

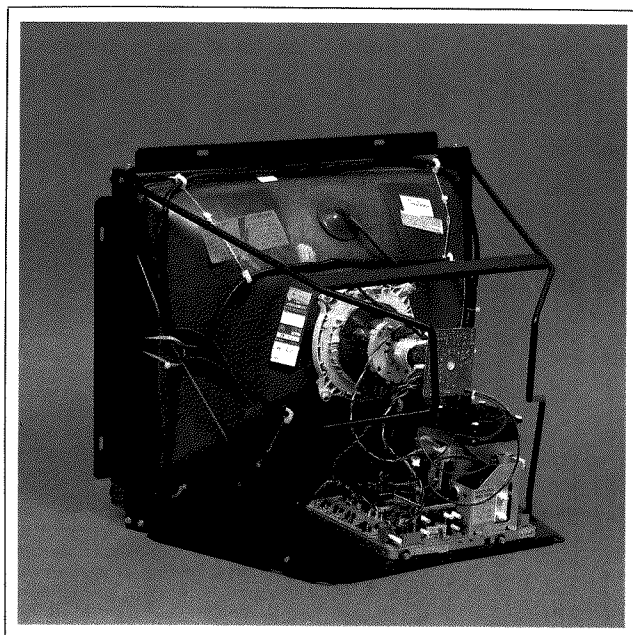


# HANTAREX

*ELECTRONIC SYSTEMS*

## **MONITORS MTC 9110 25'' 28''**

- **MANUALE DI SERVIZIO**
- **SERVICE MANUAL**
- **HANDBUCH**
- **MANUAL DE SERVICIO**
- **MODE D'EMPLOI**



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## ENGLISH

### DETAILS AND INOVATIONS OF THE MTC 9110 - 25''-28''

- 1) The MTC 9110 monitor has been designed for maximum versatility, so allowing it to be used with almost any logic board.
- 2) The 'monolithic' construction, using a single printed circuit board, makes maximum use of the automatic insertion of components, which, being free of human error, guarantees a high level of production uniformity coupled with a high level of reliability.
- 3) Completely new mechanical design with the specific object of making the unit extremely resistant to impact and vibration during transportation.
- 4) Use of two connectors (CL and CM on the printed circuit board) for the deflexion unit with cross-over wiring which permits easy inversion and reversal of the image — often an indispensable feature.
- 5) The electronics for the 25''-28''/110° incorporates a thermostat mounted on the heat sink (on the side of TR BU 508) which guarantees an exceptionally high degree of product safety and reliability. The thermostat comes into operation if its temperature reaches 75-80°, interrupting the 130 V d.c. supply so bringing the fault to the attention of the operator. This could happen if, for example, the ventilator failed, or the monitor were used in conditions of extreme ambient temperature.
- 6) All the controls which affect the display (horizontal and vertical frequency, horizontal and vertical amplitude, horizontal phase and vertical shift) are mounted on a small separate p.c.b. which is normally plugged into a connector on the main board, but may be used in conjunction with a 1.5 metre long extension cable that is available on request. This allows the control card to be mounted in a specially moulded mounting bracket in a position where the operator can easily adjust the monitor while directly viewing the image.
- 7) The video input is fed via a precision three-gang potentiometer permitting acceptance of input signals in the range 1 to 5 V p.p. without creating changes in colour balance.
- 8) Utilization of a new integrated circuit for vertical deflexion (TDA 1670A) resulting in the short vertical fly-back time of 0.7 ms, so extending the range of logic board usage.
- 9) Incorporation of a new integrated circuit in the horizontal sync. circuitry. This I.C. guarantees a positive protection against x-ray radiation and conforms with the principal international public health regulations, such as F.D.A. Federal Drug Administration.

## WARNING

### 1) SUPPLY

The input supply of the monitor (128 V a.c.) must be fed via a mains isolating transformer.

### 2) EARTHING

The chassis and the heat sinks are connected to earth. To measure voltages and to inspect waveforms, connect the negative terminals of instruments to the chassis.

### 3) X-RAYS

The monitor has been designed to minimize x-ray radiation. Furthermore, a special safety circuit comes into operation in the event of failure to limit radiation to below 0.5 mR/h.

### 4) E.H.T.

Dangerously high voltages are present inside the monitor, and for safe operation it is imperative to follow all safety instructions and warnings.

### 5) C.R.T.

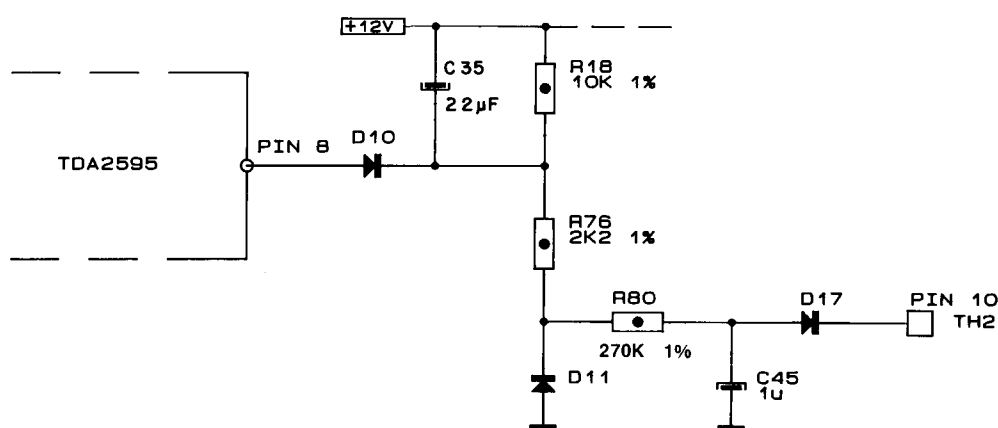
The cathode-ray tube is a high vacuum device and its surfaces are subject to high external pressure. It is therefore necessary to handle the tube with care and to avoid impact which could cause implosion. It follows that personnel handling cathode-ray tubes during installation or during replacement, should wear thick gloves and protective clothing to protect against possible flying glass splinters.

### 6) WEATHER PROTECTION

To avoid the possibility of electric discharge, do not expose the monitor to rain or excessive humidity.

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## PROTECTION AGAINST X-RAY RADIATION



(D.H.H.S. accession n. 8720899-05)

The MTC 9110 monitor contains an x-ray protection circuit. A reference voltage is generated from the E.H.T. transformer and is fed via a resistive divider to pin 8 of I.C. TDA 2595.

The voltage appearing at pin 8 is compared with an accurate reference voltage within the I.C., and if the E.H.T. exceeds 30 kV the voltage at pin 8 operates a trigger circuit which inhibits the oscillator and hence the generation of the E.H.T.

The circuit continues to block the oscillator until the cause of the failure has been repaired, and can only be reset by completely switching-off the monitor and switching-on again.

## TECHNICAL CHARACTERISTICS

### 1) SUPPLY

128 V a.c.  $\pm 10\%$ , 50/60 Hz

The supply to the monitor must be via an isolating transformer with the following characteristics:  
primary 120 V a.c. (USA) 220/240 V a.c., secondary 128 V a.c. 150 W.

### 2) POWER CONSUMPTION

100 W max.

### 3) DEGAUSSING

100  $\div$  264 V a.c. automatic.

To change to manually controlled degaussing, remove bridge P34 and insert a twin cable of the desired length into connector CD terminated in a push-button switch, enabling degaussing to be effected at any time.

### 4) VIDEO INPUT SIGNALS

RGB positive-going with an input impedance of 2.2 kOhm. Input sensitivity from 1 to 5 V p.p. Input connexions as shown on page 37.

For negative-going input signals refer to the description of the «Video Invertor» on page 39.

### 5) VIDEO PASS BAND

-3 dB at 12 MHz

### 6) HORIZONTAL BLANKING

12  $\mu$ s

### 7) VERTICAL BLANKING

1 ms

### 8) SYNC. SIGNALS

Horizontal and vertical, positive or negative, composite or separate. Input impedance 2.2 kOhm. Input level between 1.5 and 5 V p.p. Input connexions as shown on page 37.

Selection of positive or negative input is made by switch SW4 (see page 37).

### 9) SCANNING FREQUENCIES

Horizontal 15.625  $\pm$  0.5 kHz: adjustable.

Vertical 45-65 Hz: adjustable.

### 10) CONTROLS

Contrast, brightness, focus, horizontal frequency, horizontal phase, horizontal amplitude, horizontal linearity, vertical frequency, vertical shift and vertical amplitude. For further details see page 37.

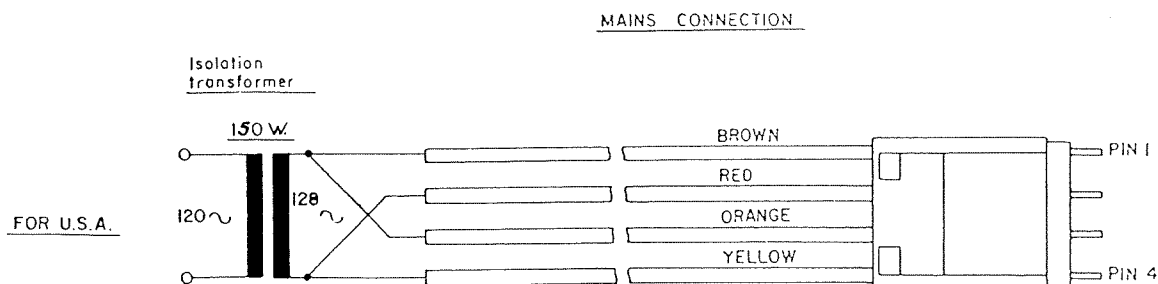
## INSTALLATION AND SETTING-UP INSTRUCTIONS

- 1) SUPPLY  
Check that the h.t. line voltage of the monitor at test point TP10 is 130 V d.c.  $\pm$  3%.
- 2) HORIZONTAL OSCILLATOR  
Remove the incoming sync. signal (for which one may use SW4) and turn RV5 to obtain a stationary image. Reconnect the sync. input signal.
- 3) VERTICAL OSCILLATOR  
Adjust RV1 to obtain a slow roll-over of the image in a downward direction. Turn back until the image locks.
- 4) FEED VOLTAGE TO VERTICAL DEFLEXION CIRCUIT  
Check that the voltage at TP13 is 26 V d.c.  $\pm$  5%. See page 35.
- 5) FEED VOLTAGE TO VIDEO AMPLIFIER  
Check that the voltage at TP1 is 24 V d.c.  $\pm$  5%. See page 35.
- 6) FEED VOLTAGE TO VIDEO OUTPUT AMPLIFIER  
Check that the voltage at TP14 is 200 V d.c.  $\pm$  5%. See page 35.
- 7) ADJUSTMENT OF BRIDGE COIL  
Bridge Coil B3 is adjusted on the production line, but should it become necessary to re-adjust, the following procedure should be adopted:
  - a) Adjust RV4 on board CG for minimum horizontal amplitude.
  - b) Adjust the ferrite core of B3 for minimum horizontal amplitude.
  - c) Re-adjust RV4 to obtain the desired amplitude.
- 8) ADJUSTMENT OF EAST/WEST CIRCUIT  
Adjust pre-set resistor RV401 on module KK (see page 37) to obtain the best vertical geometry.
- 9) ADJUSTMENT OF GAIN OF RGB VIDEO OUTPUT STAGES  
Having inserted RGB signals of equal amplitude to the inputs, turn the blue gain control RV206, located on the c.r.t. neck board ZG, to its mid-position and adjust the Contrast Control P1 so that the video signal measured with an oscilloscope at the blue cathode is 100 V p.p. Adjust the signals at the cathodes of the red and green guns to the same value by adjustment of RV202 and RV201. See page 37.
- 10) ADJUSTMENT OF «WHITE»
  - a) Remove the video input signal.
  - b) Turn RV7 on the c.r.t. grid 1, to maximum brightness.
  - c) Turn the black level controls situated on the c.r.t. neck board, RV203 red, RV204 green and RV205 blue, to minimum (clockwise).
  - d) Reduce the brightness by adjusting the voltage on grid 2 by means of the control situated on the line output transformer TH2 so that the dominant colour is only just visible, and then adjust the black level controls to obtain the best white possible.
  - e) The G2 «Screen» potentiometer functions as the brightness control.
- 11) FOCUS  
Adjust the focus control (FOCUS situated on the line output transformer TH2) using a dot pattern signal, with medium brightness, to give the best focus obtainable.
- 12) HORIZONTAL LINEARITY  
Using a grid pattern signal, adjust for the last square on the right to be equal in size to the first square on the left.

