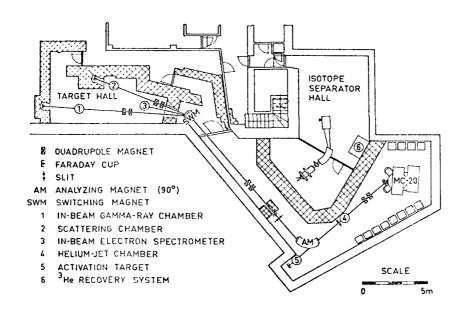
DESIGN, date 1968-69 MODEL tests 1968-69 ENG. DESIGN, date 1969-71 CONSTRUCTION, date 1969-73 FIRST BEAM date (or goal) 1974 POLE FACE diameter 90 cm; R extraction 38-39 cm GAP, min 6.5 cm; Field 20.5 kG max 16.5 cm; Field 13.7 kG AVERAGE FIELD at R ext 17.1 kG ampere turns	NAME OF MACHINE Minicyclotron MC-20	DATE 7/25/78
HISTORY AND STATUS DESIGN, date 1968-69 MODEL tests 1968-69 ENG, DESIGN, date 1969-71 MAJOR ALTERATIONS CONSTRUCTION, date 1969-73 MAJOR ALTERATIONS OPERATION, 170 hrivks; On Target 150 Model 150 Milks; On Target 150	INSTITUTION <u>Department of Physics, Ur</u>	niversity of Jyväskylä
DESIGN, date 1968-69 MODEL tests 1968-69 ENG, DESIGN, date 1969-73 EIRST BEAM date for goal) 1974 MAJOR ALTERATIONS OPERATION, "70 hi/wk; On Target "60 hi/wk; USERS' SCHEDULING CYCLE "5 weeks COST, ACCELLERATOR \$ 550 00 COST, FACILITY, total \$ 1000 000 FUNDED BY GOVERNMENT OF Finl and COREATIONS 1 CRAFTS 4 GRAD STUDENTS involved during yeer 2 OPERATED BY X Res staff or Operators USERS' SCHEDUS Timolved during yeer 2 OPERATED BY A GOVERNMENT SIMOLED BY GOVE	ADDRESS <u>Nisulankatu 78, SF-40720 Jyv</u>	väskylä 72, Finland
DESIGN, date 1968-69 MODEL tests 1968-69 ENG. DESIGN, date 1969-73 ENG. DESIGN, date 1969-73 SIGNSTAUCTION, date 1969-73 SIGNSTAUCTION, date 1969-73 SIGNSTAUCTION, date 1969-73 MAJOR ALTERATIONS OPERATION, ~70 h/wk; On Target ~60 hr/wk TIME DIST, in house † %, outside † % USERS SCHEDILLING CYCLE ~55 weeks COST, ACCILLEY, total \$50 000 COST, FACILITY, total \$1000 000 FUNDED BY GOVERNMENT OF Finland ACCELERATOR STAFF, OPERATION and DEVELOPMENT SCIENTISTS ENGINEERS 3 TECHNICIANS 1 CRAFTS 4 GRAD STUDENTS involved during year 2 OPERATED BY X PRE-stoff or Operators BUDGET, op & date \$7.50 000 FUNDED BY GOVERNment of Finland RESEARCH STAFF, not included above USERS, in house \$20 outside 15 GRAD STUDENTS involved during year 10 RES BUDGET, in house \$200 outside 15 FUNDED BY GOVERNment of Finland PRESEARCH STAFF, not included above USERS, in house \$20 outside 15 FUNDED BY GOVERNment of Finland MAG SPECTRO RRESEARCH SHIELDED AREA, fixed 100	IN CHARGE Teuvo Poikolainen	REPORTED by Teuvo Poikolainen
ENG. DESIGN, date 1969-71 CONSTRUCTION, date 1969-73 MAJOR ALTERATIONS OPERATION, \$\sigma 1974 MAJOR ALTERATIONS ENGINEERS SOST, ACCELERATOR \$\frac{3}{5}\$50 000 COST, FACILITIES ENGINEERS ACCELERATOR STAFF, OPERATION and DEVELOPMENT SCIENTISTS ENGINEERS BUDGET, \$\text{operation}\$ ENGINEERS BUDGET, \$\text{operation}\$ RESEARCH STAFF, not included above USERS, in house \$\frac{2}{5}\$0 000 FUNDED BY \$\text{GOVERTIMENT of Finland}\$ RESEARCH STAFF, not included above USERS, in house \$\frac{2}{5}\$0 000 FUNDED BY \$\text{GOVERTIMENT of Finland}\$ RESEARCH STAFF, not included above