SkillsUSA
2010 Contest Projects

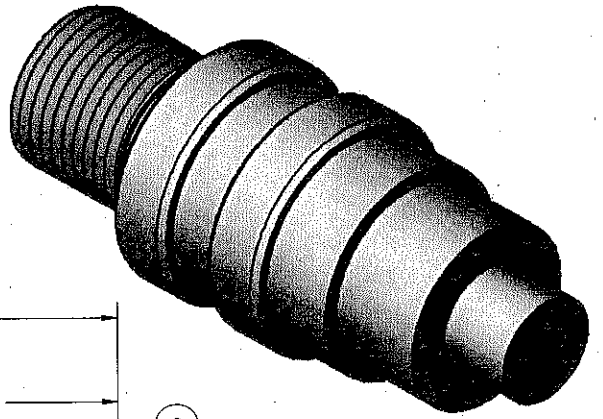
Precision Machining Technology

Click the “Print this Section” button above to automatically print the specifications for this contest. Make sure your printer is turned on before pressing the button.

Precision Machining

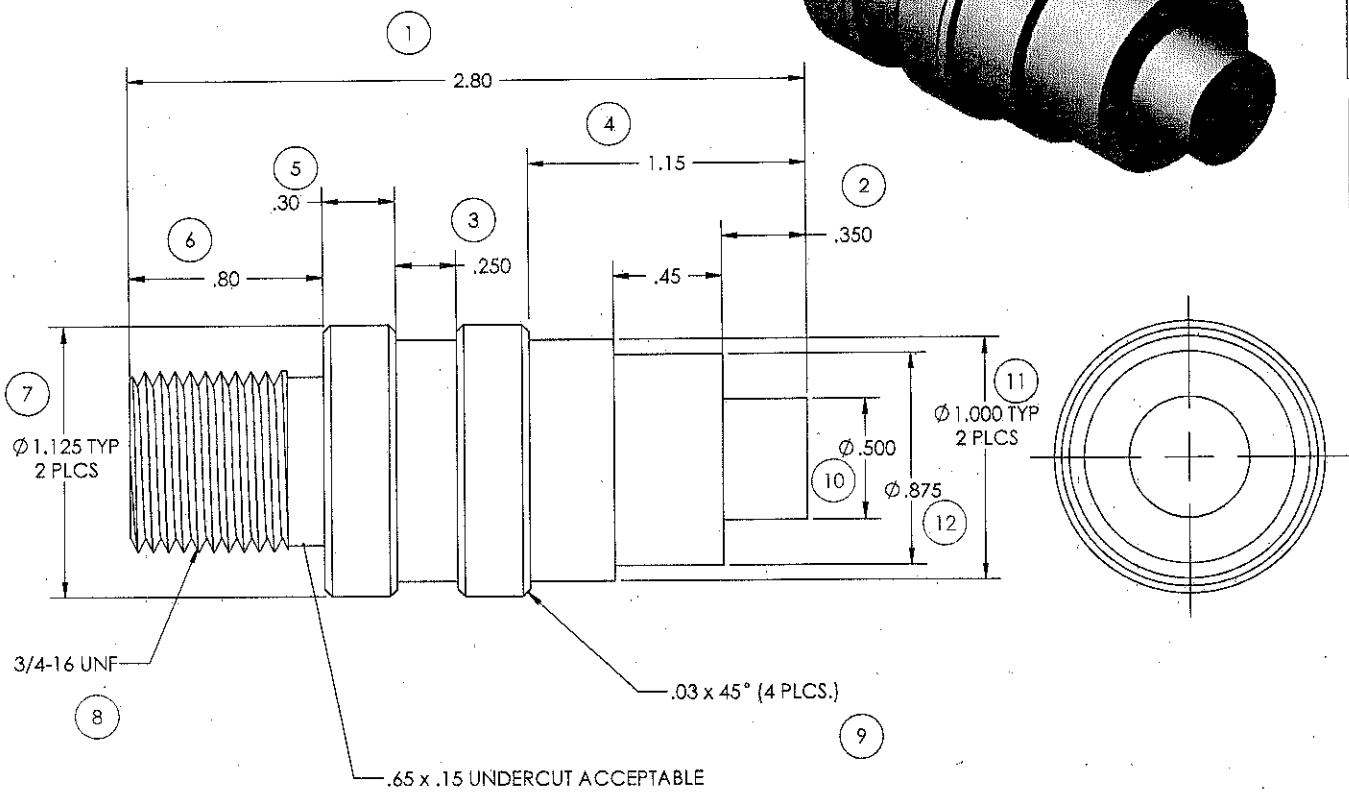
Immersive Engineering, Inc is now offering free training resources for SkillsUSA participants.The LearnHaasCNC.com Virtual Training Environment is being offered free to students and instructors preparing for the SkillsUSA Precision Machining Contests. This program provides a virtual training environment for CNC Machining that combines powerful “flight-simulator” technology with a flexible Internet-based learning content management system to deliver a truly innovative learning experience.

