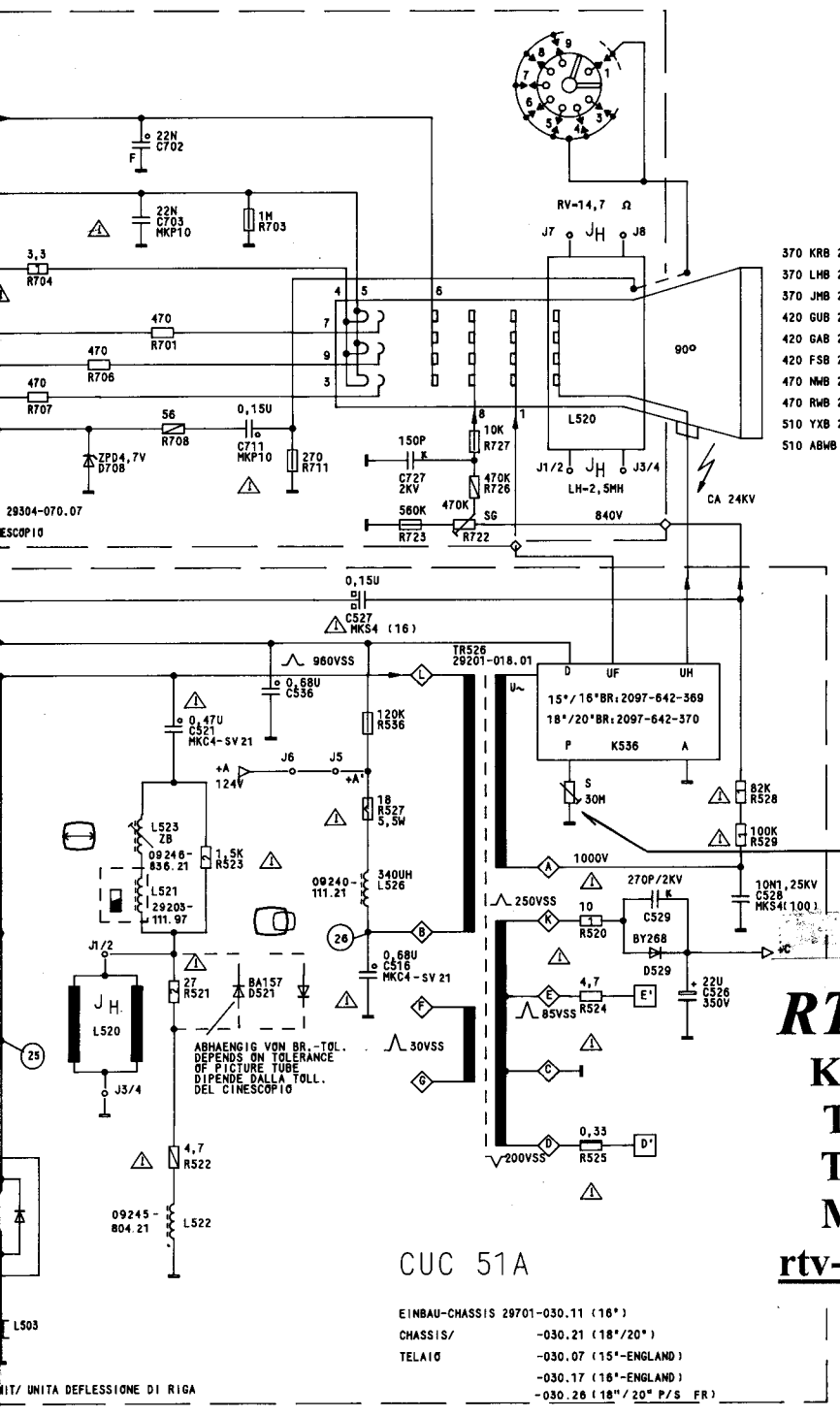
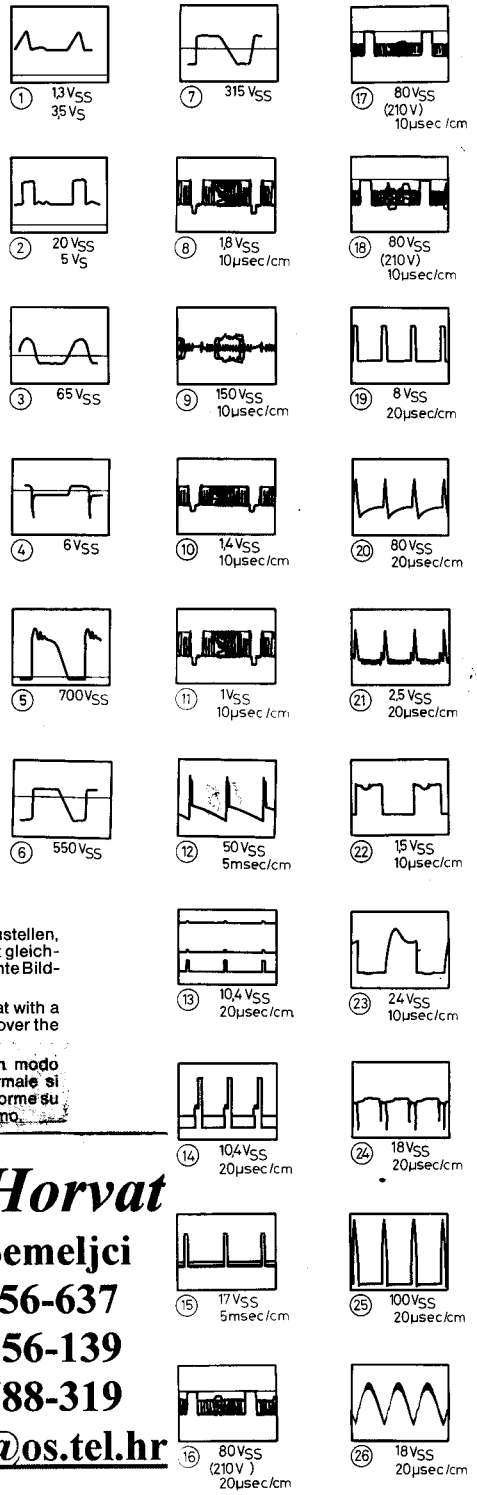


370 KRB 22-TC 05 (PY)	15"
370 LHB 22-TC 02	15"
370 JMB 22-TC 03	15"
420 GUB 22-TC 01	16"
420 GAB 22-TC 02	16"
420 FSB 22-TC 02 (PY)	16"
470 NWB 22-TC 01 (SY)	18"
470 RWB 22-TC 02	18"
510 YXB 22-TC 02 (SY)	20"
510 ABWB 22-TC 02	20"



Der Fokusregler ist so einzustellen, daß bei Testbild eine möglichst gleichmäßige Schärfe über die gesamte Bildfläche erreicht wird.

Adjust the focus control so that with a test pattern, the focus is even over the entire screen area.

Agire su questo regolatore in modo che con un monoscopio normale si ottenga una focalizzazione uniforme su tutta la superficie dello schermo.

RTV servis Horvat

Kešinci, 31402 Semeljci

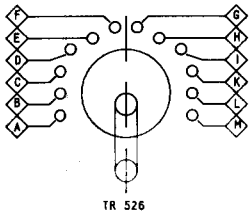
Tel : 031-856-637

Tel / fax : 031-856-139

Mob : 098-788-319

rtv-servis-horvat@os.tel.hr

ZEILENTR. ANSCHL. V. UNTEN GES.
LINE TRANSF. CONNECTIONS BOTTOM VIEW
COLLEGAM. TRASFORMATORE DI RIGA VISTI DI SOTTO



GRUNDIG
CUC 51 A

P 42 - 142	(25 004)	P 47 - 142 GB	(25 005)
P 42 - 1421	(25 046)	P 51 - 142	(25 006)
P 42 - 1422	(25 071)	P 51 - 142 VT	(25 006)
P 42 - 142 GB	(25 004)	T 51 - 140	(25 007)
P 42 - 1421 GB	(25 046)	T 51 - 140 VT	(25 007)
P 47 - 142	(25 005)	P 47 - 142 PIS FR	(25 005)

MINERVA
CUC 51 A

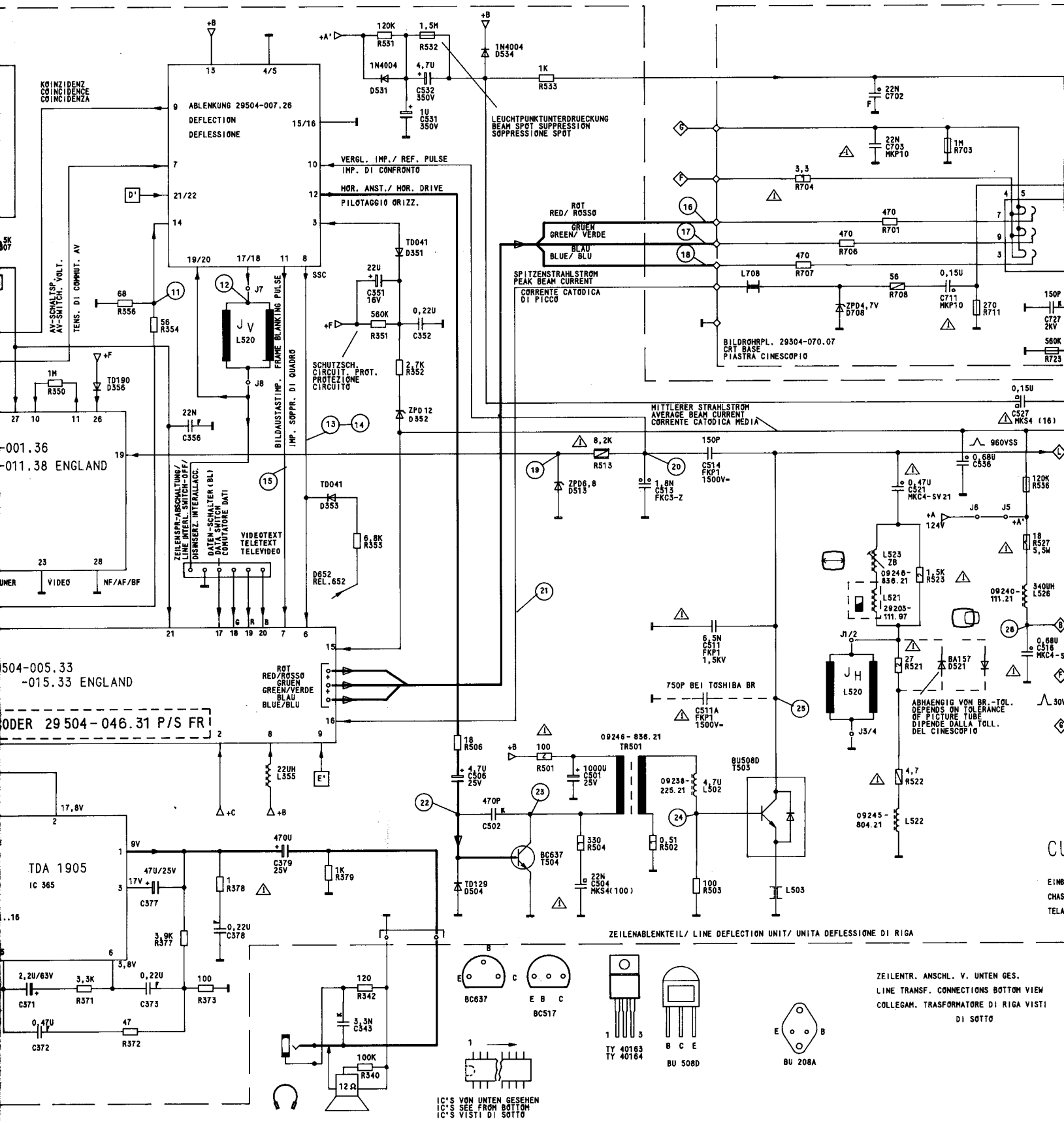
P 1649	(25 021)

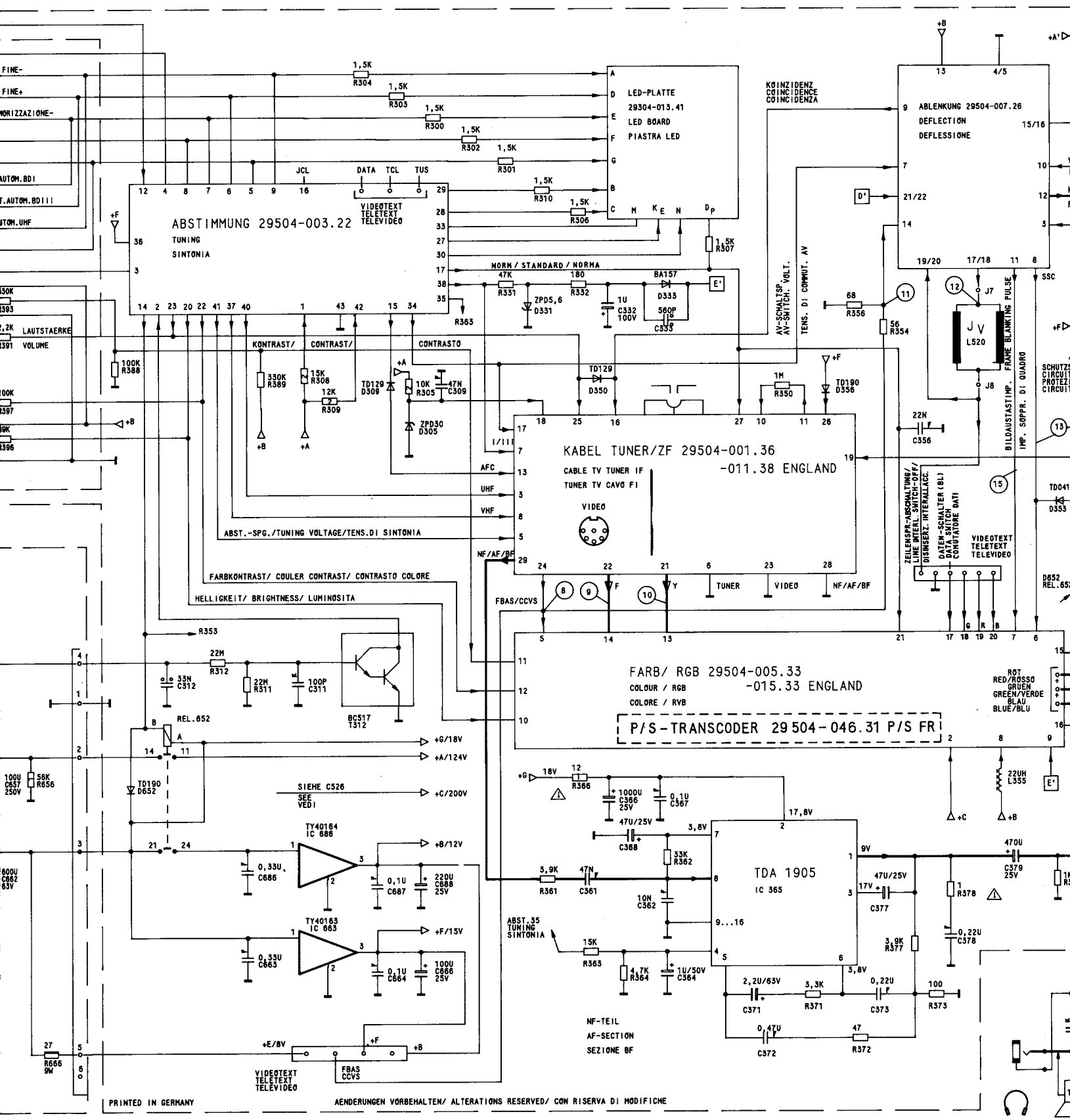
Zeilenbreite
Line width
Larghezza orizzontale

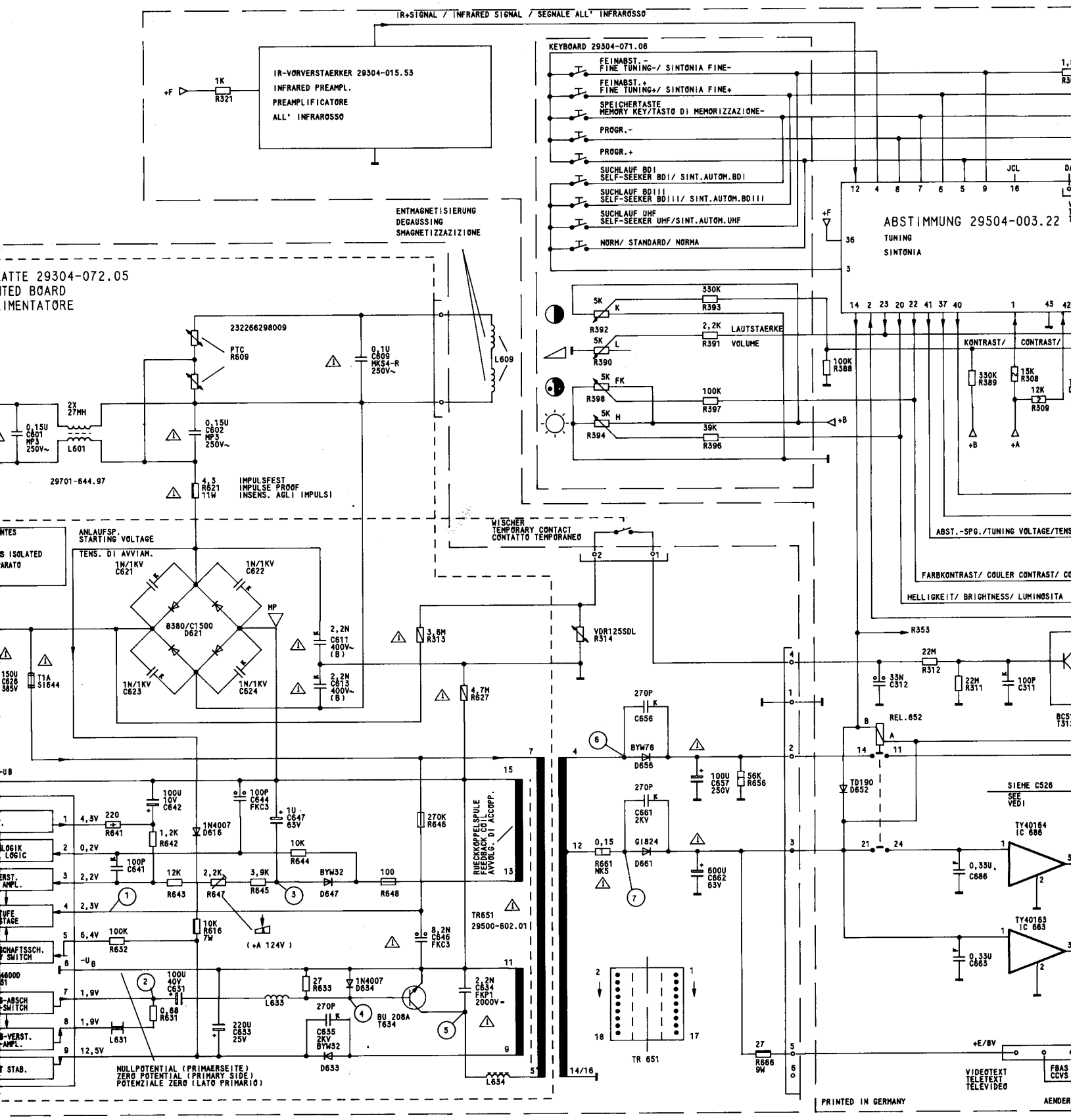
SG Schirmgitterregler
Screen grid control
Regolatore di griglia schermo

