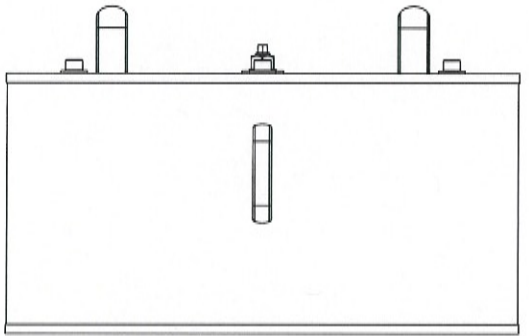
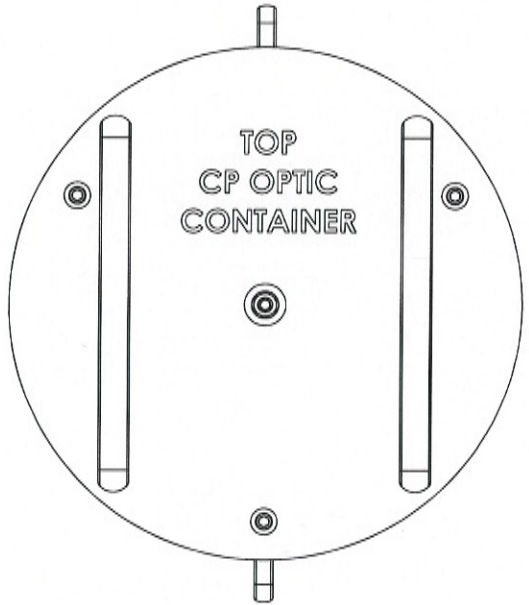


8 7 6 5 4 3 2 1

REV.	DATE	DCN #	DRAWING TREE #
v3	30 SEPT 2009	E0900322	
v4	23 OCT 2009	E0900380	
v5	12 NOV 2009	E0900383	
v6	30 OCT 2009	E0900412	

V7



D0902520-4 →
 ADD FOR TOP: →
 D1000958 ADAPTER QTY 1
 D1001025 SHIPPING SLEEVE QTY 3
 92200A150 SHCS QTY 4

ITEM NO.	PART NUMBER	DESCRIPTION	MATERIAL	REQ	SPARE	TOTAL
ALT	ROW, Inc	O-Ring, Supporting Optic, SR, .275 Thick x 9.000 ID	PFA Encapsulat ed Viton	1		1
ALT	D0902520-3	OVERSIZE LOCATING SLEEVE, CP, COC CONTAINER	PFA440 HP	1		1
ALT	D0902520-2	OVERSIZE LOCATING SLEEVE, CP, COC CONTAINER	PFA440 HP	1		1
ALT	D0902520-1	OVERSIZE LOCATING SLEEVE, CP, COC CONTAINER	PFA440 HP	1		1
ALT	D0902495	GUIDE, OPTIC, COC CONTAINER	PFA440 HP	3		3
27	ROW Inc.	O-Ring, Base FM, .188 Thick X 16.375 ID	PFA Encapsulat ed Viton	2		2
26	ROW Inc.	O-Ring, Supporting Optic, ETM, .275 Thick X 12.500 ID	PFA Encapsulat ed Viton	1		1
25	ROW Inc.	O-Ring, Supporting Optic, SR, .275 Thick X 9.500 ID	PFA Encapsulat ed Viton	1		1
24	D0902536	PULL HANDLE, MODIFIED MC #1897A49	6061-T6 AI	2		2
23	D0902490	COVER, CENTRYCO CC-22-025-0050-013-DAE	301 SSSL	1		1
22	D0902331	RETAINER FOR CENTRYO COVER	304 SSSL	1		1
21	D0902330	PILOT FOR CENTRYO COVER	304 SSSL	1		1
20	D0902028	THRUST PAD, WEDGE PLATE CLAMP, COC CONTAINER	17-4 PH SS	1		1
19	D0902027	PULL HANDLE, 337LB LOAD RATED	6061-T6 AI	2		2
18	D0902026	CLAMP, WEDGE PLATE, COC CONTAINER	300 SSSL	1		1
17	D0902016	SHIPPING SLEEVE, CP, COC CONTAINER	6061-T6 AI	3		3
16	D0901890	OUTER SLEEVE, CP, COC CONTAINER	304 SSSL	1		1
15	D0901889	LOCATING SLEEVE, CP, COC CONTAINER	PFA440 HP	3		3
14	D0901887	LOCATING SHAFT, CP, COC CONTAINER	304 SSSL	3		3
13	D0901885	WEDGE PLATE, CP, COC OPTIC CONTAINER	6061-T6 AI	1		1
12	D0901884	TOP PLATE, CP, COC OPTIC CONTAINER	6061-T6 AI	1		1
11	D0901883	BASE PLATE, CP, COC OPTIC CONTAINER	6061-T6 AI	1		1
10	C-606-N	SCREW, SHC, 6-32 x 3/8, (JC Comp #C-606-N)	300 SSSL	4		4
9	98449A033	WASHER, LOCK, INT TOOTH 1/2", ASME B18.21.1 MC #98449A033	410 SSSL	1		1
8	98019A510	WASHER, FLAT, 1/2, MS15795-819, MC #98019A510	18-8 SSSL	1		1
7	98019A399	WASHER, FLAT, 3/8, MS15795-814, MC #98019A399	18-8 SSSL	3		3
6	92200A682	SCREW, SHC, 3/8-16 x 1 1/4, MS16995-82, MC #92200A682	18-8 SSSL	3		3
5	92200A630	SCREW, SHC, 5/16-18 x 1, MS16995-66, MC #92200A630	18-8 SSSL	4		4
4	92200A340	SCREW, SHC, 10-32 x 3/8, MS16995-9, MC #92200A340	18-8 SSSL	4		4
3	92200A144	SCREW, SHC, 6-32 x 1/4, MS16995-16, MC #92200A144	300 SSSL	4		4
2	90762A139	1/2 HEX NUT, MS51972-5, MC #90762A139	300 SSSL	1		1
1	1726A7	PULL HANDLE, MC #1726A7	304 SSSL	2		2

D0902001 CP, COC CONTAINER, ADVANCED LIGO, PART PDM REV: X-030, DRAWING PDM REV: X-024

8 7 6 5 4 3 2 1

NOTES AND TOLERANCES: (UNLESS OTHERWISE SPECIFIED)
 1. INTERPRET DRAWING PER ASME Y14.3-1994.
 2. REMOVE ALL SHARP EDGES, R.02 MIN.
 3. DO NOT SCALE FROM DRAWING.
 4. ALL MACHINING FLUIDS MUST BE FULLY SYNTHETIC, FULLY WATER SOLUBLE AND FREE OF SULFUR, SILICONE, AND CHLORINE.
 DIMENSIONS ARE IN INCHES
 TOLERANCES:
 .XX ± .01
 .XXX ± .005
 ANGULAR: 0.5°
 MATERIAL N/A
 FINISH N/A pinch

LIGO CALIFORNIA INSTITUTE OF TECHNOLOGY MASSACHUSETTS INSTITUTE OF TECHNOLOGY
 SYSTEM: **ADVANCED LIGO** SUB-SYSTEM: **COC** PART NAME: **CP, COC CONTAINER ASSEMBLY**
 DESIGNER: K. INGLAND 28 AUG 2009 SIZE DWG. NO. **D0902001** REV. **V6**
 DRAFTER: K. INGLAND 1 SEPT 2009
 CHECKER: K. MARAND 8 OCT 2009
 APPROVAL: C. TORRES 8 OCT 2009 SCALE: 1:1 PROJECTION: 1st SHEET 1 OF 8

V7

CALIFORNIA INSTITUTE OF TECHNOLOGY
MASSACHUSETTS INSTITUTE OF TECHNOLOGY

DRWG NO. REV GID
E0900360-y6 V6

SHEET SEE BOTTOM LEFT

ASSEMBLY NO:

OVERALL BILL OF MATERIALS

D0902001-y6 V7

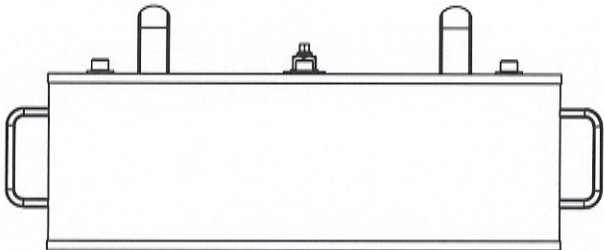


ADVANCED LIGO CP COC CONTAINER ASSEMBLY

DRAWN / AUTHOR: (REFERENCE CONTENTS)	APPROVALS:	DATE:	REV	DCN NO.	BY	CHECK	DCC	DATE
	CIT, KB	1-Dec-09	V6	E0900438	KB			
CHECKED:								
APPROVED:								
DCC RELEASE								

