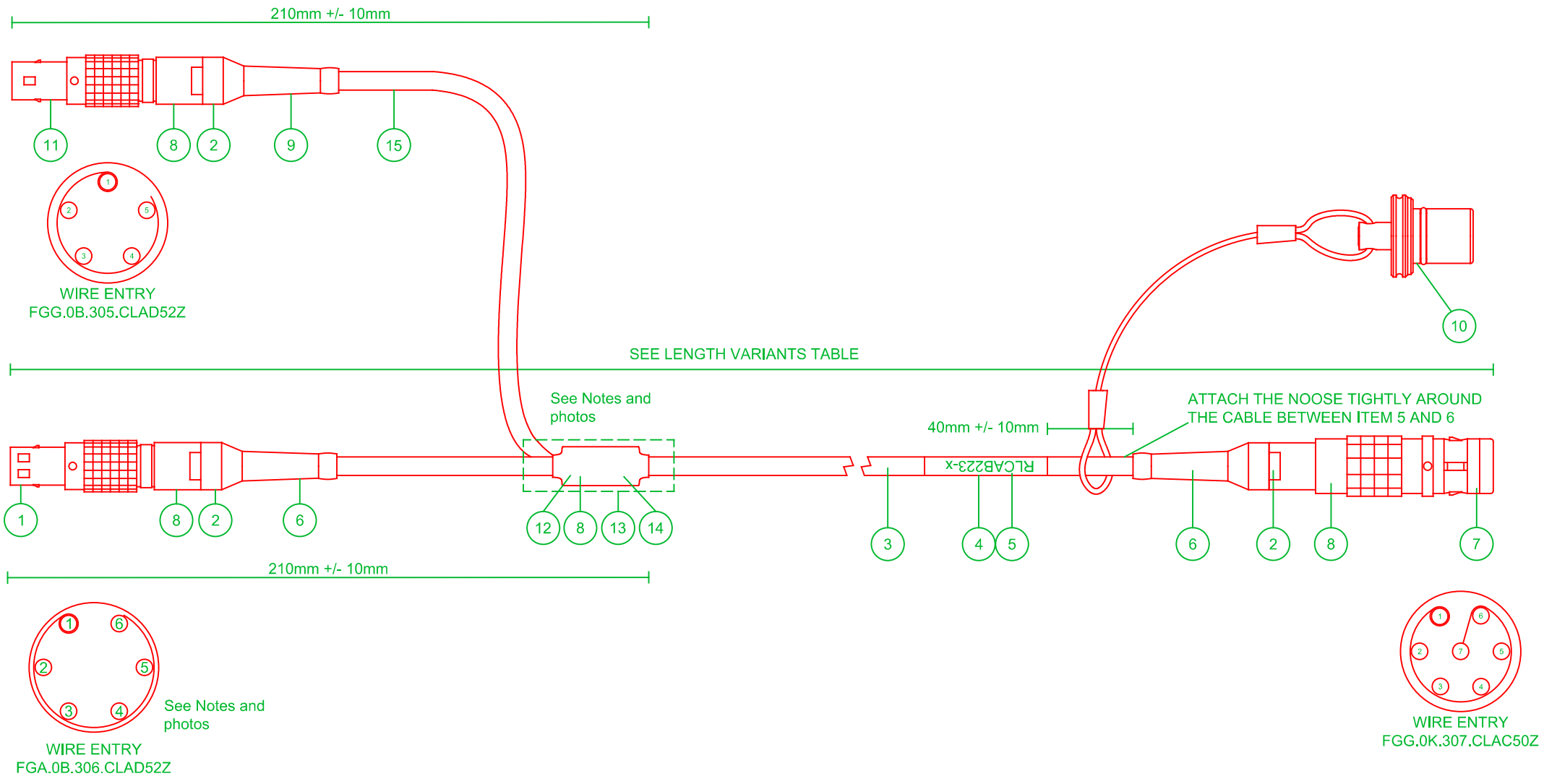

DRAWING NUMBER	RLCAB223-x	DRAWN	H.HUSSAIN	SHEET	1/4
DESCRIPTION	LEMO 6W + LEMO 5W to LEMO 7W SP				

REVISION

ISS	DESCRIPTION	DATE	APPROVED	REDMINE
2	ADDITIONAL BUILD INSTRUCTIONS ADDED	26/03/24	SH	22285

RACELOGIC
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BILL OF MATERIALS					
Item	Qty	Manufacturer	Manufacturer PN	Description	Racelogic PN
1	1	LEMO	FGA.0B.306.CLAD52Z	LEMO 6W A-KEYWAY CABLE MOUNT PLUG	LEMO 6W P-A
2	A/R	FARNELL	100-8431	HEATSHRINK 2:1 BK 4.8mm	100-8431
3	A/R	ALPHA WIRE	3308 SL005	MULTICORE, SCREENED, 8 CORE, 28 AWG	3308 SL005
4	30mm	FARNELL	304-6539	CLEAR HEATSHRINK	304-6539
5	1	AVERY	J8658-25	CABLE IDENT ON 25.4 x 10mm LABEL	-
6	2	LEMO UK	GMA.0B.040.DG	LEMO GREY STRAIN BOOT	GMA.0B.040DG
7	1	LEMO UK	FGG.0K.307.CLAC50Z	LEMO 7W S/P PLUG - G KEYWAY	LEMO 7WAY PS
8	A/R	FARNELL	119-1021	HEATSHRINK 1.5/0.5	119-1021
9	1	LEMO	GMA.0B.035.DG	LEMO GREY STRAIN BOOT	GMA.0B.035DG
