

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 100 FOR THE FIRST ANGLE AND PROCEED CONSECUTIVELY. USE 07 HIGH CHARACTERS. EXAMPLE: A DXXXXXX.VY. 5/01/01
- 6. APPROXIMATE WEIGHT - XXXX LB.
- 7. MACHINE ALL SURFACES TO REMOVE OXIDES AND MILL FINISH. USE OF ABRASIVE REMOVAL TECHNIQUES IS NOT ALLOWED. REFER TO LIGO 49000384.
- 8. ALL PARTS SHALL BE MANUFACTURED IN ACCORDANCE WITH LIGO SPECIFICATION 49000384.
- 9. ALL HELICOIL HOLES TO BE PREPARED ACCORDING TO EMHART HELICOIL PRODUCT CATALOG #HC0001 REV 4.
- 10. ALL HELICOIL 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, FLUGS OR RECYCLED MATERIAL). NO REPAIRS SHALL BE MADE UNLESS APPROVED IN ADVANCE. AND IN WRITINGS, BY LIGO LABORATORY. REFER TO LIGO 49000364.
- 12. SURFACE FINISH TO BE AS PROCESSED FROM MILL/SUPPLIER, FREE FROM SCRATCHES OR GOUGES.
- 13. PARTS WILL BE PORCELAIN COATED PER LIGO SPECIFICATION 49000384 AFTER FABRICATION. THE NOTED HOLES WILL BE MASKED PRIOR TO PORCELAIN COATING. THE MINIMUM ACCEPTABLE DIAMETER CANNOT BE ON BOTH SIDES OF THE HOLE.
- 14. THE PARTS SHALL BE PORCELAIN COATED UNLESS NOTED OTHERWISE.
- 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 SHEET METAL IS TO BE PORCELAIN COATED. THE BEND RADIUS SHALL BE A MINIMUM OF .12" OUTSIDE RADIUS OF BEND UNLESS OTHERWISE NOTED.

NOTES 13 and 14 DO NOT APPLY TO THIS PART

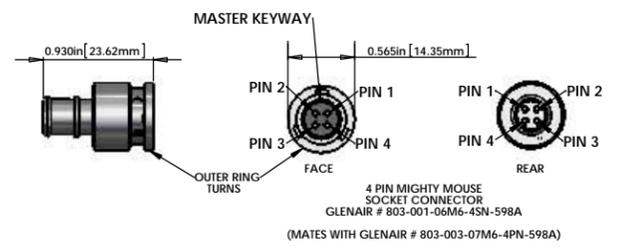
**V25AC-69-84-77-67 CABLE ASSEMBLY CIRCUIT SUMMARY**  
V-DB25HD M/S1-69,84,77,67-MM4PINHD F/X

FROM				
CONNECTOR J1 - 25 PIN SUBMINI_D CONNECTOR (PEEK)				
PIN	WIRE NAME	LENGTH *	TWISTED PAIR	
1, SHELL	(SHIELD) NOT CONNECTED			
13	(CABLE 1) WIRE 13	69"	TP-1	
25	(CABLE 1) WIRE 25	69"	TP-1	
12	(CABLE 1) WIRE 12	69"	TP-2	
24	(CABLE 1) WIRE 24	69"	TP-2	
11	(CABLE 2) WIRE 11	84"	TP-3	
23	(CABLE 2) WIRE 23	84"	TP-3	
10	(CABLE 2) WIRE 10	84"	TP-4	
22	(CABLE 2) WIRE 22	84"	TP-4	
9	(CABLE 3) WIRE 9	77"	TP-5	
21	(CABLE 3) WIRE 21	77"	TP-5	
8	(CABLE 3) WIRE 8	77"	TP-6	
20	(CABLE 3) WIRE 20	77"	TP-6	
7	(CABLE 4) WIRE 7	67"	TP-7	
19	(CABLE 4) WIRE 19	67"	TP-7	
6	(CABLE 4) WIRE 6	67"	TP-8	
18	(CABLE 4) WIRE 18	67"	TP-8	
PIN 14, 15, 3, 16, 4, 17, 5 N/C (NOT CONNECTED)				

