

# TECHNICAL MANUAL

*Quality. Uncompromised*

# ROTEL® RD-835

STEREO CASSETTE TAPE DECK

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**THE ROTEL CO., LTD.**

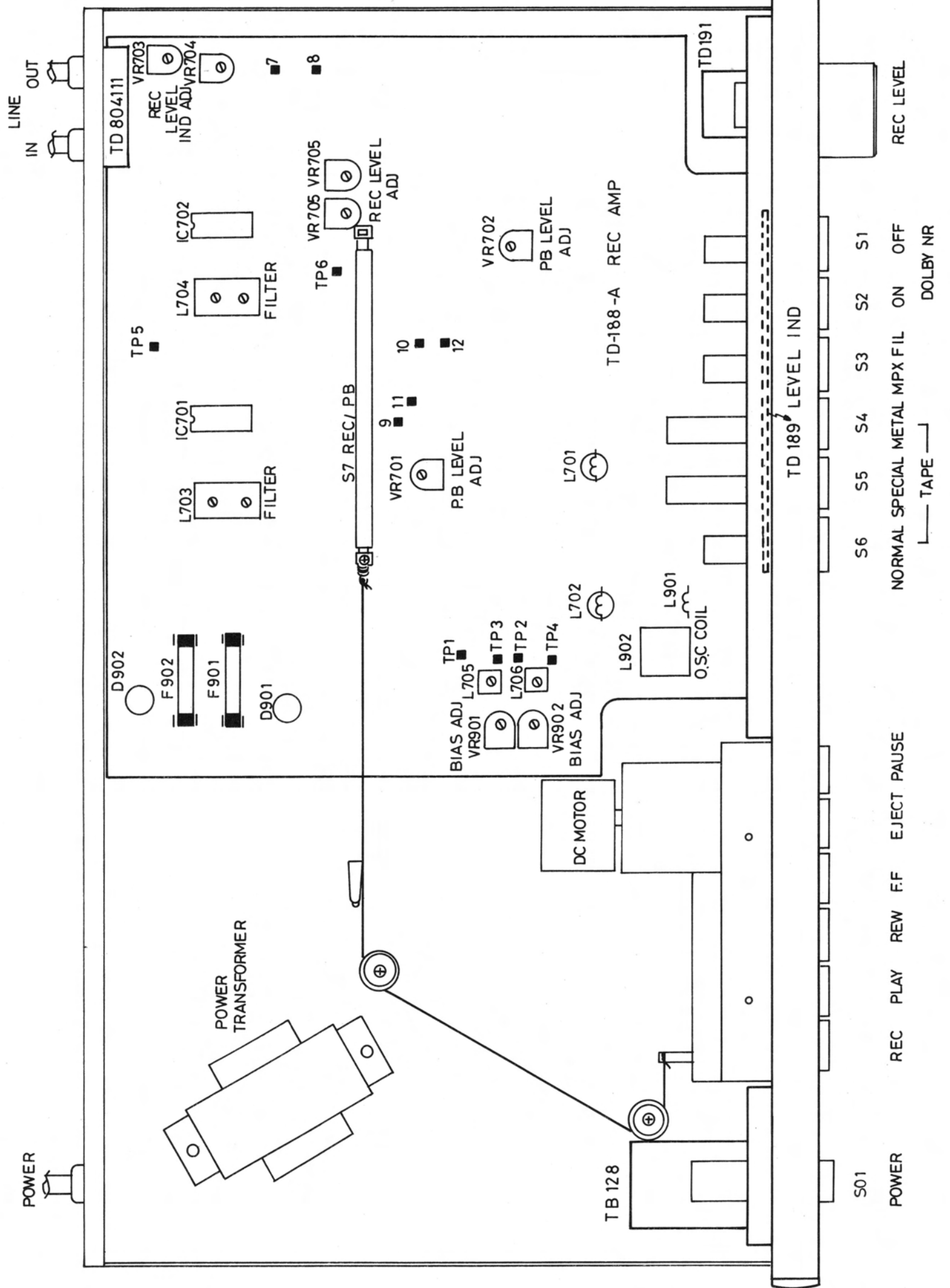
1-36-8 OHOKAYAMA, MEGURO-KU, TOKYO 152, JAPAN

**ROTEL ELECTRONICS CO., LTD.**

ROTEL BLDG., 3F. NO. 35, FUSING N. ROAD, TAIPEI, TAIWAN, REPUBLIC OF CHINA

MN20001550

# Chassis Layout



# Playback System Adjustments

**Instruments:** 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	ATT-114N	REC/PB head screw	Obtain largest wave form on Oscilloscope for both channels (Fig. 1)
Dolby Level	MTT-150	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 $\pm 3.0$ dB	
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

