CHILDERS GUNS

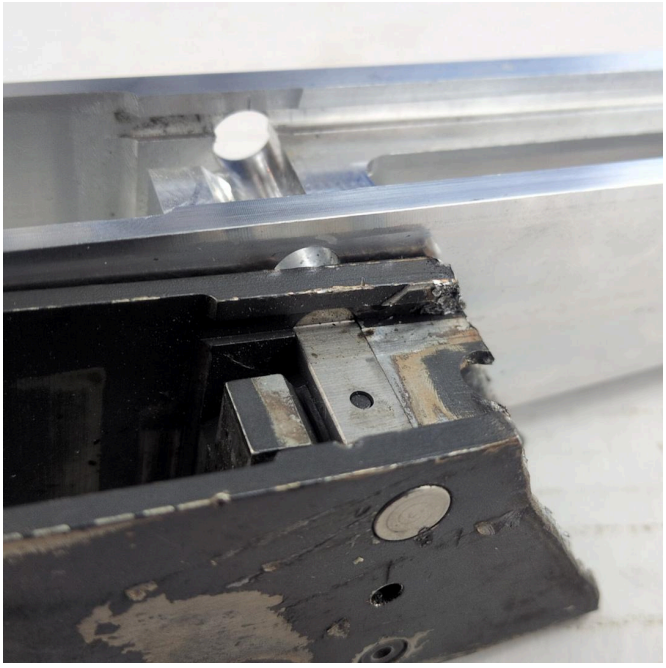
Receiver Insert Drilling/Installation Guide

It is recommended to read the entirety of this before proceeding.

Tools needed:
Punches
Hammer
Included Drill Bit (#40)
Cordless Drill, Drill Press or Milling Machine

Also Recommended:
Cutting/Tapping fluid
Bench Block
Vise with good softjaws
Paper towels/Shop towels/clean rags for protecting the receiver when punching or drilling

What is the “insert”?

