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MODIFICATIONS TO BEAMS d_{25} AND m_4 WHEN TARGET 1 IS DISPLACED RADIALLY

Two negative secondary beams start from target 1 , m_4 at less than 4 GeV/c and d_{25} at 6 to 12 GeV/c. The operation of sharing these with slow ejection requires a radial displacement of + 1 cm of target 1 .

d_{25} BEAM

With the target in its present position on the equilibrium orbit, the beam d_{25} is extracted at an angle of 40 mr, the acceptance is $\pm$ 8 mr at 12 GeV/c, $\pm$ 9 mr at 6 GeV/c. These values are true for the optimum positions of the magnet MNP 010, which can, by remote control, travel parallel to the CPS magnet 1. The positions of the centre of the magnet MNP 010 measured from the centre of the CPS magnet 1 are about 115, 95 and 70 cm at 12, 9 and 6 GeV/c, respectively.

With the target displaced this acceptance and extraction angle may still be achieved by either rotating through 4 mr or displacing by + 1cm the magnet MNP 004 (first magnet of m_4 beam located in tank 1); the settings of magnet MNP 010 being roughly the same.

It would appear that a rotation of the magnet MNP 004 would involve extensive modifications.

m_4 BEAM

The acceptance and extraction angle of this beam are unaffected as target 1 and the magnet MNP 004 are both displaced by + 1 cm. However, the initial two lenses of this beam should be adjusted to take account of the change in position of MNP 004. These changes are 4.6 mm and 2.5 mm

for quadrupoles QNP 01 and QNP 02 respectively, perpendicular to the beam line southwards.

Following diagrams show a sketch of the first part of beams d_{25} and m_4 (Fig. 1) together with phase plane emittances and boundaries of d_{25} beam in various longitudinal positions along the equilibrium orbit (Figs. 2, 3, 4, 5 and 6).

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CAVITE 3

10 m.

Faisceau : M 7

Electrodes : Acier inox

Longueur : 9m.

KV

Tension totale de fonctionnement

10 — 12 KV

Ecartement

T : claq/heure

Taux de claq. moyen

200 h

U varie de 340 à 600 kv

T

semaines

40+41 41+42 43+44 44+45 45+47 49+50 50+51 2+3 4 à 6 8+9 10+11 12+13 15+16 16+17 18+19 21+22 22+23 26+27 28+29 29+30 31+32 34+35 36+37

KV

Tension totale en fin de formation H.P.

10 — 12 KV

Ecartement

T : claq/minute

Taux de claq. en fin de form. H.P.

1 h

T

semaines

40+41 43+44 44+45 46+47 50+51 4+5 8+9 10+11 15+16 18+19 21+22 26+27 28+29 31+32 34+35 36+37 38+39

KV

Tension totale en fin de formation B.P.

10 — 12 KV

Ecartement

1 h

semaines

40+41 41+42 43+44 44+45 46+47 49+50 50+51 2+3 4+5 8+9 10+11 15+16 18+19 21+22 26+27 28+29 31+32 34+35 36+37 38+39

fig. 1

CAVITE "AB"

6 m.

Faisceau : M 6

Electrodes :
cathodes, alu oxydé
anodes, ac. inox

Longueur : 6 m.

KV

Tension totale de fonctionnement

600
500
400
300
200
100

5 — 10 — 7 — 5

Ecartement

KV

100 h

T

T : claq/h.

Taux de claq. moyen

3
2
1

24+25 28+29 29+30 31+32 32+33 34+35 36+37

semaines

KV

Tension totale en fin de formation H.P

600
500
400
300

5 — Ecartement

KV

10 h.

T

T : claq/h.

Taux en fin de formation

2
1

24+25 28+29

semaines

KV

Tension totale en fin de formation B.P.

360
340
320
300
280
260
240

5 — 7 — 5 — Ecartement

KV

10 h.

24+25 28+29 29+30 31+32 34+35 36+37

semaines

fig. 2

CAVITE "C D"

6 m.

