

**Ram Pump**  
**Users Manual**

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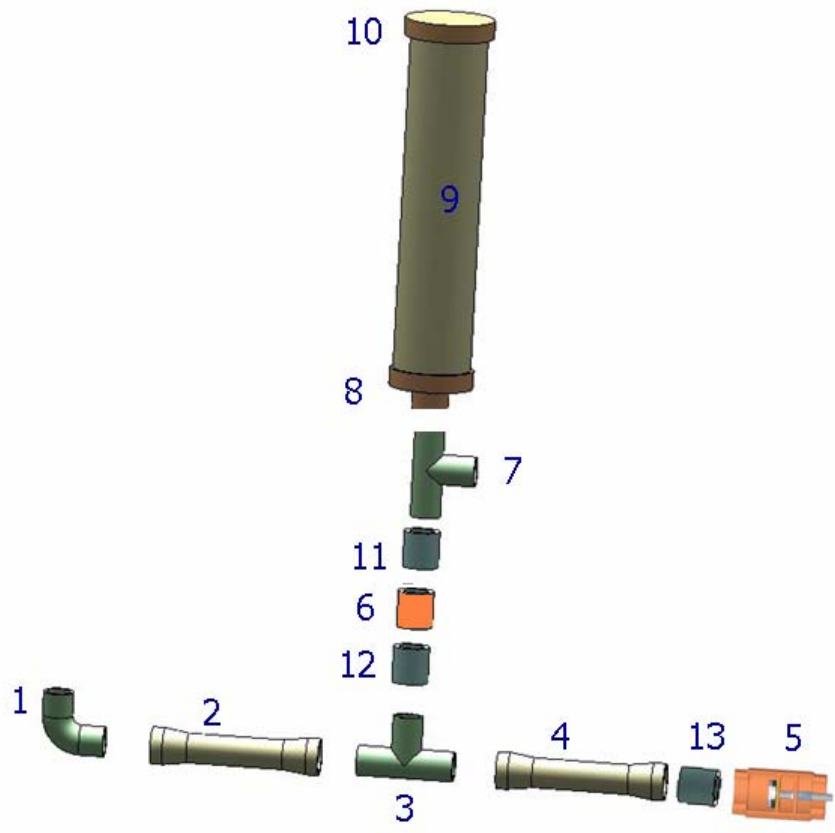
## Assembly Instructions

### Follow the following steps to assemble your Ram Pump

1. In opening the cardboard box containing your brand new Ram Pump you should find the following items:

<b>Material</b>	<b>Part #</b>
<b>45° 1 in. ID PVC elbow (2)</b>	<b>1</b>
<b>15 in. – 3 in. ID PVC</b>	<b>9</b>
<b>3 in. End cap</b>	<b>10</b>
<b>3 in. to 1 in. reducer</b>	<b>8</b>
<b>1 in. ID T-joints (2)</b>	<b>3, 7</b>
<b>1 way valve</b>	<b>6</b>
<b>Spring Valve</b>	<b>5</b>
<b>6 in. - 1 in. ID PVC Sections</b>	<b>2, 4</b>
<b>1 in. Threaded Coupler</b>	<b>11, 12, 13</b>
<b>200 ft. Outlet Hose</b>	

If you do not find each of the following items in the box then contact your supplier and have the missing part shipped to you. The diagram on the next page shows each of the thirteen parts.



## **Troubleshooting**

### **My pump is pumping but no water is coming out**

There are two reasons for why this might be happening. First, you might have some debris blocking the filter into the inlet pipe. This is easily fixed by brushing off the filter with your hand. The second cause for this is that you are trying to pump water higher than the pump is capable of. When this happens you must lower the vertical elevation of the outlet pipe. The elevation of the outlet pipe must be lowered to the point when water starts coming out.

### **Can't get pump to start**

There are a few reasons for why this might occur. First, make sure that the outlet pipe is higher than your water source. If the outlet pipe is not higher than the water source the pump will not run. Next, if not enough pressure is being generated by the drive pipe the valve will not function correctly. This can be fixed by changing the height of the drive pipe and the water flow through the drive pipe. Lastly, there might be some debris in the valve preventing it from opening and closing correctly. In this case, you may need to disassemble the waste valve (5). To do this, follow the instructions for changing a spring from page 9.

Note that parts 1, 2, 3, 4, 12, and 13 are already joined together. Parts 11, 8, 9, 7, and 10 are also already joined together. These parts have been preassembled for your convenience.

