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Boring Hammers For DUMMIES

I'm going to assume some knowledge
please ask if you don't understand something

The Basics of Duplicating Hammers

TIME! MONEY! BETTER!

So why bore your own hammers?

So What Tools do I Need?

Do I Need Top of the Line?

NO!!

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So What Tools do I Need?

Drill Press

Disc Sander or Table Saw

Band Saw (Optional) But I would!

Jigs and Fixtures

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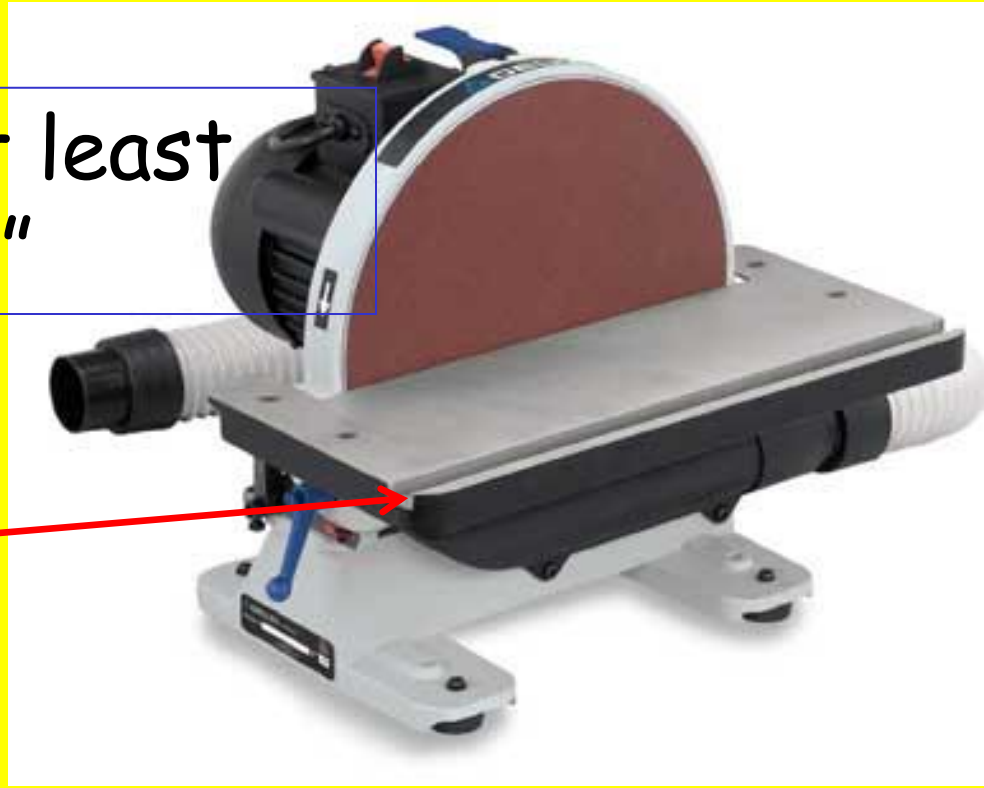
At least 15"



It needs to have a Miter Gauge Groove

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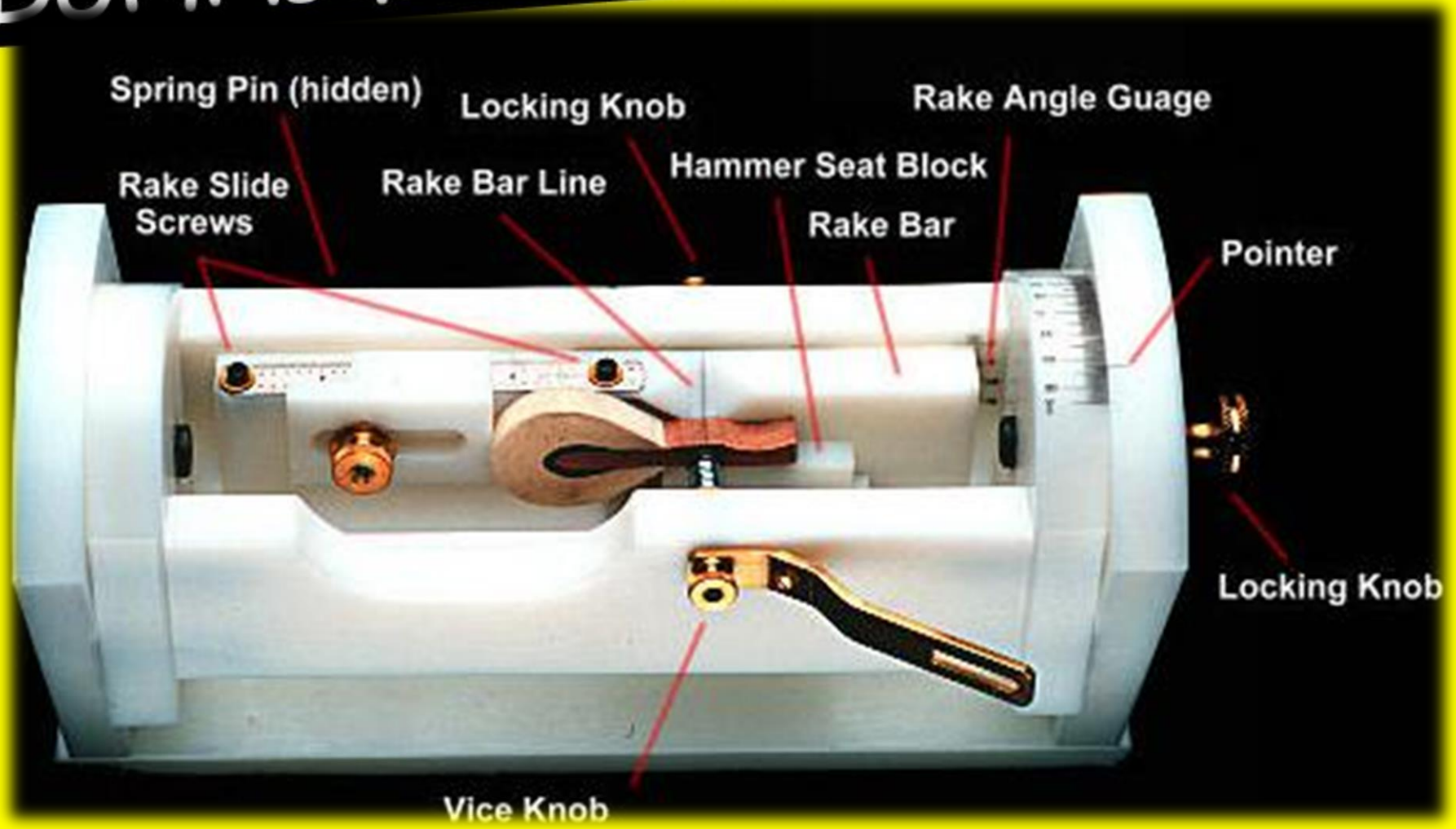

Renner Boring Jig

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Brooks Boring Jig
*Vice, Hand and grand Hammer are not included

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I use the Renner fixture now
I used the Brooks for years

