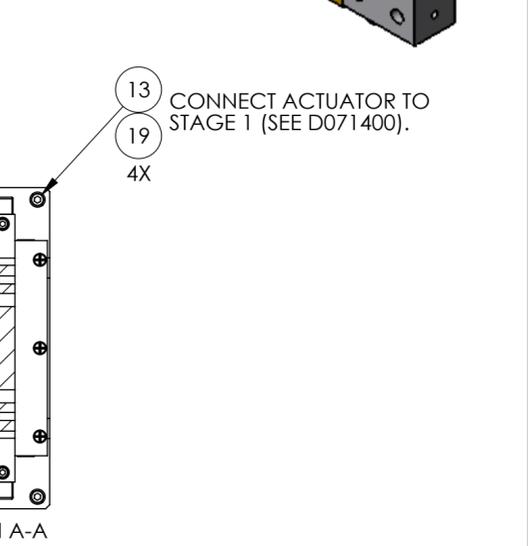
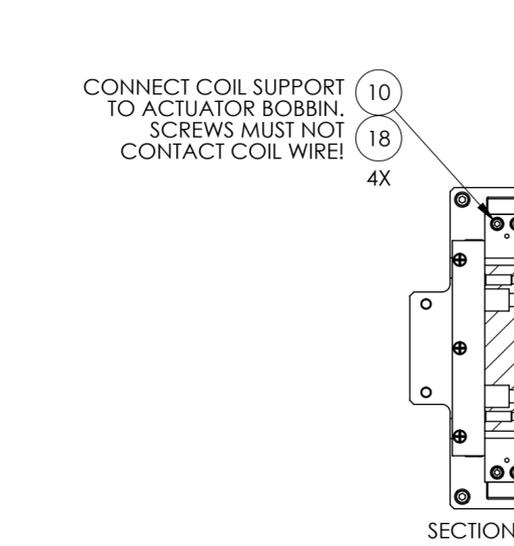
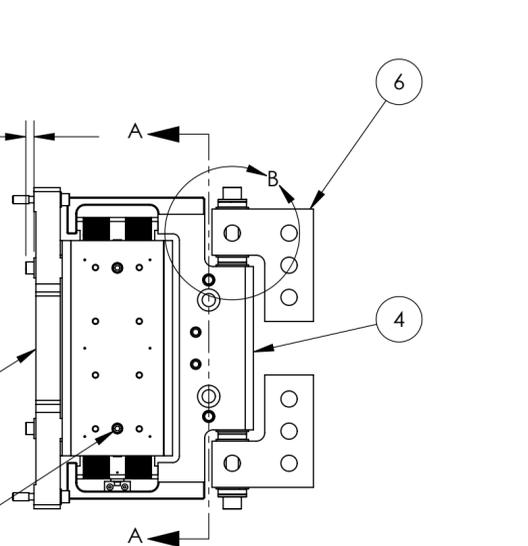
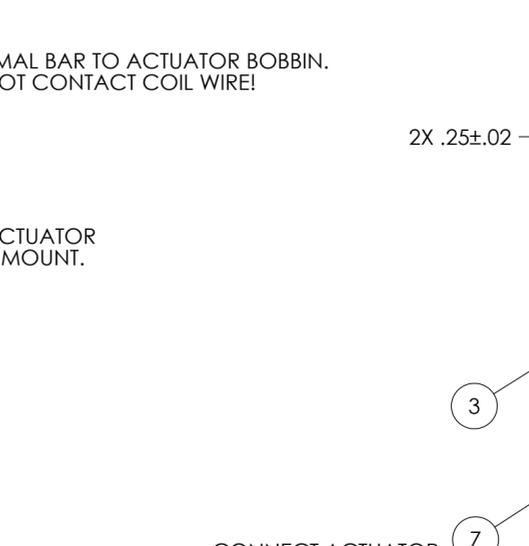
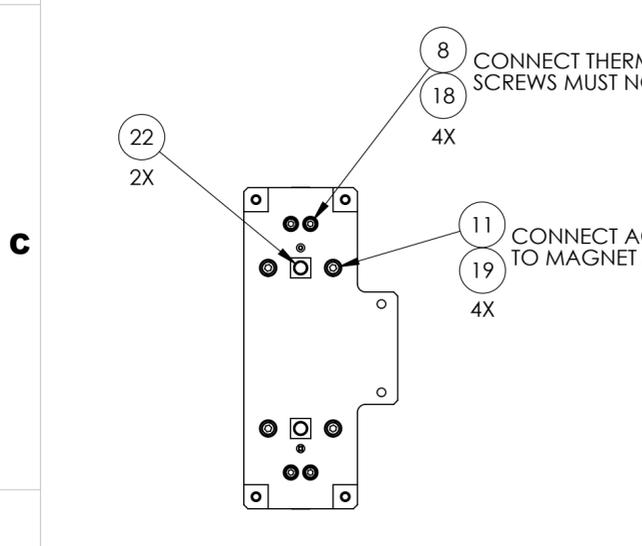
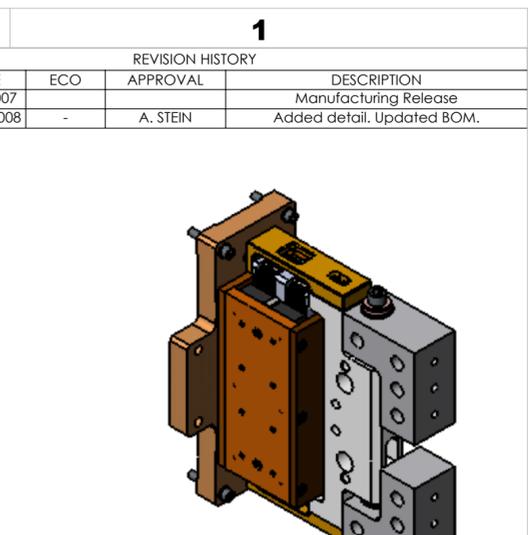
