

ENTRY NO. CM7 Date
 Machine Name BC1710
 Manufacturer The Japan Steel Works, LTD.
 Address 1-2, Yurakucho 1-chome, Chiyoda-ku, Tokyo Japan
 Tel (03)3501-6111 Telex J24256 (JSW)
 Fax (03)3504-0727 EMAIL
 In Charge: Reported by: Y. Toda

HISTORY AND STATUS
 DATES: Design 1980-1981 First Machine 1981
 SALES: No. Sold/Operational 8 / 8. Currently Available 99%
 COST: Accelerator Facility

MAGNET
 POLE PARAMETERS:
 Diameter 101 cm Rextract 42 cm Rinject cm
 HILL PARAMETERS: Gap (min) 7 cm Bmax T
 (@ 1.2x10⁸ AT) Gap (max) 7 cm Bmin T
 VALLEY PARAMETERS: Gap (min) 13 cm Bmax T
 (@ 1.2x10⁸ AT) Gap (max) 13 cm Bmin T
 AVERAGE FIELD: < B >min 1.43 T < B >max 1.54 T
 NUMBER OF SECTORS: compact/separated 4 /
 sector angle 45 deg. spiral (max) 000 deg.
 FIELD TRIMMING: Trim Coils 3
 Harmonic Coils 2
 Other
 CURRENT: Main Coils 380 A Amps Stability ±2x10⁻⁶
 Trim Coils 50 A Amps Stability ±1x10⁻⁴
 Stored Energy (cryogenic) MJ
 WEIGHT: Iron 30 ton Conductor 1 ton
 ION ENERGY: Bending Limit E/A = q²/A² MeV/u
 Focussing Limit E/A = q/A MeV/u

ACCELERATION SYSTEM
 FUNDAMENTAL ACCELERATION:
 Description: 2 sets of pie/4 shape dee with lambda/4 stems
 No. of Gaps/turn 4 dE/dn(max) 0.16 MeV/q
 Voltage(max) 0.04 MV Harmonic fr/fion 2.4
 Freq 49.5, 47 MHz Power in(max) 0.02 MW
 Stability: Phase 1 Voltage 1x10⁻³

VACUUM SYSTEM
 OPERATING PRESSURE: 1x10⁻⁸ Torr
 PUMPS: No. and type 1 diffusion pump

ION SOURCE(S)
 Type Intensity @ εn = βγε Ion Species
 (mA) (π mm mrad)
 (a) Hot Cathode PIG 1 H⁺
 (b)

INJECTION SYSTEM
 Efficiency %

EXTRACTION SYSTEM
 Electrostatic deflector Efficiency 80 %

CHARACTERISTIC BEAMS
 Accelerated Ions E/A (MeV/u) Current(part. μA)
 Internal External
 (a) H⁺ 1.7 150 70
 (b) D⁺ 1.0 150 70
 EXTRACTED BEAM PROPERTIES:
 For 5.0 μA of 1.7 MeV/u H⁺ ions
 ΔE/E 1 % Δφ °rf
 εn = βγε x 3.0 πmm mrad z 1.0 πmm mrad

REFERENCES/NOTES
 (a)
 (b)

ENTRY NO. CM8 Date
 Machine Name BC2211
 Manufacturer The Japan Steel Works, LTD.
 Address 1-2, Yurakucho 1-chome, Chiyoda-ku, Tokyo Japan
 Tel (03)3501-6111 Telex J24256 (JSW)
 Fax (03)3504-0727 EMAIL
 In Charge: Reported by: Y. Toda

HISTORY AND STATUS
 DATES: Design 1988-1989 First Machine 1989
 SALES: No. Sold/Operational 1 / 1. Currently Available 99%
 COST: Accelerator Facility

MAGNET
 POLE PARAMETERS:
 Diameter 101 cm Rextract 42 cm Rinject cm
 HILL PARAMETERS: Gap (min) 7 cm Bmax T
 (@ 1.3x10⁸ AT) Gap (max) 7 cm Bmin T
 VALLEY PARAMETERS: Gap (min) 13 cm Bmax T
 (@ 1.3x10⁸ AT) Gap (max) 13 cm Bmin T
 AVERAGE FIELD: < B >min 1.60 T < B >max 1.60 T
 NUMBER OF SECTORS: compact/separated 4 /
 sector angle 45 deg. spiral (max) 000 deg.
 FIELD TRIMMING: Trim Coils 3
 Harmonic Coils 2
 Other
 CURRENT: Main Coils 400 A Amps Stability ±2x10⁻⁶
 Trim Coils 50 A Amps Stability ±1x10⁻⁴
 Stored Energy (cryogenic) MJ
 WEIGHT: Iron 30 ton Conductor 1 ton
 ION ENERGY: Bending Limit E/A = q²/A² MeV/u
 Focussing Limit E/A = q/A MeV/u

ACCELERATION SYSTEM
 FUNDAMENTAL ACCELERATION:
 Description: 2 sets of pie/4 shape dee with lambda/4 stems
 No. of Gaps/turn 4 dE/dn(max) 0.16 MeV/q
 Voltage(max) 0.04 MV Harmonic fr/fion 2.4
 Freq 49 MHz Power in(max) 0.02 MW
 Stability: Phase 1 Voltage 1x10⁻³

VACUUM SYSTEM
 OPERATING PRESSURE: 1x10⁻⁸ Torr
 PUMPS: No. and type 1 diffusion pump

ION SOURCE(S)
 Type Intensity @ εn = βγε Ion Species
 (mA) (π mm mrad)
 (a) Hot Cathode PIG 1 H⁺
 (b)

INJECTION SYSTEM
 Efficiency %

EXTRACTION SYSTEM
 Electrostatic deflector Efficiency 80 %

CHARACTERISTIC BEAMS
 Accelerated Ions E/A (MeV/u) Current(part. μA)
 Internal External
 (a) H⁺ 2.2 150 70
 (b) D⁺ 1.1 150 70
 EXTRACTED BEAM PROPERTIES:
 For 5.0 μA of 2.2 MeV/u H⁺ ions
 ΔE/E 1 % Δφ °rf
 εn = βγε x 3.0 πmm mrad z 1.0 πmm mrad

REFERENCES/NOTES
 (a)
 (b)