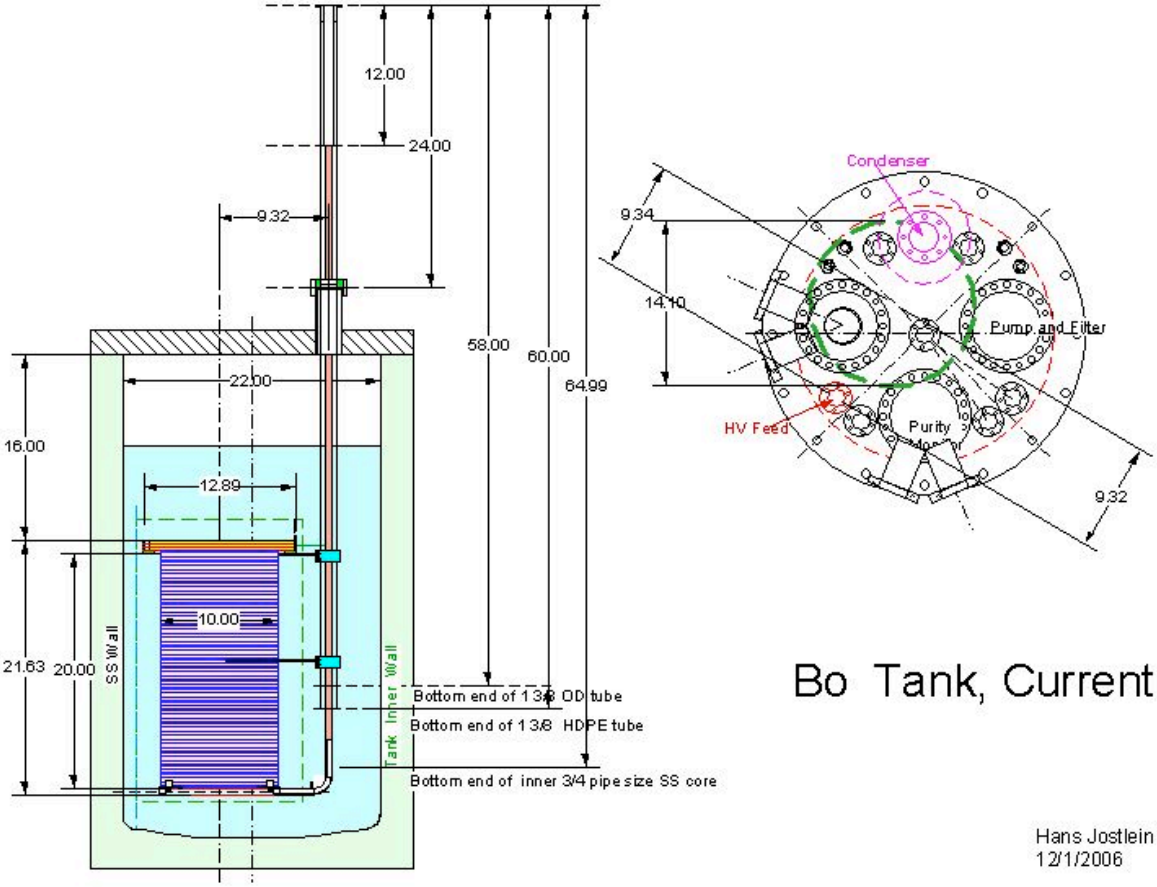
Drawings/pictures of the TPC in Bo : TPC overall, HV lead detail, HV Filter, Gradient Sheet detail, wire planes, cable type, & feedthrough flange