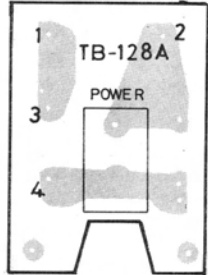
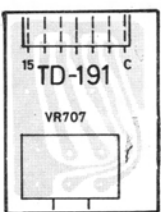
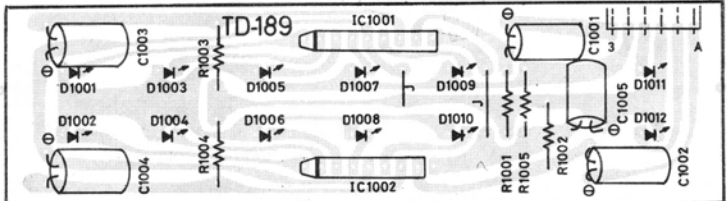
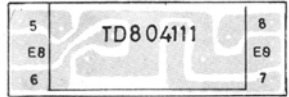
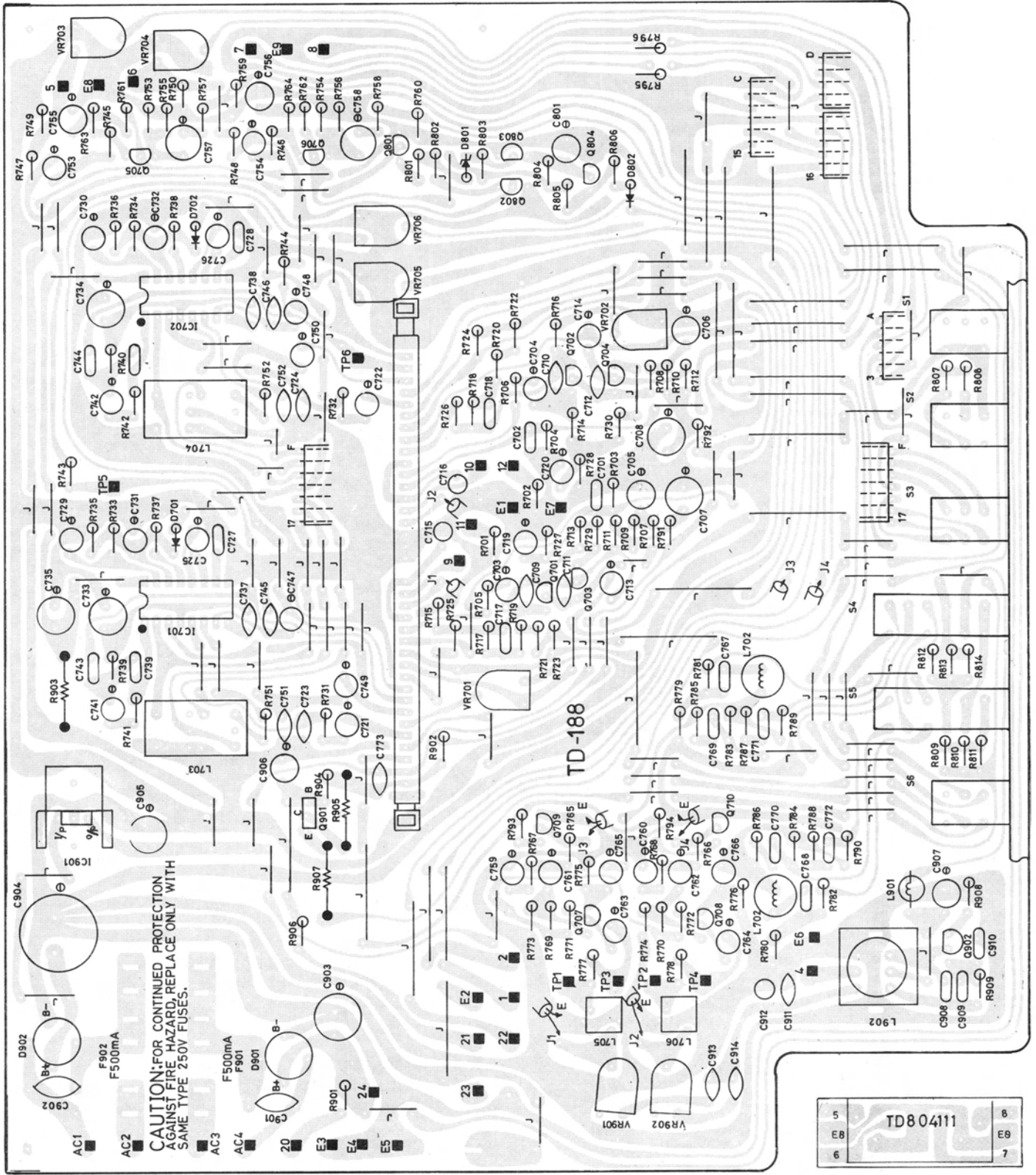
# REC/PB System Adjustments

