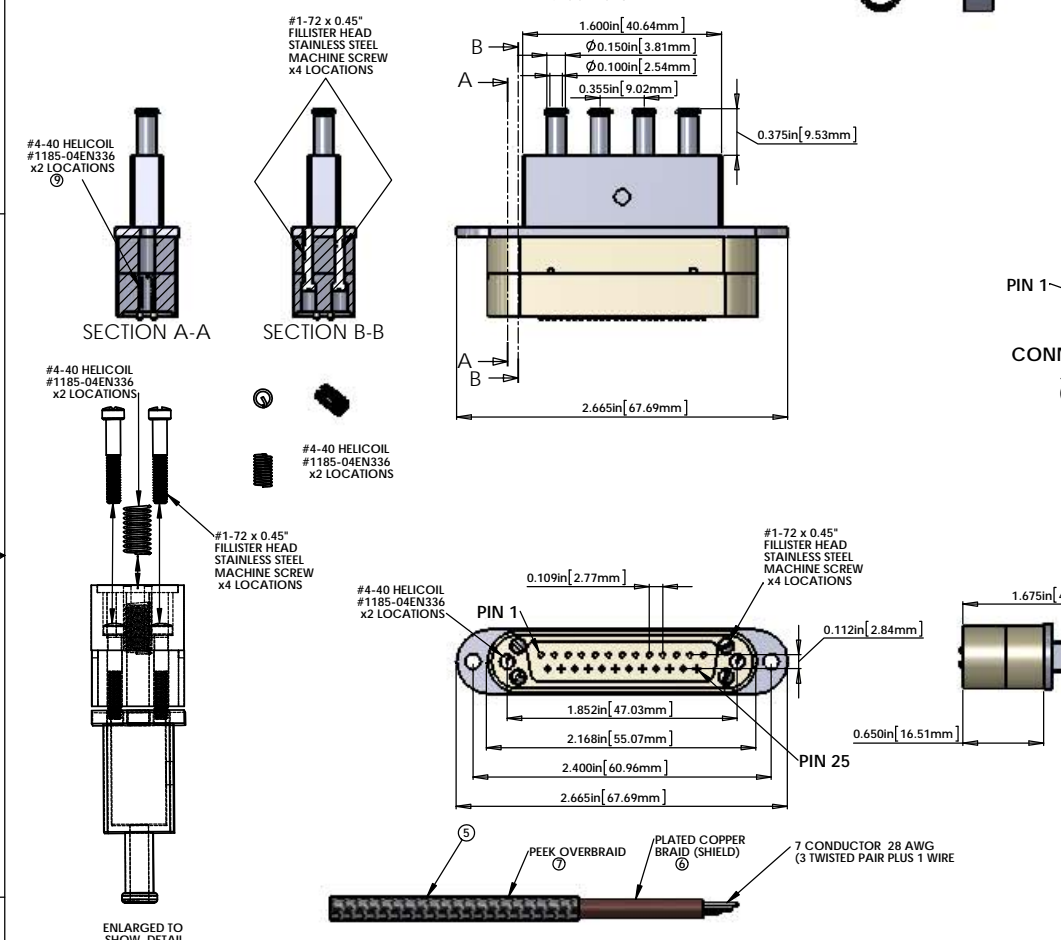


REV.	DATE	DCN #	DRAWING TREE #

- NOTES CONTINUED:
- SCRIBE, ENGRAVE, OR MECHANICALLY STAMP (NO INKS OR DYES) DRAWING PART NUMBER AND REVISION ON NOTED SURFACES FOLLOWED ON THE NEXT LINE BY A THREE DIGIT SERIAL NUMBER. SERIAL NUMBERS START AT 001 FOR THE FIRST PARTICLE AND PROCEED CONSECUTIVELY. USE 07 HIGH CHARACTERS. EXAMPLE: DXXXXX.VV.5N.001 VIBRATORY TOOL MAY BE USED.
 - APPROXIMATE WEIGHT - X.XXX LB.
 - MACHINE ALL SURFACES TO REMOVE OXIDES AND MILL FINISH. USE OF ABRASIVE REMOVAL TECHNIQUES IS NOT ALLOWED. REFER TO LIGO 1000034.
 - ALL PARTS SHALL BE MANUFACTURED IN ACCORDANCE WITH LIGO SPECIFICATION E9000364.
 - ALL HELI-COIL HOLES TO BE PREPARED ACCORDING TO EMHART HELI-COIL PRODUCT CATALOG, HC0000, REV 4.
 - ALL HELI-COIL INSERTS TO BE INSTALLED BY LIGO PERSONNEL AFTER DELIVERY OF FINISHED PARTS. USE NITRONIC 60 THREADED INSERTS.
 - 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 1000034.
 - SURFACE FINISH TO BE AS PROCESSED FROM MILL/SUPPLIER, FREE FROM SCRATCHES OR GOUGES.
 - PART WILL BE PORCELAIN COATED PER LIGO SPECIFICATION E100003 AFTER FABRICATION. THE INDICATED HOLES WILL BE MARKED PRIOR TO PORCELAIN COATING TO APPROXIMATELY 2.5-3X HOLE DIAMETER CENTERED ON BOTH SIDES OF THE HOLE.
 - DIMENSIONS APPLY BEFORE PORCELAIN COATING UNLESS SPECIFIED.
 - BEND RADIUS: UNLESS OTHERWISE NOTED, THE BEND RADIUS SHOULD BE THE MINIMUM REQUIRED TO FORM WITHOUT CRACKING OR DEFORMING. 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 13 and 14 DO NOT APPLY TO THIS PART