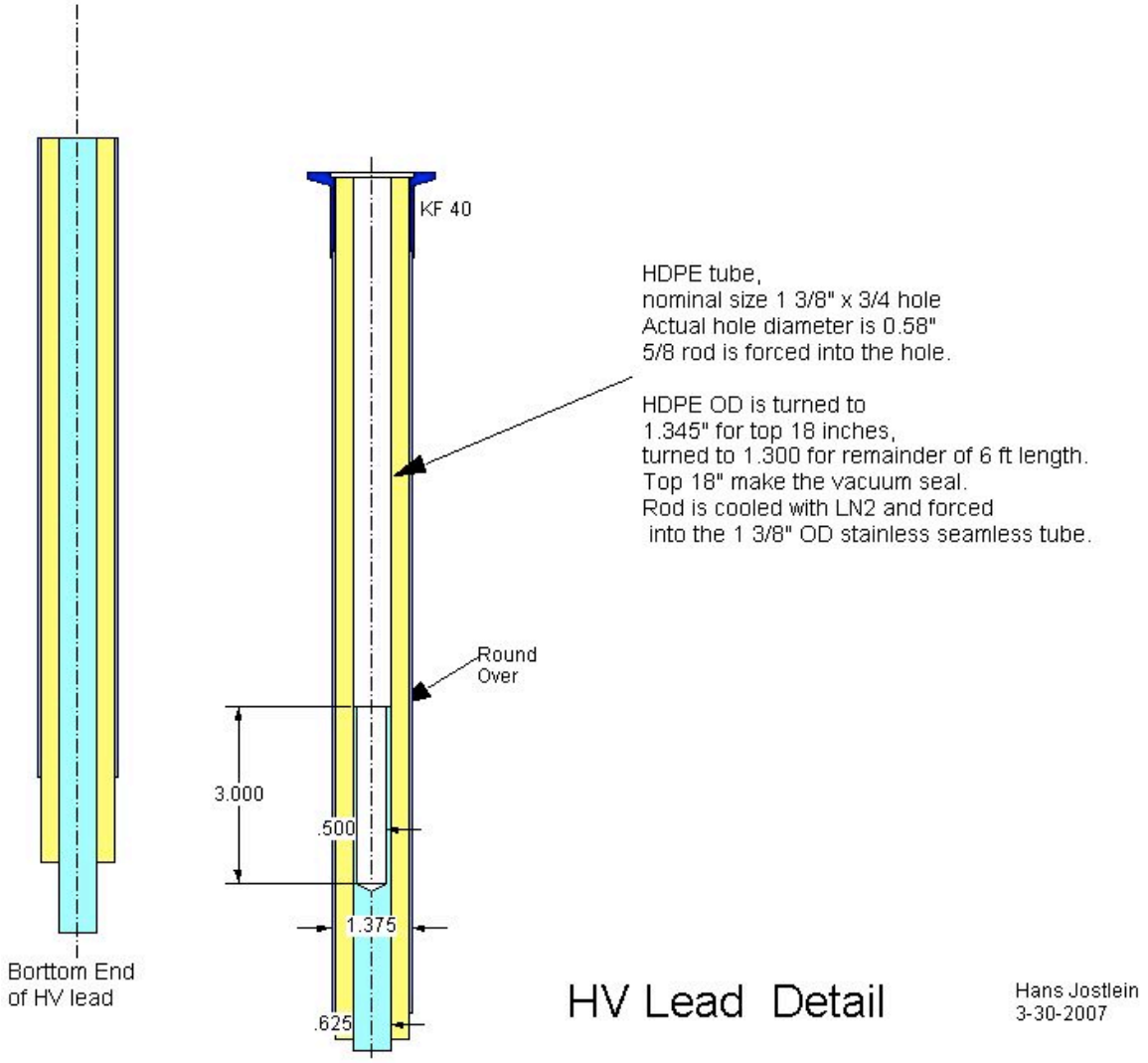
Abstract

This documents collects some drawings, and photos about the TPC in Bo. An overall drawing of the TPC is below. It is a vertical cylinder about 22 inches high and 12 inches in diameter. Electrons drift up. It has 150 wires total in 3 planes. The wire spacing is 4.698 mm. The materials involved are copper-clad G-10, G-10, copper-beryllium wire, some solder, some HDPE pipe and some stainless tube. The cable is kapton insulated ribbon cable from Accuglass.