To access the Precision Machining Technology Virtual CNC and Machine and online training system, click the link below and complete the registration form to get started today preparing for this years contests www.learnhaascnc.com/learnhaascnc/skillsusa.cfm



TOTAL POINTS

CONTESTANT NUMBER



NUMBER	
1	10
2	15
3	10
4	10
5	10
6	10
7	15
8	15
9	10
10	15
11	15
12	15
TOTAL	150

NOTES:
1. MATERIAL : 6061 ALUMINUM
2. PART TO BE FREE OF BURRS
3. NO LAYOUT BLUING ALLOWED ON LATHES
4. MINIMAL TOOLMARKS ALLOWED ON O.D. SURFACES

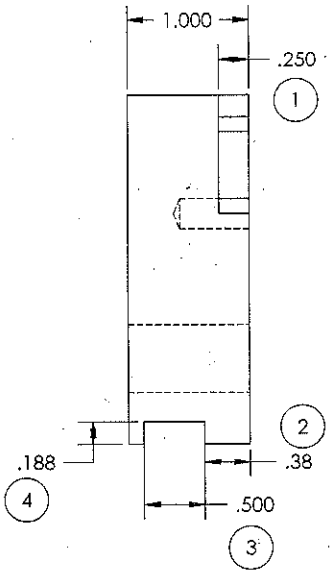
SCALE: 1:1

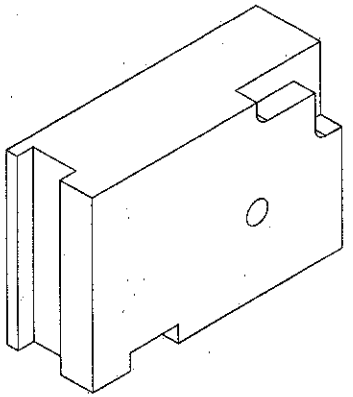
UNLESS OTHERWISE SPECIFIED TOLERANCES ARE:
.X = ±.03
.XX = ±.010
.XXX = ±.003

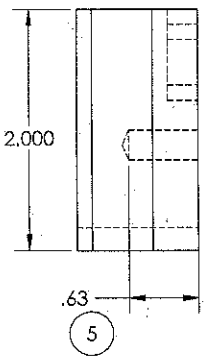
SKILLS USA 2010 MANUAL LATHE PROJECT

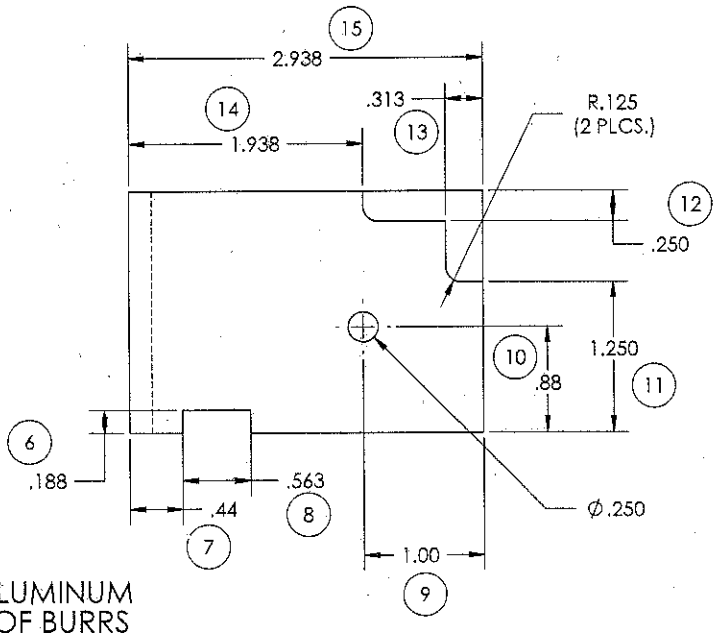
SIZE B | DRAWN BY XXX | DATE XXX | REV

UNLESS OTHERWISE SPECIFIED, ALL DIMENSIONS ARE IN INCHES









TOTAL POINTS

CONTESTANT NUMBER

Number	
1	10
2	10
3	10
4	10
5	10
6	10
7	10
8	10
9	10
10	10
11	10
12	10
13	10
14	10
15	10
SAFETY	
TOTAL	**150**

NOTES:
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2. PART TO BE FREE OF BURRS
3. NO LAYOUT BLUEING ALLOWED ON MILLS

SCALE: 1:1

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SKILLS USA 2010 MANUAL MILLING MACHINE PROJECT

SIZE	DRAWN BY	DATE	REV
B	XXX	XXX	

UNLESS OTHERWISE SPECIFIED: ALL DIMENSIONS ARE IN INCHES

2010
PRECISION MACHINING TECHNOLOGY COMPETITION

PROFESSIONAL DEVELOPMENT ORAL EXAMINATION

!!!JUDGES USE ONLY!!!

