HANTAREX

electronic equipment manufactures

monitor color

MTC90

HANTAREX
electronic equipment manufactures

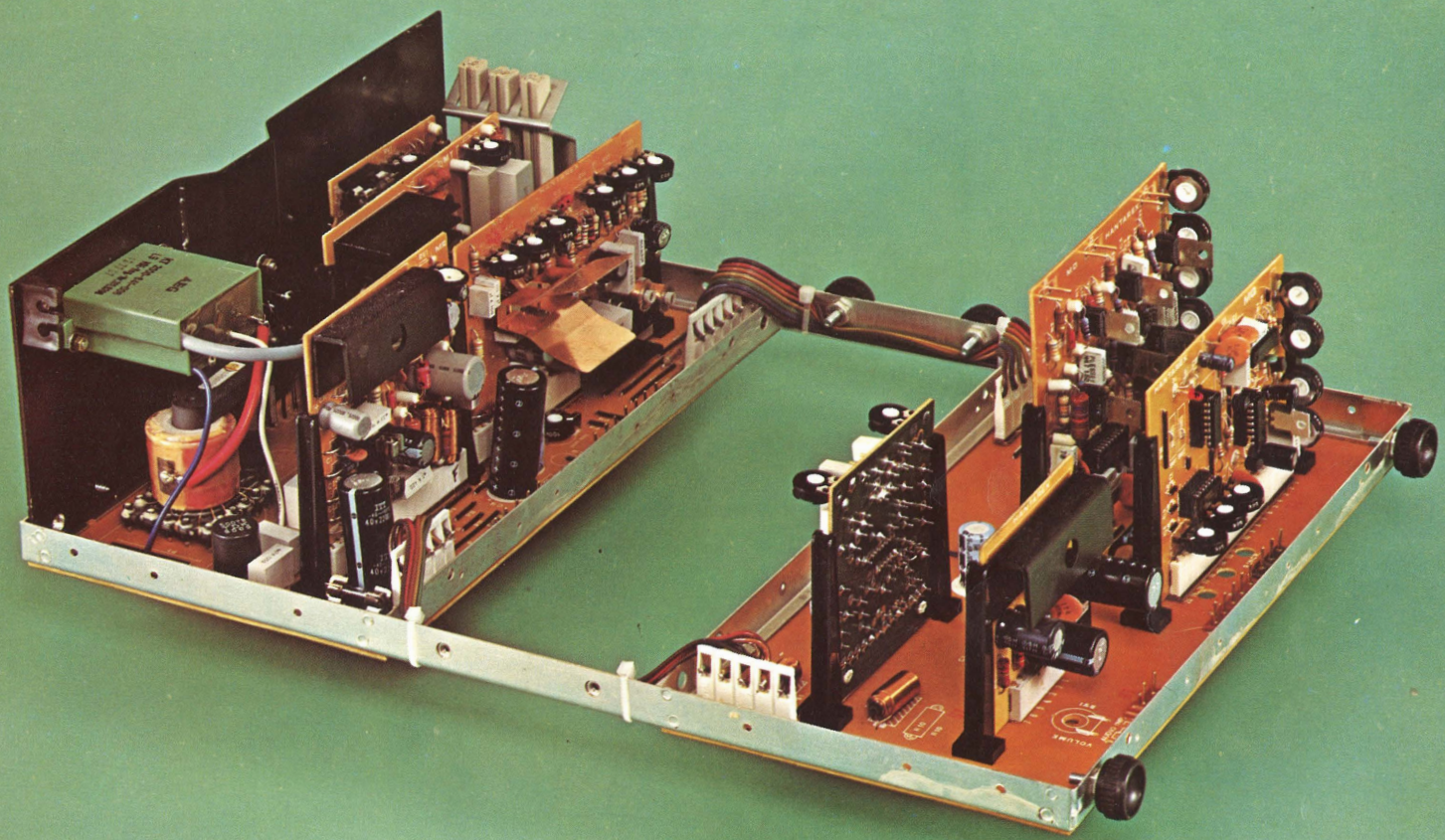
50134 firenze - Italy
36r, via g.fabroni
tel.055 — 483176-7-8-9
telex: 572341 Hantar-I

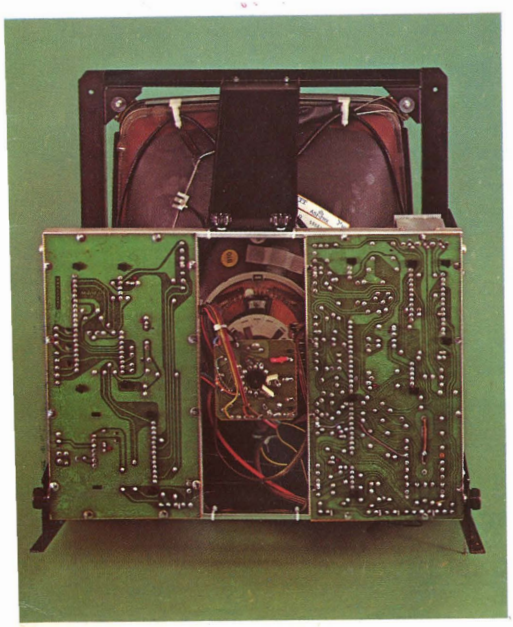
L'esperienza trentennale nel settore dell'elettronica ha portato « HANTAREX » ad un livello di qualificazione tale da essere considerato oggi un riferimento insostituibile per tutti coloro che si interessano di video-game. E' riconosciuto, infatti, che i prodotti HANTAREX costituiscono la sintesi più aggiornata delle attuali tecnologie.
L'espressione migliore della nostra consolidata esperienza tecnologica è rappresentata dal progetto MTC 90: il recentissimo monitor a colori per video-game.
Le caratteristiche essenziali di questo nostro nuovo prodotto, che rappresentano poi i traguardi fondamentali di tutte le nostre ricerche progettuali, sono:
l'AFFIDABILITA' - minor consumo: il consumo è ridotto al valore eccezionalmente basso di 80 W; ciò significa minori temperature all'interno dell'apparecchio, con notevole miglioramento della affidabilità e della durata dei componenti.
l'INGEGNERIZZAZIONE - tecnica modulare: strutturalmente il monitor è composto di due grandi circuiti stampati, nei quali vengono inseriti nove moduli, che raggruppano le funzioni più delicate.
la SICUREZZA - il monitor è protetto contro sovraccarichi e cortocircuiti; in più il suo completo isolamento dalla rete consente l'assoluta sicurezza in utenza e in servizio.
la QUALITA' - il cinescopio « precision in line », a fosfori pigmentati, e l'utilizzazione di finali video RGB a larga banda con transistor complementari, consente di ottenere la perfezione dell'immagine anche nei più piccoli particolari luminosi.
Per noi è molto importante anche la fase di controllo del prodotto finito: infatti, per garantire al massimo l'affidabilità, ogni monitor deve superare una lunga serie di collaudi.
Inoltre, ogni giorno, una percentuale della produzione viene sottoposta ad un test di funzionamento e di affidabilità di oltre duecento ore.
Ulteriori verifiche, per campione, tengono sotto controllo il monitor per mille ore.

HANTAREX's 30 years of experience in the filed of electronic has brought the firm to the point where they are considered an Indlspensable point of reference for all thos interested in video-games. It is in fact well-known that HANTAREX's products represent a synthesis of all that is up-to-date in technological developments.
The most valid expression of our consolidated technological experience is undoubtedly our MTC 90 project: the very latest colour monitor for video-games.
The basic features of this new piece of equipment, representing as it does the fundamental watersheds of all our most recent research, are:
RELIABILITY: less power consumption, with an exceptionally low power consumption of 80 W.; this means lower temperatures inside the machine, making it much more reliable and the components much longer-lasting.
ENGINEERING: modular technology: structurally the monitor consists of two large printed circuits, in which nine modules are inserted, grouping the more delicate functions together.
SAFETY: the monitor is protected against overleoading and short circuits, plus its complete isolation from the mains means absolute safety when in use.
QUALITY: the pigmented phosphorous « precision in-line » cinescope and the use of RGB video-terminals, wide band with complementary transistors, means a perfect image even in the smallest luminous details.
We also consider the quality control stage very important: indeed, to guarantee maximum reliability, each monitor has to undergo a long series of tests. Further, every day a random sample from the production line is subjected to a working and reliability test of over 200 hours. Further checks, on random samples, keep the monitor under control for 1000 hours.

