

1.2 Trailer Setup

Plumbing

Once your tank and pressure washer are permanently positioned and fastened in, you will need to plumb them together and be set up for filling with bulk water. There are multiple ways to do this, so feel free to do it however it will work for your situation. Bulk water stations allow large quantities of water to be purchased with an account and is commonly available through your local municipality.

The following list is of the main components you will want to have incorporated into your plumbing configuration.

1. Inline ball valve or gate shut off for water in and out from your local bulk filling station.
2. Cam-lock fitting to hook hose onto that is coming from bulk water station. You will also need this hose with the correct fitting on the other end to match the bulk water station.
3. Inline ball valve or gate shut off for water in and out from your tank to your machine.
4. Ball valve diverter between #2 valve and your machine with a male air fitting, which will be used for winterizing your machine (as per Module 4.3).
5. Reducer to low pressure hose coming off of machine pump.

You should be able to find all of the items at hardware store that have a plumbing section.

There are many options and you will need to configure what works for however you position your tank and pressure washer. Only begin the plumbing once you have secured your heavy equipment into position. You may not be able to move your tank once it is plumbed in and moving the pressure washer will take extra work as well.

Reference of parts for plumbing configuration diagrams.

1 + 2. Ball Valve: There are many options for ball valves and all of them will work, as long as they match the size of the pipe you are attaching and they can stop water flow.



3. ABS Pipe Tee: If you are using ABS pipe, then find the corresponding "T". Note that there is a direction of flow on most of them, so have the flow guiding from the tank to the pressure washer. Not the water intake to the pressure washer.



4. Pipe Reducer: When the pipe has additional parts added, the sizing might not line up. Finding one, or multiple, reducers will get you to the sizing you need for your 3 way ball valve to hook in. Don't use a large 3 way in this section as you will have more water to push out, or more antifreeze required, depending on how you winterize your machine.



Winterizing might not be needed in parts of the world that don't see freezing temperatures, but if your area does, then you will need part 5. Winterizing will be explained in a later Module.

5. 3 Way Ball Valve: This ball valve will allow water to continually flow from the tank straight to the pressure washer in one position with the second position allowing air or antifreeze to be directed into the pressure washer. These directions of flow are important for when you need to flush out all water in order to prevent freezing damage in winter months. The middle opening is most likely the main exit for both ends, so it will be the one going to the machine's pump in both positions.



6: Air or Antifreeze Adapter: Both adaptors can be used off of the 3 way valve, so it will depend on which method you're going to use for winterizing your machine. The male end of an air hose should be extended out and easily accessible, so you can attach an air hose and push the water out of the pressure washer whenever you need to. Antifreeze would only require a section of hose that can fit into and reach to the bottom of a bottle of antifreeze.



7: Pump Hose: This section of hose should have come with and be extended off of your pressure washer's pump. If it doesn't reach, it can be extended with a piece/section of garden hose (low pressure hose), or the hose from the pump can be replaced at most hose and fitting shops in order to reach your 3 way ball valve.

8. ABS Pipe: ABS pipe is commonly used in the plumbing industry for drain pipe. It has a low pressure rating, so it cannot be heavily loaded. PVC pipe is white and is rated to take higher pressure. The water pressure coming from a holding tank will not be high pressure; however, if you don't open the valve 1 before filling at a high pressure bulk water filling station, the hose between 1 and 9 will experience high pressure. If the water has an easy path to flow then you will be fine with ABS pipe. Using PVC work just as fine, but it can be slightly more expensive.



When gluing pipes together, make sure you have the correct glue. PVC and ABS don't mix together well, so you need specific glue for each and a different one to glue them together. If you are using threaded fittings, make sure to use a plumbing tape to ensure a solid seal and prevent any dripping from your pipes and/or connections. If you see a drip anywhere once you've filled with water, drain it, dry it, and redo the connection.



The thickness of pipe should be thicker than the low pressure hose coming off of your pressure washer's pump. It should also be big enough to allow the bulk water to flow easily. Too small of pipe will increase the pressure it takes on. 2" is recommended, but anything bigger works fine too.

