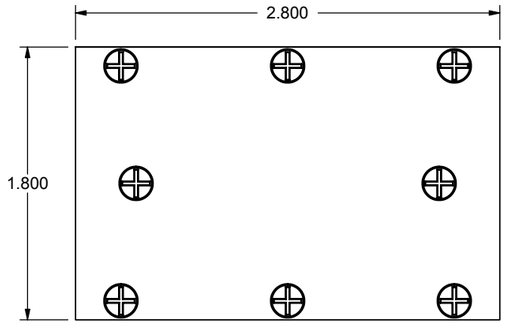

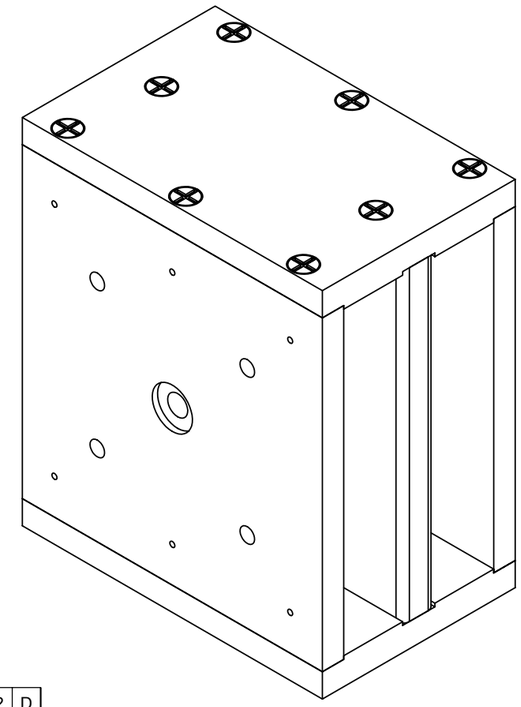

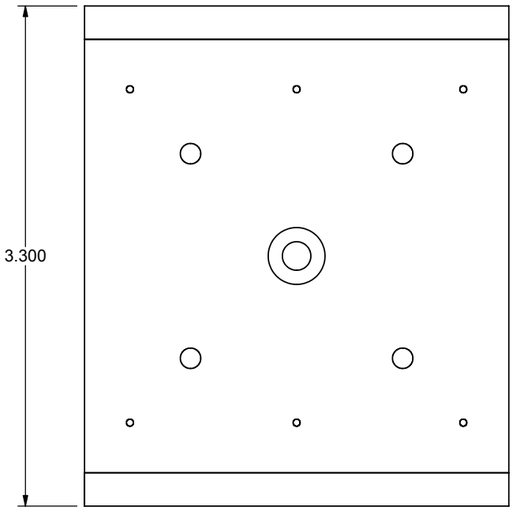

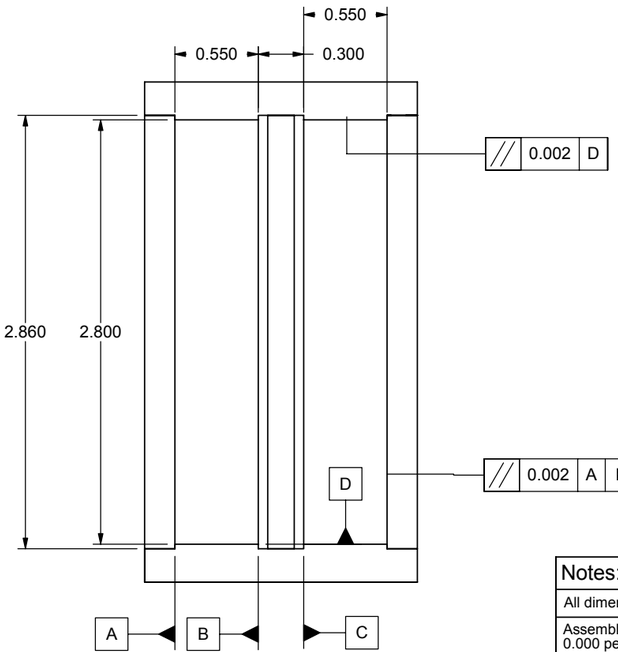

Notes:

All dimensions shown on this drawing are for reference only

Assembly to be Nickel Plated according to Mil-Spec 26074, Class I, Grade A, 0.000 penetration, 0.001 buildup; DIMENSIONS SHOWN ARE AFTER PLATING

All surfaces to be 32 finish or better

Material (all): CR 1018 Steel (supplied)

Quantity: 6 as shown

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ARE:

.xx ± 0.010 ±ANG 0.5°
.xxx ± 0.005
.xxxx ± 0.001

MATERIAL: See Notes

FINISH: See Notes

Scale: 1:1

SW2004 Generated Drawing
Do not Manually Update

APPROVALS	DATE
DRAWN SCS 070604	
CHECKED Scott Stewart	
RESP ENG	
MFG ENG	
QUAL ENG	

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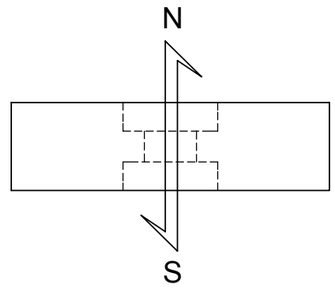
LIGO Phase II
Small Actuator Assembly

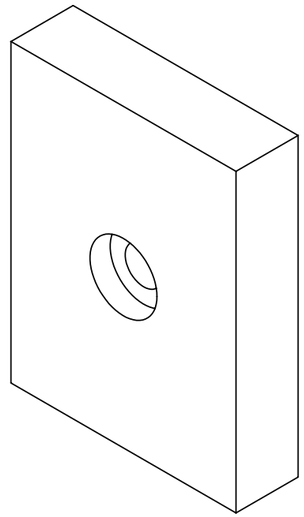
SIZE	DWG. NO.	REV.
B	0487-LIGO-d100-070604-SCS	

