Installing the LVDB Harness

This document will show you how to attach the LV supply cables to the CSC on-chamber electronics

Tools required:

None

Materials required:

CFEB-LVDB cable harness assembly

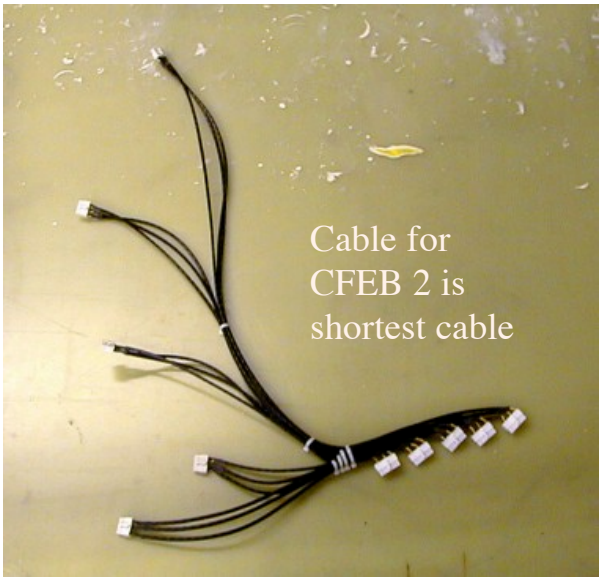
(# MD 400090: ME 1/2
400093: ME 1/3
400090: ME23/2
400200: ME 2/1, ME3/1, ME4/1)

ALCT-LVDB cable assembly

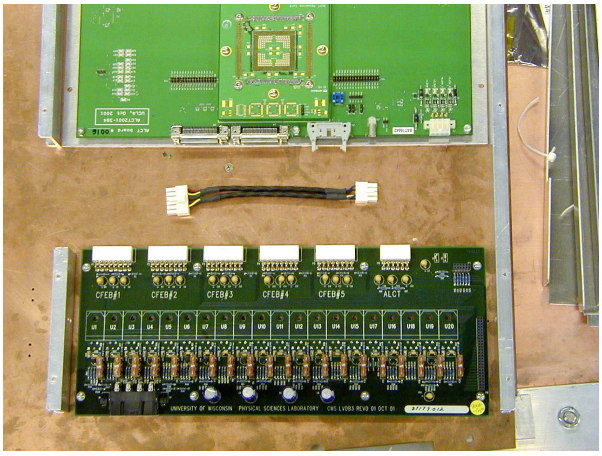
(# MC 400095: ME 1/2
400094: ME 1/3
400095: ME23/2
400106: ME 2/1, ME3/1, ME4/1)

Preparation required:

The LVDB, CFEBs and ALCT need to have been installed on the cooling plate



LVDB - CFEB harness assembly

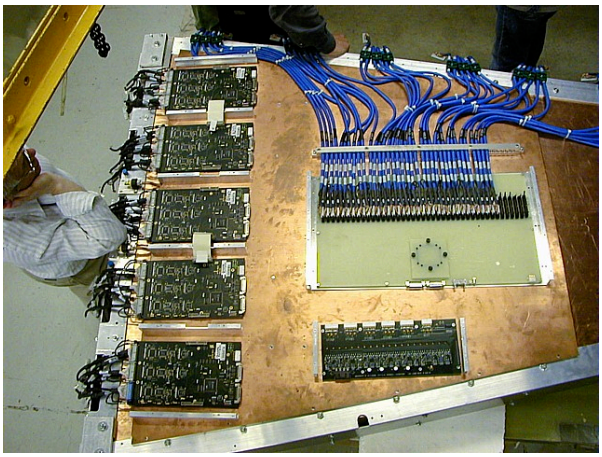


LVDB - ALCT cable assembly, with mounted LVDB and ALCT

CFEB Harness Orientation

The chamber should have the LVDB, all CFEBs and ALCT mounted

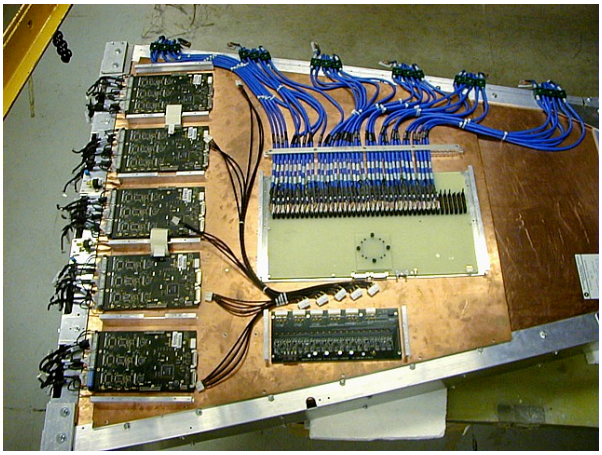
The chamber shown here happens to be ME 3/1. The harness happens to be an ME23/2 harness, so we will not get a perfect fit, but the process of installation is the same in all cases.



Place the harness as shown.

The five leftmost connectors on the back edge of the LVDB supply power to the CFEB boards. Those are the connectors that the harness will attach to.

The rightmost connector on the back edge of the LVDB supplies power to the ALCT. That cabling will be covered later



CFEB harness on LVDB side

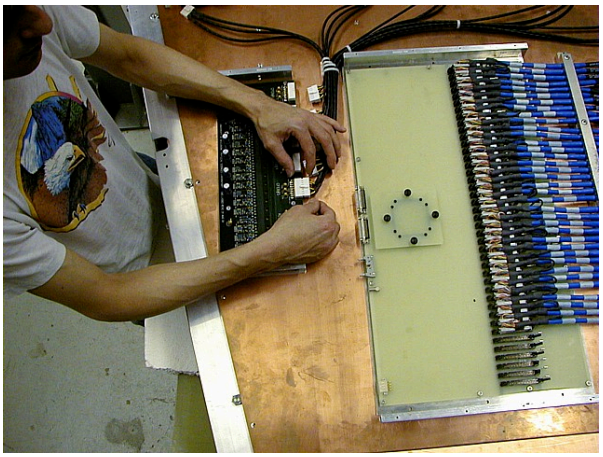
Note that the LVDB-CFEB harness is preformed.

The correspondence between connectors should be obvious.

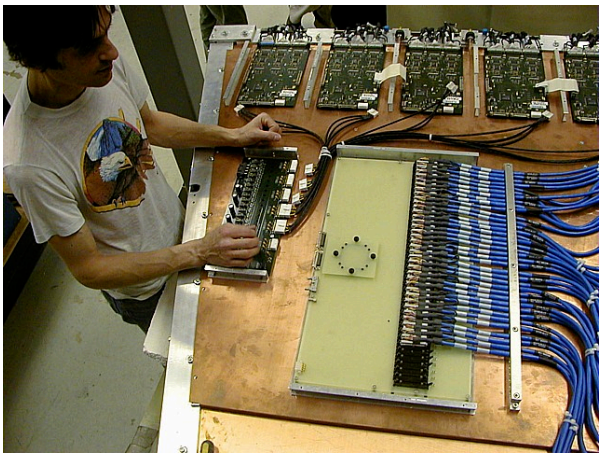
If there is any ambiguity as to where a connector should go, then something is wrong.

Stop installation and resolve the problem before going any further.

Begin plugging in the connectors on the LVDB side, working from right to left.

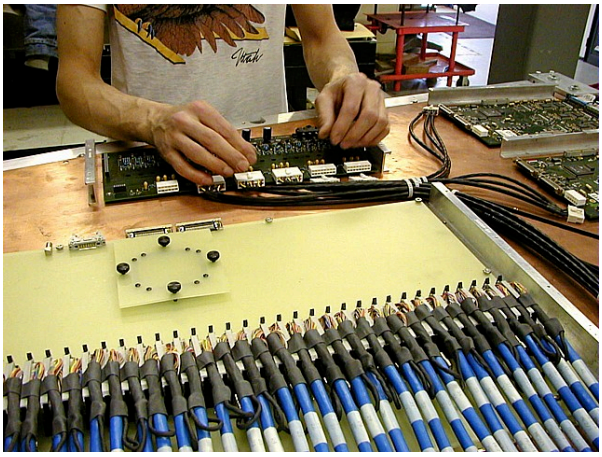


Here we see two connectors done, three left to go.

