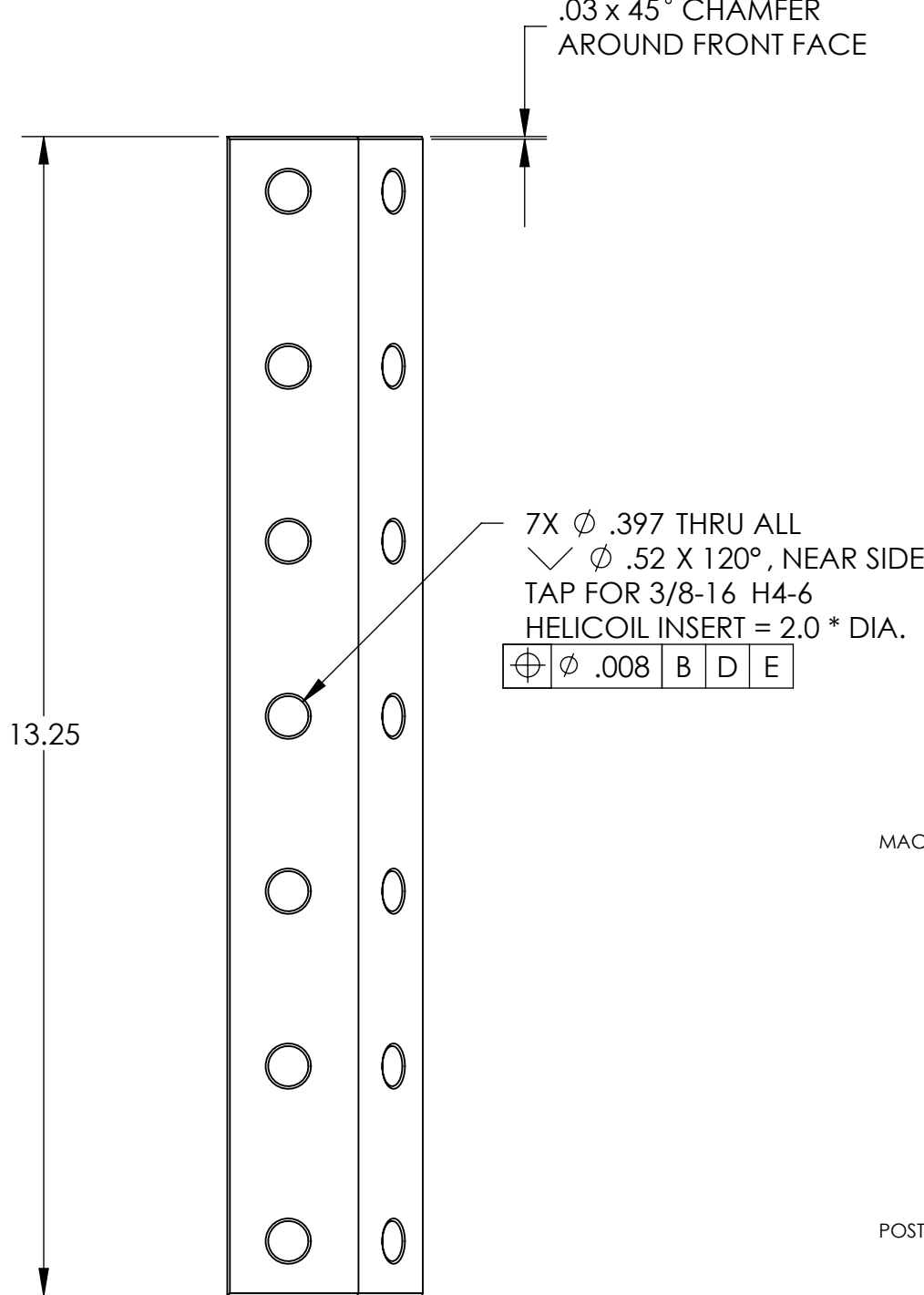
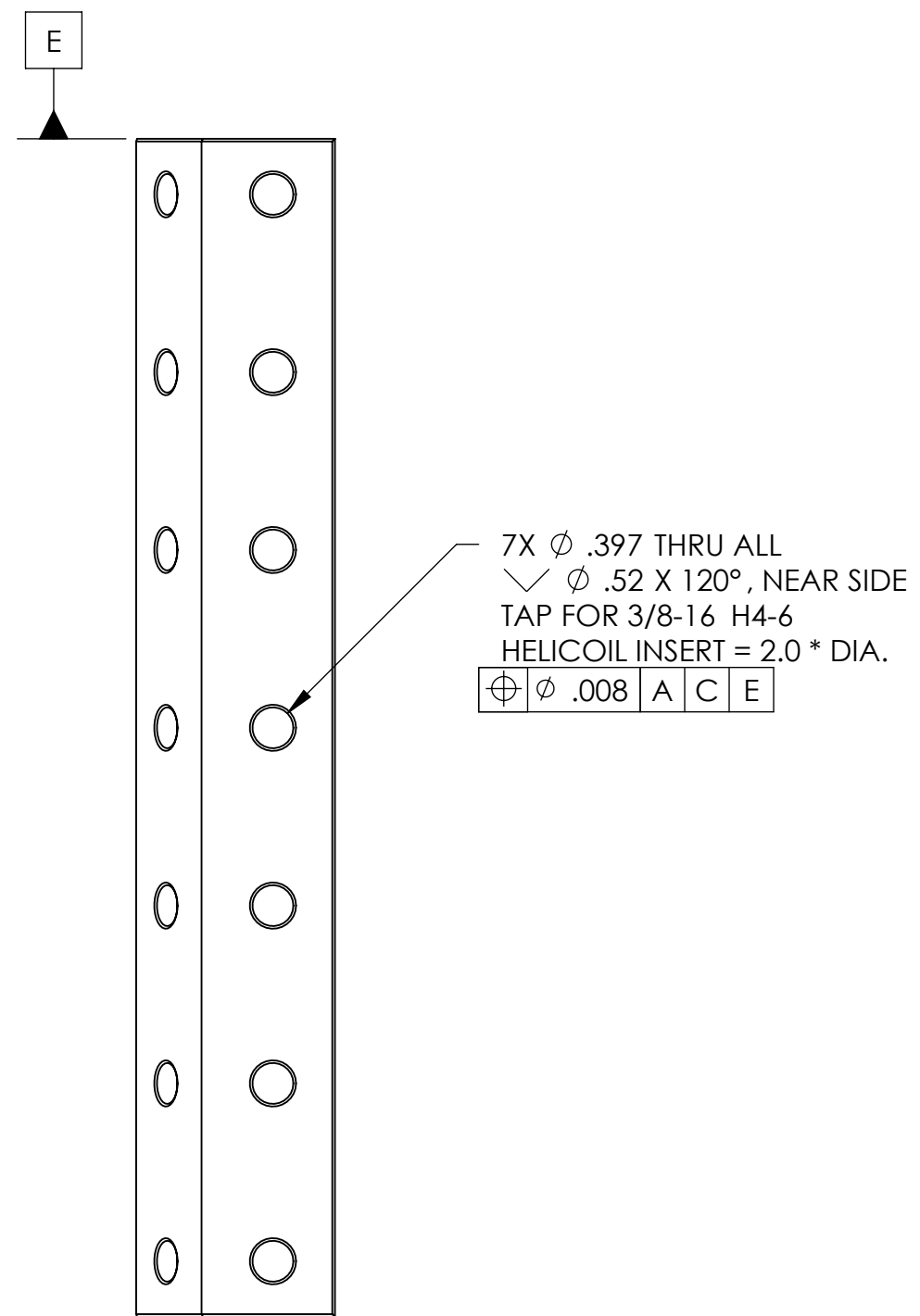
