

ABBREVIATED INSTALLATION INSTRUCTIONS FOR

WATER POWERED BACKUP SUMP PUMPS MODEL RB-750/HB-1000/CB-1500



Specifications											
Materials: Heavy-duty Schedule 80 Polypropylene, Stainless steel hardware, PVC Schedule 40 fittings											
Dimensions:	RB-750		Length: 14.5"		Width: 4" Height:		nt: 10"	Weight: 1.5 lb.			
	HB-1	000	Length: 15.5"		Width: 4"	Heigh	nt: 10"	Weight: 2 lb.			
	CB-1500		Length: 15.5"		Width: 6"	Heigh	nt: 10"	Weight: 3 lb.			
Water Inlet Fitting:		RB-7	750	1⁄2" or 3⁄4	34" Male threaded		Suctio	ion and Discharge Opening: 1" socket			
		HB-1	000	34" Male threaded			Suctio	ion and Discharge Opening: 1-1/4" socket			
		CB-1	500	1" or ¾	³ 4" Male threaded		Suctio	ion and Discharge Opening: 1-1/2" socket			
Water Service Requirements: Minimum pressure: 40 lb. PSI Maximum pressure, all models: 100 lb. PSI											
Minimum City Water Flow Rate: RB-750: 7 GPM HB-1000: 10 GPM CB-1500: 15 GPM											
Additional Parts or Supplies Needed											
Pipe Sizes: R	B-750	: ½" o	r ¾"	HB-100	00: ¾" C	B-1500) : ¾" or	or 1"			
Water supply pipe and fittings, <i>(copper or equivalent, not iron)</i> usually a "T", a couple 90° elbows, and enough pipe to connect your existing water supply to the inlet fitting of the pump.											
Full Flow "Ball"	or "Ga	ate" V	alve; U	nion fitti	ng; Female	e adapt	er to co	connect to threaded male fitting on pump.			
Clear PVC prim	ner/clea	aner a	nd cen	nent (sm	all cans) a	nd pipe	thread	d sealant or tape.			
10" Length: F	RB-750): 1" P	VC pip	e HB	-1000 : 1-1	/4" PVC	C Pipe	CB-1500 : 1-1/2" PVC Pipe (enough to fit your application).			
Tools Neede	d										
Electric or cordless drill with hole saw attachment for drilling through house wall in Outdoor Discharge Installations (not needed for SDK Models): RB-750 : 1½" HB-1000 : 1¾" CB-1500 : 2" and screwdriver bits.											
Phillips and Slotted Screwdrivers; Utility Knife; Tape Measure.											
Plumbing tools for water supply pipe as needed: torch, tubing cutter, solder, flux, pipe cleaning cloth, etc.											
Back-flow Prevention											
Check with your local plumbing or water department for their requirements regarding back-flow prevention if you have any questions. Installation of an approved back-flow prevention device will cause little or no problem for this pump, but a reduction of pumping capacity											

Installation of an **approved back-flow prevention device** will cause little or no problem for this pump, but a reduction of pumping capacity may occur (usually less than 10%). However, some of these devices are more restrictive than others and can hinder the pump from operating properly and may even prevent it from operating at all.

Pre-Installation 4 Point Checklist

BEFORE installing, **use this checklist** to verify each item below. Record each item in the space provided. Improper installation will result in reduced pumping capacity or pump **may not operate** at all. Each pump model has slightly different requirements so take note of your model number and the information associated with it. This will save you a lot of time during installation and if a problem arises, this will help pinpoint the source.

Household Water Pressure

Minimum Pressure: 40 lbs. PSI Maximum Pressure: 100 lbs. PSI Compensate for normal pressure loss from test point to pump Location. Avoid excessive piping from "tee-in" location, whenever possible. Tee in before PRV when possible unless incoming municipal **water pressures exceeds 95 lbs. PSI**, then it is necessary to "tee-in" **AFTER** the mPressure Regulator Valve (*PRV*) to protect the pump valve from damage.

