

ProTool

PROTOOL CART ASSEMBLE IT YOURSELF INSTRUCTION MANUAL

PROTOOL CART WATER POWERED

150-0535



WHAT'S INCLUDED

- Cart Frame
- Housings
- Filters
- Fitting Kits
- Hose
- Tools
- Zipties



1 x Cart Frame



1 x Wheel Bracket



2 x Wheels



1 x 40" SS Housings



1 x 40" RO Filter (pre-installed)



2 x 20" Plastic Housing



1 x 20" Carbon Filter



1 x DI Container



1 x DI Resin Bag



1 x RO Fitting Kit



1 x RO Waste Kit



1 x Inlet/Outlet Kit



1 x Screw Kit



1 x Hose Kit



1 x Cutters



1 x Screw Driver



1 x Nut Driver 10mm



1 x Nut Driver 13mm



1 x Nut Driver 14mm

WHAT'S NOT INCLUDED

- Wrench

SCREW KIT

WHAT'S INCLUDED

A -
Housing Top
Screws 5/16"



- C
Wheel Bracket
Bolts 3/8"

- D
Lock Washers

B -
Wheel Pins



- E
Rubber Feet
Screws



FILTER LOCATIONS

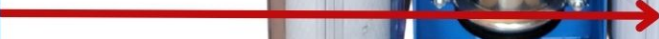
RO FILTER



CARBON FILTER



DI FILTER



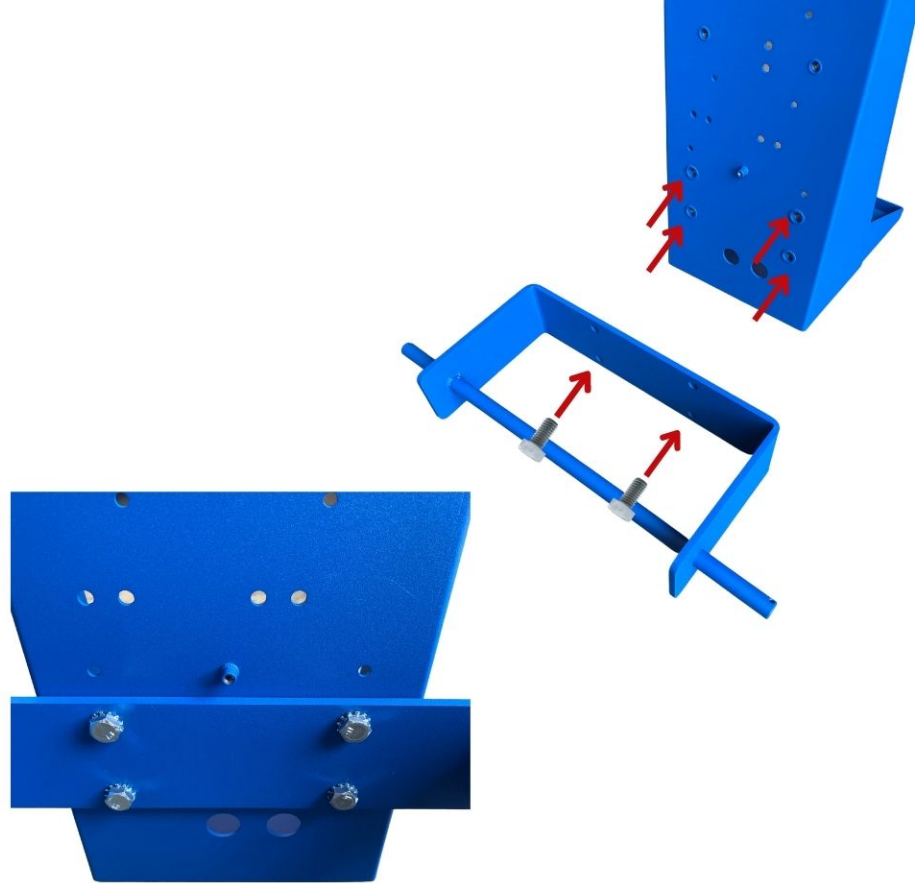
STEP 1

Items Needed:

- Cart Frame
- Wheel Bracket
- C bolts
- D washers

Steps:

1. Align the wheel bracket with the cart frame.
2. Pass the C bolts through the D lock washers.
3. Thread the bolts into the large rivnuts on the cart frame.
4. Secure with the 14mm nut driver.
5. Secure as tight as possible to torque on the lock washers.



