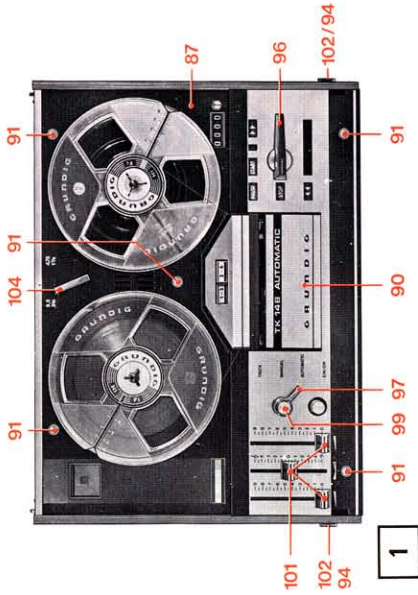


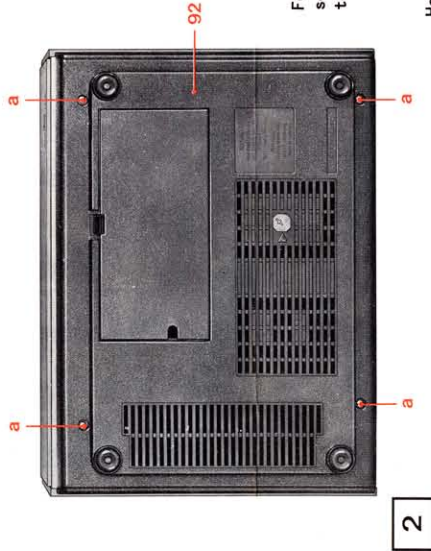


**TK 148 Automatic**

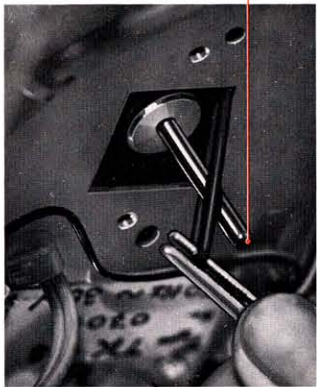
Service data



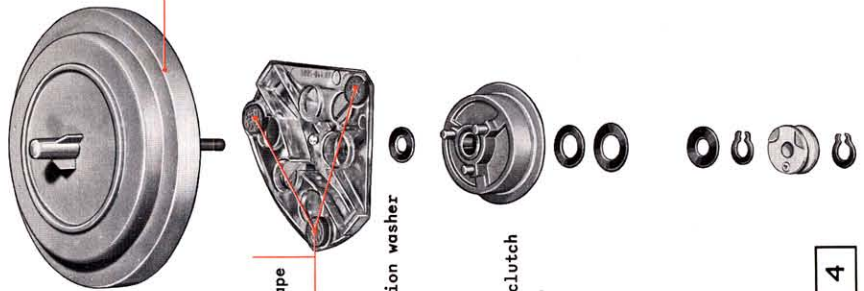
1



2



6



4

Felt pads for setting the tape tension

Height correction washer (9604-664)

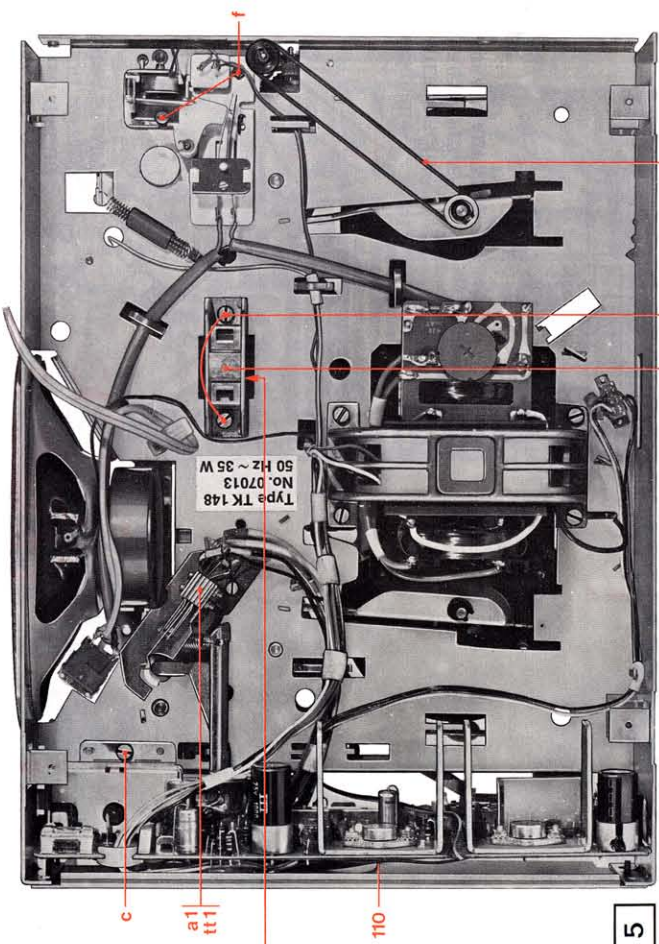
only on right clutch

Pressure on clutch on forward in wind 200-250 gr.