## OPERATING INSTRUCTIONS

- 1) Insert the supply cable to the power input connector CC. See page 37.
  - 2) Insert the signal and sync. cable to the input connector CA. See page 37.
  - 3) Set sync. selector switch SW4 to positive or negative according to the type of input signal. so as to obtain a locked image horizontally and vertically. See page 37.
  - 4) Next adjust vertical amplitude, vertical frequency, horizontal amplitude, horizontal phase, vertical shift, horizontal frequency, East-West, brightness and contrast to match the applied signal. See page 37.
- Finally it may be necessary to trim to the colour and white adjustments. See para. 9 and 10 page 10.

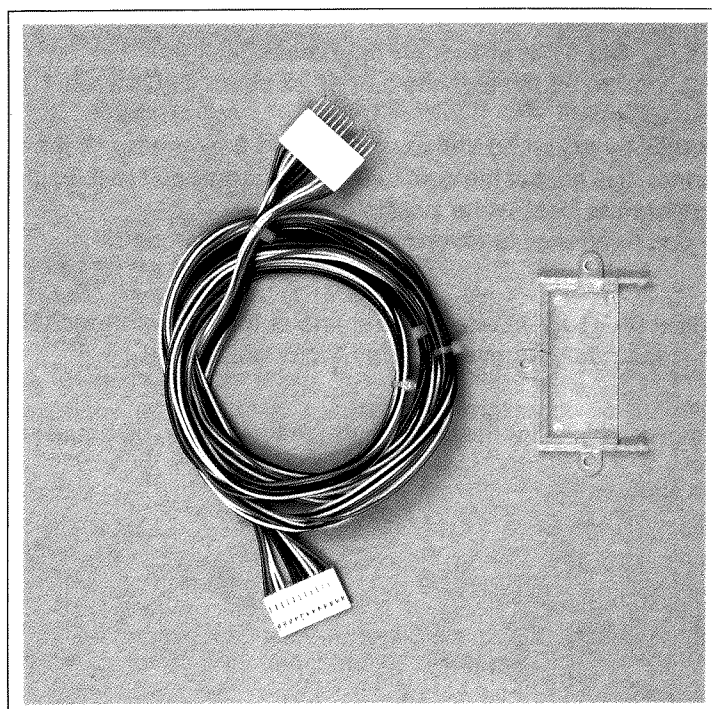
## MONITOR POWER INPUT CONNEXION SCHEMATIC (U.S.A. ONLY)



## REMOTE CONTROL

The following controls are all mounted on a small printed circuit board CG: vertical frequency, vertical amplitude, vertical shift, horizontal frequency, horizontal phase, horizontal amplitude. The board is fitted with a socket connector which is plugged into a mating plug connector CF on the main board, and may be removed and re-connected via a 1.5 metre cable (available on request) enabling the operator to adjust all those controls from the front of the monitor.

The cable and the special plastic support frame for remotely mounting the control board can be ordered by quoting part no. 62008440 Remote Control Assembly.



