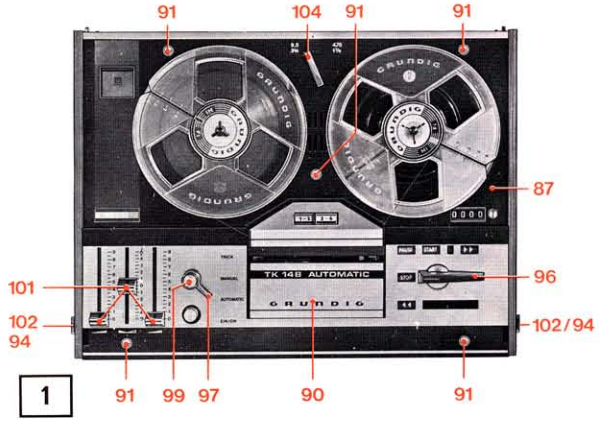
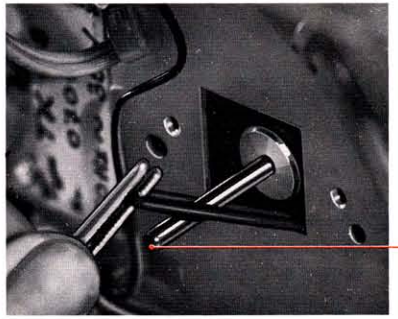
GRUNDIG

TK 148 Automatic

Service data



1



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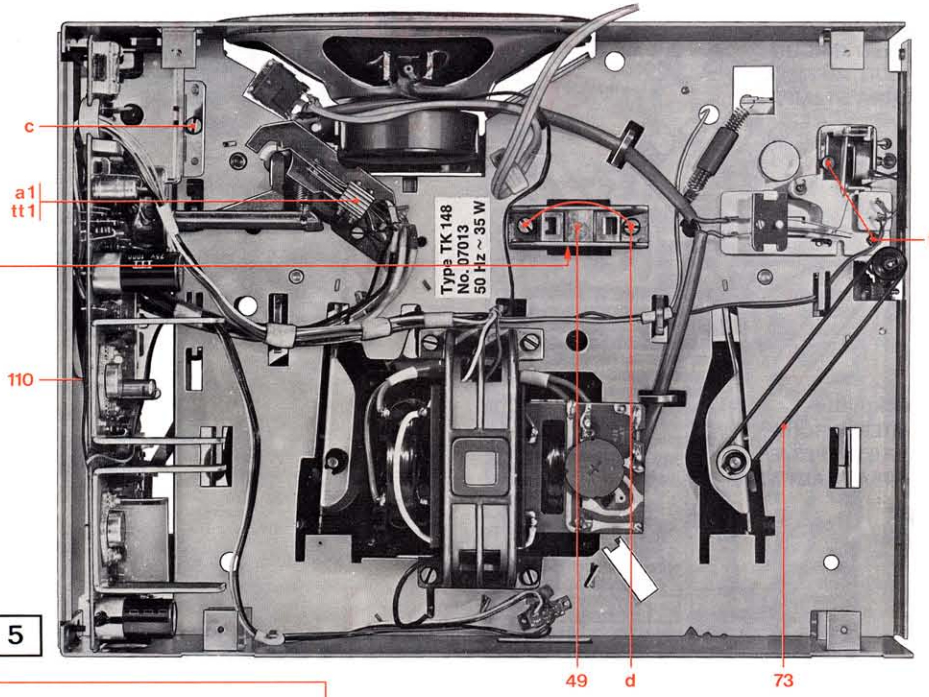
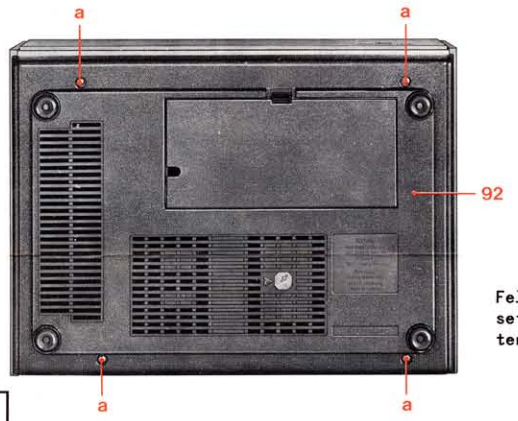


