

REV.	DATE	DCN #	DRAWING TREE #

NOTES CONTINUED:  
 5. SCRIBE, ENGRAVE, OR MECHANICALLY STAMP (NO INKS OR DYES) DRAWING PART NUMBER AND REVISION ON NOTED SURFACE FOLLOWED ON THE NEXT LINE BY A THREE DIGIT SERIAL NUMBER. SERIAL NUMBERS START AT 001 FOR THE FIRST ARTICLE AND PROCEED CONSECUTIVELY. USE 07 HIGH CHARACTERS. EXAMPLE: A DXXXXXX.VV.5.N.001 VIBRATORY TOOL MAY BE USED.  
 6. APPROXIMATE WEIGHT - X.XXX LB.  
 7. MACHINE ALL SURFACES TO REMOVE OXIDES AND MILL FINISH. USE OF ABRASIVE REMOVAL TECHNIQUES IS NOT ALLOWED. REFER TO LIGO E9000364.  
 8. ALL PARTS SHALL BE MANUFACTURED IN ACCORDANCE WITH LIGO SPECIFICATION E9000364.  
 9. ALL TOLERANCES UNLESS OTHERWISE SPECIFIED TO REFER TO LIGO E9000364.

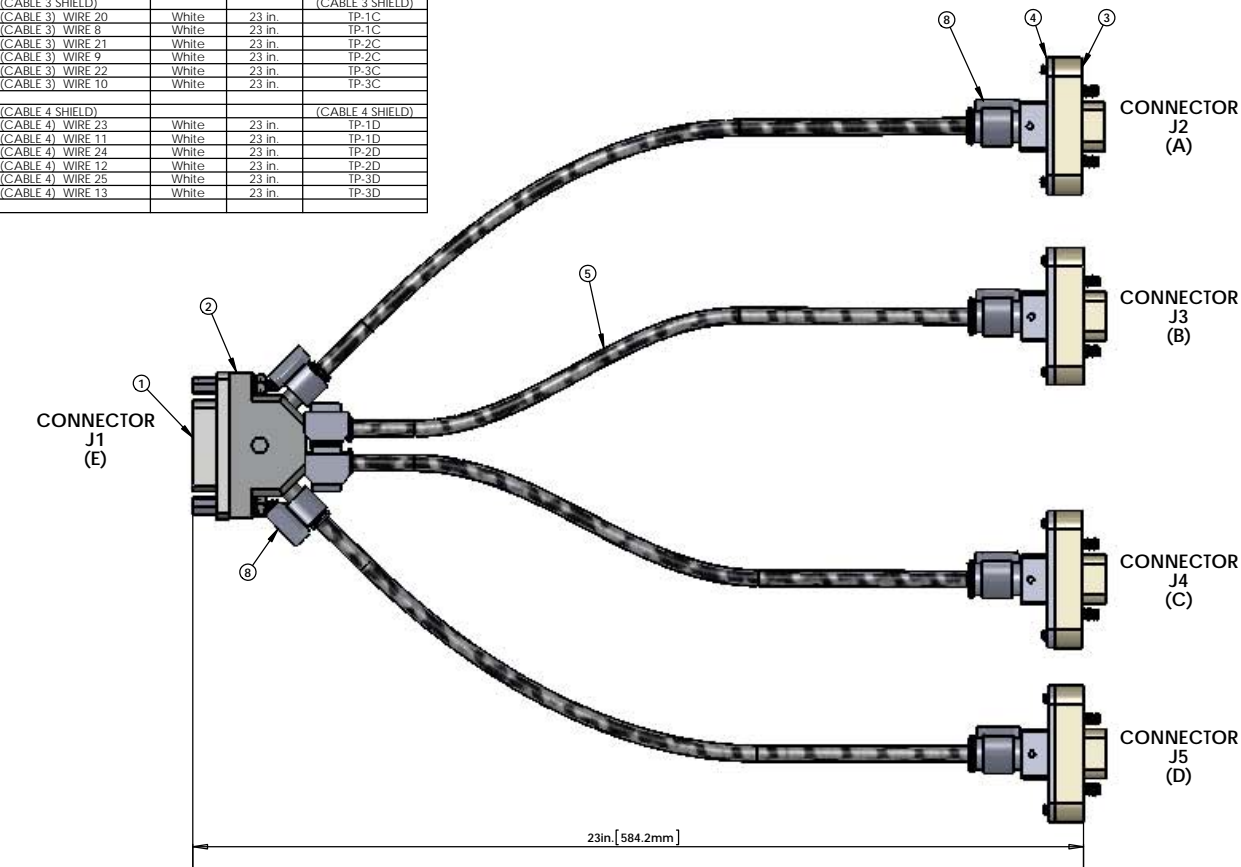
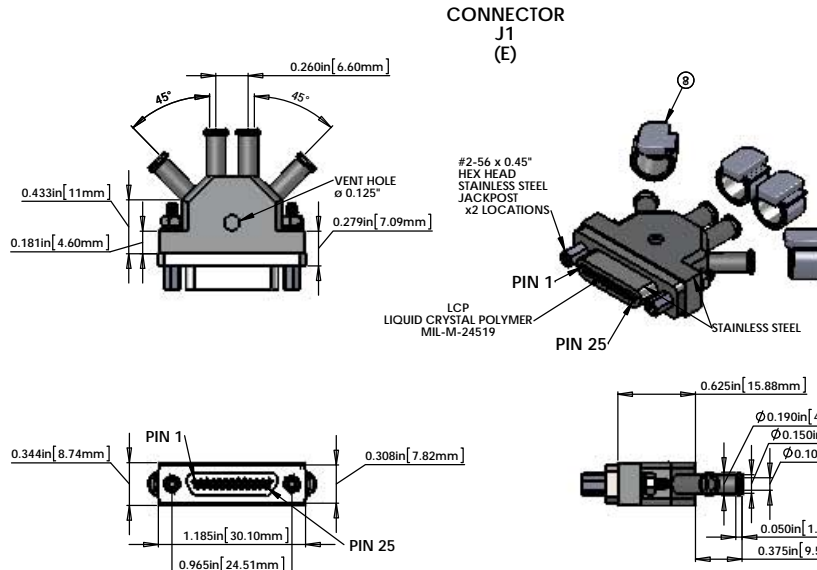
10. ALL TOLERANCES UNLESS OTHERWISE SPECIFIED TO REFER TO LIGO E9000364.  