USERS, in house \$\frac{2}{5}\$0 000 FUNDED BY \$\text{GOVERTIMENT of Finland}\$ ACCELERATION SYSTEM DEES, number 2 angle 90 deg BEAM APERTURE 1, 8 cm; DO BIAS 0 kV TUNED by, coarse MS fine VC RF 10, 5 to 25.6 mHz; GAIN, max 120 kV/turn HAMMONICS, RF/orb F, used 1, 2 DEEGAM, max 30 kV, min gap 1 cm STATIONS served at same time, max 1 HAMMONICS, they honoisely/left RF volt) 0,001 RF PHASE stable to \$\frac{1}{2}\$ 0.5 mHz; GAIN, max 120 kV/turn HAMMONICS, they honoisely/left RF volt) 0,001 RF PHASE stable to \$\frac{1}{2}\$ 0.5 mHz; GAIN, max 120 kV/turn HAMMONICS, they honoisely/left RF volt) 0,001 RF PHASE stable to \$\frac{1}{2}\$ 0.5 mHz; GAIN, max 120 kV/turn HAMMONICS, they honoisely/left RF volt) 0,001 RF PHASE stable to \$\frac{1}{2}\$ 0.5 mHz; GAIN, max 120 kV/turn HAMMONICS, they honoisely/left RF volt) 0,001 RF PHASE stable to \$\frac{1}{2}\$ 0.5 mHz; GAI	HISTORY AND STATUS	MAGNET
ENG. DESIGN, dase 1969-71 CONSTRUCTION, date 1969-73 MAJOR ALTERATIONS MAJOR ALTERATIONS OPERATION, ~70 privik; On Target ~60 trivik TIME DIST, in house \$\frac{1}{2}\$, worstide \$\frac{1}{2}\$. weeks COST, ACCELERATOR \$\frac{1}{2}\$, 550 000 COST, FACILITY, total \$\frac{1}{2}\$100 000 FUNDED BY GOVERNMENT OF Finland ACCELERATOR STAFF, OPERATION and DEVELOPMENT SCIENTISTS ENGINEERS 3 TECHNICIANS 1 CRAFTS 4 GRAD STUDENTS involved during year 2 OPERATED BY \$\frac{1}{2}\$, weeks BUDGET, op & dev \$\frac{1}{2}\$ 200 000 FUNDED BY GOVERNment of Finland RESEARCH STAFF, not included above USERS, in house \$\frac{1}{2}\$ 200 000 FUNDED BY GOVERNment of Finland RESEARCH STAFF, not included above USERS, in house \$\frac{1}{2}\$ 200 000 FUNDED BY GOVERNment of Finland RESEARCH STAFF, not included above USERS, in house \$\frac{1}{2}\$ 200 000 FUNDED BY GOVERNment of Finland RESEARCH STAFF, not included above USERS, in house \$\frac{1}{2}\$ 200 000 FUNDED BY GOVERNment of Finland RESEARCH STAFF, not included above USERS, in house \$\frac{1}{2}\$ 200 000 FUNDED BY GOVERNment of Finland RESEARCH STAFF, not included above USERS, in house \$\frac{1}{2}\$ 200 000 FUNDED BY GOVERNment of Finland RESEARCH STAFF, not included above USERS, in house \$\frac{1}{2}\$ 200 000 FUNDED BY GOVERNMENT OF FINLAND OF THE PROPERTY OF THE PROPE	DESIGN, date 1968-69 MODEL tests 1968-69	POLE FACE diameter 90 cm; R extraction 38-39 cm
AVERAGE FIELD AT R ext. 17.1 kG sm/sec turns		GAP, min 6.5 cm; Field 20.5 kG) 0.3 446
AVERAGE FIELD AT R ext. 17.1 kG sm/sec turns	CONSTRUCTION, date 1969-73	max 16.5 cm; Field 13.7 kg at 0.5 x 10
OPERATIONS TIME DIST, in house Time Dist, in house Ti	FIRST BEAM date (or goal) 1974	AVERAGE FIELD at R ext 17.1 kg ampere turns
