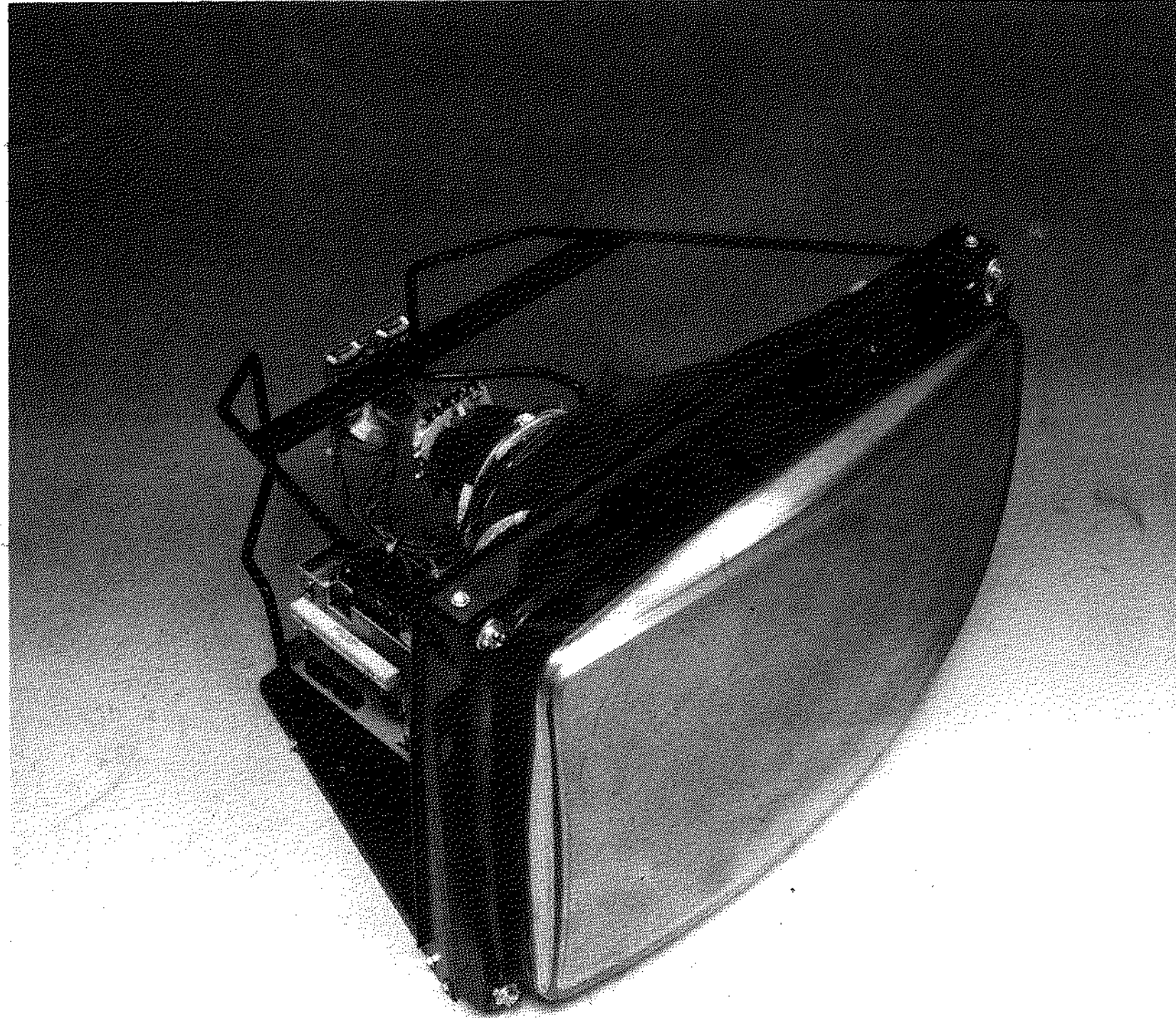