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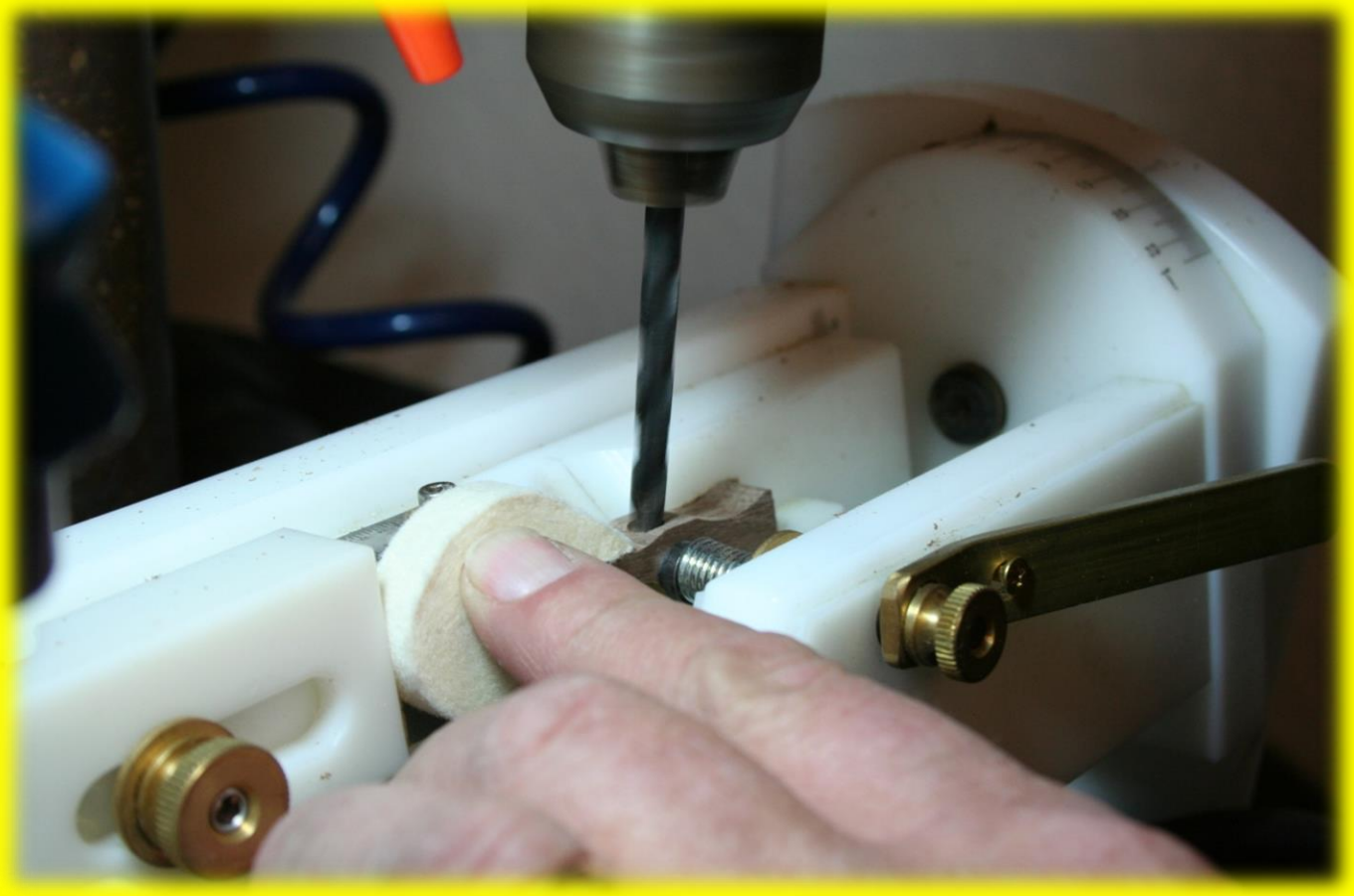
My game my toys we'll use the Renner today



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Some hand tools are also needed

Hammer removing tools
Grand and upright hammers pullers
Good pair of cutters
Around a 16" straight edge
Franklin cold hide glue
A small machinist square is a plus

The First Step

Nail the Job

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Choosing the right hammer for the job

What's on there now?

Hard, soft, big o'l club?

Most importantly; did the customer like the sound they have now or are you going after a different tone all together?

These are the questions that answer what hammer you choose

One other minor little question

Is the piano worthy of the hammer you choose? You are not going to make a Whitney spinet sound like this Petrof no matter what hammer you put on it!

So price and quality come into play and is it worth putting hammers on at all?

This is food for thought but for today…

It's worthy and needs hammers

Great now what?

Let's compare some hammers

Weight matters…..a lot!

A gram extra here at the hammer means a lot more touch weight

Fortunately and unfortunately

Today's hammers are more dense and weigh more

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Weight matters…..a lot!

That doesn't mean just put a lighter weight felt hammer on

Size and shape matter also

This sounds like it's getting….

Complicated?

Yes and no

This is where doing your own pays for itself

Nine out of ten if there is a weight problem it's because the new hammer is too heavy

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Weight watchers for hammers?

Yes….kinda

There are many things we can do to lose weight

At the hammer

Weight watchers for hammers?

Grand hammers is where we find most
Of the problems

So we can taper, file (a little), arc,
what else?

The cove…..

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Weight watchers for hammers?

We will do all of these today so you can see and feel what you can do to help your customer get the best feel and sound from their new hammers

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First things first

We're going to DUPLICATE some hammers on this piano

Not redesign, change strike distance, change the angels or rakes

This is the basics

There are many different ways
to hang hammers

I'm lazy so I leave every other one on so when I put it back it's lined up

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Remove the old hammers leaving samples

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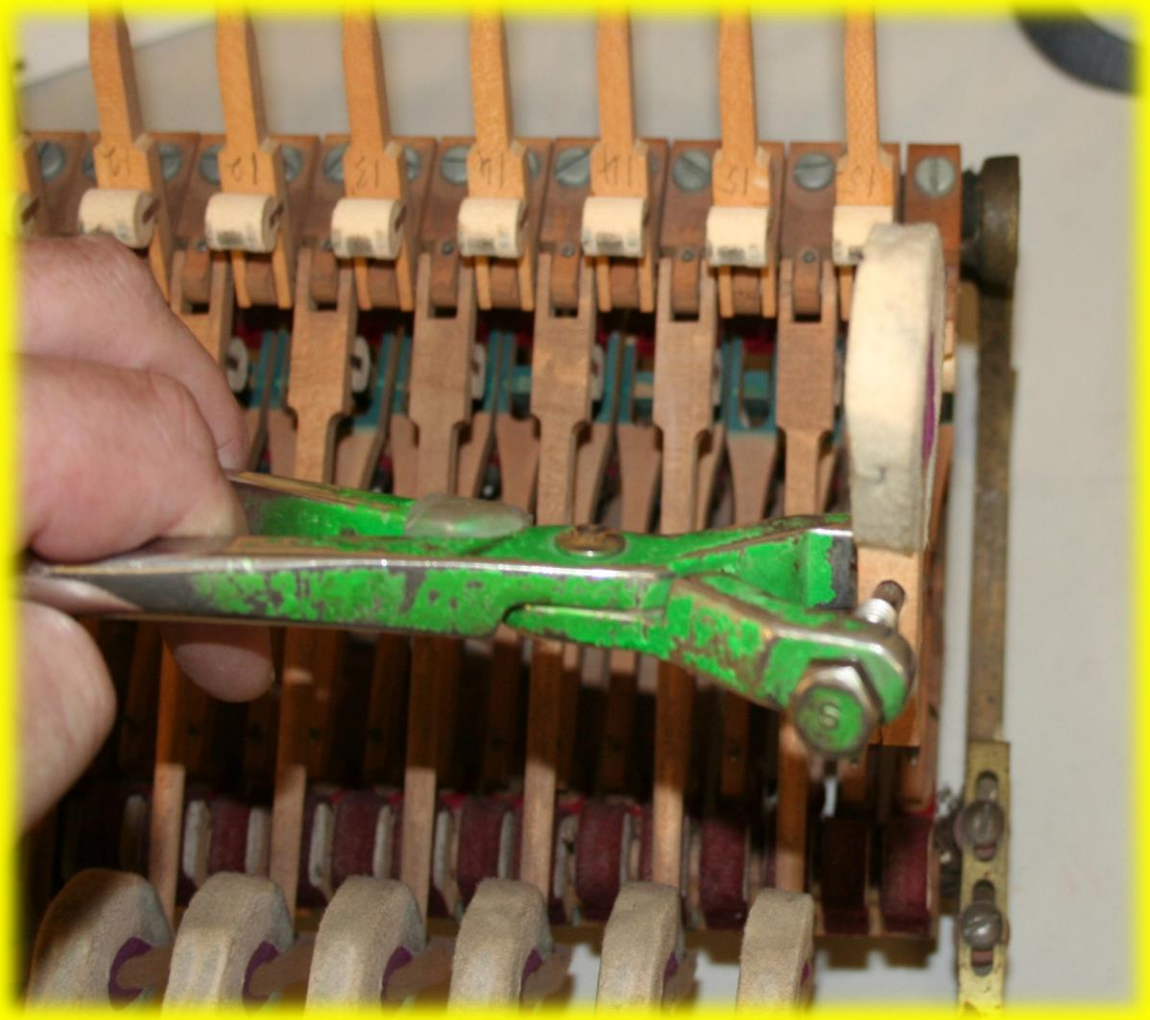