PARTS LIST

| MAIN P.C.B. ASSEMBLY 25"-28"/110°               |                                       |                        |      |
|-------------------------------------------------|---------------------------------------|------------------------|------|
| CODE                                            | DESCRIPTION                           | REF.NO.                | Q.TY |
| 20110300                                        | ZENER DIODE 1.3 W ZY 100              | ZD2                    | 1    |
| 20150150                                        | DIODE BY 584 (BY 184)                 | D27                    | 1    |
| 20150170                                        | DIODE BYV 95/C - 600                  | D13                    | 1    |
| 20150210                                        | DIODE BY 228                          | D12                    | 1    |
| 20410100                                        | TRANSISTOR BDX 53 A                   | TR17                   | 1    |
| 20430320                                        | TRANSISTOR BU 508 A                   | TR15                   | 1    |
| 20430470                                        | TRANSISTOR TIPL 762                   | TR20                   | 1    |
| 20430570                                        | TRANSISTOR BU 801                     | TR19                   | 1    |
| 20670270                                        | INTEGRATED CIRCUIT TDA 2595           | IC2                    | 1    |
| 20670950                                        | INTEGRATED CIRCUIT TDA 1670A          | IC1                    | 1    |
| 21000160                                        | PHILIPS PTC 2322.662.96011 110/220V   | PTC1                   | 1    |
| 21351601                                        | METAL FILM RES. 16K 1% 1/2W           | R113-114               | 2    |
| 21416800                                        | METAL OXIDE RESISTOR 6.8E 5% 1W       | R120                   | 1    |
| 21452200                                        | METAL OXIDE RESISTOR 22K 5% 1W        | R107                   | 1    |
| 21453300                                        | METAL OXIDE RESISTOR 33K 5% 1W        | R110                   | 1    |
| 21454700                                        | METAL OXIDE RESISTOR 47K 5% 1W        | R119-72                | 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      | R95                    | 1    |
| 22142200                                        | METAL OXIDE RESISTOR 2.2K 5% 5W       | R74                    | 1    |
| 22414700                                        | WIREWOUND RESISTOR VERT. 4.7E 5% 9W   | R81                    | 1    |
| 22451000                                        | WIREWOUND RESISTOR 10K 10% 9W         | R97                    | 1    |
| 22712200                                        | WIREWOUND RESISTOR 2.2E 10% 17W       | R99                    | 1    |
| 22933300                                        | AXIAL WIREWOUND RES. 330E 10% 30W     | R105                   | 1    |
| 23062203                                        | CARBON TRIMMER 220K HORIZ. PT10V      | RV7                    | 1    |
| 23241009                                        | POTENTIOMETER 1K 232250590002         | P1                     | 1    |
| 24341000                                        | RADIAL ELECT. CAPACITOR 1000MF 16V    | C15-16                 | 2    |
| 24514702                                        | RADIAL ELECT. CAPACITOR 4.7MF 50V     | C42                    | 1    |
| 24541000                                        | RADIAL ELECT. CAPACITOR 1000MF 35V    | C57                    | 1    |
| 24822201                                        | RADIAL ELECT. CAPACITOR 22MF 160V     | C34                    | 1    |
| 24922200                                        | RADIAL ELECT. CAPACITOR 22MF 200V     | C54                    | 1    |
| 24934710                                        | RADIAL ELECT. CAPACITOR 470MF 200V    | C53                    | 1    |
| 25144703                                        | FILM CAPACITOR 4.7NF 63V 5%           | C28                    | 1    |
| 25362200                                        | FILM CAPACITOR 1.60 220NF 160V 10%    | C47                    | 1    |
| 25461010                                        | FILM CAPACITOR 1.60 100NF 250V 10%    | C43                    | 1    |
| 25464710                                        | FILM CAPACITOR 1.76 470NF 250V 10%    | C37                    | 1    |
| 25551000                                        | FILM CAPACITOR 1.60 10NF 400V 10%     | C46                    | 1    |
| 25651200                                        | FILM CAPACITOR 1.73 12NF 630V 10%     | C41                    | 1    |
| 25746802                                        | FILM CAPACITOR 1.73 6.8NF 1500V 5%    | C40                    | 1    |
| 25751002                                        | FILM CAPACITOR 1.58X10NF 250VCA 20%   | C52                    | 1    |
| 25761002                                        | FILM CAPACITOR 1.58X100NF 250VCA 20%  | C48                    | 1    |
| 25943302                                        | FILM CAPACITOR 1.73 3.9NF 1500V 5%    | C36                    | 1    |
| 26422608                                        | CERAMIC CAPACITOR —20 + 50 2.2NF 500V | C50-51-55-49           | 4    |
| 28010590                                        | DRIVER TRANSFORMER AT4043/01          | TH1                    | 1    |
| 28021210                                        | BRIDGE COIL UTF49                     | B3                     | 1    |
| 28025170                                        | LINEARITY COIL UTF67                  | B1                     | 1    |
| 28026030                                        | TRANSFORMER E.H.T., 1105-E048         | TH2                    | 1    |
| 29100000                                        | TIME-DELAY FUSE 2 A                   | F1                     | 1    |
| 29100009                                        | TIME-DELAY FUSE 3.15 A                | F2                     | 1    |
| 29100150                                        | FUSE HOLDER C10 6A 250V               |                        | 2    |
| 30000450                                        | SWITCH. CHANG. SWITCHCRAFT KSA2251    | SW4                    | 1    |
| 34010061                                        | FASTON LUG.M. TE115 2.8×0.8           | SF1                    | 1    |
| 34023352                                        | AMP CONNECTOR MOD. 1-2 D280609/1      | CD-CE                  | 2    |
| 34023354                                        | AMP CONNECTOR MOD. 1-4 D280610/1      | CC                     | 1    |
| 34023356                                        | AMP CONNECTOR MOD. 1-6 D280611/1      | CL-CM-CA               | 3    |
| 34075080                                        | 5WAY MALE CONN. PRESSAC UTH1859       | CH                     | 1    |
| 34075090                                        | 11WAY MALE CONN. PRESSAC UTH1861      | CF                     | 1    |
| 43000011                                        | SPRING x TO220 UTH38                  |                        | 4    |
| 43000100                                        | SPRING x RESISTOR 30W UTH635          |                        | 2    |
| 50110140                                        | RESISTOR BRACKET UTH601               |                        | 4    |
| 50116101                                        | HEATSINK UTH1569                      |                        | 1    |
| 50116111                                        | MAINFRAME UTH1129                     |                        | 1    |
| 50420225                                        | SPINDLE, CONTRAST CONTROL KL1-7503    |                        | 1    |
| 50424220                                        | TO3 INSULATOR UTH1986                 |                        | 2    |
| 50424230                                        | TO220 ISULATOR UTH1987                |                        | 1    |
| 50424310                                        | INTEGRATED CIRCUIT INSUL. UTH2047     |                        | 1    |
| 50424640                                        | MAIN PROTECTION UTH2044               |                        | 1    |
| 20400469                                        | TRANSISTOR BC639                      | TR14-18-22             | 3    |
| 20401029                                        | TRANSISTOR BC548 B                    | TR2-3-5-6-8-9-10-13    | 8    |
| 20401039                                        | TRANSISTOR BC 558 B                   | TR1-4-7-11-12-16       | 6    |
| 20420219                                        | TRANSISTOR BF 422                     | TR21                   | 1    |
| 24324709                                        | RADIAL ELECT. CAP. 47MF 16V SM        | C6-14                  | 2    |
| 24421009                                        | RADIAL ELECT. CAP. 10MF 25V SM        | C20-18-17-19-58        | 5    |
| 24422209                                        | RADIAL ELECT. CAP. 22MF 25V SM        | C35                    | 2    |
| 24531009                                        | RADIAL ELECT. CAP. 100MF 35V SM       | C9-59                  | 1    |
| 24611009                                        | RADIAL ELECT. CAP. 1MF 63V SM         | C23-38-22              | 3    |
| 24811009                                        | RADIAL ELECT. CAP. 1MF 160V SM        | C56                    | 1    |
| 24911009                                        | RADIAL ELECT. CAP. 1MF 200V           | C45                    | 1    |
| 25161019                                        | FILM CAPACITOR 1.85 100NF 63V 5%      | C12-13                 | 2    |
| 25163319                                        | FILM CAPACITOR 1.85 330NF 63V 5%      | C10                    | 1    |
| 25244719                                        | MYLARD CAP. 4.7NF 100V 10%            | C32                    | 1    |
| 25251029                                        | MYLARD CAP. 10NF 100V 10%             | C24-25                 | 2    |
| 25252209                                        | FILM CAPACITOR 1.85 22NF 100V 10%     | C30                    | 1    |
| 25261009                                        | MYLARD CAP. 100NF 100V 10%            | C31-26                 | 2    |
| 25262219                                        | FILM CAP. 22.365 220NF 100V 10%       | C27-33-11              | 3    |
| 26215109                                        | CER.CAP.NP0 50V 15PF RTHE40SKCH150J   | C1-3-5                 | 3    |
| 26310109                                        | CER.CAP.NP0 50V 100PF RTHE80SKCH101J  | C2-4-7                 | 3    |
| 26347109                                        | CER.CAP.10% 50V470PF RTHE40SKYB471K   | C8                     | 1    |
| 26610609                                        | CER.CAP.-20 + 80 50V 100NF            |                        | 1    |
| 20100000                                        | RTDSK11SKYF104Z                       | C29                    | 1    |
| 20101010                                        | DIODE 1N 4148                         | D4-2-1-8-10-6-25-26-11 | 9    |
| 20110600                                        | ZENER DIODE 1.3 W ZPY 12 2%           | ZD1                    | 1    |
| 20130060                                        | ZENER DIODE 2% BZX 79 B5V6            | ZD3                    | 1    |
| 20150004                                        | DIODE BAV 20                          | D16-28                 | 2    |
| 20150040                                        | DIODE 1N 4004                         | D3-5-24                | 3    |
| 20150460                                        | DIODE BYD 33G                         | D23-17-15-18-14        | 5    |
| 20150480                                        | DIODE GP 15 G                         | D21-22-19-20           | 4    |
| 21211801                                        | METAL LAYER RES. 1.8E 1% 1/4W         | R46                    | 1    |
| 21212200                                        | CARBON RESISTOR 2.2E 5% 1/4W          | R36                    | 1    |
| 21224700                                        | CARBON RESISTOR 47E 5% 1/4W           | R8-18-28-79            | 3    |
| 21225600                                        | CARBON RESISTOR 56E 5% 1/4W           | R11-21-33              | 4    |
| 21228200                                        | CARBON RESISTOR 82E 5% 1/4W           | R3-13-20               | 3    |
| 21231200                                        | CARBON RESISTOR 120E 5% 1/4W          | R44-22-34-12           | 4    |
| 21232700                                        | CARBON RESISTOR 270E 5% 1/4W          |                        | 1    |
| 21233300                                        | CARBON RESISTOR 330E 5% 1/4W          |                        | 1    |
| 21234700                                        | CARBON RESISTOR 470E 5% 1/4W          |                        | 3    |
| 21241000                                        | CARBON RESISTOR 1K 5% 1/4W            |                        | 8    |
| 21241000                                        | CARBON RESISTOR 1K 5% 1/4W            |                        | 3    |
| 21241200                                        | CARBON RESISTOR 1.2K 5% 1/4W          |                        | 1    |
| 21241500                                        | CARBON RESISTOR 1.5K 5% 1/4W          |                        | 1    |
| 21241601                                        | METAL LAYER RES. 1.6K 1% 1/4W         |                        | 1    |
| 21241800                                        | CARBON RESISTOR 1.8K 5% 1/4W          |                        | 1    |
| 21242200                                        | CARBON RESISTOR 2.2K 5% 1/4W          |                        | 1    |
| 21242200                                        | CARBON RESISTOR 2.2K 5% 1/4W          |                        | 7    |
| 21242202                                        | METAL LAYER RES. 2.2K 1% 1/4W         |                        | 4    |
| 21242700                                        | CARBON RESISTOR 2.7K 5% 1/4W          |                        | 1    |
| 21243300                                        | CARBON RESISTOR 3.3K 5% 1/4W          |                        | 1    |
| 21244700                                        | CARBON RESISTOR 4.7K 5% 1/4W          |                        | 1    |
| 21245600                                        | CARBON RESISTOR 5.6K 5% 1/4W          |                        | 6    |
| 21246800                                        | CARBON RESISTOR 6.8K 5% 1/4W          |                        | 1    |
| 21248200                                        | CARBON RESISTOR 8.2K 5% 1/4W          |                        | 2    |
| 21251000                                        | CARBON RESISTOR 10K 5% 1/4W           |                        | 1    |
| 21251002                                        | METAL LAYER RES. 10K 1% 1/4W          |                        | 1    |
| 21251200                                        | CARBON RESISTOR 12K 5% 1/4W           |                        | 6    |
| 21251202                                        | METAL FILM RES. 12K 1% 1/4W           |                        | 1    |
| 21252200                                        | CARBON RESISTOR 22K 5% 1/4W           |                        | 1    |
| 21253300                                        | CARBON RESISTOR 33K 5% 1/4W           |                        | 1    |
| 21253900                                        | CARBON RESISTOR 39K 5% 1/4W           |                        | 1    |
| 21254700                                        | CARBON RESISTOR 47K 5% 1/4W           |                        | 3    |
| 21258201                                        | METAL LAYER R. 82K 1% 1/4W            |                        | 1    |
| 21261000                                        | CARBON RESISTOR 100K 5% 1/4W          |                        | 1    |
| 21261200                                        | CARBON RESISTOR 120K 5% 1/4W          |                        | 2    |
| 21261500                                        | CARBON RESISTOR 150K 5% 1/4W          |                        | 3    |
| 21261800                                        | CARBON RESISTOR 180K 5% 1/4W          |                        | 1    |
| 21264700                                        | CARBON RESISTOR 470K 5% 1/4W          |                        | 3    |
| 21266800                                        | CARBON RESISTOR 680K 5% 1/4W          |                        | 1    |
| 21313901                                        | RESISTOR, NON-FLAMMABLE, 3.9E 5% 1/2W |                        | 1    |
| 21323300                                        | CARBON RESISTOR 33E 5% 1/2W           |                        | 1    |
| 21324700                                        | CARBON RESISTOR 47E 5% 1/2W           |                        | 1    |
| 21334700                                        | CARBON RESISTOR 470E 5% 1/2W          |                        | 1    |
| 21341000                                        | CARBON RESISTOR 1K 5% 1/2W            |                        | 1    |
| 21342200                                        | CARBON RESISTOR 2.2K 5% 1/2W          |                        | 1    |
| 21362700                                        | CARBON RESISTOR 270K 5% 1/2W          |                        | 1    |
| 21371004                                        | METAL FILM RESISTOR 1M 5% 1/2W VR 37  |                        | 1    |
| 50146210                                        | MAIN P.C.B. BZ01                      |                        | 1    |
| CRT SOCKET ASSEMBLY 25"-28" code 62010190       |                                       |                        |      |
| CODE                                            | DESCRIPTION                           | REF.NO.                | Q.TY |
| 20420110                                        | TRANSISTOR BF 459                     | TR201-202-203          | 3    |
| 21411000                                        | METAL OXIDE RES. 1E 5% 1W WK4         | R216                   | 1    |
| 21551000                                        | METAL OXIDE RES. 10K 5% 2W            | R205-206-210           | 3    |
| 23034706                                        | TRIMMER VERT. REG. 470E PT10NH        | RV201-202-206          | 3    |
| 23044700                                        | CARBON TRIMMER HOR. REG. 4.7K PT10V   |                        | 3    |
| 24921000                                        | RADIAL ELECT. CAPACITOR 10 MF 250V    | RV203-204-205          | 3    |
| 26422640                                        | CER. CAP. 2.2NF 400VCA 4KUP           | C205                   | 1    |
| 29300010                                        | SOAPSTONE INSULATORS 8 M.M.           | C206                   | 1    |
| 34010061                                        | FASTON LUG M.FACO TE115 2.8×0.8       | FS201                  | 6    |
| 34020590                                        | SOCKET, HOSIDEN HPS0199-020           |                        | 1    |
| 50423440                                        | HEXAGONAL SHAFT PHILIPS 822241771060  |                        | 3    |
| 53840180                                        | SOC. SHIELDING UTH1852                |                        | 1    |
| 61002270                                        | SOC WIRING ASS. UTC241                |                        | 1    |
| 61005060                                        | SOC. SIGNALS WIRING MTC9000 UTC527    |                        | 1    |
| 24522209                                        | RADIAL ELECT. CAPACITOR 22uF 35V SM   | C201                   | 1    |
| 26322709                                        | CER.CAP. 10% 50V 270PF                |                        | 1    |
| 21212200                                        | CARBON RESISTOR 2.2E 5% 1/4W          | C202-203-204           | 3    |
| 21238200                                        | CARBON RESISTOR 820E 5% 1/4W          | R201                   | 1    |
| 21244700                                        | CARBON RESISTOR 4.7K 5% 1/4W          | R203-207-209           | 3    |
| 21341000                                        | CARBON RESISTOR 1K 5% 1/2W            | R204-208-211           | 3    |
| 21342200                                        | CARBON RESISTOR 2.2K 5% 1/2W          | R213-214-215           | 3    |
| 21351000                                        | CARBON RESISTOR 10K 5% 1/2W           | R217                   | 1    |
| 50144841                                        | CRT SOCKET P.C.B. ZG 06               | R218                   | 1    |
| CONTROLS P.C.B. ASSEMBLY 25"-28" code 62010210  |                                       |                        |      |
| CODE                                            | DESCRIPTION                           | REF.NO.                | Q.TY |
| 21332700                                        | CARBON RESISTOR 270E 5% 1/2W          | R116                   | 1    |
| 21331800                                        | CARBON RESISTOR 180E 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    |
| 34075095                                        | 11 WAYFEMALE CONN. PRESSAC UTH1862    | CG                     | 1    |
| 34075290                                        | POLARIZATION KEY 12/3768              |                        | 1    |
| 50144830                                        | CONTROLS P.C.B. CG                    |                        | 1    |
| 50423430                                        | SHAFT PT15                            |                        | 1    |
| 50423440                                        | HEXAGONAL SHAFT PHILIPS 822241771060  |                        | 5    |
| POWER IN WIRING ASSEMBLY 25"-28" code 61000120  |                                       |                        |      |
| CODE                                            | DESCRIPTION                           | REF.NO.                | Q.TY |
| 34020002                                        | AMP FEMALE LUGS 280702/1              |                        | 4    |
| 34023404                                        | AMP CONNECTOR 4 F 280591              |                        | 1    |
| SIGNALS INPUT WIRING ASSY 25"-28" code 61000140 |                                       |                        |      |
| CODE                                            | DESCRIPTION                           | REF.NO.                | Q.TY |
| 34020002                                        | AMP FEMALE LUGS 280702/1              |                        | 6    |
| 34023406                                        | AMP CONNECTOR 6 F 280592              |                        | 1    |



| C.R.T. ASSEMBLY 25" 110° |                                         |      |
|--------------------------|-----------------------------------------|------|
| CODE                     | DESCRIPTION                             | Q.TY |
| 20830310                 | C.R.T. 25" VIDEOCOLOR A59EAS00X01       | 1    |
| 43000030                 | SPRING, C.R.T. EARTHING UTH 634         | 2    |
| 50420070                 | COIL MOUNTING 20-0539-1150              | 2    |
| 61007470                 | GROUNDING BRAIDED WIRE ASSY 25" UTC 794 | 1    |
| 50420080                 | COIL SUPPORT 20-0791-1150               | 4    |

| C.R.T. ASSEMBLY 28" 110° |                                        |      |
|--------------------------|----------------------------------------|------|
| CODE                     | DESCRIPTION                            | Q.TY |
| 20830300                 | C.R.T. 28" S.R. VIDEOCOLOR A66EAS00X01 | 1    |
| 43000030                 | SPRING, C.R.T. EARTHING UTH 634        | 2    |
| 50420070                 | COIL MOUNTING 20-0539-1150             | 2    |
| 61007570                 | C.R.T. EARTHING CABLE 28" UTC 800      | 1    |
| 50420080                 | COIL SUPPORT 20-0791-1150              | 4    |

| YOKE WIRING ASSEMBLY 25" 28" code 61001070 |                              |      |
|--------------------------------------------|------------------------------|------|
| CODE                                       | DESCRIPTION                  | Q.TY |
| 34020002                                   | AMP. FEMALE LUGS 280702/1    | 6    |
| 34023406                                   | AMP. CONNECTOR 6 FEM. 280592 | 1    |

| DEGAUSSING COIL ASSY 25" code 61007430 |  |  |
|----------------------------------------|--|--|
|----------------------------------------|--|--|