ITEM NO	REQ.	SPARE	TOT.	PART NUMBER	REVISION	DESCRIPTION	MATERIAL
1	2		2	1726A7	-	PULL HANDLE, MC #1726A7	304 SSSL
2	1		1	90762A139	-	1/2 HEX NUT, MS1972-5, MC #90762A139	300 SSSL
3	4		4	92200A144	-	SCREW, SHC, 6-32 x 1/4, MS16995-16, MC #92200A144	300 SSSL
4	4		4	92200A340	-	SCREW, SHC, 10-32 x 3/8, MS16995-9, MC #92200A340	18-8 SSSL
5	4		4	92200A630	-	SCREW, SHC, 5/16-18 x 1, MS16995-66, MC #92200A630	18-8 SSSL
6	3		3	92200A682	-	SCREW, SHC, 3/8-16 x 1 1/4, MS16995-82, MC #92200A682	18-8 SSSL
7	3		3	98019A399	-	WASHER, FLAT, 3/8, MS15795-814, MC #98019A399	18-8 SSSL
8	1		1	98019A510	-	WASHER, FLAT, 1/2, MS15795-819, MC #98019A510	18-8 SSSL
9	1		1	98449A033	-	WASHER, LOCK, INT TOOTH 1/2", ASME B18.21.1 MC C-606-N	410 SSSL
10	4		4	D0901883	V6	BASE PLATE, CP, COC OPTIC CONTAINER	300 SSSL
11	1		1	D0901884	V6	TOP PLATE, CP, COC OPTIC CONTAINER	6061-T6 AI
12	1		1	D0901885	V4	WEDGE PLATE, CP, COC OPTIC CONTAINER	6061-T6 AI
13	1		1	D0901887	V3	LOCATING SHAFT, CP, COC CONTAINER	304 SSSL
14	3		3	D0901889	V2 V3	LOCATING SLEEVE, CP, COC CONTAINER	6061-T6 AI
15	3		3	D0901890	V4	OUTER SLEEVE, CP, COC CONTAINER	304 SSSL
16	1		1	D0902016	V1	SHIPPING SLEEVE, CP, COC CONTAINER	PFA440 HP
17	3		3	D0902026	V3	CLAMP, WEDGE PLATE, COC CONTAINER	6061-T6 AI
18	1		1	D0902028	V3	PULL HANDLE, 337LB LOAD RATED	300 SSSL
19	2		2	D0902027	V2	THRUST PAD, WEDGE PLATE CLAMP, COC CONTAINER	6061-T6 AI
20	1		1	D0902028	V1	PILOT FOR CENTRYO COVER	17-4 PH SS
21	1		1	D0902330	V1	RETAINER FOR CENTRYO COVER	304 SSSL
22	1		1	D0902331	V1	COVER, CENTRYCO CC-22-025-0050-013-DAE	301 SSSL
23	1		1	D0902490	V1	PULL HANDLE, MODIFIED MC #1879A49	6061-T6 AI
24	2		2	D0902536	V2		PFA
25	1		1	ROW Inc.	-	O-Ring, Supporting Optic, SR, .275 Thick X 9.500 ID	Encapsulat e-rl Vitron PFA
26	1		1	ROW Inc.	-	O-Ring, Supporting Optic, ETM, .275 Thick X 12.500 ID	Encapsulat e-rl Vitron PFA
27	2		2	ROW Inc.	-	O-Ring, Base FM, .188 Thick X 16.375 ID	Encapsulat e-rl Vitron PFA
ALT	1		1	ROW, Inc	-	O-Ring, Supporting Optic, SR, .275 Thick x 9.000 ID	Encapsulat e-rl Vitron PFA
ALT	1		1	D0902520-1	V1 V2	OVERSIZE LOCATING SLEEVE, CP, COC CONTAINER	e-rl Vitron PFA440 HP
ALT	1		1	D0902520-2	V1	OVERSIZE LOCATING SLEEVE, CP, COC CONTAINER	PFA440 HP
ALT	1		1	D0902520-3	V1	OVERSIZE LOCATING SLEEVE, CP, COC CONTAINER	PFA440 HP
ALT	3		3	D0902495	V2	GUIDE, OPTIC, COC CONTAINER	PFA440 HP
ALT	1		1	90905290-6	V2	OVERSIZE LOCATING SLEEVE	PFA440 HP
ALT	3		3	0100085	V1	SHIPPING SLEEVE	PFA440 HP
ALT	1		1	01000758	V1	ADAPTOR, TCP SUBSTRATE	PFA440 HP
ALT	4		4	92200A150	-	SCREW, SHC 6-32 x 5/8	PFA440 HP

D0902120 FM, COC CONTAINER, ADVANCED LIGO, PART PDM REV: X-509, DRAWING PDM REV: X-010



REV.	DATE	DCN #	DRAWING TREE #
v1	23 SEPT 2009	E0900365	
v2	13 NOV 2009	E0900412	

[ALT D0902521-4]

ITEM NO.	PART NUMBER	DESCRIPTION	MATERIAL	REQ	SPARE	TOTAL
ALT	D0902521-4	OVERSIZE LOCATING SLEEVE, FM, COC CONTAINER	PFA440HP	1		1
ALT	D0902521-2	OVERSIZE LOCATING SLEEVE, FM, COC CONTAINER	PFA440HP	1		1
ALT	D0902521-1	OVERSIZE LOCATING SLEEVE, FM, COC CONTAINER	PFA440HP	1		1
ALT	D0902495	GUIDE, OPTIC, COC CONTAINER	PFA440HP	3		3
26	ROW Inc.	O-Ring, Base FM, .188 Thick X 16.375 ID	PFA Encapsulat ed Viton	2		2
25	ROW Inc.	O-Ring, Supporting Optic, FM, .275 Thick X 13.475 ID	PFA Encapsulat ed Viton	2		2
24	D0902536	PULL HANDLE, MODIFIED MC #1897A49	6061-T6 Al	2		2
23	D0902490	COVER, CENTRYCO CC-22-025-0050-013-DAE	301 SSSL	1		1
22	D0902331	RETAINER FOR CENTRYCO COVER	304 SSSL	1		1
21	D0902330	PILOT FOR CENTRYCO COVER	304 SSSL	1		1
20	D0902128	SHIPPING SLEEVE, FM, COC CONTAINER	6061-T6 Al	3		3
19	D0902126	OUTER SLEEVE, FM, COC CONTAINER	304 SSSL	1		1
18	D0902125	LOCATING SLEEVE, FM, COC CONTAINER	PFA440 HP (PRESHRUNK)	3		3
17	D0902124	LOCATING SHAFT, FM, COC CONTAINER	304 SSSL	3		3
16	D0902123	WEDGE PLATE, FM, COC OPTIC CONTAINER	6061-T6 Al	1		1
15	D0902122	TOP PLATE, FM, COC OPTIC CONTAINER	6061-T6 Al	1		1
14	D0902121	BASE PLATE, FM, COC OPTIC CONTAINER	6061-T6 Al	1		1
13	D0902028	THRUST PAD, WEDGE PLATE CLAMP, COC CONTAINER	17-4 PH SS	1		1
12	D0902027	PULL HANDLE, 337LB LOAD RATED	6061-T6 Al	2		2
11	D0902026	CLAMP, WEDGE PLATE, COC CONTAINER	300 SSSL	1		1
10	C-606-N	SCREW, SHC, 6-32 x 3/8, (UC Comp #C-606-N)	300 SSSL	4		4
9	98449A033	WASHER, LOCK, INT TOOTH 1/2", ASME B18.21.1 MC #98449A033	410 SSSL	1		1
8	98019A510	WASHER, FLAT, 1/2, MS15795-819, MC #98019A510	18-8 SSSL	1		1
7	98019A399	WASHER, FLAT, 3/8, MS15795-814, MC #98019A399	18-8 SSSL	3		3
6	92200A682	SCREW, SHC, 3/8-16 x 1 1/4, MS16995-82, MC #92200A682	18-8 SSSL	3		3
5	92200A630	SCREW, SHC, 5/16-18 x 1, MS16995-66, MC #92200A630	18-8 SSSL	4		4
4	92200A340	SCREW, SHC, 10-32 x 3/8, MS16995-9, MC #92200A340	18-8 SSSL	4		4
3	92200A144	SCREW, SHC, 6-32 x 1/4, MS16995-16, MC#92200A144	300 SSSL	4		4
2	90762A139	1/2 HEX NUT, MS51972-5, MC #90762A139	300 SSSL	1		1
1	1726A7	PULL HANDLE, MC #1726A7	304 SSSL	2		2

PARTS LIST

NOTES AND TOLERANCES: (UNLESS OTHERWISE SPECIFIED)

DIMENSIONS ARE IN INCHES
 TOLERANCES:
 XX ± .01
 XXX ± .005
 ANGULAR ± 0.5°

1. INTERPRET DRAWING PER ASME Y14.5-1994.
 2. REMOVE ALL SHARP EDGES, R.02 MIN.
 3. DO NOT SCALE FROM DRAWING.
 4. ALL MACHINING FLUIDS MUST BE FULLY SYNTHETIC, FULLY WATER SOLUBLE AND FREE OF SULFUR, SILICONE, AND CHLORINE.
 MATERIAL N/A
 FINISH N/A jinch
 NEXT ASSY

LIGO CALIFORNIA INSTITUTE OF TECHNOLOGY
 MASSACHUSETTS INSTITUTE OF TECHNOLOGY
 SYSTEM ADVANCED LIGO
 SUB-SYSTEM COC

PART NAME FM, COC CONTAINER ASSEMBLY
 DESIGNER E. BUCKLAND 23 AUG 2009 SIZE DWG. NO.
 DRAFTER E. BUCKLAND 23 SEPT 2009 B D0902120 REV V2
 CHECKER E. MARANO 21 OCT 2009
 APPROVAL C. TORRE 21 OCT 2009 SCALE: 1:1 PROJECTION: SHEET 1 OF 3

V3



CALIFORNIA INSTITUTE OF TECHNOLOGY
MASSACHUSETTS INSTITUTE OF TECHNOLOGY

DRWG NO. REV. GID

E0900361-y3 ✓ V4

SHEET SEE BOTTOM LEFT

ASSEMBLY NO:

D0902120-y2 ✓ V3

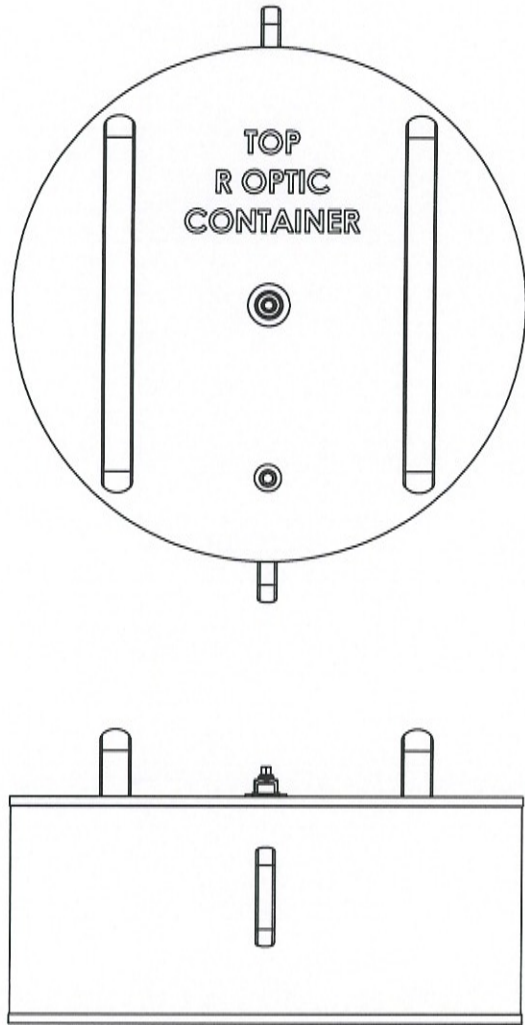
OVERALL BILL OF MATERIALS

TITLE: ADVANCED LIGO FM COC CONTAINER ASSEMBLY

DRAWN / AUTHOR: REFERENCE CONTENTS	APPROVALS:	DATE:	REV	DCH NO.	BY	CHECK	DCC	DATE
	CIT, KB	1-Dec-09	y3 ✓ V4	E0900438	KB			
CHECKED:								
APPROVED:								
DCC RELEASE								