 11. ALL MATERIAL IS TO BE VIRGIN MATERIAL (i.e. NO WELD REPAIRS, FUGES OR RECYCLED MATERIAL). NO REPAIRS SHALL BE MADE UNLESS APPROVED IN ADVANCE, AND IN WRITING, BY LIGO LABORATORY REFER TO LIGO E9000364.  
 12. SURFACE FINISH TO BE AS PROCESSED FROM MILL/SUPPLIER, FREE FROM SCRATCHES OR GOUGES.  
 13. PARTS SHALL BE PORCELAIN COATED PER LIGO SPECIFICATION E9000364 AFTER FABRICATION. THE COATING SHALL BE MASKED PRIOR TO PORCELAIN COATING. THE MASKING SHALL BE A MINIMUM OF 1/16" DIAMETER CIRCLED ON BOTH SIDES OF THE HOLE.  
 14. MANUFACTURE AND ASSEMBLY BEFORE PORCELAIN COATING UNLESS OTHERWISE NOTED.  
 15. BEND RADIUS, UNLESS OTHERWISE NOTED, THE BEND RADIUS SHOULD BE THE MINIMUM REQUIRED TO FORM WITHOUT CRACKING OR REQUIRING ADDITIONAL WORK WHEN FORMING. IN PARTICULAR IF SHEET METAL IS TO BE PORCELAIN COATED, THE BEND RADIUS SHALL BE A MINIMUM OF .12" OUTSIDE RADIUS OF BEND UNLESS OTHERWISE NOTED.