S Bildschärfe
Picture focus
Definizione dell'immagine

PRINTED IN GERMANY
Änderungen vorbehalten/Subject to alteration/Con riserva di modifiche 130284 Ni 84008/I 25004-942.01


ABLENKUNG 29504-007.26
DEFLECTION
DEFLESSIONE
KOINZIDENZ
COINCIDENCE
COINCIDENZA
AV-SCHALTSP.
AV-SWITCH. VOLT.
TENS. DI COMMUT. AV
VERGL. IMP./ REF. PULSE
IMP. DI CONFRONTO
HOR. ANST./ HOR. DRIVE
PILOTAGGIO ORIZZ.
LEUCHTPUNKTUNTERDRUECKUNG
BEAM SPOT SUPPRESSION
SOPPRESSIONE SPOT
ROT
RED/ ROSSO
GRUEN
GREEN/ VERDE
BLAU
BLUE/ BLU
SPITZENSTRAHLSTROM
PEAK BEAM CURRENT
CORRENTE CATODICA
DI PICCO
BILDROHRPL. 29304-070.07
CRT BASE
PIASTRA CINESCOPIO
SCHUTZSCH.
CIRCUIT. PROT.
PROTEZIONE
CIRCUITO
BILDAUSTASTIMP. FRAME BLANKING PULSE
IMP. SOPPR. DI QUADRO
MITTLERER STRAHLSTROM
AVERAGE BEAM CURRENT
CORRENTE CATODICA MEDIA
ZEILENSPR-ABSCHALTUNG/
LINE INTERL. SWITCH-OFF/
DISINSERZ. INTERALLACC.
DATEN-SCHALTER (BL)
DATA SWITCH
COMMUTATORE DATI
VIDEOTEXT
TELETEXT
TELEVIDEO
ROT
RED/ROSSO
GRUEN
GREEN/VERDE
BLAU
BLUE/BLU
750P BEI TOSHIBA BR
ABHAENGIG VON BR.-TOL.
DEPENDS ON TOLERANCE
OF PICTURE TUBE
DIPENDE DALLA TOLL.
DEL CINESCOPIO
-001.36
-011.38 ENGLAND
504-005.33
-015.33 ENGLAND
ODER 29 504-046.31 P/S FR
TDA 1905
IC 365
ZEILENABLENKTEIL/ LINE DEFLECTION UNIT/ UNITA DEFLESSIONE DI RIGA
BC637
BC517
TY 40163
TY 40164
BU 508D
BU 208A
IC'S VON UNTEN GESEHEN
IC'S SEE FROM BOTTOM
IC'S VISTI DI SOTTO
ZEILENTR. ANSCHL. V. UNTEN GES.
LINE TRANSF. CONNECTIONS BOTTOM VIEW
COLLEGAM. TRASFORMATORE DI RIGA VISTI
DI SOTTO
Zeilenbreite
Line width
Larghezza orizzontale
SG Schirmgitterreg
Screen grid co
Regolatore di g
PRINTED IN GE
Änderungen vo


ABSTIMMUNG 29504-003.22
TUNING
SINTONIA
LED-PLATTE
29304-013.41
LED BOARD
PIASTRA LED
ABLENKUNG 29504-007.26
DEFLECTION
DEFLESSIONE
KABEL TUNER/ZF 29504-001.36
-011.38 ENGLAND
CABLE TV TUNER IF
TUNER TV CAVO FI
VIDEO
FARB/ RGB 29504-005.33
-015.33 ENGLAND
COLOUR / RGB
COLORE / RVB
P/S-TRANSCODER 29504-046.31 P/S FR
TDA 1905
IC 365
TY40164
IC 686
TY40163
IC 663
BC517
T312
REL.652
LS20
VIDEOTEXT
TELETEXT
TELEVIDEO
NF-TEIL
AF-SECTION
SEZIONE BF
PRINTED IN GERMANY
AENDERUNGEN VORBEHALTEN/ ALTERATIONS RESERVED/ CON RISERVA DI MODIFICHE



Regler + A
Control + A
Regolatore + A

Lautstärke
Volume
Volume

Farbkontrast
Colour contrast
Contrasto colore

Helligkeit
Brightness
Luminosita

Kontrast
Contrast
Contrasto

rete

Servicehinweise für Schaltnetzteil: Gerät mit Netztrenntransformator betreiben. Primärseite des Schaltnetzteiles liegt an Netzpotential. Bei fehlender Sekundärspannung oder Takten des Netzteiles Sekundärstromkreise einzeln unterbrechen und Funktion überprüfen.
Suchschema bei Nichtschwingen des Sperrwandlers.

- Anlaufspannung (Pin 9/5) < 8 V Anlauf über Di 616 u. R 616.
- Referenzspannung (Pin 1) ca. 6 V
- Startimpuls (Pin 4) ①
- Basisstromansteuerung (Pin 7) ②

C 626 muß vor Wechsel des IC 631 entladen sein! Netzteilregelbereich 160 bis 260 V~

Service hints for switch-mode power supply: operate set with mains-isolating transformer (n. b. the primary side of the SM power supply is normally not isolated, if there is no secondary voltage or the power supply pulsates, disconnect the secondary circuits individually and check operation. Fault finding scheme if blocking function prevents oscillation:

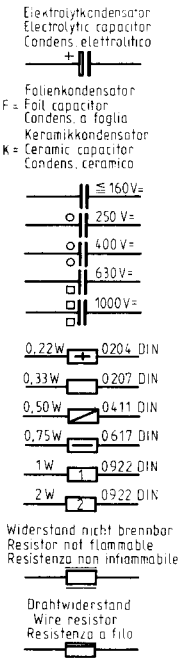
- Starting voltage (Pin 9/5) < 8 V, starting via Di 616 and R 616
- Reference voltage (Pin 1) approx. 6 V
- Start pulse (Pin 4) ①
- Base current drive (Pin 7) ②

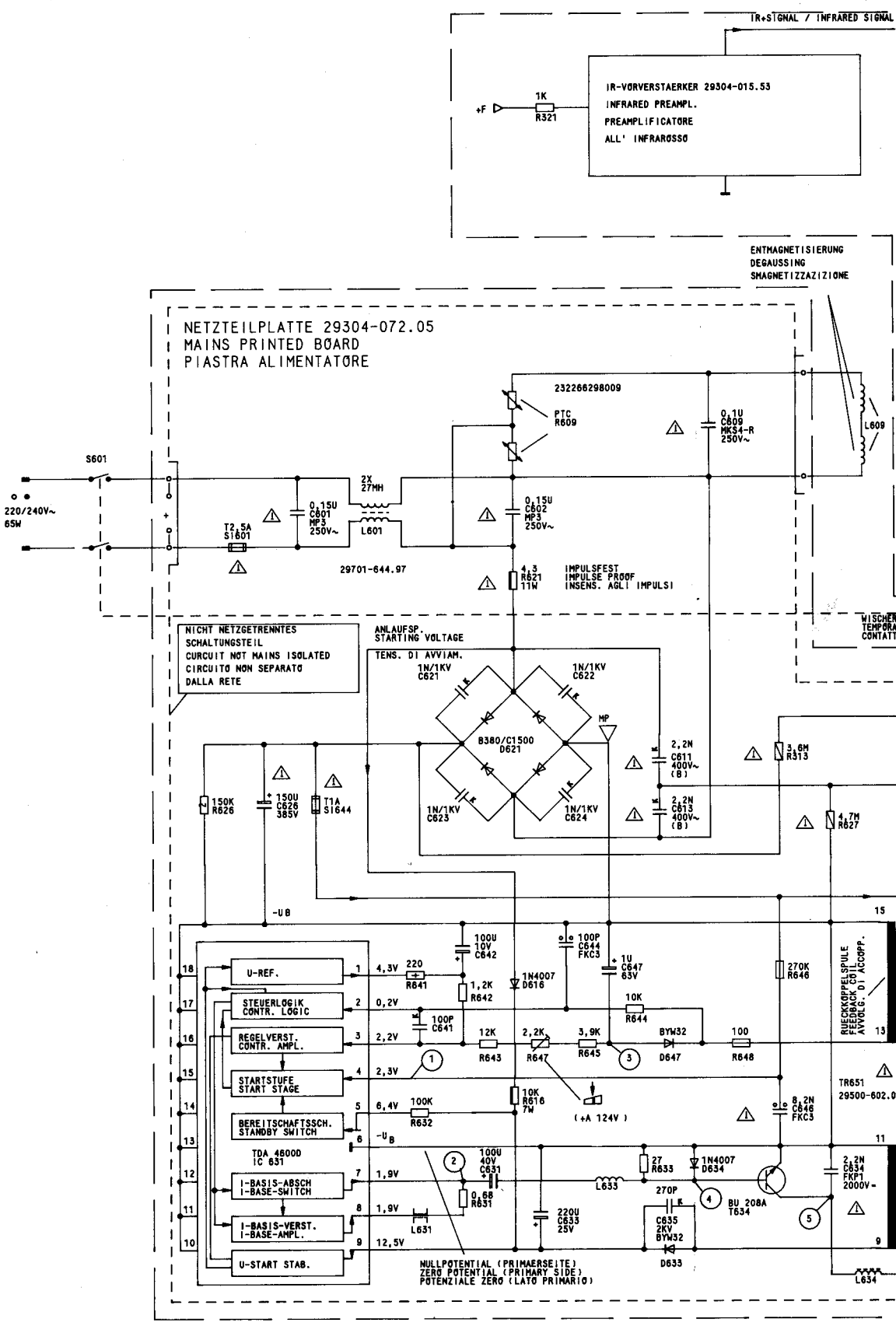
Before replacement of IC 631, C 626 must be discharged. Power supply range 160 to 260 V AC.

Avvertenze di Servizio dell'alimentatore: Alimentare l'apparecchio con un trasformatore separatore. Il lato primario dell'alimentatore è a potenziale di rete. Se viene a mancare la tensione del secondario o in caso di intervento ritmico dell'alimentatore, interrompere uno alla volta i circuiti dell secondario e controllarne la funzione. Se il trasduttore di interdizione non viene eccitato, ricercare il guasto secondo lo schema seguente:

- Tensione di avviamento (pin 9/5) < 8 V. Avviamento tramite Di 616 e R 616.
- Tensione di riferimento (pin 1) ca. 6 V.
- Impulso di avviamento (pin 4) ①
- Pilotaggio della corrente di base (pin 7) ②

Il C 626 deve essere scarico prima di cambiare l'IC 631! Campo di regolazione dell'alimentatore: 160 a 260 V ~.



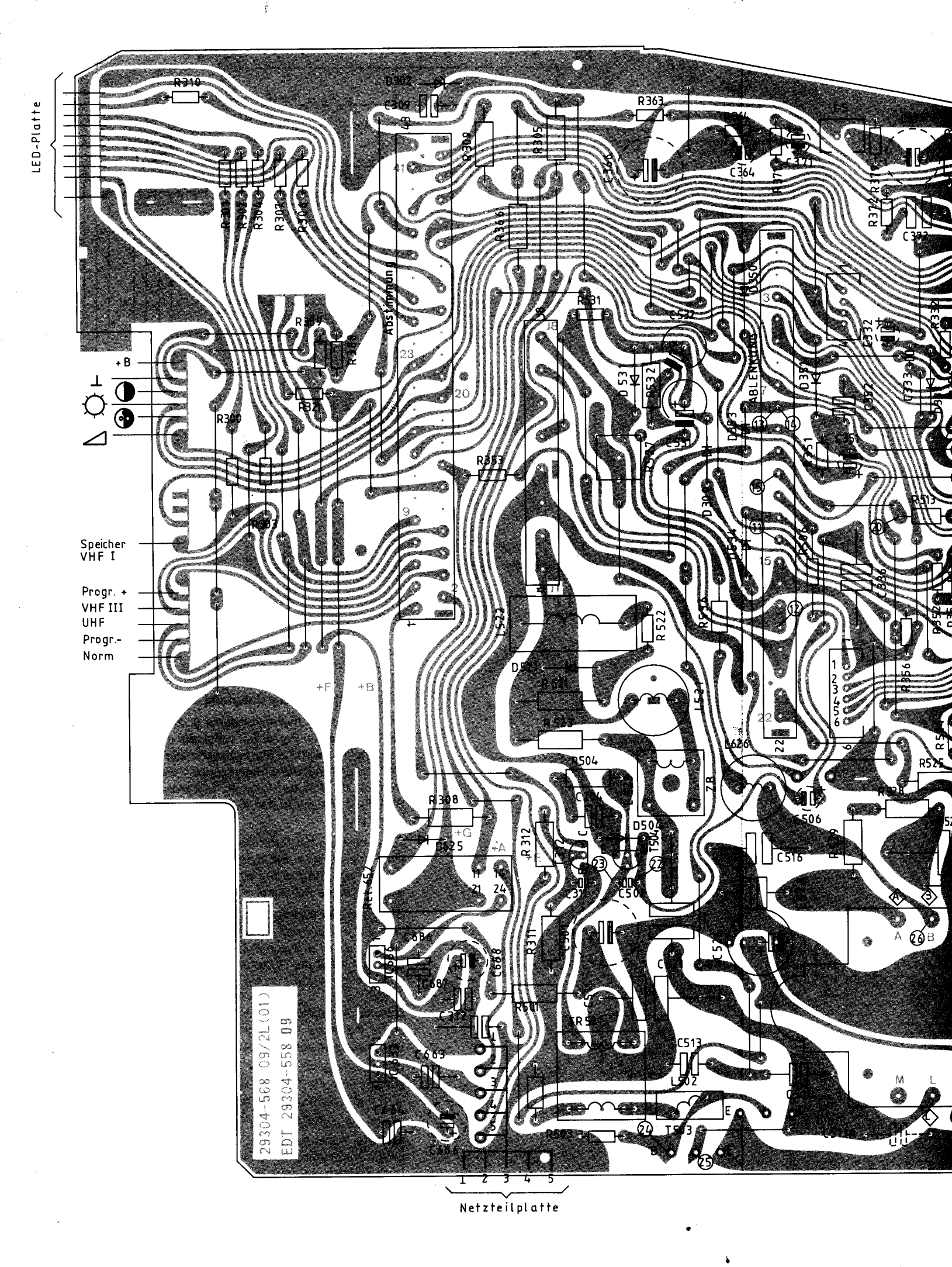


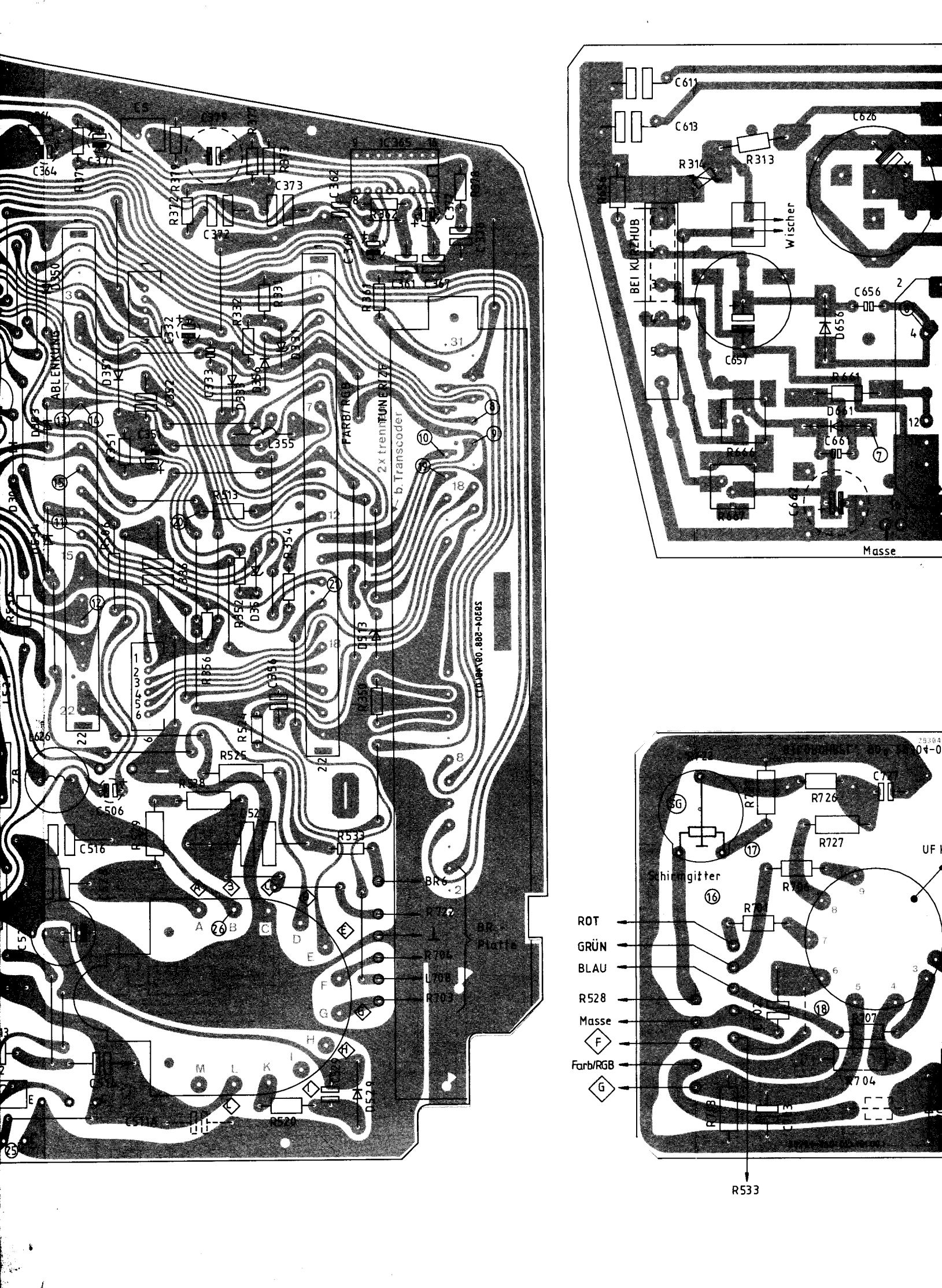
○ ● Netzschalter
Mains switch
Interruttore di rete

