

# **Assembly Instructions**

Master Artisan  
Media Blasting Pressure Pot Foot Pedal Conversion Kit

Thank You for your purchase of this conversion kit, we hope it makes your Media Blasting experience much more enjoyable. This kit was designed primarily to convert the Harbor Freight Pressure pot and Blasting Cabinet into a single unit operated by a foot pedal. Until now both the Pressure Pot and the Blast Cabinet were stand alone units, with this kit they now can be combined into an easy to use single unit.

The reason I built this kit was the Siphon blast cabinet I had was awkward to use for fine glass etching. The gun was big and bulky, and the pistol grip and trigger were hard on my hands for extended blasting. The feed hose was stiff and hard to move around and the system was hard on my compressor as it used a large volume of air to operate. The foot pedal operated systems available on the market were priced such that I could not justify the cost for the volume of work I was doing. I had the Blasting cabinet for etching and I had a pressure pot unit for working on my project truck, so I thought why not try to make my own foot pedal operated unit out of what I had in the shop.

The internet is an amazing tool; many people have built their own units and shared how to do it on line. After searching and looking I started to design my own rig, it took a few false starts but I managed to put together a system that worked well and was so much easier on my old stiff hands. I should also mention my Air Compressor thanked me for not trying to kill it every time I blasted something. A friend used my new unit and asked me if I would build one for him, I said why not build it yourself, I will tell you how. He laughed and said not everyone had my shop, tools or 30 years of engineering training. He had no interest in hunting down all the parts and putting them together. He said stripping down his old pressure pot and using a few simple tools to bolt on an assembled unit was all he was willing to handle.

After building him his rig I thought; I wonder if there are other people out there who would be interested in upgrading their Siphon Blasting Cabinets to a more versatile, easy to use foot pedal system without breaking the bank. I sought advice on this subject from my old dog as she wandered through the shop on the way to scope out the cats litter box for goodies. The advice I got was a grunt, a snort, and a foul odor which lasted for a good while. After taking this sage advice under consideration I decided to market the kit. I thought as the dog wandered back from the shop I would mention that the cat had been gone for 2 years, but hey, old habits are hard to break and she seems content, who am I to rain on her parade. Sorry, I tend to digress now and then, I will attempt to stick to the subject at hand from now on, no promises.

## Unit Assembly

As stated before, this unit was designed to convert the Harbor Freight Pressure Pot and Sand Blasting Cabinet into a complete foot pedal operated sandblasting unit. That said with a few minor modifications it can be made to fit any pressure pot and cabinet.



Figure 1

With the Harbor Freight pressure pot this is what you will have out of the box; it has all of the old gear still on it. Spoiler alert, when you open the box the handles, wheels and front support leg has not been installed. This is your first job. When you install the front support leg do not bend the retaining pin, as this will need to be removed later to allow the bottom parts to be installed. The only parts that you will be using from the box are the Tank, handles with wheels, front leg and the ½" heavy duty hose, everything else is surplus.

This is what will replace all of the original fittings on the Pressure Pot and connect it to your cabinet.



Figure 2

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Let's get started. You will need to remove all of the fittings that come with the tank from the box. See Figure 3



Figure 3

What you will end up with is a bare tank with a threaded hole in the filling neck and a threaded hole on the very bottom of the tank. See Figure 4. I only show the top hole in the picture as I am taking a leap of faith that you will be able to recognize a hole of similar shape and size in the tank bottom.



Figure 4

Now you can start to install the new kit. The first thing, remove the Teflon pipe dope container from **(Bag 1)** See Figure 5



Figure 5

Take the 3/8" Brass Hex fitting from **(Bag 2)**. For this part it is best to wear disposable gloves as this stuff sticks to everything. You, the table, your clothes, the dog and pretty much anything else you touch. If you do get it on your skin, isopropyl alcohol removes it quickly. Product information and safety warnings can be found online if you Google **Loctite 5133 Thread Sealant with PTFE Part NO. 1527514**.

