Sandblaster Plans:

Step by Step Guide to Making a Pressure Pot

sandblasterinfo.com

By: Eric R. W.

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Making a Pressure Pot Sandblaster

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Sandblasting can cause silicosis if the certified filters aren't worn or the certified abrasive isn't used. Uncertified abrasive such as play sand shouldn't be used and has a higher amount of silica.

Thank you for purchasing my plans! I decide to write these plans because a lot of people were asking me how I made my sandblaster. Many people that need a sandblaster tend to be mechanically inclined so the materials provided in these plans should be sufficient enough to get you going. But if you have any questions or are seeking further explanation of something, feel free to send me an email at **eric@sandblasterinfo.com**. I would be happy to help in any way I can.

Making your own sandblaster isn't very hard but you do need some tools to get the job done. Also it does take some time to get all the parts together and cut to the right length but it shouldn't take too long. This could easily be done in a half a day if you have all your parts and tools handy. But just getting everything together can itself take longer than a half a day. I provided inexpensive sources and links that you can click throughout the ebook so that it's easier for you to find parts. Also, be sure to check with your local hardware store because they will have a majority of them in stock.

Check out our Blaster Nozzles & Replacement Tips!

We now offer premium sandblaster nozzles and replacement tips. We also carry the name brand, Kennametal tips that are long lasting on our Amazon store.

See here all our products in the below links:

- https://amzn.to/3B1YRkO
- https://amzn.to/3zdL9Kf

A Few Notes About Making These Homemade Sandblasters:

- These homemade sandblasters really do work quite well. I also bought a cheaper Harbor Freight sandblaster and I think I like my homemade one better. One good reason to make your own is that it can be made exactly the way you want it and its designed better than cheap ones. These plans also have a larger hole in the bottom mixing valve so abrasive is less likely to jam up and larger grit can be used.

- All threaded parts used in the plans have **NPT** which is abbreviated for **National Pipe Thread.** This is the standard thread type used in the United States for pipes. If you live in another country, you may have a different thread.

- Use a sealant on all threads such as **"thread tape sealant"** or **"Teflon tape".**

- You will need welding equipment, metal cutting saw, a drill with various bits, and other basic tools. It may be possible to make one without welding equipment by threading all parts together and creating threads in your newly drilled holes with a thread tap.

- All sandblasters should have an air filter hooked up somewhere on the air line before reaching the sandblaster. These filters remove moisture in the air, along with oil residue created from the air compressor before going into the sandblaster. If you live in a humid climate and don't use a filter, moisture will get into the sandblaster quickly and soak up the abrasive in the tank. When this happens the abrasive will bind up, get stuck, and not flow out of the sandblaster. So make sure you use an air filter somewhere along the air line**. (To find other great solutions for fixing abrasive problems, check out my manual which lists additional modifications and solutions here: http://www.sandblasterinfo.com/sandblaster-manual/)**

  It's best to install the air filter farthest from the air compressor to allow the air to cool so hooking it up to the sandblaster manifold would be a good spot. The picture below shows an example of an air filter. There are many air filters that vary in price so click the link below and check around:

Source click here: Amazon.com

Part I
Tank Assembly

Step 1: Finding Tank and Remove Excess Propane Gas

For the first step, you need to find a tank to use for the pressure pot of the sandblaster which holds the abrasive and pressurized air. I found the best thing to use is an old propane tank which is used for gas grills. The plans discuss the use of a standard grill size propane tank but you can use whatever you'd like and adjust accordingly.

Places to Find Tanks

These propane tanks are thrown away at times when they get older so you can try to ask a propane dealership if they will give it away or sell you one at a cheap price.

Another place to look is in the classified ad section of newspapers or websites such as http://www.craigslist.org. I found someone in my area that was trying to get rid of 5 of these grill sized propane tanks for free. So be sure to check around on different sources. Try asking a friend, neighbor, or relative if they want to get rid of an old propane tank.

Removing Excess Propane Gas

Once you find a propane tank to use, you will need to remove the excess gas which can be very dangerous. Even if the gauge says it's very low or empty, the majority of the time, it will still have a lot of pressure and gas left. It will be best to read this site about safe disposal before you start:
http://www.propane101.com/propanetankdisposal.htm

To safely empty the propane tank, I suggest you ask to see if a certified propane handler can empty it completely and remove the valve.

If you don't find a certified person that will remove the valve, you can do it yourself which is what I did.

To do it yourself, open up the valve by turning it counter-clockwise. After all gas comes out of the main valve, use a small screwdriver and open the other small relief valve on the side to drain the excess gas out. Make sure you do it outside and away from people in areas of free flowing air. Propane gas has a tendency to linger around in low places.

Step 2: Remove the Valve

Now you need to remove the whole top valve and pull it out of the propane tank as shown in the picture. These can be tough to get off, so try to find the largest adjustable wrench or pipe wrench. Penetrating oil or WD-40 can help make it come off a lot easier. Also, you may want to use a reciprocating saw to remove the top handle to give you enough room to use your wrench which I later did.

