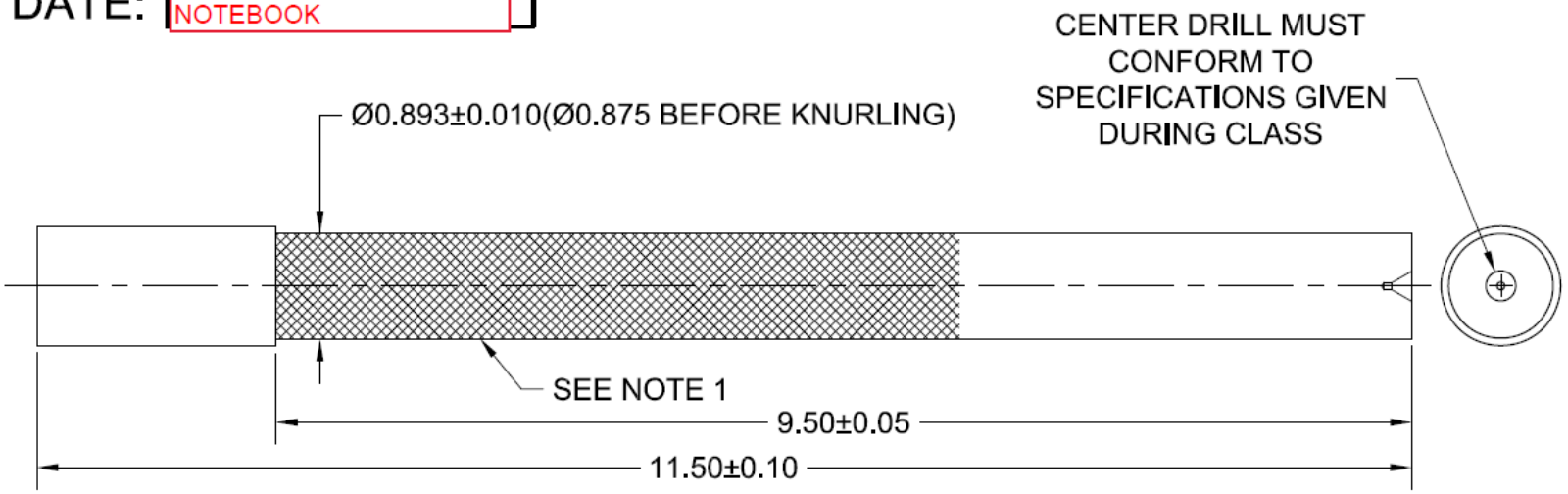
TECH 1711

Hammer Project

NAME: SAMPLE - DO NOT REMOVE FROM NOTEBOOK GRADE:

DATE:

REVISION HISTORY			
REV	DESCRIPTION	DATE	APPROVED
A	ORIGINAL RELEASE	01/08/2019	



NOTE 1: MEDIUM DIAMOND KNURL, 20 TO 35 TPI
NOTE 2: SURFACE ROUGHNESS Ra 150 MICROINCHES MAX (BEFORE KNURLING)

MATERIAL: 6061-T6511, ASTM B221-14

DIMENSIONING & TOLERANCING IN ACCORDANCE WITH ANSI/ASME Y14.5M – 1994

THIRD ANGLE

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UNLESS OTHERWISE SPECIFIED: ALL DIMENSIONS ARE INCHES

UNSPECIFIED TOLERANCES

LENGTH
.0 = ±.1
.00 = ±.01
.000 = ±.005
.0000 = ±.005

SURFACE FINISH
RMS 140 μin

ANGULAR ±.25°

UNIVERSITY OF MEMPHIS
DEPARTMENT OF ENGINEERING TECHNOLOGY

HAMMER HANDLE – PART 1

SIZE	DATE	DWG NO	REV
a	01–08–2019	UM001	A

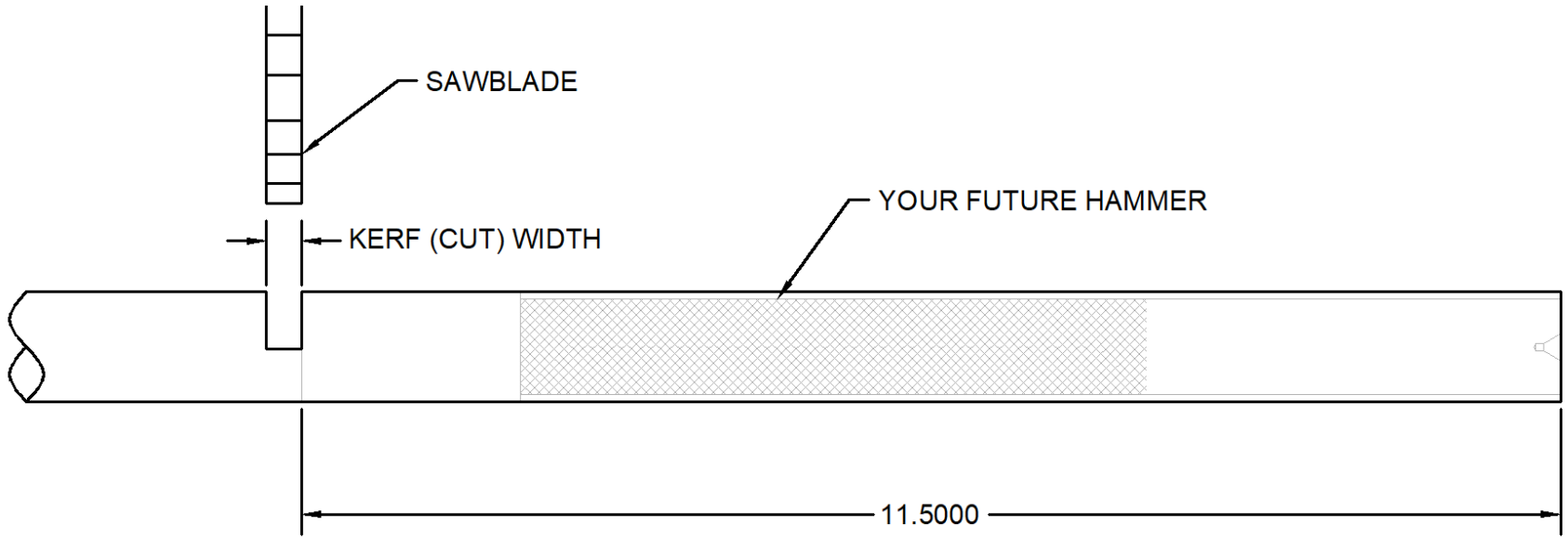
SCALE: 1=1

DRAWN BY: RH

Part One - Saw to Length

- Material used is 1.0 inch round 6061-T6511 aluminum bar stock
  - https://youtu.be/tJ3LmmoYRJ4

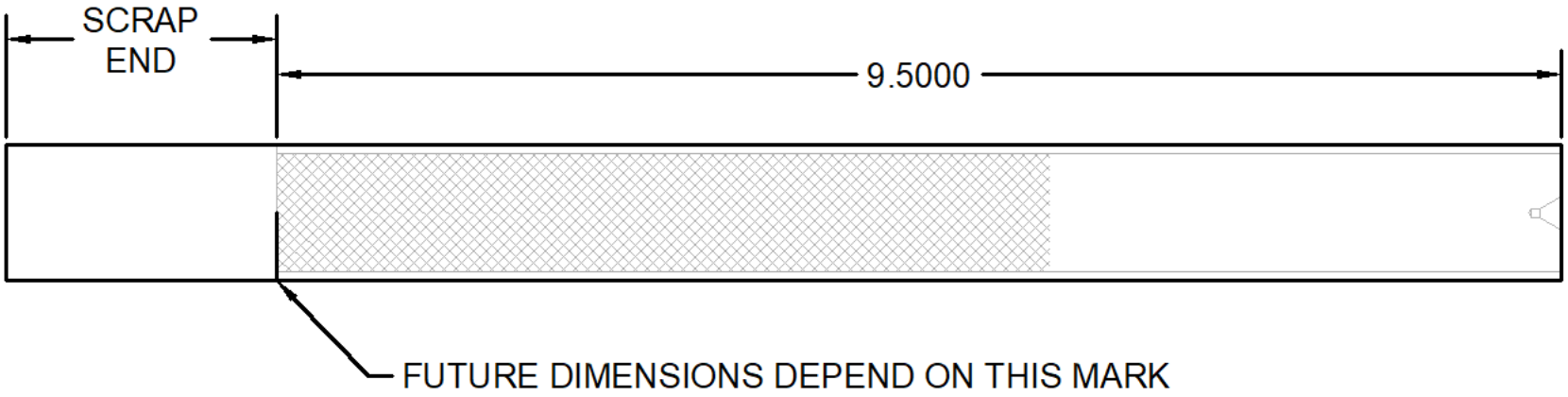
- Your part should be 11.5 ± 0.10 inches long