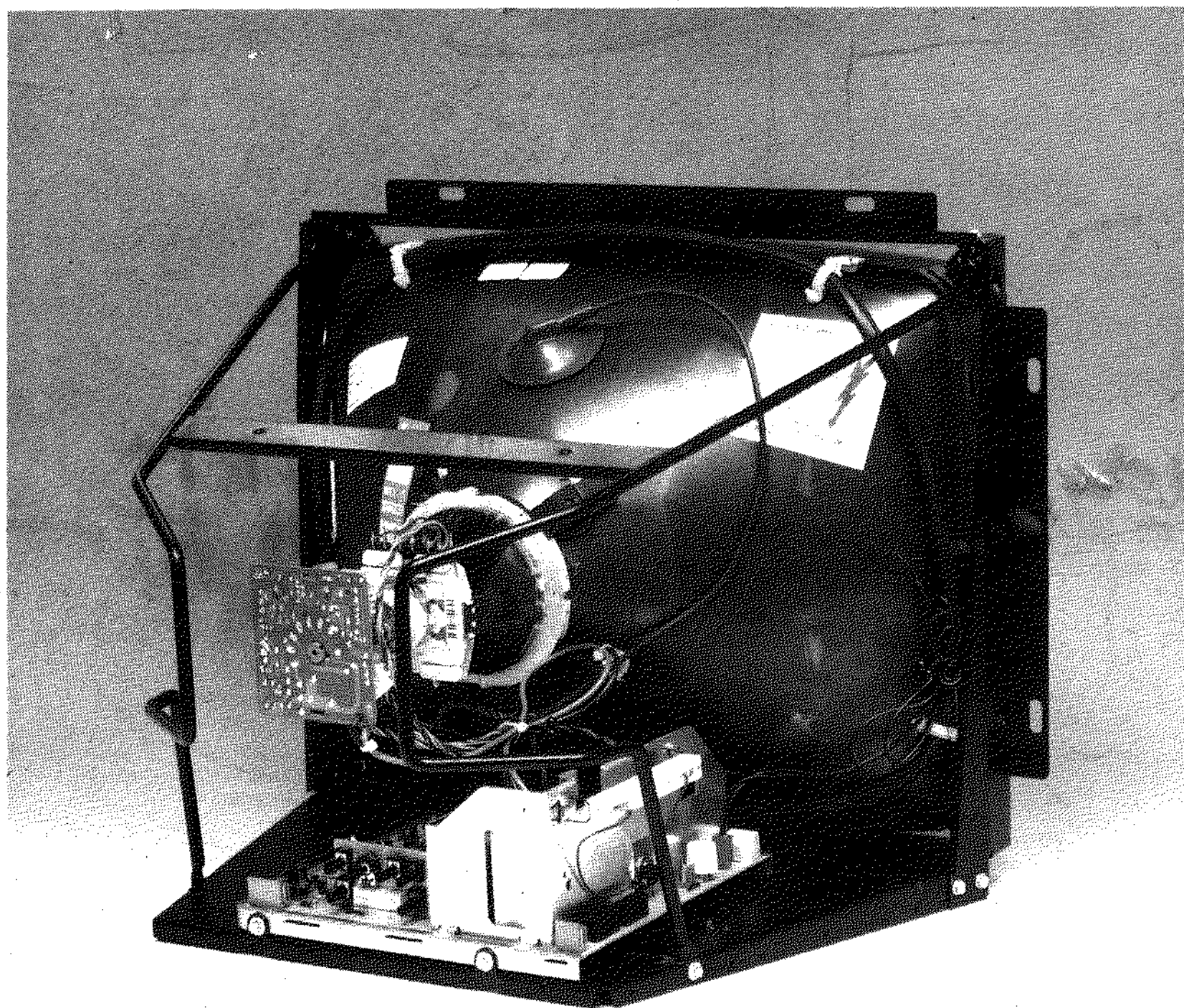
HANTAREX[®]