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Figure 6 Take a small amount of the pipe dope and put it on one set of threads of the fitting. Make sure that the dope goes all the way around the threaded portion; the threads should be filled with an even thin coat of the dope. The dope acts as a sealant; this ensures you get no air leaks when the unit is pressurized. The product does not harden so will not dry and crack over time, keeping the threads sealed until the seal is disturbed. If you do need to take a fitting out, clean the threads completely and re-apply the pipe dope before re-installing. Only one end of the fitting needs to be coated as the hose fitting which attaches to the other end is self sealing. Now install the fitting with the doped end into the threaded hole in the neck of the tank. Figure 7



Figure 7

I am going to assume at this point you have not gotten yourself stuck to the dog or any other object, so we will move to the next step. The next part that you need to install is the Media control valve and media mixing chamber, Figure 9, on the very bottom of the tank.



Figure 8

The installation of this part is easier if you lay the tank on its back and remove the front support leg. You get to play in the pipe dope again. Using a glove put a thin film on the pipe nipple on the top of the

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valve; again ensure the threads are fully coated. Thread the unit into the threaded hole in the bottom of the tank. Make sure it is in tight; the unit should be off set to the side to allow the front support leg to be reinstalled, see Figure 9.



Figure 9

The next step is to install the Pinch Valve assembly, Figure 10. Using a glove put Pipe Dope on the threads on the black iron  $\frac{3}{4}$ " threaded pipe adapter on the end of the Media Control valve and Media Mixing Chamber assembly.



Figure 10

Thread the Pinch valve assembly onto the threaded pipe adapter until it is tight. This can be done by hand. You should not need tools for this. When the Pinch Valve unit is in its final position the Blue hose connector should be pointed to the side to allow the air hose to be attached. See Figure 11

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Figure 11

You can now set the tank upright for the rest of the installation. Take the Pressure Regulator Manifold and the manifold mounting bracket. Remove the 2 x 1/4"-20 bolts from **(Bag 3)** and install them through the Pressure regulator back plate and thread them into the fitted nuts on the mounting bracket. Only start them into the nuts as you will need room to allow the manifold to be slipped over the Tank handles.



Figure 12

It takes a little fiddling but put the water separator end of the manifold over the tank handle first then tilt the unit up slightly and slip the other end over the second handle. Hold the manifold then tighten the screws until the manifold is tight against the handles and is secure. See Figure 12



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The next step is to install the air supply hoses. Top supply hose 13 ½" long, bottom hose 29 ½". See Figure 13



Figure 13

The top hose is the shorter hose 13 ½" with two brass swivel couplings. This hose supplies pressurized air to the media tank. Thread it onto the upper brass connection of the manifold and to the brass connection on the top of the tank. There is no need to use pipe dope on these fittings as they are self sealing. Tighten them snugly but do not over tighten. See Figure 14



Figure 14

The next step is to install the lower air supply hose it is 29 ½" long. This hose supplies pressurized air to the Media Mixing chamber at the bottom of the tank. The hose attaches to the bress fitting below the shut off valve on the bottom of the pressure regulator manifold. As with the top hose there is no need for pipe dope on the fittings. Snug up the fittings but do not over tighten. See Figure 15



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Figure 15

Next step is to install the foot pedal and its hoses. The foot pedal hoses are the two clear blue plastic hoses. Cut off the zip ties and get the foot pedal. Take a hose, they are both the same so just grab one, insert one end of the hose into the  $\frac{1}{4}$ " blue connection on the end of the  $\frac{1}{4}$ " Pressure Regulator, see Figure 16. All that is needed is to push the hose until it stops, the connections are self sealing. To remove the hose, simply push the Blue part of the connector in and gently pull the hose free. These fittings can be used over and over so the hoses can be removed and replaced with no problems.



