Quality Uncompromised

ROTEL®

Technical Manual

STEREO CASSETTE TAPE DECK

RD-830

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INHALTSVERZICHMIS

TABLE DES MATERES

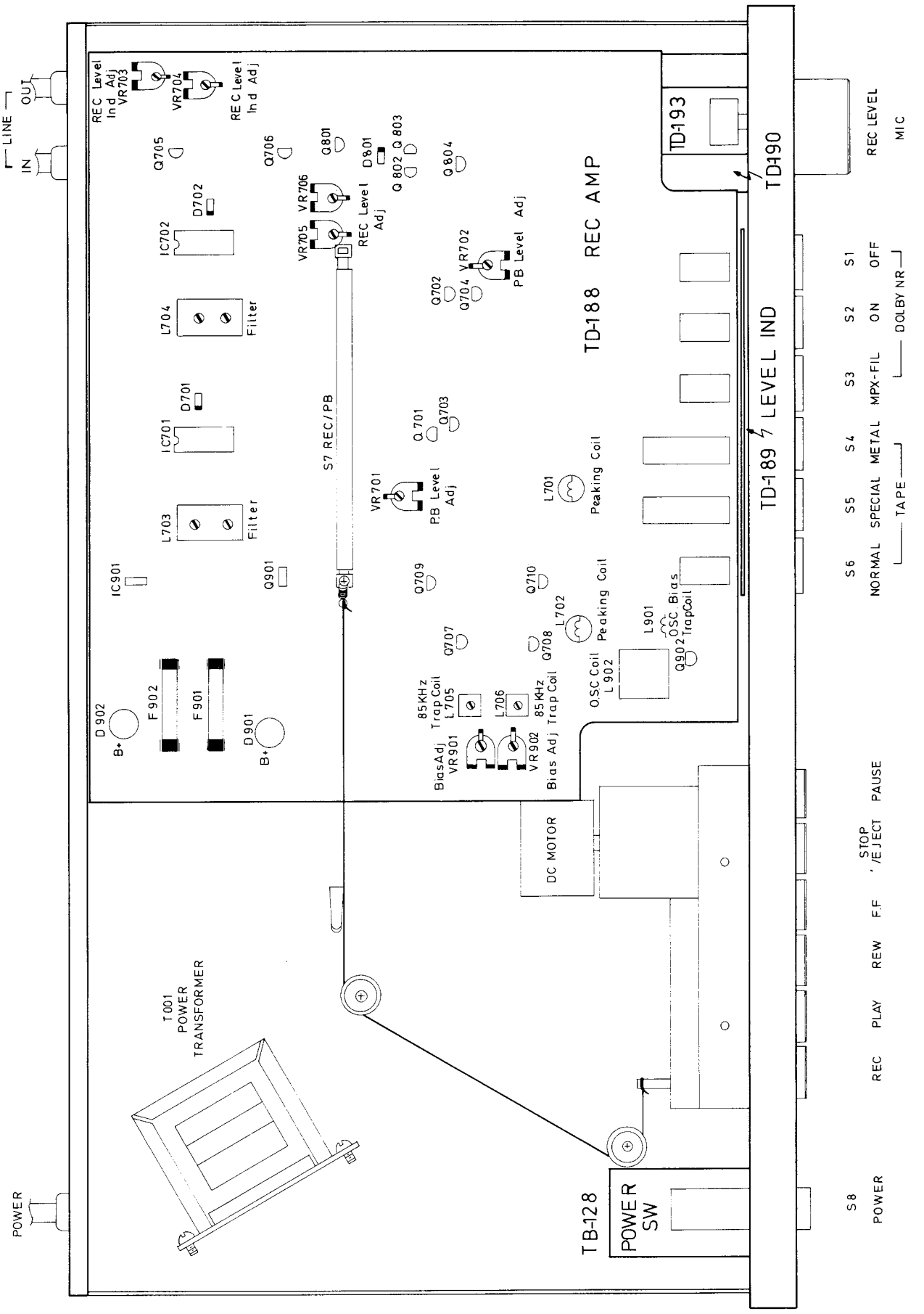
THE ROTEL CO., LTD.
1-36-8 OHOKAYAMA, MEGURO-KU, TOKYO 152, JAPAN

ROTEL ELECTRONICS CO., LTD.
ROTEL BUILDING, 3F, 33-2 FU HSING N. ROAD, TAIPEI, TAIWAN, REPUBLIC OF CHINA

ROTEL HI FI LIMITED.
2-4 ERICA ROAD, STACEY BUSHES, MILTON KEYNES, BUCKINGHAMSHIRE, ENGLAND

Printed in Taiwan '84 NOV. MN20001056

Chassis Layout/ Chassis-Anordnung/ Installation de Châssis



Playback System Adjustments

Instrumente: Oscilloscope, AC VTVM. Frequency Counter and Test Tape
Conditions: Oscilloscope, AC VTVM and Frequency Counter...LINE OUT Tape Selector...NORMAL Dolby NR...OFF

Adjustment Item	Test Tape	Adjust	Adjust for
Azimuth	LCT-3004-C	REC/PB head screw	Obtain largest wave form on Oscilloscope for both channels (Fig. 1)
Dolby Level	LCT-7001	VR701 (L-ch) VR702 (R-ch)	AC VTVM reads 580mVat IC 701 TP5 (IC702 TP6)
Playback EQ Check	LCT-3009-C	Output Level difference between 40Hz, 1KHz and 10KHz signal is within ±3.0dB	
Tape Speed Deflection Check/Tape Speed Adjust	LCT-3001	Check that allowable margin of deflecting at middle of or at the end of winding is in the range of +2%−1% (at 3000Hz allowable margin of deflection of speed is 3060-2970) If Tape Speed deflection surpasses the above range adjust speed of Motor (Fig. 3)	

Recording System Adjustments

Instruments: Oscilloscope, Signal Generator AC VTVM and Blank Tape
Conditions: Dolby NR...OFF REC Level...Maximum

Adjustment Item	Coupling	Tape Selector	Adjust	Adjust for
Bias Carrier	Oscilloscope...Point TP1 L-ch (TP2R-ch)	METAL	L705 (L-ch) L706 (R-ch)	Obtain Min. deflection on the Oscilloscope
19KHz Filter	S.G. (400Hz 0dB) LINE IN... TP 7(8) LINE OUT... TP5(6) Changed S.G. to 19KHz Dolby NR...ON	NORMAL	L703 (L-ch) L704 (R-ch)	AC VTVM reads-30dB (Minimum)
Bias Voltage	Oscilloscope...Point 11 L-ch (12R-ch)	METAL	VR901 (L-ch) VR902 (R-ch)	AC VTVM reads 8 mV

REC/PB System Adjustments

Instruments: Signal Generator, H.D. Analyzer and Blank Tape
Conditions: Dolby NR...OFF REC Level...Maximum PLAY, REC, PAUSE...ON

Adjustment	Conditions	Adjust	Adjust for
REC/PB Output Level	S.G. (400Hz 0dB) LINE IN... PIN 7(8) LINE OUT...PIN5(6) 500 mV Release Pause Button and playback it again.	VR705 (L-ch) VR706 (R-ch)	Recording and Playback level difference must be within ±1dB
Distortion Check	S.G. (400Hz 0dB) LINE IN... PIN 7(8) LINE OUT...PIN 5(6) 500 mV H.D. Analyzer...LINE OUT Release Pause Button and playback it again.	Check that distortion is within following range. a. METAL Tape ..... under 2% b. SPECIAL Tape ..... under 4% c. NORMAL Tape ..... under 2%	
	If the distortion factor exceeds the above, recheck Bias Current Adjustment		
Frequency Response Check	METAL Tape insert it	VR901 (L-Ch) VR902 (R-Ch)	40Hz-125Hz...5dB 125Hz-10KHz...3dB 10KHz-15KHz...5dB
	SPECIAL Tape insert it		
	NORMAL Tape insert it		40Hz-125Hz ..5dB 125Hz-10KHz...3dB 10KHz-14KHz...5dB

Wiedergabepegels-Einstellung

Instrumente: Oszillograph, Wechselspannungsvoltmeter, Frequenz-Zähler und Test-casette
Bedienung: Oszillograph, Wechselspannungsvoltmeter und Frequenez-Zähler...LINE OUT, Bank Wahler...NORMAL
Dolby NR Taste...OFF