Part Two - Mark Length (Layout)

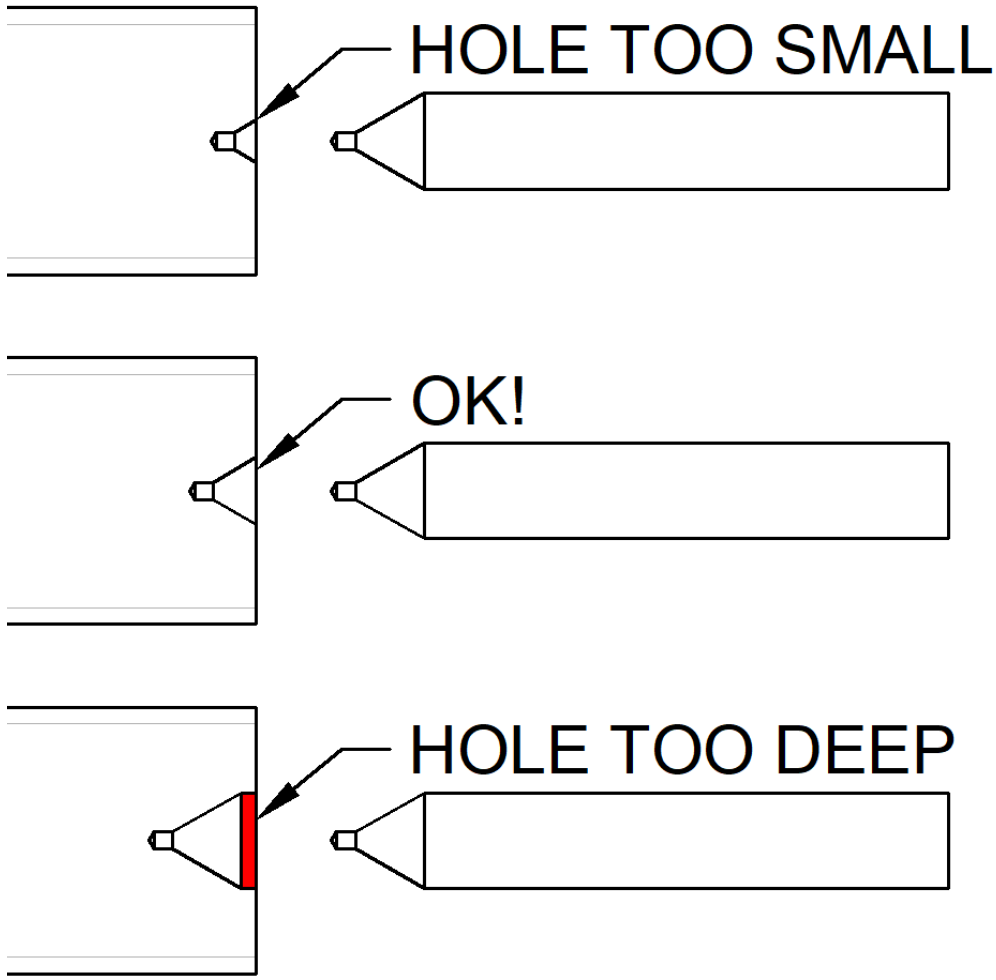
- Make a *precise* mark at the end of the actual hammer
  - https://youtu.be/Gd1Jy3sxDok

- Note: This mark is important



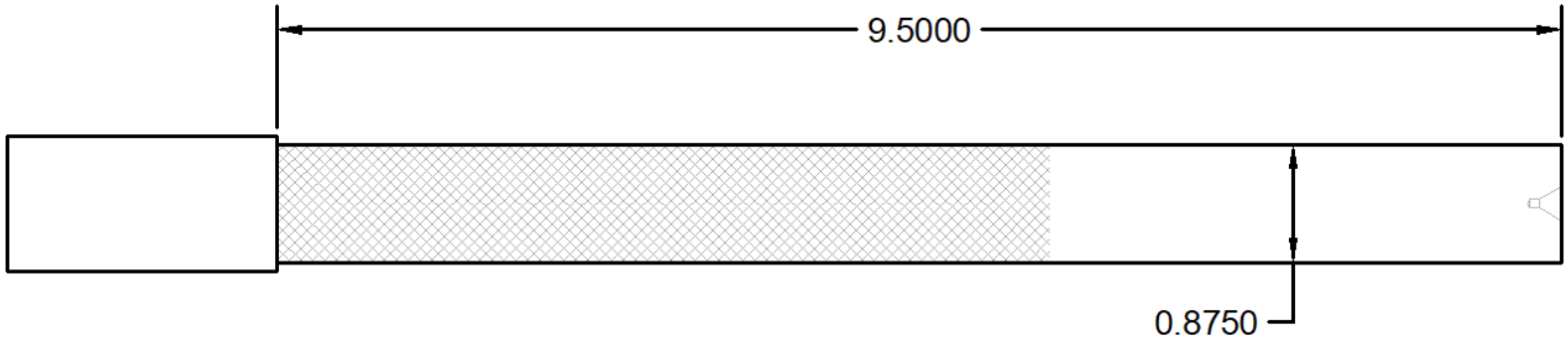
Part 3 - Center Drilling

- Drill a conical hole to accept live center.
- https://youtu.be/rpXWOW8ygq4



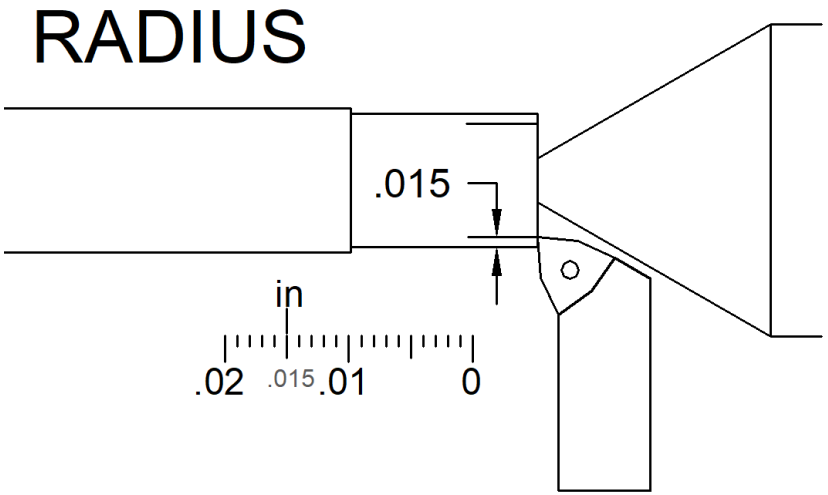
Part 4 - Straight Turning (Details)

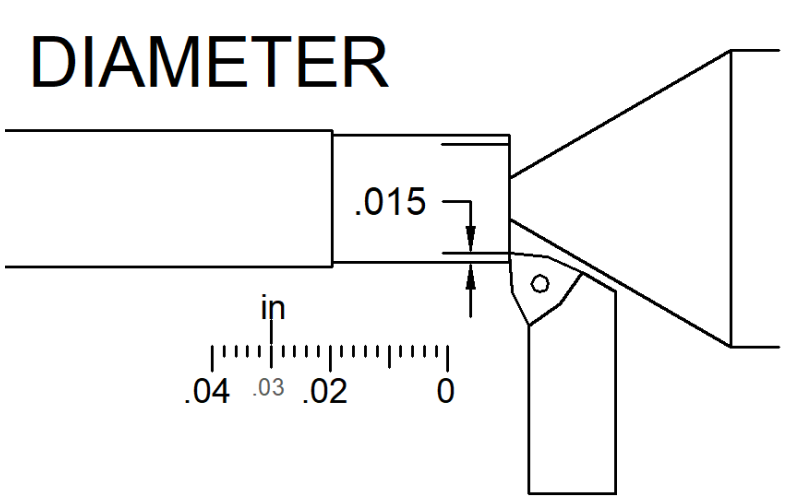
- Complete Video https://youtu.be/VjdCXMKqMOc
- Mark end https://youtu.be/VjdCXMKqMOc?t=722



