This is my submission for a tier 1 epic quest in the category of disc detainer pick making. The rules according to the Lock Pickers United Belt submission guidelines are as follows:

Disc Detainer Pick Making
Tier 1 - Create any functional front tensioning Disc Detainer pick tip/tensioner set from stock material or using parts from existing near-functional pick designs capable of picking the lock it was designed for.

The following pages are my blue prints, designs, and how I made a viable front disc tensioning disc detainer pick. The designs allows for different tips/tensioners to be added to the “assemblies” for a quick change in case a different disc needs to be tensioned. Like many designs on the market, 1 housing can be fitted with different tips/tensioners for different types of locks. I plan on making several pick/tensioner designs as I progress through the tiers on my journey to black belt. I plan on making tips/tensioners for rear disc tensioning, abloy classic, and other abloy profiles as my skills progress.

This is my first epic quest project which I am submitting for my brown belt. Thank you for your consideration and I can be reached via email with any questions at the following email:

Discord: TeddyLockSpin
Redditt: u/TeddyGNKoa

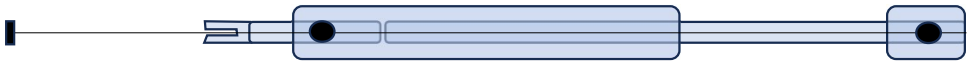
Front Tensioning Disc Detainer Pick

Raw Materials:

M4 x 3MM Stainless Steel Grub Screws
3MM Diameter x 250 MM Steel ejector rod
10MM (OD) x 5MM (ID) Aluminum Rod
5MM (OD) x 3MM (ID) Aluminum Rod

Tools Used:

Flat and round Files
Metal cutting hand saw
3MM Tap
Dremel with grinding, cutting and polishing wheels
1000 grit sand paper
Simi chrome metal polish
Bench Vice
Digital and hand calipers
3MM Allen wrench
Drill and drill bits (drill bits made for aluminum).



Rough Schematic of DD Pick

Safety Equipment

Googles
Gloves
3M N95 Mask for metal particulate

Finished DD Pick

Front Tensioning Disc Detainer Pick

Step 1:

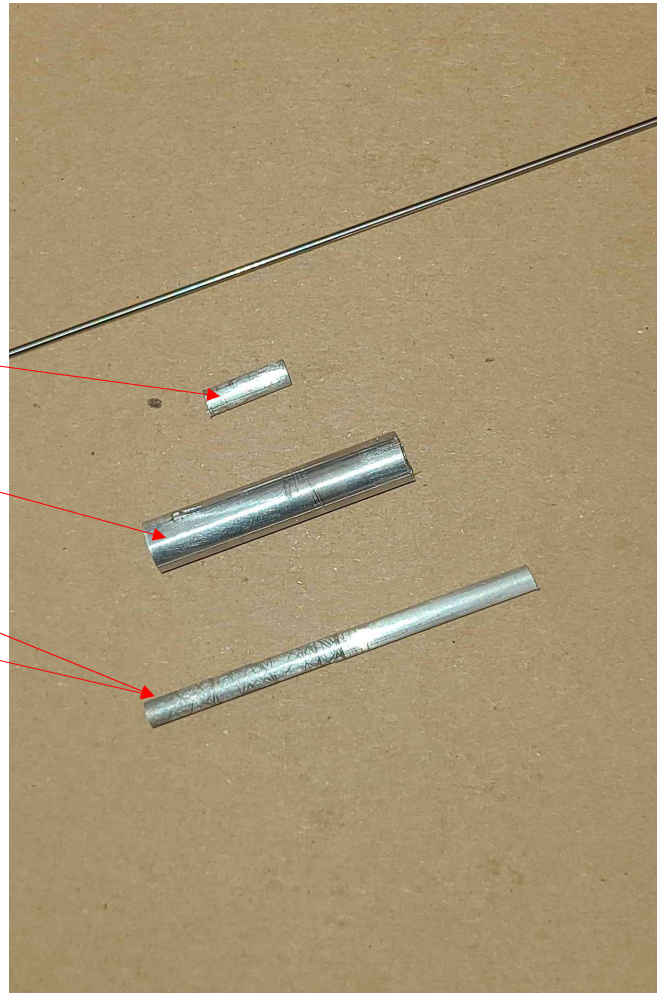
Make initial cuts for Front Tensioner Assembly (FTA)