NOTE: 100 POINTS MAXIMUM

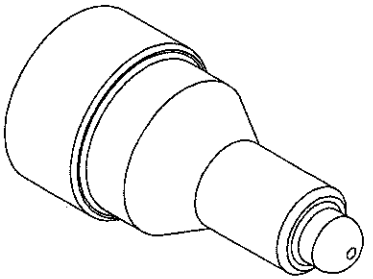
	Poor	Average	Excellent
1. Confidence	1	5	10
2. Knowledge of the subject/self	1	5	10
3. Articulate (Grammar)	1	5	10
4. Decision Making	1	5	10
5. Enthusiasm	1	5	10
6. Poise (manners)	1	5	10
7. Body Language & Eye Contact	1	5	10
8. Organization of thoughts	1	5	10
9. Overall Professionalism	1	5	10
10. Overall Communication	1	5	10

CONTESTANT # : _____

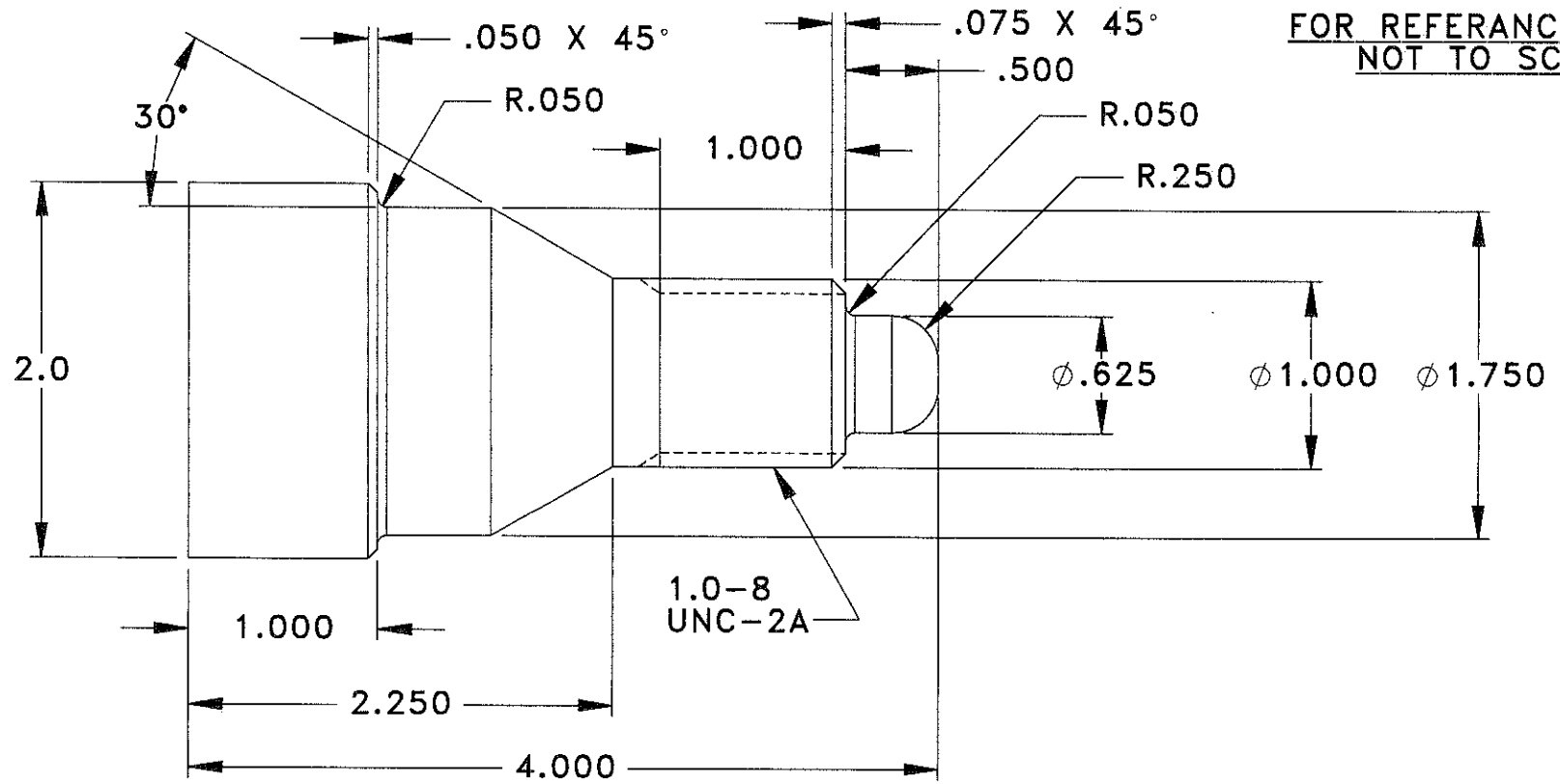
TOTAL SCORE: 100

JUDGE'S INITIALS: _____

NOTES:
Stock size ∅2.0" X 4.1"



