80% LOWERS

EASY JIG

Instruction Manual

NEED HELP?

Our team of builders are here ready to help you when need it.
Call us, chat us or email us:
317-682-0012
www.80-lower.com
info@80-lower.com

Equipment Needed

- Eye protection
- Hearing protection
- Drill press or Hand drill with 3/8 chuck
- Drill press clamps
  Router or laminate router with 1/4" collet
- (Porter Cable Model PCE6430 or Rigid Router Model 24012 recommended)
- Easy Jig
- 4” Drill Press Vice
- Bench Vise
- Tabletop or Bench
- Cutting / Tapping Fluid (Oatey's or Magic Tap)
- Shop Vac
- Can of Compressed Air
- Tooth Brush
- Large rigid paint brush
  Painter’s Tape

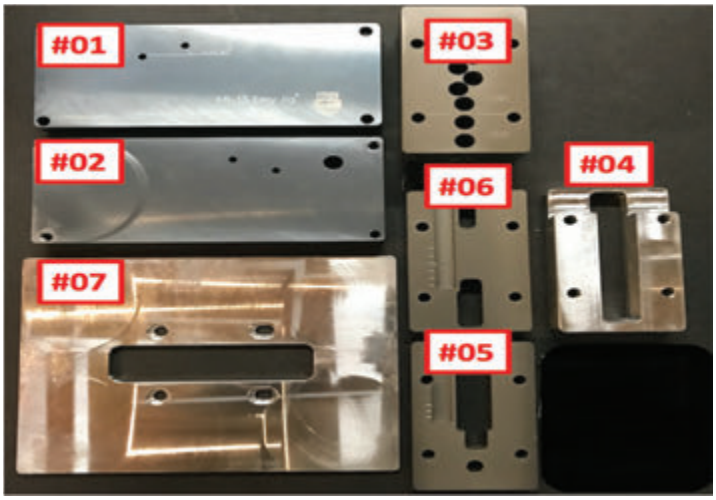
TOOLING NEEDED:

#11 1/4" Easy Jig end mill bit
#12 3/8" drill stop collar
#13 3/8" jobber length drill bit
#14 5/32" jobber length drill bit
#15 19/64" jobber length drill bit

3/16" allen wrench
1/8" allen wrench
3/32" allen wrench

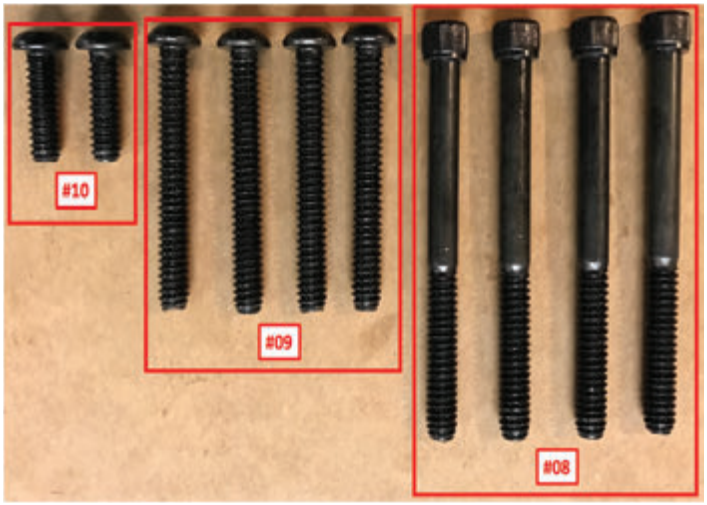
EASY JIG PLATES - OVERVIEW

#01: Right Jig Wall
#02: Left Jig Wall
#03: Pocket Drilling Block
#04: Template Spacer
#05: Trigger Pocket Template
#06: Rear-Shelf Pocket Template
#07: Router Base Support Plate



BOLT SET - OVERVIEW

#08: Jig Wall Bolts 2.5" (4 pcs)
#09: Template Bolts 1.75" (4 pcs)
#10: Trigger Milling Bolts 0.75" (2 pcs)



ICON LEGEND

	LIGHTBULB	**“PRO-TIP”**
	RED EXCLAMATION POINT	**“WARNING”**
	YELLOW TRAFFIC LIGHT	**“SPECIAL NOTES ”**
	GREEN TRAFFIC LIGHT	**“PROCEED”**
	2 ARROWS SPLITTING	**“OPTIONAL ”**
	TOOLS CROSSED	**“TOOLS & EQUIPMENT NEEDED”**

COMPLETION INSTRUCTIONS: STEP 1

Tools & Equipment Needed:

- Right Jig Wall - #01
- Left Jig Wall - #02
- Jig Wall Bolts - #08
- 3/16" Allen Wrench
- Painter's Tape

OPTIONAL (but recommended): Use masking tape or painter's tape to mask all areas of the receiver that will not be machined. Do not place tape between mating surfaces.

PROCEED: Attach side plates #01 and #02 to lower receiver using the Jig Wall Bolts #08. The bolts will go through side plate #01 (Right Jig Wall) and thread into side plate #02 (Left Jig Wall). The top bolts will be going through the takedown pin holes in your lower receiver.