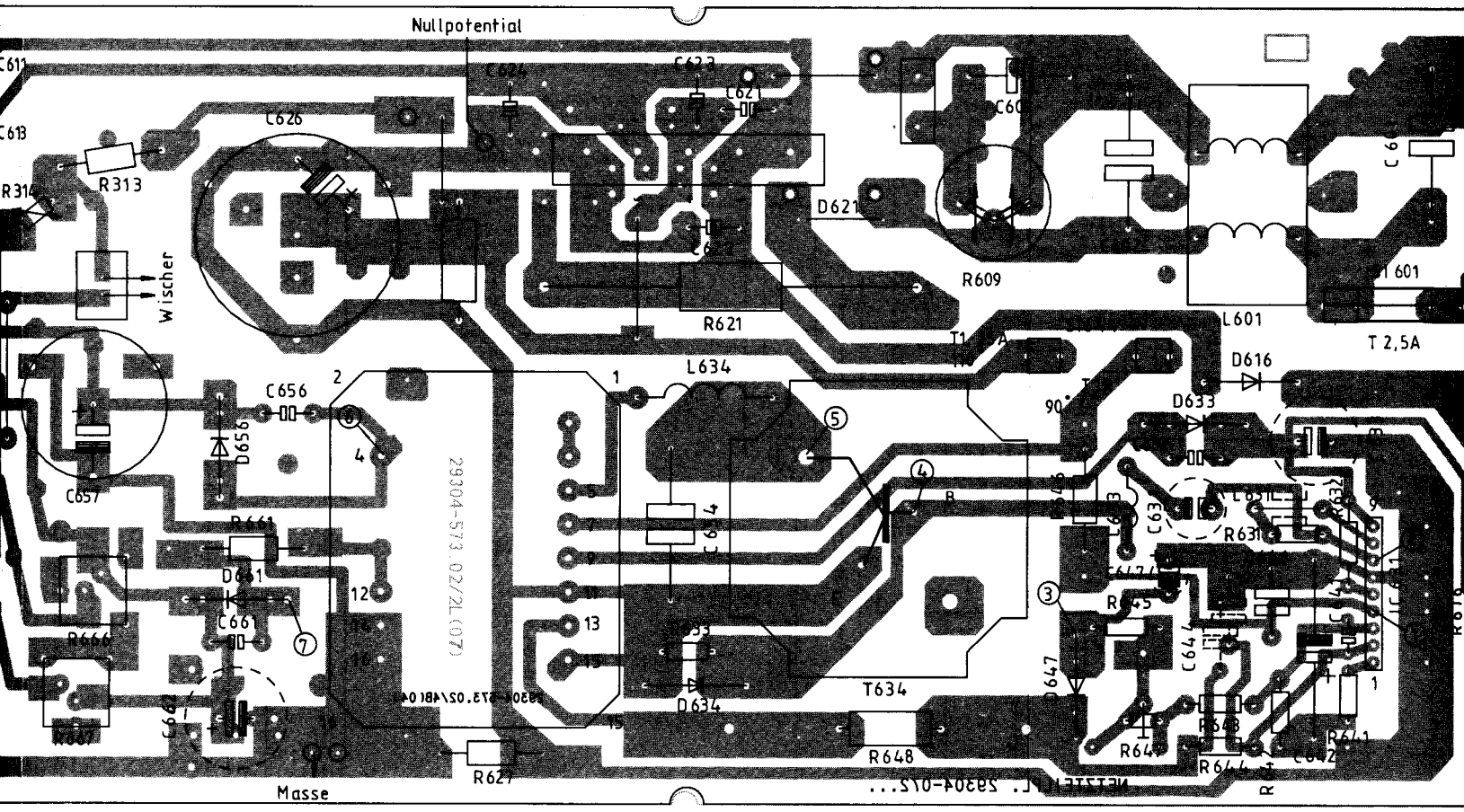
Regler + A
Control + A
Regolatore + A

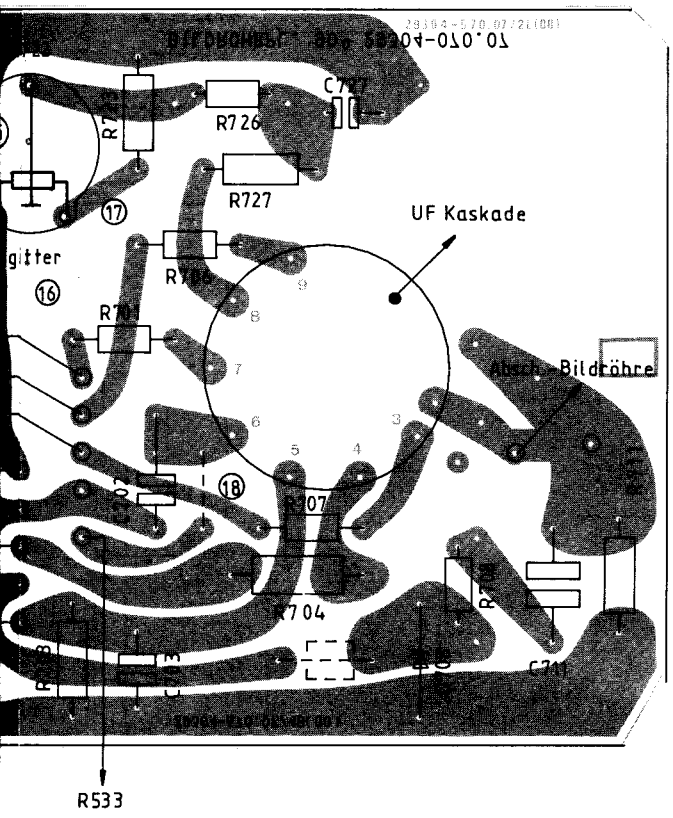
Lautstärke
Volume
Volume

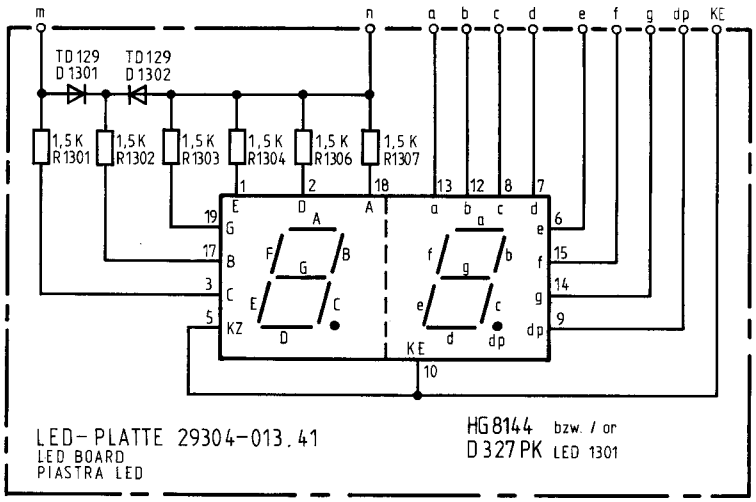
Farbkontrast
Colour contrast
Contrasto colore

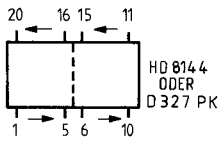

LED-Platte
Speicher VHF I
Progr. +
VHF III
UHF
Progr.-
Norm
+B
ABSTIMMUNG
ABLENKUNG
29304-568 09/2L(01)
EDT 29304-558 09
Netzteilplatte


C611
C613
C626
R313
R314
Wischer
BEI KURZHUB
C656
D656
C657
R661
D661
C661
R664
R667
Masse
ABLENKUNG
FARB/RGB
2x trennTUNER 70
b. Transcoder
L355
R514
R354
R525
R528
R533
C506
C516
BR6
R704
L708
R703
BR-Platte
C511A
R520
D520
Schirmgitter
R726
R727
R707
R704
ROT
GRÜN
BLAU
R528
Masse
Farb/RGB
R533

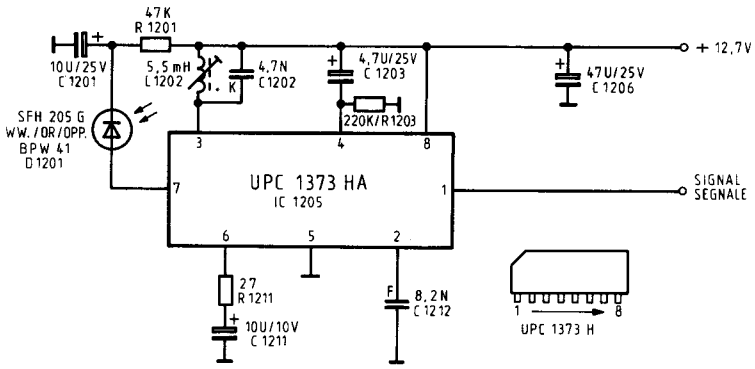






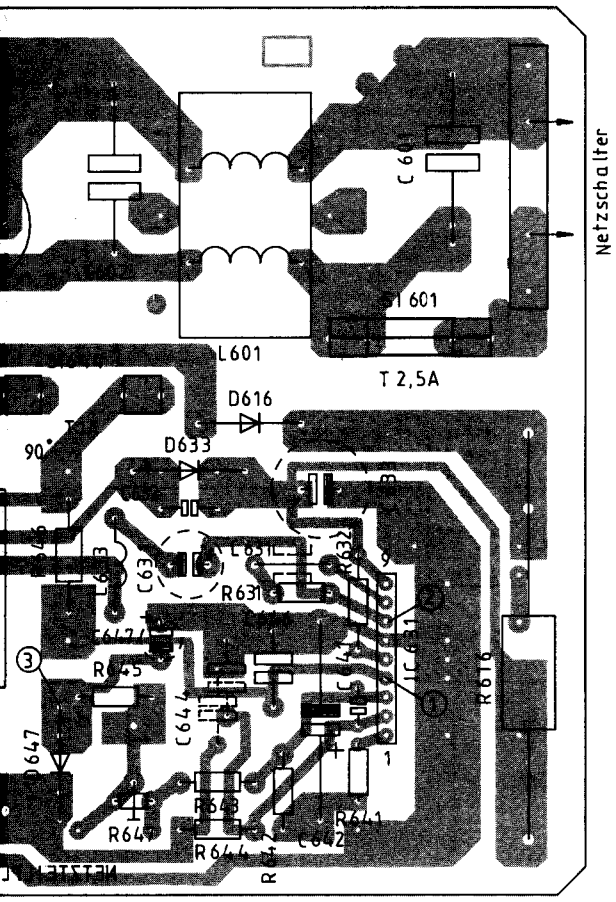


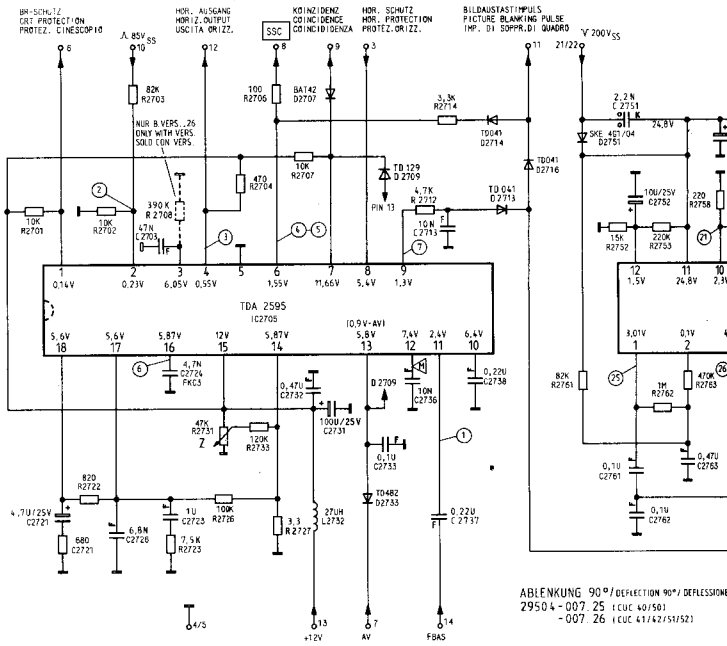
LED ANZEIGE VON OBEN GESEHEN
LED INDICATO. TOP VIEW
INDICATORE LED VISTO DA SOPRA

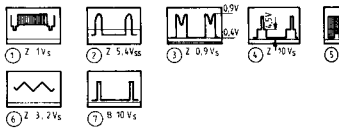


29304-015.53 IR-VORVERST. / Infrared preampl. / Preampl. all'infrarosso

Kein An
When re
No ènec
sostituzi







Anpassungsabgleich bei Austausch der Steckkarte
Matching alignment necessary when replacing the plug-in board
Taratura di adattamento dopo la sostituzione di uno scheda ad innesto

kurzschließen.
Zeilenoszillator auf Sollfrequenz einstellen. Kurzschluß entfernen.

Short circuit test point marked MP. Adjust control marked Z for stationary picture (as near as possible). Remove short circuit.

Cortocircuitare i punti MP.
Regolare L'oscillatore di riga sulla frequenza nominale. Allontanara il cortocircuita.

Bildhöhe so einstellen, daß der Testbildkreis rund ist.

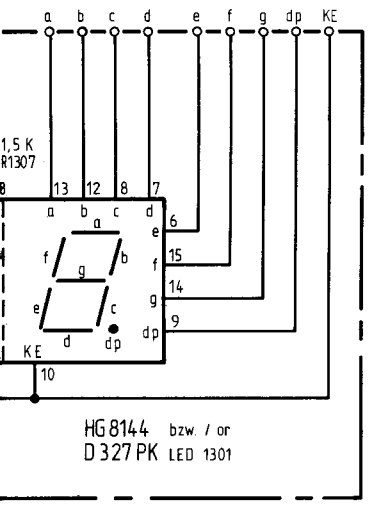
Adjust the field height so that the test card circle is round.

La regolazione dell'altezza del quadro viene effettuata in modo da rendere rotondo il cerchio del monoscopio.

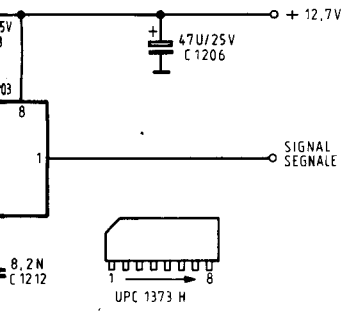
Schirmbild auf gle
Linearität bringen.

Adjust for overall field l

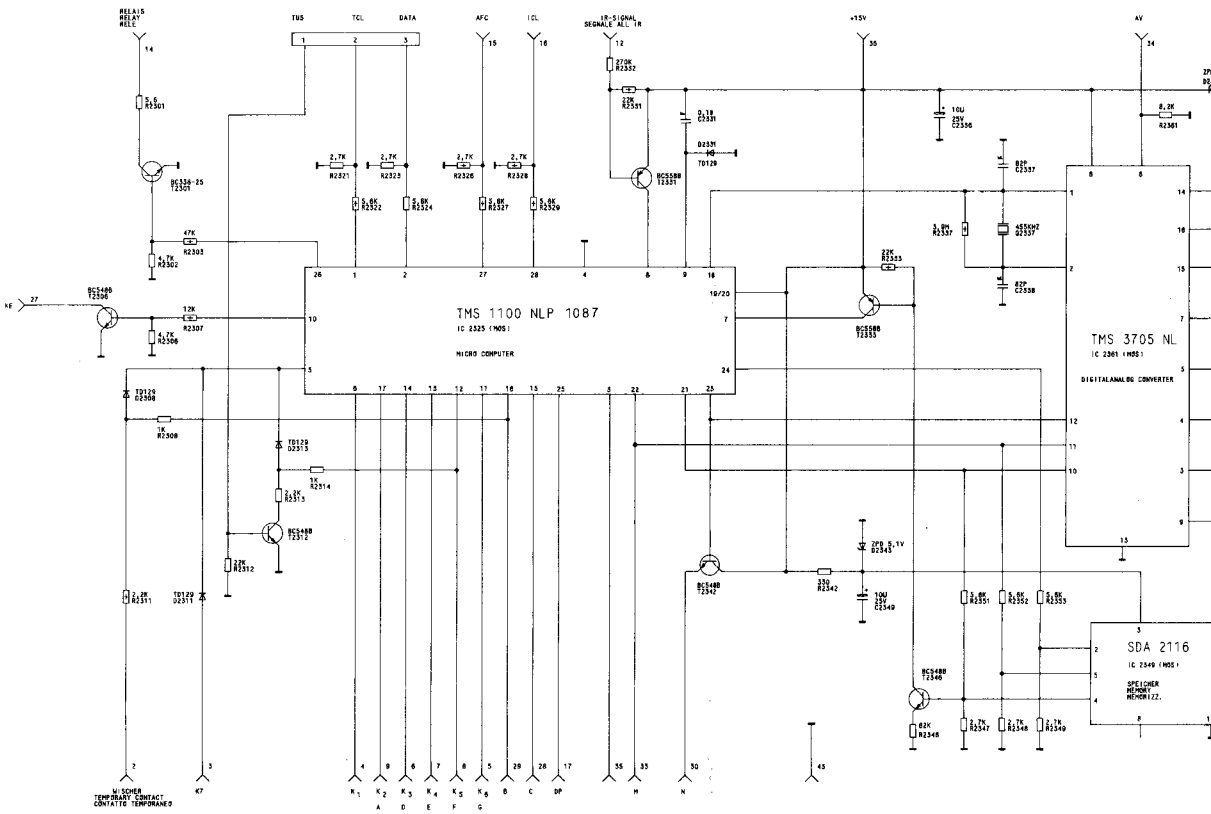
Portare l'immagine in lin
metila.