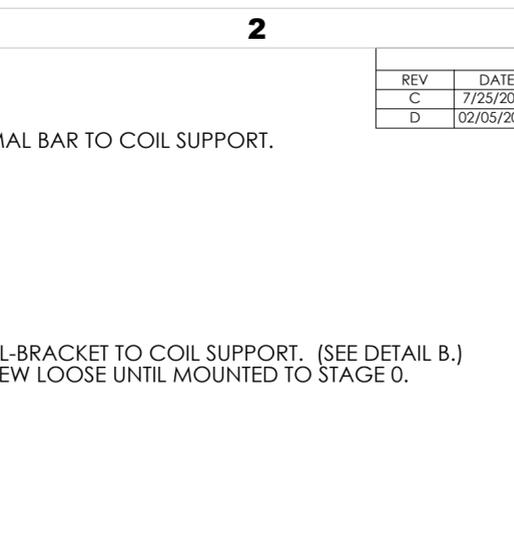
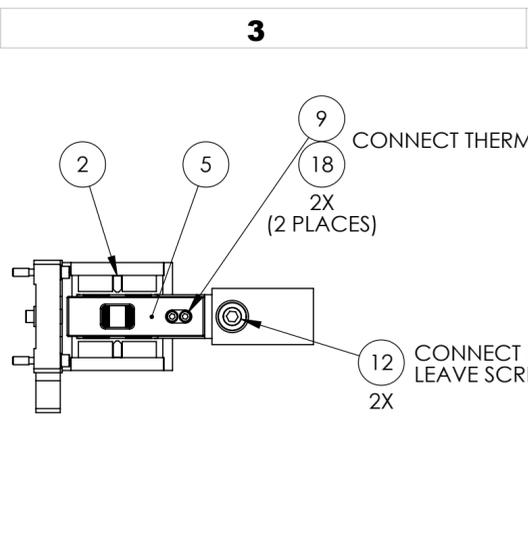
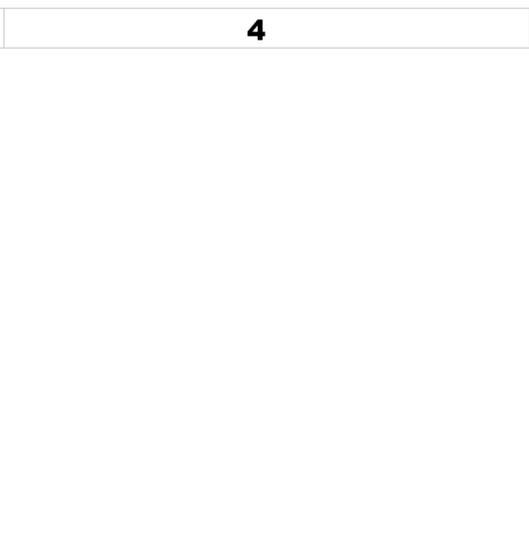
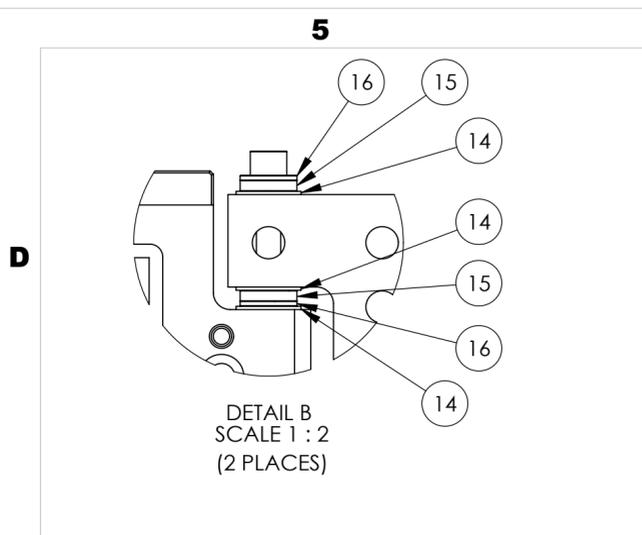
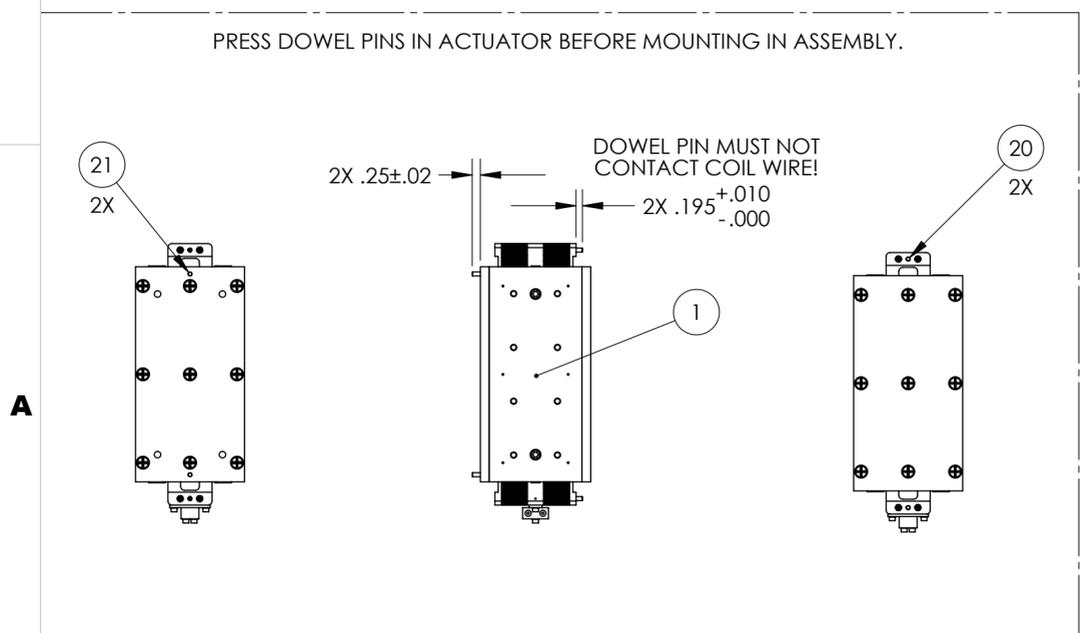