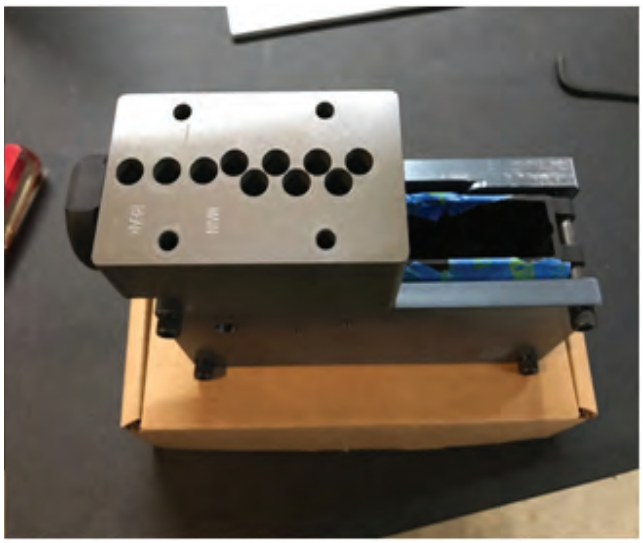
Tighten the (4) bolts in an alternating manner. Do not over tighten bolts, just snug with an Allen key.

COMPLETION INSTRUCTIONS: STEP 2

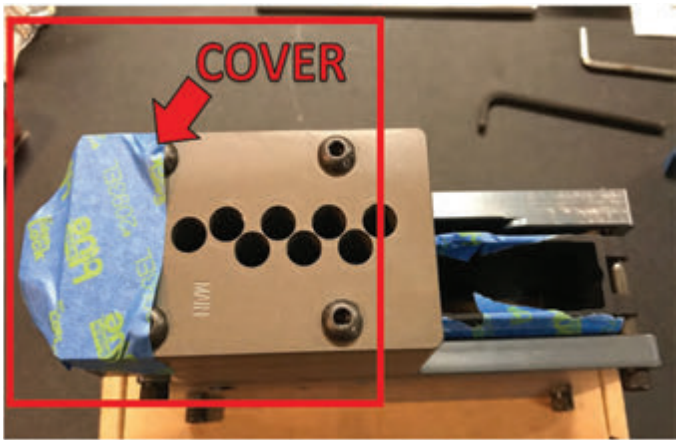
Tools & Equipment Needed:

- Pocket Drilling Block - #03
- Template Bolts - #09
- 1/8" Allen Wrench
- Painter's Tape

PROCEED: Attach the pocket Pocket Drilling Block #03 to the top of the jig using the #09 Template Bolts.



Tighten the top bolts in an "X" pattern to ensure you have your jig walls parallel and spaced apart correctly.

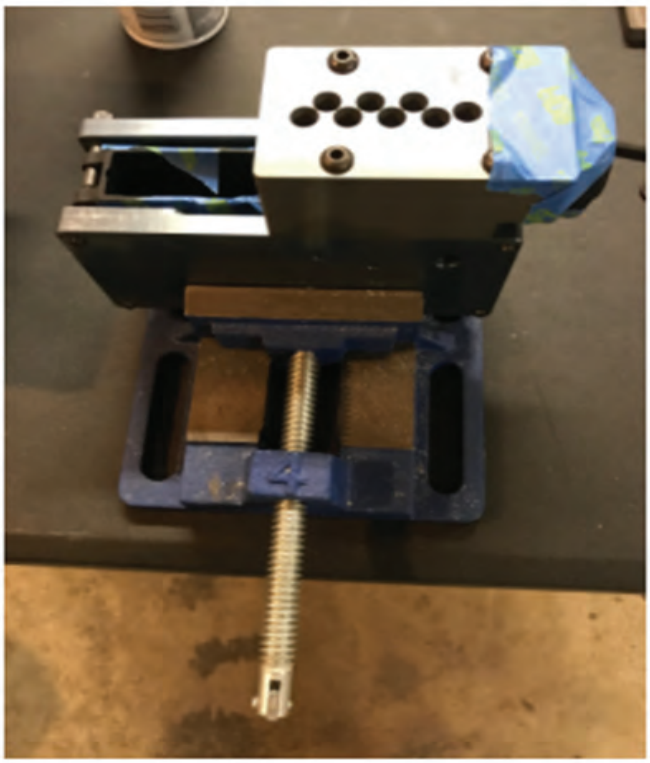


COMPLETION INSTRUCTIONS: STEP 3

Tools & Equipment Needed:

- 3/8" Drill Bit - #13
- 3/8" Drill Stop Collar - #12
- Rear Shelf Pocket Template - #06 - Labeled MAIN
- 4" Drill Press Vice

PROCEED: Prepare the 3/8" Drill #13 and 3/8" Drill Stop Collar #12 to the appropriate length by using the Rear Shelf Pocket Template #06 labeled MAIN. Securely tighten the drill stop collar. The drill bit should be touching the bottom of the depth gauge. Before drilling out the 8 holes, secure the jig assembly in your vise.