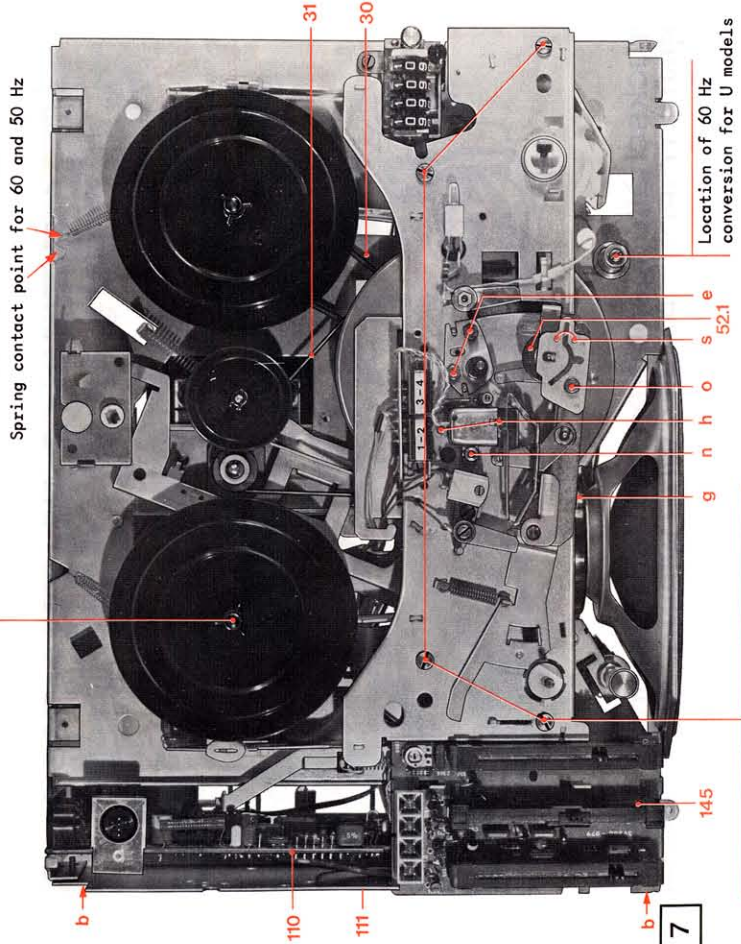
Pressure on motor at re-wind 300-340 gr.

12 gr. 45 gr. at start  
 25 gr. 12 gr. at start.  
 700 gr. + 10%

3



5



7

NOTE! Care must be taken when removing the four screws, as many moving parts pivot on the chassis plate.

## Service Information

Numbers in ( ) in the text refer to numbers in the spare parts list for the TK148. Hard or metallic/magnetic objects should not be brought into contact with the heads as this may cause damage.

### Fig 1 Removing Top Cover and Housing (87)

Remove the five screws (91) the handle (102) and the handle securing screw (94). Pull off the speed change lever (104), the record button (99), the function lever (97) and the knobs (101), taking care not to lose the felt pads. Pull off the function lever (96) and the top cover (87) can be removed.

### Fig 2 Removing Base (92)

Removing the four screws (a) pull the mains cable through the cable compartment. Remove the base (92) letting the cable slide through the outlet hole.

### Fig 7 Amplifier Printed Circuit Board (11)) - Solder Side

After removing the housing (87) (as in Fig 1 ) undo the two screws (b) and pull the screening plate from it's key way.

### Fig 5/7 Amplifier Printed Circuit Board (110) - Component Side

Dismantle both the top cover screen and the base. Gently pull out the control printed circuit board (145) after bending away location flaps on top of chassis. Remove the screw (c), and pull the printed circuit board (110) down and out.

NOTE:- The function selection lever should be in the "START" position

### Fig 1/7 Servicing the Heads and Sound Channel

Remove the head cover (90), and clean the heads, tape guides and sound channel with methylated spirits.

### Fig 7 Changing and Adjusting Heads

(for securing screws, see illustration). Adjustments are made using Grundig Alignment Tape 464. The vertical height of the record/playback head is made with screw (h), azimuth adjustment with screw (n).

