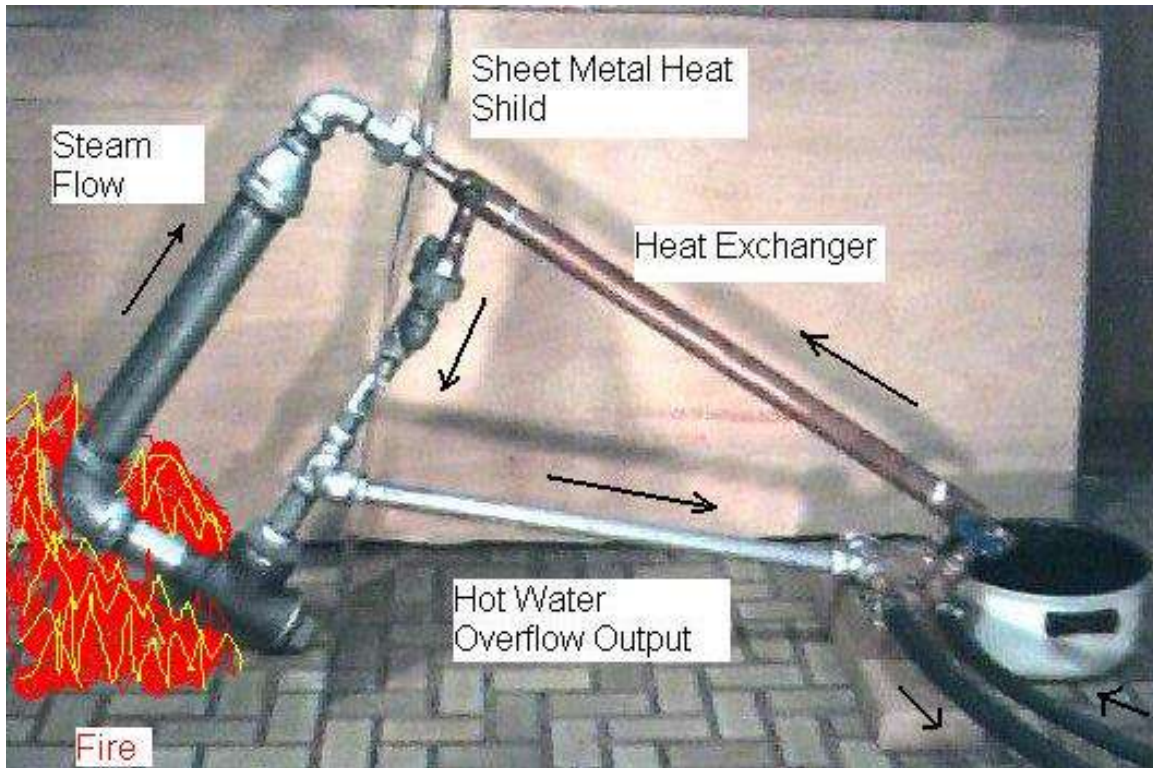


J-Spatter-Pole Water Distillers

(3 April 05)

Open Fire J-Spatter-Pole Water Distiller

See <http://home1.gte.net/mikelob/JFpole-1.jpg>



The principal of operation is the same as the electric version except an open fire is used as the heat source. Depending on the heat of the source the output is more or less than 4 Oz/10 min.

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Front view see <http://home1.gte.net/mikelob/JFpole-6.jpg>



The above is a view looking at the front of the unit. A heat shield was made out of sheet metal. In this case it was a 3" vent pipe flattened out with holes cut for the pipes. The heat shield helps keep the heat exchanger and the operator from getting too hot.

Back view see <http://home1.gte.net/mikelob/JFpole-5.jpg>



This view is from the back looking forward toward the fire. The flow control for input cooling water and the output flows are all as far as possible from the fire.

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Back view of heat exchanger hot water output flow see

<http://home1.gte.net/mikelob/JFpole-4.jpg>



Operates on the same principle as the electric version. Hot water from heat exchanger drops down by gravity and mixes with air to replenish the water level in the lower pipes and to allow the excess to run off as hot water waste.

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Looking down on the right end at the cold water input control valve and hot waste water output pipes attached to wooden block see <http://home1.gte.net/mikelob/JFpole-2.jpg>



This wooden block (two 2"x4" wood blocks glued together) stabilizes and holds the unit up so that it stands vertically.