REVISION HISTORY				
REV	DATE	ECO	APPROVAL	DESCRIPTION
C	7/25/2007			Manufacturing Release
D	02/05/2008	-	A. STEIN	Added detail. Updated BOM.



- NOTES:
- SEE E070154 (ADVANCED LIGO SINGLE STAGE HAM VIBRATION ISOLATION TABLE ASSEMBLY PROCEDURE) FOR ADDITIONAL ASSEMBLY NOTES AND REQUIREMENTS.
  - THIS SHEET SHOWS HORIZONTAL ACTUATOR CONFIGURATION, AS IT APPEARS WHEN MOUNTED INSIDE HAM ISI. SETUP BAR IS REMOVED, SO BOBBIN IS FREE TO MOVE.

BILL OF MATERIALS					
ITEM NO.	Horizontal/QTY.	PART NUMBER	DESCRIPTION	CONFIG DESCRIPTION	MATERIAL
1	1	PSI 0765-LIGO-PHSIII	ASM, ACTUATOR, HAM ISI	-	See BOM
2	2	D070534	ACTUATOR STOP, HAM ISI	-	6061-T6
3	1	D071120	ACTUATOR MAGNET MOUNT	-	6061-T6
4	1	D071121	ACTUATOR COIL SUPPORT	-	6061
5	2	D071123	ACTUATOR THERMAL BAR	-	OFHC
6	2	D071132	ACTUATOR L-BRACKET, HORIZ	-	6061-T6
7	4	HOLOKROME 78030	SHCS	#8-32x.625"	18-8 SS
8	4	MCMaster 92196A265	SHCS	#10-32x.25"	18-8 SS
9	4	HOLOKROME 79020	SHCS	#10-32x.50"	18-8 SS
10	4	HOLOKROME 79030	SHCS	#10-32x1.25"	18-8 SS
11	4	HOLOKROME 78056	SHCS	1/4"-20x.625"	18-8 SS
12	2	MCMaster 92196A636	SHCS	3/8"-16x3.0"	18-8 SS
13	4	D071136	SHCS, CUSTOM CAPTIVE	1/4"-20x1.5" (1.0" CLEAR)	18-8 SS
14	6	MCMaster 92141A051	FLAT WASHER	.406"IDx1.00"ODx.050"	18-8 SS
15	4	MCMaster 91944A450	SPHERICAL WASHER	3/8", FEMALE	18-8 SS
16	4	MCMaster 91944A450	SPHERICAL WASHER	3/8", MALE	18-8 SS
17	4	UCC WFV-08	VENTED WASHER	.169"IDx.304"OD	18-8 SS
18	12	UCC WFV-10	VENTED WASHER	.195"IDx.354"OD	18-8 SS
19	8	UCC WFV-25	VENTED WASHER	.255"IDx.468"OD	18-8 SS
20	2	MCMaster 90145A470	DOWEL PIN	1/8"x.375"	18-8 SS
21	2	MCMaster 90145A471	DOWEL PIN	1/8"x.50"	18-8 SS
22	2	MCMaster 90145A622	DOWEL PIN	3/8"x.75"	18-8 SS



**UNLESS OTHERWISE SPECIFIED:**  
 DIMENSIONS ARE IN INCHES  
 DECIMAL TOLERANCES:  
 .XX ±.015 .XXX ±.005  
 ANG TOL: ± 1° SURFACE ROUGHNESS: 63