### Fig 5/6 Changing the Belts

Fully dismantle the machine, remove the screws(d), and take the bearing(49) off the flywheel spindle. Lift the belt out and over the spindle(as in Fig 6). The belt (31) can now be pulled out.

### Fig3/4 Clutch Torque

The illustration shows the torque measured on the clutches.

### Fig 7 Tape Drive

With the pressure band removed the tape must travel over the capstan spindle without looping. Adjust after loosening screws (e).

### Fig 3/7 Pressure Roller

In the "PAUSE" position the pressure roller must be parallel with the capstan spindle. In the "START" position the pressure roller must take from 3-6 revolutions to travel from the top to the bottom position. Adjust with adjustment key 5999-035 after loosening screw (c). The pressure of the pressure roller on the capstan spindle in the "START" position should be 700gr + 10%, adjust with screw (g).

**Fig 5 Contact Sets a1 and tt1**

Pressing the record button in the "automatic" mode should not move contact "a1", and with "Trick" depressed, the contact tt1 must move 0.2mm to make.

**Fig 5** The end of the tape stop is so adjusted that in the "STOP", "PAUSE", and in the rest position between "START" and fast forward wind the nose of the switch lever has a clearance of 0.3-0.5mm from the armature piece.

Correct after loosening the securing screw (f).

**Bias Setting** ( need only be carried out if heads are changed )

Switch the machine to "RECORD", "MANUAL", "PAUSE" and with a capacitive voltage divider (i.e. VST24) connected to test point **A1** (tracks 1-2) or **A2** ( tracks 3-4) on the track switching printed circuit board T. Adjust the bias voltage with C305 according to the colour coding of the head :-

Red 32V - White 36V - Black 40V - Yellow 44V

Heads which have two colour codes should be adjusted in the "arithmetical centre" i.e. Black/yellow = 42V (When the "TRICK" button is depressed the bias voltage should drop by 2.5V).

The erase voltage measured at **B1** or **B2** should be at least 15V.

The bias/erase frequency (measured via FM1) should lie between 62 and 76kHz. (When the "TRICK" button is depressed the frequency should fall by 15%).

**Measurements Using Grundig Alignment Tape 9 (Type 468) at 9 cm/s (3 3/4 i.p.s.)**

The output of the 333Hz section of the tape measured at pins 3/2 of the "radio" socket must be 500mV from each track.

The output at other frequencies must lie within the following tolerance field (to DIN 45 511 ). If the deviation at 12.5kHz is excessive the head alignment should be checked.

**Recording and Playback**

Input via 470kΩ in parallel with 150pF to pins 1/2 of the radio socket.

**Full Recording Level**

Set the machine to Record, Automatic, 9.5 cm/s (3 3/4 i.p.s ), 333Hz, Vin - 200mV.

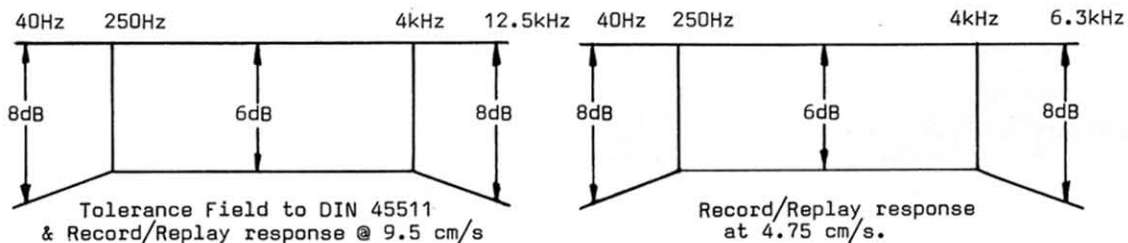
The playback voltage under these conditions should be at least 800mV, with a distortion factor  $k_d$  of 4-5%. The voltage measured at **M2** should be 4V ± 1.5dB, adjustable with R113 whilst making a new recording.

When these conditions are fulfilled, the recording level indicator can be checked. The lamp under the red field must only just light. Adjust with R509.

**Frequency Response at 9.5 cm/s (3 3/4 i.p.s.) and 4.75 cm/s (1 1/2 i.p.s.)**

(Machine switched to Manual)

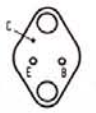
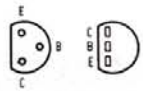
Record a test tape at each speed with an input of 20mV at all frequencies. During playback the levels should lie within the following tolerance fields. If there should be any loss at 12.5kHz the HF bias point should be changed slightly



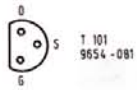
**Automatic Working Point**

Switch machine to "RECORD", "AUTOMATIC", "PAUSE". Place a short across resistors R104-R105, and connect a DC voltmeter to points **C** **D**. Set R108 for a reading of 0.8V.

