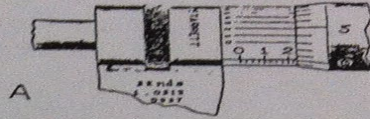
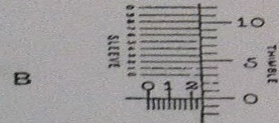


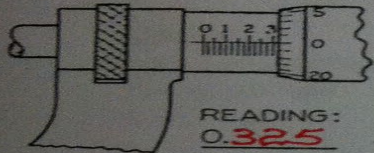
READING: 0.



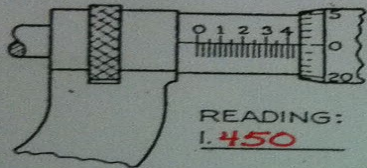
READING: 0



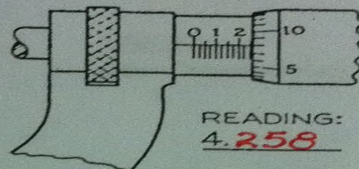
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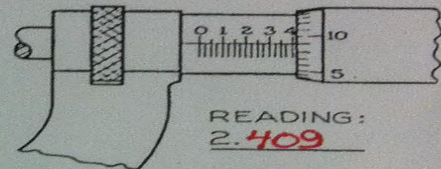
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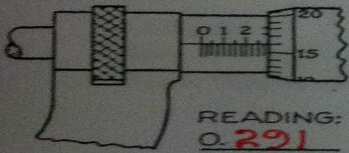
READING:
1.450



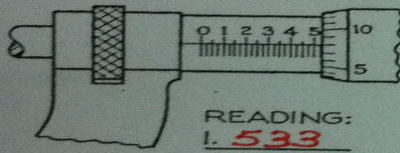
READING:
4.258



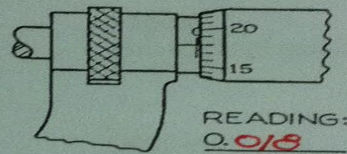
READING:
2.409



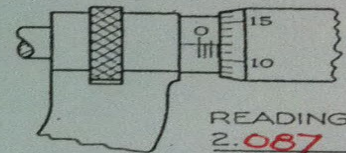
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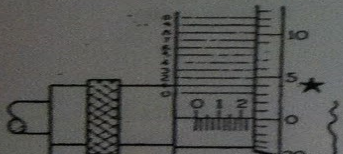
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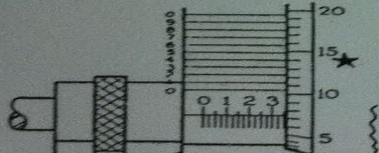
READING:
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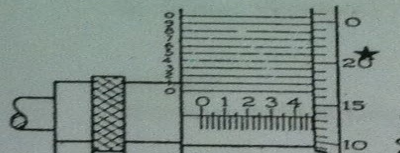
READING:
2.087



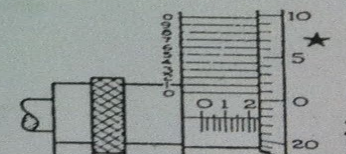
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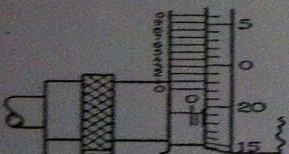
READING:
1.3574



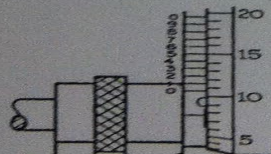
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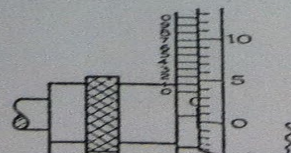
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0.2477