Electronic
Equipment
Manufacturer



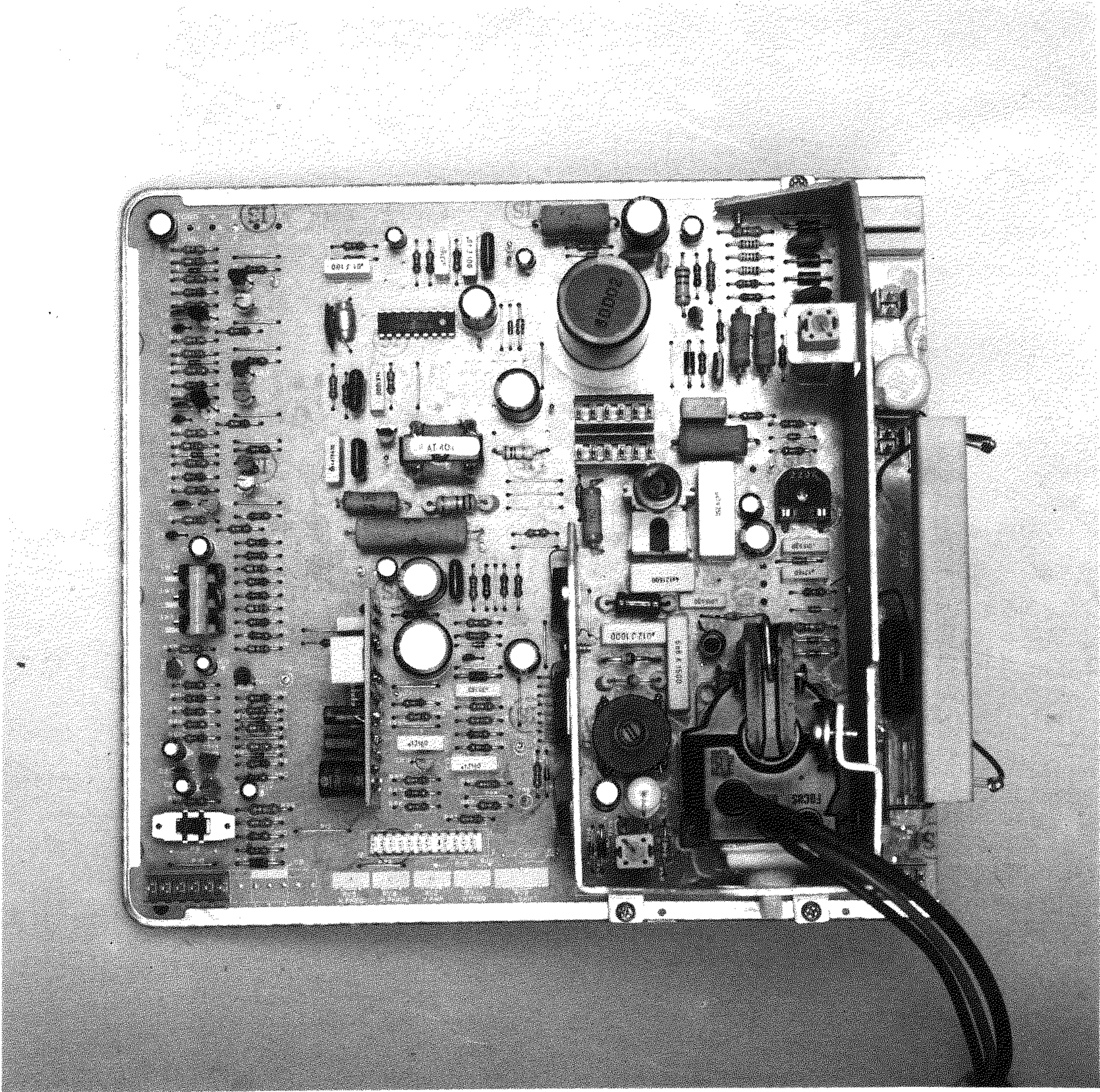
MTC 9000

open frame colour monitor

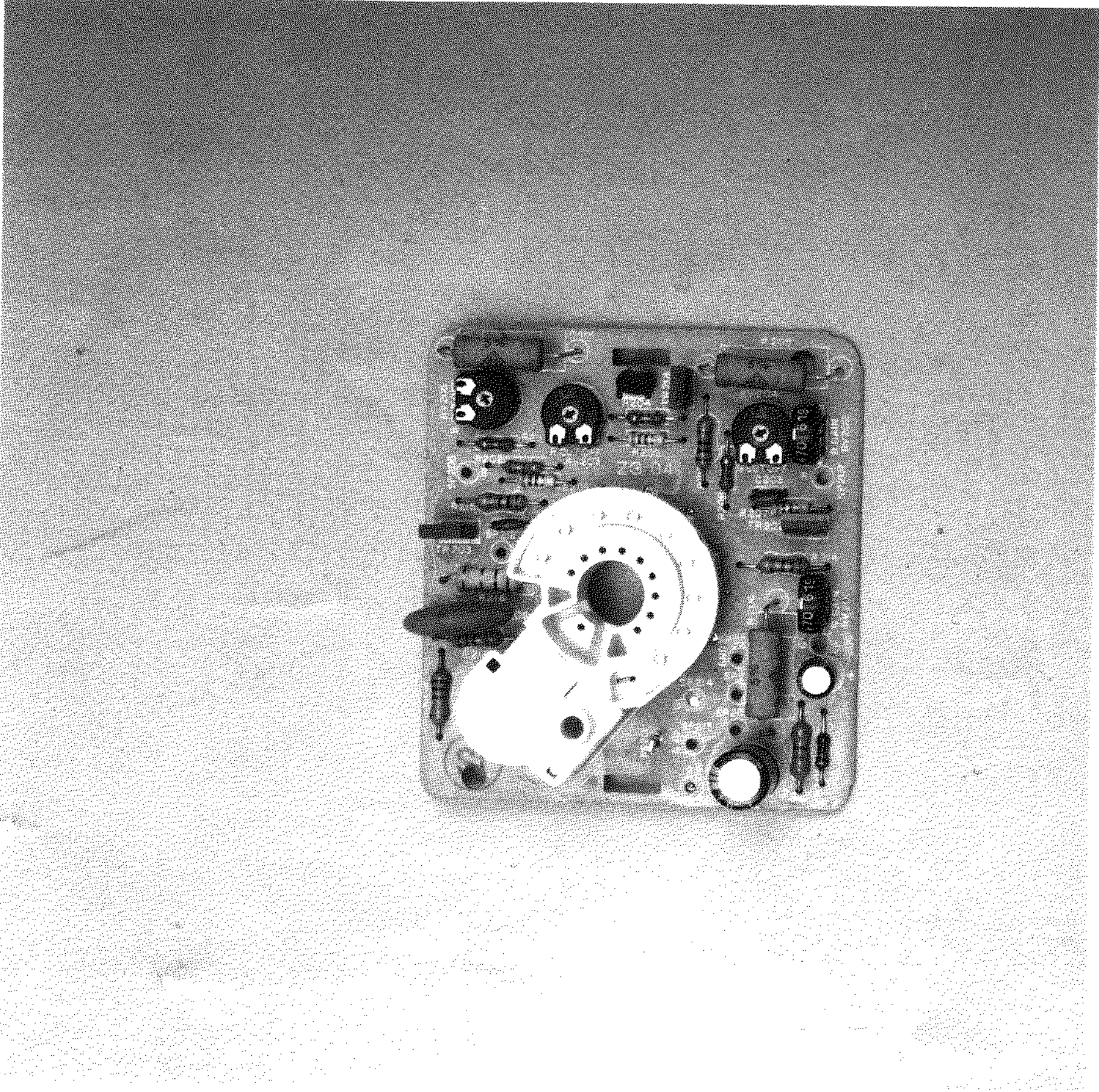


INFORMAZIONI PRELIMINARI

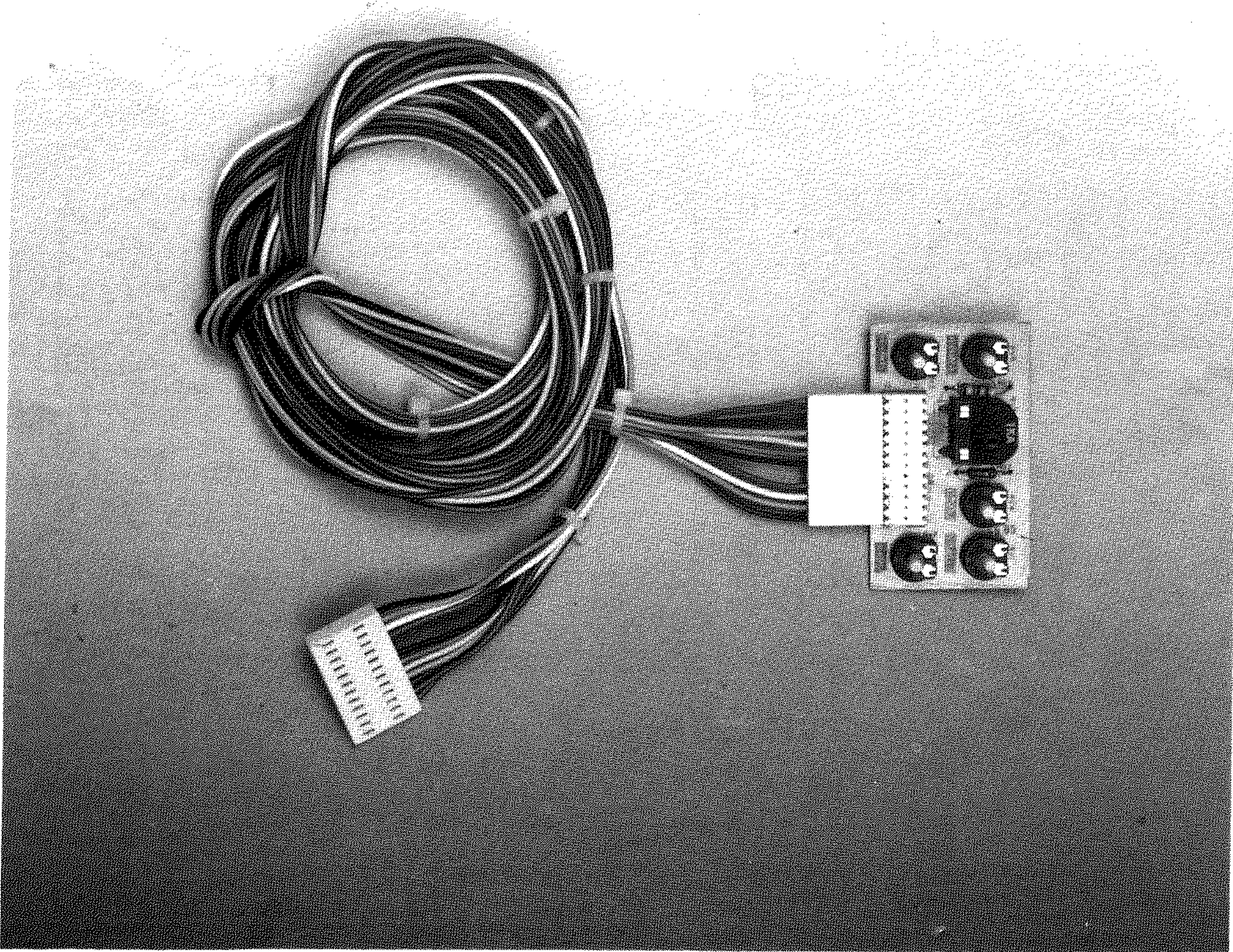
MOTHER BOARD



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 | 115-142 V a.c. |
| | Frequency | 50-400 Hz |
| | r.m.s. Current | at Ib 0 = 0.3 A at Ib 1 mA, = 0.7 A |
| | d.c. current** | |
| | Voltage | 155-200 V d.c. |
| | Current | 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 | 220 V a.c. ± 20% |
| | Frequency | 50-60 Hz |
| | Current | 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 | 1.5 - 5 V p.p. |
| | Polarity | positive/negative (switchable by switch on p.c.b.) |
| | Timing | conforms to t.v. standards ± 10% |
| | Separate: | |
| | Amplitude | 1.5 - 5 V p.p. |
| | Polarity | positive/negative (switchable simultaneously*** by switch on p.c.b.) |
| | H width | 1-10 us |
| | H Freq. | 15-16 kHz |
| | V width | 80-1000 us |
| | V Freq. | 45-70 Hz |
| | H Phase | with standard European t.v. signals the H phase control permits a displacement of the image (of nominal ampl.) of ± 4 cm |
| | V Linearity | errors < 3% |
| | H Linearity | errors < 3% |
| | H Amplitude | with standard European t.v. - signals the H ampl. permits active video of 40-51 us. |
| | V Amplitude | 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 | RGB anal/TTL compat. |
| | Polarity | positive, white (high-level) |
| | Amplitude | 2-5 V p.p. (by use of input switch) |
