

# Blast Cabinet Upgrade Kit Instructions

Thank you for your purchase of the Blast Cabinet Upgrade Kit. Please familiarize yourself with the components and installation process by reading these instructions **in their entirety before** starting your installation. (**Note: The basic design of the blast cabinets sold by Harbor Freight and other retailers have changed slightly over time.** Your Blast Cabinet Upgrade Kit has been designed to work with the overall layout of the cabinet.)

**Step 1) Lay out all of the parts in order to gain familiarity with each component**

**A. Hose grommets (2)**



**B. Metering valve assembly (1)**



**C. Media supply hose (1)**



**D. Hose clamps (7)**



**E. Foot valve assembly (1)**



**F. Compressed air hoses (2)**



**G. Pressure reg. assembly (1)**



**H. Metal dust exhaust baffle (1)**



**I. Cyclone dust collector (1)**



**J. Brass quick disconnect (1)**



**K. Clean air inlet blast gate (1)**



## Step 2) Installing the hose grommets (Part A)

The 2 hoses [compressed air (red) and media delivery (white)] that connect to the blast gun enter the main body of the blast cabinet on the lower right of the front glove hole panel. Drill 2 holes (1-1/8" and 7/8" in diameter) as shown in the picture below (also, see picture under Step 5). The sizes and positions of the holes are shown in the picture. Install the two grommets.



## Step 3) Installing the metering valve assembly (Part B) in the media removal cover

Remove the stock media removal cover (the one that comes with your blast cabinet) from the bottom of the funnel assembly (by turning the handle and swinging the cover to the rear). Turn the cover upside down and locate the center of the cover by drawing two intersecting lines from the opposite corners. Drill a 1-3/8" hole through the cover at the point where the 2 lines intersect (see picture below). Take the metering valve assembly (Part B) and unscrew the chase nipple from the silver threaded connector and remove the large reducing washer. Then, take the chase nipple, and with the washer in place on the nipple, push it through the hole from the inside (side with the black rubber pad) so the threads of the chase nipple are visible on the outer surface of the cover. While holding the nipple with one hand, take the metering valve assembly and screw it back onto the chase nipple. Tighten the nipple down to firmly capture the media removal cover between the nipple/washer and the silver extension pipe, being careful to orient the metering valve so that the brass barb fitting points toward the front right leg of the blast cabinet when the cover is reinstalled. Finally, reinstall the media removal cover with the metering valve assembly installed. (**NOTE:** The metering valve assembly supplied in your Upgrade Kit completely replaces the highly inefficient media pickup tube and hose that originally came with your blast cabinet. You can remove the pickup tube or just leave it in place).



#### Step 4) Installing the media feed hose (Part C)

Take the media feed hose (Part C), slip one hose clamp (Part D) over one end of the hose and slide the end of the hose onto the brass barb on the metering valve assemble (you can lubricate the barb and hose as needed to assist in the installation). Push the hose clamp down over the barb and snug the clamp (do **not** fully tighten the hose clamp at this time). Next, take the other end of the same hose and push it through the LARGER of the two grommets previously installed in Step 2 into the body of the cabinet (a bit of lubrication can be helpful to push the hose through the grommet) (see also picture under Step 5, below). Next, slide one hose clamp over the end of the hose and attach it to the media inlet port on the gun. Slide the hose clamp down over the end of the hose and tighten the clamp.

#### Step 5) Installing the compressed air hose from the foot valve (Part E) to the gun

Take the foot valve assembly (Part E) and place it on the ground in front of the blast cabinet. Take the longer section of the compressed air hose (Part F - long) and slide one hose clamp (Part D) over the end. Install the hose onto the brass barb fitting on the foot valve assembly marked "OUT". Slide the hose clamp down to the base of the fitting and snug it up (do **not** fully tighten the hose clamp at this time). Take the free end of the same hose and slide it through the remaining (smaller) grommet and into the cabinet. Place one hose clamp (Part D) over the end of the hose, install it on the air feed port of the gun and tighten the clamp. The Foot valve will now serve to 'turn on/off' the flow of compressed air to the gun. If you have a gun with a finger pull trigger, you can use tape or a zip tie to permanently hold the trigger in the 'on' position. This greatly reduces hand fatigue.



