JIG INSTRUCTIONS

BECOME FAMILIAR WITH LOWER AND THE JIG WITH ITS PARTS

While the goal is to finish the lower receiver you should take the time to note certain features of the Draco lower. Flared magwell, larger pivot pin and take down pin areas, Integrated trigger guard for easier use, texture grip area on front and side of lower, ergonomic front grip section, selector switch stops, magazine catch stops, registration tag, easy grip retention, wide mouth trigger area, non-reflective surface texture, clean surface without pin guides shown on part.

Warnings!! – Issues that impact warranty coverage!!

We at Arma Polytech stand by our product and offer an excellent no-hassle warranty coverage. However, there are limits to coverage, particularly when the customer damages the product through poor craftsmanship or control during the milling process. Additionally, after the milling is completed, the build process seems to be where most people get into trouble, particularly during assembly and cleaning. Here are key areas that you need to watch for:

1. Use the proper tools to install bolt catch roll pin in lower. If you use to much force as well, you can break the part or damage it: it will not be covered under warranty.

2. Do not use any lock-tight on the receiver – regardless of what some internet assembly instructions tell you.

3. Chemicals: Generally, you do not need to lubricate polymer products.

A. Many oils are combined with rust penetrants which can damage polymer-based products.

B. Do not utilize brake cleaner (it has Acetone in it) or rust penetrants, they penetrate through polymer, like how they penetrate metal.

C. Do not put Acetone on any part of the receiver. Acetone will instantly destroy, breakdown, weaken any polymer-based product.

TOOLS REQUIRED TO BUILD AN 80% LOWER

For most jobs, your hands are the best tools you have. But for completing an 80 percent lower AR build, you'll need a few pieces of machinery on hand.

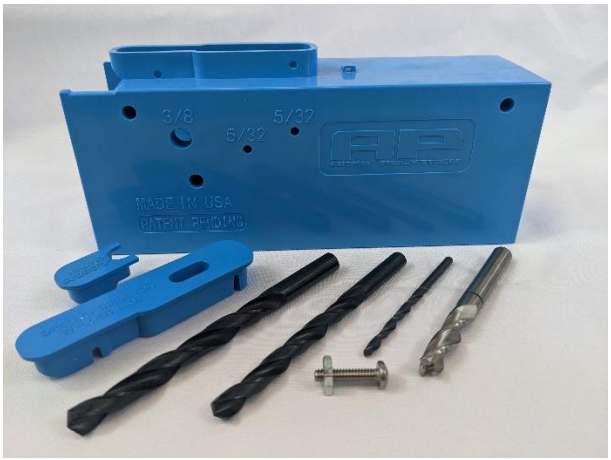
- Drill press or milling machine
- Cross slide drill press Vise
- Small 4” wire ties
- Small round and flat files (pictures at end in clean up after drill/milling process)
- Sandpaper (220 grit works well)
- Very good lighting or a light that can focus on the milling section of the part
- Small level
- Small vacuum or compressed air

While optional, it’s recommended you keep the following nearby:

- Pair of calipers
- Drill stop collar for 3/8” drill and 5/32” drill (McMaster-Carr Part #8865A143, 5/32” stop collar. Part # 8865A216, 3/8” stop collar.)
- Non-marring vice jaws

Included in the kit you will find the following tools (Pictured below):

- Jig
- (1) 3/8 Drill Bit
- (1) 5/32 Drill Bit
- (1) 5/16 Drill Bit
- (1) 9mm Short End Mill - 3” (With etched black line for guide stop for depth of cut)
- Drilling Guide for Trigger slot
- Milling Guide/Stop
- Screw and nut for attaching grip. If you lose them you can get them at any hardware department anywhere. 10-32 X 7/8” pan head bolt and 10-32 square nut.



STEP-BY-STEP GUIDE TO BUILD AN 80% LOWER

With the tools you need on-hand, it’s time to tackle your Draco 80% lower build. Don't overthink it, we've made it very easy. Take your time, follow the instructions, and you're guaranteed a great result.

