

This document has been downloaded from:



The largest resource for amusement machines
documentation on the world wide web!

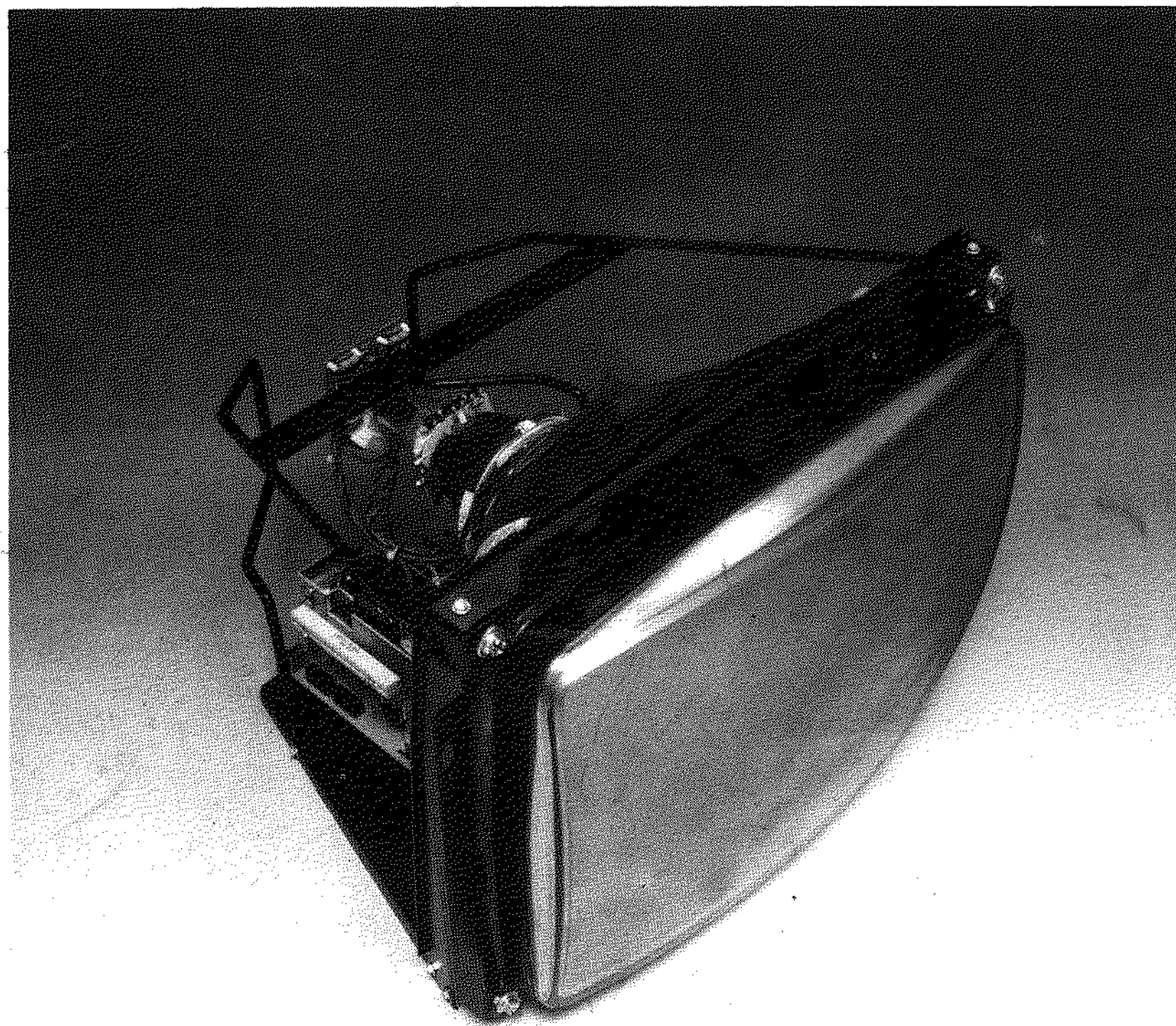


FLIPPERSPILL.COM



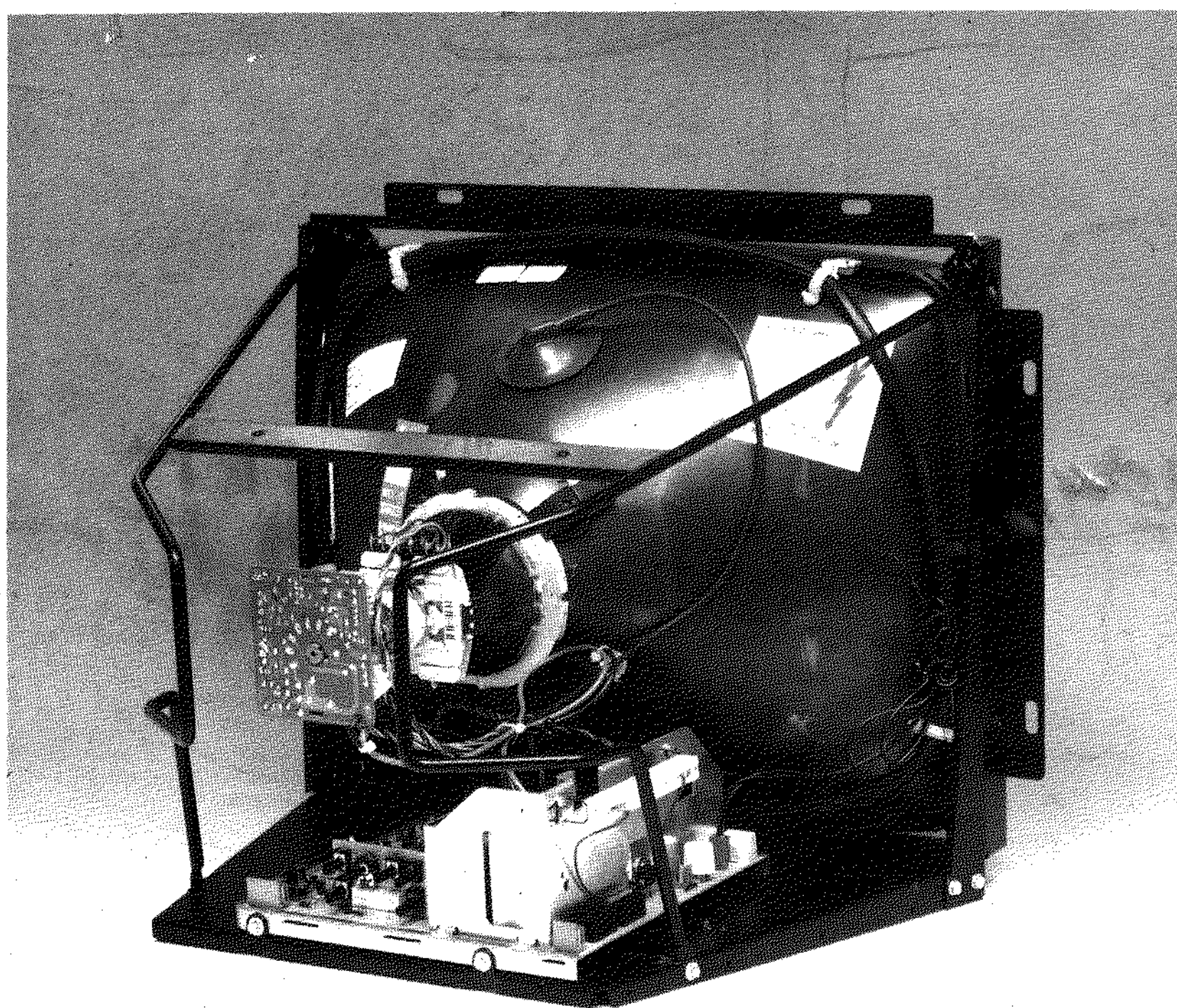
HANTAREX[®]