Part 4 - Straight Turning

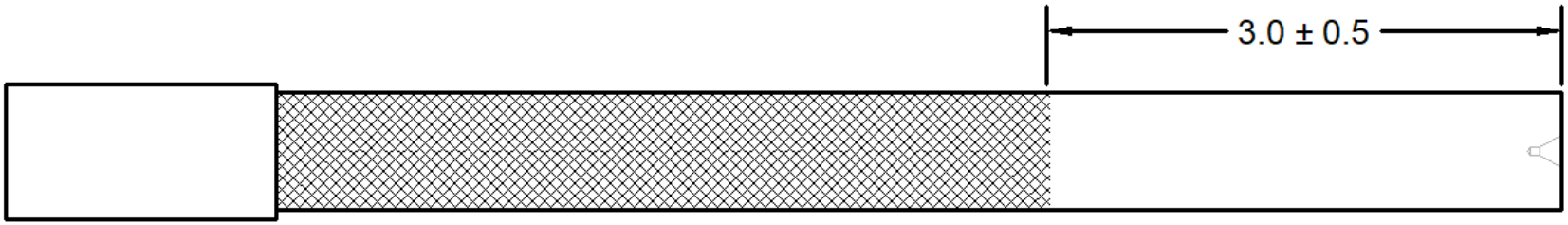
- Turn to proper DIAMETER and LENGTH
- Understand the difference between lathes with cross slides calibrated in diameter units versus radius units.
- https://youtu.be/VjdCXMKqMOc?t=990





Part 5 - Knurling

- Knurl the part along the handle portion
- https://youtu.be/63LfM-MT4pw



When you are finished with this part:

- Write your last name on the machined section
- Bring the following to your instructor
  - Finished part
  - Grade sheet, filled out
  - Grade record form, filled out

NAME: GRADE:

DATE:

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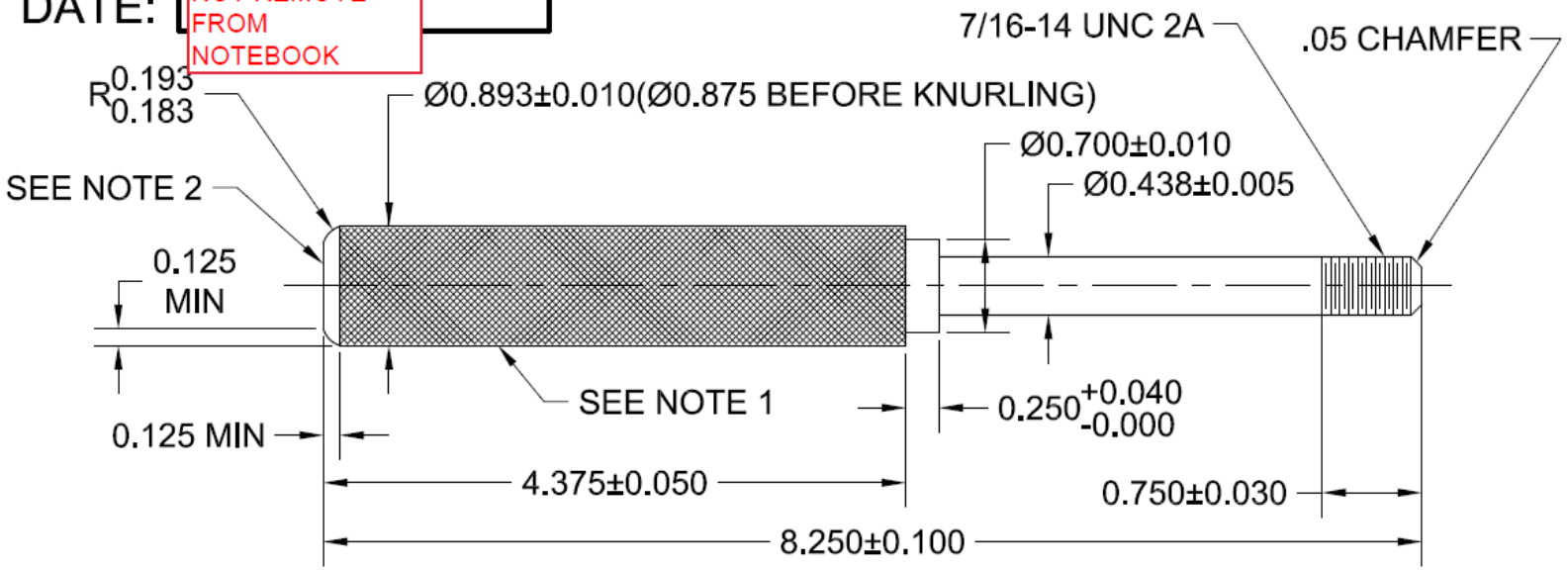

NOTE 1: MEDIUM DIAMOND KNURL, 20 TO 35 TPI
NOTE 2: END MUST BE FACED COMPLETELY
NOTE 3: SURFACE ROUGHNESS Ra 150 MICROINCHES MAX (EXCEPT KNURLS)

MATERIAL: 6061-T6511, ASTM B221-14

DIMENSIONING & TOLERANCING IN ACCORDANCE WITH ANSI/ASME Y14.5M – 1994

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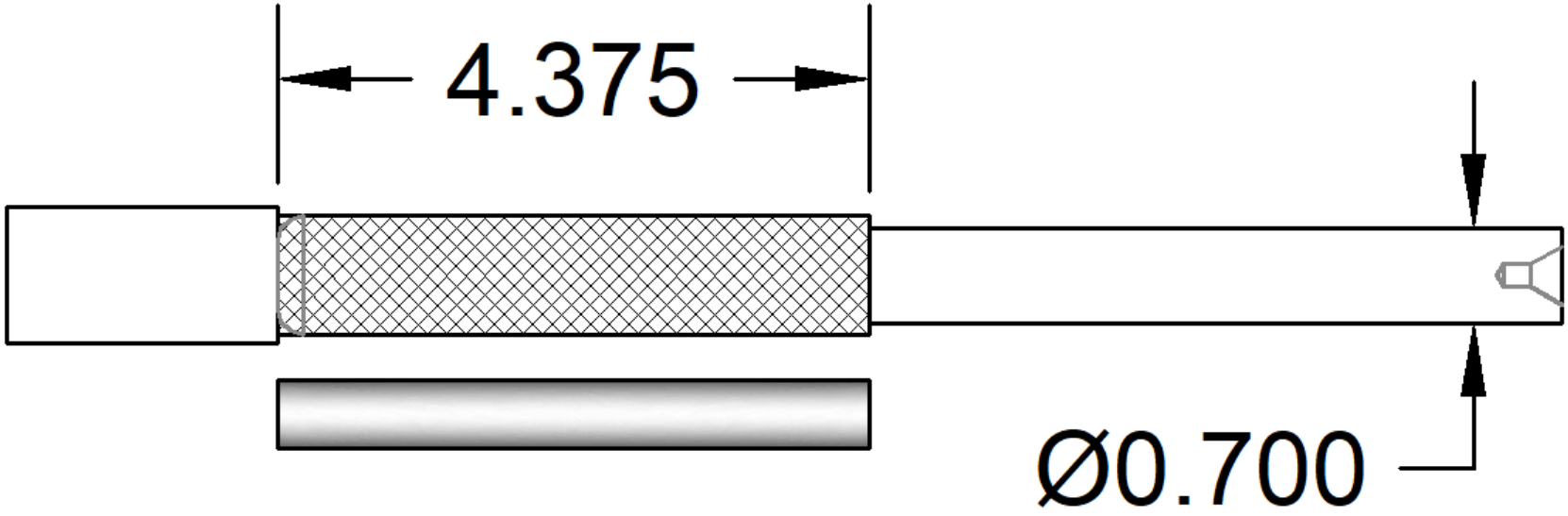
HAMMER HANDLE – PART 2

