

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  
DXXXXX.VV.5N.001  
VIBRATORY TOOL MAY BE USED.

6. APPROXIMATE WEIGHT - X.XXXX LB.

7. MACHINE ALL SURFACES TO REMOVE OXIDES AND MILL FINISH. USE OF ABRASIVE REMOVAL TECHNIQUES IS NOT ALLOWED. REFER TO LIGO-E090034.

8. ALL PARTS SHALL BE MANUFACTURED IN ACCORDANCE WITH LIGO SPECIFICATION E090034.

9. ALL HELI-COIL HOLES TO BE PREPARED ACCORDING TO EMMART HELI-COIL PRODUCT CATALOG, HC2000, REV. 10/00. NOTES 13 AND 14 DO NOT APPLY TO THIS PART.

10. ALL HELI-COIL INSERTS TO BE INSTALLED BY LIGO PERSONNEL AFTER DELIVERY OF FINISHED PARTS. USE NITRONIC 60 THREADED INSERTS.

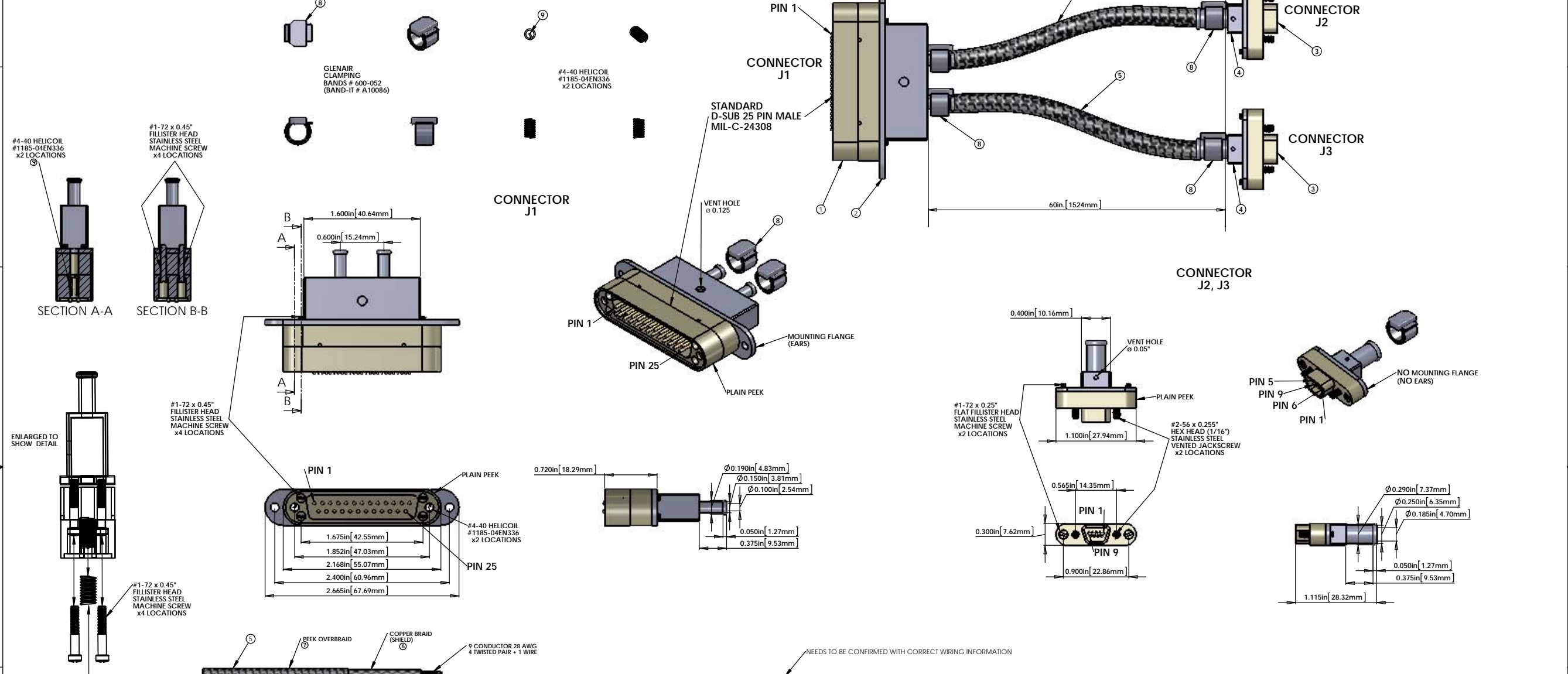
11. ALL MATERIAL IS TO BE VIRGIN MATERIAL (i.e. NO WELD REPAIRS, PLUGS OR RECYCLED MATERIAL). NO REPAIRS SHALL BE MADE UNLESS APPROVED IN ADVANCE. AND IN WRITING, BY LIGO LABORATORY. REFER TO LIGO-E090034.