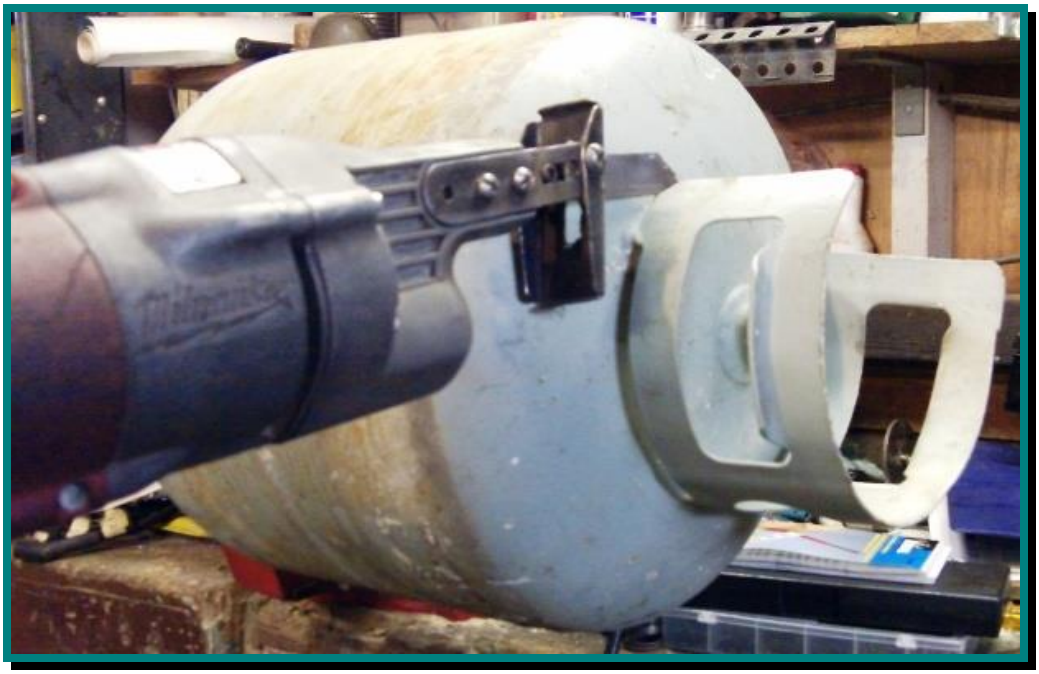
Step 3: Flush Out the Tank

There will be excess fumes and combustible composites left over in the tank so you have to flush it out. Fill the tank up with water and flush out the tank about 2 – 4 times before you start making any modifications. CAUTION: If you don't do this step, the fumes can ignite when you start cutting or welding.

Step 4: Cut Off Tank Handle

If you haven't already done so, cut off the tank's top handle. I used a reciprocating saw but you can use whatever you have available to cut off the handle.

This step isn't completely necessary but the sandblaster will look nicer without the handle and it may get in the way if not removed.



Step 5: Gather Up Materials and Layout

For this step, I will show you the parts I used. Also, it shows me laying the majority of the parts out for the **bottom mixing valve** and **top manifold piping** to get an idea of the overall view of how it will fit together.

Since the original top hole of the propane tank has a perfect size hole and threads for the sandblaster's abrasive mixing valve, we will now make it the bottom. In other words, we are flipping the propane tank upside down.

I used a regular grill sized tank for my setup which has a ¾ inch threaded hole so I will be using a ¾ inch pipe nipple to connect the mixing valve to the tank. Other sizes and tanks from around the world may be different so make the appropriate adjustments to my parts list. The parts list is shown below for each section:

Bottom mixing valve list:

- ¾ inch steel pipe close nipple (a 1-½ inch long nipple works also)

- ¾ inch x ½ inch reducing coupling

- Two ½ inch steel pipe close nipple

- ½ inch ball valve

- ½ inch tee

- ½ inch steel pipe nipple with a length of 4-½ inches

- ½ inch 90 degree elbow

Top Manifold list:

- ½ inch steel pipe nipple with length of 4-½ inches (cut to fit)

- ½ inch tee

- ½ inch 90 degree elbow female to male connection

- ½ inch by ¼ inch hex bushing

Recommended Safety Parts for Top Manifold list:

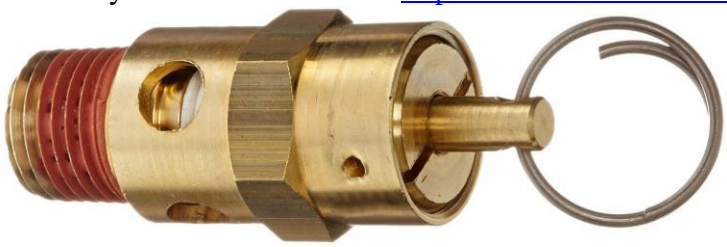
For my first build, I didn't originally install a safety pressure release valve, but it is strongly recommended. It is quick and easy to assemble on and inexpensive. This valve releases pressure if your air compressor fills the sandblaster pot up with too much pressure. **See Exhibit 2 at the end of the plans for a quick layout.**

- ½ inch steel pipe close nipple

- ½ inch tee

- ½ inch by ¼ inch hex bushing

- ¼" Safety Valve with 125 PSI: https://amzn.to/3IOLnKU



Top Abrasive Fill Up Port list:

- 1- ½ inch cap

- 1- ½ inch pipe nipple with length of 4 inches long

The picture below shows the layout of parts for the bottom mixing valve and the top area which consists of the fill up port and the top manifold:

Step 6: Assemble Bottom Mixing Valve

Now you can start assembling the bottom abrasive mixing valve so we know how much clearance there needs to be for the next step. Make sure you use thread seal tape on all the pipe threads so that the system is sealed up properly. A pipe wrench can make it easy to tighten the parts together but often times you can use the leverage of the other part at the opposite side to turn it together. You can see the bottom abrasive mixing valve assembled to the tank below.

Step 7: Weld on the Legs

You can start making the legs once you find the clearance by measuring how low the mixing valve assembly sticks out of the tank. Add a few inches to this measurement for the bottom so the valve won't touch the ground and another few inches to the top so that the legs reach the outside of the tank and can be welded onto the side of it.

I estimated and made my total measurement for the leg length to be 14 inches. This only allowed for about 2 inches of weld to the tank. If you are making a larger sandblaster, you would want to make them longer for sturdier welded legs. Even if you are using the same size tank, be sure to make your own measurement because they may be slightly different.