OPERATION, 070 hr/wk; On Target 060 hr/wk TIME DIST., in house 1 %, outside 1 % weeks USBERS SCHEDULING SYCLE 05 weeks COST, FACELERATOR \$ 550 000 COST, FACELERATOR \$ 550 000 FUNDED BY GOVERNMENT OF Finland ACCELERATOR STAFF, OPERATION and DEVELOPMENT SCIENTISTS ENGINEERS 3 TECHNICIANS 1 CHAFTS 4 GRAD STUDENTS involved during year 2 GRAD STUDENTS involved during year 2 BUDGET, op & dev 3 250 000 FUNDED BY GOVERNMENT OF Finland ACCELERATOR STAFF, OPERATION and DEVELOPMENT SCIENTISTS ENGINEERS 3 TECHNICIANS 1 CHAFTS 4 GRAD STUDENTS involved during year 2 BUDGET, op & dev 3 250 000 FUNDED BY GOVERNMENT OF Finland ACCELERATOR STAFF, not included above USERS, in house 20 outside 15 GRAD STUDENTS involved during year 10 RES. BUDGET, in house \$ 20 000 FUNDED BY GOVERNMENT OF Finland ACCELERATION SYSTEM DEBTA TO STAFF, not included above BEAM APERTURE 1.8 cm; DC BIAS 0 kV TINED by, coarse MS fine VC TINED by, coarse MS fine VC TONE F5.3 to 25.6 mHz, stable ± //106 Orb F5.3 to 25.6 mHz, stable ± //1	MAJOR ALTERATIONS	CURRENT STABILITY 20 parts/10 ⁶ ; B _{max} /⟨B⟩ 1.2
TIME DIST, in house		NUMBER OF SECTORS 4 ; SPIRAL, max 48 deg
TIME DIST, in house	OPERATION, \sim 70 hr/wk; On Target \sim 60 hr/wk	POLE FACE COIL PAIRS: AVF 2 /sec;
USERS SCHEDULING CYCLE 193 1950 000	TIME DIST., in house	
CONTOLOTOR, Material and type Copper STORED BY GOVERNMENT OF Finland COLLING SYSTEM Demineralized water POWER: Main coils 90 max, kW Trimming coils 6 max, kW SECTOR ANGLE (Sep Sec) 6 deg 10N ENERGY (Bending limit) E/A = 20 q²/A² MeV (Focusing limit) E/A = 20 q²/A² MeV (Foc	USERS' SCHEDULING CYCLEweeks	
SCIENTISTS ENGINEERS 3 TECHNICIANS 1 CRAFTS 4 GRAD STUDENTS involved during year 2 OPERATED BY X Res staff or Operators BUDGET, op & dev & \$\frac{7}{2} \text{ 20 outside } \frac{15}{2} \text{ 45 outside } \frac{15}{2} \text{ 45 outside } \frac{15}{2} \text{ 46 outside } \frac{15}{2} \text{ 47 outside } \frac{15}{2} \text{ 47 outside } \frac{15}{2} \text{ 47 outside } \frac{15}{2} \text{ 48 outside } \frac{15}{2} \text{ 49 outside } \frac{15}{2} \text{ 40 outside } \frac{15}{2} \text{ 40 outside } \frac{15}{2} \text{ 50 outside } \frac{15}{2} \text{ 60 outside } \frac{10}{2} \text{ 60 outside } \frac{15}{2} 60 out	cost, accelerator \$ 550 000	
STORED ENERGY COOLING SYSTEM Demineralized water COOLING SYSTEM Demineralized water COOLING SYSTEM Demineralized water COOLING SYSTEM SET Demineralized water COOLING SYSTEM SET DEMINERS STEATH ON STORE STATION STEED SY X Resiteff or Operators BUDGET, op & dev & \$2.50 0.00 O	COST, FACILITY, total \$1000 000	CONDUCTOR, Material and type <u>Copper</u>
ACCELERATOR STAFF, OPERATION and DEVELOPMENT SCIENTISTS ENGINEERS 3 TECHNICIANS 1 CRAFTS 4 GRAD STUDENTS involved during year 2 OPERATED BY X Res staff or Operators BUDGET, op & dev	FUNDED BY Government of Finland	STORED ENERGYMJ