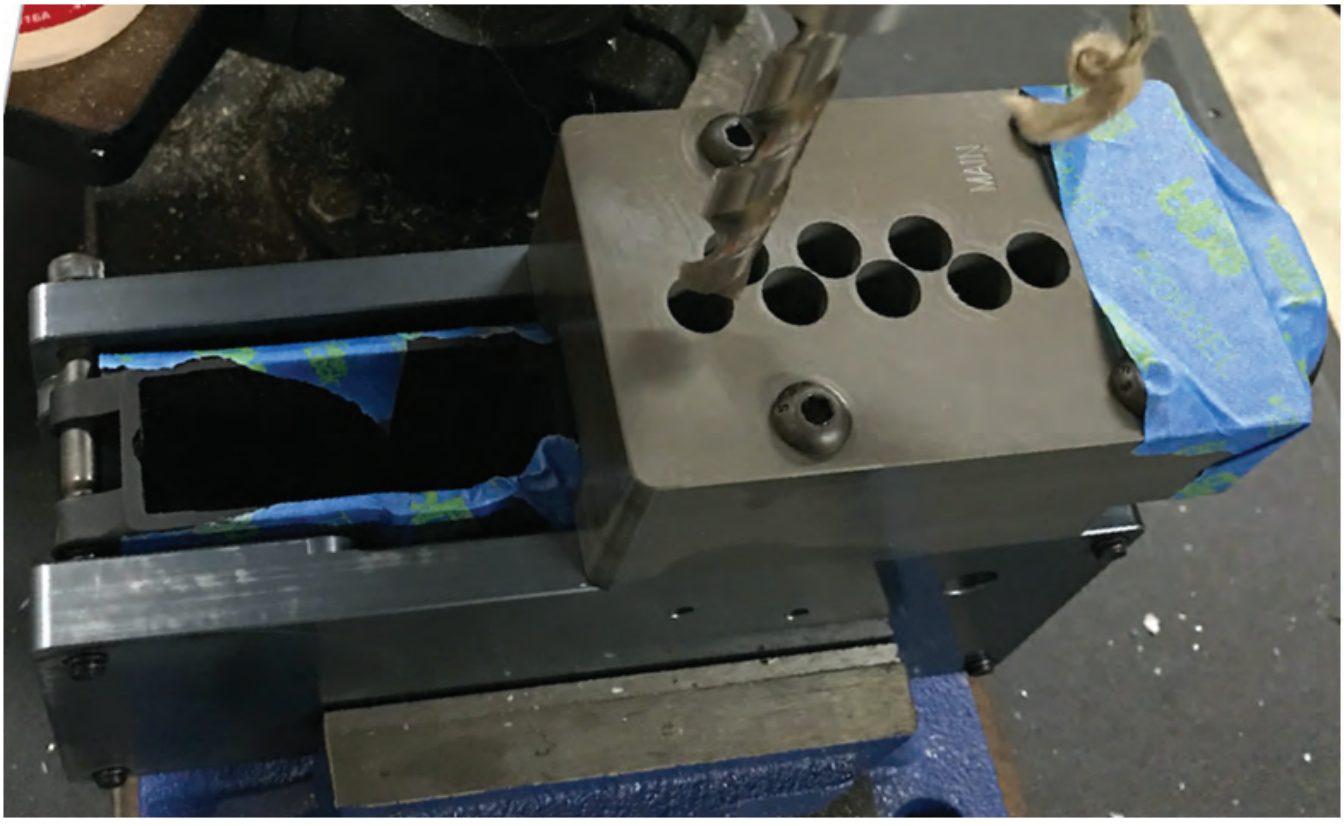


COMPLETION INSTRUCTIONS: STEP 4

Tools & Equipment Needed:

- Drill press or Hand drill with 3/8 chuck
- Cutting / Tapping Fluid (Oatey's or Magic Tap)
- Shop Vac
- Eye Protection

PRO TIP: We suggest using cutting fluid while drilling and a shop-vac to periodically clear out the chips as you drill. Drill out the 8 holes checking the drill bit length using the template depth gauge after each hole. If you're using a hand drill, make sure you drill straight down—do not lean at any angle. TIP: Slow down and reduce the pressure when your Drill Collar gets close to touching the Drill Block. Avoid allowing the stop collar to touch the drill block in order to prevent the drill stop collar from sliding and over-drilling the hole.



COMPLETION INSTRUCTIONS: STEP 5

Tools & Equipment Needed:

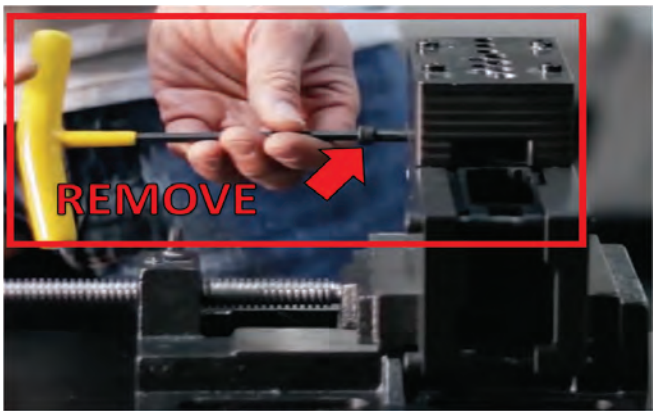
- Drill press or Hand drill with 3/8 chuck
- 3/8" Drill Bit - #13
- 3/8" Drill Stop Collar - #12
- Trigger Pocket Template - #05 - Labeled REAR
- 4" Drill Press Vice
- Cutting / Tapping Fluid (Oatey's or Magic Tap)
- Shop Vac
- Eye Protection

SPECIAL NOTES: If you purchased your 80% lower receiver from 80% Lowers (80-lower.com), you may skip step 5 and go to step 6, as your lower receiver already has perfectly mil-spec rear shelf. If you purchased your 80% lower receiver elsewhere, but it already has the rear shelf lug area milled out, skip step 5 completely and go to step 6.

WARNING: You MUST remove the top rear jig bolt so you do not drill through it. After removing the top rear jig bold, re-insert the bolt into the left jig wall and thread in only 7/8" of the tip of the bolt into the left jig wall. The tip of the bolt will go partially into the the edge of the lower to keep the lower from slipping, but not so far as to get in the way of the bit. Caution: Removing the rear Jig bolt can cause the lower to slip downward if the vise is not tight enough.

PROCEED: Remove the tape to expose the REAR drill block holes. Prepare the 3/8" Drill Bit #13 and 3/8" Drill Stop Collar #12 to the appropriate length by using the Trigger Pocket

Template #05 labeled REAR. Drill out the 2 remaining rear shelf holes. When you're done, remove the Pocket Drilling Block #03 and use a shop-vac to clean the jig and lower of chips.