V25P CABLE ASSEMBLY CIRCUIT SUMMARY

V-DB25 M/1-60-4_μD9 F/5

FROM					TO				
CONNECTOR J1 (E) - 25 PIN MALE SUBMINI_D CONNECTOR (PEEK)									
PIN	WIRE NAME	COLOR	LENGTH	TWISTED PAIR	PIN	WIRE NAME	COLOR	LENGTH	TWISTED PAIR
1	(CABLE 1) SHIELD			(CABLE 1) SHIELD	5	(CABLE 2) SHIELD			SHIELD
1	(CABLE 1) WIRE 14	White	60 in.	TP-1	5	(CABLE 2) WIRE 1	White	60 in.	TP-1
14	(CABLE 1) WIRE 14	White	60 in.	TP-1	5	(CABLE 2) WIRE 20	White	60 in.	TP-2
2	(CABLE 1) WIRE 2	White	60 in.	TP-2	1	(CABLE 2) WIRE 17	White	60 in.	TP-3
15	(CABLE 1) WIRE 15	White	60 in.	TP-2	1	(CABLE 2) WIRE 5	White	60 in.	TP-4
3	(CABLE 1) WIRE 3	White	60 in.	TP-2	2	(CABLE 2) WIRE 18	White	60 in.	TP-5
16	(CABLE 1) WIRE 16	White	60 in.	TP-3	12	(CABLE 2) WIRE 12	White	60 in.	TP-6
4	(CABLE 1) WIRE 4	White	60 in.	TP-3	25	(CABLE 2) WIRE 25	White	60 in.	TP-7
1	(CABLE 2) SHIELD			(CABLE 2) SHIELD	2	(CABLE 3) WIRE 21	White	60 in.	TP-8
17	(CABLE 2) WIRE 17	White	60 in.	TP-4	9	(CABLE 3) WIRE 9	White	60 in.	TP-9
5	(CABLE 2) WIRE 5	White	60 in.	TP-4	22	(CABLE 3) WIRE 22	White	60 in.	TP-10
18	(CABLE 2) WIRE 18	White	60 in.	TP-5	10	(CABLE 3) WIRE 10	White	60 in.	TP-11
6	(CABLE 2) WIRE 6	White	60 in.	TP-5	1	(CABLE 4) SHIELD			(CABLE 4) SHIELD
19	(CABLE 2) WIRE 19	White	60 in.	TP-6	23	(CABLE 4) WIRE 23	White	60 in.	TP-10
7	(CABLE 2) WIRE 7	White	60 in.	TP-6	8	(CABLE 4) WIRE 8	White	60 in.	TP-7
1	(CABLE 3) SHIELD			(CABLE 3) SHIELD	21	(CABLE 4) WIRE 21	White	60 in.	TP-8
20	(CABLE 3) WIRE 20	White	60 in.	TP-7	9	(CABLE 4) WIRE 9	White	60 in.	TP-8
8	(CABLE 3) WIRE 8	White	60 in.	TP-7	22	(CABLE 4) WIRE 22	White	60 in.	TP-9
21	(CABLE 3) WIRE 21	White	60 in.	TP-8	13	(CABLE 4) WIRE 13	White	60 in.	TP-12
9	(CABLE 3) WIRE 9	White	60 in.	TP-8					
22	(CABLE 3) WIRE 22	White	60 in.	TP-9					
10	(CABLE 3) WIRE 10	White	60 in.	TP-9					

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

V25P CABLE ASSEMBLY CIRCUIT SUMMARY

TO

CONNECTOR J2 - 9 PIN FEMALE MICRO_D CONNECTOR (PEEK)		
Pin	Wire Name	SIGNAL
5	(CABLE 1) SHIELD	SHIELD
5	(CABLE 1) WIRE 14	SHIELD
1	(CABLE 1) WIRE 14	PD-K
6	(CABLE 1) WIRE 2	PD-A
2	(CABLE 1) WIRE 15	LED-A
7	(CABLE 1) WIRE 3	LED-K
4	(CABLE 1) WIRE 16	FN COIL
9	(CABLE 1) WIRE 4	ST COIL

