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 yes

COST: Accelerator Facility

MAGNET

POLE PARAMETERS:

Diameter 101 cm $R_{extract}$ 42 cm R_{inject} cm

HILL PARAMETERS: Gap (min) 7 cm B_{max} T

(@ 1.2x10⁵ AT) Gap (max) 7 cm B_{min} T

VALLEY PARAMETERS: Gap (min) 13 cm B_{max} T

(@ 1.2x10⁵ AT) Gap (max) 13 cm B_{min} 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) none deg.

FIELD TRIMMING: Trim Coils 3

Harmonic Coils 2

Other

CURRENT: Main Coils 380 Amps Stability ±2x10⁻⁵

Trim Coils 50 Amps Stability ±1x10⁻⁴

Stored Energy (cryogenic) MJ

WEIGHT: Iron 30 ton Conductor 1 ton

ION ENERGY: Bending Limit E/A = q^2/A^2 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 f_{rf}/f_{ion} 2.4

Freq 43.5-47 MHz Power in(max) 0.02 MW

Stability: Phase 1° Voltage 1x10⁻³

VACUUM SYSTEM

OPERATING PRESSURE: 1x10⁻⁶ Torr

PUMPS: No. and type 1 diffusion pump

ION SOURCE(S)

	Type	Intensity (mA)	@ $\epsilon_n = \beta\gamma\epsilon$ (π mm mrad)	Ion Species
(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^+	17	150	70
(b)	D^+	10	150	70

EXTRACTED BEAM PROPERTIES:

For 50 μA of 17 MeV/u H^+ ions

$\Delta E/E$ 1 % $\Delta\phi$ °rf

$\epsilon_n = \beta\gamma\epsilon$ x 30 πmm mrad z 10 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 yes

COST: Accelerator Facility

MAGNET

POLE PARAMETERS:

Diameter 101 cm $R_{extract}$ 42 cm R_{inject} cm

HILL PARAMETERS: Gap (min) 7 cm B_{max} T

(@ 1.3x10⁵ AT) Gap (max) 7 cm B_{min} T

VALLEY PARAMETERS: Gap (min) 13 cm B_{max} T

(@ 1.3x10⁵ AT) Gap (max) 13 cm B_{min} T

AVERAGE FIELD: $< B >_{min}$ 1.60 T $< B >_{max}$ 1.80 T

NUMBER OF SECTORS: compact/separated 4 /

sector angle 45 deg. spiral (max) deg.

FIELD TRIMMING: Trim Coils 3

Harmonic Coils 2

Other

CURRENT: Main Coils 400 Amps Stability ±2x10⁻⁵

Trim Coils 50 Amps Stability ±1x10⁻⁴

Stored Energy (cryogenic) MJ

WEIGHT: Iron 30 ton Conductor 1 ton

ION ENERGY: Bending Limit E/A = q^2/A^2 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 f_{rf}/f_{ion} 2.4

Freq 49 MHz Power in(max) 0.02 MW

Stability: Phase 1° Voltage 1x10⁻³

VACUUM SYSTEM

OPERATING PRESSURE: 1x10⁻⁶ Torr

PUMPS: No. and type 1 diffusion pump

ION SOURCE(S)

	Type	Intensity (mA)	@ $\epsilon_n = \beta\gamma\epsilon$ (π mm mrad)	Ion Species
(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^+	22	150	70
(b)	D^+	11	150	70

EXTRACTED BEAM PROPERTIES:

For 50 μA of 22 MeV/u H^+ ions

$\Delta E/E$ 1 % $\Delta\phi$ °rf

$\epsilon_n = \beta\gamma\epsilon$ x 30 πmm mrad z 10 πmm mrad

REFERENCES/NOTES

(a)

(b)