

NOTES CONTINUED:
 3. 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: DXXXXXXVY, 5/N 001. VIBRATORY TOOL MAY BE USED. A
 4. APPROXIMATE WEIGHT = X.XXXX LB.
 5. MACHINE ALL SURFACES TO REMOVE OXIDES AND MILL FINISH. USE OF ABRASIVE REMOVAL TECHNIQUES IS NOT ALLOWED. REFER TO LIGO-E900364.
 6. ALL PARTS SHALL BE MANUFACTURED IN ACCORDANCE WITH LIGO SPECIFICATION E900364.
 7. ALL HELI-COIL HOLES TO BE PREPARED ACCORDING TO EMHART HELI-COIL PRODUCT CATALOG, HC2000, REV 4
 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, FUSION OR RECYCLED MATERIAL). NO REPAIRS SHALL BE MADE UNLESS APPROVED IN ADVANCE, AND IN WRITING, BY LIGO LABORATORY. REFER TO LIGO-E900364.
 12. SURFACE FINISH TO BE AS-PROCESSED FROM MILL/SUPPLIER. FREE FROM SCRATCHES OR GROOVES.
 13. PART WILL BE PORCELAIN COATED PER LIGO SPECIFICATION E1000003 AFTER FABRICATION. THE INDICATED HOLES WILL BE MASKED PRIOR TO PORCELAIN COATING TO APPROXIMATELY 2.5X HOLE DIAMETER CENTERED ON BOTH SIDES OF THE HOLE.
 14. DIMENSIONS APPLY BEFORE PORCELAIN COATING UNLESS SPECIFIED.
 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.