Einstellungsteil	Test-Casette	Einstellung	Einstellungszweck
Azimut	LCT-3004-C	REC/PB Tonkopfschraube	Maximum-Wellenform auf Oszillograph für beiden Kanäle (Abb. 1) erhalten.
Dolby-Regel	LCT-7001	VR701 (L-K) VR702 (R-K)	Wechselspannungsvoltmeter auf 580mV einstellen bei IC701 TP5 (IC702 TP6)
Prüfung der Wiedergabe "EQ"	LCT-3009-C	Ausgangspegelunterschied zwischen 40Hz, 1KHz und 10KHz darf innerhalb ± 3.0dB betragen.	
Überprüfung der Bandgeschwindigkeit /Einstellung der Bandgeschwindigkeitabweichung	LCT-3001	'Prüfen, ob' Abweichung von der Sollgeschwindig -keit im Bereich + 2%-1% liegt (bei 3000Hz zwischen 3060-2970 Hz). Bei grösser Abweichung Motorgeschwindigkeit nachstellen (Abb. 3)	

Aufnahmesystems-Einstellung

Instrumente: Oszillograph, NF-Generator, Wechselspannungsvoltmeter und Leercasette.
Bedienungen: Dolby NR Taste...OFF Aufnahmepegelregler...Maximum

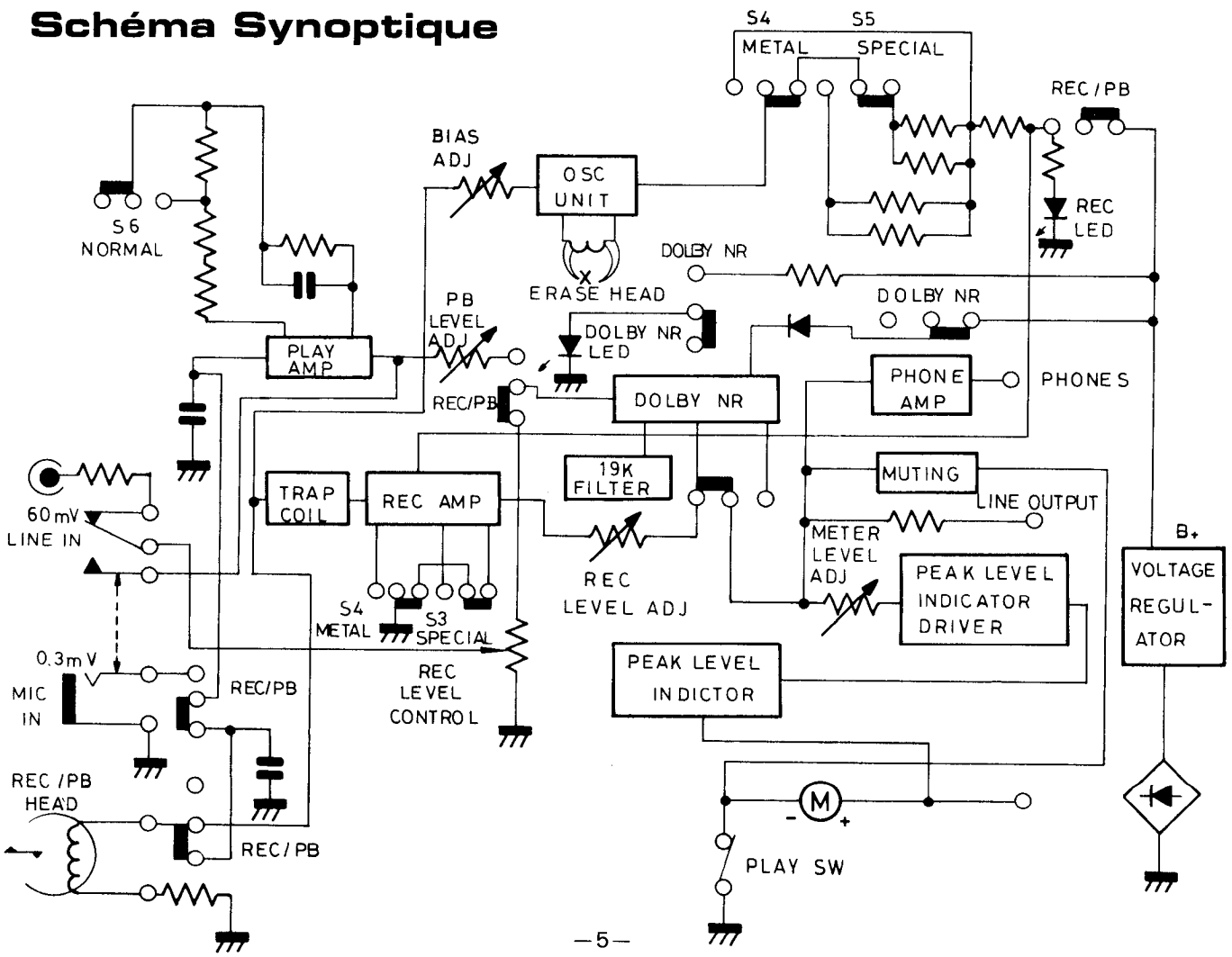
Einstellungsteil	Kupplung	Band-Wähler	Einstellung	Einstellungszweck
Bias-Trägerstrom	Oszillograph... Punkt TP1 L-K (TP2 R-K)	METAL	L705 (L-K) L706 (R-K)	Min. Abweichung auf Oszillograph erhaltern.
19 KHz Filter	NF-Generator (400Hz 0dB) LINE IN... TP 7(8) LINE OUT... TP5(6) NF-Generator auf 19 KHz. Dolby NR...ON.	NORMAL	L703 (L-Ch) L704 (R-Ch)	Wechselspannungs-voltmeter auf −30dB einstellen, (Minimum)
Vorspannung	Oszillograph... Punkt 11 (12R-K).	METAL	VR901 (L-Ch) VR902 (R-Ch)	Wechseispannungs-Voltmeter auf 8 mV einstellen.

Aufnahmesystems-und Wiedergabepegels-Einstellung

Instruments: NF-Generator, Klirrfaktormessbrücke und Leer-cassette
Bedienungen: Dolby NR...OFF, Aufnahmespegel...Maximum PLAY, REC, PAUSE Taste...ON

Einstellung	Bedienungen	Einstellen	Einstellungszweck
Aufnahme/ Wiedergabe Ausgangspegel	NF-Generator (400Hz 0dB) LINE IN. Punk 7(8) LINE OUT... PIN5(6) 500 mV Pause-Taste freigehen und spielenes rück noch einmal.	VR705 (L-Ch) VR706 (R-Ch)	Die Differenz der Aufnahme und Wiedergabe-Ausgangspegel innerhalb einer Toleranz von ± 1dB liegen müssen.
Prüfen des Klirrfaktors	NF-Generator (400Hz 0dB) LINE IN. Punk 7(8) LINE OUT... PIN5(6) 500 mV Klirrfaktormessbrücke...LINE OUT Pause-Taste freigeben und spielenes rück noch einmal	Prüfen ob Klirrfaktor den folgenden werten entspricht: a. METAL Band ..... unter 2% b. SPECIAL Band ..... unter 4% c. NORMAL Band ..... unter 2%	
	Wenn der Klirrfaktor die angegebenen Werte übersteigt, dann Vormagnetisierungstrom prüfen.		
Prüfen des Frequenzgangs	METAL Band einschieben	VR901 (L-Ch) VR902 (R-Ch)	40Hz-125Hz...5dB 125Hz-10KHz...3dB 10KHz-15KHz...5dB
	SPECIAL Band einschieben		
	Normal Band einschieben		40Hz-125Hz...5dB 125Hz-10KHz...3dB 10KHz-14KHz...5dB

Block Diagram/Blockschaltbild/ Schéma Synoptique



Réglages de système de la reproduction

Instruments: Oscilloscope, Voltmétre éléctronique à courant alternatif, Analyseur de fréquence et bande d'essai.
Conditions: Oscilloscope, Voltmétre éléctronique à courant alternatif et analyseur de fréquence....LINE OUT selecteur de bande....NORMAL
Dolby NR....OFF