Sometimes splitting the hammer with side cutters or pruning anvil cutters helps save knuckles; yours not the pianos

Many if not most of the time you will be
Replacing shanks and flanges

I would have here on the piano pictured
but the dealer said no,
fine it's your piano

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Clean the glue off the shank
Don't twist the centers

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Measure the shank for drilling size

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Find the right drill, set it aside

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The drill will need to be about 10/1000's larger than the shank measurement

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I don't do perfect

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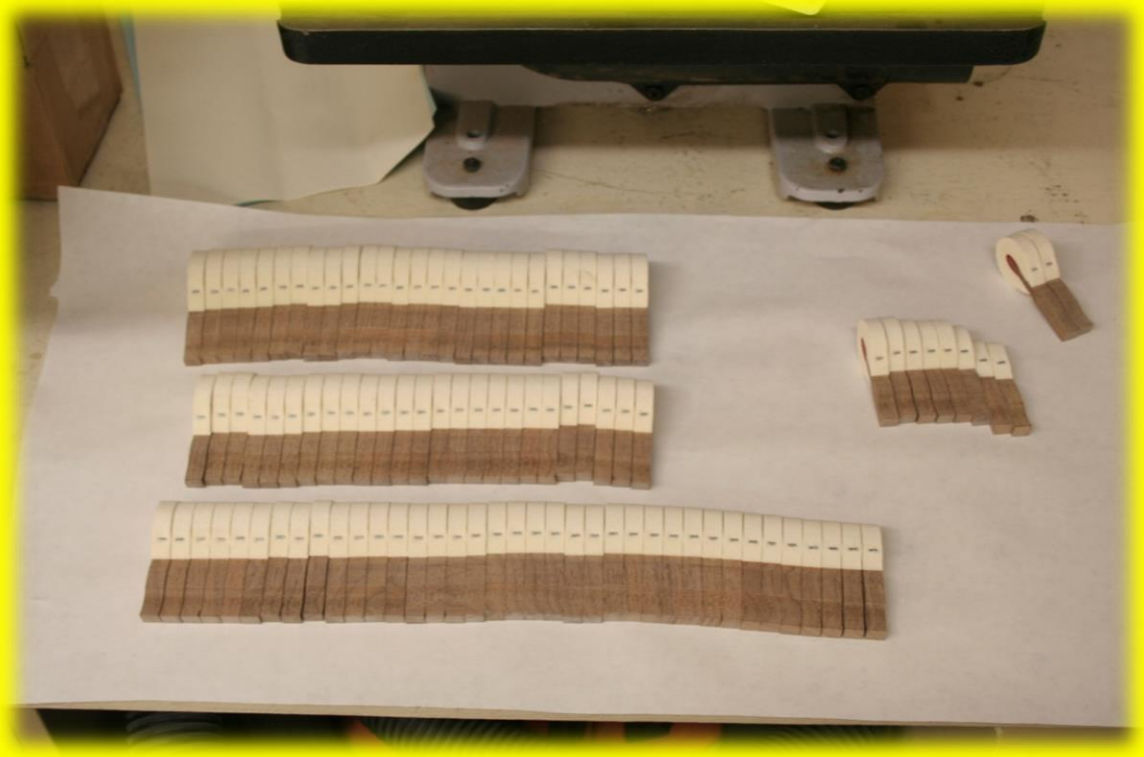
Lay your hammers out and count



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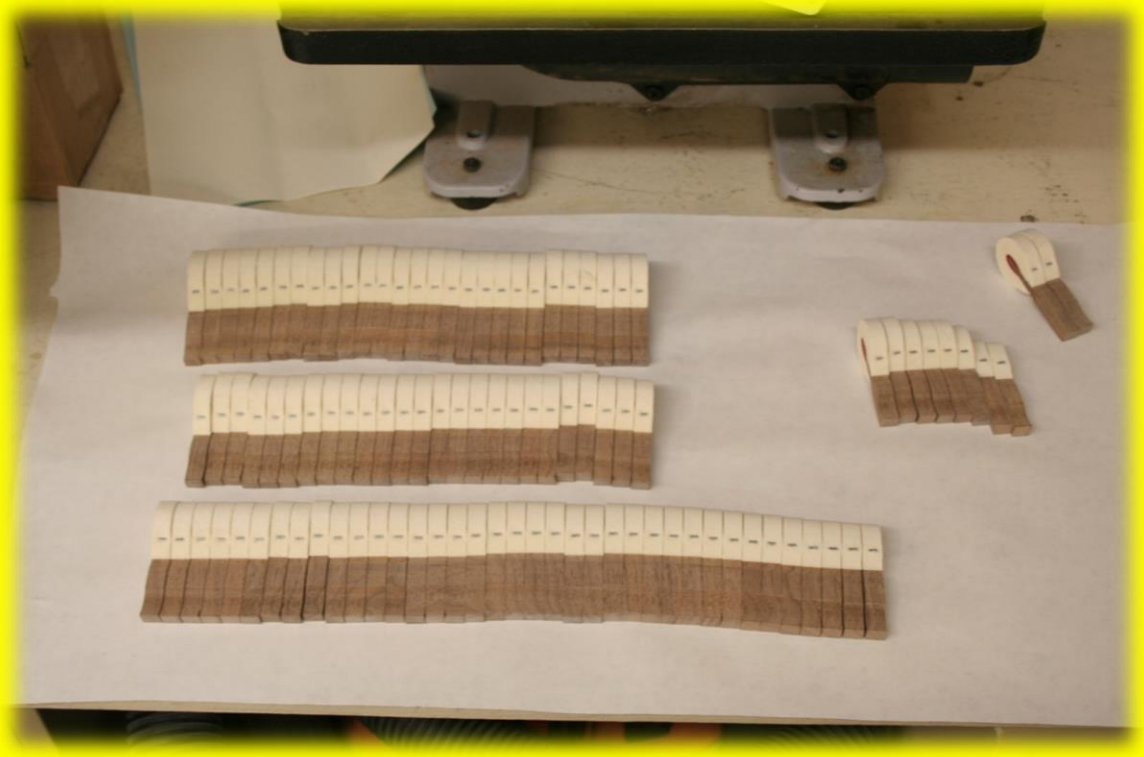
The extras become sample bores



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Measure the steepest angled tenor hammer and how many are at that angle

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Measure the last treble hammer with an angle you can almost always see it visually