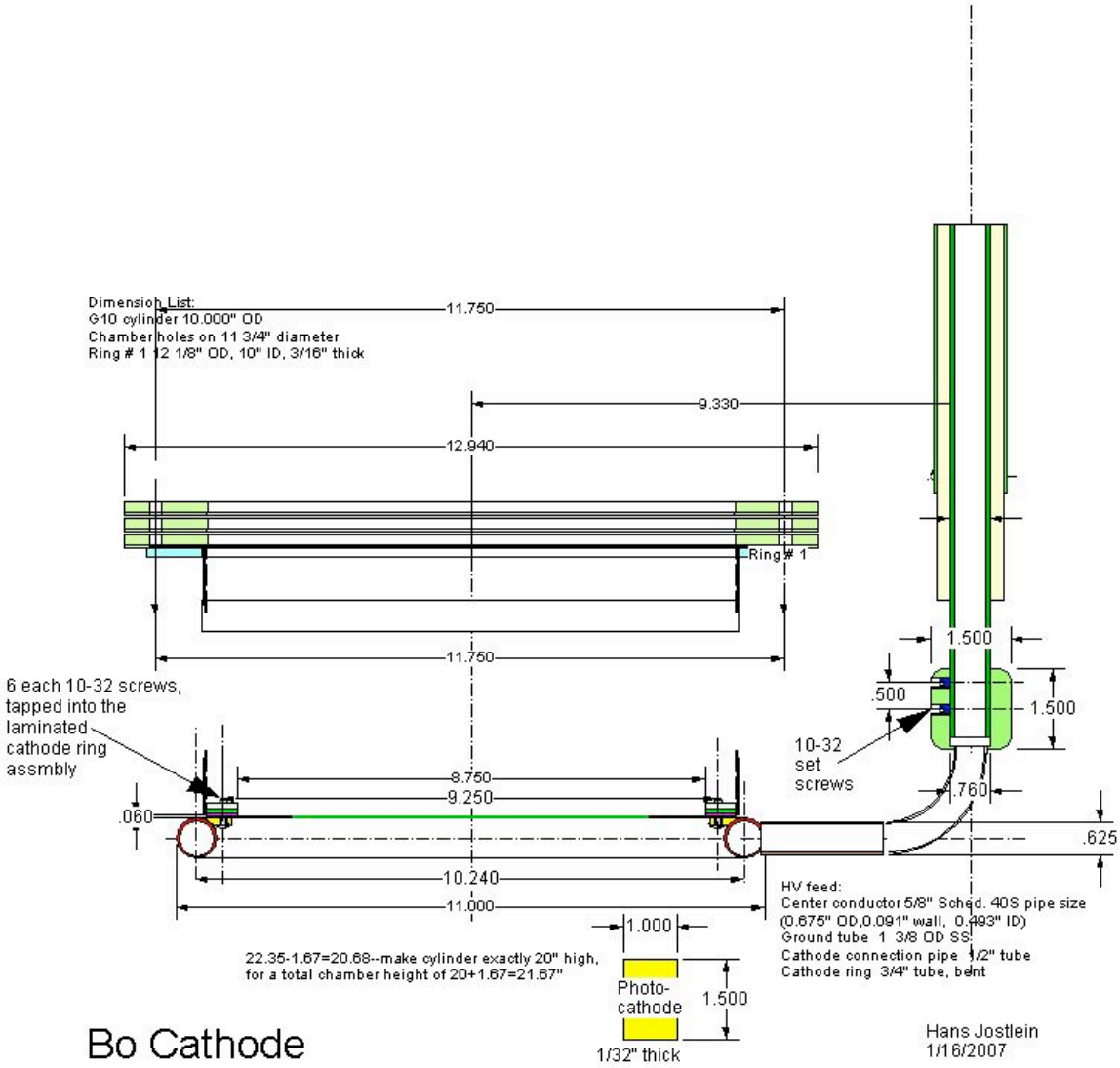
TPC Overall



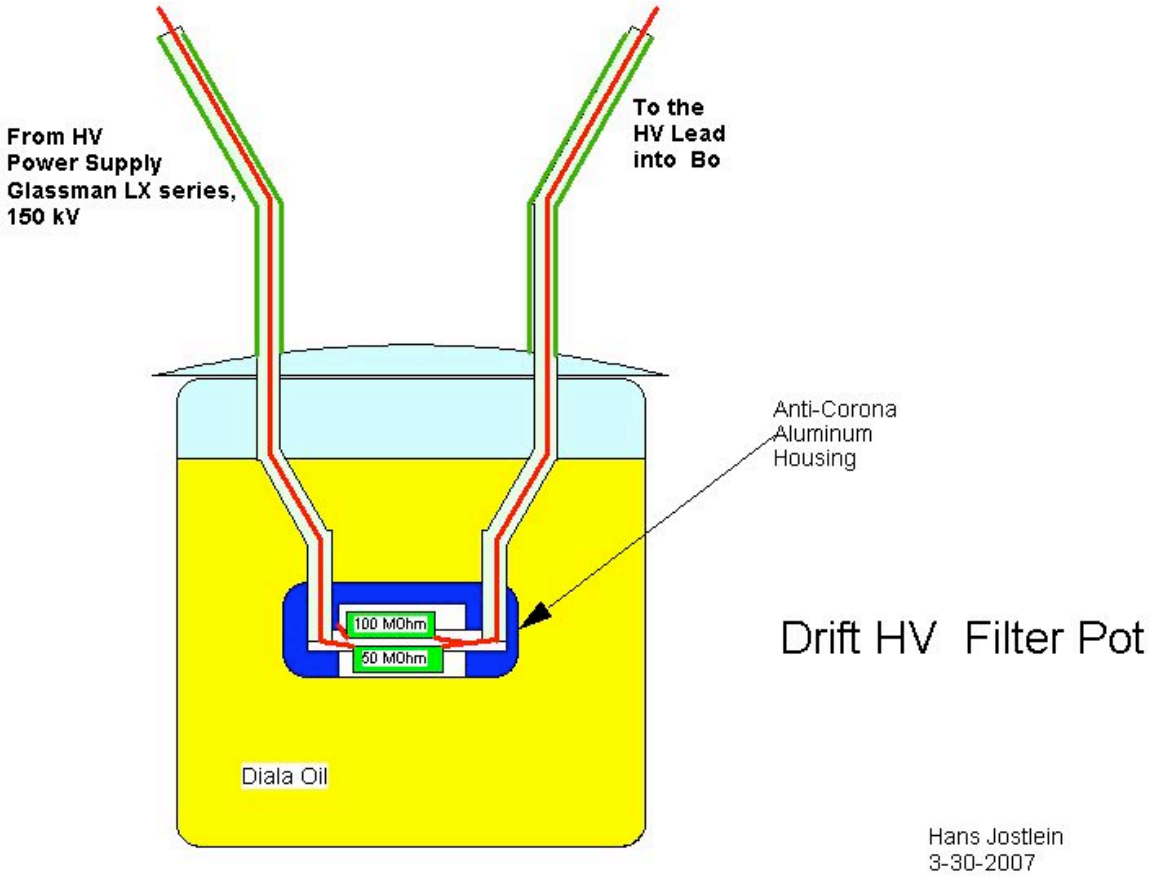
The HV Lead for Bo



The Bo Cathode HV Connection



The HV Filter Pot (not actually in Bo)



Test results

We have tested the HV lead, connected to the Glassman HV supply via the filter pot, for a HV test in LN2.