Faisceau : M 6

Electrodes :
cathodes , alu oxyd
anodes , ac. inox

Longueur : 6 m.

KV

600

500

400

300

200

100

Tension totale de fonctionnement

5 — 10 — 7 — 5 Ecartement

KV

T

100 h.

T : claq/ h.

Taux de claq. moyen

3

2

1

semaines

24 + 25 | 28 + 29 | 29 + 30 | 31 + 32 | 32 + 33 | 34 + 35 | 36 + 37

KV

600

500

400

300

Tension totale en fin de formation H.P.

5 Ecartement

KV

10 h.

semaines

24 + 25 | 28 + 29

T

claq/ h.

Taux de claq. en fin de formation

5

4

3

2

1

T

10 h.

semaines

24 + 25 | 28 + 29

KV

360

340

320

300

280

260

240

Tension totale en fin de formation B.P.

5 Ecartement 7 5

10 h.

KV

semaines

24 + 25 | 28 + 29 | 29 + 30 | 31 + 32 | 34 + 35 | 36 + 37

FABRICATION

fig. 3

CAVITE "BEAUJOLAIS"

2 m.

Faisceau : K10

Electrodes :
anode : ac. inox
cathode : alu. oxydé

Longueur : 2 m.

KV — Tension totale de fonctionnement

Ecartement : 7 — 12

KV : 800, 700, 600, 500, 400, 300, 200, 100, 0

100 h.

T : claq./h.

Taux de claq. moyen : 3, 2, 1

T

46-47 * 47-48 | 48-49 | 1-2 * 2-3 | 7-8 | 8-9 * 9-20 | 24-25 * 26-27 | 31-32 * 32-33 | 38-39 * 40-41

semaines

KV — Tension totale en fin de formation B.P.

Ecartement : 7 — 12

KV : 600, 500, 400, 300, 200, 100, 0

10 h.

31-32 * 32-33

46-47 * 47-48 | 1-2 * 2-3 | 7-8 * 8-9 | 18-19 * 19-20 | 24-25 * 26-27 | 38-39 * 40-41

semaines

FABRICATION SCI

fig. 4

CAVITE "CALVADOS" 2m.

Faisceau : K11

Electrodes:
anode, ac. inox
cathode, alu oxydé

Longueur : 2 m

KV

Tension totale de fonctionnement

10 — 13 — 7 10 — 7 — Ecartement

900
800
700
600
500
400
300
200
100
0

KV

cathode reoxydée

100 h.

T : claq. h.

Taux de claq. moyen

4
3
2
1

? T ?

Semaines

4+5 | 5+6 | 10+11 | 12+13 | 15+16 | 16+17 | 21+22 | 22+23

KV

Tension totale en fin de formation B.P.

10 — 7 — Ecartement

600
500
400
300
200
100
0

KV

10 h.

Semaines

4+5 | 5+6 | 10+11 | 12+13 | 15+16 | 16+17 | 21+22 22+23 | 28 29 29 30 | 34+35

fig. 5

CAVITE "DOLE" 2 m.

Faisceau : K 11

Electrodes :
anode : ac inox
cathode : alu oxydé

Longueur : 2 m.

KV

Tension totale de fonctionnement

10 — 13 — 7 — 10 — 7 — Ecartement

900
800
700
600
500
400
300
200
100
0

KV

100 h.

T : claq/h

Taux de claq. moyen

3
2
1

T

semaines

4÷5 | 5÷6 | 10-11÷12-13 | 15÷16 | 16÷17 | 21-22÷22-23 | 28-29÷29-30 | 34÷35

KV

Tension totale en fin de formation B.P.

13 — 7 — Ecartement

600
500
400
300
200
100

KV

10 h.

semaines

4÷5 | 5÷6 | 10-11÷12-13 | 15÷16 | 16÷17 | 21-22÷22-23 | 28-29 | 29-30 | 34÷35

fig. 6