STEP 1: SET UP YOUR MILL OR DRILL PRESS. MAKE SURE THE DRILL PRESS OR MILL WORKTABLE IS PERPENDICUALR TO THE DRILL.

If you are using a small drill press, make sure that it is secured tightly to the working surface it is sitting on using c-clamps, bolts or simply weighted down so it will not vibrate while drilling and milling. This is very important to cut down on excessive vibration when drilling or milling the part. This vibration also tends to make the drill chuck fall out. If you use a drill press you will need to make sure the drill press head is really implanted in the drill press. To do this you remove any drills or mills from the chuck and hit it with a mallet to make sure it is set.

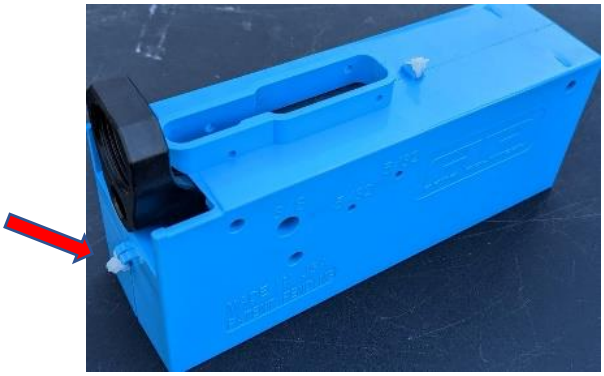
Note: Our customers have told us that they tack welded the chuck to the drill press head to stop this from happening.

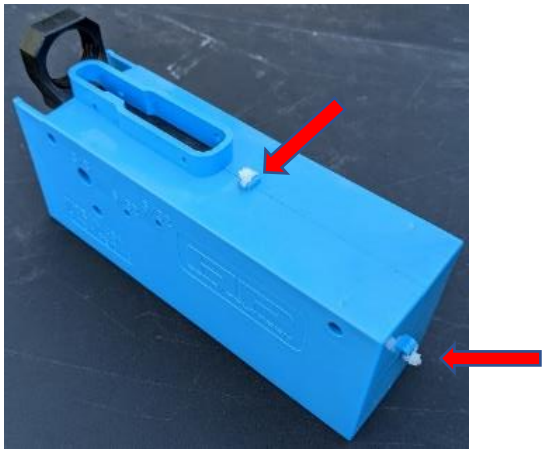
Do not trust your drill press depth settings. You will be making a final cut later in the guide to complete the trigger pocket. The mill provided has the laser cut depth of cut line on it. Most important is to measure things twice and cut only once the final cut. The depth of cut is to be 1.245” to 1.250” maximum.

Install the 3/8” drill in the drill chuck. Using a square or rafter square (pictured below) hold it on the worktable surface and bring it up against the drill to make sure the working table is perpendicular. Adjust table to make sure it is perpendicular to the drill when you do so there will be no spaces between the outside edge of the drill and the square edges. Later when you install your cross-vice check again with a drill and square that everything is still square.

STEP 2: SECURE THE LOWER IN JIG

The first step in completing your new Draco build is to secure the lower in the jig and wire tie it together, keeping it tightly held together. There are three sets of wire tie lugs on the part. One on each end of the jig and one on top. Only do these three for first operation. See below.





STEP 3: SECURE THE JIG WITH LOWER IN CROSS VICE

Clamp the Jig with Lower in the cross vice on one of its sides as seen in picture below. The vice will hold the Jig with lower in place for the hole drilling operations. The cross vice should not be tied down to the worktable so you can easily slide it around to line up the drill into each drill guide hole for drilling.

Remember: To avoid misalignment, do not over-tighten jig. Apply light pressure with the clamp to ensure the jig does not move during the process.

Cross Vice to use (Harbor Frieght)

STEP 4: DRILL THE HOLES IN LOWER

These holes need to be precise. So, take your time and do them carefully. To do this prep the depth of the drills using basic drill collars and set the length of cut using them. If you have a stop on your drill or mill that will work also; setting the depth of cut into the lower at ¼" (.250) only.