| DEGAUSSING COIL ASSY 28" code 61007560 |  |  |
|----------------------------------------|--|--|
|----------------------------------------|--|--|

| C.R.T. MAINFRAME ASSY 25" 110° |                                            |      |
|--------------------------------|--------------------------------------------|------|
| CODE                           | DESCRIPTION                                | Q.TY |
| 40213507                       | SCREW M 4 x 7 036192                       | 6    |
| 40942095                       | SELF TAPPING-SCREW 4.2 x 9.5               | 8    |
| 40963120                       | SELF TAPPING-SCREW 6.3 x 20 AB ZN          | 4    |
| 42000010                       | WASHER UNI 6593-69 D18 d6.6 SP2            | 4    |
| 50118790                       | LEFT LEG 25" UTH 2885                      | 1    |
| 50118800                       | RIGHT LEG 25" UTH 2886                     | 1    |
| 50118810                       | BASE PLATE 25" UTH 2887                    | 1    |
| 50118820                       | UPPER CROSS MEMBER 25" UTH 2888            | 1    |
| 50118830                       | C.R.T. NECK REINFORCING FRAME 25" UTH 2889 | 1    |

| C.R.T. MAINFRAME ASSY 28" 110° |                                            |      |
|--------------------------------|--------------------------------------------|------|
| CODE                           | DESCRIPTION                                | Q.TY |
| 40213507                       | SCREW M 4 x 7 036192                       | 6    |
| 40942095                       | SELF TAPPING-SCREW 4.2 x 9.5               | 8    |
| 40963120                       | SELF TAPPING-SCREW 6.3 x 20 AB ZN          | 4    |
| 42000010                       | WASHER UNI 6593-69 D18 d.6.6 SP2           | 4    |
| 50118740                       | LEFT LEG 28" UTH 2880                      | 1    |
| 50118750                       | RIGHT LEG 28" UTH 2881                     | 1    |
| 50118760                       | BASE PLATE 28" UTH 2882                    | 1    |
| 50118770                       | C.R.T. NECK REINFORCING FRAME 28" UTH 2883 | 1    |
| 50118780                       | UPPER CROSS MEMBER 28" UTH 2884            | 1    |

| PACKING ASSEMBLY 25" 110° |                                 |      |
|---------------------------|---------------------------------|------|
| CODE                      | DESCRIPTION                     | Q.TY |
| 52826440                  | SIDE PACKING BOARD 25" UTH 2903 | 2    |
| 52826450                  | BASE PLATE 25" UTH 2904         | 2    |
| 52826460                  | PACKING BOX 25" UTH 2905        | 1    |

| PACKING ASSEMBLY 28" 110° |                                 |      |
|---------------------------|---------------------------------|------|
| CODE                      | DESCRIPTION                     | Q.TY |
| 52826470                  | SIDE PACKING BOARD 28" UTH 2906 | 2    |
| 52826480                  | BASE PLATE 28" UTH 2907         | 2    |
| 52826490                  | PACKING BOX 28" UTH 2908        | 1    |

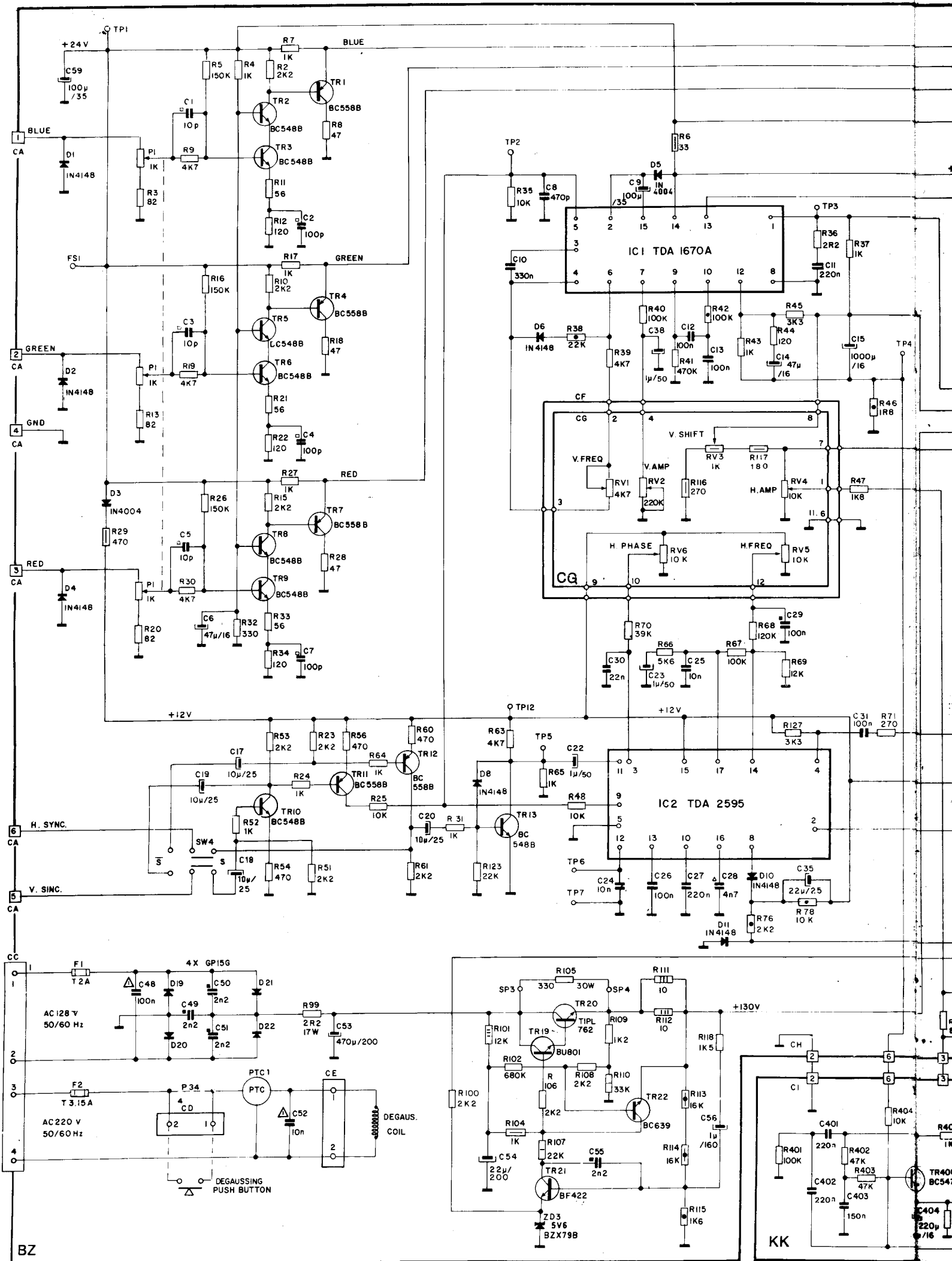
| EAST-WEST P.C.B. ASSEMBLY 25" 28" code 62010220 |                                      |               |
|-------------------------------------------------|--------------------------------------|---------------|
| CODE                                            | DESCRIPTION                          | REF. No. Q.TY |
| 23044710                                        | SEALED TRIMMER 4.7K HORIZ.REG.PT10NV | RV 401 1      |
| 34075085                                        | 5 WAY FEMALE CONN.PRESSAC.UTH 1860   | C1 1          |
| 50423440                                        | HEXAGONAL SHAFT PHILIPS 822241771060 | 1             |
| 21234700                                        | CARBON RESISTOR 470E 5% 1/4 W        | R 408 1       |
| 21241000                                        | CARBON RESISTOR 1K 5% 1/4 W          | R 407-406 2   |
| 21251000                                        | CARBON RESISTOR 10K 5% 1/4 W         | R 404 1       |
| 21254700                                        | CARBON RESISTOR 47K 5% 1/4 W         | R 402-403 2   |
| 21261000                                        | CARBON RESISTOR 100K 5% 1/4 W        | R 401 1       |
| 21261500                                        | CARBON RESISTOR 150K 5% 1/4 W        | R 409 1       |
| 50144820                                        | EAST-WEST P.C.B. KK02                | 1             |
| 20400429                                        | TRANSISTOR BC 547 B                  | TR 401 1      |
| 24332209                                        | RADIAL ELECT. CAP. 220MF 16V         | C 404 1       |
| 24422209                                        | RADIAL ELECT. CAP. 22MF 25V          | C 406 1       |
| 24522209                                        | RADIAL ELECT. CAP. 22MF 35V          | C 405 1       |
| 25161509                                        | FILM CAPACITOR 1.85 150NF 63V 10%    | C 403 1       |
| 25262209                                        | FILM CAPACITOR 1.85 220NF 100V 10%   | C 401-402 2   |

| VENTILATOR ASSEMBLY ALI 1338 UTS 75 code 62010080 |                                     |      |
|---------------------------------------------------|-------------------------------------|------|
| CODE                                              | DESCRIPTION                         | Q.TY |
| 29030630                                          | VENTILATOR TD80A4H SINWAN           | 1    |
| 34074242                                          | PRESSACO CONN. FEMALE (RED) 12/6232 | 1    |
| 34074250                                          | PRESSACO LUG 11/6666                | 2    |

| IMPEDANCE ADAPTOR P.C.B. ASSEMBLY 25" 28" 110° code 62010200 |                                         |               |
|--------------------------------------------------------------|-----------------------------------------|---------------|
| CODE                                                         | DESCRIPTION                             | REF. No. Q.TY |
| 21631000                                                     | METAL LAYER RES. 100E 3W                | R 301 1       |
| 28027120                                                     | DEFL. YOKE MATCHING TRANSFORMER UTF 113 | TH 301 1      |
| 29300010                                                     | SOAPSTONE INSULATORS 8 M.M.             | 2             |
| 34010061                                                     | FASTON LUG M. FACO TE 115 2.8 x 0.8     | FS 301 1      |
| 34023356                                                     | AMP. CONN. M1 6 D 280611/1              | CO 1          |
| 34074232                                                     | 2 WAY CONN. PRESSACO (RED) M. 253562    | CP 1          |
| 50146470                                                     | IMPEDANCE ADAPTOR P.C.B. 25" EG 03      | 1             |
| 61007380                                                     | INPUT P.C.B. CABLE 25" UTC 784          | 1             |
| 61007390                                                     | THERMOSTAT CABLE 25" UTC 785            | 1             |
| 61007400                                                     | VENTILATOR POWER CABLE 25" UTC 786      | 1             |