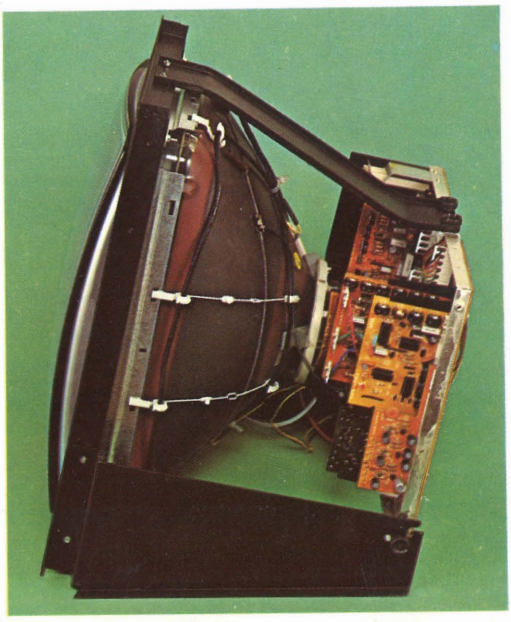
MTC 90

monitor color
per video-game









CARATTERISTICHE TECNICHE GENERALI
MAIN TECHNICAL ITEMS

Cinescopio	20" 90° tipo A51-211X
Picture tube	*20" 90° type A51-211X*
Alimentazione	220 V AC ± 10% - 50/60 Hz - alimentazione a trasformatore isolato dalla rete - assorbimento totale 80 W
Power requirement	*220 V AC ± 10% - supply voltage 50 Hz (with insulating transformer) - power dissipation 80 W*
Ingresso segnali	compatibili TTL o segnali analogici 0,6 ÷ 5 V
Signal inputs	*TTL compatibility or analog signals 0,6 to 5 V*
Ingresso sincronismi	composito negativo - orizzontale separato positivo - verticale separato positivo - orizzontale separato negativo - verticale separato negativo
Sync inputs	*composite sync neg. - horizontal sync pos. - vertical sync pos. - horizontal sync neg. - vertical sync neg.*
Geometria	regolazioni: ampiezza orizzontale - ampiezza verticale - linearità inferiore e superiore - effetto cuscino - effetto trapezio - frequenza verticale - frequenza orizzontale - punto di fase orizzontale - punto di fase verticale
Geometric controls	*est-west amplitude - vertical amplitude - linearity amplitude - est-west phase - hold - horizontal frequency - horizontal phase - vertical phase*
Alta tensione	25.000 V a 0 beam - con questa specifica: il monitor è garantito contro le emissioni di raggi X spuri dal tubo
High voltage	*25.000 AT - 0 Micro A. beam courrent - 22.500 AT - 900 Micro A. beam courrent*
Raggi X	con EAT di 27.500 V e IK = 1 m A viene garantito ad una distanza di 50 mm. dal cinescopio 0,5 m R/h
X rays	*AT = 27.5 KV I. K = I mA dosage measured at a distance of 50 mm. from the glass surface max 36 pA/hg (0,5 mR/h)*
Cancellazione orizzontale	automatica
Horizontal blanking	*automatic*
Cancellazione verticale	automatica
Vertical blanking	*automatic*
Frequenza di scansione	orizzontale 15.625 Hz ± 500 - verticale 50 ÷ 60 Hz
Horizontal and vertical frequency	*horizontal 15.625 Khz ± 700 Hz - vertical 50 Hz ÷ 60 Hz*
Controlli	luminosità - i tre livelli dei segnali in ingresso - livello sincronismi - regolazione cancellazione orizzontale - regolazione cancellazione ritracce verticali
Controls	*brightness - sync level - signals level - horizontal blanking - vertical blanking*
Dimensioni	completo di cinescopio: mm. 450x345x420
Dimension	*with picture tube: mm. 450x345x420*
Peso	monitor completo Kg. 12.3 - cinescopio Kg. 3
Weight	*electronics Kg. 12.3 - picture tube Kg. 3*
Temperatura	di lavoro: 0°C a +55°C ambiente - di immagazzinamento: da —40°C a +65°C
Temperature range	*operating range: 0°C to 55°C - storage range: —40°C to 65°C*

INDICAZIONI PER L'INGRESSO SEGNALI
SIGNAL INPUTS DIRECTIONS

I segnali d'ingresso necessari per il corretto funzionamento del Monitor MTC 90 sono:

The signals to light on the Monitor HANTAREX MTC 90 are:

1) SEGNALE DI SINCRONISMO (composito o separato) che deve essere comunque a livello TTL.

The SYNC (composite or separated) VIDEO SIGNAL RGB and, of course, ground - the sync signal may be composite or separated; it must be however TTL compatible.

2) SEGNALI RGB video per i colori: possono essere segnali a livello TTL (logica negativa(o segnali analogici nel « range » 0,6 - 5 V (nel caso che si abbiano più tonalità del medesimo colore).

The VIDEO SIGNALS for the colours RGB may be or TTL signals (negative logic) or analogic signals at 0.6 - 5 V (when man has more that one tonality of each colour).

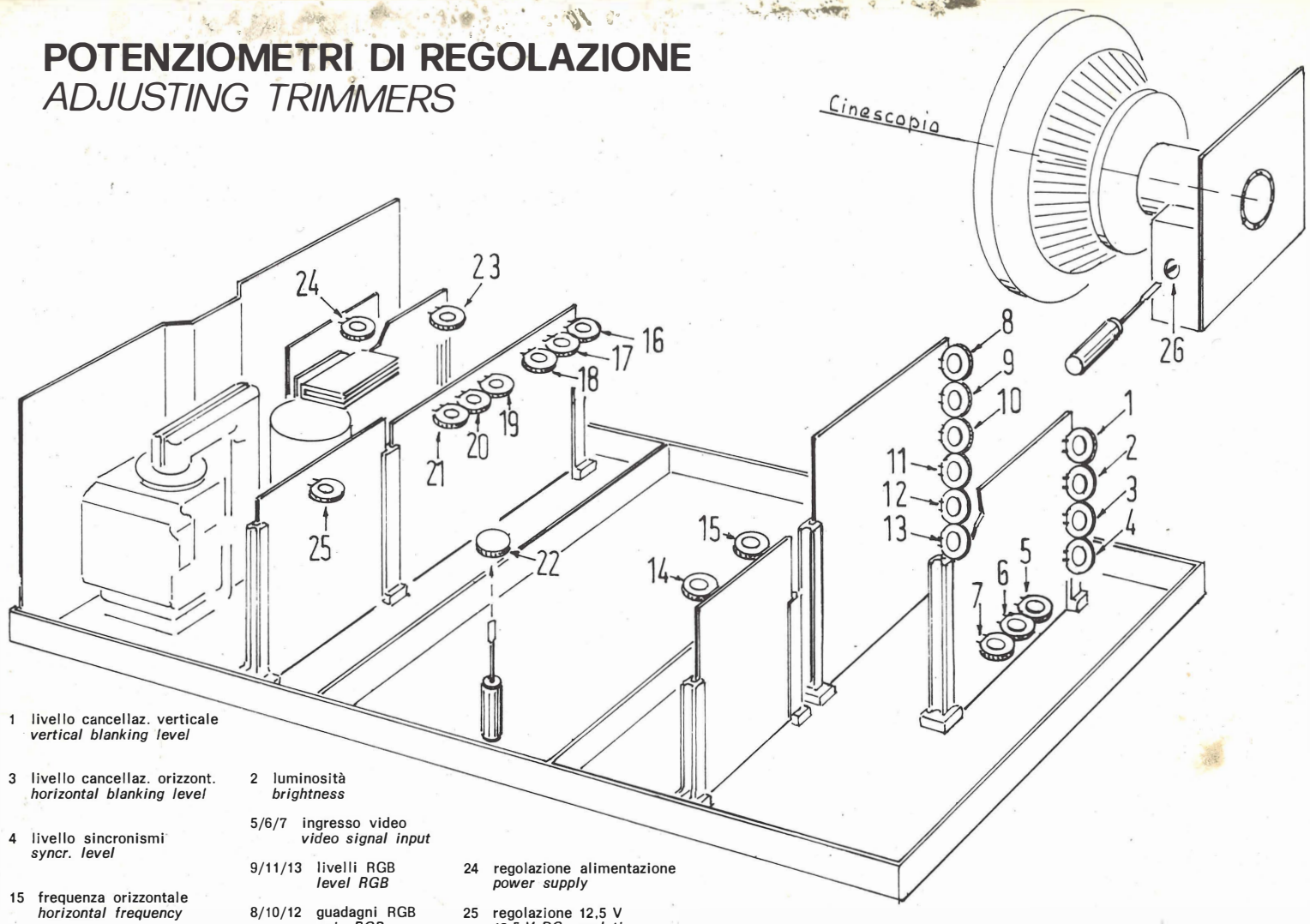
OPZIONI:	MODULO INTERFACCIALE MP - viene utilizzato per invertire un segnale analogico o TTL da positivo a negativo
OPTION:	*INTERFACE MODULE MP - may be used to invert analogic or TTL signals from positive logic to negative logic*
	MODULO MQ - sincronismo: composito, compatibile TTL - (logica negativa) 50 o 60 Hz secondo specifica del cliente
	MODULE MQ - sync.: composite, TTL levels, negative logic
Il monitor MTC 90 viene collaudato con le seguenti specifiche:	VIDEO R.G.B. - ingressi compatibili TTL (logica negativa) o secondo specifica del cliente
This monitor comes to you with these present regulations:	*VIDEO R.G.B. - input from TTL levels, negative logic*
	MODULO D - livelli di continua dei finali video 140 V - livello video (guadagno) 70 V pp - ingressi 600 mV pp (trimmers RV1-2-3 del modulo MQ)
	MODULE D - Dc levels 140 V - video levels 70 V pp (gain) - inputs 600 mV pp (RV1-2-3 on the MQ module)

POSSIBILI DIFETTI ALL'ATTO DELL'ACCENSIONE CON UN NUOVO GIOCO

SOME DEFECTS YOU CAN SEE

COSA FARE	controllare che nessun segnale sia maggiore di 5 V
WHAT TO DO	
1) Il gioco va bene, ma i colori non sono giusti	— utilizzare l'interfaccia MP
The game is O.K. but you see false colours (complementary)	*invert all the colours with the analogic interface. You can use this interface also to invert TTL signals*
2) Il gioco va bene, ma non c'è saturazione nei colori, o sono troppo chiari	— agire sul trimmer RV 6 (blanking orizzontale) fino al punto migliore — controllare se il segnale video contiene il « blanking », se presente deve essere tolto
The games is O.K. but you see coloures with no saturation or very hell	*turn the horizontal blanking trimmer to the best point. Control if you have in your game a blanking signal super imposed on the video signal R.G.B. it must be taken off*
3) Sul monitor sono presenti solo alcune righe colorate e nessuna immagine	— controllare se il trimmer RV 7 (modulo MQ) non sia al minimo — controllare che il segnale di sincronismo sia veramente composito in logica negativa (eventualmente modificare i ponticelli SW1, SW2, SW3)
You see nothing else than red or green or blue lines	*control if your sync. signal is really composite in negative logic.* *Control if the sync. trimmer is not turned off RV 7*
4) Si vedono le righe di ritraccia	— agire sul trimmer RV 4 (modulo MQ)
You see retraces	*turn the vertical retrace trimmer to the best point (RV 4)*
5) Muovendo la fase orizzontale il gioco cambia colore	— agire sul trimmer RV 6 (modulo MQ)
When you move the phase trimmer the game changes colours	*turn the horizontal retrace trimmer to the best point (RV 6)*

POTENZIOMETRI DI REGOLAZIONE
ADJUSTING TRIMMERS



1 livello cancellaz. verticale
vertical blanking level

3 livello cancellaz. orizzont.
horizontal blanking level

4 livello sincronismi
syncr. level

15 frequenza orizzontale
horizontal frequency

17 correzione distorsione
distortion correction

22 frequenza verticale
vertical frequency

14 fase orizzontale
phase control

16 ampiezza orizzontale
horizontal amplitude

18 correzione trapezio
trapezium control

19 fase verticale
vertical phase

20 ampiezza verticale
vertical amplitude

21 linearità verticale
downer lin.

