

ENERGY - FREE LIVESTOCK DRINKER

INSTALLATION INSTRUCTIONS, WARRANTY INFORMATION, AND REPAIR PARTS LISTS

READ ALL DIRECTIONS CAREFULLY BEFORE BEGINNING INSTALLATION

FIRST OF ALL - PURCHASE AN ANTI-SEIZE COMPOUND (BY PERMATEX OR EQUIVALENT) AVAILABLE AT MOST AUTOMOTIVE SUPPLY STORES. USE ON THE MOUNTING LAG BOLTS AND USE ON YOUR VALVE COVER FASTENERS.

EXHIBIT A

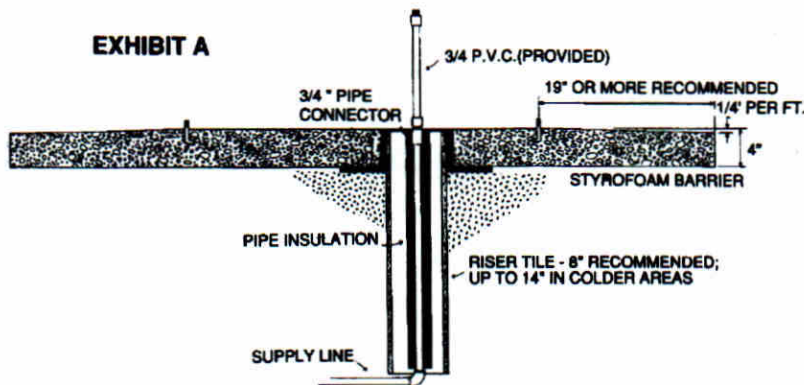
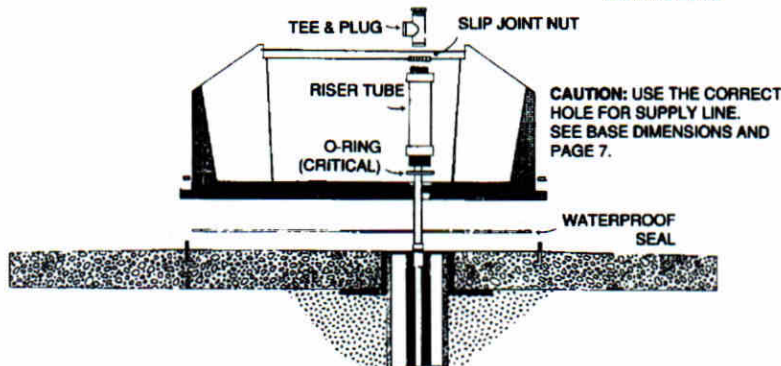
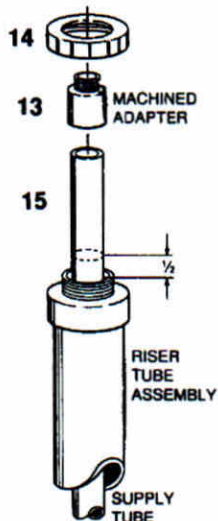


EXHIBIT B



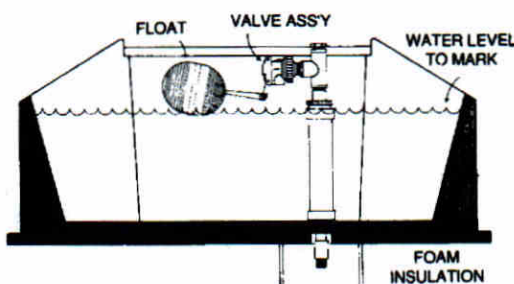
CAUTION: USE THE CORRECT HOLE FOR SUPPLY LINE. SEE BASE DIMENSIONS AND PAGE 7.

EXHIBIT C



NOTE: MAKE SURE MACHINED 3/4 INCH MPT TO PVC ADAPTER IS UP. THE NON-MACHINED STANDARD ADAPTER IS GLUED TO THE BOTTOM END OF THE SUPPLY TUBE. ALLOW SUPPLY TUBE TO EXTEND 1/2 INCH (1.27cm) BEYOND THE RISER TUBE ASSEMBLY.

