

EASY JIG® GEN 2 AR-15 / AR-9 USER MANUAL

Ver. 1.6

WARNINGS AND SAFETY NOTICE

READ ALL INSTRUCTIONS AND WARNINGS BEFORE USING THE PRODUCT. DO NOT USE THIS PRODUCT IF YOU DO NOT UNDERSTAND THE INSTRUCTIONS AND WARNINGS. FAILURE TO CLOSELY READ AND COMPLY WITH THE INSTRUCTIONS AND WARNINGS MAY RESULT IN DAMAGE TO PROPERTY, SERIOUS INJURY, OR DEATH. DO NOT USE THIS PRODUCT IF YOU CANNOT LAWFULLY PURCHASE A FIREARM.

This manual should always accompany your jig and be transferred with it upon change of ownership. A copy of the manual can be downloaded for free from www.80PercentArms.com/pages/manuals or by contacting 80% Arms.

Using this product on an 80% lower will convert the 80% lower into a firearm. Even if the 80% lower is not fully milled to completion, it will still be legally considered a firearm. It is your responsibility to comply with all federal, state and local laws and regulations regarding the ownership, possession, and transportation of a firearm. Certain configurations of the lower created by the end-user with an upper may subject the firearm to classification under the National Firearms Act, which imposes registration, taxes, and other requirements on the owners of such firearms.

Working with power tools and cutting metal is inherently dangerous. Use safety equipment and follow all safety instructions provided by the power tool's manufacturer. By using this product you agree that you are aware of these risks, and agree not to hold 80 Percent Arms liable for any injuries or property damage that may occur through the use of our products. Proceed at your own risk.

80 Percent Arms warns all users of our products to exercise extreme caution in the handling of any firearm. Because any firearm is potentially dangerous, the user should successfully complete a recognized firearms safety course before handling or employing any firearm. Before attaching your finished lower receiver to an upper receiver, ensure that the safety and trigger mechanisms are functioning properly. This must be done **before** the lower receiver is attached to an upper receiver or made capable of firing. If you are not an experienced gunsmith, please take your completed lower receiver to a licensed gunsmith who can ensure that it is functioning properly, and that the safety is in good working order. Remember, you are the most important safety device when it comes to the safe handling of your firearms. By using our product you further agree that 80 Percent Arms will not be held liable for any personal injury, death or property damage that results from the use of any firearm created with our products. If you do not agree to these terms, please do not use this product, and contact us to return your unused product for a refund.

Under no circumstances shall 80 Percent Arms be responsible for incidental or consequential damages with respect to economic loss, injury, death or property damage, whether as a result of breach of warranty, negligence or other-wise. Some states do not allow the exclusion or limitation of incidental or consequential damages, so the above limitation or exclusion may not apply to you.

IMPORTANT POWER TOOLS SAFETY NOTICE

EYE AND HEARING PROTECTION MUST BE WORN AT ALL TIMES WHEN OPERATING ANY POWER TOOLS WITH YOUR EASY JIG GEN 2. YOU MUST WEAR IMPACT RESISTANT ANSI Z87.1 RATED SAFETY GOGGLES AT ALL TIMES TO PROTECT YOUR EYES FROM FLYING DEBRIS OR CHIPS WHILE DRILLING, MILLING, OR CLEANING UP. DO NOT WEAR OPEN STYLE SAFETY GLASSES AS THEY DO NOT PROVIDE ADEQUATE PROTECTION FROM FLYING DEBRIS OR CHIPS. NEVER USE COMPRESSED AIR TO BLOW OR CLEAR METAL CHIPS. Examples of suitable eye protection include 3M Virtua CCS Protective Eyewear with foam gasket and DeWalt DPG82 goggles.

ASSEMBLY AND DESIGN

The Easy Jig Gen 2 AR-15 / AR-9 is the ultimate 80% lower milling jig in terms of quality, speed, precision, durability and ease of use for finishing AR-15 and AR-9 lowers. Milling speed is extremely fast with our patented router milling technology. It's the only AR-15 jig you will ever need, and it's backed up by the industry leader in router milling technology.

The Easy Jig Gen 2 AR-15 / AR-9 is the most foolproof system for milling all AR-15 and AR-9 lowers. A minimal amount of hardware is needed. The bolts used in the assembly of the jig are standard 1/4"-20 x 1/2" bolts and use the included 3/32" hex key for assembly. Once the jig is assembled, it does not need to be disassembled to remove or insert most lowers.

ROUTER INFORMATION

The Easy Jig Gen 2 systems requires a router for milling lowers. Most compact routers with a 1/4" collet can be used with the Easy Jig® Gen 2. They may be fixed or variable speed. A number of full-size fixed base routers can also be used with the optional full-size router attachment plate.

The Easy Jig Gen 2 systems support the largest number of routers of any system. Some routers are better than others with the main difference being the ease, accuracy, and speed of adjusting the milling depth. Certain routers have limited travel and require a specific set up. Please review Appendix A in the back of the manual for your specific router information before starting.

END MILL AND DRILL BITS INFORMATION

The end mill and drill bits are not included with the Easy Jig Gen 2 system. The drill bits are available at your local hardware stores; however, the required 5/16" end mill with a reduced 1/4" cut down shank is custom designed for the Easy Jig Gen 2 system. The end mill is available from 80% Arms and authorized 80% Arms dealers. The drill bits needed are 21/64", 3/8", and 5/32" bits. An 80% Arms Easy Jig Gen 2 For your convenience, an 80% Arms Tool Kit is available with our long lasting, made in USA end mill, and all the required premium quality drill bits.

INCLUDED PARTS LIST

- #1: Jig Plate (1pc)
- #2: End Mill Alignment Tool (1pc)
- #3: Buffer Screw (1pc)
- #4: Drill Block / Trigger Template (1pc)
- #5: Router Attachment Plate (1pc)
- #5A: Bushing Sub Assembly (1pc)
- #6: Right AR-15 / .308 Side Plate (1pc)
- #7: Left AR-15 / .308 Side Plate (1pc)
- #8: AR-15 Short & Long Pin Set (1pc)
- #9: Jig Bolt Set 1/2" (5pcs) & 2.25" (1pc)
- #10: M4x0.7mm x10mm Screws (4 pcs)
- #11: Hex Key 3/16" (1pc)
- #12: Bubble Level (1pc)

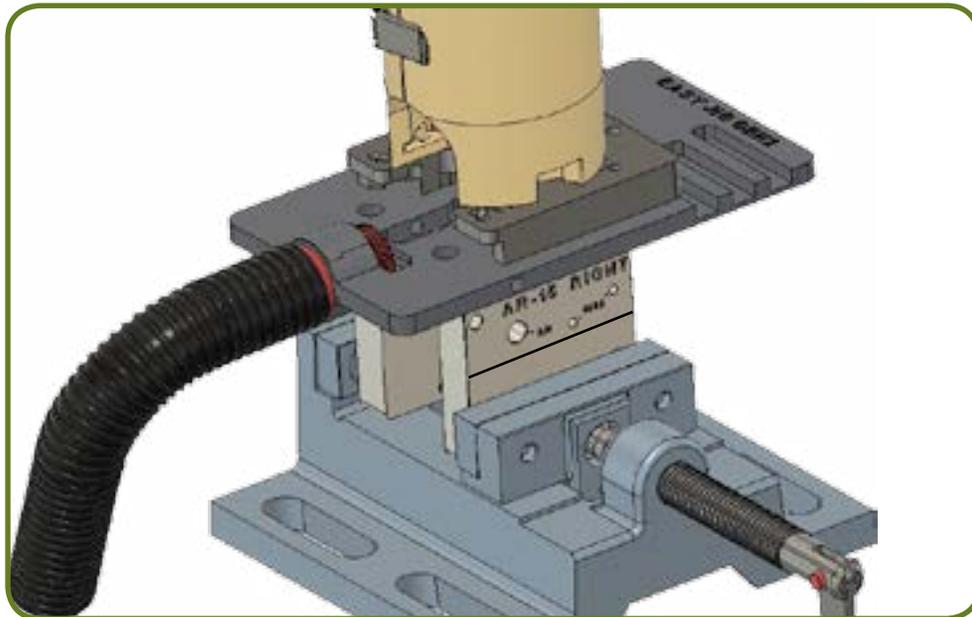
OTHER REQUIRED ITEMS

- Compatible Router
- Hand Drill or Drill Press
- Table Vice or Table Clamps
- Lubricant for Milling and Drilling
- Eye and Hearing Protection
- Screwdriver for Router Base Screws
- 21/64" Drill Bit
- 3/8" Drill Bit
- 5/32" Drill Bit
- 80% Arms Custom 5/16" End Mill

SHOP VAC CHIP EXTRACTION SYSTEM

The Buffer Screw on the Easy Jig Gen 2 is designed to quickly attach to a standard 1.25" Shop-Vac hose. Simply slide the vacuum hose over the buffer screw to catch chips when milling.

For best chip extraction, seal the gaps between the lower and the side plates with painter's tape. Using a thin lubricant when milling, instead of a thicker alternative, further helps extract the chips by preventing the chips from clumping together in the lower. Improve visibility, reduce clean up time, and get a better quality finish by not cutting through old chips using our exclusive chip extraction system.



