

JOB NAME Planer Jack

BLUE PRINT NUMBER 01-A-13

ITEM: Screw

PRIMARY SKILL LEARNED:

1. Cutting threads, die in tail stock.
2. Cutting threads in vise, stock and die.
3. Straddle milling.

PRECAUTIONS:

1. Make screws as one piece, back to back, allow 1/8" for cutting in half.
2. Thread one end in lathe using die on tail stock and thread other end in vise using stock and die to gain experience in these methods.

STOCK: Machine Steel 3/4" diameter.

OPERATIONS:

1. Cut off stock to length 6 1/4"
2. Turn 1/2" dia. X 2-1/2".
3. Reverse piece and turn other end to 1/2" dia. X 2-1/2".
4. Undercut head with 1/16" radius.
5. Cut threads.
6. Mill square.
7. Cut in half.
8. File radius on head.

JOB NAME Planner Jack

BLUE PRINT NUMBER: 01-A-13

ITEM: Base

INFORMATION: Planner jacks are used to level work on planer beds and milling machines. They are also valuable in supporting thin shafts during a milling or drilling operation.

PRIMARY SKILL LEARNED:

1. Turn work held in chuck.
2. Tapping with tail center.
3. Milling hexagons.
4. Turn taper using compound rest.

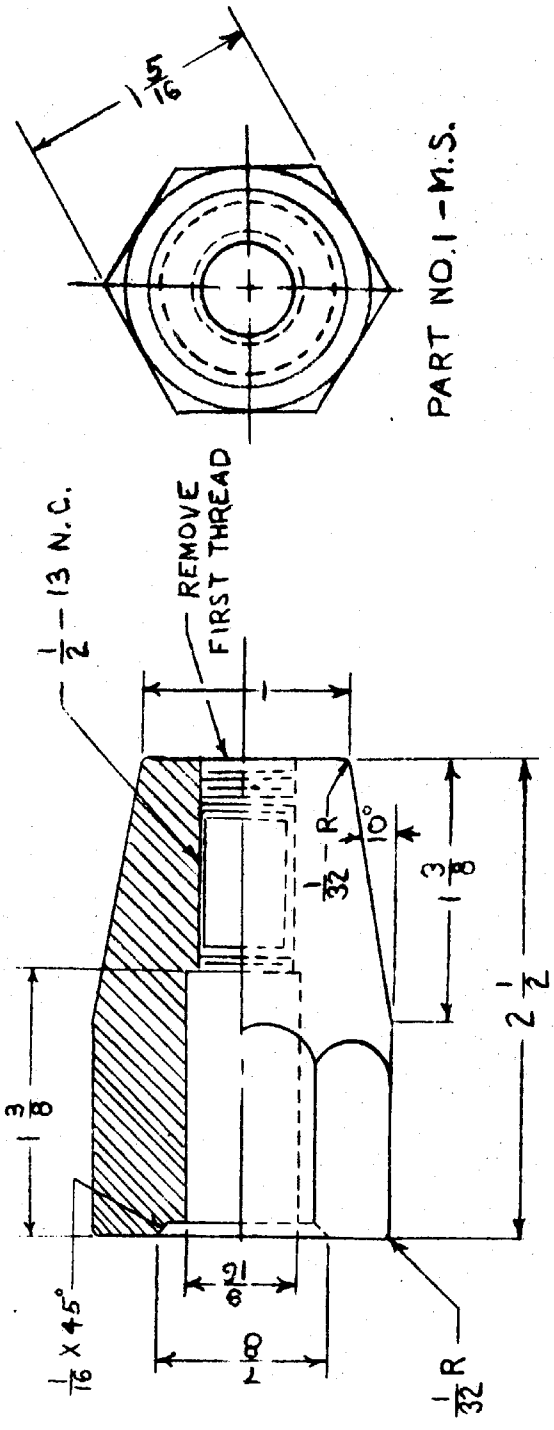
PRECAUTIONS:

1. When reversing piece between index centers use a protractor to line up cut.
2. Two bases will be milled as one piece, then cut in half.
3. When tapping in the lathe use light pressure on the tail stock as you advance tap.