Electronic
Equipment
Manufacturer



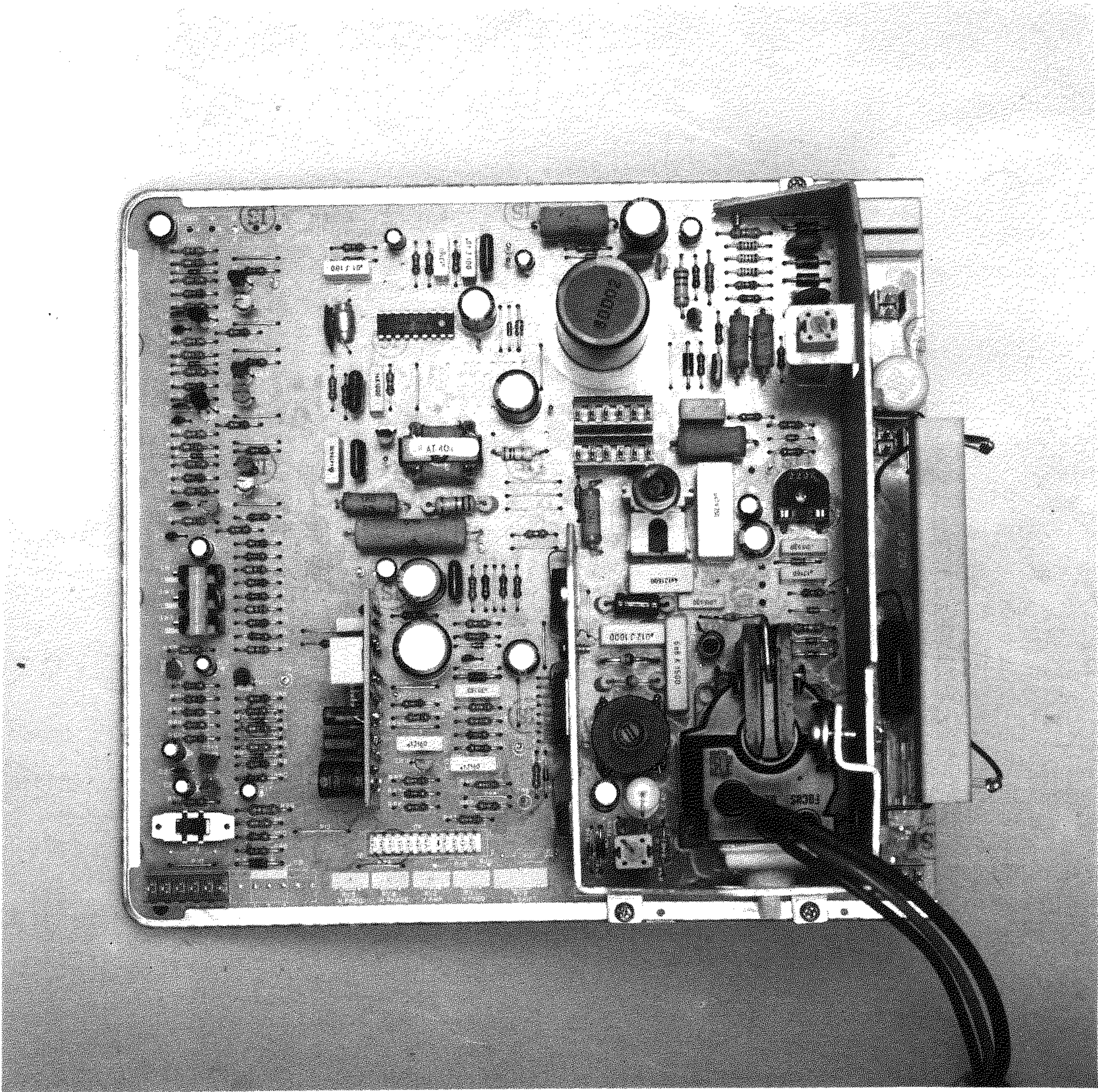
MTC 9000

open frame colour monitor

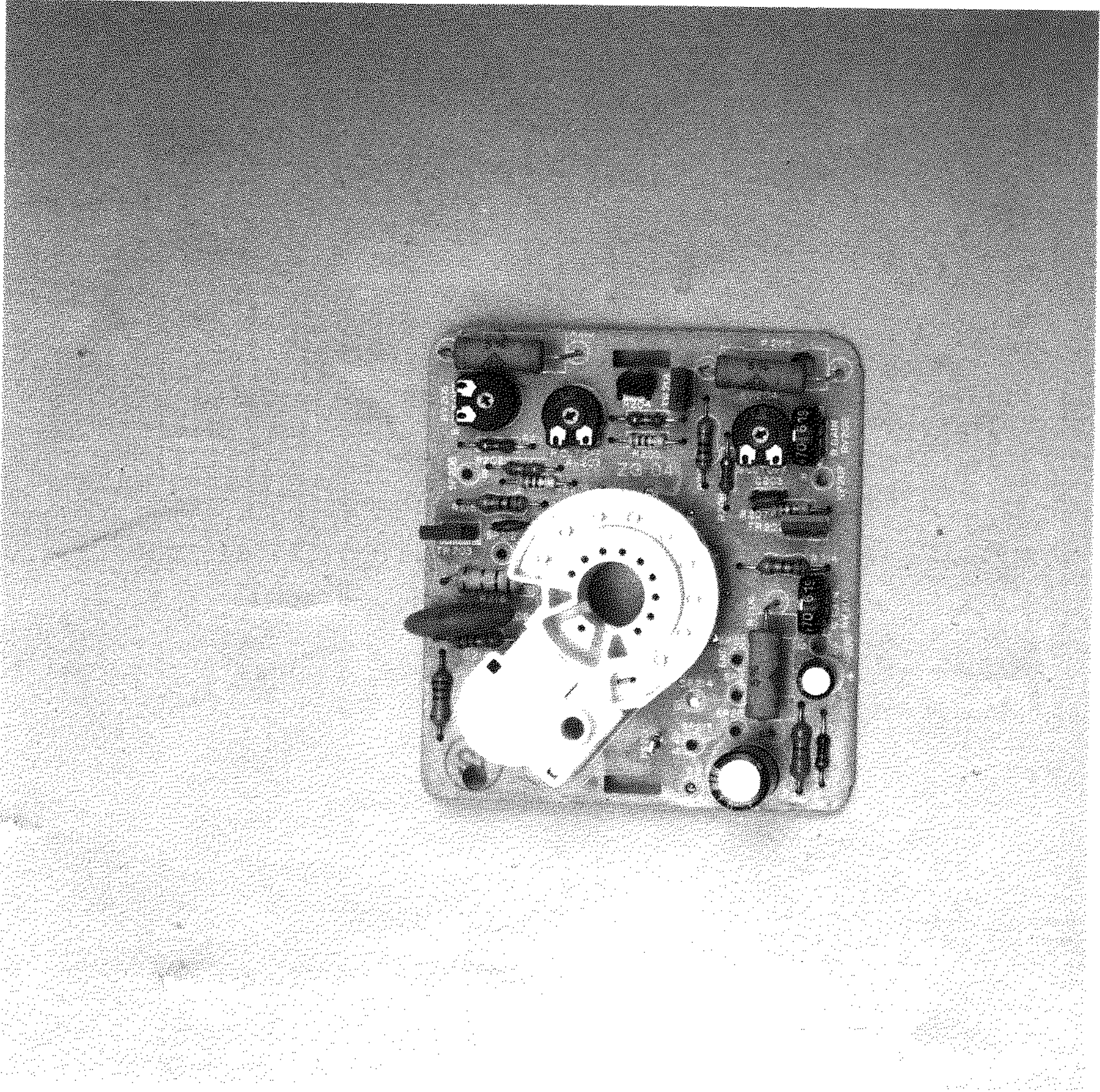


INFORMAZIONI PRELIMINARI

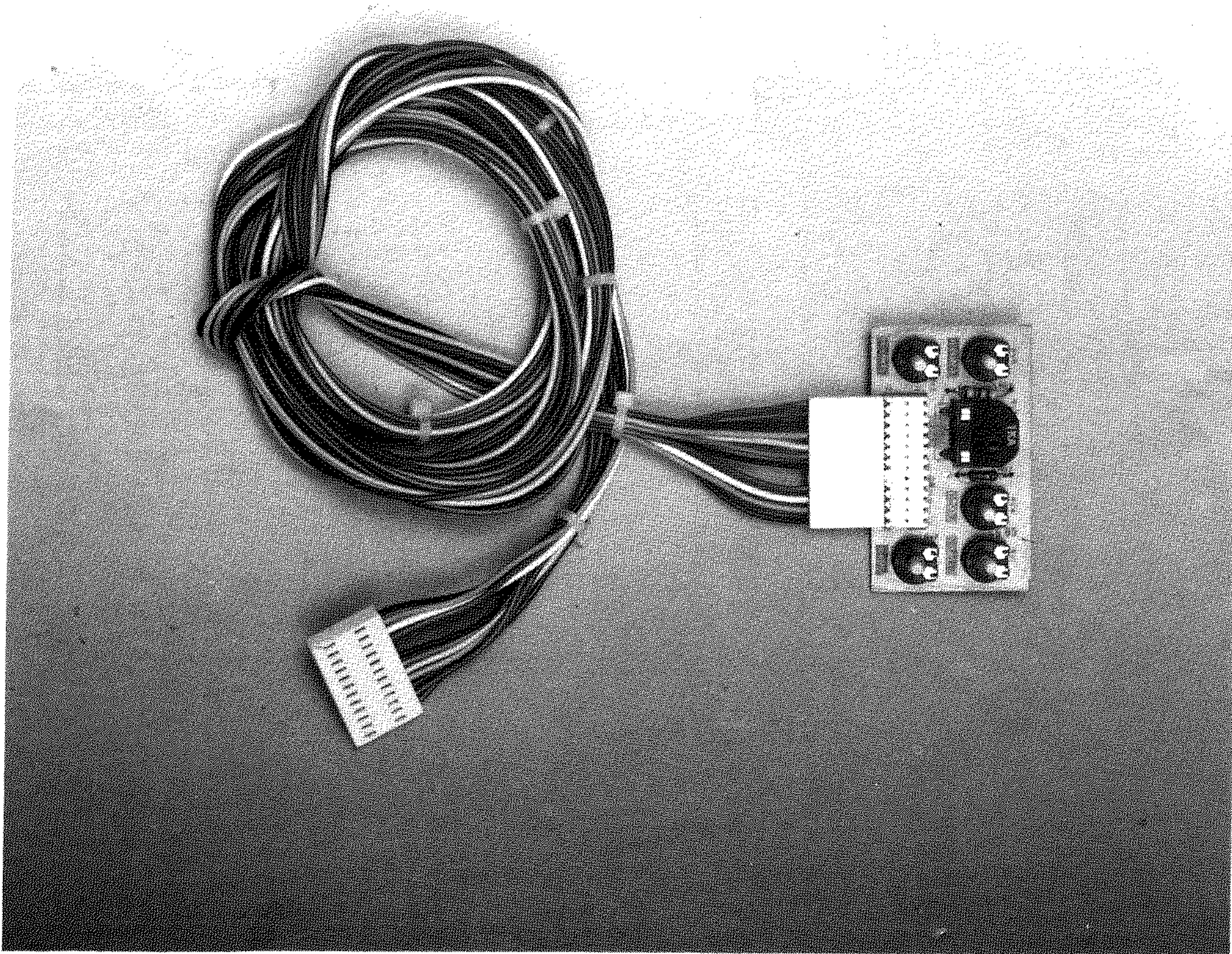
MOTHER BOARD



C. R. T. SOCKET ASSEMBLY



**ADJUSTMENT BOARD AND
EXTENTION CABLE**



HANTAREX[®]

MTC 9000

open frame colour monitor

ADVANCE INFORMATION

COMPATIBILITY

The MTC 9000 has been created bearing in mind its numerous predecessor that are still in daily service, so that its technical specification, its connexions, and its mechanical fixing points are all totally compatible with its antecedants, thus making possible any variation of "crosses" with chassis, picture tubes and metal structures of the old MTC 900 and its derivatives.

