Hydropump Model RH1400 Installation Instructions

Please read all the instructions before attempting to install this PUMP. The pumping capacity may vary depending on your piping configuration, battery capacity and its age.

Specifications		**Physical Size:**
Pump Motor:	12 VDC, 21 Amps	Pump Length: 9 1/2" Width: 6" Height: 6"
Battery Charger:	1.0 AH @ 12 VDC, 0.4 Amp Load	Battery case L: 17", W: 9-1/2", H: 11"
Charger Service:	120 VAC, 60 HZ, GFCI Outlet	Pump weight: (without battery): 10 Lb
Float Switch:	Vertical Style, with mounting clamp	Total shipping weight: 20 Lbs.
Water Alarm:	Integrated, operated by float	1-1/2" PVC Connection
Battery Requirements:	12 Volt Marine Deep Cycle, Sealed Lead Acid, AGM, or Gel: Size 27	
Battery NOT included	Use Highest Quality, Maintenance-Free in Size 27, Best Warranty	

** Extra battery case available as an add-on kit to double pumping time; not pumping rate

Included Parts:		**Flow Rates**:		
Motorized Pump with SS Bracket	One-Way Foot Valve and suction screen	5 Foot Lift	1800 Gallons Per Hour	
Battery Case with Cover and Cables	PVC Tee and Adapter; (1") 45°; (1") 90°	9 Foot Lift	1400 Gallons Per Hour	
Battery Charger with cables	Discharge Hose: 4 Feet; (1") barbed adapter	Max Lift	15 Feet	
Vertical Float Switch with clamp	PVC Pipe, 18" Long ; (1-1/4") 90º Street Elbow	**Pumping Time:**	1 minute cycles	12 Hours
(3) Cable ties, (2) Hose Clamps	Installation Instructions		5 minute cycles	48 Hours
(2) 20 Amp Inline Glass Tube Fuses	(1 in fuse holder, 1 spare)		15 minute cycles	96 Hours

Additional Parts & Tools Needed:

Check valve for primary pump (existing?)	Hand saw or PVC cutting tool
PVC Primer and Cement (small cans) for PVC connections	Phillips and slotted screwdrivers
Teflon Tape or Pipe Sealant for threaded connections	Utility knife, tape measure, large adjustable pliers

⚠ WARNING — **ELECTRICAL SHOCK HAZARD**

Disconnect power before installing or servicing this product. A qualified service person must install and service this product according to applicable electrical and plumbing codes.

⚠ WARNING — **EXPLOSION OR FIRE HAZARD**

Do not use this product with flammable liquids. Do not install in hazardous locations as defined by National Electrical Code, ANSI/NFPA 70.

Failure to follow these precautions could result in serious injury or death. Replace product immediately if switch cable becomes damaged or severed. Keep these instructions with warranty after installation. This product must be installed in accordance with National Electric Code, ANSI/NFPA 70 so as to prevent moisture from entering or accumulating within boxes, conduit bodies, fittings, float housing, or cable.

30 Day Customer Satisfaction Guarantee and Two Year Limited Warranty

Within 30 days of purchase, if you are not completely satisfied with your new PUMP, we will refund your money, in full, excluding shipping charges. Pump must be returned unused and in re-salable condition. Please contact the dealer where you purchased your pump to obtain refund. If purchased directly from Base Products Corporation (The Company), you must call us at 800 554 1426 to receive authorization to process return or to receive Technical Assistance. Please give your name, address, phone number, date of purchase, and address of the installation.