T 201 9654 - 195  
T 202 9654 - 189



T 203 } AD 161  
          } 9654 - 016  
T 204 } AD 162  
  
T 203 } AD 157  
          } 9654 - 169  
T 204 } AD 156

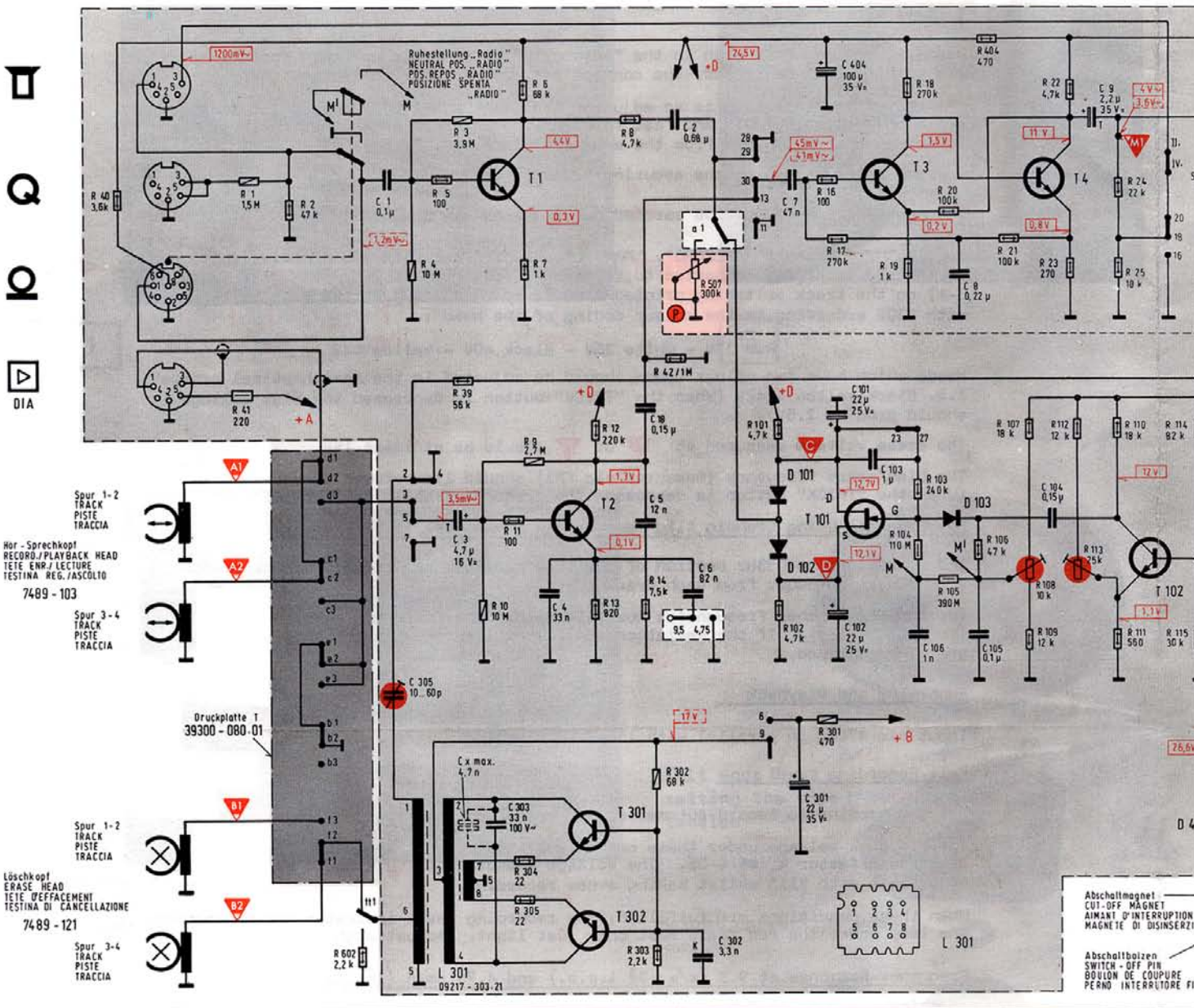


T 101  
9654 - 081



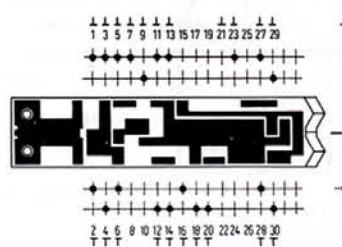
T 1 9654 - 146  
T 2 BC 239 C  
T 3 9654 - 146  
T 4 BC 237 B  
T 5 BC 237 B  
T 102 BC 237 A/B