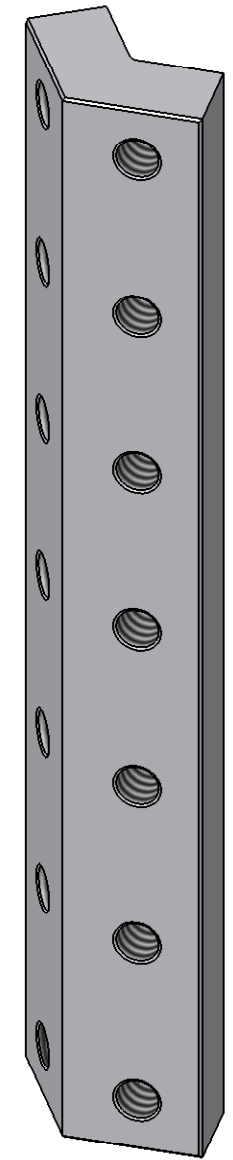
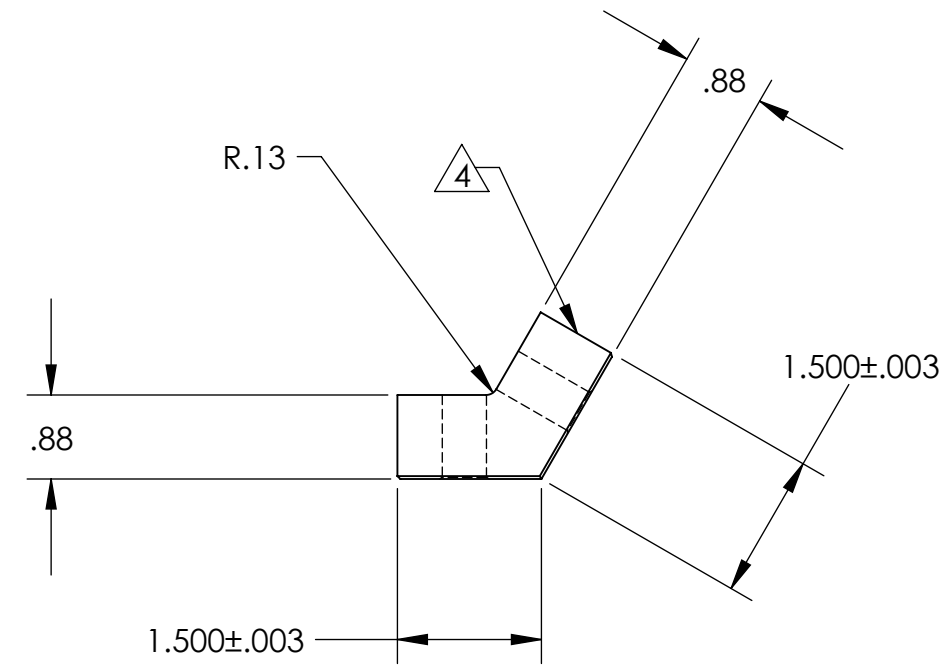
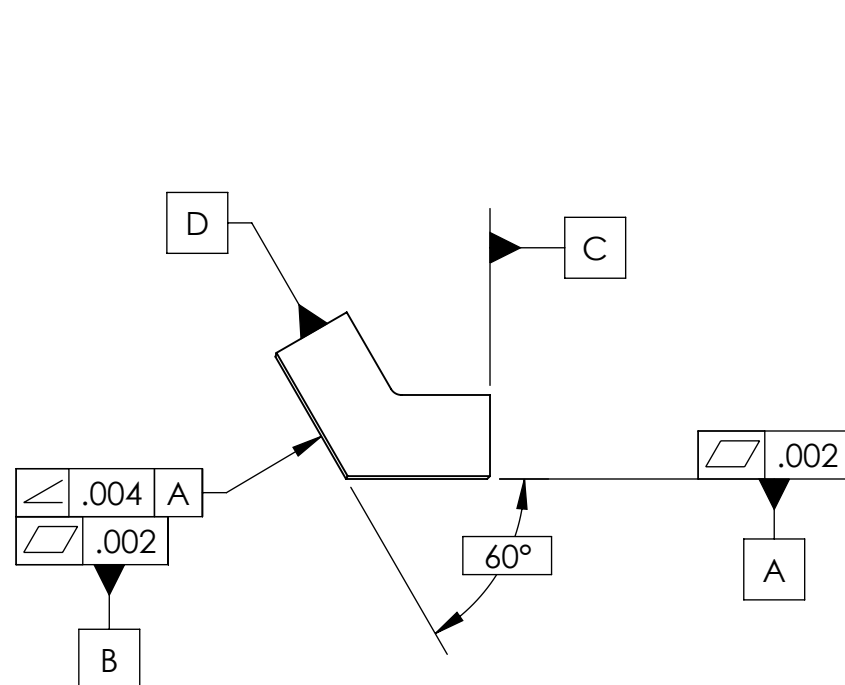


