

REV.	DATE	DCN #	DRAWING TREE #

NOTES CONTINUED:  
 ○ 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 ANGLE AND PROCEEDED CONSECUTIVELY. USE 07 HIGH CHARACTERS. EXAMPLE: A DXXXXXX.YY.SN.001 VIBRATORY TOOL MAY BE USED.

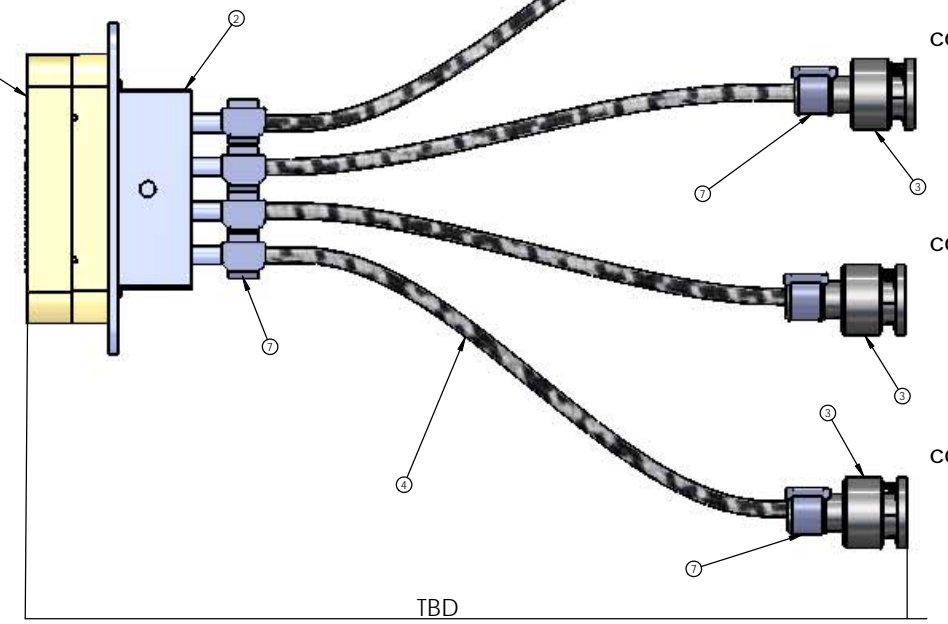
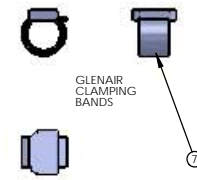
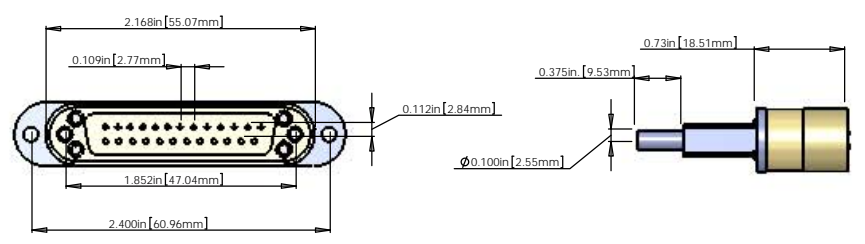
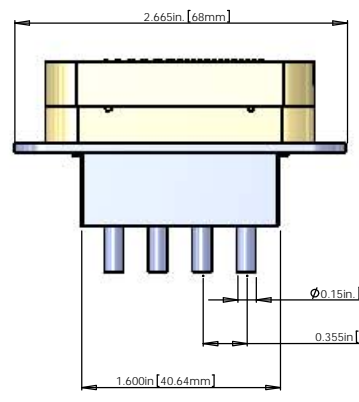
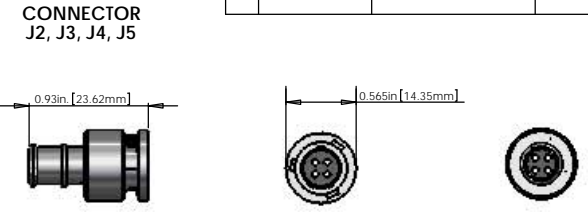
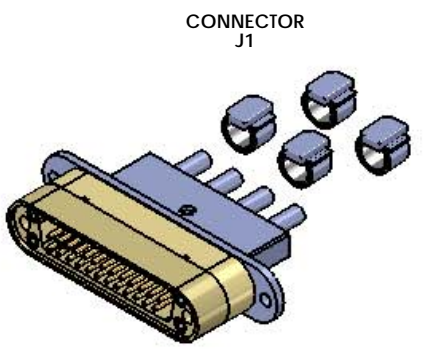
- APPROXIMATE WEIGHT - XXXX LB.
- MACHINE ALL SURFACES TO REMOVE OXIDES AND MILL FINISH. USE OF ABRASIVE REMOVAL TECHNIQUES IS NOT ALLOWED. REFER TO LIGO-ED900364
- ALL PARTS SHALL BE MANUFACTURED IN ACCORDANCE WITH LIGO SPECIFICATION ED900364
- ALL HELI-COIL HOLES TO BE PREPARED ACCORDING TO EMHART HELI-COIL PRODUCT CATALOG, HC2000, 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 ED900364
- SURFACE FINISH TO BE AS PROCESSED FROM MILL/SUPPLIER, FREE FROM SCRATCHES OR GOUGES.
- PART WILL BE PORCELAIN COATED PER LIGO SPECIFICATION E1000083 AFTER FABRICATION. THE INDICATED HOLES WILL BE MASKED 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 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.