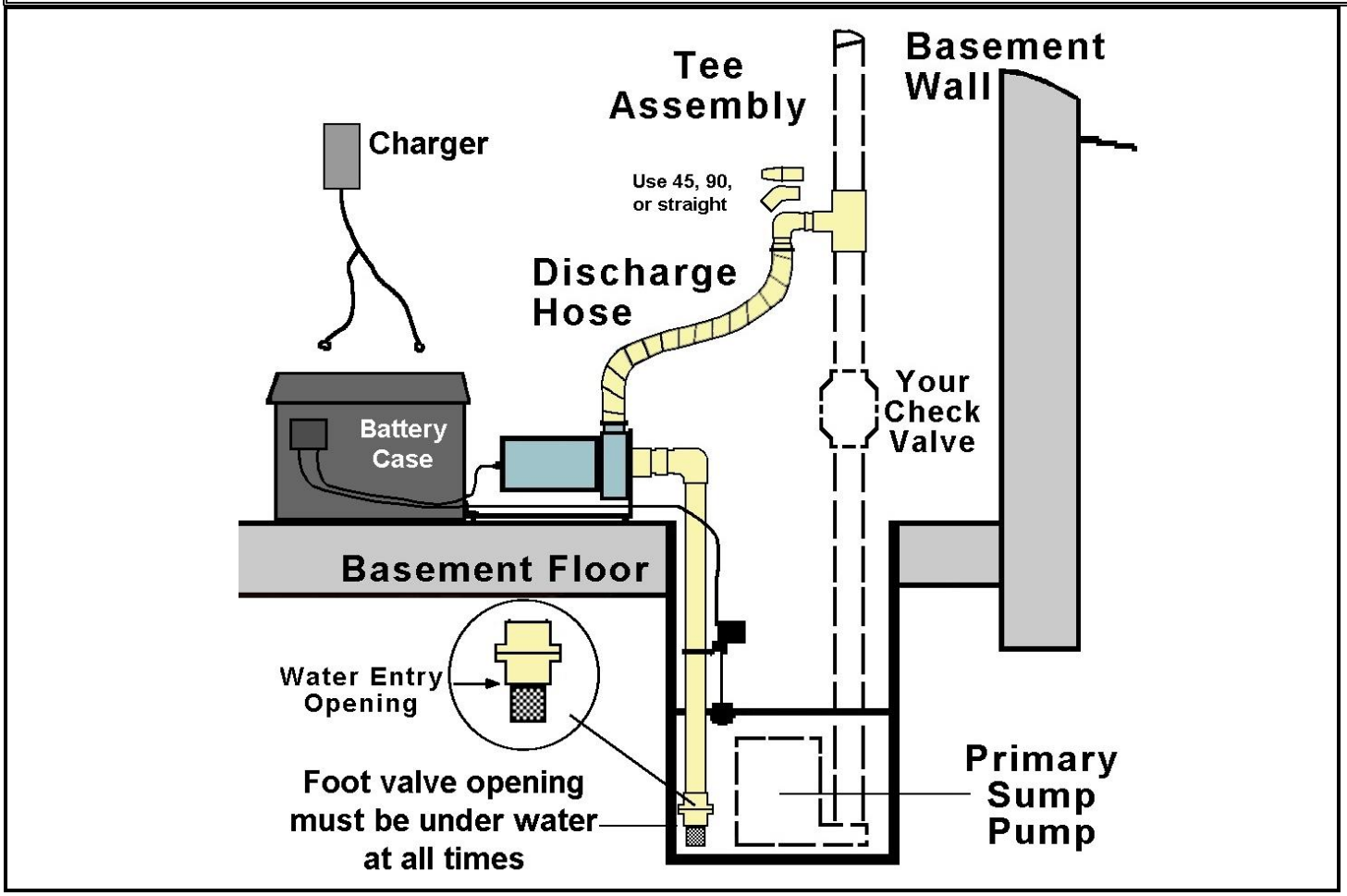
Base Products Corporation (the "Company") warrants the Hydropump (the "Product") against defects in material and workmanship for a period of Two Years from the date of the shipment. In the event of any defect within the warranty period, the Company will, at its option, replace or recondition the Product without charge providing the Product is returned, prepaid to our offices in Buffalo, New York. The replacement or reconditioning of the Product shall constitute the exclusive remedy for any alleged defect.