2 luminosità
brightness

5/6/7 ingresso video
video signal input

9/11/13 livelli RGB
level RGB

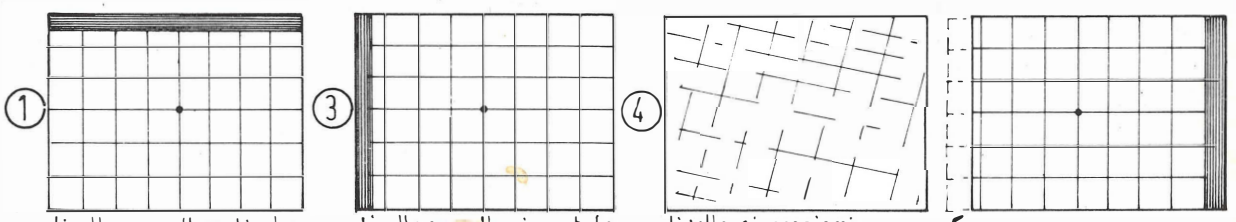
8/10/12 guadagni RGB
gain RGB

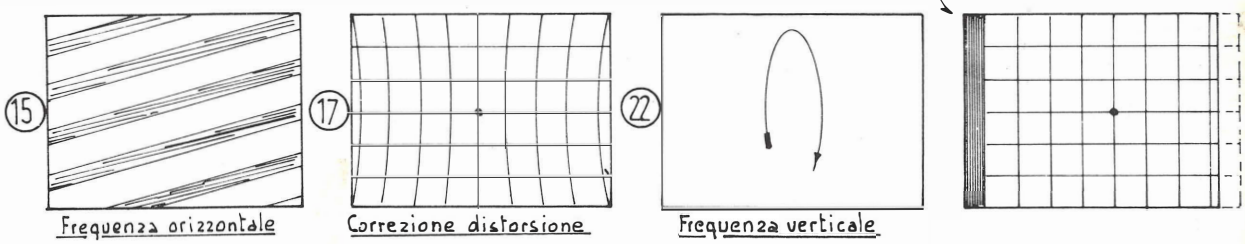
23 livello di griglia
grid level

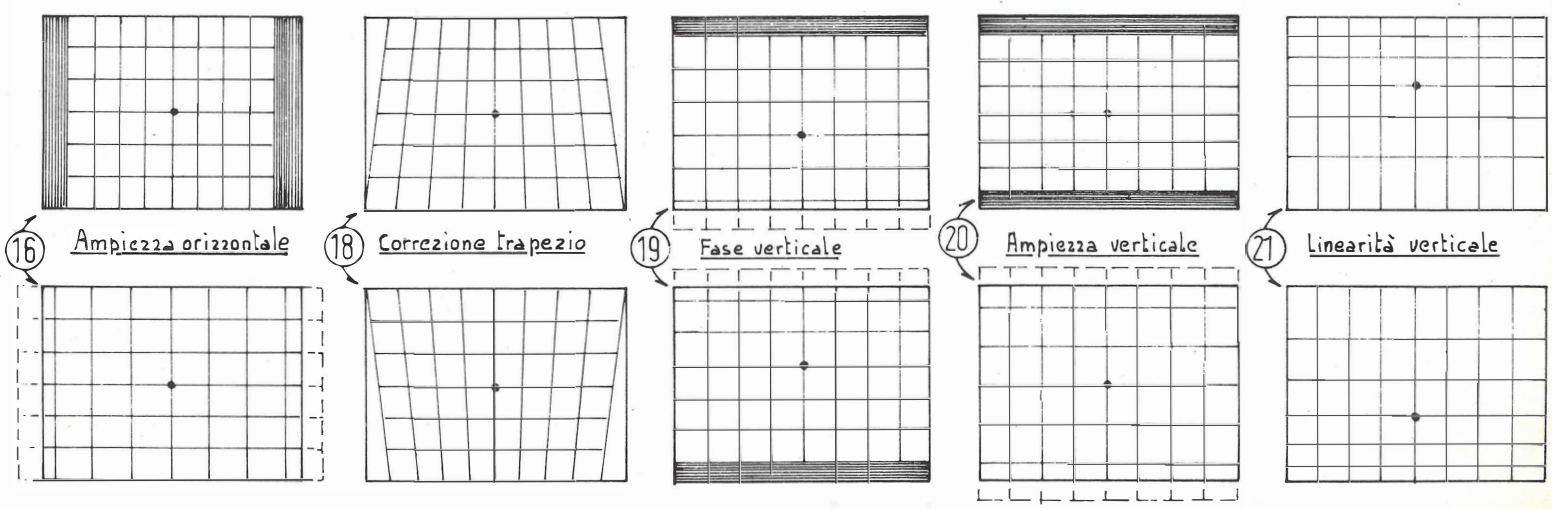
24 regolazione alimentazione
power supply

25 regolazione 12,5 V
12.5 V DC regulation

26 correzione fuoco
focus

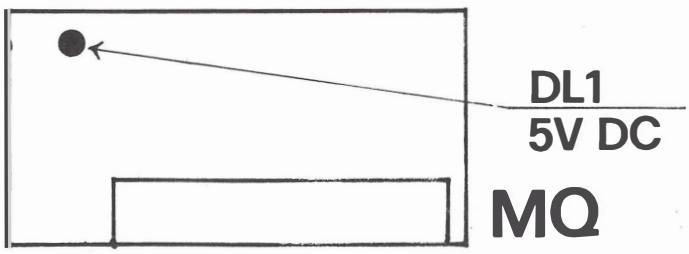




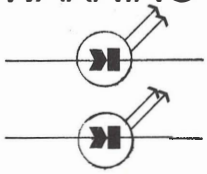


OPTICAL TEST





ATTENZIONE
WARNING

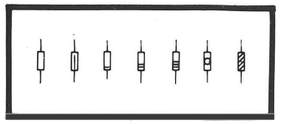


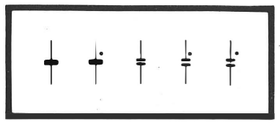
acceso *led on* — **tensione presente** *present tension*

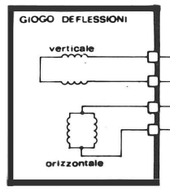
spento *led off* — **tensione assente** *absent tension*

