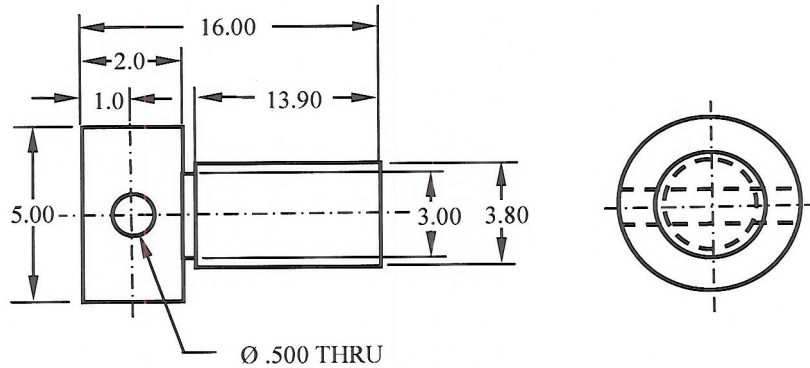


HW 03: GROUP TECHNOLOGY

NAME: SOLN KEY - S15

The part below is to be machined from $\varnothing 5.2$ inch drawn aluminum bar stock held in a continuous feed chuck. Assume that the surfaces have accuracy requirements as shown by the decimal places. All dimensions are in inches, and the groove will function as a seat for an O-ring seal.

Item: Pin



- Construct the four-digit Vuoso-Praha group technology code. Be sure to briefly justify each code digit (as in class).

Soln: 1 1 6 6

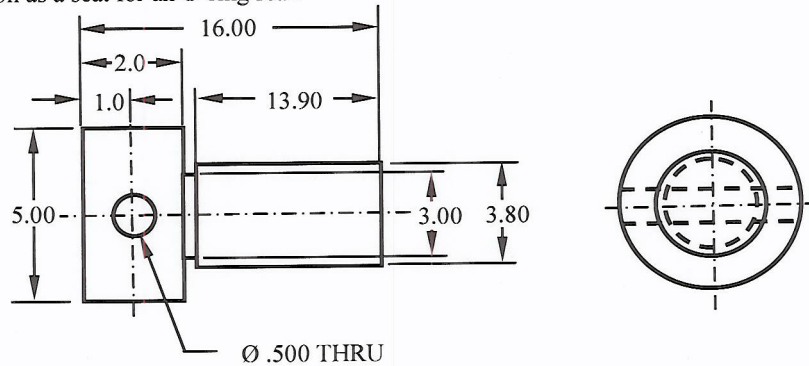
8pts

Digit	Code	Justification
1	1	ROTATIONAL PART W/ <u>NO</u> HOLE ALONG AXIS
2	1	DIA = 5.00 IN (0-40) AND L = 16.00 IN \Rightarrow L/D = 3.2 (1-6) <u>NOTE</u> : CAN ALSO MAKE CASE FOR D = 127MM SINCE (5 IN)(25.4 MM/IN) = 127MM \Rightarrow 80-200, >3 \Rightarrow ⑦
3	6	PART IS GROOVED (3) AND HAS A HOLE NOT IN AXIS (2) \Rightarrow COMBINATION OF 2 + 3
4	6	MATERIAL IS DRAWN ALUMINUM BAR STOCK ↑ (NON-FERROUS)

(Assignment continues on back ...)

The part below is to be machined from Ø 5.2 inch drawn aluminum bar stock held in a continuous feed chuck. Assume that the surfaces have accuracy requirements as shown by the decimal places. All dimensions are in inches, and the groove will function as a seat for an O-ring seal.

Item: Pin



- Construct the nine-digit Opitz group technology code. Again, be sure to briefly justify each code.

Soln: 2 6 0 0 3 - 3 7 1 1

18pts

Digit	Code	Justification
1	2	$L=16.00, D=5.00 \Rightarrow L/D = 3.2$ so $L/D > 3$
2	6	EXTERNAL SHAPE IS STEPPED TO BOTH ENDS, WITH A FUNCTIONAL GROOVE
3	0	INTERNAL SHAPE ALONG AXIS HAS NO HOLE OR BREAK THROUGH
4	0	PART HAS <u>NO</u> PLANE SURFACE MACHINING
5	3	THROUGH HOLE IS RADIAL, NOT ON PITCH CIRCLE DIAMETER
6	3	$D = 5.00$ IN ($>4.0, \leq 6.5$)
7	7	MATERIAL IS ALUMINUM (NON-FERROUS) METAL
8	1	INITIAL FORM IS ROUND BAR, DRAWN ALUMINUM
9	1	DIAMETERS ABOUT AXIS HAVE 2 DIGITS ACCURACY (COULD MAKE CASE FOR RADIAL HOLE DIAMETER HAVING

3 DECIMAL DIGITS \Rightarrow SO 2 AND 3 = (5) WOULD ALSO BE ACCEPTABLE)