

Project #113

(7/28/14 wrt)

Wood Vise Threaded Screw

Project Description:

The wood vise threaded screw is the second component of the wood vise assembly. This project will allow you to continue your skill development of cutting threads between centers on an engine lathe. This project prepares the student for the hammer handle threading project. Project #113 requires the creation of a process sheet by the student.

Project Objectives:

After you have completed this project, you should be able to:

1. Develop a process sheet for a lathe project.
2. Locate the proper thread specifications in the Machinery's Handbook
3. Setup an engine lathe to cut a thread between centers.
4. Measure the thread using the 3 – wire method to meet specified tolerances

References/ Study Material:

Precision Machining Technology (PMT) textbook:

If needed: Review Section 5, Unit 4, pg. 428-443, (Manual Lathe Threading)
Or review videotapes MS-37 and MS-39.

Materials Needed: stock size: 3/4" Dia. or larger x 10 1/8".

Tools Needed:

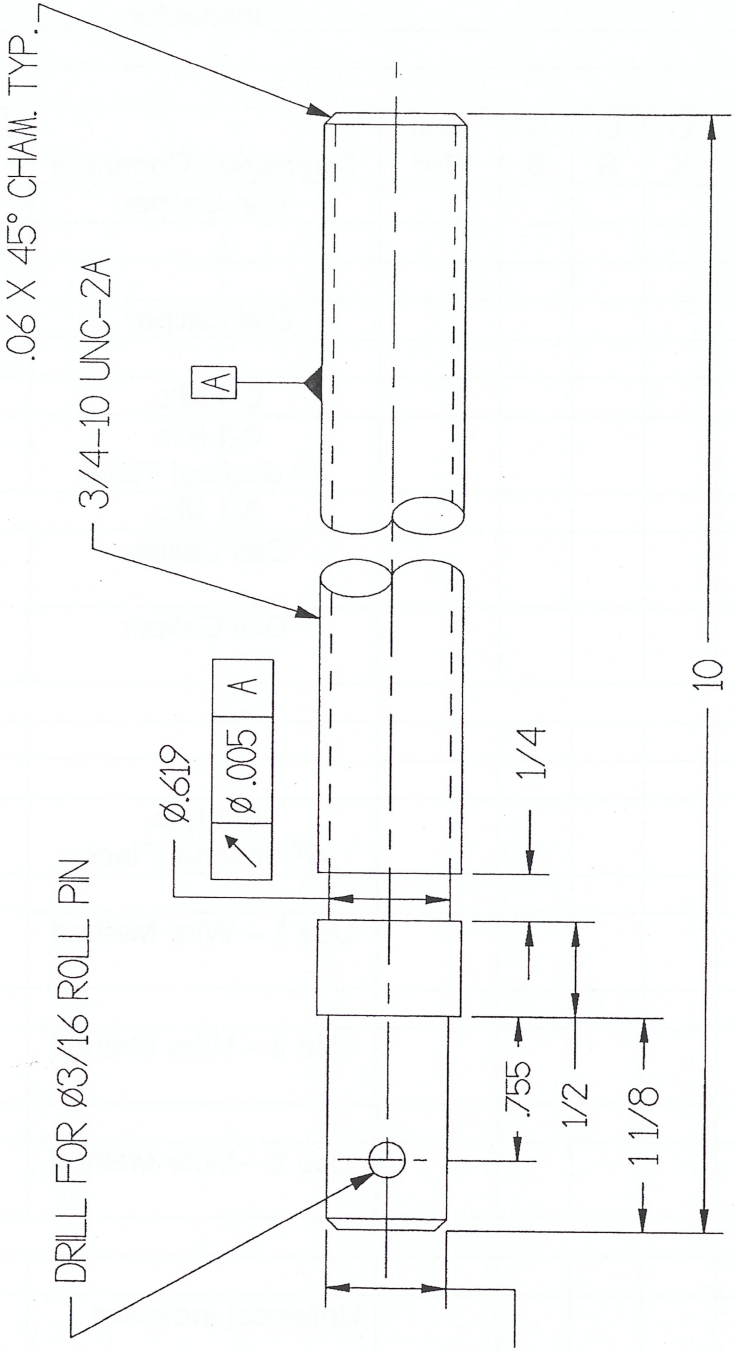
Two #3 Morse taper centers (hard & soft) **Note: no live centers**, face plate, Lathe Dog, 60 degree threading tool bit, Optical comparator, center gauge (fishtail), 5/16 straight carbide tool holder, and appropriate size wires for measurement of thread pitch.

Processing Requirements: Because we are using 3/4 dia. stock for this project, when you center drill each end use a 5C collet. Part must be threaded between centers. Pitch diameter will be measured in three places; left end, right end, and middle of thread.

Process Sheet #113

Wood Vise Threaded Screw

Operation No.	Machine	Description	Tools	Speeds/ Feeds
10	Bench	Create a detailed process sheet for project 113 Wood Vise Threaded Screw. Note: Read process requirement on pg. 113-1	pencil	
20	Instructor	Contact instructor to approve your process sheet	Initials and Date: _____	
30				



3/4-10 UNC-2A

Major Dia. MAX _____

MIN _____

Pitch Dia. MAX _____

MIN _____

Minor Dia. MAX _____

Pitch over wires: Max: _____

Min: _____

NOTES: Unless otherwise specified

TOLERANCES: Fractional: $\pm 1/64$
 Decimal: $.XX \pm .015$
 Decimal: $.XXX \pm .010$
 Decimal: $.XXXX \pm .005$

Angular $\pm 30'$
 FAO 125

Title: Threaded Screw

MAT'L MILD STEEL SCALE: FULL

DWG. NO: REV: 8/8/13

CVTC

Wood Vise Threaded Screw

Operator _____ Clock No. _____
 Date handed in: _____ Inspector _____
 Grade _____

Dimension	Checks	O K	O S	U S	Rwk Rpr	Disposition/Comment	Function Y/N			
10 +/- .015						Dial Caliper				
1 1/8 +/- .015										
1 / 2 +/- .015										
1 / 4 +/- .015						Dial Caliper				
3/4 dia. +/- .015						0-1 Mic.				
.620 dia. +0 -.005						0-1 Mic. 4 th decimal Place				
.619 dia. +/- .010						0-1 Mic.				
Left end .06 x 45 +/- .015						Dial Caliper				
Right end .06 x 45 +/- .015						Dial Caliper				
3/4 – 10 UNC-2A										
----Major Dia.----										
Max. .7482 Min. .7353						0-1 Mic. 4 th decimal Place				
Left End Pitch Dia.										
Max. .6832 Min. .6773						Use 3 – Wire Method				
Right End Pitch Dia.										
Max. .6832 Min. .6773						Use 3 – Wire Method				
Middle Pitch Dia.										
Max. .6832 Min. .6773						Use 3 – Wire Method				
Geo. Tols.										
.620 dia.						Universal Indicator				
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.619 dia.						Universal Indicator				
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