## LEGEND

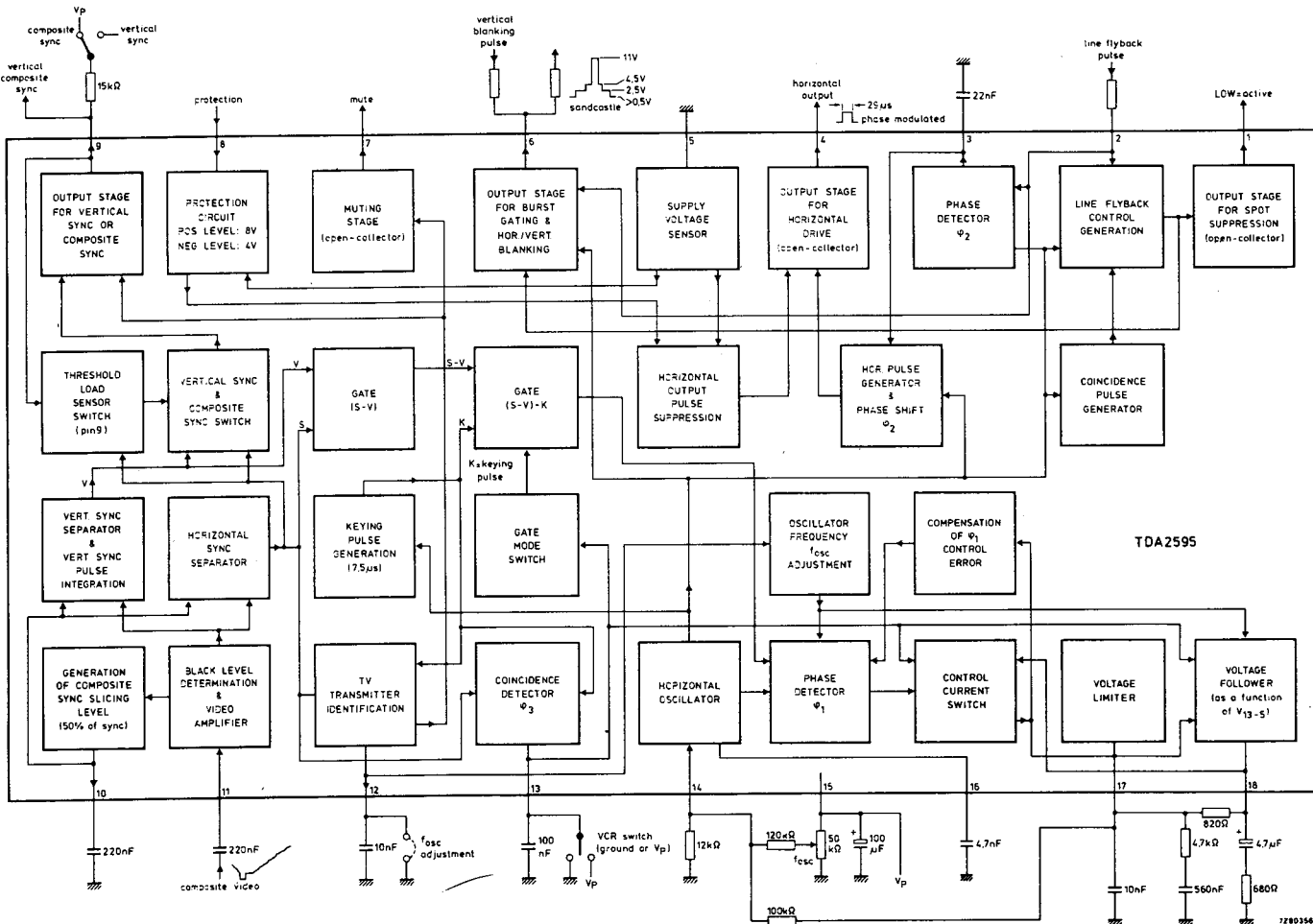
|                         |                                              |
|-------------------------|----------------------------------------------|
| FILM CAPACITOR          | = CAPACITOR, POLYSTYRENE                     |
| FILM CAPACITOR 1.60     | = CAPACITOR, METALLIZED POLYESTER            |
| FILM CAPACITOR 1.76     | = CAPACITOR, DOUBLE-METALLIZED POLYPROPYLENE |
| FILM CAPACITOR 1.73     | = CAPACITOR, METALLIZED POLYPROPYLENE        |
| FILM CAPACITOR 1.58X    | = CAPACITOR, POLYESTER                       |
| FILM CAPACITOR 1.85     | = CAPACITOR, METALLIZED POLYESTER            |
| FILM CAPACITOR 22.365   | = CAPACITOR, POLYESTER                       |
| RADIAL ELECT. CAPACITOR | = CAPACITOR, RADIAL ELECTROLYTIC             |
| CER.CAP.                | = CAPACITOR, CERAMIC                         |



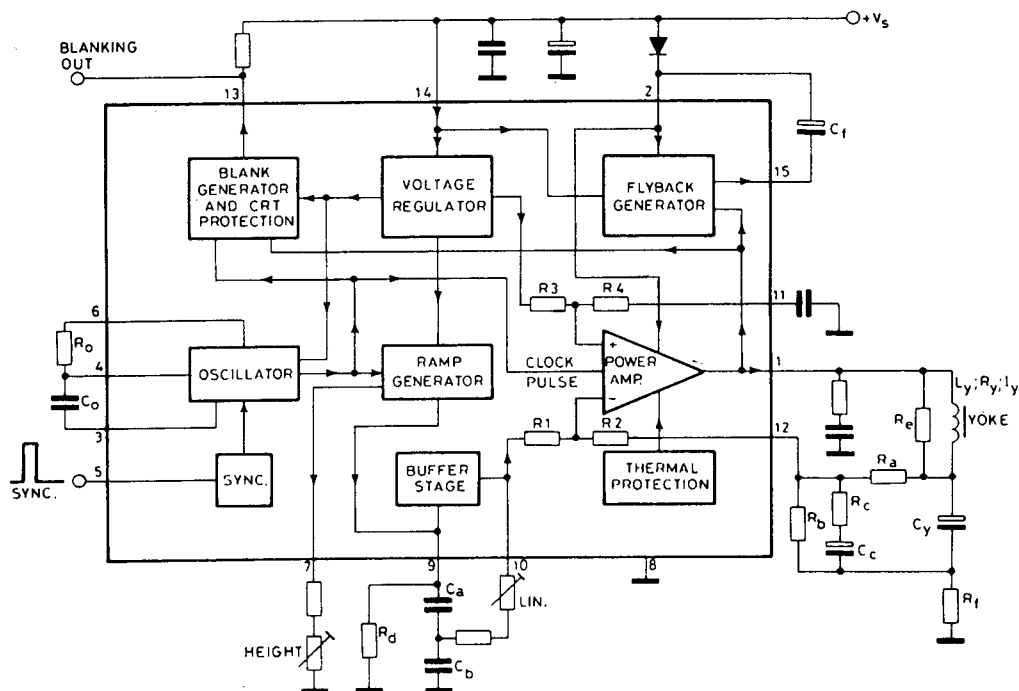


- DIAGRAMMA A BLOCCHI PER CIRCUITO INTEGRATO TDA 2595 E TDA 1670A
- BLOCK DIAGRAM FOR INTEGRATED CIRCUITS TDA 2595 AND TDA 1670A
- BLOCKSCHALTBIOD FÜR TDA 2595 UND TDA 1670A
- DIAGRAMA DE BLOQUES DEL CIRCUITO INTEGRADO TDA 2595 E TDA 1670A
- DIAGRAMME FONCTIONNEL POUR CIRCUITS IMPRIMES TDA 2595 ET TDA 1670A

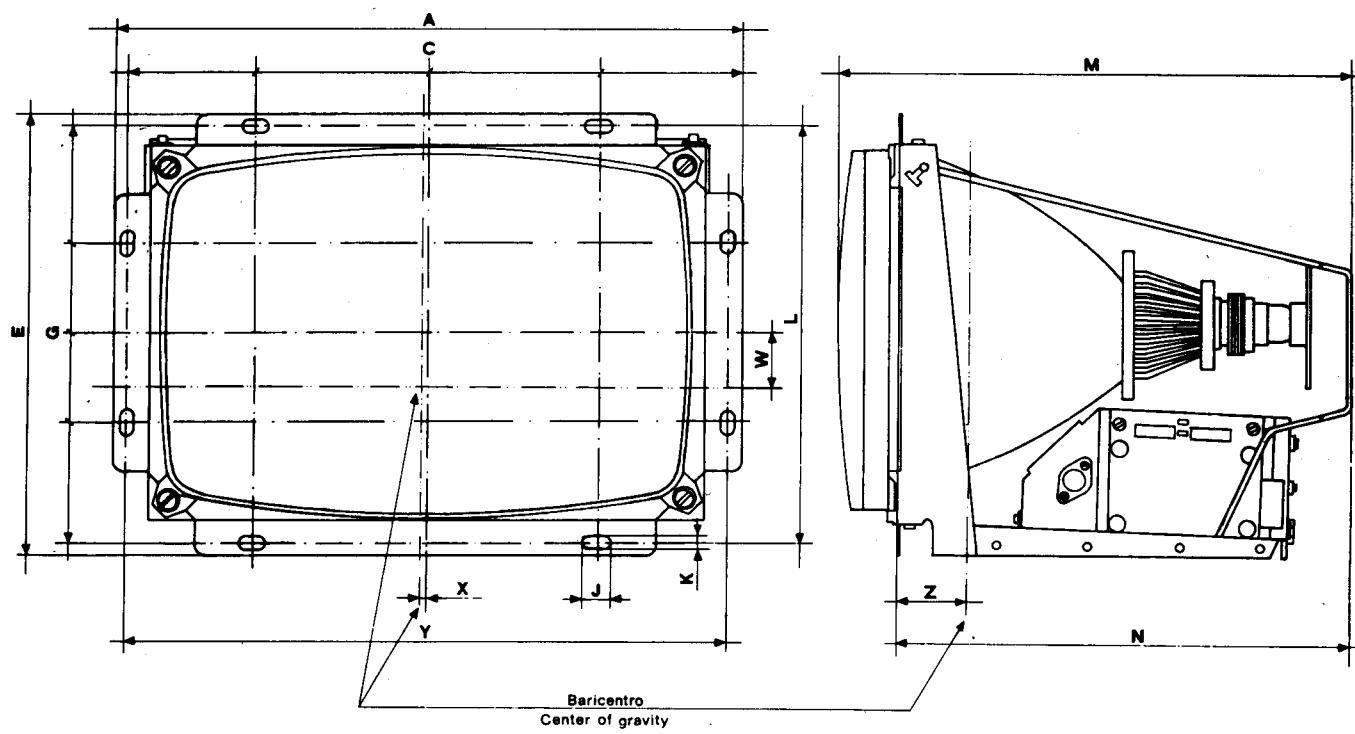
## TDA 2595



## TDA 1670A



- DATI MECCANICI
- MECHANICAL DATA
- MECHANISCHE ANGABEN
- DATOS MECANICOS
- DONNEES MECANQUES

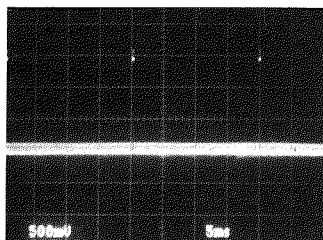


| DIM.     | A      | E      | G      | M      | Y      |
|----------|--------|--------|--------|--------|--------|
| 25'' mm  | 592    | 480    | 460    | 500    | 572    |
| 28'' mm  | 654    | 528    | 508    | 535    | 634    |
| 25'' IN. | 23.307 | 18.898 | 18.110 | 19.685 | 22.520 |
| 28'' IN. | 25.748 | 20.787 | 20.000 | 21.063 | 24.961 |

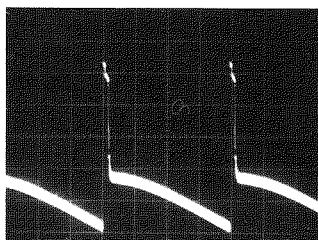
-

- T.P. DI CONTROLLO E FORME D'ONDA
- CONTROL TEST POINTS AND WAVEFORMS
- TEST-PUNKTE UND OSZILLATORDIAGRAMME
- PUNTO DE PRUEBA PARA CONTROL Y FORMA DE ONDA
- POINTS DE TEST DE CONTROLE ET FORME D'ONDE

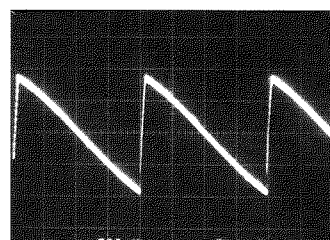
TP2



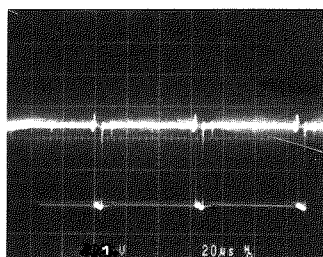
TP3



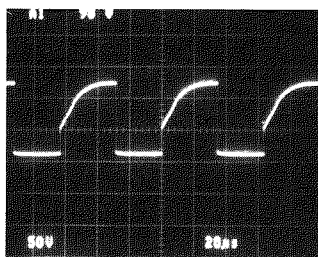
TP4



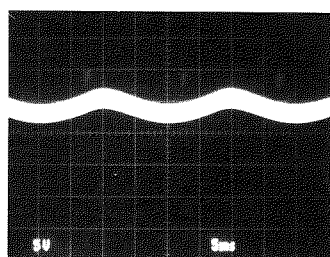
TP5



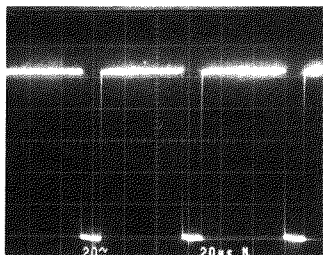
TP8



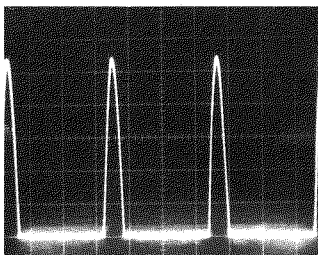
TP9



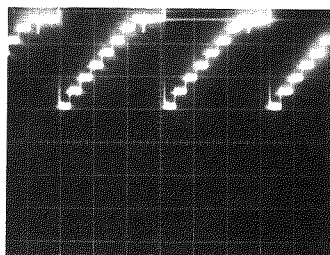
TP11



1



2



## FORME D'ONDA WAVEFORMS

- T.P.2 Sincronismo verticale  
*Vertical sync.*
- T.P.3 Pilotaggio deflessione verticale  
*Vertical drive*
- T.P.4 Segnale di reazione deflessione verticale  
*Vertical feedback*
- T.P.5 Sincronismo composito  
*Composite sync.*
- T.P.8 Pilotaggio per transistori finale di riga  
*Horizontal drive*
- T.P.9 Correzione est/ovest con modulo KK inserito  
*East/west correction with module KK inserted*
- T.P.11 Spegnimento orizzontale e verticale  
*Horizontal and vertical blanking*
1. Impulso del collettore BU 508  
*Pulse at collector of BU 508*
2. Segnale sui catodi finale video RVB  
*Signal at cathodes of RGB video output*