You can use a variety of metal materials for the legs. I used angle metal which is sold at most hardware stores. Then cut three of angle metals pieces at 14 inches for a total of 3 legs.

Level the legs up to the outside of the tank and weld them on. If you don't make them perfectly level, you can trim the higher legs down later. You can see in the photo below with them welded on.

Step 8: Drill Hole for Top Filler Port

Now I started working on the top end of the pressure pot by making a filler port which is where you fill up the tank with more abrasive. Find the center point of the top side and drill a small starter hole. Then use a hole saw (as you can see me in the photo below) which will cut out a hole in the top for the 1–½ inch pipe nipple to fit snug inside.

Step 9: Weld in the Filler Port

With the hole cut on the top, hold the 1-½ inch nipple pipe inside the hole and weld a nice thick bead around the port making sure that it is fully sealed. If you mess up the weld like I did (whoops), you can always grind the weld smooth and re-weld over it. You can see a picture of the pipe welded on top in the next step.

Step 10: Weld in Tank Pressure Port

For this step, we need to do the following in sequence:

1. Measure & estimate the length of the required vertical pipe that connects the top manifold to the bottom mixing valve.

2. Get a pipe custom cut to that measurement with threads on each side.
3. Cut a hole for the tank pressure port.
4. Assemble the custom cut pipe, top manifold, and the pressure port pipe.
5. Weld in a pressure port pipe.

As stated, the first thing we need to do is measure how long of a (vertically aligned) pipe is needed to connect the bottom mixing valve to the top air manifold with the (horizontally aligned) pressure port pipe able to be welded into the filler port.

Optional: Many sandblasters also have ball valve configured into the (vertically aligned) custom cut pipe. This is optional but it can be nice if you don't have a valve on the nozzle or if the sandblaster hose breaks. This valve allows you to quickly shut off all air going to the hose & nozzle. To add a valve, you would need to thread a ½ inch ball valve into the custom cut pipe and a ½ inch close pipe nipple threaded on the other side. Then ½ inch close pipe nipple would thread into the top air manifold. **See Exhibit 1 at the end of this ebook with a picture of it connected. Make the decision to add this valve before you cut the custom pipe.**

Once you have that measurement, you can get a ½ inch pipe from the hardware store that is at that length. My measurement was 19-¾ inches long. Typically there won't be a standard size at your exact measurement unless you are lucky so you will need to get a slightly longer pipe cut down. Here in the United States, most hardware stores (such as Home Depot) will do this at no extra cost and place new threads on the side that was cut. So I got a perfectly sized length from our local hardware store as shown below.

Now screw in the custom cut ½ inch pipe (mine was 19-¾ inches) to the bottom mixing valve assembly with thread seal tape. Screw on the ½ inch 90 degree female to male angle on the top of the custom pipe. And then tighten the ½ tee into the other side of the 90 degree angle. Next, screw the ½ by 4-½ inch tank pressure port pipe into the other side of the tee so that it's perpendicular to the filler port. Use a marker to mark and estimate where the center of pressure port pipe will fit into the filler port. (The pressure port pipe won't align perfectly because it's too long so you will have to make an estimated mark.)

With a small drill bit, drill out this mark to get it started and then use a ½ inch hole saw or drill bit to make this hole large enough for the pressure port pipe to just fit snuggly inside as seen below.

Place the tank pressure port pipe inside the drilled filler port hole first. Line up the manifold with its ½ inch tee and thread the tank pressure port pipe together as shown in the photo below. If the tank pressure port pipe seems to hang over the open entry hole in the filler port too much, you will need to take it back off and cut the excessive length off.

Once all the pipes are lined up as shown in the above picture, you can now start welding around the pressure port pipe to seal it up. I ended up cutting the propane tank's top ring off so that I could adequately reach under and weld the bottom side of the pressure port pipe.

Step 11: Weld together the Filler Port Cap

This step is about welding a handle to the 1-½ inch threaded cap so that it's easier to turn and seal the filler port shut. The cap handle is optional but it's nicer and gives you leverage to tighten it completely.

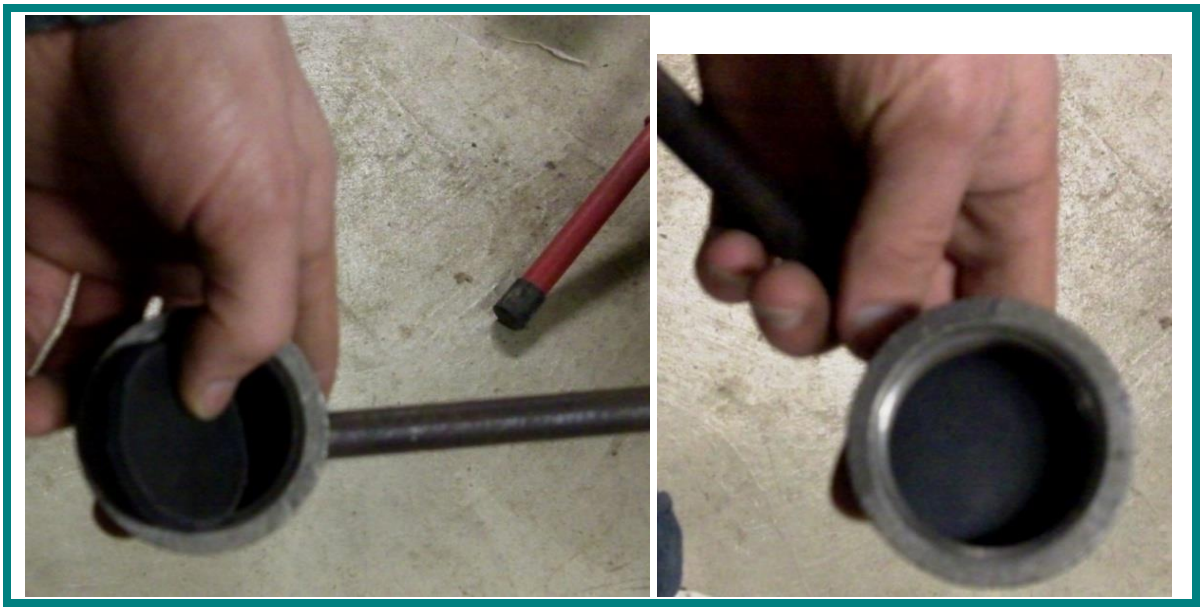
To add the handle, find a metal rod or tube that is about 5 inches. Then weld it onto the top of the 1-½ inch cap to your preference. I made mine hang over to one side. Also, if you want the rod welded flush against the cap, you can cut the rod in half where it touches the cap like I did in the picture below:

Step 12: Apply Seal to Filler Port Cap

The cap will have air leaks if you don't have some type of seal on the threads or inside the cap. For this step, I cut a circular seal out of a thick rubber sheet that I found lying around the shop.

There are a few different rubber materials that you can use such as old wheel inner tube rubber or large O-rings. Use your creativity to find items to use or check the hardware store.

Once the seal material is cut out, place it inside the filler cap and test to see if it leaks. I found out that my cap still had a gap between the seal and the top filler port edge. To fill it in, you can either cut a few more rubber sheets to stack them up or add some type of spacing material before the seal is placed in. For spacing you can weld in a metal washer, use a wood block, or cut out a few circular pieces of cardboard. I cut out circular pieces of cardboard and stacked them up to fill in the gap which actually worked quite well. Then I placed the seal on top of it which held everything in place.



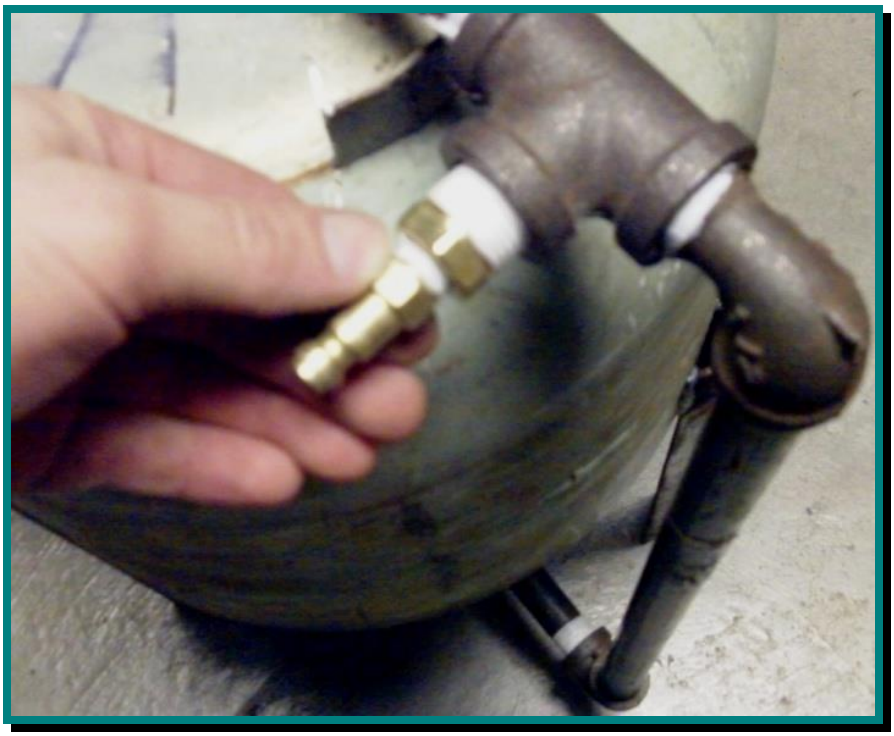
Step 13: Finishing the Manifold

The last required step to finish the manifold is fairly simple. All you need to do is thread an air line connector to the manifold. Air line connectors are usually ¼ inch so they won't be big enough to thread into the ½ inch tee on the manifold.

You will need to get a ½ inch by ¼ inch hex bushing as shown below:

Tighten air line connector into the ½ x ¼ inch hex bushing. And then tighten the bushing with the connector onto the tee of the manifold as shown in the photo below.

Optional: Many sandblasters also have an air valve configured into the manifold. This is optional but it can be nice if you have an airline hooked up and don't want to fill up the tank yet. Or you might have air left inside the tank and want to disconnect the air line without a burst of air blowing out. To do this, you would need to get a ½ inch ball valve and a ½ inch close pipe nipple threaded into the manifold. Then the air connector and bushing would thread into the other side of the valve. **See Exhibit 1 at the end of this ebook with a picture of it connected.**



Part II:
Nozzle, Hose, and Connecting to the Bottom Mixing Assembly

For this last part, there are a lot of different ways to configure the nozzle. I will show you one of my favorite inexpensive nozzle assemblies which I use for glass etching.

Before you start this step, you need to figure out how large of a hose diameter you will need. The larger the hose diameter, the larger the amount of abrasive it can deliver to the nozzle. If you are sandblasting mostly smaller items inside a sandblasting cabinet, then a ¼ inch inner diameter hose is fairly adequate with finer abrasive. The larger the abrasive (as a rule of thumb lets say larger than 70 grit), or the larger demand of abrasive for big projects would require a wider diameter. Most sandblasters come with a standard size of a ½ inch inner diameter hose. So use a hose that will fit your needs and adjust the parts that I mention in this section to the hose size that you will use.

All of these parts tend to wear out after awhile because abrasive passes through so it's best to order a few of each at one time.