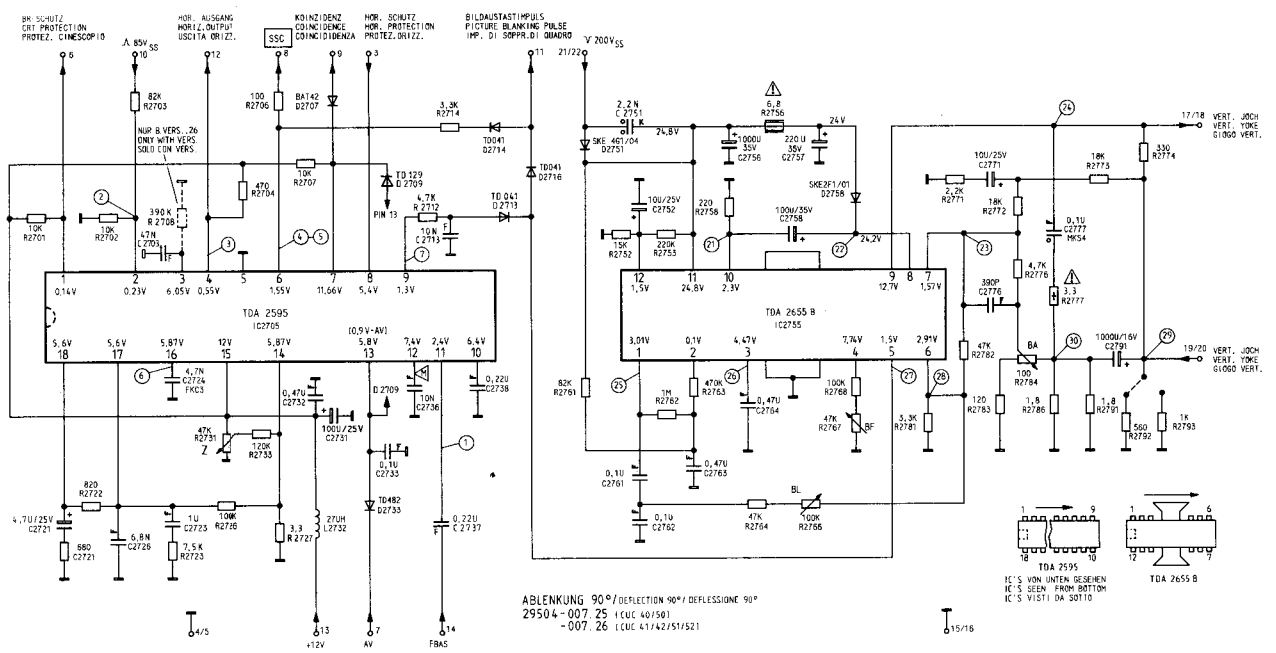
LED ANZEIGE VON OBEN GESEHEN
LED INDICATO, TOP VIEW
INDICATORE LED VISTO DA SOPRA

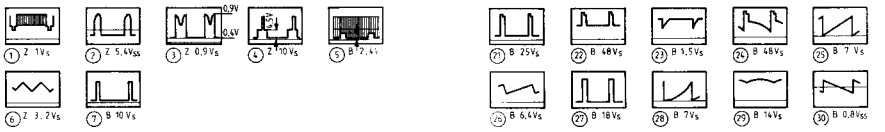


BRVERST. / Infrared preampl. / Preampl. all'infrarosso



Kein Anpassungsabgleich bei Austausch der Steckkarte notwendig
When replacing the plug-in board, no alignment is necessary
No ènecessaria nessuna taratura di adattamento dopo la sostituzione di una scheda ad innesto





Anpassungsabgleich bei Austausch der Steckkarte
Matching alignment necessary when replacing the plug-in board
Taratura di adattamento dopo la sostituzione di uno scheda ad innesto

MP kurzschließen.
Zeilenoszillator auf Sollfrequenz einstellen. Kurzschluß entfernen.

Short circuit test point marked MP. Adjust control marked Z for stationary picture (as near as possible). Remove short circuit.

Cortocircuitare i punti MP.
Regolare L'oscillatore di riga sulla frequenza nominale. Allontanara il cortocircuita.

Bildhöhe so einstellen, daß der Testbildkreis rund ist.

Adjust the field height so that the test card circle is round.

La regolazione dell'altezza del quadro viene effettuata in modo da rendere rotondo il cerchio del monoscopio.

Schirmbild auf gleichmäßige Linearität bringen.

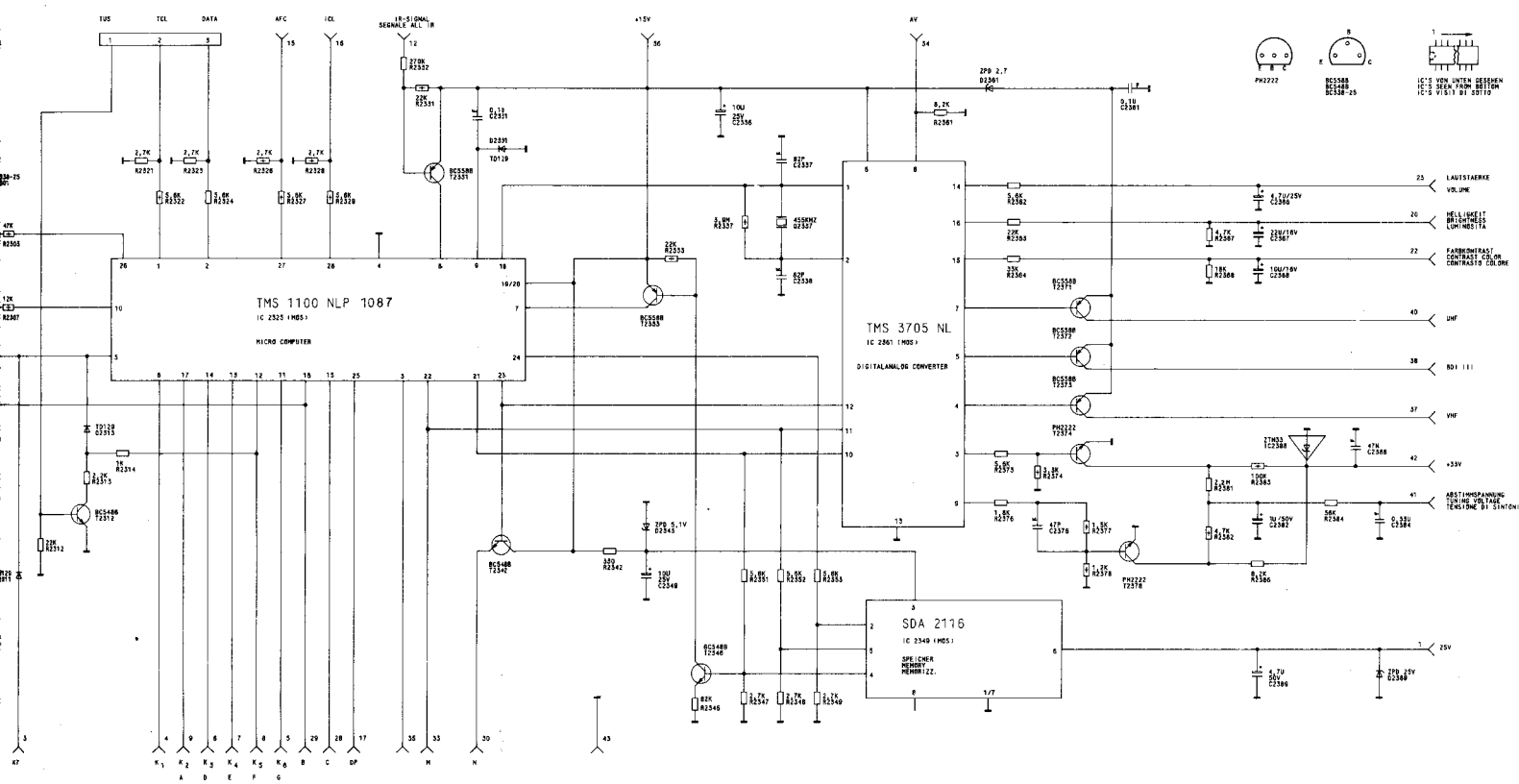
Adjust for overall field linearity.

Portare l'immagine in linearità simmetila.

Regler BF verdrehen, bis das Bild nach unten durchzulaufen beginnt, dann Regler BF so einstellen, daß das Bild sichtbar nach oben einrastet.

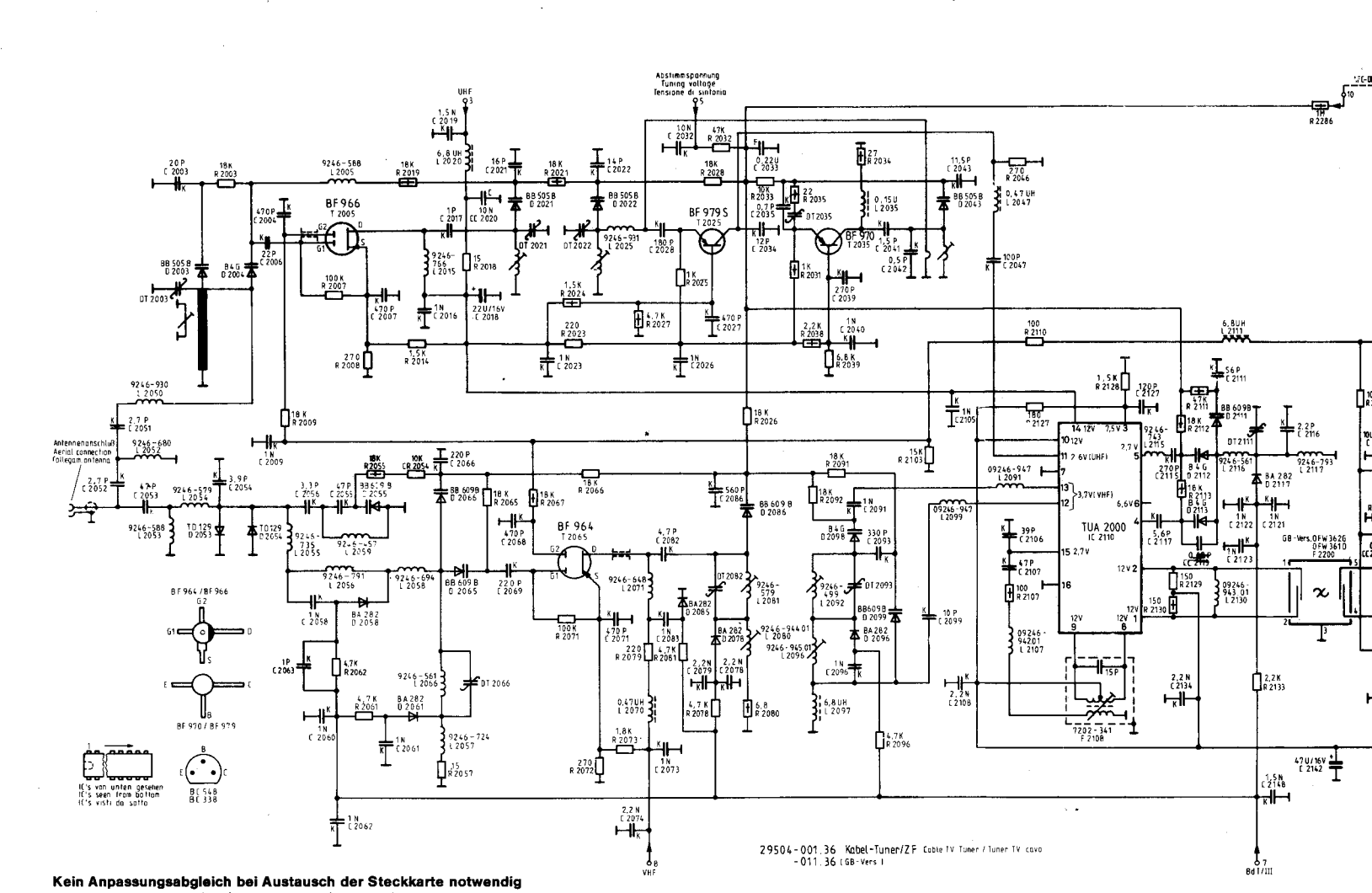
Adjust control BF so that the pictu-re starts to roll downwards and then adjust for a stationary picture.

Regolare il regolatore BF finche il quadro comincia a spostarsi verso il basso e poi regolarto fino a che il quadro effettua la sua ultima variazione da sotto a sopra.

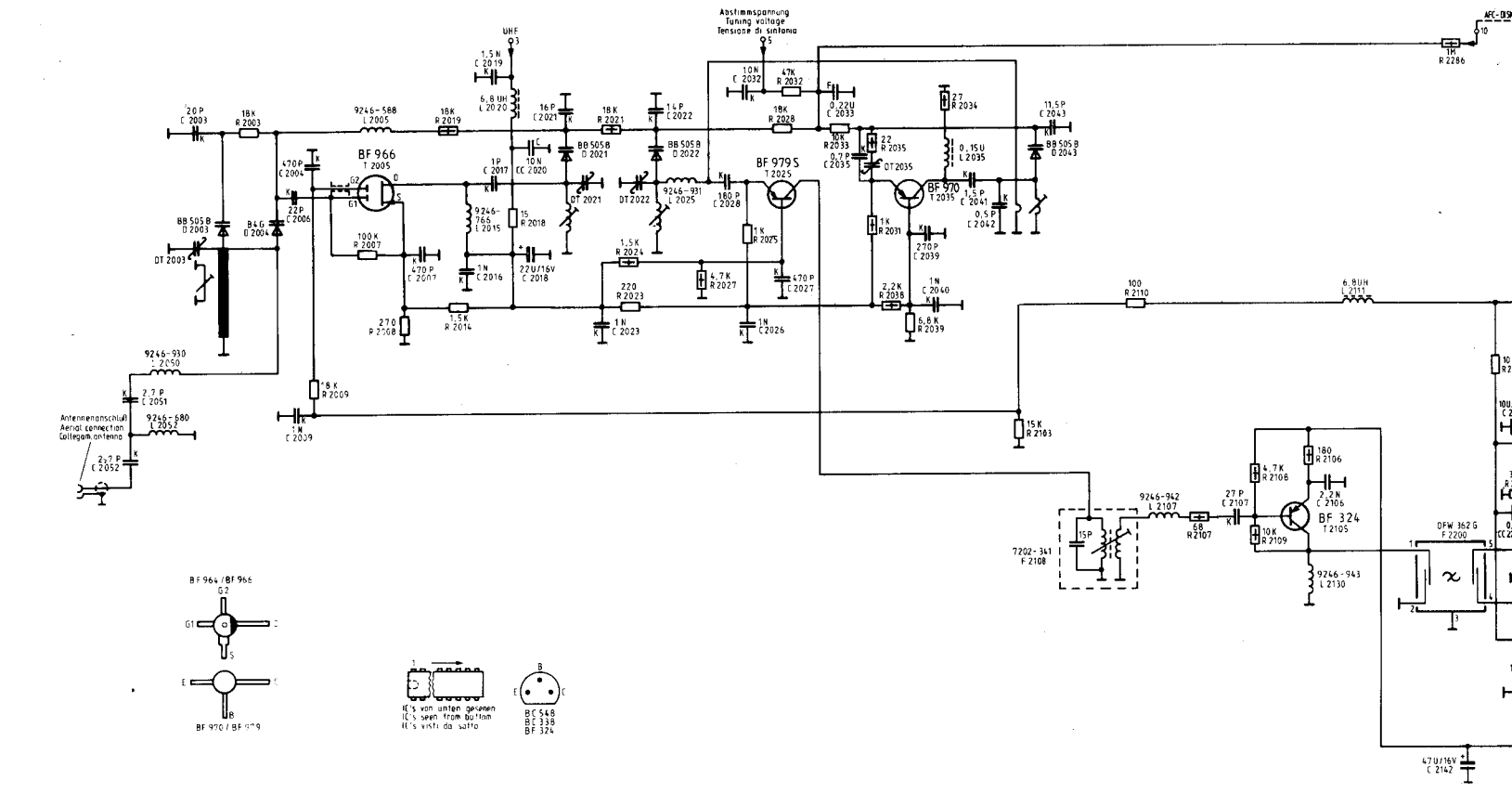


gleich bei Austausch der Steckkarte notwendig
plug-in board, no alignment is necessary
una taratura di adattamento dopo la
scheda ad innesto