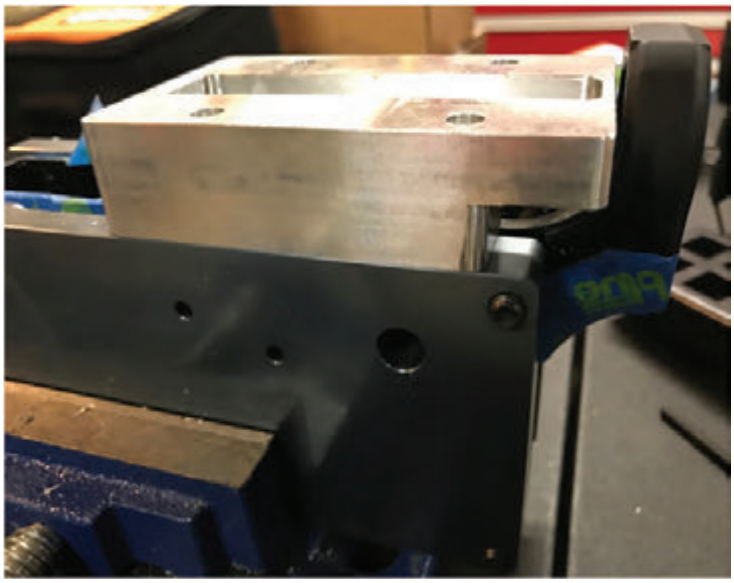


COMPLETION INSTRUCTIONS: STEP 6:

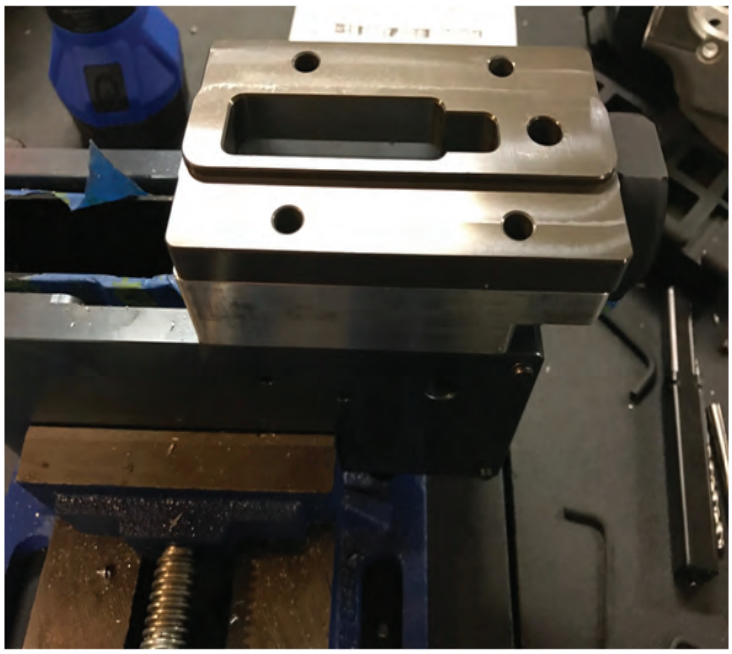
Tools & Equipment Needed:

- Template Spacer - #04
- Trigger Pocket Template - #05

PROCEED: Prepare to mill the trigger pocket by placing the Template Spacer #04 with the notched end towards the receiver extension hole (buffer tube hole).



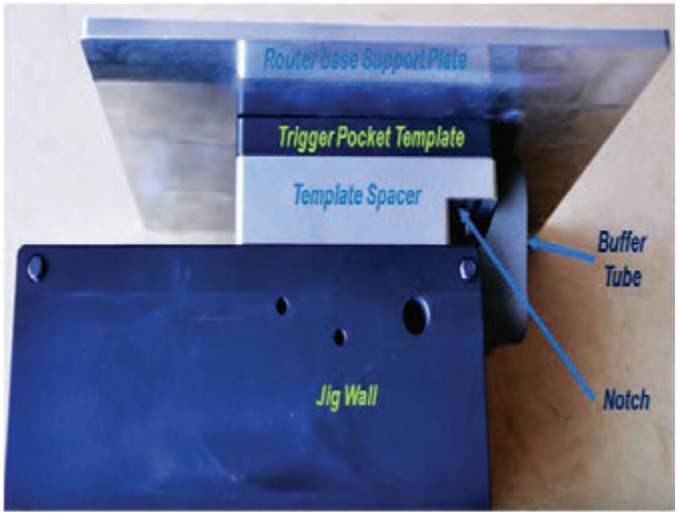
Then stack the Trigger Pocket Template #05 so that the smaller end and the hole on the template is toward the buffer tube hole, and the raised lip on the template is facing up.



COMPLETION INSTRUCTIONS: STEP 7

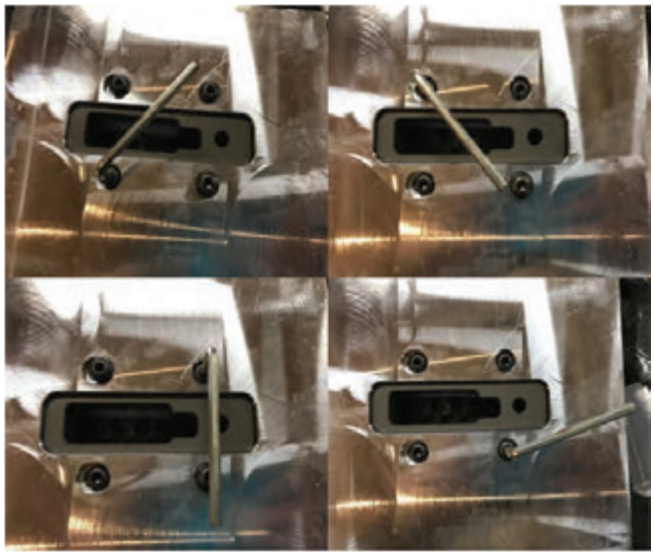
Tools & Equipment Needed:

- Router Base Support Plate - #07
- Template Bolts - #09
- 1/8" Allen Wrench



PROCEED: Place the Router Base Support Plate #07 over the lip of the template with the recessed bolt holes facing up. The router base only fits flush one way, so if your holes don't line up, rotate the support plate 180 degrees.