V25P CABLE ASSEMBLY CIRCUIT SUMMARY

TO

CONNECTOR J3 - 9 PIN FEMALE MICRO_D CONNECTOR (PEEK)		
Pin	Wire Name	SIGNAL
5	(CABLE 2) SHIELD	SHIELD
5	(CABLE 2) WIRE 1	SHIELD
1	(CABLE 2) WIRE 17	PD-K
6	(CABLE 2) WIRE 5	PD-A
2	(CABLE 2) WIRE 18	LED-A
7	(CABLE 2) WIRE 9	LED-K
4	(CABLE 2) WIRE 6	FN COIL
9	(CABLE 2) WIRE 7	ST COIL

V25P CABLE ASSEMBLY CIRCUIT SUMMARY

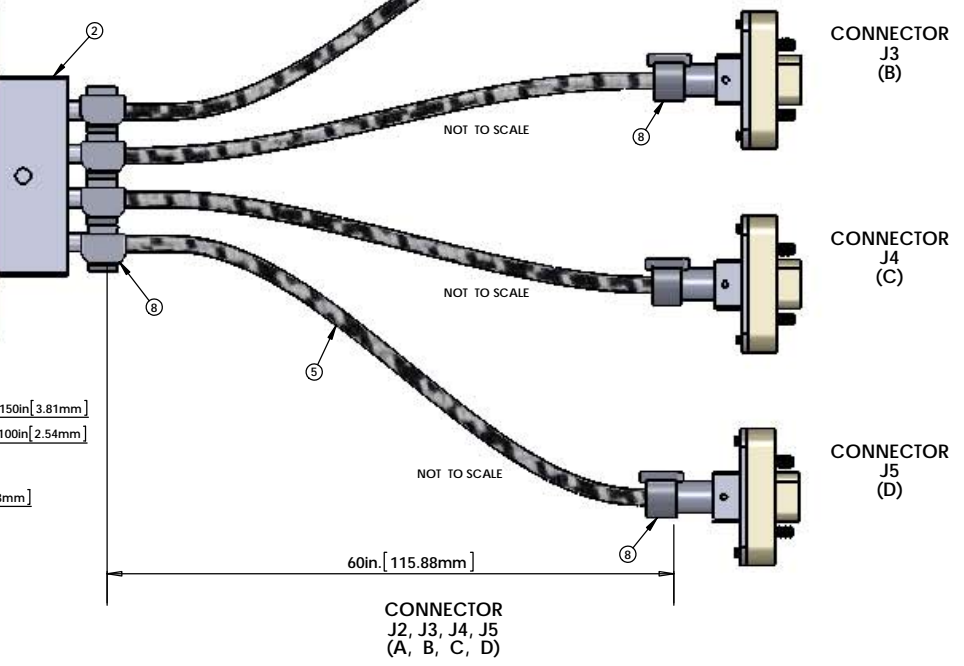
TO

CONNECTOR J4 - 9 PIN FEMALE MICRO_D CONNECTOR (PEEK)		
Pin	Wire Name	SIGNAL
5	(CABLE 3) SHIELD	SHIELD
5	(CABLE 3) WIRE 1	SHIELD
1	(CABLE 3) WIRE 20	PD-K
6	(CABLE 3) WIRE 8	PD-A
2	(CABLE 3) WIRE 21	LED-A
7	(CABLE 3) WIRE 9	LED-K
4	(CABLE 3) WIRE 22	FN COIL
9	(CABLE 3) WIRE 10	ST COIL

V25P CABLE ASSEMBLY CIRCUIT SUMMARY

TO

CONNECTOR J5 - 9 PIN FEMALE MICRO_D CONNECTOR (PEEK)		
Pin	Wire Name	SIGNAL
5	(CABLE 4) SHIELD	SHIELD
5	(CABLE 4) WIRE 1	SHIELD
1	(CABLE 4) WIRE 23	PD-K
6	(CABLE 4) WIRE 11	PD-A
2	(CABLE 4) WIRE 24	LED-A
7	(CABLE 4) WIRE 12	LED-K
4	(CABLE 4) WIRE 25	FN COIL
9	(CABLE 4) WIRE 13	ST COIL