T 301 } BC 337 16/25  
T 302 }  
T 401 BC 237 B  
T 501 BC 223 B  
T 502 }  
T 503 } BC 238 C  
T 504 }

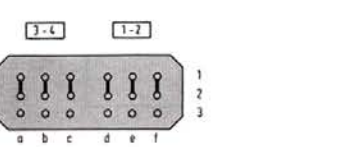
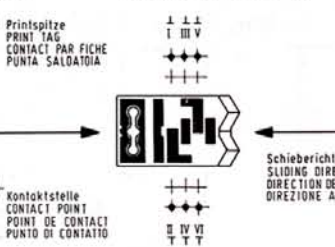


C: 1, 305, 3, 303, 4, 18, 5, 2, 6, 302, 7, 301, 404, 101, 102, 103, 106, 8, 105, 104, 9.  
R: 40, 41, 1, 2, 602, 4, 5, 3, 39, 10, 11, 304, 305, 9, 6, 7, 12, 13, 8, 14, 302, 303, 42, 507, 101, 102, 16, 17, 301, 18, 19, 103, 104, 105, 20, 106, 21, 107, 108, 109, 22, 23, 112, 113, 24, 25, 110, 111.

AW - Schiebescalter gezeichnet in Stellung „Wiedergabe“  
AW - SLIDER SWITCH SHOWN IN POSITION „PLAYBACK“  
COMMUNICATEUR GLISSANT - AW MONTRÉ EN POS. „LECTURE“  
COMMUTATORE A CURSORE - AW RAPPRESENTATO IN POS. „ASCOLTO“



SP - Schalter in Stellung „Start“  
SP - SWITCH IN POSITION „START“  
COMMUNICATEUR - SP EN POS. „MARCHÉ“  
COMMUTATORE - SP IN POS. „START“



Spurschalter gezeichnet in „Ruhestellung“  
TRACK SWITCH SHOWN IN „NEUTRAL POSITION“  
COMMUNICATEUR PISTE MONTRÉ EN „POS. REPOS“  
COMMUTATORE TRACCIÀ RAPPRESENTATO IN „POS. SPENTA“

Betriebsart OPERATING POSITION POSITION POSIZIONE DI SERVIZIO	a1	111	SP1	SP2	m
Aufnahme - Wählschalter RECORDING SELECTOR SELECTEUR D'ENREGISTREMENT COMMUTATORE SELETTIRO DI REGISTRAZIONE					
Betriebsartenschalter - PAUSE / START OPERATION SELECTOR - PAUSE / START SELECTEUR DE FONCTION - STOP MOMENTANE / MARCHÉ COMMUTATORE DELLA POSIZIONE DI SERVIZIO - PAUSA / START					
Bandendabschaltung TAPE END SWITCH ARRÊT AUTOMATIQUE EN FIN DE BANDE COMMUTAZIONE DI FINE NASTRO					
Wird betätigt IS OPERATED EST OPERÉ VIENE COMANDATO					

L Lautstärkeregel  
VOLUME CONTROL  
REGLAGE DE PUISSANCE  
REGOLATORE DEL VOLUME SONORE

P Pegelregler  
LEVEL CONTROL  
REGLAGE DE NIVEAU  
REGOLATORE DI LIVELLO

R Klangregler  
TONE CONTROL  
REGLAGE DE TONALITÉ  
REGOLATORE DI TONO

Änderungen vorbehalten!