ITEM NO	REQ	SPARE	TOT.	PART NUMBER	REVISION	DESCRIPTION	MATERIAL
1	2		2	1726A7	-	PULL HANDLE, MC #1726A7	304 SSIL
2	1		1	90762A139	-	1/2 HEX NUT, MS1972-5, MC #90762A139	300 SSIL
3	4		4	92200A144	-	SCREW, SHC, 6-32 x 1/4, MS16995-16, MC #92200A144	300 SSIL
4	4		4	92200A340	-	SCREW, SHC, 10-32 x 3/8, MS16995-9, MC #92200A340	18-8 SSIL
5	4		4	92200A630	-	SCREW, SHC, 5/16-18 x 1, MS16995-66, MC #92200A630	18-8 SSIL
6	3		3	92200A682	-	SCREW, SHC, 3/8-16 x 1 1/4, MS16995-82, MC #92200A682	18-8 SSIL
7	3		3	98019A399	-	WASHER, FLAT, 3/8, MS15795-814, MC #98019A399	18-8 SSIL
8	1		1	98019A510	-	WASHER, FLAT, 1/2, MS15795-819, MC #98019A510	18-8 SSIL
9	1		1	98449A033	-	WASHER, LOCK, INT TOOTH 1/2", ASME B18.21.1 MC#98449A033	410 SSIL
10	4		4	C-606-N	-	SCREW, SHC, 6-32 x 3/8 UC Comp C-606-NMC #92200A144	300 SSIL
11	1		1	D0902026	V3	CLAMP, WEDGE PLATE, COC CONTAINER	300 SSIL
12	2		2	D0902027	V3	PULL HANDLE, 337LB LOAD RATED	6061-T6 Al
13	1		1	D0902028	V2	THRUST PAD, WEDGE PLATE CLAMP, COC CONTAINER	17-4 PH SS
14	1		1	D0902121	V3	BASE PLATE, FM, COC OPTIC CONTAINER	6061-T6 Al
15	1		1	D0902122	V3	TOP PLATE, FM, COC OPTIC CONTAINER	6061-T6 Al
16	1		1	D0902123	V2	WEDGE PLATE, FM, COC OPTIC CONTAINER	6061-T6 Al
17	3		3	D0902124	V2	LOCATING SHAFT, FM, COC CONTAINER	304 SSIL
18	3		3	D0902125	V1 V2	LOCATING SLEEVE, FM, COC CONTAINER	PFA440 HP
19	1		1	D0902126	V1	OUTER SLEEVE, FM, COC CONTAINER	304 SSIL
20	3		3	D0902128	V1	SHIPPING SLEEVE, FM, COC CONTAINER	6061-T6 Al
21	1		1	D0902330	V1	PILOT FOR CENTRYO COVER	304 SSIL
22	1		1	D0902331	V1	RETAINER FOR CENTRYO COVER	304 SSIL
23	1		1	D0902490	V1	COVER, CENTRYCO CC-22-025-0050-013-DAE	301 SSIL
24	2		2	D0902536	V2	PULL HANDLE, MODIFIED MC #1879A49	6061-T6 Al
25	2		2	ROW Inc.		O-Ring, Supporting Optic, FM, .275 Thick X 13.475 ID	PFA Encapsulat eal Vitron
26	2		2	ROW Inc.		O-Ring, Base FM, .188 Thick X 16.375 ID	PFA Encapsulat
ALT	1		1	D0902521-03	V1 V2	OVERSIZE LOCATING SLEEVE, FM, COC CONTAINER	erl Vitron
ALT	1		1	D0902521-02	V1 V2	OVERSIZE LOCATING SLEEVE, FM, COC CONTAINER	PFA440HP
ALT	1		1	D0902521-01	V1 V2	OVERSIZE LOCATING SLEEVE, FM, COC CONTAINER	PFA440HP
ALT	3		3	D0902495	V2	GUIDE, OPTIC, COC CONTAINER	PFA440HP
ALT	1		1	D0902521-4	V2	OVERSIZE LOCATING SLEEVE	PFA440HP

D0902138 R OPTIC, COC CONTAINER, ADVANCED LIGO, PART FROM REV: X-306, DRAWING FROM REV: X-007



REV.	DATE	DCN #	DRAWING TREE #
V1	21 OCT 2009	E0900366	
V2	13 NOV 2009	E0900412	

ITEM NO.	PART NUMBER	DESCRIPTION	MATERIAL	REQ	SPARE	TOTAL
ALT	D0902522-3	OVERSIZE LOCATING SLEEVE, R OPTIC, COC CONTAINER	PFA440HP	1		1
ALT	D0902522-2	OVERSIZE LOCATING SLEEVE, R OPTIC, COC CONTAINER	PFA440HP	1		1
ALT	D0902522-1	OVERSIZE LOCATING SLEEVE, R OPTIC, COC CONTAINER	PFA440HP	1		1
ALT	D0902495	GUIDE, OPTIC, COC CONTAINER	PFA440HP	3		3
26	ROW Inc.	O-Ring, Base FM, .188 Thick X 16.375 ID	PFA Encapsulated Viton	2		2
25	ROW Inc.	O-Ring, Supporting Optic, SR, .275 Thick X 9.500 ID	PFA Encapsulated Viton	2		2
24	D0902536	PULL HANDLE, MODIFIED MC #1897A49	6061-T6 Al	2		2
23	D0902490	COVER, CENTRYCO CC-22-025-0050-013-DAE	301 SSSL	1		1
22	D0902331	RETAINER FOR CENTRYCO COVER	304 SSSL	1		1
21	D0902330	PILOT FOR CENTRYCO COVER	304 SSSL	1		1
20	D0902145	SHIPPING SLEEVE, R OPTIC, COC CONTAINER	6061-T6 Al	3		3
19	D0902144	OUTER SLEEVE, R OPTIC, COC CONTAINER	304 SSSL	1		1
18	D0902143	LOCATING SLEEVE, R OPTIC, COC CONTAINER	PFA440 HP (PRESHRUNK)	3		3
17	D0902142	LOCATING SHAFT, R OPTIC, COC CONTAINER	304 SSSL	3		3
16	D0902141	WEDGE PLATE, R OPTIC, COC OPTIC CONTAINER	6061-T6 Al	1		1
15	D0902140	TOP PLATE, R OPTIC, COC OPTIC CONTAINER	6061-T6 Al	1		1
14	D0902139	BASE PLATE, R OPTIC, COC OPTIC CONTAINER	6061-T6 Al	1		1
13	D0902028	THRUST PAD, WEDGE PLATE CLAMP, COC CONTAINER	17-4 PH SS	1		1
12	D0902027	PULL HANDLE, 337LB LOAD RATED	6061-T6 Al	2		2
11	D0902026	CLAMP, WEDGE PLATE, COC CONTAINER	300 SSSL	1		1
10	C-606-N	SCREW, SHC, 6-32 x 3/8, (UC Comp #C-606-N)	300 SSSL	4		4
9	98449A033	WASHER, LOCK, INT TOOTH 1/2", ASME B18.21.1 MC #98449A033	410 SSSL	1		1
8	98019A510	WASHER, FLAT, 1/2, MS15795-819, MC #98019A510	18-8 SSSL	1		1
7	98019A399	WASHER, FLAT, 3/8, MS15795-814, MC #98019A399	18-8 SSSL	3		3
6	92200A682	SCREW, SHC, 3/8-16 x 1 1/4, MS16995-82, MC #92200A682	18-8 SSSL	3		3
5	92200A630	SCREW, SHC, 5/16-18 x 1, MS16995-66, MC #92200A630	18-8 SSSL	4		4
4	92200A340	SCREW, SHC, 10-32 x 3/8, MS16995-9, MC #92200A340	18-8 SSSL	4		4
3	92200A144	SCREW, SHC, 6-32 x 1/4, MS16995-16, MC #92200A144	300 SSSL	4		4
2	90762A139	1/2 HEX NUT, MS51972-5, MC #90762A139	300 SSSL	1		1
1	1726A7	PULL HANDLE, MC #1726A7	304 SSSL	2		2

ALT | D0902522-4

V3

NOTES AND TOLERANCES: (UNLESS OTHERWISE SPECIFIED)

1. INTERPRET DRAWING PER ASME Y14.5-1994.
 2. REMOVE ALL SHARP EDGES, R0.2 MIN.
 3. DO NOT SCALE FROM DRAWING.
 4. ALL MACHINING FLUIDS MUST BE FULLY SYNTHETIC, FULLY WATER SOLUBLE AND FREE OF SULFUR, SILICONE, AND CHLORINE.

DIMENSIONS ARE IN INCHES

TOLERANCES:
 XX ± .01
 XXX ± .005

ANGULAR ± 0.5°

MATERIAL N/A FINISH N/A μinch

CA CALIFORNIA INSTITUTE OF TECHNOLOGY
MA MASSACHUSETTS INSTITUTE OF TECHNOLOGY

SYSTEM ADVANCED LIGO **SUB-SYSTEM** COC **PART NAME** R OPTIC, COC CONTAINER ASSEMBLY

DESIGNER K. BUCKLAND 23 AUG 2009 SIZE DWG. NO. D0902138
 DRAFTER K. BUCKLAND 24 SEPT 2009
 CHECKER K. MALAND 21 OCT 2009
 APPROVAL C. TORRE 21 OCT 2009

SCALE: 1:1 PROJECTION: 1st ANGLE SHEET 1 OF 3

V3

CALIFORNIA INSTITUTE OF TECHNOLOGY
 MASSACHUSETTS INSTITUTE OF TECHNOLOGY

DRWG NO. REV GID

E0900362-y8 ✓ 4

SHEET SEE BOTTOM LEFT

ASSEMBLY NO:

D0902138-y2 ✓ 3

OVERALL BILL OF MATERIALS

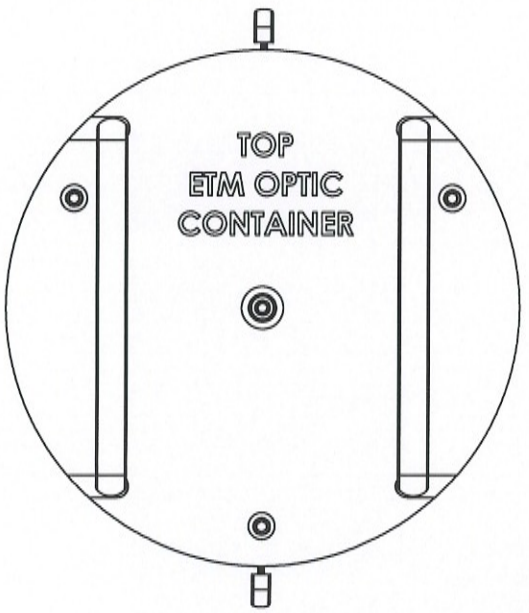
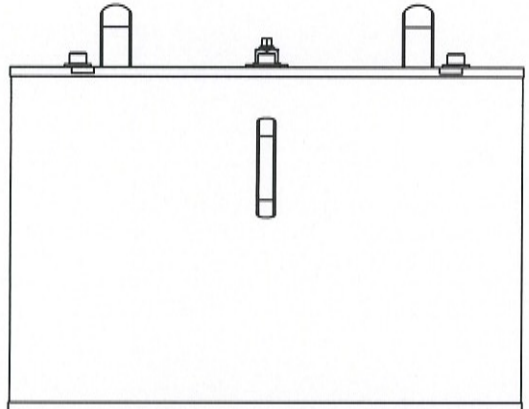
TITLE: ADVANCED LIGO R OPTIC COC CONTAINER ASSEMBLY

