



# MERIBAH RAM PUMP®

## Easy Assembly Manual

### How to build a 1 inch Meribah Steel Fitting Ram Pump (MSFRP®)

The 1 inch Meribah Steel Fitting Ram Pump (MSFRP®) requires a 1 inch drive pipe and a 1/2 delivery pipe. Suitable parameters for the 1 inch MSFRP® are drive pipes of up to 4 meter head (H). The pump can deliver about 10 times the height of the drive pipe. For example with a drive head (H) of 2.5 meters the pump can deliver 25 meter high (DH) with about 3 liters per minute or 4500 liters per day (24h).

The drive pipe can be made out of thick PVC, but we recommend using a steel pipe. With the small diameters of pipes involved the pump and installation should be relative low cost. The pump has up to 30% efficiency, delivering up to 30% of the drive water. This pump is suitable to deliver clean water to a family house or for some farm animals or plantations.

All of the parts for assembling the MSFRP® were obtained from a **local hardware store's plumbing section**. The flap and check valves were international brand, but any other good quality valves should work as long as they are of the same general configuration.

Get all the **parts from the shopping list** and shown on the picture below and take additional some Teflon rolls and two pipe wrenches for fixing the parts easily. In case you are not successful with parts locally available you can also purchase the set of fittings from us.

### General Data of the 1 inch MSFRP®

<b>Model</b>	<b>1 inch MSFRP®</b>
<b>Drive Pipe connection</b>	1 inch
<b>Delivery Pipe connection</b>	1/2 inch
<b>Drive Head (H) minimum</b>	1 meter
<b>Drive Head (H) maximum</b>	4 meter
<b>Delivery Head (DH) maximum</b>	25 - 45 meter (up to the delivery length)
<b>Volume of Water required</b>	16.5 - 20 liters/minute

# Pump Assembly

Valves, fittings, and pipes are assembled together as shown in the picture below, using two pipe wrenches. In the same fashion as the check valve, all threaded pipes should be **Teflon taped** and tightly secured.

## Assembling picture



## Shopping List 1 inch MSFRP<sup>®</sup>

Pos.	Part description	Amount
1	1 inch union with rubber sealing	1
2	1 inch double nipple	1
3	1 inch t-junction	1
4	1 inch male / female bow 90°	1
5	1 inch double nipple	1
6	1 inch flap valve	1
7	1 inch disc check valve	1
8	1 inch double nipple	1
9	1 inch x 1/2 inch t-junction	1
10	1/2 inch double nipple	1
11	1/2 inch union with rubber sealing	1
12	1 inch pressure vessel 6 inch long	1
13	1 inch fitting	1
14	1 inch pressure vessel 6 inch long	1
15	1 inch cap	1
16	1/2 inch union rubber sealing	1
17	1 inch union rubber sealing	1
18	Teflon tape	4
19	1/8 inch double nipple	1
20	air snifter valve	1

## Air Snifter Valve and Operation of the Ram



Every ram pump needs an air cushion for a proper operation. There are different ways to guarantee that the pump didn't run out of air. The valve we added at the check valve is one of the best solutions (it's a **1/8 inch one no return valve**) for a nearly maintenance free operation, you just drill a hole (Ø8.5mm) above the male thread of part 7. Then use a 1/8 inch die to finish the

thread, after that screw on the air snifter valve. If you once installed the pump and want to start it, you should have a look at the **air snifter valve**. Up to your parameters (when the delivery high or length is to less) the valve didn't suck enough air for a proper operation. You can check it very easy, just put your finger onto the valve. **If it gets sucked in everything is alright**, if not close the valve from the delivery pipe a bit and check again, repeat it until you feel the suction. Also **if the pump just run a couple of minutes and then stops without any reason**, also close the delivery valve a bit and repeat the step before it. Sometimes the delivery valve is shut over 50 % and the amount of delivery water remains at the same amount like fully opened. Up to the water quality it is recommended to check the air snifter valve from time to time if it sucks in air, if not you have to clean the valve.

**If there are any questions or problems, please let us know, we will provide you with any help and information you need.**

## Exchange the Pressure Vessel

Or you can purchase a standard pressure vessel with build in rubber membrane from us if you don't want to look for the air snifter valve at the check valve. Just screw off part 12, 13, 14 and 15 and fix the vessel on top with the included fitting, that's all.