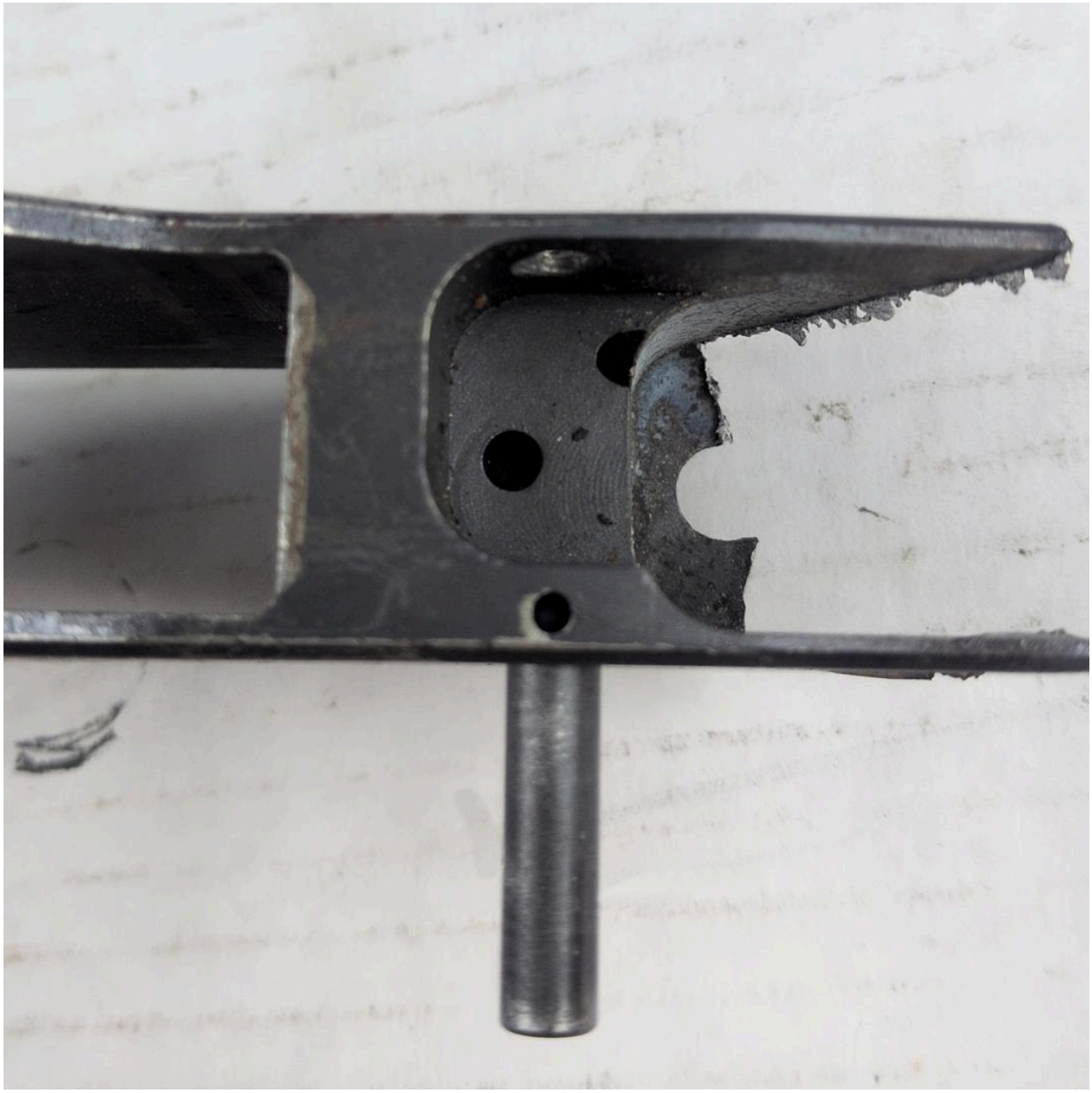


The “insert” is a precision machined piece of steel that acts as the primary surface the legs of the amplifier lever work against. It distributes the force of these two legs into the aluminum receiver. Pictured above is a receiver piece with said insert still installed.
The insert is also secured with a retaining pin, being the bit showing in the center hole.

Why are we drilling a hole for it?

Because the retaining pin’s hole location relies on a separate piece installed after manufacturing (the insert), and acts as a two-piece pinhole with the insert itself, It was decided to leave drilling this up to the customer or builder to ensure it all lines up perfectly. Getting this accurate is paramount for the correct installation of the insert, and if it was machined even slightly off it could cause the retaining pin to be impossible to install, or force the insert itself to sit crooked in the receiver.

To remove your steel insert, you must first punch out the retaining pin from the top.
Clear the way by pushing the FCG takedown pin from the side that has a dimple; It is retained by a detent and will slide out of the way similar to AR takedown pins. Above it is the hole where the head of the insert's retaining pin is.