An initial test with the lead in air, and the HV filter pot filled with air (not the Diala oil) showed breakdown at 32 kV. This compares to the nominal drift HV need for BO of 25 kV.

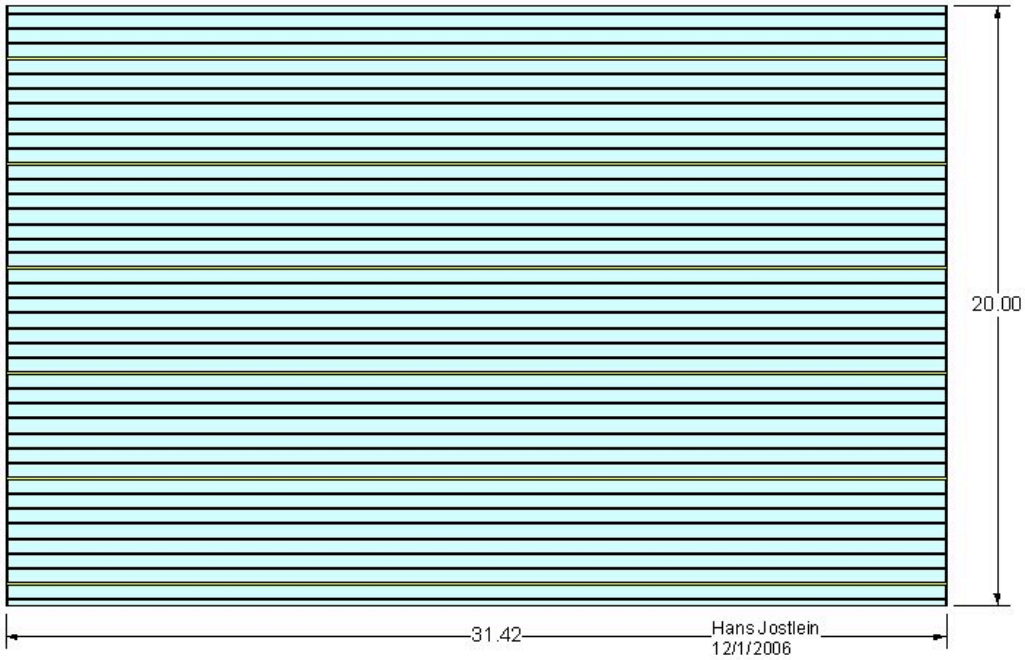
After filling with LN2 and oil, we reached a maximum of 132 kV before breakdown. After the initial breakdown, the system held 100 kV, but not 110 kV.

