. If low water pressure conditions exist and a higher flow rate is desired, a larger inlet is available (3888247).

Preparing the Mounting Platform

Install the drinker on a 4" (minimum) thick concrete base, slightly raised above the ground level for better drainage. (Note: The pad should be a minimum of 4" larger than the drinker.) For the AHW100 Drinker, a 24" x 34" minimum pad is required. If you are replacing a drinker and going to use an existing platform made for a different drinker, it must have a 24" x 34" flat mounting area. If it doesn't have a large enough area, you can pour a cap over the existing platform to enlarge it or replace the platform.

Extending the platform provides animals with a secure place to stand while drinking. If you extend the platform beyond the minimum it is advisable to slope the platform outside of the mounting area to promote better drainage. A smooth surface is recommended for the mounting area of the drinker and rough surface on the area where the animals will stand to drink. If you are pouring a new platform you have the option of using anchor bolts set into the concrete when wet or drilling and using expandable anchor bolts after the concrete has cured to mount your drinker. Refer to illustration # 1 for detailed measurements of the hole pattern.

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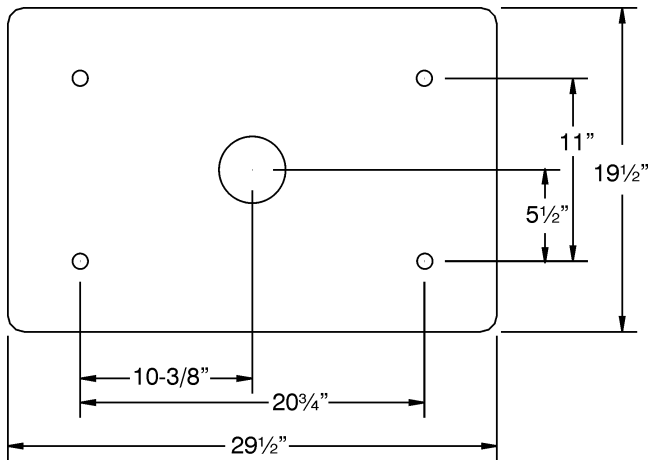


Illustration #1 - Anchor Bolt Placement

Before pouring the concrete, have the water line routed up through a 4" or larger tile in the center of the pad for final connections to the drinker. **Tip:** Behlen Country poly earth tubes (54130038) are an excellent way to route water to your drinker. Also, if electrical power is going to be routed underground to your drinker, an appropriate conduit for the electrical service must be installed at this time also. Please follow local electrical codes and use the recommended materials to route power to your drinker. Note: If you are using an existing platform and the water supply line is not in the center of the platform, you can enlarge the existing opening as required with a jig saw. If this is done, it is recommended that the exposed foam be coated with silicone sealant. See illustration 2 for details.



Illustration #2 - Enlarge Hole As Needed

Make sure the tile or earth tube extends below the frost line for your area. The tile or earth tube

must be left open to give access to warmer air from below the frost line, thus preventing the riser from freezing. If the soil in your area does not drain well it is recommend that a gravel bed be used under the earth tube to promote drainage if water happens to get in the earth tube. The top of the earth tube should be flush with the platform to allow flush mounting of the drinker.

Be sure the riser pipe does not touch the sides of the earth tube. If desired, a shut-off valve can be installed under the drinker to allow for easier servicing. **NOTE:** If the heat is going to be shut off during the winter a means must be provided to drain the supply line down below the frost line to prevent freezing of the riser pipe. **Tip:** Behlen Country has shut-off valve kit (54130118) that can be used to shut off the water supply and drain the riser pipe.

Mounting the Drinker to the Platform

To make mounting your drinker easier it is best to disassemble it first. Remove the float cover by pulling out on the two latches, see illustration 3A and 3B.



Illustration # 3A - Pull on Latch Handles



Illustration # 3B - Removing Float Cover

Next remove the four screws from the rim of the basin, illustration 4.



Illustration 4 - Removing Screws From Top

You can now remove the basin with the heat pad assembly by lifting up on the rim of the basin opposite of the drain, illustration 5.



Illustration 5 - Removing Basin

You will now have three pieces, the float cover assembly, the basin assembly and the base assembly.

If you are using expandable anchor bolts, proceed as follows: Center the drinker base assembly on the pad and transfer the mounting hole locations to the pad, illustration 6.



