

ENTRY No. CU44

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. Yamatsu 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 }
max .12 cm, Field kG } at 1.66×10^5
AVERAGE FIELD at R ext 17.7 kG } Ampere turns
B max/
NUMBER OF SECTORS { compact 4 } Spiral, max deg
SECTOR ANGLE (ISSC) separated 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 2×10^{-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 $\pm$
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) 1×10^{-3}
ENERGY GAIN, max 80 kV/turn
RF PHASE, stable to $\pm$ deg
RF POWER input, max 25 kW
FREQUENCY MODULATION, rate /s
modulator, type
beam pulse, width

VACUUM SYSTEM

OPERATING PRESSURE 4×10^{-5} Torr or 4×10^{-6} bar
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)		CURRENT (μA)	
	Goal	Achieved	Internal	External
P		18		50
d		10		50

SECONDARY

(part/s)

BEAM PROPERTIES

MEASURED		CONDITIONS	
PULSE WIDTH	RF deg	μA of	MeV ions
PHASE EXC, max	RF deg	μA of	MeV ions
EXTRACT eff	%	μA of	MeV ions
RESOL $\Delta E/E$	%	μA of	MeV ions

EMITTANCE
(π mm, mrad) { axial } μA 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