APPROVALS:	DATE:	REV	DCN NO.	BY	CHECK	DCC	DATE
DRAWN / AUTHOR: (REFERENCE CONTENTS)	CIT, KB	v3	E0900438	KB			
CHECKED:			E1000141				
APPROVED:							
DCC RELEASE							

ITEM NO	REQ.	SPARE	TOT.	PART NUMBER	REVISION	DESCRIPTION	MATERIAL
1	2		2	1726A7	-	PULL HANDLE, MC #1726A7	304 SSSL
2	1		1	90762A139	-	1/2 HEX NUT, MS1972-5, MC #90762A139	300 SSSL
3	4		4	92200A144	-	SCREW, SHC, 6-32 x 1/4, MS16995-16, MC #92200A144	300 SSSL
4	4		4	92200A340	-	SCREW, SHC, 10-32 x 3/8, MS16995-9, MC #92200A340	18-8 SSSL
5	4		4	92200A630	-	SCREW, SHC, 5/16-18 x 1, MS16995-66, MC #92200A630	18-8 SSSL
6	3		3	92200A682	-	SCREW, SHC, 3/8-16 x 1 1/4, MS16995-82, MC #92200A682	18-8 SSSL
7	3		3	98019A399	-	WASHER, FLAT, 3/8, MS15795-814, MC #98019A399	18-8 SSSL
8	1		1	98019A510	-	WASHER, FLAT, 1/2, MS15795-819, MC #98019A510	18-8 SSSL
9	1		1	98449A033	-	WASHER, LOCK, INT TOOTH 1/2", ASME B18.21.1 MC#98449A033	410 SSSL
10	4		4	C-606-N	-	SCREW, SHC, 6-32 x 3/8 UC Comp C-606-N	300 SSSL
11	1		1	D0902026	V3	CLAMP, WEDGE PLATE, COC CONTAINER	300 SSSL
12	2		2	D0902027	V3	PULL HANDLE, 337LB LOAD RATED	6061-T6 AI
13	1		1	D0902028	V2	THRUST PAD, WEDGE PLATE CLAMP, COC CONTAINER	17-4 PH SS
14	1		1	D0902139	V3	BASE PLATE, R OPTIC, COC OPTIC CONTAINER	6061-T6 AI
15	1		1	D0902140	V3	TOP PLATE, R OPTIC, COC OPTIC CONTAINER	6061-T6 AI
16	1		1	D0902141	V2	WEDGE PLATE, R OPTIC, COC OPTIC CONTAINER	6061-T6 AI
17	3		3	D0902142	V2	LOCATING SHAFT, R OPTIC, COC CONTAINER	304 SSSL
18	3		3	D0902143	V1	LOCATING SLEEVE, R OPTIC, COC CONTAINER	PFA440 HP
19	1		1	D0902144	V1	OUTER SLEEVE, R OPTIC, COC CONTAINER	304 SSSL
20	3		3	D0902145	V1	SHIPPING SLEEVE, R OPTIC, COC CONTAINER	6061-T6 AI
21	1		1	D0902330	V1	PILOT FOR CENTRYO COVER	304 SSSL
22	1		1	D0902331	V1	RETAINER FOR CENTRYO COVER	304 SSSL
23	1		1	D0902490	V1	COVER, CENTRYCO CC-22-025-0050-013-DAE	301 SSSL
24	2		2	D0902536	V2	PULL HANDLE, MODIFIED MC #1879A49	6061-T6 AI
25	2		2	ROW Inc.	-	O-Ring, Supporting Optic, SR, .275 Thick X 9.500 ID	PFA
26	2		2	ROW Inc.	-	O-Ring, Base FM, .188 Thick X 16.375 ID	Encapsulat ed Vitron PFA
ALT	1		1	D0902522-3	V1 } V2	OVERSIZE LOCATING SLEEVE, R OPTIC, COC CONTAINER	Encapsulat ed Vitron PFA440HP
ALT	1		1	D0902522-2	V1 } V2	OVERSIZE LOCATING SLEEVE, R OPTIC, COC CONTAINER	PFA440HP
ALT	1		1	D0902522-1	V1 } V2	OVERSIZE LOCATING SLEEVE, R OPTIC, COC CONTAINER	PFA440HP
ALT	3		3	D0902495	V2	GUIDE, OPTIC, COC CONTAINER	PFA440HP
ALT	1		1	D0903122-4	V2	OVERSIZE LOCATING SLEEVE	PFA440HP

8 7 6 5 4 3 2 1

REV.	DATE	DCN #	DRAWING TREE #
v1	21 OCT 2009	E0900367	
v2	13 NOV 2009	E0900412	



ITEM NO.	PART NUMBER	DESCRIPTION	MATERIAL	REQ	SPARE	TOTAL
ALT	D0902523-3	OVERSIZE LOCATING SLEEVE, ETM, COC CONTAINER	PFA440HP	1		1
ALT	D0902523-2	OVERSIZE LOCATING SLEEVE, ETM, COC CONTAINER	PFA440HP	1		1
ALT	D0902523-1	OVERSIZE LOCATING SLEEVE, ETM, COC CONTAINER	PFA440HP	1		1
ALT	D0902495	GUIDE, OPTIC, COC CONTAINER	PFA440HP	3		3
30	AS568A-453 O-RING	ROW INC. O-RING, .275" THICK X 11.975" ID, PFA Encapsulated Viton	VITON	2		2
29	ROW Inc.	O-Ring, Base FM, .188 Thick X 16.375 ID	PFA Encapsulated Viton	2		2
28	D0902536	PULL HANDLE, MODIFIED MC #1897A49	6061-T6 Al	2		2
27	D0902490	COVER, CENTRYCO CC-22-025-0050-013-DAE	301 SSSL	1		1
26	D0902348	Plate, Adjustable, ETM Optic Container	303 SS	2		2
25	D0902331	RETAINER FOR CENTRYCO COVER	304 SSSL	1		1
24	D0902330	PILOT FOR CENTRYCO COVER	304 SSSL	1		1
23	D0902246	TOP PLATE, ETM, COC OPTIC CONTAINER	6061-T6 Al	1		1
22	D0902152	SHIPPING SLEEVE, ETM, COC CONTAINER	6061-T6 Al	3		3
21	D0902151	OUTER SLEEVE, ETM, COC CONTAINER	304 SSSL	1		1
20	D0902150	LOCATING SLEEVE, ETM, COC CONTAINER	PFA440 HP (PRESHRUNK)	3		3
19	D0902149	LOCATING SHAFT, ETM, COC CONTAINER	304 SSSL	3		3
18	D0902148	WEDGE PLATE, ETM, COC OPTIC CONTAINER	6061-T6 Al	1		1
17	D0902147	BASE PLATE, ETM, COC OPTIC CONTAINER	6061-T6 Al	1		1
16	D0902028	THRUST PAD, WEDGE PLATE CLAMP, COC CONTAINER	17-4 PH SS	1		1
15	D0902027	PULL HANDLE, 337LB LOAD RATED	6061-T6 Al	2		2
14	D0902026	CLAMP, WEDGE PLATE, COC CONTAINER	300 SSSL	1		1
13	D0901316	Block, Spring Loaded, Adjustable, ETM Optic Container	PFA 440 HP	2		2
12	C-606-N	SCREW, SHC, 6-32 x 3/8, (UC Comp #C-606-N)	300 SSSL	4		4
11	C-2024-N	Screw, Soc Hd Cap, 1/4-20 x 1.50 (UC Comp #C-2024-N)	18-8 SS	4		4
10	98449A033	WASHER, LOCK, INT TOOTH 1/2", ASME B18.21.1 MC #98449A033	410 SSSL	1		1
9	98019A510	WASHER, FLAT, 1/2, MS15795-819, MC #98019A510	18-8 SSSL	1		1
8	98019A399	WASHER, FLAT, 3/8, MS15795-814, MC #98019A399	18-8 SSSL	3		3
7	92200A682	SCREW, SHC, 3/8-16 x 1 1/4, MS16995-82, MC #92200A682	18-8 SSSL	3		3
6	92200A630	SCREW, SHC, 5/16-18 x 1, MS16995-66, MC #92200A630	18-8 SSSL	4		4
5	92200A340	SCREW, SHC, 10-32 x 3/8, MS16995-9, MC #92200A340	18-8 SSSL	4		4
4	92200A144	SCREW, SHC, 6-32 x 1/4, MS16995-16, MC#92200A144	300 SSSL	4		4
3	90762A139	1/2 HEX NUT, MS51972-5, MC #90762A139	300 SSSL	1		1
2	1986K1	Spring, Compressed, Closed end, 5/32 OD x .016 x 1.00	Stainless Steel	2		2
1	1726A7	PULL HANDLE, MC #1726A7	304 SSSL	2		2

ALT D0902523-4

NOTES AND TOLERANCES: (UNLESS OTHERWISE SPECIFIED)

- INTERPRET DRAWING PER ASME Y14.5-1994.
- REMOVE ALL SHARP EDGES, R0.02 MM.
- DO NOT SCALE FROM DRAWING.
- ALL MACHINING FLUIDS MUST BE FULLY SYNTHETIC, FULLY WATER SOLUBLE AND FREE OF SULFUR, SILICONE, AND CHLORINE.