## TENSIONI SUPPLIES

- T.P.1 24/25 V.d.c. Alimentazione amplificatore video  
*24/25 V.d.c. Video amplifier supply*
- T.P.10 130 V.d.c.  $\pm 2\%$  Alimentazione stabilizzata  
*130 V.d.c.  $\pm 2\%$  Stabilized supply*
- T.P.12 12 V.d.c. Alimentazione sincronismo e oscillatore orizzontale (TDA 2595)  
*12 V.d.c. Horizontal sync. and oscillator supply (TDA 2595)*
- T.P.13 25/26 V.d.c. Alimentazione verticale  
*25/26 V.d.c. Vertical supply*
- T.P.14 200/210 V.d.c. Alimentazione finale video  
*200/210 V.d.c. Video output supply*

- **DIAGRAMMA DELLE CONNESSIONI E REGOLAZIONI DEI TRIMMER**
- **CONNEXIONS DIAGRAM AND PRE-SET ADJUSTMENTS**
- **ANSCHLUßPLAN UND JUSTAGE - ELEMENTE**
- **ESQUEMA DEL CONEXIONADO Y REGULACION DE LOS POTENCIOMETROS**
- **SCHEMA DE CONNEXION ET REGULATION DES TRIMMERS**

- |                                                                                                                                              |                                                                                                                                                                                    |
|----------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1) FASCIA DI SMAGNETIZZAZIONE<br>— DEGAUSSING COIL<br>— BOBINA DESMAGNETIZADORA<br>— ENTMAGNETISIERUNGSSPULE<br>— BOBINE DE DEMAGNETISATION  | 16) BOBINA PONTE<br>— BRIDGE COIL<br>— BOBINA PUENTE<br>— BRÜCKE<br>— BOBINE PONT                                                                                                  |
| 2) GIOGO ORIZZONTALE<br>— HORIZONTAL YOKE<br>— BOBINA DEFLECTORA HORIZONTAL<br>— HORIZONTALE ABLENKSPULE<br>— BOBINE DE DEFLEXIÓN HORIZONTAL | 17) MODULO CG COMANDI E REGOLAZ.<br>— ADJUSTING MODULE<br>— MODULO CG REGULACION<br>— EINSTELL-EINHEIT<br>— MODULE DE REGLAGE                                                      |
| 3) GIOGO VERTICALE<br>— VERTICAL YOKE<br>— BOBINA DEFLECTORA VERTICAL<br>— VERTIKALE ABLENKSPULE<br>— BOBINE DE DEFLEXION VERTICALE          | 18) FREQUENZA VERTICALE<br>— VERTICAL HOLD<br>— FRECUENCIA VERTICAL<br>— VERTIKALE FREQUENZ<br>— FREQUENCE VERTICALE                                                               |
| 4) GUADAGNO ROSSO<br>— RED GAIN<br>— GANANCIA ROJO<br>— ROT-VERSTÄRKUNGS-REGLER<br>— GAIN ROUGE                                              | 19) AMPIEZZA ORIZZONTALE<br>— HORIZONTAL WIDTH<br>— AMPLITUD HORIZONTAL<br>— HORIZONTALE AMPLITUDE<br>— AMPLITUDE HORIZONTAL                                                       |
| 5) INTERDIZIONE VERDE<br>— GREEN CUT-OFF<br>— VERDE CUT-OFF<br>— SCHWARZWERT FÜR GRÜN<br>— SUPPRESSION VERT                                  | 20) AMPIEZZA VERTICALE<br>— VERTICAL HEIGHT<br>— AMPLITUD VERTICAL<br>— VERTIKALE HÖHE<br>— AMPLITUDE VERTICALE                                                                    |
| 6) INTERDIZIONE ROSSO<br>— RED CUT-OFF<br>— ROJO CUT-OFF<br>— SCHWARZWERT FÜR ROT<br>— SUPPRESSION ROUGE                                     | 21) FASE VERTICALE<br>— VERTICAL SHIFT<br>— FASE VERTICAL<br>— VERTIKALE VERSCHIEBUNG<br>— PHASE VERTICALE                                                                         |
| 7) INTERDIZIONE BLU<br>— BLUE CUT-OFF<br>— AZUL CUT-OFF<br>— SCHWARZWERT FÜR BLAU<br>— SUPPRESSION BLEU                                      | 22) FASE ORIZZONTALE<br>— HORIZONTAL SHIFT<br>— FASE HORIZONTAL<br>— HORIZONTALE VERSCHIEBUNG<br>— PHASE HORIZONTAL                                                                |
| 8) GUADAGNO BLU<br>— BLUE GAIN<br>— GANANCIA AZUL<br>— BLAU-VERSTÄRKUNGS- REGLER<br>— GAIN BLEU                                              | 23) FREQUENZA ORIZZONTALE<br>— HORIZONTAL HOLD<br>— FRECUENCIA HORIZONTAL<br>— HORIZONTALE FREQUENZ<br>— FREQUENCE HORIZONTAL                                                      |
| 9) G2<br>— SCREEN<br>— PANTALLA<br>— SCHIRMGITTER-REGLER<br>— ECRAN                                                                          | 24) INGRESSO VIDEO/SINCRONISMI<br>— VIDEO/SYNC. INPUT<br>— ENTRADA VIDEO/SINC.<br>— VIDEO - UND SYNCHRONISATIONS EINGANG<br>— ENTREE SYNCHRO. VIDEO                                |
| 10) FUOCO<br>— FOCUS<br>— FOCO<br>— FOCUS<br>— FOCALISATION                                                                                  | 25) CONTRASTO<br>— CONTRAST<br>— CONTRASTE<br>— KONTRAST<br>— CONTRASTE                                                                                                            |
| 11) MASSA CINESCOPIO<br>— GND PICTURE TUBE<br>— MASA DEL TUBO<br>— BILDROHRENMASSE<br>— MASSE DU TUBE                                        | 26) COMMUTATORE PER SINC. POS/NEG.<br>— SYNC. POLARITY SWITCH<br>— CONMUTADOR SINCRONISMOS/NEG.<br>— SYNCHRONISATIONS - UMSCHALTER POS./NEG<br>— COMMUTATEUR POUR SYNCHRO. POS/NEG |
| 12) GUADAGNO VERDE<br>— GREEN GAIN<br>— GANANCIA VERDE<br>— GRÜN-VERSTÄRKUNGS-REGLER<br>— GAIN VERT                                          | 27) REGOLAZIONE EST/OVEST<br>— PINCUSCHION ADJUSTMENT<br>— REGULACION ESTE/OESTE<br>— OST/WEST-REGLER<br>— REGLAGE DROITE/GAUCHE                                                   |



13)INGRESSO ALIMENTAZIONE

- POWER SUPPLY
- FUENTE ALIMENTACION
- NETZTEIL
- ENTREE ALIMENTATION

14)REGOLAZIONE FUOCO

- FOCUS ADJUSTMENT
- AJUSTE FOCO
- FOCUS-REGLER
- REGLAGE FOCALISATION

15)REGOLAZIONE LUMINOSITÀ

- BRIGHTNESS ADJUSTMENT
- REGULACION BRILLO
- HELLIGKEITS-REGLER
- REGLAGE LUMINOSITE

28)MODULO KK CORREZIONE EST/OVEST

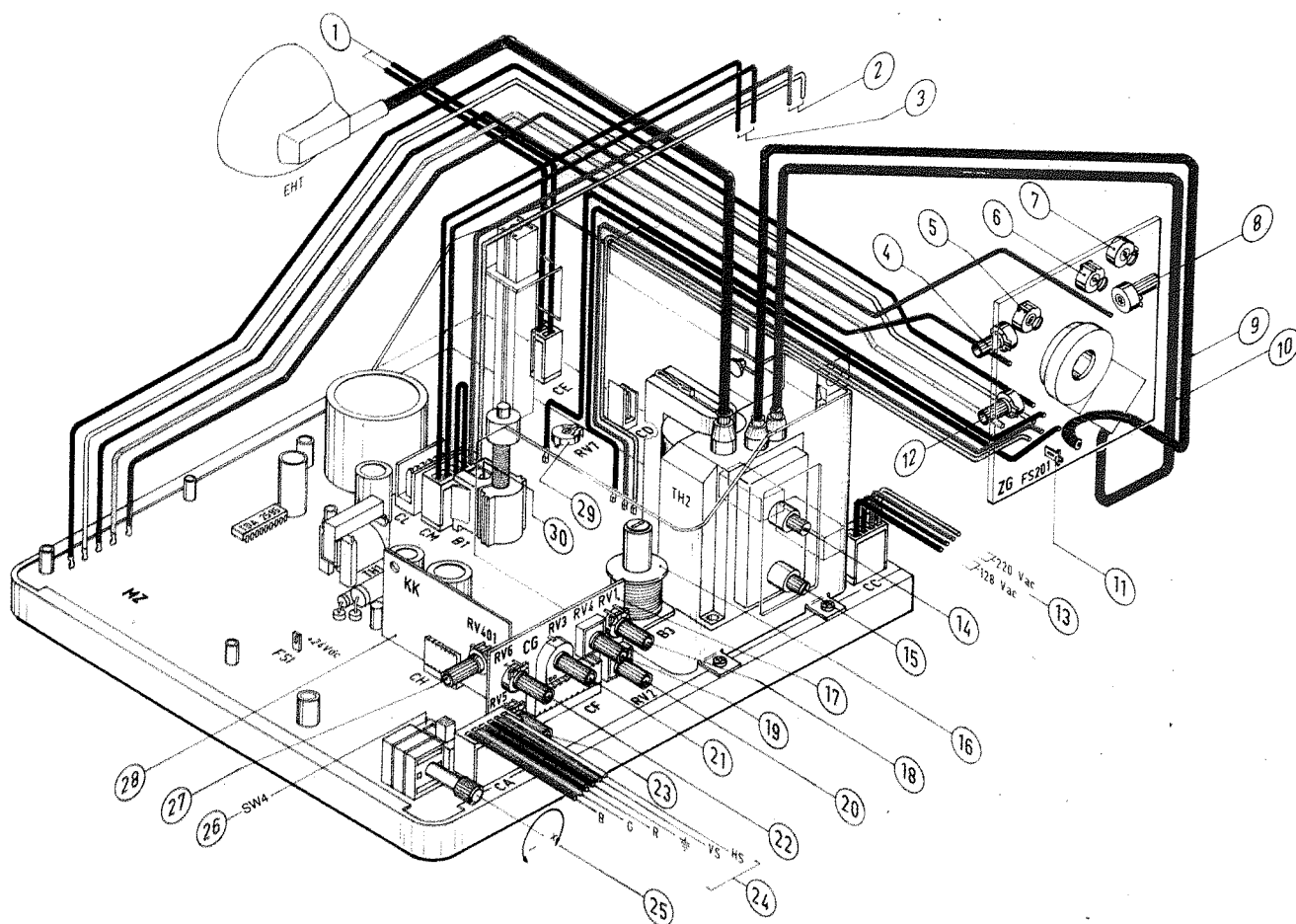
- KK PINCUSCHION MODULE
- MODULO KK CORRECCION ESTE/OESTE
- OST/WEST - MODUL
- MODULE KK DE CORRECTION DROITE/GAUCHE