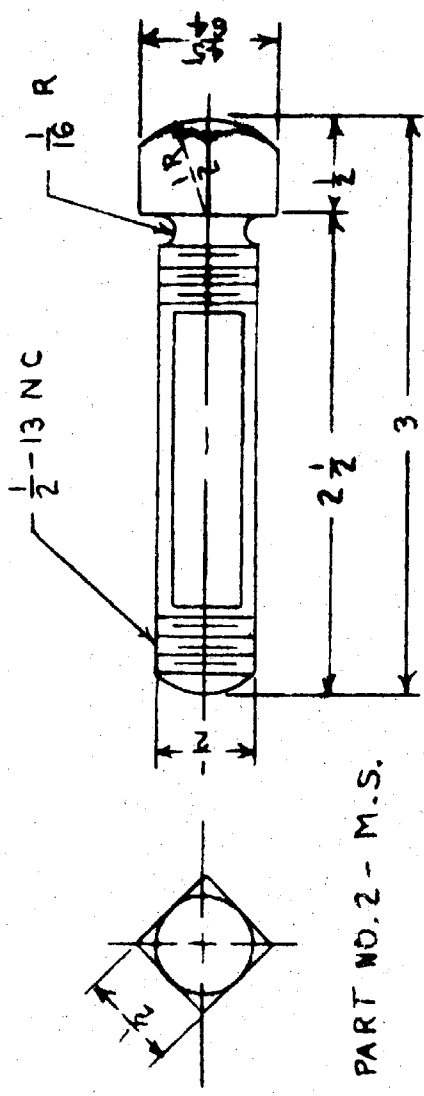
STOCK: 1 3/4" Diameter Machine Steel.

OPERATIONS:

1. Cut off stock to length 5 1/4".
2. Face off and center drill.
3. Mill hexagon.
4. Saw piece in half.
5. Turn taper in chuck.
6. Drill 27/64" hole.
7. Drill 1/2" hole 1/8" deep.
8. Tap in lathe, 1/2"-13 x 1" deep.
9. Reverse piece in chuck.
10. Drill 9/16" clearance hole 1 1/2" deep.
11. Recess undercut.



PART NO. 1 - M.S.



PART NO. 2 - M.S.

BREAK ALL UNNECESSARY CORNERS

ELI WHITNEY REGIONAL VOCATIONAL TECHNICAL SCHOOL

DIMENSIONAL TOLERANCES Fractional $\pm \frac{1}{64}$ Decimal $\pm .002$
 UNLESS OTHERWISE SPECIFIED:- Angular $\pm 1^\circ$ Concentricity $\pm .001$

DO NOT SCALE THIS DRAWING

Material MACHINE STEEL	PART NAME PLANER JACKS	Date: - Scale: -
Heat Treat	D.W.G. No. 01-A-13	

PLANER JACKS

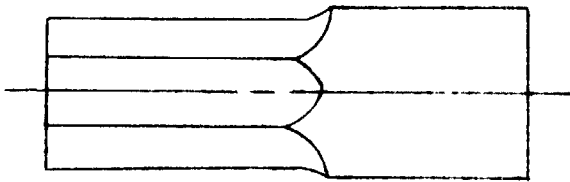


Fig. 1

Stock size $1 \frac{3}{4}$ " diameter, $5 \frac{1}{4}$ " long. Face and center drill both ends, in a three jaw chuck. Adjust the work on the Milling Machine, between the Index Head and the foot-stock. Mill a $1 \frac{5}{16}$ " hexagon, $2 \frac{5}{8}$ " long. Fig. 1

Reverse the work on the Index centers and mill this end to match the completed end. Fig. 2

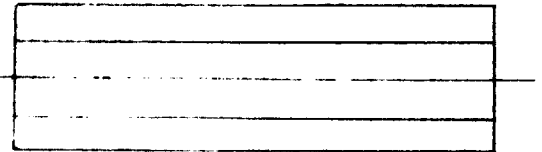


Fig. 2

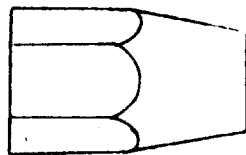


Fig. 3

Saw the piece in half across the hexagon. Use a three jaw chuck in the lathe, face and center drill the sawed end. Turn the 10° angle to the 1 " dimension. Fig. 3

Drill a $27/64$ " hole thru, counter-bore a $1/2$ " diameter $1/8$ " deep. Tap a $1/2$ " X 13 thread $5/8$ " deep. Fig. 4

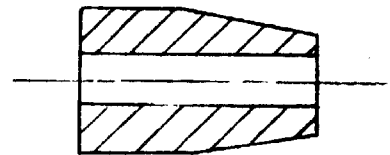


Fig. 4

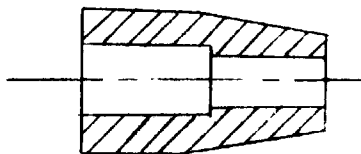


Fig. 5

Reverse the piece in the chuck undercut the bottom to the $7/8$ " dimension. Drill a $9/16$ " hole $1 \frac{3}{8}$ " deep. Fig. 5

Remove the project from the chuck and finish tapping thru. Stamp name and date.

Select $3/4$ " diameter machine steel, $6 \frac{1}{4}$ " long. Face and center drill both ends. Turn one end to $1/2$ " diameter X $2 \frac{1}{2}$ " long. Reverse workpiece on centers and repeat the above operation. Thread one end in lathe using die on tail stock. Thread other end in vise using stock and die to gain experience in these methods. Mill the center section $1/2$ " square in the milling machine. Saw in half and finish by facing off and filing. Fig. 6



Fig. 6