### V25AC CABLE ASSEMBLY CIRCUIT SUMMARY

#### V-DB25 M/S1-TBD-4\_MM4PIN F/S

FROM

CONNECTOR J1 - 25 PIN SUBMINI-D CONNECTOR (PEEK)					
PIN	WIRE NAME	COLOR	LENGTH	TWISTED PAIR	
1	(SHIELD)				(SHIELD)
1	(CABLE 1) WIRE 1A, WIRE 1B	White			
	WIRE 1C, WIRE 1D				
2	(CABLE 2) WIRE 2A, WIRE 2B	White		TP-1	
14	(CABLE 1) WIRE 14A, WIRE 14B	White		TP-1	
3	(CABLE 1) WIRE 3A, WIRE 3B	White		TP-2	
15	(CABLE 1) WIRE 15A, WIRE 15B	White		TP-2	
4	(CABLE 2) WIRE 4A, WIRE 4B	White		TP-3	
16	(CABLE 1) WIRE 16A, WIRE 16B	White		TP-3	
5	(CABLE 2) WIRE 5A, WIRE 5B	White		TP-4	
17	(CABLE 2) WIRE 17A, WIRE 17B	White		TP-4	
6	(CABLE 2) WIRE 6A, WIRE 6B	White		TP-5	
18	(CABLE 2) WIRE 18A, WIRE 18B	White		TP-5	
7	(CABLE 2) WIRE 7A, WIRE 7B	White		TP-6	
19	(CABLE 2) WIRE 19A, WIRE 19B	White		TP-6	
8	(CABLE 3) WIRE 8A, WIRE 8B	White		TP-7	
20	(CABLE 3) WIRE 20A, WIRE 20B	White		TP-7	
9	(CABLE 4) WIRE 9A, WIRE 9B	White		TP-8	
21	(CABLE 4) WIRE 21A, WIRE 21B	White		TP-8	



### V25AC CABLE ASSEMBLY CIRCUIT SUMMARY

#### TO

#### CONNECTOR J2 - 4 PIN PLUG MIGHTY MOUSE CONNECTOR

Pin	Wire Name	Signal
1	(CABLE 1) WIRE 2A, WIRE 2B	PICOMOTOR #1 XY M1
2	(CABLE 1) WIRE 14A, WIRE 14B	PICOMOTOR #1 XY M2
3	(CABLE 1) WIRE 3A, WIRE 3B	PICOMOTOR #1 XY M3
4	(CABLE 1) WIRE 15A, WIRE 15B	PICOMOTOR #1 XY M4

### V25AC CABLE ASSEMBLY CIRCUIT SUMMARY

#### TO

#### CONNECTOR J3 - 4 PIN PLUG MIGHTY MOUSE CONNECTOR

Pin	Wire Name	Signal
1	(CABLE 2) WIRE 4A, WIRE 4B	PICOMOTOR #2 XY M1
2	(CABLE 1) WIRE 16A, WIRE 16B	PICOMOTOR #2 XY M2
3	(CABLE 2) WIRE 5A, WIRE 5B	PICOMOTOR #2 XY M3
4	(CABLE 2) WIRE 17A, WIRE 17B	PICOMOTOR #2 XY M4

### V25AC CABLE ASSEMBLY CIRCUIT SUMMARY

#### TO

#### CONNECTOR J4 - 4 PIN PLUG MIGHTY MOUSE CONNECTOR

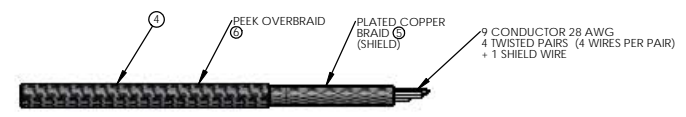
Pin	Wire Name	Signal
1	(CABLE 2) WIRE 6A, WIRE 6B	PICOMOTOR #3 XY M1
2	(CABLE 2) WIRE 18A, WIRE 18B	PICOMOTOR #3 XY M2
3	(CABLE 2) WIRE 7A, WIRE 7B	PICOMOTOR #3 XY M3
4	(CABLE 2) WIRE 19A, WIRE 19B	PICOMOTOR #3 XY M4