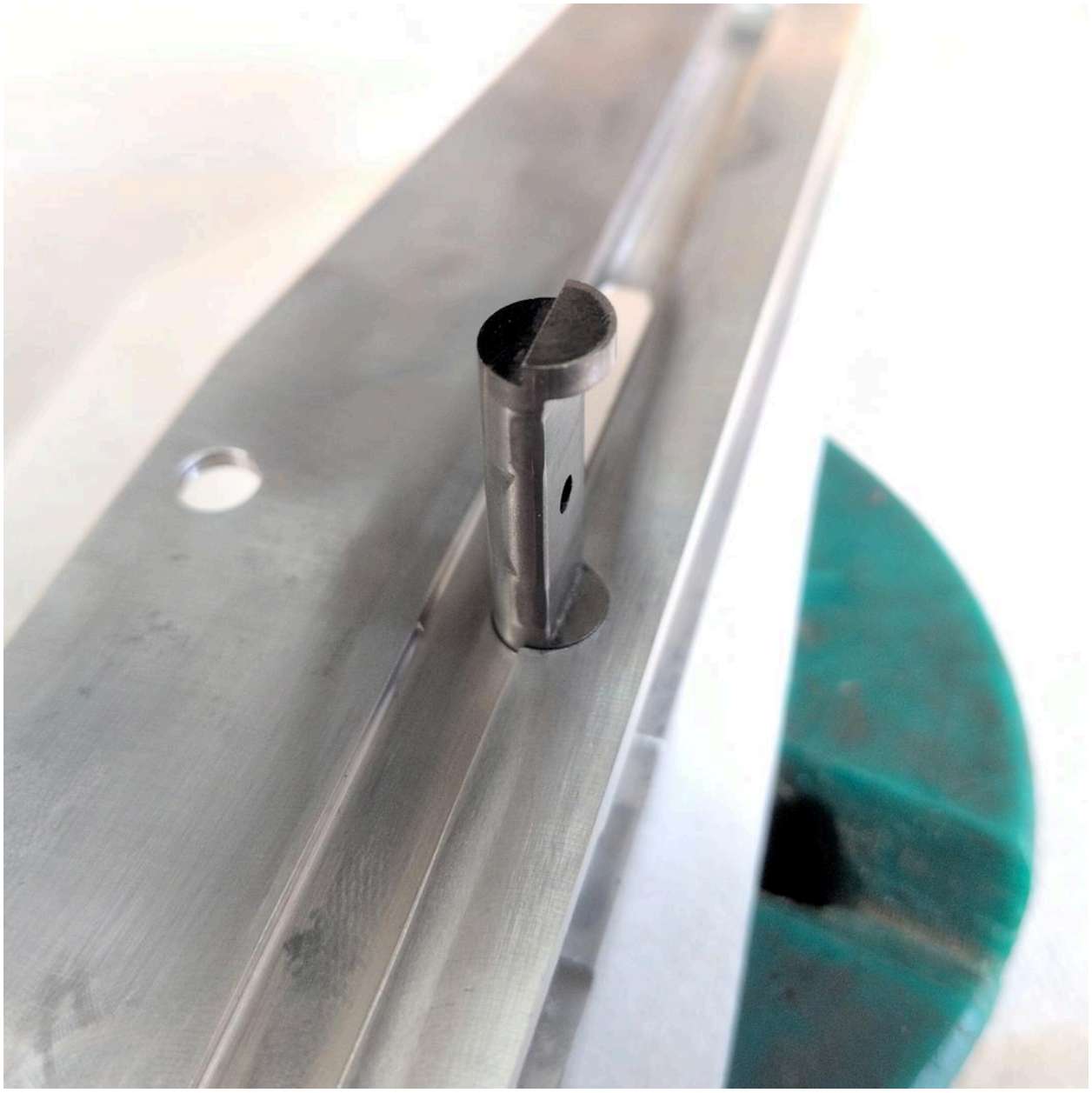


Bottomside view of FCG takedown pin pushed to side and retaining pin hole visible.

Now that the FCG pin is out of the way, flip back to the receiver top and punch the retaining pin downward and out, being careful not to lose it.

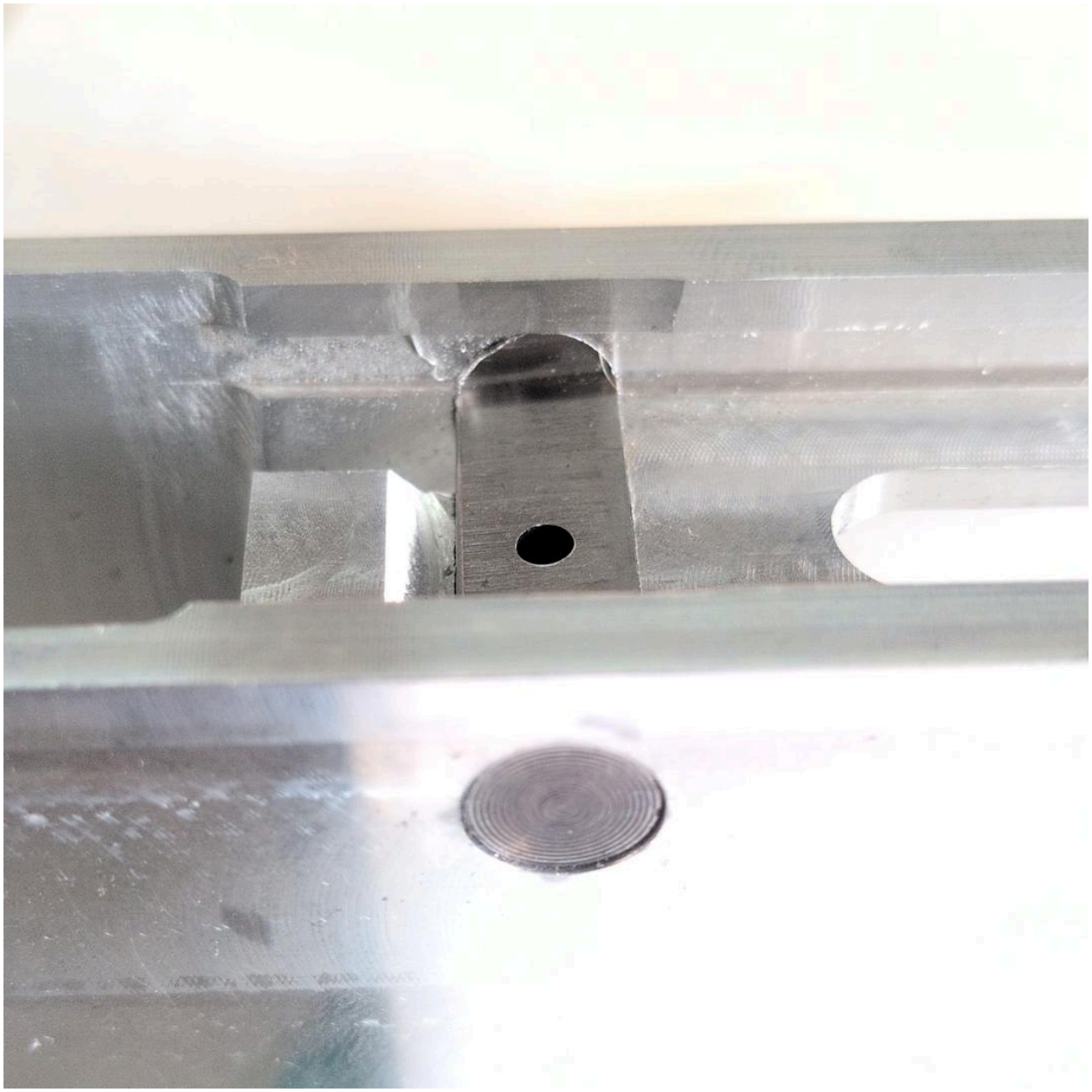
The retaining pin has a smooth top portion for the steel insert, a knurled/splined portion near bottom for holding itself into the aluminum, and has a head at bottom for preventing it from being punched too far.