**Instruments:** Signal Generator, H.D. Analyzer and Blank Tape

**Conditions:** Dolby NR...OFF REC Level...Maximum PLAY, REC, PAUSE...ON

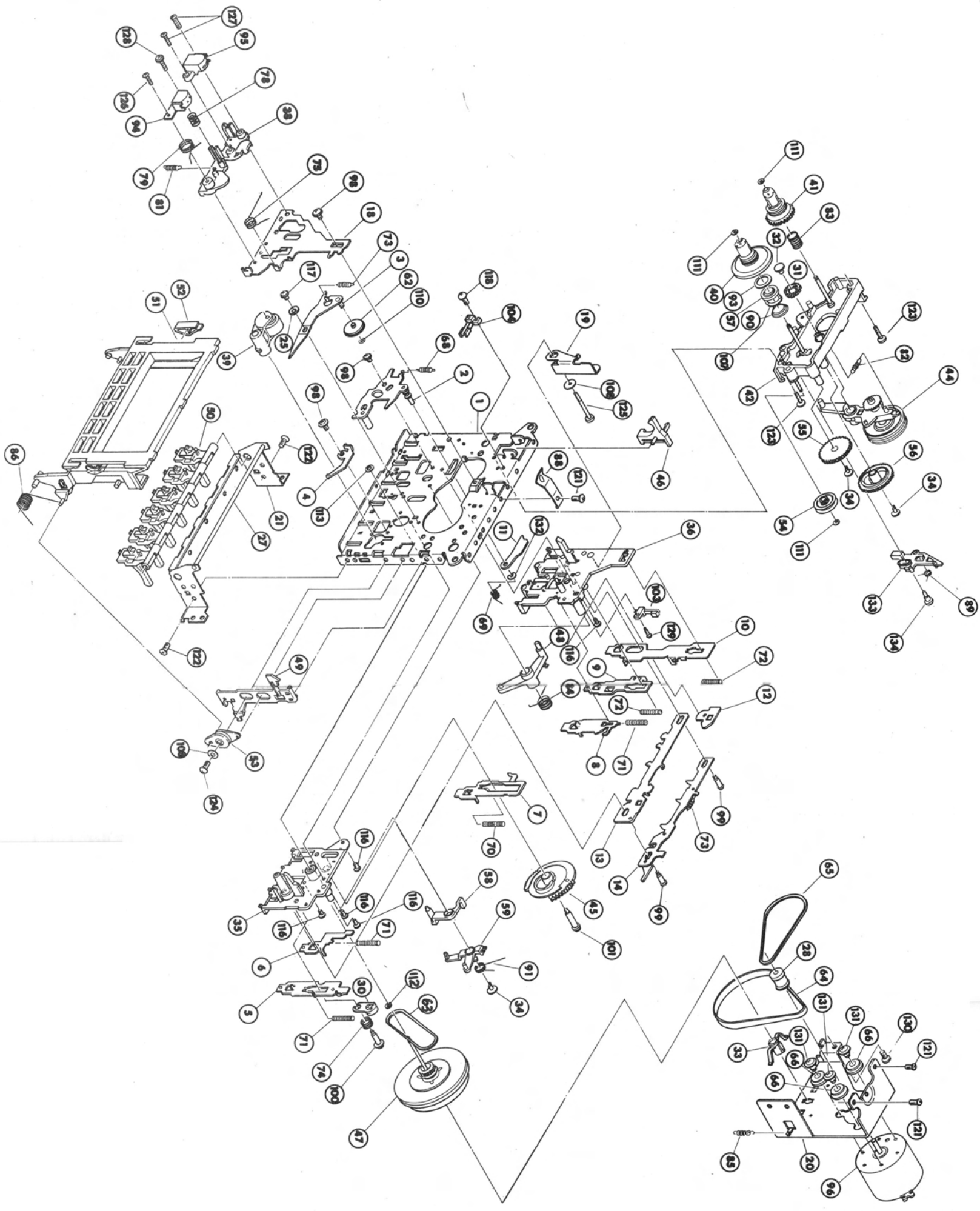
Adjustment	Conditions	Adjust	Adjust for
REC/PB Output Level	S.G. (400Hz 0dB) LINE IN... PIN 7(8) LINE OUT...PIN5(6) 500 mV Release Pause Button and playback it again.	VR705 (L-ch) VR706 (R-ch)	Recording and Playback level difference must be within $\pm 1$ dB
Distortion Check	S.G. (400Hz 0dB) LINE IN... 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