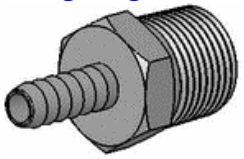
Section 1: Hose and Connecting to the Bottom Mixing Assembly

Parts Used:

- **Hose/ Tubing**:
  - ¼ ID x 3/8 OD Superthane Ether hose from http://www.usplastic.com/catalog/item.aspx?itemid=66307&catid=717
  - This is very strong tubing that I found & tested. A local hardware store will have vinyl tubing that you could use but it may not last as long and could break. Use at your own risk.

- **Steel ½ inch x 3/8 inch bushing**
  - Ordered from: http://www.mcmaster.com/#stainless-steel-pipe-fittings/
    - Click on "**Bushing (Male X Female Hex)**" & select size
  - *Note*: local hardware stores usually only have these in brass so I ordered steel ones online from McMaster-Carr. Since abrasive will be flowing through these, the brass ones will wear out too quick.
  - Another source: http://www.grainger.com

- **Steel barbed tube fitting adapter**:
  - ¼ inch tube ID x 3/8 inch pipe
  - Ordered from: http://www.mcmaster.com/#stainless-steel-pipe-fittings
    - Scroll down, click on "**NPT Pipe x Barbed Tube**" & select size
  - http://www.grainger.com also has these but are more expensive



Since I am using a ¼ inch inner diameter hose, I needed to connect it to the bottom mixing assembly with a ¼ inch steel barbed tube fitting adapter. The size adapter that I used only had a thread size up to 3/8 inch so I used a bushing that would fit them together. This was the ½ inch x 3/8 inch bushing which is the previously mentioned part.

Fit these together with thread seal tape as shown on the picture below and tighten into the Tee on the bottom mixing assembly.

Then press your desired tube or hose over the barbed end of the adapter. If you prefer, use a small hose clamp to prevent the tube from coming off for security.

Section 2: Nozzle Assembly

Parts Used:

- **Pinch Clamp**
  - Source: http://www.usplastic.com/catalog/item.aspx?itemid=23098&catid

- **3/8 inch Hex Nipple**
  - Drill out center if needed so that the tube can fit through.
  - Source: http://www.mcmaster.com/#brass-pipe-fittings/=bi86vs
    - Click on "**Nipple**" category, then "**Hex Nipple**" & a pipe size of 3/8 inch.

- **Tapered Ceramic Nozzle Tip**
  - There are many different sources to get these (McMaster has these too).
  - Cheapest source that I found on this Amazon.com link.
    - The smaller the nozzle inner diameter the less air and abrasive it will use. Larger nozzle tips require a more powerful air compressor you will need. See **chart A** in the Bonus Section of these plans for air compressor requirements.

- **3/8 inch Threaded Hex Cap** (quantity: 2)
    - Source: http://www.mcmaster.com/#iron-pipe-fittings-and-steel-pipe-fittings/=bi8ndp
        - Click on "**Cap**", then "**Hex Head**" select size **3/8**.
    - These will thread onto each side of the Hex Nipple with one side holding the tube and the other side holding the Nozzle Tip in place. A hole will need to be drilled in the center of each of them.

- **Small O-ring**
    - This is possibly optional because you can use the tube as the seal instead of the O-ring.

This step only requires drilling a few holes and then assembling. First drill out the hole of the 3/8 inch Hex Nipple so that the tube fits through and is snug. The outer diameter of the tube I used was 3/8 of an inch so I used a 3/8 inch drill bit. See below:

Then I drilled a hole in the center on a Hex Cap to a diameter that is slightly smaller than the outer diameter of the tube. That way the tube is held in place. A 11/32 of an inch drill bit will be sufficient for a 3/8 inch outer diameter tube. See below:

The last hole that you need to drill is through the center of the other Hex Cap which will hold the Tapered Nozzle Tip in place. The same 11/32 drill bit worked for this on my nozzle tip and most others that are available. See below:

Once you drill these holes out, you can start assembling the nozzle as shown in the picture below. It's very simple to do- just slide all the parts over the tube by looking at the picture below. Make sure the end of the tube is sealed up on the ceramic nozzle tip once you tighten the Hex Caps together.

Below are photos of the pressure pot sandblaster once it is assembled and ready for sandblasting.