SIZE	DATE	DWG NO	REV
a	01-08-2019	UM001	A
SCALE: 1=1		DRAWN BY: RH	

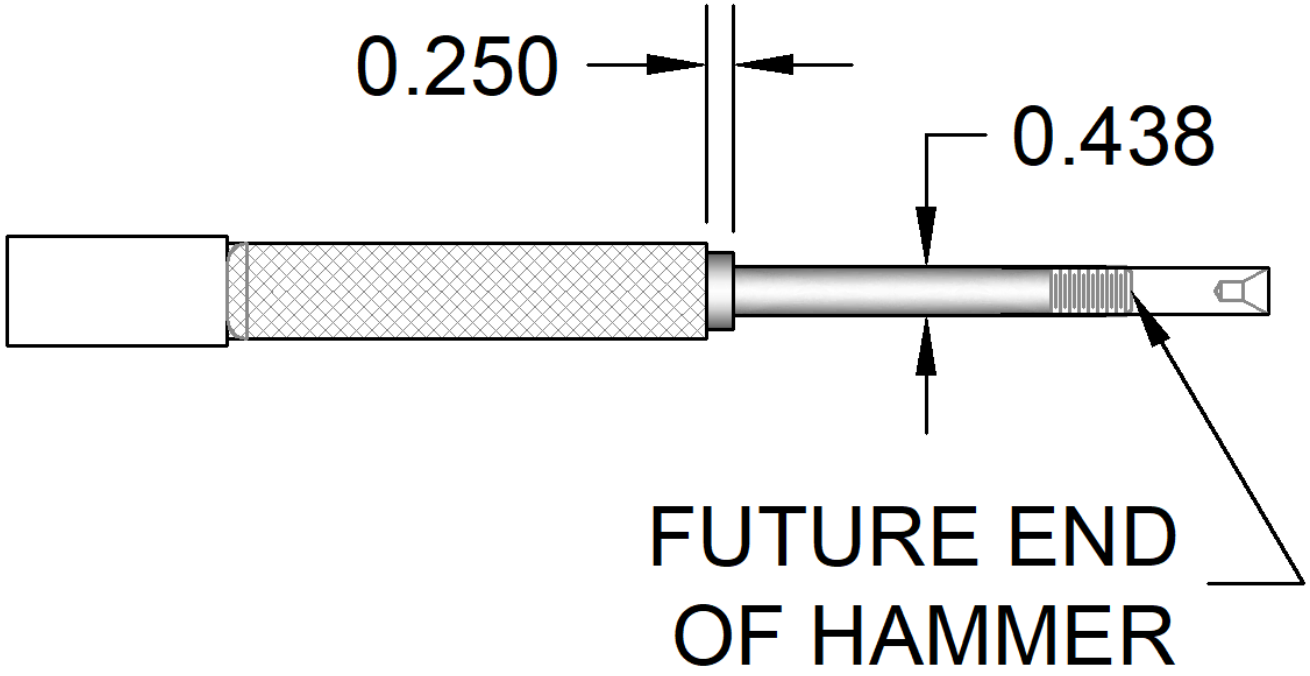
Part 6 - Turning a Shoulder

- Complete Video: https://youtu.be/Us0x6G_9Ojo

- The location of the shoulder is important.
- First turn the .700 diameter shoulder



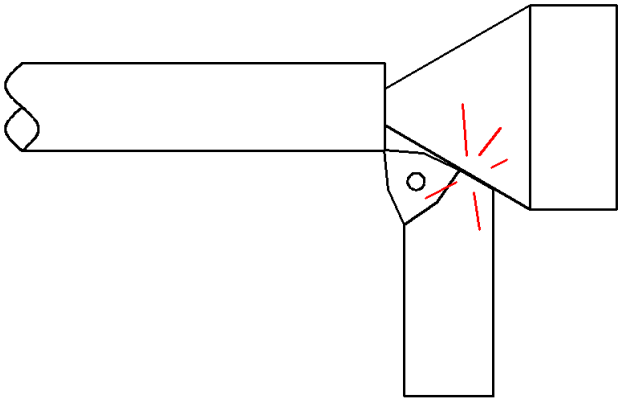
- Note: The .438 dimension is critical to the function of the hammer.



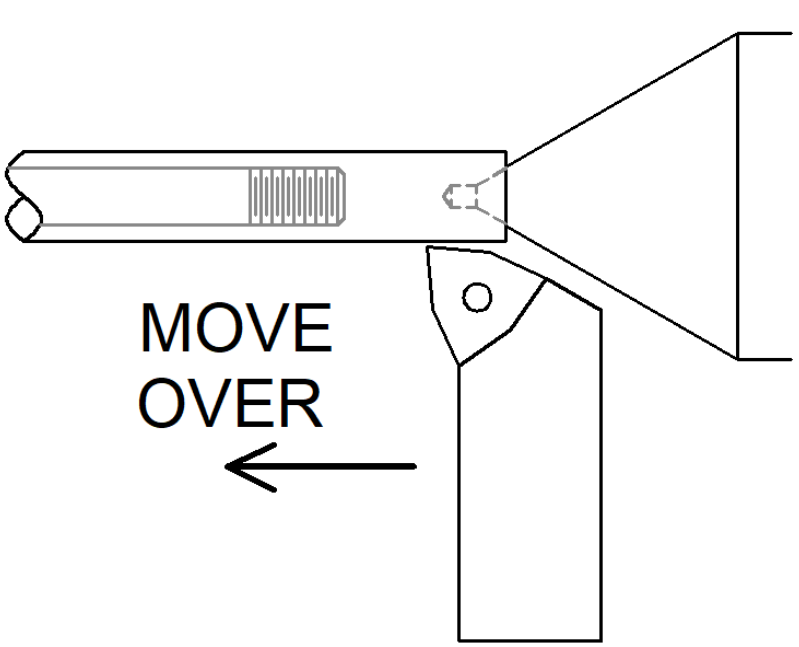
Use the dial indicator to set up for the .250 dimension.

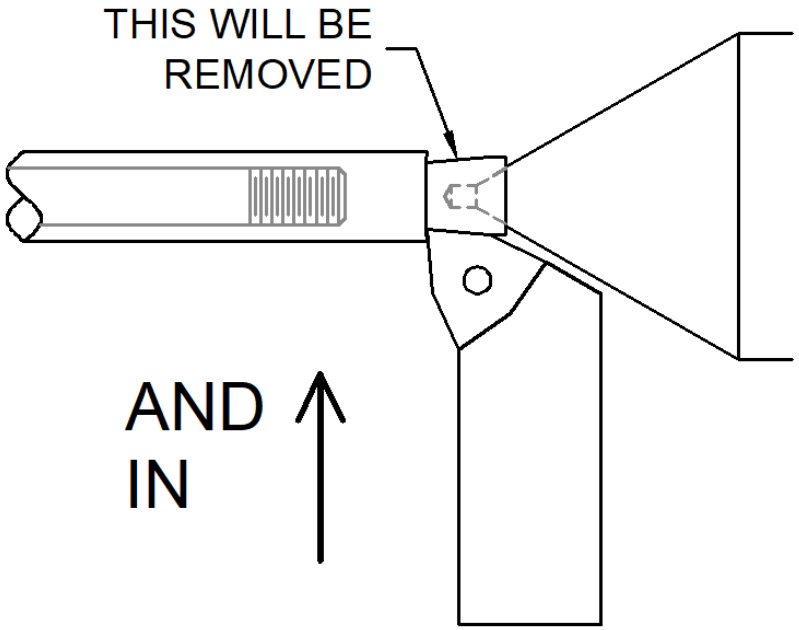
- https://youtu.be/Us0x6G_9Ojo?t=380

- You might have this problem:



- To solve it:
- https://youtu.be/Us0x6G_9Ojo?t=664





Part 7 - Saw, Face, Chamfer

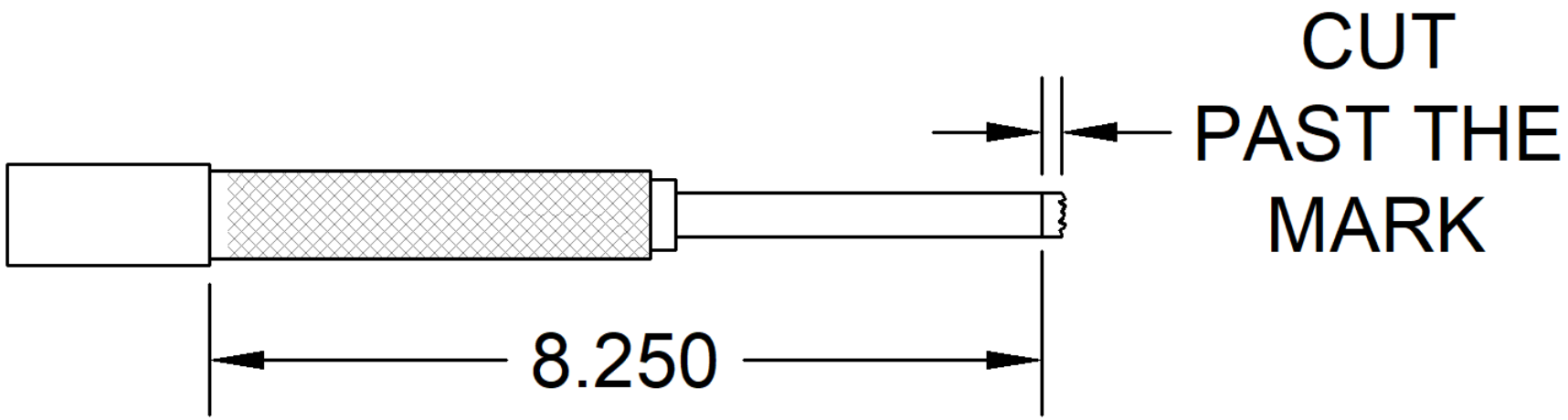
- Complete Videohttps://youtu.be/601M1l7-RHM

Use Fixture to Mark

- https://youtu.be/601M1l7-RHM?t=48

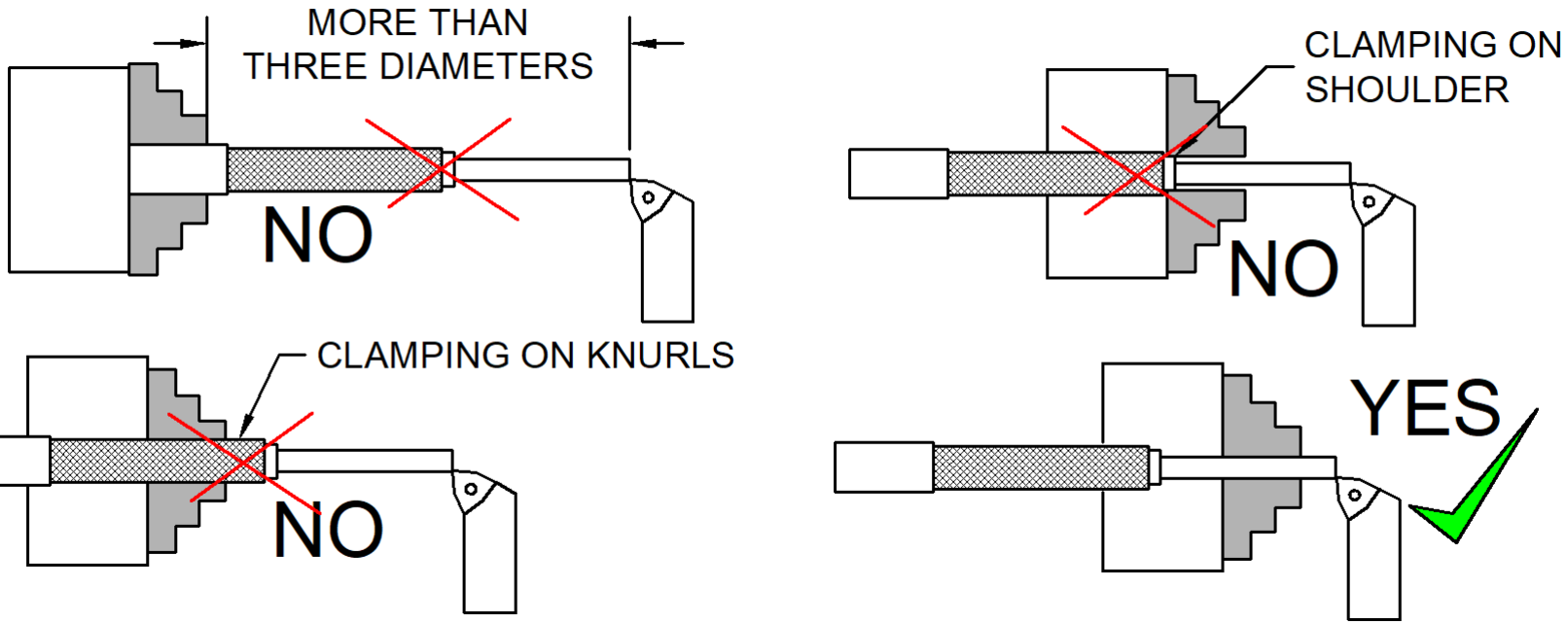
Saw PAST Mark

- https://youtu.be/601M1I7-RHM?t=87



Face to Length

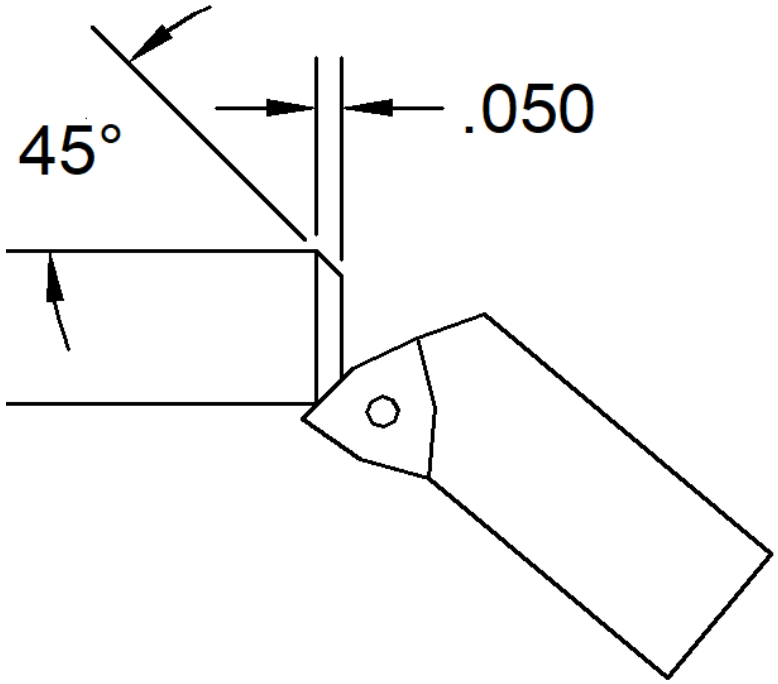
- Be careful how how you clamp your part
  - https://youtu.be/601M1I7-RHM?t=122

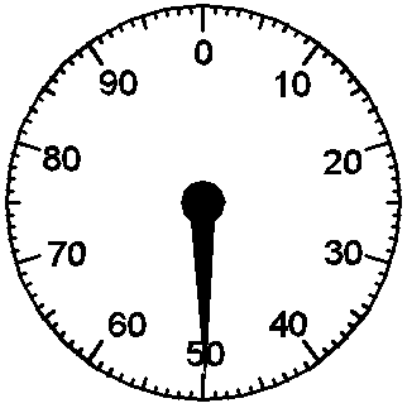


Chamfer

- https://youtu.be/601M1I7-RHM?t=229

- You will need to rotate the tool so the leading edge is at 45° to the part.
- BE CAREFUL about setting up the toolpost. ASK if you have questions.