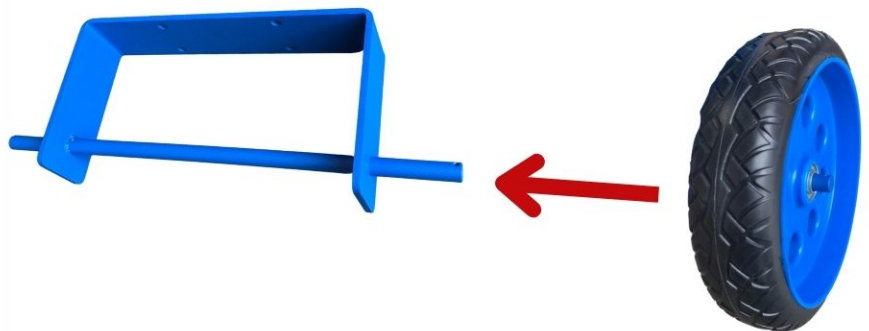
STEP 2

Items Needed:

- Cart Frame
- 2 x Wheels
- 2 x E - Wheel Pins

Steps:

1. Line up the wheels with the posts on the wheel bracket.
2. Slip a wheel on the axel.
3. Slip the wheel pin E through the hole in the axl.
4. Repeat for the other wheel.



STOP

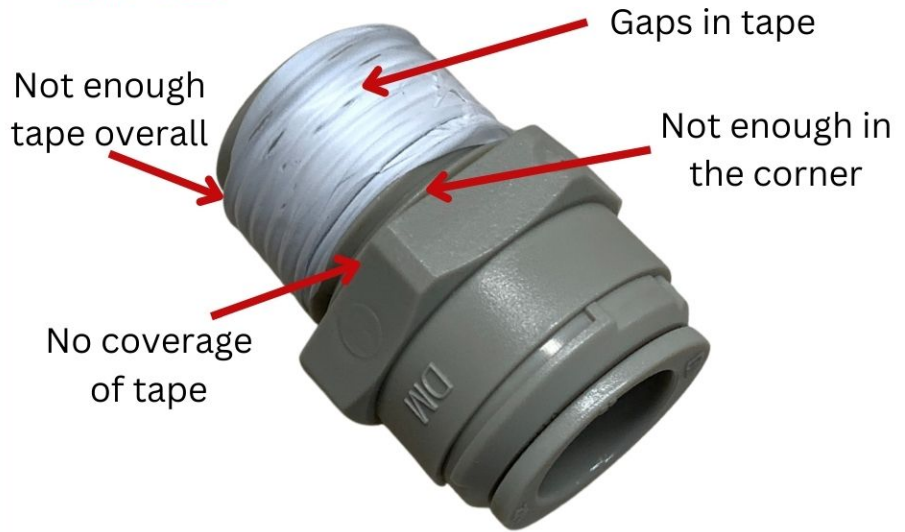
Items Needed:

- Special note on water proof tape for fittings

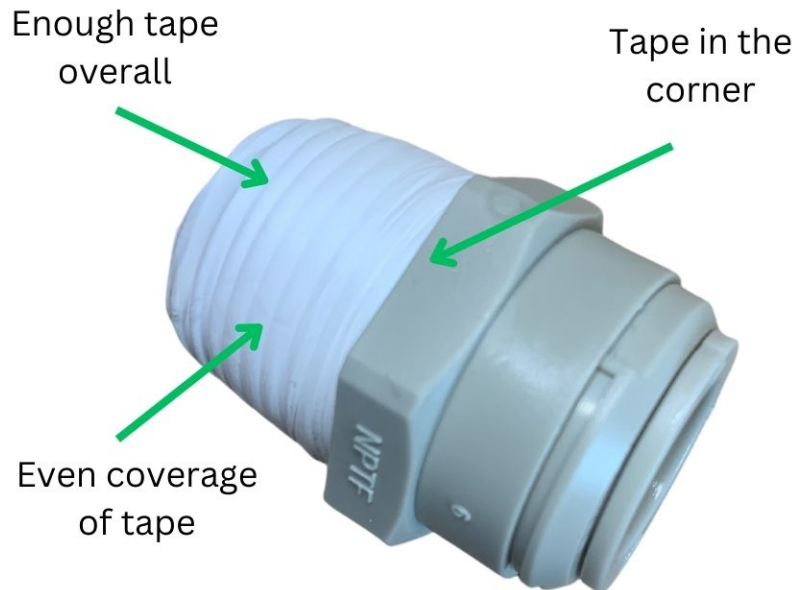
Steps:

1. Before moving forward, a quick note on waterproofing fittings.
2. Use provided sealant tape to tape ALL fittings with threads.
3. We recommend at least 8-9 wraps around plastic fittings to ensure a water proof fit.
4. Ensure tape covers all fitting threads.
5. Ensure an even coverage of tape without gaps.
6. If you see water seeping through the fitting and tape, there is not enough tape. Remove fitting and add tape on top of existing tape. Double check key points on the image to the right.