| | Bandwidth | 10 MHz at 40 V pp. |
| | Rise/Fall Time | < 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 ± 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 ± 5% V d.c. |
| vert. oscillator supply voltage | grid | | TP13 | | 26 ± 5% V d.c. |
| video amplifier supply voltage | grid | | TP1 | | 24 ± 5% V d.c. |
| video output stage supply voltage | grid | | SP11 | | 190 ± 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 2322.662.86009 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 |
| 28021190 | 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.F.ACO 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 2.96X6.5 6854-71 B Zn | | 9 |
| 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 | |
| | | D11-25-26 | 11 |
| | | ZD1 | 1 |
| 20110100 | ZENER DIODE 1.3W ZPY12 | ZD3 | 1 |
| 20110600 | ZENER DIODE 2% BZX79 B5V6 | D16-28 | 2 |
| 20130060 | DIODE BAV20 | D3-5-24 | 3 |
| 20150004 | DIODE 1N4004 | D14-15-17-18-23 | 5 |
| 20150460 | DIODE BYD33G | D18-20-21-22 | 4 |
| 20150480 | DIODE GP15G | R46 | 1 |
| 21211801 | METAL LAYER RESISTOR 1.8E 1% 1/4W 100PPM | R36 | 1 |
| 21212200 | CARBON RESISTOR 2.2E 5% 1/4W | R8-18-28-78 | 4 |
| 21224700 | CARBON RESISTOR 47E 5% 1/4W | R44 | 1 |
| 21231200 | CARBON RESISTOR 120E 5% 1/4W | R11-21-33 | 3 |
| 21231500 | CARBON RESISTOR 150E 5% 1/4W | R71 | 1 |
| 21232700 | CARBON RESISTOR 270E 5% 1/4W | R21-22-32-34 | 4 |
| 21233300 | CARBON RESISTOR 330E 5% 1/4W | R56 | 1 |
| 21234700 | CARBON RESISTOR 470E 5% 1/4W | R4-7-17-27-37-43-48 | |