-	Minimum Pressure: 40 lbs. PS						
	ACTUAL:		_PSI				

Household Water Flow

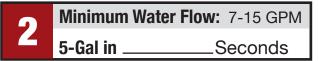
You must be able to fill a five gallon bucket with water from a hose spigot at the following rates:

RB-750: 40 seconds or less (7 GPM)

 HB-1000: 30 seconds or less (10 GPM)

 CB-1500: 20 seconds or less (15 GPM)

If it takes longer, you may have a restriction that must be bypassed or removed to maximize pumping capacity; or you may need to go down a Model size.



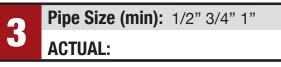
Type of Piping

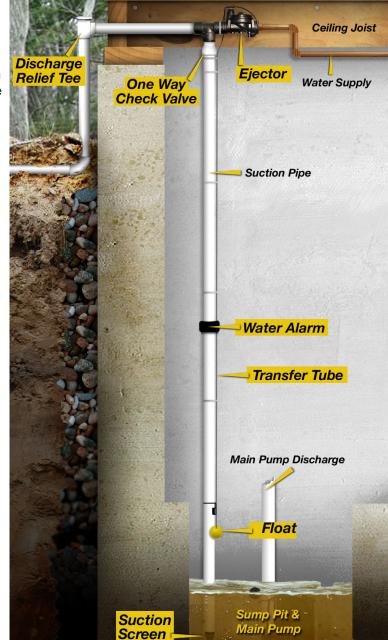
Must be installed using copper pipe or equivalent in the **minimum** sizes indicated below. (*PVC, CPVC, PEX, etc., if approved in your area.*) Do not connect to or install using galvanized iron pipe because of the smaller Inside Diameter and potential for rust and deterioration flaking off.

RB-750: 1/2" - 3/4" Pipe

 HB-1000: 3/4" Pipe

 CB-1500: 3/4" -1" Pipe



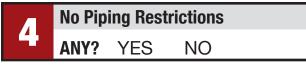


Standard Installation

Pipeline Restrictions

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Pump should be teed-in before any devices that restrict water flow. Examples of such devices are: stop & waste valves, globe-type valves, Pressure Regulator Valves (*PRV*), water conditioners, filters, etc. Water meter must be minimum 3/4" standard for all models. A double check valve or an SVB (*Spill-resistant Vacuum Breaker*) back-flow device installed in the water supply line before the pump is often required and should pose no problem. Reduced Pressure Zone (*RPZ*) devices may reduce pumping rates significantly.

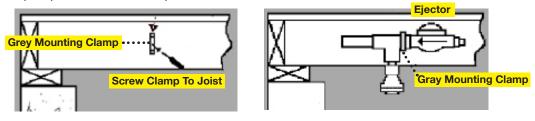


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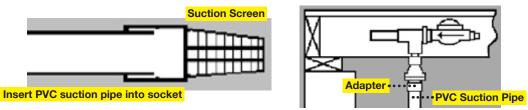
STEP 1: Mount Ejector On Joist

A black polypropylene threaded male reducer nipple is provided for connecting your municipal water supply piping to the pump ejector valve. Apply thread sealing tape to each end of this fitting and thread the larger end into the threaded opening of the ejector valve. Mount the ejector as directly as possible above the sump pit against the side or on the bottom of one of the ceiling joists (See Suction and Discharge Options). Check the building exterior to make sure the discharge will clear any obstacles. The suction pipe can be fitted in various ways to accommodate this location. If the discharge is longer than 6 feet in length, pumping will be reduced somewhat. Locate cold water supply, which must be piped directly into the unit. Do not connect with hose or other "short-cut" connection tubing other than locally approved systems. Consider all this when locating the unit so the water connections will work out later in the installation. Attach the mounting clamp to the ceiling joist using 1" wood screw and snap the pump unit into the clamp as shown.