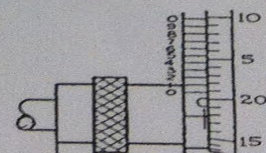
READING:
3.0492



READING:
0.0075



READING:
0.0006



READING:
1.0178

★ Indicates Vernier reading

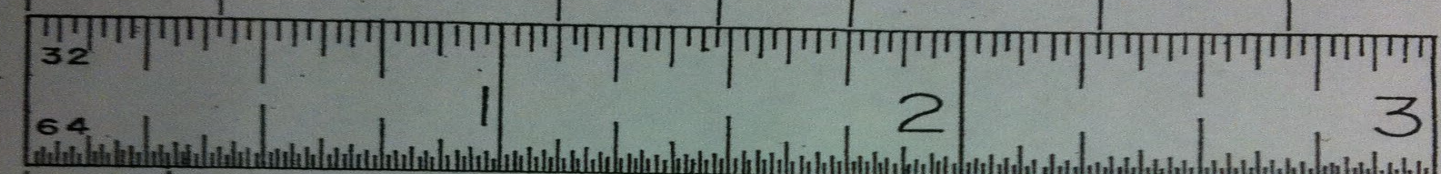
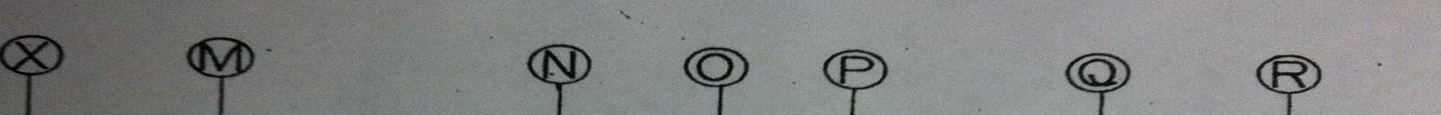
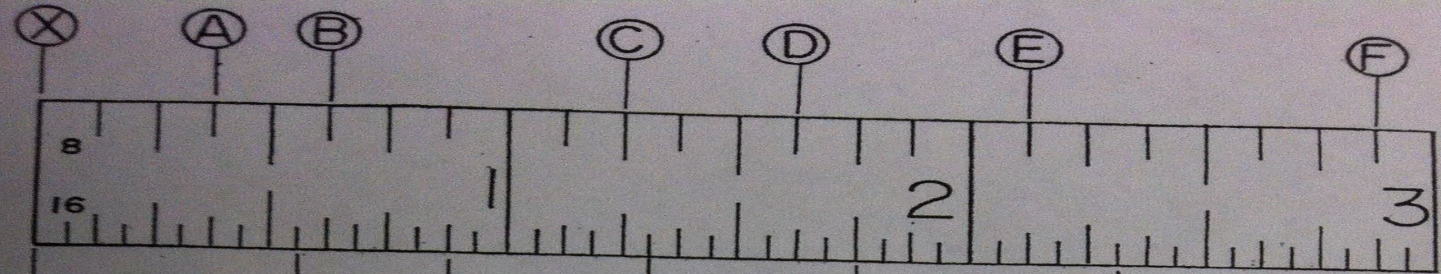
GRADE	2	3	4	5
6	7	8	9	10

MICROMETER READINGS
Indicates Values Shown

DRAWN BY:

FILE NO.:

DRAWING:

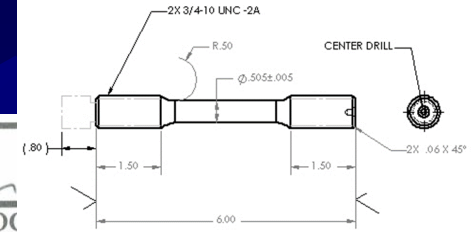


A	$\frac{3}{8}$.375
B	$\frac{5}{8}$.625
C	$1\frac{1}{4}$	1.250
D	$1\frac{5}{8}$	1.625
E	$2\frac{1}{8}$	2.125
F	$2\frac{3}{8}$	2.875
G	$\frac{9}{16}$.5625
H	$\frac{7}{8}$ $\frac{14}{16}$.875
I	$1\frac{5}{16}$	1.312

J	$1\frac{3}{4}$ $1\frac{12}{16}$	1.750
K	$2\frac{5}{16}$	2.312
L	$2\frac{3}{4}$ $2\frac{12}{16}$	2.750
M	$\frac{13}{32}$.4062
N	$1\frac{4}{32}$ $1\frac{1}{8}$	1.125
O	$1\frac{15}{32}$	1.4687
P	$1\frac{3}{4}$ $1\frac{24}{32}$	1.750
Q	$2\frac{9}{32}$	2.2812
R	$2\frac{11}{16}$	2.6875

S	$\frac{19}{64}$ or .296875	
T	$\frac{59}{64}$.9218
U	$\frac{16}{64}$	1.250
V	$1\frac{40}{64}$ $1\frac{5}{8}$	1.625
W	$1\frac{53}{64}$	1.8281
X	\bigcirc	0.0
Y	$2\frac{25}{64}$	2.3906
Z	$2\frac{56}{64}$ $2\frac{7}{8}$	2.875