TECHNICIANS 1 CRAFTS 4 GRAD STUDENTS involved during year 2 OPERATED BY X Res staff or Operators BUDGET, op & dev \$\frac{1}{2}\$ Z0 000 FUNDED BY GOVERNMENT of Finland RESEARCH STAFF, not included above USERS, in house 20 outside 15 GRAD STUDENTS involved during year 10 RESE, BUDGET, in house \$\frac{1}{2}\$ 20 000 FUNDED BY GOVERNMENT of Finland DEES, number 2 angle 90 deg BEAM APERTURE 1.8 cm; DC BIAS 0 kV TUNED by, coarse MS fine VC RES. BUDGET, in house \$\frac{1}{2}\$ 20 000 FUNDED BY GOVERNMENT of Finland DEES, number 2 angle 90 deg BEAM APERTURE 1.8 cm; DC BIAS 0 kV TUNED by, coarse MS fine VC RES. BUDGET, in house \$\frac{1}{2}\$ 20 000 FUNDED BY GOVERNMENT of Finland DEES, number 2 angle 90 deg BEAM APERTURE 1.8 cm; DC BIAS 0 kV TUNED by, coarse MS fine VC RES. 10.5 to 25.6 mHz; GAIN, max 120 kV/turn HARMONICS, RF/Orb F, used 1, 2 DEE-Gnd, max 30 kV, min gap 1 cm STABILITY, (pk-pk noise)/Pk FF volt) 0.001 RF PHASE stable to ± 0.5 RF POWER input, max 50: kW RF PROTECT circuit, speed 1 uses Type Series tube FREQUENCY MODULATION, rate 0 //sec MODULATION, rate 1 //sec MODULATION, rate 0 //sec		COOLING SYSTEM Demineralized water
TECHNICIANS 1 CRAFTS 4 GRAD STUDENTS involved during year 2 OPERATED BY X Res staff or Operators BUDGET, op & dev \$\frac{1}{2}\$ Z0 000 FUNDED BY GOVERNMENT of Finland RESEARCH STAFF, not included above USERS, in house 20 outside 15 GRAD STUDENTS involved during year 10 RESE, BUDGET, in house \$\frac{1}{2}\$ 20 000 FUNDED BY GOVERNMENT of Finland DEES, number 2 angle 90 deg BEAM APERTURE 1.8 cm; DC BIAS 0 kV TUNED by, coarse MS fine VC RES. BUDGET, in house \$\frac{1}{2}\$ 20 000 FUNDED BY GOVERNMENT of Finland DEES, number 2 angle 90 deg BEAM APERTURE 1.8 cm; DC BIAS 0 kV TUNED by, coarse MS fine VC RES. BUDGET, in house \$\frac{1}{2}\$ 20 000 FUNDED BY GOVERNMENT of Finland DEES, number 2 angle 90 deg BEAM APERTURE 1.8 cm; DC BIAS 0 kV TUNED by, coarse MS fine VC RES. 10.5 to 25.6 mHz; GAIN, max 120 kV/turn HARMONICS, RF/Orb F, used 1, 2 DEE-Gnd, max 30 kV, min gap 1 cm STABILITY, (pk-pk noise)/Pk FF volt) 0.001 RF PHASE stable to ± 0.5 RF POWER input, max 50: kW RF PROTECT circuit, speed 1 uses Type Series tube FREQUENCY MODULATION, rate 0 //sec MODULATION, rate 1 //sec MODULATION, rate 0 //sec	ACCELERATOR STAFF, OPERATION and DEVELOPMENT	POWER: Main coils 90 max, kW
TECHNICIANS 1 CRAFTS 4 GRAD STUDENTS involved during year 2 BUDGET, op & dev \$250 000	SCIENTISTS ENGINEERS 3	Trimming coilsbmax, kW
GRAD STUDENTS involved during year DOPERATED BY X Restaff or Operators BUDGET, op & dev X 2 50 000 RESEARCH STAFF, not included above USERS, in house 20 outside 15 GRAD STUDENTS involved during year 10 RES. BUDGET, in house 200 000 FUNDED BY Government of Finland HILLIAN SUBJECT, in house 200 000 FUNDED BY GOVERNMENT of Finland FUNDED BY GOVERNMENT of Finland HARMONICS, REF/Orb F, used 1, 2 DEEG, number 2 angle 90 deg BEAM APERTURE 1.8 cm; DC BIAS 0 kV TUNED by, coarse MS fine VC RE 10.5 to 25.6 mHz, stable ± //106 Orb F.5.3 to 25.6 mHz, stabl		YOKE/POLE AREA