With the retaining pin removed, you can now get the insert out from the receiver. Punch it out in any direction, taking care as normal.



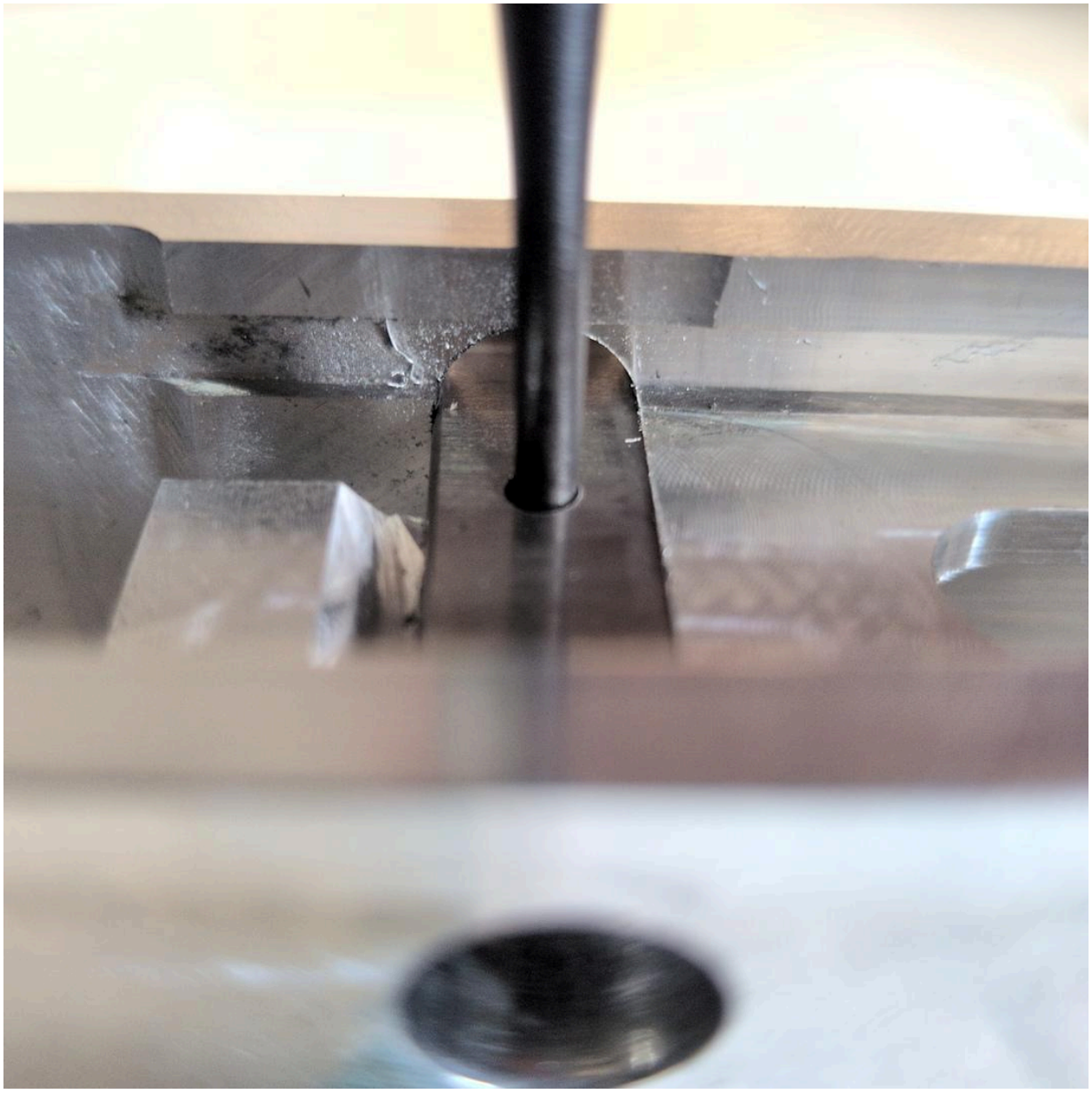
It is now time to install the insert in your new receiver. Clean the hole of any dirt or debris, dust etc, first, it has been reamed for a precise, solid fit, and lubricating it with a bit of cutting fluid or very light oil is recommended to help smooth out installation. Start it in the hole, nice and straight, and ensure that the side with the triggerbar cutout matches the receiver!