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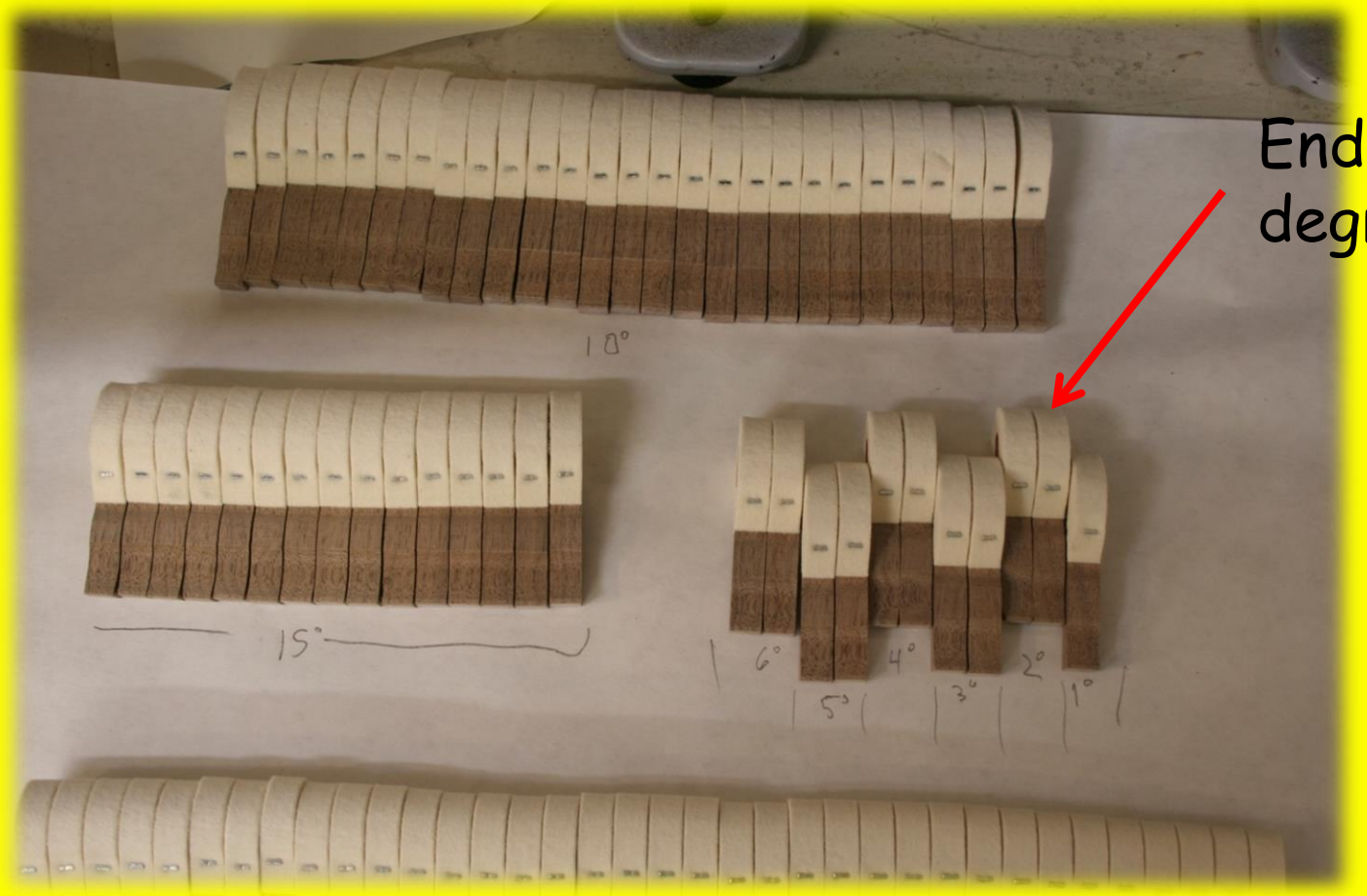
Lay out the hammers accordingly



Ended up one degree per hammer

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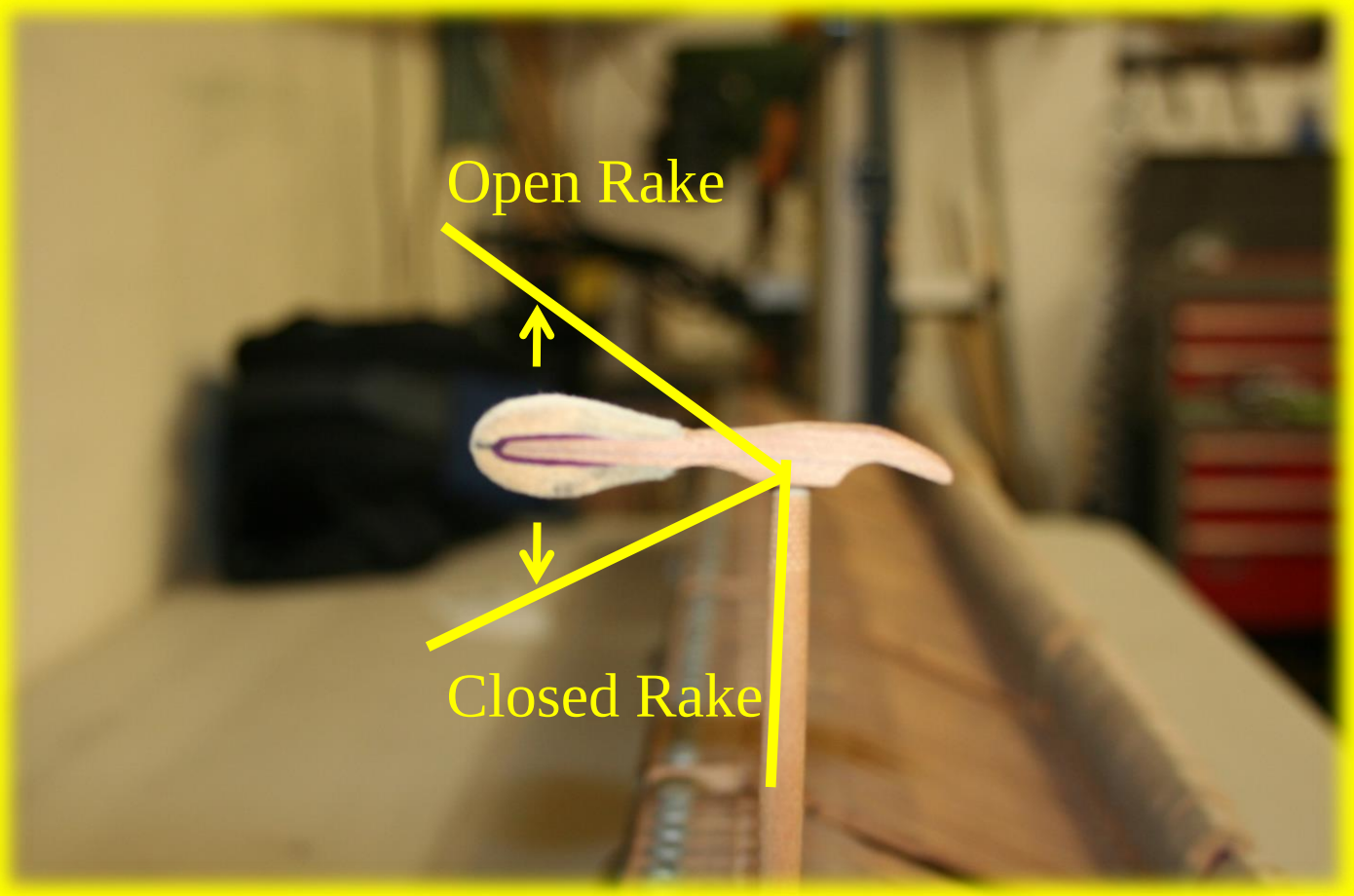
Rake closed, open, or 90^0



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We need some measurements to set up the fixture for boring a sample hammer