**High Precision Devices**  
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PRIOR P/N: **p06109-442-1**

APPROVALS: ENGINEERING, MANUFACTURING, QUALITY

DATE: \_\_\_\_\_

DESCRIPTION: **ASM, ACTUATOR**

P/N: **D071442** CONFIG: **HORIZONTAL**

FILE NAME: D071442-D Asm, Actuator

FOLDER: \_\_\_\_\_

SIZE: **C** SCALE: **1:4** DRAWN BY: **Dave Senders** REV: **D**

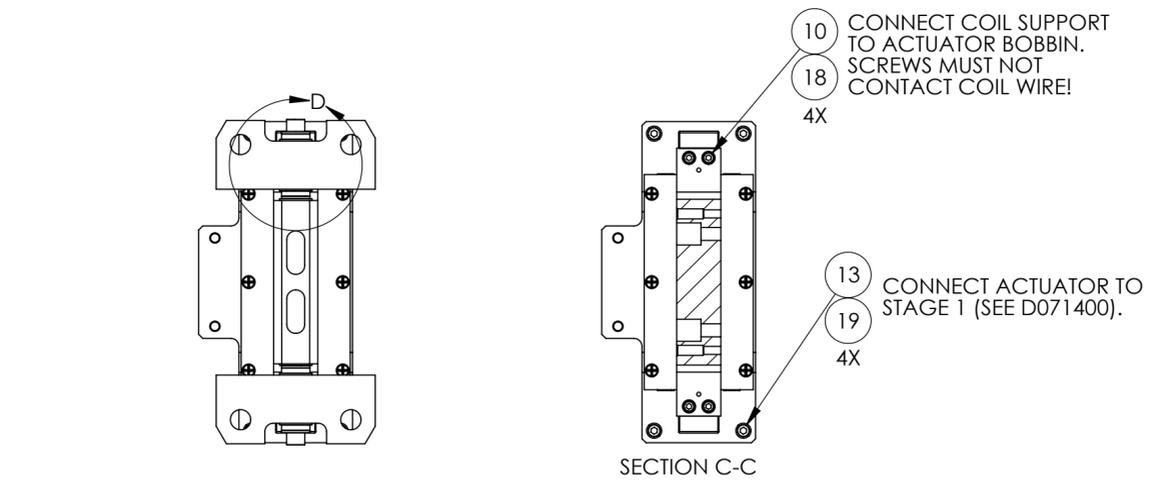
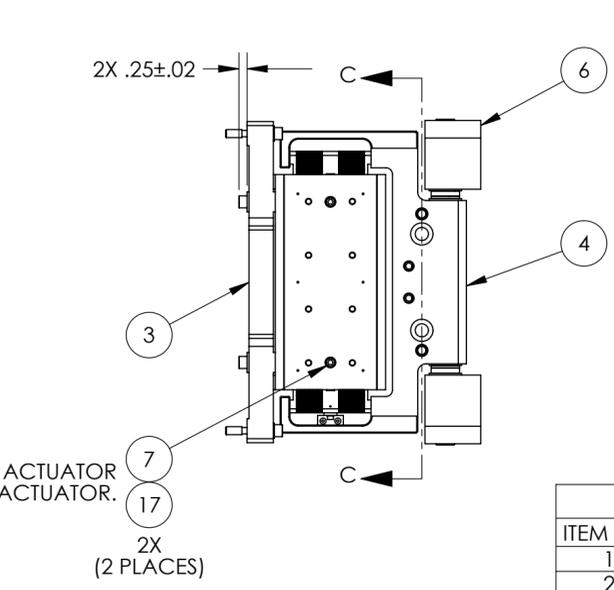
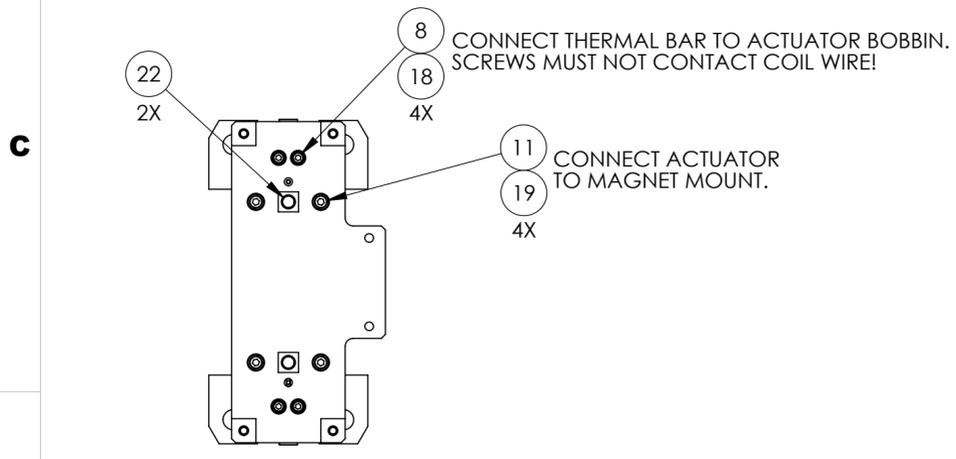
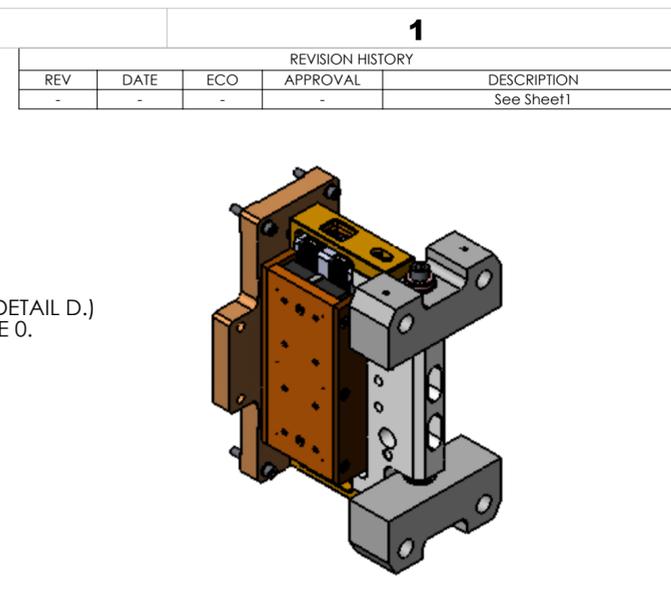
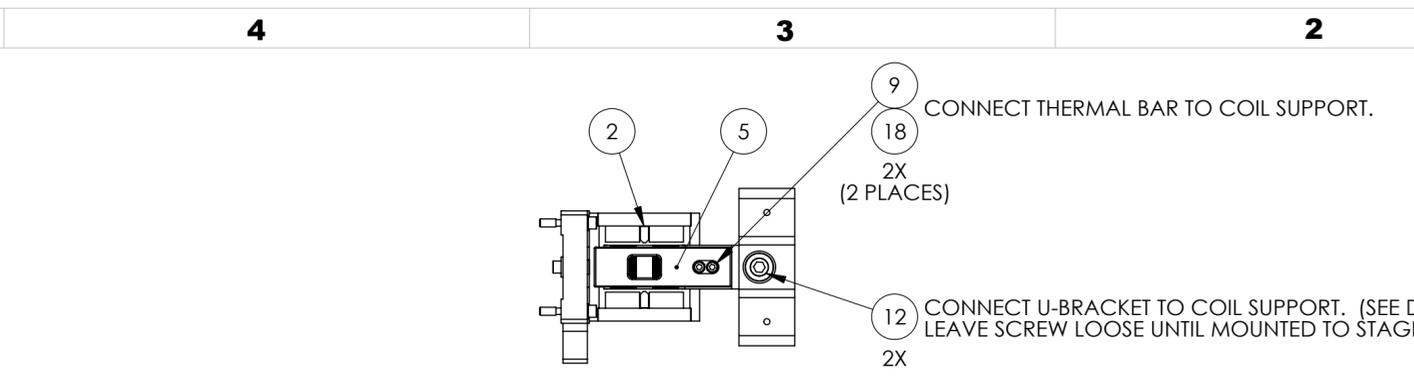
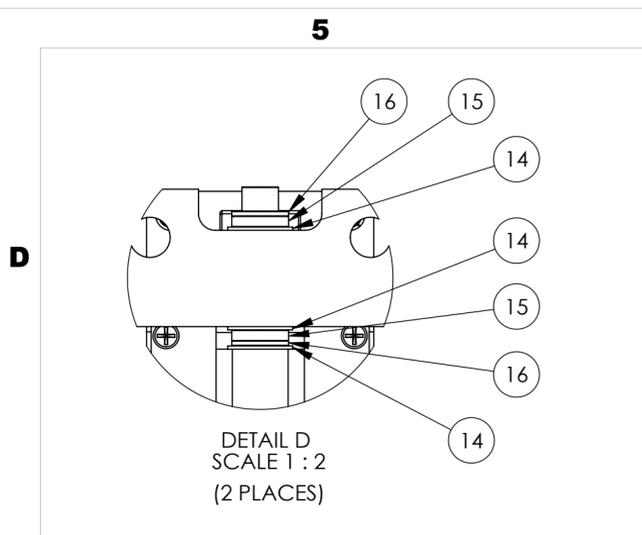
SHEET **1** OF **4** DATE PRINTED: **2/26/2008**