FOR REFERANCE ONLY
NOT TO SCALE



DIMS IN INCHES BREAK EDGES 0.015
LATHE FINISH 63 uINCH MILL FINISH 125 uINCH
90° CSINK TAPPED HOLES 0.016R OVER MAJOR∅
TOLERANCES- UNLESS OTHERWISE SPECIFIED
X/X ±0.06 X.X ±0.06 X.XX ±0.02 X.XXX ±0.005
ANGLES ±1° X.XXX DIAMETERS ◎ 0.005 TIR
X.XXXDIA & SURFACES // & | 0.001 INCH/INCH

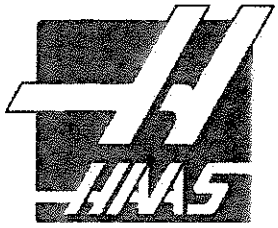
Skills USA

HAAS AUTOMATION, INC.

CNC Lathe Part

APPROVALS	DATE
DRAWN Daniel Scott	04-06-10
CHECKED CHECKER	XX-XX-XX
ENGINEER Daniel Scott	04-06-10

MATERIAL	FINISH	SIZE	SCALE	DWG	REV
6061 T6	NONE	A	1:1	Turning 2010	A



Haas Automation, Inc.

Skills USA
Precision Machining 2010

CNC Turning Part Score Sheet **Contestant Number** _____

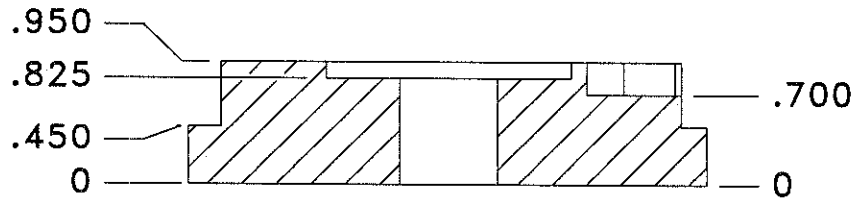
		Points Poss.	Points Earned
1.	Face front of part	5 pts	_____
2.	.250" Radius	5 pts	_____
3.	.625" Diameter	5 pts	_____
4.	.050" Radius (2)	10 pts	_____
5.	.075" x 45 degree chamfer	10 pts	_____
6.	1.000" Diameter	5 pts	_____
7.	1.0"- 8 x 1.0" Thread	20 pts	_____
8.	30 deg chamfer	20 pts	_____
9.	1.750" Diameter	5 pts	_____
9.	.050" x 45 degree chamfer	10 pts	_____
9.	.500" Z dim	5 pts	_____
9.	1.000" Z dim	5 pts	_____
9.	2.250" Z dim	5 pts	_____
9.	4.000" Z dim	5 pts	_____
10.	Spindle on	5 pts	_____
11.	Rotation correct	5 pts	_____
12.	Break sharp edges .015"	5 pts	_____
13.	Speeds, feeds and DOC	10 pts	_____
14.	Following instructions	5 pts	_____
15.	Tool Changes	5 pts	_____