BAD



GOOD



STEP 3

Items Needed:

- 1 x Plastic Housing
- 1 x Inlet Housing Kit

Steps:

1. Tape all male threaded fittings in the inlet/outlet kit per the instructions on page 6.
2. Thread the dark grey reducer fittings into the housing caps on both sides. Tighten.
3. Thread the brass nipple into the dark grey reducer fitting on the inlet side.
4. Thread the brass female garden hose fitting onto the brass nipple and tighten.
5. Thread a push fit fitting into the outlet side.
6. This is the inlet housing cap. Set aside.
7. This cap becomes the top to the carbon filter.



Final

STEP 4

Items Needed:

- 1 x Plastic Housing
- 1 x Inlet Housing Kit

Steps:

1. Thread the dark grey reducer fittings into the housing caps on both sides. Tighten.
2. Thread the brass male garden hose fitting into the outlet side and tighten.
3. Thread a push fit fitting into the inlet side.
4. This is the outlet housing cap. Set aside.
5. This cap becomes the top to the DI filter.



Final

STEP 5

Items Needed:

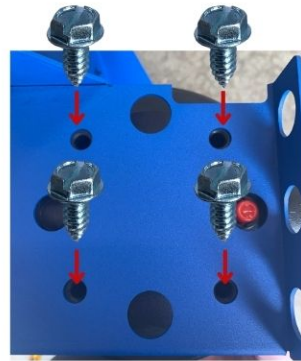
- 1 x Cart Frame
- 1 x Inlet Housing Cap
- 4 x A Screws

Steps:

1. Align the inlet housing cap to the left side of the cart frame.
2. Pass the push fit fitting through the large opening in the back of the frame. Align the 4 holes of the inlet cap to the 4 holes in the top of the frame.
3. Thread the A screws through the 4 holes.
4. Make sure the housing cap stays against the frame.
5. Tighten the 4 screws so the cap does not rattle.
6. Do NOT overtighten if using a drill gun.



Final



STEP 6

Items Needed:

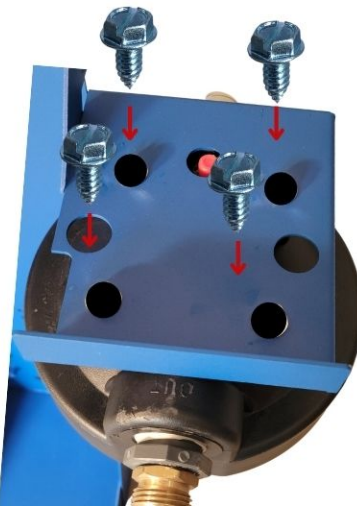
- 1 x Plastic Housing
- 1 x Inlet Housing Kit
- 4 x A screws

Steps:

1. Align the outlet housing cap to the right side of the cart frame.
2. Pass the push fit fitting through the large opening in the back of the frame. Align the 4 holes of the outlet cap to the 4 holes in the top of the frame.
3. Thread the A screws through the 4 holes.
4. Make sure the housing cap stays against the frame.
5. Tighten the 4 screws so the cap does not rattle.
6. Do NOT overtighten if using a drill gun.



Final



STEP 7

Items Needed:

- SS Housing with RO
- 1 x RO Fitting Kits

Steps:

1. NOTE: RO is pre-installed in the SS housing for you.
2. Grab the SS housing and RO fitting Kit.
3. Thread all male fittings with tape per instructions on page 6.