EXHIBIT D



MOUNTING THE VALVE - Review Exhibit D.

Adjust the float so water fills the reservoir approximately 1 inch (2.54 cm) from overflow of the drink opening. There is a "FILL TO THIS LINE" mark in each drink opening.

If necessary, mount flaps to the cover using the 13 inch (33 cm) hinge rod an OF121 washer on each end of the rod and the OF78 cotter pin on each flap. On some models, the flaps are already attached. Mount the cover assembly to the base. Use the OF448 hex machine screws and OF127SS washers to mount the cover assembly to the base. LIGHTLY SNUG THE SCREWS ONLY. DO NOT OVERTIGHTEN. WE HIGHLY RECOMMEND USE OF ANTI-SEIZE COMPOUND (BY PERMATEX OR EQUIVALENT) ON THE OF448 HEX MACHINE SCREWS.

The valve comes assembled. Refer to Exhibit F for valve repair parts.

RISER TILE - The ideal size of riser tile 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. 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. 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 foam pipe insulation (provided) and make sure the insulation does not touch the riser tile as well. Review Exhibit E on page 2. Where entering 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 °F (about 4°C), use a 14 inch (35.6 cm) tile.

MOUNTING PAD - Review Exhibit A. 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. Attach a 3/4 inch (1.9 cm) N.P.T female connector (not included) to your supply line. Make sure top of riser tile is flush with top of pad. Also, make sure the top of the female connector (not included) is flush with top of the pad. Connect the provided 3/4 inch (1.9 cm) STANDARD MPT to PVC adapter (Ref. No. 18). Glue 3/4 inch (1.9 cm) PVC tube (provided) to the STANDARD 3/4 inch (1.9 cm) MPT to PVC adapter (Ref. No. 18).

MOUNTING DRINKER - Review Exhibit B.

- Slide pipe insulation down over supply tube making it even with the top of the riser tile. Hold in place at the top with tywrap provided.
- Stick base seal to reservoir bottom, about 1 inch (2.54 cm) in from the edge on the sides and just inside the anchor slots across the ends.
- Set reservoir over supply tube keeping supply tube centered in the tile. Anchor drinker at this time.
- Slip riser tube over supply tube and tighten into reservoir base. Make sure O-ring is in place on the riser tube.

Review Exhibit C.

- Mark supply tube so that 1/2 inch (1.27 cm) extends above the top of riser tube and cut supply tube at mark. Removing riser tube before cutting supply tube may make this step easier. Glue MACHINED 3/4 inch (1.9 cm) MPT to PVC adapter (Ref. No. 13) to top of supply tube. Replace and tighten riser tube if you have removed it.
- Tighten slip joint nut, (Ref. No. 14) at top of riser tube, against the biggest diameter of the 3/4 inch (1.9 cm) MPT to PVC adapter (Ref. No. 13) on the supply tube. This should be centered on the smooth surface.
- Tighten 3/4 inch (1.9 cm) tee on supply tube with the pipe plug up.
- Lag drinker to pad. Use an anti-seize compound on the lag bolt threads and nuts.

Use of an anti-seize compound will extend the life of the inserts used to hold your valve cover in place. Should your inserts become non-useable, order the following replacement parts.

OF406-Insert, 3/8-16
Internal Thread, Zn

OF445-3/8-16 x 1 1/2 Hex
Head Cap Screw, SS

MANAGEMENT SUGGESTIONS:

Locate drinker in a sheltered place if possible. Install unit 25 feet (7.5 meters) or so from feed sources to reduce the amount of feed dropped into the tank.

If making a new installation, a stop and waste valve should be considered for a shut off valve.

Water will probably enter the unit at 44°F to 56°F (6.7°C to 13.3°C) depending on your geographic area. See Exhibit E. ALSO, NOTE PARAGRAPH 7 BELOW CONCERNING POND WATER OR OTHER COLD SOURCE WATER. Water inside the unit will lose 10-12°F (5°-6°C per day with no usage (when windchill temperature is 0°F (-17°C)). When you see ice, the drinker is telling you it's running out of energy. To avoid icing, follow these tips.