You can push the insert in from either direction, but going left to right may be easier to align properly.

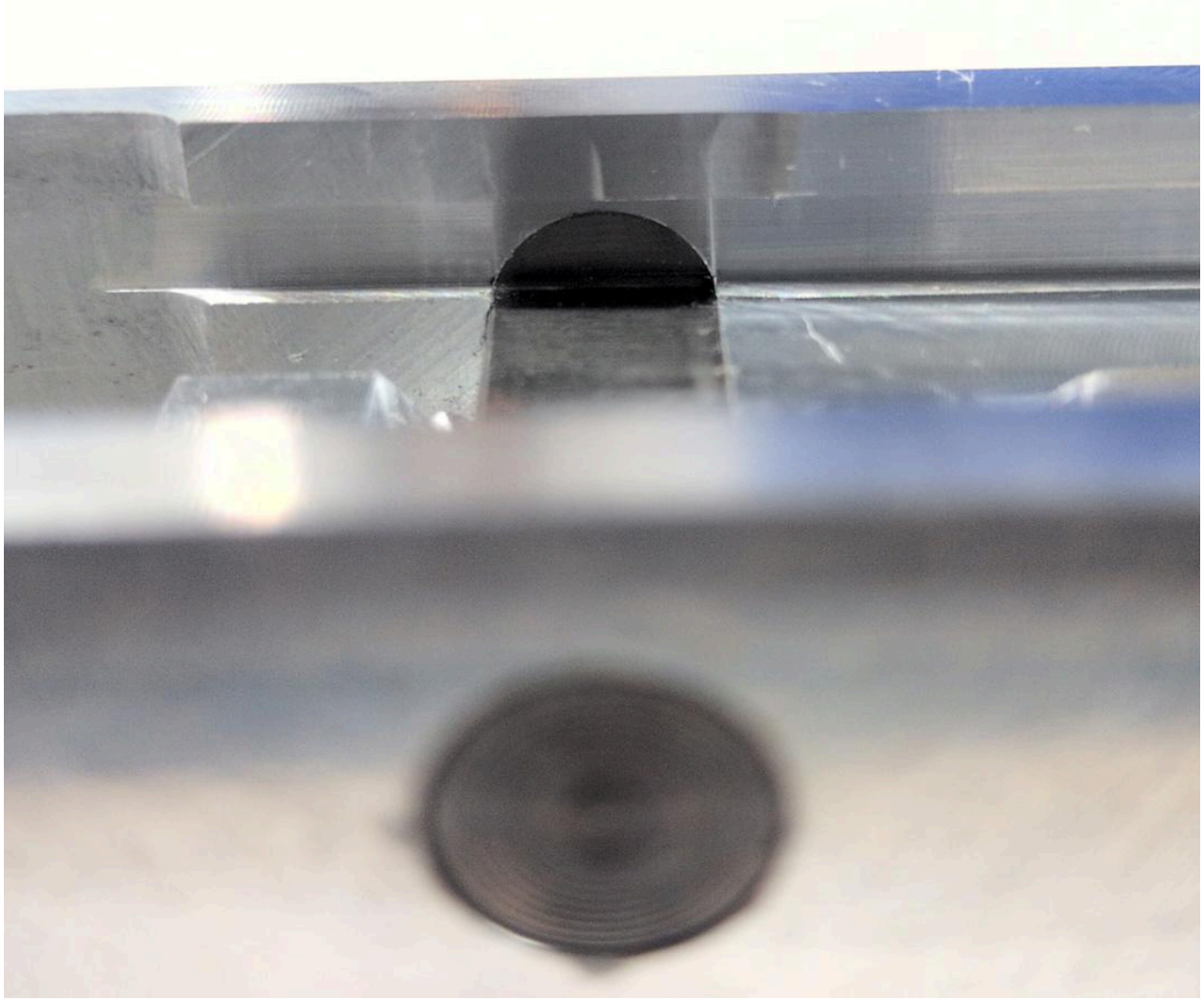


As you can see, this was the failed first attempt. The insert is crooked and not square with the bolt rails/raceway.