Illustration 6 - Transfer & Drilling Holes

Following these marks drill four 3/8" dia. x 2" deep holes in the concrete platform. Turn the drinker on its side and apply caulking around the bottom outer edge and center opening. Make sure to apply enough caulking to seal any irregularities between the drinker and the platform, see Illustration # 7.



Illustration 7 - Caulking Bottom

Secure the drinker base to pad using four 3/8" x 4" expandable anchor bolts with 3/8" fender washer (purchased locally),

While the basin is off, it is good time to install the 3/4" hose barb connection to the riser pipe. Reinstall the basin assembly to the base and remove the side access door. You can leave the float cover off until the water level is adjusted.

Electrical Connections

NOTE: Electrical connections should be made by a qualified electrician and all local codes need to be followed. The heating pad is 220 watt, 120 volt AC, 1.8 amp unit. It is thermostatically controlled so it only operates when there is a demand for heat. It is recommended that you shut off the power to the drinker during warm weather when heat is not required.

A 120 volts of AC power that is grounded and contains Ground Fault Circuit Interruption (GFCI) is required to operate this drinker. Normally, a 15 amp power supply is used to power the drinker. **CAUTION:** This drinker contains live electrical components, disconnect the power before servicing.

There are three connections and a ground that are required to connect your drinker. These connections are to be made with the three supplied DRYCON wire nuts. These wire

nuts are silicone filled and provide maximum protection against moisture. They are a one time use connector so, if reconnection is necessary new wire nuts will need to be obtained. All connections should be made inside the electrical box.

Ground Connection: The green (ground) wire from the supply line connects to the grounding lug inside the electrical box. The wiring will be easier if you hook up the ground wire first.

First Connection: A black and a white come from the heating pad. The white wire connects to the White (neutral) wire of the supply line.

Second Connection: The black wire from the heating pad connects to either one of the two black wires of the thermostat.

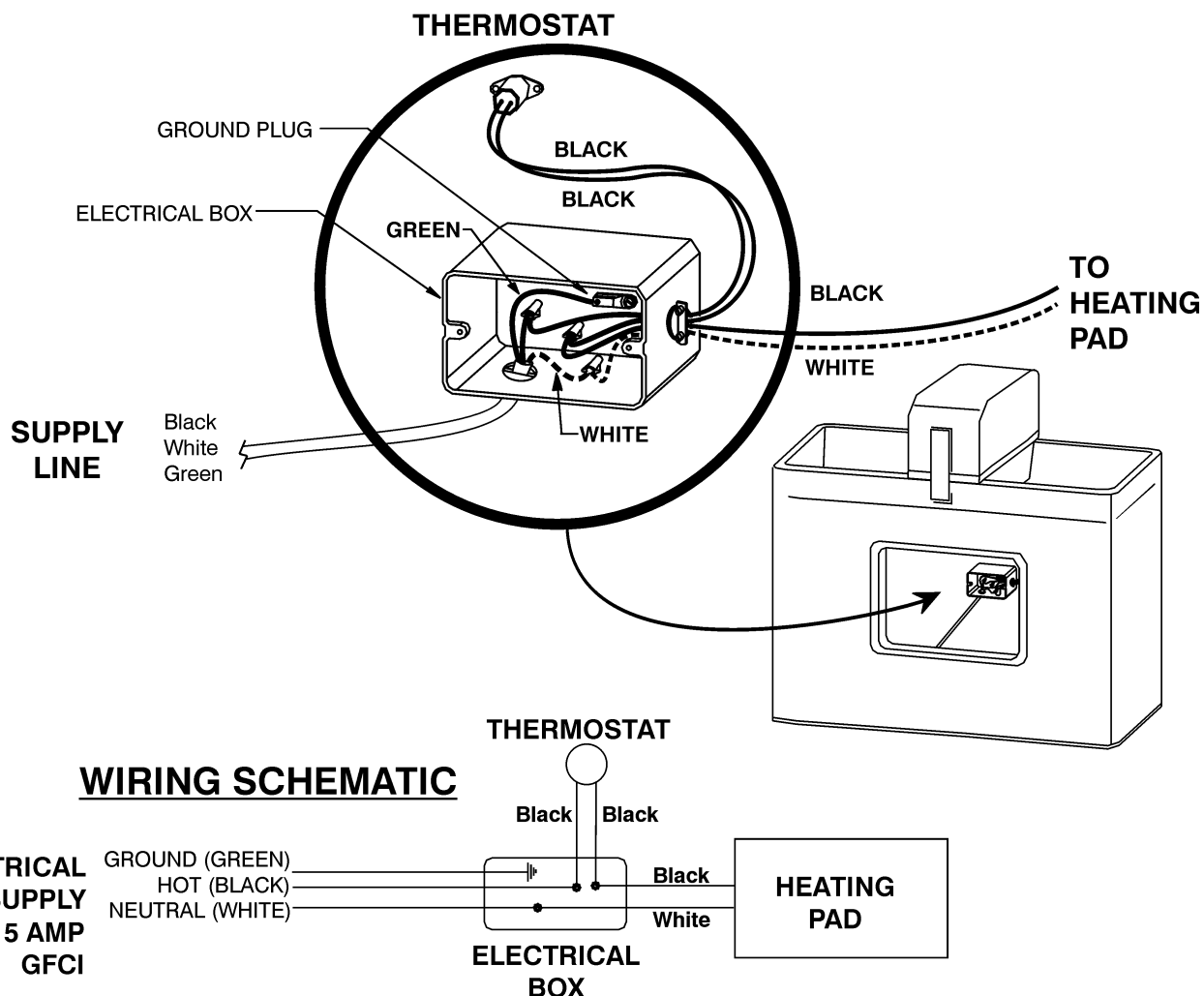
Third Connection: The other black wire from the thermostat connects to the black (hot) wire of the supply line.

