ENTRY No. 45

NAME OF MACHINE . Model 370 (Sumitomo-CGRMeV) DATE . . . . June 14, 1989
INSTITUTION . Chiba Medical School Hospital
ADDRESS . . . . 1-8-1 Inohana Chiba City, Chiba 280, Japan
TEL 0472-22-7171 . . . . . TELEX . 0472-24-3834
IN CHARGE . S. Vematsu . . . . . REPORTED BY . . Y. Itoh

HISTORY AND STATUS

DESIGN, date . . . . . Model tests . . . . .
ENG DESIGN, date . . . . .
CONSTRUCTION, date . . . . . 1985 . . . . .
FIRST BEAM, date (or goal) . . . Sept. 1985 . . . . .
MAJOR ALTERATIONS . . . . .
. . . . .
COST, ACCELERATOR . . . . .
COST, FACILITY, total . . . . .
FUNDED BY . . . . .

ACCELERATOR STAFF, OPERATION AND DEVELOPMENT

SCIENTISTS . . . . . ENGINEERS . . . . .
TECHNICIANS . . . 2 . . . . . CRAFTS . . . . .
GRAD STUDENTS involved during year . . . . .
OPERATED BY . . . . . Research staff or . . . . . Operators
OPERATION . . . . . 30 . . . hr/wk, On target . . . . 9 . . . . . hr/wk
TIME DISTR. in house . . . . . %, Outside . . . . . %
BUDGET, op & dev . . . . .
FUNDED BY . . . . .

RESEARCH STAFF, not included above

USERS, in house . . . . . 8 . . . . . outside . . . . .
GRAD STUDENTS involved during year . . . . .
RESEARCH BUDGET, in house . . . . .
FUNDED BY . . . . .

MAGNET

POLE FACE, diameter (compact) . . 88 cm, R extraction . . 37 cm
R injection . . . . . cm
GAP, min . . . 7 . . . . cm, Field . . . . . kG } at 1.66x10^5 Ampere turns
max . . 12 . . . . cm, Field . . . . . kG }
AVERAGE FIELD at R ext . . . . . 17.7 . . . . . kG
B max/ <B> . . . . .
NUMBER OF SECTORS { compact . . . 4 . . } Spiral, max . . deg
{ separated . . . . . }
SECTOR ANGLE (SSC) . . . . . deg
TRIMMING COILS . . Harmonic . . . 4 pairs . . . . .
. . . . . Circular . . . 4 pairs . . . . .
CONDUCTOR, material and type . . Copper Hollow . . . . .
STORED ENERGY (cryogenic) . . . . . MJ
POWER : main coils . 78 . . . max, kW ; current stability . 2x10^-6
trimming coils . . 3 . . . max, kW ; current stability . . . . .
WEIGHT : Fe . . . 16 . . . . . tons ; coils . . . . 1 . . . . . tons
COOLING system . . . Demineralized Water . . . . .
ION ENERGY (bending limit) E/A = ... q^2/a^2 MeV/amu
(focusing limit) E/A = ... q^2/a^2 MeV/amu

ACCELERATION SYSTEM

DEES, number . . . . . 1 . . . . . ; angle . . . . . 180 . . . . . deg
BEAM APERTURE . . 1.8 . . . . cm ; DC Bias . . . . . kV
TUNED by, coarse . . . . . fine . . . . .
RF . . . . 25 . . . . . to . . . . . 40 . . . mHz, stable ± . . . . . .
Orb F . . 25 . . . . . to . . . . . 13.3 . . . mHz
HARMONICS, RF/Orb F, used . . . 1, 3 . . . . .
DEE - Gnd, max . 40 . . kV, min gap . . . 1.2 . . . . . cm
STABILITY, (pk-pk noise)/(pk RF volt) . . . 1 x 10^-3 . . . . .
ENERGY GAIN, max . . . . 80 . . . . . kV/turn
RF PHASE, stable to ± . . . . . deg
RF POWER input, max . . . . 25 . . . . . kW
FREQUENCY MODULATION, rate . . . . . /s
modulator, type . . . . .
beam pulse, width . . . . .

VACUUM SYSTEM

OPERATING PRESSURE . . 4 x 10^-5 . . . . . Torr ~~mbar~~
PUMPS, No, Type, Size 1 Diffusion pump 1300 l/sec . . . . . .
. . . . .
. . . . .

ION SOURCES

. . . . . Livingstone-Jones type . . . . . .

INJECTION SYSTEM

. . . . .

EXTRACTION SYSTEM

Electrostatic deflector and magnetic channel (static) . .

FACILITIES FOR RESEARCH

SHIELDED AREA, fixed . . . 41 . . . . . m^2 ; movable . . . . . m^2
TARGET STATIONS . . 1 . . . . . in . . . . . rooms
STATIONS served at same time, max . . . . .
MAG SPECTROGRAPH, type . . . . .
COMPUTER model . . . . .
OTHER FACILITIES . . . . .
. . . . .
. . . . .

CHARACTERISTIC BEAMS

PARTICLE	ENERGY (MeV) Goal	ENERGY (MeV) Achieved	CURRENT (pμA) Internal	CURRENT (pμA) External
P		18		50
d		10		50
SECONDARY				(part/s)

BEAM PROPERTIES

MEASURED CONDITIONS

PULSE WIDTH . . . . . RF deg . . . . . pμ A of . . . . MeV . . . ions
PHASE EXC, max . . . RF deg . . . . . pμ A of . . . . MeV . . . ions
EXTRACT eff . . . . . % . . . . . pμ A of . . . . MeV . . . ions
RESOL ΔE/E . . . . . % . . . . . pμ A of . . . . MeV . . . ions
EMITTANCE
(π mm. mrad) { . . . axial } . . . . . pμA of . . . . . MeV . . . ions
{ . . . . rad }

OPERATING PROGRAMS, time distribution

BASIC NUCLEAR PHYSICS . . SOLID STATES PHYSICS . . . .
BIOMEDICAL APPLICAT. 100% ISOTOPE PRODUCTIONS . . . .
. . . . .
. . . . .

REFERENCES/NOTES

PLAN VIEW OF FACILITY, NOTEWORTHY FEATURES, COMMENTS