29504-003.22 ABSTIMMUNG/TUNING/SINTONIA

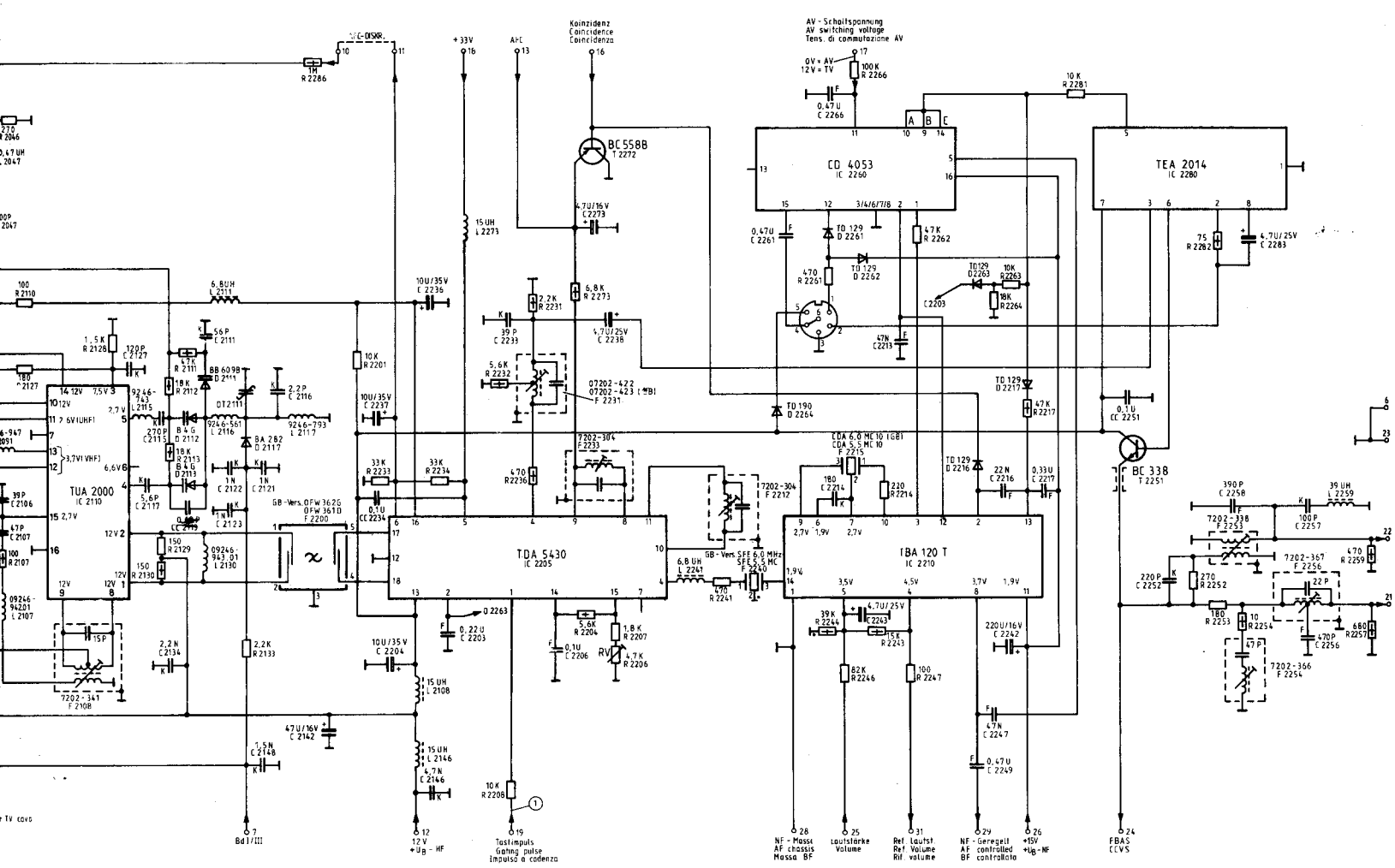


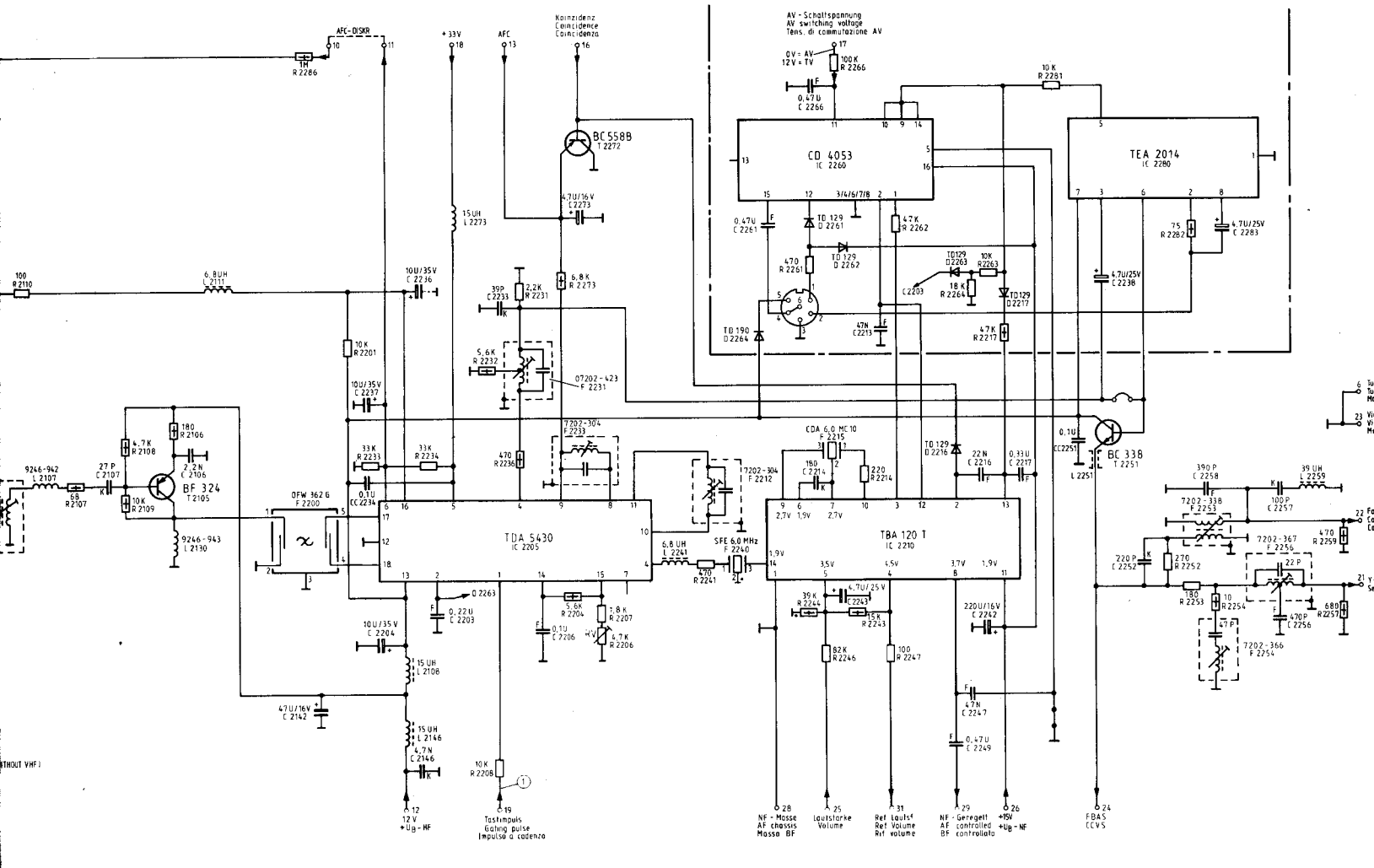
Kein Anpassungsabgleich bei Austausch der Steckkarte notwendig
When replacing the plug-in board, no alignment is necessary
No è necessaria nessuna taratura di adattamento dopo la sostituzione di una scheda ad innesto

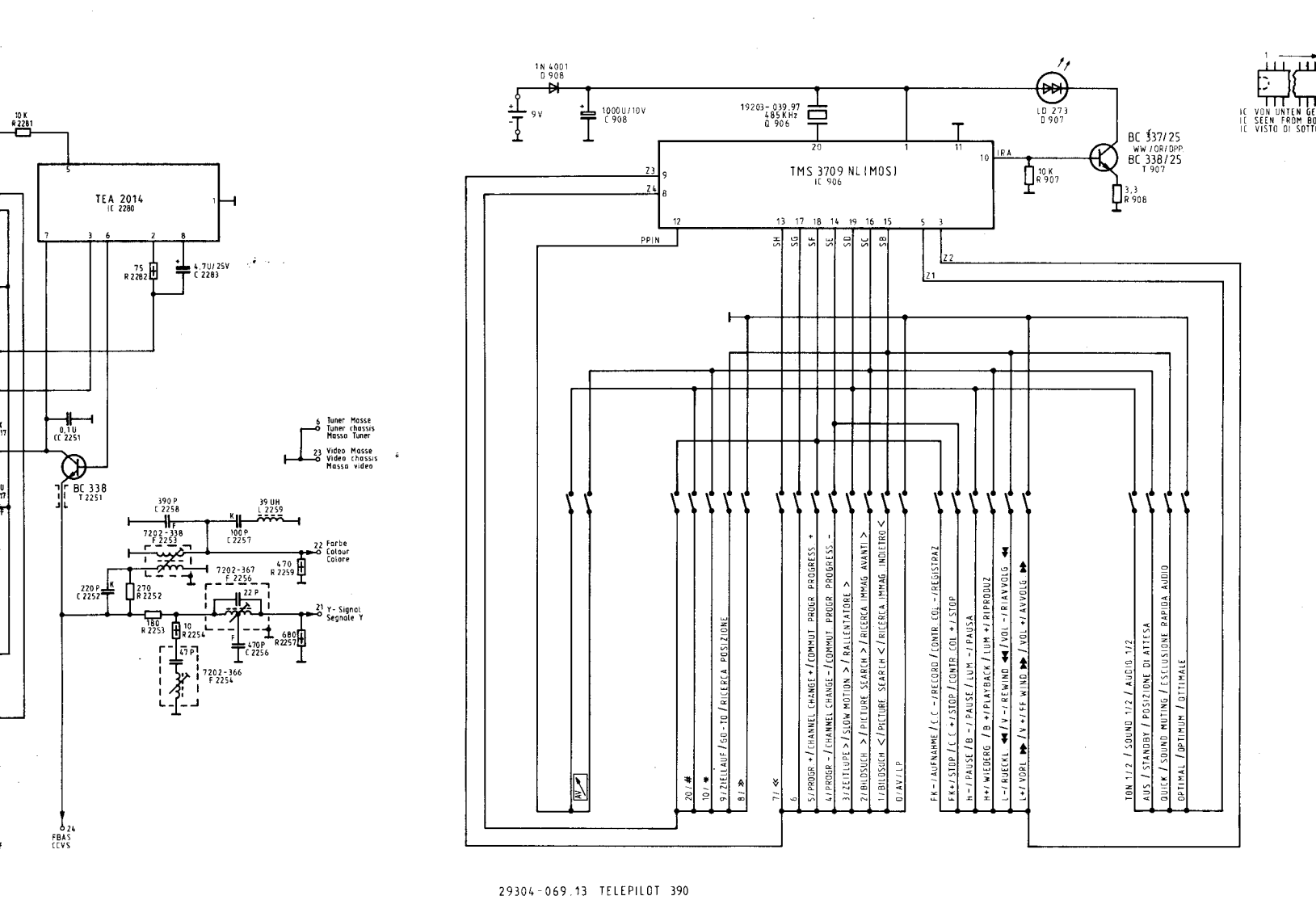


Tuner/ZF 29504-011.38 (SL-TP/SELF-SEEKER TP)
TV Tuner -011.58 (KH OHNE VHF/SHORT-TRAVEL BUTTON SET WITHOUT VHF)

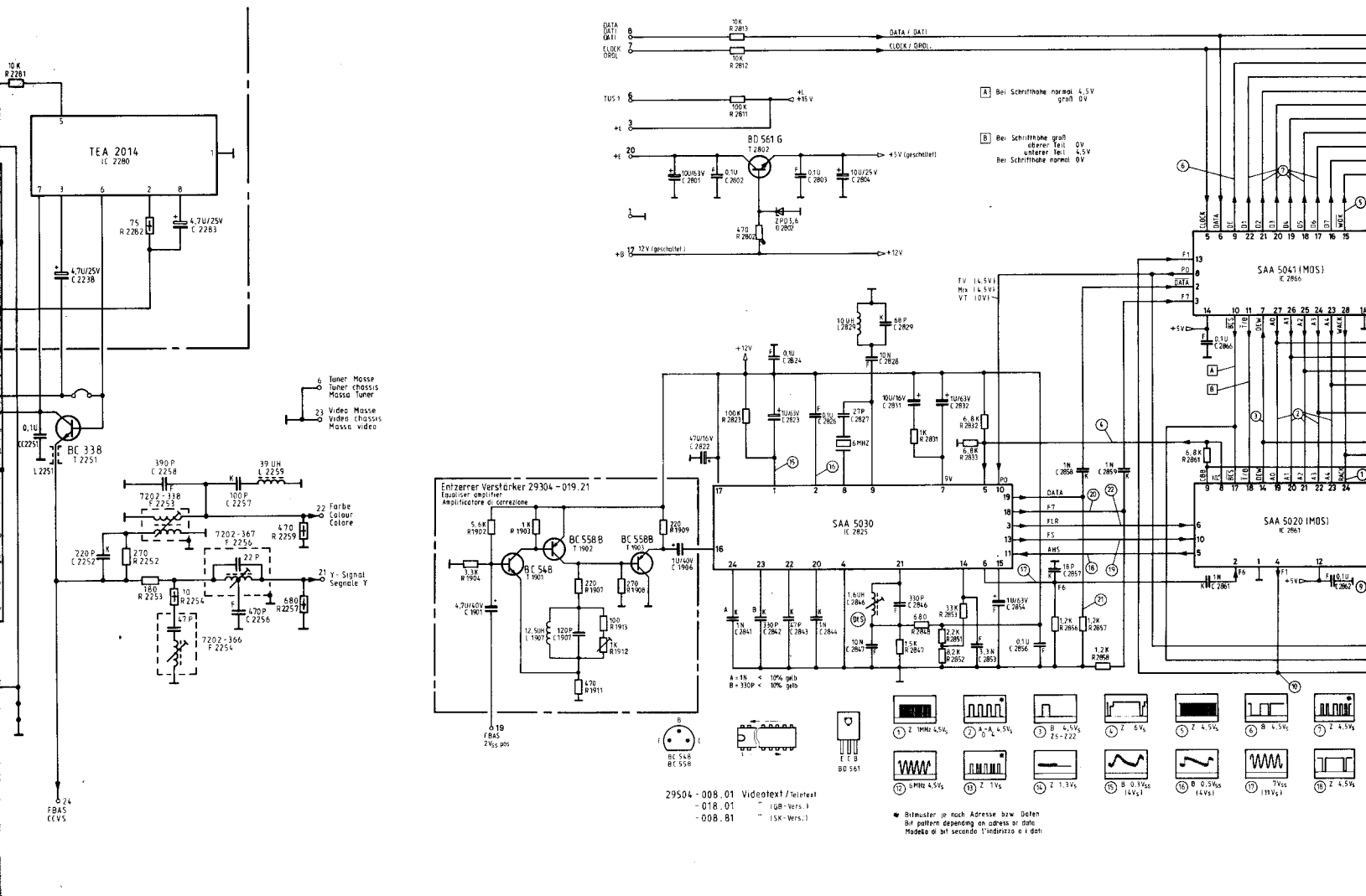
Kein Anpassungsabgleich bei Austausch der Steckkarte notwendig
When replacing the plug-in board, no alignment is necessary
No è necessaria nessuna taratura di adattamento dopo la sostituzione di una scheda ad innesto

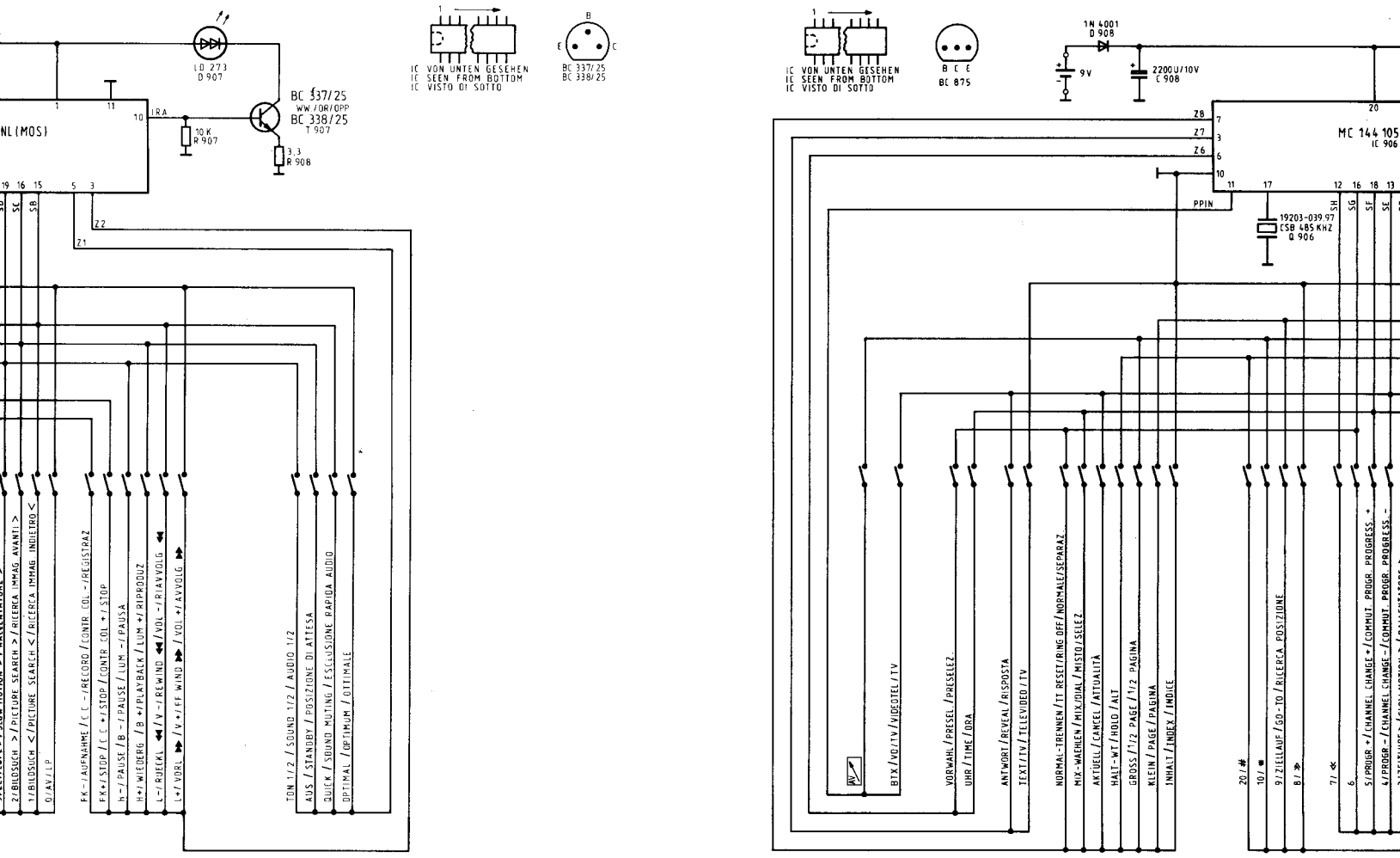

AFC-DISKR.
+33V
AFC
Koinzidenz
Coincidence
Coincidenza
AV - Schaltspannung
AV switching voltage
Tens. di commutazione AV
0V = AV
12V = TV
BC 558B
T 2272
CD 4053
IC 2260
TEA 2014
IC 2280
TUA 2000
IC 2110
TDA 5430
IC 2205
TBA 120 T
IC 2210
BC 338
T 2251
NF - Masse
AF chassis
Massa BF
Lautstärke
Volume
Ref. Lautst.
Ref. Volume
Rif. volume
NF - Geregelt
AF controlled
BF controlato
FBAS
CCVS
Tastimpuls
Gating pulse
Impulso a cadenza
12V
+Ub - HF
+15V
+Ub - NF