MTC 90

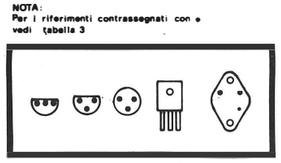
SCHEMA SEZIONE DEFLESSIONI

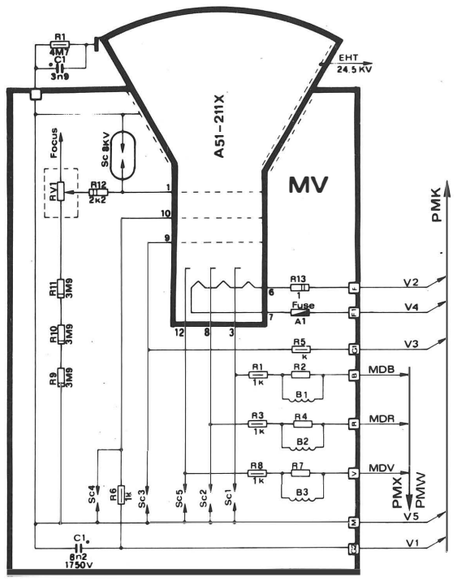


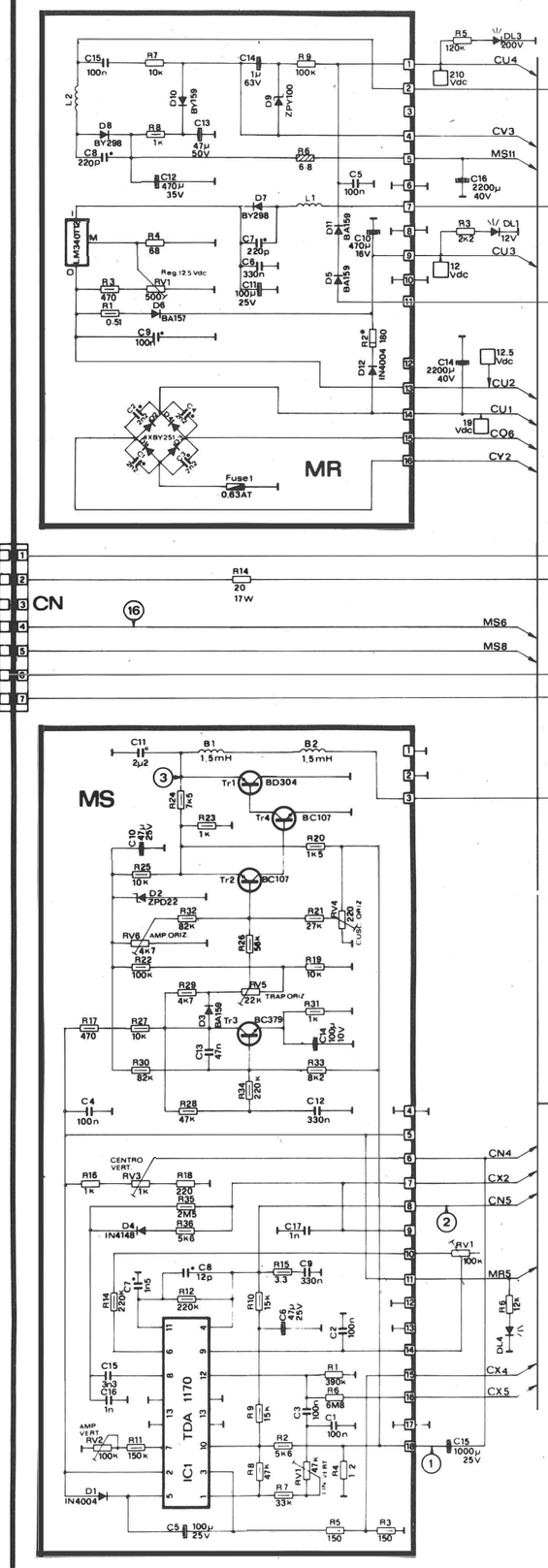


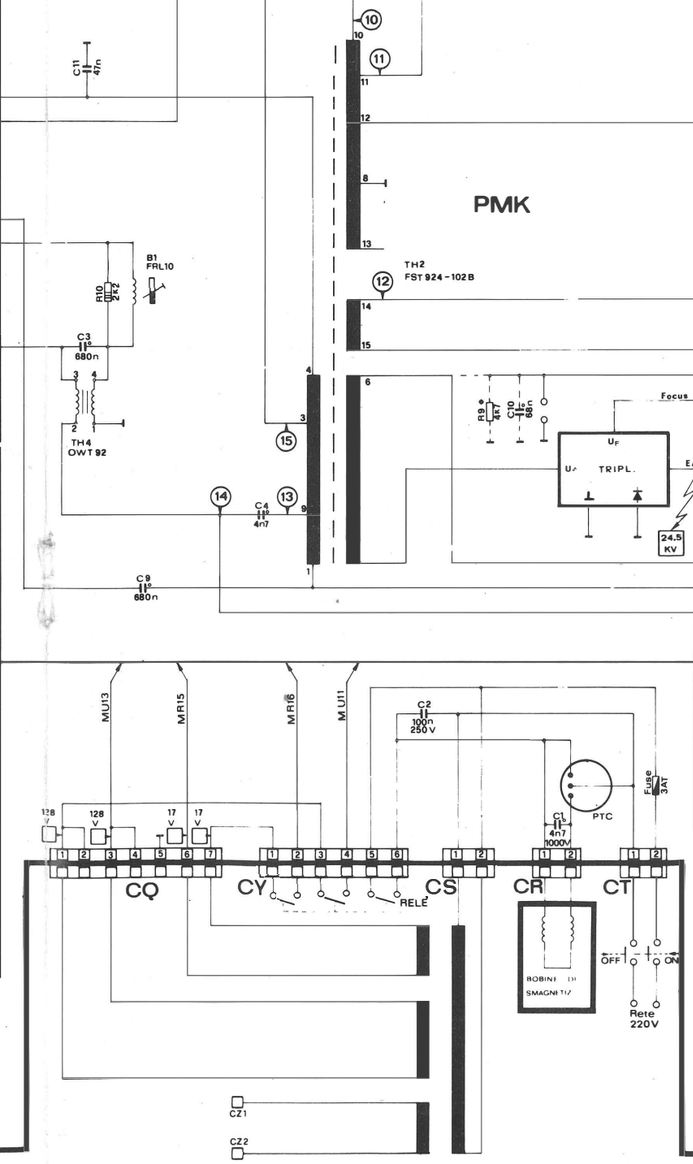


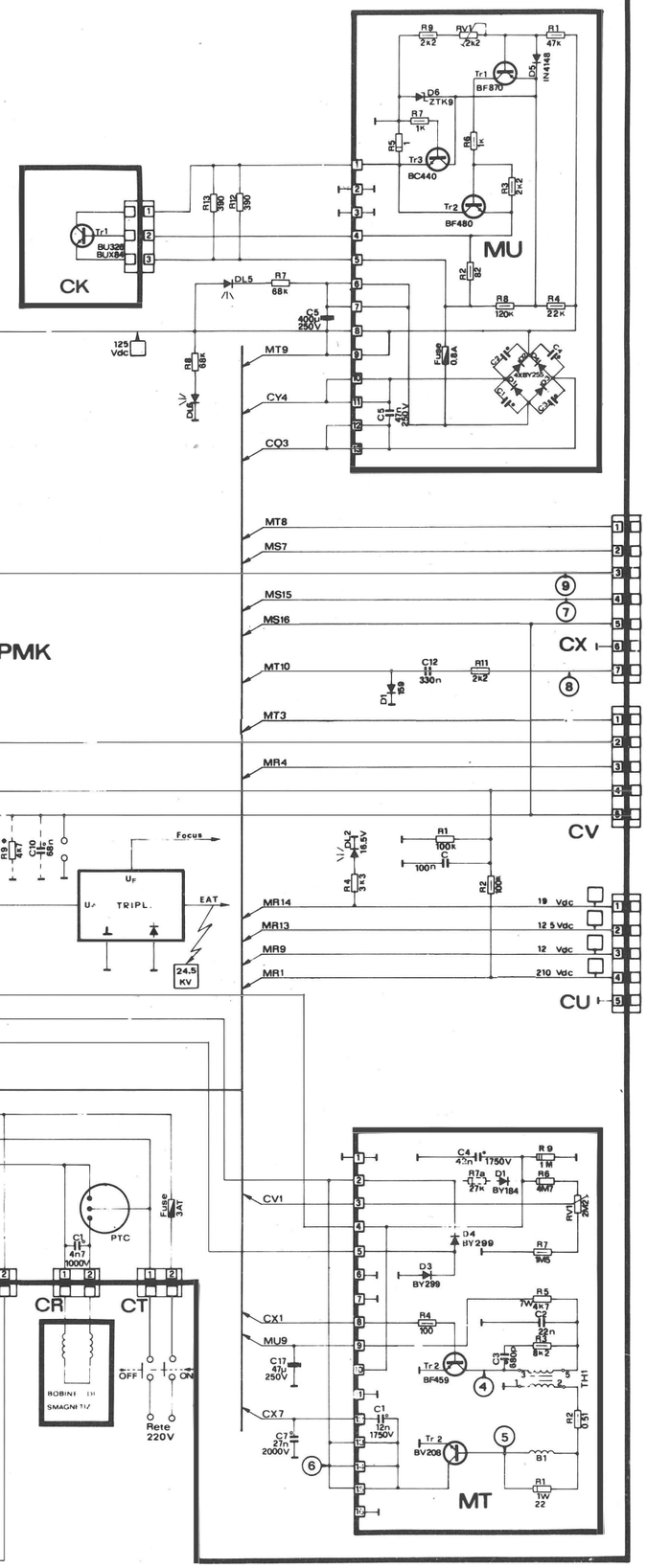
NOTA:
Per i riferimenti contrassegnati con ●
vedi tabella 3