CUSTOMER'S SOLE AND EXCLUSIVE REMEDY UNDER THIS LIMITED WARRANTY SHALL BE PRODUCT REPAIR OR REPLACEMENT AS PROVIDED HEREIN. CLAIMS BASED ON IMPLIED WARRANTIES, INCLUDING WARRANTIES OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE, ARE LIMITED TO ONE YEAR, OR THE SHORTEST PERIOD ALLOWED BY LAW, BUT NOT LESS THAN ONE YEAR. THE LIABILITY OF THE COMPANY SHALL NOT IN ANY CASE EXCEED THE COST OF REPLACEMENT OF THE PRODUCT, AND IN NO CASE, SHALL THE COMPANY OR ANY OF ITS DISTRIBUTORS BE LIABLE FOR ANY INCIDENTAL, INDIRECT, CONTINGENT OR CONSEQUENTIAL LOSS OR DAMAGES SUCH AS PROPERTY DAMAGE OR EXPENSES RESULTING FROM THE FAILURE OF THE PRODUCT, DELAYS, LOSS OF USE, NEGLIGENCE, DAMAGE FROM PECULIAR WATER CONDITIONS, CHEMICALS OR FOR BREACH OF THIS OR ANY OTHER WARRANTY, EXPRESS OR IMPLIED, EVEN IF THE LOSS OR DAMAGE IS CAUSED BY THE COMPANY'S NEGLIGENCE OR FAULT. THE COMPANY MAKES NO OTHER WARRANTIES, EXPRESS OR IMPLIED, EXCEPT AS PROVIDED IN THIS LIMITED WARRANTY. THIS WARRANTY BECOMES VOID BY ANY MISAPPLICATION, MISUSE, ABUSE, OR IMPROPER INSTALLATION OF THE PRODUCT. THIS WARRANTY GIVES YOU SPECIFIC LEGAL RIGHTS AND YOU MAY ALSO HAVE OTHER RIGHTS WHICH MAY VARY FROM STATE TO STATE. WARRANTY IS APPLICABLE IN THE USA AND CANADA, ONLY.

This warranty does not cover defects in the Product resulting from: (a) abuse or mishandling of the Product; (b) modification, alteration, repair or service of the Product by anyone other than Base Products Corporation; (c) improper or neglect in maintenance. This warranty does not cover any water damages caused by defects in the Product as such defect should have been identified during periodical testing. The owner's use of these Products confirms the understanding that these Products **do not constitute an insurance policy** and they are only loss mitigation products used to reduce the risk of water damage, however not eliminating such risk.

Return Policy

Before installation, if you determine that this product is not suitable for your application, call The Company or your dealer for return information. **After installation**, if you choose to return it, call The Company for return approval; there may be parts that cannot be credited. The Company is not responsible for any cost incurred with installation, removal, or pump repairs. Proper packaging of the returned product is the customer's responsibility and goods damaged while in transit as a result of improper packaging will not be considered for credit.



Step by Step Installation **Refer to installation drawing throughout installation.**

Step 1 Place PUMP on Floor:

Remove all packaging and materials and hang all wires out of the battery box. Position empty battery box and pump in final position on the floor close to the sump pit. Line up the battery box to the plastic corner bracket attached to the rear of the Stainless Steel pump bracket. Use a ¼" drill bit to drill a hole into the **EMPTY** battery box at the point where it meets the corresponding hole in the corner bracket. Use one #10-32 x ½" long Stainless Steel screw and nut provided to attach bracket to battery box to stabilize the pump during and after you complete the installation.

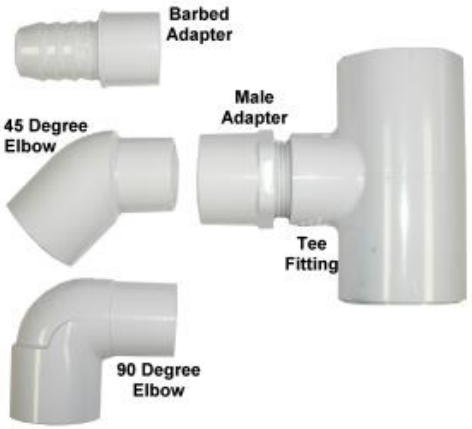
Step 2 Install suction pipe:

Prime and cement the foot valve assembly onto the end of the long PVC pipe section supplied with PUMP and let it dry. DO NOT CEMENT any of the following connections until certain of their final position. Insert the 90° (1-1/4") street elbow into the male adapter that comes attached to the pump, as shown in drawing above. Put the check valve/suction screen assembly with the pipe attached, down into the sump and determine its best location. The finished position of the suction screen should be just above the bottom so mud is not drawn into the pump. Once that position is set, cut the pipe to fit into the street elbow and check once more for proper positioning. Once this is done, then cement it all in place. Allow time for cement to dry. **Make sure the water is never *PUMPED* below the Water Entry *Opening*, as shown in drawing above. SUCTION AND DISCHARGE PIPE MUST BE FULL OF WATER AT ALL TIMES IN ORDER TO OPERATE. FOOT VALVE IS DESIGNED TO KEEP IT FULL EVEN IF THE SUMP WATER EVAPORATES AWAY DURING DRY PERIODS, BUT DON'T ALLOW EITHER PUMP TO ACTUALLY *PUMP* IT BELOW THE WATER ENTRY OPENING. Avoid unnecessary stress against the pump by setting the check valve to just touch the side of the sump wall.**

Step 3 Disconnect primary pump:

Unplug primary pump and drain discharge pipe. A high quality, fully functioning check valve **MUST** be present above the main sump pump and below the backup PUMP discharge connection, as shown above. Without it, the backup PUMP will send water down through your main sump pump and back into the sump. A removable type check valve is recommended in order to service the main sump pump in the future without disconnecting the backup PUMP.