1. MAKE SURE YOU HAVE AN AIRTIGHT AND WATERTIGHT CONNECTION BETWEEN THE MOUNTING PAD AND DRINKER BASE.
2. MAKE SURE YOUR RISER TILE IS FLUSH WITH THE TOP OF THE PLATFORM.
3. MAKE SURE THERE IS NO OTHER SOURCE OF WATER IN THE FEEDLOT - ABSOLUTELY NONE. BE SURE THERE ARE NO PONDS, STREAMS, STOCK TANKS OR ANY ALTERNATION SOURCE OF WATER OTHER THAN YOUR ENERGY DRINKER.
4. MAINTAIN THE WATER LEVEL AT 1 INCH (2.54cm) BELOW THE TOP OF THE DRINK OPENING. In the event of water supply failure, cover the drinker so animals cannot drink from it. If water has already dropped below the bottom end of the baffle in the drinking opening, add water to within 1 inch (2.54cm) from drinker opening.
5. Under the most extreme conditions and with little drinking activity, you may see ice in the drinker openings. Should this occur, simply break ice, dip out a couple gallons (8 liters) of water and listen for the valve to open. If supply line freezes, remove plug at top of supply line and use rod to dislodge any ice or pour hot water down supply line. You can also use rock salt.
6. Check drinker flaps daily. Remove any ice from drinker opening.
7. PLEASE NOTE: As we say on our literature, IF ENTERING WATER IS LESS THAN ABOUT 40° F (4.4°) SUCH AS WATER FROM A POND, MOUNTAIN SPRING WATER OR COLDER GROUND WATER, YOU MAY EXPERIENCE ICING IN THE DRINKER OPENINGS. Most pond water is less than 40°F (4.4°C). Drinkers can work in such cases. Chances for success increase if the drinker is sheltered and if you have an abundance of drinking activity (50 head +). Most likely, the valve will stay open but - under severe conditions - you may have to remove ice from your drinker opening daily. Severe conditions are where windchills or actual temperatures are consistently below about 10°F (-12°C) day and night. ALSO, please note that this paragraph applies primarily to our units with less than 15 gallons (56.8 liters) capacity (WPM10, WPM10A, MPM10, MPM10A, WPM14 AND WPM14A) Our 20 gallon (75.7 liter) and larger capacity units tend to work better with colder incoming water. However, even with these, you may still experience occasional icing. Follow these additional tips for ease of management.
8. If drinker is not being used for short periods in the winter, dip out or drain 3-5 gallons (11-19 liters) each day to prevent eventual freezing. Dipping is better than adding hot water.
9. If unit is not being used for extended periods, drain unit completely, shut off the water and drain water line below frost level.
10. If you experience any difficulty in getting animals to drink, invert flaps for a few days. See our brochure, LITPM.
11. When tank needs to be cleaned, stir up solids so they are in suspension. Reach through drinker openings and remove plugs (or push in plugs through outside openings). The valve will activate giving a flushing action.
12. When servicing during cold weather, use artificial inseminator's plastic sleeve to keep hands and clothing dry.
13. If drinker is used inside and if animals drink continuously, you may not need to use flaps. Before removing, however, tie them open or invert to see if any icing occurs.
14. If ice buildup occurs from animals slobbering around the opening, lower the water level slightly (not more than 1 inch).