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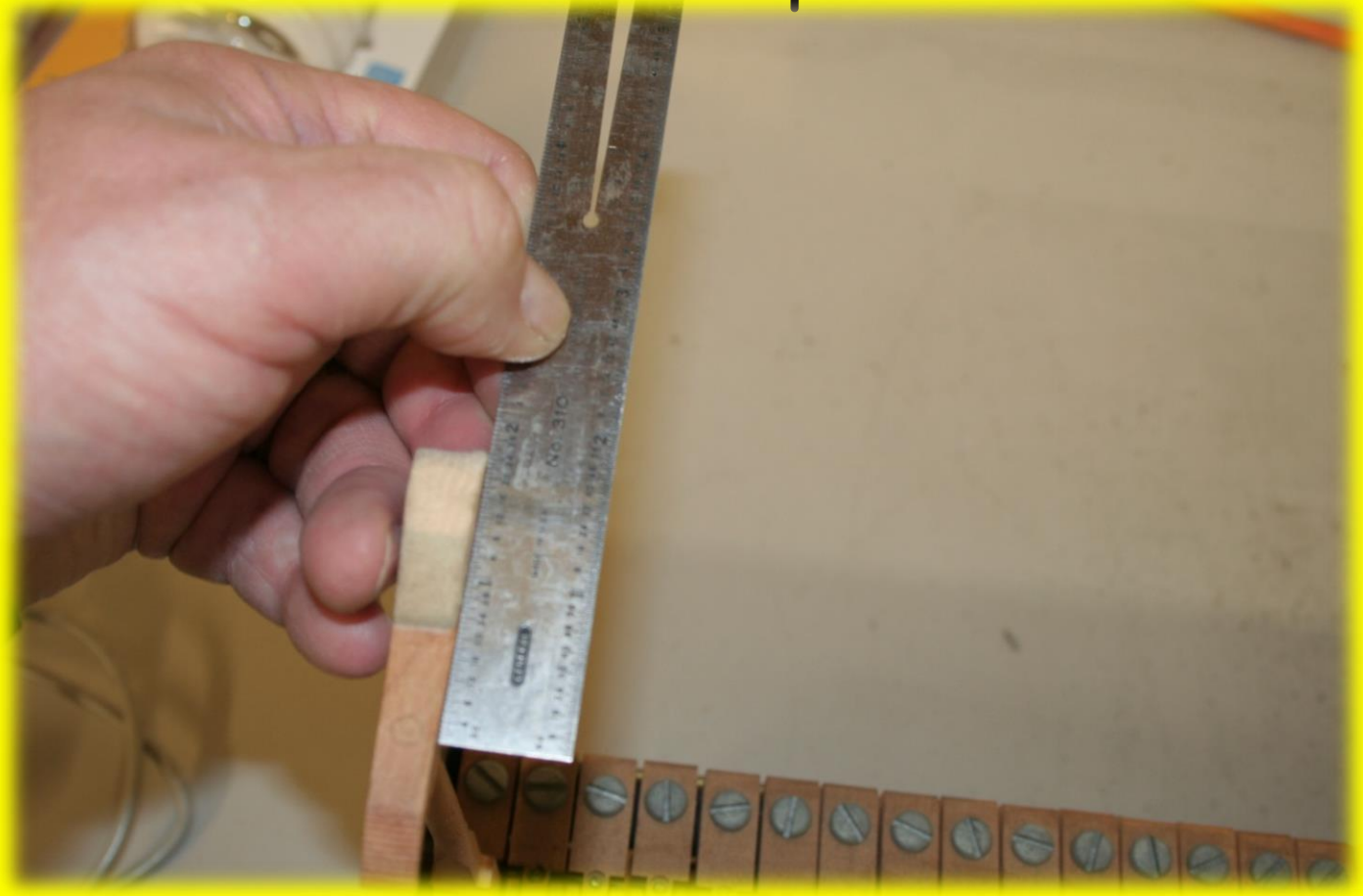
Measure the striking distance from the center of shank to tip of felt on #88



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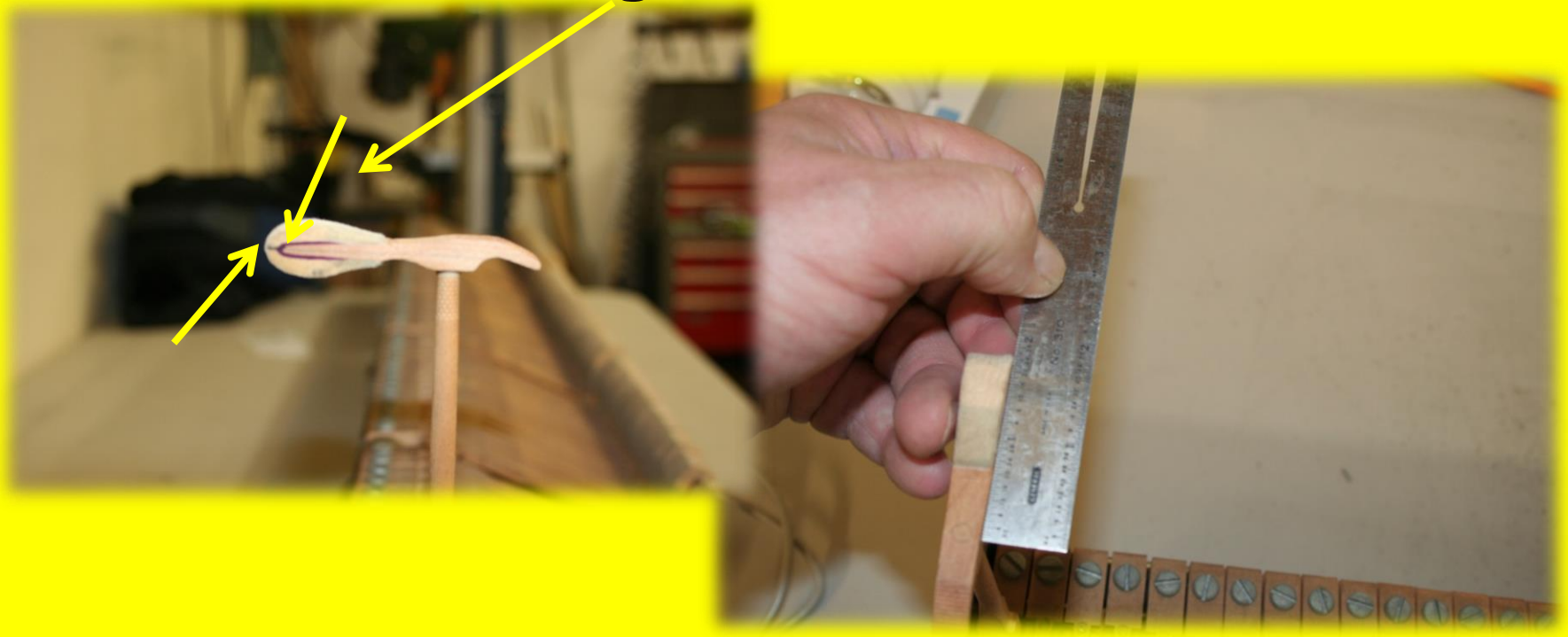
Careful here you must decide where the original felt was.. look at the new hammer to <u>get an idea</u>



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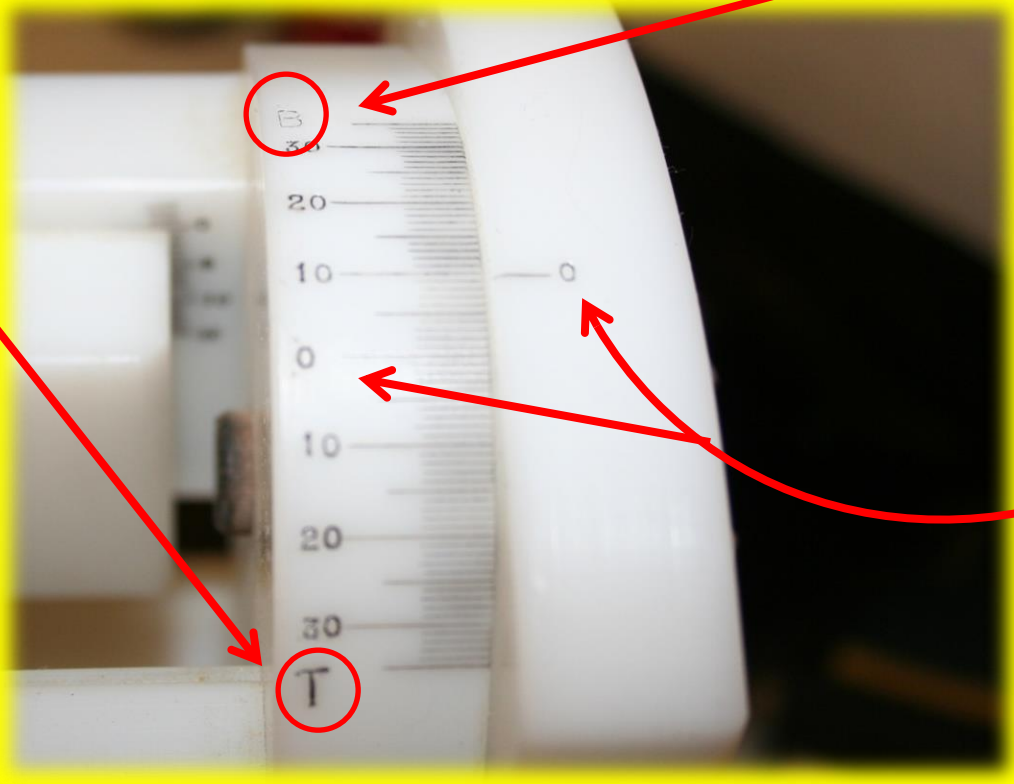
Line the zeros and there will be no angle
T for treble angles and as you guessed B for bass angles