Step 4 Install Discharge:



Use the discharge hose (cut to fit, if needed) to help you determine the position of the Tee Assembly on your main sump pump discharge pipe. **Assemble the Tee** and fittings to work best in your application:

1.) Apply Teflon tape or paste to the threaded end of the male adapter and screw it into the tee. Then insert either the **barbed adapter alone**, or **together** with either the **45° elbow** or the **90° elbow** so the hose lines up comfortably with the pump position (the 45**°** usually works best).

2.) If the main discharge is 1-1/4" PVC you will need to purchase PVC Reducer Bushings to adapt to the 1-1/2" size of the tee.

3.) Mark the Tee position on the pipe. This MAY be either the vertical pipe (typically) or the horizontal pipe (when necessary). Carefully cut and remove a 2" section from your main pump discharge pipe where the center of the tee will fit. Cement and insert tee into the new opening one end at a time for best results and let dry.

4.) Slide a hose clamp onto each end of the discharge hose and attach one end of the hose to the barbed adapter on the pump and the other end to the barbed adapter on Tee assembly.

5.) Tighten the hose clamps at both ends of the hose securely.

Step 5 Float Switch:

Attach vertical float switch to the suction pipe using the hose clamp provided. Float should be placed so that it will turn the pump on if the water rises more than 2-3 inches above the "normal primary pump" high level. Slide float up the rod by hand to simulate a normal response to high water and confirm the location of the "high" level. The float will need to rise to the top of the rod to turn the pump on and travel all the way down to the bottom of the rod to turn the pump off. During normal operation of the primary pump, the backup pump float may be lifted part way as long as it does not turn the backup pump on except in the case of failure. If necessary, you may move the stopper on the rod to a new position for shorter cycles, but longer cycles are best. Pump must **turn on** before the water rises to the floor level and it must **turn off** before the water drops down below the foot valve Water Entry Opening so air does not enter the system and break the suction prime. After following the start-up procedures below, you may have to make some minor adjustments to the float to assure proper operation. Adjust floats on both pumps, if necessary. **SUCTION AND DISCHARGE PIPE MUST BE FULL OF WATER AT ALL TIMES IN ORDER TO OPERATE. DO NOT ALLOW THE MAIN SUMP PUMP TO DRAIN THE SUMP WATER BELOW THE WATER ENTRY OPENING OF THE FOOT VALVE OF PUMP. ADJUST FLOAT OR HEIGHT OF MAIN PUMP IF NECESSARY TO PREVENT THIS. NATURAL DRYING OF THE SUMP SHOULD NOT AFFECT THIS.**

Start Up:

Do not plug in the charger until you are finished with all wiring connections. Connect **all Red (+) Pos** wires from charger **and** junction box together to positive (+) battery terminal. Connect **all Black (-) Neg** wires from charger **and** junction box together to negative (-) battery terminal using wing nuts on terminals. Tighten securely. Plug charger into a GFCI protected wall outlet. Plug primary pump into wall outlet. If unsure about any of this, consult with a licensed electrician. Alligator clips are provided for odd types of terminals. (See "Charger Instructions")

Optional* Dual Battery Case Instructions:** Make all these connections with the battery charger ***UNPLUGGED. When connecting an ***optional*** second battery, all the **Red Wires** go to the **Positive (+) Terminals** and all the **Black Wires** go to the **Negative (-) Terminals**. Connect the proper-colored wire to each terminal of the first battery and then to the matching terminals of the second battery using the wires included with the Dual Battery Case. This keeps the batteries in "parallel" and allows the charger to maintain both batteries. Plug charger in when finished.