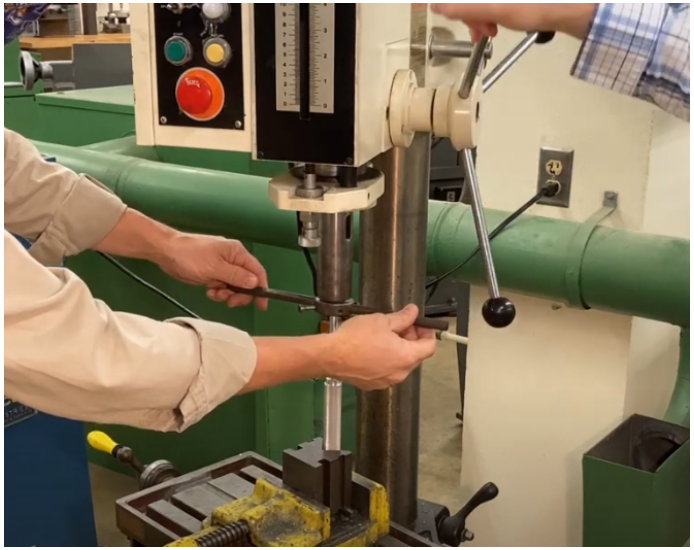




Thread Hammer End

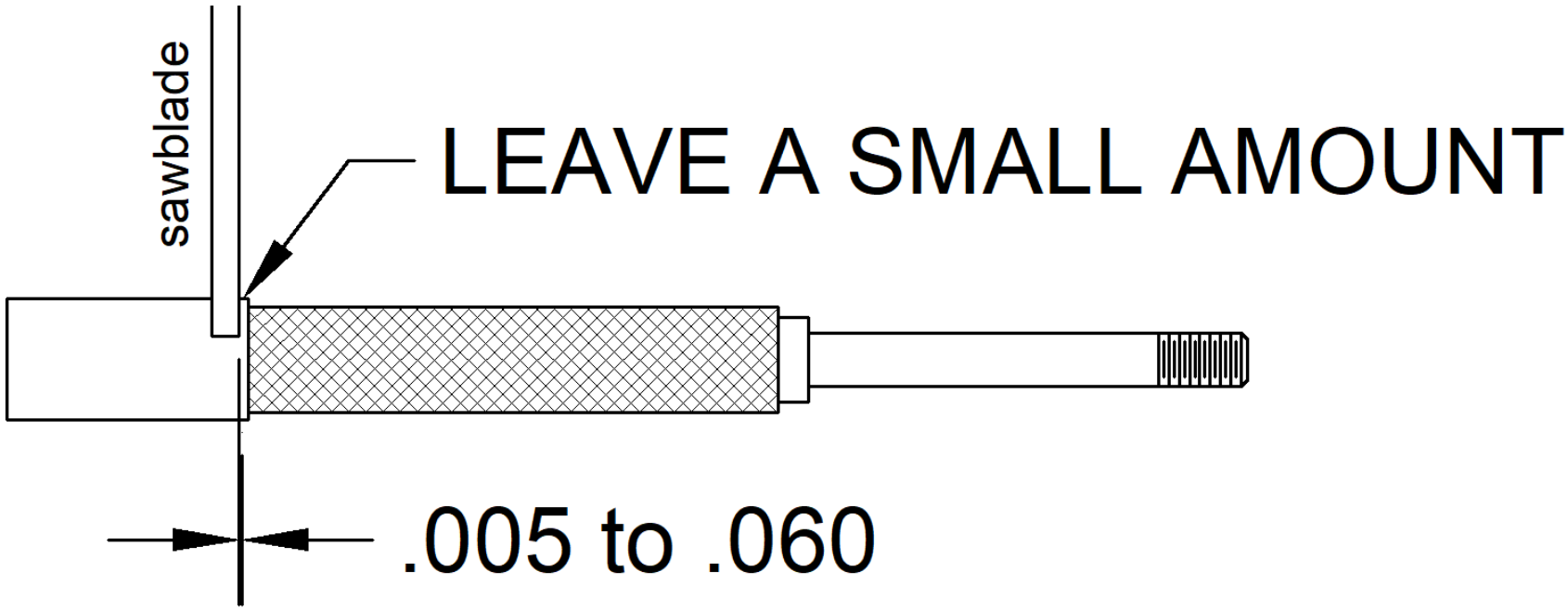
- https://youtu.be/601M1I7-RHM?t=368

You will need the help of another student.