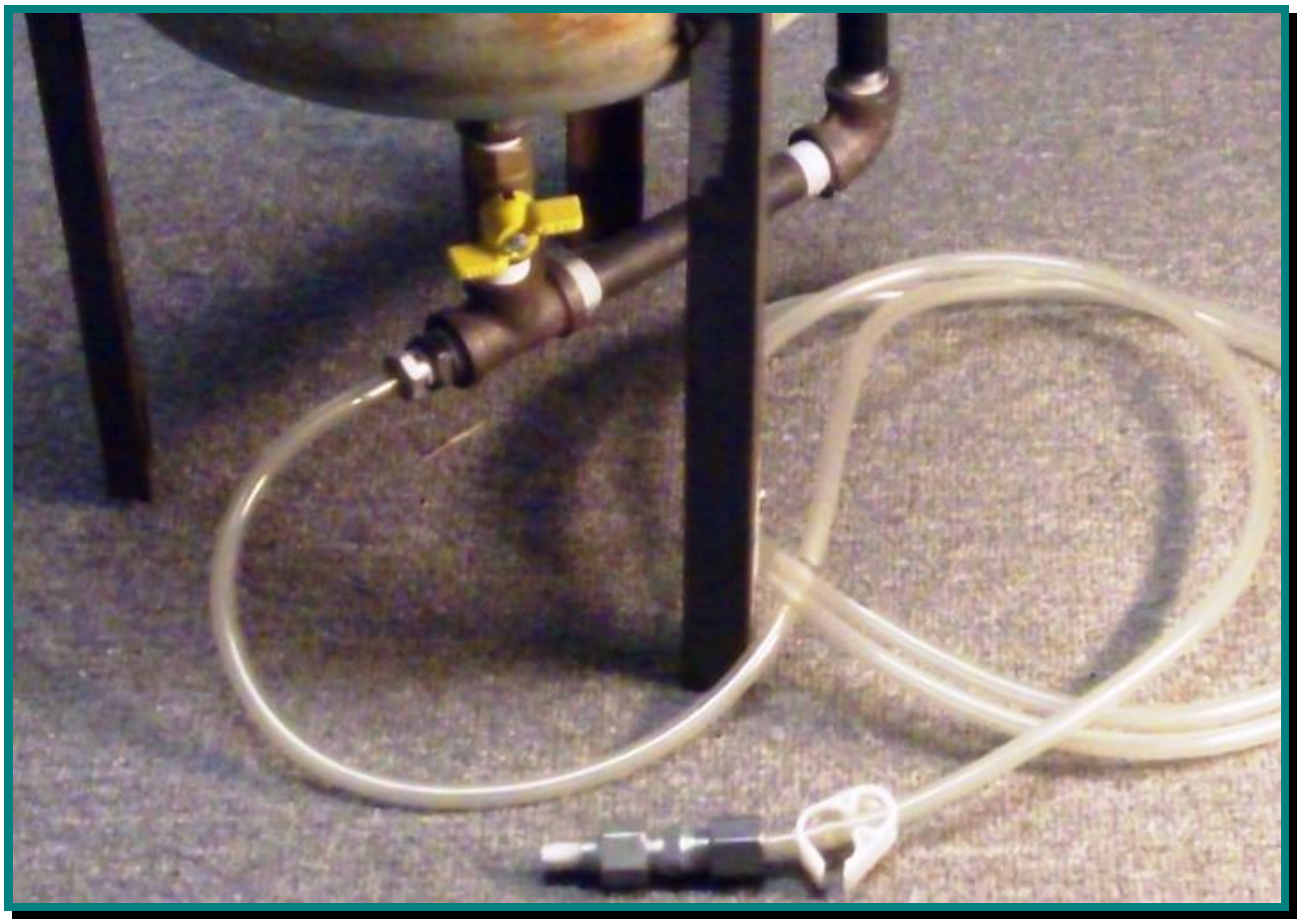


Exhibit 1

Exhibit 1 is a picture showing the two additional ball valves that was not included in the step by step plans in this ebook. These are not completely necessary but are desirable by some people. Adding the two valves will not cost you much more money so it's up to you if they are desired.

The valve on the left can be added anytime after you build the sandblaster but the right side valve that I am holding up needs to be included while you're adding in the custom cut pipe.

Exhibit 2: Add on a Safety Pressure Release Valve

Exhibit 2 is a picture showing the layout of connecting the safety pressure release valve. This is strongly encouraged to prevent the pot from exploding, especially if you have a high output air compressor.

Bonus Section

I decided to include my promised extra bonuses on one PDF file to the end of this report. This makes it easier to keep track of and keep them together.

Bonus 1: Matching Nozzle ID Size with Air Compressor

Pressure Pot Air Requirement Chart (SCFM)

Pressure (PSI):	20	30	40	50	60	80	100	120
1/16" nozzle	1.5	2	2.5	3	3.5	4.5	5.5	6.5
3/32" nozzle	3.5	4.5	6	7	8	10	12.5	15
1/8" nozzle	6	8	10	13	14	17	20	25
3/16" nozzle	15	18	22	26	30	38	45	55
¼" nozzle	27	32	41	49	55	68	81	97
5/16" nozzle	42	50	64	76	88	113	137	152
3/8" nozzle	55	73	91	109	126	161	196	220

* 4 SCFM = 1 compressor horsepower

Inner numbers mark the required Standard CFM of air. Overall, the chart will give you an idea of the minimum air requirements and the size of the air compressor you will need for your application. The larger the nozzle diameter and the higher the pressure (PSI) you blast at; the larger and more powerful air compressor you are going to need. It's estimated that for every 4 SCFM's of air used, you will typically need about 1 compressor horsepower. That is a rough estimate and horsepower shouldn't be the primary attribute when selecting an air compressor.

Also note, SCFM is abbreviated for Standard Cubic Feet per minute and is a unit of measuring the air flow volume.

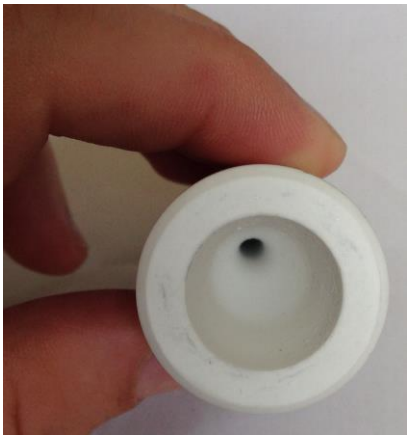
This chart will help you find an air compressor to buy for your particular application. It is also recommended that you select a compressor based on the next larger size nozzle because the original one will wear out to this size. Remember a bigger air compressor is always better. The only bad thing about getting large air compressors is that they are more expensive and may require a higher voltage source outlet.

Most manufacturers recommend finding an air compressor that meets the air requirements of the next nozzle size up from what you will typically use since that nozzle will wear out and typically be replaced when it enlarges to the next size.

Bonus 2: What Abrasive Grit Size Can Fit Through My Nozzle?

Short Answer: Most abrasive sizes will work with most nozzle IDs

As a rule of thumb, your nozzle inner diameter (ID) width should be at least 3 times the size of your grit size as **a bare minimum**.



Based on multiple charts and calculations, the numbers are all roughly based and each chart has a slight discrepancy from each other. However, it is accurate enough to give a rough guideline for selecting the correct abrasive. I ran the calculations and created the below chart from referenced data which compares the grit size to the typical maximum inch diameter of abrasive from Media Blast.