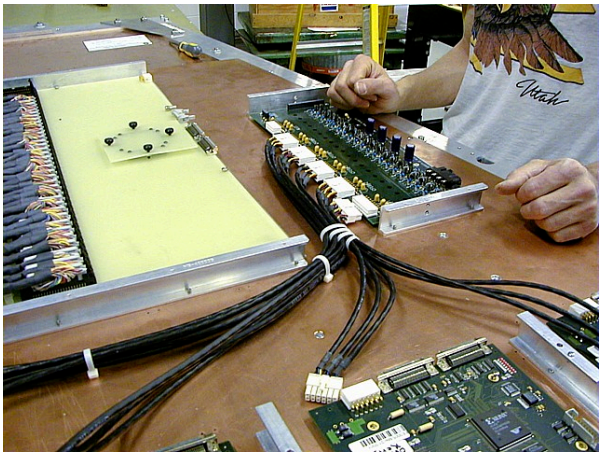


Finish installation at LVDB

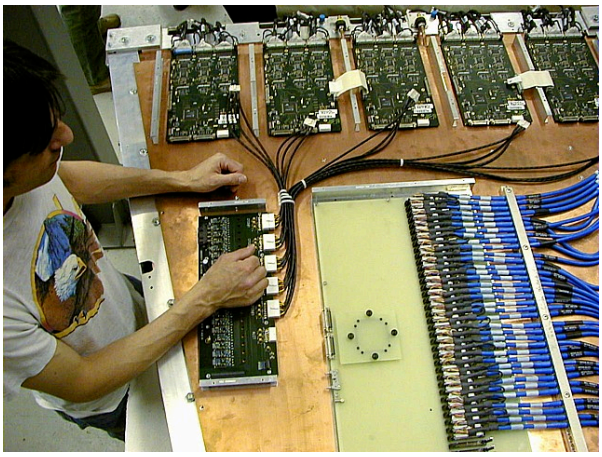
Make sure that each connector seats securely, and that each connector latch closes.



Last connector on the LVDB side…



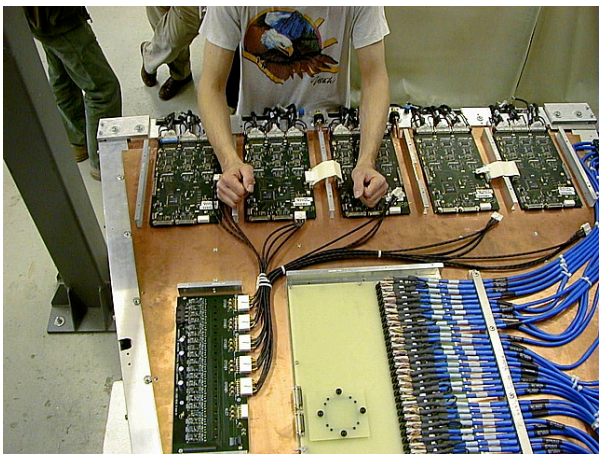
There should be clearance between the LVDB harness and the near edge of the ALCT. This is where the ALCT readout cables will run when the chambers are installed.



Harness installation on CFEB side

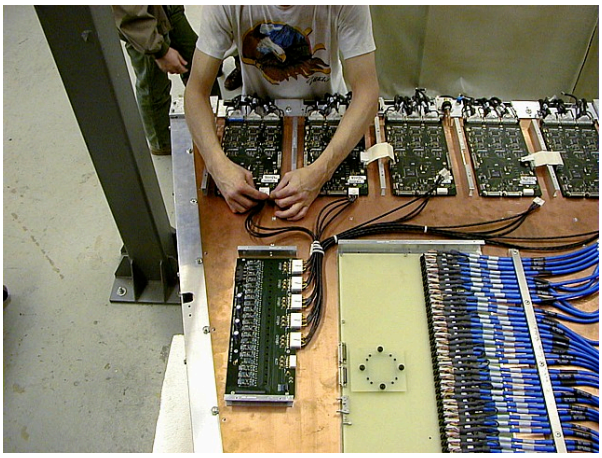
Now begin plugging in cables on the CFEB side of the harness

