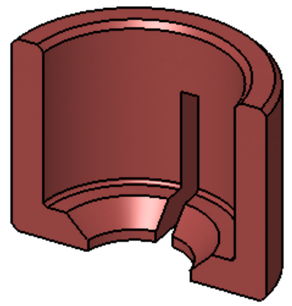
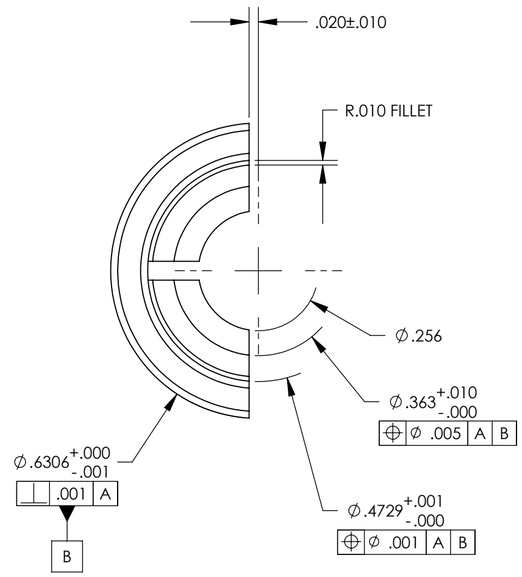
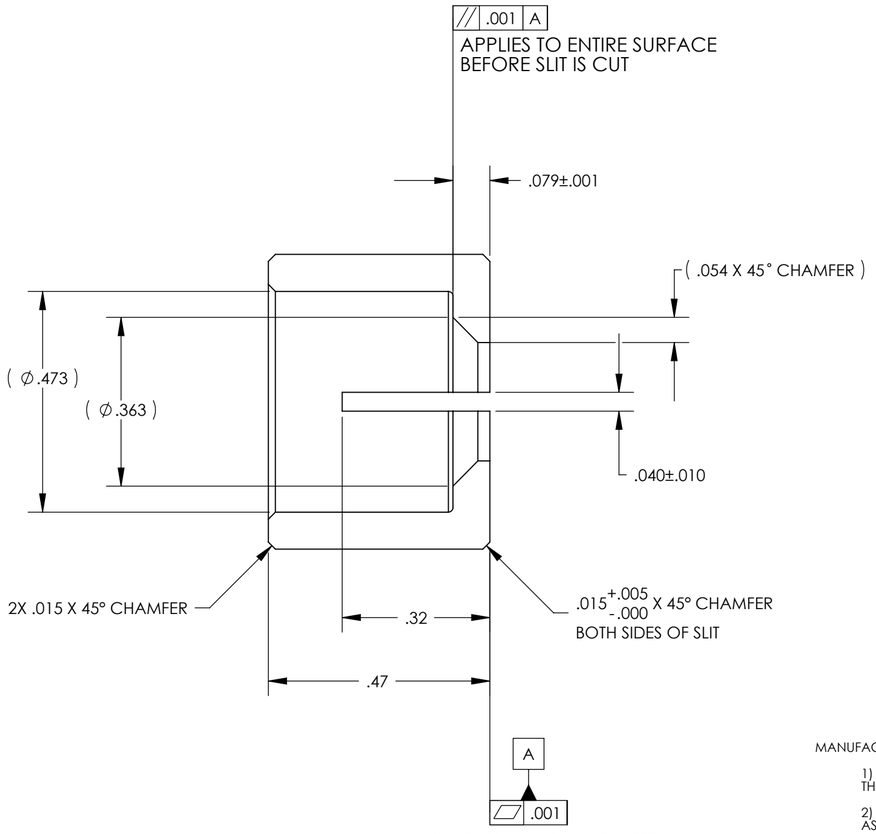
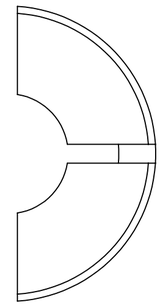
REVISION HISTORY				
REV	DATE	ECO	APPROVAL	DESCRIPTION
V1 / D	18 Jul 2007	1069	Dan Bryce	Release for Enhanced LIGO.
V2	20 Mar 2009		A. Stein	Release for Advanced LIGO. Added chamfers to top edges.









MANUFACTURING 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) MACHINE FROM MARAGING 300 (MIL-S-46850D). BEGIN WITH MATERIAL IN SOLUTION ANNEALED STATE. INTERMEDIATE MACHINING AND STRAIN RELIEF STEPS ARE ACCEPTABLE.

5) ALL DIMENSIONS APPLY BEFORE HEAT TREATMENT. MATERIAL SHRINKAGE OF .001 IN/IN IS ACCOUNTED FOR IN DESIGN.

6) AFTER FINAL MACHINING, HEAT TREAT AS FOLLOWS (INERT ATMOSPHERE REQUIRED):

- HEAT TO 480°C, SOAK FOR 40 MINUTES
- AGE FOR 4-6 HOURS
- AIR COOL TO ROOM TEMP

FINAL HARDNESS: 50-55 HRC.

POST-MANUFACTURING NOTES:

P1) CLEAN TO LIGO STANDARDS, CLASS A (PER E0900047 AND E960022).

APPROVALS	DATE
ENGINEERING (HPD): J. Waterman	6/15/2007
QUALITY (HPD): C. Danaher	6/15/2007
MATERIAL: **See Notes**	
FINISH: **None**	
MASS: **0.01 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:

.010 A B C

ORIGINAL DESIGN BY:

High Precision Devices

1668 Valtec Lane, Suite C, Boulder, Colorado 80301
Phone: (303) 447-2558 Fax: (303) 447-2548 Web Site: www.hpd-online.com

MODIFIED BY: LIGO

DESCRIPTION: **Flexure Cup**

P/N: **D071104** CONFIG: **-**

CAD FILE NAME: D071104_Flexure_Cup

PROJECT: HAM ISI, Advanced LIGO

SIZE **C** | SCALE: **4:1** | DRAWN BY: **Jonas Waterman (HPD)** | REV **V2**

SHEET **1** OF **1** | DATE PRINTED: **5/6/2009**

Model: #D071104 Rev: V2 Dwg: #D071104 Rev: X-002