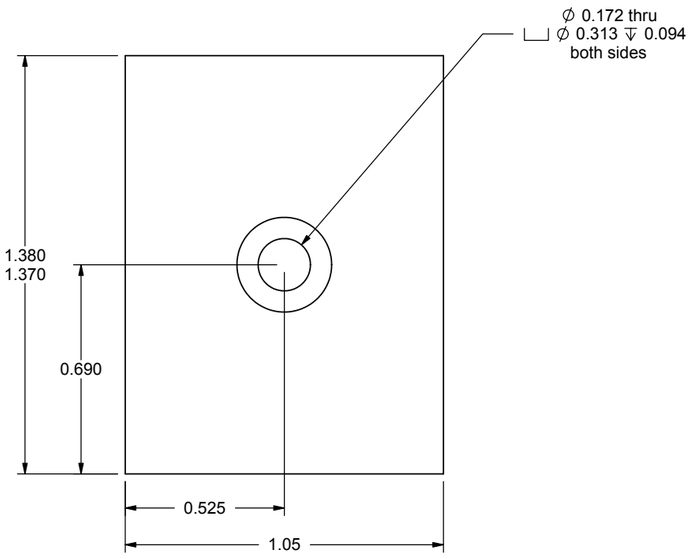
SCALE 1:1 | CAD FILE: | SHEET 1 OF 1

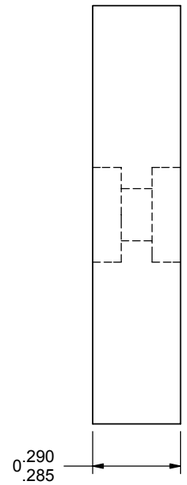
LIGO-E040606-00-D

LIGO-D040606-00-D









Notes:

Unit to be Nickel Plated according to Mil-C-26074 Class I, Grade A

Magnets to be operated under vacuum conditions: 10-8 torr

Compatible with a class-100 clean room environment

Material Samarium Cobalt S2669 Baked @177C for 96 hours

Quantity: 48 as shown

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ARE:

.xx± 0.010 ±ANG 0.5°
.xxx± 0.005
.xxxx± 0.001

MATERIAL See Notes

FINISH See Notes

Scale: 2:1

SW2004 Generated Drawing
Do not Manually Update

APPROVALS	DATE
DRAWN SCS 070604	
CHECKED Scott Stewart	
RESP ENG	
MFG ENG	
QUAL ENG	

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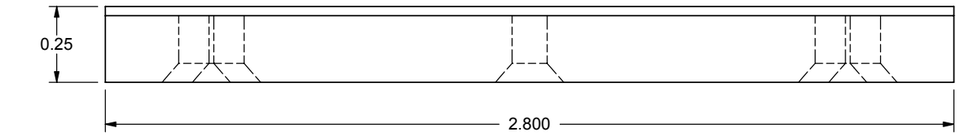
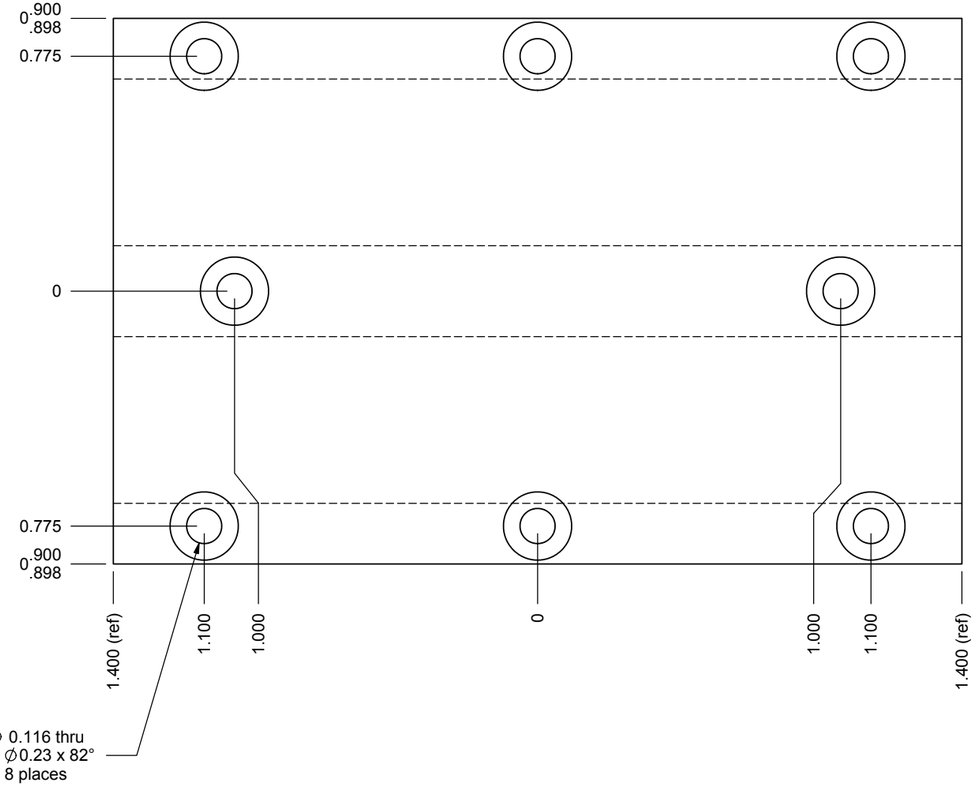
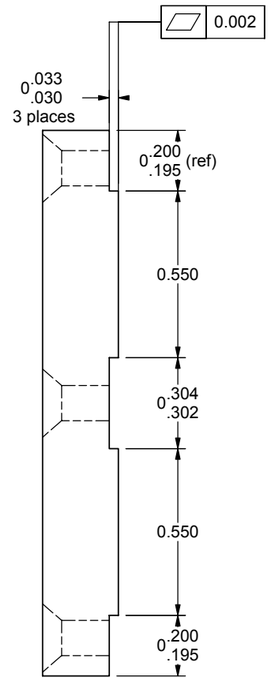
LIGO Phase II
Small Actuator Magnets

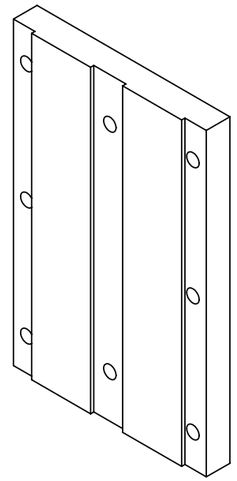
SIZE B | DWG. NO. 0487-LIGO-d101-070604-SCS | REV.