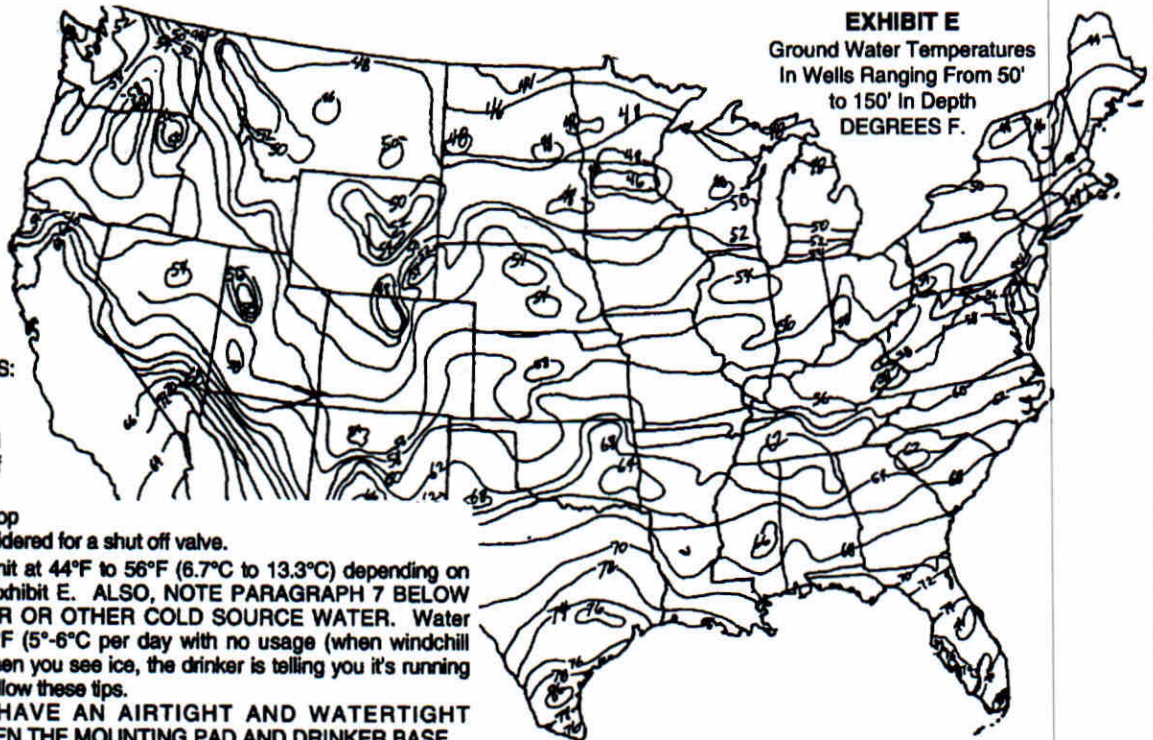


EXHIBIT E
Ground Water Temperatures
In Wells Ranging From 50'
to 150' In Depth
DEGREES F.

VP VALVE CAPACITIES
Gallons per Minute
(Liters)

PS	VP114 5/32" Orifice	VP16 1/4" Orifice	VP17 3/8" Orifice
20	2.44 (9.2)	3.70 (14.0)	5.00 (18.9)
40	3.70 (14.0)	6.25 (23.7)	8.33 (31.5)
60	4.55 (17.2)	7.69 (29.1)	9.62 (36.4)
80	5.00 (18.9)	7.94 (30.0)	9.62 (36.4)

Model VP16 1/4 inch orifice comes standard with Model VP124 valve, the standard valve on all energy free drinkers. For rural water/high water pressure situations, order Model G9227A brass water pressure regulator. It is preset to reduce pressure to 30 PSI, an ideal operating pressure for our VP valve series. It is also available at plumbing and RV outlets

Ref. No.	Part No.	Description	Qty.
1	VP19	Power Link	1
2	VP110	Cam Link	1
3	VP11	Valve Body	1
4	VP111	Link Pin	2
5	VP18	Plunger	1
6	VP113	Diaphragm, Rubber	1
7	VP16	Orifice 1/4	1
8	VP112	O Ring 5/8 x .103 Neoprene	1
9	VP13	Base 3/4 OD x 1/4 ID, Plastic	1
10	VP15	Assembly Nut	1
11	VP115*	Adjust Screw	1
12	WC726P*	Float Arm Plastic	1