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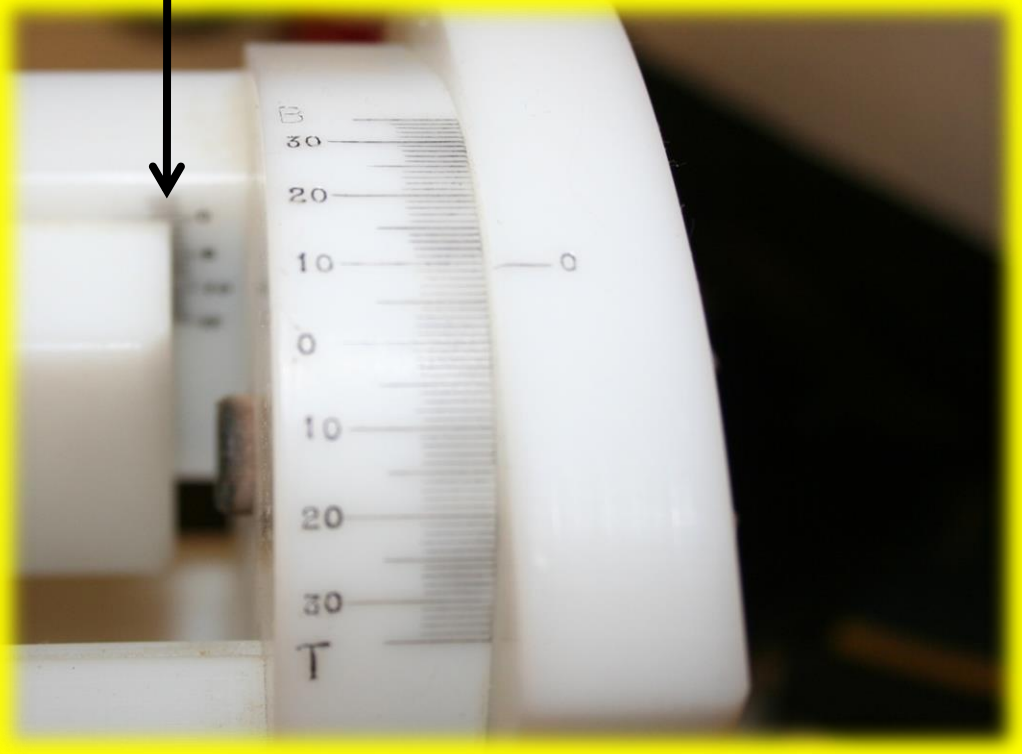
The blurry numbers are the rake;

up is open, down is closed

0 is 90^0



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On the brooks jig you need to mark treble and bass and the rake has no marks; tail down for closed up for open flat for 90^0 just take your best guess and do a sample

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This is when you drill a sample hammer to check strike and rake on #88 or near

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Let's set up and bore some hammers

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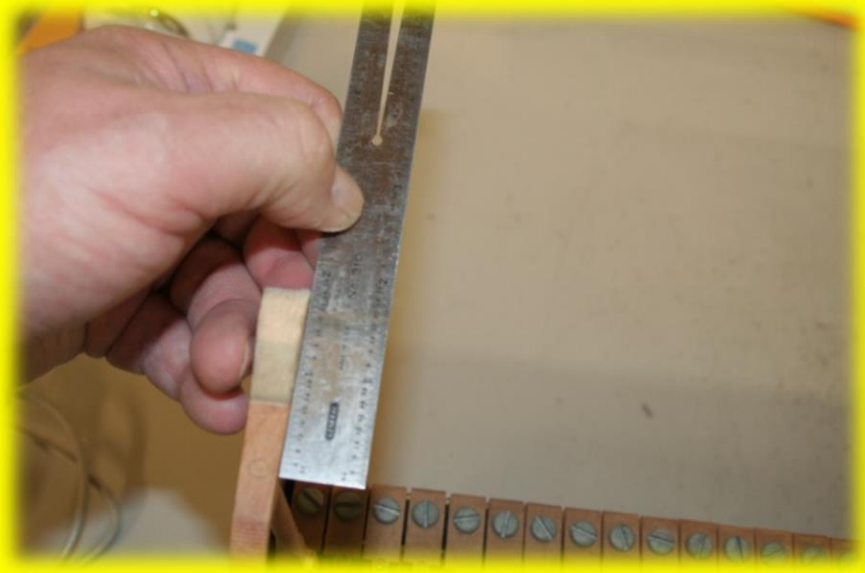
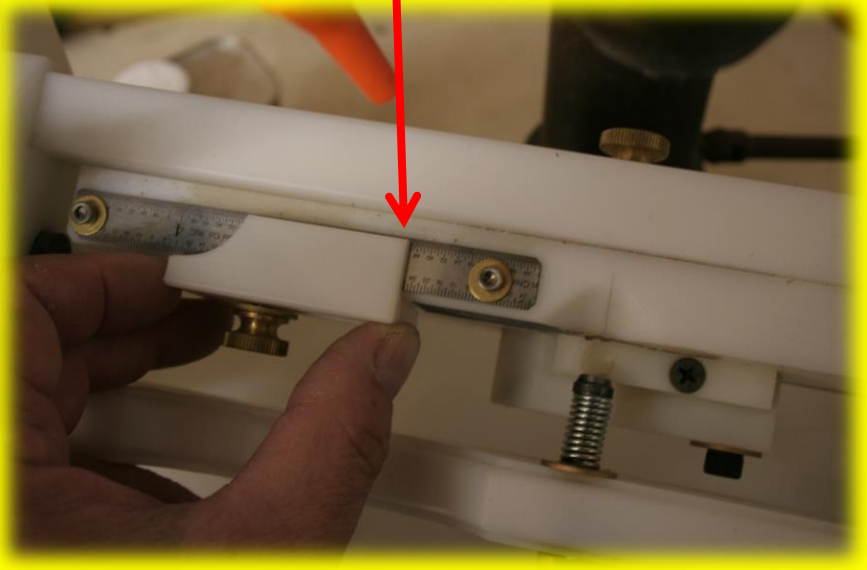
Take the measurement you took and transfer it to the fixture





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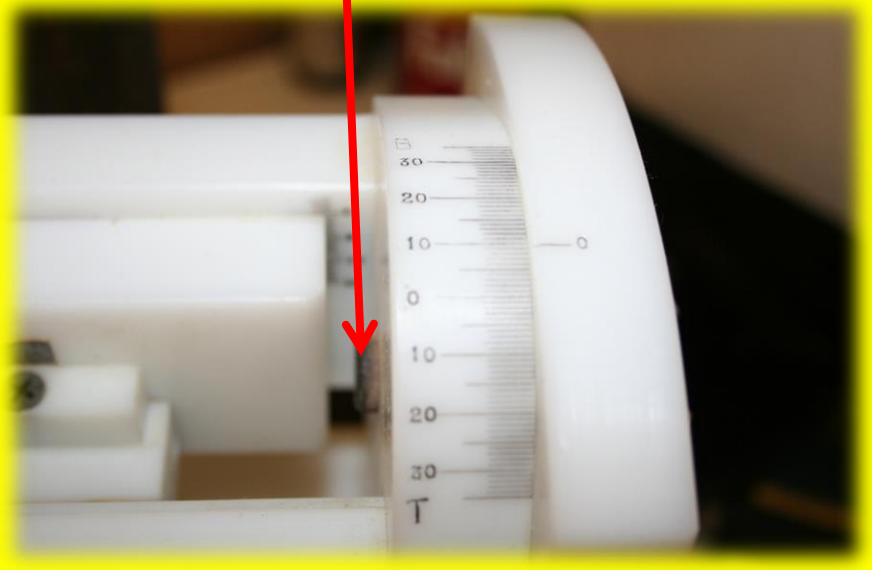
Let's set the rake

Move the rake bar to set the rake



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Install the drill we set aside earlier