Attach the plate using the #09 Template Bolts, tightening the bolts to the top of the jig walls in the same alternating fashion ("X" Pattern). Secure the assembled jig in the vise with the buffer tube hole closest to you.



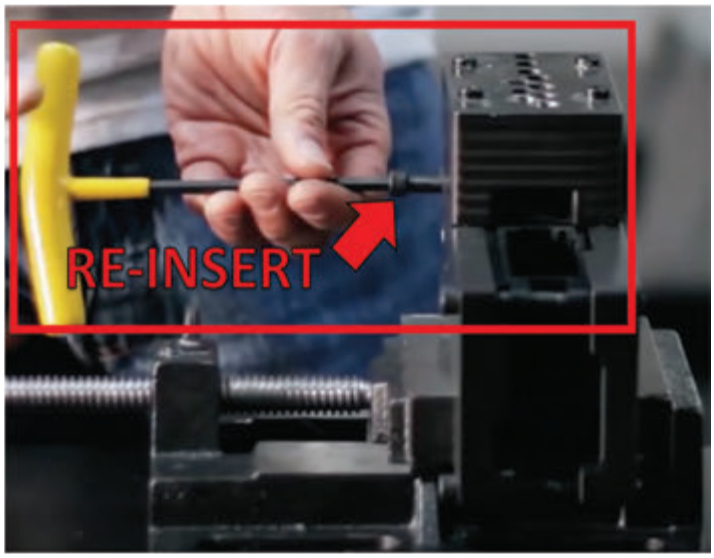
COMPLETION INSTRUCTIONS: STEP 8

Tools & Equipment Needed:

- 1/4" End Mill Bit - #11
- Router or laminate router with 1/4" collet (Porter Cable Model PCE6430 or Rigid Router Model 24012 recommended)
- Rear Shelf Pocket Template - #06 - labeled MAIN

SPECIAL NOTES: If you completed Step 5 (drilling the rear-shelf), re-insert and tighten the top rear Jig Wall Bolt #08 through the lower. Either way, use this opportunity to double check that the top rear Jig Wall Bolt #08 is in place for good measure.

PROCEED: Install the 1/4" End Mill #11 into your router making sure the end mill is very tightly secured in the collet to prevent it from creeping out while milling. Adjust the cutting depth by using the depth gauge on the Rear Shelf Pocket Template #06 labeled MAIN. Adjust the depth of the router so the tip of the end mill is just below the first hash mark on the template.



COMPLETION INSTRUCTIONS: STEP 9

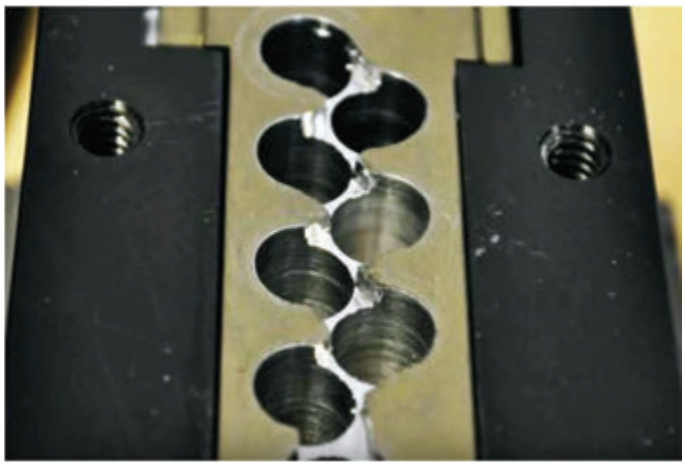
Tools & Equipment Needed:

- 1/4" End Mill Bit - #11
- Router or laminate router with 1/4" collet (Porter Cable Model PCE6430 or Rigid Router Model 24012 recommended)
- Rear Shelf Pocket Template - #06 - labeled MAIN
- Bench Vise
- Cutting / Tapping Fluid (Oatey's or Magic Tap)
- Shop Vac
- Eye Protection
- Hearing Protection

WARNING: Always turn off the router and wait for it to completely stop rotating before removing or inserting it into the jig or lower. Failure to do so may damage your lower and jig or cause premature failure of the 1/4" End Mill Bit #11.

PROCEED: Insert the lower and jig into your bench vise to hold it while you begin the milling process. With the router off, insert the end-mill into the center of the furthest hole from you. The tip of the end-mill should be just below the top of the 3/8" hole you drilled out earlier.

Maintain a firm grip on the router when turning it on. For your first cutting pass, only focus on removing material between the holes using a zig-zag pattern until all the holes are connected. Take your time and go slow. This first pass will take you 1-2 minutes. Do not change the depth of the end-mill yet.