Item de réglage	Bande d'essai	Régler	Régler pour
Azimut	LCT-3004-C	Vis de tête de Enregistrement/reproduction	Obtenir forme d'onde la plus grande sur l'oscilloscope pour les deux canaux (fig.1)
Niveau de Dolby	LCT-7001	VR701 (canal gauche) VR702 (canal droit)	Le voltmétre éléctronique á courant alternatif lit 580mV a IC 701 TP5 (IC 702 TP6)
Contrôle de l'égalisation de reproduction	LCT-3009-C	Différence de niveau de sortie entre les signaux 40 Hz, 1 KHz et 10KHz est dans ±3.0dB	
Contrôle de la Variation de la vitesse de bande/réglage de la vitesse	LCT-3001	Vérifier que la marge admissible de variation au milieu ou à la fin de bobinage est dans la plage donnee de +2%−1% (à 3000Hz marge admissible de variation de la vitesse est 3060-2970). Si la variation de vitess de bande surpasse la plage donnée ci-dessus, régler la vitesse de moteur. (fig. 3)	

Réglages de système de l'enregistrement

Instruments: Oscilloscope, Générateur de signal, voltmétre éléctronique à courant alternatif et bande vierge
Conditions: Dolby NR...OFF Niveau de l'enregistrement...maximum

Item de réglage	Accouplement	Selecteur de bande	Régler	Régler pour
Ports-Polarisation	Oscilloscope...Point TP1 (TP2 canal droit)	METAL	L705 (canal gauche) L706 (canal droit)	Obtenir la variation min. sur l'oscilloscope
Filtre 19KHz	Générateur de signal(400Hz 0dB) LINE IN...TP 7(8) LINE OUT...TP 5(6) Changé le générateur de signal à 19KHz Dolby NR...ON.	NORMAL	L703 (L-ch) L704 (R-ch)	voltmétre éléctronique à courant alternatif lit −30dB (minimum)
Voltage de polarisation	Oscilloscope... Point 11, 12 Canal droit)	METAL	VR901 (L-Ch) VR902 (R-Ch)	Voltmétree éléctronique à courant alternatif lit 8 mV

Réglages de système de l'enregistrement/reproduction

Instrument: Générateur de signal, analyseur H.D., et bande vierge
Conditions: Dolby NR...OFF
Niveau de l'enregistrement...maximum Reproduction, enregistrement, pause....ON

Réglage	Conditions	Régler	Régler pour
Niveau de la sortie de l'enregistrement/reproducion	Générateur de signal (400 Hz 0dB) LINE IN... Point 7(8) LINE OUT...PIN5(6) 500 mV Relâcher le houton de pause et reproduïre encore.	VR705 (Canal gauche) VR706 (Canal droit)	Différence de niveau de l'enregistrement et reproduction doit être dans ± 1dB
Contrôle de la déformations	Générateur do signal (400Hz 0dB) LINE IN...point 7(8) LINE OUT...point 5(6) 500 mV Relâcher le bouton de pause et reproduire encore	Vérifier que la déformation est dans la plage donnée suivante. 1. Bande métale.....sous 2% B. Special .....sous 4% c. Bande normale ..... sous 2%	
	Si le facteur de la déformation excède les valeurs ci-dessus, vérifier le réglage du courant de la polarisation.		
Contrôle de réponse de fréquence	Insérer la bande METAL	VR901 (Canal gauche) VR902 (Canal droit)	40Hz-125Hz...5dB 125Hz-10Hz...3dB 10KHz-15KHz...5dB
	Insérer la bande SPECIAL		
	Insérer la bande NORMAL		40Hz-125Hz...5dB 125Hz-10KHz...3dB 10KHz-14KHz...5dB

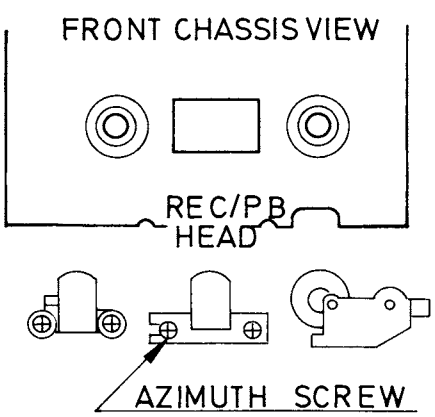


Fig. 1 Azimuth Adjustment
Abb. 1 Azimuteinstellung
Fig. 1 Réglage de l'azimut

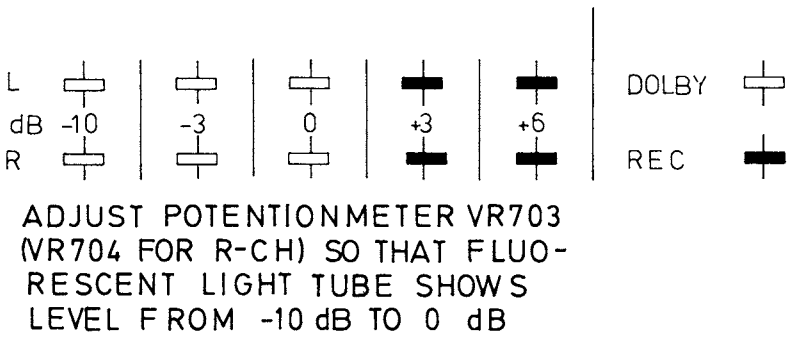


Fig. 2 Dolby Level Adjustment
Abb. 2 Einstellung der Dolby-Regel.
Fig. 2 Réglage du niveau Dolby

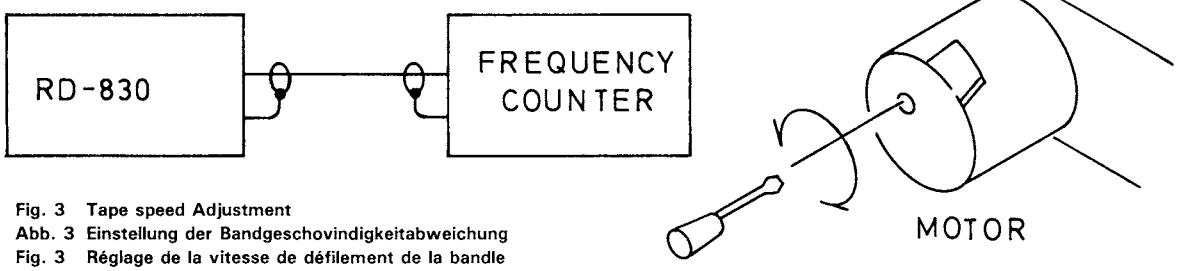
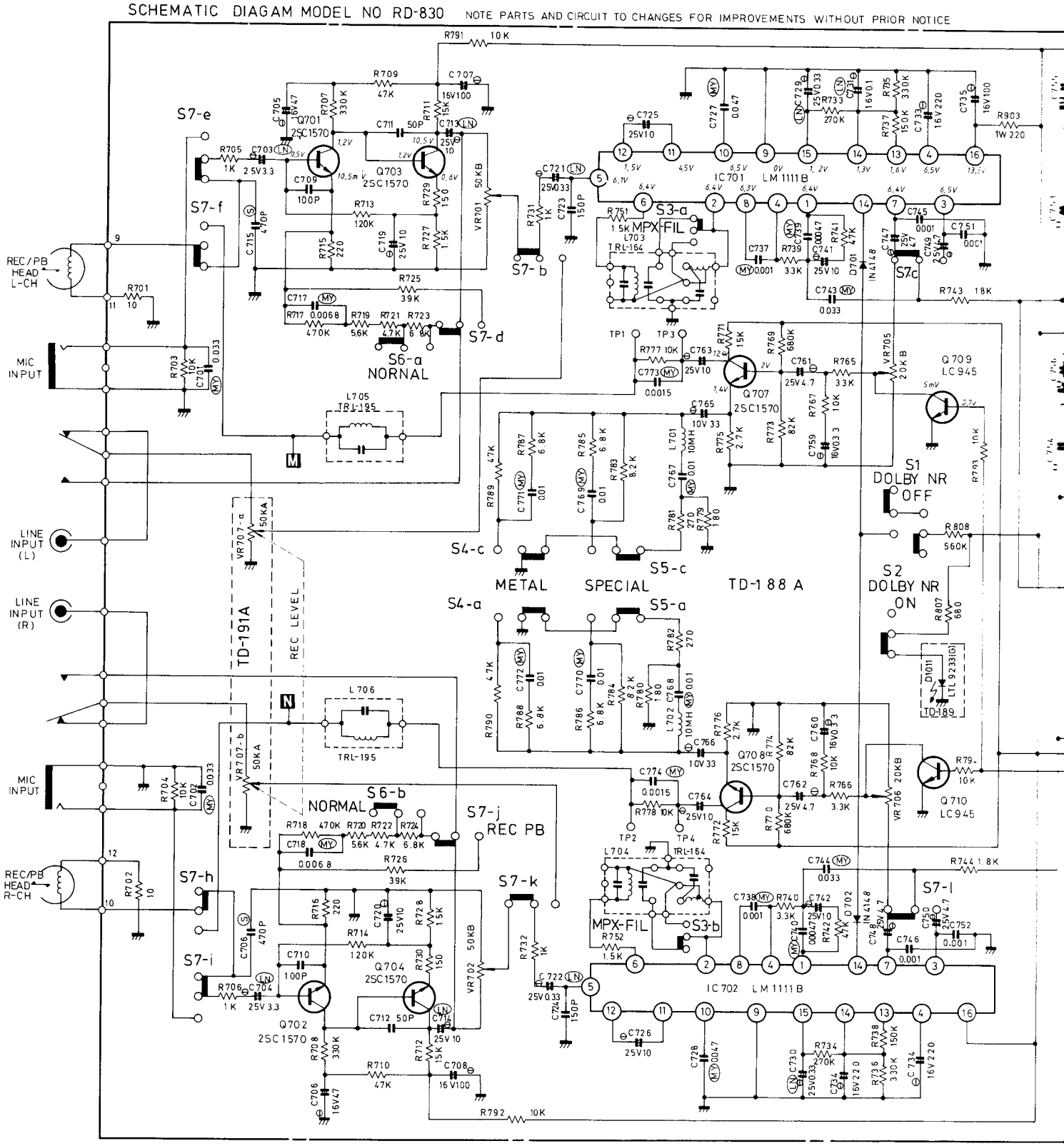