SCALE 2:1 | CAD FILE: | SHEET 1 OF 1









Notes:

Assembly to be Nickel Plated according to Mil-Spec 26074, Class I, Grade A, 0.000 penetration, 0.001 buildup; DIMENSIONS SHOWN ARE AFTER PLATING

See Drawing 0487-LIGO-d100-070604-SCS Small Actuator Assembly

All surfaces to be 32 finish or better

Material: CR 1018 Steel (supplied)

Quantity: 6 as shown

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ARE:

.xx ± 0.010 ±ANG 0.5°
.xxx ± 0.005
.xxxx ± 0.001

MATERIAL: See Notes

FINISH: See Notes

Scale: 2:1

SW2004 Generated Drawing
Do not Manually Update

APPROVALS	DATE
DRAWN SCS 070604	
CHECKED Scott Stewart	
RESP ENG	
MFG ENG	
QUAL ENG	

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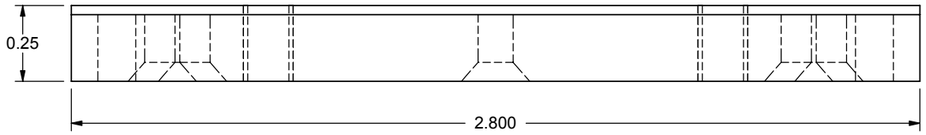
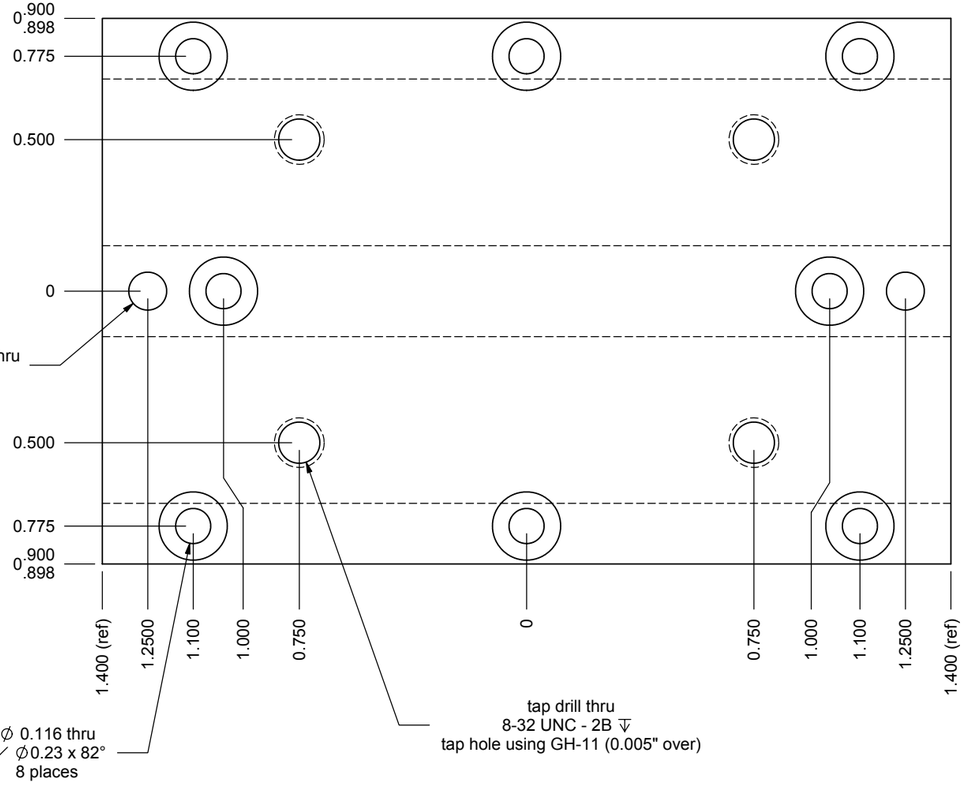
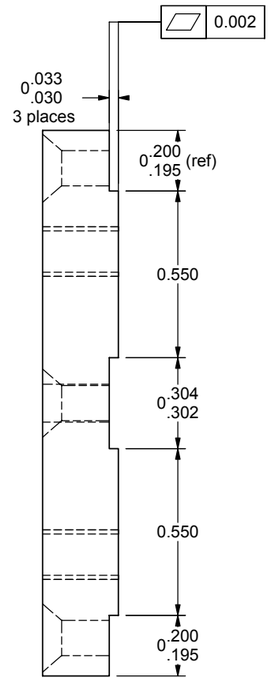
LIGO Phase II
Small Actuator Top Plate

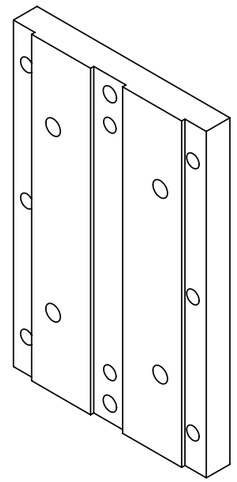
SIZE	DWG. NO.	REV.
B	0487-LIGO-d102-070604-SCS	

SCALE 2:1 | CAD FILE: | SHEET 1 OF 1









Notes:

1. Assembly to be Nickel Plated according to Mil-Spec 26074, Class I, Grade A, 0.000 penetration, 0.001 buildup; DIMENSIONS SHOWN ARE AFTER PLATING
2. See Drawing 0487-LIGO-d100-070604-SCS Small Actuator Assembly
3. All surfaces to be 32 finish or better
4. Material: CR 1018 Steel (supplied)
5. Quantity: 6 as shown

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ARE:

.xx ± 0.010 ±ANG 0.5°
.xxx ± 0.005
.xxxx ± 0.001

MATERIAL: See Notes

FINISH: See Notes

Scale: 2:1

SW2004 Generated Drawing
Do not Manually Update

APPROVALS	DATE
DRAWN SCS 070604	
CHECKED Scott Stewart	
RESP ENG	
MFG ENG	
QUAL ENG	

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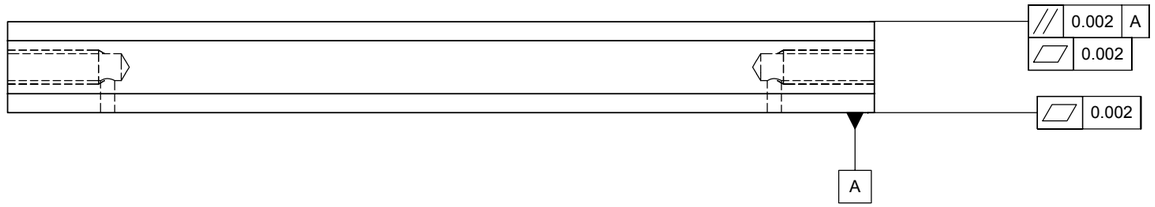
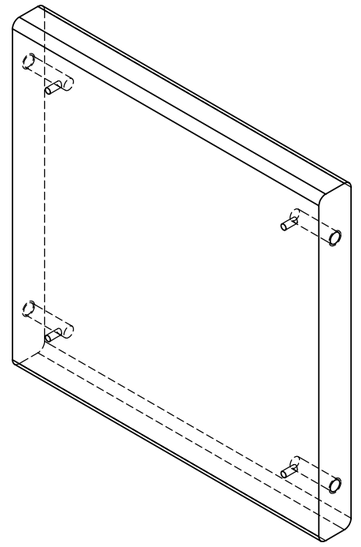
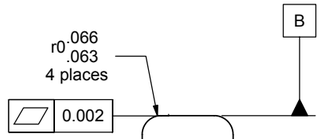
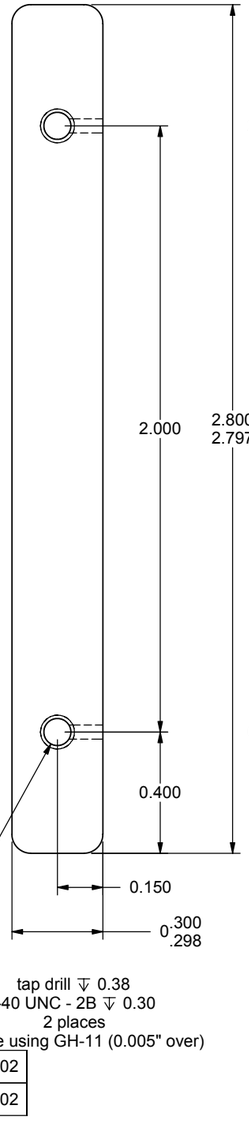
LIGO Phase II
Small Actuator Bottom Plate