Refer to the illustration below for details and schematic of this wiring connection.

Do **NOT** turn on the power until after the water connections have been made and tested to assure that there are no leaks.

NOTE: The use of the riser pipe as the grounding rod is not recommended. This is due to the extensive use of plastic pipe on the farmsteads and the unknown grounding properties of the existing pipe on the site.

WARNING: Compliance with the national electric code (CSA in Canada) and local electrical codes must be made and maintained when installing the drinker. Failure to comply and maintain the drinker to code could result in loss of livestock, severe personal injury, or even death.



Water Hookup and Float Adjustment

When cutting the flex hose, leave a little extra length to allow for movement of the platform during cold weather. However, do not leave too much length or the hose will kink and restrict the water flow. Slide the hose over the barb and secure it with the hose clamp. Make sure all connections are tight.

Insert the foam sealing ring coneside first from the outside of the drinker. Push the edges of the ring with finger so that the ring is in a quarter of an inch past the rim. The drain plug is installed in the end of the drain spout from the outside of the drinker. See Illustrations #8 & 9).



Illustration 8 - Installing Foam Sealing Ring

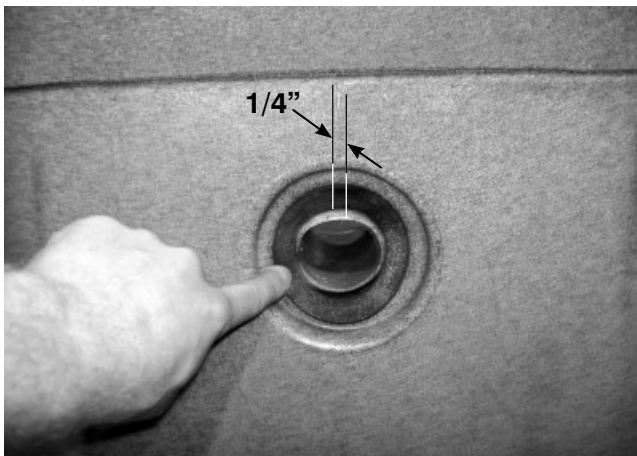


Illustration 9 - Foam Sealing Ring Installed

The water can now be turned on and the float level set.

Adjust the float by using the two thumb screws. Set the float to maintain a water level in the trough of 1" to 1½" below the top of the rim of the trough. See illustration 10.



Illustration 10 - Setting Water Level

Check all connections for leaks and if none are present the power can be turned on to the unit and the access door installed.

NOTE: Your drinker is equipped with an MC Valve that is easy to clean and adjust. If low water pressure conditions exist and a higher flow rate is desired, a larger inlet is available (3888247).

If you encounter problems after hooking up your drinker, please refer to the trouble shooting chart for information on possible solutions.