29)PRESELETTORE LUMINOSITÀ

- BRIGHTNESS PRESET
- PREREGULACION BRILLO
- HELLIGKEITSREGLER
- PRE-SELECTION LUMINOSITE

30)LINEARITÀ ORIZZONTALE

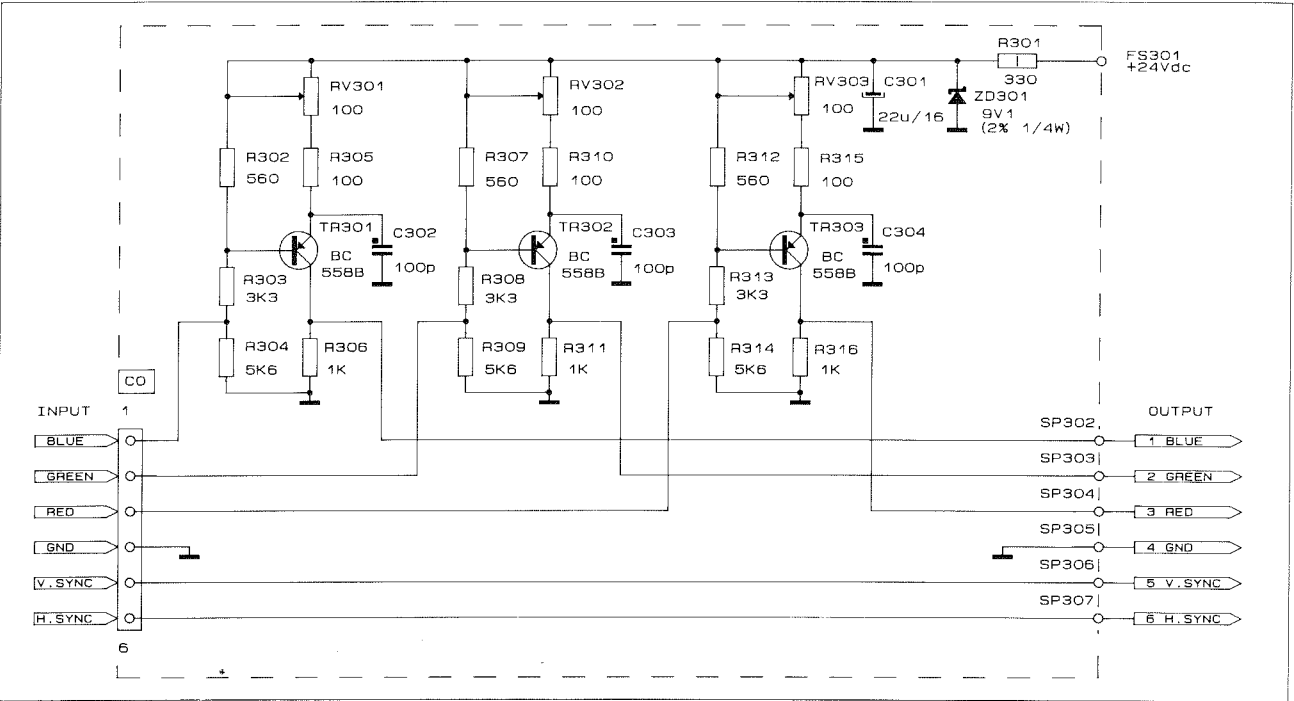
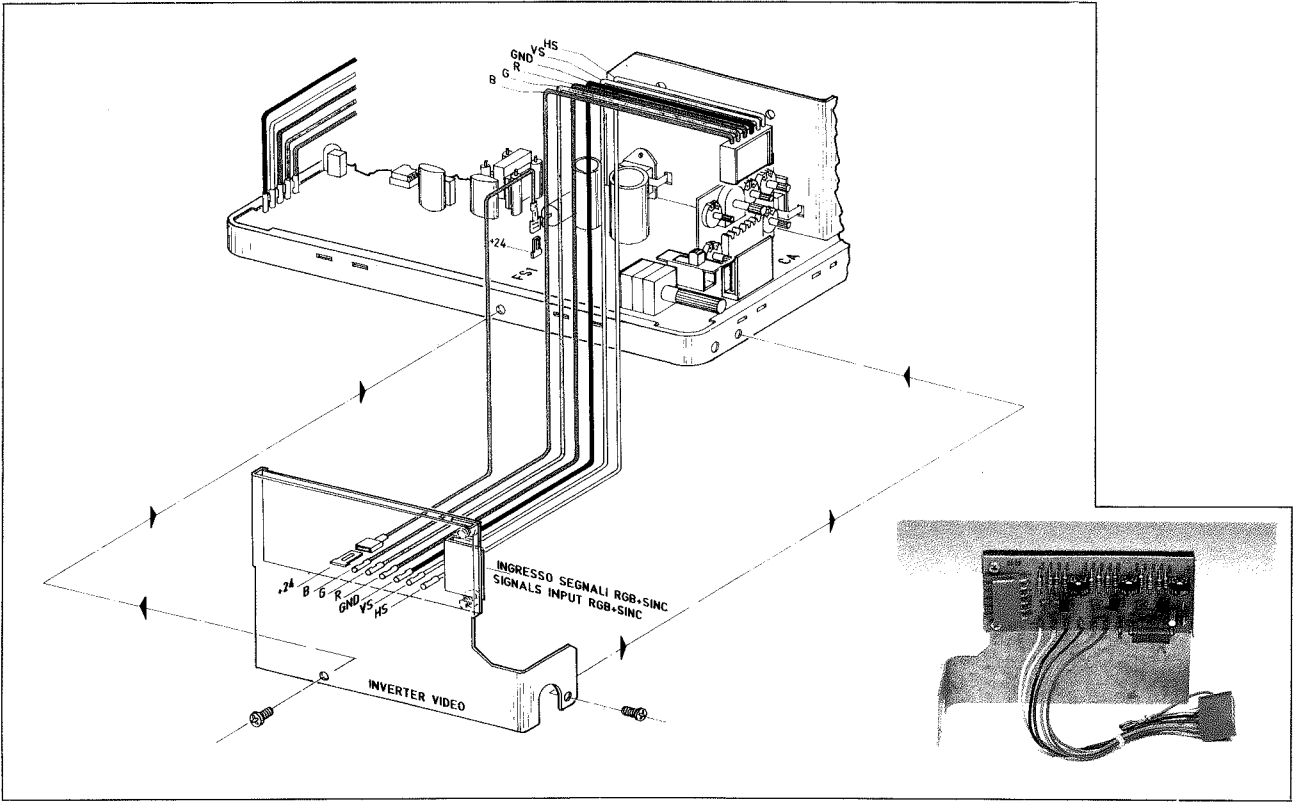
- HORIZONTAL LINEAR.
- LINEALIDAD HORIZONTAL
- HORIZONTALE LINEARITÄTSEINSTELLUNG
- LINEARITE HORIZONTALE

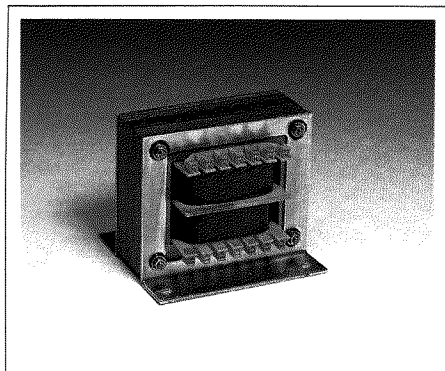


INVERTER VIDEO

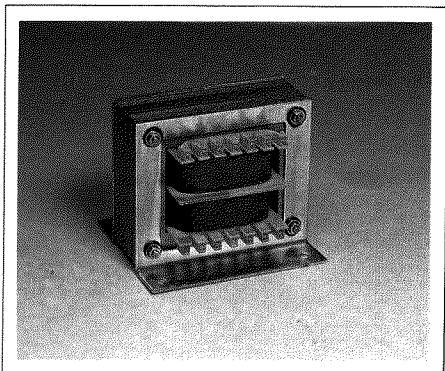
Per permettere l'adattamento di logiche con segnale video negato al monitor MTC9110, l'HANTAREX ha studiato una scheda d'interfaccia applicabile direttamente sulla centina metallica dell'elettronica. La scheda è fornita delle istruzioni di montaggio, delle connessioni elettriche e dello schema. Per la richiesta fare riferimento al cod. 63000160 scheda «INVERTER-VIDEO».

To enable the MTC 9110 to be used with negative going input signals, HANTAREX has designed an interface board which mounts directly into the framework of the monitor. The board is supplied complete with circuit diagram, mounting instructions and connexions to the monitor. To order, quote part no. 63000160 Inverter Video.

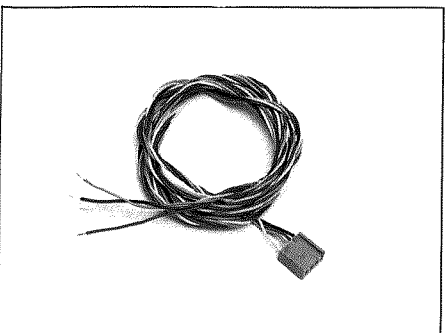




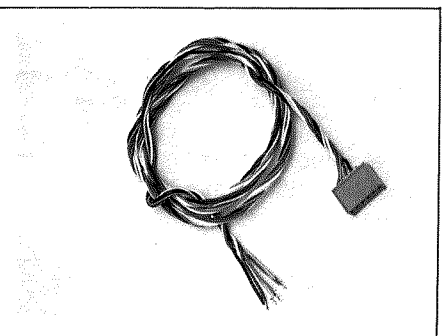
- Trasformatore di alimentazione monitor MTC9110 220/240 Vac / 128 Vac 150 W. (Per richiesta cod. 28070460).
- Isolating transformer for supplying monitor MTC9110 220/240 V a.c. / 128 V a.c. 150 W. To order, quote: cod. 28070460.
- Trenntransformator für die Stromversorgung des Monitors MTC9110 mit 220/240 V Eingang, 128 V / 150 W Ausgang. Bestell-Nr. 28070460.
- Transformador de alimentación monitor MTC9110 220/240 Vac / 128 Vac 150 W. (Para solicitud cod. 28070460).
- Transformateur d'alimentation pour moniteur MTC9110 220/240 V c.a. / 128 V c.a. 150 W. (Code 28070460).



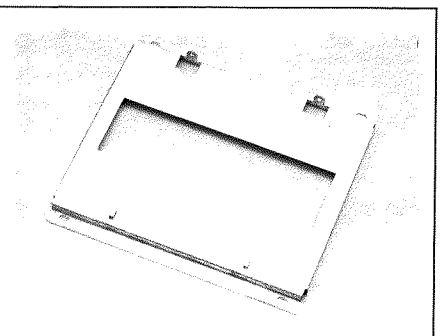
- Trasformatore di alimentazione monitor MTC9110 120/128 Vac 150 W. (Per richiesta cod. 28070440).
- Isolating transformer for supplying monitor MTC9110 120/128 V a.c. / 150 W. To order, quote: cod. 28070440.
- Trenntransformator für die Stromversorgung des Monitors MTC9110 mit 120/128 V Eingang, 128 V / 150 W Ausgang. Bestell-Nr. 28070440.
- Transformador de alimentación monitor MTC9110 120/128 Vac 150 W. (Para solicitud cod. 28070440).
- Transformateur d'alimentation pour moniteur MTC9110 120/128 V c.a. 150 W. (Code 28070440).