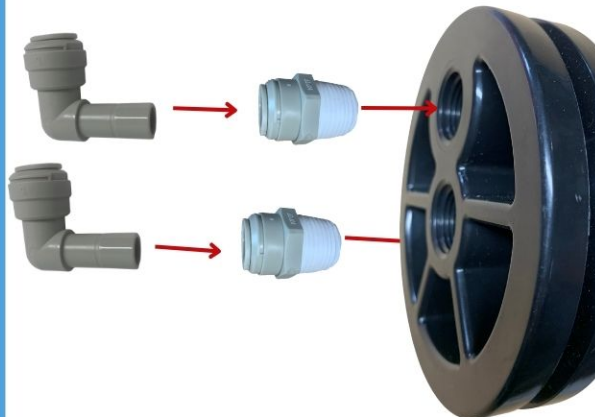
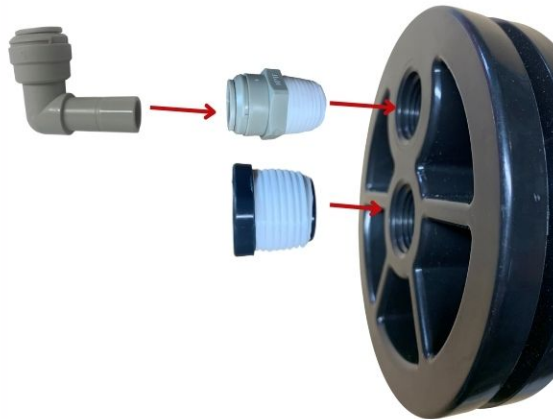
STEP 8

Items Needed:

- SS Housing with RO
- 1 x RO Fitting Kits

Steps:

1. Thread a push fit fitting and a plug into the TOP of the SS housing. The push fit fitting goes into the side port and the plug goes into the center port. The top side is marked with tape and labelled "Top".
2. Thread a push fit fitting into each threaded opening on the bottom of the SS housing.
3. Add elbows to all three push fit fittings.



STEP 9

Items Needed:

- 1 x Cart Frame
- 2 x Rubber Feet

Steps:

1. Align the rubber feet with the center rivnuts at the top of the cart frame.
2. Pass the E bolts through the rubber feet and thread them into the rivnut. Tighten.
3. Repeat for the bottom rivnut by the base of the cart frame.
4. Place a zip tie for the pressure gauge for later. Pass through from the back and push back into the hole just below. The zip tie should be open on the side.



STEP 10

Items Needed:

- 1 x SS Housing with RO
- 2 x Housing Straps

Steps:

1. Remove the bolts from the housing straps. Be careful not to loose the round pivot nuts.
2. Pass a bolt through the hole on the left side of each rubber foot.
3. Thread the bolt into the pivot nut of a housing straps.
4. Leave the right side open.
5. Place the SS housing in the cart frame. Put the dual port side facing down, leaving the plugged port on the top.



STEP 11

Items Needed:

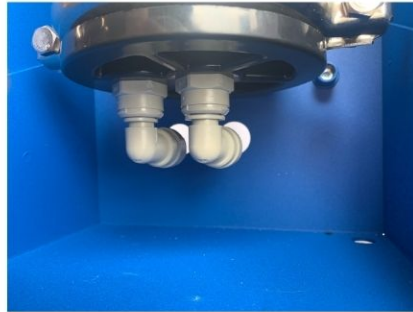
- 1 x SS Housing with RO
- 2 x Housing Straps

Steps:

1. Wrap the top housing strap around the SS housing.
2. Pass a bolt through the hole on the right side of the top rubber foot.
3. Thread the bolt into the pivot nut of the housing strap. Make sure the bolt threads to the outside of the strap.
4. Tighten each side of the strap evenly until the strap just touches the housing. Leave loose for adjustment.
5. Repeat for the bottom strap.
6. Lift the SS housing off the frame a few inches. (Pro Tip: The box for the pressure gauge can be used as a spacer to hold the SS housing.)
7. The bottom of the SS housing should be even with the plumbing holes on the cart.
8. Once in position, tighten the straps to secure the SS housing.



Outside



STEP 12

Items Needed:

- 1 x Hose Kit
- Cutters

Steps:

1. Connect an elbow to the push fit fitting on the outlet side of the left housing cap.
2. Connect an elbow into the push fit on the top of the SS housing.
3. Add a second elbow into the elbow added in step 2.
4. Pass the black hose through the left hole on the very top of the cart frame.
5. Push the black hose into the elbow you just added in step 1.
6. Push the other end of the of the black hose into the double elbow added in step 3.



STEP 13

Items Needed:

- 1 x Hose Kit
- Cutters

Steps:

1. Cut a short red hose. Approx 4-6 inches.
2. Cut a short blue hose. Approx 4-6 inches.
3. Add a double push fit elbow to the red hose.
4. Add a double push fit elbow to the blue hose.
5. Note: The length of tube on the right can be used as a guide. Trim if necessary.