OPERATED BY X Res staff or Operators BUDGET, op & dev \$250 000		SECTOR ANGLE (Sep Sec) deg
BUDGET, op & dev \$ 250 000	OPERATED BY X Res staff or Operators	
RESEARCH STAFF, not included above USERS, in house 20 outside 15 GRAD STUDENTS involved during year 10 RES. BUDGET, in house \$200 000 FUNDED BY GOVERNMENT OF Finland FACILITIES FOR RESEARCH SHIELDED AREA, fixed 100 movable - movab	BUDGET, op & dev \$ 250 000	(Focusing limit) E/A =q/A MeV
BEAM APERTURE 1.8 cm; DC BIAS 0 kV USERS, in house 20 outside 15 GRAD STUDENTS involved during year 10 RES. BUDGET, in house \$200 000 FUNDED BY Government of Finland FACILITIES FOR RESEARCH SHIELDED AREA, fixed 100 movable - movabl	FUNDED BY Government of Finland	ACCELERATION SYSTEM
BEAM APERTURE 1.8 cm; DC BIAS 0 kV USERS, in house 20 outside 15 GRAD STUDENTS involved during year 10 RES. BUDGET, in house \$200 000 FUNDED BY Government of Finland FACILITIES FOR RESEARCH SHIELDED AREA, fixed 100 movable - movabl		DEES number 2 angle 90 deg
USERS, in house 20 outside 15 GRAD STUDENTS involved during year 10 RES. BUDGET, in house \$200 000 RES. BUDGET, in house \$200 000 FUNDED BY GOVERNMENT OF Finland FACILITIES FOR RESEARCH SHIELDED AREA, fixed 100 movable - mov	RESEARCH STAFF, not included above	
RES. BUDGET, in house \$ 200 000 RF 10.5 to 25.6 mHz, stable ± /106 Orb F 5.3 to 25.	USERS, in house 20 outside 15	TUNED by coarse MS fine VC
RES. BUDGET, in house \$ 200 000 FUNDED BY GOVERNMENT OF Finland FACILITIES FOR RESEARCH SHIELDED AREA, fixed 100 movable	GRAD STUDENTS involved during year 10	RF 10.5 to 25.6 mHz, stable ± /10 ⁶
FUNDED BY Government of Finland FACILITIES FOR RESEARCH SHIELDED AREA, fixed 100 movable	RES. BUDGET, in house \$ 200 000	
SHIELDED AREA, fixed 100 m² movable - m² m² movable - m² m² movable - m²	FUNDED BY Government of Finland	
SHIELDED AREA, fixed 100 m² m² movable - m² m² TARGET STATIONS 5 in 2 rooms STATIONS served at same time, max 1 MAG SPECTROGRAPH, type COMPUTER, model PDP 11/45 OTHER FACILITIES In-beam Gamma Ray and Electron spectrometers. On-Line Mass Spectrometer Helium-Jet Recoil Transport REFERENCES/NOTES TNO distinction has been made between "In-house" and "outside" users. TSTABILITY, (pk-pk noise)/(pk RF volt) 0.001 RF PHASE stable to ± 0.5 deg RF POWER input, max 50: kW RF PROTECT circuit, speed 1 msec 1 ms		