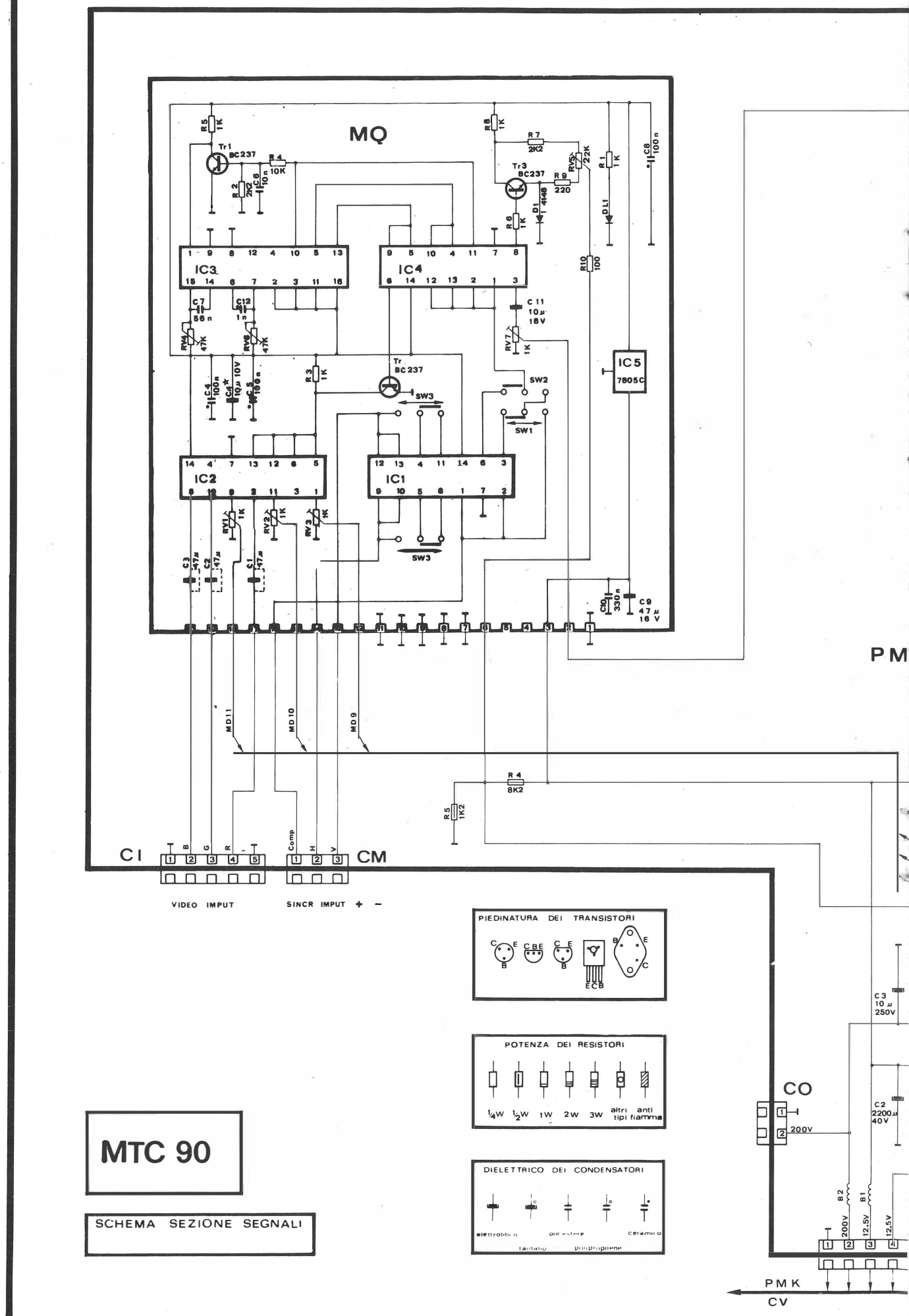






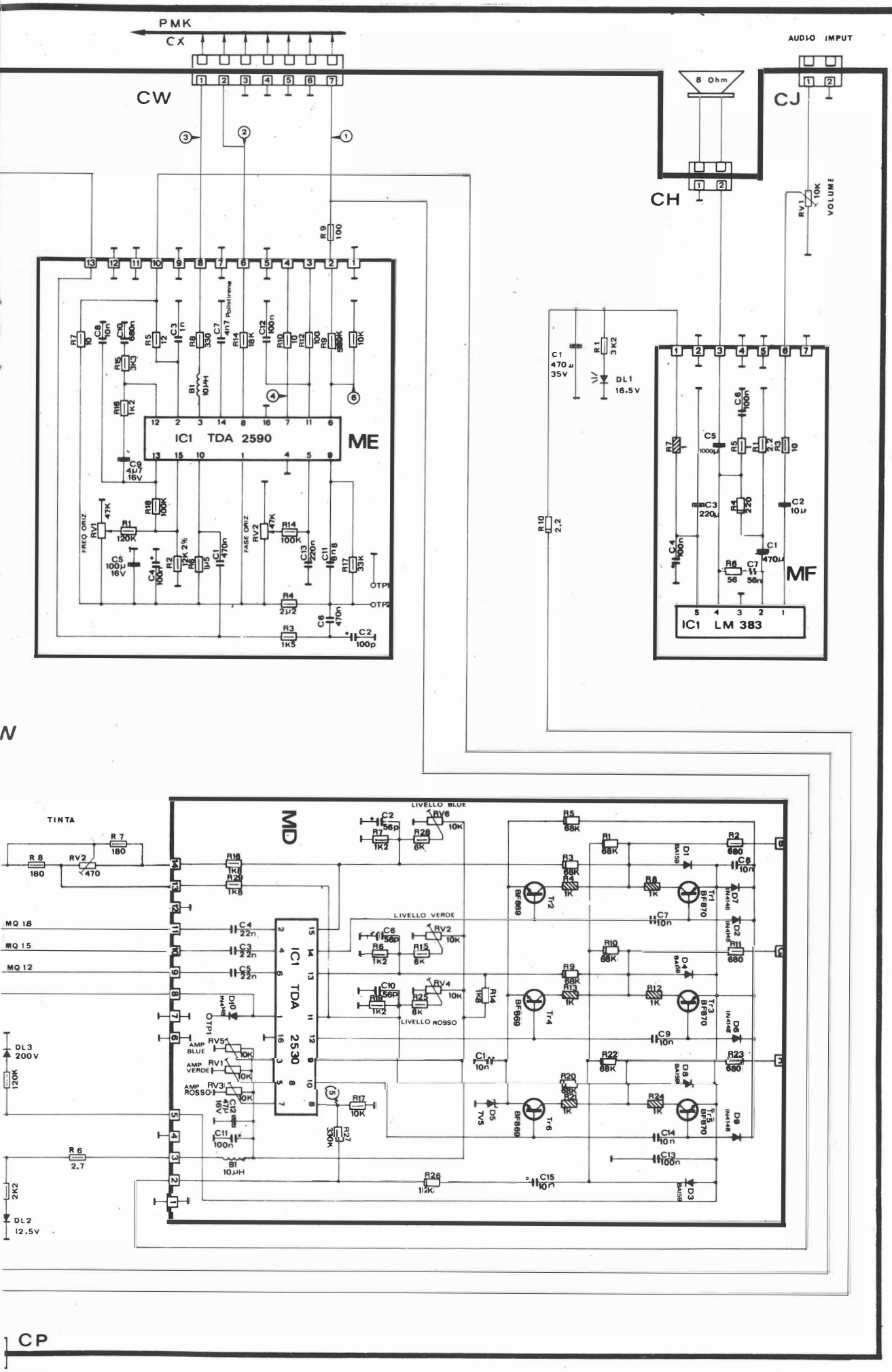




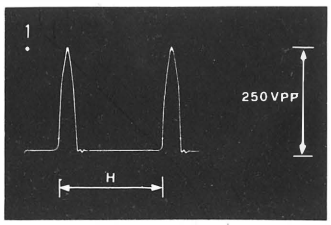


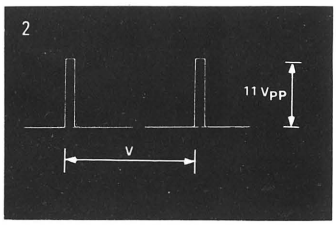
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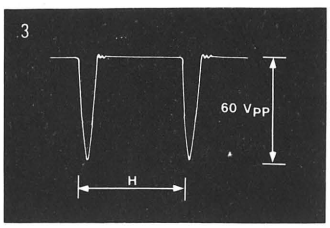
SCHEMA SEZIONE SEGNALI

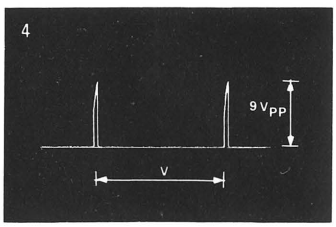

PMK
CX
CW
AUDIO IMPUT
8 Ohm
CJ
CH
VOLUME
RV1 10K
ME
IC1 TDA 2590
MF
IC1 LM 383
C1 470µ 35V
DL1 16.5V
R1 3K2
R10 2.2
MD
IC1 TDA 2530
TINTA
LIVELLO BLUE
LIVELLO VERDE
LIVELLO ROSSO
AMP BLUE
AMP VERDE
AMP ROSSO
MQ 18
MQ 15
MQ 12
DL3 200V
DL2 12.5V
R6 2,7
B1 10µH
OTP1
OTP2
CP

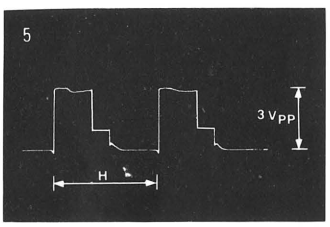
PMW

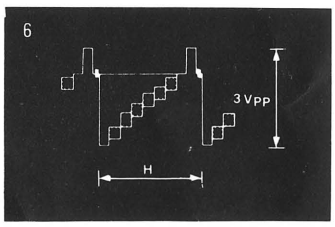

1
250 VPP
H

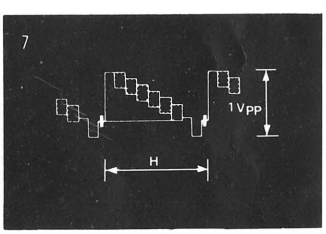

2
11 VPP
V

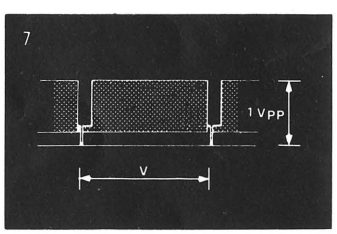

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60 VPP
H

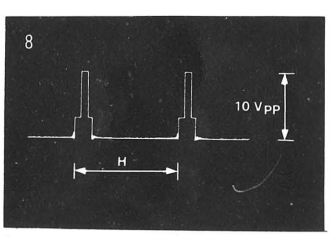

4
9 VPP
V

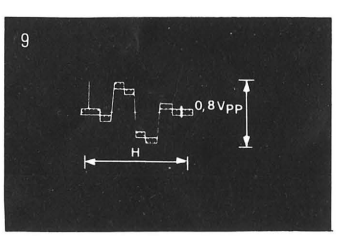

5
3 VPP
H

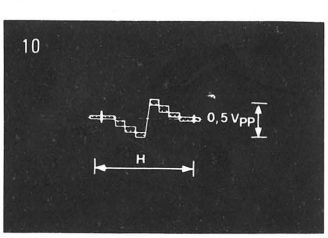

6
3 VPP
H

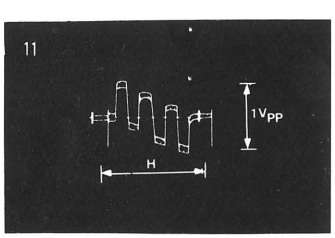

7
1 VPP
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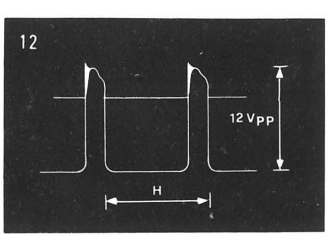