10	1	LEMO UK	BRF.0K.200.NAS	LEMO 0K BLANKING CAP	LEMO BLANKS2
11	1	LEMO UK	FGG.0B.305.CLAD52Z	LEMO 5 WAY 0B PLUG - G KEYWAY	LEMO 5WAY P
12	1	ACCU	HPS-10-8.2-25-N	10mm x 8.2mm x 25mm Black Nylon Spacer	HPS-10-8.2-25-N
13	50mm	TE CONNECTIVITY	HTAT-12/3-0-STK	HEATSHRINK 12mm 4:1 BLACK 12/3 ADHESIVE LINED	HTAT-12/3-0
14	A/R	PRO POWER	SPC5086	HEATSHRINK TUBING, EMI SHEILD, 24AWG	SPC5086
15	A/R	ALPHA WIRE	5471C SL005	24AWG, TWISTED PAIR, SCREENED, 2-CORE CABLE	775-4022

CONNECTOR WIRING					
	6 WAY P	3308 SL005 8-Core Cable	5 WAY P	775-4022 2-Core Cable	7 WAY PS
FUNCTION	PIN	COLOUR	PIN	COLOUR	PIN
IMU RS232 Rx	2	WHITE / BLACK	N/C	-	1
IMU RS232 Tx	1	RED / BLACK	N/C	-	2
IPS RS232 Rx	N/C	GREEN	1	BLACK	3
IPS RS232 Tx	N/C	BLUE	2	RED	4
1PPS	6	ORANGE	N/C	-	5
POWER	5	RED	N/C	-	6
GND	SHELL	BLACK	SHELL	-	7
SHEILD	SHELL	SHEILD	SHELL	SHEILD	SHELL

LENGTH VARIANTS		
CABLE NAME	LENGTH	TOLERANCE
RLCAB223	3m	+/-20mm
RLCAB223-5	5m	+/-20mm
RLCAB223-10	10m	+/-20mm
RLCAB223-12	12m	+/-20mm