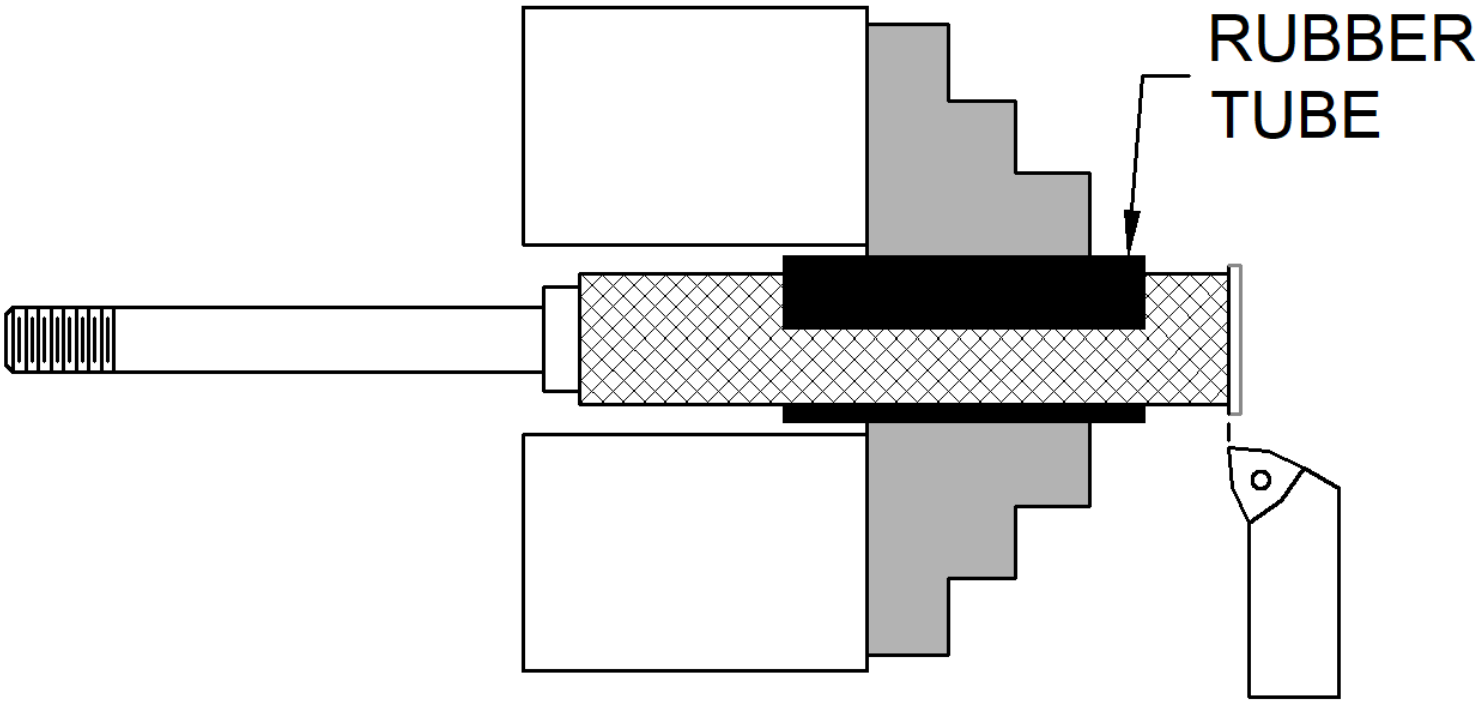
Remove Carrier End

- https://youtu.be/601M1I7-RHM?t=500



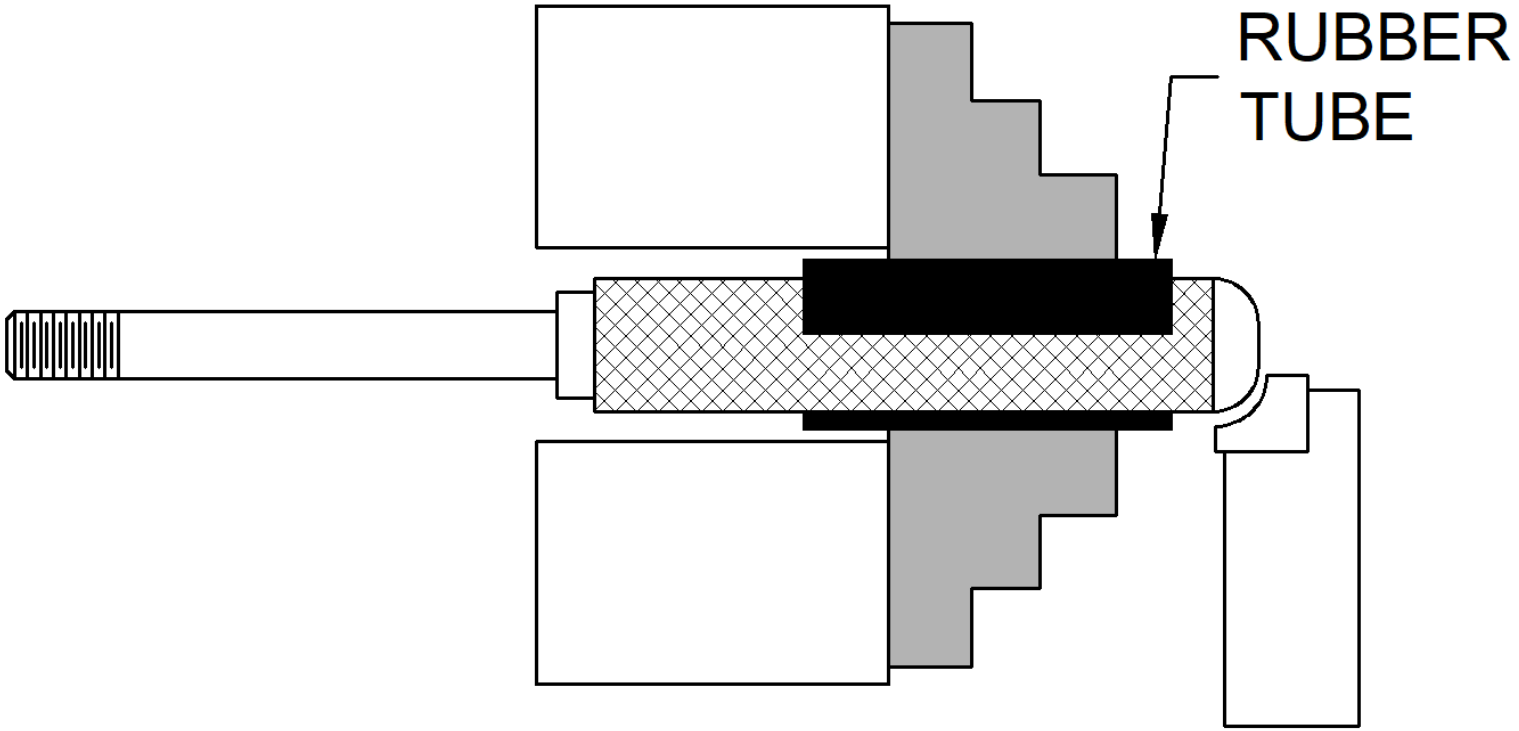
Face to Length

- https://youtu.be/601M1I7-RHM?t=551\



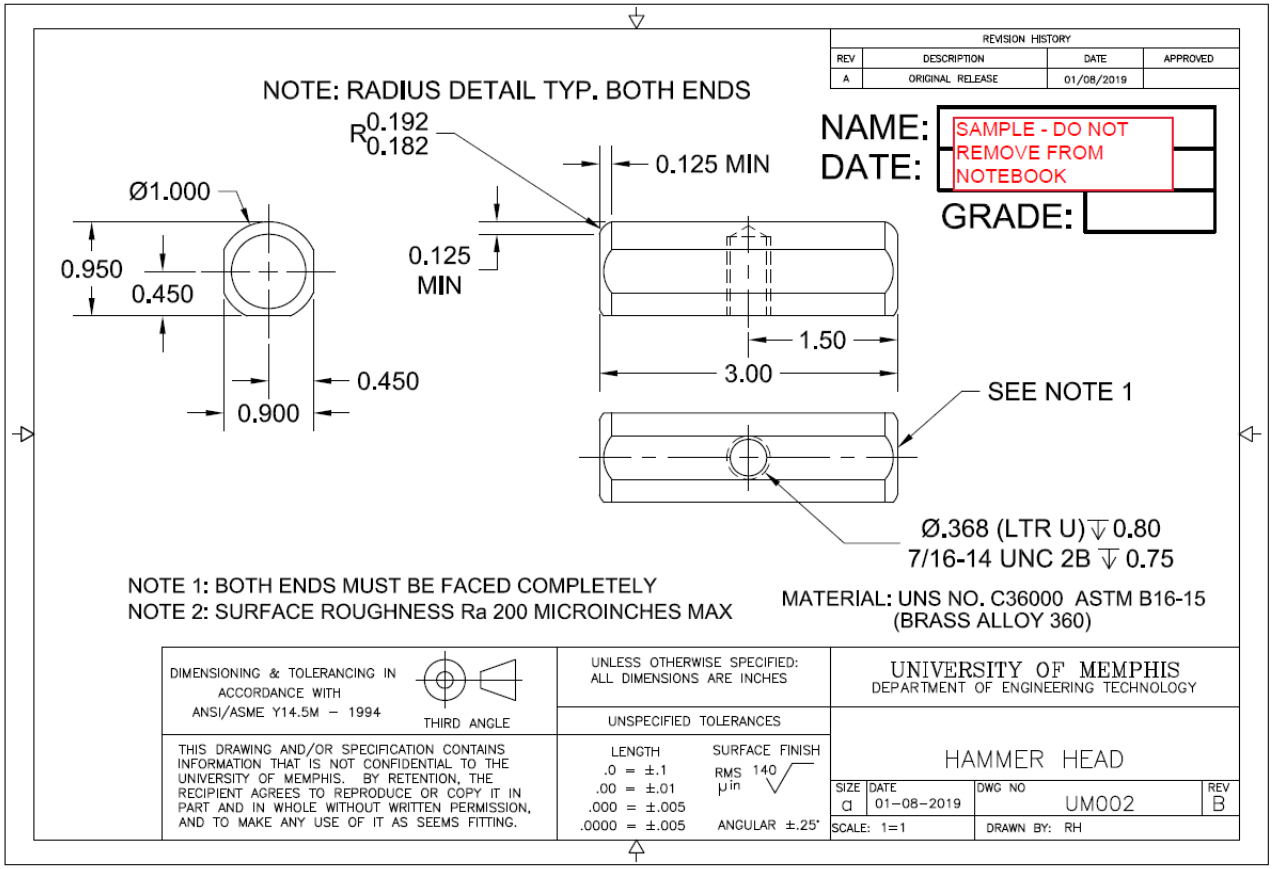
Round Hammer End

- https://youtu.be/601M1I7-RHM?t=620



Part 8 - Saw, Face, Mill, Drill, and Tap

- Complete Video: https://youtu.be/24R_4F40DUI



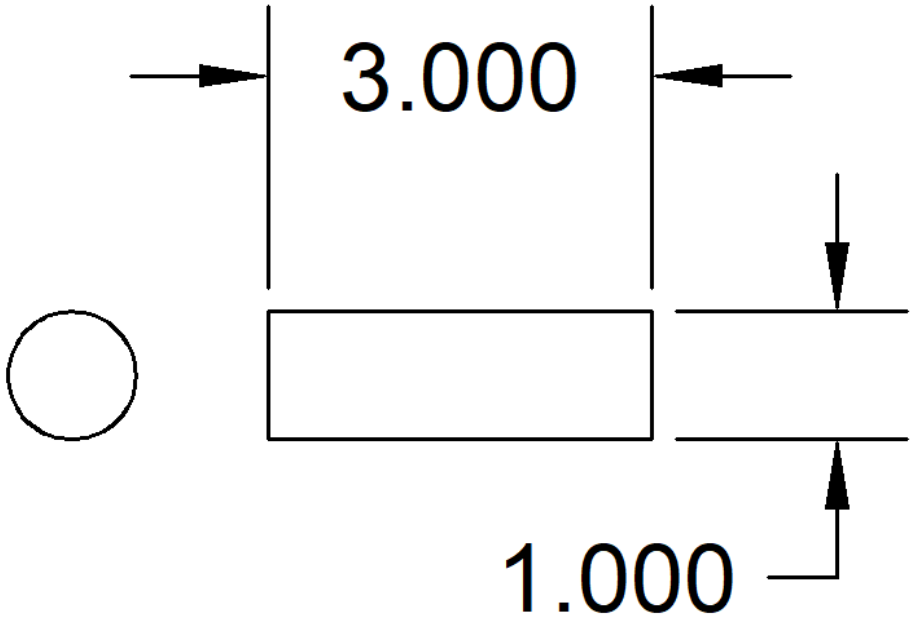
Saw Stock to Make Blank

- https://youtu.be/24R_4F40DUI?t=4