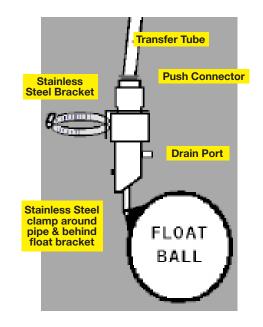
STEP 2: Install Suction Pipe

Apply thread sealing tape or paste to threaded end of check valve that is attached to the ejector and connect female adapter to check valve; tighten securely. Locate the suction pipe in the pit to clear the primary pump and any other obstructions. Measure PVC pipe and cut length to reach from the bottom of the Pump Ejector down to approximately 6" from the base of the sump pit. Take into account any turns and fittings you need. After the float is attached to the suction pipe in Step 3, you may then secure the suction pipe to the side of the pit using the included gray clamp. Allowing the pipe to hang freely in the pit is fine if the suction pipe and float assembly do not interfere with the main pump and will not cause the float to come into contact with anything that would prevent its normal operation. You may use two 45° or 90° elbows to shift the pipe over if the pump is not mounted directly above the pit. Using PVC primer and cement, insert the pipe into the PVC female fitting on the Suction Screen. Temporarily insert the upper end of the suction pipe into the female adapter of the Pump Ejector and make sure that the lower end of the Suction Screen is 3 - 4 inches above the bottom of the sump. **After** cutting and adjusting to the proper length, **use primer and cement to insert the upper end** into the female adapter, as shown. This adapter may be a reducing adapter on some models or it may be a straight adapter on other models.



STEP 3: Install The Float

Open the Stainless Steel Pipe Clamp and place it around suction pipe near the top of the sump pit. Tighten screw until the clamp is nearly closed around pipe. Hold float assembly with Stainless Steel Bracket against pipe above clamp and slip the bracket behind the clamp, as shown. Slide the float assembly on the suction pipe so the float ball hangs just above the "high water mark" (*highest water level in the pit just as the main sump pump turns on*) and tighten clamp **securely** against the pipe so the float will not slide up and down. Make sure the float assembly clears your sump cover, or you may need to cut the cover to fit around it. If anything interferes with the free movement of the float, you may **turn it** to clear, or **adjust the angle** of the float ball.

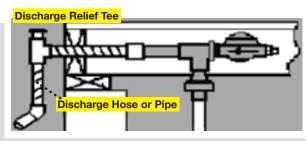


STEP 4: Install Discharge Hose

Use appropriate hole-saw to drill a hole through the building exterior wall for the discharge hose, typically in line with the Ejector unit. The discharge hose is flexible for ease of installation. If necessary, a PVC 90° or 45° elbow may be used for a tight turn. Avoid vertical rises of more than a few inches on the discharge tube or pumping rates may be affected. Attach female adapter onto the discharge end of the ejector. Push one end of the discharge hose through hole to the exterior. Clean the other end and cement it into the adapter on the discharge end. Cut off the excess hose outside building and clean off the end of the hose. Cement the **Discharge Relief Tee** on the discharge hose outside the building, as shown.

Note: Discharge Relief Tee MUST be installed to create the

necessary back-pressure for the pump to operate. If the discharge line should become clogged or frozen, the water pressure can pop open the Relief Plug and allow pump to continue operating. This plug must be manually pressed back in after the problem is corrected. The Relief Plug comes already installed in the "Tee", but you may need to loosen or tighten it by hand in order to work properly with your water pressure. You'll have to



judge this yourself, but 5-10 lb. of pressure works well. Normal operation won't develop enough pressure to pop it out, but a clogged line should. Cement a short length of discharge hose or PVC pipe into the bottom of the Relief Tee to direct the water down. This is part of the pumping process and is very important. Use a 90° or 45° fitting to divert the flow away from the foundation, onto the ground, a splash block, or into a larger drain pipe. Remember, this is a BACKUP SUMP PUMP and will only run in an emergency! Discharge hose or pipe to the outdoors should be no more than 6 feet and Discharge Relief Tee is installed and directed down and away from the foundation of the building. In cases requiring longer discharge piping, it is best if pump is mounted high and the discharge piping runs slightly downhill from the pump to the exterior. Avoid having this longer run be full of water as pumping rate will be reduced.