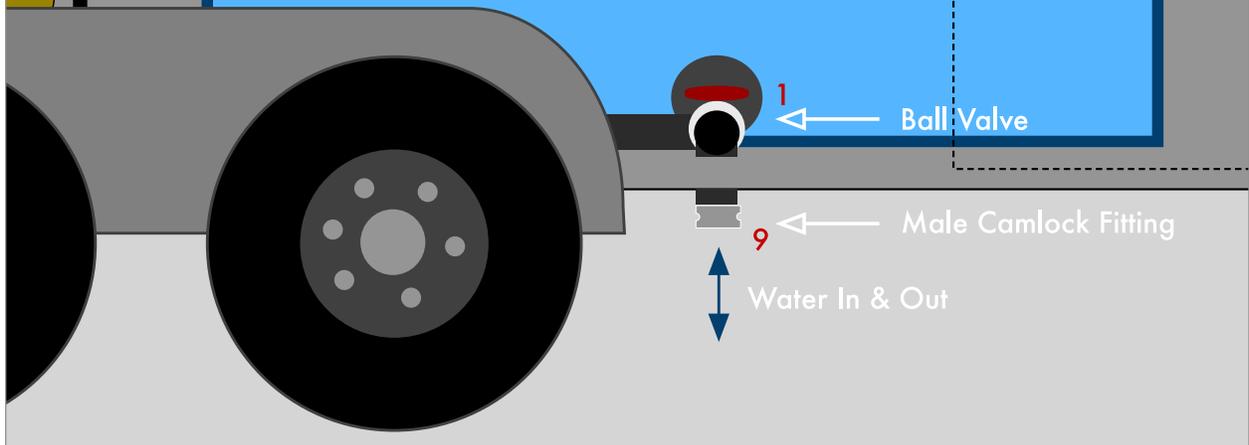
Always follow direction of how to connect pipe. Asking someone where you buy the products is a good start if you don't feel comfortable doing this. You can also hire a plumber for this work as well if you need to.

9. Camlock: A camlock connection is an easy way to connect hoses. If you have the corresponding female camlock on a hose that can also camlock onto the bulk water fill station in your area, you will save time and effort when it comes to filling your holding tank with water.



Make sure to have enough hose to reach from the fill station to your trailer or van. You can have this made up at a local hose supply shop.

- The male camlock fitting can be used to fill the water holding tank and will also be the drain pipe when you want to drain the tank. Having the pipe diverted out of the trailer will give you the capability to drain water with all of the trailer doors closed, as well as prevent water spilling on the trailer floor when disconnecting the water fill hose. Draining the water and then leaving the valves open while you drive will help get all of the water out of the tanks and pipes, which is helpful in cold months when you will be winterizing the machine. You do not want any water sitting in the tank or pipes if it will freeze.
- Ball valves will give you control over where the water is flowing.



Plumbing configuration for filling and draining.

