

LINAC I INTERTANK

Drawing PS 1A35.000.3

This new intertank section with two current transformers (but without the valve) replaces the existing one (drawing PS 1A 30.000.3) which has a valve and a flexible bellows but no transformers.

The reason for this change is the need for beam diagnostic in front of each tank. The whole old linac structure, because of the missing valves, becomes now one vacuum volume like the vacuum system of the new linac.

The specification given by H. Haseroth :

- each intertank section will have two current transformers, one of
- CERN type Tore No 24 and the other
- Pearson type 110

The connector for the CERN transformer is BURNDY type 14-12P-21T.

The construction concept

Both transformers are in one box which is electrically sealed to the outside and closed on the box-bottom side by welding. The transformers cannot be taken out of the box without machining away the welded seam.

The "gap" is made with a 6mm thick glass ring protected from ion bombardment. Minimum gap is ~ 2 mm.

The central tube has a 38mm bore for 32mm bore in the half-drift tube .

Vacuum seals are rubber O rings which are also used on the tanks.

The bellows with the tank cover will be taken from the present intertank section.

Assembly work sequence :

- The Pearson transformer (P.Tr.) is bolted loosely on the box after the first insulator ring is inserted.
- The CERN transformer (C.Tr.) with the rest of the insulator rings is tightened to the bottom of the box by the three M4 screws.
- The P.Tr. is finally tightened to the box.
- The wires coming from the C.Tr. are soldered to the connector.
- Both transformers are checked electrically for correct functioning.
- The central tube is now welded to the box.
- The box with the gap ring is bolted to the aluminium cover and the whole assembly is vacuum tested.
- The tested assembly, together with the intermediate tube is inserted between the linac tanks after the valve is taken out. The cover with the bellows may stay on the tank.

Production time and costs

Production cost of one intertank assembly not including the transformers	1400.- SFr
Production time for two assemblies including commissioning	3 weeks
Assembly time on the bench including vacuum tests	2 days
Installation between the linac tanks for two assemblies, pumping time not included	2 hours.

E. Boltezar