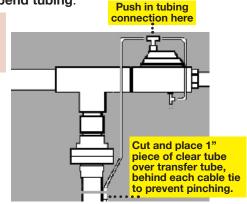
STEP 5: Connect Transfer Tube

Push one end of the thin flexible tubing into the push connector of the small "Tee" on top of the pump Ejector. Run the tubing along the suction pipe down to the float, leave about 12" extra for adjustments, and cut off any excess with razor knife or scissors. Make sure the tube ends are fully open and are cut clean and square; push the lower end into the push connector at the top of the float assembly. Fittings are self-sealing when fully inserted. To remove the tubing from either fitting, hold in the retainer ring and pull out the tubing. It can be reinserted several times. Use cable ties to strap the transfer tube along the suction pipe to keep it looking neat. **Do not over-tighten cable ties or pinch, kink, or bend tubing**.

TIP: Cut and slide 1" pieces of the included clear tubing over the transfer tube before pushing in the last connector; placing one behind each cable tie to prevent pinching of transfer tube (see sketch on right).

STEP 6: Connect Water Supply

Shut off main water supply and make connection into your water supply line according to local plumbing codes. In most cases, insert a "T" fitting into a main cold water line. Install a full flow, ball or gate valve right out of the "T" and you can turn on the main water supply while you complete the job. Use the included black threaded adapter to connect the water pipe to the pump. Remove this adapter from the pump and apply thread sealing tape to the larger threaded end. Thread this end tightly into the pump. Apply thread sealing tape to the smaller, exposed end and connect to a female adapter, union fitting, or back-flow device on your water pipe. **Do Not Apply Heat to pump valve.** Complete piping and soldering before connecting nto the pump. Install a "union" fitting somewhere in that line in case you ever have to disassemble to make corrections.



NOTE: It is advisable to flush the water line before connecting to the pump by turning it on into a bucket for a short time. This can take care of any loose solder or debris that may be inside the pipes before it can clog the ejector.

STEP 7: Install Water Alarm

Water alarm is packed with the operating instructions. Remove clear plastic tab sticking out from one end of the alarm that says "Pull tab to activate." Insert one white, releasable cable tie into the holder on rear of alarm and strap the alarm to the PVC pipe coming from the sump. **Do not allow cable tie to pinch the black transfer tube.** Place alarm about 4 feet above the floor and *(cont.)*

unwind wire to the probe. The probe must be placed at or near the point where you want the alarm to sound if the water raises high enough to get it wet. Usually this is just at the place where the bottom of the float ball rests. The **reset button on the back of the alarm** can be pressed to silence the alarm if it should become wet and begin to sound the alarm. First dry off the probe and then press the button to reset. The alarm is NOT part of the pump and operates independently. Place probe where water will NOT splash onto it and give you false alarms.

The batteries should last up to 2 years in stand-by mode. If the alarm sounds, the battery life will be shortened and replacement may become necessary sooner than 2 years. The 2 button cell batteries **#CR2032**, are each about the size of a US Nickel and are available locally at most retail stores. To change them, use your thumbnail to release the cable tie from the pipe and press the small tab at one end of the alarm box with a small screwdriver, butter knife, or letter opener and separate the two halves of the alarm to reveal the 2 batteries. Remove these from between the contacts and the new batteries are inserted. Snap the halves of the alarm box back together and the alarm is activated and may be re-positioned on the pipe as before, using the cable tie.