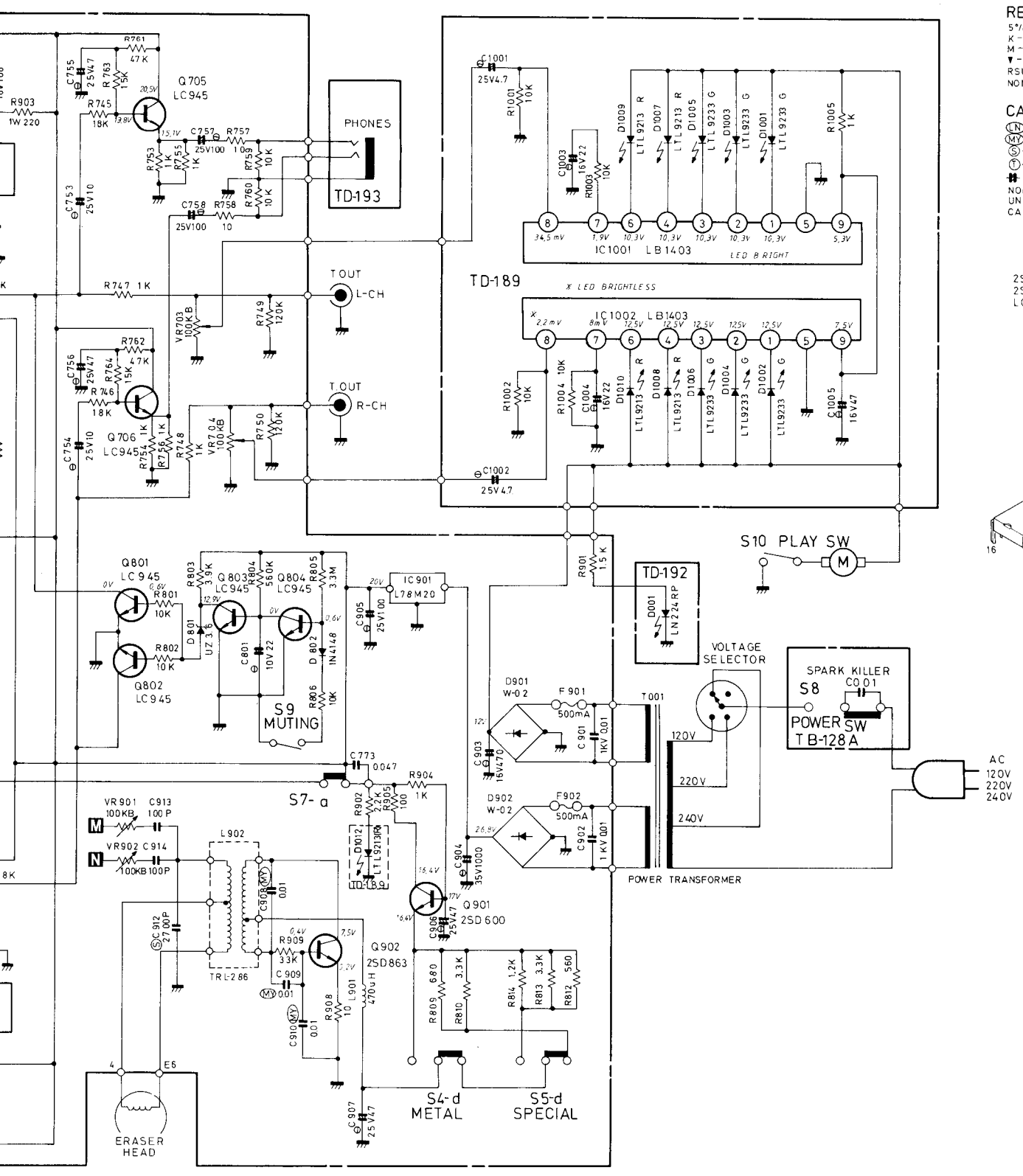
Fig. 3 Tape speed Adjustment
Abb. 3 Einstellung der Bandgeschovindigkeitabweichung
Fig. 3 Réglage de la vitesse de défilement de la bandle

Repair Parts List/Reparaturteilliste/ Liste des piéces de rechange

Schematic Location	Computer No.	Parts No.	Description
		TRANSISTORS, DIODES AND IC'S	
Q701,702	TR30000108	032 2SC1570	2SC1570 (E,F) Deck Play EQ Amp
Q703,704	TR30000108	032 2SC1570	2SC1750 (E,F) Deck Play EQ Amp
Q705,706	TR30000248	032LC945	LC945, Phone Amp
Q707,708	TR30000108	032 2SC1570	2SC1570 (E,F) REC Amp
Q709,710	TR30000248	032LC945	LC945, for Mute
Q801,802	TR30000248	032LC945	LC945, for Mute
Q803,804	TR30000248	032LC945	LC945, for Mute
Q901	TR40000069	032 2SD600K	2SD600K (E,F) Switching
Q902	TR30000080	032 2SD863	2SD863, OSC
D701,702	DD10000100	034IN4148	IN4148, Reversal Prevention
D801	DD20000107	034UZ-3.6B	UZ-3.6B, Bias
D802	DD10000100	034 IN4148	IN4148, Reversal Prevention
D901,902	DD10000123	034W02	W02, Rectifier
D1001~1006	DD40000617	034LTL9233A	LTL9233A, REC Level Ind.
D1007~1010	DD40000563	034LTL9213A	LTL9213A, REC Level Ind.
D1011	DD40000617	034LTL9233A	LTL9233A, Dolby NR
D1012	DD40000563	034LTL9213A	LTL9213A, REC Ind.
IC701,702	IC00000380	031LM1111B	LM1111B, Dolby IC
IC901	IC00000548	031L78M20	L78M20, Regulator
IC1001,1002	IC00000925	031LB1403	LB-1403, LED Driver
		COIL, VARIABLE RESISTORS AND SWITCHS	
L701,702	LM00000164	021TRL-154	10MH TRL-154, Peaking Coil
L703,704	LC11640002	021TRL-164	TRL-164, Filter
L705,706	LC21950000	021TRL-195	TRL-195, 85KHz Trap Coil
L901	LM00000012	021 TRL-237	470μH TRL-237, OSC Bias Trap Coil
L902	LC22860006	021 TRL-286	TRL-286, OSC Coil
VR701,702	RV20000235	05108-301-50KB	50KB, PB Level Adj.
VR703,704	RV20000181	05108-301-100KB	100KB, REC Level Ind.. Adj.
VR705,706	RV20000223	05108-301-20KB	20KB, REC Level Adj.
VR901,902	RV20000181	05108-301-100KB	100KB, Bias Adj.
S1~S6	SH16000096	0614TR-1995-6	6 Key Push Switch
S7	SH20000101	0614TR-1205	Slide Switch
S8	SH40000120	061C-3600B	Power Switch