7
1 VPP
V

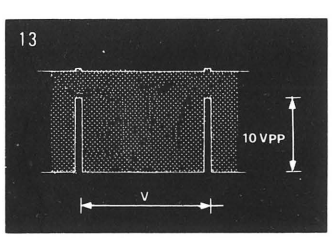

8
10 VPP
H

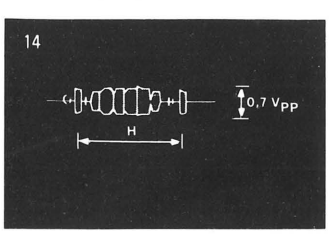

9
0,8 VPP
H

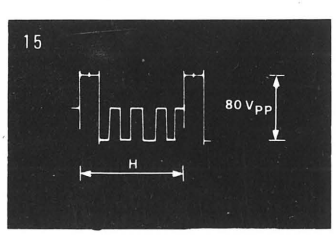

10
0,5 VPP
H


11
1 VPP
H

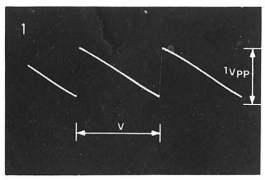

12
12 VPP
H

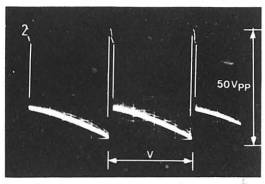

13
10 VPP
V

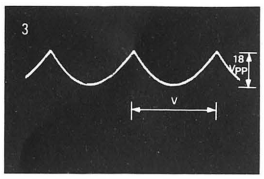

14
0,7 VPP
H

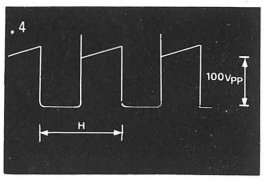

15
80 VPP
H

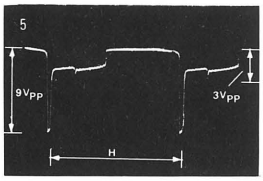
PMK

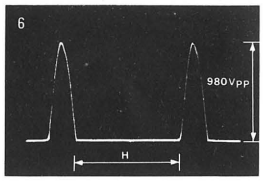

1
1 VPP
V

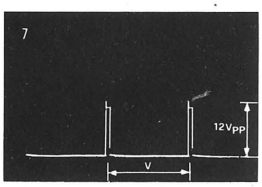

2
50 VPP
V

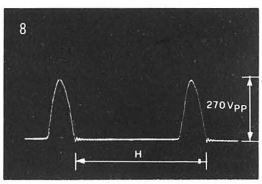

3
18 VPP
V

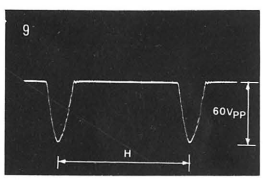

4
100 VPP
H

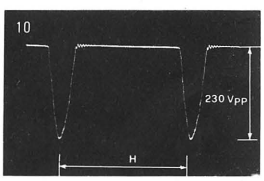

5
9 VPP
3 VPP
H

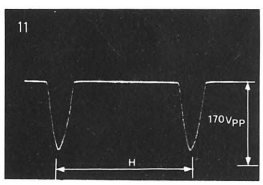

6
980 VPP
H

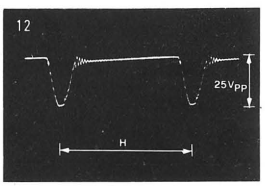

7
12 VPP
V

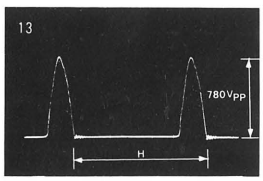

8
270 VPP
H

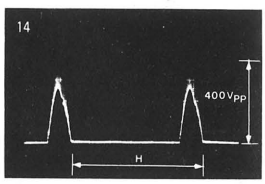

9
60 VPP
H

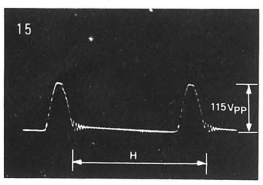

10
230 VPP
H

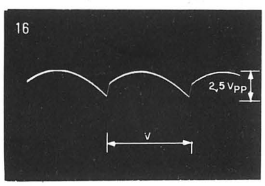

11
170 VPP
H

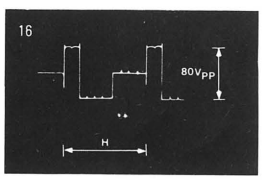

12
25 VPP
H

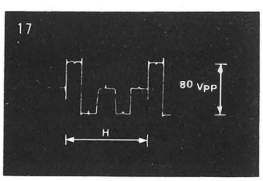

13
780 VPP
H

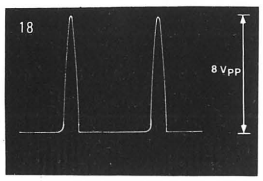

14
400 VPP
H

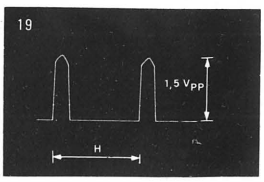

15
115 VPP
H


16
2,5 VPP
V

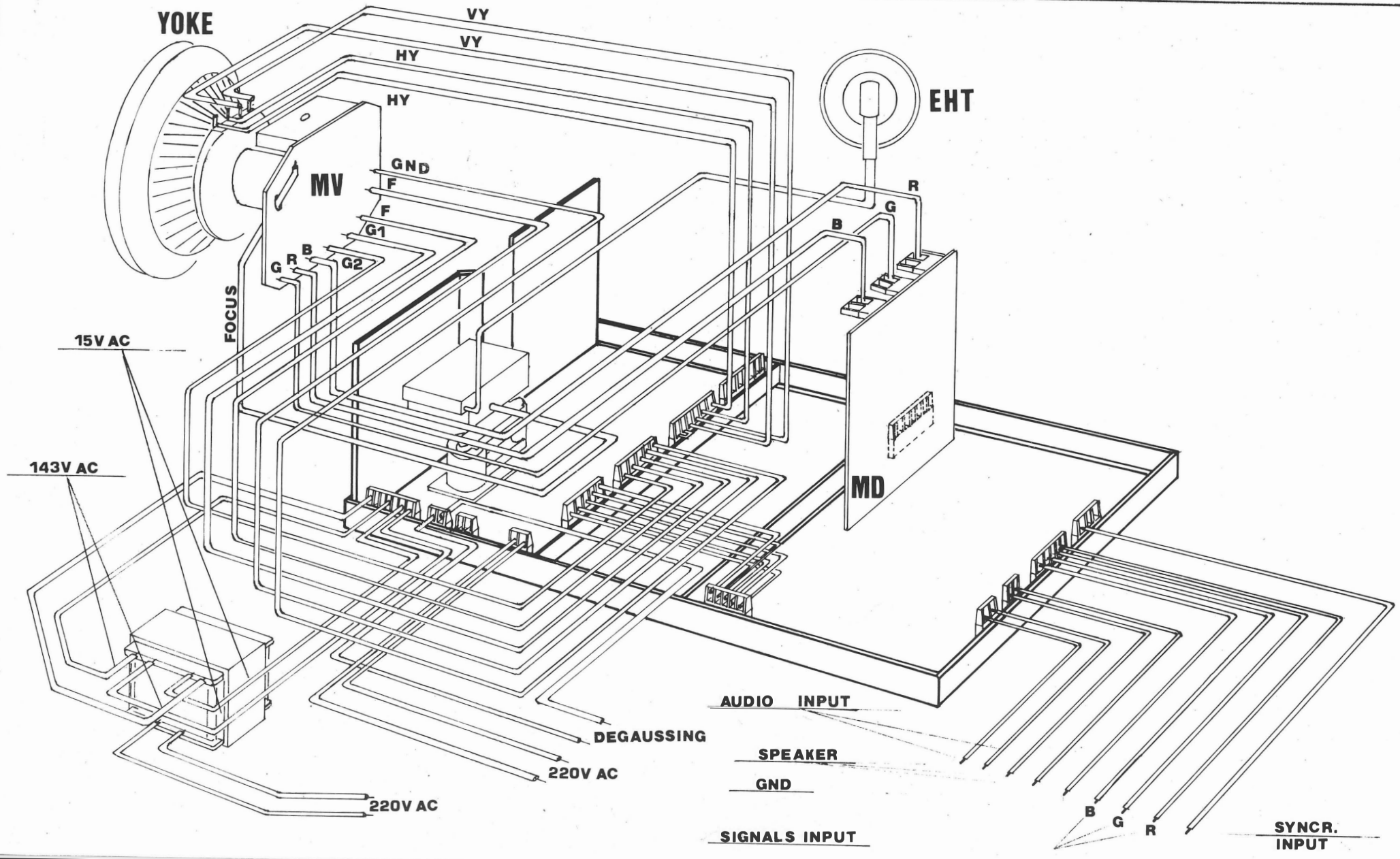

16
80 VPP
H


17
80 VPP
H


18
8 VPP


19
1,5 VPP
H

MTC 90 CONNECTION DIAGRAM



NOMENCLATURA
NOMENCLATURE

MQ codice 62000130

CODICE	DESCRIZIONE	POSIZIONE SCHEMA	QU.
20100000	diodo 1N 4148	D 1	1
20180003	diodo LED 3 mm ROSSO	DL 1	1
20400420	trans. BC 237 B	TR 1-2-3	3
20620030	circ. int.	IC 1	1
20620040	circ. int.	IC 2	1
20620050	circ. int.	IC 3	1
20620060	circ. int.	IC 4	1
20620070	circ. int. MA 7805	IC 5	1
21231000	res. 1/4 W 5% 100 R	R 10	1
21232200	res. 1/4 W 5% 200 R	R 9	1
21241000	res. 1/4 W 5% 1 K	R 1-3-5-6-8	5
21242200	res. 1/4 W 5% 2,2 K	R 2	1
21251000	res. 1/4 W 5% 10 K	R 4	1
21244700	res. 1/4 W 5% 4,7 K	R 7	1
23041001	trimmer PT 15 H 1 K	RV 1-2-3-7	4
23052201	trimmer PT 15 H 22 K	RV 5	1
23054700	trimmer PT 15 H 47 K	RV 4-6	2
24321000	C. El. EN 12-35 10 mF 16 V	C 11-13	2
24424700	C. El. EN 12-35 47 mF 25 V	C 9	1
25455600	C. Pol. 1.60 56 NF 10% 250 V p = 10	C 7	1
25463300	C. Pol. 1.60 330 NF 10% 250 V p = 15	C 10	1
25651000	C. Pol. 1.60 10 NF10% 630 V p = 10	C 6	1
26410803	C. Cer. 1000 pF ± 10% 50 V	C 12	1
26610600	C. Cer. 100000 pF —20 +80 25 V	C 4-5-8	3
34021305	connettore 6630/5 D	—	1
34021315	connettore 6630/15 D	—	1
50142030	circuito stampato MQ	—	1
34020080	zoccolo per C.I. a 14 PIN	—	3
34020090	zoccolo per C.I. a 16 PIN	—	1