All you need to do is follow your grit size over to the right column to see what nozzle ID can accommodate it. The majority of the abrasive grit sizes are estimated to work with even the smallest known nozzle ID size (1/16").

However, a courser abrasive may increase the chance of an occasional clog if used with a small ID size. So if you are using a 54 grit size with the small 1/16" nozzle, you may have to reduce the abrasive to air ratio. In this scenario, I would just suggest going with at least the next larger nozzle size (which is the 3/32" ID) to play it safe.

Minimum Nozzle ID to Grit Size Chart

Grit Size	Corresponds to Be Suitable for Nozzle ID:
16	1/4" nozzle and larger
20	3/16" nozzle and larger
24	3/16" nozzle and larger
30	1/8" nozzle and larger
36	3/32" nozzle and larger
46	3/32" nozzle and larger
54	All Nozzle Sizes: 1/16" nozzle and larger
60	All Nozzle Sizes: 1/16" nozzle and larger
70	All Nozzle Sizes: 1/16" nozzle and larger
80	All Nozzle Sizes: 1/16" nozzle and larger
90	All Nozzle Sizes: 1/16" nozzle and larger
100	All Nozzle Sizes: 1/16" nozzle and larger
120	All Nozzle Sizes: 1/16" nozzle and larger
150	All Nozzle Sizes: 1/16" nozzle and larger
180	All Nozzle Sizes: 1/16" nozzle and larger
220	All Nozzle Sizes: 1/16" nozzle and larger
240	All Nozzle Sizes: 1/16" nozzle and larger

Bonus 3: Air Compressor Types for Sandblasting

There are a few different types of air compressors that you can use so I figured I would create this bonus to discuss some of them.

Air compressors range in size and air output capacity. The larger compressors put out higher air pressures and higher air flow volume for a longer period of time so they require a larger power source. Before I go into detail about that, let me first explain the different categories of air compressor types.

As a rule of thumb, your nozzle inner diameter (ID) width should be at least 3 times the size of your grit size.

	
Gas Powered Compressor **Source click here: Amazon.com**	**Electric Powered Compressor**

The compressor pump has to be powered by a motor or an engine so the two main categories of air compressor setups are:

- **Electric air compressor**- These compressors are powered by an electric motor and need to be plugged into an electric outlet as shown on the right side picture above.
- **Fuel powered air compressor**- These usually have a gas or diesel powered engine which turns the compressor as shown in the left side picture above.

Electric Air Compressor Disadvantages

The only disadvantages of the electric air compressor is most of them need a larger 220 Volt source and they aren't as portable as the fuel powered compressors. The majority of the electrical outlets in a home or garage are only 110 Volt and most air compressors require a 220 Volt source to run. The downside to this is you might have to hire an

electrician to route a 220 Volt source to your air compressor if you can't find one. A notable 220 Volt source in a typical house is where the laundry dryer is plugged into. Also taking these to a job site may be tedious if you can't find a 220 Volt source there.

Fuel Powered Air Compressor Disadvantages

The only disadvantage of the fuel powered air compressor is they are usually louder, they require gasoline or diesel to keep them going, and the engine runs constantly even if it isn't compressing air (the electric powered compressor is more peaceful because it turns off when the air isn't being compressed).

Compressor Sub-Categories

Now that I discussed the two main category types of air compressors, this section will discuss the subcategories which are:

- One stage air compressor
- Two stage air compressor

A one stage air compressor means that it has one piston to compress air and a two stage has two pistons to compress air.

The only thing you have to know about this is that the two stage air compressors can compress more air. This typically means it has a higher CFM rating, a higher PSI output, and can compress air faster. You can see an example of a two-stage air compressor above.

Bonus 4: Truth Behind Abrasive Problems

You will find out that even if you purchase an already manufactured pressure pot sandblaster, you will encounter problems with the abrasive coming out.

You might fill up the tank to 50% of its capacity, sandblast for awhile and then the abrasive just flat out stops!! This is by far one of the most frustrating things that will happen to these sandblasters.