Process Sheets



PROCESS SHEET

PROJECT: tensile specimen

NAME: Jason

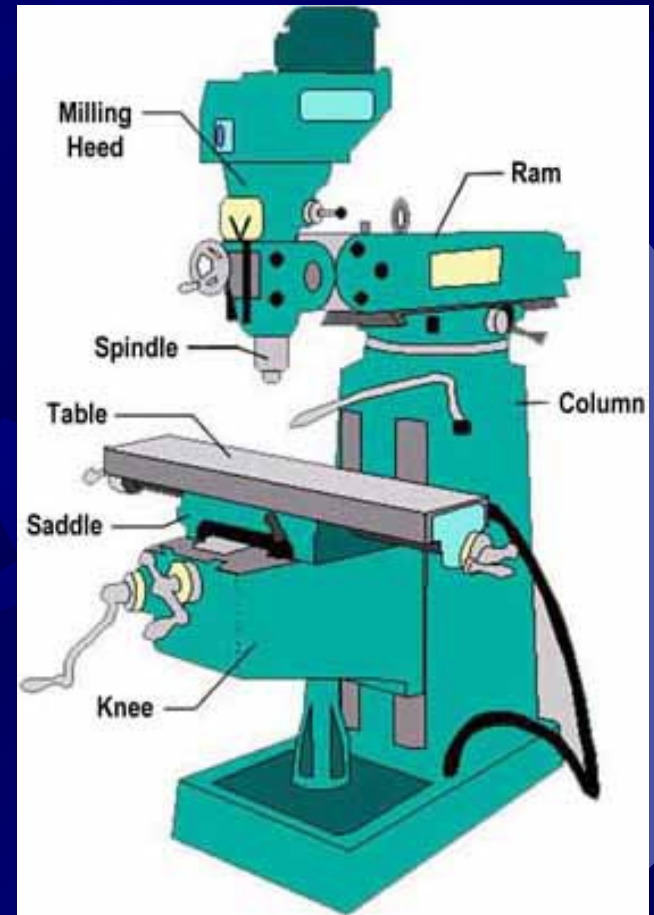
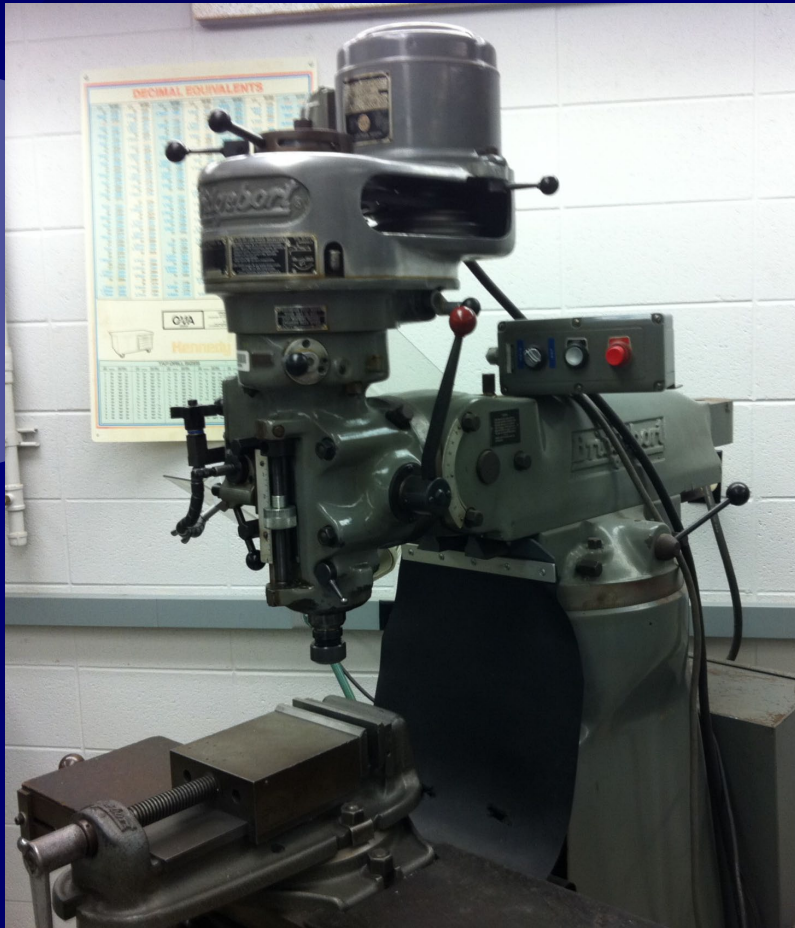
NO.	OPERATION	SPEED	EQUIPMENT	TOC
1	cut off stock at 7" long $\phi 3/4$ " bar (12L14 steel)		Horizontal Bandsaw	Tape Measure
2	Face ends of bar and center drill	480rpm	lathe	turning tool center drill $\frac{CS \times 4}{D} = \frac{90 \text{ sfm} \times 4}{D}$ $\frac{360}{.75} = 480 \text{ rpm}$
3	Turn OD of stock to $3/4-10 \text{ UNCOD} (\phi .748 - \phi .735)$	480rpm	lathe	turning tool, micrometer
4	lay out locations for stop and start of radius & threads		lathe	scribe, layout dike (Dykem)
5	Turn center ID rough to $\phi .520$ "	480rpm	lathe	turning tool, micrometer
6	Turn first radius and finish size on lead to $\phi .505 \pm .005$ "	60rpm	lathe	radius tool, micrometer
7	Turn second radius and finish center to size $\phi .505 \pm .005$ "	60rpm	lathe	radius tool, micrometer
8	cut relief at 6" mark	480rpm	lathe	cut off tool
9	add chamfers	480rpm	lathe	turning tool rotating tool to get 45°
10	Thread to $3/4-10 \text{ UNC-2A}$ pitch dia = $(\phi .683 - \phi .677)$		lathe	threading tool, thread pitch micrometer
11	cut off part at 6" mark	60rpm	lathe	cut off tool