MD codice 62000110

CODICE	DESCRIZIONE	POSIZIONE SCHEMA	QU.
20100000	diodo 1 N 4148	D 2-6-7-9	4
20100010	diodo BA 159	D-1-3-4-8	4
20110200	diodo zener 7,5 V 1 W	D 5	1
20420500	trans. BF 869	TR 2-4-6	3
20420510	trans. BF 870	TR 1-3-5	3
21336800	res. 1/2 W 5% 680 R	R 11-23-2	3
21341200	res. 1/2 W 5% 1,2 K	R 6-7-19	3
21341800	res. 1/2 W 5% 1,8 K	R 14-16-18	3
21346800	res. 1/2 W 5% 6,8 K	R 15-25-28	3
21356800	res. 1/2 W 5% 68 K	R 1-3-9-10-20-22	6
21363300	res. 1/2 W 5% 330 K	R 27	1
21351000	res. 1/2 W 5% 10 K	R 17	1
21341001	res. 1/2 W 5% antifiamma 1 K	R 4-8-12-13-21-24	6
21451200	res. 1 W 5% 12 K	R 26	1
21456800	res. 1 W 5% 68 K	R 5	1
23051000	trimmer PT 15 H 10 K	RV 1-2-3-4-5-6	6
24324700	C. El. EN 12-35 47 mF 16 V	C 12	1
25552200	C. Pol. 1.60 22 NF10% 400 V p = 10	C 3-4-5	3
25561000	C. Pol. 1.60 100 NF10% V p = 15	C 13	1
25651000	C. Pol. 1.60 10 NF10% 630 V p = 10	C 1-7-8-9-14-15	6
26256100	C. Cer. 56 pF 5% 50 V NPO	C 2-6-10	3
26610600	C. Cer. 100000 pF —20 +80 25 V	C 11	1
34021305	connettore 6630/5 D	—	1
34021309	connettore 6630/9 D	—	1
34020000	terminale doppio PE 1120 D	—	6
34020090	zoccolo circ. integ. 16 PIN	—	1
50142010	circuito stampato MD	—	1
20620110	circ. integ. TDA 2530	—	1
28020130	choker 10 µH su ferrite	B 1	1

ME codice 62000180

CODICE	DESCRIZIONE	POSIZIONE SCHEMA	QU.
20620100	circ. int. TDA 2591	IC 1	1
21321000	res. 1/2 W 5% 10 R	R 6	1
21333300	res. 1/2 W 5% 330 R	R 8	1
21341200	res. 1/2 W 5% 1,2 K	R 16	1
21341500	res. 1/2 W 5% 1,5 K	R 3	1
21343300	res. 1/2 W 5% 3,3 K	R 15	1
21351000	res. 1/2 W 5% 10 K	R 13	1
21351800	res. 1/2 W 5% 18 K	R 11	1
21353300	res. 1/2 W 5% 33 K	R 17	1
21361000	res. 1/2 W 5% 100 K	R 18	1
21361200	res. 1/2 W 5% 120 K	R 1	1
21365600	res. 1/2 W 5% 560 K	R 9	1
21371500	res. 1/2 W 5% 1,5 M	R 7	1
21372200	res. 1/2 W 5% 2,2 M	R 4	1
21251201	res. MR 25 2% 12 K	R 2	1
21321200	res. 1/2 W 5% 12 R	R 5	1
21354700	res. 1/2 W 5% 47 K	R 14	1
23054700	trimmer PT 15 H 47 K	RV 1-2	2
24314700	cond. elet. EN 12,35 4,7 mF 16 V	C 9	1
24331000	cond. elet. EN 12,35 100 mF 16 V	C 5	1
25144701	cond. poliest. 1,42 4700 pF 2% 63 V	C 7	1

ME codice 62000180

CODICE	DESCRIZIONE	POSIZIONE SCHEMA	QU.
25266800	cond. poliest. 1,60 680 NF 10% 100 V p = 15	C 10	1
25361000	cond. 1,60 100 NF 20% 160 V p = 10	C 12	1
25262200	cond. 1,60 220 NF 10% 100 V p = 10	C 13	1
25264700	cond. 1,60 470 NF 10% 100 V p = 15	C 1-6	2
25646800	cond. 1,60 6800 pF 10% 630 V p = 10	C 11	1
25651000	cond. 1,60 10 N 10% 630 V p = 10	C 8	1
25741000	cond. 1,60 1000 pF 10% 1000 V p = 10	C 3	1
26310100	cond. cer. 100 pF 5% 50 V NPO	C 2	1
26610600	cond. cer. 100000 pF —20 +80 25 V	C 4	1
34021313	connettore 6630/13 D	—	1
34020090	zoccolo per integrato 16 PIN	—	1
34020000	terminale doppio PE 1120/D	—	2
50142080	circ. stampato ME	—	1
28020130	choker 10 µH su ferrite	B 1	1

MS codice 62000170

CODICE	DESCRIZIONE	POSIZIONE SCHEMA	QU.
20150004	diodo 1N 4004	D 1	1
20100010	diodo BA 159	D 3	1
20100000	diodo 1N 4148	D 4	1
20400080	trans BC 107 B	TR 3-4	2
20400090	trans BC 177 B	TR 2	1
20410050	trans BD 304	TR 1	1
20620090	circ. int. TDA 1170 S	IC 1	1
21311000	res. 1/2 W 5% 1 R	R 17	1
21313300	res. 1/2 W 5% 3,3 R	R 15	1
21332200	res. 1/2 W 5% 220 R	R 18	1
21341000	res. 1/2 W 5% 1 K	R 23-31	2
21341500	res. 1/2 W 5% 1,5 K	R 20	1
21344700	res. 1/2 W 5% 4,7 K	R 29	1
21345600	res. 1/2 W 5% 5,6 K	R 2	1
21347500	res. 1/2 W 5% 7,5 K	R 24	1
21348200	res. 1/2 W 5% 8,2 K	R 33	1
21351000	res. 1/2 W 5% 10 K	R 19-25-27	3
21351500	res. 1/2 W 5% 15 K	R 9-10	2
21352700	res. 1/2 W 5% 27 K	R 21	1
21353300	res. 1/2 W 5% 33 K	R 7	1
21354700	res. 1/2 W 5% 47 K	R 8-28	2
21355600	res. 1/2 W 5% 56 K	R 26	1
21358200	res. 1/2 W 5% 82 K	R 30-32	2
21361000	res. 1/2 W 5% 100 K	R 22	1
21361500	res. 1/2 W 5% 150 K	R 11	1
21362200	res. 1/2 W 5% 220 K	R 12-14	2
21362400	res. 1/2 W 5% 240 K	R 34	1
21363900	res. 1/2 W 5% 390 K	R 1	1
21372200	res. 1/2 W 5% 2,2 M	R 35	1
21345600	res. 1/2 W 5% 5,6 K	R 36	1
21311200	res. 1/2 W 5% 1,2 ohm	R 4	1
21333300	res. 1/2 W 5% 330 ohm	R 16	1
23041001	trimmer PT 15 H 1 K	RV 3	1
23044702	trimmer PT 15 H 4,7 K	RV 6	1
23032200	trimmer PT 15 H 220 R	RV 4	1
23052201	trimmer PT 15 H 22 K	RV 5	1
23054700	trimmer PT 15 H 47 K	RV 1	1
23061000	trimmer PT 15 H 100 K	RV 2	1
24322200	C. El. EN 12-35 22 mF 16 V	C 6	1
24331000	C. El. EN 12-35 100 mF 16 V	C 14	1
24424700	C. El. EN 12-35 47 mF 25 V	C 10	1
24431000	C. El. EN 12-35 100 mF 25 V	C 5	1
25261000	cond. pol. 1,60 100 NF 10% 100 V p = 7,5	C 1-2-3-4	4
25463300	cond. pol. 1,60 330 NF 10% 250 V p = 15	C 9-12	2
25454700	cond. pol. 1,60 47 NF 10% 100 V p = 10	C 13	1
25272200	cond. pol. 1,60 2,2 mF 10% 100 V p = 22,5	C 11	1
26212100	cond. cer. 12 pF 5% 50 V NPO	C 8	1
26415610	cond. cer. 1500 pF ± 10% 1000 V	C 7	1
25643300	C. Pol. 1,60 3,3 NF 10% 630 V p = 7,5	C 15	1
25741000	C. Pol. 1,60 1000 pF 10% 1000 V p = 10	C 16-17	2
28020080	choker 1,5 µH su rocchetto e nucleo	B 1-2	2
34021303	connettore 6630/3 D	—	1
34021315	connettore 6630/15 D	—	1
50110021	dissipatore a U mm. 35x15xh = 20	—	1
50110060	dissipatore STAV. US 800 L	—	1
50142070	circ. stamp. MS	—	1

MR codice 62000160

CODICE	DESCRIZIONE	POSIZIONE SCHEMA	QU.
20100010	diodo BA 159	D 5-6-10-11	4
20150120	diodo BY 251	D 1-2-3-4	4
20150300	diodo BY 298	D 7-8	2
20150004	diodo 1 N 4004	R 6	1
20110300	dioro zener 1,3 W 100 V	R 2	1
20620080	circ. int. UA 7812	D 9	1
21305000	res. 1/2 W 5% 0,5 R	IC 1	1
21326800	res. 1/2 W 5% 68 R	R 1	1
21334700	res. 1/2 W 5% 470 R	R 4	1
21341000	res. 1/2 W 5% 1 K	R 3	1

MR codice 62000160

CODICE	DESCRIZIONE	POSIZIONE SCHEMA	QU.
21351000	res. 1/2 W 5% 10 K	R 8	1
21361000	res. 1/2 W 5% 100 K	R 7	1
21316800	res. 1/2 W 5% 6,8 R	R 9	1
21431000	res. 1 W 5% 100 R	R 6	1
23034701	trimmer PT 15 H 470 R	RV 1	1
24334700	C. El. EN 12-35 470 mF 16 V	C 10	1
24431000	C. El. EN 12-35 100 mF 25 V	C 11	1
24524700	C. El. EN 12-35 47 mF 35 V	C 13	1
24534700	C. El. EN 12-35 470 mF 35 V	C 12	1
24811000	C. El. EN 12-35 1 mF 160 V	C 14	1
25363301	C. Pol. 1.60 330 NF 10% 160 V p = 15	C 6	1
25561000	C. Pol. 1.60 100 NF 10% 400 V p = 15	C 5-15	2
26610600	C. Cer. 100000 pF —20 +80 25 V	C 9	1
26422608	C. Cer. 2200 pF —20 +50 500 V	C 1-2-3-4	4
26322720	C. Cer. 220 pF 2000 V	C 7-8	2
28020040	choker 380 µH	L 1-2	2
34021311	connettore 6630/11 D	—	1
50142060	circ. stamp. MR	—	1
50110022	dissipatore 2 fori a U 65x25	—	1
29100050	portafusibile 28011	—	1
29100003	fusibile 0,5 A RIT	—	1
34021305	connettore 6630/5 D	—	1