# PRINTED CIRCUIT BOARDS



# Disassembly Diagram

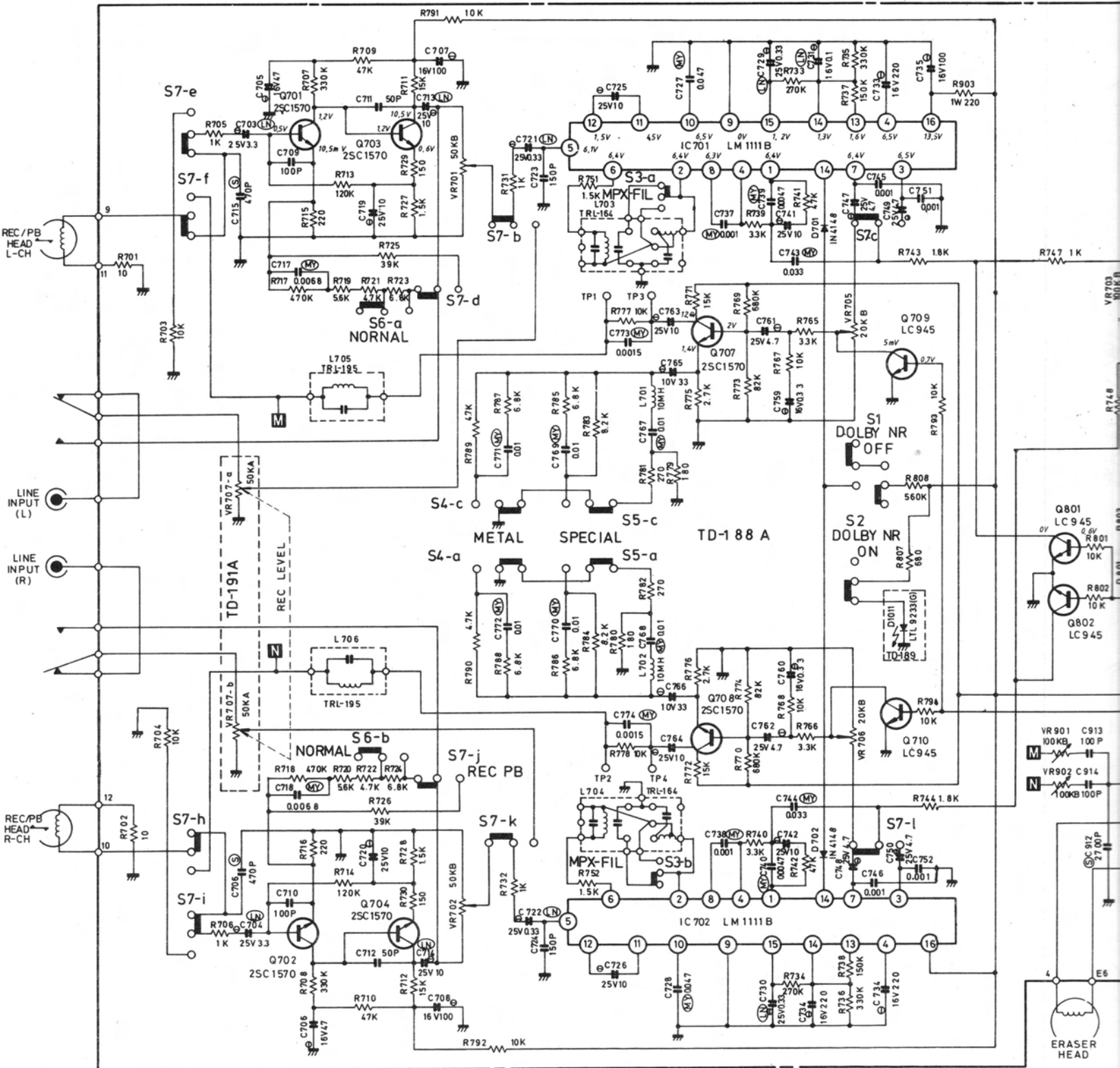
No.	Computer No.	Parts No.	Description	No.	Computer No.	Parts No.	Description
1	DM09001467	MA 1141	Chassis	68	DM11000914	MD 6055	Shift Arm Spring
2	DM09001650	MD 1191	Shift Arm Assy	69	DM11000975	MD 6019	Rec Lever Spring (B)
3	DM09001601	MD 1173	Idler Arm (HT) Assy	70	DM11001098	MD 6038	FF Lever Spring
4	DM09001479	MD 1004	Pause Arm	71	DM11000872	MD 6005	Rew Lever Spring
5	DM09001364	MD 1165	Pause Lever (B) Assy	72	DM11000940	MD 6003	Lever Spring
6	DM09001376	MD 1121	Stop Lever	73	DM11000951	MD 6006	Cam Spring
7	DM09001388	MD 1142	FF Lever (B)	74	DM11000963	MD 6007	Pause Cam Spring
8	DM09001431	MD 1144	Rew Lever (B)	75	DM11000938	MD 6010	Head Chassis Spring
9	DM09001613	MD 1156	Play Lever (B)	76			
10	DM09001455	MD 1163	Rec Lever (C)	77			
11	DM09001510	MDS 1108	Rec Lever (BH)	78	DM11000446	KD 6009	Head Spring
12	DM09001480	MD 1061	Interlock Arm	79	DM11001050	MD 6060	P Roller Spring
13	DM09001583	MC 1140	Lock Cam (A)	80			
14	DM09001273	MD 1045	Lock Cam (B) Assy	81	DM11001001	MD 6001	Head Chassis Return Spring
15				82	DM11001086	MD 6035	Clutch Arm Spring
16				83	DM11000896	MD 6013	Back Tension Spring
17				84	DM11000999	MD 6050	Lock Arm Spring
18	DM09001406	MC 1168-2	Head Chassis	85	DM11000987	MD 6040	Eject Lever Spring
19	DM09001522	MD 1021	Rec Arm	86	DM11001074	MD 6079	Cassette Case Spring
20	DM09001595	MC 1062	Motor Holder	87			
21	DM09001339	MC 1131	Button Holder (B)	88	DM11001062	MDS 1097	Pack Spring
22				89		MD 6062	Auto Sensor Spring
23				90	DM11000902	MD 6016	Auto Clutch Spring
24				91	DM11000859	MD 6017	Auto Lock Arm Spring
25	DM13000190	MD 2033	Collar	92			
26				93	DM17000020	MD 8009	Auto Clutch Felt
27	DM13000206	MD 2016	Button Shaft	94		HAYSH44D8D	RP Head
28	DM12000351	MD 2041	Motor Pulley	95		HAJAB30C50	E Head
29				96	DM03000179	MMI-5A-2L3	Motor
30	DM09001315	MC 3014	Pause Cam	97			
31	DM12000338	MD 3015	FF Gear	98	DM14000317	MD8002	Screw (A)
32	DM08000157	KD 3052	Bush	99	DM14000329	MD 8003-2	Screw (B)
33	DM09000918	LC 3014	Capstan Holder	100	DM14000330	MD 8004-2	Screw (C)
34	DM08000327	MD 3047	Bush	101	DM14000340	MD 8005-2	Screw (D)
35	DM09001352	MD 3076	Laver Holder (A) Assy	102			
36	DM09001420	MB 3075	Lever Holder (B)	103	DM10000096	LSA-1119C	Leaf Switch
37				104	DM10000102	LSA-1120YN	Leaf Switch
38	DM09001418	MC 3019-5	Head Base	105			
39	DM01000218	MD 3072	P Roller Arm Assy	106			
40	DM01000188	MD 3034	T Reel Assy	107	DM15000386	MD 8016	Tefron Washer
41	DM01000190	MD 3035	S Reel Assy	108	NW20000083	2.6φ	Plain Washer (L)
42		MC 3113	Reel Base Assy (B)	109			
43				110	DM15000398	1.2φx3.5φx0.25t	Polyslider Washer
44	DM09001649	MD 3096	Clutch Arm Assy	111	DM15000222	1.7φx3.5φx0.25t	Polyslider Washer
45	DM12000296	MC 3083-3	Gear (C)	112	DM15000404	2.1φx5.0φx0.4t	Polyslider Washer
46	DM09001560	MC 3021	Rec Sensor	113	DM15000120	1.9φx5.0φ0.5t	Oil Stop Washer
47	DM12000340	MD 3061	Flywheel Assy (I)	114			
48	DM09001558	MC 3086-2	Lock Arm (H)	115			
49	DM09001534	MD 3025	Eject Lever (F)	116	SW45200412	+M2x4MC	Tap Tite Screw
50	DM09001571	MC 3039	Button Lever	117	SW41200510	+M2x5MC	Tap Tite Screw
51	DM09001492	MB 3091	Cassette Case	118	SW41200612	+M2x6MC	Tap Tite Screw
52	DM06000040	MD 3081	Cassette Clamp	119			
53	DM03000180	MD 3084	Damper Assy	120			
54	DM12000314	MD 3066	Auto Pulley	121	SW41260414	+M2.6x4MC	Tap Tite Screw
55	DM12000326	MD 3065	Auto Gear	122	DM14000354	+M2.6x5MC	Flat Tap Tite Screw
56	DM12000302	MD 3044	Auto Cam Gear	123	SW41260815	+M2.6x8MC	Bind Tap Tite Screw
57	DM09001390	MD 3048	Auto Clutch	124	SW41261315	+M2.6x13MC	Tap Tite Screw
58	DM09001546	MD 3043	Auto Arm (B)	125	DM14000305	M2.6x22	Dia Screw
59	DM09001285	MD 3042	Auto Lock Arm	126		2x8	Binding Screw
60				127	SW71200912	2x9	Binding Screw
61				128		2x9	Washer Head Screw
62	DM12000284	MD 4001	Play Idler	129	SW51260514	+M2.6x5MC	Tapping Screw
63	DM08000339	MD 4003	Auto Belt	130	SW51260617	+M2.6x6MC	Tapping Screw
64	DM08000352	MD 4006	Drive Belt	131	DM13000218	MD8017	Sholdek (B)
65	DM08000364	MD 4008	FR Belt	132	DM15000209	2φ	E Ring
66	DM08000303	MD 4002	Motor Cushion	133	DM09001637	MD 3041	Auto Sensor Arm
67				134		MD 2044	Auto Sensor Arm Shaft