Schematic Diagram/Schaltungsschema/Diagramme de



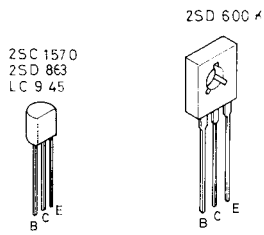


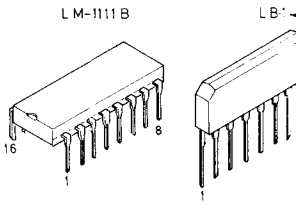
RESISTORS

5% TOLERANCE UNLESS OTHERW
K----KILO OHM
M----MEGA OHM
▼----COMPOSITION RESISTORS 1/2
RSU METAL OXIDE FILM RESISTOR
NON MARK LOW NOISE TYPE CARBO

CAPACITORS

(LN)--LOW NOISE ELECTROLYTIC CA
(MY)--MYLAR FILM CAPACITORS
(S)---POLYSTYRENE FILM CAPACITOR
(T)---TANALUM CAPACITORS
⊕--ELECTROLYTIC CAPACITORS
NON MARK CERAMIC CAPACITORS
UNLESS OTHERWISE NOTED IN SCH
CAPACITANCE VALUES ARE EXPR



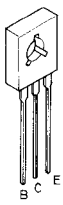


Wiring Diagram/ Drahtleitung Diagramm/Diagram

TORS
OLERANCE UNLESS OTHERWISE OTED
LO OHM
EGA OHM
OMPOSITION RESISTORS 1/2 WATT
AL OXIDE FILM RESISTORS
K LOW NOISE TYPE CAPBON RESISTORS

ITORS
Y NOISE ELECTROLYTIC CAPACITORS
AR FILM CAPACITORS
YSTYRENE FILM CAPACITORS
ATLUM CAPACITORS
CTROLYTIC CAPACITORS
RK CERAMIC CAPACITORS
OTHERWISE NOTED IN SCHEMATIC ALL
ANCE VALUES ARE EXPRESSED

2SD 600 K



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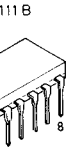

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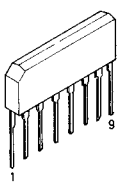
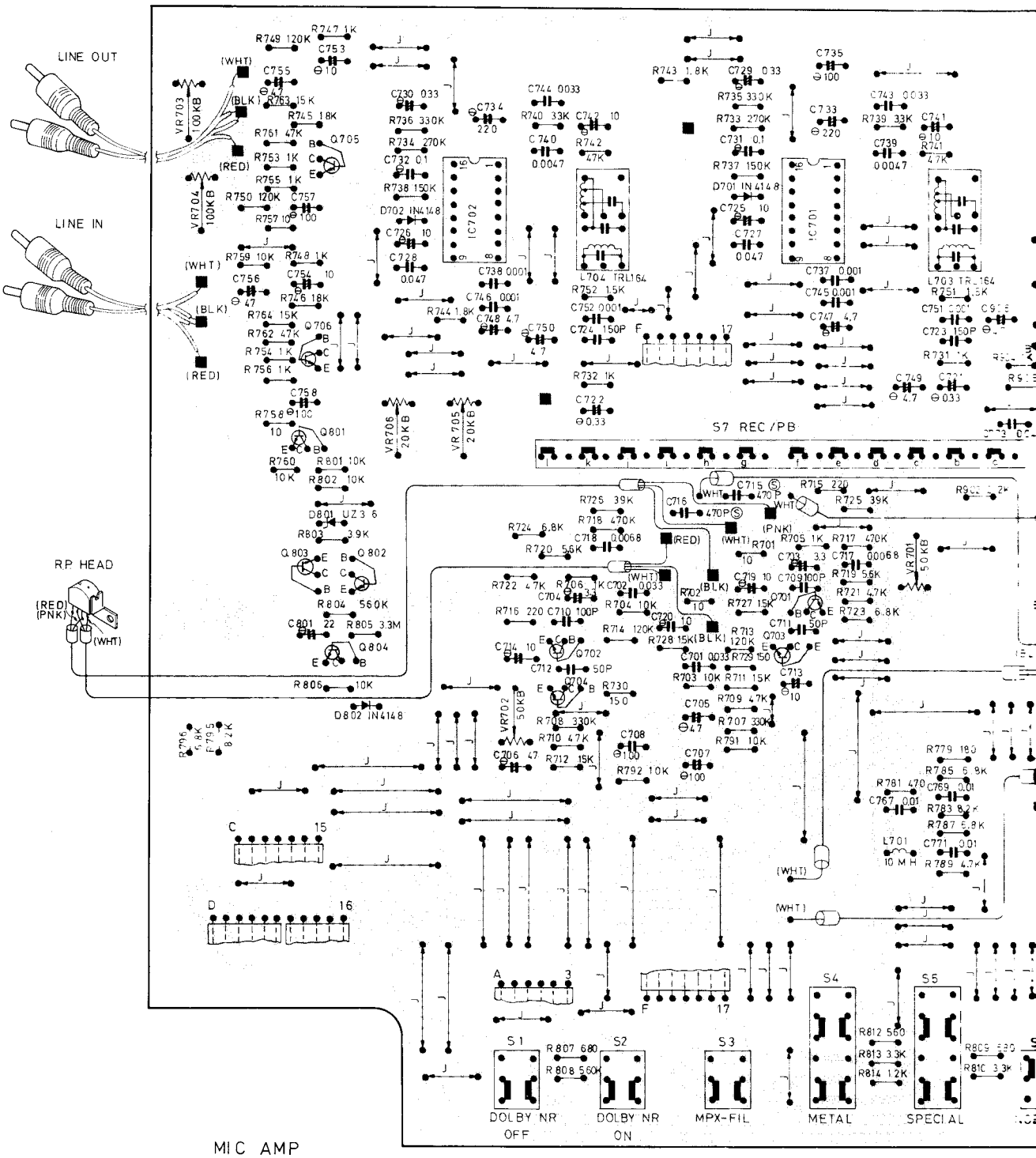
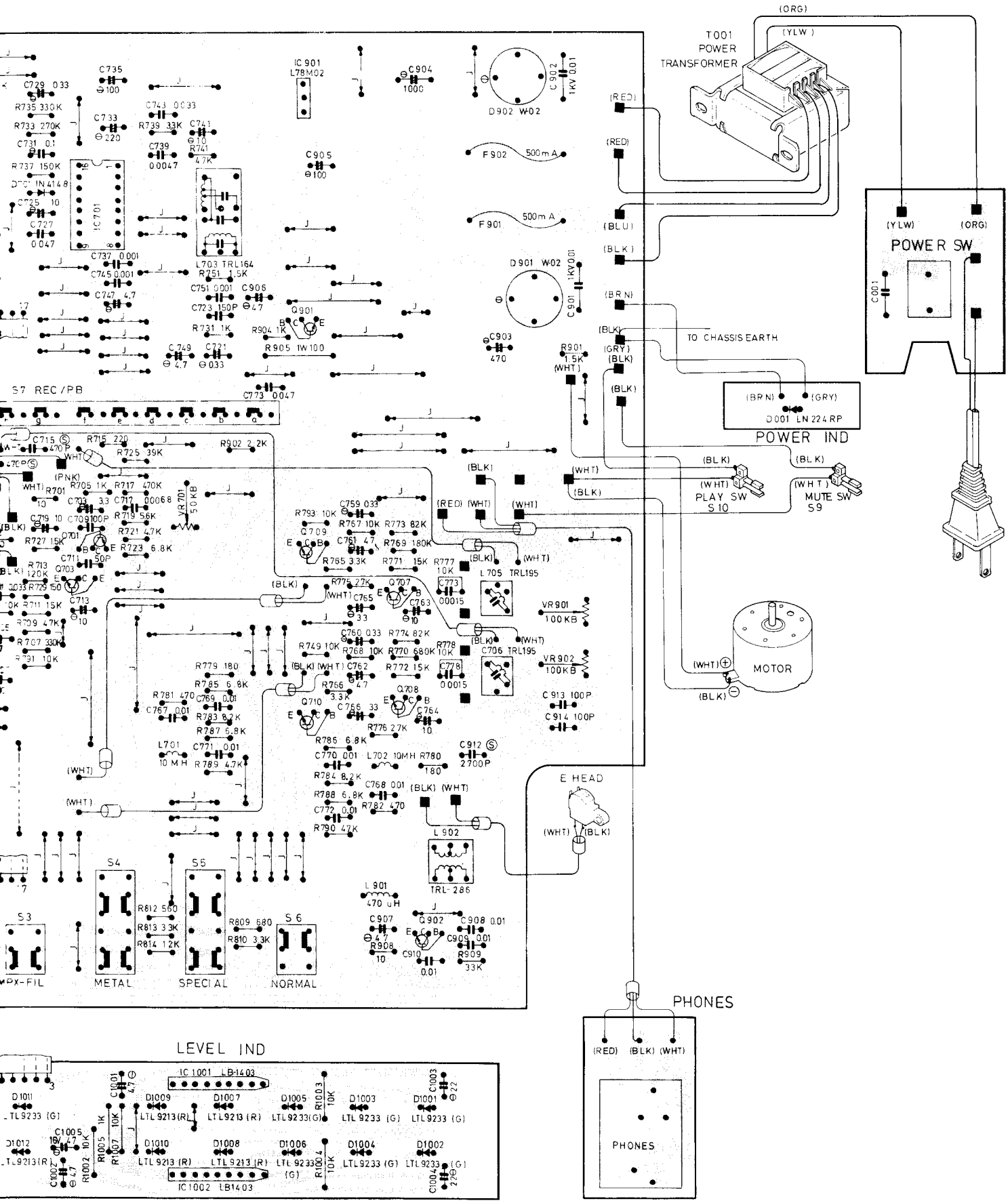