INTRODUCTION

- The principal new features of the MTC 9000 are as follows:
- All the controls which directly affect the display, horizontal frequency, vertical frequency, vertical amplitude, horizontal amplitude, horizontal phase and vertical shift, are mounted on a small printed circuit board connected to the main board by a connecting cable.
 - The monitor is supplied complete with a connecting cable 1.5 metres long, which permits the remote mounting of the control board in the most convenient position for any particular application.
- This “remote” feature is exclusive to the Hantarex MTC 9000.**
- Addition of two connectors to each deflexion yoke with inverted connexions which, by choice of connector, permits the easy inversion of the image both vertically and horizontally for certain applications.
 - Introduction of a novel circuit into the power supply, which, at an excessive drop in supply voltage, transforms the stabilizer circuit into an anti-ripple circuit so permitting the use of the monitor outside the limits of stabilization.
 - Use of a special three-position switch in the video input circuit using close tolerance resistors, permitting the monitor to be connected to input signals varying between 2 and 5 V p.p. without the introduction of tracking errors, which would otherwise cause undesirable colour changes.
 - Introduction of a new integrated circuit (TDA 1670) for vertical deflexion which permits the achievement of a short vertical fly-back time (0.9 ms), and extends the use of the monitor where a short vertical blanking period is required.
 - Introduction of a new integrated circuit in the horizontal oscillator synchronization circuit, which, among other things, provides for more accurate intervention of the x-ray protection circuit as required by the principal international safety standards, such as F.D.A., the Federal Drug Administration.

TECHNICAL SPECIFICATION

TUBE SIZE	14", 16" and 20"	
POWER REQUIRED (excluding degaussing)	a.c. current* Voltage Frequency r.m.s. Current	115-142 V a.c. 50-400 Hz at Ib 0 = 0.3 A at Ib 1 mA, = 0.7 A
	d.c. current** Voltage Current	155-200 V d.c. at Ib 0 = 0.3 A at Ib 1 mA, = 0.7 A
*IMPORTANT: It is mandatory to use an isolating transformer with a capacity of at least 100 VA built to local safety standards. Hantarex declines all responsibility for eventual damage or injury caused by non observance of the above standards.		
**IMPORTANT: It is mandatory that the d.c. supply is floating, viz. with no reference to earth and/or chassis (as is the case when using Hantarex Power Supply US 300)		
POWER REQUIRED (degaussing)	Voltage Frequency Current	220 V a.c. ± 20% 50-60 Hz 4 A for approx 0.2 s
EARTH SAFETY CONNEXION	This connexion must be made to the metallic structure of the monitor which is not separable from the electrical earth.	
SYNC. AND DEFLEXION	Sync. signals Composite: Amplitude Polarity Timing Separate: Amplitude Polarity H width H Freq. V width V Freq. H Phase V Linearity H Linearity H Amplitude V Amplitude	1.5 - 5 V p.p. positive/negative (switchable by switch on p.c.b.) conforms to t.v. standards ± 10% 1.5 - 5 V p.p. positive/negative (switchable simultaneously*** by switch on p.c.b.) 1-10 us 15-16 kHz 80-1000 us 45-70 Hz with standard European t.v. signals the H phase control permits a displacement of the image (of nominal ampl.) of ± 4 cm errors < 3% errors < 3% with standard European t.v. - signals the H ampl. permits active video of 40-51 us. with standard European t.v. signals the V ampl. permits active video of 16-19 ms.
***The polarity of the separate synchronizing pulses can be different (between H and V) only by modification of the circuit, substituting the switch by a bridge.		
VIDEO SIGNAL	Type Polarity Amplitude Bandwidth Rise/Fall Time	RGB anal/TTL compat. positive, white (high-level) 2-5 V p.p. (by use of input switch) 10 MHz at 40 V pp. < 50 ns at 70 V p.p.

NOTE (a): The MTC 9000 is provided with both horizontal and vertical blanking signals, which permits the use of the monitor with signals without blanking.
(b): The three RGB video amplifiers are d.c. coupled: there is thus no lower limit to the pass band.

PROTECTION CIRCUITS

The MTC 9000 is provided with the following protection circuits:

- a) Protection against excessive x-ray radiation.
This circuit is obligatory in many countries, and ensures that, with the worst cathode-ray tube and with a breakdown in any part of the monitor, x-ray radiation will not exceed 0.5 mR/h. This is the international safety limit; however, in practice, statistical measurements made on Hantarex production show that radiation never exceeds 0.1 mR/h.
- b) Protection of the Power Supply Unit.
This circuit protects the power unit from accidental short-circuit which could happen during installation or adjustment of the monitor.

DEGAUSSING CIRCUIT:	Demagnetizing	time 5 s
	Time between successive	
	Demagnetizations	< 30 min.

NOTE:

- The monitor must be left switched-off between successive de-magnetizations.
- Normally the degaussing circuit operates automatically each time it is switched on; there is available, on request, an accessory comprising a connector, a cable and a push-button, which provides for manual operation of the de-gaussing circuit.

BEAM CURRENT LIMITER:	Level of limit	1 mA approx.
FUSES:	F1	2 AT (slow-blow)
	F2	3 AT (slow-blow)

NOTE:
Fuse F1 protects the whole monitor with the exception of the de-gaussing circuit. Fuse F2 protects the de-gaussing circuit only.