| 21241000 | CARBON RESISTOR 1K 5% 1/4W | R50-52-58-60-65 | 12 |
| | | R108 | 1 |
| 21241200 | CARBON RESISTOR 1.2K 5% 1/4W | R3-15-25-54-118 | 5 |
| 21241500 | CARBON RESISTOR 1.5K 5% 1/4W | R115 | 1 |
| 21241601 | METAL LAYER RESISTOR 1.6K 1% 1/4W 100PPM | R47 | 1 |
| 21241800 | CARBON RESISTOR 1.8K 5% 1/4W | R83-100-106-108 | 4 |
| 21242200 | CARBON RESISTOR 2.2K 5% 1/4W | R76 | 1 |
| 21242202 | METAL LAYER RESISTOR 2.2K 1% 1/4W 100PPM | R45 | 1 |
| 21242700 | CARBON RESISTOR 2.7K 5% 1/4W | R2-14-24 | 3 |
| 21243000 | CARBON RESISTOR 3K 5% 1/4W | R127 | 1 |
| 21243900 | CARBON RESISTOR 3.3K 5% 1/4W | R8-10-18-20-30-31-38 | |
| 21244700 | CARBON RESISTOR 4.7K 5% 1/4W | 48-51-53-57-61-63-86 | 14 |
| | | R66 | 1 |
| 21245600 | CARBON RESISTOR 5.6K 5% 1/4W | R1-13-23 | 3 |
| 21246200 | CARBON RESISTOR 6.2K 5% 1/4W | R86-88 | 2 |
| 21246800 | CARBON RESISTOR 6.8K 5% 1/4W | R88 | 1 |
| 21248200 | CARBON RESISTOR 8.2K 5% 1/4W | R35-85-87-121 | 4 |
| 21251000 | CARBON RESISTOR 10K 5% 1/4W | R78 | 1 |
| 21251002 | METAL LAYER RESISTOR 10K 1% 1/4W 100PPM | R38-68 | 2 |
| 21251200 | CARBON RESISTOR 12K 5% 1/4W | R55-58-62 | 3 |
| 21252200 | CARBON RESISTOR 22K 5% 1/4W | R84 | 1 |
| 21253300 | CARBON RESISTOR 33K 5% 1/4W | R70 | 1 |
| 21253900 | CARBON RESISTOR 39K 5% 1/4W | R75-81 | 2 |
| 21254700 | CARBON RESISTOR 47K 5% 1/4W | R42 | 1 |
| 21258201 | METAL LAYER RESISTOR 82K 1% 1/4W 100PPM | R67 | 1 |
| 21261000 | CARBON RESISTOR 100K 5% 1/4W | R5-16-26-40-68 | 5 |
| 21261200 | CARBON RESISTOR 120K 5% 1/4W | R103 | 1 |