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Dry fit #88 and check strike and rake

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Then let's set the first tenor hammer with its angle and rake if it has one

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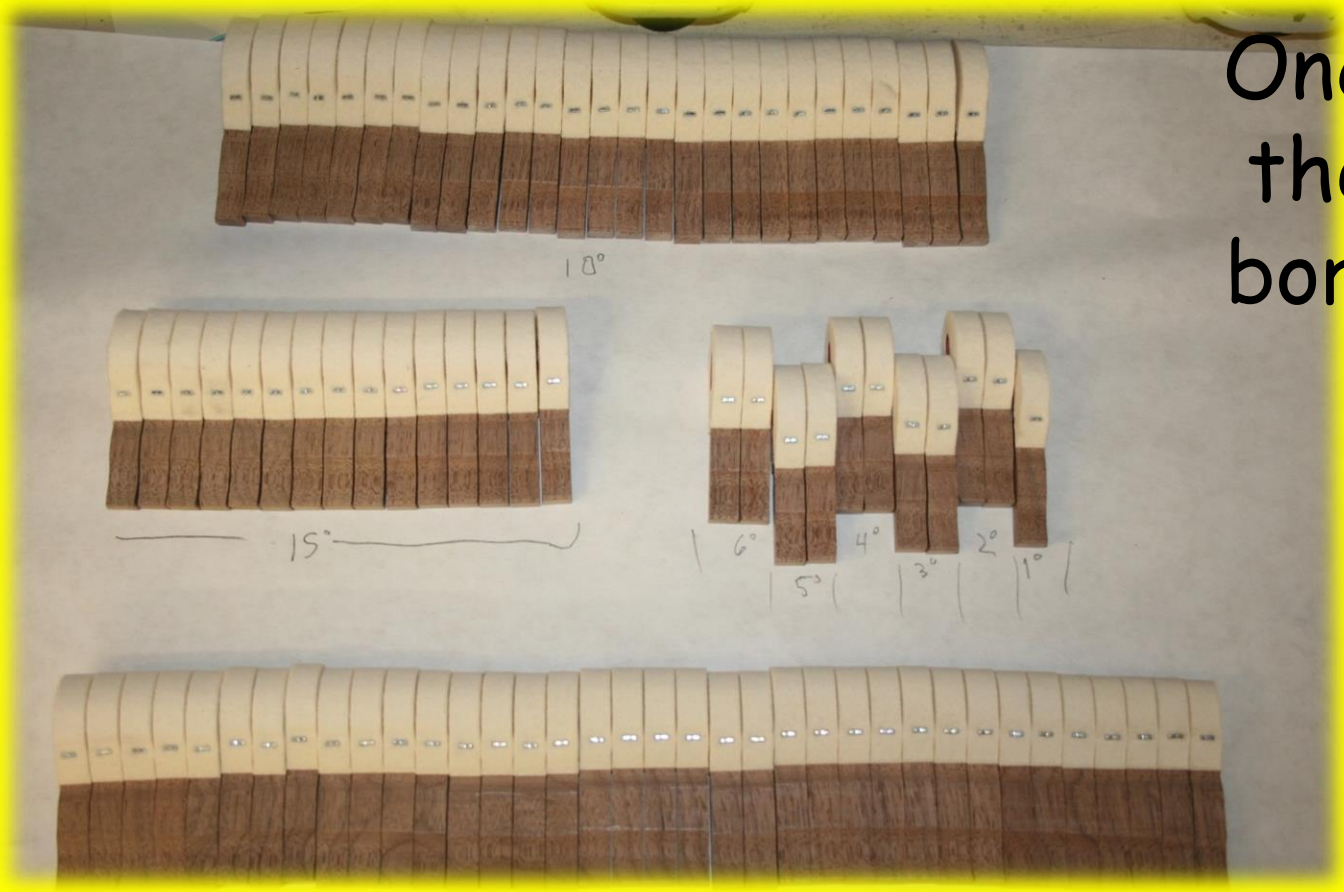

Once this is ok then we start boring for real

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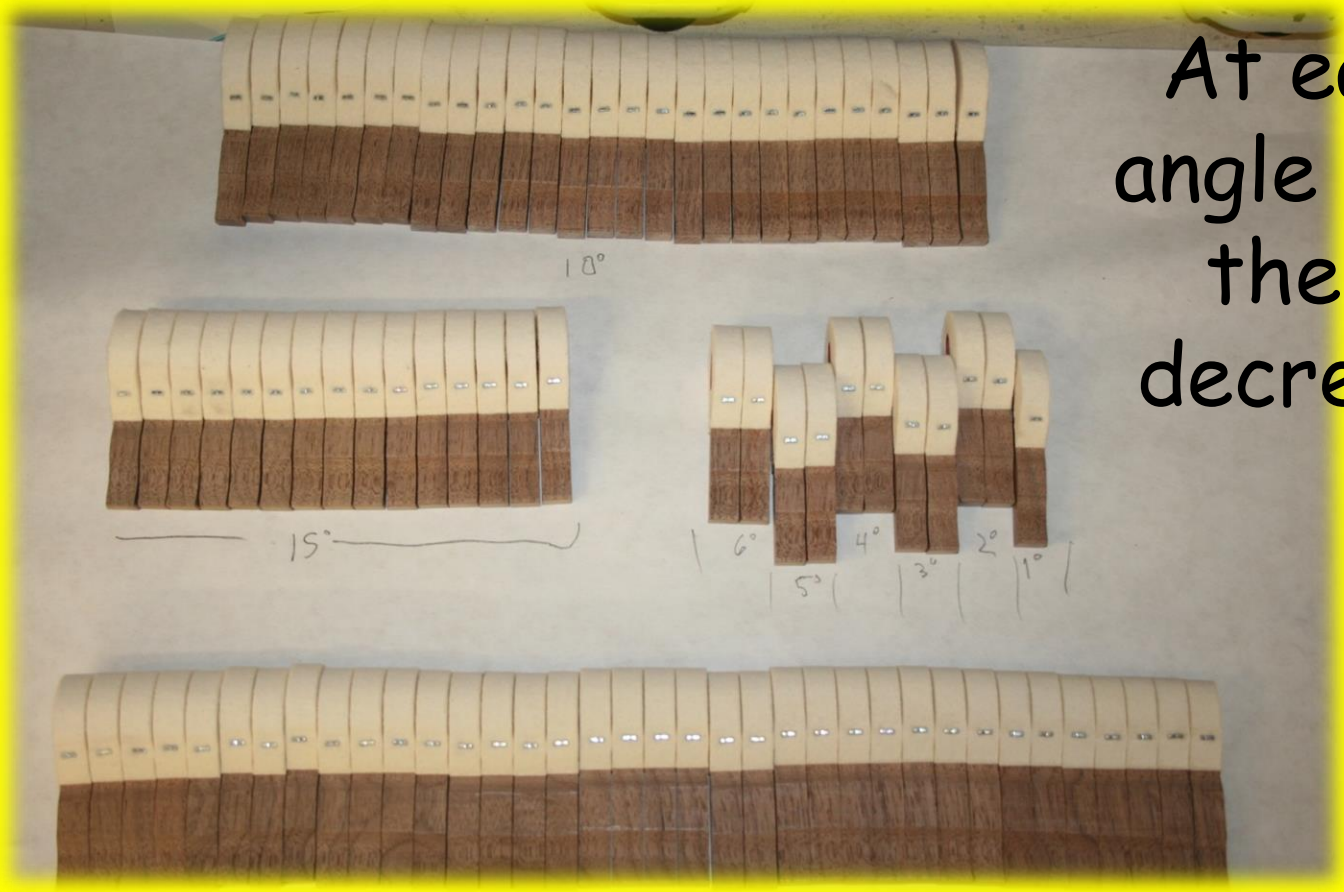