NOTES 9, 10, 13 and 14 DO NOT APPLY TO THIS PART

### V25AM-23-A CABLE ASSEMBLY CIRCUIT SUMMARY VμD25 M/1S-23-4\_μD9 F/5S:A

FROM				
CONNECTOR J1 - 25 PIN MALE MICRO_D CONNECTOR				
PIN	WIRE NAME	COLOR	LENGTH*	TWISTED PAIR
(CONNECTOR SHELL)				
E1	(CABLE 1) WIRE 1	White	23 in	(CABLE 1) SHIELD
E14	(CABLE 1) WIRE 14	White	23 in	SINGLE WIRE
E2	(CABLE 1) WIRE 2	White	23 in	TP-1A
E15	(CABLE 1) WIRE 15	White	23 in	TP-2A
E3	(CABLE 1) WIRE 3	White	23 in	TP-2A
E16	(CABLE 1) WIRE 16	White	23 in	TP-3A
E4	(CABLE 1) WIRE 4	White	23 in	TP-3A
(CABLE 2 SHIELD)				
E17	(CABLE 2) WIRE 17	White	23 in	TP-1B
E5	(CABLE 2) WIRE 5	White	23 in	TP-1B
E18	(CABLE 2) WIRE 18	White	23 in	TP-2B
E6	(CABLE 2) WIRE 6	White	23 in	TP-2B
E19	(CABLE 2) WIRE 19	White	23 in	TP-3B
E7	(CABLE 2) WIRE 7	White	23 in	TP-3B
(CABLE 3 SHIELD)				
E20	(CABLE 3) WIRE 20	White	23 in	TP-1C
E8	(CABLE 3) WIRE 8	White	23 in	TP-1C
E21	(CABLE 3) WIRE 21	White	23 in	TP-2C
E9	(CABLE 3) WIRE 9	White	23 in	TP-2C
E22	(CABLE 3) WIRE 22	White	23 in	TP-3C
E10	(CABLE 3) WIRE 10	White	23 in	TP-3C
(CABLE 4 SHIELD)				
E23	(CABLE 4) WIRE 23	White	23 in	TP-1D
E11	(CABLE 4) WIRE 11	White	23 in	TP-1D
E24	(CABLE 4) WIRE 24	White	23 in	TP-2D
E12	(CABLE 4) WIRE 12	White	23 in	TP-2D
E25	(CABLE 4) WIRE 25	White	23 in	TP-3D
E13	(CABLE 4) WIRE 13	White	23 in	TP-3D

TEST LIST		TEST LIST		TEST LIST		TEST LIST	
FROM	TO	FROM	TO	FROM	TO	FROM	TO
J1	J2	J1	J3	J1	J4	J1	J5
PIN	PIN	PIN	PIN	PIN	PIN	PIN	PIN
J1 - 1, SHELL	J2 - 5, SHELL	J1 - 1, SHELL	J3 - 5, SHELL	J1 - 1, SHELL	J4 - 5, SHELL	J1 - 1, SHELL	J5 - 5, SHELL
J1 - 14	J2 - 1	J1 - 17	J3 - 1	J1 - 20	J4 - 1	J1 - 23	J5 - 1
J1 - 2	J2 - 6	J1 - 5	J3 - 6	J1 - 8	J4 - 6	J1 - 11	J5 - 6
J1 - 15	J2 - 2	J1 - 18	J3 - 2	J1 - 21	J4 - 2	J1 - 24	J5 - 2
J1 - 3	J2 - 7	J1 - 6	J3 - 7	J1 - 9	J4 - 7	J1 - 12	J5 - 7
J1 - 16	J2 - 4	J1 - 19	J3 - 4	J1 - 22	J4 - 4	J1 - 25	J5 - 4
J1 - 4	J2 - 9	J1 - 7	J3 - 9	J1 - 10	J4 - 9	J1 - 13	J5 - 9



#### V25AM-23-A CABLE ASSEMBLY CIRCUIT SUMMARY

TO

CONNECTOR J2 - 9 PIN FEMALE MICRO\_D CONNECTOR (PEEK)

PIN	WIRE NAME	SIGNAL
A5	(CONNECTOR SHELL)	SHIELD
A5	(CABLE 1) SHIELD	SHIELD
A5	(CABLE 1) WIRE 1	SHIELD
A1	(CABLE 1) WIRE 14	PD1-K
A6	(CABLE 1) WIRE 2	PD1-A
A2	(CABLE 1) WIRE 15	LED1-A
A7	(CABLE 1) WIRE 3	LED1-K
A4	(CABLE 1) WIRE 16	COIL1-FN
A9	(CABLE 1) WIRE 4	COIL1-ST