TARGET STATIONS 5 in 2 rooms STATIONS served at same time, max 1 MAG SPECTROGRAPH, type COMPUTER, model PDP 11/45 OTHER FACILITIES In-beam Gamma Ray and Electron spectrometers. On-Line Mass Spectrometer Helium-Jet Recoil Transport **No distinction has been made between "In-house" and "outside" users. **Type Series tube FREQUENCY MODULATION, rate 0 /sec MODULATOR, type - BEAM PULSE, width - VACUUM SYSTEM PUMPS, No., Type, Size 2 oil diffusion pumps (2x2500 1/s; with baffles) OPERATING PRESSURE 10 µTorr, PUMPDOWN TIME 5-7 hrs **ION SOURCES/INJECTION SYSTEM Internal cold cathode penning, biased EXTRACTION SYSTEM Electrostatic defl.+magn.channel CONTROL SYSTEM	FACILITIES FOR RESEARCH	
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TARGET STATIONS 5 in 2 rooms STATIONS served at same time, max 1 MAG SPECTROGRAPH, type COMPUTER, model PDP 11/45 OTHER FACILITIES In-beam Gamma Ray and Electron spectrometers. On-Line Mass Spectrometer Helium-Jet Recoil Transport REFERENCES/NOTES Type Series tube FREQUENCY MODULATION, rate 0 /sec MODULATOR, type - BEAM PULSE, width - VACUUM SYSTEM PUMPS, No., Type, Size 2 oil diffusion pumps (2x2500 1/s; with baffles) OPERATING PRESSURE 10 µTorr, PUMPDOWN TIME 5-7 hrs ION SOURCES/INJECTION SYSTEM Internal cold cathode penning, biased EXTRACTION SYSTEM Electrostatic defl.+magn.channel CONTROL SYSTEM	movable 2	RF POWER input, max 50° kW
STATIONS served at same time, max 1 MAG SPECTROGRAPH, type COMPUTER, model PDP 11/45 OTHER FACILITIES In-beam Gamma Ray and Electron spectrometers. On-Line Mass Spectrometer Helium-Jet Recoil Transport REFERENCES/NOTES Thouse'' and ''outside'' users. Type Set Tes tube FREQUENCY MODULATION, rate 0 /sec MODULATOR, type - BEAM PULSE, width - VACUUM SYSTEM PUMPS, No., Type, Size 2 oil diffusion pumps (2×2500 1/s; with baffles) OPERATING PRESSURE 10 µTorr, PUMPDOWN TIME 5-7 hrs ION SOURCES/INJECTION SYSTEM Internal cold cathode penning, biased EXTRACTION SYSTEM Electrostatic defl.+magn.channel CONTROL SYSTEM		
MAG SPECTROGRAPH, type COMPUTER, model PDP 11/45 OTHER FACILITIES In-beam Gamma Ray and Electron spectrometers. On-Line Mass Spectrometer Helium-Jet Recoil Transport REFERENCES/NOTES The distinction has been made between "In-house" and "outside" users. PREGUENCY MODULATION, rate Users MODULATOR, type SEAM PULSE, width SEAM PULSE,		
COMPUTER, model PDP 11/45 OTHER FACILITIES In-beam Gamma Ray and Electron spectrometers. On-Line Mass Spectrometer Helium-Jet Recoil Transport REFERENCES/NOTES The image of		FREQUENCY MODULATION, rate/sec
Therefacilities In-beam Gamma Ray and Electron spectrometers. On-Line Mass Spectrometer Helium-Jet Recoil Transport REFERENCES/NOTES The distinction has been made between "In-house" and "outside" users. Dear Gamma Ray and Vacuum system Pumps, No., Type, Size 2 oil diffusion pumps (2x2500 1/s; with baffles) OPERATING PRESSURE 10 µTorr, PumpDown TIME 5-7 hrs ION SOURCES/INJECTION SYSTEM Internal cold cathode penning, biased EXTRACTION SYSTEM Electrostatic defl.+magn.channel CONTROL SYSTEM		