5

Spring contact point for 60 and 50 Hz



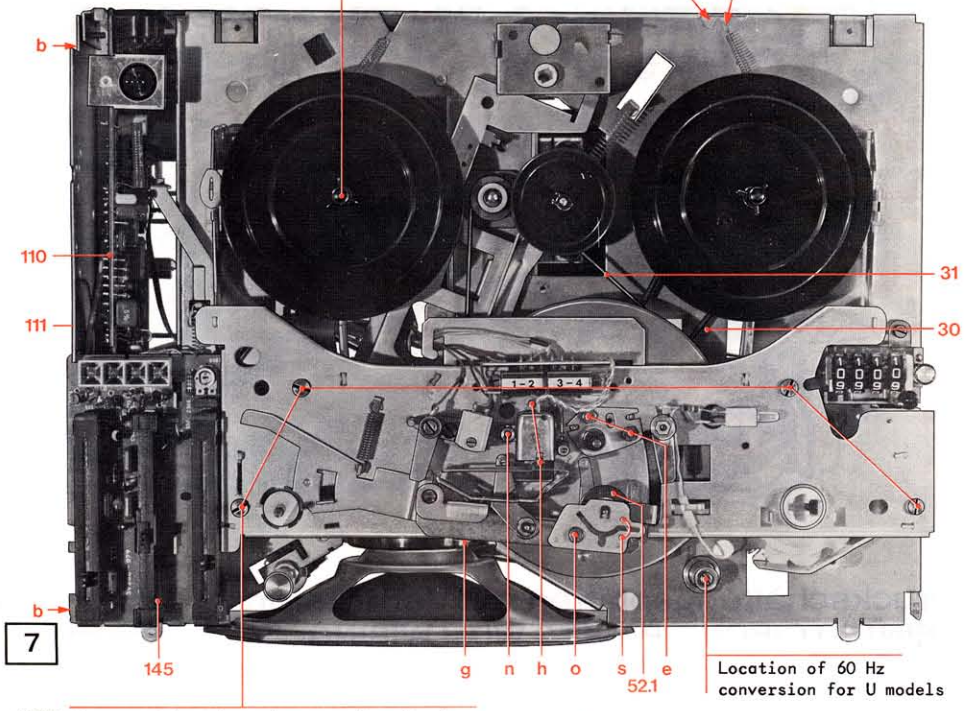
2

Felt pads for setting the tape tension

Height correction washer
(9604-664)

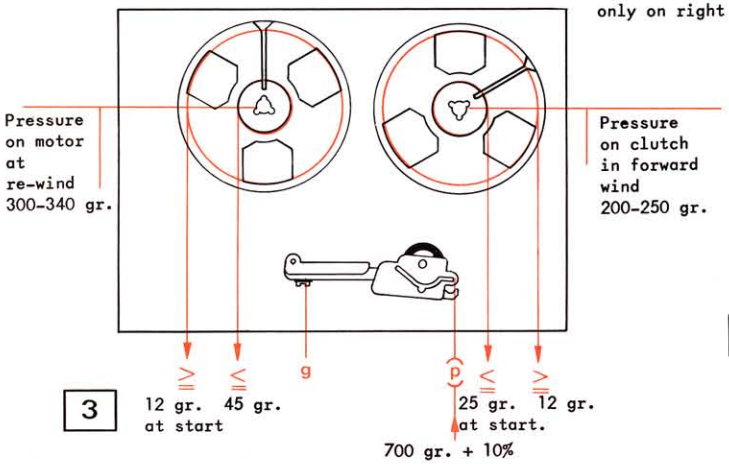
only on right clutch

4



7

Location of 60 Hz conversion for U models



3

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

GRUNDIG TK 148 Automatic

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 (3¾ 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 (3¾ i.p.s), 333Hz, Vin - 200mV.

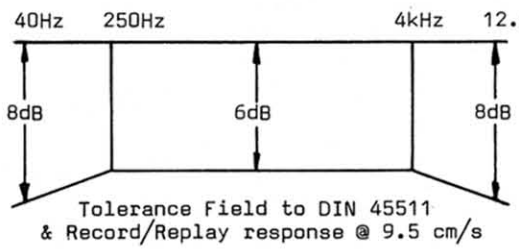
The playback voltage under these conditions should be at least 800mV,with a distortion factor k_3 of 4-5%. The voltage measured at M2 should be 4V ± 1.5dB, adjustable with R113 whilst making a new recording.