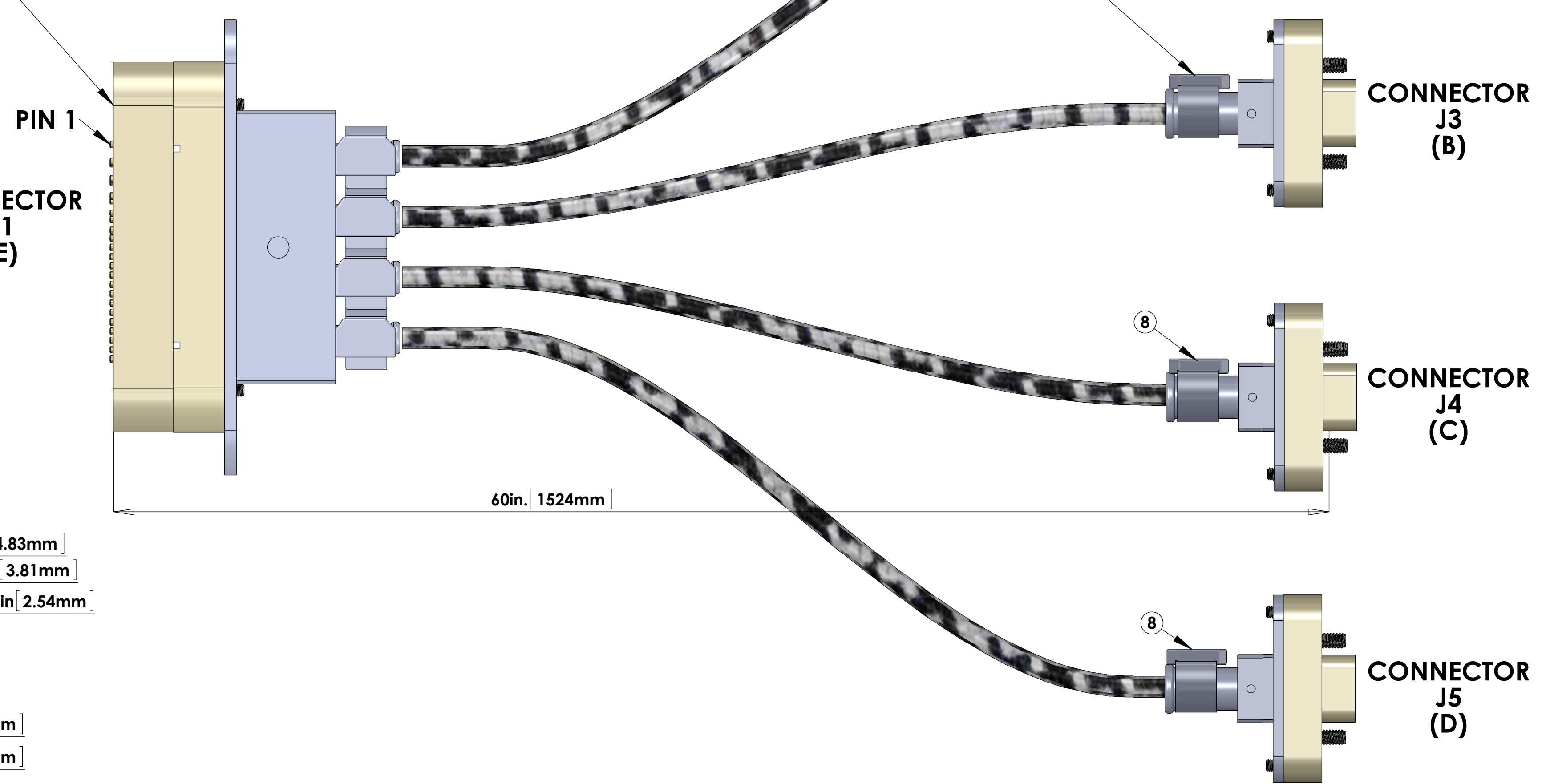
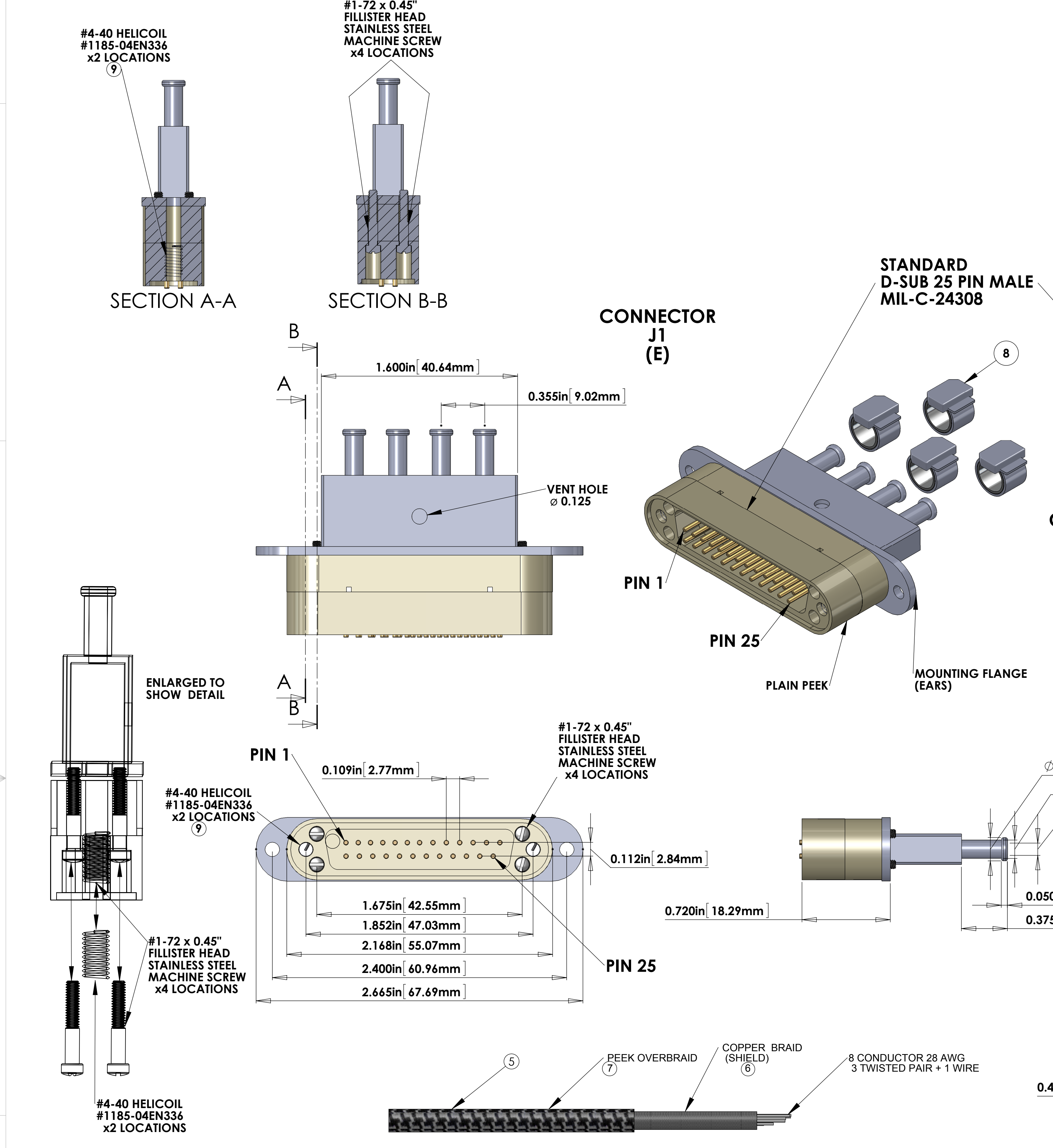
V25Z CABLE ASSEMBLY CIRCUIT SUMMARY