Pictured below are both the 3/8" and 5/32" drills with the end of drill to the stop is 1 3/16 inch to 1 ¼ inch in depth. Install one of the drills, **with motor off**, for a guide. Move vice with the jig until you have the drill centered and it moves easily up and down the guide hole. Take your time as again these holes must be precise as noted earlier. Once you machine out the firing pocket these holes will be completed. You will drill the two 5/32" holes and the one 3/8" hole on one side of the jig then turn the jig over and clamp it in place to do the same operation on the other side. Remembering to take your time to do so.

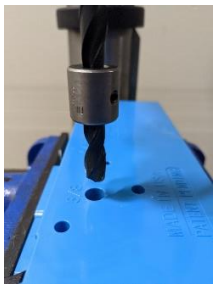
You want to only drill ¼" into the lower from each side. The best way to do this is to use either drill collars or apply tape to mark the drill bits. For both drills you need to put your stop at 1 3/16 inch to maximum of 1 ¼ inch from the point end of the drill. If you have a drill stop on your drill or mill, then you can use that also and set it for only ¼ inch (.250) depth of drilling into the lower itself.

Tip: Start with a 3/8" hole on the first side then switch to the 5/32" drill next and complete the two holes on the first side. Then simply turn the part over and do the two 5/32" holes on this side then switch the drill out for the final 3/8" hole.

Warning: You do not want to drill any deeper than .250 deep into the part for any of the holes. Do not try and drill all the way through the lower because the drill will drift and ruin the part as the holes will be misaligned and ruins the part. This affects cleanly milling the trigger pocket as well.

5/32" and 3/8" Drill with drill stop.

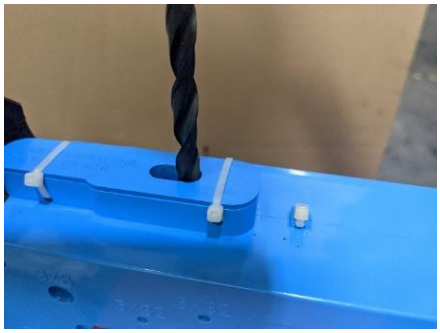
Lining up 5/32" drill in jig with drill stop.

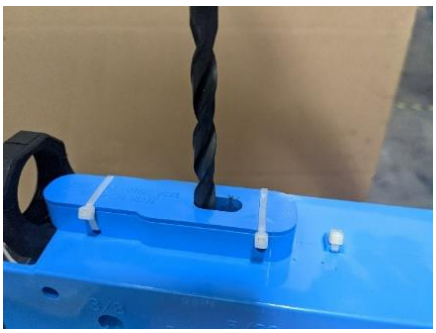


Lining up 3/8" drill in jig with drill stop.

STEP 4: DRILL TRIGGER SLOT HOLES IN LOWER

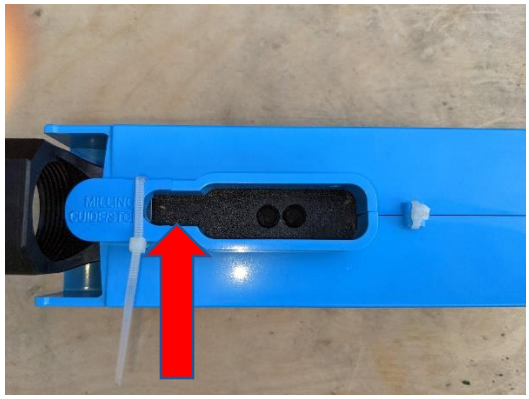
Remove the jig with lower from cross vice from laying on its side. Drop in the Drilling Guide for the Trigger lot and use two small wire ties to lock it in place. (See below) Place jig with lower into the vice with the buffer tube tower away from you. (See below). Check that the vice is level and perpendicular as discussed in #1 of instructions.





Take your time and do these first two holes slowly and carefully constantly bringing the drill up and cleaning it off while drilling. This is to have the drill nice and clean to cut clean straight holes.