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.

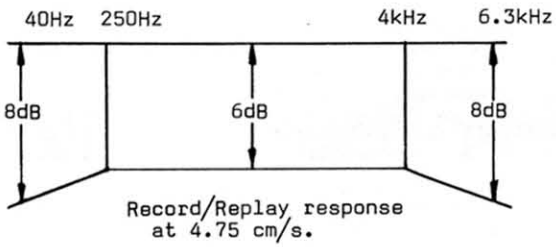
Frequency Response at 9.5 cm/s (3¾ i.p.s.) and 4.75 cm/s (1⅞ i.p.s.)

(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



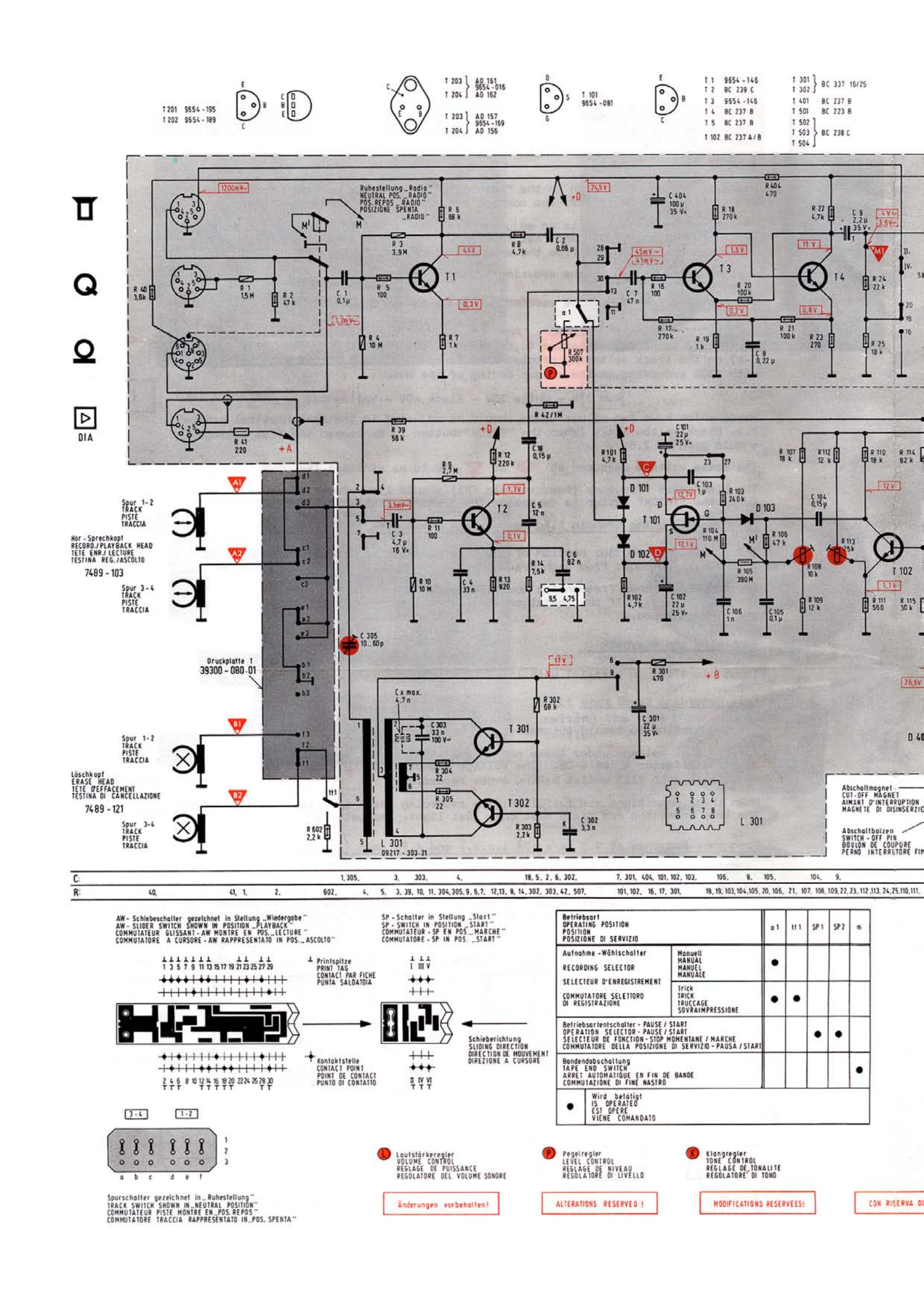
Tolerance Field to DIN 45511
& Record/Replay response @ 9.5 cm/s



Record/Replay response
at 4.75 cm/s.