TOLERANCES:
 .XX ± .01
 .XXX ± .005

ANGULAR ± 0.5°

MATERIAL: N/A
 FINISH: N/A μinch
 NEXT ASSY:

CAUTION: ADVANCED LIGO COC

PART NAME: ETM, COC CONTAINER ASSEMBLY

DESIGNER: E. BUCKLAND 23 AUG 2009
 DRAFTER: E. BUCKLAND 29 SEPT 2009
 CHECKER: K. MALAND 21 OCT 2009
 APPROVAL: C. TORRE 21 OCT 2009

SCALE: 1:4
 PROJECTION:

DWG. NO.: D0902146

REV: y2 v3

SHEET 1 OF 3

D0902146 ETM, COC CONTAINER, ADVANCED LIGO, PART PDM REV: X-008, DRAWING PDM REV: X-009

8 7 6 5 4 3 2 1



CALIFORNIA INSTITUTE OF TECHNOLOGY
MASSACHUSETTS INSTITUTE OF TECHNOLOGY

DRWG NO. REV GID
E0900363-y4 v5

SHEET SEE BOTTOM LEFT
ASSEMBLY NO:
D0902146-v2 v3

OVERALL BILL OF MATERIALS

TITLE: ADVANCED LIGO ETM COC CONTAINER ASSEMBLY

APPROVALS:	DATE:	REV	DCN NO.	BY	CHECK	DCC	DATE
DRAWN / AUTHOR: (REFERENCE COMMENTS)	CIT, KB	v3	E0900481 E 1000141	KB			
CHECKED:							
APPROVED:							
DCC RELEASE							

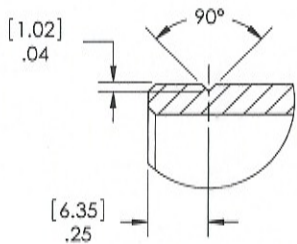
ITEM NO	REQ	SPARE	TOT	PART NUMBER	REVISION	DESCRIPTION	MATERIAL
1	2		2	1726A7	-	PULL HANDLE, MC #1726A7	304 SSSL
2	2		2	1986K1	-	Spring, Compressed, Closed end, 5/32 OD x .016 x 1.00	Stainless Steel
3	1		1	90762A139	-	1/2 HEX NUT, MS1972-5, MC #90762A139	300 SSSL
4	4		4	92200A146	-	SCREW, SHC, 6-32 x 1/4, MS16995-16, MC #92200A146	300 SSSL
5	4		4	92200A340	-	SCREW, SHC, 10-32 x 3/8, MS16995-9, MC #92200A340	18-8 SSSL
6	4		4	92200A630	-	SCREW, SHC, 5/16-18 x 1, MS16995-66, MC #92200A630	18-8 SSSL
7	3		3	92200A682	-	SCREW, SHC, 3/8-16 x 1 1/4, MS16995-82, MC #92200A682	18-8 SSSL
8	3		3	98019A399	-	WASHER, FLAT, 3/8, MS15795-814, MC #98019A399	18-8 SSSL
9	1		1	98019A510	-	WASHER, FLAT, 1/2, MS15795-819, MC #98019A510	18-8 SSSL
10	1		1	98449A033	-	WASHER, LOCK, INT TOOTH 1/2", ASME B18.21.1 MC#98449A033	410 SSSL
11	4		4	C-606-N	-	SCREW, SHC, 6-32 x 3/8 UC Comp C-606-NMC#92200A144	300 SSSL
12	4		4	C-2024-N	-	Screw, Soc Hd Cap, 1/4-20 x 1.50 [UC Comp #C-2024-N]	18-8 SS
13	2		2	D0901316	V1	Block, Spring Loaded, Adjustable, ETM Optic Container	PFA 440 HP
14	1		1	D0902028	V3	CLAMP, WEDGE PLATE, COC CONTAINER	300 SSSL
15	2		2	D0902027	V3	PULL HANDLE, 337LB LOAD RATED	6061-T6 Al
16	1		1	D0902028	V2	THRUST PAD, WEDGE PLATE CLAMP, COC CONTAINER	17-4 PH SS
17	1		1	D0902147	V3	BASE PLATE, ETM, COC OPTIC CONTAINER	6061-T6 Al
18	1		1	D0902148	V2	WEDGE PLATE, ETM, COC OPTIC CONTAINER	6061-T6 Al
19	3		3	D0902149	V2	LOCATING SHAFT, ETM, COC CONTAINER	304 SSSL
20	3		3	D0902150	V1	LOCATING SLEEVE, ETM, COC CONTAINER	PFA440 HP
21	1		1	D0902151	V1	OUTER SLEEVE, ETM, COC CONTAINER	6061-T6 Al
22	3		3	D0902152	V1	SHIPPING SLEEVE, ETM, COC CONTAINER	6061-T6 Al
23	1		1	D0902246	V4	TOP PLATE, ETM, COC OPTIC CONTAINER	304 SSSL
24	1		1	D0902330	V1	PILOT FOR CENTRYO COVER	304 SSSL
25	1		1	D0902331	V1	RETAINER FOR CENTRYO COVER	303 SS
26	2		2	D0902348	V1	Plate, Adjustable, ETM Optic Container	301 SSSL
27	1		1	D0902490	V1	COVER, CENTRYCO CC-22-025-0050-013-DAE	6061-T6 Al
28	2		2	D0902536	V2	PULL HANDLE, MODIFIED MC #1879A49	PFA
29	2		2	ASS68A-453 O-RING	-	O-Ring, Supporting Optic, ETM, .275 Thick X 11.975 ID	Encapsulat ed Vitron PFA
30	2		2	ROW Inc.	-	O-Ring, Base Fm, .188 Thick X 16.375 ID	Encapsulat ed Vitron PFA
ALT	1		1	D0902523-3	V1	OVERSIZE LOCATING SLEEVE, ETM, COC CONTAINER	enc Vitron PFA440HP
ALT	1		1	D0902523-2	V1	OVERSIZE LOCATING SLEEVE, ETM, COC CONTAINER	PFA440HP
ALT	1		1	D0902523-1	V1	OVERSIZE LOCATING SLEEVE, ETM, COC CONTAINER	PFA440HP
ALT	3		3	D0902495	V2	GUIDE, OPTIC, COC CONTAINER	PFA440HP
ALT	1		1	D0902143-4	V2	OVERSIZE LOCATING SLEEVE	

8 7 6 5 4 3 2 1

NOTES CONTINUED:
 Ⓢ BAG ALL ITEMS AND MARK OR TAG EACH BAG WITH
 DRAWING NUMBER, REVISION, AND QUANTITY.
 EXAMPLE: DXXXXXX-V1, QTY: 100

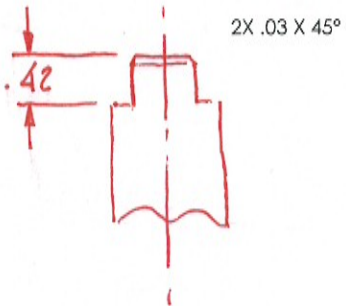
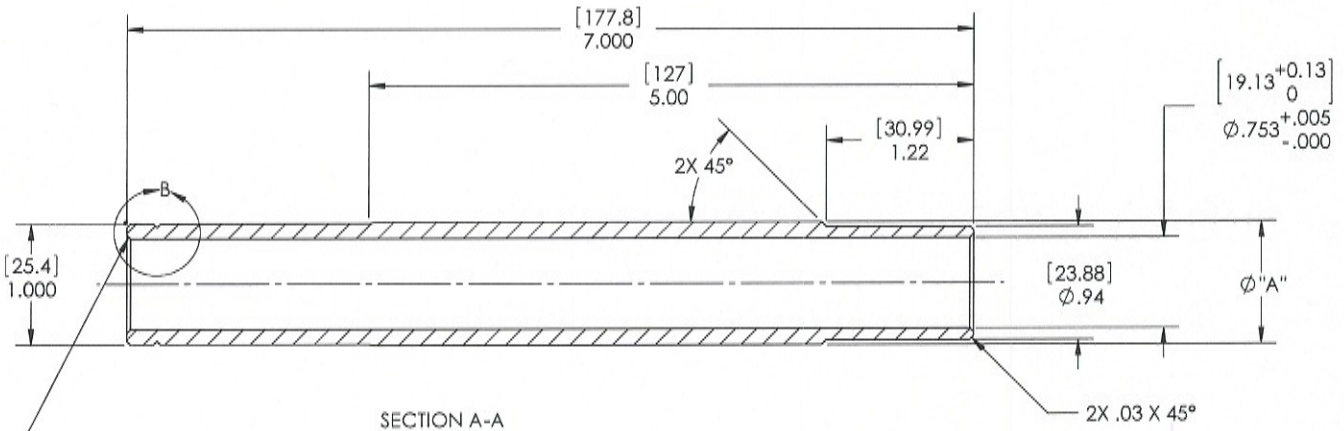
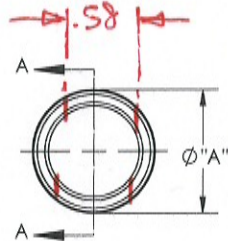
REV.	DATE	DCN #	DRAWING TREE #
v1	29 OCT 2009	E0900383	

v2



DETAIL B
 SCALE 2 : 1
 "N" PLACES, .12 SPACING

PART NUMBER	φ "A"	GROOVE PLACES "N"
D0902520-1	1.020	1
D0902520-2	1.040	2
D0902520-3	1.060	3
D0902520-4	1.080	4



D0902520 OVERSIZE LOCATING SLEEVE, CP, COC CONTAINER, ADVANCED LIGO, PART PDM REV: X-000, DRAWING PDM REV: X-000

NOTES AND TOLERANCES: (UNLESS OTHERWISE SPECIFIED)

DIMENSIONS ARE IN INCHES (MM)
 1. INTERPRET DRAWING PER ASME Y14.5-1994.
 2. REMOVE ALL SHARP EDGES, R.02 MIN.
 3. DO NOT SCALE FROM DRAWINGS.
 4. ALL MACHINING FLUIDS MUST BE FULLY SYNTHETIC, FULLY WATER SOLUBLE AND FREE OF SULFUR, SILICONE, AND CHLORINE.
 TOLERANCES:
 .XX ± .01
 .XXX ± .005
 ANGULAR ± 0.5°
 MATERIAL PFA440 HP (PRESHRUNK)
 FINISH N/A μinches

LIGO CALIFORNIA INSTITUTE OF TECHNOLOGY
 MASSACHUSETTS INSTITUTE OF TECHNOLOGY
 SYSTEM ADVANCED LIGO
 SUB-SYSTEM COC
 NEXT ASSY D0902001

PART NAME OVERSIZE LOCATING SLEEVE, CP, COC CONTAINER
 DESIGNER E. BUCKLAND 29 OCT 2009
 DRAFTER K. BUCKLAND 29 OCT 2009
 CHECKER K. MALLAND 29 OCT 2009
 APPROVAL C. TORRIS 29 OCT 2009
 SIZE DWG. NO. B
 D0902520
 SCALE: 1:1
 PROJECTION: 1ST ANGLE
 SHEET 1 OF 1

