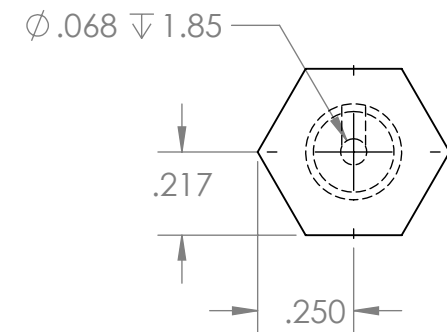
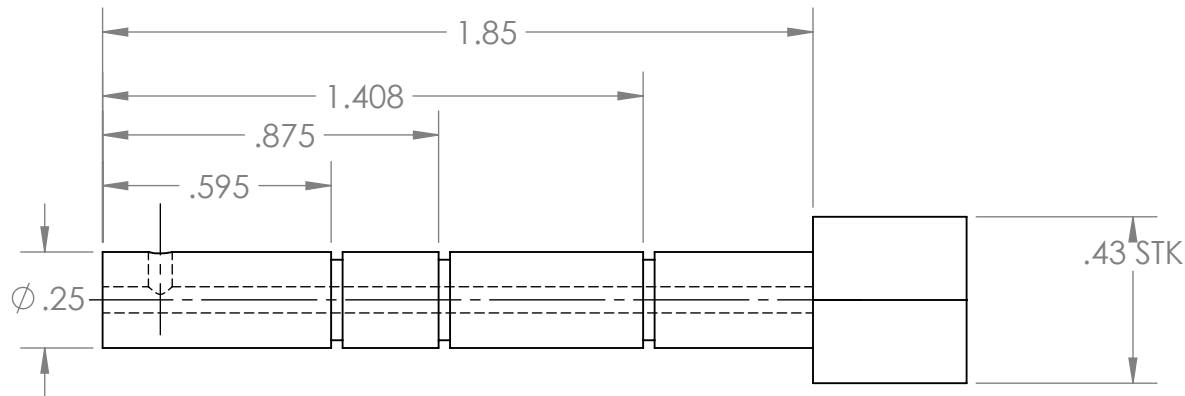
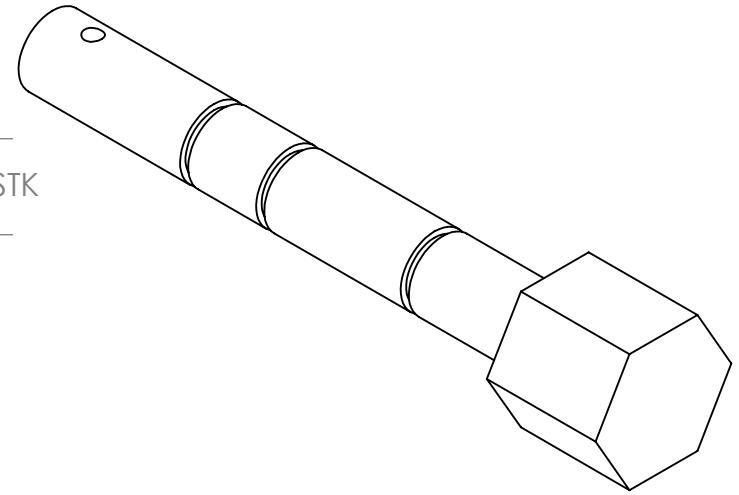
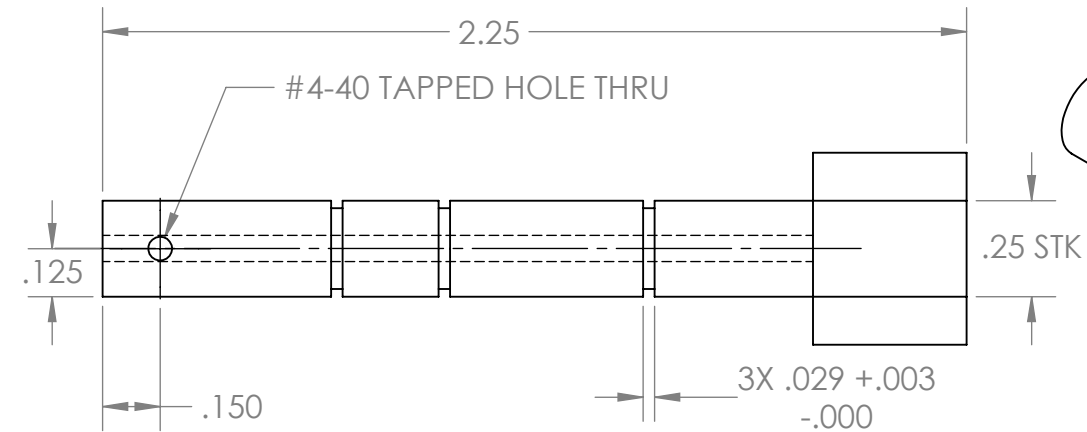