REVISION HISTORY				
REV	DATE	ECO	APPROVAL	DESCRIPTION
V1 / C	12 Jun 2007	1064	D. Senders	Release for Enhanced LIGO.
V2	10 Mar 2009		A. Stein	Release for Advanced LIGO. Radius added to back edge. Chamfers added. Heli-Coil length changed to 2.0" Dia.



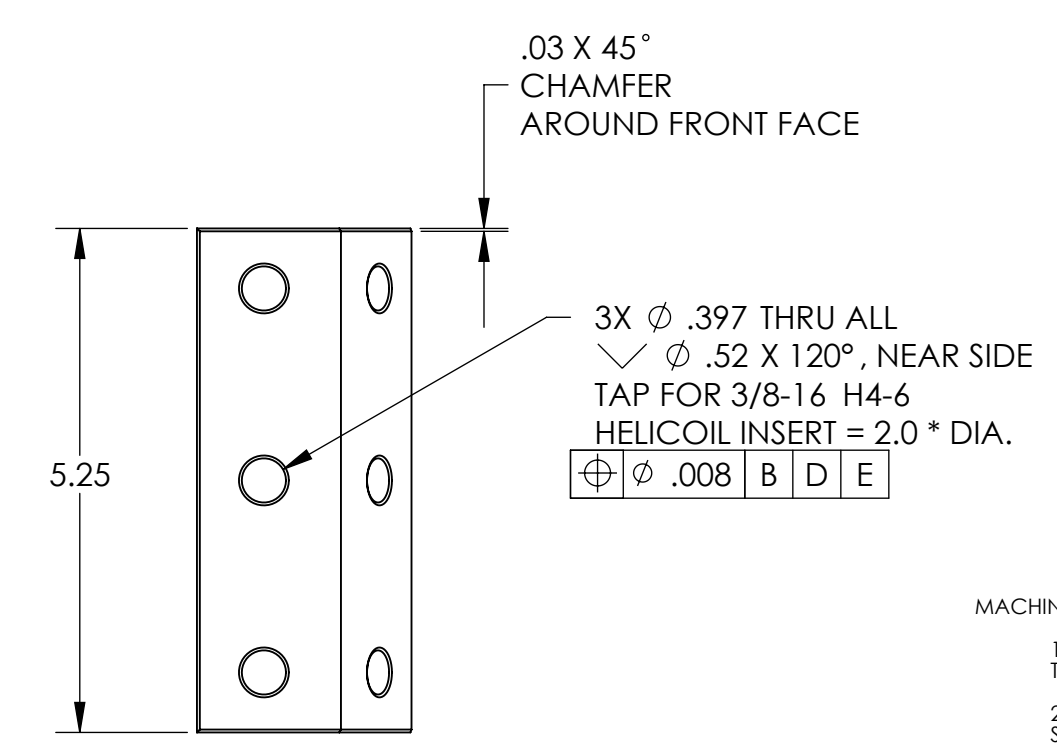
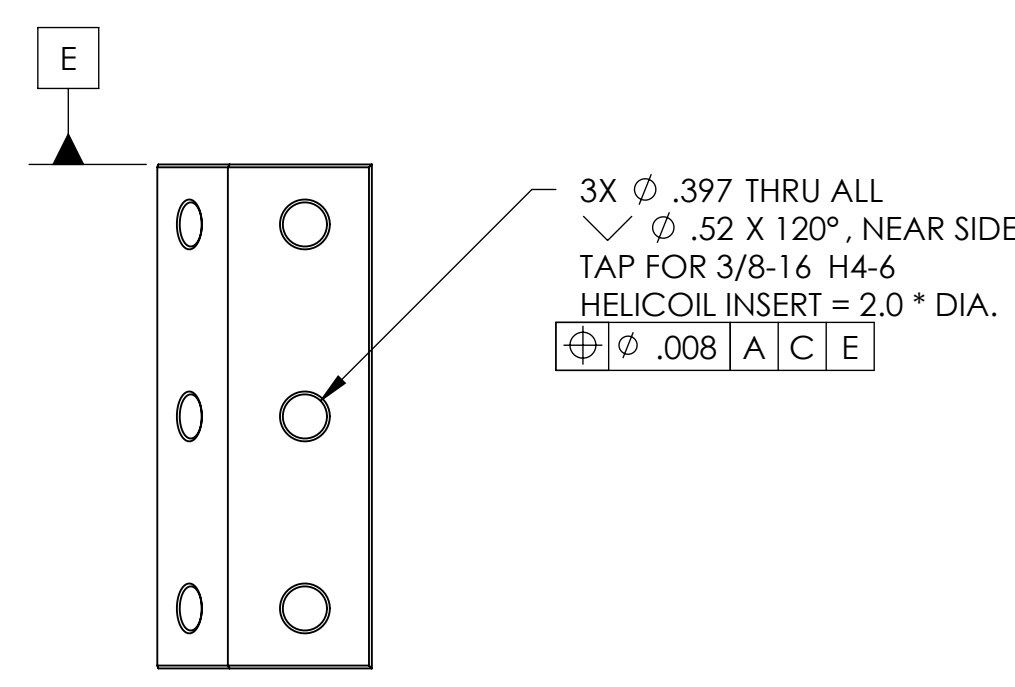
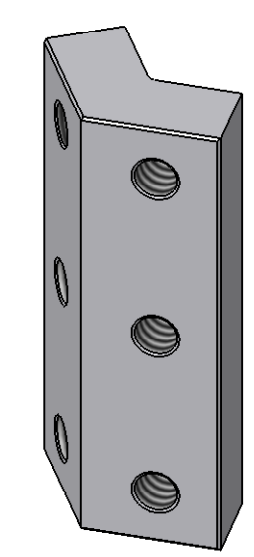
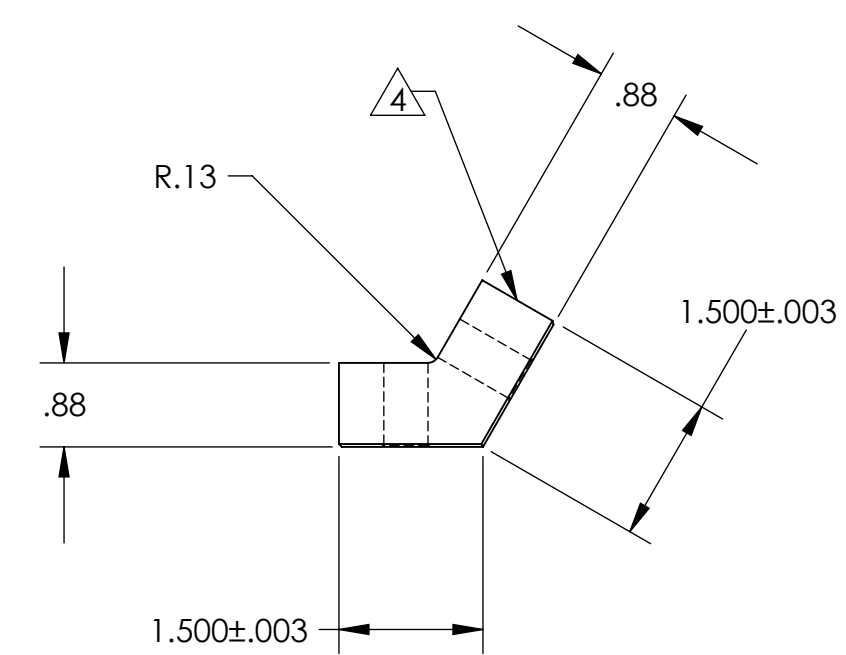
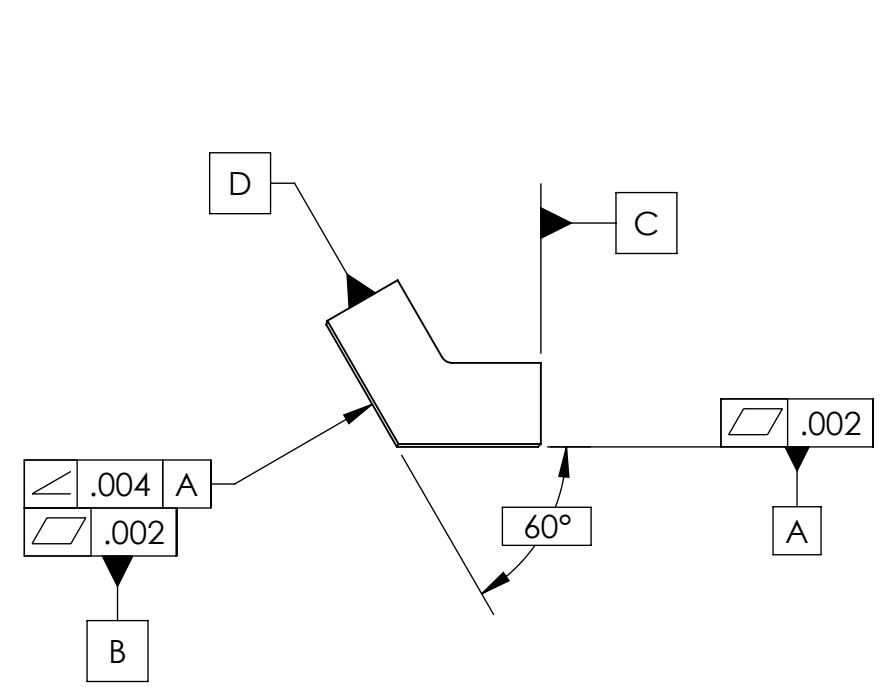
- MACHINING NOTES:
- 1) MACHINE ALL SURFACES TO REMOVE OXIDES AND MILL FINISH. ABRASIVE REMOVAL TECHNIQUES (OTHER THAN DRESSED BLANCHARD GRINDING) ARE NOT ACCEPTABLE.
 - 2) ALL MACHINING FLUIDS MUST BE WATER SOLUBLE AND FREE OF SULFUR, CHLORINE, AND SILICONE. SUCH AS CINCINNATI MILACRON CIMTECH 410.
 - 3) THOROUGHLY CLEAN PART TO REMOVE ALL OIL, GREASE, DIRT, AND CHIPS.
 - 4) WHERE INDICATED, MECHANICALLY SCRIBE, STAMP, OR ENGRAVE THE FOLLOWING INFORMATION AS SHOWN BELOW: **PART NUMBER-REVISION** (AND **TYPE** IF INDICATED), FOLLOWED ON THE NEXT LINE WITH A UNIQUE 3-DIGIT **SERIAL NUMBER** STARTING AT 001 FOR THE FIRST PART AND INCREMENTING THEREAFTER. USE 0.38" TALL CHARACTERS UNLESS PART SIZE DICTATES SMALLER.
- D071060-V2, Type 00
 S/N - ###
- 5) DO NOT INSTALL HELI-COILS UNTIL POST-CLEANING.
- POST-MACHINING NOTES:
- P1) CLEAN TO LIGO STANDARDS, CLASS A.
- P2) INSTALL CLASS-A CLEAN HELI-COILS. BREAK OFF AND REMOVE TANGS. CHECK THAT END OF EACH INSERT REMAINS CLEAN IN THREAD AFTER TANG REMOVAL.