INSTALLATION

- a) Connect to the power source as follows via connector CC:
Contacts 1-2 to an isolated source (see note) of alternating current at 128V, 50-400 Hz capable of supplying 100VA. Alternatively one may use a direct current supply in the range 155-200 V, irrespective of polarity, subject to its being isolated from chassis or earth, as, for example, one of the Hantarex series US 200/US 250/US 300. (see the note)
Contacts 3-4 to the mains supply at 220-240 V a.c., 50-60 Hz.
- b) Connect to the signal source as follows via connector CA:
Contact 1 positive video signal BLUE (B)
Contact 2 positive video signal GREEN (G)
Contact 3 positive video signal RED (R)
Contact 4 common signal earth (GND)
Contact 5 vertical sync. (V SYNC)
(or no connexion if using composite sync.)
Contact 6 horizontal or composite sync (H SYNC)

Important
The use of an isolating transformer is obligatory; it needs a power capacity of at least 100VA and to be constructed to meet local safety regulations. Hantarex accepts no responsibility for any harm to persons or property resulting from non-observance of this warning.

Important
It is obligatory that the direct current source shall be «floating», i.e. without any reference to earth or chassis, such as in the case of the Hantarex US 200/US 250/US 300.

- c) Connect the Earth wire to the metal structure as prescribed by safety regulations.
- d) Set the sync. selector switch (SW4) to adjust the monitor for the type of synchronizing signals available; SW4 functions on both composite sync., and on separate sync. (simultaneously).
- e) Set the input selector SW3 to adjust the monitor to accept the level of video signal available; the monitor functions in the range 1.5 - 5 V p.p.
- f) If necessary is possible to invert the image (vertically and horizontally) by inserting the connector to the deflexion yoke in position CL.
- g) If it is necessary to adjust the controls on the removable control panel (either with the panel inserted in the chassis or connected via its extension lead) the image characteristics are optimized as follows:

H freq. - horizontal scan frequency
Adjust within the range 15.625 +/- 0.3 kHz to obtain the most stable display.

V freq. - vertical scan frequency
Adjust from the condition where the image scrolls upwards to obtain a stable display.

V ampl. - vertical scan amplitude
Adjust for optimum display height.

H ampl. - horizontal scan amplitude
Adjust for optimum display width.

H phase - horizontal phase
Adjust for correct horizontal positioning of the display.

V shift - vertical shift
Adjust for correct vertical positioning of the display.

SETTING-UP SPECIFICATION

regulation or control	test signal	measurement conditions	point of measurement	point of regulation	value
monitor supply voltage	grid		TP10		130 $\pm$ 3% V d.c.
horiz. synchronization	grid	set SW4, bridge TP6 & TP7	screen	RV5	adjust to obtain most stable display unbridge TP6 & TP7
vert. synchronization	grid	check 50 & 60 Hz	screen	RV1	adjust to stabilize upward scrolling display
horiz. oscillator supply voltage	grid		TP12		12 v $\pm$ 5% V d.c.
vert. oscillator supply voltage	grid		TP13		26 $\pm$ 5% V d.c.
video amplifier supply voltage	grid		TP1		24 $\pm$ 5% V d.c.
video output stage supply voltage	grid		SP11		190 $\pm$ 5% V d.c.
diode modulator	grid	horizontal amplitude RV4 set to minimum	TP9	B3	adjust for maximum *
G2 voltage	grey scale		p.c.b. ZG	TH2 'screen'	set for 600 V d.c. (100:1 probe) **
black level	grey scale	set RV203, 204 & 205 to min & RV 201 & 202 half	screen	RV7	adjust to make the darkest band disappear and the adjacent band just visible
c.r.t. cut-off	none	faintly illuminated screen by G2	screen	RV203, 204 & 205	eliminate the dominant colour by adjustment of the other two colours, adjusting brightness
white level	white field		KR & KG p.c.b. ZG	RV 201 & 202	adjust the level of green and red cathodes to same as blue
focus	dot	medium brightness	screen	TH2 focus	adjust for best focus
horizontal linearity	grid		screen	B1	adjust width of first square equal to last

*The maximum voltage at TP9 can vary between approximately 34 and 50 V d.c. according to the type of c.r.t. used.

**The position of the shaft of G2 is marked with a reference point.



HANTAREX®

Electronic
Equipment
Manufacturer

MONITOR

MTC9000 14,16,20"