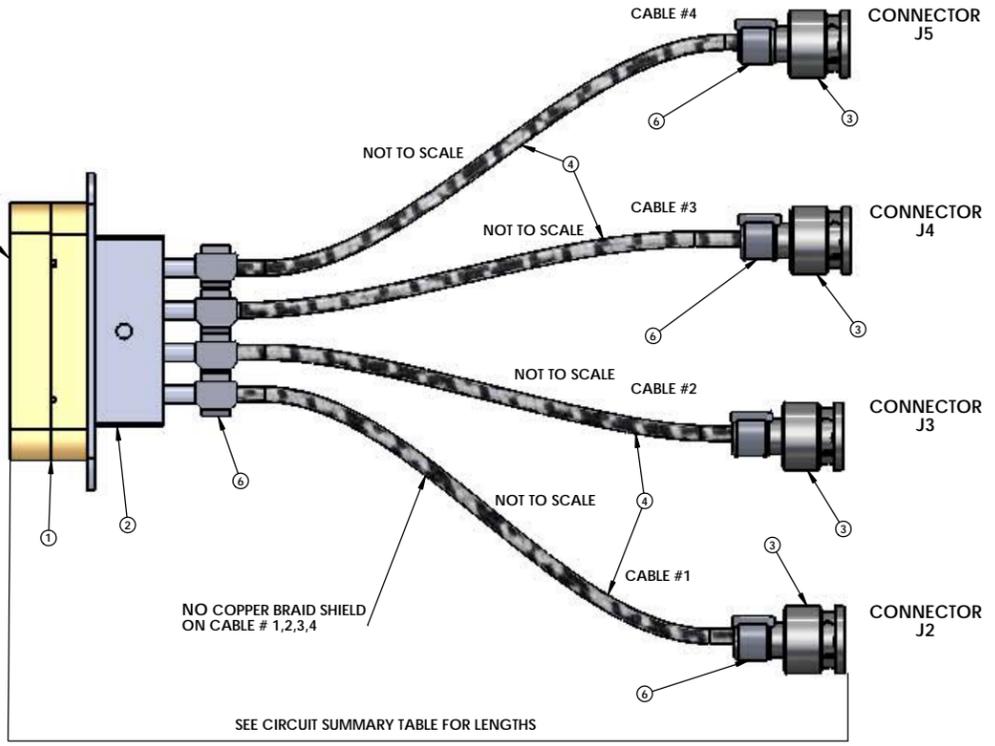
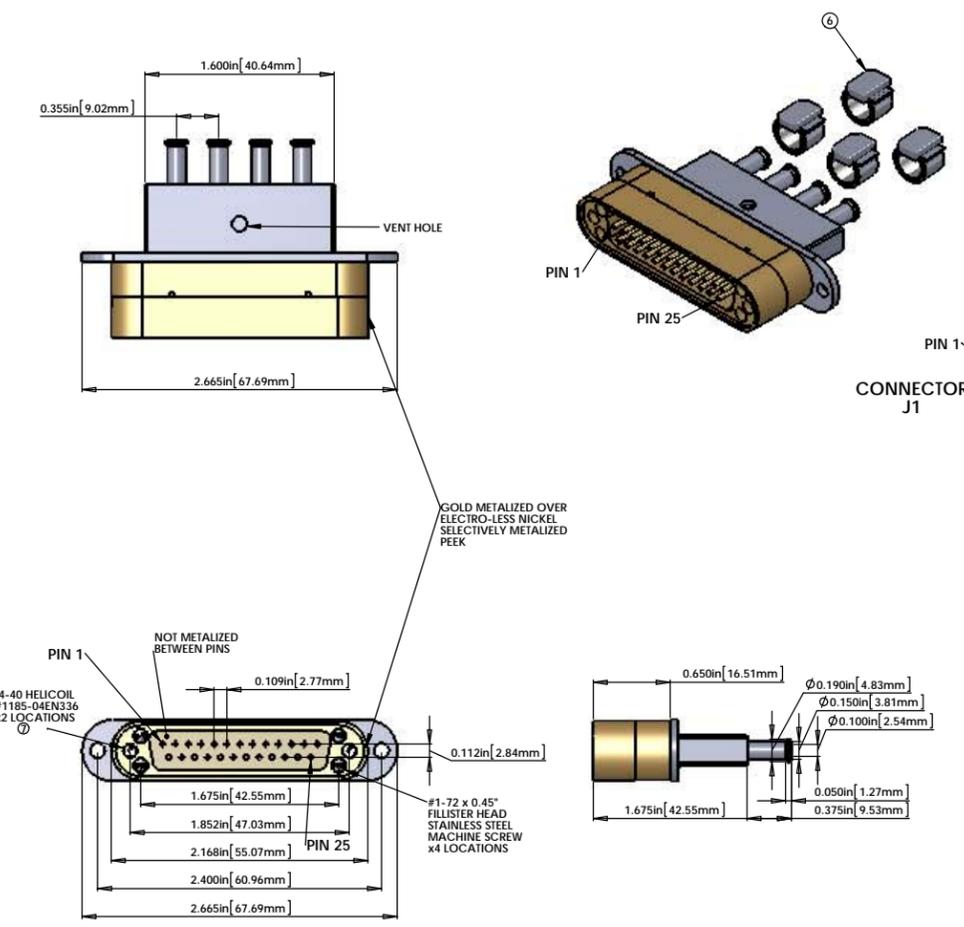
SEE REFERENCE DCC# LIGO-D1100670