agramm/Diagramme de connexion



Key No.	Computer No.	Parts No.	Description
1	AA40000330	010 2TVQ-1A#1	Plas Front Panel
2	KB10000936	012 4TR-1969#1	Knob 30ϕ BIK
3	KB20000854	012 4TR-1816#0	Push Button
4	OM00001633	014 4TVQ-2#1	L.E.D. Ornamental Plate
5	OM00001700	014 3TVJ-11#2	Cassette Door Plate
6	OM00001657	014 4TVQ-3	Acrylic Door Plate
7	KB 20000507	012C-3982#2	Push Button
8	NW10000153	071 4TWW-24	Speed Nut
9	SP10003830	013 4TVJ-5	Mic Lock Plate
10	PC17190902	016TD-190A	P.C.B.
11	PC17191908	016TD-191A	P.C.B.
12	PC17189902	016TD-189A	P.C.B.
13	KB20000799	012 4TVC-2#3	Push Button RED
14	SP10003829	013 4TVJ-4	HJ Lock Plate
15	DC00000487	063A100-105-795	Tape Counter T3SA100-105-795
16	SP10003842	013 4TVJ-7	Tape Counter Support
17	PC17192901	016TD-192A	P.C.B.
18	PC16128905	016TB-128A	P.C.B.
19	KB20001068	012 4TVC-2#6	Deck Push Button BIK
20	DC00000463	092GT-90FMF#2	Cassette Deck Ass'y GT-90FMF#2
21	PC17188909	016TD-188A	P.C.B.
22	SP10004172	0134TR-2038#2	Front Panel Support (R)
23	SP10004160	0134TR-2038#1	Front Panel Support (L)
24	FT00000035	019 4TR-1257A	Plastic Foot
25	SP10003817	013 4TVJ-14	P.C.B. Support (C)
26	SP10003799	013 4TVJ-12	P.C.B. Support (A)