MATL: **See BOM**

FINISH: **See BOM**

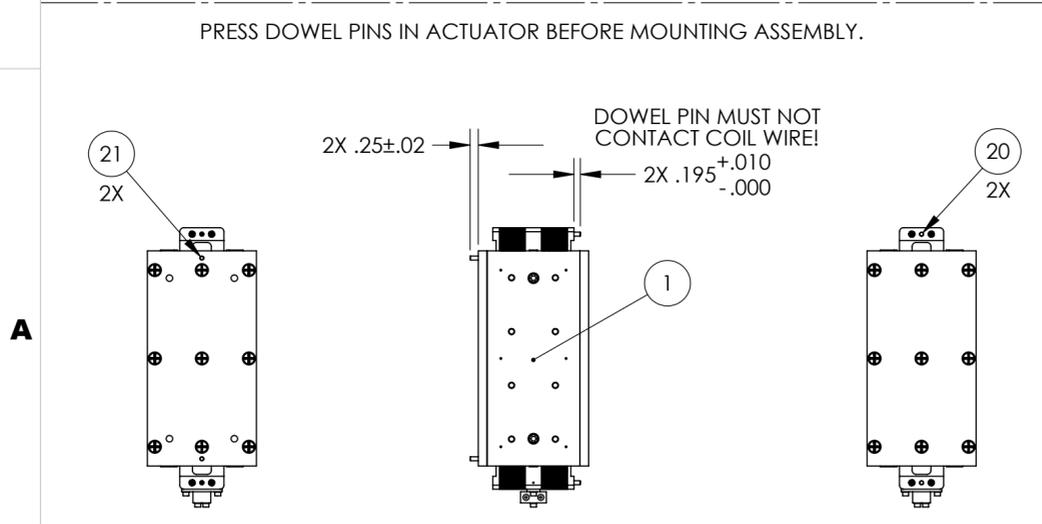
THIS PRINT & ITS RELATED MODEL ARE THE DOCUMENTATION OF RECORD. UNLESS OTHERWISE SPECIFIED, ALL FEATURES MUST CONFORM TO .010 TOTAL WIDE PROFILE OF A SURFACE. INTERPRET DWG PER ASME Y14.5M 1994

REVISION HISTORY				
REV	DATE	ECO	APPROVAL	DESCRIPTION
-	-	-	-	See Sheet 1



- NOTES:**
- SEE E070154 (ADVANCED LIGO SINGLE STAGE HAM VIBRATION ISOLATION TABLE ASSEMBLY PROCEDURE) FOR ADDITIONAL ASSEMBLY NOTES AND REQUIREMENTS.
  - THIS SHEET SHOWS VERTICAL ACTUATOR CONFIGURATION, AS IT APPEARS WHEN MOUNTED INSIDE HAM ISI. SETUP BAR IS REMOVED, SO BOBBIN IS FREE TO MOVE.