Important: Fill sump with water from a hose if needed to test for proper installation. Lift **primary sump pump** float by hand or by filling sump with water and operate the main pump for approximately 10 seconds. Do this 2 or 3 times to sufficiently prime PUMP with sump water and to purge out any trapped air (Do not run it dry). Verify that all joints are sealed. Unplug primary pump and fill pit with water. You may simulate the rising water by lifting the float by hand, but don't empty the pit and lose the prime. Confirm that the location and position of the PUMP float is correct and moves freely. Raise float to reach the desired "high level" which will begin the pumping before water reaches the top of the sump. Confirm that the float shuts the pump off when returned to the "low level" before water surface is below the ***Water Entry***

Opening. Repair any leaks now during this process. A small drip may develop at the front of the pump over time. This is normal and should not cause any problem. The water should either evaporate or find its way into the sump, harmlessly. A larger leak should not be ignored, however. **Tightening** the screws on the green base plate, which may be reached through the large round opening in the front of the stainless steel bracket, may resolve this issue.

******* Don't forget to plug the primary pump back in when you are finished!! *******

2. Water Alarm:

The alarm sounds at the same time that the PUMP operates, to let you know there is a high water situation. If quieter operation is desired, remove the four screws from the front cover of the small junction box located on the side of the large battery box, open the cover, and remove the thin, red alarm wire from terminal block to silence alarm. A small slotted screwdriver will be needed for this. Remember that without the alarm connected, you may not realize that the backup PUMP is operating and the main sump pump needs attention. It is better to simply cover the alarm with a piece of tape to quiet it down if it's annoying.

3. Maintenance Procedures:

Every 3 months, lift the float by hand to the top and confirm pump operation and water removal. Confirm that the float is allowed to move freely and hits no obstacles. Check battery age and charger status lights. The **RED** light means the charger is **powered** from the wall outlet. The **YELLOW** light means it's **charging**. The **GREEN** light means the charger has switched to the "**Float Mode**". Note: It is normal for the charger to switch back and forth between the "Charging" and "Float" modes. This is an automatic charger; no adjustments or maintenance are required. See Separate Charger Instructions for further details. **Write down your test date and results; keep it with the pump.**

4. Troubleshooting:

Pump is running but no water is being removed from pit.

- **Pump may have lost its prime:** Fill the sump with water and run the main sump pump on and off a few times. If necessary, open the hose clamp at the top of the discharge hose and pull the hose off the barbed fitting. Pour water into hose till full. This restores a lost prime. Reconnect hose and start pump again.
- **Clogged** suction or discharge piping: clear obstruction and restart.

Pump is removing low volumes of water.

- Suction or discharge piping may be **partially clogged**: clear obstruction.
- **Excessive discharge pipe length** and/or configuration can produce a large pressure drop; accept the lower flow or change the piping layout, direction, length, etc.
- **Battery may need charging or replacing**. A ***NEW BATTERY*** often needs 24 - 36 hours of charging. Two batteries will take 2-3 times longer. If battery is more than 3 years old, it is likely to need replacing. Wet cell type batteries **MUST** be regularly serviced. Sealed batteries are your BEST choice and need no maintenance.
- **Check all PVC joints** and confirm that they are cemented and leak-tight. Air leaks reduce pumping capacity.

Pump will not turn on or off properly.

- **Float** must be fully **down for off** and fully **up for on**. Adjust float by hand to each position required to test pump and re-position clamp on suction pipe, or stopper on the float rod, if necessary, to assure proper operation.
- **Battery terminals** may be connected improperly: correct and tighten securely.
- **Check fuse in yellow fuse holder**. Replace with like-kind, 20Amp glass-tube fuse and re-try pump.

NOTE: SUCTION AND DISCHARGE PIPE MUST BE FULL OF WATER AT ALL TIMES IN ORDER TO OPERATE. THIS IS NOT A SELF-PRIMING PUMP. THE FOOT VALVE AND CONNECTION TO THE MAIN SUMP PUMP DISCHARGE IS DESIGNED TO KEEP THE PIPE AND PUMP FULL OF WATER. DO NOT ALLOW PUMP TO *PUMP* DOWN DRY. SET THE FLOAT SWITCH ON BOTH MAIN AND BACKUP PUMPS TO TURN OFF WHILE THE FOOT VALVE WATER ENTRY *OPENING* IS STILL SUBMERGED. SUMP WATER DRYING OUT BELOW THE WATER ENTRY *OPENING* SHOULD BE NO PROBLEM. PUMPING BELOW THAT POINT IS A PROBLEM.