27	SP10003787	013 4TVJ-10	REC String Support (B)
28	SP10003775	013 4TVJ-9	REC String Support (A)
29	PU10000032	019 4TR-905A	Pulley
30	SP10003805	013 4TVJ-13	P.C.B. Support (B)
31	AM00000922	013 2TVJ-2A	Chassis Body
32	AR40000213	015 2TWD-14C	Plastic Rear Board
33	WI08000096	073 4TR-1135B#1	Pin Jack Shield Cord
34	SP10004070	013 4TVQ-5	SW Lock Plate
35	SP10002060	013 4TWD-15	Remote Jack Mask
36	NP00000015	015 4TR-525#1	Name Plate TNP-197
	NP00000076	015 4TR-525#7	Name Plate TNP-203
	NP00000519	015 4TR-525#24	Name Plate TNP-251
	NP00000064	015 4TR-525#6	Name Plate TNP-202A
	NP00000246	015 4TR-525#17	Name Plate TNP-238
	NP00000441	015 4TR-525#14	Name Plate TNP-234
	NP00000507	015 4TR-525#23	Name Plate TNP-250
	NP00000090	015 4TR-525#9	Name Plate TNP-205
37	PT14807106	022TT-148-GF	Power Transformer
38	SP10001730	0134TXD-18	P.T. Support
39	CD00000036	0724TR-670#1	AC Power Cord
	CD00000048	0724TR-815	AC Power Cord
	CD00000085	072C-2504A	AC Power Cord
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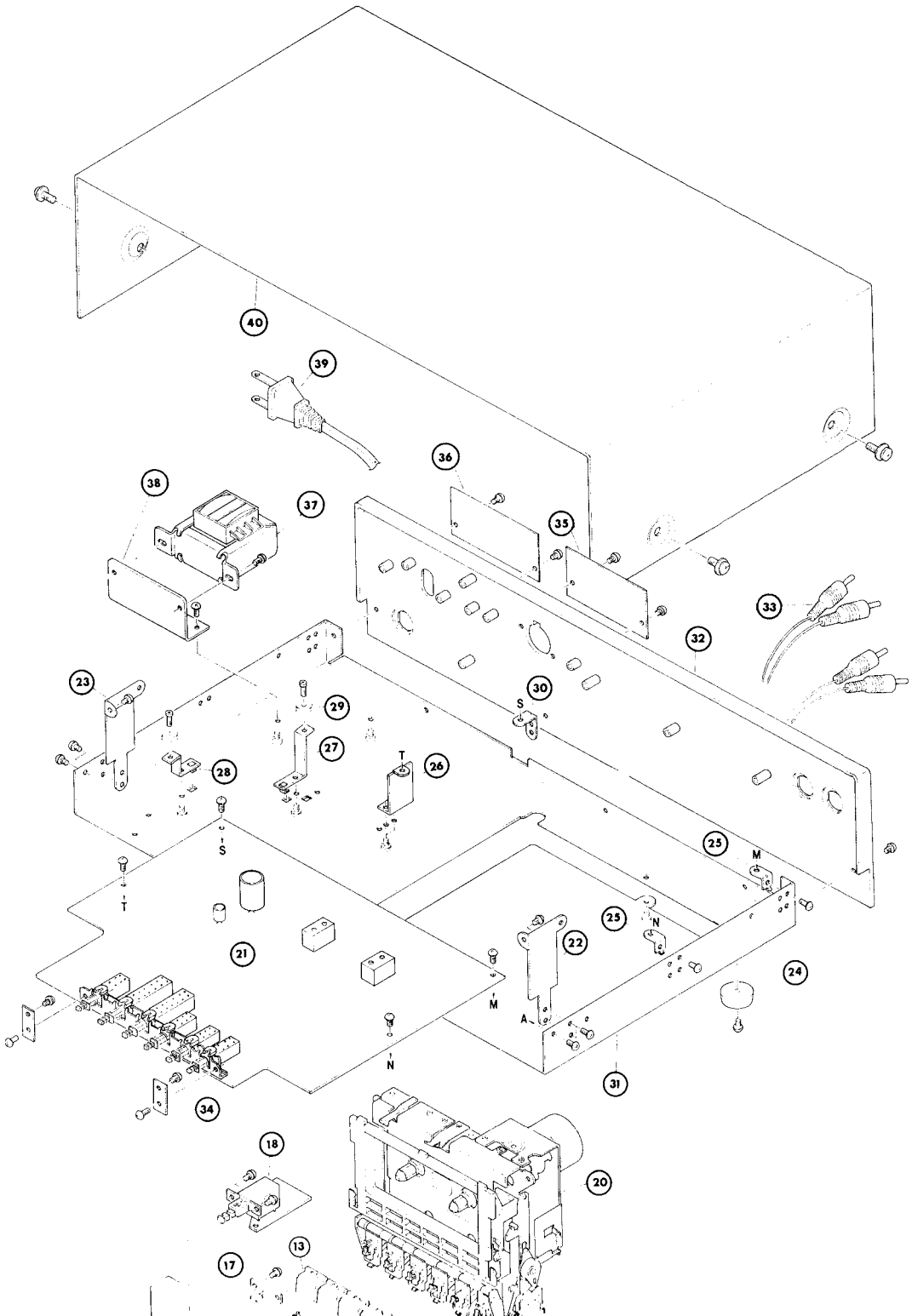
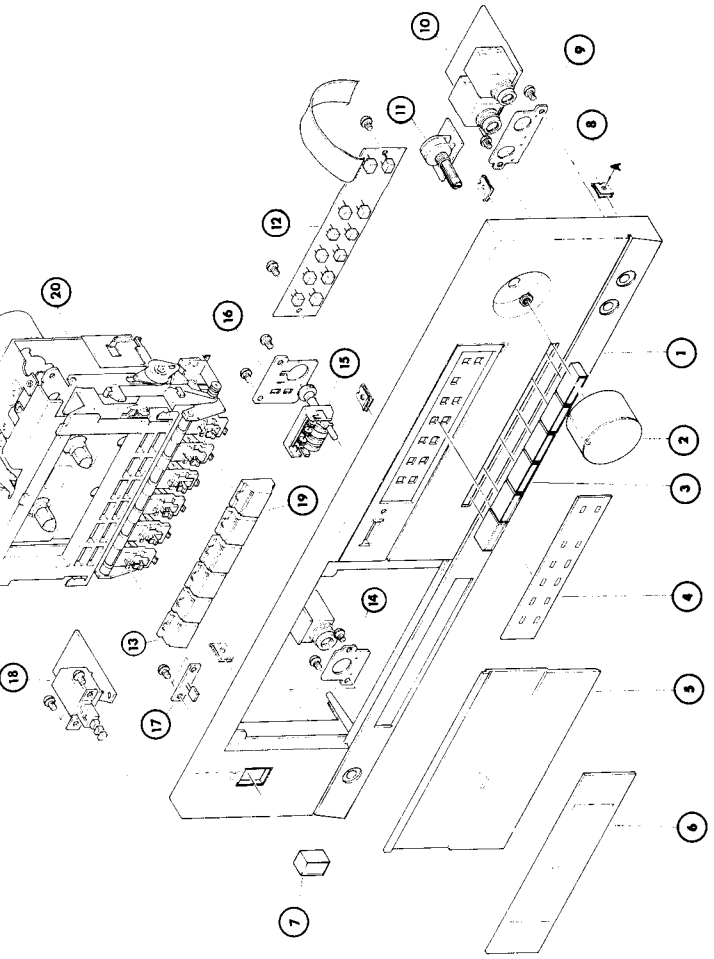
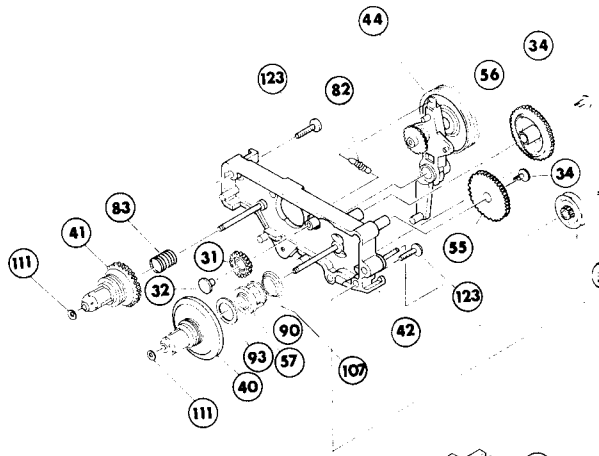
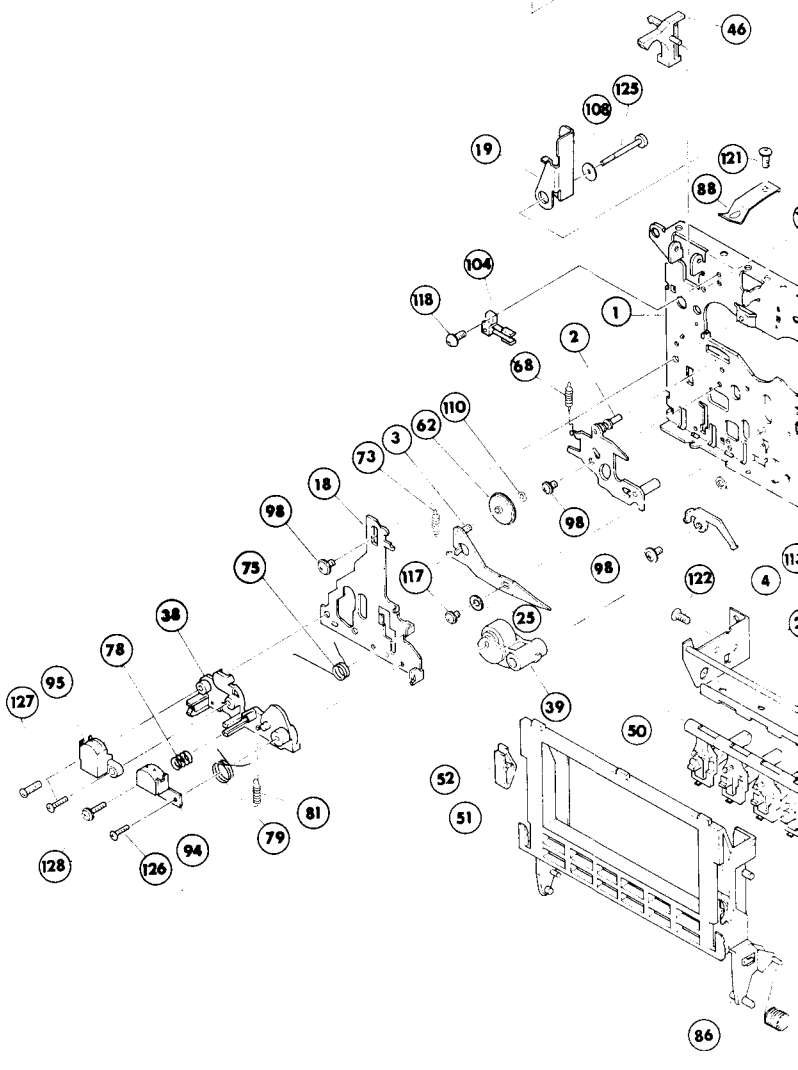