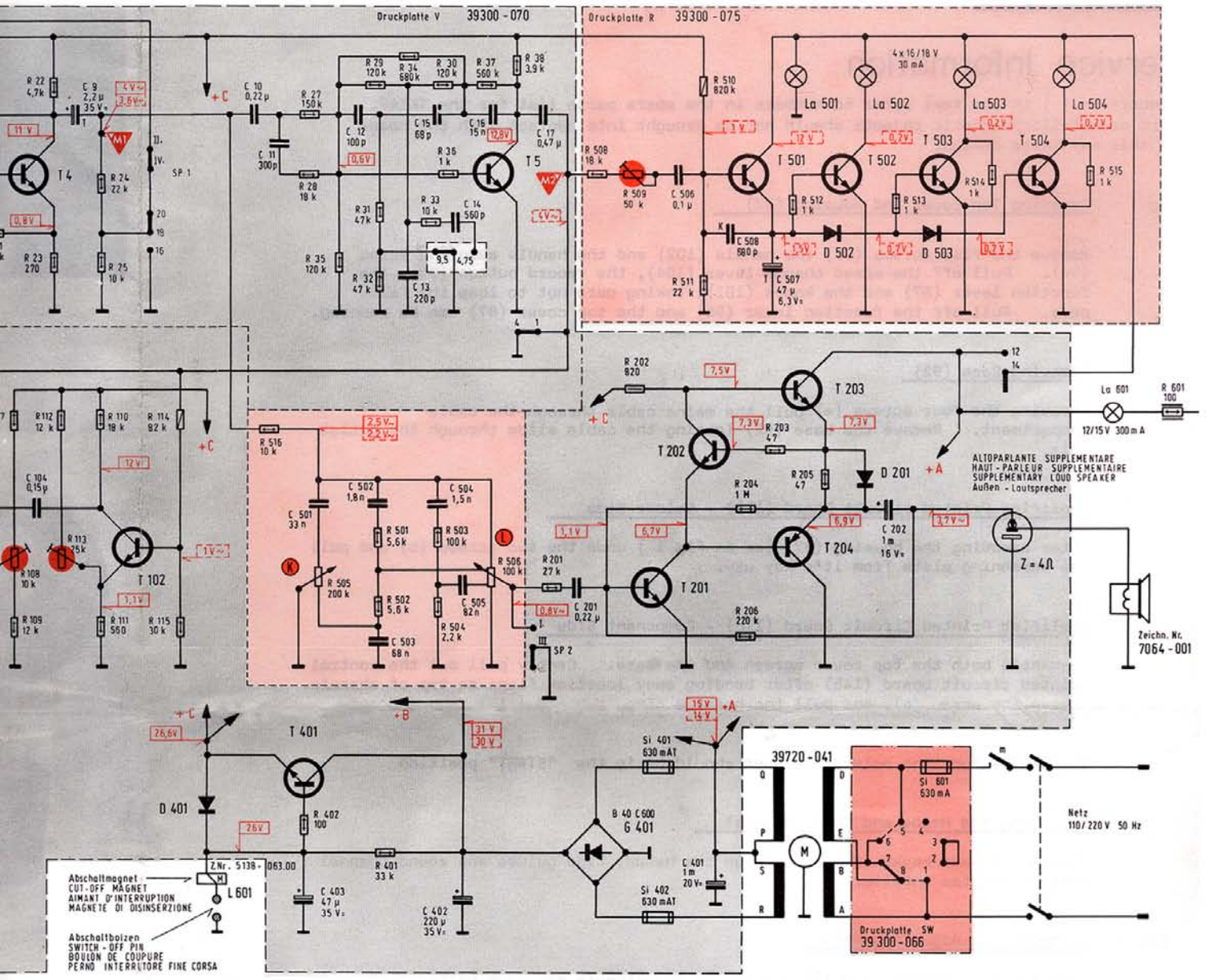
ALTERATIONS RESERVED!

MODIFICAZIONI RISERVATE!

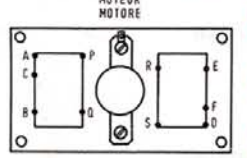
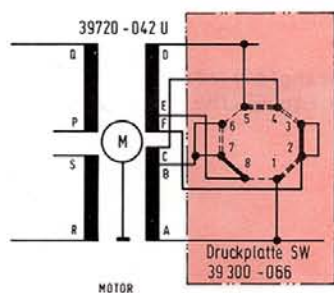
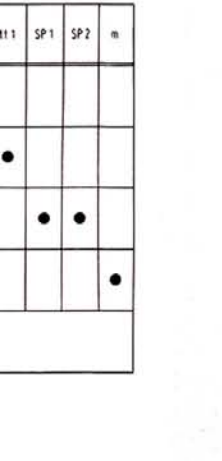
CON RISERVA DI...

T 301 } BC 337 16/25  
 T 302 }  
 T 401 BC 237 B  
 T 501 BC 223 B  
 T 502 } BC 238 C  
 T 503 }  
 T 504 }

D 101 } 9654-083  
 D 102 }  
 D 103 } 9654-082  
 D 201 } 9654-188  
 D 401 } 10 473  
 D 501 } 10 473  
 D 502 }  
 D 503 } 0 474



104, 9, 10, 11, 403, 501, 12, 502, 503, 13, 14, 15, 504, 505, 402, 16, 17, 201, 506, 401, 508, 507, 202, 1, 107, 108, 109, 22, 23, 112, 113, 24, 25, 110, 111, 114, 115, 516, 27, 28, 402, 505, 35, 29, 31, 32, 501, 502, 401, 34, 33, 30, 36, 503, 504, 506, 37, 38, 201, 508, 509, 202, 510, 511, 204, 206, 203, 512, 205, 513, 514, 601, 515.