Start with the shortest cable

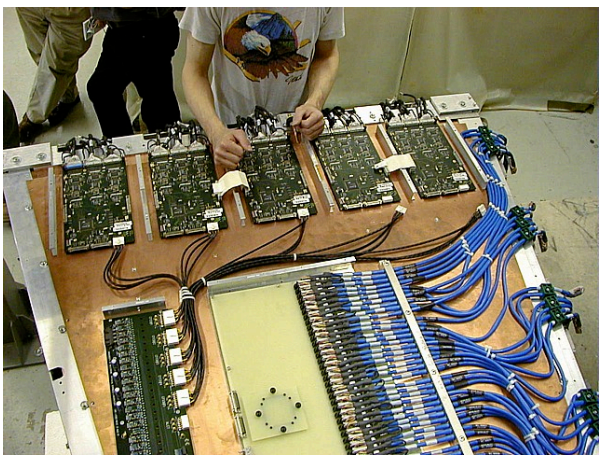


Now plug in the cable for the CFEB nearest to the HV side panel

Bend the cable as shown



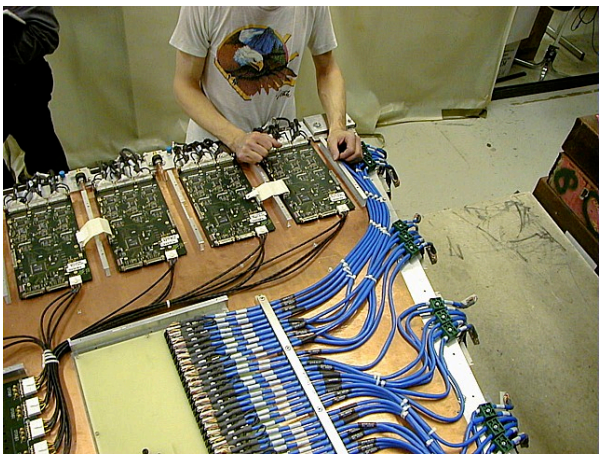
Now plug in the rest of the cables, working your way towards the anode side of the chamber



Finish CFEB harness installation

Finishing the installation…

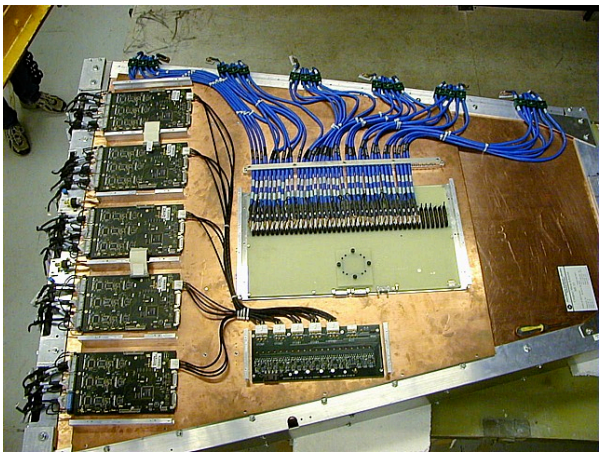
As with the connectors on the LVDB side, make sure the connectors seat all the way and that the latches grab securely



A complete, installed LVDB - CFEB harness assembly.

Disregard the fact that it's not an exact fit in this case, since an ME23/2 chamber was not available for this exercise.

The basic points about the cable routing and clearances are still clear in this picture.



Installation of LVDB-ALCT cable

The ALCT LV power connector is the rightmost one at the back edge of the LVDB, looking from the input side of the LVDB.

