STEP-BY-STEP GUIDE

Foot-pump Handwashing Station
Designed by Steve Abbott [http://designchoice.org/]

2020 | APRIL
Materials
Materials:
1. ½” barbed plug
2. Plumbers’ tape
3. ½” x 2” nipple
4. Two ½” nipples
5. 3” clamp
6. ½” threaded connected to 3” reducer * these are glued together. See next slide
7. Two ½” hose barbs
8. Two ½” check valves
9. ½” galvanized tee
10. Wood screws (not in picture)

Note: It is NOT necessary to use brass or GI parts. If plastic parts are available these will reduce costs and work just as well.
To make item #6 on the previous slide you need:

A. 1½” to ½ “ threaded connector
B. 3” to 1½” reducer
C. Glue together with ABS cement
10. Plastic buckets x 4*
   1 bucket to store clean water, 1 bucket for greywater, 2 buckets for the stand.
11. Lids for buckets x 2
12. Plastic bowl with several holes drilled into the bottom

Note: Use buckets of the same volume for the storage and drainage water

13. Motorbike inner tube
14. Piece of scrap wood (17cm x 4cm x 2cm)
15. Cross bar for stand (42cm x 6cm x 2cm, two holes 5/8” dia for plastic tube, one hole for stand)
16. Board (60cm x 25cm x 2cm)
17. Contact cement
18. Plastic tubing ½” inner diameter (3 m)
18. Bulkhead fitting
19. Stand for outlet tube
   You can use anything you’d like. We used an old bucket and concrete to make a base for the wooden pole and cross bar
Tools

- Wood saw
- Pipe wrench
- Drill and drill bits
- Tape measure
- Screwdriver
- Wire cutters
- Clamps
Assembly
1. Cut a piece of inner tube approximately 30 cm long

2. Apply contact cement to the inside part of the tube

3. Press together

4. Apply contact cement to both sides of the glued end
5. Fold the tube over twice and clamp to hold (clamping is not necessary, you can just press it down)

6. Once set, fasten the inner tube to the board with 2 wood screws and the scrap wood. Be careful not to puncture the tube with the screws.
7. Arrange plumbing parts in the configuration shown here.
8. Apply plumbers tape to all threaded parts

9. Join all parts and tighten with a pipe wrench
10. Connect hardware to the inner tube and secure with the clamp
11. Drill holes into a plastic bowl to create a basin  
   Note: The bowl must be large enough to be held up by the rim of the greywater bucket

12. Stack the buckets to create a stand
13. Cut 2 lengths of plastic tubing:
   • Approximately 80 cm to connect the storage bucket to the pump
   • Approximately 175 cm – to connect the pump to stand
   • If you use a different configuration for the stand, you may need more or less tubing

14. Attach the tubing to the storage bucket. You may want to use tie wire to make sure it is secure

15. Prop up storage bucket on another bucket, or use something else for a stand.
    Note: the storage bucket must be elevated above the pump to have enough head to fill the pump
16. Drill several holes in the plastic plug

17. Assemble the stand

18. Thread tubing through the cross bar and jam the plastic plug into the end of the tube
19. Attach the plastic tubing from the bucket to the pump, and from the stand to the pump.

20. Make sure the check valves are level. We supported the top valve with an additional piece of wood. Secure the pump to the board if necessary.
20. Arrange the stand, storage bucket, basin, and foot pump in the proper configuration, so it is easy to use.

21. Provide soap - the storage bucket makes a convenient stand
21. Fill the storage bucket with water, and give it a try!
REMEMBER!

• Make sure check valves are pointing the right direction (look at the arrow on the valve), and ensure valves are level once installed.

• The grey water bucket will have to be emptied manually once full. Don’t forget!

• It’s important to provide soap at the handwashing station.

• This handwashing station was designed by Steve Abbott at Appropriate Design Choice. You can get more information at http://designchoice.org/ on different types of handwashing stand configurations, as well as information on shallow well pumps and hand dug wells.
THANK YOU!

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