Figure 16

Now take the foot pedal and turn it over so you can see the hose connections on the back. See Figure 17

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Figure 17

Take the other end of the hose you inserted into the Pressure Rerulator and push it into the connection on the IN valve of the pedal. Now take the second hose and insert one end into the connection marked OUT on the foot pedal. The free end of this hose is inserted into the Blue connector on the Pinch Valve on the bottom of the tank. What you end up with should look like this. See Figure 18



Figure 18

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Congradulations, you are now half way to having a complete blasting system. The next step is to install the only original Pressure pot part you will use. From the manufacturer the hose comes with the Nozzle assembly already installed. This style of nozzle is called a dead man nozzle, it is used for heavy duty blasting, you will not need this for our set up. Remove the dead man nozzle from the hose. See Figure 19



Figure 19

There are two hose clamps supplied with the kit (**Bag 4**) you can use the ones already on the ½" hose or the ones supplied with the kit, they both work well for the job. When the dead man nozzle is removed make sure that there is a hose clamp on the hose at both ends. Put one end of the hose onto the hose barb on the outlet end of the pinch valve, first coat the hose barb in a small amount of liquid soap. It will slip on very easlily if you do this. Any type of liquid soap will work. Once the hose is on the end of the pinch valve tighten up the hose clamp firmly. This is how your unit should look. See Figure 20



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Figure 20

The next step is to install the kit components on the cabinet. You will need to remove the old fittings from your cabinet. When you remove the air fitting from your cabinet you will need to make the hole larger to fit the new bulkhead fitting from the kit.

Note: If you want to retain the cabinets ability to act as a syphon blast system you can leave the old fitting in place and drill a new 5/8" hole to install the new pressure blast fittings.

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The kit comes with a Titanium Nitride High Speed Steel Step drill (**Bag 5**). See Figure21



Figure 21

The hole on the cabinet needs to be 5/8" wide. A little trick to help you when using the step drill is to find the size you want on the side of the drill and coat the next step up with a magic marker. When you are drilling and you get to your magic marker you are at the right size for your hole.

Once the hole is drilled it is time to install the cabinet fittings. The bulkhead fitting allows the pressurized media to flow through the cabinet side to the inside hose and nozzle. The inside hose and nozzle allow you to easily and effortlessly move the blast nozzle around the cabinet.

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The nozzle hose has two 3/8" NPT Stainless Steel fittings, one at each end, the hose is 36" long. See Figure 22



Figure 22

It is easier to install the blast nozzle holder and nozzle on the hose before it is inserted into the cabinet. However, it is very easy to change out the nozzle once the unit is in the cabinet, so which ever way you prefer. We will go with installing the nozzle holder and nozzle first for these instructions. In **(Bag 6)** you will find a Brass nozzle holder, three steel shims and a 1/8" carbide blast nozzle. See Figure 23



Figure 23

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The shims are to ensure the nozzle fits tightly into the holder. I have found that different types and makes of nozzles are all slightly different in diameter. Some require one shim, some two and others three. There should always be one shim in the holder as this part is consumable and it protects the back of the nozzle from erosion due to the media stream. Take the carbide nozzle and insert it into the brass holder, insert one shim into the holder then thread the assembly onto one end of the hose. The holder only needs to be hand tight, if you tighten it with a wrench once the media gets into it the grit and heat will jam the holder pretty tight. When the holder is hand tight on the hose, push on the end of the carbide nozzle, it should not move backwards or side to side. If the nozzle does move then you will need the another shim. See Figure 24



Figure 24

The next step is to fit the nozzle hose and bulkhead fitting through the side of the cabinet. **(Bag 7)** contains the bulkhead fitting, a 1/2" stainless steel hose barb and a large washer. See Figure 25



Figure 25

Put the large washer over the fitting on the opposite end of the nozzle hose, the washer will be on the inside of the cabinet when the hose fitting is inserted through the hole you drilled in the cabinet side. Thread the black iron fitting with the 1/2" hose barb onto the fitting projecting from the cabinet side. Tighten up fitting. See Figure 26



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Figure 26

The last thing to do is coat the hose barb with a bit of liquid soap and making sure you have a clamp on the hose, push the hose onto the hose barb and tighten up the clamp. Saying, make sure you have a clamp on the hose before you fit the hose sounds silly but I can not count the times I have forgotten and had to pull the hose off.

Congradulations the kit installation is complete.