Install the 5/16” drill in the chuck. Line up the drill using the slot in the guide. Drill a hole in the front of the guides slot then one in the rear of the slot only. Use some time to do this as you will get better results if you do not drill down fast. **Do it at a steady speed and pressure so the drill will not walk.** The best approach is to drill about ½” (.500) then withdraw the drill and clean out the chips by air or shop vacuum until you complete the holes. Take your time and feel when you break through the lower and stop. Once you have the front and rear holes made you have the front and rear ends of the trigger opening that will be cleaned up after you cut the fire control pocket. When complete it should look like this showing the two completed holes.



DO NOT PUT DRILL PRESS OR END MILL PRESSURE AGAINST THIS SIDE WALL OF THE JIG IN THIS AREA. If you expose the safety detent hole, the lower receiver will not operate properly

STEP 5: MILLING OUT THE FIRE CONTROL POCKET WITH 9MM MILL

First remove the Drilling Guide for the Trigger Slot and install the Milling Guide Stop and wire tie it to the jig. Shown above and below. Chuck up the 9MM mill from the kit. Have a shop vacuum or air to remove materials while always milling. This will help make clean cuts, not let the mill heat up and allow you to see what you are

doing. Take your time doing this as you can ruin the part very quickly if you are not carful. This is especially true if you are not careful around the safety detent and spring hole as discussed in red above. Take more care in this area of the part to make sure you do not damage the part.

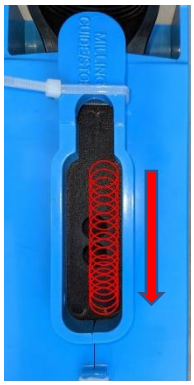
You will plunge cut, like drilling, out the pocket now following the pattern laid out below. This type of cutting is also referred to as step plunge cutting as you actually move the mill about 1/3 the thickness, or less, of the mill a step forward of the direction you are heading towards when removing material by plunge milling. You want to remove material, however not too much so you lose control of the cutting or have vibration yet are still removing material from the pocket. The patterns below shown by the circles showing the steps made by plunge cutting in the direction shown. As each of the five sections are being plunge cut you will need to always stay away from the wall of the jig about 1/16” to1/8”.

This will take some time, so take your time. If you need to do some cutting, then take a break so you are not in a hurry that would be good to do. Follow the pattern plunge cutting only a third of the thickness of the mill at a time. While cutting constantly blow out or vacuum the extra chips of materials or it could bind the mill and potentially damage the lower. Again, while following the pattern laid out stay away from the side of the jig about 1/16” to 1/8”.

You will plunge cut in the pattern laid out in the pictures below starting with #1 then move on to #2 cut, then #3, then #4 then last #5 as the last set of plunge cutting. Be sure to follow these precisely. The proper way to plunge cut is to only move the mill to cut one third the diameter of the mill at a time, at most. The mill has a black laser cut line on it; seen in the picture below. Always keep the black line of the cutter above the jig while plunge cutting.

1.

2.



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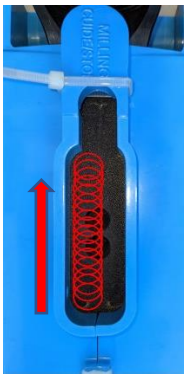
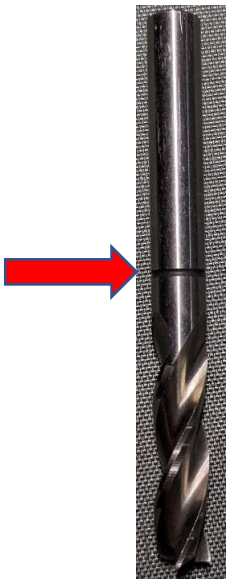
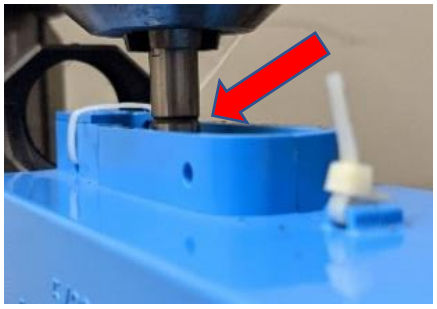


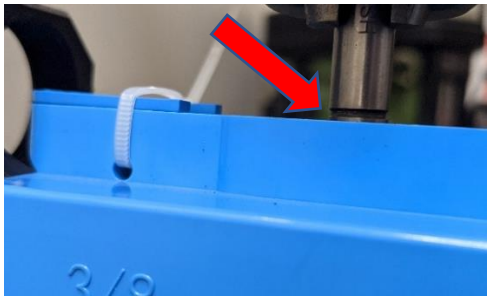
5.