AFC-DISKR.
+33V
AFC
Koinzidenz
Coincidence
Coincidenza
AV - Schaltspannung
AV switching voltage
Tens. di commutazione AV
0V = AV
12V = TV
BC 558B
T 2272
CD 4053
IC 2260
TEA 2014
IC 2280
BF 324
T 2105
TDA 5430
IC 2205
TBA 120 T
IC 2210
BC 338
T 2251
NF - Masse
AF chassis
Massa BF
Lautstärke
Volume
Ref. Lautst.
Ref. Volume
Rif. volume
NF - Geregelt
AF controlled
BF controlato
FBAS
CCVS
Tastimpuls
Gating pulse
Impulso a cadenza
12V
+Ub - HF
+15V
+Ub - NF

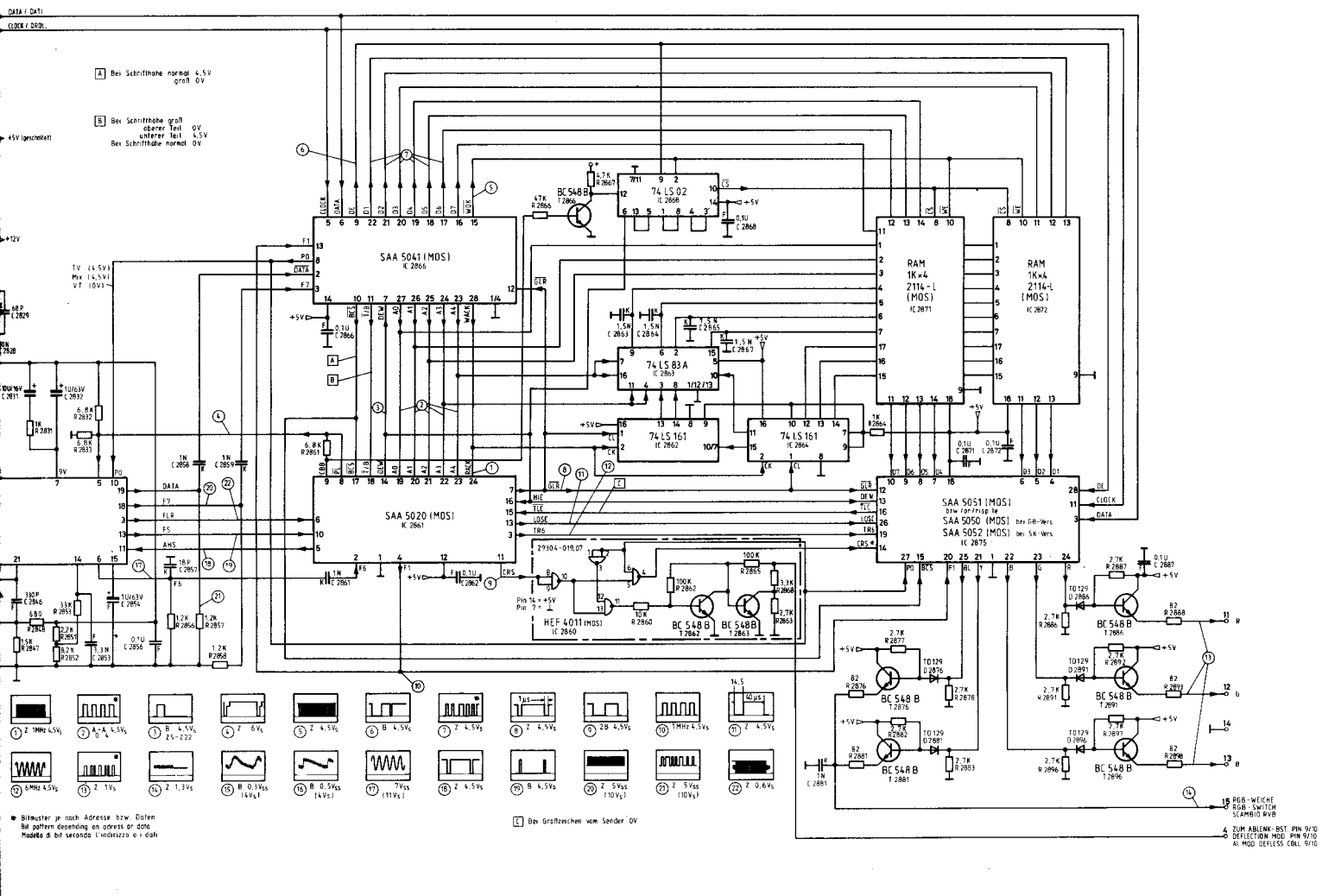


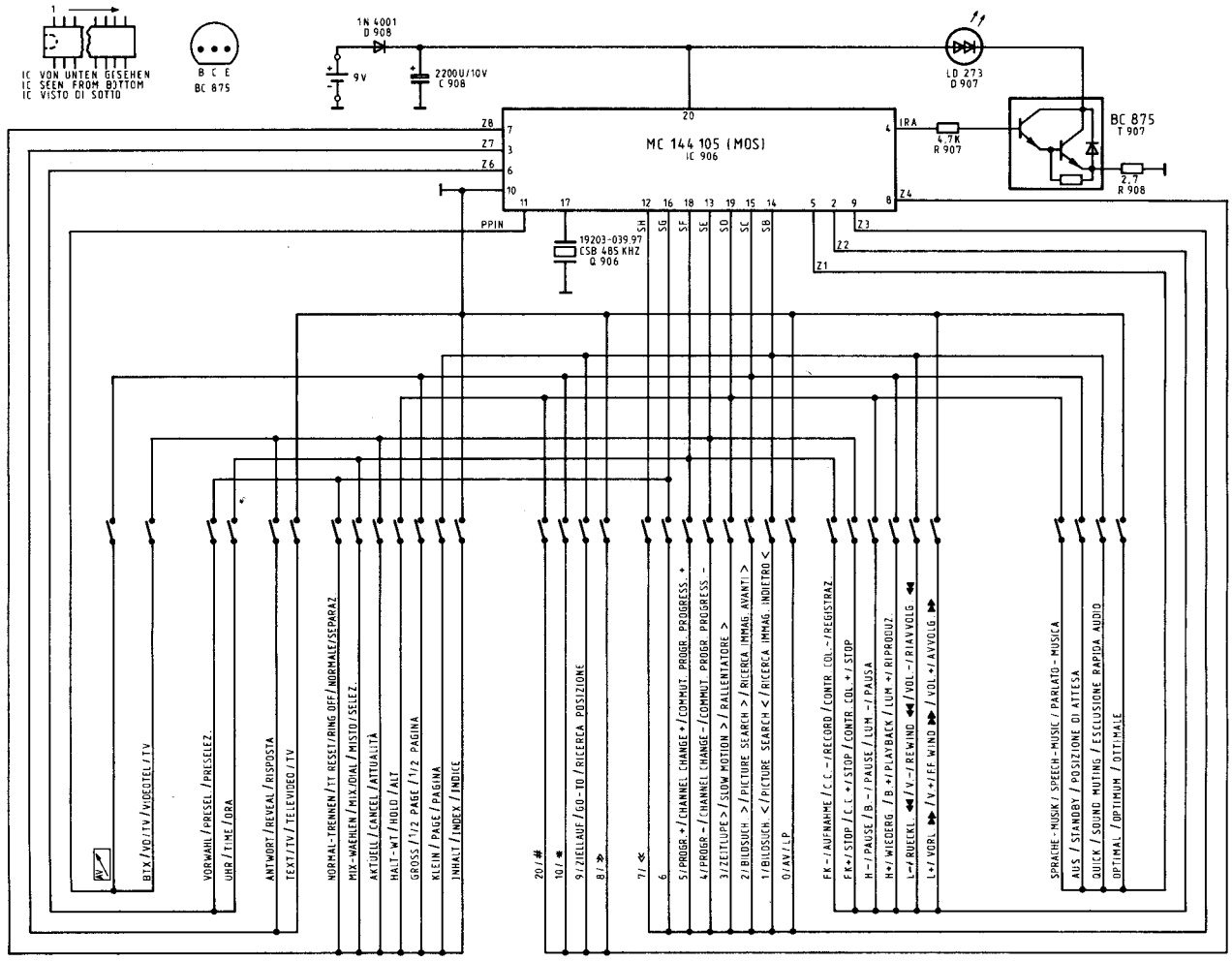
29304-069.13 TELEPILOT 390



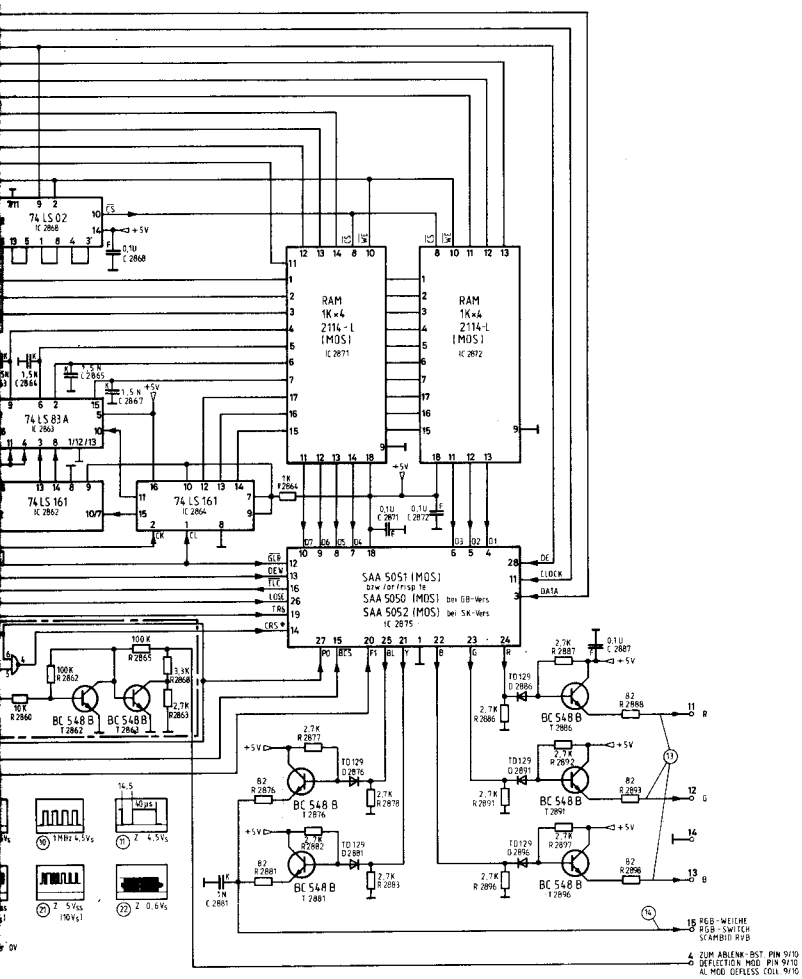


29304-064.22 TELEPILOT 590 VT/TT





29304-064.22 TELEPILOT 590 VT/TT



Behelfsjustierung der Datentakt-Schwingkreisspule

Die Datentakt-Schwingkreisspule (L 2846) bildet zusammen mit C 2846 einen Parallelschwingkreis mit hoher Güte; dieser Schwingkreis wird zur Filterung schmaler Impulse, die aus den Flanken des Videotext-Datensignals gewonnen werden, verwendet. Mit Hilfe des internen Taktgenerators der Schaltung SAA 5030 wird ein zu den Videotext-Daten synchroner Datentakt erzeugt.

Zur Justierung der Datentakt-Schwingkreisspule ist zunächst ein Fernsehsender mit Videotext-Datensignalen einzustellen. Es soll nach Möglichkeit ein Signal sein, das gut empfangen wird und keine Reflexionen (Echos) aufweist.

Die Seite 199 (Clock-Cracker) wird angewählt und das HF-Signal soweit abgeschwächt bis die Fehlerschwelle erreicht ist, d.h. bis die ersten falschen Zeichen auf dem Schirm erscheinen. Die Induktivität der Datentakt-Schwingkreisspule L 2846 wird nun solange verstellt bis ein Fehlerminimum oder Fehlerfreiheit erreicht ist. Bei Fehlerfreiheit wird nun nochmals bis zur Fehlerschwelle abgeschwächt und auf Fehlerminimum abgeglichen. Dieser Vorgang wird solange wiederholt bis sich ein eindeutiges Fehlerminimum eingestellt hat.

Während des Abgleiches ist es notwendig, die Seite 199 ständig neu anzuwählen, da nur so die Seite neu eingelesen wird und eine Beurteilung der Fehlerschwelle möglich ist.

Der Einsteller R 1912 steht bei Auslieferung auf Linksanschlag (kleinste Höhenanhebung, ca. 2 dB). Treten trotz einwandfreiem Antennensignal und korrekt abgeglichener Spule L 2846 noch Zeichenfehler auf, R 1912 langsam nach rechts verstellen, bis Fehler verschwinden. Nicht weiterdrehen, da Fehlerhäufigkeit wieder zunehmen kann.

Coarse adjustment of the Data Clock-Pulse Oscillator Coil

The data clock-pulse oscillator coil (L 2846), along with C 2846, forms a high-Q parallel tuned circuit. This circuit is used for

Coarse adjustment of the Data Clock-Pulse Oscillator Coil

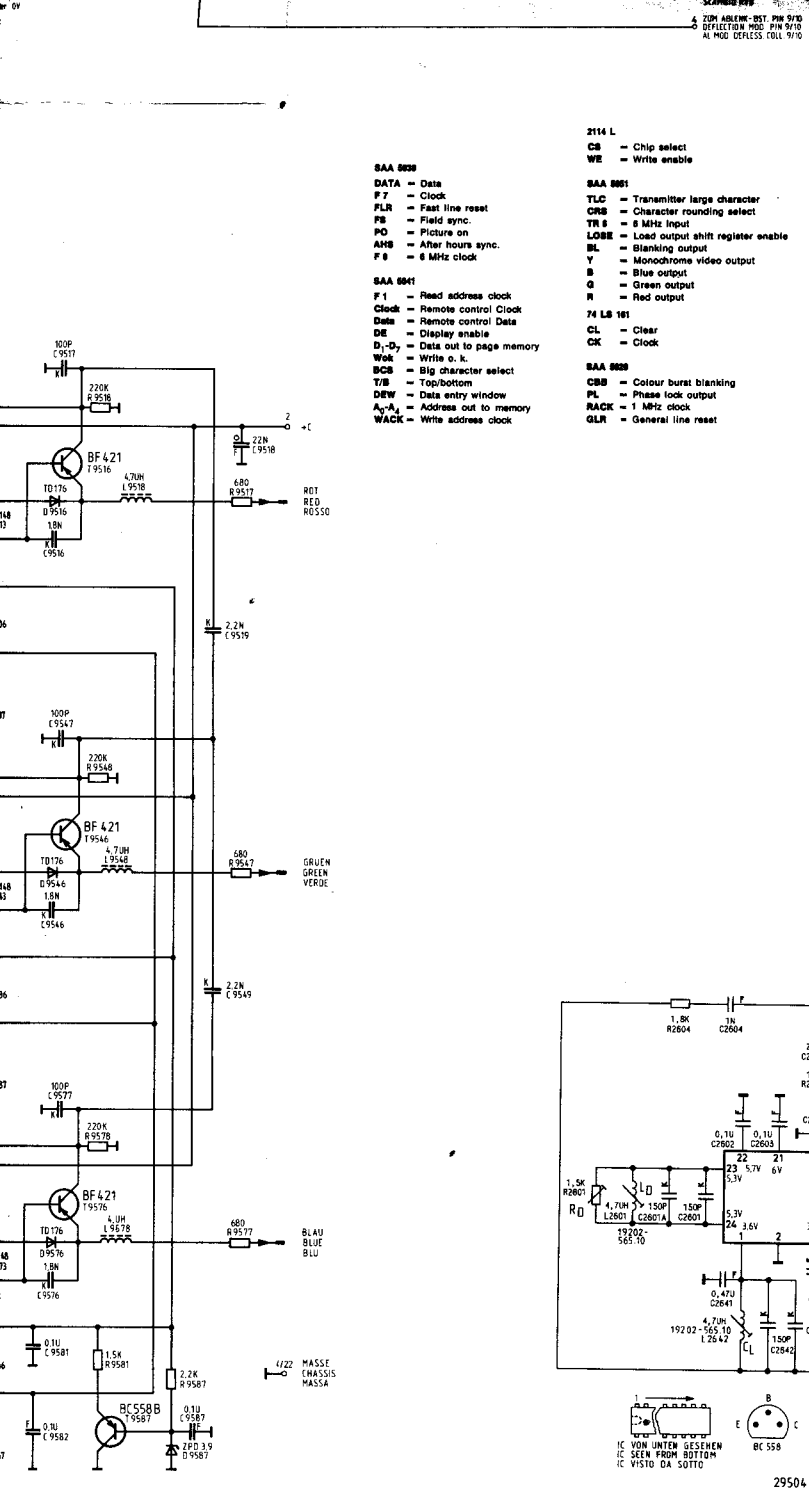
The data clock-pulse oscillator coil (L 2846), along with C 2846, forms a high-Q parallel tuned circuit. This circuit is used for filtering narrow pulses which are obtained from the edges of the teletext data signal. The internal clock generator in the SAA 5030 is used to generate a data clock-pulse which is synchronous with the Teletext data.