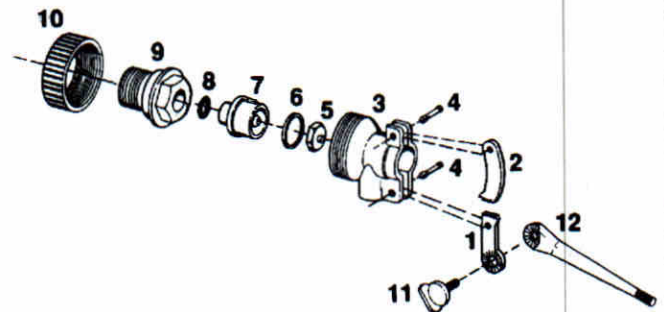


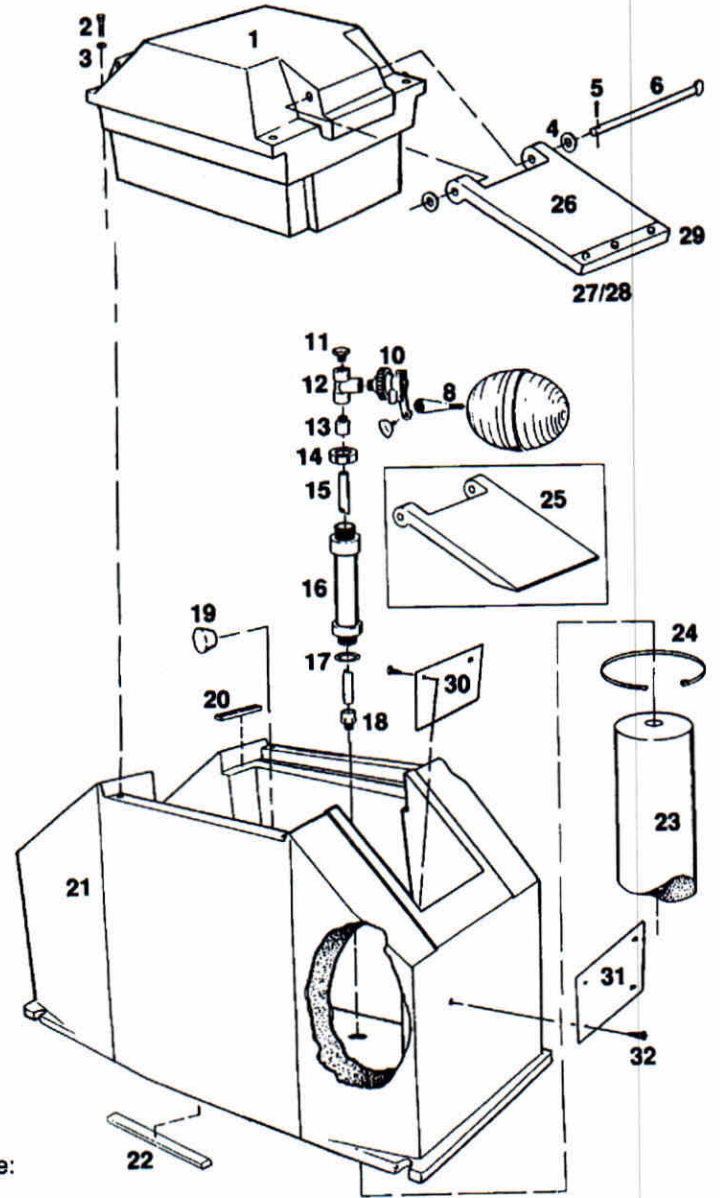
EXHIBIT F

* VP115 and WC726P are not included with VP124 valve.