Wiedergabe Aufnahme  
 PLAYBACK RECORDING  
 REPRODUCTION ENREGISTREMENT  
 ASCOLTO REGISTRAZIONE

Gleichspannungen gemessen mit Grundig - Röhrenvoltmeter RV 3 ohne Signal gegen Masse.  
 Signalspannungen (f = 1kHz) gemessen mit Grundig Röhrenvoltmeter RV 55.  
 DC VOLTAGES MEASURED AGAINST GROUND AND NO SIGNAL APPLIED WITH GRUNDIG-VTVM RV 3.  
 SIGNAL VOLTAGES (f = 1kHz) MEASURED WITH GRUNDIG-VTVM RV 55.  
 TENSIONS CONTINUES MEASUREES PAR RAPPORT AU CHASSIS ET SANS SIGNAL AVEC GRUNDIG-VOLMETRE A LAMPES RV3.  
 TENSIONS DE SIGNAL (f = 1kHz) MESUREES AVEC GRUNDIG-VOLMETRE A LAMPES RV 55.  
 TENSIONE CONTINUA MISURATA VERSO MASSA CON VOLTMETRO ELETTRONICO GRUNDIG RV 3 IN ASSENZA DI SEGNALE.  
 TENSIONE DI SEGNALE (f = 1kHz) MISURATE CON VOLTMETRO ELETTRONICO GRUNDIG RV 55.

- R 106 Einstellregler für Arbeitspunkt der FET-Stufe  
CONTROL FOR ADJUSTING OPERATING POINT OF FET-STAGE  
CONTROLE POUR L'AJUSTAGE DU POINT DE FONCTIONNEMENT DE L'ETAGE - FET  
REGOLATORE DEL PUNTO DI FUNZIONAMENTO DELLO STADIO - FET
- R 113 Einstellregler für Regeleinsetzpunkt der Automatik  
CONTROL FOR ADJUSTING STARTING POTENTIAL OF AUTOMATIC  
CONTROLE POUR L'AJUSTAGE DE LA TENSION DE COUPEURE DE L'AUTOMATISME  
REGOLATORE DEL PUNTO DI LAVORO DELL' AUTOMATISME
- R 509 Einstellregler für Vollpegelwert der Aussteuerungs - Leuchtanzeige  
ADJUSTMENT OF MAXIMUM LEVEL OF RECORDING LEVEL INDICATOR  
REGLEGE DE NIVEAU MAX. POUR INDICATEUR DE MODULATION  
COMANDO PER LA REGOLAZIONE DELL' INDICATORE LUMINOSO DEL LIVELLO
- C 305 Trimmerkondensator für Vormagnetisierungsspannung  
TRIMMER CAPACITOR FOR MAGNETIZATION VOLTAGE  
CONDENSATEUR AJUSTABLE POUR LA TENSION DE PREAIMANTATION  
COMPENSATORE PER LA PREMAGNETIZZAZIONE

- Eiko
- Tantol - Eiko
- Keramik-Kond.
- Styroflex - Kond.
- Folien -
- 1/8 W
- 1/3 W
- 1/2 W
- nicht entflammbarer Widerstand  
NON INFLAMMABLE RESISTOR  
RESISTANCE NON INFLAMMABLE  
RESISTENZA NON INFLAMMABLE



# TK 148 / TK 148 U Automatic

(31008-906.01) / (31008-906.02) (31008-942.11)

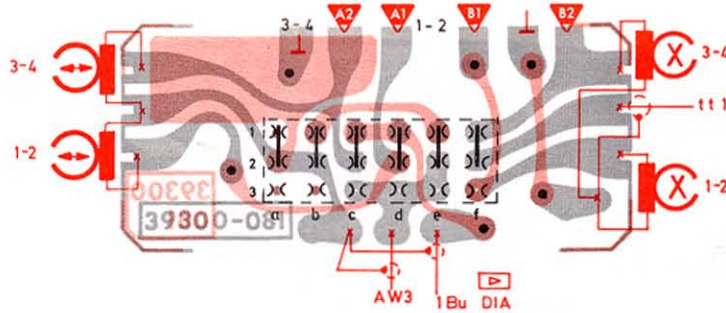
CON RISERVA DI MODIFICA!