Total Points Available: 150 points **Total Points Earned:** _____

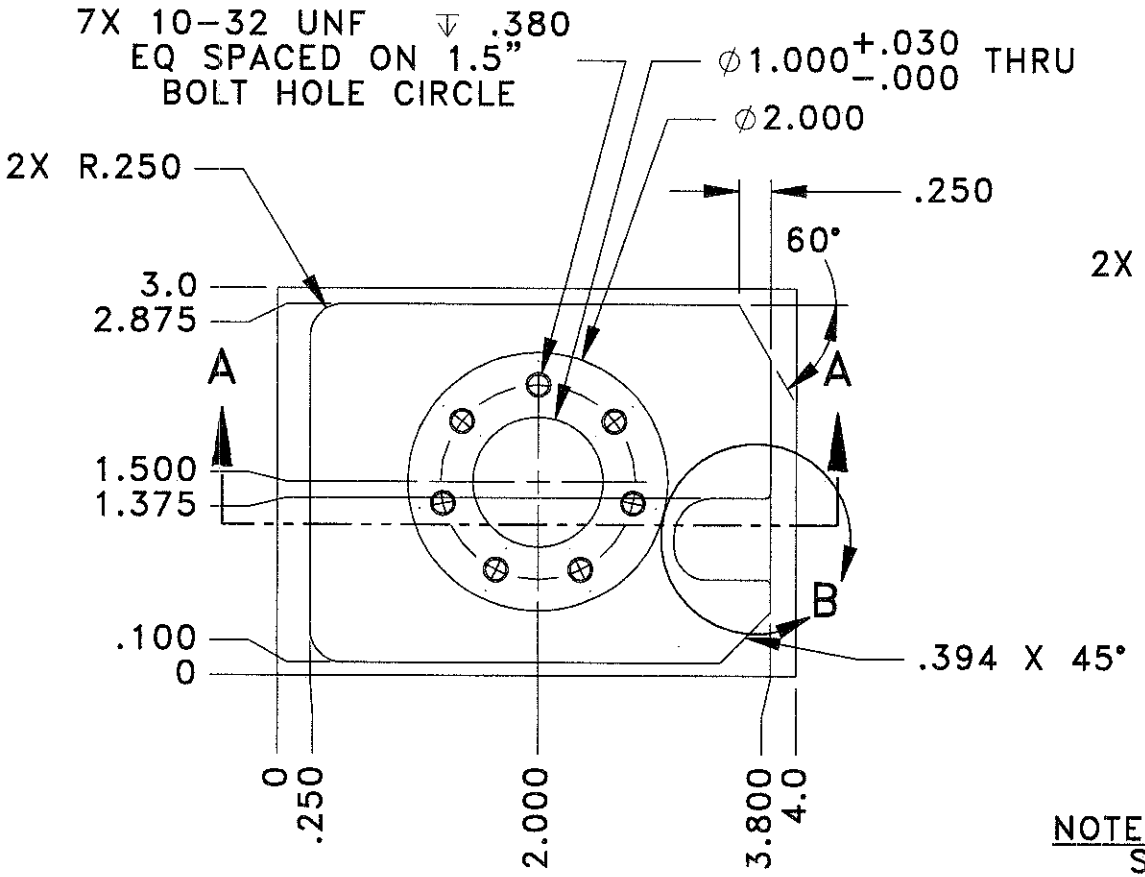
Scored by: _____

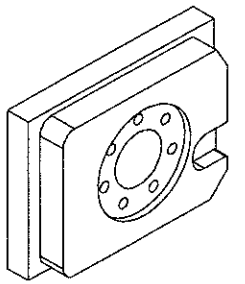
Run on lathe by: _____

Headquarters: 2800 Sturgis Road, Oxnard, California 93030
Telephone: 805-278-1800 • Fax: 805-278-2255 • www.HaasCNC.com



SECTION A–A





FOR REFERANCE ONLY
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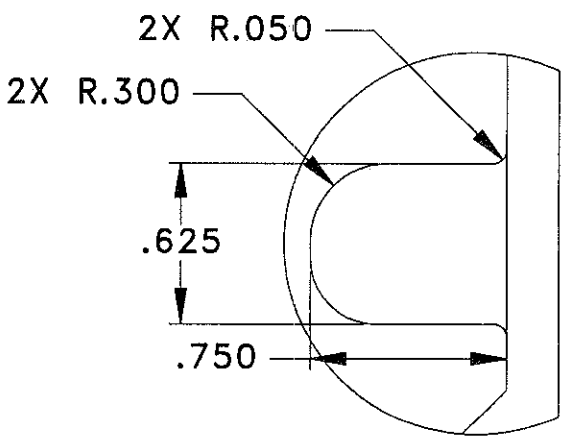


DETAIL B
SCALE 2 : 1.5

NOTES:
Stock size 4"x3"x1"

DIMS IN INCHES BREAK EDGES 0.015
LATHE FINISH 63 uINCH MILL FINISH 125 uINCH
90° CSINK TAPPED HOLES 0.016R OVER MAJOR⌀
TOLERANCES- UNLESS OTHERWISE SPECIFIED
X/X ±0.06 X.X ±0.06 X.XX ±0.02 X.XXX ±0.005
ANGLES ±1° X.XXX DIAMETERS ◎ 0.005 TIR
X.XXXDIA & SURFACES // & ⏥ 0.001 INCH/INCH

SKILLS USA

HAAS AUTOMATION, INC.

APPROVALS	DATE
DRAWN DANIEL SCOTT	04-12-10
CHECKED CHECKER	XX-XX-XX
ENGINEER DANIEL SCOTT	04-12-10

CNC MILL PART

MATERIAL	FINISH	SIZE	SCALE	DWG	REV
6061 T6	NONE	A	1:1.5	MILLING 2010	A

Haas Automation, Inc.

Skills USA
Precision Machining 2010
Milling

CNC Milling Part Score Sheet _____ Contestant Number _____

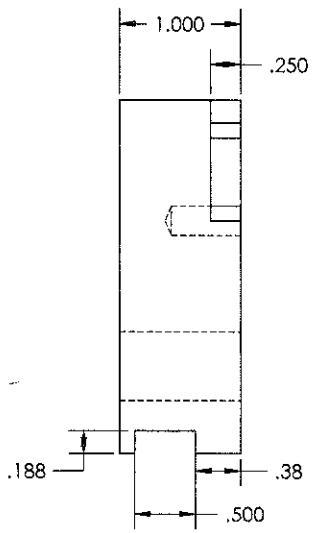
		Points Poss.	Points Earned
1.	Face mill top of part	5 pts	_____
2.	.500" deep perimeter cut	10 pts	_____
3.	.250" radius (2)	10 pts	_____
4.	.394" x 45-Degree chamfer	5 pts	_____
5.	.250" x 60-degree chamfer	5 pts	_____
6.	Drilled holes correct depth (7)	10 pts	_____
7.	Tapped holes correct depth (7)	10 pts	_____
9.	Tapped holes correct location (7)	10 pts	_____
9.	2.0" Dia. x .125" pocket	20 pts	_____
10.	Tool changes	5 pts	_____
11.	Spindle on	5 pts	_____
12.	Rotation correct	5 pts	_____
13.	Break sharp edges .015"	5 pts	_____
14.	Speeds and feeds	10 pts	_____
15.	"Detail B"	20 pts	_____
16.	1.000" Hole	5 pts	_____
17.	Following instructions	10 pts	_____