Tip: Only plunge cut about 1/3 the diameter, or less, of the cutter at a time like in drilling. Bring the mill up and down and vacuum or blow off the materials from the cutting. If you are melting the materials, you are going to fast and not cleaning off the materials.

Check to make sure the mill will be turning clockwise. You will need to take your time to plunge cut each of the five sections. You will see the mill has a laser cut black line around itself (Below). This is to be **kept above the edge of the jig at all times** as pictured in two views below.





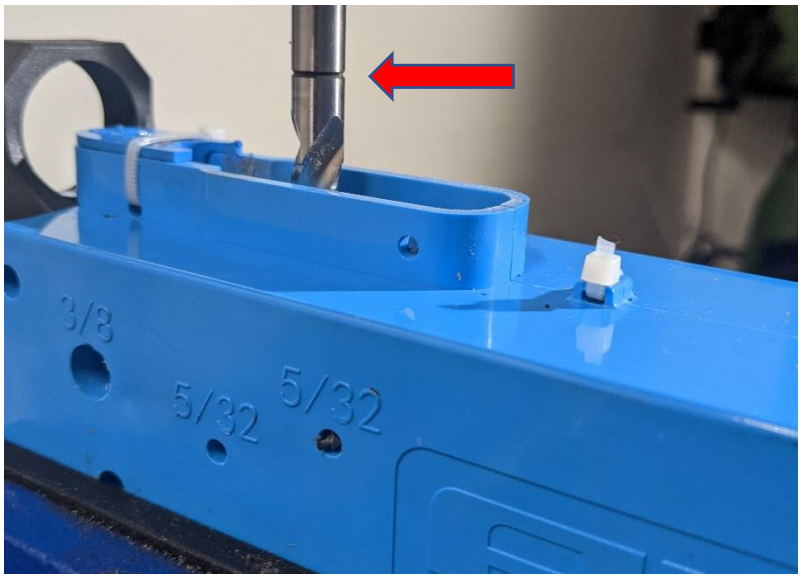


Once you completed the plunge cutting you will need to do some clean up of the plunge cutting by doing conventional milling procedure. Really take your time here because now you will be doing the final cuts of the pocket from this point forward. Make sure you have plenty of light to investigate the pocket to make sure you are making nice clean up cuts. If you need to stop and rest, do it so you can be careful moving forward to complete this trigger pocket.

Instead of plunge cutting you will now be using the normal milling procedure. You will need to go to the center of the pocket and put the mill down into the pocket with the black line above the jig ¾", seen below. Now lock the mill at that depth and now you will walk the mill around using the cross vice to do a clean up milling of the pocket. You will need to follow the pattern on the drawing below. As you walk the mill around this pattern you can come close to the wall however just up to it careful not to force the mill against it and cut into the jig.

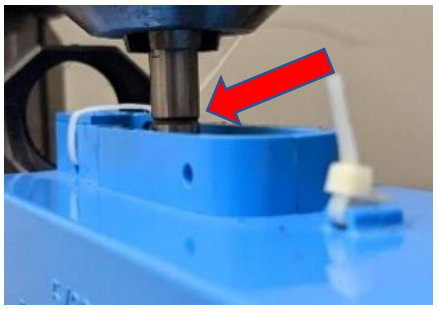
Again, just as when plunge cutting, use air or a shop vacuum to remove the materials being milled while milling the part.

Use it as your guide and take your time to slowly go around the jig in the direction of the arrows pattern. This is important because cutting the pocket with the rotation on the mill requires you to follow the pattern laid out to give you a good clean milling of the trigger pocket. Once you have completed the route one or two times carefully move the mill to the center of the pocket again. Stop the mill.