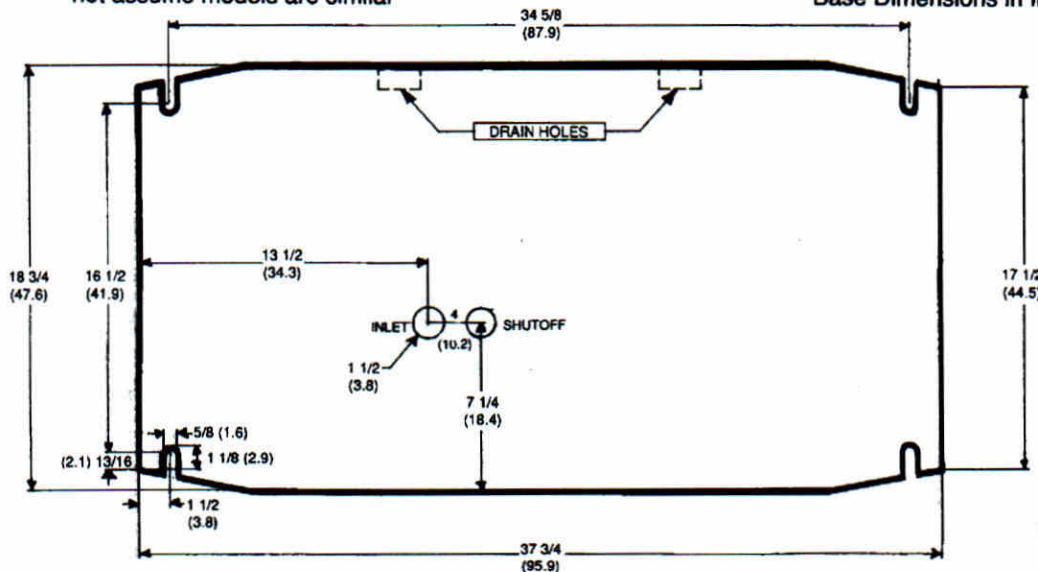
Assembly Schematic, Repair Parts List, Base Dimensions

Models WPM10, WPM10A, MPM10, MPM10A

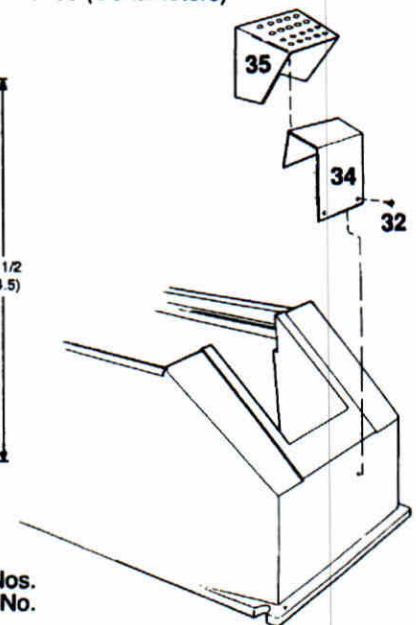
Ref No.	Part No.	Description	Qty
1	WPM103	Cover, Blue	1
1	MPM103	Cover, Red	1
2	OF448	1/4-20 x 1 1/2 Slotted Indented Hex Head Machine Screw, SS	4
3	OF127SS	1.10 OD x .280 ID Washer, SS, 1"	4
4	OF351	.345 ID x .752 OD Washer, SS - 5/16"	4
5	OF78SS	1/8 x 3/4 Cotter Pin, SS	2
6	WPM107	.311 x 13.187 Lid Hinge Rod, Zinc	2
7	VP115	Adjusting Screw, Zinc	1
8	WC726P	Float Arm, 3 5/8" Plastic	1
9	A405P	4 x 5 Black Float, Plastic	1
10	VP124	Valve Assembly 1/4 Orifice	1
11	OP223	Plug, 3/4, Nylon	1
12	OP114	3/4 x 3/4 x 3/4 Schedule 80 Tee, PVC	1
13	OP116	3/4" Schedule 40 Male Adapter, Machined, PVC	1
14	OP117SUN	1 1/4 Slip Joint Nut	1
15	WPM112	3/4" PVC Pipe x 14 3/4" (Supply Tube)	1
16	WPM113	Riser Tube Assembly, 10"	1
17	OP119	1 3/4 ID x 2-1/4 OD "O" Ring, Rubber	1
18	OP116P	3/4" Schedule 40 Male Adapter, Standard, PVC	1
19	OP120	#11 Rubber Stopper	2
20	WPM101	Weather Seal 23"	2
20	WPM116	Weather Seal 3"	4
21	WPM100	Base Reservoir 10 Gal., Blue	1
21	MPM100	Base Reservoir 10 Gal., Red	1
22	WPM110	Base Seal 8 1/2 Ft.	1
23	WT208	Foam Pipe Insulation 36"	1
24	OP93	10 1/2" Tywrap	1
25	WPM205	Flap for WPM10A, Sheep, Blue	2
25	MPM205	Flap for MPM10A, Sheep, Red	2
26	WPM105	Flap for WPM10, Hog, Blue, Plastic Only	2
26	MPM105	Flap for MPM10, Hog, Red, Plastic Only	2
26	WPM104	Flap Assembly with Guard, Blue	2
27	OF460	1/4-20 x 1 1/2 Slotted Truss Head Machine Screw, SS	6
28	OF449	1/4-20 Nylon Hex Nut, SS	6
29	WPM106	Flap Guard	2
30	WPM124	Inner Lip Guard	2
31	WPM125	Outer Lip Guard	2
32	OF476	10 x 3/8 Tapping Screw, SS	12
	WPM108	Hardware Bag	



