

COMMONWEALTH PIAT CONSTRUCTION GUIDE

CREATED BY SNIPES, EDITED BY HARLYHUNK

List of Tools

Drill & bits
Dremel & bits
Screwdrivers
Grinder
File (PVC file is recommended)
Heat gun
Sandpaper (Medium and fine grit)

List of Materials

1- 3" PVC pipe 13 1/4" long.
1- 2" PVC pipe 21 3/8" long.
1- 1" PVC pipe 24" long.
1- 2" PVC coupling.
1- 3" to 2" outside reducer coupling.
1- 2" to 1 1/4" outside reducer coupling.
1- 2" to 1" inside reducer bushing.
1- 24" x 1/2" dowel rod
1- Roll electricians tape
1- 1/2" PVC Coupling.
1- Toilet float bulb.
2- #6 x 1" wood screws.
2- #6 flat washers.
1- Can PVC glue.
1- Can PVC cleaner.
1- Tube 2-part clear epoxy glue.
1- Tippmann type 9oz CO2 tank stock.
1- Can Olive green spray paint.
1- Can military Olive Drab spray paint.
10- 10 round paintball tubes.

Optional List of Materials

1- 3" PVC pipe about 12" long. (Optional, if the raised bead that runs along the side of the PIAT Bomb Tray is desired.)
1- 3" PVC coupling. (Optional, if the support ring for the front of the PIAT Bomb Tray is desired.)
1- Web strap for the sling. (Optional. This may be found at WalMart in the automotive area and packaged as light cargo straps, with buckles, in a two pack.)
4- #6 x 1" wood screws. (Optional to attach the sling.)
4- #6 flat washers. (Optional to attach the sling.)
1- Piece of flat plastic for bomb fins. (Optional, if bomb fins are desired.)

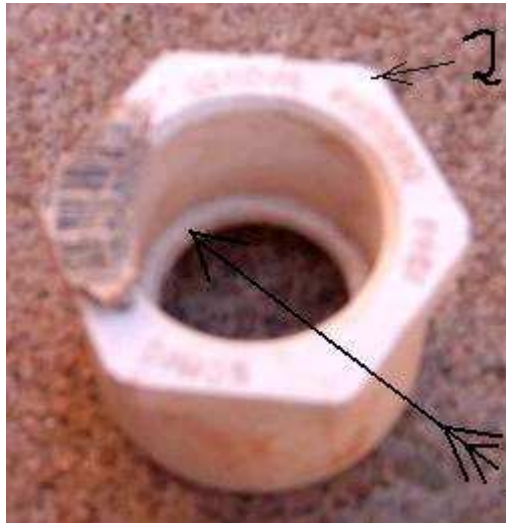
***** NOTE *****

A **COUPLING** is a fitting that glues on the outside end of a pipe to connect it to another pipe of the same diameter. A **REDUCER COUPLING** is a fitting that glues on the outside end of a pipe to reduce it from one size to another. A **REDUCER BUSHING** glues on the inside end of a coupling or elbow to reduce it to a smaller size.

******* NOTE *******

It is recommended that all parts be tested for fit and cleaned thoroughly, before gluing.

While looking on the inside of the 2" to 3" reducer coupling, note a raised ridge. Dremel this ridge out, so the 2" pipe will slide all the way through it. (#1 in the attached picture)



Dremel the same ridge out of the 2" to 1" reducer bushing, so the 1" pipe will slide all the way through it.

Insert the 1" pipe into the bushing, to use as a handle and grind off the outside ridge on this bushing as well. (The ridge that needs to be ground off the outside is #2 in the attached picture.)

******* NOTE *******

The ridge needs to be ground off, in order to glue it into the 2" coupling, backwards.

Test for fit.

Glue the 2" to 1" reducer bushing into your 2" coupling. Notice that it will not go all the way in, but that it leaves a little sticking out.

Grind off the excess flush with the side of the 2" coupling.

Cut the 1" PVC at 24". (Stem & body of PIAT Bomb.)

Cut the 2" PVC at 21 3/8" (Main body of PIAT.)

Cut two pieces of 3" PVC. One at 13 1/4" (For the bomb tray) and the other at 12", to cut up for other parts.

Rip the 12" piece of 3" PVC in half. There should now be two 12" pieces of PVC that look like #4 in the attached picture.