A tip is that with the insert almost fully installed, just before the insert ends have seated into the receiver sides, you may be able to gently rotate the insert square with a punch or other in the retaining pin hole. This is helped if you have lubricated this process as recommended above. If it feels too stiff, do not force it! If you have it fully seated, push it back out first.



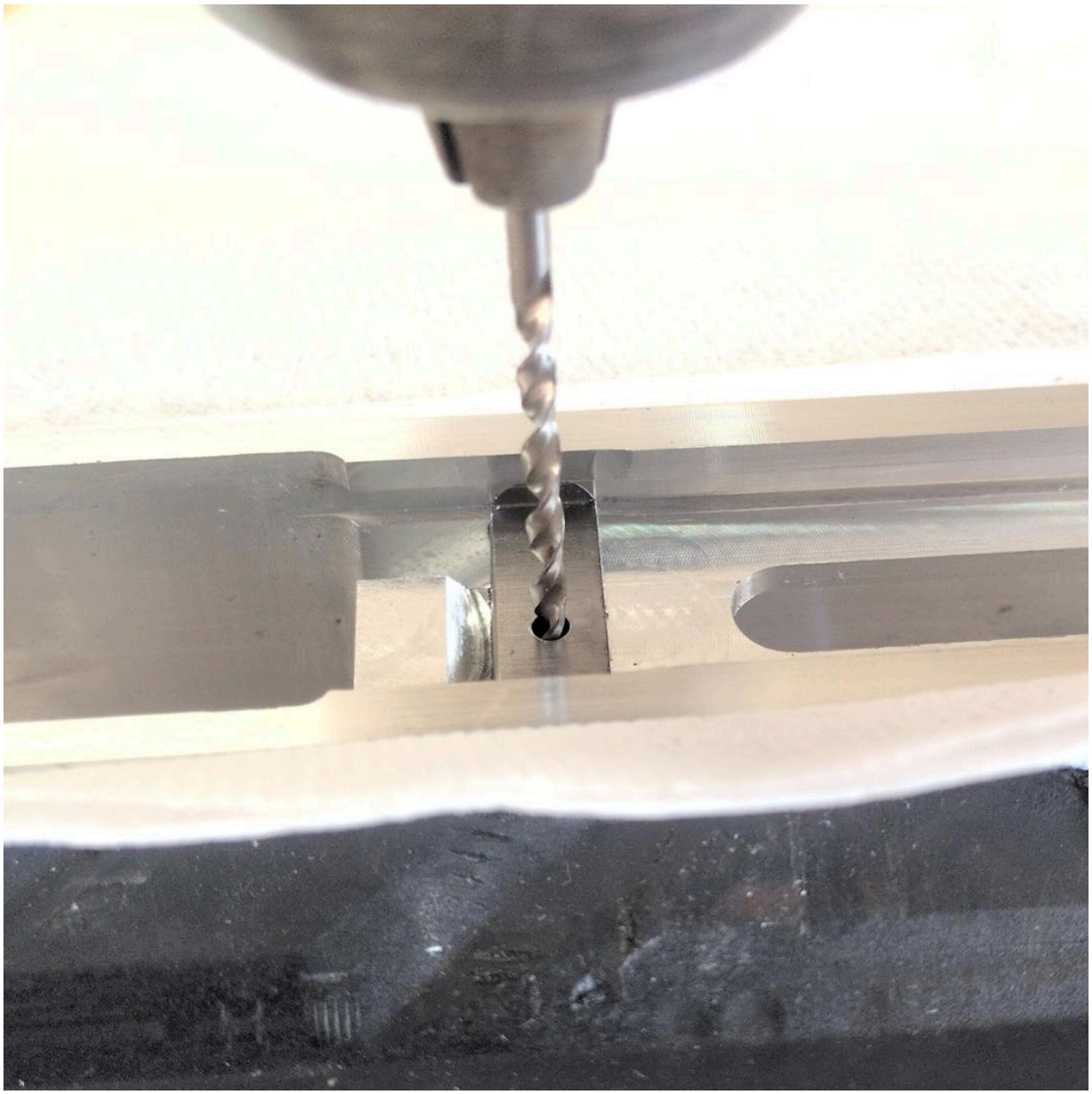
Using a punch to gently straighten out the insert when it is almost, but not fully installed. Without the insert ends in the receiver sides, there is far less friction. This is a demonstration picture, but use as close fitting a punch as possible and do not force it if it is too tight.



Insert, now square after some careful adjusting to get it flat with the rails

With the insert installed square to the bolt rails and evenly spaced to center (left/right), It's time for drilling the retaining pin hole.
If you have access to a drill press or mill, those are the best options. A cordless drill works, but you need to take great care through the process to hold it straight. The harder steel of the insert will guide the bit, but forcing it too much could still cause crooked hole, or binding resulting in other issues or bit breakage. Check yourself often.