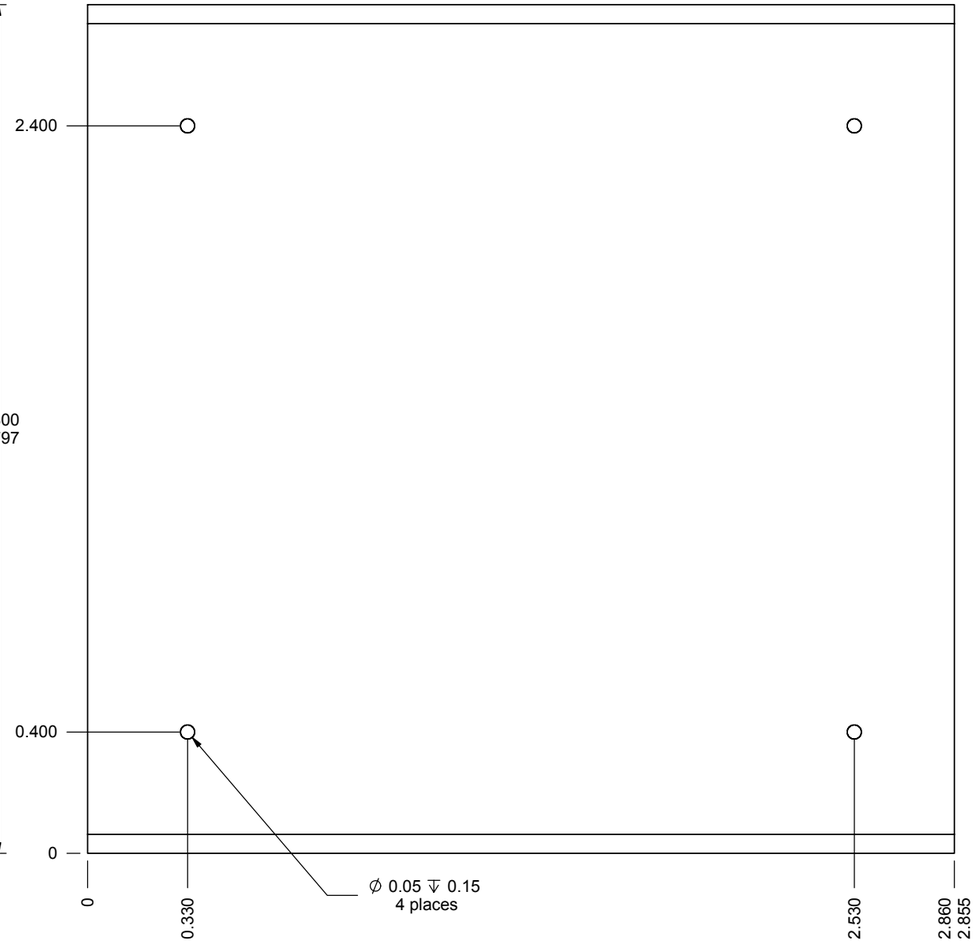
SIZE	DWG. NO.	REV.
B	0487-LIGO-d103-070604-SCS	
SCALE 2:1	CAD FILE:	SHEET 1 OF 1

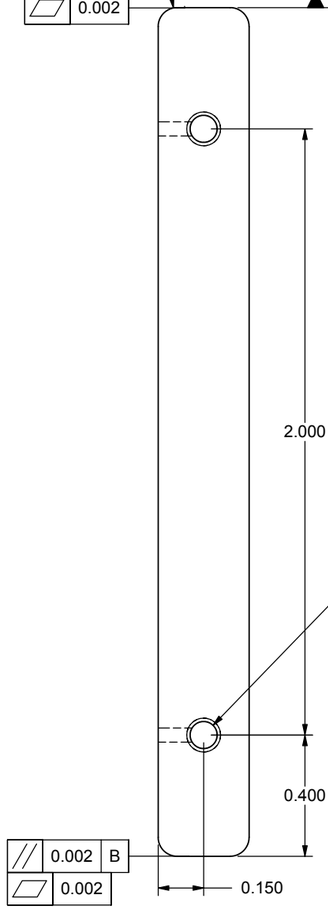












Notes:

Assembly to be Nickel Plated according to Mil-Spec 26074, Class I, Grade A, 0.000 penetration, 0.001 buildup; DIMENSIONS SHOWN ARE AFTER PLATING

See Drawing 0487-LIGO-d100-070604-SCS Small Actuator Assembly

All surfaces to be 32 finish or better

Material: CR 1018 Steel (supplied)

Quantity: 6 as shown

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ARE:

.xx± 0.010 ±ANG 0.5°
.xxx± 0.005
.xxxx± 0.001

MATERIAL: See Notes

FINISH: See Notes

Scale: 2:1

SW2004 Generated Drawing
Do not Manually Update

APPROVALS	DATE
DRAWN SCS 070604	
CHECKED Scott Stewart	
RESP ENG	
MFG ENG	
QUAL ENG	

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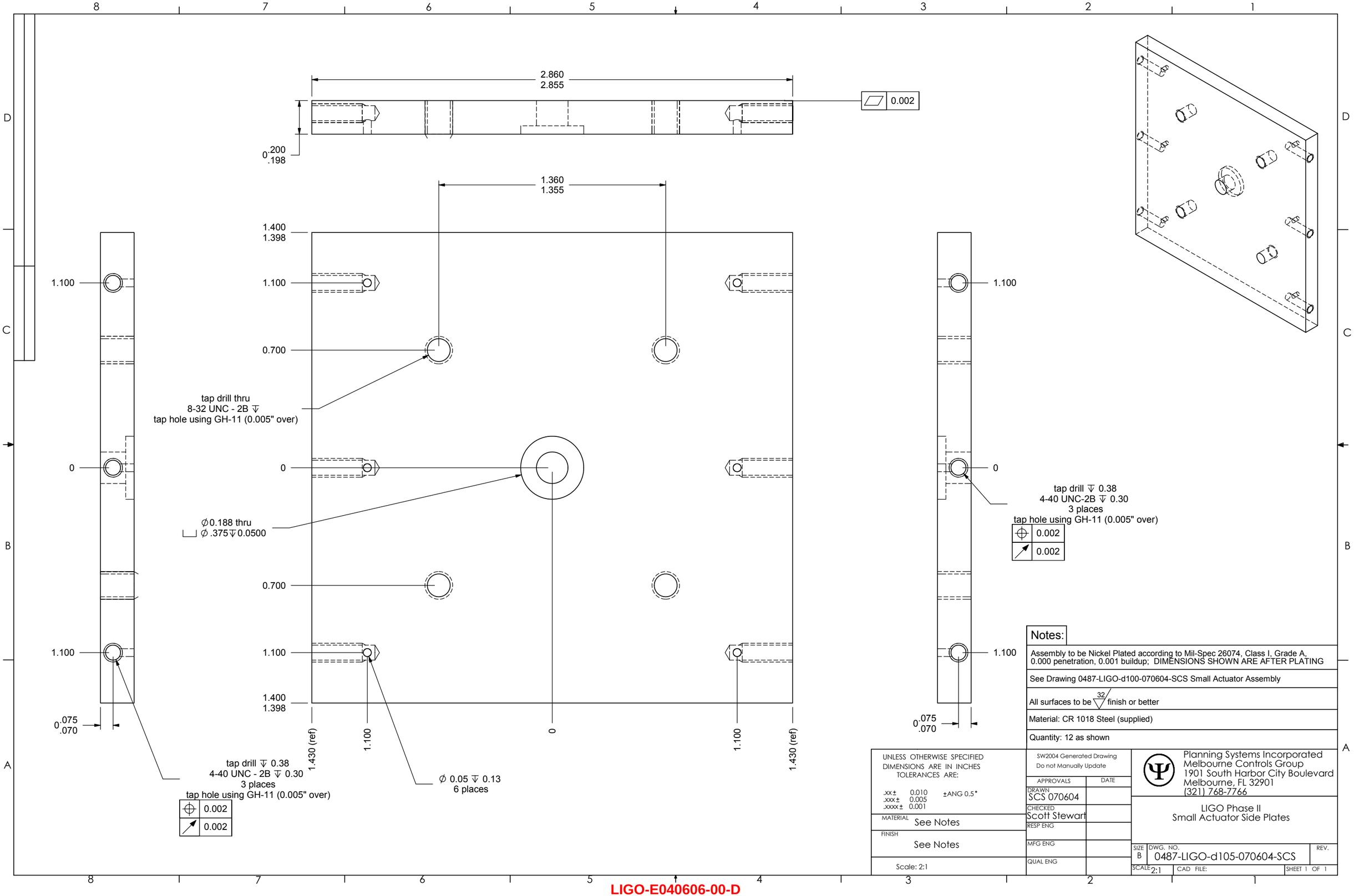
LIGO Phase II
Small Actuator Center Pole Piece

SIZE B | DWG. NO. 0487-LIGO-d104-070604-SCS | REV.

SCALE 2:1 | CAD FILE: | SHEET 1 OF 1



Notes:

1. Assembly to be Nickel Plated according to Mil-Spec 26074, Class I, Grade A, 0.000 penetration, 0.001 buildup; DIMENSIONS SHOWN ARE AFTER PLATING
2. See Drawing 0487-LIGO-d100-070604-SCS Small Actuator Assembly
3. All surfaces to be 32 finish or better
4. Material: CR 1018 Steel (supplied)
5. Quantity: 12 as shown

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES
TOLERANCES ARE:
.xx± 0.010 ±ANG 0.5°
.xxx± 0.005
.xxxx± 0.001