B

B

**DRAWING & MANUF. PLAN CHECKS:**

- PART FULLY DIMENSIONED
- APPROPRIATE DATUM LINES
- TOLERANCES SPECIFIED
- MATERIAL/QUANTITY SPECIFIED
- IF APPLICABLE, REAMER CALLED OUT
- APPROPRIATE TOOL SPEEDS
- APPROPRIATE DRILL/TAP SIZES
- SPECIFIED ALL NECESSARY TOOLS/SIZES NECESSARY
- RAW STOCK CUT OVERSIZED
- STEPS TO GET ALL ALL MACHINED/STOCK SURFACES

REV 1

INITIAL RELEASE

UNLESS OTHERWISE SPECIFIED:

DIMENSIONS ARE IN INCHES

TOLERANCES:

MACHINED ANGULAR: $\pm 1^\circ$
 BENT ANGULAR: $\pm 3^\circ$
 TWO PLACE DECIMAL: ± 0.01
 THREE PLACE DECIMAL: ± 0.005

INTERPRET GEOMETRIC
 TOLERANCES PER: ASME Y14.5-2009

MATERIAL
 Aluminum .25" hex

FINISH
 stock
 BURR FREE

REVISION BLOCK

DO NOT SCALE DRAWING

DRAWN

NAME DATE

ABIRNB 11/20/21

CHECKED

ABIRNB 11/22/21

GSI/IA APPR.

SHOP APPR.

INSPECTED

COMMENTS:

ME 250 TEAM XX

TITLE:

WHEEL AXEL

SIZE

DWG. NO.

REV

A**P103_24****1**

SCALE: 2:1

QUANTITY: 4

SHEET 1 OF 2

A

MANUFACTURING PLAN

RAW MATERIAL STOCK: 1/2" Aluminum Hex

STEP	PROCESS DESCRIPTION	MACHINE	FIXTURE	TOOL(S)	SPEED (RPM)
1	Cut down to 3"	Band Saw	-	-	300 ft/min
2	Deburr the ends of the surfaces	Lathe	-	File	-
3	Place in lathe and face off to get a machined surface	Lathe	Hex Collet	Cutting tool	1000
4	Deburr the part	Lathe	Hex Collet	File	-
5	Remove part from lathe and flip	-	-	-	-
6	Repeat steps 3 and 4	Callipers	-	-	-
7	Remove part from lathe and measure with callipers	Lathe	-	-	-
8	touch off with parting tool and zero x. Cut to length taking passes of 0.050" or less	Lathe	Hex Collet	Cutting Tool	1000
9	Lathe down to .25" diameter with passes going to 1.75" with the final pass going to 1.85"	Lathe	Hex Collet	Cutting Tool	1000
10	0 the x direction. Move tool towards part the thickness of the groove tool in the x direction and rezero the x direction. Move lathe distance to the groove in x and touch off in the z direction Move lathe an additional 0.03" in z direction to cut the groove	Lathe	Hex Collet	Cutting Tool	700
11	Repeat step 10 for other 2 E clip holes	Lathe	Hex Collet	Cutting Tool	
12	Centerdrill	Lathe	Hex Collet	Centerdrill with drill chuck	1600
13	Drill .068" hole to depth of 1.85"	Lathe	Hex Collet	#50 drill with drill chuck	
14	Deburr the part	Mill	-	File	-
15	Use edgefinder to locate X and Y coordinates of edges	Mill	Vise 1	Edge Finder with drill chuck	1000
16	Centerdrill	Mill	Vise 1	centerdrill with drill chuck	1600
16	Drill a thru hole .15" off the thin end with a .062" diameter	Mill	Vise 1	1/16 Drill with drill chuck	1600
17	Tap 4-40 thread	Mill	Vise 1	4-40 Tap drill chuck, drill chuck tap fixture	-
18	Deburr the part	-	-	file	-

SHEET 2 OF 2