V-DB25 M/1-60-4 μD9 F/5

FROM

CONNECTOR J1 - 25 PIN MALE SUBMINI_D CONNECTOR (PEEK)				
PIN	WIRE NAME	COLOR	LENGTH	TWISTED PAIR
E1	(CABLE 1) SHIELD			(CABLE 1) SHIELD
E1	(CABLE 1) WIRE 1	White	60 in.	SINGLE WIRE
E14	(CABLE 1) WIRE 14	White	60 in.	TP-1A
E2	(CABLE 1) WIRE 2	White	60 in.	TP-2A
E3	(CABLE 1) WIRE 3	White	60 in.	TP-2A
E16	(CABLE 1) WIRE 16	White	60 in.	TP-3A
E4	(CABLE 1) WIRE 4	White	60 in.	TP-3A
E1	(CABLE 2) SHIELD			(CABLE 2) SHIELD
E17	(CABLE 2) WIRE 17	White	60 in.	TP-1B
E5	(CABLE 2) WIRE 5	White	60 in.	TP-1B
E18	(CABLE 2) WIRE 18	White	60 in.	TP-2B
E6	(CABLE 2) WIRE 6	White	60 in.	TP-2B
E19	(CABLE 2) WIRE 19	White	60 in.	TP-3B
E7	(CABLE 2) WIRE 7	White	60 in.	TP-3B
E1	(CABLE 3) SHIELD			(CABLE 3) SHIELD
E20	(CABLE 3) WIRE 20	White	60 in.	TP-1C
E8	(CABLE 3) WIRE 8	White	60 in.	TP-1C
E21	(CABLE 3) WIRE 21	White	60 in.	TP-2C
E9	(CABLE 3) WIRE 9	White	60 in.	TP-2C
E22	(CABLE 3) WIRE 22	White	60 in.	TP-3C
E10	(CABLE 3) WIRE 10	White	60 in.	TP-3C
E1	(CABLE 4) SHIELD			(CABLE 4) SHIELD
E23	(CABLE 4) WIRE 23	White	60 in.	TP-1D
E11	(CABLE 4) WIRE 11	White	60 in.	TP-1D
E24	(CABLE 4) WIRE 24	White	60 in.	TP-2D
E12	(CABLE 4) WIRE 12	White	60 in.	TP-2D
E25	(CABLE 4) WIRE 25	White	60 in.	TP-3D
E13	(CABLE 4) WIRE 13	White	60 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 - 9	J3 - 7	J1 - 12	J4 - 7	J1 - 15	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



V25Z CABLE ASSEMBLY CIRCUIT SUMMARY

TO

CONNECTOR J2 - 9 PIN FEMALE MICRO_D CONNECTOR (PEEK)		
PIN	WIRE NAME	SIGNAL
N/C	(CABLE 1) SHIELD	SHIELD
A5	(CABLE 1) WIRE 1	SHIELD
A1	(CABLE 1) WIRE 14	TOP1
A6	(CABLE 1) WIRE 2	TOP1
A2	(CABLE 1) WIRE 15	RIGHT
A7	(CABLE 1) WIRE 3	RIGHT
A4	(CABLE 1) WIRE 16	UL
A9	(CABLE 1) WIRE 4	UL

V25Z CABLE ASSEMBLY CIRCUIT SUMMARY

TO

CONNECTOR J3 - 9 PIN FEMALE MICRO_D CONNECTOR (PEEK)		
PIN	WIRE NAME	SIGNAL
N/C	(CABLE 2) SHIELD	SHIELD
B5	(CABLE 2) WIRE 1	SHIELD
B1	(CABLE 2) WIRE 17	MO FACE 2
B6	(CABLE 2) WIRE 5	MO FACE 2
B2	(CABLE 2) WIRE 18	MO SIDE
B7	(CABLE 2) WIRE 6	MO SIDE
B4	(CABLE 2) WIRE 19	RO LEFT
B9	(CABLE 2) WIRE 7	RO LEFT