MATERIAL See Notes

FINISH See Notes

Scale: 2:1

SW2004 Generated Drawing
Do not Manually Update

APPROVALS	DATE
DRAWN SCS 070604	
CHECKED Scott Stewart	
RESP ENG	
MFG ENG	
QUAL ENG	

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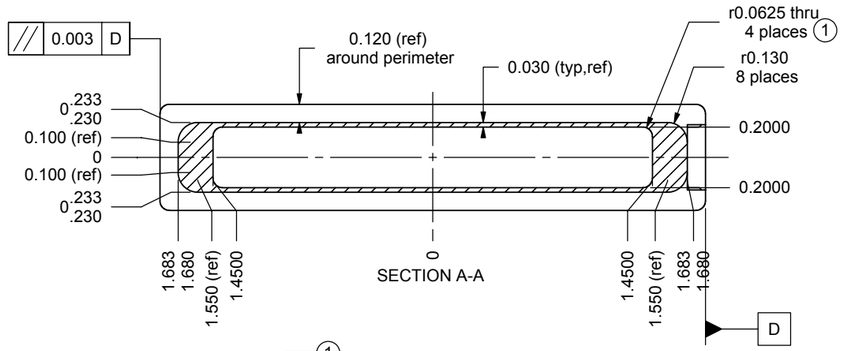
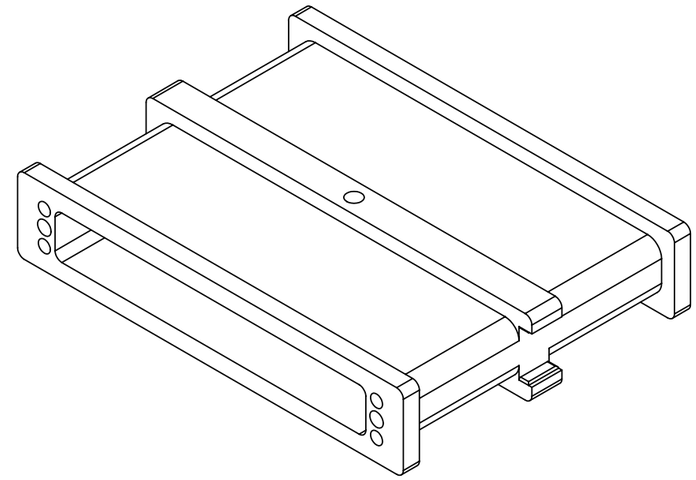
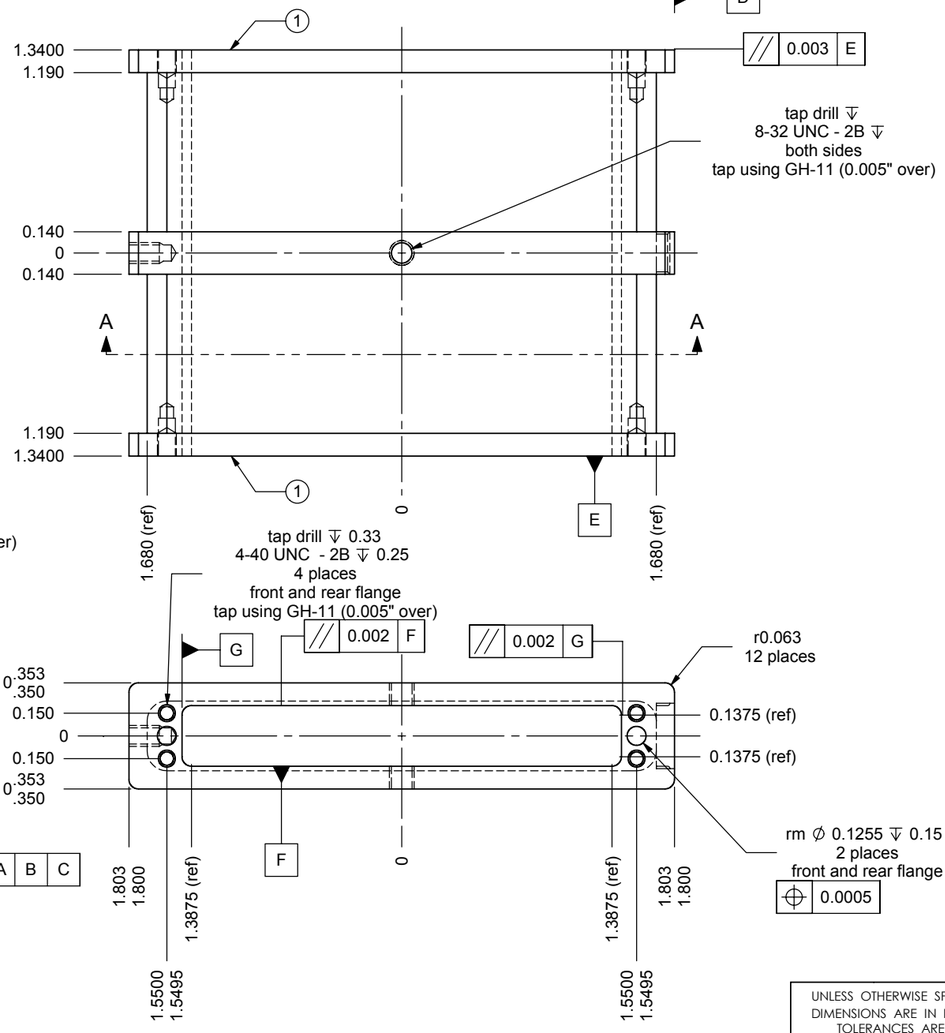
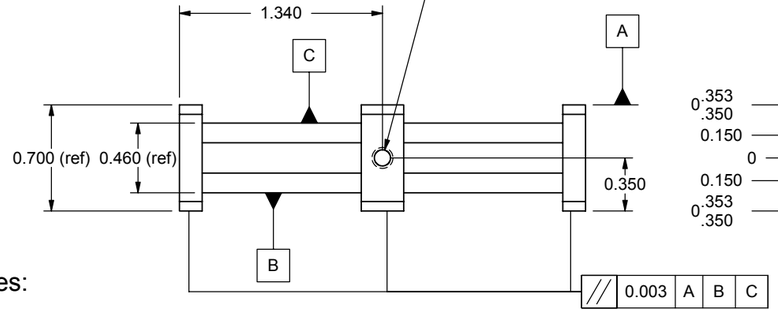
LIGO Phase II
Small Actuator Side Plates

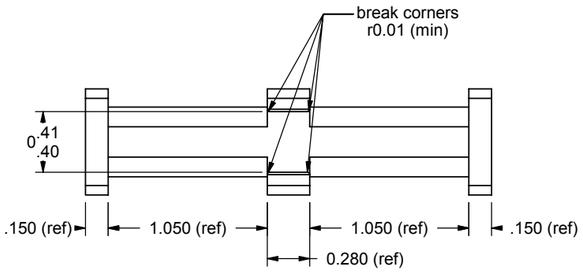
SIZE B | DWG. NO. 0487-LIGO-d105-070604-SCS | REV.
SCALE 2:1 | CAD FILE: | SHEET 1 OF 1











Notes:

Treatment: Sulfuric Acid Anodize Clear

All surfaces to be $\sqrt{32}$ finish or better

Faces denoted by (1) shall be finished machined after anodizing

Material: 6061-T6 Aluminum

Quantity: 6 as shown

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES TOLERANCES ARE: .xx± 0.010 .xxx± 0.005 .xxxx± 0.001 ±ANG 0.5°	SW2004 Generated Drawing Do not Manually Update
MATERIAL See Notes	APPROVALS / DATE
FINISH See Notes	DRAWN SCS 070604
Scale: 1:1	CHECKED Scott Stewart
	RESP ENG
	MFG ENG
	QUAL ENG