12. SURFACE FINISH TO BE AS PROCESSED FROM MILL/SUPPLIER. FREE FROM SCRATCHES OR GOUGES.

13. THE PART SHALL BE INERTLY COATED PER LIGO SPECIFICATION E090034 AFTER FABRICATION. THE ASSOCIATED HOLES WILL BE MASKED PRIOR TO FINISH COATING. APPROPRIATELY 75% OF HOLE DIAMETER CENTERED ON BOTH SIDES OF THE HOLE.

14. THE PART SHALL BE MANUFACTURED IN ACCORDANCE WITH LIGO SPECIFICATION E090034.

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 FORM-COIN COATED, THE BEND RADIUS SHALL BE A MINIMUM OF .12" OUTSIDE RADIUS OF BEND UNLESS OTHERWISE NOTED.



BILL OF MATERIALS				
ITEM NO.	PART NUMBER	DESCRIPTION	QTY.	LENGTH *
1	TICOR # TS0149-25C020B8S2-188F OR EQUIVALENT **	DB25 MALE CONNECTOR W/ EARS (J1) FOR UHV (PEEK)	1	60in.
2	DB25 CONNECTOR BACKSHELL FOR UHV (STAINLESS) WITH DUAL Ø0.100" I.D. PORTS	1		
3	TICOR # IS0094 OR EQUIVALENT	DB9 FEMALE CONNECTOR (J2,J3) FOR UHV (PEEK)	2	
4	DB9 CONNECTOR BACKSHELL FOR UHV (STAINLESS) WITH Ø0.185" I.D. PORT	2		
5	C1	9 COND. (4 TWISTED PAIR + 1 WIRE + SHIELD) CABLE WITH COPPER BRAID (SHIELD) AND PEEK OVERBRAID	2	
6	PART # 24x3x40BC	COPPER BRAID - CONTINENTAL CORDAGE PART # 24x3x40BC	2	
7	PART # 6759	PEEK BRAID PART #6759 - MANUFACTURED WITH ZEUS 0.016" BLACK PEEK DRAWN MONOFILAMENT	2	
8	GLENAIR # 600-052 or BAND-IT # A10086 (BAG OF 100 = # A10089)	GLENAIR #600-052 STANDARD BRAID CLAMP or BAND-IT PART # A10086 (0.240" WIDE) ("BAG OF 100" #A10089)	4	
9	HELICOIL # 1185-04EN336	#4-40 Nitronic 60® HELICOIL 0.336" LENGTH	2	

\* NOTE: USE WHATEVER LENGTH IS NECESSARY FOR THE INTERNAL WIRING OF THE CONNECTORS AND STRIP LENGTH TO ACHIEVE THE CORRECT OVERALL LENGTHS.

\*\* NOTE: SEE THE "TICOR CONNECTOR PART NUMBER BUILDER" DCC#D1000219 FOR DETAILS ON THIS PART NUMBER.

**ELECTRICAL NOTES: (UNLESS OTHERWISE SPECIFIED)**

A. MATERIAL: a. CONNECTOR SHELL - GOLD OVER ELECTRO-LESS NICKEL SELECTIVELY METALIZED PEEK VICTREX 450GL30.  
b. BACKSHELL - STAINLESS STEEL WITH VENT HOLE.  
c. CONTACTS - BERYLLIUM COPPER ALLOY C17300 0.00050 MIN. GOLD OVER NICKEL.  
d. HARDWARE: STAINLESS STEEL, PASSIVATED.  
e. PEEK BRAID - PEEK VICTREX GRADE IDS-450CA30 CARBON LOADED - SUPPLIED BY LIGO.