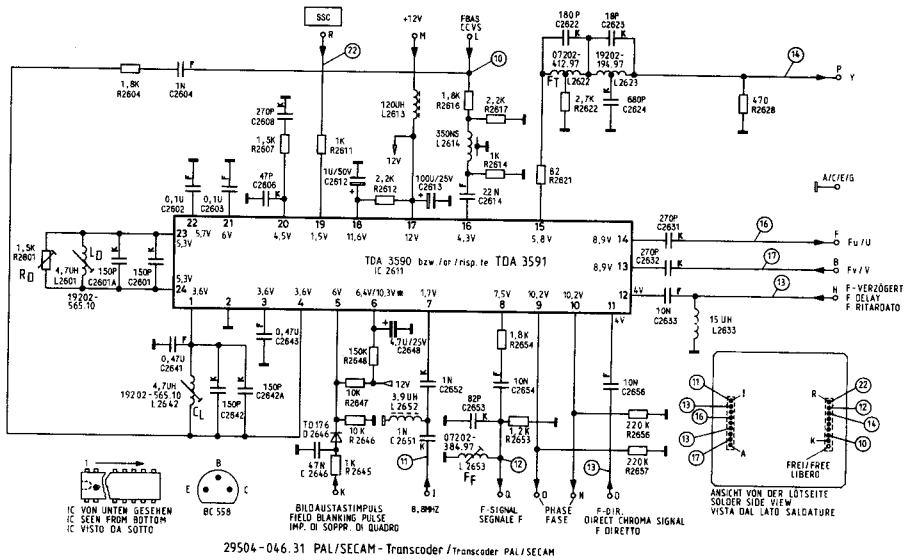
To adjust the data clock-pulse oscillator coil the set should first be tuned to a transmitter broadcasting Teletext data. If possible the reception of the signal should be good and should not exhibit any reflections (ghosts).

Page 199 (Clock-Cracker) is selected and the RF signal attenuated until the error threshold is reached, ie: until the first incorrect symbols appear on the screen. The inductance of the data clock-pulse oscillator coil L 2846 is now adjusted until minimum error level or freedom from errors is achieved. If errors are absent, the attenuation is again adjusted to the error threshold and then set for minimum error. This procedure is repeated until a clear minimum error level is achieved.

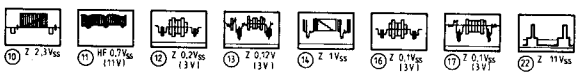
Page 199 must always be selected anew during the adjustment, as only this effects a new read-in of the page making it possible to evaluate the error level.

The control R 1912 is set in the fully anticlockwise position when the unit is delivered (smallest treble boost: approx. 2 dB). If, with a perfect aerial signal and the coil L 2846 correctly adjusted, character faults still occur, turn R 1912 slowly clockwise until the faults disappear. Do not turn R 1912 up any further as error rate may increase again.





29504-046.31 PAL/SECAM - Transcoder / Transcoder PAL/SECAM



Spannungen gemessen mit Digitalvoltmeter b. Secam-Testbild. Spannungen mit ✱ gemessen mit Digitalvoltmeter b. PAL.
Voltages measured with digital voltmeter and Secam-test picture. Voltages with ✱ are measured with digital voltmeter and PAL.
Tens. misurate con voltmetro digitale in presenza di monoscopio Secam. Tens. con ✱ misurate con voltmetro digitale in presenza di monoscopio PAL.

1) Taratura del bianco
   - Applicare un monoscopio FuBK
   - Regolare ⊕ al minimo, ☼ sul valore nominale ed ◑ al massimo.
   - Con i regolatori V_G e V_B eliminare eventuali macchie di colore visibili su tutta la scbala dei grigi.
2) Taratura del punto di blocco
   Una regolazione manuale non è possibile, poiché questa scheda ad innesto incorpora una regolazione automatica della corrente d'oscurità.
   Controllo del punto di blocco (è necessario un oscilloscopio):
   - Applicare un monoscopio Fu BK.
   - Controllare la taratura del bianco.
   - Regolare ⊕ al minimo, ☼ sul valore nominale ed ◑ al minimo.
   - Collegare la sonda dell'oscilloscopio ai collettori dei transistori T 9511, T 9541 e T 9571 ed annotare i valori del nero della scala dei grigi.
   - Collegare la sonda dell'oscilloscopio al collettore del transistore che ha il maggior valore del nero e regolarlo su 165 V con il regolatore G 2.
     Valori orientativi per la tensione G 2:
   - per apparecchi ≦ 20": ca. 550 V
   - per apparecchi > 20": ca. 650 V
3) Regolazioni dell'oscillatore colore e PAL
   - Applicare un monoscopio FuBK.
   - Regolare ⊕, ☼ ed ◑ sul valore nominale.
   - Collegare la sonda dell'oscilloscopio al terminale 14 dell'IC TDA 3303 .
     Con il regolatore BP e la bobina LZ portare a copertura le immagini doppie del segnale - (B-y).

Bei Eingriffen Schutzmaßnahmen für MOS-Bauteile beachten!

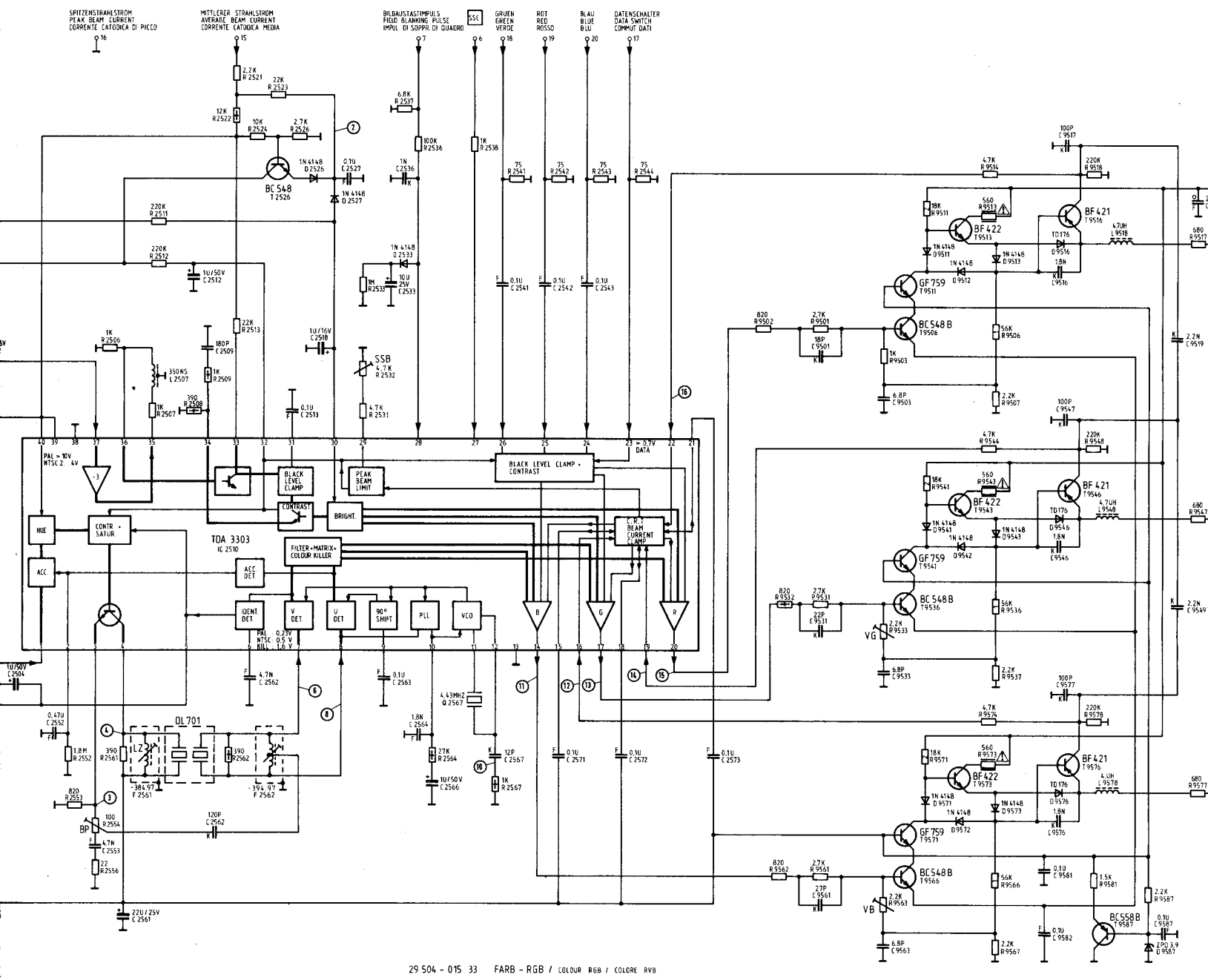
When handling MOS-circuits, always observe the MOS protection measures!

Adoperando componenti o circuiti MOS, osservarne le corrispondenti misure di protezione!

Die mit ⚠ bezeichneten Bauteile sind nach den Richtlinien des VDE bzw. IEC für die Gerätesicherheit und die mit ⚠ bezeichneten für die einwandfreie Gerätefunktion unbedingt notwendig. Im Ersatzfall dürfen nur Originalteile Verwendung finden.

The components marked ⚠ conform to VDE or IEC guidelines and are essential for safe operation of the set, while those marked ⚠ are required for correct operation. Use specified parts only when replacing.

I componenti ⚠ hanno la massima importanza per la sicurezza dell'apparecchio e sono conformi alle norme VDE o IEC e quelli ⚠ sono assolutamente necessari per il funzionamento perfetto dell'apparecchio. In caso di sostituzione impiegare quindi soltanto pezzi di ricambio originali.



29 504 - 015 33 FARB - RGB / COLOUR RGB / COLORE RVB

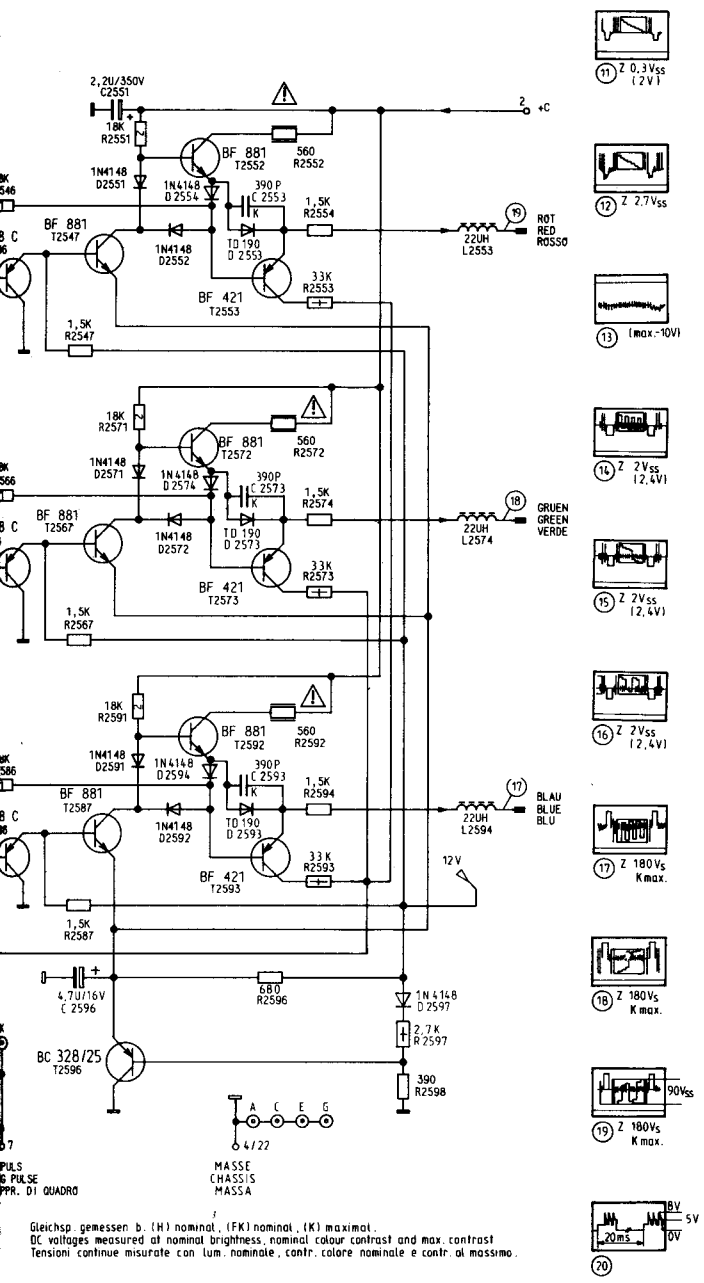
i Austausch der Steckkarte
cessary when replacing the plug-in board
o dopo la sostituzione di una scheda ad innesto

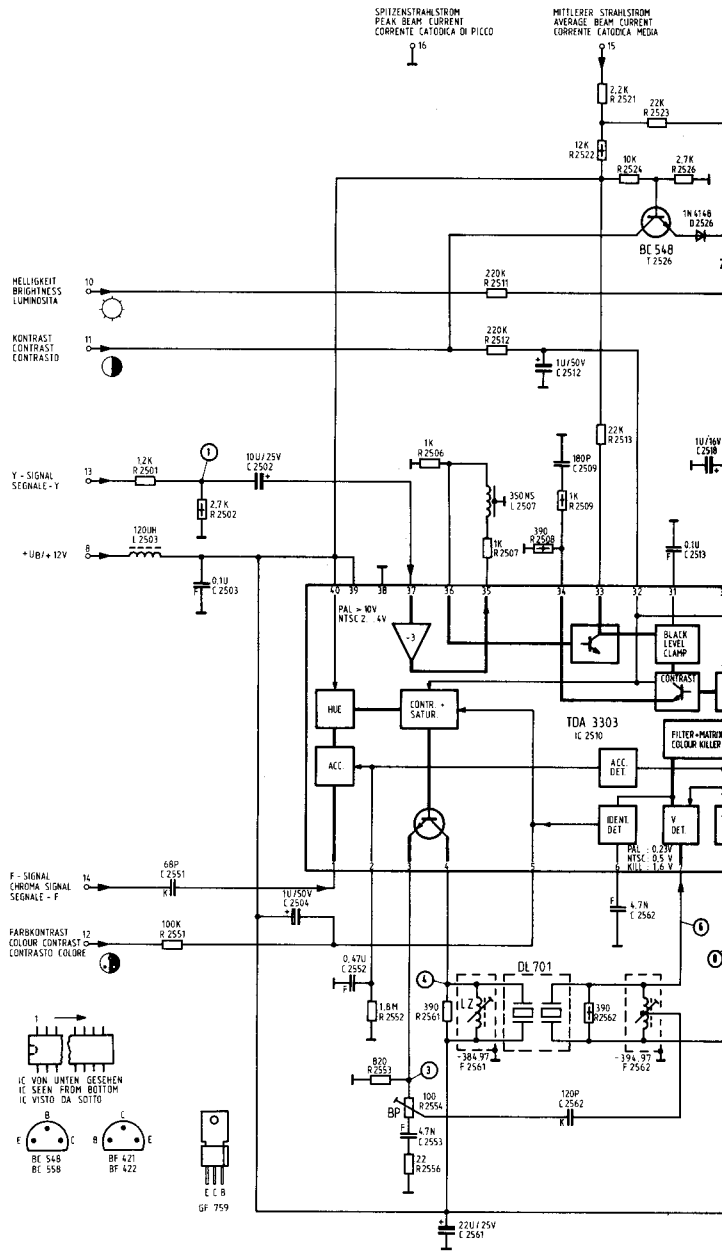
peisen
einstellen
so einstellen, daß keine Verfärbungen in den Grauwerten sichtbar

llung ist nicht möglich, da die Steckkarte eine automatische Dun-
sitzt.
punkts (Oszilloskop erforderlich).
peisen
trollieren
einstellen
llektoren der Transistoren T 9511, T 9541, T 9571 anhängen und die
8stufigen Grautreppe notieren.
Kollektor desjenigen Transistors einhängen, dessen Schwarzwert
t hat und mit G 2-Regler auf 165 V einstellen.
G2-Spannung:
: ca. 550 V
: ca. 650 V
bkanal
peisen
einstellen
des IC TDA 3303 einhängen.
Spule LZ die Doppelbilder des -(B-y)-Signals zur Deckung bringen.

1) White level adjustment
   - Inject colour bar test pattern
   - Set ◐ to minimum, nominal ☼, ◑ to maximum
   - Adjust V_G and V_B controls so that no colouration is visible in the grey values
2) Cut-off point adjustment
   A manual adjustment is not possible as the plug-in circuit board is provided with an automatic dark current control.
   Checking the cut-off point (oscilloscope required).
   - Inject colour bar test pattern
   - Check white level adjustment
   - Set ◐ to minimum, nominal ☼, ◑ to minimum.
   - Attach probe to the collectors of the transistors T 9511, T 9541, T 9571 and make a note of the black levels of the 8-stage grey staircase.
   - Attach probe to the collector of the transistor which has the highest black level and adjust to 165 V with G 2 control.
     Standard values for the G 2 voltage:
   - for sets ≦ 20": approx. 550 V
   - for sets < 20": approx. 650 V
3) Colour oscillator and PAL adjustments
   - Inject colour bar test pattern
   - Adjust to ◐, ☼, ◑ suit view conditions.
   - Attach probe to pin 14 of the IC TDA 3303 .
   - With control BP and coil LZ, adjust the double images of the -(B-Y) signal to coincide.