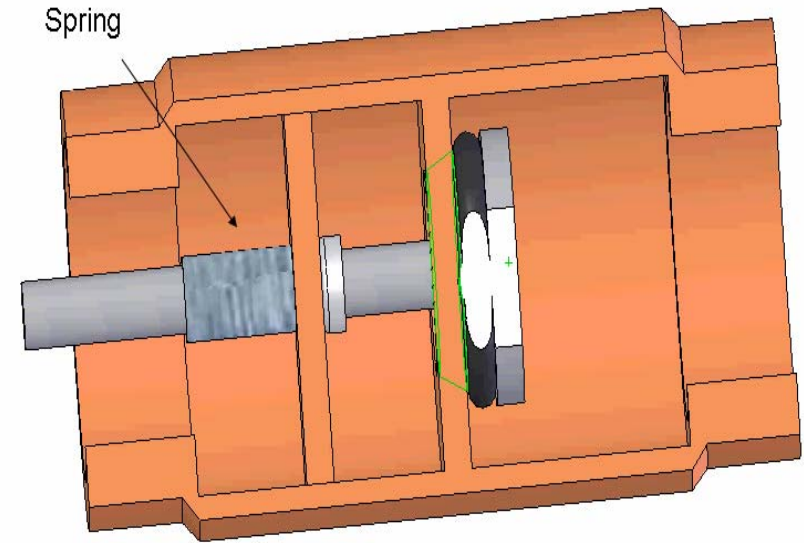
2. Screw 6 into 11 and 12, make sure arrow is pointing up
3. Screw 5 into 13, make sure the arrow is pointing away from the pump
4. Attach outlet hose to 7

Your Ram Pump is now completely assembled and ready to pump water.

## Setup Guide

Follow the following steps to setup your Ram Pump for pumping water.

1. Find a large water source that you wish to pump water from.
2. Run the drive pipe from the water source to the Ram Pump. Make sure that the drive pipe is positioned in such a way that water from the water source can freely flow down the drive pipe.
3. Make sure that the Ram Pump is positioned at a lower level than the water source. **This step is very important.** If the Ram Pump is not positioned below the water source the pump will not work. The vertical distance between the water source and the Ram Pump is directly related to how far you can pump and how many gallons per day that you can pump. The table to the right shows how far below the water source the pump must be in order to pump to a certain height at a certain rate.



## Maintenance

This pump was designed so that maintenance would be almost unnecessary. The only maintenance that needs to be performed on the Ram Pump is the replacement of the spring in the spring valve. This valve is shown in Figure 2.

Figure 2.

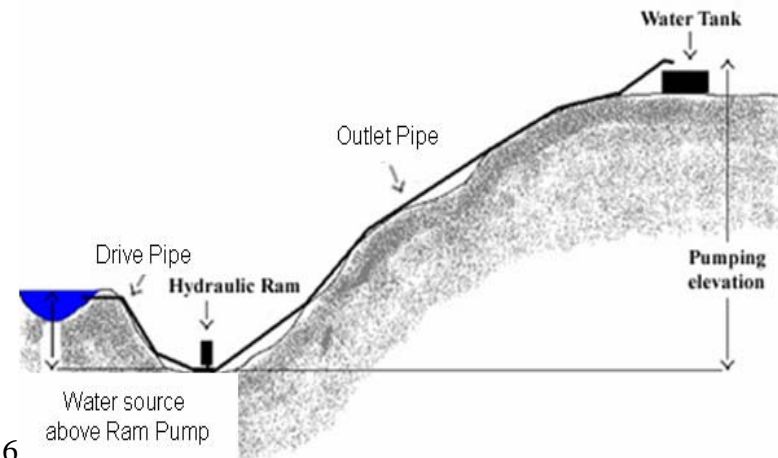
When the spring wears out the pump will no longer function. When this happens the spring must be replaced. This is easily done by following these steps.

### Spring Replacement

1. Remove nut from the end of the valve
2. Remove spacer from the end of the valve
3. Take old spring off
4. Put new spring on
5. Replace spacer and nut on the end of the valve

	<b>Delivery Rate in Gallons/Day</b>				
	<b>Vertical length of outlet pipe (ft)</b>				
Vertical length of drive pipe (ft)	65.5	98.4	131.2	164	197
8.2	26.4	17.4	10.7	8.6	6.3
9.8	34.3	23	17.2	13.5	10.6
11.5	39.9	26.4	19.8	15.9	12.2
13.1	45.7	30.4	22.7	18.2	14
14.8	62.3	40.9	31.2	24.8	18.9
16.4	74.5	48.9	37	29.6	24.7

The diagram below shows the basic setup for the Ram Pump.



## Running the pump

Now that you have the Ram Pump setup you are ready to run it. Follow the following steps to run you Ram Pump.

1. Make sure that water is running though the drive pipe into the pump and out the open valve.
2. Using your hand manually close the open valve.
3. Hold the valve closed until there is enough pressure from the falling water to keep the valve closed.
4. Allow the system to reach equilibrium. This happens when water stops flowing down the drive pipe.
5. Once the system has reach equilibrium manually open the valve that you previously closed.
6. Hold this valve open for about 1 second letting water flow out. This step is shown to the right.
7. After about 1 sec remove your hand. The pump should now be pumping.