| 21261800 | CARBON RESISTOR 180K 5% 1/4W | R80 | 1 |
| 21262401 | METAL LAYER RESISTOR 240K 2% 1/4W 100PPM | R41-82-83 | 3 |
| 21264700 | CARBON RESISTOR 470K 5% 1/4W | R102 | 1 |
| 21266800 | CARBON RESISTOR 680K 5% 1/4W | R6 | 1 |
| 21323300 | CARBON RESISTOR 33E 5% 1/2W | R126 | 1 |
| 21324700 | CARBON RESISTOR 47E 5% 1/2W | R28 | 1 |
| 21334700 | CARBON RESISTOR 470E 5% 1/2W | R104 | 1 |
| 21341000 | CARBON RESISTOR 1K 5% 1/2W | R88 | 1 |
| 21342200 | CARBON RESISTOR 2.2K 5% 1/2W | R113-114 | 2 |
| 21351601 | METAL LAYER RESISTOR 16K 1% 1/2W 100PPM | R110 | 1 |
| 21353900 | CARBON RESISTOR 39K 5% 1/2W | R90 | 1 |
| 21362700 | CARBON RESISTOR 270K 5% 1/2W | R77 | 1 |
| 21372202 | METAL LAYER RESISTOR 2.2M 5% 1/2W VR37 | | 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.F.ACO 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 MTC8000E 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 |
| 34075065 | 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. MTC8000 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 |
| 34075065 | 11 WAY FEMALE CONNECTOR PRESSACO UTH1862 | CG | 1 |
| 34075290 | POLARIZATION KEY 12/3768 | | 1 |
| 50144830 | CONTROLS P.C.B. MTC8000 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 MTC8000 UT316 | | 1 |

CRT MAINFRAME ASSY 16" code 62003720

| CODE | DESCRIPTION | REF. NO. | QTY |
|----------|-------------------|----------|-----|
| 50111360 | CENTRAL LEG x 16" | | 1 |
| 50111360 | RIGHT LEG x 16" | | 1 |
| 50111370 | LEFT LEG x 16" | | 1 |
| 50111380 | BASE PLATE x 16" | | 1 |