V25Z CABLE ASSEMBLY CIRCUIT SUMMARY

TO

CONNECTOR J4 - 9 PIN FEMALE MICRO_D CONNECTOR (PEEK)		
PIN	WIRE NAME	SIGNAL
N/C	(CABLE 3) SHIELD	SHIELD
C5	(CABLE 3) WIRE 1	SHIELD
C1	(CABLE 3) WIRE 20	MO FACE
C6	(CABLE 3) WIRE 8	MO FACE
C2	(CABLE 3) WIRE 21	RO FACE 1
C7	(CABLE 3) WIRE 9	RO FACE 1
C4	(CABLE 3) WIRE 22	RO RIGHT
C9	(CABLE 3) WIRE 10	RO RIGHT

V25Z CABLE ASSEMBLY CIRCUIT SUMMARY

TO

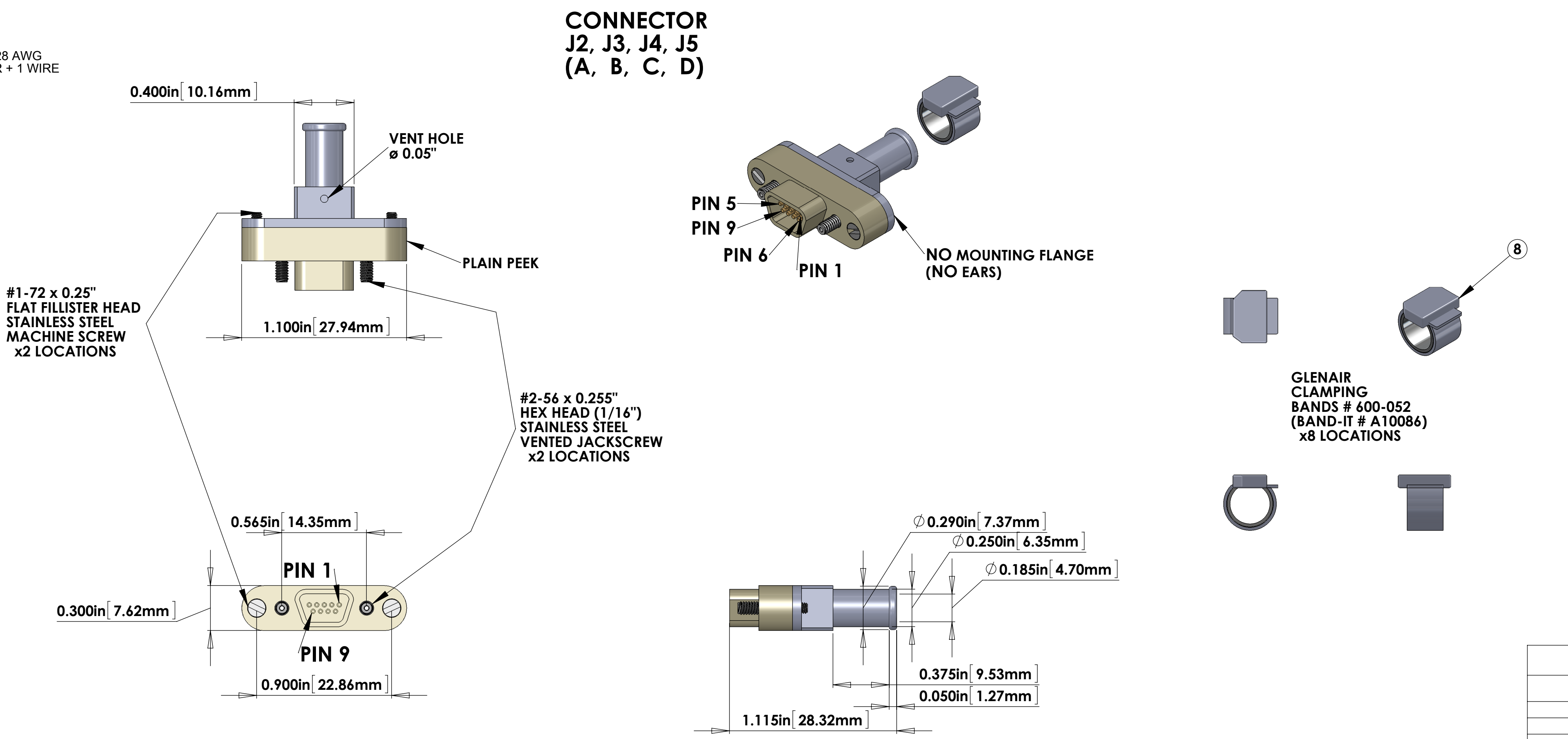
CONNECTOR J5 - 9 PIN FEMALE MICRO_D CONNECTOR (PEEK)		
PIN	WIRE NAME	SIGNAL
N/C	(CABLE 4) SHIELD	SHIELD
D5	(CABLE 4) WIRE 1	SHIELD
D1	(CABLE 4) WIRE 23	MO LEFT
D6	(CABLE 4) WIRE 11	MO LEFT
D2	(CABLE 4) WIRE 24	RO FACE 2
D7	(CABLE 4) WIRE 12	RO FACE 2
D4	(CABLE 4) WIRE 25	RO SIDE
D9	(CABLE 4) WIRE 13	RO SIDE