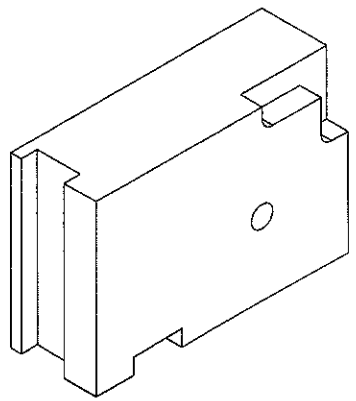
Total Points Available: 150 points **Total Points Earned:** _____

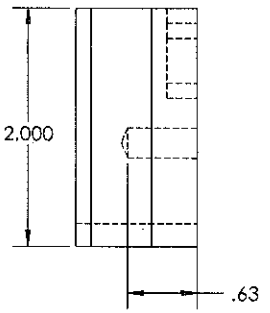
Scored by: _____

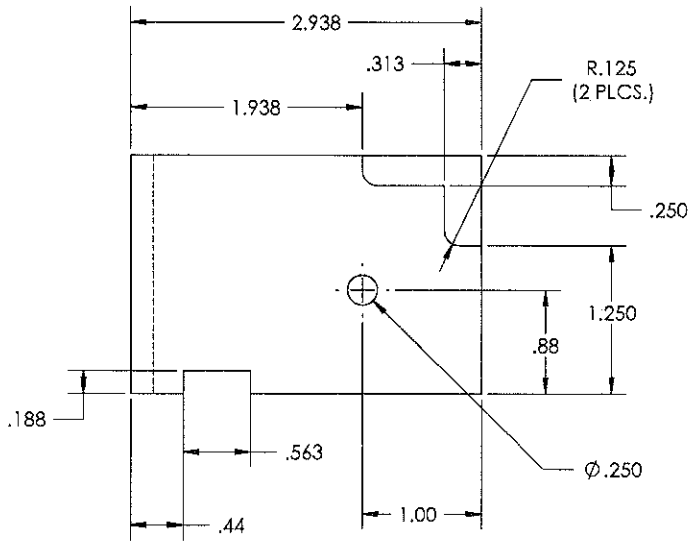
Run on Mill by: _____

Headquarters: 2800 Sturgis Road, Oxnard, California 93030
Telephone: 805-278-1800 • **Fax:** 805-278-2255 • **www.HaasCNC.com**









NOTES:

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SCALE: 1:1

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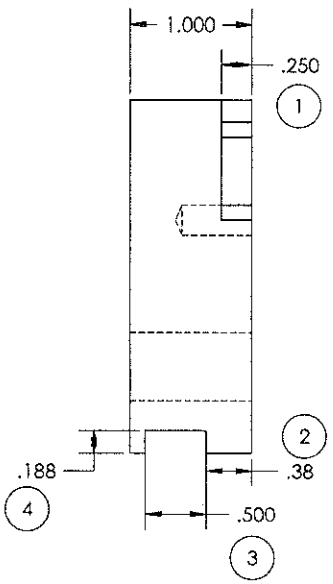
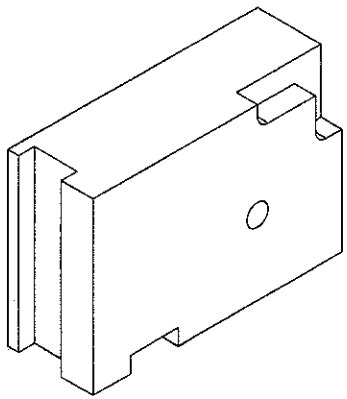
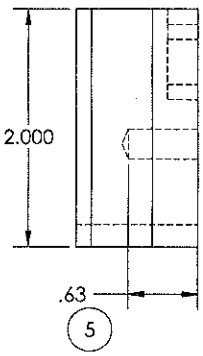
.XX = ±.010
.XXX = ±.003