INCLUDED PARTS



#6



#7



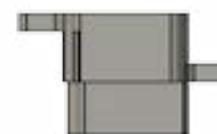
#2



#3



#4



#8



#9



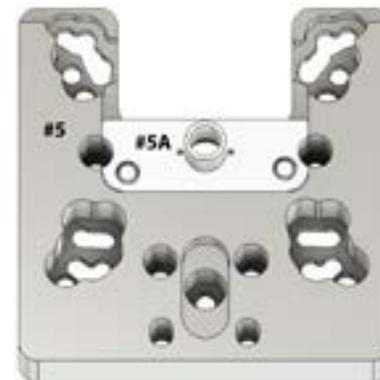
#10



#11



#12

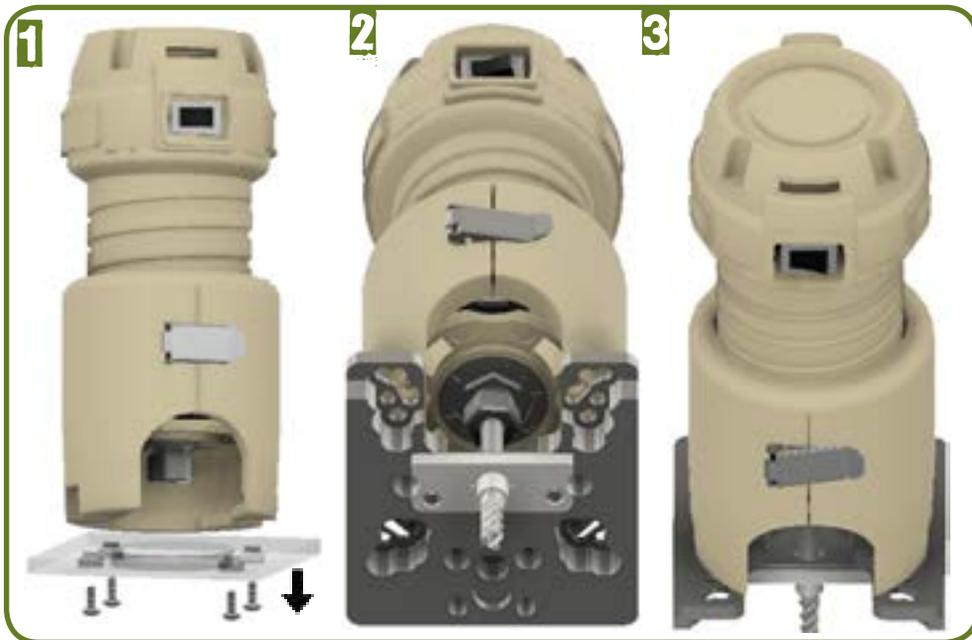


STEP 1 – READ THE MANUAL

Read this manual from start to finish before using this product to be familiar with all the steps required to complete the lower. Check our website to make sure you have the most up to date manual. If you have any questions after reading the manual, please contact us for assistance. We also recommend watching our video tutorials before milling your lower. Additional resources including online manuals are available at our website: www.80PercentArms.com/pages/manuals

STEP 2 – SECURE THE ROUTER ATTACHMENT PLATE

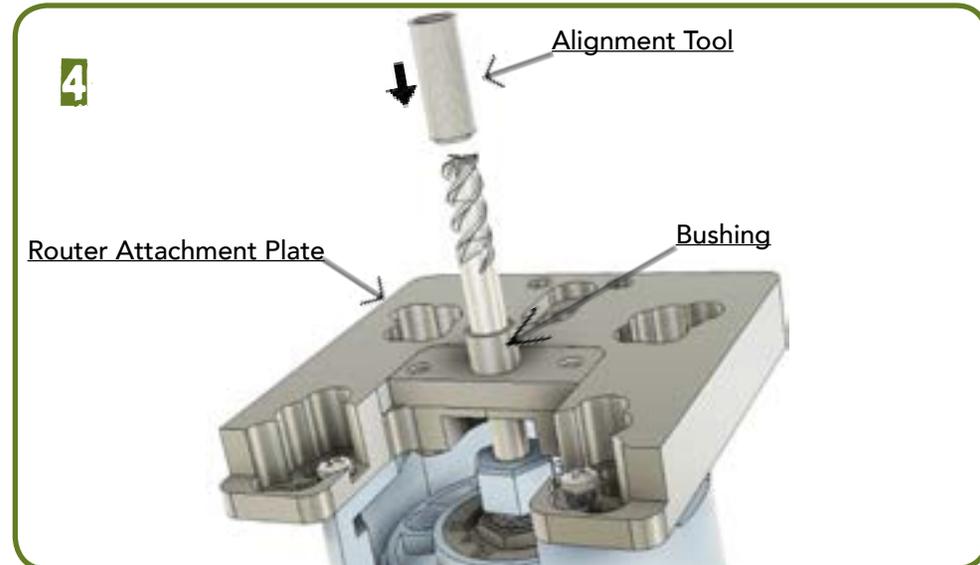
Remove the sub base that came attached to the router (Fig. 1). Firmly secure the end mill into the router and slide on the **#5 Router Attachment Plate** with the bushing pointed away from the router (Fig. 2-3). The cutout on the router attachment plate should face the front of the router. Line up the screw hole openings on the router attachment plate with matching screw holes on the router. Select the holes that line up best with the router attachment plate keeping the bushing centered on the end mill without putting any pressure against the end mill.



Reuse the router's screws to loosely attach the router attachment plate. If the router came with tapered screws, replace them with screws that have a flat inner face. The metric M4-0.7 pan head screws provided with your jig will fit most compact routers. Make sure the thread pitch matches that of the router before attempting to use the screws. Do not tighten the screws at this time. **Do not use screws which have a conical tapering inner face with the router attachment plate.**



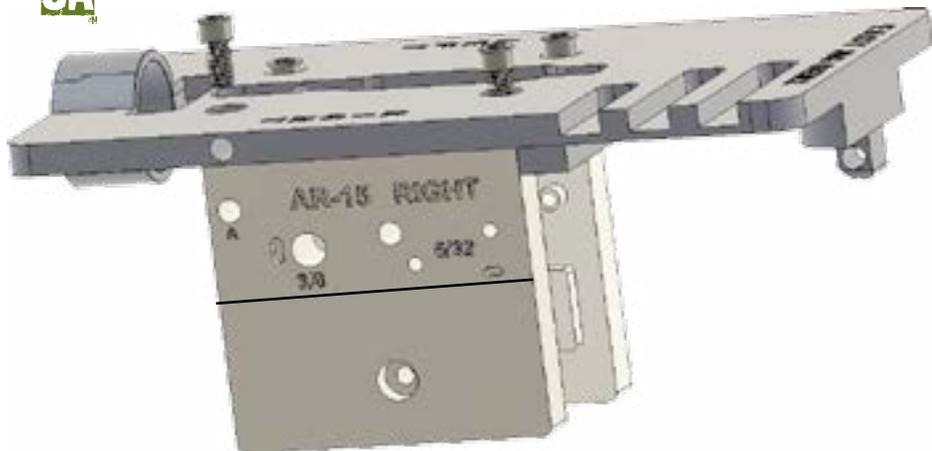
With the router unplugged, and the router attachment plate screws loosely attached, slide the **#14 End Mill Alignment Tool** over the end mill, **tapered end first** (Fig. 4). Twist and press the alignment tool against the bushing (Fig. 5). While firmly holding the alignment tool down against the bushing, tighten the screws to secure the router attachment plate to the router. **Remove the alignment tool.** The router assembly is now aligned and ready for use. The alignment process does not need to be repeated when the end mill is removed or replaced. Repeat the alignment process if the router attachment plate is removed from the router.



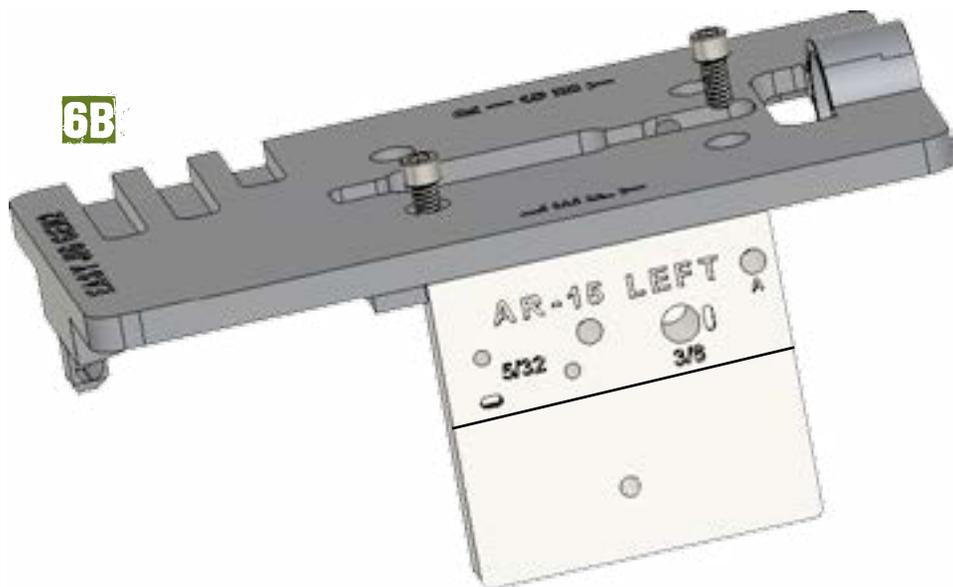
STEP 3 – ATTACH THE JIG SIDE PLATES

For optimal results, please follow the jig assembly order outlined in this manual. To mill an AR-15 or AR-9 lower, attach the **#6 Right Side Plate** to the **#1 Jig Plate** on the right side that says “RIGHT” using two 1/2 inch bolts (Fig. 6A). Only finger tighten the bolts. Attach the left **#7 Left Side Plate** to the jig plate on the left side that says “LEFT” using two 1/2 inch bolts (Fig. 6B). Only finger tighten the bolts.