Automatic Working Point

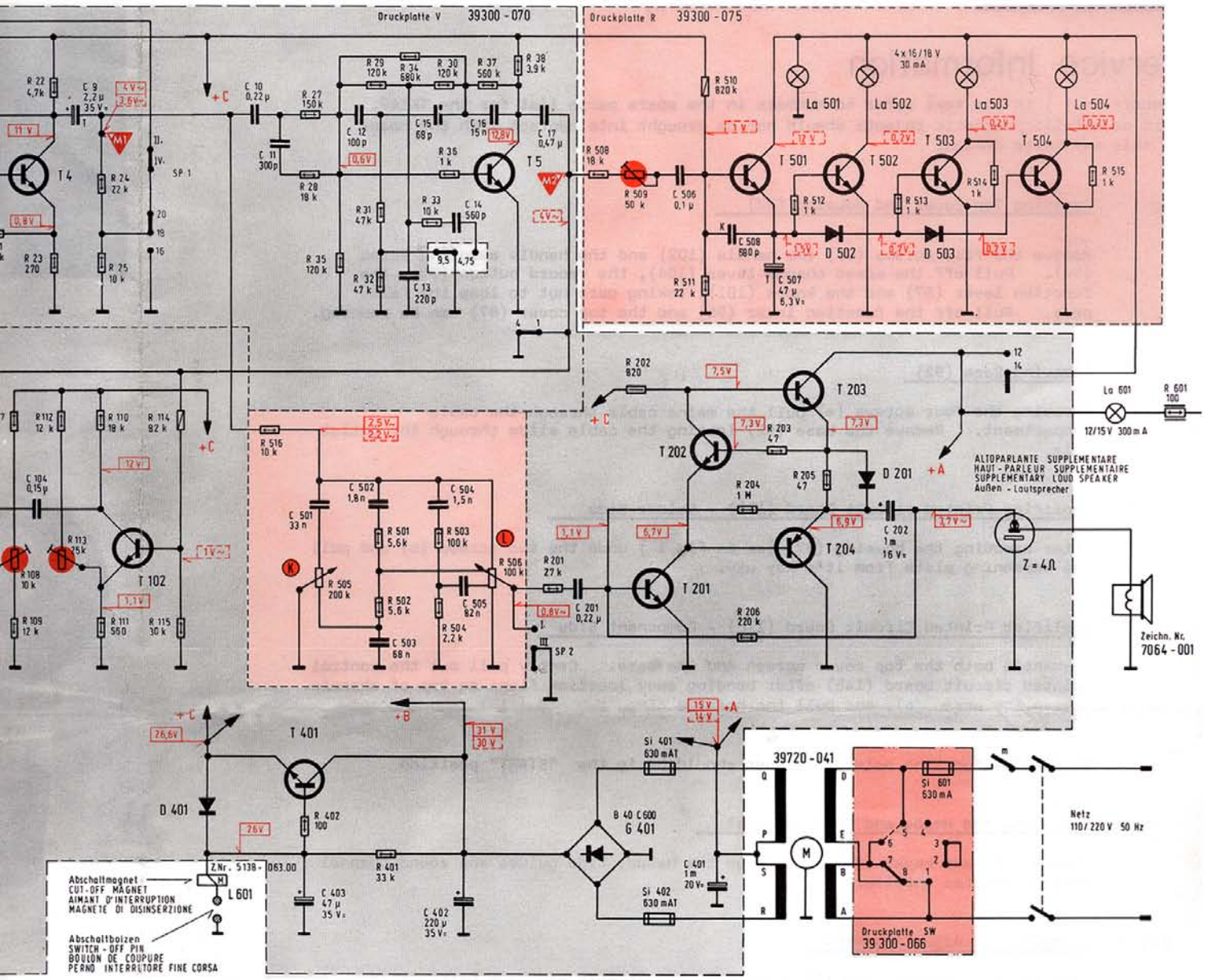
Switch machine to "RECORD", "AUTOMATIC", "PAUSE". Place a short across resistors R104-R105, and connect a DC voltmeter to points C D . Set R108 for a reading of 0.8V.