B. CABLE 9 COND. 28 AWG, (40 STRD 44 AWG) WITH PFA INSULATION. 4 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.

V25Y CABLE ASSEMBLY CIRCUIT SUMMARY							
V-DB25 M/1-60-2_µD9 F/5							
FROM				TO			
CONNECTOR J1 - 25PIN SUBMINI_D MALE CONNECTOR (PEEK)				CONNECTOR J2 - 9 PIN MICRO_D FEMALE CONNECTOR (PEEK)			
PIN	WIRE NAME	COLOR	LENGTH	TWISTED PAIR	PIN	WIRE NAME	SIGNAL
1	9 SHELL SHIELD (BRAID)		22in.		N/C (not connected)	SHIELD (BRAID)	SHIELD
1	9 SHELL (CABLE 1) WIRE 1	White	22in.	SINGLE WIRE	5	(CABLE 1) WIRE 1	SHIELD
2	(CABLE 1) WIRE 2	White	22in.	TP-1	4	(CABLE 1) WIRE 2	POWER -
14	(CABLE 1) WIRE 14	White	22in.	TP-1	9	(CABLE 1) WIRE 14	POWER - RTN
3	(CABLE 1) WIRE 3	White	22in.	TP-2	3	(CABLE 1) WIRE 3	POWER +
15	(CABLE 1) WIRE 15	White	22in.	TP-2	8	(CABLE 1) WIRE 15	POWER + RTN
4	(CABLE 1) WIRE 4	White	22in.	TP-3	2	(CABLE 1) WIRE 4	LOCK +
16	(CABLE 1) WIRE 16	White	22in.	TP-3	7	(CABLE 1) WIRE 16	LOCK -
5	(CABLE 1) WIRE 5	White	22in.	TP-4	1	(CABLE 1) WIRE 5	SIG +
17	(CABLE 1) WIRE 17	White	22in.	TP-4	6	(CABLE 1) WIRE 17	SIG -
				CONNECTOR J3 - 9 PIN MICRO_D FEMALE CONNECTOR (PEEK)			
9	1 SHELL SHIELD (BRAID)		23in.		N/C (not connected)	SHIELD (BRAID)	SHIELD
9	1 SHELL (CABLE 2) WIRE 9	White	23in.	SINGLE WIRE	5	(CABLE 2) WIRE 9	SHIELD
10	(CABLE 2) WIRE 10	White	23in.	TP-5	4	(CABLE 2) WIRE 10	POWER -
22	(CABLE 2) WIRE 22	White	23in.	TP-5	9	(CABLE 2) WIRE 22	POWER - RTN
11	(CABLE 2) WIRE 11	White	23in.	TP-6	3	(CABLE 2) WIRE 11	POWER +
23	(CABLE 2) WIRE 23	White	23in.	TP-6	8	(CABLE 2) WIRE 23	POWER + RTN
12	(CABLE 2) WIRE 12	White	23in.	TP-7	2	(CABLE 2) WIRE 12	LOCK +
24	(CABLE 2) WIRE 24	White	23in.	TP-7	7	(CABLE 2) WIRE 24	LOCK -
13	(CABLE 2) WIRE 13	White	23in.	TP-8	1	(CABLE 2) WIRE 13	SIG +
25	(CABLE 2) WIRE 25	White	23in.	TP-8	6	(CABLE 2) WIRE 25	SIG -

TEST LIST		TEST LIST	
FROM	TO	FROM	TO
J1	J2	J1	J3
PIN	PIN	PIN	PIN
J1 - 1,9 SHELL	J2 - N/C	J1 - 1,9 SHELL	J3 - N/C
J1 - 1,9 SHELL	J2 - 5	J1 - 1,9 SHELL	J3 - 5
J1 - 2	J2 - 4	J1 - 10	J3 - 4
J1 - 14	J2 - 9	J1 - 22	J3 - 9
J1 - 3	J2 - 3	J1 - 11	J3 - 3
J1 - 15	J2 - 8	J1 - 23	J3 - 8
J1 - 4	J2 - 2	J1 - 12	J3 - 2
J1 - 16	J2 - 7	J1 - 24	J3 - 7
J1 - 5	J2 - 1	J1 - 13	J3 - 1
J1 - 17	J2 - 6	J1 - 25	J3 - 6

SUS TRIPLE SUSPENSION - TOP CUSTOM CABLE	
V-DB25 M/1-60-2_µD9 F/5	
STANDARD USE FOR THIS CABLE	
SUBSYSTEM	STANDARD USE
SUS	TRIPLE SUSPENSION - TOP

NOTES AND TOLERANCES: (UNLESS OTHERWISE SPECIFIED)

1. INTERPRET DRAWING PER ASME Y14.5-1994.

2. REMOVE ALL SHARP EDGES: .005" DIA. 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: MILLIMETERS

TOLERANCES: .XX ±

ANGULAR: °

MATERIAL: FINISH: µinch

NEXT ASSY:

SCALE: 2:1

PRODUCTION:

SHEET 1 OF 1

**LIGO** CALIFORNIA INSTITUTE OF TECHNOLOGY MASSACHUSETTS INSTITUTE OF TECHNOLOGY

PART NAME: **CUSTOM CABLE SPECIFICATION V25Y-60**

DESIGNER: J. HEFFNER DATE: 09/10/2012

DRAWER: E. BROWN DATE: 08/13/2012

CHECKER:

APPROVAL:

SYSTEM: SUS

DWG. NO: **D1000235**

REV: **v3**