START UP

Carefully open the shut-off valve you installed in Step 6 and check for leaks. **Pump may turn on at this time.** If there are no leaks, open valve all the way, including your main house valve. Lift the backup pump float for 15 seconds to release air trapped in the Ejector and transfer tube. Air and water will release from the drain port on the float unit just above the float ball. When running the water for the first time, pump may take longer than normal to shut off. Factory setting is approximately 30 seconds after the float ball drops. If it continues running too long or shuts off too quickly, refer to **Troubleshooting Instructions** for more details.

NOTE: This pump does not run silently; it is **very powerful** and some noises will occur during operation, while turning on, or when shutting off, depending on water flow, pressure, piping, etc. Some noises may occur just from the vibration and movement of the pumping unit. Secure all piping and, if needed, place insulating material between the pump, pipe, and the joist to deaden any particularly noisy areas. If water hammer is experienced, you may install a water hammer arrester in the supply line. In some cases, the check valve on the base of the Ejector will thump or flutter as the valve shuts off and air exits the system. This is normal and should be no more than an annoyance.

OPERATION

Every 6 months, hold the float up for a few seconds and release it, allowing pump to operate through a full cycle. This flushes the water lines and confirms that the pump is functioning properly. **Confirm that float moves freely up and down in sump.** Confirm that pump runs approximately 30-40 seconds AFTER the float ball drops to its lowest position. This is the factory setting and it may have been adjusted at time of installation to run longer or shorter depending on sump water conditions and inflow rates. Please note that the pump should not turn off immediately when you let the float ball drop.

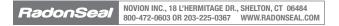
Place these instructions back into the plastic bag they came in and use the enclosed beaded tie wrap to hang the bag on or next to the water pump for future reference!

30-DAY Customer Satisfaction Guarantee

Within 30 days of purchase, if you are not completely satisfied with your new Water Powered Backup Sump Pump, The Company will refund your money, in full, excluding shipping charges. Pump must be returned in its original packaging, unused, and in re-salable condition. Please contact the dealer where you purchased your pump to obtain refund. If purchased directly from The Company, you must call our Customer Satisfaction Department at 1-800-472-0603 to process return or to receive Technical Assistance. Please give your name, address, phone number, date of purchase, and model number.

FIVE YEAR Limited Warranty

RadonSeal warrants this Water Powered Backup Sump Pump against defects in material and workmanship for a period of Five Years from the date of the shipment. Note: The water alarm is NOT part of the pump and is not covered under this warranty. In the event of any defect in the pump unit 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. This shall constitute the exclusive remedy for any alleged defect. The Company shall not be responsible for any incidental, indirect, contingent, or consequential damages, including, without limitation, damages or other costs resulting from labor charges, delays, loss of use, revenue or profit, vandalism, negligence, fouling caused by foreign material, damage from peculiar water conditions, chemicals, or other circumstances over which The Company has no control. 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.



Atmospheric Vacuum Breaker – AVB Installation

General installation is the same for both the outdoor discharge and the AVB EXCEPT that the discharge for the - AVB MUST slope downward to the exterior to selfdrain, as shown here.

The water pump system design meets the criteria as specified by the University of Southern California as outlined below.

Meets ASSE Listed 1001, CSA Certified, IAPMO Listed. AVB is always placed downstream from all shut-off valves. It's air inlet valve closes when the water flows in the normal direction but, as water ceases to flow the air inlet valve opens, thus interrupting the possible back siphon effect. If piping or a hose is attached to this assembly and run to a point of higher elevation, the backpressure will keep the air inlet valve closed because of the pressure created by the elevation of water. Hence, it would not provide the intended protection. Therefore, this type of assembly must always be installed at least six (6) inches above all downstream piping and outlets. Additionally, this assembly may not have shut-off or obstructions downstream. A shut-off valve would keep the assembly under pressure and allow the air inlet valve (or float check) to seal against the air inlet port, thus causing the assembly to act as an elbow, not a backflow preventer. The AVB may not be under continuous pressure for this same reason. An AVB must not be in use for more than twelve (12) hours out of any twenty-four (24) hour period. It may be used to protect against either a pollutant or contaminant, but may only be used to protect against a back siphon condition.

