

ENTRY NO. **CU131** Date **02-OCT-95**
 Name of Machine **JSW 1710 (Japan Steel Works)**
 Institution **Brookhaven National Laboratory**
 Address **Upton, New York 11973-5000**
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 In Charge: **J. S. Fowler** Reported by: **D. J. Schlyer**

HISTORY

MILESTONE DATES:
 Design **1981** Model Tests **1981**
 Construction **1981** First Beam **1982**
 DESIGN/CONSTRUCTION BY:
 in house other **Japan Steel Works**
 COST: Accelerator **860,000** Facility **1,100,000**
 FUNDED BY: **DOE**

STATUS

STAFF: Machine
 Scientists **1** Engineers
 Technicians **1** Students
 Research (in house/external)
 Scientists **/** Engineers **/**
 Technicians **/** Students **/**
 BUDGET: Machine Funded by
 Research Funded by
 TIME DISTRIBUTION:
 Basic Research (in house/external) **100** % / %
 Applied Program (in house/external) **100** % / **0** %
 Maintenance % Development %

MAGNET

POLE PARAMETERS:
 Diameter **105** cm $R_{extract}$ **42** cm R_{inject} **0** cm
 HILL PARAMETERS: Gap (min) cm B_{max} T
 (@ AT) Gap (max) cm B_{min} T
 VALLEY PARAMETERS: Gap (min) cm B_{max} T
 (@ AT) Gap (max) cm B_{min} T
 AVERAGE FIELD: $\langle B \rangle_{min}$ T $\langle B \rangle_{max}$ T
 NUMBER OF SECTORS: compact/separated **4** / **0**
 sector angle deg. spiral (max) deg.
 FIELD TRIMMING: Trim Coils **3**
 Harmonic Coils
 Other
 CURRENT: Main Coils Amps Stability
 Trim Coils Amps Stability
 Stored Energy (cryogenic) MJ
 WEIGHT: Iron **35** Tons Conductor **Cu hollow**
 ION ENERGY: Bending Limit E/A = q²/A² MeV/u
 Focusing Limit E/A = q/A MeV/u

ACCELERATION SYSTEM

FUNDAMENTAL ACCELERATION:
 Description: **2 Dees @ 45°**
 No. of Gaps/turn dE/dn(max) **0.180** MeV/q
 Voltage (max) MV Harmonic f_r/f_{ion}
 Freq **43.5 - 47** MHz Power in(max) MW
 Stability: Phase Voltage
 OTHER CAVITIES (Flattopping or otherwise):
 Description:
 Region of Influence: R_{min} cm R_{max} cm
 No. of Gaps/turn dE/dn(max) MeV/q
 Voltage (max) MV Harmonic f_r/f_{ion}
 Freq MHz Power in(max) MW
 Stability: Phase Voltage

VACUUM SYSTEM

OPERATING PRESSURE: **5 x 10⁻⁶**
 PUMPS: (No. and type) **Diffusion 8"**

ION SOURCE(S)

Type	Intensity (mA)	@ $\epsilon_n = \beta\gamma\epsilon$ (π mm mrad)	Ion Species
(a)			
(b)			
(c)			
(d)			

INJECTION SYSTEM

Hot Cathode Axial Source Efficiency %

EXTRACTION SYSTEM

Electrostatic Efficiency **40** %

CHARACTERISTIC BEAMS

Accelerated Ions	E/A (MeV/u)	Current (part μ A)	
		Internal	External
(a) H^+	17	60	40
(b) D^+	10	50	30
(c)			
(d)			

Secondary Particles	E (MeV)	part/sec
(a)		
(b)		
(c)		

EXTRACTED BEAM PROPERTIES:

For μ A of MeV/u ions
 $\Delta E/E$ % $\Delta\phi$ ° ϵ_n
 $\epsilon_n = \beta\gamma\epsilon$ x π mm mrad z π mm mrad

FACILITIES FOR RESEARCH

SHIELDED AREA: Fixed: **60** m² Moveable **0** m²

Target Stations: **1** No. Served At Same Time: **1**

MAGNETIC SPECTROMETERS:

OTHER FACILITIES:

REFERENCES/NOTES

(a)
 (b)

PLAN VIEW OF FACILITY, COMMENTS