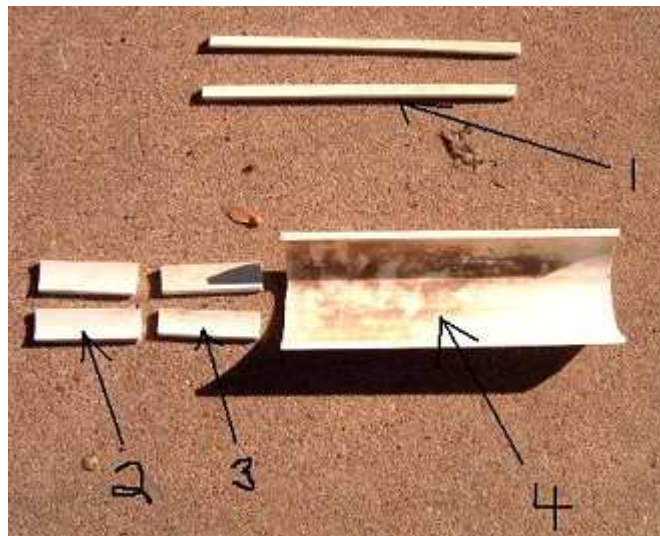
Set one piece aside and heat the other piece, until it is soft.

Press the heated piece around the outside of the 13 1/4" piece of 3" PVC.

The resulting piece will be slightly wider than the piece that was set aside.

After it cools, rip two 1/2" wide by 12" long strips from it. They should look like #1 in the attached picture.

Rip two 1 1/4" by 12" strips. These strips can be used as shims to center the marker. (#2 & #3 in the attached picture.)



Clean about 2" of the 2" PVC pipe that has been cut off to 21 3/8".

Clean the inside of the 2" part of the 2" to 1 1/4" reducer coupling. (#2 in attached picture) (All you need to clean is the 2" side of this coupling.)



Test for fit.

Glue the 2" PVC and in the 2" side of the reducer bushing together.

******* NOTE *******

A 9 ounce tank stock should slide over the outside of the small end of the reducer coupling. (#1 in the picture) Do not glue the tank stock on at this time.

The next photo shows how the 3" Bomb tray, 2" main Body and the 1" bomb stem are attached to the 2" main tube.

#1 is the 1" PIAT Bomb tube.

#2 is the bomb fins.

#3 is the 1" to 2" reducer bushing that has had the ridge removed and glued into the 2" coupling. This part will be referred to as the Bomb Adapter.

#4 is the 2" coupling.

#5 is the 2" to 3" reducer coupling. This part will be referred to as the Bomb Tray Adapter.



Clean the inside of the 2" to 3" reducer Coupling, which has had the ridge removed.(This is the bomb tray adapter.)

Clean the 2" side of the 2" coupling (Bomb adapter) and about 4" of the end of your 2" PVC pipe main body.

******* NOTE *******

Test fit the following parts, before gluing. After the glue is applied, the parts need to be assembled rapidly, in order to achieve the correct fit.

Apply glue to about 3" of the outside of the 2" PVC main body.

Apply glue to the inside of the 2" side of the Bomb Adapter. (2" coupling)

Apply glue to the inside of the 2" side of the Bomb Tray Adapter (2" to 3" reducer coupling) and slide it onto the 2" PVC main body, until about 1 1/2" of the 2" PVC main body is sticking out of the 3" side.

Slide the bomb adapter onto the 2" PVC pipe that is sticking out of the 3" side. Some force may be needed, in order to make it slide on all the

way. This may make the bomb tray adapter slide down a little farther as well. This is OK.

Looking at the next picture,

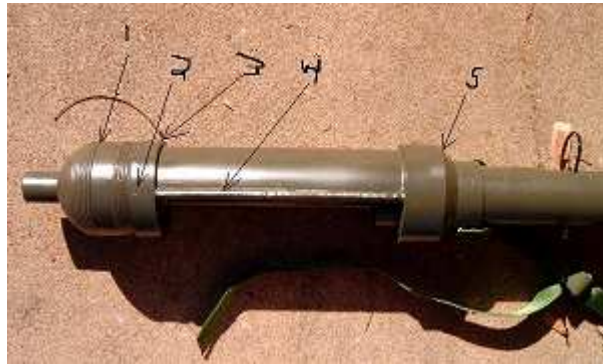
#1, Is the toilet float (PIAT Bomb)

#2, Is the three screws that attach the float to the PIAT Bomb tray.

#3, Is the PIAT Bomb tray end support ring.

#4, Is the bomb tray bead.

#5, Is your 2" to 3" adapter coupling.



To make ring #3, cut off a 3/4" ring from the 3" coupling. Deburr it and set aside.

Use the 13 1/4" piece of 3" PVC pipe for the main body of the bomb tray.

Mark a straight line from one end to the other. This will be the centerline of the bomb tray.

Measure 2 1/4" on each side of the centerline and mark a line, parallel to the centerline. These lines mark the right and left side of the bomb tray.

Glue the 3" x 3/4" support ring on the front of the pipe. (It should look like #3 in the picture.)

Glue the 3" bomb tray into the 2" to 3" coupling.

Using a Dremel or other suitable cutting tool, cut out the marked top portions of the 3" pipe, between the support ring and the coupling.

Deburr the edges.

Optional: For the bomb tray bead, lay the 1/2" x 12" strips along the side of your bomb tray and trim the length to fit. (#4 in the picture.)