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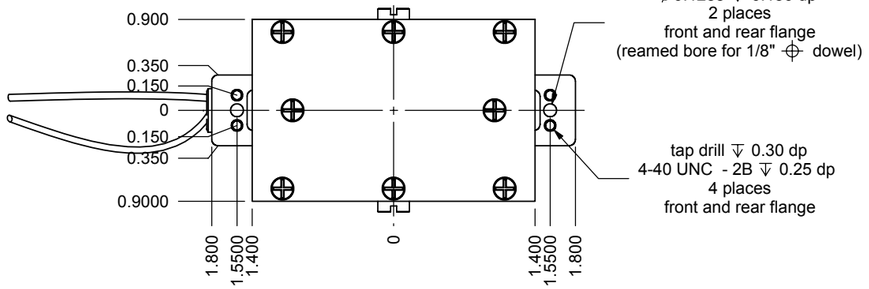
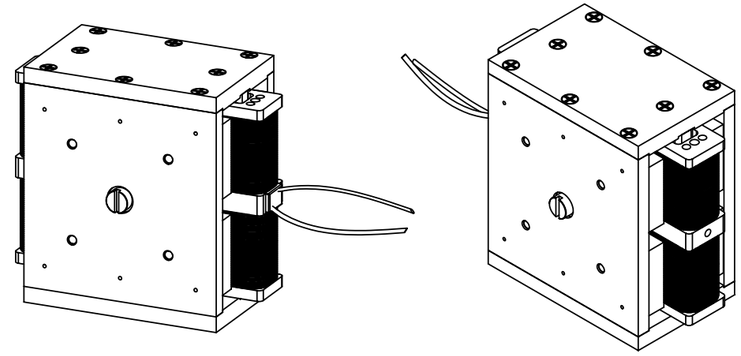
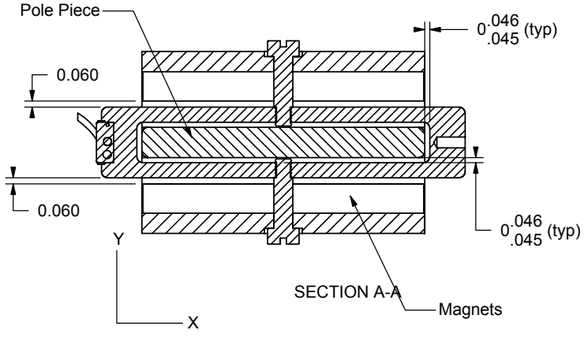
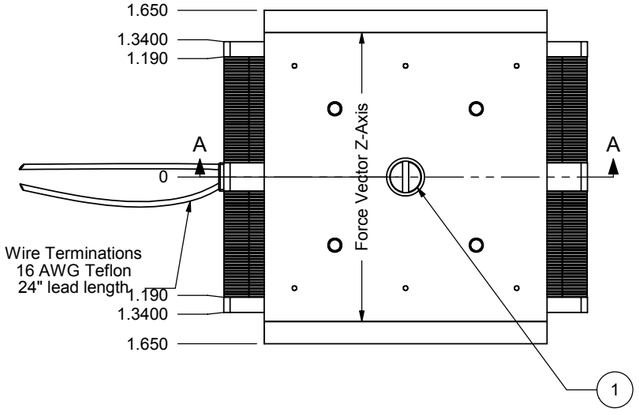
LIGO Phase II
Small Actuator Bobbin

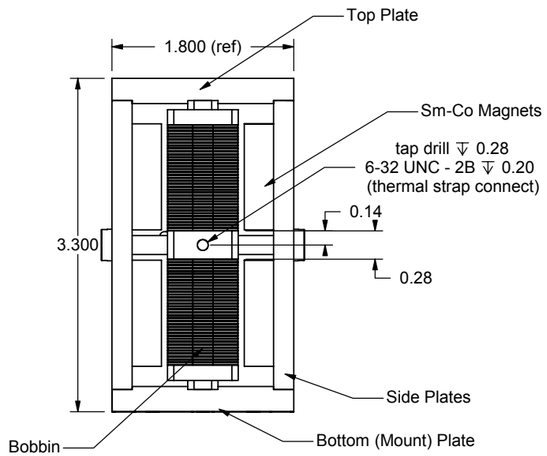
SIZE B | DWG. NO. 0487-LIGO-d106-070604-SCS | REV.
SCALE 1:1 | CAD FILE: | SHEET 1 OF 1











Notes:

All dimensions shown are for reference only

Center of Gravity +/- 0.001" of geometric center as shown by 0 datum lines

.xxxx positions indicate nominal mount locations of bobbin

Lateral Clearance as shown in Section A-A for X and Y axes

Stroke +/- 0.0500" Z axis

Mass: 3.93 lbs as shown, bobbin assembly 0.71 lbs

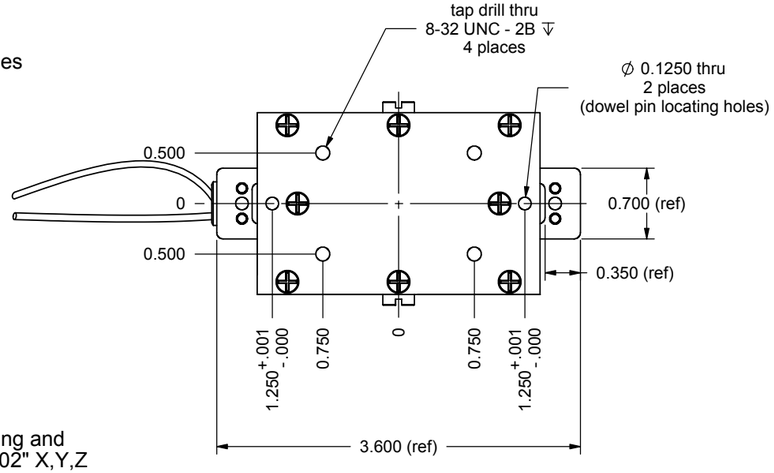
Material: 6061-T6 Al bobbin Sulfuric Acid Anodize clear
CR 1018 Field Assembly Nickel Plated Mil-Spec 26074,
Class I, Grade A, 0.000" penetration, 0.001" buildup

Surface finish 32

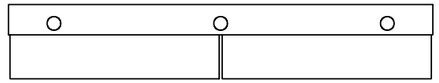
Maximum hardware penetration in mount plate 0.200"

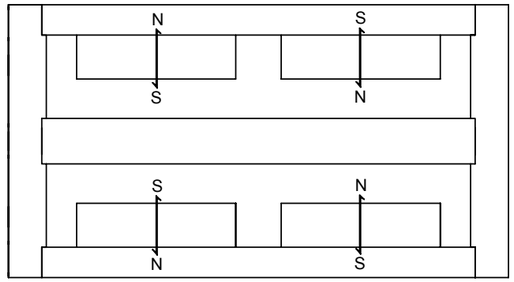
(1) Shoulder screws (2 places) for holding bobbin in position during shipping and prior to integration, to be removed during testing and operation +/- 0.002" X,Y,Z

