JOB NAME Bench Block

BLUE PRINT NUMBER: C1-A-7

INFORMATION: This tool is very handy for holding small round or square work while drilling, it is also used for driving out small pins.

PRIMARY SKILL LEARNED:

1. Mounting and removing chucks.
2. Spotting and centering.
3. Mount work in independent chuck.
4. Inside facing.
5. Mounting and removing chucks and taper shank sleeves in drill press.
6. Mill with angular cutter.
7. Screw arbor work in lathe.
8. Drill and ream holes in drill press.

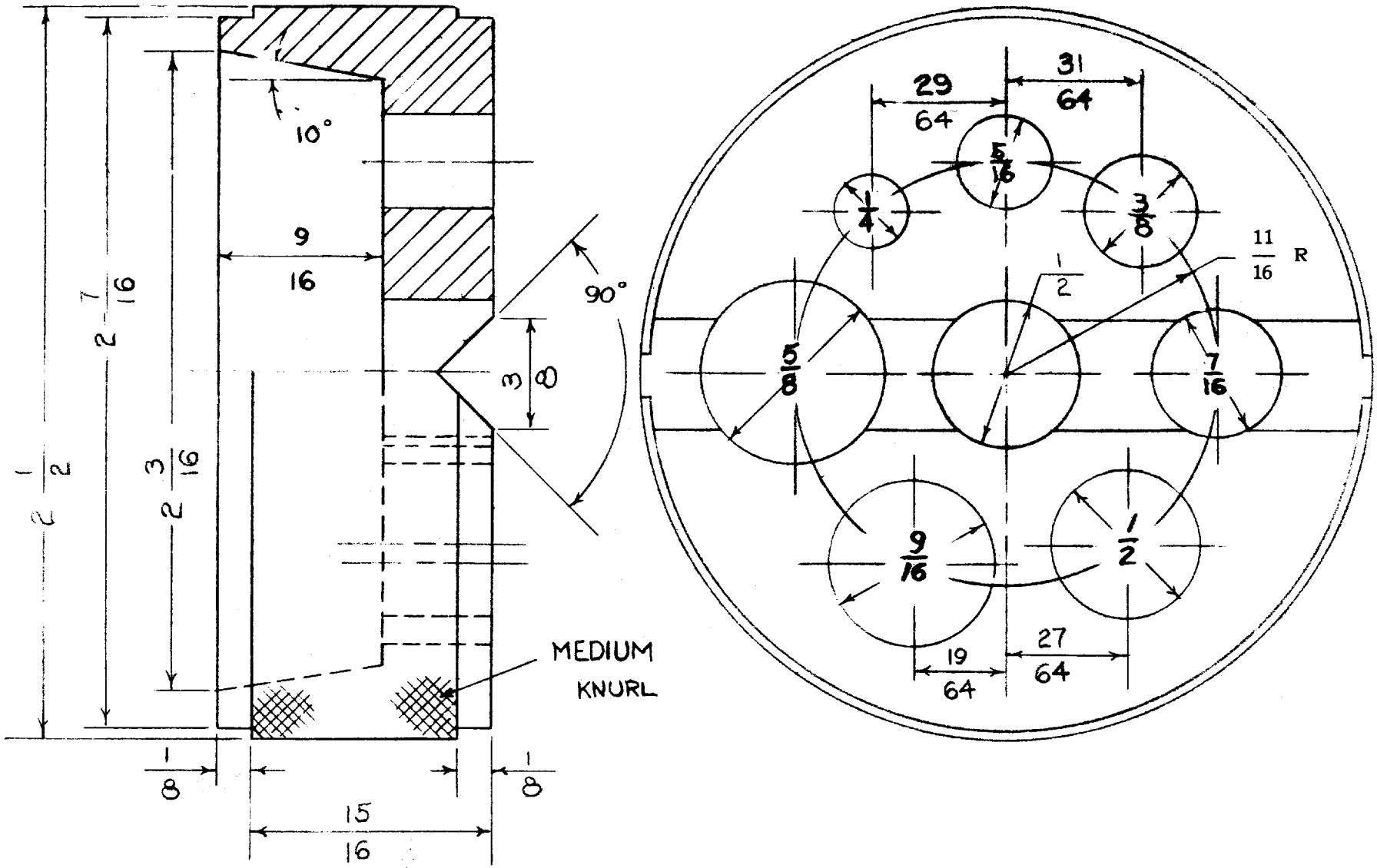
PRECAUTIONS:

1. Do not remove from chuck until you have checked with your instructor.
2. Turn outside dimension and knurl on thread mandril.
3. Use slow speed and plenty of oil when reaming.
4. Make sure the "V" is milled across the 5/8" and 7/16" holes.

STOCK: 2 3/4" Machine steel.

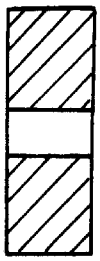
OPERATIONS:

1. Cut stock to 1 1/16" length.
2. Put in four jaw chuck and true up.
3. Face one side.
4. Drill 31/64" hole.
5. Ream $\frac{1}{2}$" hole.
6. Face and bore angle.
7. Reverse piece in chuck and face second side.
8. Put bench block on thread mandril and turn diameter.
9. Knurl, medium knurl.
10. Cut undercuts on each end of knurl.
11. Apply layout dye and layout holes.
12. Center drill all holes.
13. Drill and ream holes.
14. Mill "V" slot.
15. Remove burrs.
16. Case harden.
17. Surface grind.



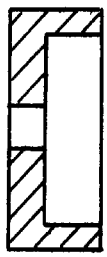
DO NOT SCALE THIS DRAWING

ELI WHITNEY REGIONAL VOCATIONAL TECH. SCHOOL	MATERIAL: Machine Steel	PART NAME BENCH BLOCK	
DIMENSIONAL TOL. UNLESS OTHERWISE SPECIFIED — FRACTIONAL ± 1/64 DECIMAL ± .002 ANGULAR ± 1° CONCENTRICITY ± .001	HEAT TREAT Pack Harden	DATE -	DWG. NO. 01-A-7
		SCALE 2-1	

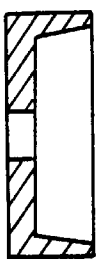


Center the stock in a four jaw chuck. Face, center drill, 31/64" drill, and 1/2" machine ream thru. Fig. 1

Do not remove project from the chuck until so informed by your instructor.



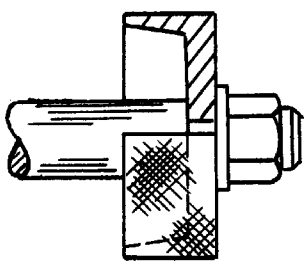
Bore inside diameter to 2", 9/16" deep. Fig. 2



Set compound rest at 10° and bore 10° internal angle to 2 3/16" dimension. Fig. 3

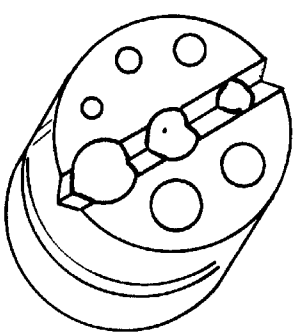
Before removing from the chuck have project checked by your instructor.

Remove from chuck.



Place project on a special threaded mandril and face. Turn the outside diameter to 2 1/2". Medium knurl turned area. Undercut 1/16" X 1/8" dimensions. Fig. 4

Remove from mandril



Surface grind top to clean up. Layout and drill proper size holes at intersections. Mill 90° "V" slot across the 7/16" and 5/8" holes. Fig. 5

Stamp name and date.