MILLING PATH First mill position for cleanup milling procedure

Check with a light to make sure it looks like it is a nice clean cut all around the pocket. If it is, with the mill in the middle of the pocket, set it with the black laser line just above the jig as earlier when plunge cutting.



Second mill position for cleanup milling procedure

Now you follow the same pattern again as you just did carefully. Use the jig as a guide to cut the pattern and not putting excessive pressure on the jig. While you make the cuts use air or shop vacuum to remove the materials being milled.

Once you are done check with a light and see if you have a nice clean cut on the side walls of the pocket. If it needs more milling to clean it up, then carefully follow the last instructions taking your time to follow the route again. First with the mill laser ¾" in the up position and then the second time in the down position with the black laser cut just above the jig. Once it looks like a nice clean wall in the pocket move to the final milling cut.

You will be using the cross vice to move the jig from side to side and back and forth to complete the pattern. Do not go to deep into the part or you will destroy it.

Do not trust your drill press depth settings. You will be making a final cut to complete the trigger pocket. The mill provided has the laser cut depth of cut line on it. Most important is to measure things twice and cut only once the final cut. The depth of cut is to be 1.250" maximum or you will destroy the part.

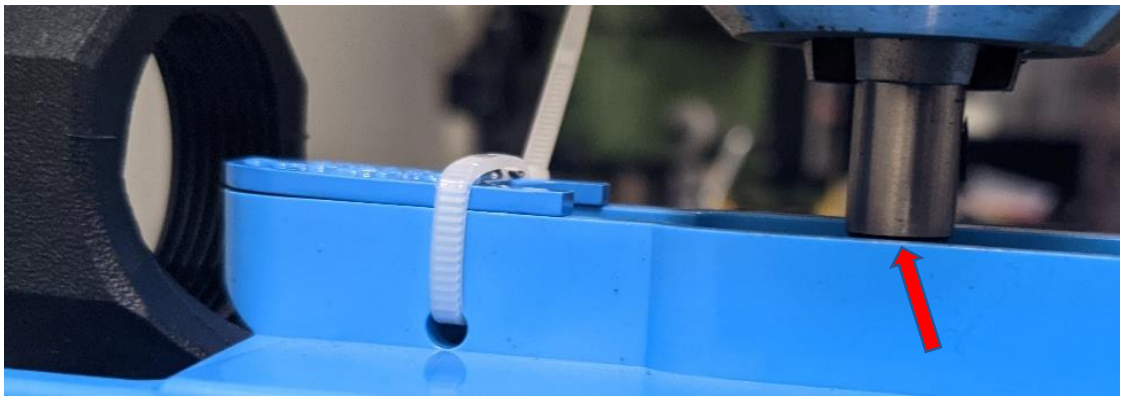
STEP 6: MILLING RECEIVER TO FINAL DEPTH.

Now that you have roughed out most of the trigger pocket it is now time to do a final cut of the pocket. Make sure you have the pocket as cleaned out as possible before you start this last clean up milling process. If you must remove the jig to do so, when you put it back, make sure it is perfectly flat and perpendicular again. If you remove it take a measurement to see where you are at. If you did not remove it then take the time now to measure the depth at different positions to confirm what it is.

One way to confirm the mill and the jig are level is to simply bring the mill to the top of the jig and stop it just above the jig and set it to stay in that position. Using the vice now move the jig under the mill from front to back and side to side at each end to confirm that it is level with the mill and the jig.

You will now go back to the rear of the lower in the center and plunge cut to where the black line is just above the top edge of the jig. Now you need to lock the mill in that position so you can walk it around very carefully following the previous milling route laid out you used when doing the plunge cutting and milling. This time you will mill following the pattern making sure that the black line stays just barely above the edge of the jig. You can go right up to the sides of the jig while doing this final cut, not aggressively, gliding along touching the sides of the jig.