Use the band saw

Face Ends to Length

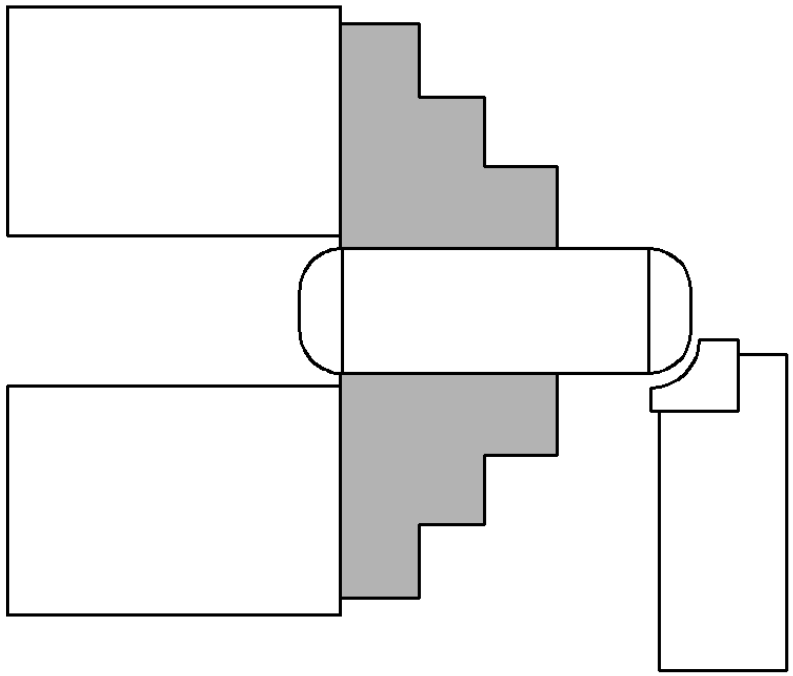
- https://youtu.be/24R_4F40DUI?t=136



Radius Both Ends

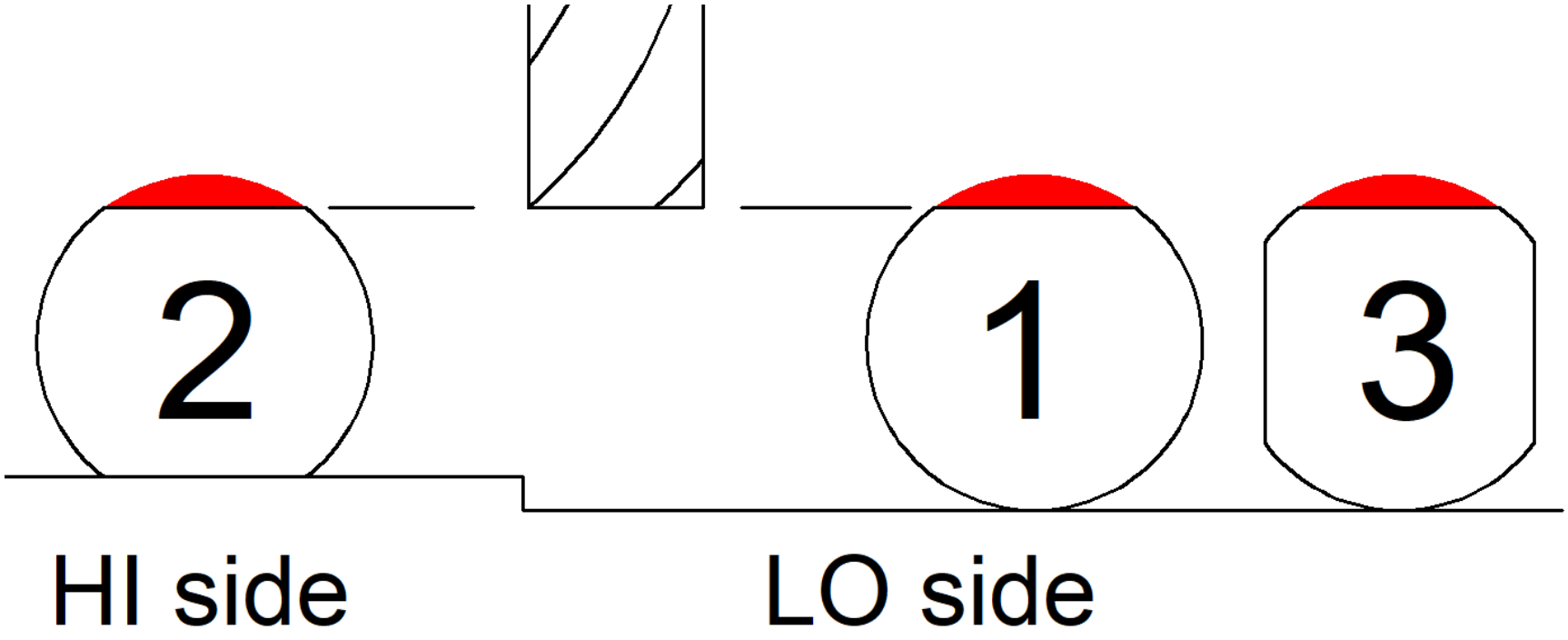
- https://youtu.be/24R_4F40DUI?t=243

Use lathe number 4. Do NOT use rubber tube.



Mill Three Flats

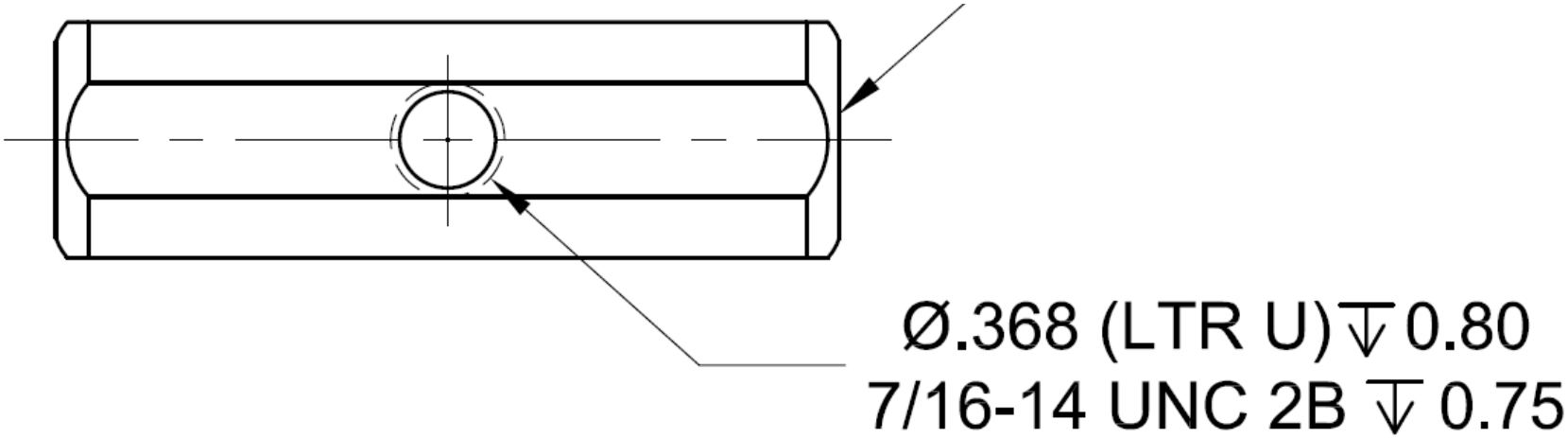
- https://youtu.be/24R_4F40DUI?t=288



Drill Tap Hole

- https://youtu.be/24R_4F40DUI?t=537

Use the fixtures as described.



Tap Hole

- https://youtu.be/24R_4F40DUI?t=665