

Engineering Drafting and Design II

Complex Assembly Drawing 1

From the image below, create the individual parts and save them into your folder in the CAD drive. Next, create an assembly drawing by placing the parts in such a way as to constrain the movements in the correct way.

572 ■ SECTION 5 Working Drawings

PROBLEM 18.7 Working drawing (in.)

Assembly Name: Mill Work Stop

SPECIFIC INSTRUCTIONS:

This problem has basic applications; however, there is a welding symbol involved in the assembly. You should study welding processes and representations covered in Chapter 21 before completing this problem.

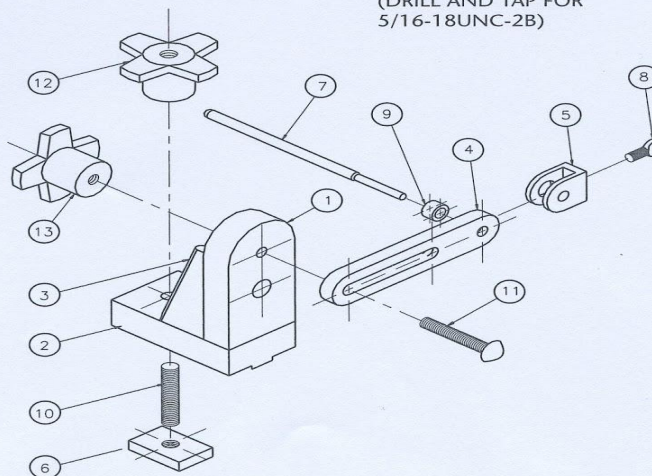
Prepare a complete set of working drawings with one detail drawing per sheet and the assembly drawing with parts list on one sheet. Notice: part number 10, TEE STUD, is cut from

standard 3/8-16UNC ALL THREAD. Parts 12 and 13, BLANK KNOBS, are purchased as knobs without the threads machined. You will draw the knobs as a "representation" of the purchase part and give the thread note as identified in the parts list. The actual dimensions of the knob to be purchased are not important; however, accurate specifications for the threads to be machined into the purchase part are important.

NOTE: Some design is required throughout the completion of the project.

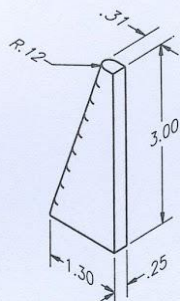
PARTS LIST

ITEM	QTY	NAME	DESCRIPTION	MATERIAL
1	1	VERTICAL MEMBER	3/4 × 2 × 4	SAE 6061
2	1	BASE MEMBER	1 × 2 × 3.5	SAE 6061
3	2	RIB	1/4 PLATE	SAE 6061
4	1	ARM	3/8 × 1 × 5-1/2	SAE 1018
5	1	CLAMP	1/2 × 1 × 1-5/16	SAE 1018
6	1	TEE PLATE	5/16 × 1 × 1-1/4	SAE 1018
		DRILL AND TAP AT CENTER FOR 5/16-18UNC-2 THREAD THRU		
7	1	STOP ROD	Ø5/16 × 6	SAE 303 SS
8	1	WING NUT	1/4-28 × 1/2	
9	1	BUSHING	Ø1/2 × .31	SAE 1018
10	1	TEE STUD	3/8-16 × 2 LG ALL THREAD	
11	1	CARRIAGE BOLT	5/16-18UNC-2	
12	21	BLANK KNOB	VLIER HK-3 (DRILL AND TAP FOR 3/8-16UNC-2B)	
13	1	BLANK KNOB	VLIER HK-3 (DRILL AND TAP FOR 5/16-18UNC-2B)	

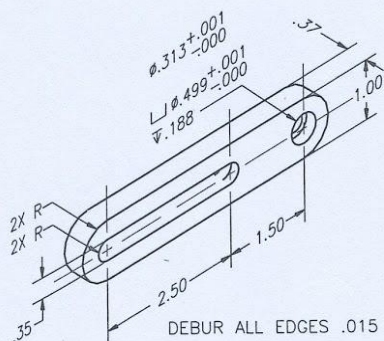


[illegible]

BODY ASSEMBLY WELDMENT
FINISH: COLOR ANODIZED



③ RIB



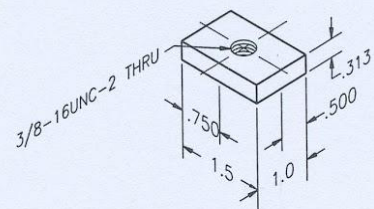
④ ARM

Technical drawing of a mechanical part, likely a valve or fitting, showing dimensions and features:

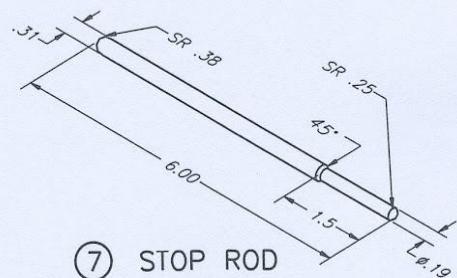
- Top view dimensions: $\phi .5015$, $.5023$, $\phi .313$, $.314$
- Side view dimensions: $.375$, $.125$, 1.000 , $2X R$
- Bottom view dimensions: $.313$, $.625$, $.813$
- Thread specification: $1/4-28 \text{ UNF}-2A \text{ THRU}$
- Angle: $45^\circ \times .12$

⑤ CLAMP

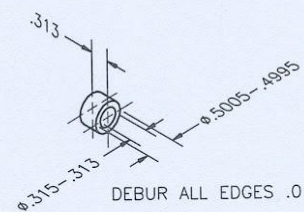
FINISH: C HARDEN .005/.010
BLACK OXIDE



⑥ TEE PLATE



⑦ STOP ROD
FINISH: POLISH



⑨ BUSHING

3/8-16UNC-2
2x 4.50 x .06
2.000
⑩ TEE STUD

⑩ TEE STUD