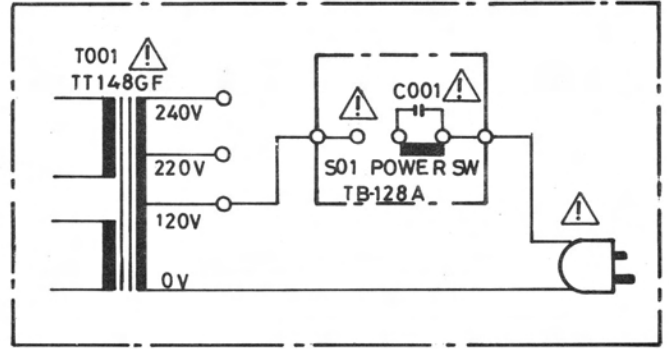
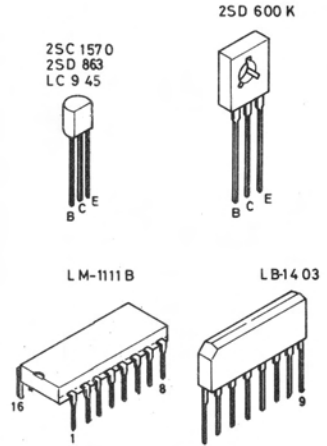
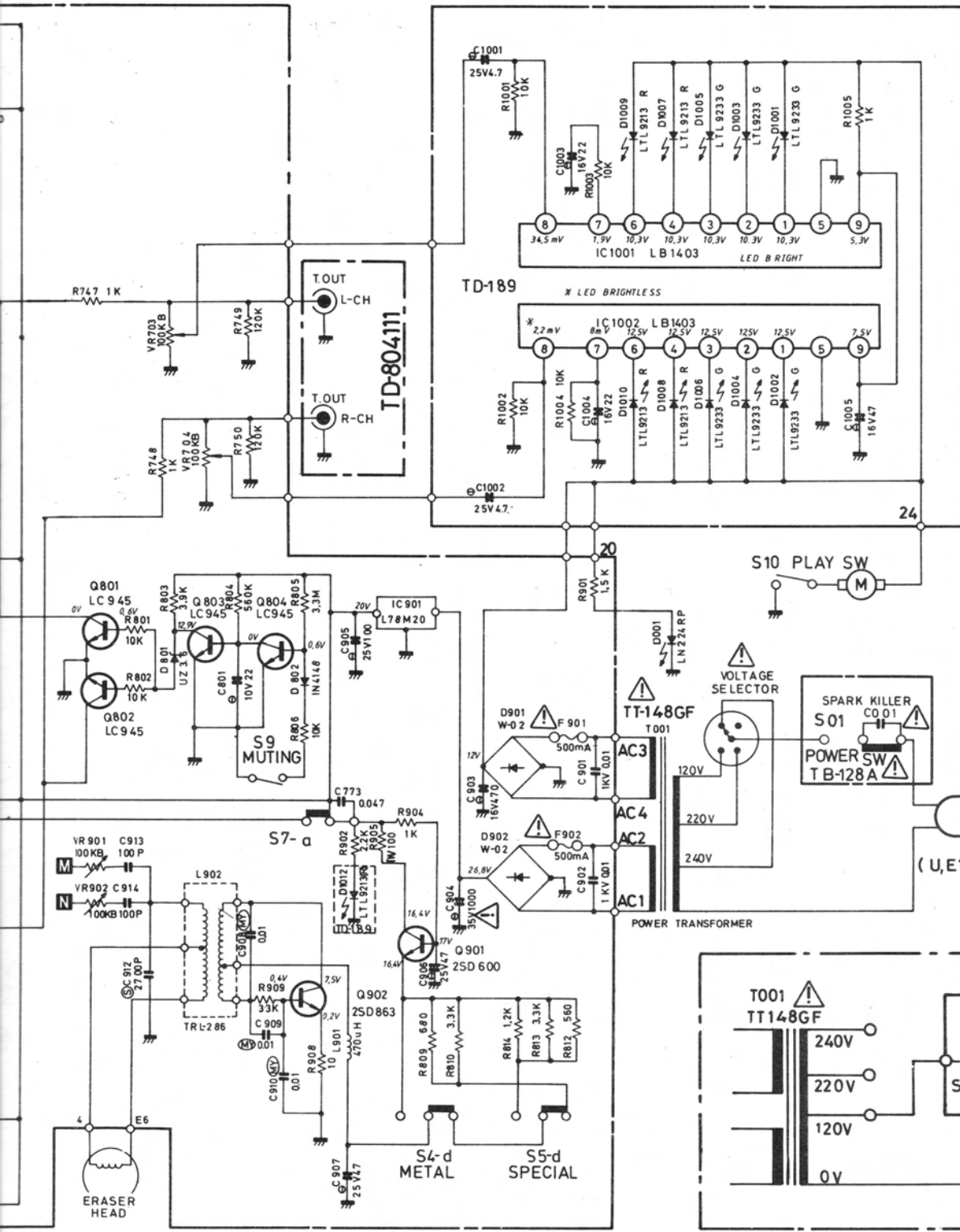
# Schematic Diagram