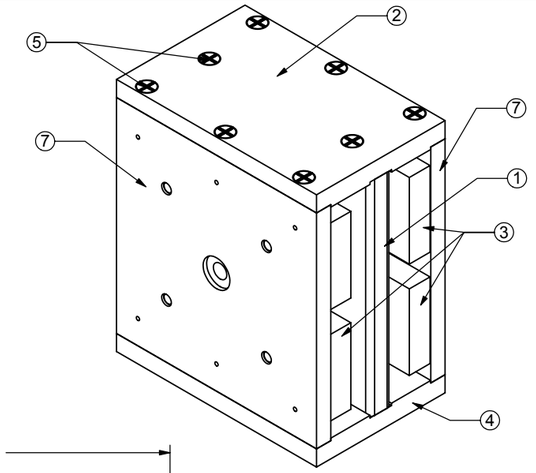
Quantity: 6 as shown



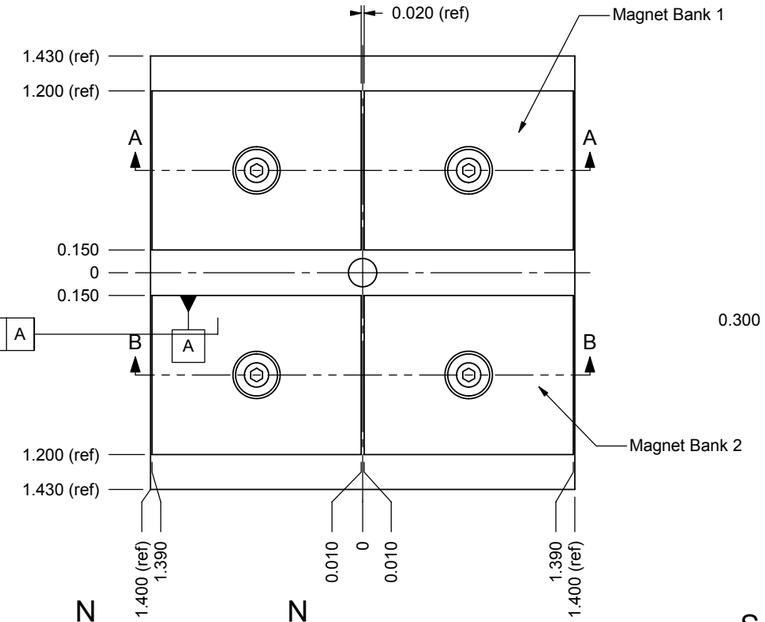
UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES TOLERANCES ARE: .xx± 0.02 .xxx± 0.010 .xxxx± 0.002 ±ANG 0.5°	SW2004 Generated Drawing Do not Manually Update contact sstewart@psi-controls.com	Planning Systems Incorporated Melbourne Controls Group 1901 South Harbor City Boulevard Melbourne, FL 32901 (321) 768-7766
MATERIAL See Notes	APPROVALS / DATE	LIGO Phase II Small Actuator Assembly
FINISH See Notes	DRAWN SCS 070604	SIZE B · DWG. NO. 0487-LIGO-d110-070604-SCS · REV. 1
Scale: 2:3	CHECKED Scott Stewart	SCALE 2:3 · CAD FILE: · SHEET 1 OF 1
	RESP ENG	
	MFG ENG	
	QUAL ENG	

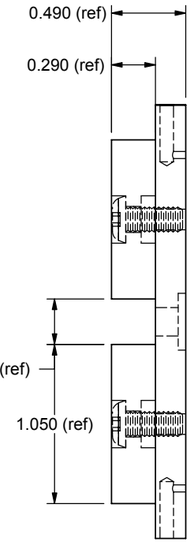


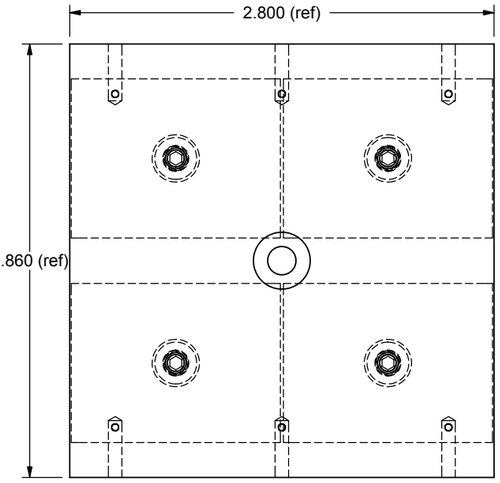


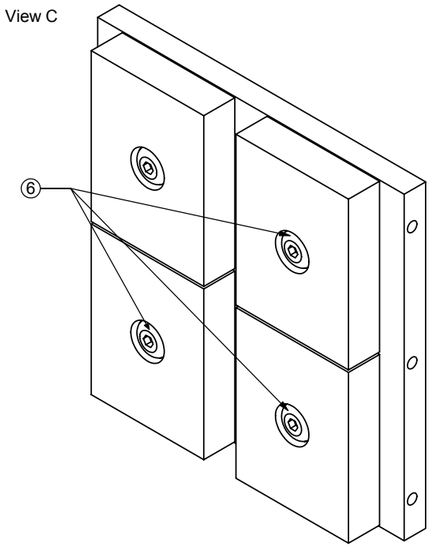


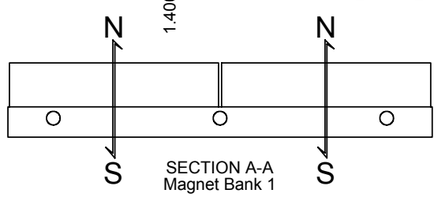
View C



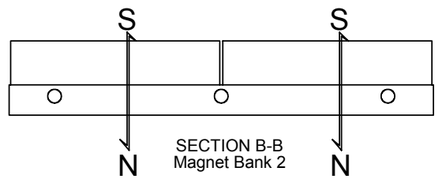








SECTION A-A
Magnet Bank 1



SECTION B-B
Magnet Bank 2

Notes:

Magnets to be magnetized after Nickel plating and ultrasonic cleaning, magnet mount plates provided-Nickel plated in Class 100 Clean Room bags ready for assembly

Handle components with powder free, unlined, packaged in a Class 100 clean room environment, gloves

Store components and assemblies in air tight, re-sealable plastic bags when not in use

Assemble components in clean, low humidity, low dust, constant temperature (Class 100 room if available) environment

Torque 8-32 x 3/8" long Silver plated Button Head Screws (magnet mount hardware) to 8 in-lbs max

Extreme care must be taken during handling and assembly to avoid chipping of magnets and Nickel plating

Material: CR 1018 Steel, Magnets SmCo S2669

Quantity: 12 plate and magnet assemblies as shown, 6 actuators

Temporarily assemble units as shown in View C for shipping (Top/Bottom plates and hardware provided)

Item Number	Part Description	Notes	QTY.
1	SA Center Pole Piece		1
2	SA Top Plate		1
3	Small Actuator Magnets		8
4	SA Bottom Plate		1
5	4-40 x 3/8" Long Trim Cut Flat Head	UC Components Part# FTH-406-NA	16
6	8-32 x 3/8" Long Button Head	UC Components Part# BU-806-NA	8
7	SA Side Plates		2

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ARE:

.xx ± 0.020 ±ANG 0.5°
.xxx ± 0.010
.xxxx ± 0.005

MATERIAL See Notes

FINISH See Notes

Scale: 1:2

SW2004 Generated Drawing
Do not Manually Update

APPROVALS	DATE
DRAWN SCS 070604	
CHECKED Scott Stewart	
RESP ENG	
MFG ENG	
QUAL ENG	

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LIGO Phase II
Small Actuator MCE
Assembly

SIZE B | DWG. NO. 0487-LIGO-d112-070604-SCS | REV.
SCALE 1:2 | CAD FILE: | SHEET 1 OF 1