Top Down View
Base Dimensions in Inches (Centimeters)

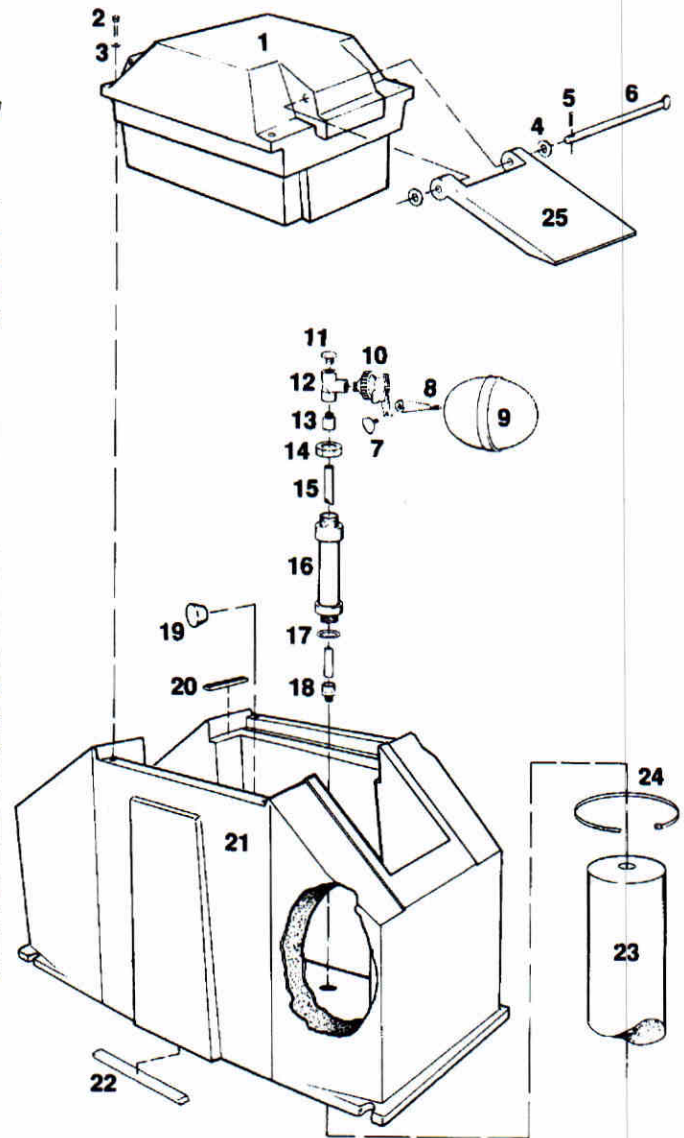


For models WPM10's and MPM10's sold without Inner and Outer Lip Guards (Ref. Nos. 30 and 31), you can retrofit Part No. WPM122 Lip Guard (Ref. No. 34). Also Part No. WPM123 Mud Grate (Ref. No. 35) will prevent small pigs from crawling into drinker. Two WPM122 and two WPM123 required per drinker.