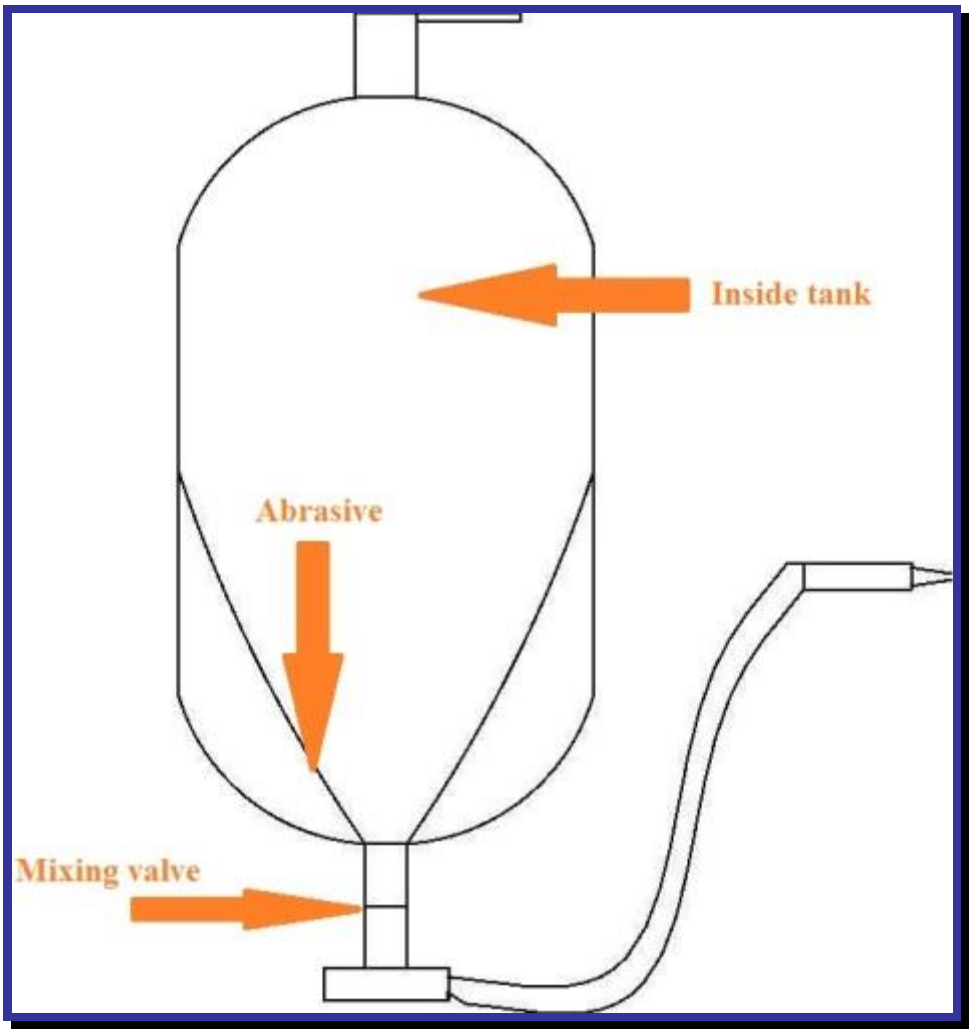
To get the abrasive moving again, you can shake the tank or tilt it to one side which helps the abrasive shift free and move down to the bottom hole of the mixing valve.

What I found out is most of the time the abrasive is settling on the sides of the tank and doesn't even funnel down to the mixing valve. I found this out by removing the bottom mixing valve and the top cap so that light could shine through each side. Then I dropped a tiny flashlight down the tank to see why the abrasive was binding up.

The problem with these sandblasters is the tank doesn't have a funnel design or shape to it. Essentially, most of these sandblasters have a cylinder shape with slightly curved corners which doesn't do a good enough job of funneling all the abrasive you put in to be used. A decent portion of the abrasive settles on the bottom edges of the tank and up along the sides.

With my other cheap 40 lb harbor freight sandblaster model, I found that a good 15 lbs of the abrasive piles up on the bottom edges and sides. So when my sandblaster is filled up to full capacity, **over 37 percent** of the abrasive is unusable! The amount that is unusable depends on the size and brand of the pressure pot, but this gives you an idea.

To show you what it would look like inside, I created a rough sketch below which shows you how the abrasive binds up on the side.



The main point to get out of this bonus is most sandblasters aren't designed well enough to feed all of the abrasive to the mixing valve. So if you're wandering why the abrasive is not coming out, this may be the issue. Just make sure you have enough abrasive in the tank.

On a side note, moisture or water can also be the issue too because it can make the abrasive damp and clump together. You need to make sure you have a good water separator hooked up to the air line so that it filters all the moisture out of the air.

Having damp abrasive and moisture in the system is one of the most talked about solutions when someone asks for help with abrasive problems, but little do most know, a lot of times it's actually due to my findings discussed in this bonus.

If you are still having problems with abrasive not coming out properly or you want to fix abrasive problems, I created more plans and multiple solutions discussed on my website here: http://www.sandblasterinfo.com/sandblaster-manual/

Bonus 5: Sandblasting Safety

I know some people might over look this bonus section but it really is valuable because it could save your life if you sandblast a lot.

You should know that sandblasting can be extremely dangerous. Seriously, when working with it, you should not have a macho personality here and should not think that safety isn't a important issue. I used to be like this when I was working on cars when I was younger, but I quickly changed my views once I heard about the serious risks if I didn't wear the right gear. Below are some safety things that you should know before sandblasting and the harm it can do if you don't take these precautions:

Dust Masks

Source click here: Amazon.com

Source click here: Amazon.com

Even if it doesn't seem to be harming you, it might be. What I am talking about is getting **silicosis**. (I think that deserves highlighting.) At a minimum you should at least wear a cheap disposable paper dust mask as shown in the picture above on the left, unless you use a cabinet. If your cabinet isn't fully sealed like one of mine, you might want to consider wearing these in addition. Here is a link to some inexpensive paper dust masks.

The dual cartridge respirator masks are better, but at least wear a cheap dust mask. It's better than nothing. When abrasive hits the surfaces of items, it creates dangerous dust which kills your lungs when inhaled. Here are sources for the dual cartridge respirators.

Also, this goes along with silicosis prevention: DO NOT USE PLAY SAND TO BLAST! Only use authorized sandblaster abrasive when operating. Play sand has a high amount of silica that can do massive damage to your lungs. It's not worth it. You have been warned.

The only time that I might use play sand for sandblasting is if I have a professional air supplied sandblasting helmet like the one shown below. You can also view this product on Amazon here.

Safety Goggles

Source click here: Amazon.com

I recommend that you wear safety glasses or goggles even if you're using a sandblasting cabinet. I say this because, every once in awhile my blasting hose comes loose while blasting. Also, blasting hoses have been known to wear out and break. If either scenario happens, abrasive will start blasting everywhere which could get in your eyes.

Definitely wear them when you are blasting in a room or outside. Helmets are safer for you though.

Protective Clothing

It's best to wear long sleeve shirts and long pants when using your sandblaster. You never know when a hose will explode or blast off. My hose shot off before from the bottom of my pressure pot sandblaster and luckily the stream of high powered abrasive didn't hit me. This would be even worst if it got in your eyes.

If you have access to professional sandblasting suits, then I would definitely go with that.