COMPLETION INSTRUCTIONS: STEP 10

Tools & Equipment Needed:

- 1/4" End Mill Bit - #11
- Router or laminate router with 1/4" collet (Porter Cable Model PCE6430 or Rigid
- Router Model 24012 recommended)
- Rear Shelf Pocket Template - #06 - labeled MAIN
- Bench Vise
- Cutting / Tapping Fluid (Oatey's or Magic Tap)
- Shop Vac
- Eye Protection
- Hearing Protection

PROCEED: Once all of the holes are connected you can begin milling out the rest of the area. Start from the middle and work outwards in a clockwise direction. Keep doing this until the end mill shank (the smooth portion of the 1/4" End Mill Bit - #11) is riding against the side of the Trigger Pocket Template #05 and Template Spacer #04. Our 1/4" End Mill Bit is custom made with super short 3/4" flutes for optimal performance so that the cutting surface never touches the jig. Once the first pass is complete, move the router to the middle of the pocket and turn it off before lifting it out of the jig. Wait until the end mill stops moving before lifting it out of the jig. Clear chips frequently with your Shop-Vac to avoid re-cutting chips. Keep the end mill lubricated when milling.

COMPLETION INSTRUCTIONS: STEP 11

Tools & Equipment Needed:

- 1/4" End Mill Bit - #11
- Router or laminate router with 1/4" collet (Porter Cable Model PCE6430 or Rigid Router Model 24012 recommended)
- Rear Shelf Pocket Template - #06 - labeled MAIN
- Bench Vise
- Cutting / Tapping Fluid (Oatey's or Magic Tap)
- Shop Vac
- Eye Protection
- Hearing Protection

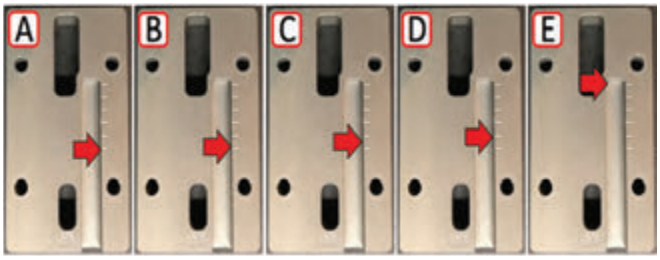
PROCEED: Once all of the holes are connected you can begin milling out the rest of the area. Start from the middle and work outwards in a clockwise direction. Keep doing this until the end mill shank (the smooth portion of the 1/4" End Mill Bit - #11) is riding against the side of the Trigger Pocket Template #05 and Template Spacer #04. Our 1/4" End Mill Bit is custom made with super short 3/4" flutes for optimal performance so that the cutting surface never touches the jig. Once the first pass is complete, move the router to the middle of the pocket and turn it off before lifting it out of the jig. Wait until the end mill stops moving before lifting it out of the jig. Clear chips frequently with your Shop-Vac to avoid re-cutting chips. Keep the end mill lubricated when milling.

⚠WARNING: On the last two passes before getting to the bottom, the end mill will not have a pre-drilled hole to start in. To prevent the end mill from jerking when powering up the router, hover the router slightly above the template and power up the router without the end mill touching the lower. Then, very slowly, lower the router while maintaining a firm grip on the router. For the final pass, the end mill depth is set so the end mill is past the last notch and touching the top of the depth gauge. When this process is complete, you'll have the main trigger pocket milled out and two rear shelf holes drilled out. At this point, you will see a threaded hole at the bottom of your trigger pocket for the pistol grip to thread into. This is normal and expected.

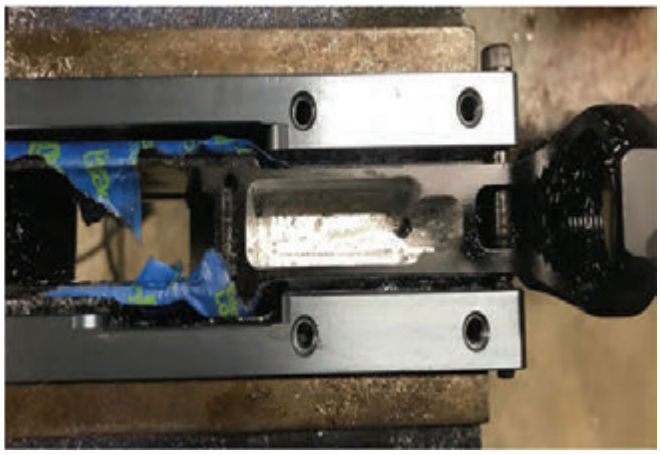
PRO TIP: Keep the jig and the lower clear of chips during the milling process for best results. Go slowly and adjust the depth back a 1/4 notch if necessary if you hear excessive noise or feel excessive chatter. Take your time and don't try to rush the milling process. To complete milling the entire depth of the trigger pocket, you will need 45 minutes to an hour of time.

SPECIAL NOTES: If your lower came with the rear shelf area milled out, you do not need the two rear holes drilled and milled as shown in these instructions (Step #5 and Step #12). The front trigger pocket does not need to be connected to the rear shelf / lug pocket

PROCEED: Continue taking deeper cuts by adjusting the end mill using the depth gauge on the Rear Shelf Pocket Template #06 labeled MAIN. For 6061 lowers increase the depth of the end mill incrementally 1/4 to 1/3 notch for each pass until you bottom out the end mill inside the depth gauge. For 7075 lowers increase the depth by only 1/6 to 1/4 notch. Each time, start inside one of the 3/8" holes and work from the middle out in a clockwise direction.



Each image in A-D shows a 1/4 notch or hash mark incremental move. For the final pass, set depth to very top edge of gauge as shown in E.)