#### Step 6) Installing the air pressure regulator assembly (Part G)

Drill a 1.25" hole (you may need to open the hole up very slightly as you fit the regulator) into the front of the front left leg of the blast cabinet in the center of the leg and approximately 8-10" below the bottom edge of the front panel (see picture below) (**NOTE: prior to drilling**, hold the air regulator in position to check for adequate space to attach the "IN" and "OUT" air hoses to the brass fittings in the regulator assembly. You can move the regulator up and down a bit to find the best placement for your specific application.) (**NOTE: If you have the stock lower shelf installed on your cabinet, take extra care to position the air pressure regular. The shelf is to brace the legs. If you have modified your blast cabinet so the legs are firmly fixed to a wheeled platform in order to make it moveable, the lower shelf is not necessary. If you wish to retain the lower shelf, you can drill an additional hole through it directly below the air pressure regulator and insert the hose through the hole and connect it).** After locating the final position of the regulator and drilling the hole, take the air pressure regulator assemble and unscrew and remove the black collar that surrounds the black regulator knob. From the rear of the leg, insert the

adjustment knob through the hole and then replace the collar and tighten it securely to hold the regulator firmly in place (see picture below).



### **Step 7) Installing the compressed air hose (Part F) from the air pressure regulator (Part G) to the foot valve assembly (Part E)**

Take the remaining short section (32") of compressed air hose (Part F – short section) and slide one hose clamp over the end. Install the hose onto the barb fitting marked "OUT" on the regulator (this should be the barb facing down toward the floor). Slide the hose clamp over the barb fitting and tighten. Take the free end of the hose, place a hose clamp over the end of the hose and install it onto the air brass barb marked "IN". Snug the clamp but do **not** tighten it.

### **Step 8) Adjusting the hose orientations**

Because of the stiffness of the hoses, it may be necessary to rotate the ends of the hoses on the foot valve assembly barb fittings and the media metering valve assembly barb fitting in order to have the foot valve sit flat on the floor and the media gun to hang in a neutral position within the blast cabinet. To rotate the hoses, simply grasp them where they insert on the brass barb fittings and turn them in small increments until the desired final positions are attained. Once you are satisfied with the final orientations, tighten all the hose clamps.

### **Step 9) Installing the metal dust collector port baffle (Part H)**

The metal baffle is attached to the INSIDE of the left side of the blast cabinet over the dust outlet hole. (**NOTE:** in some older blast cabinets, the dust outlet hole was located on the left rear of the cabinet. This placement was eventually changed to the left side to be more effective in drawing dust away from the work piece. If you have an older style cabinet, you should consider relocating the dust exit port to the newer location. This can be done easily by removing the stock fitting, drilling a new hole and reusing the fitting, and then sealing the old hole with piece of sheet metal, foil tape, etc.) To determine the proper placement of the baffle, it can be helpful to take the baffle and hold it over the dust exit port on the OUTSIDE of the left side of the cabinet. The short, closed end of the baffle should completely cover the dust exit port and the short open side should point down and to the front of the blast cabinet at about a 45° angle. Now, take the baffle and by going through the main cabinet door, you can hold it in place and mark its final position. The baffle has holes drilled in the 3 flanges to allow nuts and bolts to be used to hold it in place. However, the baffle can also be held in place with two-sided foam tape or silicone caulking or a combination of nuts and bolts and either foam tape or caulking. If you are planning to use nuts and bolts (not supplied), mark the position for the holes on the wall of the blast cabinet, drill through the wall and bolt in place. If you plan to use caulking, apply a continuous bead of caulking along the flat surfaces of the 3 flanges and apply to the wall of the cabinet, using masking tape to hold the baffle in place

until the caulk sets up. If you are using nuts and bolts, it is still recommended to use caulk or foam tape to make a complete seal between the baffle flanges and the wall of the cabinet.