There are two kinds of LVDB- ALCT cables:

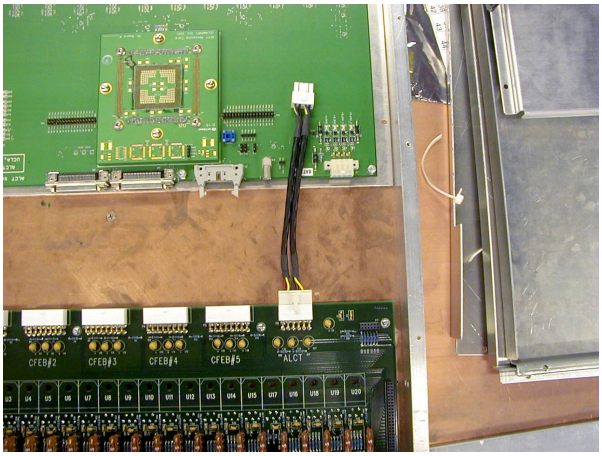
- Short: applies to ME 1/2, ME 1/3 and ME 234/2
- Long: applies to ME 2/1, ME 3/1 and ME 4/1

Describing short cable installation first-

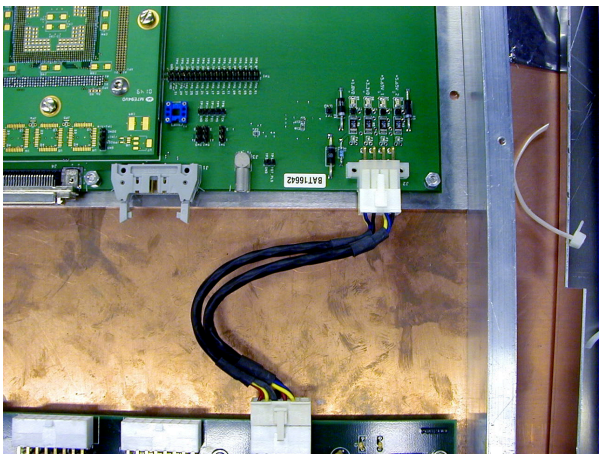
Plug LVDB-ALCT cable into LVDB connector as shown in first figure. Make sure connector latches securely

Bend cable horizontally as shown and plug cable into ALCT power connector.

- The cable should remain horizontal. Do not try to make it stick up in the air.



Beginning LVDB-ALCT cable installation, short cable variant



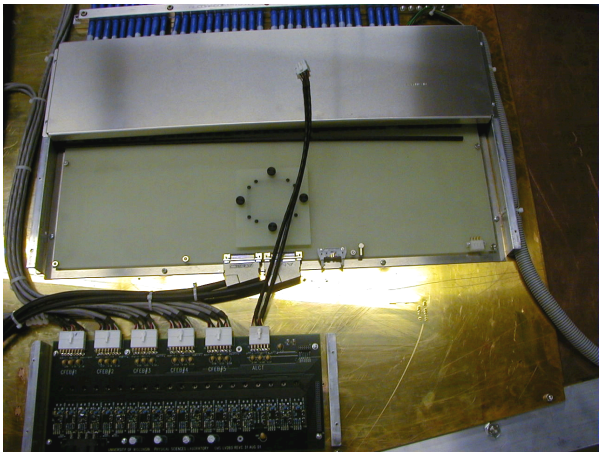
Finishing short cable installation

For 20-degree chambers …

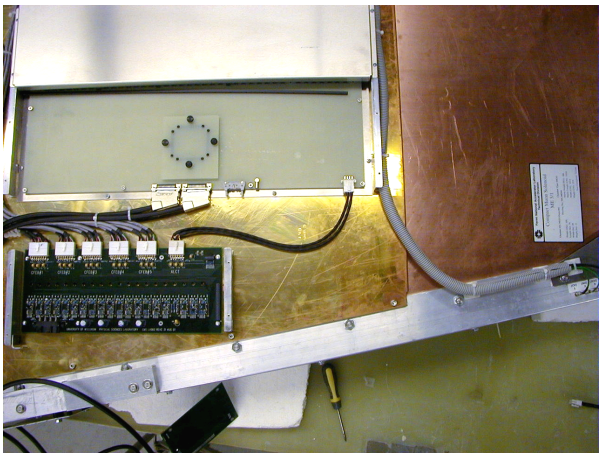
Long cable installation-

Again, plug LVDB-ALCT cable into LVDB connector

Make sure connector latches securely



Bend cable horizontally as shown and plug cable into ALCT power connector



Secure cable with a cable-tie and adhesive cable-tie anchor near midpoint of cable, as shown