BILL OF MATERIALS

ITEM NO.	PART NUMBER	DESCRIPTION	QTY.	LENGTH *
1	TICOR # TS0149-25C020B54-100F OR EQUIVALENT **	DB25 MALE CONNECTOR (J1) FOR UHV PEEK	1	
2	TICOR # TS0094 WITH FLYING LEADS OR EQUIVALENT	DB25 CONNECTOR BACKSHELL FOR UHV (STAINLESS) WITH QUAD Ø0.100" I.D. PORTS	1	
3	C1	μD9 RIGHT ANGLE FEMALE CONNECTOR (J2) FOR UHV (PEEK)	4	
4		μD9 CONNECTOR BACKSHELL FOR UHV (STAINLESS) WITH Ø0.185" I.D. PORT	4	
5		7 COND. (3 TW PAIR + 1 WIRE + SHIELD) CABLE WITH 6 COPPER BRAID (SHIELD) AND 7 PEEK OVERBRAID	4	60in.
6		COPPER BRAID	4	
7		CONTINENTAL CORDAGE PART # 24x3x408C	4	
8		PEEK BRAID	4	
8	GLENAIR # 600-052 or BAND-IT # A10086 (BAG OF 100 = # A10089)	PART #6759 MANUFACTURED WITH ZEUS 0.016" BLACK PEEK DRAWN MONOFILAMENT	4	
8		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: THE 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 LENGTHS.
 ** 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 - PEEK - VICTREX 450GL30.
 b. BACKSHELL - STAINLESS STEEL WITH VENT HOLE.
 c. CONTACTS - BERYLLIUM COPPER ALLOY C17300, 0.000050 MIN. GOLD OVER NICKEL.
 d. HARDWARE: STAINLESS STEEL, PASSIVATED.
 e. PEEK BRAID - PEEK VICTREX GRADE TDS-450CA30 CARBON LOADED - SUPPLIED BY LIGO.
 B. CABLE 9 COND. 28 AWG, (40 STRD 44 AWG) WITH PFA INSULATION. (SUPPLIED BY LIGO).
 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.



V-DB25 M/1-60-4 μD9 F/5

STANDARD USE FOR THIS CABLE

SUBSYSTEM	STANDARD USE
SUS	TRIPLE SUSPENSIONS TOP
SUS	TRIPLE SUSPENSIONS MIDDLE
SUS	TRIPLE SUSPENSIONS BOTTOM

DIMENSIONS ARE IN		NOTES AND TOLERANCES: (UNLESS OTHERWISE SPECIFIED)		LIGO CALIFORNIA INSTITUTE OF TECHNOLOGY MASSACHUSETTS INSTITUTE OF TECHNOLOGY		PART NAME	
TOLERANCES:	.XX ±	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.	SYSTEM		CUSTOM CABLE SPECIFICATION V25Z-60	
ANGULAR ±	.XXX ±	3. DO NOT SCALE FROM DRAWING	4. ALL MACHINING FLUIDS MUST BE FULLY SYNTHETIC, FULLY WATER SOLUBLE AND FREE OF SULFUR, SILICONE, AND CHLORINE.	SUB-SYSTEM		DESIGNER J. HEFFNER APR/15/2012 SIZE DWG. NO.	
		MATERIAL		FINISH		DRAFTER E. BROWN JUN/04/2012	
		NEXT ASSY		APPROVAL		E D1000236	
						SCALE: 2:1 PROJECTION: SHEET 1 OF 1	