### Step 10) Installing the clean air inlet blast gate (Part K)

The clean air inlet blast gate installs into the 4" hole in the upper left of the rear cabinet panel. Test fit the blast gate by inserting the side with the partial connector ring into the hole and the finger pull of the gate towards the top. The finger pull will face away from the cabinet when properly installed to allow you to move it up and down. For the final install, place a bead of silicone chalk (or panel or other suitable adhesive) in a ring around the duct opening and replace the gate into the hole in the cabinet. Use tape to hold the blast gate into position until the adhesive cures or hardens. (Note: Small screws or bolts and nuts can also be used to secure the blast gate to the back of the cabinet but may interfere with the flanges of the metal inlet air baffle that comes with your blast cabinet and runs down from the 4" hole on the inside. If you use screws or nuts/bolts, you will need to drill holes in the recessed edge of the blast gate (as seen from the back) but be very careful to not interfere with the smooth up/down operation of the sliding gate).



### Step 11) Installing the cyclone dust collector (Part I)

The cyclone dust collector installs on the lid of a standard 5 gallon plastic bucket (not supplied, but easily attained at most home improvement stores or for free from many sources, including job sites). First, remove the lid of your bucket, mark the approximate center with an "X", and drill or cut a hole 3.0" in diameter. Take the cyclone dust collector (Part I) and insert the short lower lip through the hole so that the black collar sits on the top of the lid. Mark the position of the 4 holes in the collar on the lid and then drill the four 1/4" holes. Attach the cyclone dust collector to the top of the lid using the nuts/bolts supplied with your upgrade kit. (NOTE: While not essential, it can be helpful to ensure a tight seal by using a bead

of silicone caulking or a ring of 2-sided foam tape between the top of the lid and the bottom of the collar.) Reinstall the lid onto the 5 gallon bucket. Included in your upgrade kit are two, short black PVC straight connectors and 2 large hose clamps to hold the hoses to the dust inlet port (side/horizontal port of the cyclone dust collector) and vacuum outlet port (top vertical port). Depending on the diameters of the hoses that you use to connect the blast cabinet to the cyclone collector and the collector to your shop vacuum, you may not need to use the PVC connectors.



### **Step 11) Attaching the supply compressed air hose to the air regulator**

The air regulator in the upgrade kit comes with a standard brass barb fitting installed on the air inlet (marked "IN") side of the valve. If you intend to use a permanently connected air hose, use one screw clamp (Part D) to attach your air own inlet hose (not supplied) to the regulator. If you prefer to use a standard quick disconnect fitting, remove the brass barb fitting that came with the regulator assembly and install the brass male quick disconnect fitting (Part J), in its place. Depending on which method you choose, you will have one fitting left over (no – you didn't miss a step; the alternate fitting is supplied to assist you in your installation without having to source the other style fitting yourself, if needed. Throw the unused fitting in your parts drawer. Never know when you might have a use for it!).

### **Step 12) Final adjustment and set-up**

Congratulations! You have completed the full installation of your blast cabinet upgrade kit. Now, attach the compressed air hose coming from your compressor to the inlet side of the air regulator (using either connector you choose as described in Step 11). When using blast cabinets, it is generally recommended that the supplied compressed air be at 80-100 psi and **DRY**. The air regulator valve (Part G) can be adjusted by pulling the black handle out and turning it to further reduce the pressure to the desired PSI depending on the type of blast media you are using and the speed of the delivery of the media to the part being cleaned (from about 40 to 90 psi, depending on specific application). Only through repeated trials will you arrive at the best setting for each application. Also, the air inlet valve (black handle) on the new metering valve assembly supplied in your kit must also be adjusted to fine tune the best blast media delivery. It is important that the air pressure (psi) and the metering air inlet bleed valve be adjusted **together** and balanced to give best overall performance. Also, different blast media (for example, glass bead vs soda) will require different pressure and valve settings and even the use of the same blast media when used on different materials being blasted (for example, aluminum vs mild steel) will benefit from careful adjustments of delivery air pressure (psi) and metering valve air bleed input.