DRAWING NUMBER	RLCAB223-x	DRAWN	H.HUSSAIN	SHEET	2/4
DESCRIPTION	LEMO 6W + LEMO 5W to LEMO 7W SP				

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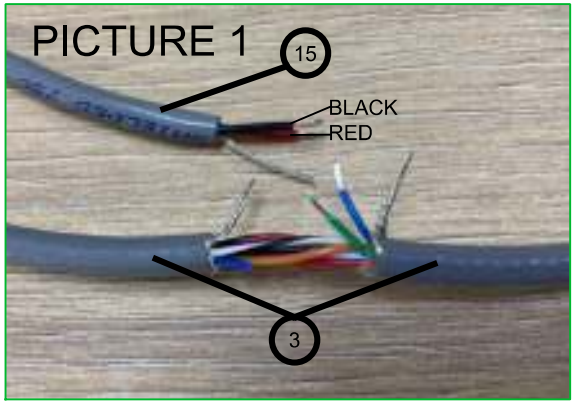
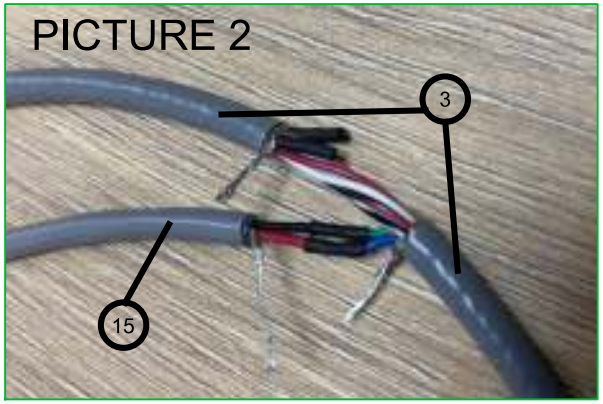
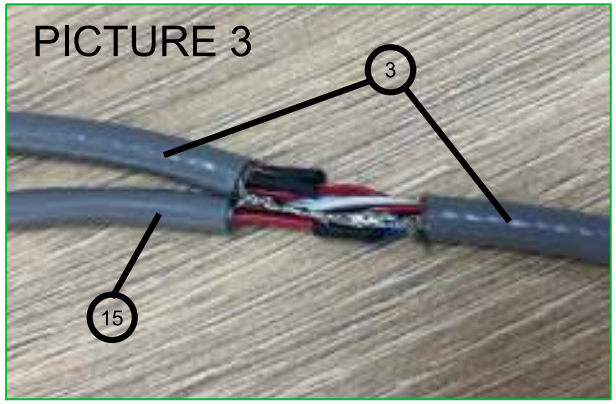
PICTURE 1



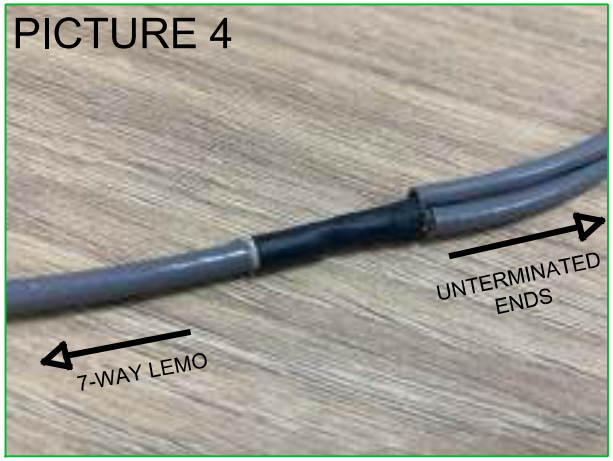
PICTURE 2



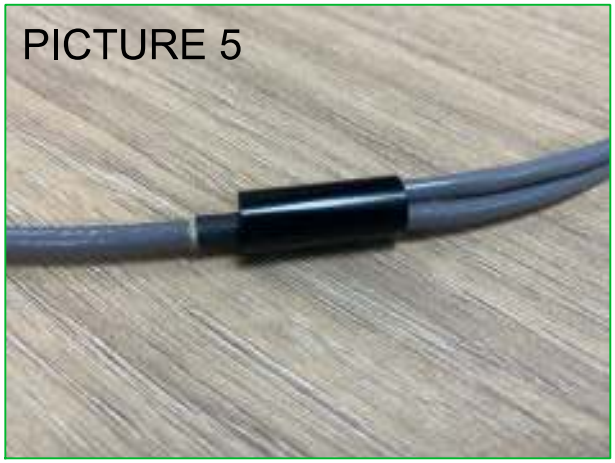
PICTURE 3



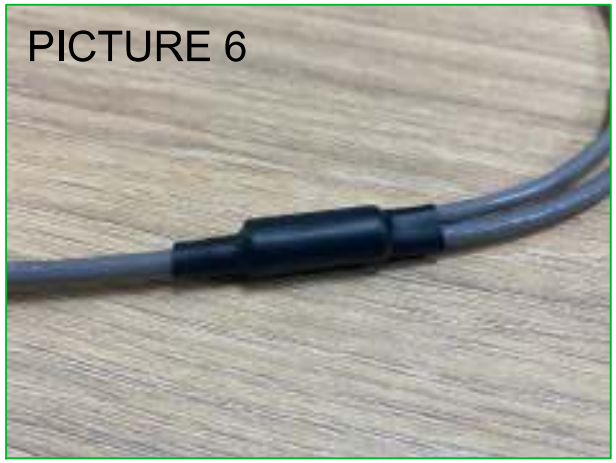
PICTURE 4



PICTURE 5



PICTURE 6



DRAWING NUMBER	RLCAB223-x	DRAWN	H.HUSSAIN	SHEET	3/4
DESCRIPTION	LEMO 6W + LEMO 5W to LEMO 7W SP				

REVISION

ISS	DESCRIPTION	DATE	APPROVED	REDMINE
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Cable Build Instructions:

1) Cut an appropriate length (dependent on length variant) of 8-core cable (item 3).