Glue the strips to the side of the bomb tray and let dry.

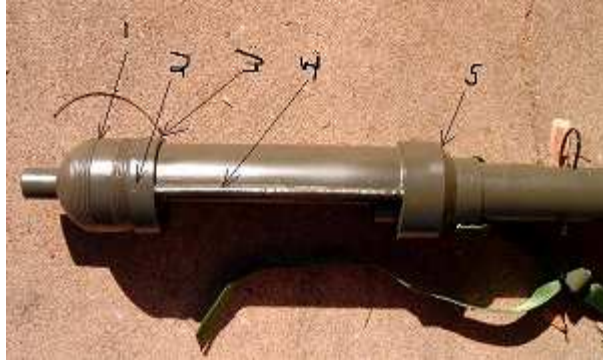
Using a Dremel, file or sandpaper, round the edges of the strips.

Looking at the next picture,

#1- Is the Toilet float.

#2- Screws.

#3- Bomb tray support ring.



In the next picture,

#1- Is the bomb stem (1" PVC cut to 24" long)

#2- Bomb fins Cut out of flat plastic about 1/8" thick. They are 3" L x 3/4" wide.

#3- Is the 1" to 2" bushing.

#4- Is the 2" coupling

#5- Is the 2" to 3" coupling and the outside of the bomb tray.



******* NOTE *******

While testing for fit, cut the hole small and slowly make it larger, as needed, until it can be forced over the 1" PVC pipe.

Cut two holes in the toilet bowl float, so that it will slide over the 1" PVC pipe.

Remove the float.

Mark the 1" pipe 4" from one end.

Apply glue to 3" of the marked end of the 1" pipe and force it into the 1" to 2" bushing, to the 4" mark. (#3 in the picture.)

Slide the toilet float onto the Bomb stem, until it contacts the Bomb tray ring.

Drill through the end bomb tray ring and into the float on each side. Install a #6 wood screw in each hole, with some epoxy. Trim the excess 1" pipe to 1 1/2".

Apply glue to all areas of the toilet float that is in contact with PVC.

Attach the fins by applying a little epoxy glue to the long edge of each fin and hold it in place until the glue sets. Apply more glue later, if needed.

******* NOTE *******

Since each marker is a bit different from the next, care must be taken to cut the holes for the marker body, feed neck and cocking rod.

Measure 15 3/4" forward from the back of the stock and mark on the bottom of your PIAT. This is where the back of the marker trigger grip should be.

Measure the marker main body, from the rear of the grip, to the front of the main body and transfer that measurement to the PIAT main body.

Mark two parallel lines, 1" apart, along the bottom of the PIAT body. This is the rough marker opening.

Using a cutting tool, carefully cut out the rough marker hole.



Test fit the marker to see where the feed neck hole needs to be removed and mark the location.

Using a cutting tool, carefully cut out the feed tube hole.



Continue to cut and test fit, until the marker fits inside of the PIAT main body.

Notice the small holes, labeled #1 in the two pictures above. The holes are for wire ties, so the marker can be solidly mounted in the PIAT.



Notice the shims that have been glued into the inside top of the PIAT. They are used to center the marker in the main body of the PIAT.

******* NOTE *******

Since each marker is a bit different from the next, care must be taken to adjust the shims, in order to center the marker. Other materials may be used.

To screw the barrel into the marker, wrap some black tape around the dowel rod until it fits tightly into the end of the barrel. Slide the barrel into the bomb tube and into the marker body. Turn the dowel until the barrel seats.

Test the marker for function and make necessary adjustments.

Gluing the tank stock on is optional.

Disassemble the PIAT and lightly sand all surfaces, until all surfaces have a slightly rough, matte finish. This is done so the paint will stick to the plastic.

******* NOTE *******

If the shoulder stock has been glued on, care must be taken to keep it from being covered with paint. If the shoulder stock has not been glued on, remove the shoulder stock and mask the tube under the stock. Care must be taken to keep the area under the stock from getting paint on it.

Apply the Olive Green paint in an even coat and let dry thoroughly.

Apply the military Olive Drab paint in an even coat and let dry thoroughly.

Heat the 1/2" PVC coupling until it is soft.

Force it into the marker feed neck and remove. Turn it over and force the other end of the coupling into the feed neck. This will make the coupling a little smaller.

While the coupling is still in the feed neck, force the open end of a 10 round tube into it and let the coupling cool.

Optional carry strap.

Cut the strapping to a suitable length and fuse the ends.

Drill two pilot holes into the PIAT at each end of the strap location.

Fold the ends of the strapping and attach them with screws and washers through both thicknesses of strapping.

Reassemble the PIAT and send Snipes and HarlyHunk a picture of it.

Good luck with your PIAT & see you at D-Day! If you need any help, feel free to email Snipes or HarlyHunk.





The finished PIAT will look like this, except the feed tube will point straight up.