

ENTRY No. CU45

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
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 IN CHARGE S. Venatsu REPORTED BY Y. Itoh

HISTORY AND STATUS

DESIGN, date Model tests
 ENG DESIGN, date 1985
 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
 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 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
 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 m²; movable m²
 TARGET STATIONS 1 in rooms

STATIONS served at same time, max
 MAG SPECTROGRAPH, type
 COMPUTER model
 OTHER FACILITIES

CHARACTERISTIC BEAMS

PARTICLE	ENERGY (MeV)		CURRENT (μ A)	
	Goal	Achieved	Internal	External
p		18		50
d		10		50

SECONDARY (part/s)

BEAM PROPERTIES

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

(π mm. mrad) { axial } μ A 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