When clamping the receiver into a vise, use soft jaws and possibly padding such as paper towels etc to protect the surface. For anyone with a mill, you all know a clean machinist vise would work as well.



Drill bit positioned in the insert hole as a guide. Use lubrication!

These bits are quite small and aluminum can be “gummy” as far as metal goes. Do not force this, but rather let the drill do the work. You *really* do not want to snap a drill bit in this, or cause other issues. Using a bit of cutting fluid to lubricate the process is highly recommended and will

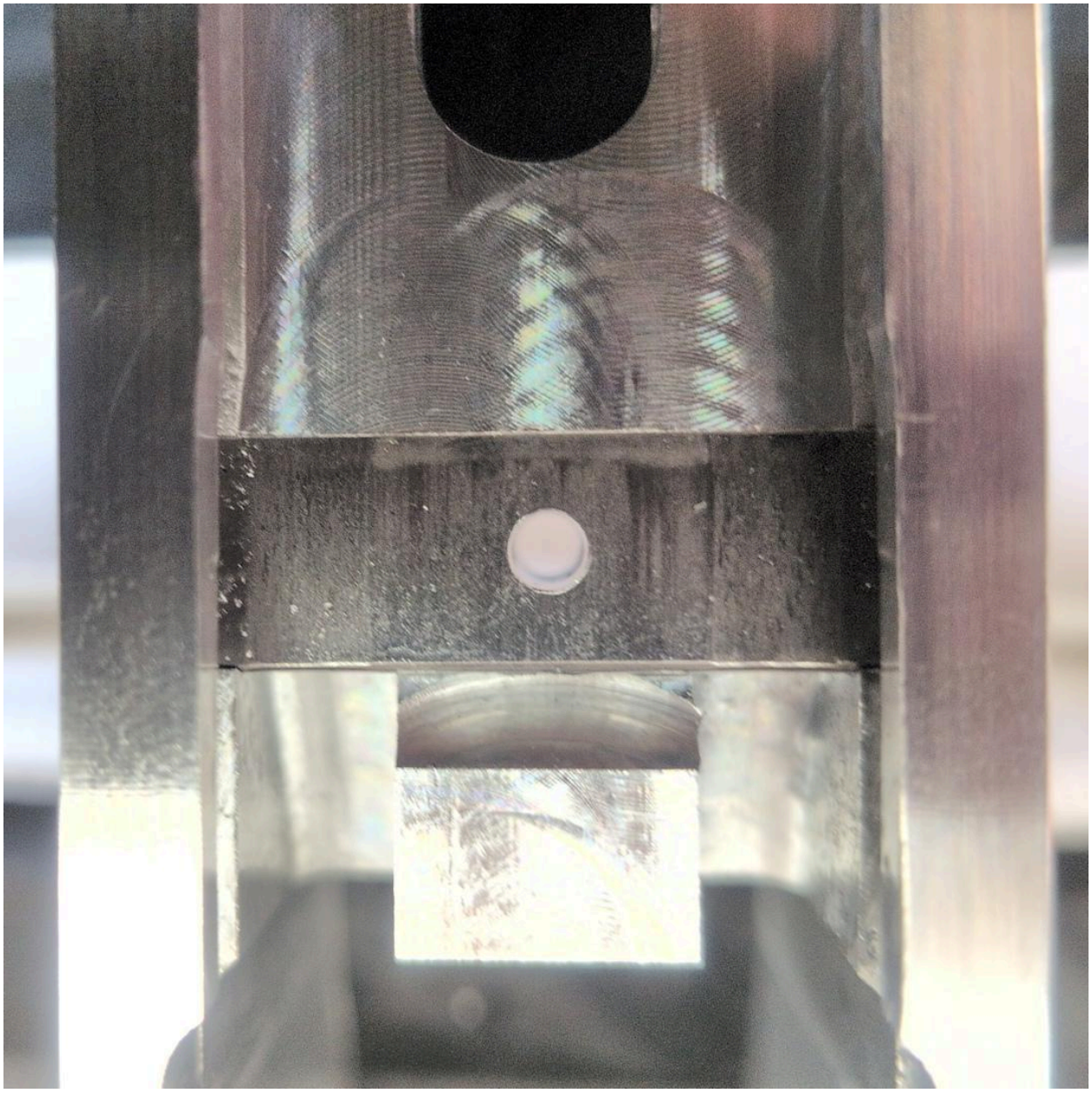
help the bit with clearing the fine aluminum chips as well. If you have used one of our AK FCG drill jigs, this is the same idea.