PARTS LIST

MAIN P.C.B. ASSEMBLY		code	62007744
CODE	DESCRIPTION	REF. NO.	QTY
20110300	ZENER DIODE 1.3W ZY100	ZD2	1
20150150	DIODE BY584 (BY184)	D27	1
20150170	DIODE BYV85/C-600	D13	1
20150210	DIODE BY228	D12	1
20410100	TRANSISTOR BDX53A	TR17	1
20430320	TRANSISTOR BU508A	TR15	1
20430470	TRANSISTOR TIPL762	TR20	1
20430570	TRANSISTOR BU801	TR19	1
20670270	INTEGRATED CIRCUIT TDA2585	IC2	1
20670850	INTEGRATED CIRCUIT TDA1670A	IC1	1
21000037	PHILIPS PTC 2322.862.86009 220V	PTC1	1
21313801	FIRE RETARDANT RESISTOR 3.9E 5% 1/2W	R84	1
21416800	METAL OXIDE RESISTOR 6.8E 5% 1W	R120	1
21421500	METAL OXIDE RESISTOR 15E 5% 1W	R81	1
21452200	METAL OXIDE RESISTOR 22K 5% 1W	R107	1
21454700	METAL OXIDE RESISTOR 47K 5% 1W	R72-118	2
21541001	METAL OXIDE RESISTOR 1K 5% 2W	R73-82	2
21621000	METAL OXIDE RESISTOR 10E 5% 3W	R111-112	2
21651200	METAL OXIDE RESISTOR 12K 5% 3W	R101	1
21744700	METAL OXIDE RESISTOR 4.7K 10% 4W	R85	1
22142200	METAL OXIDE RESISTOR 2.2K 5% 5W	R74	1
22451000	WIREWOUND RESISTOR 10K 10% 9W	R87	1
22712200	WIREWOUND RESISTOR 2.2E 10% 17W	R88	1
22833300	AXIAL WIREWOUND RESISTOR 330E 10% 30W	R105	1
23062203	CARBON TRIMMER 220K HORIZ. PT10V	RV7	1
24334700	RADIAL ELECT. CAPACITOR 470uF 16V	C16	1
24341000	RADIAL ELECT. CAPACITOR 1000uF 16V	C15	1
24514702	RADIAL ELECT. CAPACITOR 4.7uF 50V SM-BP (P) 10X12	C42	1
24541000	RADIAL ELECT. CAPACITOR 1000uF 35V	C57	1
24611000	RADIAL ELECT. CAPACITOR 1uF 63V		1
24822201	RADIAL ELECT. CAPACITOR 22uF 160V	C34	1
24822200	RADIAL ELECT. CAPACITOR 22uF 200V	C54	1
24834710	RADIAL ELECT. CAPACITOR 470uF 200V	C53	1
25144703	FILM CAPACITOR 4.7nF 73V 5%	C28	1
25362200	FILM CAPACITOR 1.60 220nF 160V 10% P10	C47	1
25461010	FILM CAPACITOR 1.60 100nF 250V 10% P10	C43	1
25464710	FILM CAPACITOR 1.75 470nF 250V 10% P22.5	C37	1
25651000	FILM CAPACITOR 1.60 10nF 630V 10% P10	C38-46	2
25651200	FILM CAPACITOR 1.73 12nF 630V 10% P15	C41	1
25744710	FILM CAPACITOR 1.73 4.7nF 1500V 5% P15	C36	1
25746802	FILM CAPACITOR 1.73 6.8nF 1500V 5% P22.5	C40	1
25751002	FILM CAPACITOR 1.58X 10nF 250VCA 20% P15	C52	1
25761002	FILM CAPACITOR 1.58X 100nF 250VCA 20% P15	C48	1
26422608	CERAMIC CAPACITOR -20 +50% 2.2nF 500V	C48-50-51-55	1
28010590	DRIVER TRANSFORMER PHILIPS AT4043/01	TH1	1
28021180	COIL 50MH UTF48	B2	1
28021200	EHV TRANSFORMER ELDOR 1105.0628	TH2	1
28021210	BRIDGE COIL UTF48	B3	1
28025170	LINEARITY COIL UTF67	B1	1
28100000	TIME-DELAY FUSE 2A	F1	1
28100008	TIME-DELAY FUSE 3.15A	F2	1
28100150	FUSE HOLDER OMEGA C10 6A 250V CP525		2
28300010	SOAPSTONE INSULATOR 8 M.M.		24
30000081	SWITCH PROMIMET TYPE 4002/CS	SW4	1
30000360	COMMUTATOR PHILIPS 242213680023		3
34010061	FASTON LUG M.FACO TE115 2.8X0.8	FS1	1
34023352	AMP CONNECTOR MOD. I-2 D280608/1	CD-CE	2
34023354	AMP CONNECTOR MOD. I-4 D280610/1	CC	1
34023356	AMP CONNECTOR MOD. I-6 D280611/1	CL-CM-CA	3
34075080	5 WAY MALE CONNECTOR PRESSAC UTH1858	CH	1
34075080	11 WAY MALE CONNECTOR PRESSAC UTH1861	CF	1
40028066	SELF TAPPING SCREW 2.95X6.5 6854-71 B Zn		3
40038087	CAP SELF TAPPING SCREW 3.8X8.5 Zn		1
42000050	WASHER UNI6583-68 D43 D12S1.5 Zn		1
43000011	SPRING X TO220 UTH38		4
43000100	SPRING X RESISTOR 30W UTH635		2
50110140	RESISTOR BRACKET UTH601		2
50116100	HEATSINK X MTC8000 UTH1568		1
50116111	MTC8000 MAINFRAME UTH1128		1
50118500	HEATSINK GROUNDING LUG UTH1854		2
50423560	AMPLITUDE COIL BRACKET UTH1848		1
50423570	COMMUTATORS BRACKET UTH1843		1
50424220	TO3 INSULATOR UTH1886		2
50424230	TO220 INSULATOR UTH1887		1
50424310	INTEGRATED CIRCUIT INSULATOR UTH2047		1
50424640	MTC8000 MAIN PROTECTION UTH2044		1
53874710	SIGNALS INPUT LABEL 8000 EUROPA UT312		1
53874730	FUSE LABEL 9000 EUROPA UT314		1
53875320	MAIN INPUT LABEL 9000 EUROPA UT355		1
61001150	WIRING ASSEMBLY MTC8000 EUROPA UTC117		1
61005080	30W RESISTOR WIRING MTC8000 UTC526		1
20400468	TRANSISTOR BC638	TR14-18-22	3
20401028	TRANSISTOR BC548B	TR2-3-5-6-8-9-10-13	8
20401038	TRANSISTOR BC558B	TR1-4-7-11-12-16	6
20430218	TRANSISTOR BF422	TR21	1
24324708	RADIAL ELECT. CAPACITOR 47uF 16V P5	C6-14	2
24421008	RADIAL ELECT. CAPACITOR 10uF 25V P5	C17-18-19-20-35-58	6
24524708	RADIAL ELECT. CAPACITOR 47uF 35V P5	C58	1
24531008	RADIAL ELECT. CAPACITOR 100uF 35V P5	C9	1
24611008	RADIAL ELECT. CAPACITOR 1uF 63V P5	C22-23	2
24811008	RADIAL ELECT. CAPACITOR 1uF 160V P5	C56	1
24811008	RADIAL ELECT. CAPACITOR 1uF 200V P5	C45	1
25161018	FILM CAPACITOR 1.85 100nF 63V 5% P5	C12-13	2
25163318	FILM CAPACITOR 1.85 330nF 63V 5% P5	C10	1
25244718	MYLAR CAPACITOR 4.7uF 100V 10% P5	C32	1
25251028	MYLAR CAPACITOR 10nF 100V 10% P5	C24-25	2
25261008	MYLAR CAPACITOR 100nF 100V 10% P5	C26-31	2
25262218	FILM CAPACITOR 22.365 220nF 100V 10% P5	C11-27-30-33	4
26215108	CERAMIC CAP. NP0 15pF 50V P5 RTHE40SKCH150J	C1-3-5	3
26310108	CERAMIC CAP. NP0 100pF 50V P5 RTHE80SKCH101J	C2-4-7	3