SCHEMATIC DIAGRAM MODEL NO. RD-835

NOTE: PARTS AND CIRCUIT TO CHANGES FOR IMPROVEMENTS WITHOUT PRIOR NOTICE

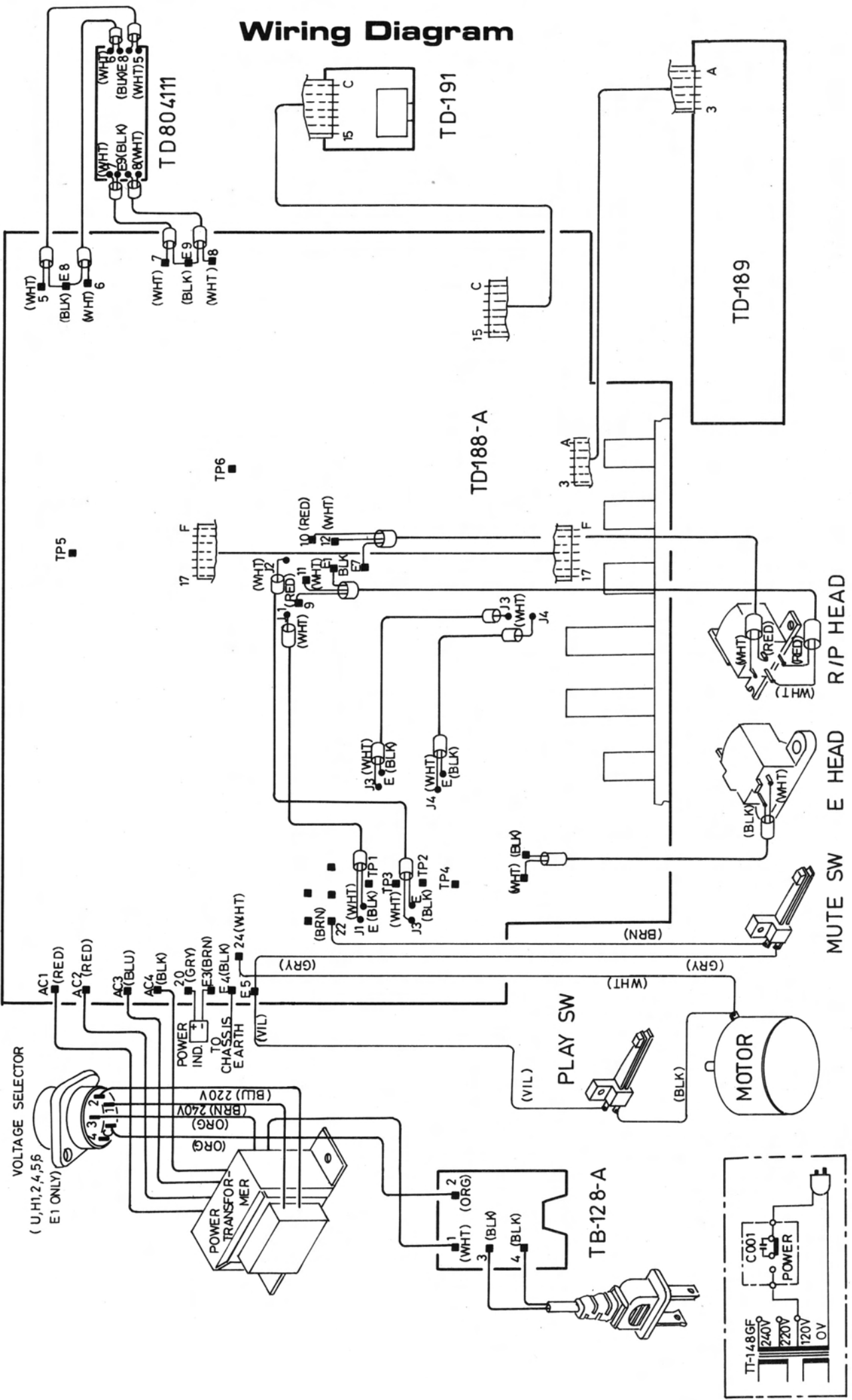


INSTRUCTIONS FOR SERVICE PERSONNEL  
 1. TO USE ONLY REPLACEMENT PARTS THAT HAVE THE CRITICAL CHARACTERISTICS RECOMMENDED BY MANUFACTURER  
 2. TO MAKE LEAKAGE-CURRENT OR RESISTANCE MEASUREMENTS TO DETERMINE THAT EXPOSED PARTS ARE ACCEPTABLY INSULATED FROM THE SUPPLY CIRCUIT BEFORE RETURNING THE APPLIANCE TO THE CUSTOMER.





# Wiring Diagram



# Parts List

NOTE: THE COMPONENTS IDENTIFIED BY  $\Delta$  MARK ARE FOR SAFETY. REPLACE ONLY WITH ORIGINAL PARTS. DO NOT SUBSTITUTE.