BILL OF MATERIALS					
ITEM NO.	Vertical/QTY.	PART NUMBER	DESCRIPTION	CONFIG DESCRIPTION	MATERIAL
1	1	PSI 0765-LIGO-PHSIII	ASM, ACTUATOR, HAM ISI	-	See BOM
2	2	D070534	ACTUATOR STOP, HAM ISI	-	6061-T6
3	1	D071120	ACTUATOR MAGNET MOUNT	-	6061-T6
4	1	D071121	ACTUATOR COIL SUPPORT	-	6061
5	2	D071123	ACTUATOR THERMAL BAR	-	OFHC
6	2	D071122	ACTUATOR U-BRACKET, VERT	-	6061-T6
7	4	HOLOKROME 78030	SHCS	#8-32x.625"	18-8 SS
8	4	MCMASTER 92196A265	SHCS	#10-32x.25"	18-8 SS
9	4	HOLOKROME 79020	SHCS	#10-32x.50"	18-8 SS
10	4	HOLOKROME 79030	SHCS	#10-32x1.25"	18-8 SS
11	4	HOLOKROME 78056	SHCS	1/4"-20x.625"	18-8 SS
12	2	MCMASTER 92196A636	SHCS	3/8"-16x3.0"	18-8 SS
13	4	D071136	SHCS, CUSTOM CAPTIVE	1/4"-20x1.5" (1.0" CLEAR)	18-8 SS
14	6	MCMASTER 92141A051	FLAT WASHER	.406"IDx1.00"ODx.050"	18-8 SS
15	4	MCMASTER 91944A450	SPHERICAL WASHER	3/8", FEMALE	18-8 SS
16	4	MCMASTER 91944A450	SPHERICAL WASHER	3/8", MALE	18-8 SS
17	4	UCC WFV-08	VENTED WASHER	.169"IDx.304"OD	18-8 SS
18	12	UCC WFV-10	VENTED WASHER	.195"IDx.354"OD	18-8 SS
19	8	UCC WFV-25	VENTED WASHER	.255"IDx.468"OD	18-8 SS
20	2	MCMASTER 90145A470	DOWEL PIN	1/8"x.375"	18-8 SS
21	2	MCMASTER 90145A471	DOWEL PIN	1/8"x.50"	18-8 SS
22	2	MCMASTER 90145A622	DOWEL PIN	3/8"x.75"	18-8 SS



**UNLESS OTHERWISE SPECIFIED:**

DIMENSIONS ARE IN INCHES  
DECIMAL TOLERANCES:  
.XX ±.015 .XXX ±.005  
ANG TOL: ± 1° SURFACE ROUGHNESS: 63

INTERNAL AND EXTERNAL INTERSECTIONS SHALL BE UNIFORMLY FINISHED WITH A CHAMFER .005/.010 X 45° OR RADIUS .005/.010.  
CHAMFER ALL THREADED HOLES 110% OF MAJOR DIAMETER X 45°

THIS PRINT & ITS RELATED MODEL ARE THE DOCUMENTATION OF RECORD. UNLESS OTHERWISE SPECIFIED, ALL FEATURES MUST CONFORM TO .010 TOTAL WIDE PROFILE OF A SURFACE. INTERPRET DWG PER ASME Y14.5M 1994

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PRIOR P/N: **p06109-442-1**

APPROVALS: ENGINEERING DATE: MANUFACTURING: QUALITY: MATL: **See BOM** FINISH: **See BOM**

DESCRIPTION: **ASM, ACTUATOR**  
P/N: **D071442** CONFIG DESC: **VERTICAL**  
FILE NAME: D071442-D Asm, Actuator

FOLDER: SIZE: **C** SCALE: **1:4** DRAWN BY: **Dave Senders** REV: **D**  
SHEET **2** OF **4** DATE PRINTED: **2/26/2008**

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4

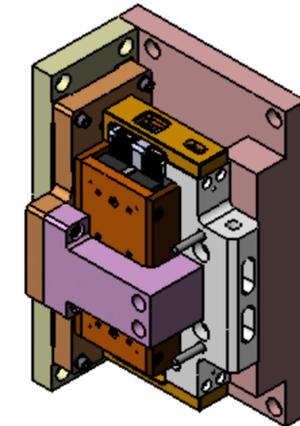
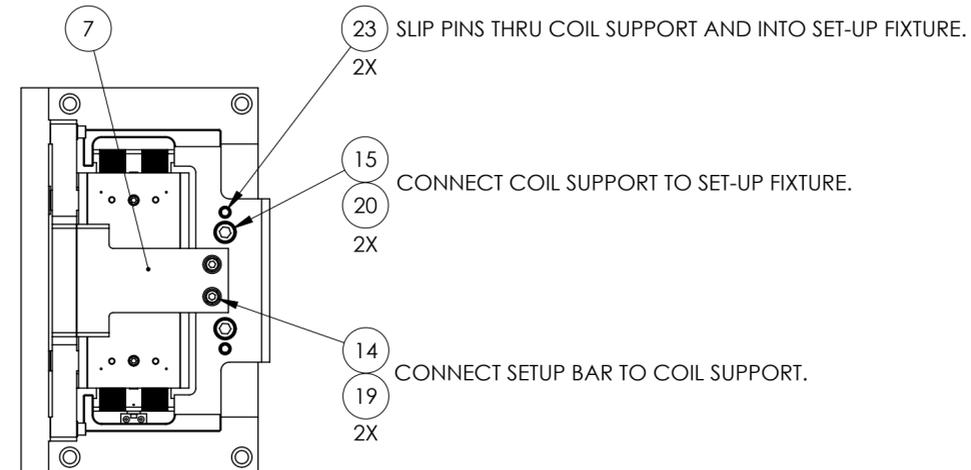
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2

1

REVISION HISTORY				
REV	DATE	ECO	APPROVAL	DESCRIPTION
-	-	-	-	See Sheet 1

D



C

NOTES:

- SEE E070154 (ADVANCED LIGO SINGLE STAGE HAM VIBRATION ISOLATION TABLE ASSEMBLY PROCEDURE) FOR ADDITIONAL ASSEMBLY NOTES AND REQUIREMENTS.
- REFER TO SHEET 1 OR SHEET 2 FOR LOCATION OF NON-LABELED BOM ITEMS.
- INSTALL HELI-COIL INSERTS AND PRESS IN DOWEL PINS BEFORE BEGINNING ASSEMBLY.
- ACTUATOR COMPONENTS ARE ALIGNED USING SET-UP FIXTURE. FIX BOBBIN TO MAGNET ASSEMBLY USING SETUP BAR. LEAVE SETUP BAR ATTACHED UNTIL END OF HAM ISI ASSEMBLY.