6A



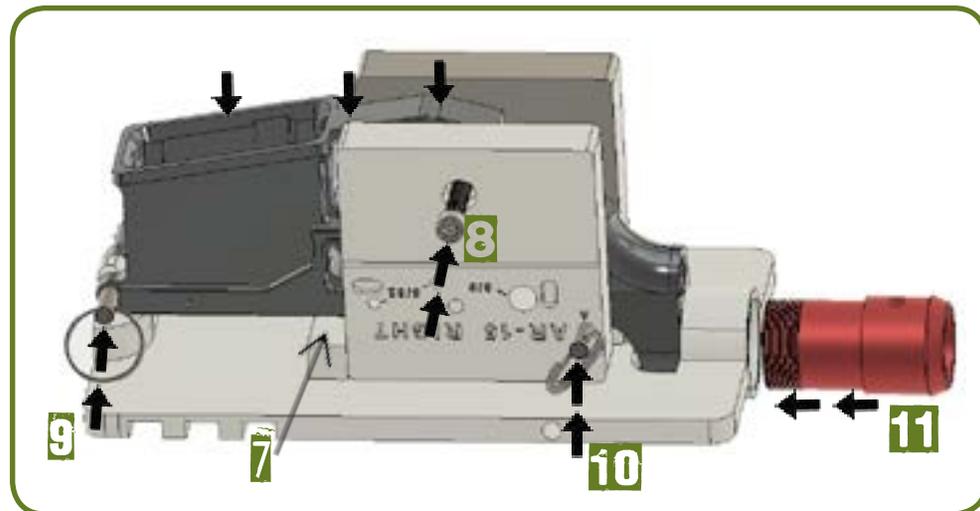
6B



STEP 4 – SECURE THE LOWER INTO THE JIG

The center alignment bar allows precision alignment of the side plates and lowers to the jig. Due to common manufacturing and design variations in lowers, some lowers can have a loose fit or tight fit in uppers and jigs. To ensure the best possible alignment of all lowers, if needed, stick 1 to 3 strips of blue painter’s tape across the top of the center alignment bar that mates with the lower (Arrow 7). The tape is for the lower to fit snug against the bar when assembled in the jig. Remove 1 to 3 strips of the tape if the tape makes the fit in the jig too tight to insert the pins or to tighten the buffer screw during assembly.

Turn the jig upside down and slide the lower into the jig as shown below. Some extra thick polymer lowers may require loosening or removing a side plate to insert or remove the lower. For AR-9 lowers, follow the same directions as for AR-15 lowers. Use the short 1/4” quick release pin to secure the front of the lower to the jig by inserting the pin through the lower’s and the jig’s front pivot pin holes (Arrow 9). Use the long 1/4” pin to secure the lower through the rear alignment holes marked “A” on the side plates (Arrow 10). Insert the #3 Buffer Screw into the buffer screw support and thread it into the lower’s buffer extension only 3 full turns (Arrow 11). The jig side plates, buffer screw, and the lower at this point are not tight in the jig, and the side plates can be jigged.

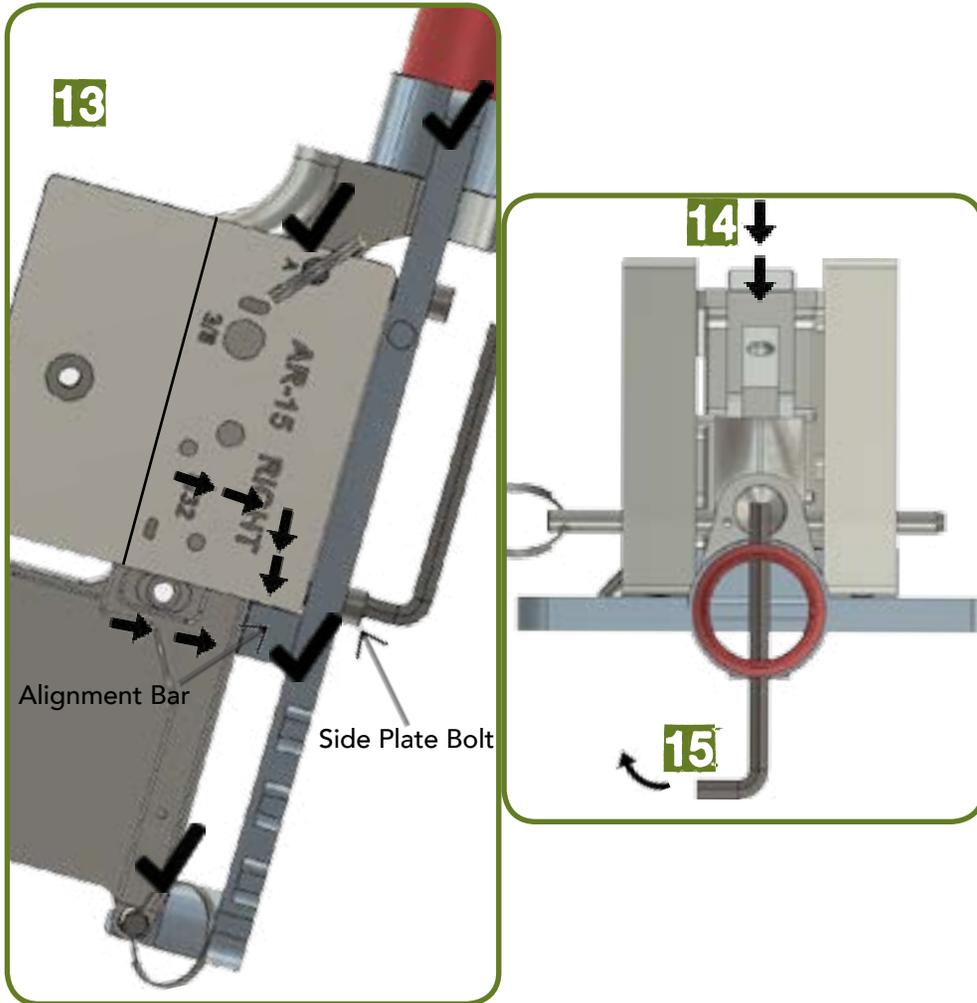


Screw in the 2.5” fully threaded bolt through the side plates **before the side plates are fully tightened**. Make sure both side plates are level and perpendicular to the main jig plate when threading the bolt into the second side plate. The bolt goes into the countersunk hole on the side plate and threads all the way through the first side plate and into the opposing side plate (Arrow 8). This bolt prevents damage to the jig when the side plates are squeezed in a vice. The bolt should thread easily into the second plate. If the bolt does not thread easily into the second plate, stop and do not force the bolt. Back out the bolt, jiggle the side plates to reposition them, and try again.

Tilt the jig assembly at an angle onto it's front end to tighten the side plates (Fig. 13). Tighten the side plate bolts while pressing and holding the side plates flush against the center alignment bar to ensure perfect square alignment of the side plates.

Fully hand tighten the buffer screw (Arrow 11) while pressing the lower down flush against the center alignment bar (Arrow 14). Pressing the lower flush against the alignment bar ensures that the lower is square in the jig. Once the buffer screw is hand tight, insert the provided 3/16" Hex Wrench through the two holes in the buffer screw. While holding the lower down flush against the alignment bar, tighten the buffer screw using the extra grip provided by the hex wrench to fully lock the lower into position for milling (Arrow 15).

With four alignment points shown with the check marks in Fig 13, (front, center alignment bar, rear alignment pin, and buffer extension) you will get consistent accuracy and optimal results each and every time.

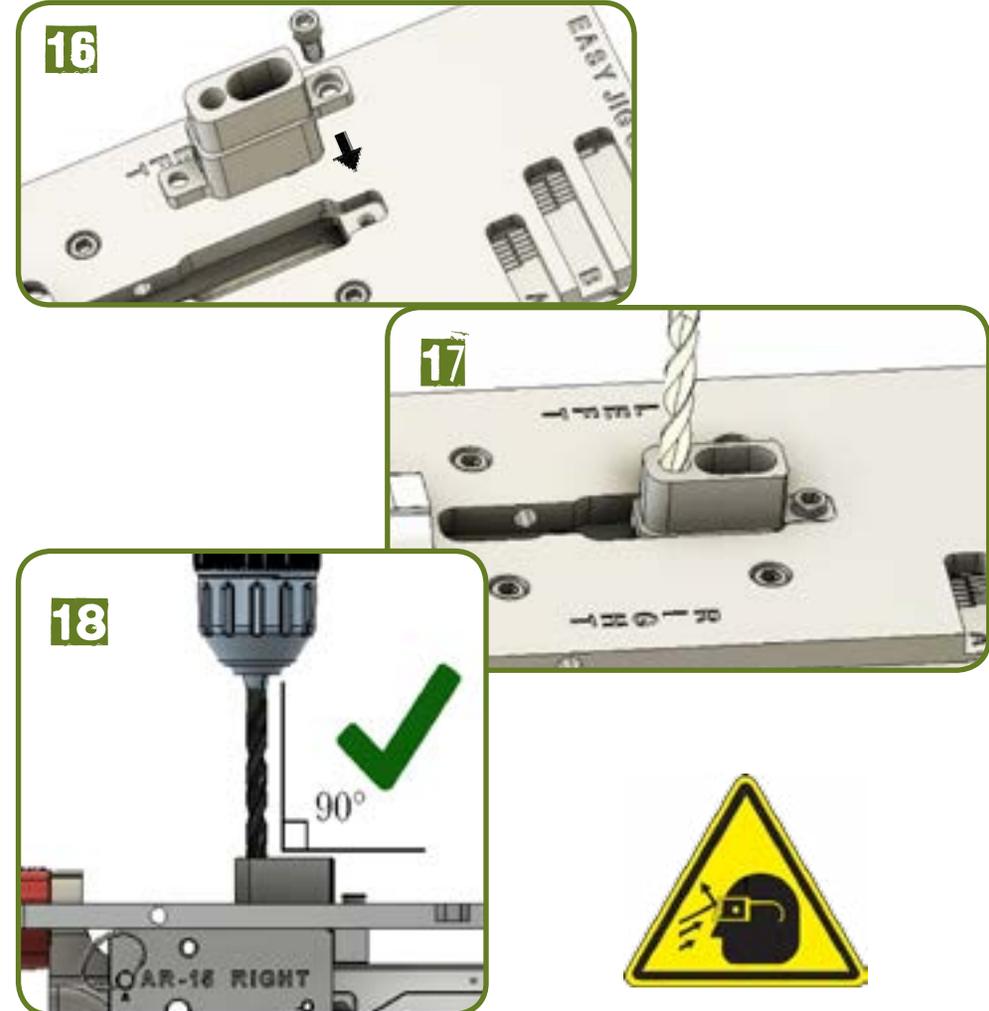


STEP 5 – DRILLING THE PILOT HOLE

Insert the #4 Drill Block into the jig with the small round pilot hole facing the buffer extension and the oval trigger slot facing the front of the jig. Note that the bottom portion of the drill block is wider than the top. Screw down the drill block using a single 1/2" bolt that goes through the countersunk hole in the drill block tab closest to the front of the jig (Fig. 16-17). **When tightened, this bolt will not be fully flush.**

The hardened steel, extra tall drill block, helps prevent drilling outside the perimeter of the trigger slot when using a hand drill; **however, improper angled drilling can prematurely wear the drill block or may result in the bit passing the edge of the trigger slot perimeter on the lower, causing an oblong trigger slot.** Be sure to drill perpendicular to the jig plate at all times (Fig. 18).