CRT MAINFRAME ASSY 14" code 62003700

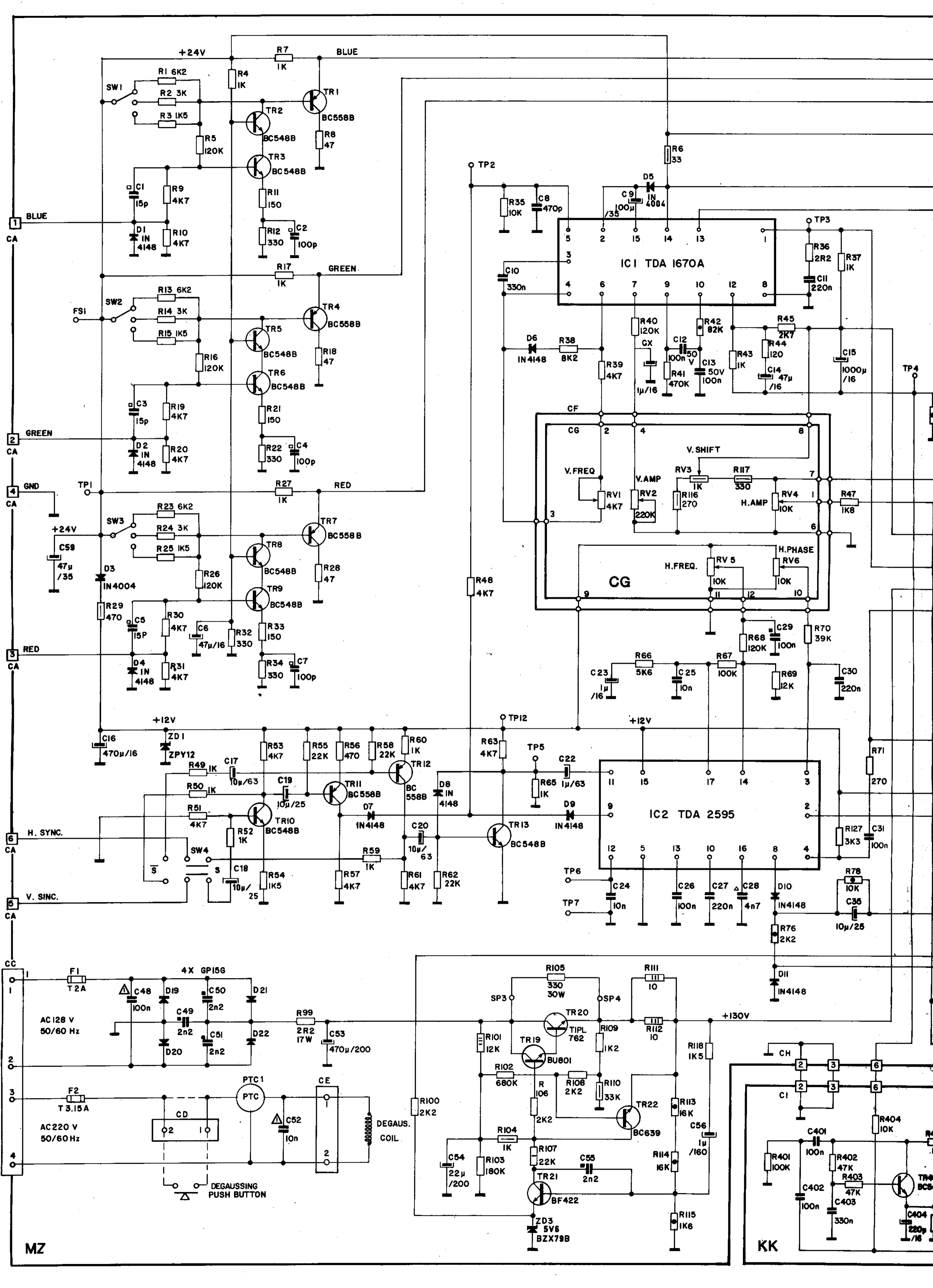
| CODE | DESCRIPTION | REF. NO. | QTY |
|----------|---------------------|----------|-----|
| 50111160 | LEG x 14" MAINFRAME | | 1 |
| 50111200 | BASE PLATE 14" | | 1 |