Above can be used as a guide for step 13.



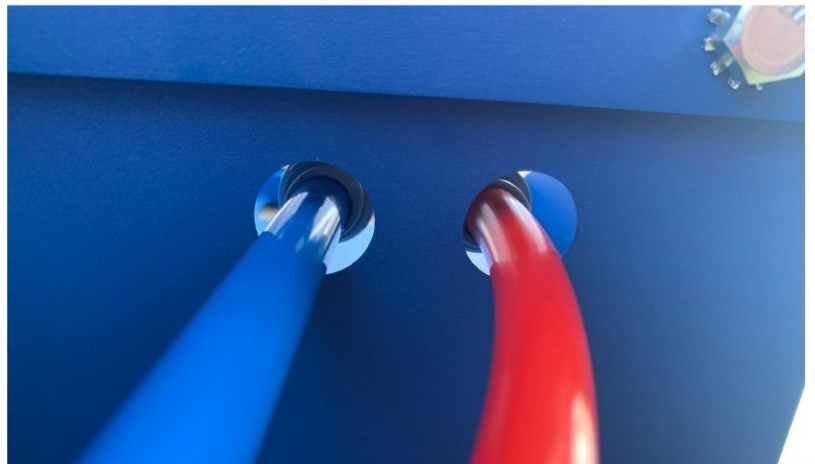
STEP 14

Items Needed:

- 1 x Hose Kit
- Cutters

Steps:

1. Turn to the back of the cart.
2. Push the short blue hose into the left hole at the bottom of the cart and into the push fit in the center port of the SS housing.
3. Push the short red hose into the right hole at the bottom of the cart and into the open fitting.
4. Ensure both hoses are seated fully into the fittings.
5. Both elbows should just clear the opening in the frame and point up.



STEP 15

Items Needed:

- 1 x Hose Kit
- Cutters

Steps:

1. Add an elbow to the push fit fitting on the outlet housing cap. This is the DI cap. (Left cap when looking at the back of the cart.)
2. Connect the blue hose to the elbow at the bottom of the cart with the blue hose.
3. Route it to the elbow you added in part 1.
4. Align it with the elbow and cut to length at the mark.
5. Connect to the elbow.
6. Use the zip tie holes to secure and route the hose safely. (This prevents the hose getting snagged when loading/unloading and transport.)



STEP 16

Items Needed:

- 1 x RO Waste Kit
- Cutters

Steps:

1. Tape and thread the pressure gauge into the tee fitting provided. Ensure a tight fit and the gauge is straight with the tee.
2. Loosely secure the pressure gauge to the frame with the ziptie from step 9.
3. Make sure tee is on the right side and inline with the red hose at the bottom.
4. Connect red hose to the elbow at the bottom.
5. Cut the red hose to length at the tee fitting.
6. Insert red hose into the bottom of the tee fitting. Ensure hose is fully seated.



STEP 17

Items Needed:

- 1 x RO Waste Kit
- Cutters

Steps:

1. Connect red hose to the top of the tee fitting.
2. Route the red hose toward the top right of the frame. (When looking at the back.)
3. Cut the red hose about 1 inch above the bend in the frame. Make sure there is enough room for the elbow fitting. Cutting it longer and trimming down may be desired.
4. Add an elbow fitting.
5. Use zipties to secure to the cart frame.



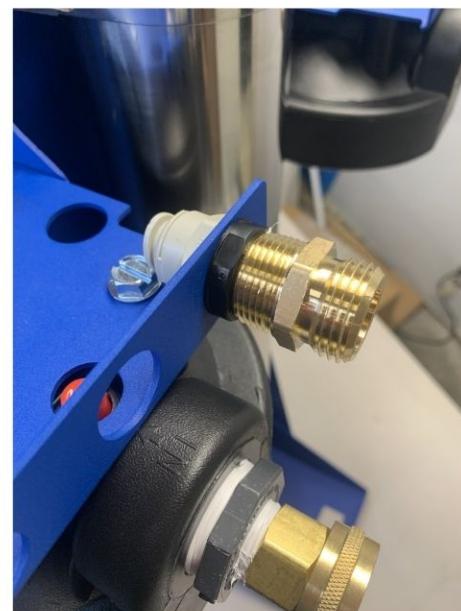
STEP 18

Items Needed:

- 1 x RO Waste Kit

Steps:

1. Push the grey fitting through the right hole above the inlet/carbon cap.
2. Thread the lock washer onto fitting threads.
3. Tighten to lock the fitting in place.
4. Add more tape if necessary.
5. Thread the brass fitting onto the push fit fitting. Hand tighten.
6. This is the RO Waste outlet.