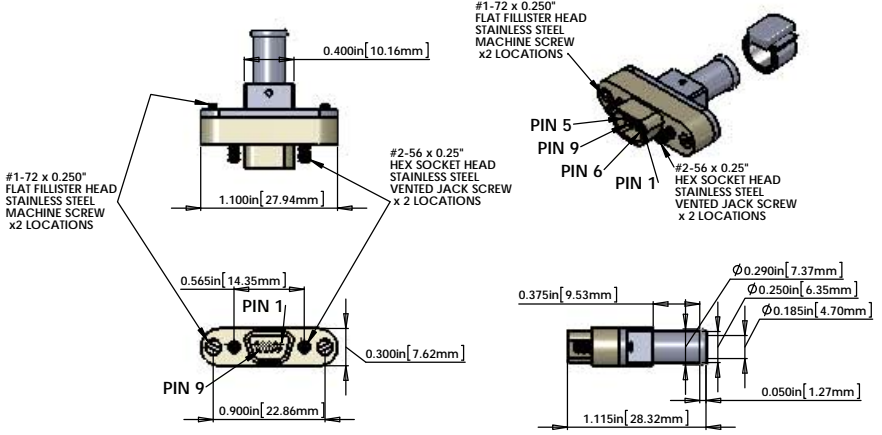
BILL OF MATERIALS

ITEM NO.	PART NUMBER	DESCRIPTION	QTY.	LENGTH *
1	TICOR # (TS0149-25C020854-100F) OR EQUIVALENT	DB25 MALE CONNECTOR (J1) FOR UHV (PEEK)	1	
2		DB25 CONNECTOR BACKSHELL FOR UHV (STAINLESS)	1	
3	TICOR #TS009 WITH FLYING LEADS (OR EQUIVALENT)	DB9 FEMALE CONNECTOR (J2, J3, J4, J5) FOR UHV (PEEK)	4	
4		DB9 CONNECTOR BACKSHELL FOR UHV (STAINLESS)	4	
5	C1	7 COND. (3 TW PAIR + 1 WIRE + SHIELD) CABLE WITH (C) COPPER BRAID (SHIELD) AND (D) PEEK OVERBRAID	4	60"
6	CONTINENTAL PART #24x3x40BC	COPPER BRAID - CONTINENTAL CORDAGE PART # 24x3x40BC	4	
7	PEEK BRAID PART #6759	PART #6759 MANUFACTURED WITH ZEUS 0.016" BLACK PEEK DRAWN MONOFILAMENT	4	
8	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	
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.

- ELECTRICAL NOTES: (UNLESS OTHERWISE SPECIFIED)
- MATERIAL:
 - CONNECTOR SHELL - PEEK VICTREX 450GL30.
 - BACKSHELL - STAINLESS STEEL WITH VENT HOLE.
 - CONTACTS - BERYLLIUM COPPER ALLOY C17300, 0.00050 MIN. GOLD OVER NICKEL.
 - HARDWARE - STAINLESS STEEL, PASSIVATED.
 - PEEK BRAID - PEEK VICTREX GRADE TDS-450CA30 CARBON LOADED.

- CABLE 7 COND. 28 AWG, (40 STRD 44 AWG) WITH 2 LAYERS OF KAPTON TAPE. 3 TWISTED PAIRS (4 TO 5 TWISTS PER INCH) + 1 WIRE. OVERALL 40AWG COPPER BRAID 90% COVERAGE. OVERALL PEEK BRAID MIN. 50% COVERAGE. OVERALL CABLE O.D. WILL BE APPROX. 0.240 IN.
- CONNECTORS WILL BE SUPPLIED WITH HARDWARE. THE SCREWS SHOULD BE THE PROPER LENGTH FOR MATING.



V-DB25 M/1-60-4_μD9 F/5

STANDARD USE FOR THIS CABLE

SUBSYSTEM	AIR/VAC	STANDARD USE
SUS	IN-VAC	SM1, SM2, PMMT1, OMC, OSEMS ETC.

NOTES AND TOLERANCES: (UNLESS OTHERWISE SPECIFIED)

- INTERPRET DRAWING PER ASME Y14.5-1994.
- REMOVE ALL SHARP EDGES. USE .015 FOR MACHINED PARTS. ROUND ALL EDGES APPROXIMATELY R.02 FOR SHEET METAL PARTS.
- DO NOT SCALE FROM DRAWING.
- ALL MACHINING FLUIDS MUST BE FULLY SYNTHETIC, FULLY WATER SOLUBLE AND FREE OF SULFUR, SILICONE, AND CHLORINE.

DIMENSIONS ARE IN: $\frac{1}{16}$ INCH

TOLERANCES: .XX ±, .XXX ±, .XXXX ±

ANGULAR: ±

MATERIAL: μ INCH

FINISH: μ INCH

NEXT ASSY: μ INCH

CAUTION: CALIFORNIA INSTITUTE OF TECHNOLOGY MASSACHUSETTS INSTITUTE OF TECHNOLOGY

PART NAME: CUSTOM CABLE SPECIFICATION V25X-TBD

DESIGNER: J. HEFFNER DATE: 08/14/2012

DRAWN: E. BROWN DATE: 08/14/2012

CHECKER: DATE: 08/14/2012

APPROVAL: DATE: 08/14/2012

SCALE: 2:1

PROJECTION: 1

SHEET 1 OF 1

REV. D1000229 v4