B



A

BILL OF MATERIALS					
ITEM NO.	WITH TOOLING/QTY.	PART NUMBER	DESCRIPTION	CONFIG DESCRIPTION	MATERIAL
1	1	PSI 0765-LIGO-PHSIII	ASM, ACTUATOR, HAM ISI	-	See BOM
2	2	D070534	ACTUATOR STOP, HAM ISI	-	6061-T6
3	1	D071120	ACTUATOR MAGNET MOUNT	-	6061-T6
4	1	D071121	ACTUATOR COIL SUPPORT	-	6061
5	2	D071123	ACTUATOR THERMAL BAR	-	OFHC
6	1	D071497	ASM, FIXTURE, ACTUATOR SET-UP	-	See BOM
7	1	D071129	ACTUATOR SETUP BAR	-	6061-T6
8	4	HOLOKROME 78030	SHCS	#8-32x.625"	18-8 SS
9	4	MCMaster 92196A265	SHCS	#10-32x.25"	18-8 SS
10	4	HOLOKROME 79020	SHCS	#10-32x.50"	18-8 SS
11	4	HOLOKROME 79030	SHCS	#10-32x1.25"	18-8 SS
12	4	HOLOKROME 78056	SHCS	1/4"-20x.625"	18-8 SS
13	2	HOLOKROME 78064	SHCS	1/4"-20x1.25"	18-8 SS
14	2	HOLOKROME 78066	SHCS	1/4"-20x1.5"	18-8 SS
15	2	HOLOKROME 78100	SHCS	3/8"-16x1.25"	18-8 SS
16	4	D071136	SHCS, CUSTOM CAPTIVE	1/4"-20x1.5" (1.0" CLEAR)	18-8 SS
17	4	UCC WFV-08	VENTED WASHER	.169"IDx.304"OD	18-8 SS
18	12	UCC WFV-10	VENTED WASHER	.195"IDx.354"OD	18-8 SS
19	12	UCC WFV-25	VENTED WASHER	.255"IDx.468"OD	18-8 SS
20	2	UCC WFV-38	VENTED WASHER	.39"IDx.625"OD	18-8 SS
21	2	MCMaster 90145A470	DOWEL PIN	1/8"x.375"	18-8 SS
22	2	MCMaster 90145A471	DOWEL PIN	1/8"x.50"	18-8 SS
23	2	MCMaster 90145A553	DOWEL PIN	1/4"x3.0"	18-8 SS
24	2	MCMaster 90145A622	DOWEL PIN	3/8"x.75"	18-8 SS

**UNLESS OTHERWISE SPECIFIED:**  
 DIMENSIONS ARE IN INCHES  
 DECIMAL TOLERANCES:  
 .XX ±.015 .XXX ±.005  
 ANG TOL: ± 1° SURFACE ROUGHNESS: 63  
 INTERNAL AND EXTERNAL INTERSECTIONS SHALL BE UNIFORMLY FINISHED WITH A CHAMFER .005/.010 X 45° OR RADIUS .005/.010.  
 CHAMFER ALL THREADED HOLES 110% OF MAJOR DIAMETER X 45°

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PRIOR P/N: **p06109-442-1**

APPROVALS ENGINEERING DATE

MANUFACTURING

QUALITY

MATL: **See BOM**

FINISH: **See BOM**

DESCRIPTION: **ASM, ACTUATOR**

P/N: **D071442** CONFIG: **WITH TOOLING**

FILE NAME: D071442-D Asm, Actuator

FOLDER:

SIZE: **C** SCALE: **1:4** DRAWN BY: **Dave Senders** REV: **D**

SHEET **3** OF **4** DATE PRINTED: **2/26/2008**

5

4

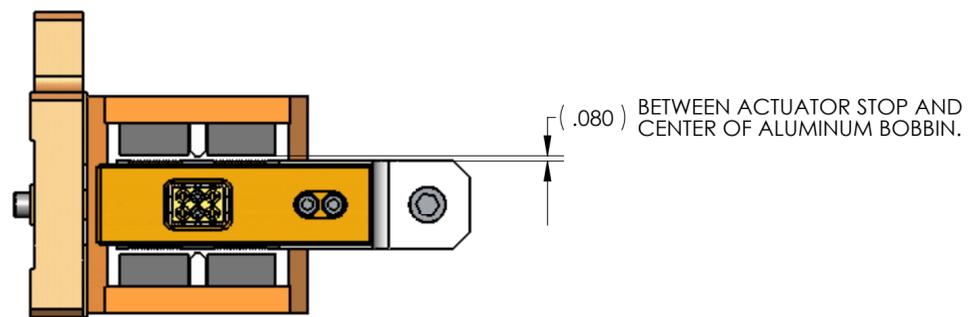
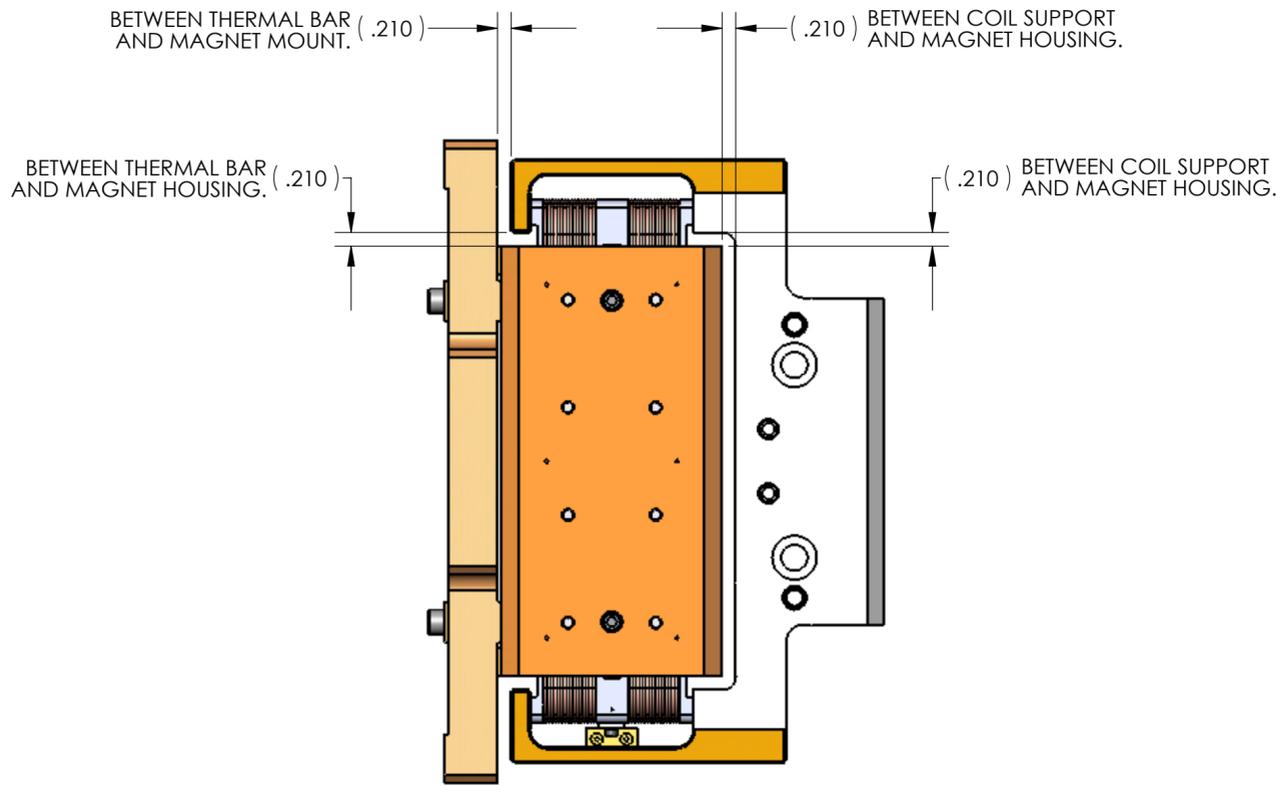
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2

1

REVISION HISTORY				
REV	DATE	ECO	APPROVAL	DESCRIPTION
-	-	-	-	See Sheet1

# ACTUATOR GAPS



### NOTES:

- SEE E070154 (ADVANCED LIGO SINGLE STAGE HAM VIBRATION ISOLATION TABLE ASSEMBLY PROCEDURE) FOR ADDITIONAL ASSEMBLY NOTES AND REQUIREMENTS.
- THESE DIMENSIONS ARE INTENDED FOR REFERENCE ONLY. BECAUSE OF MANUFACTURING TOLERANCES, THE REAL GAPS WILL NOT BE EXACTLY AS SHOWN HERE.

PRIOR P/N: <b>p06109-442-1</b> APPROVALS: _____ DATE: _____ ENGINEERING: _____ MANUFACTURING: _____ QUALITY: _____ MATL: <b>See BOM</b> FINISH: <b>See BOM</b>		<b>UNLESS OTHERWISE SPECIFIED:</b> DIMENSIONS ARE IN INCHES DECIMAL TOLERANCES: .XX ±.015 .XXX ±.005 ANG TOL: ± 1° SURFACE ROUGHNESS: 63 INTERNAL AND EXTERNAL INTERSECTIONS SHALL BE UNIFORMLY FINISHED WITH A CHAMFER .005/.010 X 45° OR RADIUS .005/.010. CHAMFER ALL THREADED HOLES 110% OF MAJOR DIAMETER X 45° THIS PRINT & ITS RELATED MODEL ARE THE DOCUMENTATION OF RECORD. UNLESS OTHERWISE SPECIFIED, ALL FEATURES MUST CONFORM TO .010 TOTAL WIDE PROFILE OF A SURFACE. INTERPRET DWG PER ASME Y14.5M 1994		<b>High Precision Devices</b> 1668 Valtec Lane, Suite C, Boulder, Colorado 80301 Phone: (303) 447-2558 Fax: (303) 447-2548 Web Site: www.hpd-online.com DESCRIPTION: <b>ASM, ACTUATOR</b> P/N: <b>D071442</b> CONFIG: - DESC: - FILE NAME: D071442-D Asm, Actuator FOLDER: _____ SIZE: <b>C</b> SCALE: <b>1:4</b> DRAWN BY: <b>Dave Senders</b> REV: _____ SHEET <b>4</b> OF <b>4</b> DATE PRINTED: <b>2/26/2008</b>	
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D

C

B

A