26347108	CERAMIC CAPACITOR 470pF 50V P5 RTHE40SKYB471K	C8	1
26610608	CERAMIC CAP.-20+80 100nF 50V P5 RTDSK11SKYF104Z	C28	1
20100000	DIODE 1N4148	D1-2-4-6-7-8-8-10	11
		D11-25-26	1
20110100	ZENER DIODE 1.3W ZPV12	ZD1	1
20110600	ZENER DIODE 2% BZX79 B5V6	ZD3	1
20130060	DIODE BAV20	D16-28	2
20150004	DIODE 1N4004	D3-5-24	3
20150460	DIODE BYD33G	D14-15-17-18-23	5
20150480	DIODE GP15G	D18-20-21-22	4
21211801	METAL LAYER RESISTOR 1.8E 1% 1/4W 100PPM	R46	1
21212200	CARBON RESISTOR 2.2E 5% 1/4W	R36	1
21224700	CARBON RESISTOR 47E 5% 1/4W	R8-18-28-78	4
21231200	CARBON RESISTOR 120E 5% 1/4W	R44	1
21231500	CARBON RESISTOR 150E 5% 1/4W	R11-21-33	3
21232700	CARBON RESISTOR 270E 5% 1/4W	R71	1
21233300	CARBON RESISTOR 330E 5% 1/4W	R21-22-32-34	4
21234700	CARBON RESISTOR 470E 5% 1/4W	R56	1
21241000	CARBON RESISTOR 1K 5% 1/4W	R4-7-17-27-37-43-48	12
		R50-52-58-60-65	1
21241200	CARBON RESISTOR 1.2K 5% 1/4W	R108	1
21241500	CARBON RESISTOR 1.5K 5% 1/4W	R3-15-25-54-118	5
21241601	METAL LAYER RESISTOR 1.6K 1% 1/4W 100PPM	R115	1
21241800	CARBON RESISTOR 1.8K 5% 1/4W	R47	1
21242200	CARBON RESISTOR 2.2K 5% 1/4W	R83-100-106-108	4
21242202	METAL LAYER RESISTOR 2.2K 1% 1/4W 100PPM	R76	1
21242700	CARBON RESISTOR 2.7K 5% 1/4W	R45	1
21243000	CARBON RESISTOR 3K 5% 1/4W	R2-14-24	3
21243300	CARBON RESISTOR 3.3K 5% 1/4W	R127	1
21244700	CARBON RESISTOR 4.7K 5% 1/4W	R8-10-18-20-30-31-38	14
		48-51-53-57-61-63-86	1
21245600	CARBON RESISTOR 5.6K 5% 1/4W	R66	1
21246200	CARBON RESISTOR 6.2K 5% 1/4W	R1-13-23	3
21246800	CARBON RESISTOR 6.8K 5% 1/4W	R86-88	2
21248200	CARBON RESISTOR 8.2K 5% 1/4W	R88	1
21251000	CARBON RESISTOR 10K 5% 1/4W	R35-85-87-121	4
21251002	METAL LAYER RESISTOR 10K 1% 1/4W 100PPM	R78	1
21251200	CARBON RESISTOR 12K 5% 1/4W	R38-68	2
21252200	CARBON RESISTOR 22K 5% 1/4W	R55-58-62	3
21253300	CARBON RESISTOR 33K 5% 1/4W	R84	1
21253900	CARBON RESISTOR 39K 5% 1/4W	R70	1
21254700	CARBON RESISTOR 47K 5% 1/4W	R75-91	2
21258201	METAL LAYER RESISTOR 82K 1% 1/4W 100PPM	R42	1
21261000	CARBON RESISTOR 100K 5% 1/4W	R67	1
21261200	CARBON RESISTOR 120K 5% 1/4W	R5-16-26-40-68	5
21261800	CARBON RESISTOR 180K 5% 1/4W	R103	1
21262401	METAL LAYER RESISTOR 240K 2% 1/4W 100PPM	R80	1
21264700	CARBON RESISTOR 470K 5% 1/4W	R41-82-83	3
21266800	CARBON RESISTOR 680K 5% 1/4W	R102	1
21323300	CARBON RESISTOR 33E 5% 1/2W	R6	1
21324700	CARBON RESISTOR 47E 5% 1/2W	R126	1
21334700	CARBON RESISTOR 470E 5% 1/2W	R28	1
21341000	CARBON RESISTOR 1K 5% 1/2W	R104	1
21342200	CARBON RESISTOR 2.2K 5% 1/2W	R88	1
21351601	METAL LAYER RESISTOR 16K 1% 1/2W 100PPM	R113-114	2
21353300	CARBON RESISTOR 33K 5% 1/2W	R110	1
21362700	CARBON RESISTOR 270K 5% 1/2W	R90	1
21372202	METAL LAYER RESISTOR 2.2M 5% 1/2W VR37	R77	1
50144811	MAIN PRINTED CIRCUIT BOARD MTC8000 MZ07		1

CRT SOCKET ASSEMBLY		code	62007704
CODE	DESCRIPTION	REF. NO.	QTY
20420110	TRANSISTOR BF458	TR201-202-203	3
21411000	METAL OXIDE RESISTOR 1E 5% 1W WK4	R216	1
21551000	METAL OXIDE RESISTOR 10K 5% 2W	R205-206-210	3
23034706	TRIMMER VERTICAL REG. 470E PT10NH	RV201-202-210	3
23044700	CARBON TRIMMER HORIZ. REG. 4.7K PT10V	RV203-204-205	3
24821003	RADIAL ELECT. CAPACITOR 10uF 200V	C205	1
26468720	CERAMIC CAPACITOR 507.6 6.8nF 2KV 20%	C206	1
28300010	SOAPSTONE INSULATORS 8 M.M.		6
34010061	FASTON LUG M.FACO TE115 2.8X0.8	FS201	1
34020610	CRT SOCKET PRESSACO W20/4568+COVER		1
50420080	TIE 20-0875-1100 L-103		1
50423440	HEXAGONAL SHAFT PHILIPS 822241771060		3
53840180	SOCKET SHIELDING 8000 EUROPA UTH1852		1
61002270	SOCKET WIRING ASSEMBLY MTC8000/E UTC241		1
61005060	SOCKET SIGNALS WIRING MTC8000 UTC527		1
24522208	RADIAL ELECT. CAPACITOR 22uF 35V P5	C201	1
26318108	CERAMIC CAP. 10% 180pF 50V P5 RTHE40SKYB181K	C202-203-204	3
21212200	CARBON RESISTOR 2.2E 5% 1/4W	R201	1
21238200	CARBON RESISTOR 820E 5% 1/4W	R203-207-208	3
21244700	CARBON RESISTOR 4.7K 5% 1/4W	R204-208-211	3
21341000	CARBON RESISTOR 1K 5% 1/2W	R213-214-215	3
21342800	CARBON RESISTOR 2.2K 5% 1/2W	R217	1
21351000	CARBON RESISTOR 10K 5% 1/2W	R218	1
50144841	CRT SOCKET P. C. B. MTC8000 ZG 06		1