MT codice 62000150

CODICE	DESCRIZIONE	POSIZIONE SCHEMA	QU.
20150400	diodo BY 399	D 3-4	2
20420110	trans BF 459	TR 2	1
20430200	trans BU 208 A	TR 1	1
21405100	res. 1 W 5% 0,51 R	R 2	1
21331000	res. 1/2 W 5% 100 R	R 4	1
21348200	res. 1/2 W 5% 8,2 K	R 3	1
21371500	res. 1/2 W 5% 1,5 M	R 7	1
21471001	res. VR 68 5% 1 M	R 9	1
21474700	res. 1 W 5% 4,7 M	R 6	1
21422200	res. 1 W 5% 22 R	R 1	1
22344700	res. 7 W a filo assiale 4,7 K	R 5	1
23072201	trimmer PT 15 H 2,2 M	RV 1	1
25552200	C. Pol. 1,60 22 NF 10% 400 V p = 10	C 2	1
25951201	C. Pol. 1,73 12 NF 5% 1750 V p = 22,5	C 1	1
26368800	C. Cer. 680 pF ± 10% 500 V	C 3	1
28020090	choker IN ARIA 2 µH filo ∅ 0,7	B 1	1
28010080	trasf. driver	TH 3	1
34021305	connettore 6630/5 D	—	1
34021311	connettore 6630/11 D	—	1
50110070	dissipatore 6 alette mm 60x50xh 24	—	1
50142050	circ. stamp. MT	—	1
25754700	C. Pol. 1,73 47 NF 20% 1750 V p = 27,5	C 4	1

MU codice 62000140

CODICE	DESCRIZIONE	POSIZIONE SCHEMA	QU.
20100000	diodo 1 N 4148	D 5	1
20150130	diodo BY 255	D 1-2-3-4	4
20401500	trans. BC 440/6	TR 3	1
20420500	trans. BF 869	TR 2	1
20420510	trans. BF 870	TR 1	1
20670010	circ. int. ZTK 9	D 6	1
21328200	res. 1/2 W 5% 82 R	R 2	1
21341000	res. 1/2 W 5% 1 K	R 6-7	2
21342200	res. 1/2 W 5% 2,2 K	R 3-9	2
21354700	res. 1/2 W 5% 47 K	R 1	1
21361200	res. 1/2 W 5% 120 K	R 8	1
21511000	res. 2 W 1 R	R 5	1
22252200	res. 6 W ossido 22 K	R 4	1
23042201	trimmer PT 15 H 2,2 K	RV 1	1
26422608	C. Cer. 2200 pF 500 V	C 1-2-3-4	4
29100016	fusibile 1,6 A RIT.	—	1
29100050	portafusibile C.S. 28011	—	1
34021313	connettore 6630/13 D	—	1
50142040	circ. stamp. aliment. MU	—	1
25754701	cond. pol. 1,58 47 NF 10% 250 V ca p = 15	C 5	1

MV codice 62000190

CODICE	DESCRIZIONE	POSIZIONE SCHEMA	QU.
21341000	res. 1/2 W 5% 1 K	R 1-3-5-2	4
21351000	res. 1/2 W 5% 10 K	R 4	1
21472200	res. 1 W 5% 2,2 M	R 6	1
21473900	res. 1 W 5% 3,9 M	R 9-8	2
21512200	res. 2 W 5% 2,2 R	RX	1
29041000	scaricatore 1000 V	SC 2-3-4-5-6	5
29048500	scaricatore 8500 V	SC 1	1
34020020	zoccolo cinescopico CN 55	—	1

MV codice 62000190

CODICE	DESCRIZIONE	POSIZIONE SCHEMA	QU.
23800008	potenziometro fuoco	—	1
50142090	circ. stamp. MV	—	1
25931001	cond. pol. 1,73 10 NF 20% 1750 V p = 22,5	C 1	1

PMW codice 62000120

CODICE	DESCRIZIONE	POSIZIONE SCHEMA	QU.
21312700	res. 1/2 W 5% 2,7 R	R 6	1
21341200	res. 1/2 W 5% 1,2 K	R 5	1
21342200	res. 1/2 W 5% 2,2 K	R 2	1
21348200	res. 1/2 W 5% 8,2 K	R 4	1
21361200	res. 1/2 W 5% 120 K	R 3	1
20180003	diodo LED 3 mm ROSSO	DL 2-3	2
24334700	cond. el. EN 12,35 470 mF 16 V	C 2	1
24924700	cond. el. EN 12,12 47 mF 250 V	C 3	1
28020040	choker 330 µH	B 1-2	2
50420040	fermaschede	—	6
50142020	circ. stamp. PMW	—	1
34021105	connettore maschio 611/5 D	—	2
34021109	connettore maschio 6611/9 D	—	1
34021113	connettore maschio 6611/13 D	—	1
34021115	connettore maschio 6611/15 D	—	1
34022102	connettore maschio p 7,5 6511/2 D	—	2
34022103	connettore maschio p 7,5 6511/3 D	—	1
34022105	connettore maschio p 7,5 6511/5 D	—	2
34022107	connettore maschio p 7,5 6511/7 D	—	1

PMK codice 62000100

CODICE	DESCRIZIONE	POSIZIONE SCHEMA	QU.
20100010	diodo BA 159	D 1	1
20180003	diodo LED 3 mm ROSSO	DL 1-2-3-4-5-6	6
21342200	res. 1/2 W 5% 2,2 K	R 3-11	2
21343300	res. 1/2 W 5% 3,3 K	R 4	1
21351200	res. 1/2 W 5% 12 K	R 6	1
21356800	res. 1/2 W 5% 68 K	R 7-8	2
21361000	res. 1/2 W 5% 100 K	R 1-2	2
21361200	res. 1/2 W 5% 120 K	R 5	1
21642200	res. 3 W 2,2 K	R 10	1
22733900	res. a filo 17 W vert. 390 R	R 12-13	2
22721000	res. a filo 17 W vert. 10 R	R 14	1
21000037	PTC 2322.662.98009	—	1
24341000	C. El. EN 12-35 1000 mF 16 V	C 15	1
24542200	C. El. EN 12-35 2200 mF 40 V	C 14-16	2
24824700	C. El. EN 12-35 47 mF 160 V	C 17	1
24934700	C. El. DIN 41238 470 mF 250 V	C 5	1
25461000	C. Pol. 1,60 100 NF 10% 250 V p = 15	C 3	1
25563300	C. Pol. 1,60 330 NF 10% 400 V p = 22,5	C 12	1
25564700	C. Pol. 1,60 470 NF 10% 400 V p = 22,5	C 11	1
25744703	C. Pol. 1,73 4700 pF 10% 1000 V p = 15	C 1	1
25761001	C. Pol. 1,29 100 NF 250 V ca VDE p = 27,5	C 2	1
25952200	C. Pol. 1,73 22 NF 5% 1750 V p = 27,5	C 7	1
25566801	C. Pol. 1,76 680 NF 10% 400 V p = 27,5	C 9-13	2
28040020	bobina linearità plessey	B 1	1
28010091	trasf. ert. plessey	TH 2	1
28070020	trasf. OWT.	TH 4	1
29100016	fusibile 1,6 A RIT.	—	1
29100050	portafusibile C.S. 28011	—	1
50142000	circ. stamp. PMK	—	1
50110050	supporto resist. potenza	—	3
50420040	fermaschede	—	6
23061001	trimmer PT 15 NV 100 K	RV 1	1
34021103	connettore maschio 6611/3 D	—	1
34021105	connettore maschio 6611/5 D	—	2
34021111	connettore maschio 6611/11 D	—	2
34021115	connettore maschio 6611/15 D	—	1
34021113	connettore maschio 6611/13 D	—	1
25744704	C. Pol. 1,73 4700 pF 10% 1500 V p = 15	C 4	1
34022102	connettore p = 7,5 maschio 6511/2 D	—	3
34022105	connettore p = 7,5 maschio 6511/5 D	—	2
34022107	connettore p = 7,5 maschio 6511/7 D	—	3
50420130	guidaschede	—	1

HANTAREX SUD
Str. Cassia Nord Km. 88 - Tel. 0761-223241
VITERBO - ITALY

HANTAREX HELLAS
54, Gounari Str. - Tel. 9913336 Telex 219875
Sourmena - Glifada - ATENE - GRECIA

SELECON
35 Ippokratos Str. - tel. 01/9910950 - Telex 219875
Ellinikon - Glifada - ATENE - GRECIA

HANTAREX U.K.
158, Camberwell Road - Tel. 01-7016697 - Telex 8811418
LONDON SE 5 - ENGLAND

HANTAREX ESPAÑOLA
210 Aragon Str. Tel. 3232941 - Telex 51189
BARCELLONA II - ESPAÑA

HANTAREX GERMANY AGENCY
18 Juistrasse - Tel. 0211-423623 - Tel. 8588523
D4000 DUSSELDORF 30 - W. GERMANY

HANTAREX U.S.A.
C/o Peter Jantzen Intl. - 55 Armstrong Road
Tel. (312) 2972815 - Telex 282507
Road Des Plaines - CHICAGO - ILLINOIS - 60618

HANTAREX JAPAN
203 Park Side Height - 23-11 Jingu-Mae, 6 Chome
Tel. 03/498-4931 - Telex 2422422
Shibuys-ku TOKIO 150 - JAPAN

HANTAREX

electronic equipment manufactures

50134 firenze - Italy
36r, via g. fabroni
tel. 055 – 483176-7-8-9
telex: 572341 Hantar-I