DO NOT USE A CORDLESS DRILL. Most do not have sufficient power to properly drill through the lower and may bind resulting in possible damage to the jig or lower.



Before drilling the pilot hole, use the included **#13 Bubble Level** to ensure all of your work area surfaces are level. Make sure the jig is level in the vice or clamp. We recommend using a hand drill with a built-in bubble level to enable you to check that you are not drilling at any angle. For optimal results, and longest jig life, a drill press is recommended, but not required. **Do not use a cordless hand drill.**

Apply lubricant into the drill block hole and to the drill bit. **Insert the drill bit fully into the drill block until it touches the lower before starting the drill.** Using a mechanic's or jobber length (~ 4" long) 21/64" drill bit, drill a hole all the way through the lower. (The 80% Arms premium 21/64" drill bit is recommended for deep hole drilling of the pilot hole.) If the lower has an integrated trigger guard, and you are using a longer drill bit, use caution to not drill into the trigger guard.

DO NOT DRILL AT FULL SPEED OR PRESS TOO HARD. For most hand drills a good speed for aluminum is the medium speed setting or approximately 50% of the drill's maximum speed. This prevents overheating which can dull drill bits, and unnecessary wear to the drill block. Periodically lift the drill bit partially up in the drill block while drilling if cutting speed slows down to clear chips from the drill bit.

Remove the drill block after drilling the pilot hole. Remove the long 1/4" quick-release alignment pin from the jig. Retighten the buffer screw again. If the long quick-release pin is too tight to remove, slightly loosen the buffer screw and pull out the pin. Retighten the buffer screw again. **Remember to press and hold the lower down flush against the alignment bar whenever tightening the buffer screw.**

DRILL PRESS TIP: The extra tall drill block is designed to provide enhanced drill bit stability when used with a hand drill. It may be too tall for the travel of smaller drill presses. If your drill press does not have enough travel to drill through the drill block and lower, raise the drill press table so the drill bit is almost all the way in the drill block before starting drilling. After drilling the hole, lower the drill press table to remove the jig from the drill press.

STEP 6 – MILLING THE TRIGGER POCKET

The hashmarks on the depth gauges A, B & C are only a guide. You may need to go less than 1 hash mark at a time depending on the quality of your router, your end mill, and the alloy of the lower being milled. **Never exceed more than 1 hash mark at a time. 7075 alloy lowers should be milled using half a hash mark or less due to the hardness of the aluminum.** As milling depth increases, it may be necessary to take shallower cuts to avoid chatter. We recommend no more than 1 hash mark when milling gauge "A" and no more than half a hash mark when milling depth gauge "B" for 6061 alloy lowers.

The end mill should cut smoothly when milling without vibration or chatter. Excessive vibration and noise is typically a sign that the end mill is set too deep, and / or the operator is moving the router too fast. Reduce the milling depth and move slower until milling is smooth and quiet again. Overly aggressive milling will cause chatter, a rough finish, and can cause your router to jump causing damage to the jig and lower.

With a variable speed router best results are typically achieved at higher speed settings. Start at 75% of the maximum speed setting and work up until you find the best speed setting for your setup.

Make sure the depth adjustment mechanism for your router is tight before its first use. Some routers come from the factory with the latch set too loose and will need to be tightened up before using to prevent the depth from slipping while milling.

Always keep the end mill and trigger pocket area lubricated when milling. A light spray lubricant such as WD-40 applied before starting each new pass (hash mark) is adequate.

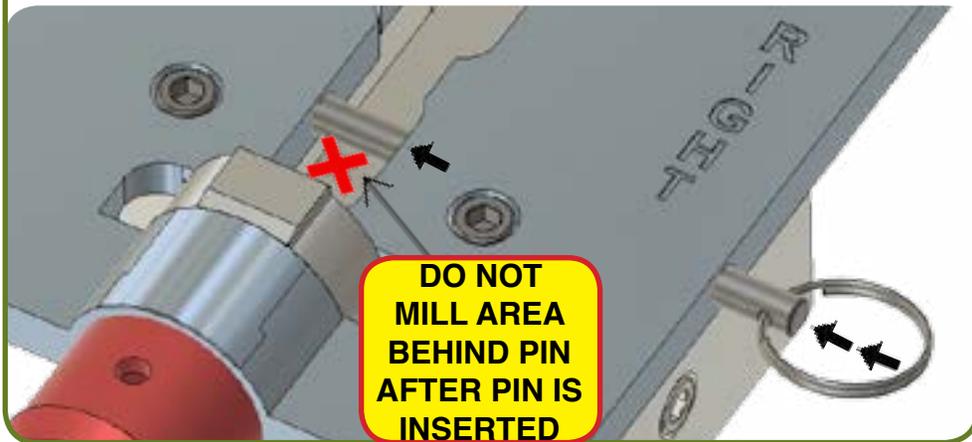
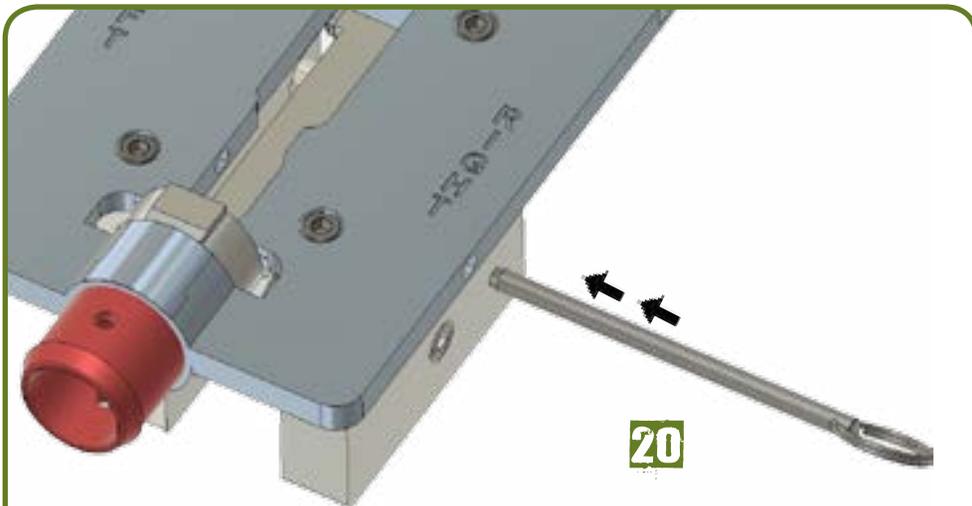
Make sure the end mill is very tight in the collet. Natural milling forces will pull down on the end mill. If the end mill comes loose during milling, it will cause damage to the lower and the jig. Periodically check and retighten the end mill collet and check tightness after milling out slot "A".

The Easy Jig Gen 2 is the most advanced and fastest jig available. It is capable of milling lowers in under 30 minutes. However, the cosmetic finish quality of the lower is directly proportional to milling speed and depth of cut. The slower and shallower the milling, the higher the quality of the finish. For a good balance of speed and near CNC finish quality, allow approximately 45 minutes to mill a lower. You are building a quality firearm to last a lifetime: take your time.

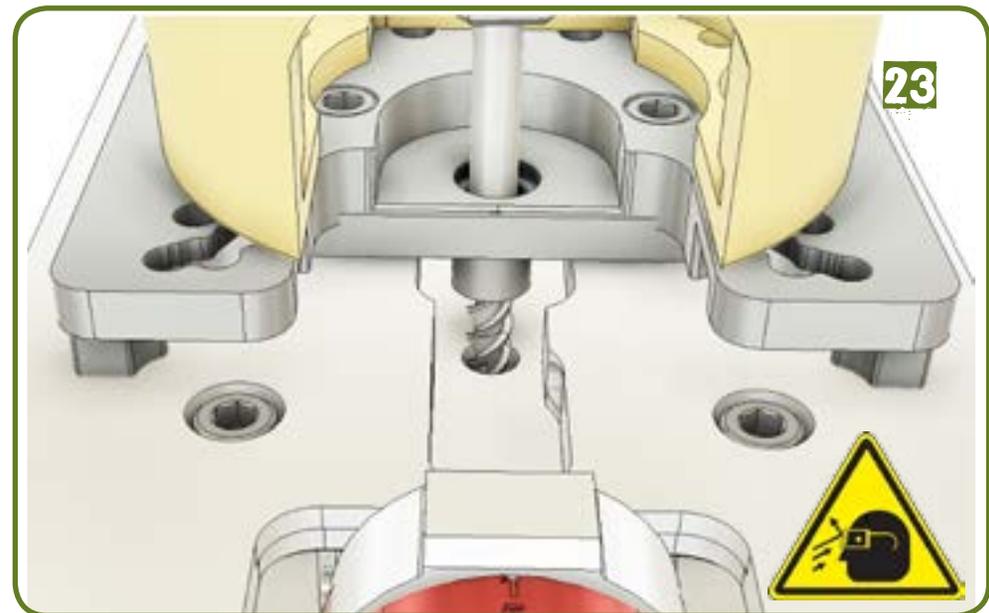
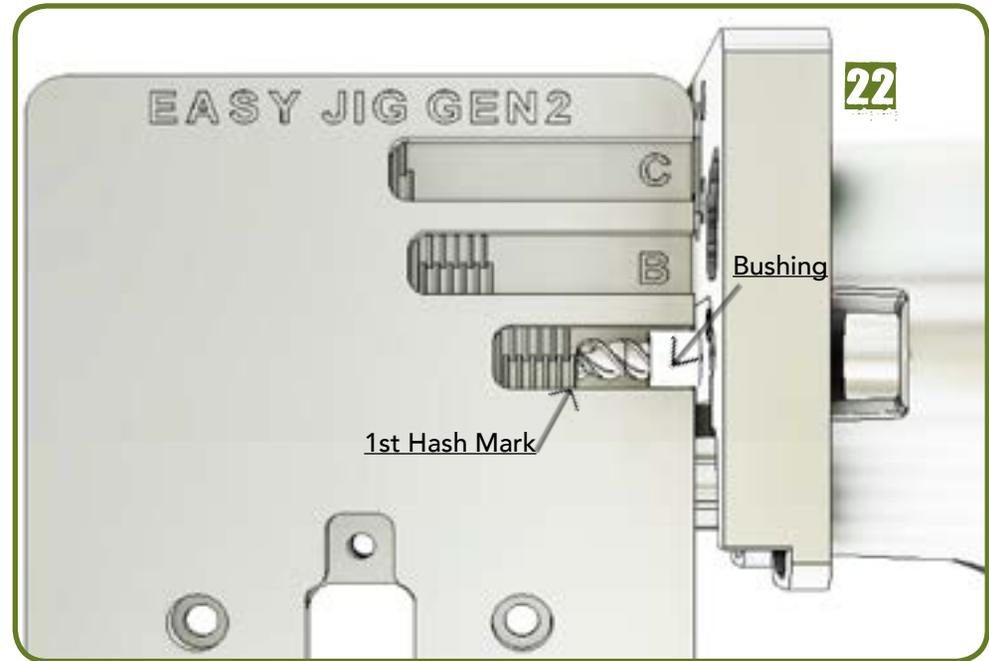
When milling a Gen 2 style lower, which already has the rear lug area milled out, it is not necessary to mill the rear shelf area (Fig. 19). To only mill the main trigger pocket area for Gen 2 lowers, insert the long 1/4" pin fully into the main jig plate for the duration of milling gauges "A", "B" and "C" (Fig. 20). The pin blocks milling of the rear shelf area. To mill both the main trigger pocket and the rear shelf, do not insert the long 1/4" pin into the jig plate at this time. **Never leave the rear "A" alignment pin inserted through the side wall plates when milling the rear shelf area.**