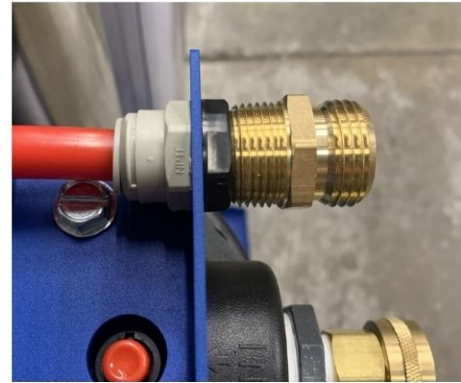
STEP 19

Items Needed:

- 1 x RO Waste Kit
- Cutters

Steps:

1. Cut two short pieces of red hose. About 3 inches each long.
2. Even length is recommended, but spacing is flexible.
3. Connect one end into the push fit fitting installed on the cart frame.
4. Ensure the push fit collar is not pinched by the screw below and can freely extend.
5. Ensure the hose is fully seated.



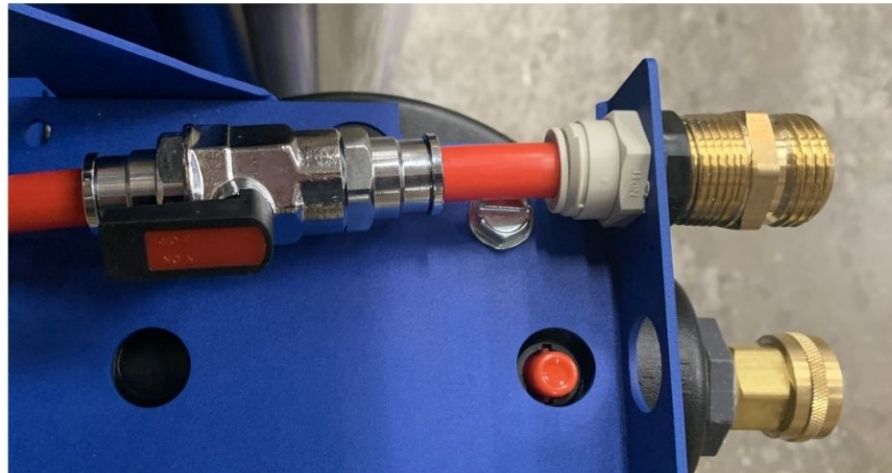
STEP 20

Items Needed:

- 1 x RO Waste Kit

Steps:

1. Add the valve to the other end of the red hose. Push all the way onto the red hose.
2. Direction does not matter, aside from preference of turning direction.
3. This is the RO Waste / flush valve.



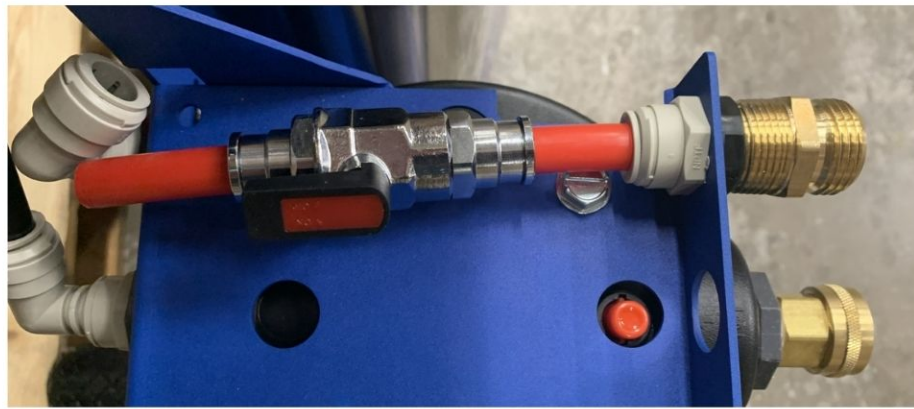
STEP 21

Items Needed:

- 1 x RO Waste Kit
- Cutters

Steps:

1. Add a red hose to other side of the RO Waste valve.
2. Push all the way in.
3. Connect the elbow to the other end of the red hose.
4. Ensure the hose is fully seated in all fittings.