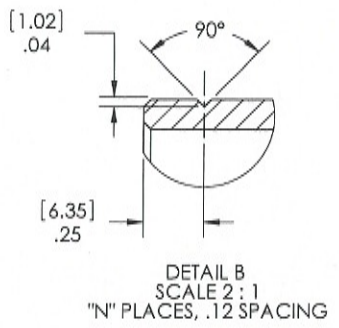
v2

8 7 6 5 4 3 2 1

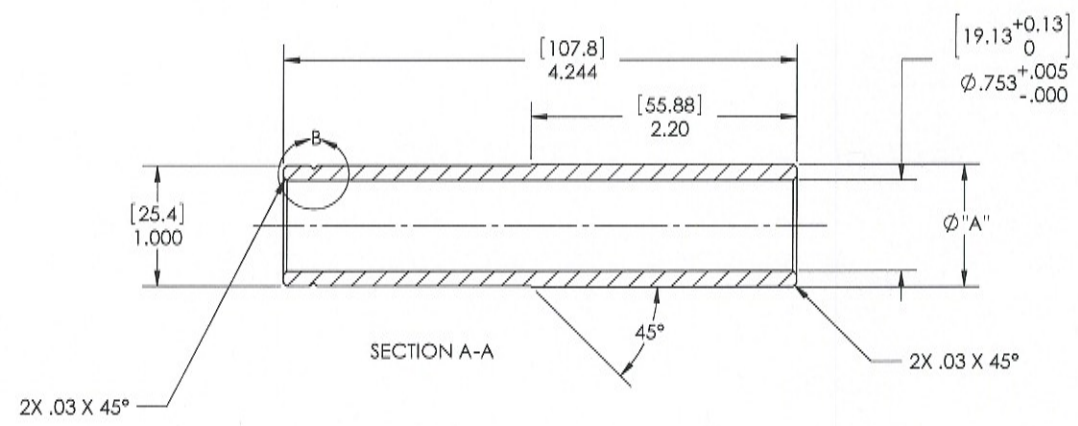
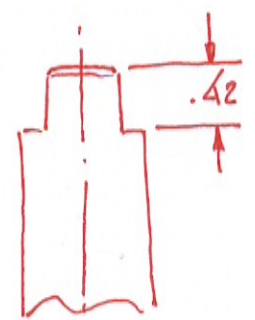
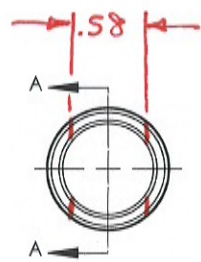
D0902521 OVERSIZE LOCATING SLEEVE, FM, COC CONTAINER, ADVANCED LIGO, PART PDM REV: X-000, DRAWING PDM REV: X-000

NOTES CONTINUED:
 Ⓢ BAG ALL ITEMS AND MARK OR TAG EACH BAG WITH
 DRAWING NUMBER, REVISION, AND QUANTITY.
 EXAMPLE: DXXXXXX-VY, QTY: TRD

REV.	DATE	DCN #	DRAWING TREE #
v1	29 OCT 2009	E0900383	
v2			



PART NUMBER	Ø "A"	GROOVE PLACES "N"
D0902521-1	1.020	1
D0902521-2	1.040	2
D0902521-3	1.060	3
D0902521-4	1.080	4

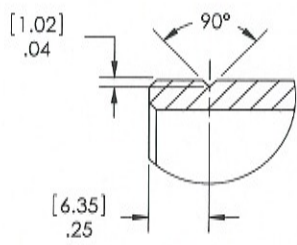


NOTES AND TOLERANCES: (UNLESS OTHERWISE SPECIFIED) DIMENSIONS ARE IN INCHES (MM) 1. INTERPRET DRAWING PER ASME Y14.5-1994. 2. REMOVE ALL SHARP EDGES, R.02 MIN. 3. DO NOT SCALE FROM DRAWING. 4. ALL MACHINING FLUIDS MUST BE FULLY SYNTHETIC, FULLY WATER SOLUBLE AND FREE OF SULFUR, SILICONE, AND CHLORINE.		LIGO CALIFORNIA INSTITUTE OF TECHNOLOGY MASSACHUSETTS INSTITUTE OF TECHNOLOGY		PART NAME OVERSIZE LOCATING SLEEVE, FM, COC CONTAINER	
TOLERANCES: .XX ± .01 .XXX ± .005 ANGULAR ± 0.5°	MATERIAL PFA440 HP	FINISH N/A pinch	NEXT ASSY D0902120	SYSTEM ADVANCED LIGO	SUB-SYSTEM COC
			DESIGNER K. BUCCLAND 29 OCT 2009 DRAFTER K. BUCCLAND 29 OCT 2009 CHECKER K. MALAND 29 OCT 2009 APPROVAL C. TORRE 29 OCT 2009	SIZE DWG. NO. B D0902521	REV. v1 v2
			SCALE: 1:1 PROJECTION:	SHEET 1 OF 1	

D0902522 OVERSIZE LOCATING SLEEVE, R OPTIC, COC CONTAINER, ADVANCED LIGO, PART PDM REV: X-000, DRAWING PDM REV: X-000

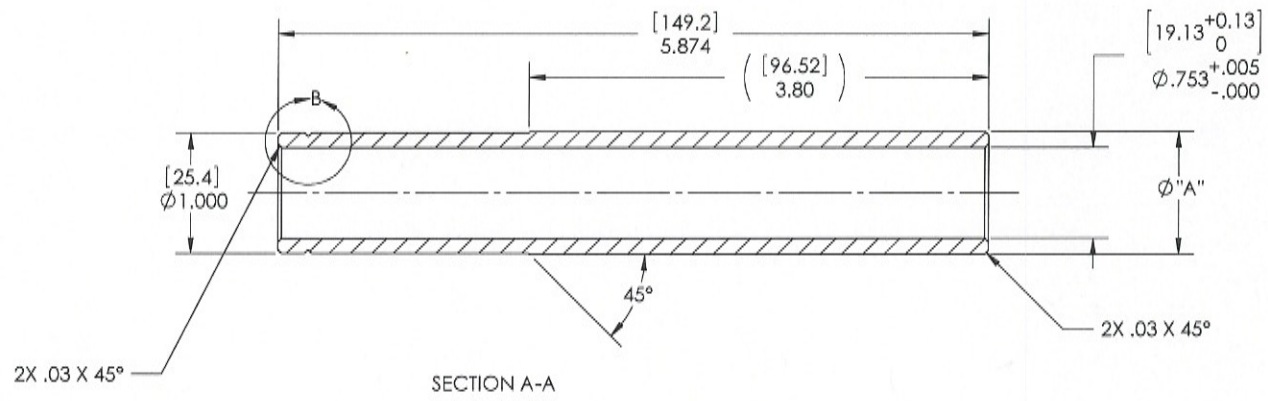
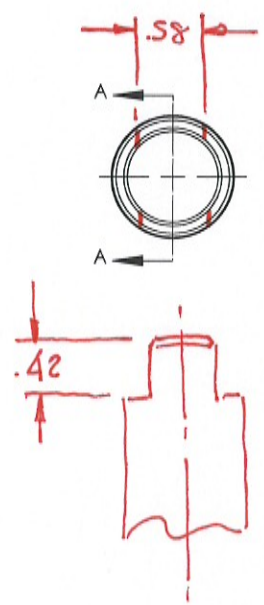
NOTES CONTINUED:
 Ⓢ BAG ALL ITEMS AND MARK OR TAG EACH BAG WITH DRAWING NUMBER, REVISION, AND QUANTITY. EXAMPLE: DXXXXXX-VY, QTY: TBD

REV.	DATE	DCH #	DRAWING TREE #
V1	29 OCT 2009	E0900383	
V2			



DETAIL B
 SCALE 2 : 1
 "N" PLACES, .12 SPACING

PART NUMBER	Ø "A"	GROOVE PLACES "N"
D0902522-1	1.020	1
D0902522-2	1.040	2
D0902522-3	1.060	3
D0902522-4	1.080	4



NOTES AND TOLERANCES: (UNLESS OTHERWISE SPECIFIED)

- 1. INTERPRET DRAWING PER ASME Y14.5-1994.
 - 2. REMOVE ALL SHARP EDGES, R .02 MIN.
 - 3. DO NOT SCALE FROM DRAWING.
 - 4. ALL MACHINING FLUIDS MUST BE FULLY SYNTHETIC, FULLY WATER SOLUBLE AND FREE OF SULFUR, SILICONE, AND CHLORINE.
- TOLERANCES:
 .XX ± .01
 .XXX ± .005
 ANGULAR ± 0.5°

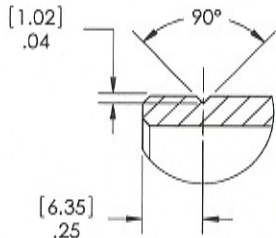
CALIFORNIA INSTITUTE OF TECHNOLOGY MASSACHUSETTS INSTITUTE OF TECHNOLOGY		PART NAME OVERSIZE LOCATING SLEEVE, R OPTIC, COC CONTAINER	
SYSTEM ADVANCED LIGO	SUB-SYSTEM COC	DESIGNER K. BUGLAND 29 OCT 2009 DRAFTER K. BUGLAND 29 OCT 2009 CHECKER K. MARLAND 29 OCT 2009 APPROVAL C. TORRE 29 OCT 2009	SIZE DWG. NO. B D0902522 SCALE 1:1 PROJECTION
NEXT ASSY N/A m/nc	FINISH N/A m/nc	D0902138	SHEET 1 OF 1