REV.	DATE	DCN #	DRAWING TREE #

**CONNECTOR J2, J3, J4, J5**



**CONNECTOR J1**



**V25AC-69-84-77-67 CABLE #4 ASSEMBLY CIRCUIT SUMMARY**

TO		
CONNECTOR J5 - 4 PIN SOCKET MIGHTY MOUSE CONNECTOR		
PIN	WIRE NAME	SIGNAL
SHELL	(SHIELD) NOT CONNECTED	
1	(CABLE 4) WIRE 7	PICOMOTOR PAIR M4 HORIZONTAL SIGNAL
2	(CABLE 4) WIRE 19	PICOMOTOR PAIR M4 HORIZONTAL RETURN
3	(CABLE 4) WIRE 6	PICOMOTOR PAIR M4 VERTICAL SIGNAL
4	(CABLE 4) WIRE 18	PICOMOTOR PAIR M4 VERTICAL RETURN

**V25AC-69-84-77-67 CABLE #3 ASSEMBLY CIRCUIT SUMMARY**

TO		
CONNECTOR J4 - 4 PIN SOCKET MIGHTY MOUSE CONNECTOR		
PIN	WIRE NAME	SIGNAL
SHELL	(SHIELD) NOT CONNECTED	
1	(CABLE 3) WIRE 9	PICOMOTOR PAIR M3 HORIZONTAL SIGNAL
2	(CABLE 3) WIRE 21	PICOMOTOR PAIR M3 HORIZONTAL RETURN
3	(CABLE 3) WIRE 8	PICOMOTOR PAIR M3 VERTICAL SIGNAL
4	(CABLE 3) WIRE 20	PICOMOTOR PAIR M3 VERTICAL RETURN

**V25AC-69-84-77-67 CABLE #2 ASSEMBLY CIRCUIT SUMMARY**

TO		
CONNECTOR J3 - 4 PIN SOCKET MIGHTY MOUSE CONNECTOR		
PIN	WIRE NAME	SIGNAL
SHELL	(SHIELD) NOT CONNECTED	
1	(CABLE 2) WIRE 11	PICOMOTOR PAIR M2 HORIZONTAL SIGNAL
2	(CABLE 2) WIRE 23	PICOMOTOR PAIR M2 HORIZONTAL RETURN
3	(CABLE 2) WIRE 10	PICOMOTOR PAIR M2 VERTICAL SIGNAL
4	(CABLE 2) WIRE 22	PICOMOTOR PAIR M2 VERTICAL RETURN

**V25AC-69-84-77-67 CABLE #1 ASSEMBLY CIRCUIT SUMMARY**

TO		
CONNECTOR J2 - 4 PIN SOCKET MIGHTY MOUSE CONNECTOR		
PIN	WIRE NAME	SIGNAL
SHELL	(SHIELD) NOT CONNECTED	
1	(CABLE 1) WIRE 13	PICOMOTOR PAIR M1 HORIZONTAL SIGNAL
2	(CABLE 1) WIRE 25	PICOMOTOR PAIR M1 HORIZONTAL RETURN
3	(CABLE 1) WIRE 12	PICOMOTOR PAIR M1 VERTICAL SIGNAL
4	(CABLE 1) WIRE 24	PICOMOTOR PAIR M1 VERTICAL RETURN