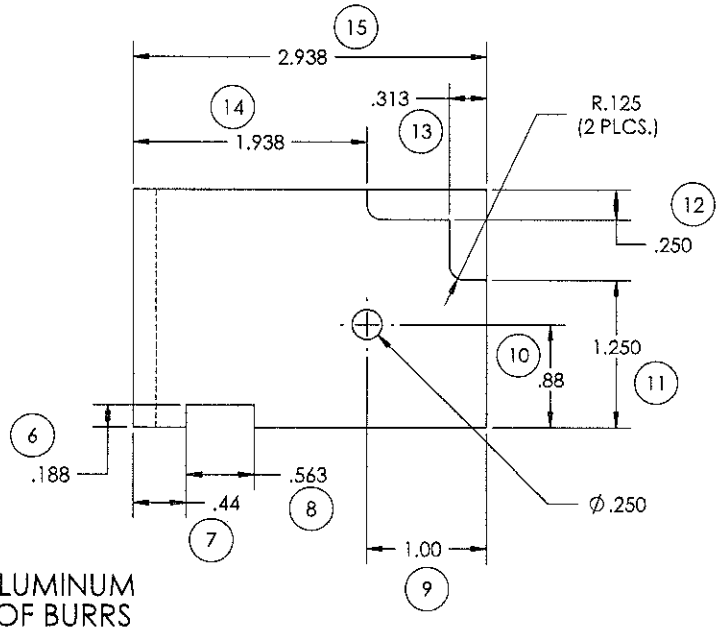
SKILLS USA 2010 MANUAL MILLING MACHINE PROJECT

SIZE	DRAWN BY	DATE	REV
B	XXX	XXX	









TOTAL POINTS

CONTESTANT NUMBER

Number			
1	10		
2	10		
3	10		
4	10		
5	10		
6	10		
7	10		
8	10		
9	10		
10	10		
11	10		
12	10		
13	10		
14	10		
15	10		
SAFETY			
TOTAL	**150**		

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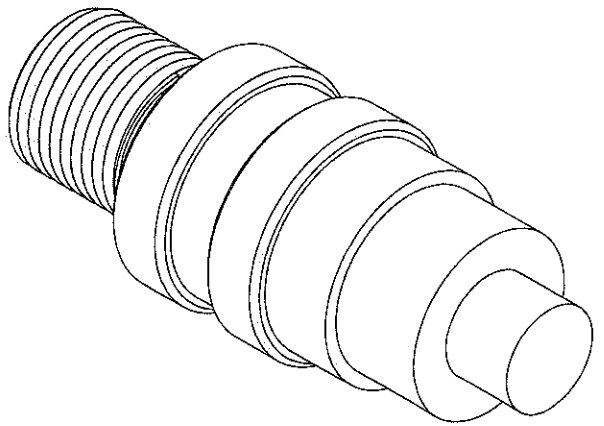
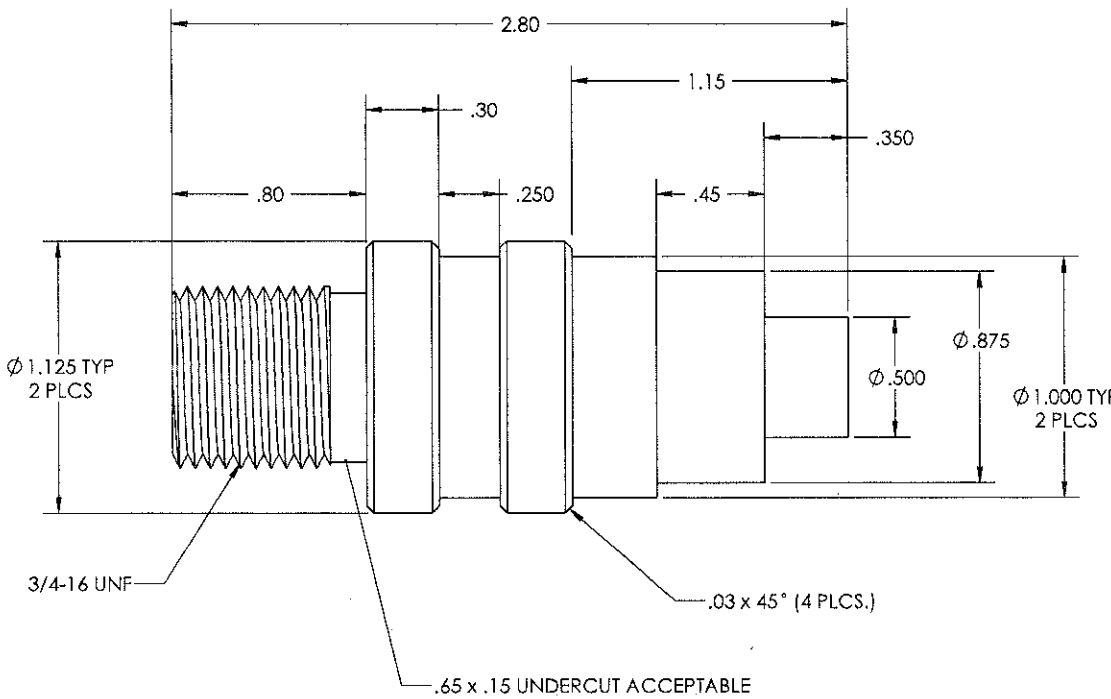
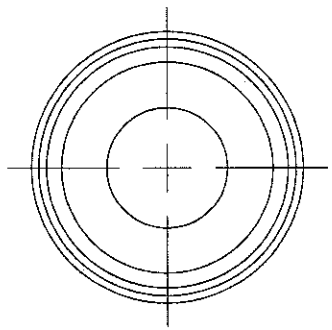
SKILLS USA 2010 MANUAL MILLING MACHINE PROJECT