HELI-COIL TABLE (See Note 5)				
Item No.	Thread Size	Material	Heli-Coil P/N 1185...	Qty.
1	3/8"-16 x .75"	Nitronic 60	-6EN750	14

APPROVALS	DATE
ENGINEERING (HPD): D. Senders	5/29/2007
QUALITY (HPD): C. Danaher	5/29/2007
MATERIAL:	6061-T6 Al
FINISH:	None
MASS:	2.6 lbs

UNLESS OTHERWISE SPECIFIED:		
DIMENSIONS ARE IN INCHES		
DECIMAL TOLERANCES:		
.XX ±.015	.XXX ±.005	
ANG TOL: ± 1° SURFACE ROUGHNESS: .63		
REMOVE ALL SHARP EDGES. LEAVE .005 X 45° MIN CHAMFER, OR .005 MIN RADIUS.		
THIS PRINT & THE EMBEDDED CAD MODEL ARE THE DOCUMENTATION OF RECORD. UNLESS OTHERWISE SPECIFIED, ALL DIMENSIONS IN THE MODEL ARE BASIC, WITH TOLERANCES GIVEN BY:		
$\overline{\text{A}}$	$\overline{\text{B}}$	$\overline{\text{C}}$

ORIGINAL DESIGN BY:	MODIFIED BY:
High Precision Devices	LIGO
1448 Valtrec Lane, Suite C, Boulder, Colorado 80301 Phone: (303) 447-2558 Fax: (303) 447-2548 Web Site: www.hpd-online.com	
DESCRIPTION:	Outer Wall, Bracket 120
P/N:	D071060
CONFIG:	Stage 1 Bracket (Long)
CAD FILE NAME:	D071060_Outer_Wall-Bracket_120
PROJECT:	HAM ISI, Advanced LIGO
SIZE	SCALE: 1:2
C	DRAWN BY: Dave Senders (HPD)
SHEET 1 OF 2	DATE PRINTED: 3/25/2009
	REV V2



MACHINING NOTES:

- 1) MACHINE ALL SURFACES TO REMOVE OXIDES AND MILL FINISH. ABRASIVE REMOVAL TECHNIQUES (OTHER THAN DRESSED BLANCHARD GRINDING) ARE NOT ACCEPTABLE.
- 2) ALL MACHINING FLUIDS MUST BE WATER SOLUBLE AND FREE OF SULFUR, CHLORINE, AND SILICONE, SUCH AS CINCINNATI MILACRON CIMTECH 410.
- 3) THOROUGHLY CLEAN PART TO REMOVE ALL OIL, GREASE, DIRT, AND CHIPS.
- 4) WHERE INDICATED, MECHANICALLY SCRIBE, STAMP, OR ENGRAVE THE FOLLOWING INFORMATION AS SHOWN BELOW: **PART NUMBER-REVISION** (AND **TYPE** IF INDICATED), FOLLOWED ON THE NEXT LINE WITH A UNIQUE 3-DIGIT **SERIAL NUMBER** STARTING AT 001 FOR THE FIRST PART AND INCREMENTING THEREAFTER. USE 0.38" TALL CHARACTERS UNLESS PART SIZE DICTATES SMALLER.

D071060-V2, Type 01
S/N - ###

5) DO NOT INSTALL HELI-COILS UNTIL POST-CLEANING.

POST-MACHINING NOTES:

P1) CLEAN TO LIGO STANDARDS, CLASS A.

P2) INSTALL CLASS-A CLEAN HELI-COILS. BREAK OFF AND REMOVE TANGS. CHECK THAT END OF EACH INSERT REMAINS ENGAGED IN THREAD AFTER TANG REMOVAL.

HELI-COIL TABLE (See Note 5)				
Item No.	Thread Size	Material	Heli-Coil P/N 1185...	Qty.
1	3/8"-16 x .75"	Nitronic 60	-6EN750	6

APPROVALS	DATE
ENGINEERING (HPD): D. Senders	5/29/2007
QUALITY (HPD): C. Danaher	5/29/2007
MATERIAL:	6061-T6 Al
FINISH:	None
MASS:	1.0 lbs

UNLESS OTHERWISE SPECIFIED:
DIMENSIONS ARE IN INCHES
DECIMAL TOLERANCES:
.XX ±.015 .XXX ±.005
ANG TOL: ± 1° SURFACE ROUGHNESS:
REMOVE ALL SHARP EDGES.
LEAVE .005 X 45° MIN CHAMFER,
OR .005 MIN RADIUS.

THIS PRINT & THE EMBEDDED CAD MODEL ARE THE DOCUMENTATION OF RECORD. UNLESS OTHERWISE SPECIFIED, ALL DIMENSIONS IN THE MODEL ARE BASIC, WITH TOLERANCES GIVEN BY:

∅	.010	A	B	C
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ORIGINAL DESIGN BY: **High Precision Devices**

1448 Valtec Lane, Suite C, Boulder, Colorado 80301
Phone: (303) 447-2558 Fax: (303) 447-2548 Web Site: www.hpd-online.com

DESCRIPTION: **Outer Wall, Bracket 120**

P/N: **D071060** CONFIG: **Keel Bracket (Short)**

CAD FILE NAME: D071060_Outer_Wall-Bracket_120

PROJECT: HAM ISI, Advanced LIGO

SIZE	SCALE: 1:2	DRAWN BY: Dave Senders (HPD)	REV
C	SHEET 2 OF 2	DATE PRINTED: 3/25/2009	V2