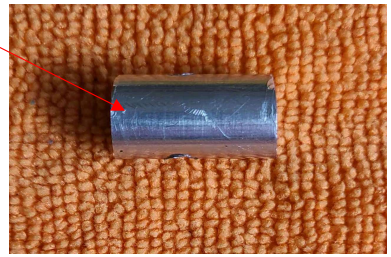
Tensioner (15 MM)
Tensioner housing (50 MM)
Pick guide housing (95 MM)

And

Pick Turn Assembly (PTA)

pick guide / pick set piece (90 MM)
Pick turn (20MM)



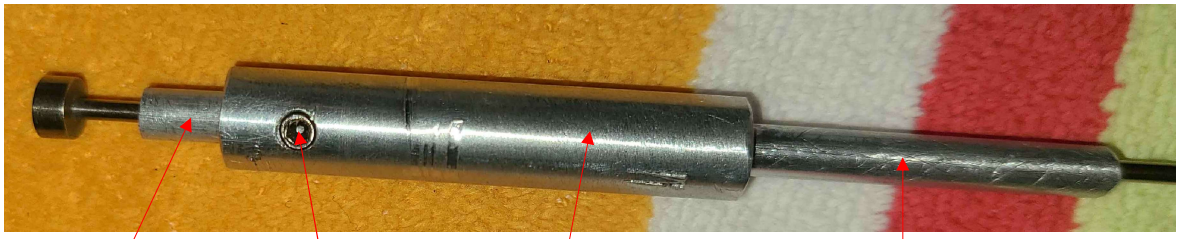


Using the 5MM Aluminum rod cut the tensioner to 15 MM. Using the 10 MM Aluminum cut the tensioner Housing to 50 MM. Using the 5MM Aluminum cut the pick guide housing to 90MM (Note the pick Guide Housing and Pick guide / Pick Set piece are the same part of each assemblies. This is the piece that bridges the gap between both assemblies. Using 10 MM rod cut 20MM piece for pick turn.

Front Tensioning Disc Detainer Pick

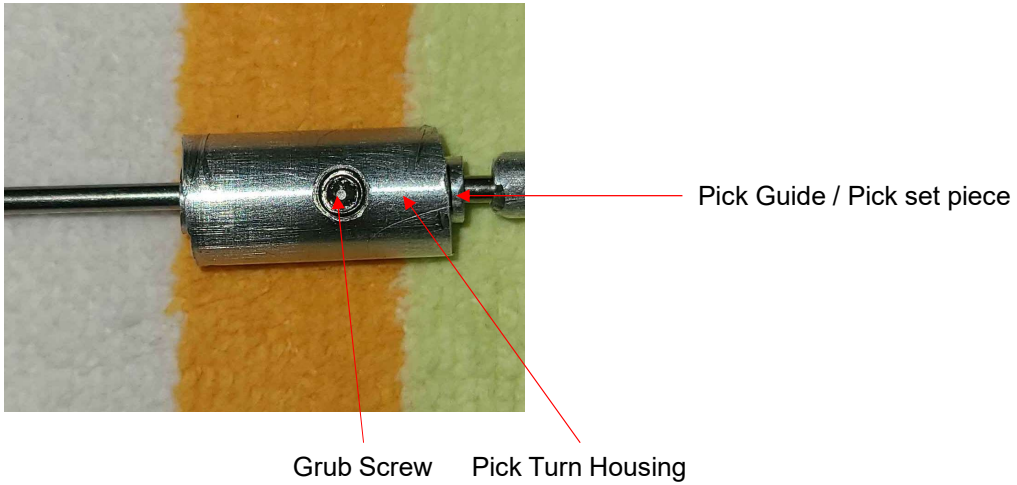
Step 2:

Drill and tap the holes (on either side) for the grub screws in the Tensioner housing. This will hold the front disc Tensioner inside of the housing, while allowing the Pick access through the middle and you will be able To turn it from the rear in the pick turn housing.



Step 3:

Drill and tap holes for the pick turn housing. One on either side Of the housing.