Secure the jig firmly in a vice. Do not over tighten the vice against the jig side walls. Make sure the 2.5" bolt is threaded into both side plate walls before tightening the vice.

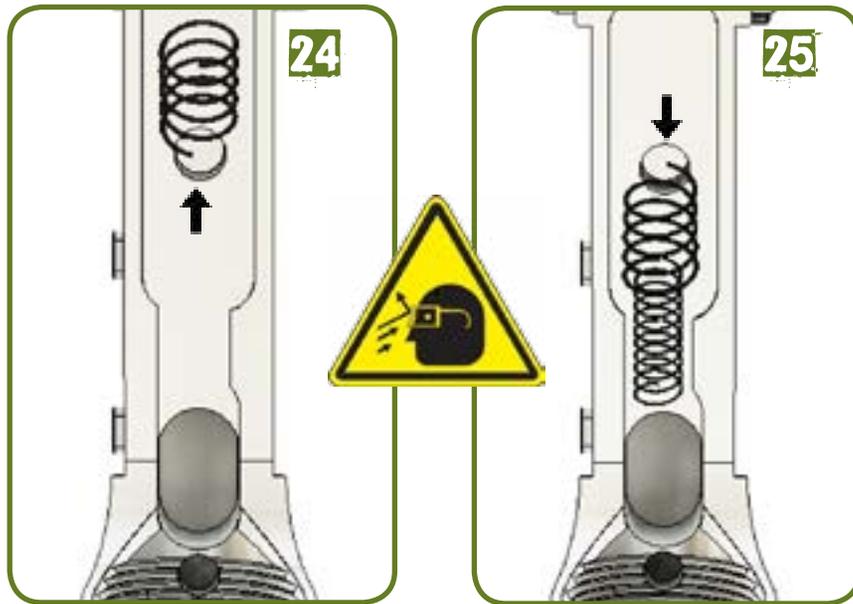




Press the router attachment plate flush against the right side of the jig with the bushing fully inserted into slot "A" (Fig. 21). Adjust the router depth so the tip of the end mill is on the first hash mark (Fig. 22). Tighten the depth adjustment on the router and insert the end mill into the 21/64" pilot hole (Fig. 23). Orient the router so you are standing behind the jig closest to the buffer screw.

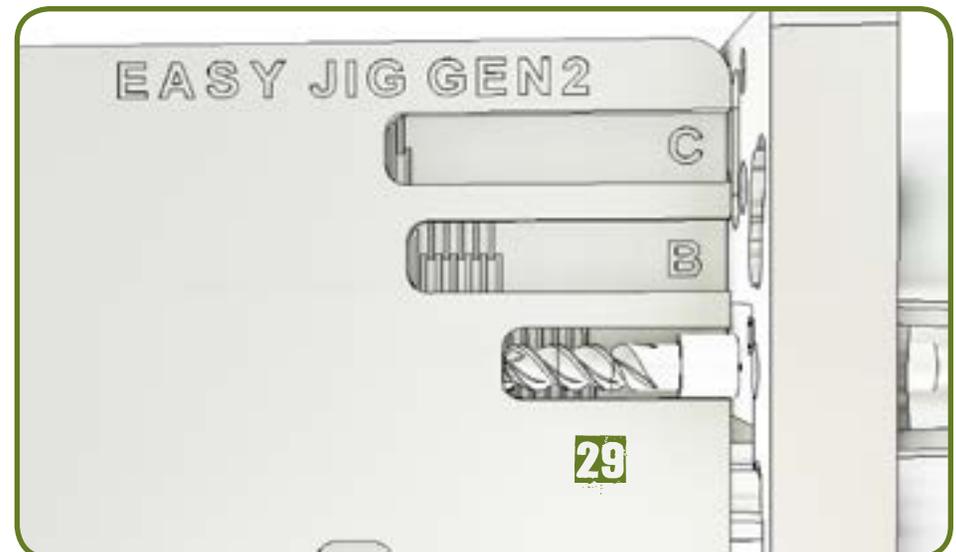
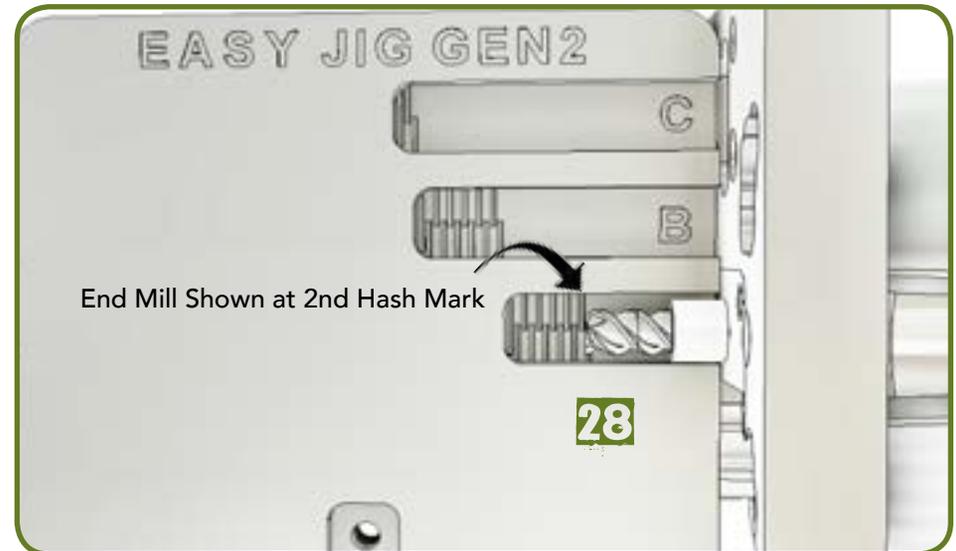


Make sure the end mill is fully inside the pilot hole by checking that the router attachment plate is resting flush on the jig, and the router does not wobble (Fig. 35-36). **While keeping constant firm downward pressure on the router**, turn on the router and start milling in a slow circular dime size clockwise motion. **Do not mill in a counter clockwise direction.** While slowly milling in a circular pattern, mill from the pilot hole upward to the top of the jig template (Fig. 24). Next mill in a circular motion moving down until you reach the bottom of the template (Fig. 25). **Do not mill in a straight line.** After milling out the center area, follow the contour of the template wall to mill out the rest of the material. It is okay to mill in a straight line after the center area has been milled out and you are following the contour of the jig template. Pay attention at the corners to make sure all material is fully milled out. Move slowly when milling the corners to prevent chatter. Rotate the router slightly in the corners to ensure they are fully milled out. Moving the router slower when milling the contour of the template wall will result in a smoother finish of the lower's wall.



