

Instructions for Preparation of Linac Beam.

| 1. <u>Time - table.</u> | Munday Normal Start | Munday Early Start | Thursday |
|---|------------------------|-----------------------|------------------------|
| 1) Switch on | 08.30 | 07.30 | 08.30 |
| 2) Close Linac | 10.00 | 09.00 | 10.00 |
| 3) Check M.A. Linac Tests | 10.00-12.00 | - | 10.00-17.00 |
| 4) Check M.A. Steering & focussing | 12.00-12.30 | 09.00-09.30 | 17.00 17.15 |
| 5) Pencil beam 1 pps check with 1 every 3 s. | 12.30-13.00 | 09.30-10.00 | 17.15-17.30 |
| 6) Transfer beam to M.C.R. | 13.00 | 10.00 | 17.30 |

2. Closing of Linac.

Announce over the public address 5 minutes before closing that Linac will be closed.

Operate the locks on the security panel, close the doors and make a patrol. Thereafter, during operation, the "main barrier interlock" must be kept closed (green). If it drops out, close it again and investigate the reason.

3. Momentum Analysis.

Settings.

Aperture - all open

Steering coils - BD 41, 42, 41a, 42a, 43, 44 - zero
(cycle. - + - 0)

Triples IQ 11, 21, - 0 8.4 D 3.4 F 7.0 D

Screen IV - in

Procedure.

Adjust IB 11 and BD 43 to centre the slit image on Screen IV. Set Tank levels to those of preceding run (approx. 147, 175 & 164 in L.C.P.).

Check that image is satisfactory and that BM 48 is of the order of a milliampère. Record BM 11, 21, 31, 41, & 48 (M.A.).

4. Steering and Focussing.

Settings.

Apertures - all open except BA 43 = 150 x 150
BD 41, 42, 41a, 42a, - zero
Triplet IQ 11 - 4.9 F 8.9 D
H.T. 510 kV
PF 11 + 6 42
PF 12 + 10 .65
q₁ 0.79
q/41 0.51
Quads II + III 615 A

Procedure.

With these starting values, adjust H.T., BD 11, 12, PF 11, 12, q₁, q₄₁, BD 41a, BD 42a and quadrupoles II & III for the best pulse form and amplitude on BM 46. Note that it is necessary to arrive at the optimum settings by successive approximation. Record BM 11, 21, 31, 41, 45 and 46 (S).

5. Matched Pencil Beam.

Settings.

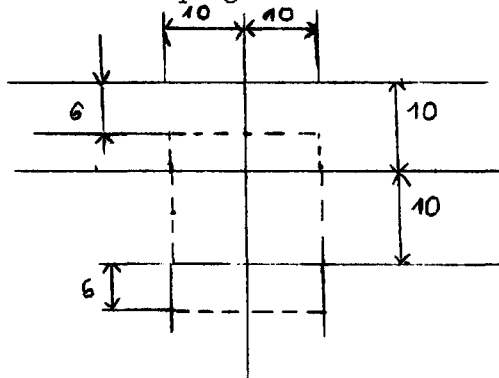
As for Steering and focussing, plus IQ 21 - 4.0 F 7.2 D.

Procedure.

When the M.C.R. announces "magnet pulsing, ring clear", release the injection valve 26 and ask for 1 pps. Switch over to P.S. timing.

Adjust IB 11 to centre the image horizontally on Screen IV. Ignore the vertical deflection for the moment. Withdraw Screen IV.

Close Flag 26 to 20 x 20 mm, 6 mm below the centre, using IB 21 and BD 43 to locate the shadow of the plug on Screen 26 as follows :



Close BA 43 to 55 x 200.

Adjust IB 21, BD 43, Triplets IQ 21, 11 and BD 41a and 42a for max. BM 49 by successive approximations.

Record BM.03 - 49 (P.B.)

Ask M.C.R. for 1 cycle per 3 seconds and check BM 49.

Call M.C.R. and announce "beam of - mA available.

BD 43 = - mA.

Control of BD 43 transferred."

Check BM 49 after transfer and setting of BD 43 in the M.C.R..

Record log B.

To reduce the beam, turn PF 11 (out-in) to the right.

C.S. Taylor

Distribution : (open)

Linac Staff

For information :

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