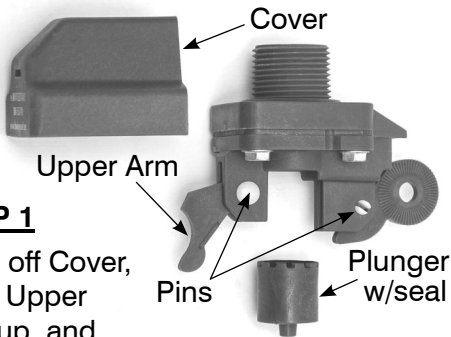
Warranties

All Behlen Country Electric Drinkers carry a 5 year limited warranty on the body and a 1 year limited warranty on the valve and controls.

Instructions for Cleaning the MC Valve and Replacing the Plunger & Seal

STEP 1

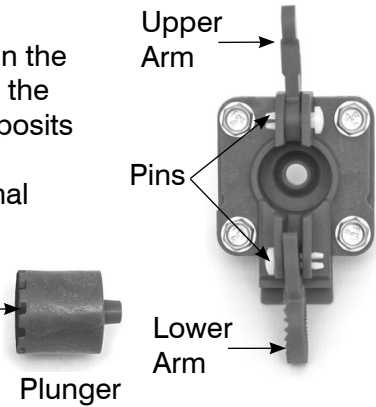
Slide off Cover, pivot Upper Arm up, and remove the Plunger.



STEP 2

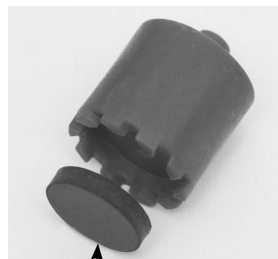
Clean the Rubber Seal in the Plunger and opening to the Valve of any mineral deposits or dirt buildup that may be obstructing the normal operation of the Valve.

Rubber Seal is inserted inside Plunger



STEP 3

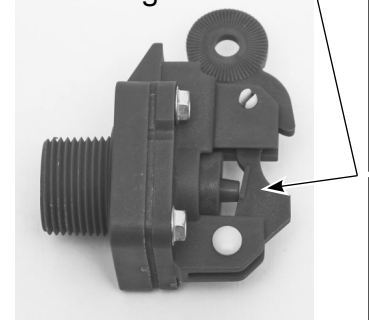
If the Rubber Seal is grooved but still pliable (not hard and brittle), you may flip it over and use the backside of the seal. If both sides of the Seal are hard, replacement Seals are available. In some instances both the Plunger and the Seal may need to be replaced.



Rubber Seal

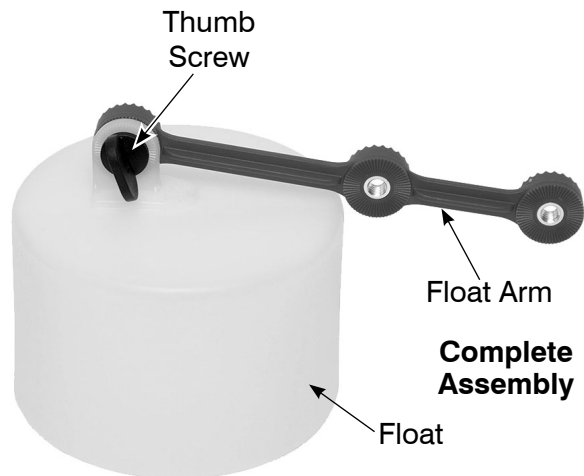
STEP 4

Replace the Plunger with the nipple facing out, and the rubber facing the valve. Pivot Upper Arm down over Plunger.



STEP 5

Replace the Cover to complete the cleaning of the Valve.



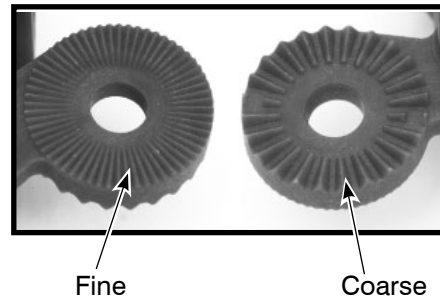
Instructions How To Assemble The Float And Arm To The MC Valve And How To Adjust The Valve

The MC Valve is already attached to the drinker. The float and arm assembly is with the hardware kit. They are packaged separately to prevent undue wear to the valve caused by the arm bouncing up and down during shipping.