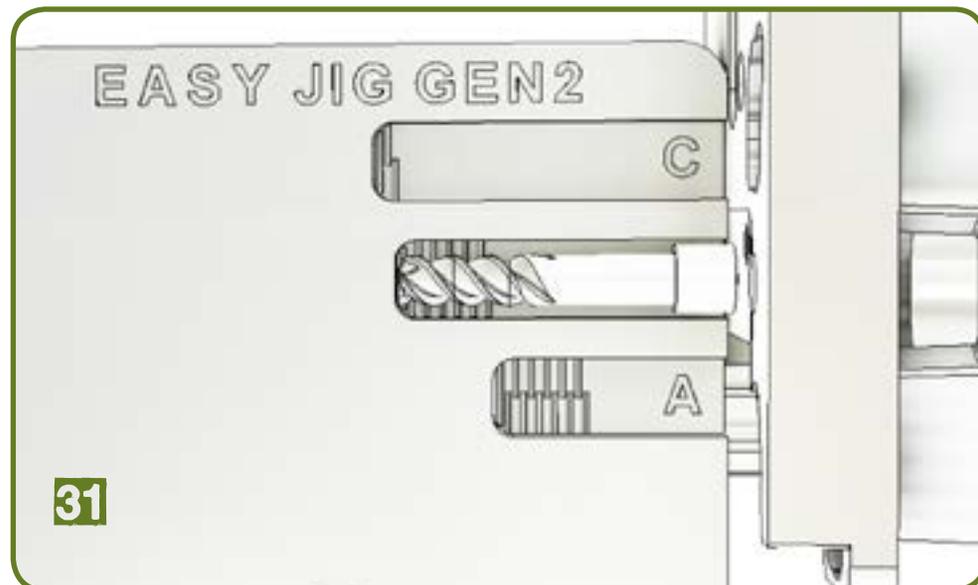
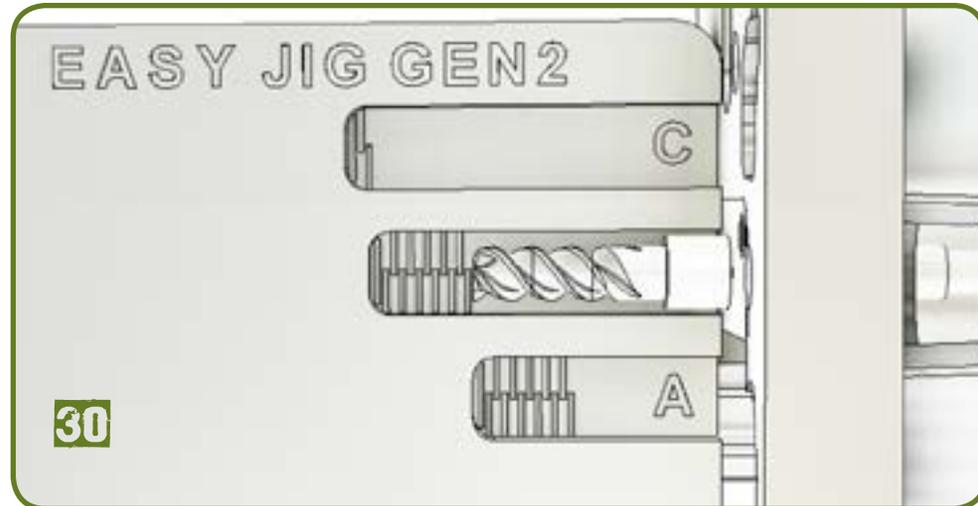
After the first pass the lower will look like Fig. 26 if milling the full lower, or like Fig. 27 if only milling the trigger pocket area for a Gen 2 lower.

After completing the each pass, turn off the router and wait for the end mill to come to a complete stop before lifting up the router. Press the router attachment plate flush against the right side of the jig again with the bushing fully inserted into slot "A" and adjust the depth of the end mill to the next hash mark (Fig. 28). Insert the end mill back into the pilot hole and repeat the milling process used for the first hash mark. Repeat this process for the remaining hash marks of depth gauge "A". Mill the last pass for gauge "A" at the full depth of the gauge with the end mill bottomed out in the slot (Fig. 29). If at any point chatter is encountered, reduce the depth to less than 1 hash mark until milling is smooth and chatter free.



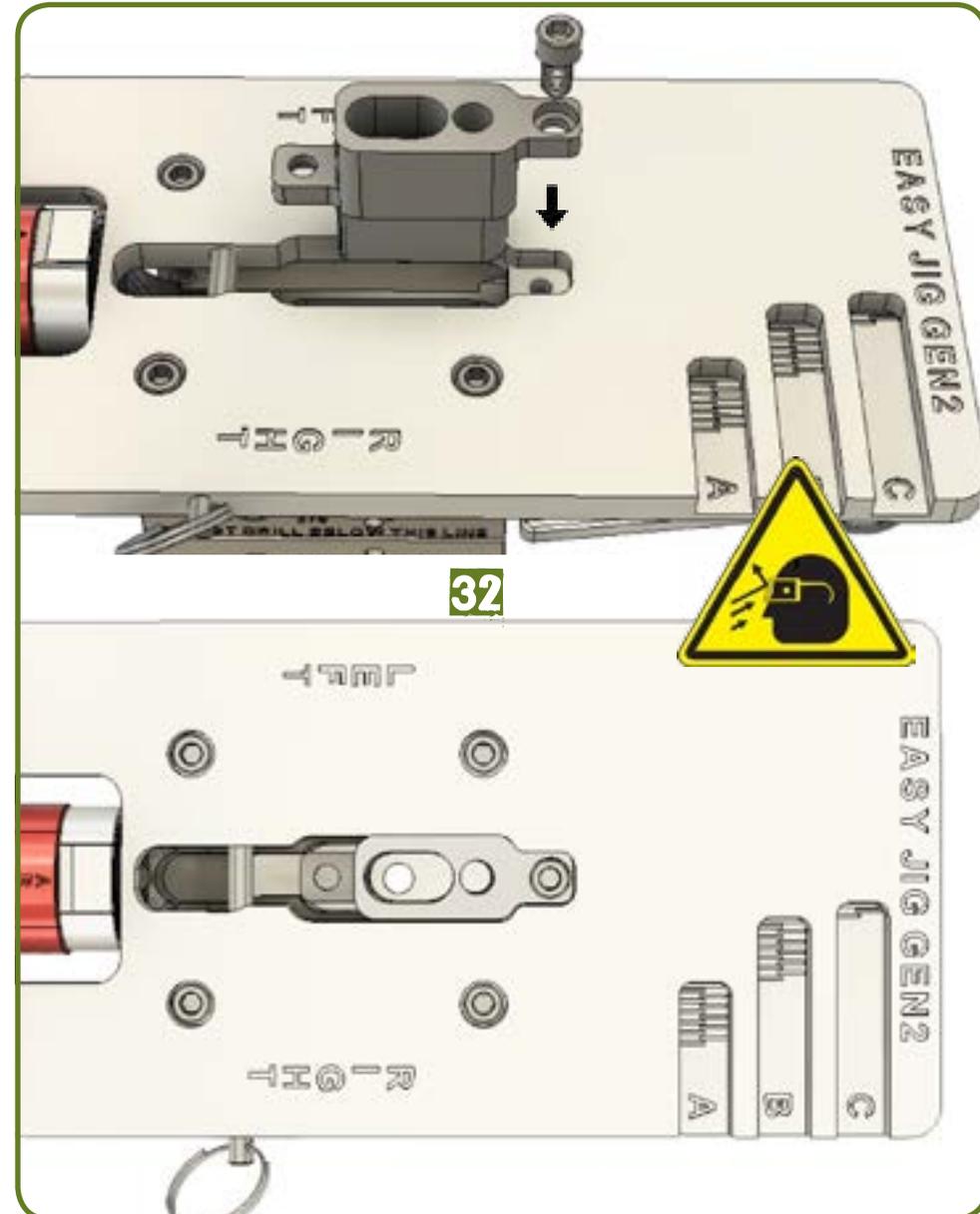
After milling the full depth for depth gauge “A”, insert the long 1/4” quick release pin into the main jig plate to prevent further milling to the rear shelf (Fig. 20). The pin may already be inserted into the jig plate if you have been milling only the main trigger pocket area for a Gen 2 lower.

Press the router attachment plate flush against the right side of the jig with the bushing fully inserted into slot “B”. Adjust the router depth so the tip of the end mill is touching the first hash mark (Fig. 30). **It is recommended to move in half hash mark increments for depth gauge “B” for 6061 alloy lowers. 7075 alloy lowers may require shallower cuts.** Mill out each hash mark until reaching the full depth of gauge “B” in the same manner as was done milling depth gauge “A” (Fig. 31). **Do not mill the area behind the pin inserted through the main jig plate in Fig. 20.**

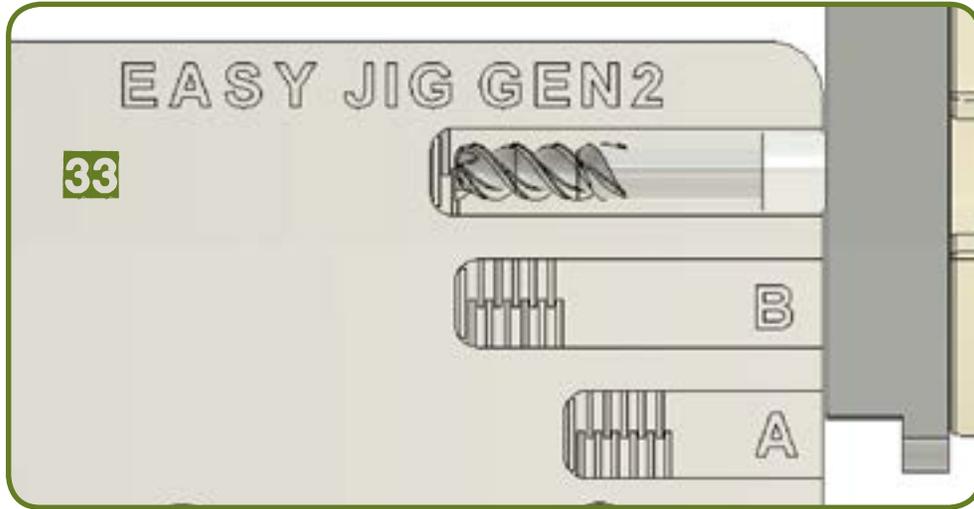


STEP 7 – MILLING THE TRIGGER SLOT

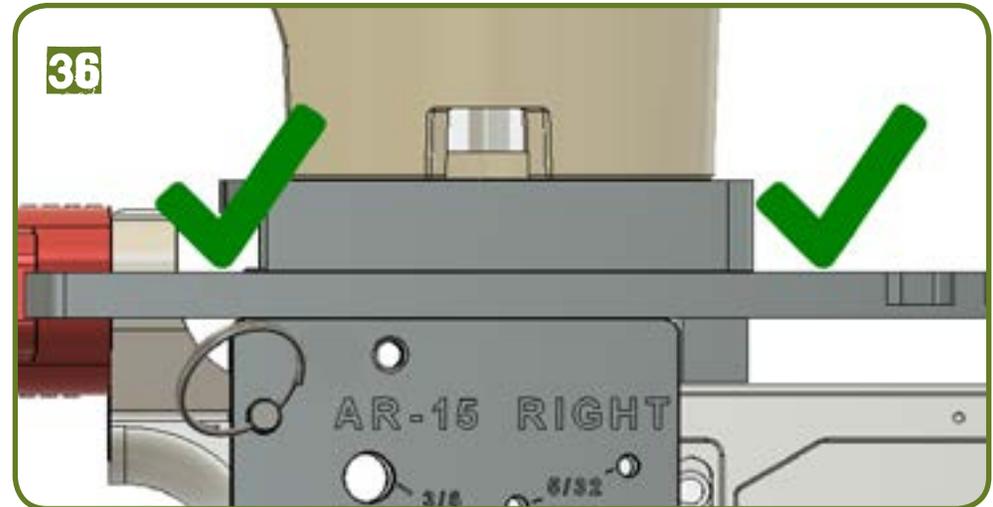
Clean chips out of the trigger pocket, the main jig plate, and the trigger template bolt hole area. Insert the **#4 Trigger Template** into the jig template opening. The trigger template large oval slot must be closest to the buffer extension. The small round pilot hole on the trigger template must be closest to the front of the jig (Fig. 32). Note that the top of the trigger template is wider than the bottom. Secure the trigger template using a single 1/2” bolt through the countersunk screw hole tab closest to the front of the jig. **This bolt will not be fully flush when tightened.**