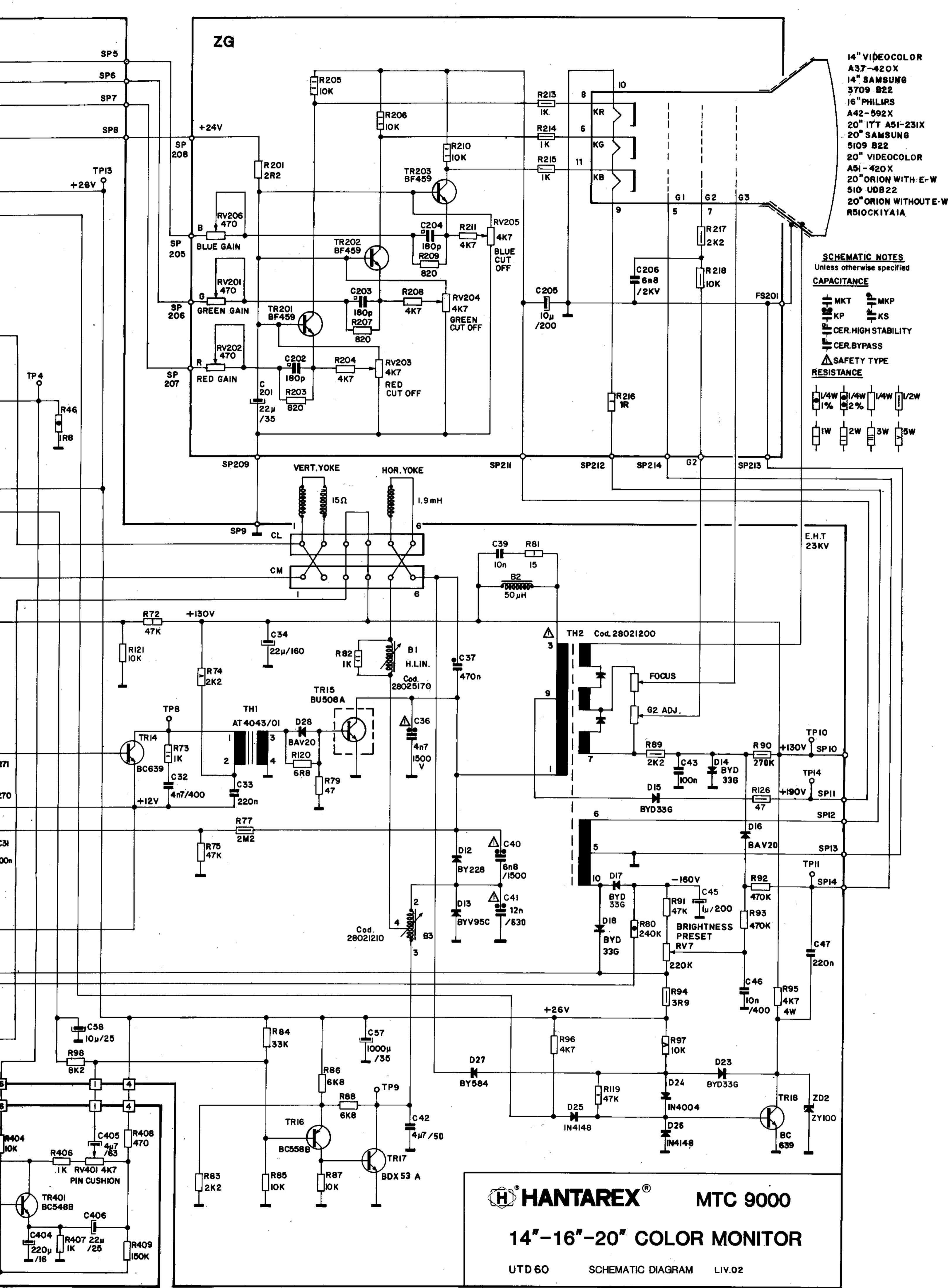
CRT ASSEMBLY 20" code 62008050

| 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 MTC8000 UT318 | | 1 |
| 61001070 | YOKE WIRING ASSEMBLY MTC8000/EUR 20" UTC113 | | 1 |
| 61001080 | WIRING ASSEMBLY MTC8000/EUR UTC118 | | 1 |
| 61002250 | GROUNDING BRAIDED WIRE ASSY MTC8000E 20" UTC238 | | 1 |

PACKING ASSEMBLY code 62007760

| CODE | DESCRIPTION | REF. NO. | QTY |
|----------|--|----------|-----|
| 52422010 | RIGHT SIDE POLYURETHANE BOX 20 UTH1913 | | 2 |
| 52422010 | LEFT SIDE POLYURETHANE BOX 20 UTH1914 | | 2 |
| 52824800 | PACKING BOX MTC8000 20" EUR. UTH1826 | | 1 |
| 53874370 | INSTRUCTION BOOKLET MTC8000 EUROPA | | 1 |





ADJUSTMENTS DIAGRAM