T 201 9654 - 195
T 202 9654 - 189
T 203 } AD 161
T 204 } 9654 - 016
AD 162
T 203 } AD 157
T 204 } 9654 - 169
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 }
Ruhestellung „Radio"
NEUTRAL POS. „RADIO"
POS. REPOS „RADIO"
POSIZIONE „SPENTA „RADIO"
DIA
Spur 1-2
TRACK
PISTE
TRACCIA
Hor-Sprechkopf
RECORD./PLAYBACK HEAD
TETE ENR./LECTURE
TESTINA REG./ASCOLTO
7489 - 103
Spur 3-4
TRACK
PISTE
TRACCIA
Druckplatte I
39300 - 080.01
Spur 1-2
TRACK
PISTE
TRACCIA
Löschkopf
ERASE HEAD
TETE D'EFFACEMENT
TESTINA DI CANCELLAZIONE
7489 - 121
Spur 3-4
TRACK
PISTE
TRACCIA
L 301
09217 - 303-21
L 301
Abschaltmagnet
CUT-OFF MAGNET
AIMANT D'INTERRUPTION
MAGNETE DI DISINSERZIO
Abschaltbolzen
SWITCH-OFF PIN
BOULON DE COUPURE
PERNO INTERRUTORE FIN
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 - Schiebeschalter gezeichnet in Stellung „Wiedergabe"
AW - SLIDER SWITCH SHOWN IN POSITION „PLAYBACK"
COMMUTATEUR GLISSANT - AW MONTRE EN POS. „LECTURE"
COMMUTATORE A CURSORE - AW RAPPRESENTATO IN POS. „ASCOLTO"
SP - Schalter in Stellung „Start"
SP - SWITCH IN POSITION „START"
COMMUTATEUR - SP EN POS. „MARCHE"
COMMUTATORE - SP IN POS. „START"
Printspitze
PRINT TAG
CONTACT PAR FICHE
PUNTA SALDATOIA
Kontaktstelle
CONTACT POINT
POINT DE CONTACT
PUNTO DI CONTATTO
Schieberichtung
SLIDING DIRECTION
DIRECTION DE MOUVEMENT
DIREZIONE A CURSORE
Betriebsart
OPERATING POSITION
POSITION
POSIZIONE DI SERVIZIO
a 1
tt 1
SP 1
SP 2
m
Aufnahme-Wählschalter
RECORDING SELECTOR
SELECTEUR D'ENREGISTREMENT
COMMUTATORE SELETTORO DI REGISTRAZIONE
Manuell
MANUAL
MANUEL
MANUALE
Trick
TRICK
TRUCCAGE
SOVRAIMPRESSIONE
Betriebsartentschalter - PAUSE / START
OPERATION SELECTOR - PAUSE / START
SELECTEUR DE FONCTION - STOP MOMENTANE / MARCHE
COMMUTATORE DELLA POSIZIONE DI SERVIZIO - PAUSA / START
Bandendabschaltung
TAPE END SWITCH
ARRET AUTOMATIQUE EN FIN DE BANDE
COMMUTAZIONE DI FINE NASTRO
Wird betätigt
IS OPERATED
EST OPERE
VIENE COMANDATO
3-4
1-2
Spurschalter gezeichnet in „Ruhestellung"
TRACK SWITCH SHOWN IN „NEUTRAL POSITION"
COMMUTATEUR PISTE MONTRE EN „POS. REPOS"
COMMUTATORE TRACCIA RAPPRESENTATO IN „POS. SPENTA"
Lautstärkeregler
VOLUME CONTROL
REGLAGE DE PUISSANCE
REGOLATORE DEL VOLUME SONORE
Pegelregler
LEVEL CONTROL
REGLAGE DE NIVEAU
REGOLATORE DI LIVELLO
Klangregler
TONE CONTROL
REGLAGE DE TONALITE
REGOLATORE DI TONO
Änderungen vorbehalten!
ALTERATIONS RESERVED!
MODIFICATIONS RESERVEES!
CON RISERVA DI