21367

260572 Ni.

# PRINTED CIRCUIT PANELS WITH WIRING

Druckplatte  
PRINTED CIRCUIT  
CIRCUIT IMPRIME  
PIASTRA STAMPATA

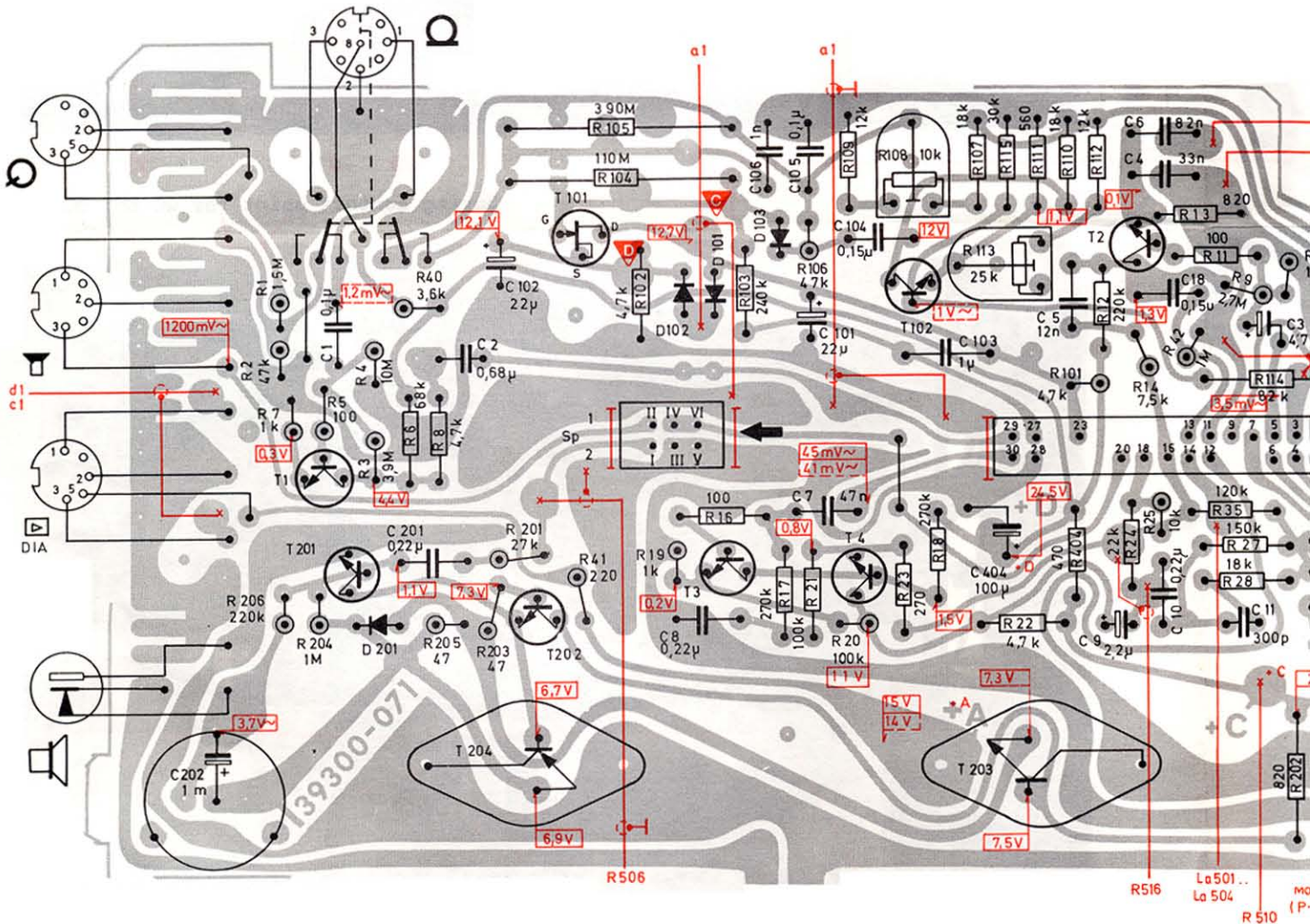


Lötse  
SOLD  
COTE  
LATO

Druckplatte  
PRINTED CIRCUIT  
CIRCUIT IMPRIME  
PIASTRA STAMPATA



Besti  
COMP  
VUE D  
LATO



**Druckplatte**  
**PRINTED CIRCUIT**  
**CIRCUIT IMPRIME**  
**PIASTRA STAMPATA**



**Lötseite**  
**SOLDER SIDE**  
**COTE DES SOUDURES**  
**LATO SALDATURE**

**Bestückungsseite**  
**COMPONENT SIDE**  
**VUE DU COTE DES COMPOSANTS**  
**LATO COMPONENTI**