SYMBOL	PARTS NO.	DESCRIPTION
TD-188-A PCB ASSEMBLY		
R701,702	RD41009825	R,CARBON 10 J 1/4W
R703,704	RD41002820	R,CARBON 10K J 1/4W
R705,706	RD41001826	R,CARBON 1K J 1/4W
R707,708	RD43303822	R,CARBON 330K J 1/4W
R709,710	RD44702827	R,CARBON 47K J 1/4W
R711,712	RD41502827	R,CARBON 15K J 1/4W
R713,714	RD41203824	R,CARBON 120K J 1/4W
R715,716	RD42200820	R,CARBON 220 J 1/4W
R717,718	RD44703820	R,CARBON 470K J 1/4W
R719,720	RD45601824	R,CARBON 5.6K J 1/4W
R721,722	RD44701823	R,CARBON 4.7K J 1/4W
R723,724	RD46801821	R,CARBON 6.8K J 1/4W
R725,726	RD43902821	R,CARBON 39K J 1/4W
R727,728	RD41501823	R,CARBON 1.5K J 1/4W
R729,730	RD41500820	R,CARBON 150 J 1/4W
R731,732	RD41001826	R,CARBON 1K J 1/4W
R733,734	RD42703828	R,CARBON 270K J 1/4W
R735,736	RD43303822	R,CARBON 330K J 1/4W
R737,738	RD41503820	R,CARBON 150K J 1/4W
R739,740	RD43301825	R,CARBON 3.3K J 1/4W
R741,742	RD44702827	R,CARBON 47K J 1/4W
R743,744	RD41801820	R,CARBON 1.8K J 1/4W
R747,748	RD41001826	R,CARBON 1K J 1/4W
R749,750	RD41203824	R,CARBON 120K J 1/4W
R751,752	RD41501823	R,CARBON 1.5K J 1/4W
R765,766	RD43301825	R,CARBON 3.3K J 1/4W
R767,768	RD41002820	R,CARBON 10K J 1/4W
R769,770	RD46803829	R,CARBON 680K J 1/4W
R771,772	RD41502827	R,CARBON 15K J 1/4W
R773,774	RD48202825	R,CARBON 82K J 1/4W
R775,776	RD42701820	R,CARBON 2.7K J 1/4W
R777,778	RD41002820	R,CARBON 10K J 1/4W
R779,780	RD41800826	R,CARBON 180 J 1/4W
R781,782	RD44700820	R,CARBON 470 J 1/4W
R783,784	RD48201821	R,CARBON 8.2K J 1/4W
R785-788	RD46801821	R,CARBON 6.8K J 1/4W
R789,790	RD44701823	R,CARBON 4.7K J 1/4W
R791,792	RD41002820	R,CARBON 10K J 1/4W
R793,794	RD41002820	R,CARBON 10K J 1/4W
R795,796	RD48201821	R,CARBON 8.2K J 1/4W
C703,704	CL03307259	CAP,LOW NOISE 3.3uF 25V
C705,706	CE44706167	CAP,ELEC. 47uF 16V
C707,708	CE41005166	CAP,ELEC. 100uF 16V
C709,710	CC41011432	CAP,CERAMIC 100P 50V
C711,712	CC45012431	CAP,CERAMIC 50P 50V
C713,714	CE41006250	CAP,ELEC. 10uF 25V
C715,716	CS44701431	CAP,STYROL 470P 50V
C717,718	CM16810423	CAP,MYLAR 682 J 50V
C719,720	CE41006250	CAP,ELEC. 10uF 25V
C721,722	CL03308252	CAP,LOW NOISE 0.33uF 25V
C723,724	CC41511430	CAP,CERAMIC 150P 50V
C725,726	CE41006250	CAP,ELEC. 10uF 25V
C727,728	CM04709426	CAP,MYLAR 473 J 50V
C729,730	CL03308252	CAP,LOW NOISE 0.33uF 25V
C731,732	CL01008253	CAP,LOW NOISE 0.1uF 25V
C733,734	CE02205164	CAP,ELEC. 220uF 16V
C735,736	CE41005166	CAP,ELEC. 100uF 16V
C737,738	CC41010439	CAP,CERAMIC 0.001 50V
C739,740	CM14710425	CAP,MYLAR 472 J 1/4W
C741,742	CE41006250	CAP,ELEC. 10uF 25V
C743,744	CM13309425	CAP,MYLAR 333 J 50V
C745,746	CC31010431	CAP,CERAMIC 0.001 50V
C747,748	CE44707251	CAP,ELEC.4.7uF 25V
C751,752	CC41010439	CAP,CERAMIC 0.001 50V
C759,760	CL03308252	CAP,LOW NOISE 0.33uF 25V
C761,762	CE44707251	CAP,ELEC. 4.7uF 25V
C763,764	CE41006250	CAP,ELEC. 10uF 25V
C765,766	CE43306108	CAP,ELEC. 33uF 10V