BILL OF MATERIALS				
ITEM NO.	PART NUMBER	DESCRIPTION	QTY.	LENGTH
1	TS0149-25CG20BS4-100F (TICOR # F50125-3) OR EQUIVALENT **	DB25 MALE CONNECTOR (J1) FOR UHV (GOLD METALIZED PEEK)	1	
2		DB25 CONNECTOR BACKSHELL (WITH EARS) FOR UHV (STAINLESS) WITH QUAD 0.100" I.d. PORTS	1	
3	GLENAIR # 803-001-06M6-4SN-598A	MIGHTY MOUSE SOCKET CONNECTOR (J2,J3,J4,J5)	4	
4	COONER WIRE # C22205 22GA PFA INSULATED BIOMEDICAL WIRE	4 COND. CABLE 22GA PFA INSULATED WITH PEEK OVERBRAID NO SHIELD. - PARTS SUPPLIED BY LIGO	4	69-84-77-67 in.*
5	PART # 6759	PEEK BRAID - PART #6759 MANUFACTURED WITH ZEUS 0.016" BLACK PEEK DRAWN MONOFILAMENT - SUPPLIED BY LIGO	4	
6	GLENAIR # 600-052 or BAND-IT # A10086	GLENAIR #600-052 STANDARD BRAID CLAMP or BAND-IT PART # A10086 (0.240" WIDE) (*BAG OF 100" #A10089)	8	

\* NOTE: THE OVERALL LENGTH IS MEASURED FROM PIN TIP (25 PIN) TO PIN TIP (4 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.  
\*\* NOTE: SEE THE "TICOR CONNECTOR PART NUMBER BUILDER" DCC#D1000219 FOR DETAILS ON THIS PART NUMBER.

NOTES: (UNLESS OTHERWISE SPECIFIED)

- A. MATERIAL: a. CONNECTOR SHELL - GOLD OVER ELECTRO-LESS NICKEL SELECTIVELY METALIZED PEEK VICTREX 450L30.  
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 TD5-450CA30 CARBON LOADED - SUPPLIED BY LIGO.
- B. CABLE 4 COND. 22 AWG (150/44), WITH PFA INSULATION COONER WIRE #C22205. OVERALL PEEK BRAID MIN. 50% COVERAGE. OVERALL CABLE O.D. WILL BE APPROX. 0.200 IN.
- C. CONNECTORS WILL BE SUPPLIED WITH HARDWARE. SCREWS SHOULD BE THE PROPER LENGTH FOR MATING.

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
SHELL	N/C	SHELL	N/C	SHELL	N/C	SHELL	N/C
N/C	SHELL	N/C	SHELL	N/C	SHELL	N/C	SHELL
J1 - 13	J2 - 1	J1 - 11	J3 - 1	J1 - 9	J4 - 1	J1 - 7	J5 - 1
J1 - 25	J2 - 2	J1 - 23	J3 - 2	J1 - 21	J4 - 2	J1 - 19	J5 - 2
J1 - 12	J2 - 3	J1 - 10	J3 - 3	J1 - 8	J4 - 3	J1 - 6	J5 - 3
J1 - 24	J2 - 4	J1 - 22	J3 - 4	J1 - 20	J4 - 4	J1 - 18	J5 - 4

V25AC - V-DB25HD M/S1-69,84,77,67-MM4PINHD F/X			
STANDARD USE FOR THIS CABLE			
SUBSYSTEM	AIR/VAC	STANDARD USE	
ISC	IN-VAC	PICOMOTORS TABLE TO MOTORS	

NOTES AND TOLERANCES: (UNLESS OTHERWISE SPECIFIED)

1. INTERPRET DRAWING PER ASME Y14.5-1994.  
2. REMOVE ALL SHARP EDGES. 0.05-015 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: ANGULAR ±

TOLERANCES: .XX ± .XXX ±

MATERIAL: FINISH: NEXT ASSY:

CALIFORNIA INSTITUTE OF TECHNOLOGY MASSACHUSETTS INSTITUTE OF TECHNOLOGY

PART NAME: CUSTOM CABLE SPECIFICATION V25AC-69-84-77-67

DESIGNER: R. ABBOTT DATE: 08/02/2012 SITE: DWG. NO: D1101516 REV: v4  
DRAFTER: E. BROWN DATE: 08/02/2012 SITE: E  
CHECKER: APPROVAL: SCALE: 2:1 PROJECTION: SHEET 1 OF 1