REV. V1 V2

D0902523 OVERSIZE LOCATING SLEEVE, ETM, COC CONTAINER, ADVANCED LIGO, PART PDM REV: X-000, DRAWING PDM REV: X-000

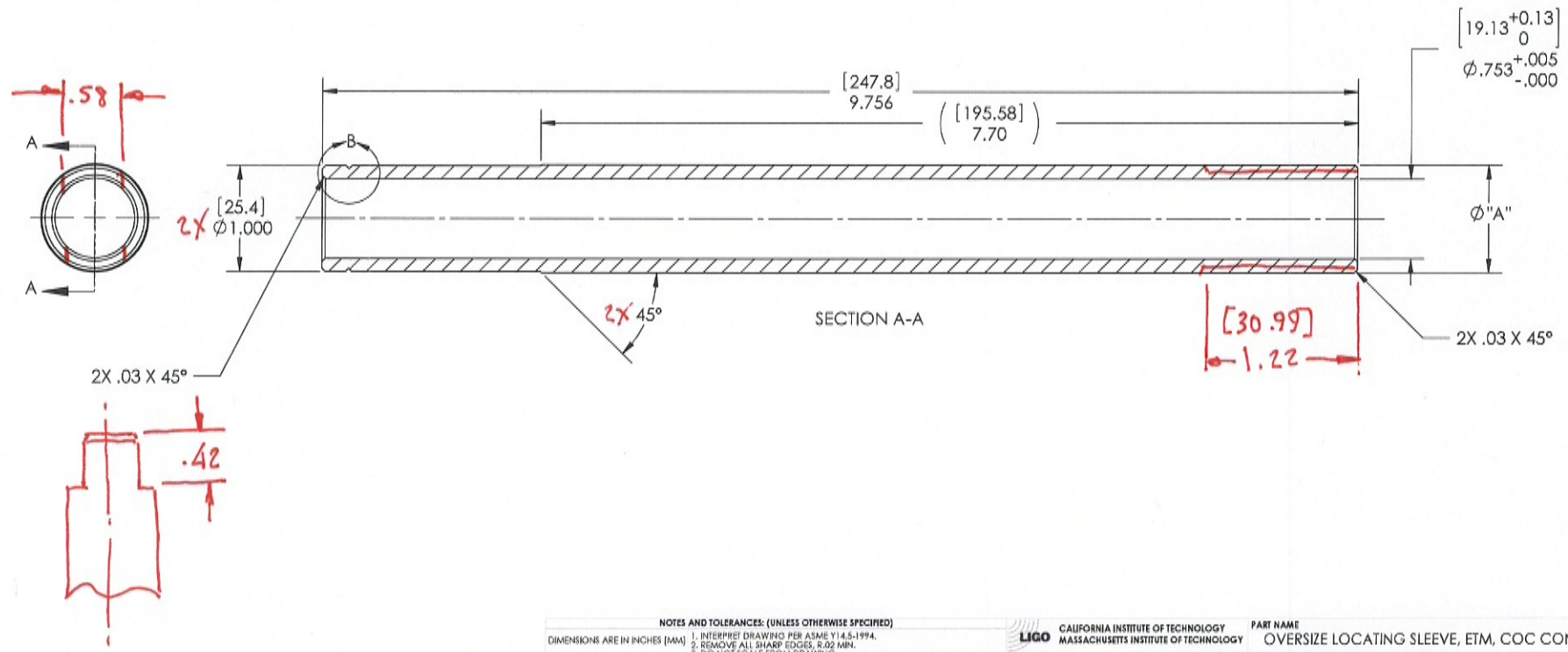
NOTES CONTINUED:
 Ⓢ BAG ALL ITEMS AND MARK OR TAG EACH BAG WITH DRAWING NUMBER, REVISION, AND QUANTITY. EXAMPLE: DXXXXXX-VY, QTY: 1TBG

REV.	DATE	DCN #	DRAWING TREE #
V1	29 OCT 2009	E0900383	
V2			



DETAIL B
 SCALE 2 : 1
 "N" PLACES, .12 SPACING

PART NUMBER	Ø "A"	GROOVE PLACES "N"
D0902523-1	1.020	1
D0902523-2	1.040	2
D0902523-3	1.060	3
D0902523-4	1.080	4



NOTES AND TOLERANCES: (UNLESS OTHERWISE SPECIFIED)
 DIMENSIONS ARE IN INCHES (MM)
 1. INTERPRET DRAWING PER ASME Y14.5-1994.
 2. REMOVE ALL SHARP EDGES, R.02 MIN.
 3. DO NOT SCALE FROM DRAWING.
 4. ALL MACHINING FLUIDS MUST BE FULLY SYNTHETIC, FULLY WATER SOLUBLE AND FREE OF SULFUR, SILICONE, AND CHLORINE.
 TOLERANCES:
 .XX ± .01
 .XXX ± .005
 ANGULAR: 0.5°
 MATERIAL: PFA440 HP
 FINISH: N/A µinch
 NEXT ASSY: D0902146

LIGO CALIFORNIA INSTITUTE OF TECHNOLOGY MASSACHUSETTS INSTITUTE OF TECHNOLOGY	PART NAME OVERSIZE LOCATING SLEEVE, ETM, COC CONTAINER	
	DESIGNER K. BUCKLAND 29 OCT 2009 DRAFTER K. BUCKLAND 29 OCT 2009 CHECKER K. MALAND 29 OCT 2009 APPROVAL C. TORRES 29 OCT 2009	SIZE DWG. NO. B D0902523 SCALE 1:1 PROJECTION

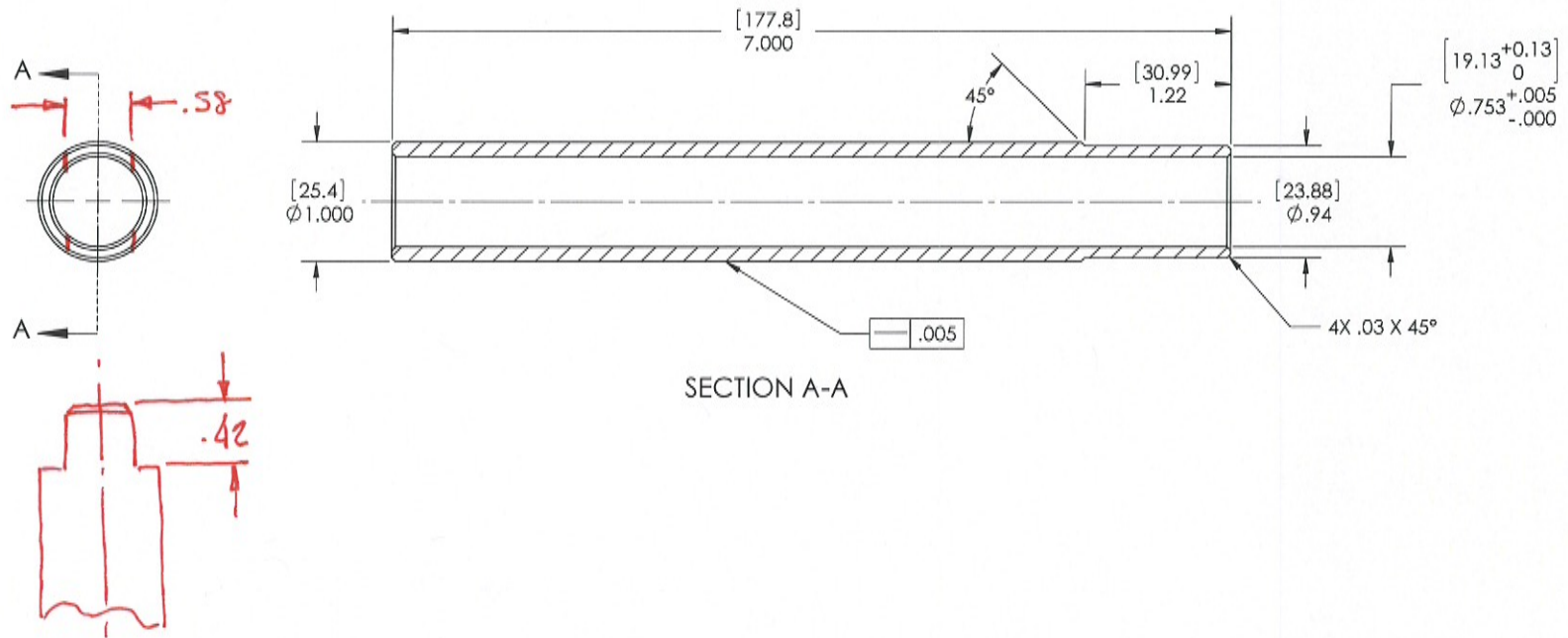
REV. V1 V2
 SHEET 1 OF 1

D0901889 LOCATING SLEEVE, CP, COC CONTAINER, ADVANCED LIGO, PART PDM REV: X-006, DRAWING PDM REV: X-005

NOTES CONTINUED:
 ④ BAG ALL ITEMS AND MARK OR TAG EACH BAG WITH DRAWING NUMBER, REVISION, AND QUANTITY. EXAMPLE: DXXXXXX-VY, QTY: TBD

REV.	DATE	DCN #	DRAWING TREE #
v1	16 SEPT 2009	E0900306	
v2	29 OCT 2009	E0900383	

V3



SECTION A-A

NOTES AND TOLERANCES: (UNLESS OTHERWISE SPECIFIED)		LIGO CALIFORNIA INSTITUTE OF TECHNOLOGY MASSACHUSETTS INSTITUTE OF TECHNOLOGY		PART NAME	
DIMENSIONS ARE IN INCHES (MM) 1. INTERPRET DRAWING PER ASME Y14.5-1994. 2. REMOVE ALL SHARP EDGES, R.02 MIN. 3. DO NOT SCALE FROM DRAWING. 4. ALL MACHINING FLUIDS MUST BE FULLY SYNTHETIC, FULLY WATER SOLUBLE AND FREE OF SULFUR, SILICONE, AND CHLORINE.		SYSTEM ADVANCED LIGO		SUB-SYSTEM COC	
TOLERANCES: .XX ± .01 .XXX ± .005 ANGULAR ± 0.5°		MATERIAL PFA440 HP		DESIGNER K. BUCKLAND 31 AUG 2009	
		FINISH N/A μinch		SIZE DWG. NO. B D0901889	
		NEXT ASSY D0902001		DRAPFER E. BUCKLAND 14 SEPT 2009	
				CHECKER E. HANLOND 14 SEPT 2009	
				APPROVAL C. TORRE 14 SEPT 2009	
				SCALE: 1:1 PROJECTION: SHEET 1 OF 1	

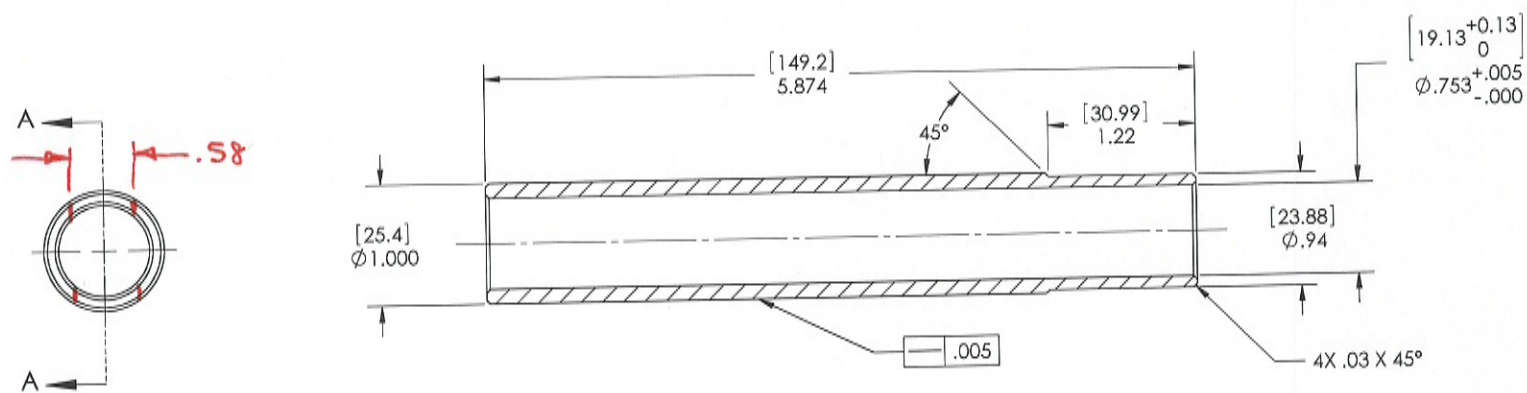
V3

D0902143 LOCATING SLEEVE, OPTIC, COC CONTAINER, ADVANCED LIGO, PART PDM REV: X-004, DRAWING PDM REV: X-005

NOTES CONTINUED:
⊗ BAG ALL ITEMS AND MARK OR TAG EACH BAG WITH DRAWING NUMBER, REVISION, AND QUANTITY. EXAMPLE: DXXXXXX-VY, QTY: TBD