STEP 22

Items Needed:

- 1 x Carbon Filter
- 1 X Clear Housing

Steps:

1. Open the carbon filter and remove the plastic cover.
2. Place the carbon filter inside a clear plastic housing. Make sure it is aligned in the center.
3. Filter should rest on a centering knob on the bottom.
4. Make sure the o-ring is secure in the plastic housing channel. Flat side down.
5. Thread the plastic housing into the black housing cap on the left side of the filter. Inlet side (left when looking at front of cart)
6. Hand tighten the plastic housing.
7. Use the black housing wrench to tighten the housing further.



STEP 23

Items Needed:

- 1 x Blue/White media container
- 1 x Resin bags

Steps:

1. Open the top of the blue/white container. Remove the solid foam filter. Ensure the donut shaped foam filter remains in the bottom of the container.
2. Cut open the corner of a DI resin bag. Pour the contents into the container.
3. Gently shake/tap the container on the ground to let the DI resin settle in the container.
4. Fill the container until full.
5. Replace the top foam filter and the blue lid. Tighten lid.
6. Place the blue/white container in the other clear plastic housing.
7. Thread the housing into the right plastic cap (when looking at the front)
8. Hand tighten the plastic housing.
9. Use the black housing wrench to tighten the housing further.



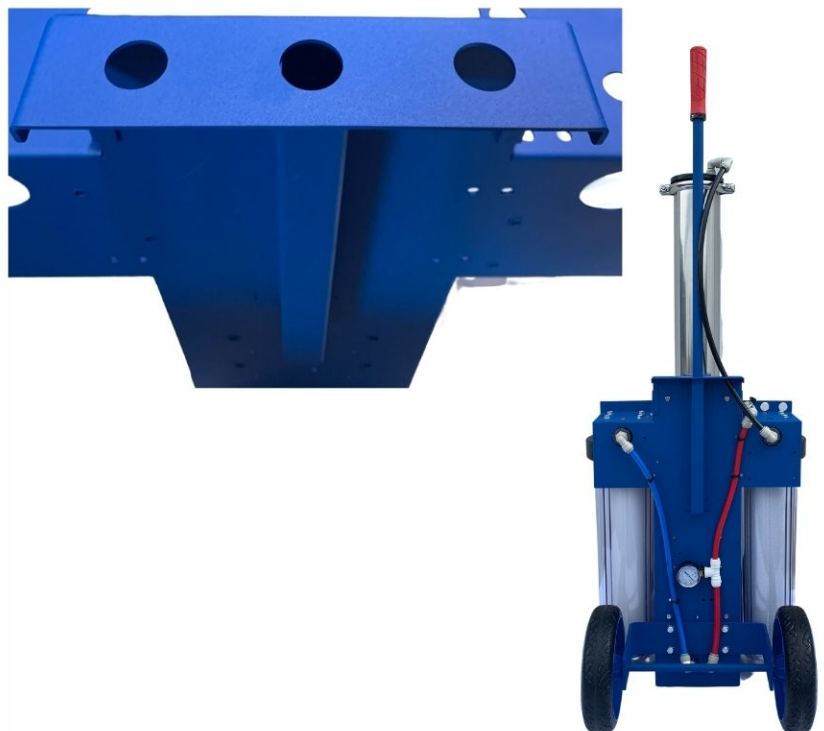
STEP 24

Items Needed:

- 1 x Cart frame handle

Steps:

1. Remove the handle from the packaging.
2. The open end has a rivnut embedded in the end of the pole.
3. Slide this side through the center hole on the top of the frame.
4. Gently rotate and slide the pole further down.
5. Once all the way in, thread the pole onto the bolt inside.
6. Hand tighten





**Your system is
ready to clean!**

Remaining pages have some maintenance and operating tips.
Please read to ensure longevity of your system.

MAINTENANCE DIRECTIONS + TIPS

1. The most important thing is to keep the RO healthy.
 - a. Replace the carbon filter
 - i. Every 12 months minimum.
 - ii. Every 6 months if you use this system everyday 6-8 hours a day.
 - b. Flush your system.
 - i. When you start your system, flush the RO for 30 seconds.
 - ii. When you are done at the job, flush the RO filters for 2-3 minutes.
 - c. Run water every two weeks.
 - i. Do not let the system sit.
 - ii. Make sure to run water for 10 minutes and flush the RO's for 2-3 mins at least twice a month.
2. Stay ahead of filter replacements.
3. Keep a spare pump (if applicable) and DI resin incase of emergency.