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

D 101, D 102 } 9654 - 083
D 103 9654 - 082
D 201 9654 - 188

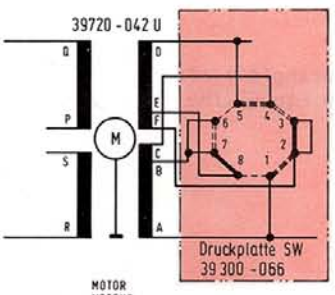
D 401 TD 473
D 501 TD 473
D 502, D 503 } D 474



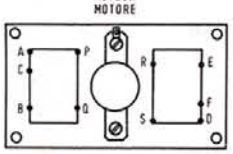
104,	9,	10, 11, 403, 501, 12,	502, 503,	13, 14, 15, 504, 505, 402, 16,	17,	201,	506,	401, 508,	507,	202,
1, 107, 108, 109, 22, 23, 112, 113, 24, 25, 110, 111,	114, 115,	516, 27, 28, 402, 505,	35, 29, 31, 32,	501, 502, 401, 34, 33, 30, 36, 503, 504, 506, 37, 38, 201,	508, 509, 202,		510, 511,	204, 206,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

514,	601,	515,

	SP 1	SP 2	m
•			
	•	•	
			•



MOTOR
MOTEUR
MOTORE



R 108 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 Regeleinsatzpunkt der Automatik
CONTROL FOR ADJUSTING STARTING POTENTIAL OF AUTOMATIC
CONTROLE POUR L'AJUSTAGE DE LA TENSION DE COUPURE DE L'AUTOMATISME
REGOLATORE DEL PUNTO DI LAVORO DELL' AUTOMATICO

R 509 Einstellregler für Vollpegelwert der Aussteuerungs-Leuchtanzeige
ADJUSTMENT OF MAXIMUM LEVEL OF RECORDING LEVEL INDICATOR
REGLAGE 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

Elko
Tantal - Elko
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

Wiedergabe Aufnahme	⎓	Gleichspannungen gemessen mit Grundig-Röhrenvoltmeter RV 3 ohne Signal gegen Masse. Signalspannungen (f = 1 kHz) gemessen mit Grundig Röhrenvoltmeter RV 55.
PLAYBACK RECORDING	⎓	DC VOLTAGES MEASURED AGAINST GROUND AND NO SIGNAL APPLIED WITH GRUNDIG VTVM RV 3. SIGNAL VOLTAGES (f = 1kHz) MEASURED WITH GRUNDIG-VTVM RV 55.
REPRODUCTION ENREGISTREMENT	~	TENSIONS CONTINUES MESUREES PAR RAPPORT AU CHASSIS ET SANS SIGNAL AVEC GRUNDIG-VOLMETRE A LAMPES RV 3. TENSIONS DE SIGNAL (f = 1kHz) MESUREES AVEC GRUNDIG-VOLTMETRE A LAMPES RV 55.
ASCOLTO REGISTRAZIONE	⎓ ~	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.

CES!

CON RISERVA DI MODIFICA!

GRUNDIG

TK 148 / TK 148 U
Automatic

(31008-906.01) / (31008-906.02)

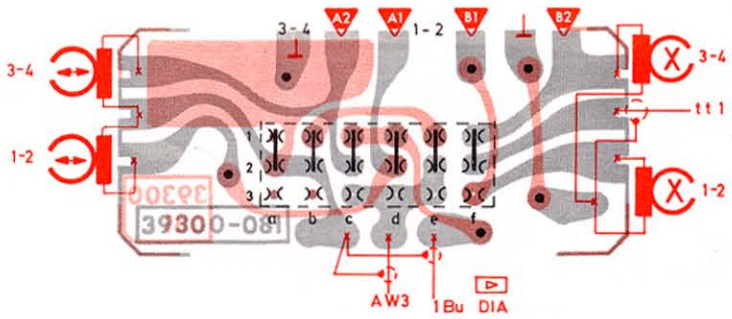
21367 260572 Ni.