Front Tensioning Disc Detainer Pick

Step 4:

Using tools (flat files / grinder wheel / or bench grinder if available. Shape the tensioner. The shape and length are going to be dependent on your needs. I chose a fork length of 4 MM. I designed this particular tensioner and pick for a Zarker J55. This design allows interchangeable front and rear tensioning tips / picks for a multitude of locks and needs.

***At the end of the tensioner (using the grub screw holes) I marked The end with a marker, and then flattened each edge for better engagement of the grub screws.

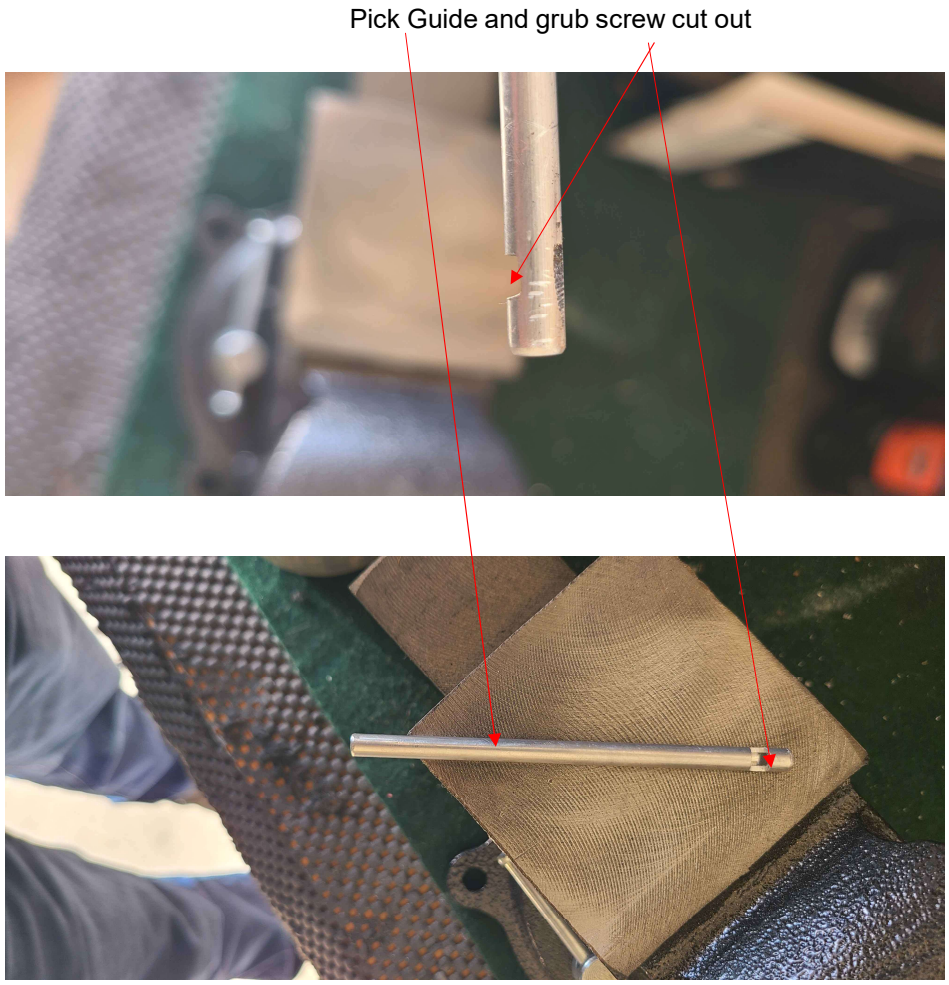
Front Tensioning Disc Detainer Pick

Step 5:

Make a grub screw cut out in the end of the pick guide / pick set piece.

For this piece I drilled a hole to tap the grub screw in the housing. I put a score mark on the pick guide housing and using files (flat and round) filed the section down until the grub screw went through the pick guide housing, which secured the pick to the inside of the tube. I flattened part of the pick for better engagement of the grub screw.

This is going to allow the pick to be secured to the pick turner. The pick guide will terminate in the pick turner, but in order for the pick to be secured a grub screw has to secure it in place to the turner. The hole with the grub screw will go through the pick turner and pick guide; which will secure the pick in place to the Pick Turner Assembly.