### V25AC CABLE ASSEMBLY CIRCUIT SUMMARY

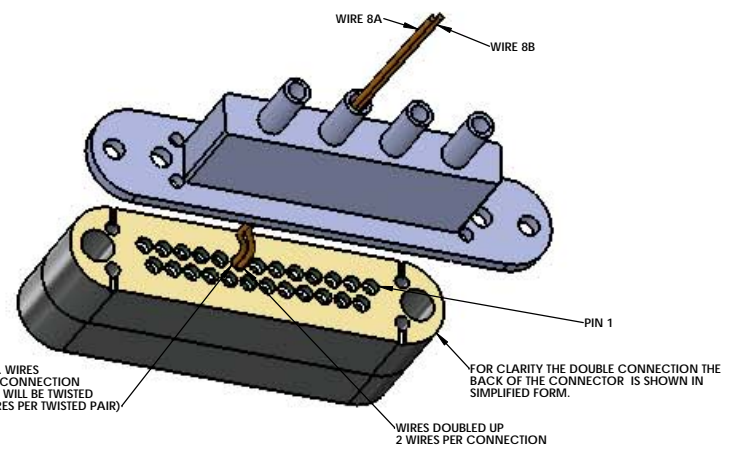
#### TO

#### CONNECTOR J5 - 4 PIN PLUG MIGHTY MOUSE CONNECTOR

Pin	Wire Name	Signal
1	(CABLE 3) WIRE 8A, WIRE 8B	PICOMOTOR #4 XY M1
2	(CABLE 3) WIRE 20A, WIRE 20B	PICOMOTOR #4 XY M2
3	(CABLE 4) WIRE 9A, WIRE 9B	PICOMOTOR #4 XY M3
4	(CABLE 4) WIRE 21A, WIRE 21B	PICOMOTOR #4 XY M4



2 WIRES PER CONNECTION AS SHOWN  
 (ONLY ONE CONNECTION SHOWN FOR CLARITY)



### V25AC - V-DB25 M/S1-TBD-4\_MM4PIN F/S

#### STANDARD USE FOR THIS CABLE

SUBSYSTEM	AIR/VAC	STANDARD USE
ISC	IN-VAC	PICOMOTORS (WITH DOUBLE WIRES)

### BILL OF MATERIALS

ITEM NO.	PART NUMBER	DESCRIPTION	QTY.	LENGTH
①	TICOR #TS0125-3	DB25 MALE CONNECTOR (J1) FOR UHV (PEEK)	1	
②		DB25 CONNECTOR BACKSHELL FOR UHV (STAINLESS)	1	
③	GLENAIR # 803-001-06M6-4SN-598A	MIGHTY MOUSE SOCKET CONNECTOR (J2, J3, J4, J5)	4	
④	C1	9 COND. (2 TWISTED PAIR) (4 WIRES PER TWISTED PAIR) CABLE (ADD COPPER BRAID (SHIELD) AND PEEK OVERBRAID)	4	TBDin.*
⑤	CONTINENTAL PART #24x3x40BC	COPPER BRAID - CONTINENTAL CORDAGE PART #24x3x40BC	4	
⑥	PART #6759	PEEK BRAID - PART #6759 MANUFACTURED WITH ZEUS 0.016" BLACK PEEK DRAWN MONOFILAMENT	4	
⑦	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)
- MATERIAL:
    - CONNECTOR SHELL - PEEK VICTREX GRADE TDS-450G.
    - BACKSHELL - STAINLESS STEEL WITH VENT HOLE.
    - CONTACTS - BERYLLIUM COPPER ALLOY C17300 0.00050 MIN. GOLD OVER NICKEL
    - HARDWARE: CORROSION RESISTANCE STEEL, PASSIVATED
    - PEEK BRAID - PEEK VICTREX GRADE TDS-450CA30 CARBON LOADED
  - CABLE 9 COND. 28 AWG, (40 STRD 44 AWG) WITH 2 LAYERS OF KAPTON TAPE 4 TWISTED PAIRS (4 TO 5 TWISTS PER INCH) + SHIELD WIRE (WIRES DOUBLED UP) (4 WIRES PER TWISTED PAIR) OVERALL 40AWG SILVER PLATED COPPER BRAID 90% COVERAGE OVERALL PEEK BRAID MIN. 50% COVERAGE OVERALL CABLE O.D. WILL BE APPROX. 0.240 IN.

NOTES AND TOLERANCES: (UNLESS OTHERWISE SPECIFIED)

- INTERPRET DRAWING PER ASME Y14.5-1994
- REMOVE ALL SHARP EDGES, 0.05-0.015 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: TOLERANCES: .XXX ± .XXX ± ANGULAR: °

MATERIAL: Material <not specified> FINISH: μinch NEXT ASSY: SYSTEM: SUB-SYSTEM: ISC DESIGNER: DATE: 2/28/11/2011 DRAFTER: DATE: 2/28/11/2011 CHECKER: DATE: 2/28/11/2011 APPROVAL: SCALE: 2:1 PROJECTION: SHEET 1 OF 1

CALIFORNIA INSTITUTE OF TECHNOLOGY MASSACHUSETTS INSTITUTE OF TECHNOLOGY PART NAME: CUSTOM CABLE SPECIFICATION V25AC

DESIGNER: DATE: 2/28/11/2011 DRAFTER: DATE: 2/28/11/2011 CHECKER: DATE: 2/28/11/2011 APPROVAL: SCALE: 2:1 PROJECTION: SHEET 1 OF 1

DWG. NO: D1000238 REV: v1