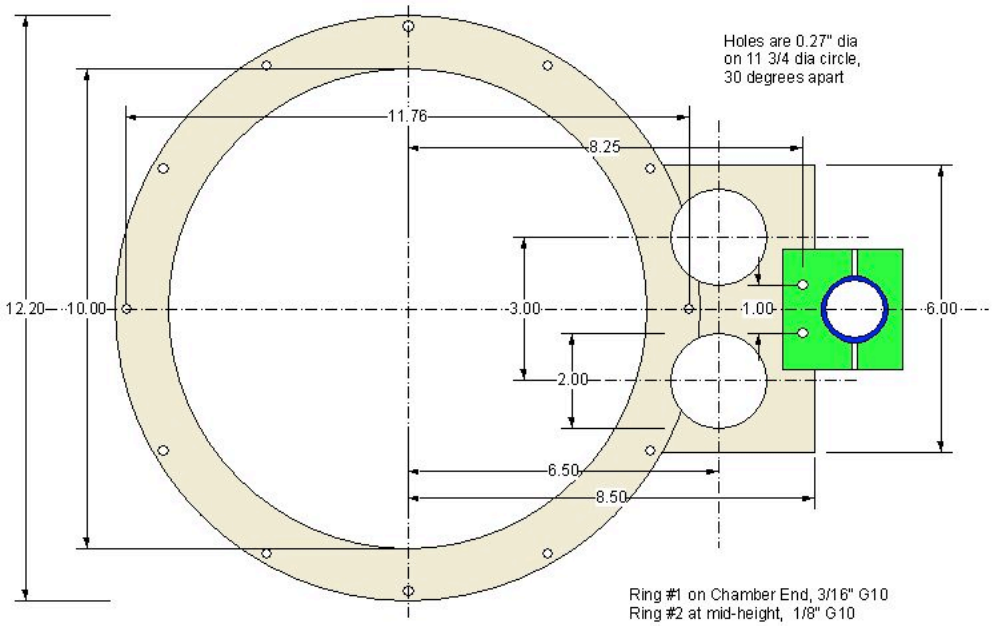
The Bo Cathode Sheet and Cylinder Ribs

Strips are at 1/2" centers, each 7/16" wide with a 1/16" gap
Strip pattern begins and ends with a half strip,
whose center line is the edge of the sheet.
Strips are 31.300" long,
the sheet is 31.416" wide,
i.e. there is a 1/16 bare G10 frame on both vertical edges.

1 each needed.
Material is 0.023" single clad.
(Halogen free if available).