COMPLETION INSTRUCTIONS: STEP 12

Tools & Equipment Needed:

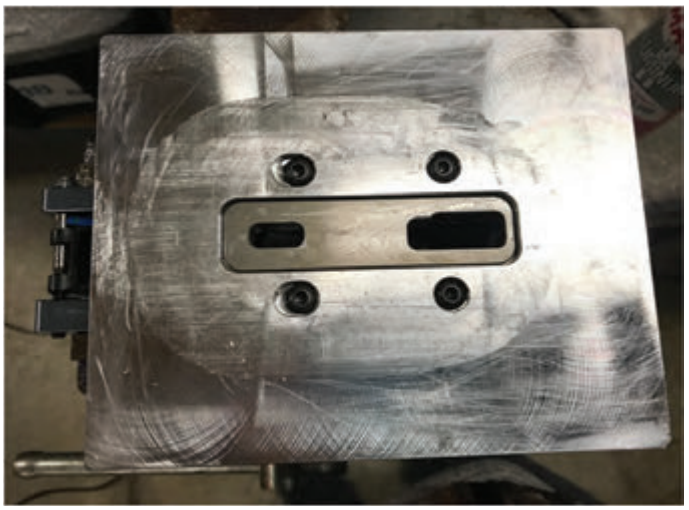
- Trigger Pocket Template - #05 - labeled REAR
- Rear Shelf Pocket Template - #06 - labeled MAIN
- Router Base Support Plate - #07
- Template Bolts #09
- 1/8" Allen Wrench
- Bench Vise

IMPORTANT: You MUST remove the top rear Jig Bolt #08 so you do not mill through it. Removing the jig bolt completely can cause the lower to slip downward if the vise is not tight enough. Re-insert and thread the tip of the bolt 7/8" through the top left jig wall threaded hole. The tip will go into the edge of the lower and keep the lower from slipping without getting in the way of the end mill.

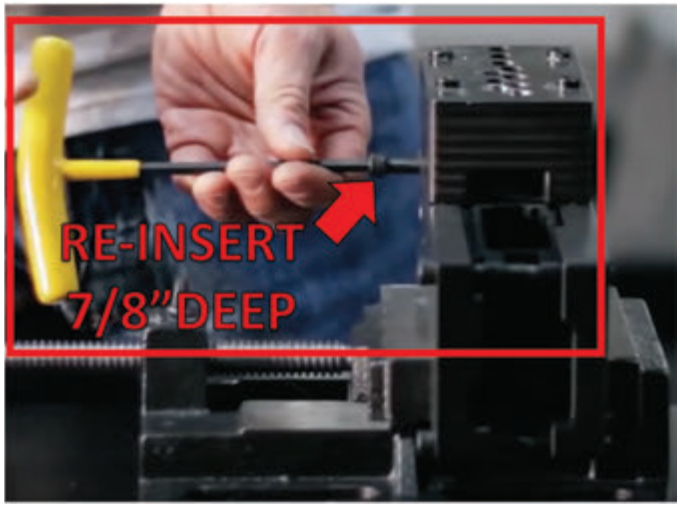
SPECIAL NOTES: If you purchased your 80% lower receiver from 80% Lowers (80-lower.com), you may skip steps 12 and 13 and go directly to step 14, as your lower receiver already has perfectly mil-spec rear shelf. If you purchased your 80% lower receiver elsewhere, but it already has the rear shelf lug area milled out, you may also skip steps 12 and 13 and go directly to step 14.

If your lower does not have the rear shelf already milled out, please proceed with this step and step 13.

PROCEED: Remove the Router Base Support Plate #7 and the Trigger Pocket Template #5. Set the Rear Shelf Template #6 on top of the Template Spacer #4 so that the longer hole is closer to the buffer tube hole, and the raised lip of the template is facing up. Next, place the Router Base Support Plate #7 over the lip of the template with the recessed bolt holes facing up. Attach the plate using the Template Bolts #9.



Tighten the bolts to the jig walls in an alternating ("X" shape) pattern. Secure the assembled jig in the vise with the buffer tube hole facing away from you.



COMPLETION INSTRUCTIONS: STEP 13

Tools & Equipment Needed:

- 1/4" End Mill Bit - #11
- Router or laminate router with 1/4" collet (Porter Cable Model PCE6430 or Rigid Router Model 24012 recommended)
- Trigger Pocket Template - #05 - labeled REAR
- Bench Vise
- Cutting / Tapping Fluid (Oatey's or Magic Tap)
- Shop Vac
- Eye Protection
- Hearing Protection

WARNING: Do NOT mill out the smaller hole (trigger slot) of the Rear Shelf Template #6 during this step. If you removed or loosened the top rear Jig Bolt in step 12, be sure to re-insert and tighten the jig bolt before moving to the next step.

SPECIAL NOTES: If you purchased your 80% lower receiver from 80-Lower.com, you may skip steps 12 and 13 and go directly to step 14, as your lower receiver already has perfectly mil-spec rear shelf. If you purchased your 80% lower receiver elsewhere, but it already has the rear shelf lug area milled out, you may also skip steps 12 and 13 and go directly to step 14.

If your lower does not have the rear shelf already milled out, please proceed with this step.

PROCEED: Adjust the end-mill to the appropriate length to mill the rear shelf by using the depth gauge on the Trigger Pocket Template #05 labeled REAR.

Adjust your router depth so the end mill is touching the first notch / hash mark on the template depth gauge. Use the same milling process of connecting the holes and milling as outlined in Steps 9, 10 and 11.

COMPLETION INSTRUCTIONS: STEP 14

Tools & Equipment Needed:

- Drill press or Hand drill with 3/8 chuck
- 19/64" Drill Bit - #15
- Trigger Pocket Template - #05
- Trigger Milling Bolts - #10
- 4" Drill Press Vise
- Cutting / Tapping Fluid (Oatey's or Magic Tap)
- Shop Vac
- Eye Protection

WARNING: Use very little downward force when drilling the pilot hole. It is possible to drill past the bottom of the trigger area and into the trigger guard below if pressing too hard. Make sure to go slowly and control the downward pressure at all times.

