

821027

TABLE OF CONTENTS

<u>PLATES</u>	
P1	Front and rear view
P2	Bottom view
P3	Right view
P4	Left view
P5	Z1 circuit
P6	Z2 circuit
P7	Z3 circuit
<u>PAGES</u>	
	<u>1. - TECHNICAL SPECIFICATION</u>
1	1.1 .- General
	1.2 .- Vertical deflection
	1.2.1 .- Operating modes
2	1.2.2 .- Sensitivity and bandwidth
	1.2.3 .- Inputs
3	1.2.4 .- Delay line visible delay
	1.3 .- Horizontal deflection
	1.3.1 .- Operating modes
4	1.3.2 .- B1 time base
	1.3.3 .- B1 trigger
6	1.3.4 .- B2 time base
	1.3.5 .- B2 trigger
7	1.3.6 .- XY mode
	1.4 .- Functions controls
8	1.5 .- DC voltages measurements
	1.5.1 .- Input
	1.5.2 .- Reading
	1.5.3 .- Sensitivities
	1.6 .- Time measurement
9	1.6.1 .- Principle of measurement
	1.6.2 .- Reading
	1.6.3 .- Sensitivities
	1.7 .- Cathode ray tube

PAGES

10	1.8 .- Auxiliary outputs
	1.8.1 .- Probe adjustment
	1.8.2 .- B1 and B2 intervals
	1.8.3 .- Probe power
	1.9 .- Power requirements
11	1.10.- Environment
	1.11.- Dimensions - weight
	1.12.- Accessories
12	1.13.- Safety measures
	Appendix 1- Rise Time
	<u>2. - OPERATION</u>
13	2.1 .- Preliminary
	2.1.1 .- Carrying handle
	2.1.2 .- Switching on
	2.2 .- Control parts functions and input-output terminals
14	2.2.1 .- Power switch - trace control - calibration
18	2.2.2 .- Operating modes selection
19	2.2.3 .- Vertical deflection
20	2.2.4 .- Horizontal deflection
	2.2.5 .- DC voltage and differential time measurements - logical display
	2.2.6 .- Rear panel
21	2.3 .- Operating instructions
	2.3.1 .- Switching on
	2.3.2 .- Function selection and trace adjustment
23	2.3.3 .- Vertical channels
24	2.3.4 .- B1 sweep triggering
	2.3.5 .- XY mode
25	2.3.6 .- B2 delayed sweep
	2.3.7 .- Saving of front panel functions when instrument is switched off
26	2.3.8 .- M1 and M2 function storages
	2.3.9 .- dc voltage measurements
	2.3.10.- Δt differential time measurement
	<u>3. - DESCRIPTION OF THE CIRCUITS</u>
28	3.1 .- General
29	3.2 .- Low-voltage supply
	3.3 .- EHT Power supply and bright-up pulse
	3.3.1 .- Converter

PAGES

30	3.3.2 . - Cathode voltage and regulation
	3.3.3 . - Focus and astigmatism
	3.3.4 . - Post-acceleration
	3.3.5 . - Control grid bias
31	3.3.6 . - Bright-up amplifier
32	3.4 . - Control keyboard
	3.5 . - Logics of function selection
	3.5.1 . - 20 MHz bandwidth
	3.5.2 . - x10 expansion
	3.5.3 . - X mode
33	3.5.4 . - B1 trigger filter
34	3.5.5 . - Alternate - chopped
	3.5.6 . - B2 starts or trig.
	3.5.7 . - Automatic - Normal - Single Sweep
35	3.5.8 . - Y mode
36	3.5.9 . - Power supply - Saving of front panel and storing of M1 and M2
	3.6 . - Logics of Y channels switching
	3.6.1 . - Switching programs
	3.6.2 . - Switching modes
37	3.6.3 . - Calibrator
	3.7 . - Logics of triggering function
	3.7.1 . - Selection of B1 trigger source
	3.7.2 . - Trigger channel switching
38	3.7.3 . - Selection and switching of B2 trigger source
	3.8 . - Storing of the controls
39	3.9 . - Triggering switch and amplifier
	3.9.1 . - B1 trigger
40	3.9.2 . - B2 trigger
	3.10. - Channels A, B, C, D preamplifiers
	3.10.1 . - Input coupling (Z7)
	3.10.2 . - Low and high impedance attenuators
41	3.10.3 . - Amplification stages
42	3.11. - Output amplifier Y
	3.12. - B1 triggering
	3.12.1 . - Trigger filters
43	3.12.2 . - Signal shaping and polarity
	3.12.3 . - Automatic or Normal "LEVEL" operation
	3.13. - B2 triggering

PAGES

44	3.14. - B1 time base
	3.14.1. - Sawtooth generator
46	3.14.2. - Sweep control
	3.14.3. - Hold-off circuit
47	3.14.4. - Automatic trigger
	3.14.5. - Single sweep
	3.15. - B2 time base
	3.15.1. - Delay system
48	3.15.2. - Sawtooth generator
	3.15.3. - Sweep control
	3.15.4. - B2 sweep starts or retriggered
	3.15.5. - B2 start-point voltage
	3.16. - X mode switching
50	3.17. - Horizontal amplifier
	3.18. - Δt and voltmeter functions
	3.18.1. - Principle of the measurement
51	3.18.2. - "Volt" or " Δt " selection
	3.18.3. - Analogical/digital converter
	3.18.4. - Range automatic search
52	3.18.5. - "Volt" Mode input
53	3.18.6. - " Δt " Mode
54	3.18.7. - Display
	<u>4. - MAINTENANCE</u>
55	4.1 . - Front panel upkeep
	4.2 . - Access to internal components
	4.2.1 . - Removing the covers and the handle
56	4.2.2 . - Removing sub-unit Y
57	4.2.3 . - Removing sub-unit X
58	4.2.4 . - Removing Power supply sub-unit
	4.2.5 . - Removing the CRT
59	4.3 . - Equipment required for fault-finding and setting
	4.4 . - Setting-up
	4.4.1 . - Power supply
	4.4.2 . - CRT
60	4.4.3 . - Time base
63	4.4.4 . - Vertical deflection
	4.4.5 . - XY mode
	4.4.6 . - Voltmeter
	4.4.7 . - Δt differential time measurement

FIG.5. - SCHEMATICS

1	Interconnection
2	Low voltage power supply
3	EHV - Bright-up
4	Key board
5	Control logic
6	Y logic
7	Trig. logic
8	Storage
9	B1 - B2 Trig. Amp.
10 a	Y preamp. (channels A, B, C, D)
14	Y output amplifier
15	B1 trigger
16	B2 trigger
17	B1 time/div. switch
18	B2 time/div. switch
19	B1 time base
20	B2 time base
21	X switching
22	Horizontal amplifier
23	Voltmeter Δt

6. - PARTS LIST