Pull it out occasionally to clear chips.

If all goes well, you will eventually break through into the center hole on the underside of the receiver, pictured above. It isn’t a deep drilling operation, and shouldn't take long. Don’t force it though!

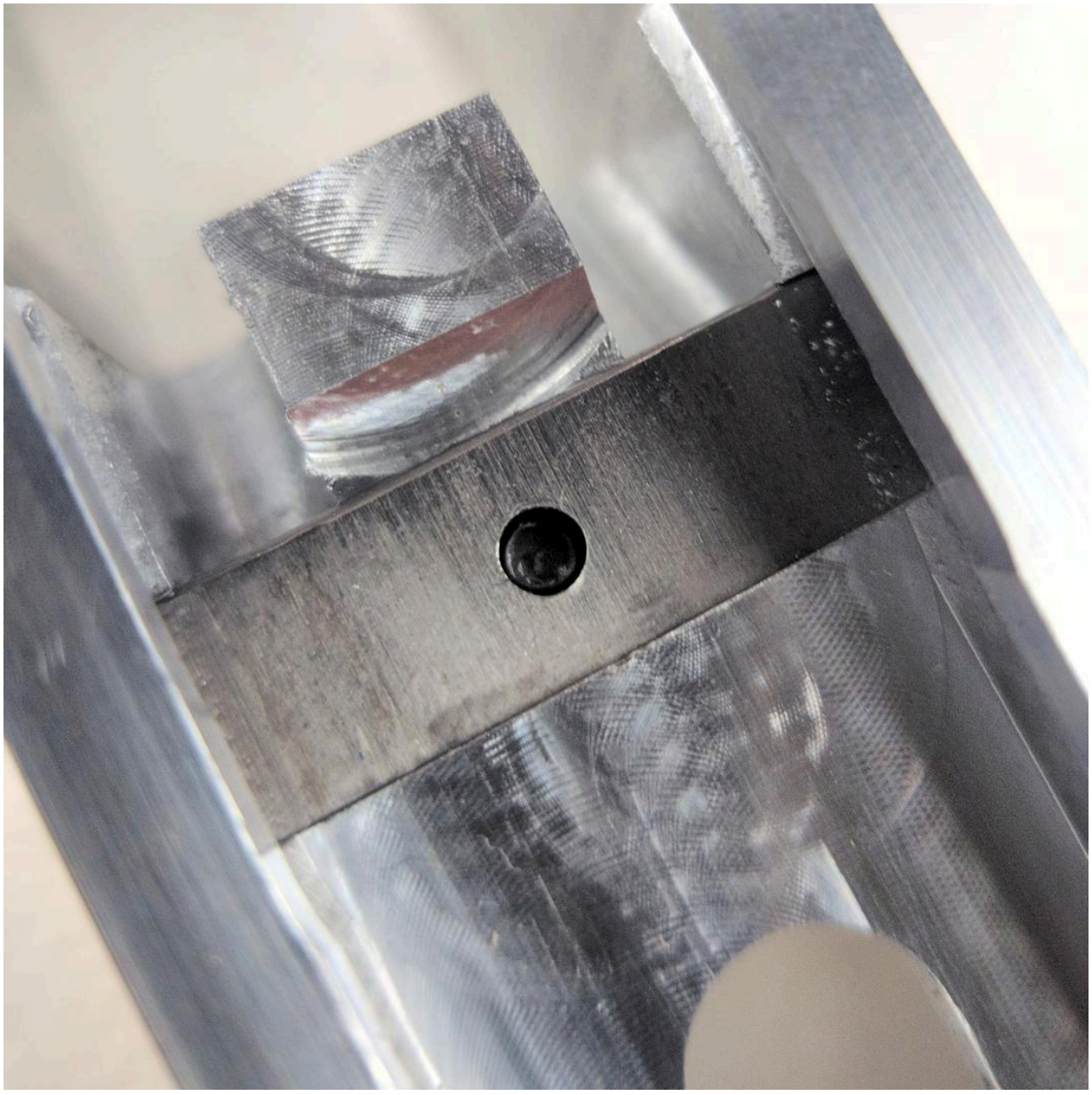
Drill immediately after breaking through the bottom.

Clean out the chips etc after drilling and inspect your work.



Nearly seamless hole through top to bottom

Now, install your retaining pin, pushing from bottomside to top. It should start fine and get tighter as the knurled section grabs the aluminum, before bottoming out on the head.



Nice work! The receiver should now be ready for the remaining parts to be installed.

If you have any questions or need assistance feel free to contact us as always at sales@childersguns.com

We are able to install these as a service as well - Contact us for more information.