Press the router attachment plate flush against the right side of the jig with the bushing fully inserted into slot "C". Adjust the depth setting so the tip of the end mill is centered on top of the first hash mark (Fig. 33). Insert the bushing and end mill into the oval slot of the trigger template and through the 21/64" pilot hole (Fig. 34). Make sure the router attachment plate is flush on the main jig plate to confirm the end mill is inside the pilot hole (Fig. 36).



Tilt the router slightly side to side. If the router rocks side to side, the end mill is not in the pilot hole (Fig. 35). Reposition the router so the end mill is in the pilot hole and the router attachment plate is resting flush on the main jig surface (Fig. 36). The router should not rock when tilted.



Press down firmly and turn on the router. Mill the trigger slot by **slowly** following the trigger slot template contour, **milling in a small circular clockwise motion**. Turn off the router and after the end mill has come to a complete stop, reposition the router against slot “C”. Insert the bushing fully into depth gauge “C” slot and adjust the end mill to the next hash mark. Insert the end mill back into the pilot hole and repeat the process to verify the end mill is seated inside the pilot hole before turning on the router. Mill the second and third hash mark layers following the same process used for the first hash mark. The trigger slot is now complete. **Remove the trigger slot template from the jig.**

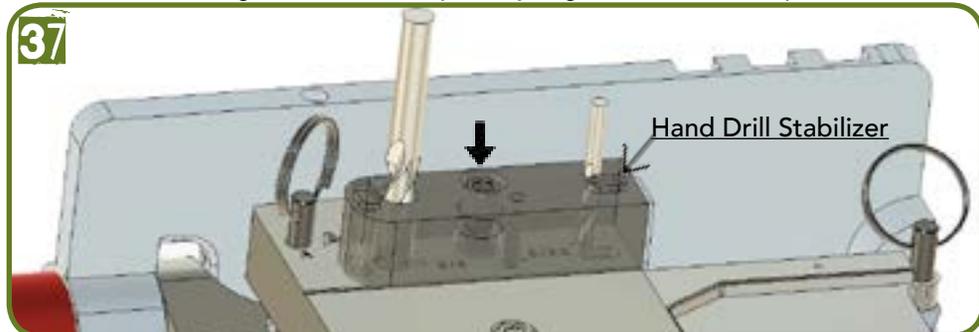
IMPORTANT: REMOVE THE TRIGGER TEMPLATE NOW. FAILURE TO REMOVE IT WILL RESULT IN DAMAGE TO THE LOWER AND TEMPLATE WHEN DRILLING

STEP 8 – DRILLING THE SIDE PLATE HOLES

Remove the long quick release pin from the main jig plate body. Reposition the jig on its side and secure it with a vice or clamp. Securely clamp the vice onto the front and back edge of the bottom side plate. **If using a vice or clamp on the #1 main jig plate, place a wooden block between the top surface of the jig plate and the jaw piece to prevent damage and scratches to the top surface of the plate.** Use the bubble level to ensure the jig side plate is level. Make sure the trigger template has been removed from the jig.

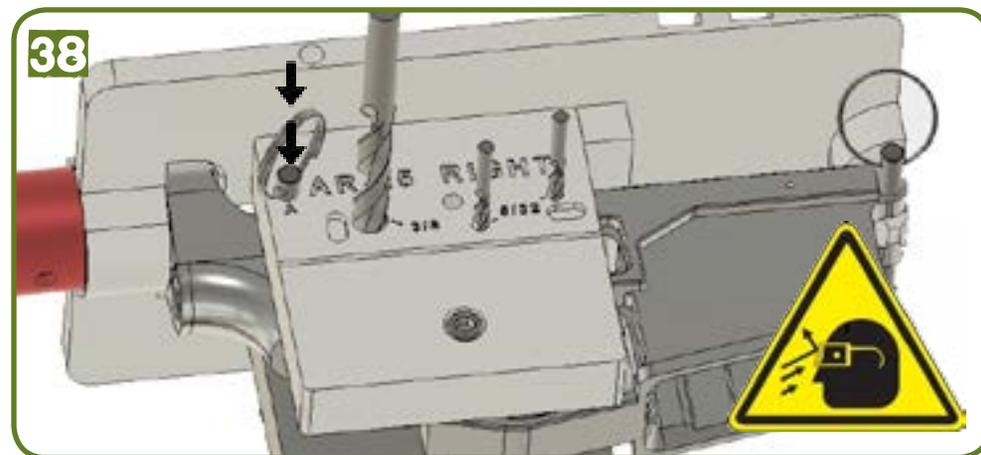
The Easy Jig Gen 2 3/4” thick side plates provide best in class support when using a hand drill. However, for optimal results and consistency, a drill press is recommended, although not required. Our optional hardened steel hand drill stabilizer effectively doubles the thickness of the side plates to a massive 1.5”. This provides outstanding drill bit support and alignment for hand drill users, and gives drill press quality results.

If using the optional hand drill stabilizer shown in Fig. 37, place the stabilizer onto the side plate with the two alignment tabs inserted into the corresponding slots on the side plate. Insert the 3/8” drill bit into the stabilizer’s 3/8” hole and push it all the way through so the drill bit is through the stabilizer’s and the side plate’s 3/8” holes. Do the same with the 5/32” bit using the 5/32” hole furthest away from the 3/8” hole. With the bits through the stabilizer and side plate holes, insert the stabilizer’s 1” bolt through the stabilizer and tighten the bolt. Remove the bits. This process ensures that the stabilizer’s guide holes are optimally aligned with the side plate holes.



Insert the long quick release pin through the “A” alignment hole as show with the arrows in Fig. 38. (You may need to slightly loosen the buffer screw if too tight to insert the pin. After inserting the pin, retighten the buffer screw while pressing the lower down flush against the center alignment bar to ensure that the lower is square in the jig.) Apply lubricant to the drill bit and into the side plate hole to be used. Insert the 5/32” drill bit into a hand drill or drill press to drill the trigger and hammer pin holes for the right side. **FULLY SLIDE THE DRILL BIT ALL THE WAY THROUGH THE SIDE PLATE UNTIL IT TOUCHES THE LOWER BEFORE STARTING TO DRILL.** The side plates are engraved showing the location to drill the two 5/32” holes and the 3/8” hole (Fig. 38). Drill the holes only through one wall of the lower. **Do not drill all the way through both walls of the lower.** Repeat the same process for the 3/8” hole. Flip the jig over and drill the 5/32” and 3/8” holes for the left wall.

Use a medium to fast speed setting when drilling 5/32” holes. For 3/8” holes use a medium speed or approximately 50% speed on a hand drill. DO NOT PRESS DOWN TOO HARD WHEN DRILLING THE HOLES TO PREVENT DEFLECTION OF THE LOWER IN THE JIG AND / OR DEFLECTION OF THE DRILL PRESS TABLE.



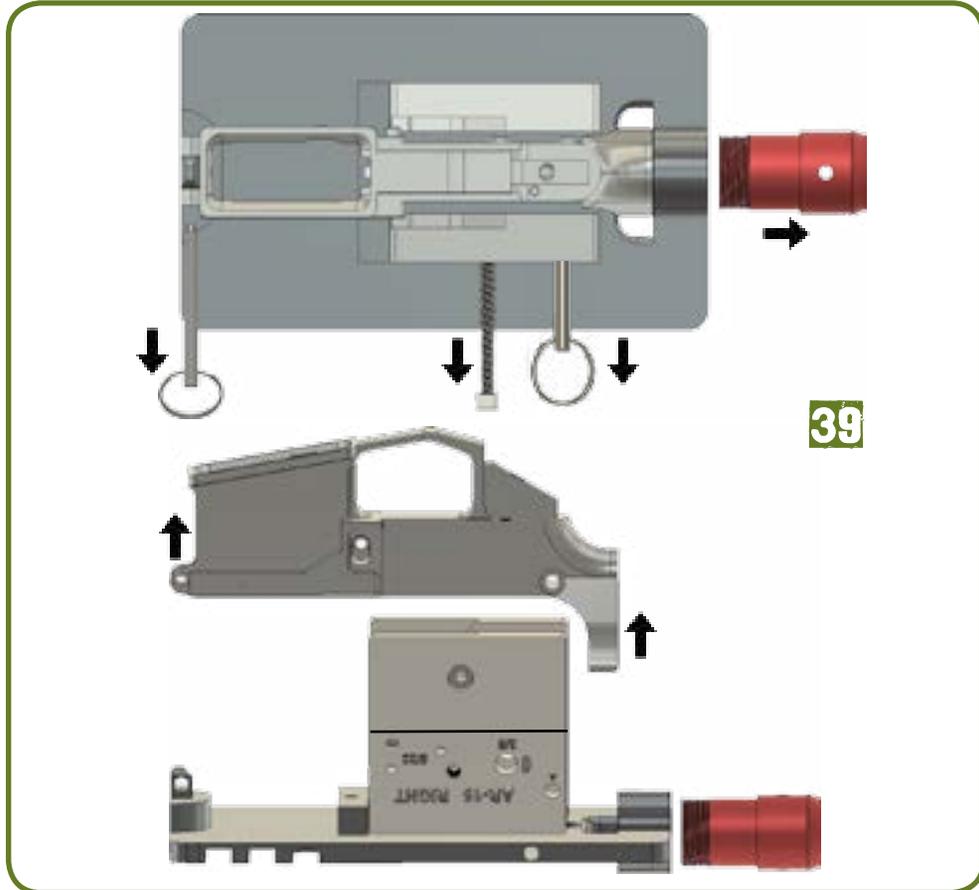
IMPORTANT: When using a hand drill, drill straight and perpendicular to the side plates. Do not lean at any angle to prevent premature wear to the side plates and possible misaligned holes on the lower.