(31008-942.11)

PRINTED CIRCUIT PANELS WITH WIRING

Druckplatte
PRINTED CIRCUIT
CIRCUIT IMPRIME
PIASTRA STAMPATA

S



Lötse
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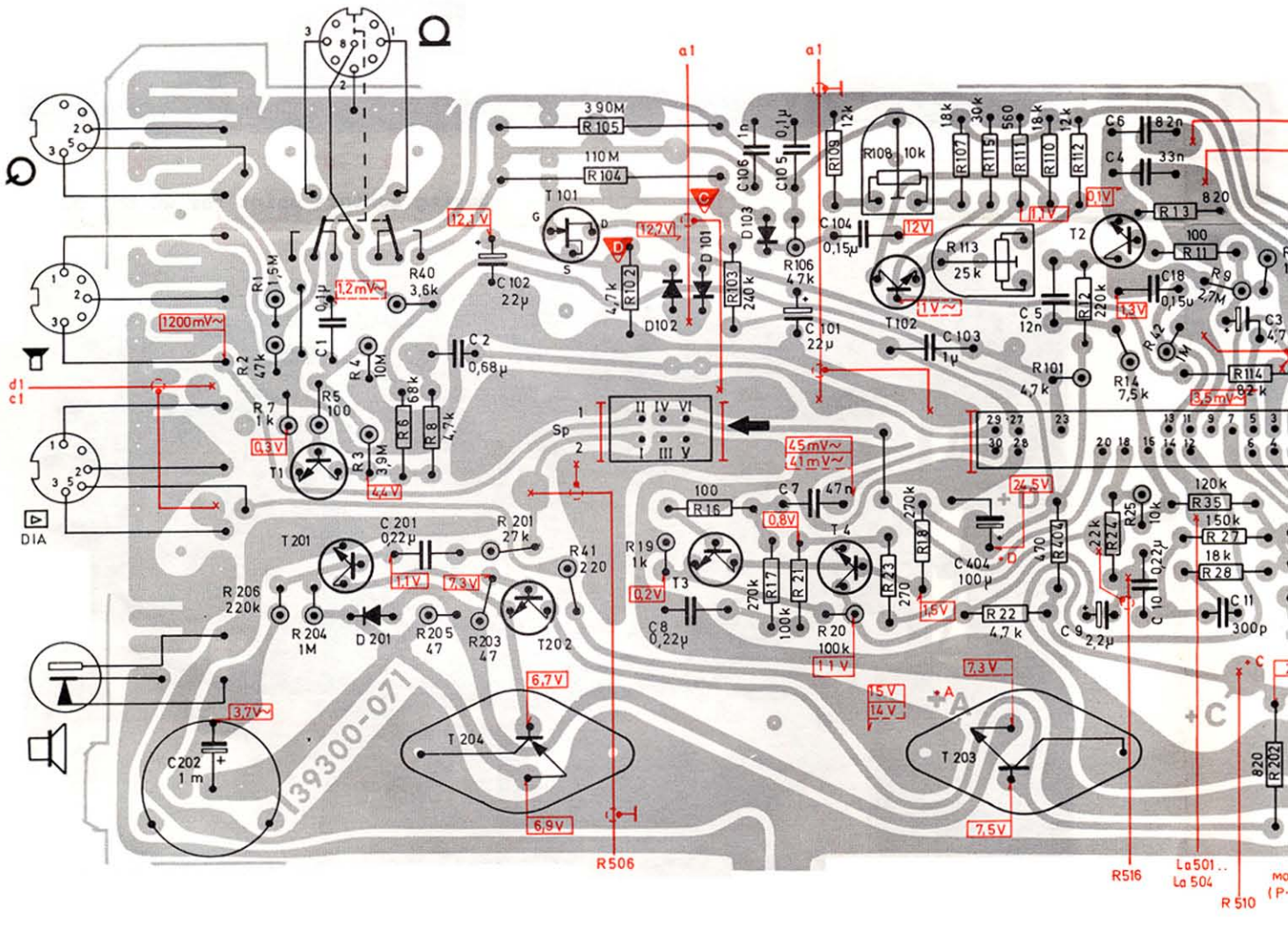
Druckplatte
PRINTED CIRCUIT
CIRCUIT IMPRIME
PIASTRA STAMPATA

V



Druckplatte
PRINTED CIRCUIT
CIRCUIT IMPRIME
PIASTRA STAMPATA

R

Lötseite
SOLDER SIDE
COTE DES SOUDURES
LATO SALDATURE

Bestückungsseite
COMPONENT SIDE
VUE DU COTE DES COMPOSANTS
LATO COMPONENTI