SIZE	DRAWN BY	DATE	REV
B	XXX	XXX	







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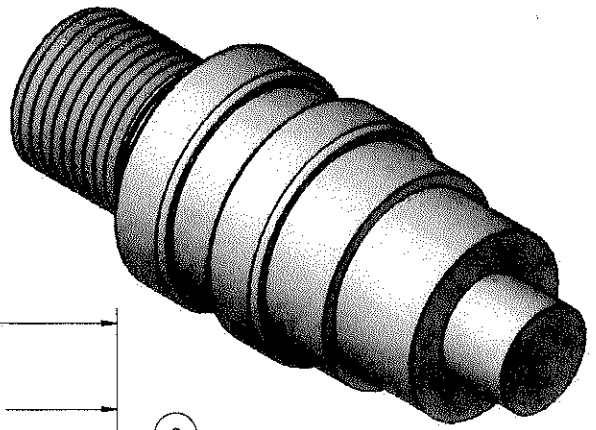
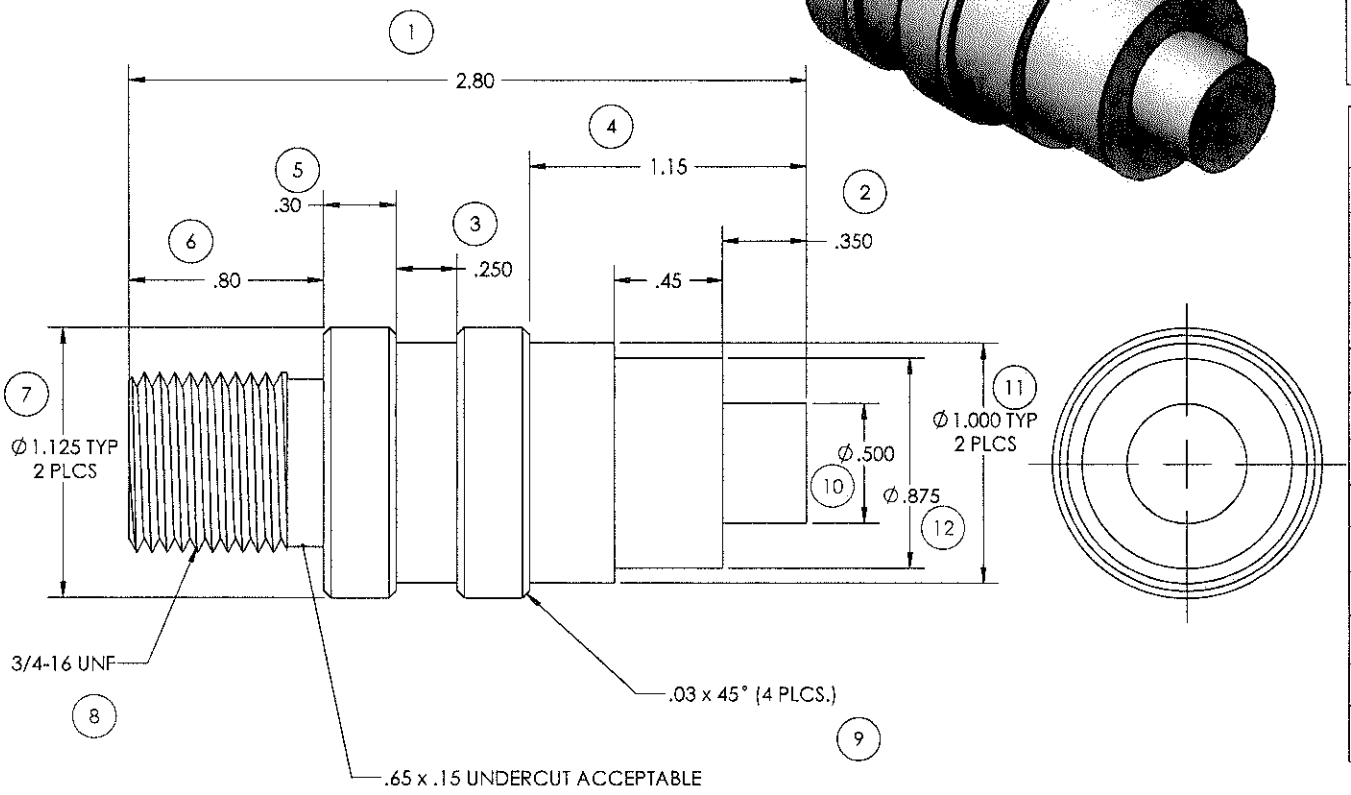
SKILLS USA 2010 MANUAL LATHE PROJECT

SIZE B | DRAWN BY XXX | DATE XXX | REV





TOTAL POINTS

CONTESTANT NUMBER

NUMBER			✓
1	10		
2	15		
3	10		
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TOTAL	150		

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