1) Taratura del bia
   - Applicare un
   - Regolare ◐ a
   - Con i regolat
     dei grigi.
2) Taratura del pu
   Una regolazion
   una regolazion
   Controllo del p
   - Applicare un
   - Controllare la
   - Regolare ◐ a
   - Collegare la s
     ed annotare
   - Collegare la
     valore del ne
     Valori orienta
   - per apparecc
   - per apparecc
3) Regolazioni del
   - Applicare un
   - Regolare ◐,
   - Collegare la
     Con il regolat
     (B-y).

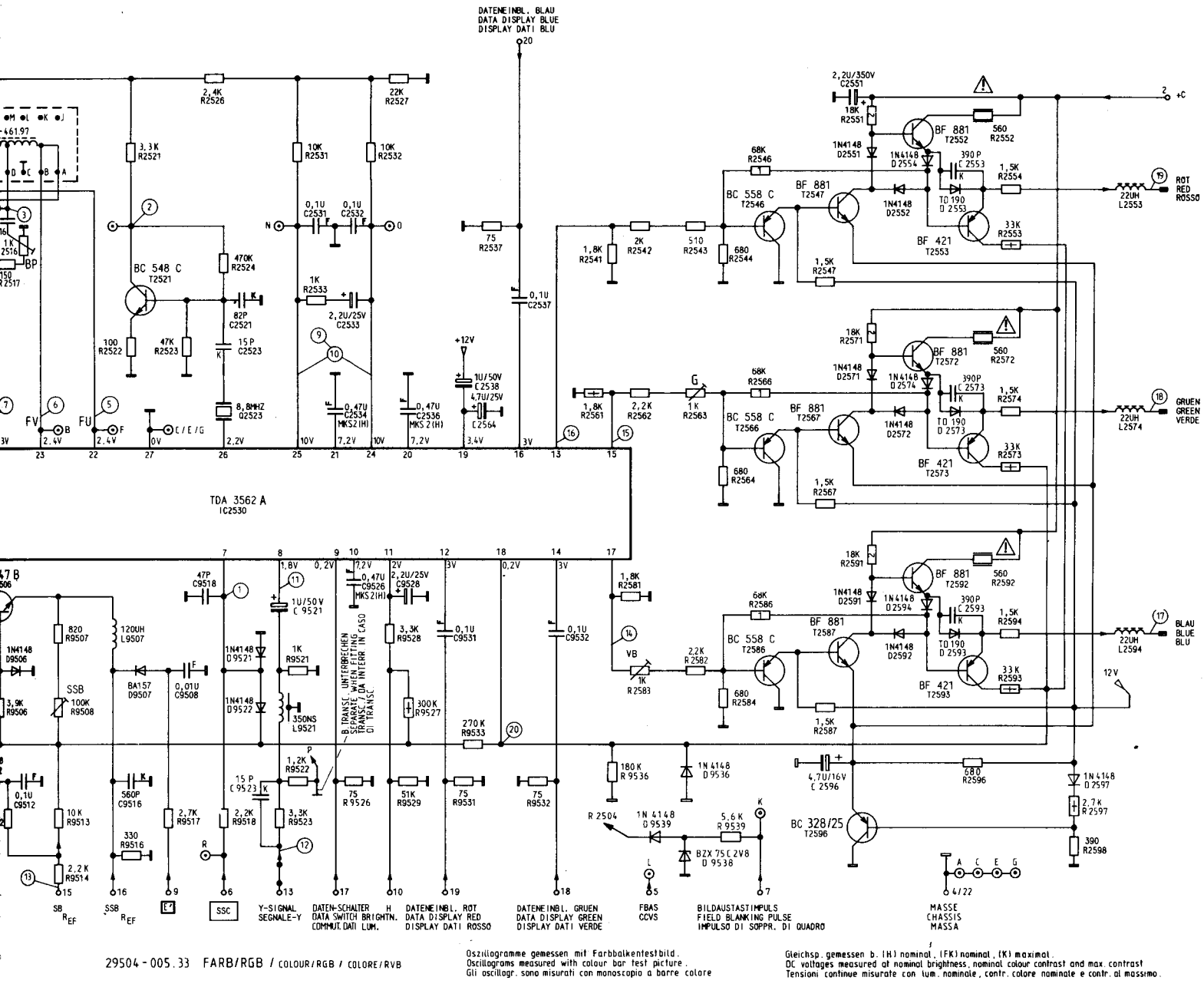




1) Taratura del bianco
   - Applicare un monoscopio FuBK
   - Regolare ◑ al minimo, ☼ sul valore nominale ed ◑ al massimo.
   - Con i regolatori V_R e V_B eliminare eventuali macchie di colore visibili su tutta la scbala dei grigi.
2) Taratura del punto di blocco
   Una regolazione manuale non è possibile, poiché questa scheda ad innesto incorpora una regolazione automatica della corrente d'oscurità.
   Controllo del punto di blocco (è necessario un oscilloscopio):
   - Applicare un monoscopio Fu BK.
   - Controllare la taratura del bianco.
   - Regolare ◑ al minimo, ☼ sul valore nominale ed ◑ al minimo.
   - Collegare la sonda dell'oscilloscopio ai collettori dei transistori T 2547, T 2567 e T 2587 ed annotare i valori del nero della scala dei grigi.
   - Collegare la sonda dell'oscilloscopio al collettore del transistore che ha il maggior valore del nero e regolarlo su 165V con il regolatore G 2.
     Valori orientativi per la tensione G 2:
   - per apparecchi ≦ 20": ca. 550V
   - per apparecchi > 20": ca. 650V
3) Regolazioni dell'oscillatore colore e PAL
   - Applicare un monoscopio FuBK.
   - Regolare ◑, ☼ ed ◑ sul valore nominale.
   - Cortocircuitare i terminali 1 e 5 ed i terminali 24 e 25 dell'IC TDA 3562 A.
   - Fermare le barre colorate scorrevoli con il trimmer 2523 e togliere i cortocircuiti.
   - Collegare la sonda dell'oscilloscopio al terminale 17 dell'IC TDA 3562 A.
     Con il regolatore BP e la bobina LZ portare a copertura le immagini doppie del segnale -(B-y).

Anpassungsabgleich bei Austausch der Steckkarte
Matching alignment necessary when replacing the plug-in board
Taratura di adattamento dopo la sostituzione di una scheda ad innesto

1) Weißabgleich
   - FuBK-Testbild einspeisen
   - ◑min, ☼nom, ◑max einstellen
   - Regler V_G und V_B so einstellen, daß keine Verfärbungen in den Grauwert sind.
2) Sperrpunktabgleich
   Eine manuelle Einstellung ist nicht möglich, da die Steckkarte eine automat kelstromregelung besitzt.
   Kontrolle des Sperrpunkts (Oszilloskop erforderlich).
   - FuBK-Testbild einspeisen
   - Weißabgleich kontrollieren
   - ◑min, ☼nom, ◑min einstellen
   - Tastkopf an den Kollektoren der Transistoren T 9511, T 9541, T 9571 anhäng Schwarzwerte der 8stufigen Grautreppe notieren.
   - Tastkopf an den Kollektor desjenigen Transistors einhängen, dessen S den höchsten Wert hat und mit G 2-Regler auf 165V einstellen.
     Richtwerte für die G 2-Spannung:
   - bei Geräten ≦ 20": ca. 550V
   - bei Geräten > 20": ca. 650V
3) Einstellungen im Farbkanal
   - RuBK-Testbild einspeisen
   - ◑nom, ☼nom, ◑nom einstellen
   - Tastkopf am Pin 14 des IC TDA 3303 einhängen.
     Mit Regler BP und Spule LZ die Doppelbilder des -(B-y)-Signals zur Decku



29504-005.33 FARB/RGB / COLOUR/RGB / COLORE/RVB

Oszillogramme gemessen mit Farbbalkentestbild.
Oscillograms measured with colour bar test picture.
Gli oscillogr. sono misurati con monoscopio a barre colore

Gleichsp. gemessen b. (H) nominal, (FK) nominal, (K) maximal.
DC voltages measured at nominal brightness, nominal colour contrast and max. contrast
Tensioni continue misurate con lum. nominale, contr. colore nominale e contr. al massimo.

irauwerten sichtbar

automatische Dun-

7 anhängen und die

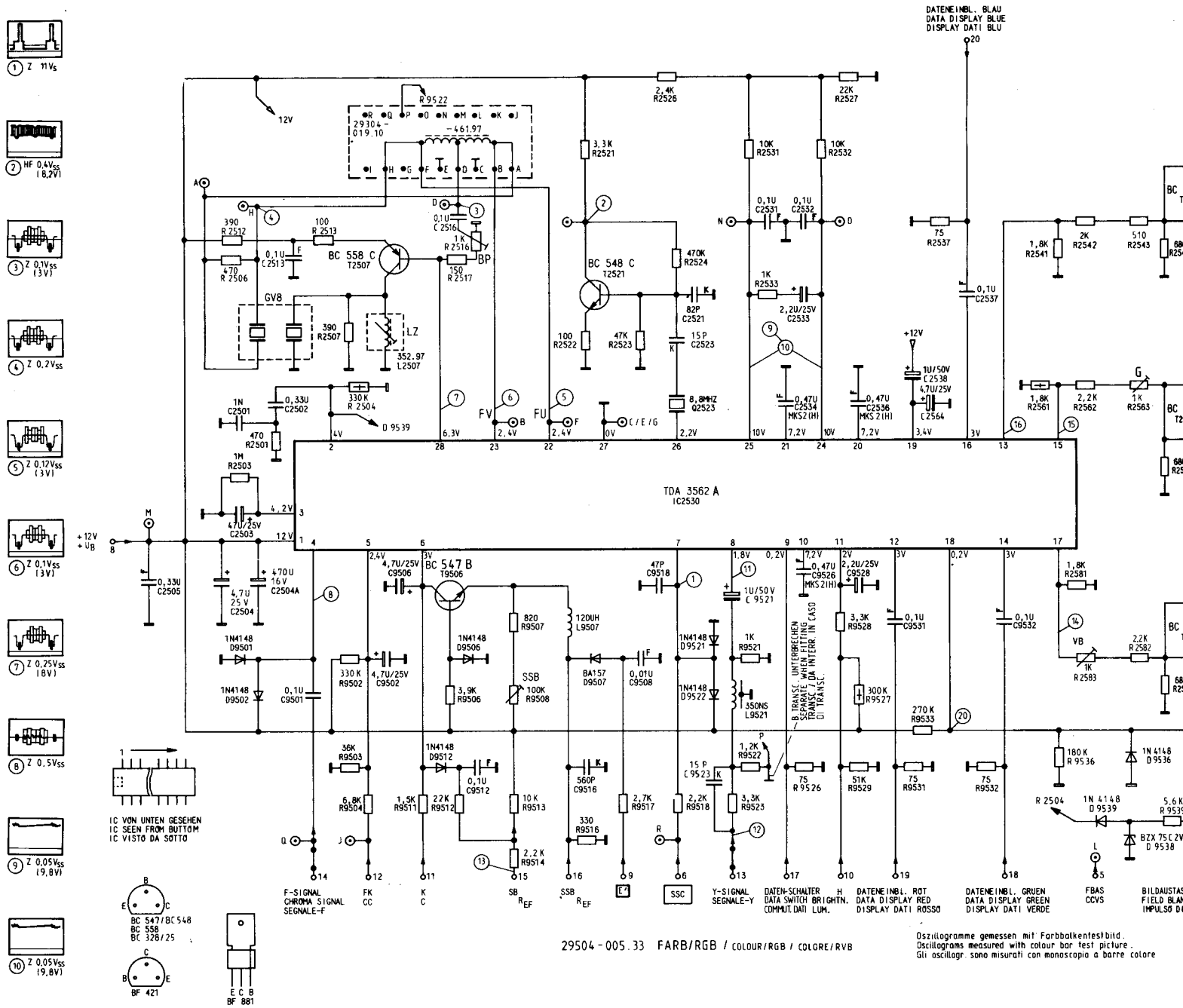
ssen Schwarzwert

ingen, Kurzschluß-

r Deckung bringen.

1) White level adjustment
   - Inject colour bar test pattern
   - Set ◑ to minimum, nominal ☼, ◑ to maximum
   - Adjust V_R and V_B controls so that no colouration is visible in the grey values
2) Cut-off point adjustment
   A manual adjustment is not possible as the plug-in circuit board is provided with an automatic dark current control.
   Checking the cut-off point (oscilloscope required).
   - Inject colour bar test pattern
   - Check white level adjustment
   - Set ◑ to minimum, nominal ☼, ◑ to minimum.
   - Attach probe to the collectors of the transistors T 2547, T 2567, T 2587 and make a note of the black levels of the 8-stage grey staircase.
   - Attach probe to the collector of the transistor which has the highest black level and adjust to 165V with G 2 control.
     Standard values for the G 2 voltage:
   - for sets ≤ 20": approx. 550V
   - for sets < 20": approx. 650V
3) Colour oscillator and PAL adjustments
   - Inject colour bar test pattern
   - Adjust to ◑, ☼, ◑ suit view conditions.
   - On the IC TDA 3562A, short circuit pin 1 with pin 5 and pin 24 with 25.
   - With trimmer 2523 adjust the until colours are correct. Remove short circuits.
   - Attach probe to pin 17 of the IC TDA 3562A.
   - With control BP and coil LZ, adjust the double images of the -(B-Y) signal to coincide.

1) Taratura del bianco
   - Applicare un monoscopio FuBK
   - Regolare ◑ al minimo, ☼ sul valore nominale ed ◑ al massim
   - Con i regolatori V_R e V_B eliminare eventuali macchie di colore vi dei grigi.
2) Taratura del punto di blocco
   Una regolazione manuale non è possibile, poiché questa scheda una regolazione automatica della corrente d'oscurità.
   Controllo del punto di blocco (è necessario un oscilloscopio):
   - Applicare un monoscopio Fu BK.
   - Controllare la taratura del bianco.
   - Regolare ◑ al minimo, ☼ sul valore nominale ed ◑ al minimo.
   - Collegare la sonda dell'oscilloscopio ai collettori dei transistori T ed annotare i valori del nero della scala dei grigi.
   - Collegare la sonda dell'oscilloscopio al collettore del transisto valore del nero e regolarlo su 165V con il regolatore G 2.
     Valori orientativi per la tensione G 2:
   - per apparecchi ≤ 20": ca. 550V
   - per apparecchi > 20": ca. 650V
3) Regolazioni dell'oscillatore colore e PAL
   - Applicare un monoscopio FuBK.
   - Regolare ◑, ☼ ed ◑ sul valore nominale.
   - Cortocircuitare i terminali 1 e 5 ed i terminali 24 e 25 dell'IC T
   - Fermare le barre colorate scorrevoli con il trimmer 2523 e tog
   - Collegare la sonda dell'oscilloscopio al terminale 17 dell'IC TD
     Con il regolatore BP e la bobina LZ portare a copertura le immagi (B-y).



29504-005.33 FARB/RGB / COLOUR/RGB / COLORE/RVB

Oszillogramme gemessen mit Farbbalkentestbild.
Oscillograms measured with colour bar test picture.
Gli oscillogr. sono misurati con monoscopio a barre colore

Anpassungsabgleich bei Austausch der Steckkarte
Matching alignment necessary when replacing the plug-in board
Taratura di adattamento dopo la sostituzione di una scheda ad innesto

1) Weißabgleich
   - FuBK-Testbild einspeisen
   - ◐min, ☼nom, ◑max einstellen
   - Regler V_R und V_B so einstellen, daß keine Verfärbungen in den Grauwerten sichtbar sind.
2) Sperrpunktabgleich
   Eine manuelle Einstellung ist nicht möglich, da die Steckkarte eine automatische Dunkelstromregelung besitzt.
   Kontrolle des Sperrpunkts (Oszilloskop erforderlich).
   - FuBK-Testbild einspeisen
   - Weißabgleich kontrollieren
   - ◐min, ☼nom, ◑min einstellen
   - Tastkopf an den Kollektoren der Transistoren T2547, T2567, T2587 anhängen und die Schwarzwerte der 8stufigen Grautreppe notieren.
   - Tastkopf an den Kollektor desjenigen Transistors einhängen, dessen Schwarzwert den höchsten Wert hat und mit G2-Regler auf 165V einstellen.
     Richtwerte für die G2-Spannung:
   - bei Geräten ≦ 20": ca. 550V
   - bei Geräten > 20": ca. 650V
3) Einstellungen im Farbkanal
   - RuBK-Testbild einspeisen
   - ◐nom, ☼nom, ◑nom einstellen
   - Am IC TDA 3562A Pin 1 mit Pin 5 und Pin 24 kurzschließen.
   - Mit Trimmer 2523 die durchlaufenden Farbbalken zum Stehen bringen, Kurzschlußbrücken entfernen.
   - Tastkopf am Pin 17 des IC TDA 3562A einhängen.
     Mit Regler BP und Spule LZ die Doppelbilder des -(B-y)-Signals zur Deckung bringen.

1) White level adjustment
   - Inject colour bar test pattern
   - Set ◐ to minimum, nominal ☼, ◑ to maximum
   - Adjust V_R and V_B controls so that no colouration is visible in the grey values
2) Cut-off point adjustment
   A manual adjustment is not possible as the plug-in circuit board is provided with an aut
   matic dark current control.
   Checking the cut-off point (oscilloscope required).
   - Inject colour bar test pattern
   - Check white level adjustment
   - Set ◐ to minimum, nominal ☼, ◑ to minimum.
   - Attach probe to the collectors of the transistors T2547, T2567, T2587 and make a no of the black levels of the 8-stage grey staircase.
   - Attach probe to the collector of the transistor which has the highest black level a adjust to 165V with G2 control.
     Standard values for the G2 voltage:
   - for sets ≦ 20": approx. 550V
   - for sets < 20": approx. 650V
3) Colour oscillator and PAL adjustments
   - Inject colour bar test pattern
   - Adjust to ◐, ☼, ◑ suit view conditions.
   - On the IC TDA 3562A, short circuit pin 1 with pin 5 and pin 24 with 25.
   - With trimmer 2523 adjust the until colours are correct. Remove short circuits.
   - Attach probe to pin 17 of the IC TDA 3562A.
   - With control BP and coil LZ, adjust the double images of the -(B-Y) signal to coincid