At each hammer angle change reset the fixture at decreasing angles

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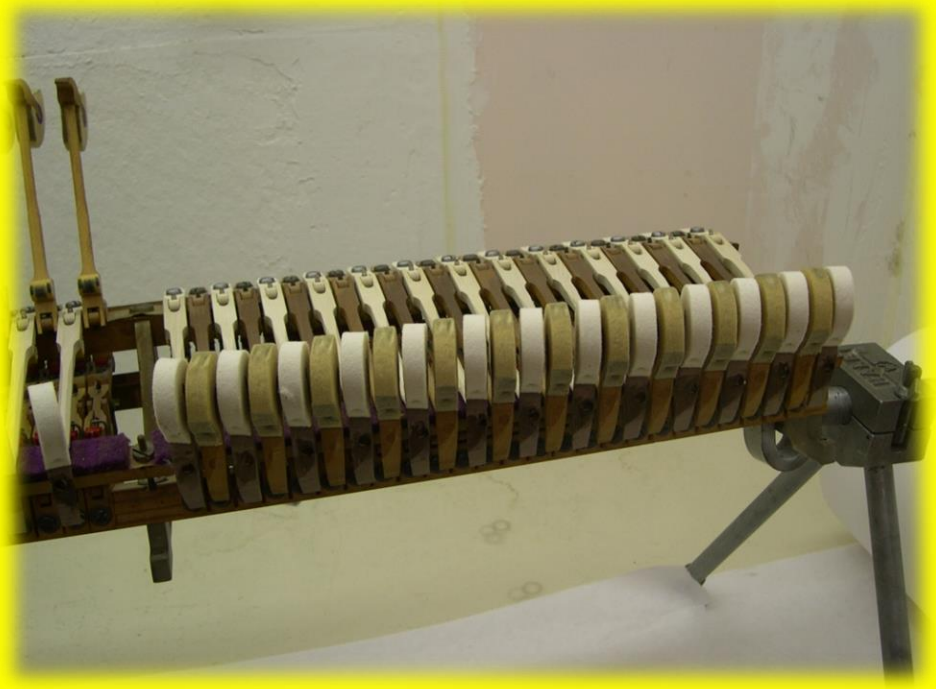
The bass is the same;
measure the striking distance and the angle;
sample bore and go



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Weight loss and clearance: let's taper

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Set up

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Set up continued

All the machines we are using today are fairly benign but can still cause some personal damage if you don't use precautions which by the way help the job go faster not slower

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Make sure you install a stop!!!
Or you won't need to trim your
finger nails for a while…ask me how I know

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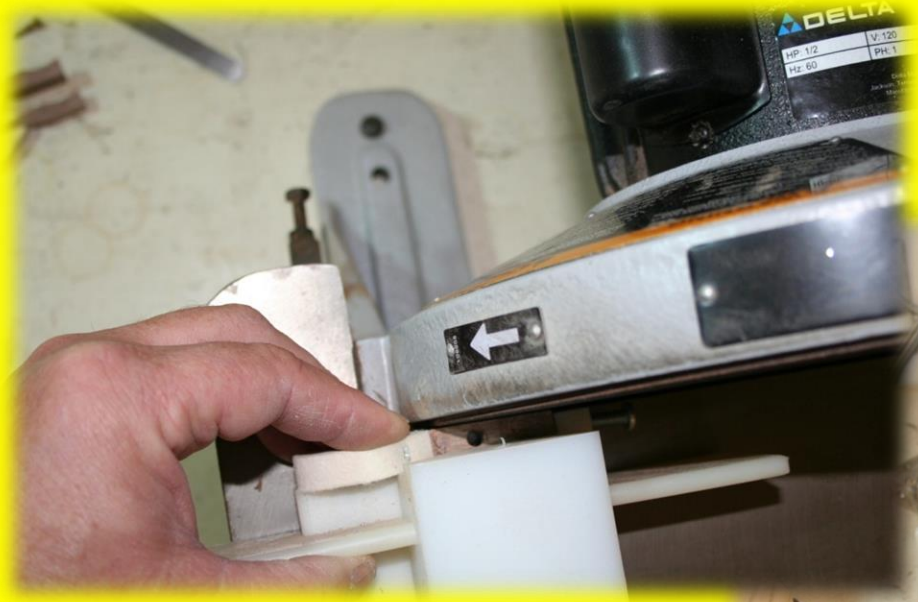
Adjusting the taper



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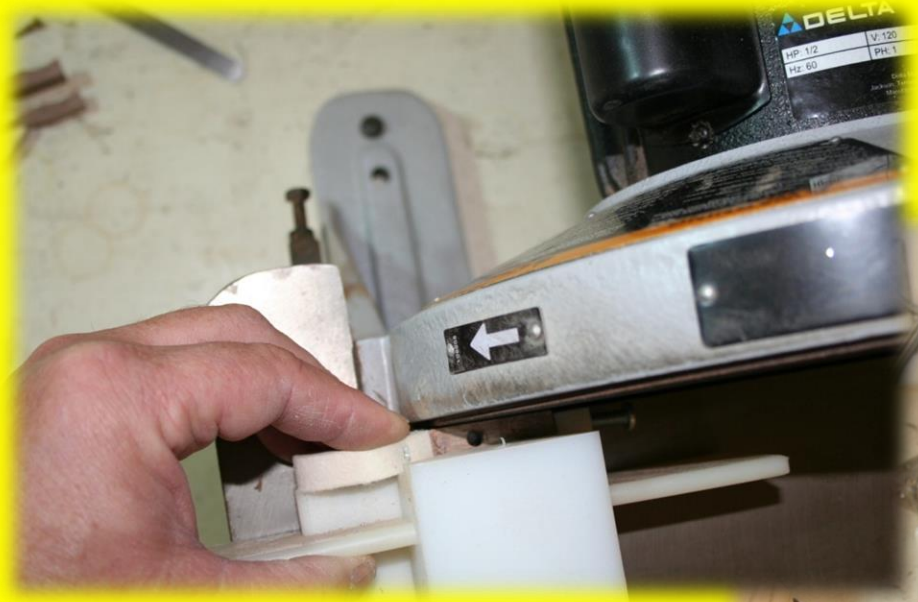
Adjusting the taper for the other side



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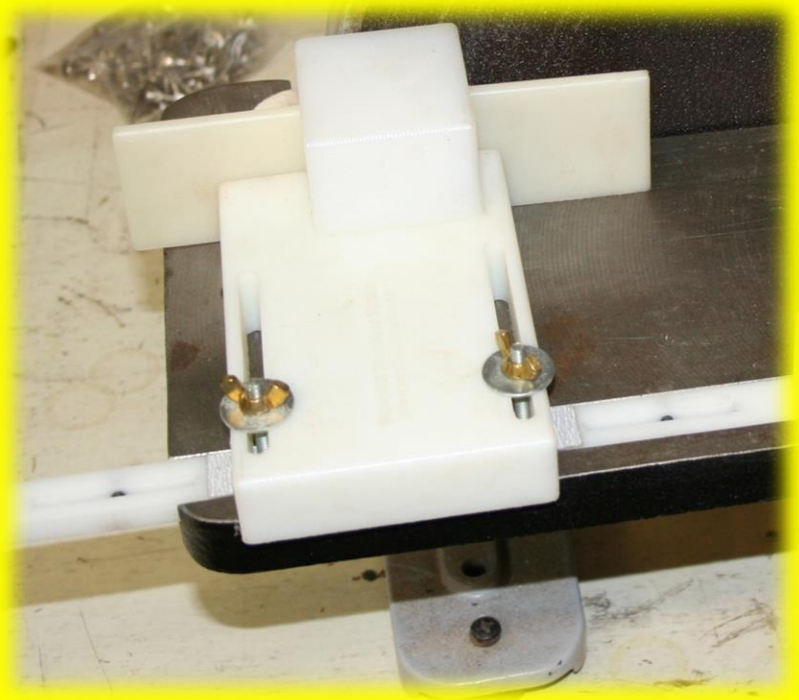
The taper fixture and the arc fixture are made by Spurlock Specialty tools and I can get you lined up with how to purchase them



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I set the arc fixture so it duplicates the arc on the old hammers; this means less regulating later and I'm lazy

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Once the hammers are bored tapered and arced I do one more thing
I rough up the tails so they check nicely

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Let's do an upright hammer so you can see how to set the boring depth
the rest is the same less the arc and taper.

Any Questions?

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