EAST-WEST P.C.B. ASSY code 62008060

CODE	DESCRIPTION	REF. NO.	QTY
23044710	TRIMMER 4.7K HORIZ. REG. PT10NV	RV401	1
34075085	5 WAY FEMALE CONNECTOR PRESSACO UTH1860	CI	1
50423440	HEXAGONAL SHAFT PHILIPS 822241771060		1
21234700	CARBON RESISTOR 470E 5% 1/4W	R408	1
21241000	CARBON RESISTOR 1K 5% 1/4W	R406-407	2
21251000	CARBON RESISTOR 10K 5% 1/4W	R204	1
21254700	CARBON RESISTOR 47K 5% 1/4W	R402-403	2
21261000	CARBON RESISTOR 100K 5% 1/4W	R401	1
21261500	CARBON RESISTOR 150K 5% 1/4W	R409	1
50144820	EAST-WEST P.C.B. MTC9000 KK		1
20400428	TRANSISTOR BC547	TR401	1
24832209	RADIAL ELECT. CAPACITOR 220uF 16V P5	C404	1
24422209	RADIAL ELECT. CAPACITOR 22uF 25V P5	C406	1
24614709	RADIAL ELECT. CAPACITOR 4.7uF 63V P5	C405	1
25163319	FILM CAPACITOR 1.85 330nF 63V 5% P5	C403	1
25261009	MYLAR CAPACITOR 100nF 100V 10% P5	C401-402	2

CONTROLS P.C.B. ASSEMBLY code 62007750

CODE	DESCRIPTION	REF. NO.	QTY
21332700	CARBON RESISTOR 270E 5% 1/2W	R116	1
21333300	CARBON RESISTOR 330E 5% 1/2W	R117	1
23041009	SEALED TRIMMER 1K HORIZ. REG. PT15NV	RV3	1
23044710	SEALED TRIMMER 4.7K HORIZ. REG. PT10NV	RV1	1
23051013	SEALED TRIMMER 10K HORIZ. REG. PT10NV	RV4-5-6	3
23062207	SEALED TRIMMER 220K HORIZ. REG. PT10NV	RV2	1
34075085	11 WAY FEMALE CONNECTOR PRESSACO UTH1862	CG	1
34075280	POLARIZATION KEY 12/3768		1
50144830	CONTROLS P.C.B. MTC9000 CG		1
50423430	SHAFT PT15 RADIOHM P15 L14 D6		1
50423440	HEXAGONAL SHAFT PHILIPS 822241771060		5

POWER IN WIRING ASSEMBLY code 61000120

CODE	DESCRIPTION	REF. NO.	QTY
34020002	AMP FEMALE LUGS 280702/1		4
34023404	AMP CONNECTOR MOD. I 4 F 280581		1
53870120	YELLOW LABEL 7X5		1
81000120	M.O.C.F.		1

SIGNALS INPUT WIRING ASSY code 61000140

CODE	DESCRIPTION	REF. NO.	QTY
34020002	AMP FEMALE LUGS 280702/1		5
34023406	AMP CONNECTOR MOD. I 6 F 280582		1
53870120	YELLOW LABEL 7X5		1
81000140	M.O.C.F.		1

YOKE WIRING ASSEMBLY code 61001070

CODE	DESCRIPTION	REF. NO.	QTY
34020002	AMP FEMALE LUGS 280702/1		6
34023406	AMP CONNECTOR MOD. I 6 F 280582		1
81001070	M.O.C.F.		1

DEGAUSSING COIL ASSY 20" code 61004200**DEGAUSSING COIL ASSY 16" code 62005130****DEGAUSSING COIL ASSY 14" code 62005130****CRT MAINFRAME ASSY 20" code 62008490**

CODE	DESCRIPTION	REF. NO.	QTY
40114016	CAP SCREW M4x7 Zn		4
40842085	SELF TAPPING SCREW 4.2x8.5		8
40863016	SELF TAPPING SCREW 6.3x16		4
42000010	WASHER UNI 6593-68 D18 d6.6		4
50111210	RIGHT LEG x 20" MAINFRAME UTH441		1
50111220	LEFT LEG x 20" MAINFRAME UTH442		1
50111230	CENTRAL LEG x 20" MAINFRAME UTH443		1
50111240	BASE PLATE x 20" MAINFRAME UTH440		1
50111450	CRT NECK REINFORCING FRAME UTH444		1
53874750	X RAY LABEL MTC9000 UT316		1

CRT MAINFRAME ASSY 16" code 62003720

CODE	DESCRIPTION	REF. NO.	QTY
50111380	CENTRAL LEG x 16"		1
50111380	RIGHT LEG x 16"		1
50111370	LEFT LEG x 16"		1
50111380	BASE PLATE x 16"		1

CRT MAINFRAME ASSY 14" code 62003700

CODE	DESCRIPTION	REF. NO.	QTY
50111160	LEG x 14" MAINFRAME		1
50111200	BASE PLATE 14"		1

CRT ASSEMBLY 20" code 62008050

CODE	DESCRIPTION	REF. NO.	QTY
20810028	CRT 20" S.R. ORION OR VIDEOCOLOR A51-427X		1
	510UDB22 TCXX		1
43000030	SPRING FOR CRT GROUNDING UTH634		1
43000070	WIRE HOOK/1 FOR DEGAUSSING COIL UTH156		2
43000080	EXTENSION SPRING 20" USA UTH157		2
50420645	TIE FASTEX 32-0065-1151 L35		1
53873710	LABEL FOR CRT 20" ORION UTH250		1
53873770	LABEL FOR CRT, MAINFRAME, PACKING VG UT263		1
53873780	ADVERTISING LABEL UT353 EX UT264		1
53874780	EHV LABEL MTC9000 UT318		1
61001070	YOKE WIRING ASSEMBLY MTC9000/EUR 20" UTC113		1
61001080	WIRING ASSEMBLY MTC9000/EUR UTC118		1
61002250	GROUNDING BRAIDED WIRE ASSY MTC9000E 20" UTC238		1

PACKING ASSEMBLY code 62007760

CODE	DESCRIPTION	REF. NO.	QTY
52422010	RIGHT SIDE POLYURETHANE BOX 20 UTH1813		2
52422010	LEFT SIDE POLYURETHANE BOX 20 UTH1914		2
52824800	PACKING BOX MTC9000 20" EUR. UTH1826		1
53874370	INSTRUCTION BOOKLET MTC9000 EUROPA		1

ADJUSTMENTS DIAGRAM