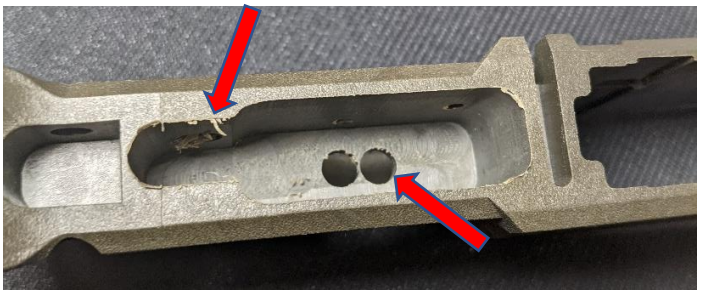
Best if you can set the mill in a locked position to make the last final cut. Make the final cut following the pattern along the side of the jig as the guide for the final cut of the pocket. This can be seen in the picture below. You will barely see the top of the black laser line. The depth of the pocket will be 1.24 inch to 1.250 inch in depth. It cannot go any deeper than 1.250 inch. It will function if it is between 1.240 inch and 1.250 inch; unless you have a specialized trigger, you may have to meet specific depth for it, however it still should not ever go more than 1.250 inch in depth. **Measure twice and cut once.**



STEP 7: CLEANING UP THE PART FOR ASSEMBLY OF TRIGGER AND SELECTOR SWITCH

Now that you have completed the drilling and milling of the lower you can now clean up the part to fit the trigger and selector switch.

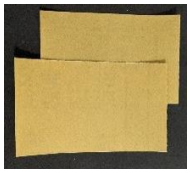
This will require you to clean the burrs left from the operations completed seen here in the below pictures. You need to clean up the burrs for the two 5/32” holes and the 3/8” hole on each side of the lower, the trigger pocket and the trigger opening.



Pictured here are some tools for cleanup. Typically, you only need the round, flat and square or triangle needle files.

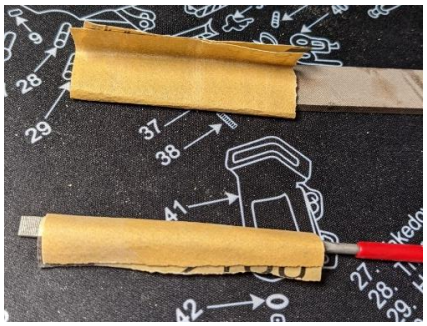
Needle Files

½” flat file and small rat tail file

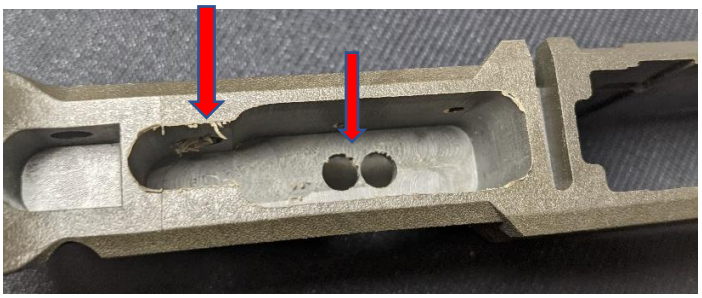


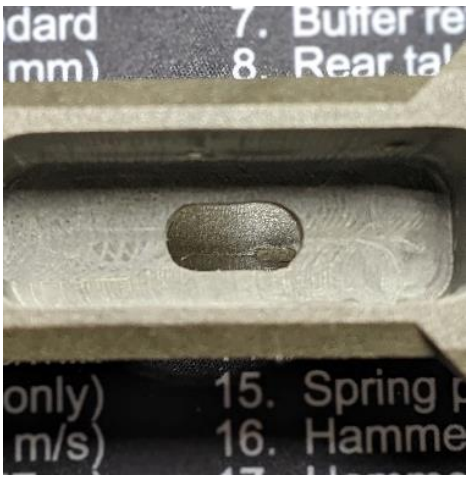
Two pieces of 2”x 4” 220 grit sandpaper

Prep the flat needle file and ½” flat file with sandpaper wrapped on them as shown below.