- Cablaggio ingresso alimentazione. Viene fornito unitamente al monitor. (Per ricambistica cod. 61000120).
- Input Power Lead. Supplied with each monitor. Spare part no. cod. 61000120.
- Verbindungskabel für Stromversorgung mit Anschlußstecker für Monitor MTC9110. Bestell-Nr. 61000120.
- Cable de entrada de alimentación. Viene incluido con el monitor. (Para recambio cod. 61000120).
- Câblage d'entrée d'alimentation. Il est fourni avec le moniteur. (Pour pièces de rechange code 61000120).

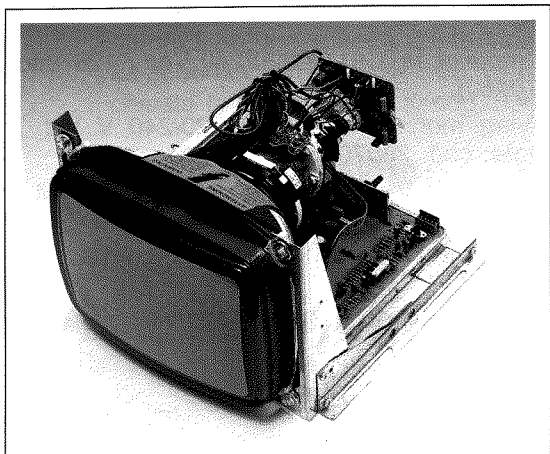


- Cablaggio ingresso segnali. Viene fornito unitamente al monitor. (Per ricambistica cod. 61000140).
- Input Signal Lead. Supplied with each monitor. Spare part no. cod. 61000140.
- Verbindungskabel RGB - Signal mit Anschlußstecker für Monitor MTC9110. Bestell-Nr. 61000140.
- Cable de entrada de senales. Viene incluido con el monitor. (Para recambio cod. 61000140).
- Câblage d'entrée des signaux. Il est fourni avec le moniteur. (Pour pièces de rechange code 61000140).



- Supporto metallico per MTC9110 per fissare l'elettronica al mobile nel caso debba essere disassemblata dal cinescopio. (Per richiesta cod. 50113370).
- Metal support for fixing electronic chassis to a case when the chassis is to be separated from the c.r.t. To order, quote cod. 50113370.
- Metallrahmen für MTC9110 zur Aufnahme von Chassis und der Bildröhre. Bestell-Nr. 50113370.
- Soporte metalico para el MTC9110 para fijar el circuito impreso al mueble, en el caso en que deba ser descollado del TRC. (Para solicitud cod. 50113370).
- Support metallique pour MTC9110 pour fixer l'electronique sur le meuble dans cas où elle devrait être disassemblée du tube image. (Code 50113370).

## PRODOTTI COMPLEMENTARI - COMPLEMENTARY PRODUCTS



### **Monitor MTC9000 10'' COD. 02191552**

Video R.V.B. positivo analogico, sincronismi composti, separati, negati o positivi.

Alimentazione: 128 Vac - 70 W.

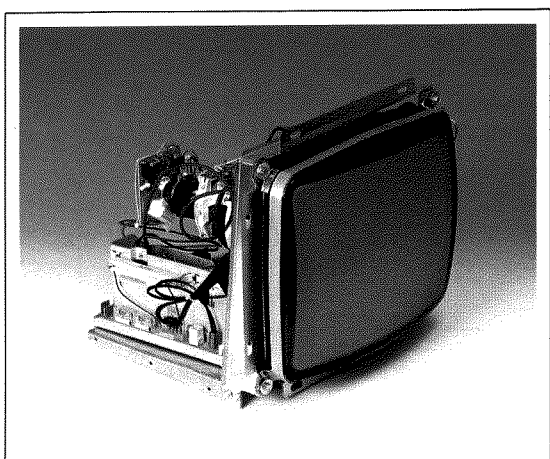
Dimensioni: L x H x P mm 297 x 250 x 307.

### **Monitor MTC9000 10'' COD. 02191552**

Video RGB, positive analogue, composite or separate sync., negative or positive.

Power: 128 V a.c., 70 W.

Dimensions: L x W x D: 297 x 250 x 307 mm.



### **Monitor MTC9000 14'' 90° COD. 02191535**

Video R.V.B. positivo analogico, sincronismi composti, separati negati o positivi.

Alimentazione 128 Vac - 100 W.

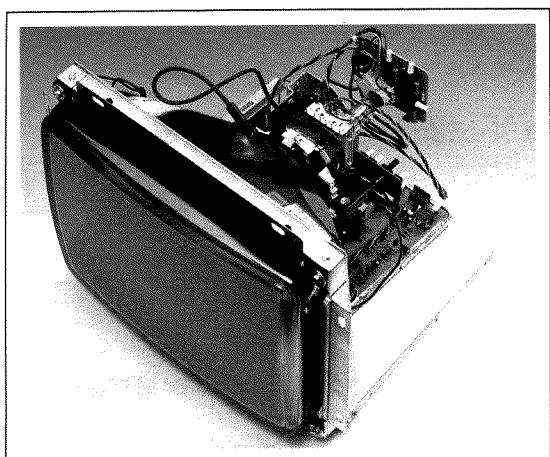
Dimensioni: L x H x P mm 372 x 312 x 352.

### **Monitor MTC9000 14'' 90° COD. 02191535**

Video RGB, positive analogue, composite or separate sync., negative or positive.

Power 128 V a.c., 100 W.

Dimensions: L x W x D: 372 x 312 x 352 mm.



### **Monitor MTC9000 15'' F.S. COD. 02191870**

Video R.V.B. positivo analogico, sincronismi composti, separati, negati o positivi.

Alimentazione: 128 Vac - 100 W.

Cinescopio: Flat Full Square MR.

Spazio fra le triadi 0,51 mm.

Dimensioni: L x H x P mm 400 x 330 x 360.

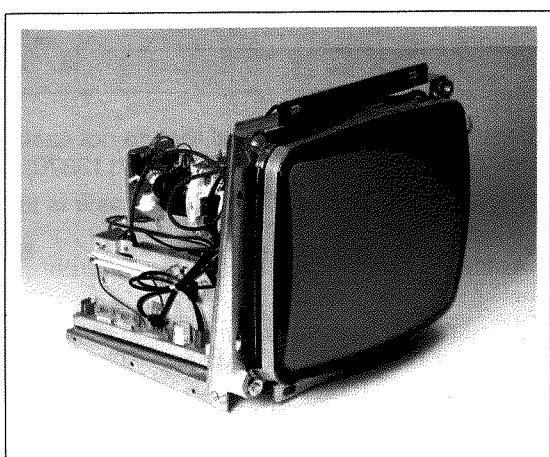
### **Monitor MTC9000 15'' F.S. COD. 02191870**

Video RGB, positive analogue, composite or separate sync., negative or positive.

Power: 128 V a.c., 100 W.

C.r.t. flat full square MR. Pixel spacing 0.51 mm.

Dimensions: L x W x D: 400 x 330 x 360 mm.



### **Monitor MTC9000 16'' 90° COD. 02191522**

Video R.V.B. positivo analogico, sincronismi composti, separati negati o positivi.

Alimentazione 128 Vac - 100 W.

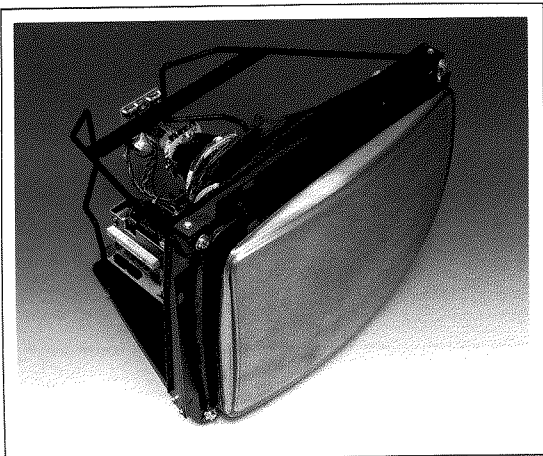
Dimensioni: L x H x P mm 424 x 340 x 380.

### **Monitor MTC9000 16'' 90° COD. 02191522**

Video RGB, positive analogue, composite or separate sync., negative or positive.

Power 128 V a.c., 100 W.

Dimensions: L x W x D: 424 x 340 x 380 mm.



**Monitor MTC9000 20" 90° COD. 02191278**

Video R.V.B. positivo analogico, sincronismi composti, separati, negati o positivi.

Alimentazione: 128 Vac - 100 W.

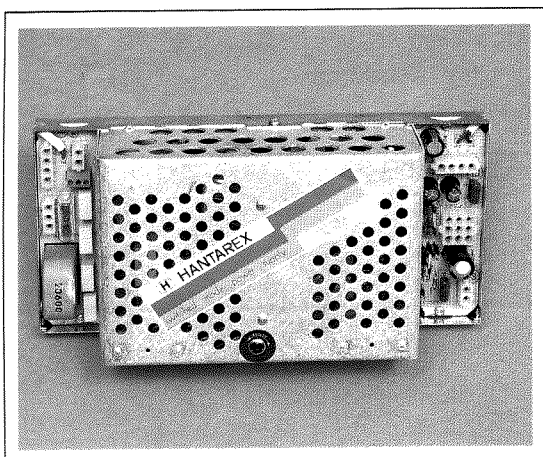
Dimensioni: L x H x P mm 512 x 406 x 442.

**Monitor MTC9000 20" 90° COD. 02191278**

Video RGB, positive analogue, composite or separate sync., negative or positive.

Power: 128 V a.c., 100 W.

Dimensions: L x W x D: 512 x 406 x 442 mm.



**Alimentatore a commutazione US 250 COD. 63000131**

Ingresso rete: 187 ÷ 264 Vac. Alimentazione monitor in d.c. senza trasformatore di alimentazione.

Basse tensioni: 5 Vdc 10A / 12 Vdc 2A /

—5 Vdc 1A / —12 Vdc 1A.

Dimensioni: L x H x P mm 288 x 156 x 124.

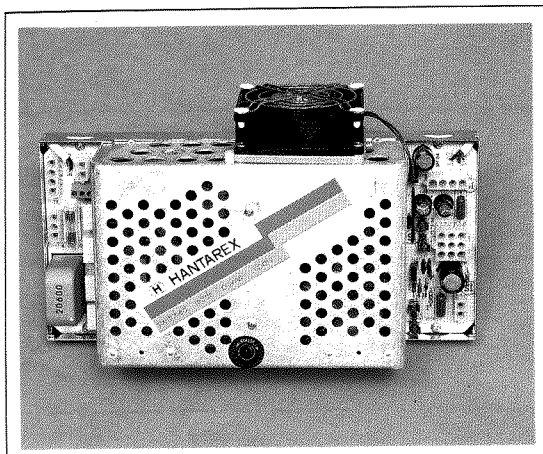
**Switched Mode Power Supply US 250 COD. 63000131**

Mains input: 187 ÷ 264 V a.c. Monitor d.c. supply without mains transformer.

Low tensions: 5 V d.c. 10A. 12 V d.c. 2A.

—5 V d.c. 1A. —12 V d.c. 1A.

Dimensions: L x W x D: 288 x 156 x 124 mm.



**Alimentatore a commutazione US 300 Ventilato COD. 63000081**

Ingresso rete: 187 ÷ 264 Vac. Alimentazione monitor in d.c. senza trasformatore di alimentazione.

Basse tensioni: 5 Vdc 15A / 12 Vdc 2A /

—5 Vdc 1A / —12 Vdc 1A.

Dimensioni: L x H x P mm 288 x 188 x 124.

**Switched Mode Power Supply US 300 ventilated COD. 63000081**

Mains input: 187 ÷ 264 V a.c. supply without mains transformer.

Low tensions: 5 V d.c. 15A. 12 V d.c. 2A.

—5 V d.c. 1 A. —12 V d.c. 1A.

Dimensions: L x W x D: 288 x 188 x 124 mm.



**Generatore di segnali R.V.B. e sincronismi MOD. K 190 G COD. 02190280**

Utile per la messa a punto di monitors aventi un ingresso segnali R.V.B.

Commutatori frontali per la selezione delle varie immagini.

**RGB Signal Generator with sync. MOD. K 190 G COD. 02190280**

Invaluable for setting-up colour monitors with RGB input.

Front panel switching for selecting a variety of images.



# HANTAREX

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