Exhaust

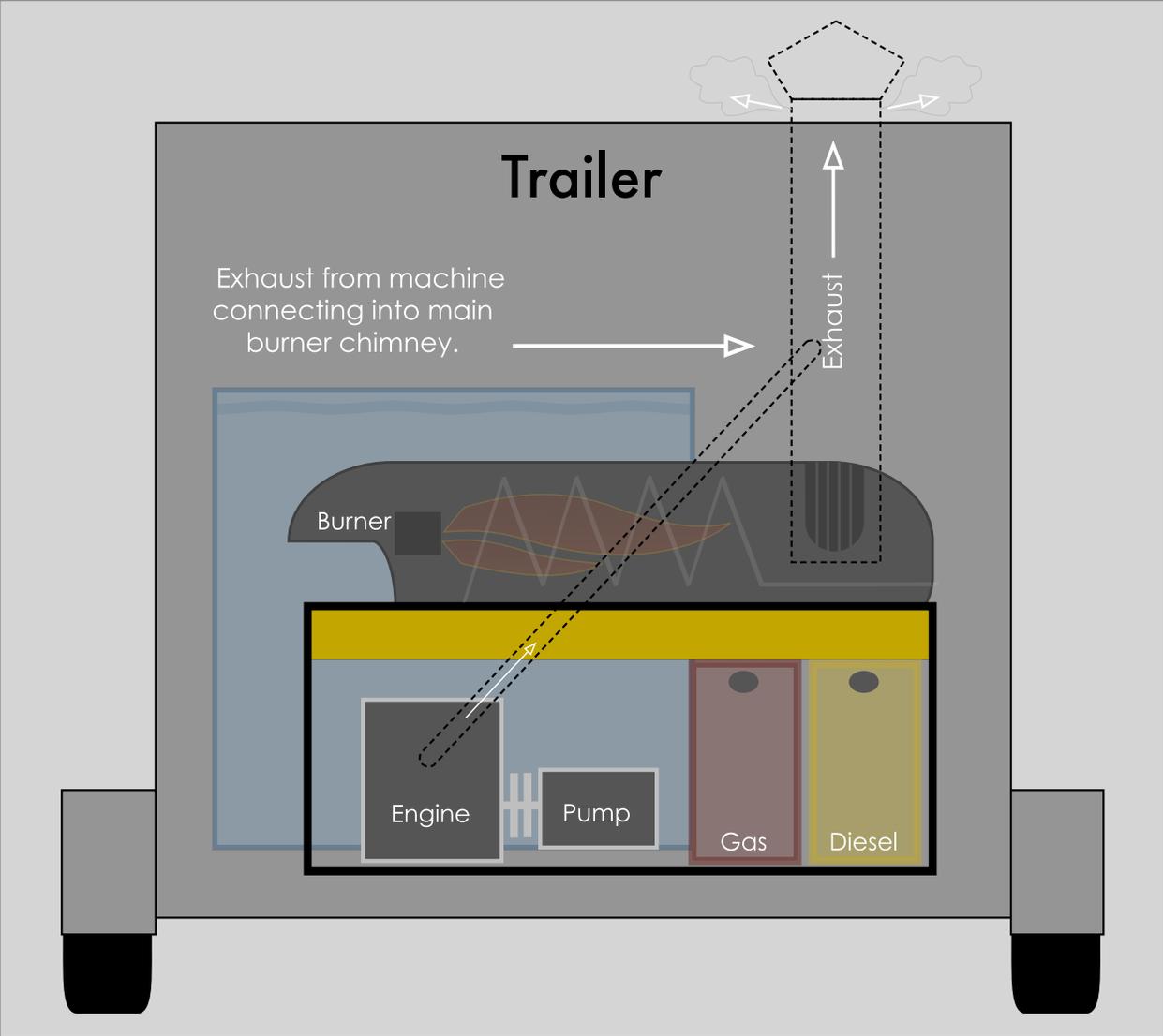
Your exhaust can be directed in a variety of directions, but the safest is straight up through a vertical chimney. Both your burner and engine exhausts can be fitted by most exhaust shops, so talk to them about your options. Exhaust going straight down to the ground through a floor is a bad idea as it can be close to the ground and burn or leave a stain on the ground, but it will also blow up towards the engine again or towards people. The chimney exhaust will put the exhaust over top of people and you can see it from a further distance to make sure your burner is running when it is suppose to.

Exhaust coming from the back of your trailer or van is the second best option as it doesn't require a hole in the roof and it is in a controlled area that someone passing by won't be hit with. Make sure that your exhaust vent comes all the way out of the vehicle as you don't want wind to blow the exhaust back or have the heat of it damage your trailer or van. The less curves your exhaust has to make in the vent, the easier the flow is, which means less pressure on the burner fan.

When parking, you should also consider where your exhaust will be going. If you notice a NO SMOKING sign, it might be because of a building's air intake. Park in a place that doesn't effect the quality of air for a building and do not ever park inside of a building or parkade when operating your engine or burner.

When you are finished at a job-site, try to let your machine cool down as much as possible before closing your trailer/van doors. If you have anything flammable in the same place, remove it and keep the area safe.

Use your common sense, it will get you further with customers, as well as your safety.



Exhaust chimney option.