Front Tensioning Disc Detainer Pick

Step 6:

Using grinding wheels and files shape the pick. I used
A Dremel grinding wheel and files to shape the pick to thickness
desired specifications. I used a Zarker J55 padlock key and
the lock itself to get my specifications and size I wanted.

My pick ended up being 6 MM in Length, 1MM high, and 3 MM in
width. This seemed to fit snug inside of the discs, but thin enough
to bypass to the next disc.

When the pick was the desired shape and thickness, I used 1000
grit sand paper to smooth it out and then used “Simichrome” and a
Dremel polishing wheel to get a mirror like finish.

Pick design thought:

I placed a picture of a common market pick (Sparrows) next to the pick I made. I don’t like this pick (sparrows) because I feel it is way too small. I found the pick would easily slide off and be difficult to engage on the discs. My pick is a little more “beefier” and seems to work well in the 55MM Zarker for which it was designed.

Finished Pick

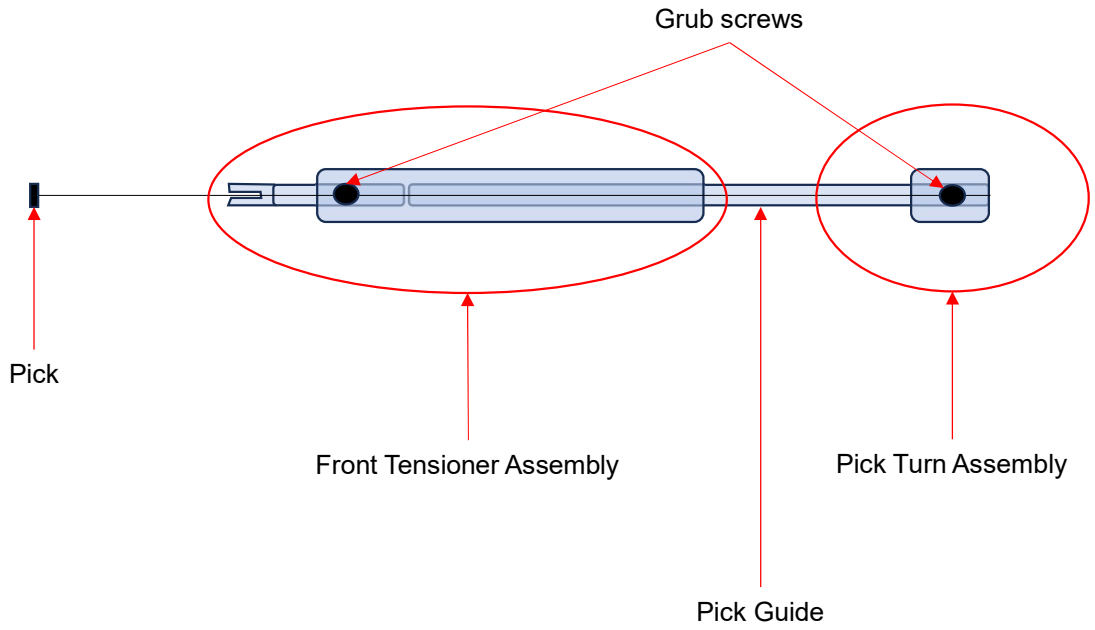
Sparrows Pick on left Home shaped
Pick on right (Comparison)

Front Tensioning Disc Detainer Pick

Step 7:

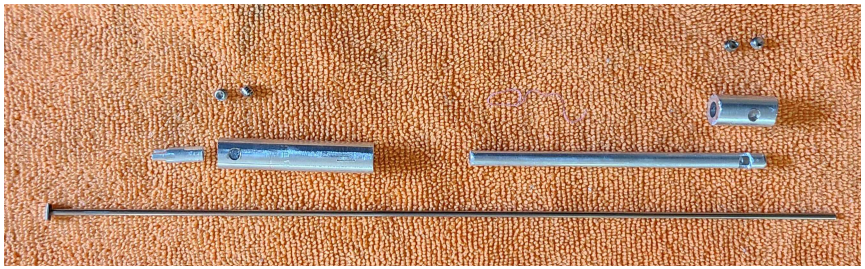
Assemble.

I assembled all parts and set the tensioner and pick to the desired lengths.



Front Tensioning Disc Detainer Pick

Tier 1: Finished Product



Unassembled

Assembled