#### V25AM-23-A CABLE ASSEMBLY CIRCUIT SUMMARY

TO

CONNECTOR J3 - 9 PIN FEMALE MICRO\_D CONNECTOR (PEEK)

PIN	WIRE NAME	SIGNAL
B5	(CONNECTOR SHELL)	SHIELD
B5	(CABLE 2) SHIELD	SHIELD
B5	(CABLE 2) WIRE 1	SHIELD
B1	(CABLE 2) WIRE 17	PD2-K
B6	(CABLE 2) WIRE 5	PD2-A
B2	(CABLE 2) WIRE 18	LED2-A
B7	(CABLE 2) WIRE 6	LED2-K
B4	(CABLE 2) WIRE 19	COIL2-FN
B9	(CABLE 2) WIRE 7	COIL2-ST

#### V25AM-23-A CABLE ASSEMBLY CIRCUIT SUMMARY

TO

CONNECTOR J4 - 9 PIN FEMALE MICRO\_D CONNECTOR (PEEK)

PIN	WIRE NAME	SIGNAL
C5	(CONNECTOR SHELL)	SHIELD
C5	(CABLE 3) SHIELD	SHIELD
C5	(CABLE 3) WIRE 1	SHIELD
C1	(CABLE 3) WIRE 20	PD3-K
C6	(CABLE 3) WIRE 8	PD3-A
C2	(CABLE 3) WIRE 21	LED3-A
C7	(CABLE 3) WIRE 9	LED3-K
C4	(CABLE 3) WIRE 22	COIL3-FN
C9	(CABLE 3) WIRE 10	COIL3-ST

#### V25AM-23-A CABLE ASSEMBLY CIRCUIT SUMMARY

TO

CONNECTOR J5 - 9 PIN FEMALE MICRO\_D CONNECTOR (PEEK)

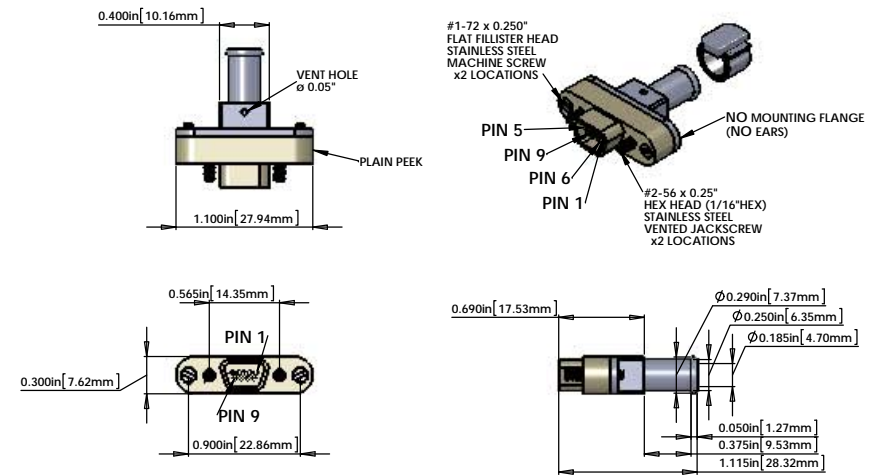
PIN	WIRE NAME	SIGNAL
D5	(CONNECTOR SHELL)	SHIELD
D5	(CABLE 4) SHIELD	SHIELD
D5	(CABLE 4) WIRE 1	SHIELD
D1	(CABLE 4) WIRE 23	PD4-K
D6	(CABLE 4) WIRE 11	PD4-A
D2	(CABLE 4) WIRE 24	LED4-A
D7	(CABLE 4) WIRE 12	LED2-K
D4	(CABLE 4) WIRE 25	COIL4-FN
D9	(CABLE 4) WIRE 13	COIL4-ST