SYMBOL	PARTS NO.	DESCRIPTION
C767,772	CM11009426	CAP,MYLAR 103 J 50V
C773	CC45009456	CAP,CERAMIC 0.047 50V
Q701-704	TR30000108	TRANSISTOR 2SC1570
Q705,708	TR30000108	TRANSISTOR 2SC1570
Q709,710	TR30000248	TRANSISTOR 2SC945
IC701,702	IC00000380	IC LM1111B
D701,702	DD10000100	DIODE 1N4148-85
L701,702	LM00000152	MICRO INDUCTOR 8.2mH
L703,704	LC11640002	COIL, MPX TRL-164
L705,706	LC21950000	TRAP COIL TRL-195
VR701,702	RV20000235	R,SEMI-FIXED 08-301 50KB
VR703,704	RV20000181	R,SEMI-FIXED 08-301 100KB
VR705,706	RV20000223	R,SEMI-FIXED 08-301 20KB
R801,802	RD41002820	R,CARBON 10K J 1/4W
R803	RD43901828	R,CARBON 3.9K J 1/4W
R804	RD45603821	R,CARBON 560K J 1/4W
R805	RD43304826	R,CARBON 3.3M J 1/4W
R806	RD41002820	R,CARBON 10K J 1/4W
R807	RD46800828	R,CARBON 680 J 1/4W
R808	RD45603821	R,CARBON 560K J 1/4W
R809	RD41001826	R,CARBON 1K J 1/4W
R810	RD42201823	R,CARBON 2.2K J 1/4W
R812	RD45600820	R,CARBON 560 J 1/4W
R813	RD43301825	R,CARBON 3.3K J 1/4W
R814	RD42201823	R,CARBON 2.2K J 1/4W
C801	CE42206106	CAP,ELEC. 22uF 10V
D801	DD20000107	DIODE RD-3.6E
D802	DD10000100	DIODE 1N4148
Q801-804	TR30000248	TRANSISTOR 2SC945
R901	RD41501823	R,CARBON 1.5K J 1/4W
R902	RD42201823	R,CARBON 2.2K J 1/4W
R903	RM12200122	R,METAL 220 J 1W
R905	RM11000128	R,METAL 100 J 1W
R908	RD11009823	R,CARBON 10 J 1/4W
R909	RD43302829	R,CARBON 33K J 1/4W
C901,902	CC01009050	CAP,CERAMIC 0.01 1000V
C903	CE04705164	CAP,CLEC. 470uF 16V
C904	CE01004357	CAP,ELEC. 1000uF 35V $\Delta$
C905	CE01005258	CAP,ELEC. 100uF 25V
C907	CE44706258	CAP,ELEC. 47uF 25V
C908-910	CM11009426	CAP,MYLAR 103 J 50V
C912	CS42710332	CAP,STYROL 2700P 50V
C913,914	CC42011439	CAP,CERAMIC 200P 50V
Q902	TR30000080	TRANSISTOR 2SD863
IC901	IC00000548	IC L78M20
VR901,902	RV20000181	R,SEMI-FIXED 08-301 100KB
F901,902	FU24000033	FUSE 250V UL/CSA 5MF 500MA $\Delta$
F901,902	FU23000013	FUSE 250V 500MA S $\Delta$
D901	DD10000123	DIODE W02
S1-S6	SH16000138	6 KEY PUSH SW 4TR-2563
S7	SH20000101	SLIDE SW 4TR-1205
TD-189-A PCB ASSEMBLY		
R1001-1004	RD21002825	R,CARBON 10K J 1/4W
R1005	RD21001821	R,CARBON 1K J 1/4W
C1001,1002	CE047-7252	CAP,ELEC. 4.7uF 25V
C1003,1004	CE02206168	CAP,ELEC. 22uF 16V
C1005	CE04706168	CAP,ELEC. 47uF 16V
D1001-1006	DD40000617	DIODE LTL-9233A (GRN)
D1007-1010	DD40000563	DIODE LTL-9213A (RED)
D1011	DD40000617	DIODE LTL-9233A (GRN)
D1012	DD40000563	DIODE LTL-9213A (RED)
IC1001,1002	IC00000925	IC LB-1403
TD191-A PCB ASSEMBLY		
VR707	RV10001462	R,VARIABLE 4TR-2688 50KBx2
TB-128-A PCB ASSEMBLY		
S01	SH40000120	POWER SW C-3600B-T $\Delta$
C001	CK00000060	SPARK KILLER DE7100 FZ472B $\Delta$
	CK00000035	SPARK KILLER DE7150F472M $\Delta$

## PARTS NO.

## DESCRIPTION

## OTHERS

AB00000328	BOTTOM BOARD 3TTW-5
AF40000252	FRONT CHASSIS (R) 2TTW-2
AF40000264	FRONT CHASSIS (L) 2TTW-3
AM00001604	CHASSIS BODY 2TTW-4
AR40000250	PLASTIC REAR BOARD 2TTS-18
DC00000657	TAPE COUNTER T3SA100-035-795
PT14807106	POWER TRANSFORMER TT-148-GF 
FT00000138	RUBBER FOOT 4TR-2274 40F <sub>x</sub> 8
NP00001603	P.V.C NAME PLATE 4TVQ-4#7
PU10000032	PULLEY 4TR-905A
CD00000218	AC CORD SPT-2 AWG#18 4TR-670#4-U, C 
CD00000097	AC CORD SPT-2 AWG#18 4TR-670#2-H1, 2, 3, 4
CD00000048	AC POWER CORD 4TR-1037-H5, 6, 7, E, K2 
CD00000085	AC POWER CORD C-2504A-K1 
CD00000115	AC POWER CORD C-2504A-G 
CD00000267	AC CORD SPT-2 AWG#16 072 C-2743-A 
SC00000131	AC CORD STOPPER SR-5N-4-A, K1
SC00000027	AC CORD STOPPER SR-4N-4
DC00000463	CASSETTE DECK ASS'Y GT-90FMF#2
DC00000499	COUNTER BELT 4TWD-12C#8 60F
KB20001068	DECK PUSH BUTTON 4TVC-2#6 BLK
KB20001317	DECK PUSH BUTTON 4TVC-2#8 RED LINE
OM10000589	TAPE ORNAMENTAL PLATE 4TTW-17
AA40000408	FRONT PANEL 2TTW-1#1
AW00000423	PANEL WINDOW 4TR-2655#3
BU00000815	PUSH RING 4TTW-13
KB20002000	PUSH BUTTON 4TTL-13 19.5x11.5
AU00000877	UPPER COVER 3TUV-6#5
KB10001310	KNOB 4TR-2254 33F
KB20001516	PUSH BUTTON 4TR-2176 14x14
KB20002176	ALUMINUM CAP 4TTW-7
PL00000850	STYROL SIDE MOULDING 3TT-14 TZ-172
TN10002879	INSIDE CARTON 4TTW-15#1
VC00000048	VOLTAGE SELECTOR C-4304A01 