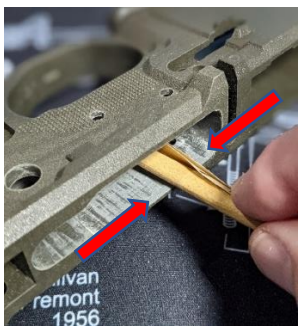


First thing to do is complete the trigger opening. You can do this by trimming out the section between the two holes drilled already (See red arrow). Use the small blade type needle file to do this. Once you have done that you can use the flat needle file to file each side of opening until you get it to the nice, finished opening.





Next you will need to do the clean up the inside of the trigger pocket. The best way to do this is with the two flat files with some sandpaper wrapped around them. Using them to stay as flat as possible and go back and forth (see red arrows) to make the surfaces nice and clean and free of burrs. Take your time working the areas that all the drilled holes have burrs on the inside of the pocket. You just need to clean up the pocket.

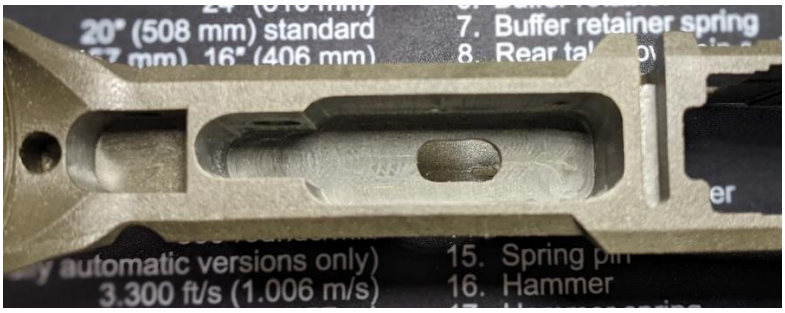


Do not penetrate this rear bump area in the pocket as behind it is where the selector switch spring and. detent is installed. Use the sandpaper with file to clean it up of burrs then stop.

Cleanup the two trigger holes and selector switch holes using needle files and sandpaper to remove the loose burrs of material only.

You must be very careful to do this gently. If you go into the hole with the file use just barely enough pressure to remove the burrs, no more. You do not want to remove material from the nice round hole you drilled into the part.

Using the sandpaper gently go around the top of the pocket to clean the burrs off the edges. Once you have completed these steps wash the part with soap and water. Your part should look like the one below.



Tips to Help in Final Assembly and Testing

1. The depth of the fire control pocket should be 1.25 inches from top of receiver…**precise**. Get as close to that as possible without going deeper than that.

2. If you have a ton of trouble getting the trigger in because the pin holes aren't aligning, you might consider several inspections, modifications, or troubleshooting in the following order:

A. 90% of the issues on trigger assembly are related to the floor of the fire control pocket not being milled deep enough, and therefore the trigger has no room to move even though it might install. The depth of the fire control pocket should be 1.25 inches from top of receiver…precise. Get as close to that as possible without going deeper than that.

B. Make sure the trigger hole is vacated of any material that prevents proper movement.

C. Make sure the rear of the trigger is not rubbing against that odd offset wall (in the rear right) that houses the safety selector switch detent.

D. Taking a very slight amount more off of the floor of the fire control pocket with the end mill bit (go back to the vise and drill press) and just take several hundredths of an inch off then go back to the trigger fitting to see if that helps.

3. After you install the trigger and hammer, the trigger should release the hammer properly and cleanly of course.

4. At the front side of the fire control pocket, there's very little room in the original milspec design between what I term the firewall and the mag release button housing. If you see exposure to that area after you drill, don't be alarmed, there's almost no material there by milspec design, but this will not impact performance of the firearm.

5. The buffer tube housing has been designed to be snug, so no movement is allowed. For those extra tight fits, use Teflon tape to wrap it rather than oil to help the buffer tube go in easier.

HOW TO MAKE IT EASIER WITH ARMA POLYTECH

Do these instructions look confusing, or you just aren't sure what they mean? No problem, feel free to email us at our support email address. Remember to download some pictures of the issues when filling out the contact information and issues you are having.

support@armapolytech.com