Gradient Cylinder Ring Sheet

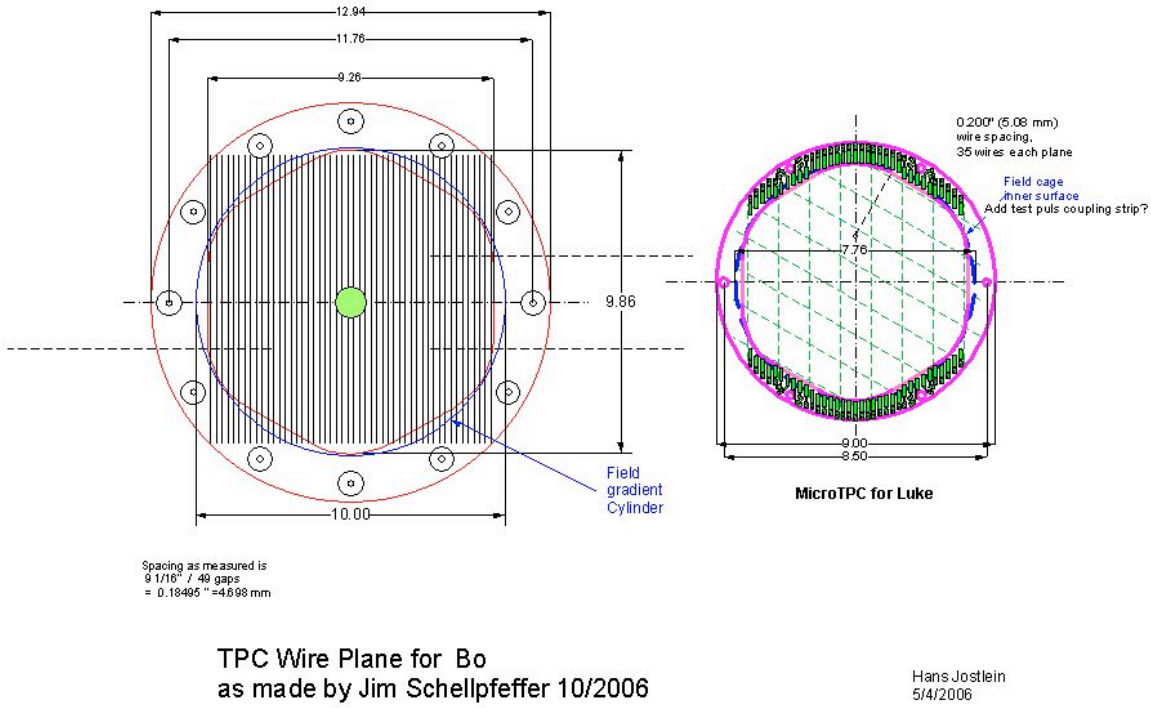




Gradient Cylinder Rings

Hans Jostlein
12/1/2006

The Bo TPC plane

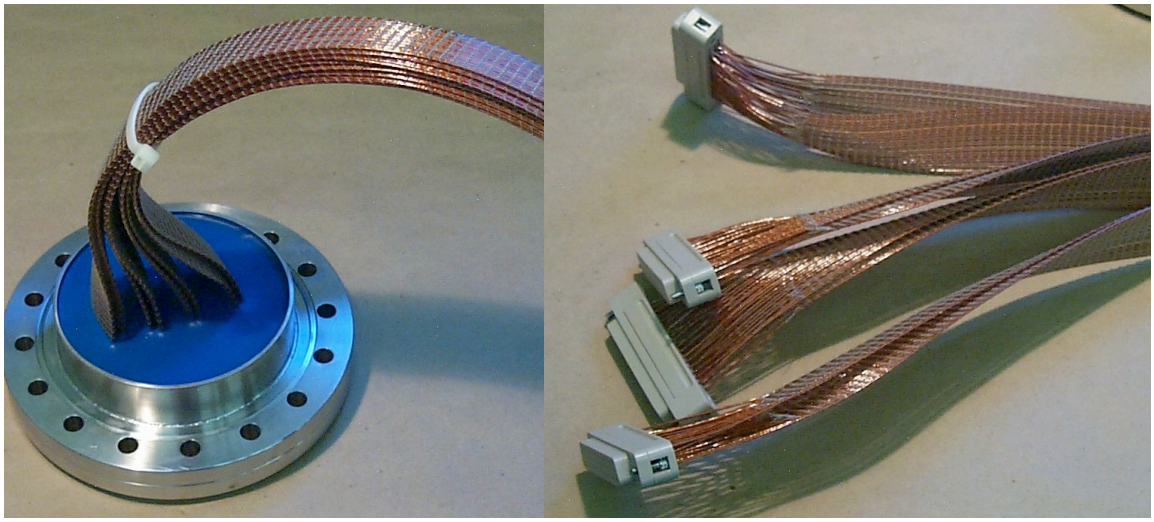


The Bo TPC internal cables and feedthru- Accuglass Manufacturer

50 WAY (25 WAY X 2), KAPTON INSULATED RIBBON CABLE

Part Number: 111400

50 Way Kapton Ribbon Cable (25 Way x 2). **19", 39", and 96" Lengths.** Custom lengths are also available, please call.



The TPC about to be installed in Bo