REV.	DATE	DCN #	DRAWING TREE #
v1	21 OCT 2009	E0900366	

v2



SECTION A-A

NOTES AND TOLERANCES: (UNLESS OTHERWISE SPECIFIED)

1. INTERPRET DRAWING PER ASME Y14.5-1994.
 2. REMOVE ALL SHARP EDGES, R.02 MIN.
 3. DO NOT SCALE FROM DRAWING.
 4. ALL MACHINING FLUIDS MUST BE FULLY SYNTHETIC, FULLY WATER SOLUBLE AND FREE OF SULFUR, SILICONE, AND CHLORINE.
- TOLERANCES:
XX ± .01
XXX ± .005
ANGULAR ± 0.5°

LIGO CALIFORNIA INSTITUTE OF TECHNOLOGY
MASSACHUSETTS INSTITUTE OF TECHNOLOGY

SYSTEM: **ADVANCED LIGO**
SUB-SYSTEM: **COC**
NEXT ASSY: **D0902138**

PART NAME: **LOCATING SLEEVE, R OPTIC, COC CONTAINER**

DESIGNER: K. BUCELAND 24 SEPT 2009
DRAFTER: K. BUCELAND 24 SEPT 2009
CHECKER: _____
APPROVAL: _____

SIZE: **D**
DWG. NO.: **D0902143**
SCALE: 1:1
PROJECTION: _____

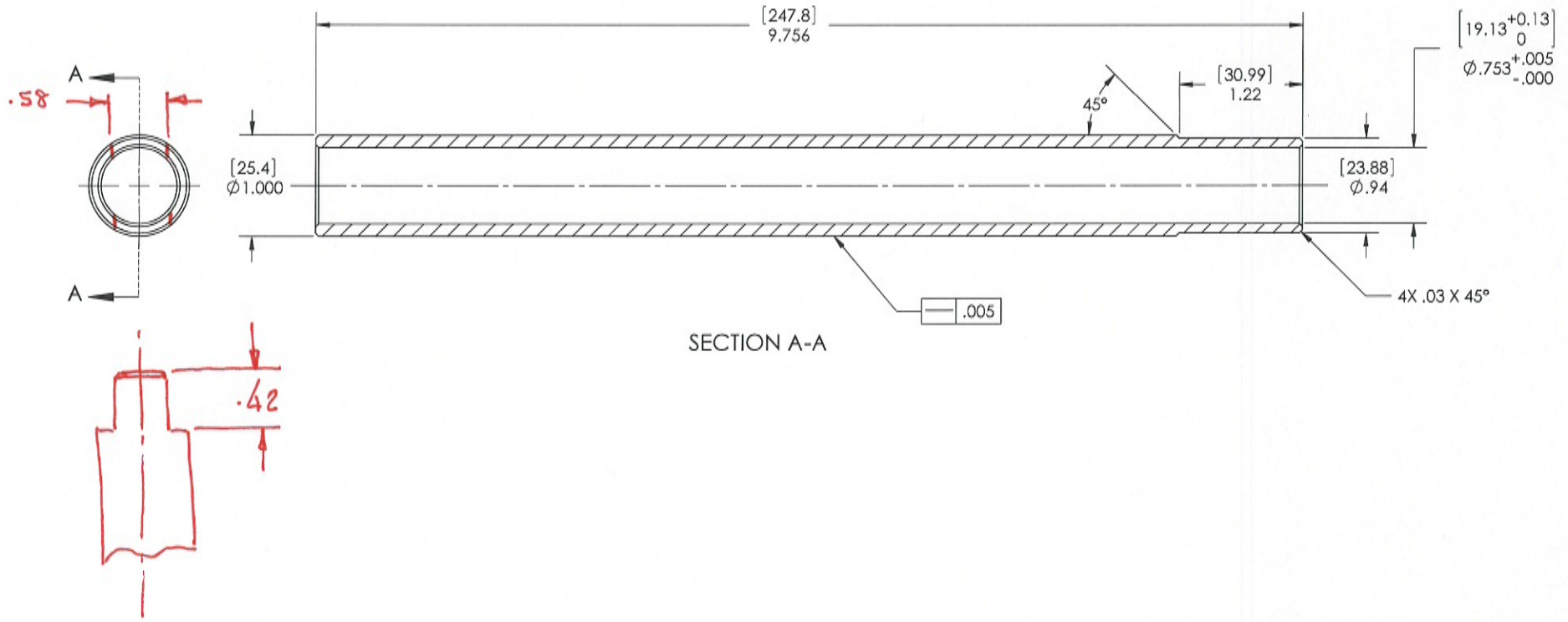
REV. v1/v2

SHEET 1 OF 1

D0902150 LOCATING SLEEVE.ETM. COC CONTAINER. A.DVANCED LIGO. PART FROM REV: X-003. DRAWING FROM REV: X-004

NOTES CONTINUED:
⊗ BAG ALL ITEMS AND MARK OR TAG EACH BAG WITH DRAWING NUMBER, REVISION, AND QUANTITY. EXAMPLE: DXXXXXX-VY, QTY: TBD

REV.	DATE	DCN #	DRAWING TREE #
v1	21 OCT 2009	E0900367	
v2			



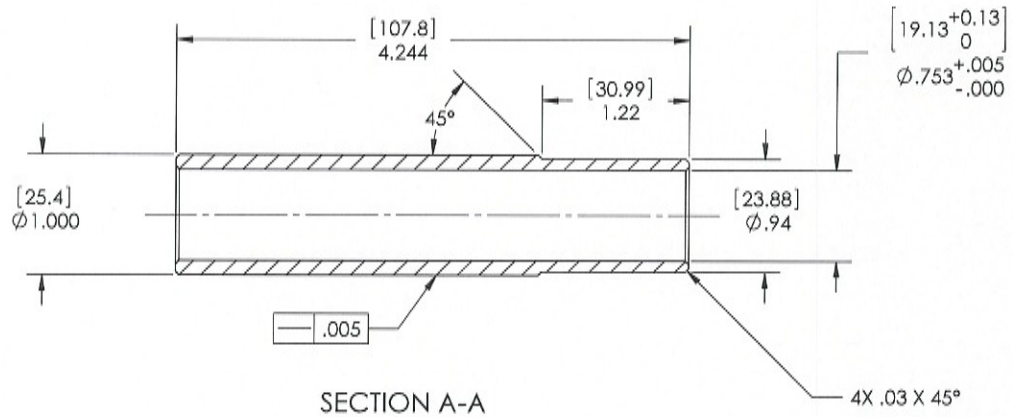
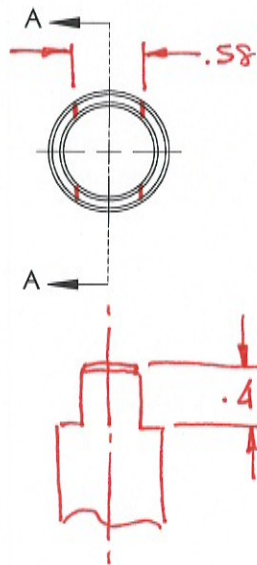
NOTES AND TOLERANCES: (UNLESS OTHERWISE SPECIFIED)		LIGO CALIFORNIA INSTITUTE OF TECHNOLOGY MASSACHUSETTS INSTITUTE OF TECHNOLOGY		PART NAME	
1. INTERPRET DRAWING PER ASME Y14.5-1994. 2. REMOVE ALL SHARP EDGES, R.02 MIN. 3. DO NOT SCALE FROM DRAWING. 4. ALL MACHINING FLUIDS MUST BE FULLY SYNTHETIC, FULLY WATER SOLUBLE AND FREE OF SULFUR, SILICONE, AND CHLORINE.		SYSTEM ADVANCED LIGO		LOCATING SLEEVE, ETM, COC CONTAINER	
DIMENSIONS ARE IN INCHES (MM) TOLERANCES: XX ± .01 XXX ± .005 ANGULAR ± 0.5°		SUB-SYSTEM COC		DESIGNER: K. BUCKLAND 29 SEPT 2009 DRAFTER: K. BUCKLAND 29 SEPT 2009 CHECKER: K. MAJLAND 21 OCT 2009 APPROVAL: C. TORRE 21 OCT 2009	
MATERIAL PFA440 HP (PRESHRUNK)		FINISH N/A μinch		SIZE DWG. NO. D0902150	
NEXT ASSY D0902146		SCALE: 1:1		PROJECTION:	
				SHEET 1 OF 1	

REV. v1/v2

D0902125 LOCATING SLEEVE, FM, COC CONTAINER, ADVANCED LIGO, PART FDM REV. X-003, DRAWING FDM REV. X-004

NOTES CONTINUED
Ⓢ BAG ALL ITEMS AND MARK OR TAG EACH BAG WITH DRAWING NUMBER, REVISION, AND QUANTITY. EXAMPLE: DXXXXXX-VI, QTY 100

REV.	DATE	DCN #	DRAWING TREE #
V1	23 SEPT 2009	E0900365	
V2			



NOTES AND TOLERANCES: (UNLESS OTHERWISE SPECIFIED) 1. INTERPRET DRAWING PER ASME Y14.5-1994. 2. REMOVE ALL SHARP EDGES, R.02 MIN. 3. DO NOT SCALE FROM DRAWING. 4. ALL MACHINING FLUIDS MUST BE FULLY SYNTHETIC, FULLY WATER SOLUBLE AND FREE OF SULFUR, SILICONE, AND CHLORINE.		LIGO CALIFORNIA INSTITUTE OF TECHNOLOGY MASSACHUSETTS INSTITUTE OF TECHNOLOGY		PART NAME LOCATING SLEEVE, FM, COC CONTAINER	
DIMENSIONS ARE IN INCHES (MM) TOLERANCES: .XX ± .01 .XXX ± .005 ANGULAR ± 0.5°		SYSTEM ADVANCED LIGO	SUB-SYSTEM COC	DESIGNER E. BUCKLAND 31 AUG 2009	SIZE DWG. NO. B D0902125
MATERIAL PFA440 HP (PRESHRUNK)	FINISH N/A μinch	NEXT ASSY D0902120	DRAPFER E. BUCKLAND 23 SEPT 2009	CHECKER K. MARLAND 21 OCT 2009	APPROVAL C. TORRE 21 OCT 2009
			SCALE 1:1	PROJECTION <input type="checkbox"/> FIRST ANGLE	SHEET 1 OF 1

V2