2) Fit the 7-way LEMO connector (item 7) and boot (item 6) to one end of the length of 8-core cable in accordance with the connector wiring table. Use 4.8mm diameter heatshrink (item 2) to pack out cable under the 7-way LEMO connector collet to ensure good strain relief (if necessary). Use 1.5mm diameter heatshrink (item 8) to insulate LEMO solder bucket joints.

3) Slide the length of clear heatshrink (item 4) over the unterminated end of the cable in preparation for affixing cable label (item 5) later (do not shrink yet).

4) Slide the length of EMI shield heatshrink (item 14), the cylindrical nylon spacer (item 12) and the adhesive-lined heatshrink (item 13) over the unterminated end of the cable in preparation for fitting them over the cable joint later.

5) Remove a 20mm section of outer insulation from the 8-core cable approximately 200mm from the unterminated end opposite the 7-way LEMO connector (see Picture 1).

6) Cut the cable screen in the middle of the exposed section to expose the inner wires and twist the strands of each half of the cable shield to form "wires" that can be soldered together later (see Picture 1).

7) Cut an appropriate length (approx. 200mm) of 2-core cable (item 15) and strip back approx. 15mm of the outer insulation from one end.

8) Twist the strands of the exposed 2-core cable screen together to form a "wire" that can be soldered later (see Picture 1).

9) Strip 3mm of insulation from the ends of the exposed red and black inner wires of the 2-core cable and tin the bare ends with solder (see Picture 1).

10) Cut the blue and green inner wires of the 8-core cable in the middle of the exposed section. Strip 3mm from the ends of the blue and green wires which are connected to the 7-way LEMO connector fitted previously and tin the bare ends with solder (see Picture 1).

11) Use a solder lap joint to connect the stripped and tinned blue and green wires prepared in the previous step to the stripped and tinned red and black wires of the 2-core cable prepared in step 9 above in accordance with the connector wiring table. Insulate the joints with 15.mm heatshrink (item 8) (see Picture 2).

12) Trim back the other halves of the cut blue and green wires in the exposed section of 8-core cable and individually insulate them using 1.5mm heatshrink (item 8) to prevent any shorts in the finished joint (see Picture 2).

13) Solder all the cable screen "wires" formed in steps 6 & 8 above together so that the cable screens of all cable sections are connected (see Picture 3).

14) Align the lengths of cable so that the unterminated ends of both the 8-core and 2-core cables are adjacent to each other and slide the length of EMI shield heatshrink, which was slid over the 8-core cable in step 4 above, over the exposed cable joint making sure that the EMI mesh is in contact with the soldered cable screen connection. Ensure that the exposed cable joint is completely covered and shrink the heatshrink in position (see Picture 4).

15) Slide the cylindrical nylon spacer, which was slid over the the 8-core cable in step 4 above, over the joint making sure that it overlaps the outer insulation of both the adjacent unterminated cable ends (see Picture 5).

16) Slide the length of adhesive-lined heatshrink, which was slid over the 8-core cable in step 4 above, over the nylon spacer and shrink in position making sure that it adheres well to the cables emerging from both sides of the spacer (see Picture 6).

17) Fit the 6-way LEMO connector (item 1) and boot (item 6) to the unterminated end of the 8-core cable in accordance with the connector wiring table. Use 4.8mm diameter heatshrink (item 2) to pack out cable under the 6-way LEMO connector collet to ensure good strain relief (if necessary). Use 1.5mm diameter heatshrink (item 8) to insulate LEMO solder bucket joints.

18) Fit the 5-way LEMO connector (item 11) and boot (item 9) to the unterminated end of the 2-core cable in accordance with the connector wiring table. Use 4.8mm diameter heatshrink (item 2) to pack out cable under the 5-way LEMO connector collet to ensure good strain relief (if necessary). Use 1.5mm diameter heatshrink (item 8) to insulate LEMO solder bucket joints.

19) Affix cable label (item 5) to cable in position and with text orientation as shown in the drawing and shrink the length clear heatshrink (item 4) previously over the label to secure it.

20) Fit the LEMO connector blanking plug (item 10) attaching the lanyard noose tightly around the 8-core cable close to the 7-way LEMO connector as shown in the drawing.

21) Test the cable connectivity.

DRAWING NUMBER	RLCAB223-x	DRAWN	H.HUSSAIN	SHEET	4/4
DESCRIPTION	LEMO 6W + LEMO 5W to LEMO 7W SP				

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