CLOSED

Valve is closed, the sytem is producing RO water.



*small amount of water will pass through to maintain pressure.



OPEN

Valve is open, the system is flushing.



TROUBLESHOOTING

1. Not enough flow?
 - a. Ensure tap water pressure is good.
 - b. Ensure pressure gauge is reading around 60 PSI or higher.
2. DI resin is being used too quickly.
 - a. Check the TDS coming out of the RO (blue hose). Make sure the RO is removing 90% of the tap water TDS.
 - i. Disconnect the blue hose from the back of the DI filter. Run water and test the TDS.
 - b. Check tap water TDS. High TDS areas will use more resin, even after RO.
 - i. IE: 200 TDS vs 1000 TDS incoming is 5 x more resin. (20 vs 100 RO), even when the RO is working.

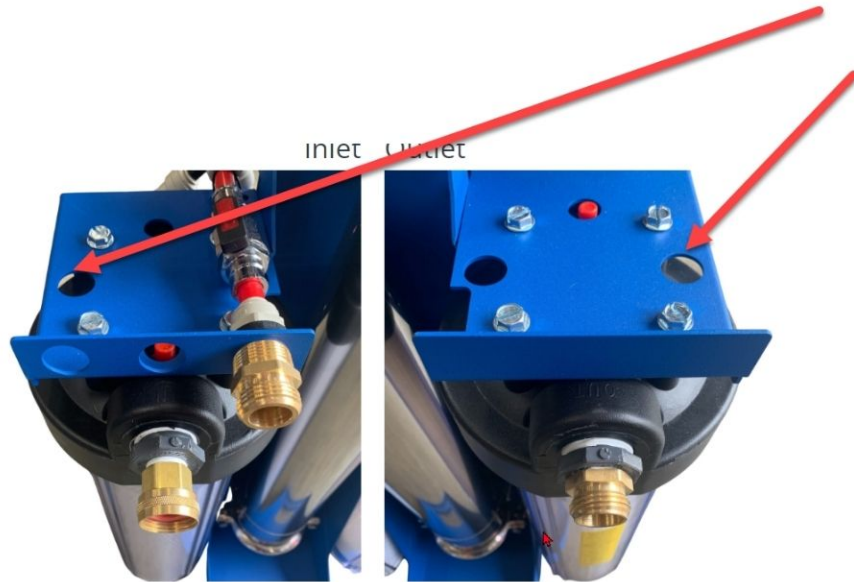
START OF JOB INSTRUCTIONS

1. Connect Water-fed pole.
2. Connect tap water.
3. Flush RO for 30 seconds.
4. Close valve and turn into production mode.
5. Ready to clean.

END OF JOB INSTRUCTIONS

1. Open RO waste/flush valve.
2. Wait 2-3 minutes.
3. Turn off tap water
4. Put away/reel hoses.
5. Place caps on both male garden hose fittings and the female garden hose fitting for storage and transport.

Inlet Outlet



ADDITIONAL TIPS

1. The handle is used to easily move the cart around. It also protects the SS housing if the system is knocked over or if you want to lay it down.
2. The handle can be removed
3. This system has various holes that can be used to strap to a wall or truck bed to secure the system during transport.
 - a. On the inlet/outlet brackets are two side holes.
 - b. On the top of the frame is an extra hole by the pole.
4. The extra holes can be used for spare parts.
5. If you need extra pressure this cart comes with hole patterns to quickly add either a 12V or 110V pump to the back of the cart.



PUMP UPGRADE OPTIONS

110V PUMP
12V PUMP

The ProTool Cart offers mounting options for both 12V and 110V pumps.

With rivnuts pre-installed and clearance holes adding a RO booster pump is quick and easy.

These kits make it easy to boost RO pressure for more water flow. This allows you to run 2 operators, or reach new heights.

This cart can reach up to 90 feet when paired with the proper water-fed pole and a pump.

The red arrow points to the mounting locations for both the 110V and 12V pump.

Following the provided instructions in the upgrade kit, simply rework the plumbing, attach the pump, and you are all set.

12V PUMP CONTROLLER AND BREAKER

1. The 12V pump kit comes with a pump controller, breaker switch and a power cable.
2. The green arrow points to the mounting locations for the pump controller and breaker switch.