WARNING: To ensure proper function of the safety, use a paperclip to clear out any chips from inside the safety selector detent hole. These chips are not always easy to see. Push a paper clip through the safety selector detent hole even if you don’t see any chips inside to clear out any hidden chips.

TIP: If you milled a raw lower, do not apply a finish coat to the lower until after a lower parts kit is installed and a function test performed. If you milled an anodized or Cerakoted lower, it is not necessary to apply a finish coat to the raw milled aluminum area.

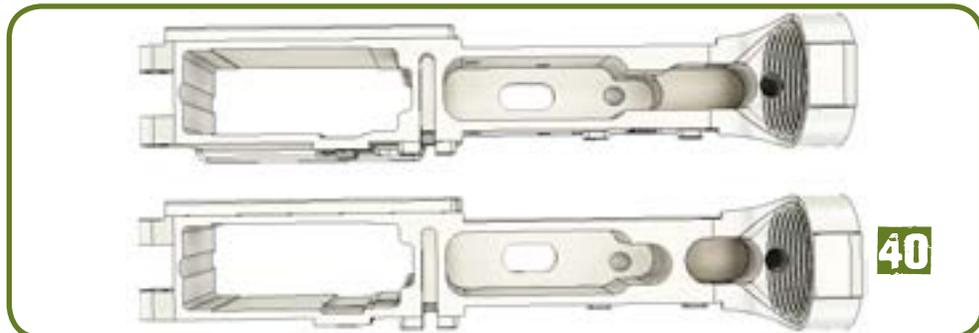
STEP 9 – REMOVE THE LOWER FROM THE JIG

Unscrew the long side plate vice support bolt. Pull out the quick release pins. Unscrew the buffer screw. Lift the lower out of the jig by lifting it straight up (Fig. 39).



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Depending on whether the full lower was milled, or only the main trigger pocket area on a Gen 2 lower, the finished lower will look like the lowers in Fig. 40.



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Apply a light coat of WD-40 or similar product to the side plates and drill block before storing the jig to protect the finish of the jig and prevent corrosion of the steel parts.

APPENDIX A – ROUTER SPECIFIC INFORMATION

Check the table below for any special set up instructions for the router being used.

BRAND	MODEL	NOTES
BOSCH	PR20EVSK	See BOSCH PRE10E
BOSCH	PRE10E	Requires unlocking base to shorten end mill length for first passes on gauge "A".
BOSCH	MRF23EVS	Full-size router attachment plate required.
BOSCH	1617EVS	Full-size router attachment plate required.
CRAFTSMAN	320.28212	
CRAFTSMAN	320.2767	Full-size router attachment plate required.
CRAFTSMAN	320.27683	Full-size router attachment plate required. Do not use tapered screws.
DEWALT	D26670	After milling slot "A" pull the end mill shank out 5/16" to complete slots "B" & "C". Do not extend the end mill until after slot "A" is milled. Do not use tapered screws.
DEWALT	DWP611	
DEWALT	DWE6000	
HITACHI	M 12VC	Full-size router attachment plate required.
MAKITA	RT0701C	Pull end mill shank out 1/8" to reach full trigger slot "C" depth.*
MAKITA	3709	Pull end mill shank out 7/32" to reach full trigger slot "C" depth.*
PORTER-CABLE	PCE6430	Requires moving depth adjustment past normal working range to mill slot "A".
PORTER-CABLE	PCE6435	Requires moving depth adjustment past normal working range to mill slot "A".
PORTER-CABLE	450	
PORTER-CABLE	960LR / 9690LR	Full-size router attachment plate required.
PORTER-CABLE	7301	See DEWALT D26670
PORTER-CABLE	7309	See DEWALT D26670
RYOBE	R163G / R1631K	Full-size router attachment plate required.
RIDGID	R2401	
RIDGID	R22002 / R2901	Full-size router attachment plate required.
RIDGID	R86044 B	
ROCKY	30 MLCS 9056	Pull end mill shank out 1/8" to reach full trigger slot "C" depth.*

* The end mill length can be set before starting to mill depth gauge slot "A". The 80% Arms end mill shank is 1" long, which allows the shank to be safely extended with sufficient shank in the collet to secure the end mill in the router.

Due to the large number of routers supported, and router design changes that occur over time, please visit our website for the latest manual and router information at: www.80PercentArms.com/pages/manuals



APPENDIX B – TROUBLE SHOOTING GUIDE

1) Side walls are not smooth: The most common cause of ridges or roughness on the walls of the lower is vibration or chatter. Machining corners also increases the chances of experiencing chatter because when the end mill enters the corner there is more engagement of the teeth in the cut, which significantly increases cutting forces. Milling in a circular pattern and removing less material at a time will reduce or eliminate chatter. To reduce chatter do the following:

- Reduce depth of the end mill so less material is being removed with each pass.
- Move using clockwise circles in the direction you are milling.
- Slow down how fast you are moving the router.
- Go extra slow in corners, specially on the right side of the lower.

2) I've tried the above and my walls still are not smooth: Mechanical problems such as a worn out or defective router can cause excessive vibration and chatter. Low quality, or defective routers, can have excessive spindle runout. Runout is when the end mill is not spinning in a perfect circle on its rotational axis. Excessive runout will cause vibration, premature end mill wear, and prevent a smooth finish. A router with excessive runout will need to be repaired or replaced.

3) My router is jumpy and / or pulling to one side: The end mill is set too deep and cutting too much material at a time. You may also be moving the router too fast. Decrease the depth of the end mill and slow down how fast you move the router.

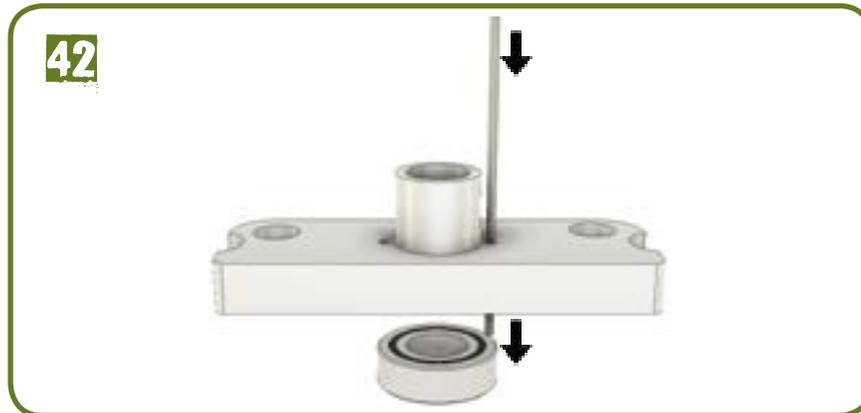
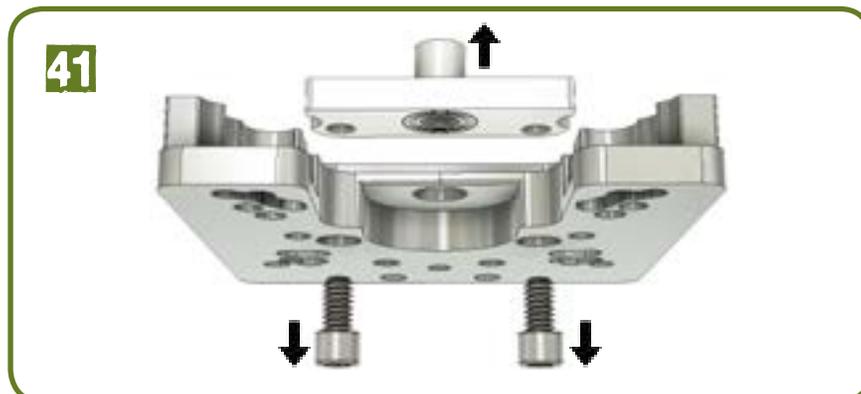
4) My router is making a lot of noise when I'm milling: See #3.

5) My router is making noise even when I'm not milling: A constant high pitch or screeching sound from the router may indicate a worn out bearing in the router attachment plate bushing assembly. Remove the end mill from the router. If the noise stops when the router is on without the end mill installed, replace the bearing.

The bearing in the router attachment plate bushing is simple to replace without any special tools. Remove the router attachment plate from the router. Remove the two 7/16" long bolts holding the bushing on the attachment plate (Fig. 41). Using a paper clip or other small rod, push the rod through the holes adjacent to the bushing, alternating from one side to the other if necessary, to push out the bearing (Fig. 42).

To install the new bearing, set the bearing on a level table surface. Set the bushing over the bearing. With your fingers push the bushing down on the bearing. Make sure the bushing is very level when pushing down on the bearing. Reinstall the bushing and **securely tighten the two 7/16" long bolts**. Do not use 1/2" long bolts to install the bushing onto the router attachment plate.

Do not remove the bearing unless it needs to be replaced to avoid damaging it. High quality, long life replacement bearings are available from 80 Percent Arms.



A well regulated militia, being necessary to the security of a free State, the right of the people to keep and bear arms, shall not be infringed.

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