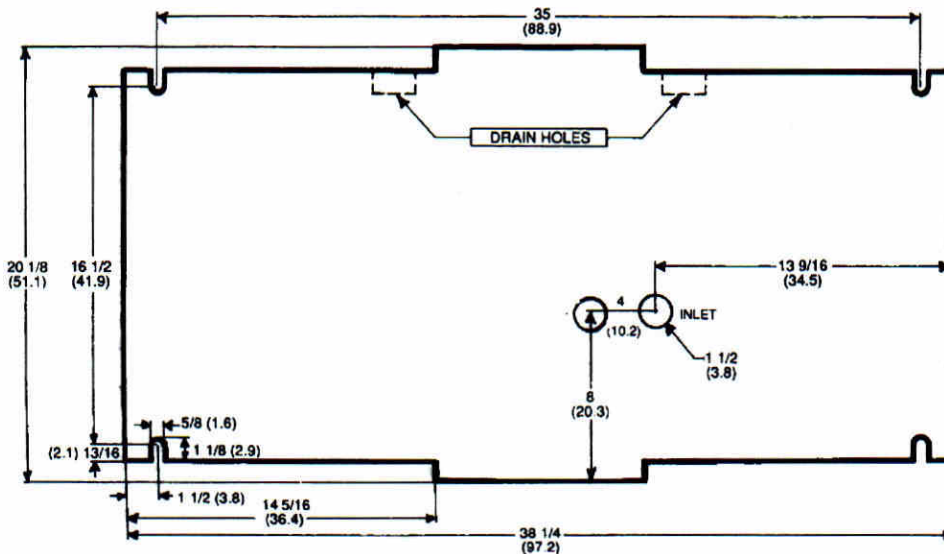
Assembly Schematic, Repair Parts List, Base Dimensions Model WPM20 and MPM20

Ref. No.	Part No.	Description	Qty
1	WPM103	Cover, Blue	1
1	MPM103	Cover, Red	1
2	OF448	1/4-20 x 1 1/2 Slotted Indented Hex head Machine Screw, SS	4
3	OF127SS	1.100D x .280 ID Washer, SS, 1"	4
4	OF121	3/4 ID x 7/8 OD Washer, Zinc - 5/16"	4
5	OF78	1/4 x 3/4 Cotter Pin, zinc	2
6	WPM107	.311 x 13.187 Lid Hinge Rod, Zinc	2
7	VP115	Adjusting Screw, Zinc	1
8	WC726P	Float Arm, 3 3/8" Plastic	1
9	A405P	4 x 5 Black Float, Plastic	1
10	VP124	Valve Assembly, 1/4 Orifice	1
11	OP115	3/4 Schedule 40 Plug, PVC	1
12	OP114	3/4 x 3/4 x 3/4 Schedule 80 Tee, PVC	1
13	OP116	3/4" Schedule 40 Male Adapter, Machined, PVC	1
14	OP117SUN	1 1/4 Slip Joint Nut	1
15	WPM212	3/4" PVC Pipe x 19-1/4" (Supply Tube)	1
16	WPM213	Riser Tube Assembly, 17 1/2"	1
17	OP119	1 3/4 ID x 2 1/4 OD "O" Ring, Rubber	1
18	OP116P	3/4" Schedule 40 Male Adapter, Standard, PVC	1
19	OP120	#11 Rubber Stopper	2
20	WPM101	Weather Seal 23"	2
20	WPM116	Weather Seal 3"	4
21	WPM200	Base Reservoir 20 Gal., Blue	1
21	MPM200	Base Reservoir 20 Gal., Red	1
22	WPM110	Base Seal 8 1/2 Ft.	1
23	WT208	Foam Pipe Insulation 36"	1
24	OP93	10 1/2" Tywrap	1
25	WPM205	Flap, Cattle, Blue	1
25	MPM205	Flap, Cattle, Red	1
26	OP210	1 1/2" NPT Pipe Plug, PVC	1
	WPM208	Hardware Bag	



NOTE: Base dimensions of models are not the same. For example: WPM20 is longer than WPM10. Also, the threaded access for the riser tube assembly is not in the same location on all drinkers. Do not assume models are similar.

Top Down View
Base Dimensions in Inches (Centimeters).



NOTE: Supply line hole in base is marked "INLET". Hole for shutoff option is marked "SHUTOFF". See Page 7.

The dimensions shown are as accurate as we can show them. However, the molding process is affected by the temperature and humidity conditions on the day the part is molded. As the material cools, there can be uneven and unpredictable shrink which can affect the dimensions shown. It is usually best to wait until you have the actual drinker you are going to install before installing all four mounting studs.