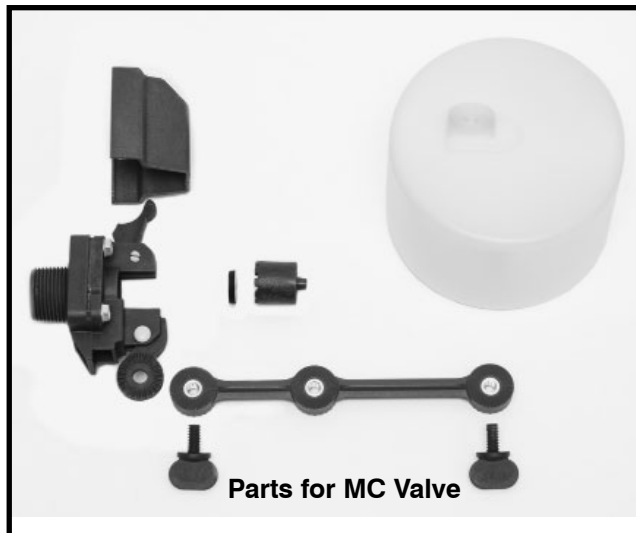
The float and arm are attached to the valve by a thumb screw. The float can be positioned either closer or further away from the valve (see photo below left for the two float positions). Further away increases the shut off force of the valve. However depending upon which drinker is being used, the closer position may

be required to maintain proper clearance for the float to the side of the drinker. A clearance of at least 1/2" should be maintained to ensure smooth operation of the valve.

When attaching the float arm to the valve, be sure to attach the arm to the correct side of the valve. The grooves on the valve and float arm must match. Please note that the valve has coarse grooves on one side and fine grooves on the other. The fine grooved side is used with the float arm (see below for details).



To adjust the water level in the drinker, loosen the thumb screws and position the float and arm so that the valve is turned off when the water is at the desired level (see photo at left). It may take a couple of adjustments to get the correct level (1-1½" below the top of the trough). To speed the adjustment process, remove the drain plug and drain a little water out so that the valve turns on. Put the drain plug back and let water fill until the valve shuts off. If the level is not correct, repeat the process until the correct level is obtained and then replace the float cover. Your drinker is now ready for use.



TROUBLE SHOOTING CHART

For Behlen Country Electric Drinkers

Ice in Trough	<ul style="list-style-type: none"> • Check fuses or circuit breakers. • Check to see if there are any gaps that allow cold air to enter the base of the drinker. <ul style="list-style-type: none"> - Make sure the fountain is sealed from wind between the concrete platform and bottom of the drinker. - Make sure there are no air leaks around the access door. • Check to make sure that you have a full 120 volts at the drinker and that the 120 volts are maintained when the heater is on. • Check the heating elements to make sure they are working and hot. • Check that heater is wired properly. • Check voltage after thermostat to fountain with and without electrical load (Note: to close the thermostat to complete the circuit, hold a piece of ice in a plastic bag next to sensing surface). • Adjust thermostat to higher temperature by moving it further away from the heat pad (make moves in 2" steps).
Water Freezing in the Valve or Supply Line	<ul style="list-style-type: none"> • Make sure supply line is properly installed. <ul style="list-style-type: none"> - Riser tube with supply line centered, and there is an air space between riser tube and supply line. - Horizontal supply line is at least 1' below frost line. • Check for missing or damaged insulation. • Check for air gaps against wind penetrations. - Make sure the fountain is sealed from wind between the concrete platform and bottom of the drinker. - Make sure there are no leaks around the access door. - Make sure that the latches are holding the float cover securely to drinker. If the latches are loose, adjust spring tension on the latch and, if necessary, bend the latch ends in vise thus enabling the latches to hold the cover tighter.
Valve Won't Stop Dripping or Shut Off	<ul style="list-style-type: none"> • Check the float adjustment. Check for waterlogged float, or float rubbing on side of the valve compartment. Ensure that the float moves freely. • 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. Please refer to the valve cleaning instructions supplied with your drinker. • Turn valve rubber over and re-assemble. • Check for excessive water system pressure (greater than 55 psi). If needed, change to our higher pressure APEX valve, or install a pressure regulator, available at most plumbing shops.
Low Water Flow	<ul style="list-style-type: none"> • Check that the 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 and then check pressure drop when valve is open. A severe pressure drop indicates a restriction or undersized supply system. • Check that shut off valves are fully open.