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The bottom 1.5" pipes are the boiler pipes that get hot in the fire see <http://home1.gte.net/mikelob/JFpole-3.jpg>



Notice the 1.5 inch clean out pipe plug on the right bottom. This is to be used to clean out the salts that accumulate at regular intervals. The time frame will depend on the hardness of the input water.

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This is a picture of the steam separator that helps direct vapor bubbles away from the hot water input pipe. See <http://home1.gte.net/mikelob/Jpole-11.jpg>



The insert is made of sheet metal. The hole and slot is positioned near the bottom.

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This is a view after partly assembling. See <http://home1.gte.net/mikelob/Jpole-12.jpg>



View from the top down see <http://home1.gte.net/mikelob/Jpole-13.jpg>



Parts list for Open Fire J-Spatter-Pole Water Distiller: (from left to right)

Quantity -- Price - Description

- 1 -- \$2.95 - 1.5" 90 degree elbow
- 1 -- \$2.56 - 1.5" x .75" steel reducing bushing
- 1 -- \$3.98 - 1.5" x 1.5" x 1.5" Tee
- 1 -- \$5.47 - 1.5" x 12" steel pipe nipple
- 1 -- \$2.26 - 1.5" x .75" reducer coupling
- 1 -- \$0.84 - .75" x 1.5" steel pipe nipple
- 1 -- \$1.44 - .75" x .5" 90 degree reducing elbow

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- 3 -- \$0.44 - .50" x 1" steel pipe nipple
- 2 -- \$2.98 - .50" union
- 1 -- \$2.49 - 1.5" x 4" pipe nipple
- 1 -- \$1.99 - 1.5" Pipe Plug
- 1 -- \$0.66 - .75" x 3.5" steel pipe nipple
- 1 -- \$1.78 - .75" x .5" x .5" Reducing Tee
- 3 -- \$0.98 - .5" 90 degree street elbow
- 1 -- \$3.39 - .5" x 18" pipe
- 2 -- \$0.49 - .5" Tee
- 1 -- \$0.89 - .5" end cap
- 1 -- \$0.87 - .5" x 4.5" pipe nipple

Copper:

- 3 -- \$0.59 - .5" Adapter mail thread and sweat fitting
- 3 -- \$0.05 - .5" x .75" pipe
- 2 -- \$0.25 - .5" 90 degree elbow
- 1 -- \$0.08 - .5" x 1.25" pipe
- 2 -- \$3.94 - 1" x .5" x .5" Reducing Tee (get from a professional pipe supply house)
- 1 -- \$2.80 - 1" x 20" pipe (L-Blue Type \$16.48/10 ft)
- 1 -- \$1.55 - .5" x 25" pipe (L-Blue Type \$7.48/10 ft)
- 1 -- \$4.49 - .5" x .5" Gate Valve
- 1 -- \$1.79 - 3/8" x 3/8" Brass hose Barb and pipe adapter
- 1 -- \$0.19 - .5" x 3" pipe

Miscellaneous:

- 1 -- \$2.50 - 3/8" x 5 ft rubber air hose used to supply water from bucket
- 1 -- \$3.50 - 5/8" x 3 ft to 5 ft heater hose from car or garden hose
- 3 -- \$0.69 - SS Hose clamps
- 1 -- \$1.79 - 3/8" x 1/4" Brass hose Barb and pipe adapter (bucket feed through)
- 2 -- \$0.12 - .5" Washers (one for each side of the bucket)
- 1 -- \$0.69 - .25" x .25" Coupling (nut that holds the washers in place)

Total cost of this approach is about \$83.00

Notes on operation of the open fire unit: I was able to get an average output rate of about 4 oz/10min or 1/2 cup/10min with coals half way up the side of the bottom 1.5" boiler pipe with a bit of cross wind blowing. More output may be possible with more coals or a hotter fire. If air was allowed to come in from the bottom to fuel the flame it would be hotter. This would be using the principles of a blacksmith forge.

Orient the J-Sputter-Pole so that the output is up wind and a minimum of ash blows into the output container (found this out the hard way) or put a hose from the output it into a semi-closed collecting container. One can also block up the output end so that the pipe being heated is tilted more horizontal and closer to a low fire condition. If needed, shield from the wind the upright 1.5" pipe so it doesn't cool the steam and cause it to

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drop the distilled water back to the bottom of the pipe and thus short circuit the heat exchanger output process. See <http://home1.gte.net/mikelob/JFpole-9.jpg>



During operation most of the attention is on the fire and keeping it hot around the boiler pipe. The second most attention is on the water flow adjustment. Besides that the unit is nearly automatic and low tech

MikeL