PRO-TIP: If you are using a hand drill, it's important that you drill the pilot hole very straight. Do not drill at an angle or the pilot hole may drift outside the boundary of the trigger slot template. Use a punch, if available, to further prevent the drill bit from walking when you start drilling. Use very little downward force and go slowly when drilling the pilot hole to prevent the drill bit from walking.

PROCEED: To complete the trigger slot remove all the top plates and the template spacer. Clear away chips from the lower and side plates. Re-insert and tighten the Rear Jig Bolt #08.

Place the Trigger Pocket Template #05 on the jig with the depth gauge facing down and the trigger pilot hole facing towards the buffer tube. Attach the Trigger Pocket Template #05 to the jig side plates, inserting only the 2 short Trigger Milling Bolts #10 into the two jig wall screw holes furthest away from the buffer tube to secure the template. Secure the Jig into the vise. Using the 19/64" Drill Bit #15, slowly drill the pilot hole.

COMPLETION INSTRUCTIONS: STEP 15

Tools & Equipment Needed:

- 1/4" End Mill Bit - #11
- Router or laminate router with 1/4" collet (Porter Cable Model PCE6430 or Rigid Router
- Model 24012 recommended)
- Rear Shelf Pocket Template - #06
- Router Base Support Plate - #07
- Bench Vise
- Cutting / Tapping Fluid (Oatey's or Magic Tap)
- Shop Vac
- Eye Protection
- Hearing Protection

PRO TIP: Only if using a full sized router with a large base, insert the Template Spacer #04 between the Pocket Template #06 and the jig wall, and use 2 of the longer 1.75" Template Bolts #9 instead of the short Trigger Milling Bolts. This will elevate the Router Support plate to allow a larger router base to clear the buffer tube.

PROCEED: To mill the trigger slot, remove the Trigger Pocket Template #05 and set the Rear Shelf Pocket Template #06 on the jig, with the raised lip facing up and the trigger slot towards the buffer tube.

Secure the Router Base Support Plate #07 on top of the template using only the 2 short Trigger Milling Bolts #10. Only use 2 bolts to attach the template and base plate. Insert the screws into the 2 holes on the base plate closest to the buffer tube, using the 2 screw holes on the jig side plates furthest from the buffer tube. The smaller trigger slot should be located closest to the buffer tube.

The larger slot over the magazine well is not used. Adjust the router depth setting so the end mill is slightly inside the drilled out trigger slot pilot hole. With the end mill centered in the hole, turn on the router while keeping a firm grip on the router. Mill back and forth in a clockwise motion. Turn off the router and increase the depth by 1/6 to 1/4 notch and repeat the process. Continue until the trigger slot is fully milled out.

COMPLETION INSTRUCTIONS: STEP 16

Tools & Equipment Needed:

- Drill press or Hand drill with 3/8 chuck
- 5/32" Drill Bit - #14
- 3/8" Drill Bit - #13
- 4" Drill Press Vise
- Cutting / Tapping Fluid (Oatey's or Magic Tap)
- Shop Vac
- Eye Protection

WARNING: If using a hand drill, make sure you drill straight down. Do not lean at any angle. Insert the 5/32" Drill Bit #14 into your drill press or hand drill and drill out the trigger and hammer pin holes on the right side. Do NOT drill all the way through from one plate to the other. Drill halfway, flip the jig over and drill halfway to connect. Measuring from the top surface of the jig side plate, do not drill deeper than 1.25" to prevent drilling into the opposite wall of the lower.

PRO TIP: To ensure proper function, use a paperclip to clear out any chips from the safety selector detent hole. It's common to have chips stuck in the selector detent hole which will interfere with the function of the safety selector. These chips are not always easy to see. It's a good idea to push a paperclip through the safety selector detent hole even if you don't see any chips in there to clear out any hidden chips.

PROCEED: Remove all of the template top plates to drill the trigger, hammer and safety selector holes. Clear out chips and reposition the jig and lower on its side. Because the bolts holding the jig together may stick out of the jig side plates, use spacers (such as the template plates) to raise the jig assembly so that it is lying level. Secure the jig on its side with a vice or clamp.

Next, install the 3/8" Drill Bit #13 and drill out the safety selector hole on the right side.

Flip the jig over and do the same for the left side.

Clean Up

During milling, it's possible for small chips to rub between the jig plates and the lower. Aluminum residue from the chips can rub onto the anodized finish of the lower. The anodized finish on the lower is much harder than the raw aluminum chips. You can use a sponge with a mildly abrasive green Scotch Pad to remove marks left on the lower by the chips. Dip the sponge in soapy water and gently rub the lower to remove any marks. If you milled a raw lower, do not apply a finish coat to the lower until after you have installed your lower parts kit and performed a function test. If you milled out an anodized or Cerakoted lower, it is not necessary to apply a finish to the milled raw aluminum area that you have just completed.

Need Help?

Our team of builders are here ready to help you when need it.
Call us, chat us or email us:
317-682-0012
www.80-lower.com
info@80-lower.com

What's Next?

Purchase and install your lower parts kit or lower assembly! Don't have them yet? Here's a coupon code to use on purchasing them! Visit www.80-lower.com, select your lower parts kit from the following, and enter coupon code **"BUILDCOMPLETE"** to receive $10 off your order.

Premium Lower Parts Kit
Classic Lower Parts Kit
Classic Lower Parts Kit (CA Compliant)

Congrats on completing your very own AR-15 Lower Receiver!