Beginning Machining

- Milling Machines

Machine Layout



Machine Speeds

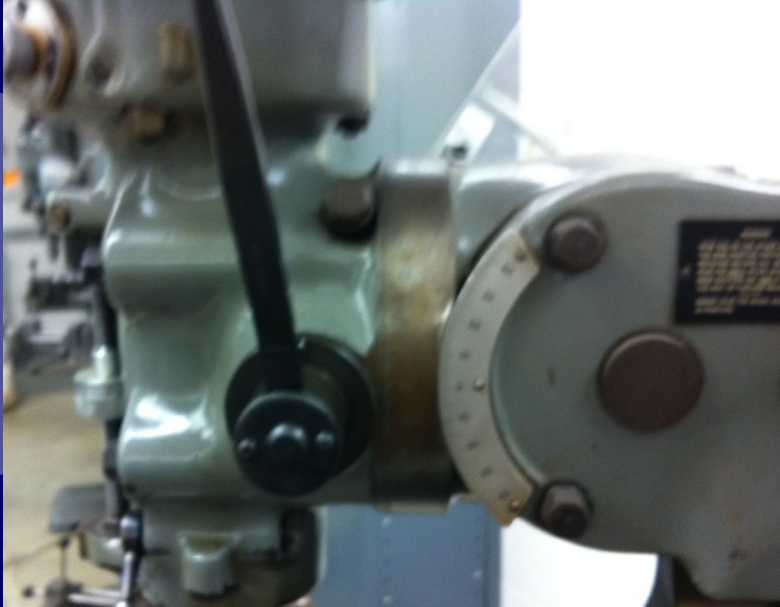
- Belt Drive Vs Variable Speed



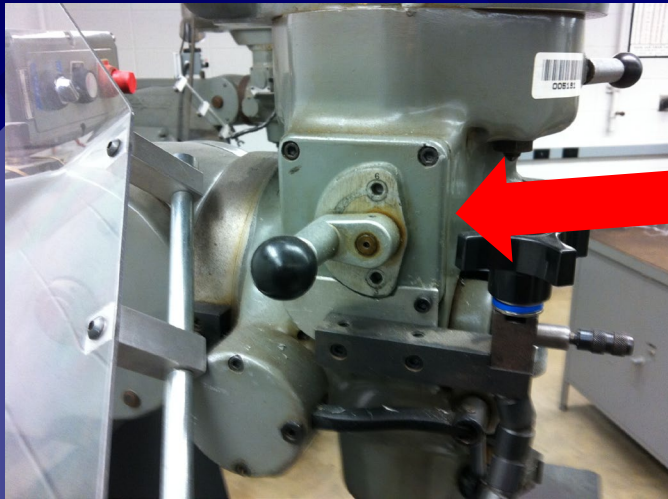
Spindle Reversing



Major Adjustments



Boring



- Boring Feed rate selector
- Only 2 speeds
.003"/rev and .006"/rev

- Screw on front of head is automatic stop



Table Feed



Both Cross feed and longitudinal feed are graduated in .001" increments on the hand wheels



Power Table Feed

Tool Holding

- Collets
 - R8 Collets
 - ER Collets
 - 5C Collets
- Drill Chuck



Work Holding

- Vise
- Magnetic Plate
- Parallels



Conventional Vs Climb Milling

Conventional

Climb

Conventional vs Climb Milling

