

ENTRY NO. 9

NAME OF MACHINE . . . Japn. Steel Works. JSW BC-10/7
INSTITUTION . . . Montreal Neurological Institute, McGill University
ADDRESS . . . 3801 University St., Montreal, Quebec H3A 2B4
TEL . . . 514-284-4675 TELEX
IN CHARGE Dr. Mirko Diksic REPORTED BY Dr. Mirko Diksic

HISTORY AND STATUS

DESIGN, date Model tests
ENG DESIGN, date
CONSTRUCTION, date
FIRST BEAM, date (or goal)
MAJOR ALTERATIONS

COST, ACCELERATOR . . \$600,000 US
COST, FACILITY, total . . \$1,500,000 Can. \$
FUNDED BY Montreal Neurological Institute

ACCELERATOR STAFF, OPERATION AND DEVELOPMENT

SCIENTISTS . . four (direct) . ENGINEERS
TECHNICIANS . two CRAFTS
GRAD STUDENTS involved during year
OPERATED BY Research staff or Operators
OPERATION . . . 30 hr/wk. On target . . . 25 hr/wk
TIME DISTR. in house . . . 95 %, outside . . . 5 %
BUDGET, op & dev . . it is not separated from
FUNDED BY the research funds

RESEARCH STAFF, not included above

USERS, in house . . 5-6 groups outside . . . two
GRAD STUDENTS involved during year . . . One
RESEARCH BUDGET, in house . . \$150,000 Can. \$
FUNDED BY Medical Research Council and MNI

MAGNET Endowment Funds

POLE FACE, diameter (compact) . . 72 cm, R-extraction . . 30 cm
R injection cm
GAP, min . . 5.5 cm, Field . . 22 kG
max cm, Field kG at 1.2x10^5
AVERAGE FIELD at R ext . . 18.5 kG Amperre turns
B max/ < B >

NUMBER OF SECTORS { compact } Spiral, max deg
{ separated . . . 4 }
SECTOR ANGLE (SSC) 45 deg
TRIMMING COILS Removed

CONDUCTOR, material and type . square section copper conductor

STORED ENERGY (cryogenic) none MJ
POWER: main coils . . 30 max kW; current stability ±5parts/10^5
trimming coils max kW; current stability

WEIGHT: Fe . 12.1, Cu = 9 . tons; coils tons
COOLING system He. at. exchanger (Flow=200g/min. at 7Kgf/cm^2 pressure)

ION ENERGY (Bending limit) E/A = q^2/A^2 MeV/amu
(Focusing limit) E/A = q/A MeV/amu

ACCELERATION SYSTEM

DEES, number . 2 dees and 2 dummy dees . 45 deg
BEAM APERTURE . . 1-2 cm; DC Bias kV
TUNED by, coarse . shorting plates fine compensator
RF . . . 55 and 46.5 MHz, stable ± 1x10^-5/Hr
Orb F to MHz
HARMONICS, RF/Orb F, used Proton=2nd, Deuteron=4th
DEE-Gnd, max . . 30 kV, min gap . . . 1 cm
STABILITY, (pk-pk noise)/(pk RF volt) . . . 1x10^-5/Hr
ENERGY GAIN, max kV/turn
RF PHASE, stable to ± compensator for phase shift to 1/4 keep dee volt max.
RF POWER input, max. . . 25 kW
FREQUENCY MODULATION, rate Fixed 46.5 & 55MHz . . . /s
modulator, type Master Oscillator Power Amplifier
beam pulse, width

VACUUM SYSTEM

OPERATING PRESSURE x 10^-5 Torr or mbar
PUMPS, No, Type, Size Mechanical roughing pump and
Turbo molecular pump (450l/sec)
(chamber volume=60l)

ION SOURCES

Hot cathode Penning type

INJECTION SYSTEM

EXTRACTION SYSTEM

Electrostatic deflector and septum

FACILITIES FOR RESEARCH

SHIELDED AREA, fixed . 20 m^2; movable m^2
TARGET STATIONS . . . one in rooms
STATIONS served at same time, max one
MAG SPECTROGRAPH, type
COMPUTER model
OTHER FACILITIES

CHARACTERISTIC BEAMS

Table with columns: PARTICLE, ENERGY (MeV) Goal, Achieved, CURRENT (pA) Internal, External. Rows include d and p particles.

SECONDARY

BEAM PROPERTIES

Table with columns: MEASURED, CONDITIONS. Rows include PULSE WIDTH, PHASE EXC, EXTRACT eff, RESOL ΔE/E, EMITTANCE.

OPERATING PROGRAMS, time distribution

BASIC NUCLEAR PHYSICS SOLID STATES PHYSICS
BIOMEDICAL APPLICAT. ISOTOPE PRODUCTIONS

REFERENCES/NOTES

- 1)
2)

PLAN VIEW OF FACILITY, COMMENTS, ETC.