#### BILL OF MATERIALS

ITEM NO.	PART NUMBER	DESCRIPTION	QTY.	LENGTH
1	GLENAIR #DCDM25P-S-MC225-240 TICOR # 040-1243-0025	MicroD25 MALE CONNECTOR (J1) FOR UHV (STAINLESS STEEL SHELL OVER LCP)	1	
2		MicroD25 CONNECTOR BACKSHELL FOR UHV (STAINLESS STEEL) WITH QUAD ø0.100" I.D. PORTS	1	
3	TICOR # TS0094 WITH 60in. FLYING LEADS WITH BACKSHELL	MicroD9 FEMALE CONNECTOR (J2, J3, J4, J5) FOR UHV (PEEK)	4	
4		MicroD9 CONNECTOR BACKSHELL FOR UHV (STAINLESS STEEL) WITH ø0.185" I.D. PORT	4	
5	C1	7 COND. (3 TWISTED PAIR) CABLE WITH Ø COPPER BRAID (SHIELD) AND Ø PEEK OVERBRAID.	4	23in.*
6	CONTINENTAL PART #24x3x40BC	COPPER BRAID - CONTINENTAL CORDAGE PART #24x3x40BC	4	
7	PART #6759	PART #6759 PEEK BRAID MANUFACTURED WITH ZEUS 0.016" BLACK PEEK DRAWN MONOFILAMENT	4	
8	GLENAIR 600-052	GLENAIR 600-052 STANDARD BRAID CLAMP	8	

\* NOTE: THE OVERALL LENGTH IS MEASURED FROM PIN TIP (25 PIN) TO PIN TIP (9 PIN) OF THE CABLE. USE WHATEVER LENGTH IS NECESSARY FOR THE INTERNAL WIRING OF THE CONNECTORS AND STRIP LENGTH TO ACHIEVE THE CORRECT OVERALL LENGTH.

NOTES: (UNLESS OTHERWISE SPECIFIED)  
 A. MATERIAL: a. 25 PIN CONNECTOR SHELL - J1 (E) STAINLESS STEEL OVER LCP - (LIQUID CRYSTAL POLYMER per MIL-M-24519).  
 b. 9 PIN CONNECTOR SHELL - J2 (A), J3 (B), J4 (C), J5 (D) - PEEK - VICTREX 450GL30.  
 c. BACKSHELL - STAINLESS STEEL WITH VENT HOLE.  
 d. CONTACTS - BERYLLIUM COPPER ALLOY C17300, 0.000050 MIN. GOLD OVER NICKEL.  
 e. HARDWARE - STAINLESS STEEL, PASSIVATED.  
 f. PEEK BRAID - PEEK VICTREX GRADE TDS-450CA30 CARBON LOADED - SUPPLIED BY LIGO.  
 B. CABLE 7 COND. 28 AWG. (40 STRD 44 AWG) WITH PFA INSULATION. 3 TWISTED PAIRS (4 TO 5 TWISTS PER INCH) + 1 WIRE OVERALL 40AWG COPPER BRAID 50% COVERAGE (SUPPLIED BY LIGO). OVERALL PEEK BRAID MIN. 50% COVERAGE (SUPPLIED BY LIGO). OVERALL CABLE O.D. WILL BE APPROX. 0.240 IN.  
 C. CONNECTORS WILL BE SUPPLIED WITH HARDWARE. SCREWS SHOULD BE THE PROPER LENGTH FOR MATING.



#### VμD25 M/1S-23-4\_μD9 F/5S:A

STANDARD USE FOR THIS CABLE

SUBSYSTEM	STANDARD USE
SUS	QUAD SUSPENSIONS UIM

NOTES AND TOLERANCES: (UNLESS OTHERWISE SPECIFIED)  
 1. INTERPRET DRAWING PER ASME Y14.5-1994.  
 2. REMOVE ALL SHARP EDGES: .005-.015 FOR MACHINED PARTS. ROUND ALL EDGES APPROXIMATELY R.02 FOR SHEET METAL PARTS.  
 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: XXX ± .001 XXX ± .002 XXX ± .005 ANGULAR ± .1

MATERIAL: FINISH: μinch NEXT ASSY: SYSTEM: SUB-SYSTEM: SUS DESIGNER: J. HEFFNER DATE: 09/15/2012 SITE: DWG. NO: E D1000562 REV: v5 DRAFTER: E. BROWN DATE: 08/13/2012 CHECKER: APPROVAL: SCALE: 2:1 PROJECTION: SHEET 1 OF 1

LIGO CALIFORNIA INSTITUTE OF TECHNOLOGY MASSACHUSETTS INSTITUTE OF TECHNOLOGY PART NAME: CUSTOM CABLE SPECIFICATIONS V25AM-23-A