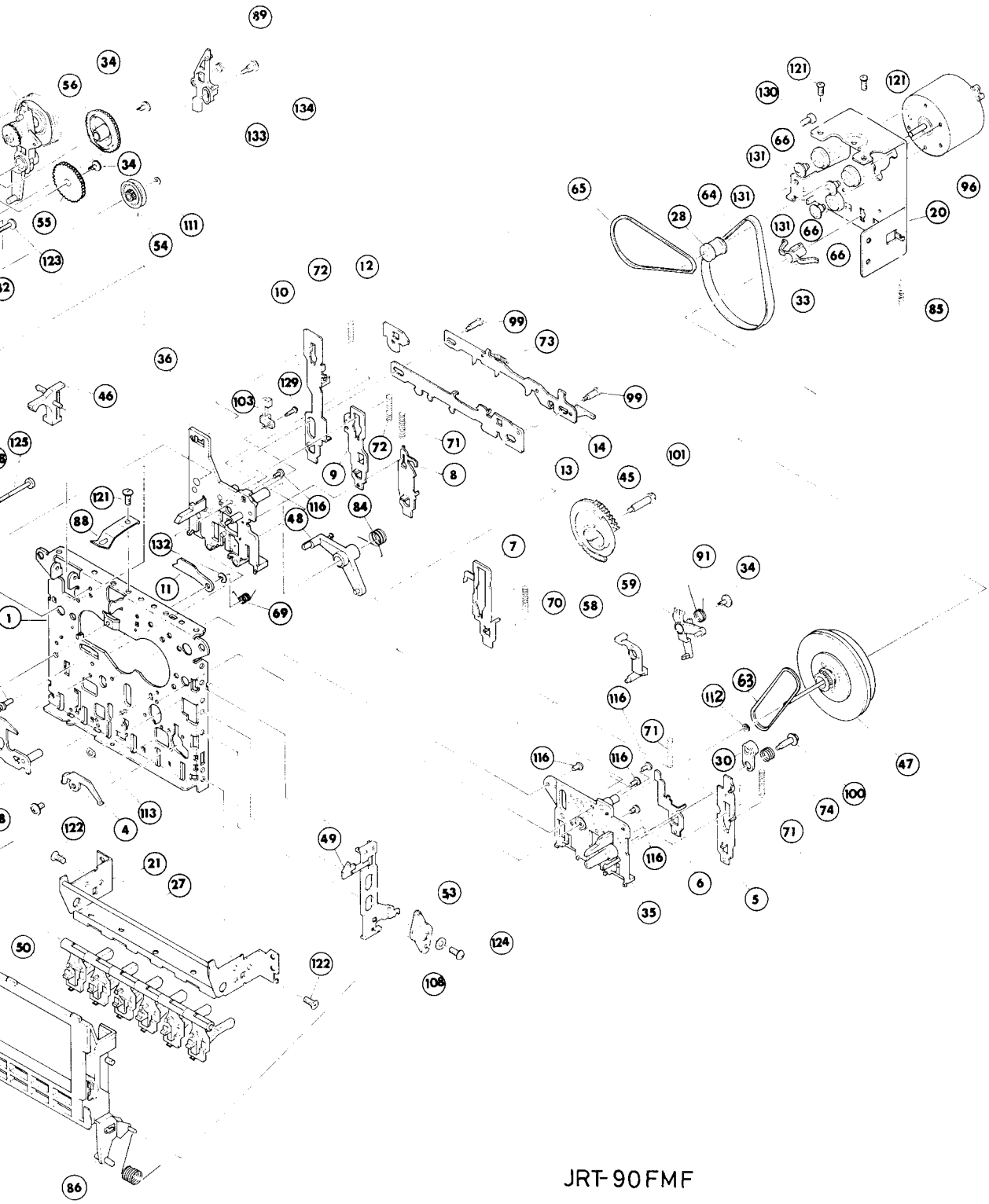






40	AU00000373	014 2TWE-5B#29	Upper Cover
	CD00000115	072C-3763	AC Power Cord
	CD00000085	072C-2504A	AC Power Cord

— Disassembly Diagram/Illustration des Auseinaderbaus/Sché



JRT-90FMF

No.	Computer No.	Parts No.	Description
1	DM09001467	MA 1141	Chassis
2	DM09001650	MD 1191	Shift Arm Assy
3	DM09001601	MD 1173	Idler Arm (HT) Assy
4	DM09001479	MD 1004	Pause Arm
5	DM09001364	MD 1165	Pause Lever (B) Assy
6	DM09001376	MD 1121	Stop Lever
7	DM09001388	MD 1142	FF Lever (B)
8	DM09001431	MD 1144	Rew Lever (B)
9	DM09001613	MD 1156	Play Lever (B)
10	DM09001455	MD 1163	Rec Lever (C)
11	DM09001510	MDS 1108	Rec Lever (BH)
12	DM09001480	MD 1061	Interlock Arm
13	DM09001583	MC 1140	Lock Cam (A)
14	DM09001273	MD 1045	Lock Cam (B) Assy
15			
16			
17			
18	DM09001406	MC 1168-2	Head Chassis
19	DM09001522	MD 1021	Rec Arm
20	DM09001595	MC 1062	Motor Holder
21	DM09001339	MC 1131	Button Holder (B)
22			
23			
24			
25	DM13000190	MD 2033	Collar
26			
27	DM13000206	MD 2016	Button Shaft
28	DM12000351	MD 2041	Motor Pulley
29			
30	DM09001315	MC 3014	Pause Cam
31	DM12000338	MD 3015	FF Gear
32	DM08000157	KD 3052	Bush
33	DM09000918	LC 3014	Capstan Holder
34	DM08000327	MD 3047	Bush
35	DM09001352	MD 3076	Laver Holder (A) Assy
36	DM09001420	MB 3075	Lever Holder (B)
37			
38	DM09001418	MC 3019-5	Head Base
39	DM01000218	MD 3072	P Roller Arm Assy
40	DM01000188	MD 3034	T Reel Assy
41	DM01000190	MD 3035	S Reel Assy
42		MC 3113	Reel Base Assy (B)
43			
44	DM09001649	MD 3096	Clutch Arm Assy
45	DM12000296	MC 3083-3	Gear (C)
46	DM09001560	MC 3021	Rec Sensor
47	DM12000340	MD 3061	Flywheel Assy (I)
48	DM09001558	MC 3086-2	Lock Arm (H)
49	DM09001534	MD 3025	Eject Lever (F)
50	DM09001571	MC 3039	Button Lever
51	DM09001492	MB 3091	Cassette Case
52	DM06000040	MD 3081	Cassette Clamp
53	DM03000180	MD 3084	Damper Assy
54	DM12000314	MD 3066	Auto Pulley
55	DM12000326	MD 3065	Auto Gear
56	DM12000302	MD 3044	Auto Cam Gear
57	DM09001390	MD 3048	Auto Clutch
58	DM09001546	MD 3043	Auto Arm (B)
59	DM09001285	MD 3042	Auto Lock Arm
60			
61			
62	DM12000284	MD 4001	Play Idler
63	DM08000339	MD 4003	Auto Belt
64	DM08000352	MD 4006	Drive Belt
65	DM08000364	MD 4008	FR Belt
66	DM08000303	MD 4002	Motor Cushion
67			

No.	Computer No.	Parts No.	Description
68	DM11000914	MD 6055	Shift Arm Spring
69	DM11000975	MD 6019	Rec Lever Spring (B)
70	DM11001098	MD 6038	FF Lever Spring
71	DM11000872	MD 6005	Rew Lever Spring
72	DM11000940	MD 6003	Lever Spring
73	DM11000951	MD 6006	Cam Spring
74	DM11000963	MD 6007	Pause Cam Spring
75	DM11000938	MD 6010	Head Chassis Spring
76			
77			
78	DM11000446	KD 6009	Head Spring
79	DM11001050	MD 6060	P Roller Spring
80			
81	DM11001001	MD 6001	Head Chassis Return Spring
82	DM11001086	MD 6035	Clutch Arm Spring
83	DM11000896	MD 6013	Back Tension Spring
84	DM11000999	MD 6050	Lock Arm Spring
85	DM11000987	MD 6040	Eject Lever Spring
86	DM11001074	MD 6079	Cassette Case Spring
87			
88	DM11001062	MDS 1097	Pack Spring
89		MD 6062	Auto Sensor Spring
90	DM11000902	MD 6016	Auto Clutch Spring
91	DM11000859	MD 6017	Auto Lock Arm Spring
92			
93	DM17000020	MD 8009	Auto Clutch Felt
94			RP Head
95			E Head
96	DM03000179	MMI-5A-2L3	Motor
97			
98	DM14000317	MD8002	Screw (A)
99	DM14000329	MD 8003-2	Screw (B)
100	DM14000330	MD 8004-2	Screw (C)
101	DM14000340	MD 8005-2	Screw (D)
102			
103	DM10000096	LSA-1119C	Leaf Switch
104	DM10000102	LSA-1120YN	Leaf Switch
105			
106			
107	DM15000386	MD 8016	Tefron Washer
108	NW20000083	2.6ϕ	Plain Washer (L)
109			
110	DM15000398	1.2ϕx3.5ϕx0.25t	Polyslider Washer
111	DM15000222	1.7ϕx3.5ϕx0.25t	Polyslider Washer
112	DM15000404	2.1ϕx5.0ϕx0.4t	Polyslider Washer
113	DM15000120	1.9ϕx5.0ϕ0.5t	Oil Stop Washer
114			
115			
116	SW45200412	+M2x4MC	Tap Tite Screw
117	SW41200510	+M2x5MC	Tap Tite Screw
118	SW41200612	+M2x6MC	Tap Tite Screw
119			
120			
121	SW41260414	+M2.6x4MC	Tap Tite Screw
122	DM14000354	+M2.6x5MC	Flat Tap Tite Screw
123	SW41260815	+M2.6x8MC	Bind Tap Tite Screw
124	SW41261315	+M2.6x13MC	Tap Tite Screw
125	DM14000305	M2.6x22	Dia Screw
126		2x8	Binding Screw
127	SW71200912	2x9	Binding Screw
128		2x9	Washer Head Screw
129	SW51260514	+M2.6x5MC	Tapping Screw
130	SW51260617	+M2.6x6MC	Tapping Screw
131	DM13000218	MD8017	Sholdek (B)
132	DM15000209	2ϕ	E Ring
133	DM09001637	MD 3041	Auto Sensor Arm
134		MD 2044	Auto Sensor Arm Shaft