Electron spectrometers. On-Line Mass Spectrometer Helium-Jet Recoil Transport REFERENCES/NOTES Ton distinction has been made between "In-house" and "outside" users. Ton Sources/INJECTION SYSTEM Electrostatic defl.+magn.channel CONTROL SYSTEM		BEAM PULSE, width
On-Line Mass Spectrometer Helium-Jet Recoil Transport REFERENCES/NOTES Tho distinction has been made between "In-house" and "outside" users. PUMPS, No., Type, Size 2 oil diffusion pumps (2x2500 1/s; with baffles) OPERATING PRESSURE PUMPDOWN TIME 5-7 hrs ION SOURCES/INJECTION SYSTEM Internal cold cathode penning, biased EXTRACTION SYSTEM Electrostatic defl.+magn.channel CONTROL SYSTEM	·	VACUUM SYSTEM
Helium-Jet Recoil Transport pumps (2×2500 1/s; with baffles)		PLIMPS No Type Size 2 oil diffusion
PUMPDOWN TIME 5-7 hrs Tho distinction has been made between "In-house" and "outside" users. The distinction has been made between between "Internal cold cathode penning, biased EXTRACTION SYSTEM Electrostatic defl.+magn.channel CONTROL SYSTEM		
**No distinction has been made between "In-house" and "outside" users. **In-house" and "outside" users. **Transport to the street of the str		
**No distinction has been made between "In-house" and "outside" users. **In-house" and "outside" users. **Internal cold cathode penning, biased EXTRACTION SYSTEM Electrostatic defl.+magn.channel CONTROL SYSTEM	REFERENCES/NOTES	στεπλτινά ττιεβούτε μτοπ,
"In-house" and "outside" users. Internal cold cathode penning, biased	†N- 1:-4:4: b 1 1	POMPDOWN TIMEnrs
biased EXTRACTION SYSTEM Electrostatic defl.+magn.channel CONTROL SYSTEM	No distinction has been made between	
EXTRACTION SYSTEM Electrostatic defl.+magn.channel CONTROL SYSTEM	"In-house" and "outside" users.	* · · · · · · · · · · · · · · · · · · ·
Electrostatic defl.+magn.channel CONTROL SYSTEM		
CONTROL SYSTEM		
		CONTROL SYSTEM

ENTRY NO. 13 (cont.)

CHARACTERISTIC BEAMS			BEAM PROPERTIES			
		Goal	Achieved	Measured	Conditions	
	Particle	(Me∨)	(MeV)	Pulse Width RF deg	μA of MeV	
ENERGY	D	2.5-20	4.8-20.2	Phase Exc, max RF deg	μA ofMeV	
d 3 _{He}	d	1.5-10	6-10	Extract Eff 35% Res, $\Delta E/E$ 0.5%	<u>4</u> μA of <u>13</u> MeV	_p
	2.5-27	12-27.5	Res, $\Delta E/E$ 0.5%	2 μA of 20 MeV	α	
	α	2.5-20	6-20.5	Emittance		
CURRENT		e (μΑ)	e (μΑ)	, (axial)		
Internal	P	200_	_100	$(mm\text{-mrad})\left\{ egin{array}{ll}$	μA of MeV_	
	d	200	300	,		
	<u>α</u>	100	10	OPERATING PROGRAMS, time d		
External	P	100_	4	Basic Nuclear Physics	90	%
d α	<u>d</u>	100_	10	Solid State Physics		%
	50	_1.5	Bio-Medical Applications	5	%	
				Isotope Production		%
		(part/s)	(part/s)	Development	5	%
Secondary						%
						%

PLAN VIEW OF FACILITY, NOTEWORTHY FEATURES, OPERATION SUMMARY, ADDITIONAL REFERENCES



The control room of the cyclotron and the measuring room are placed above the target hall.