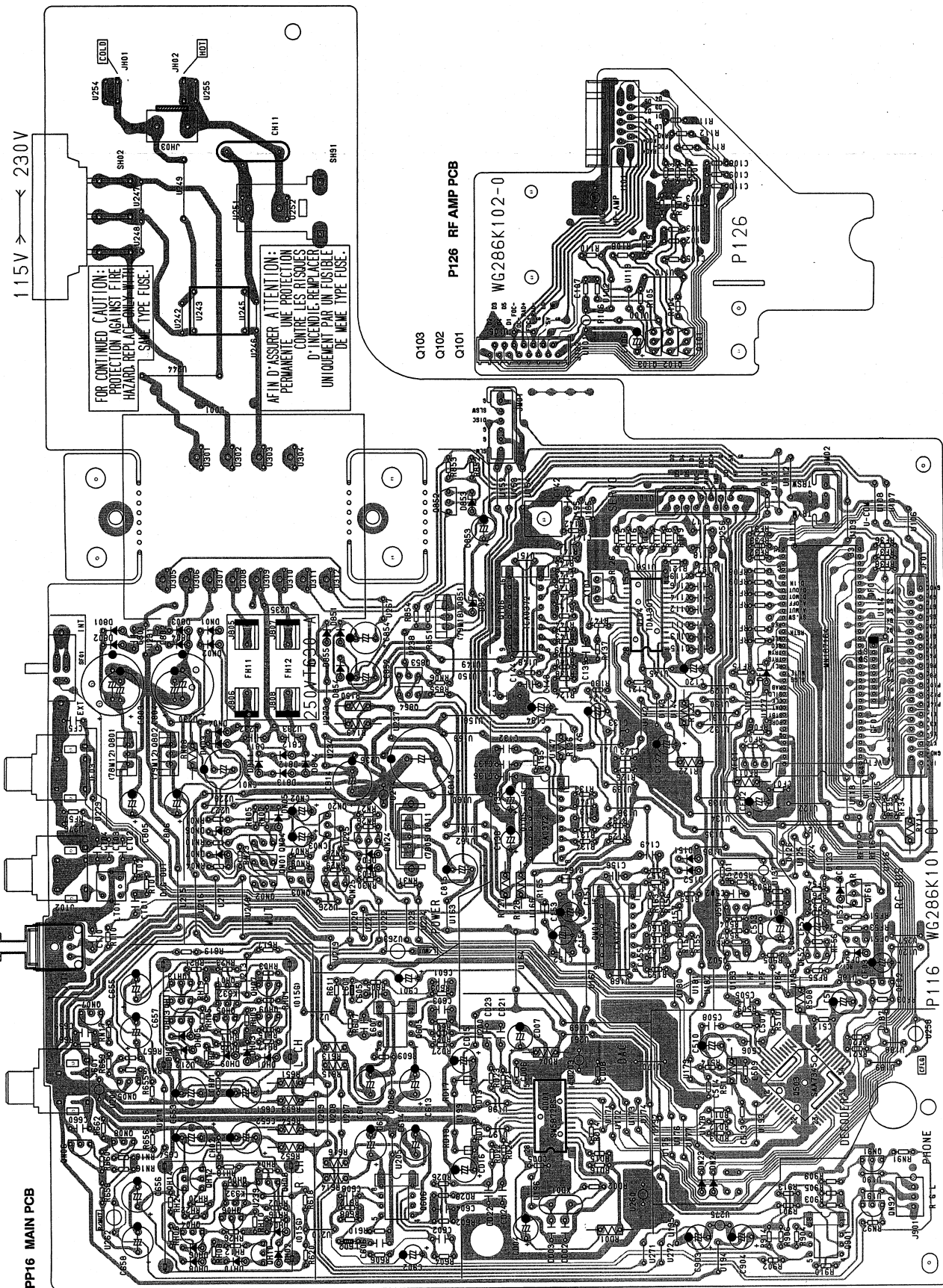


7. SCHEMATIC DIAGRAMS AND PARTS LOCATIONS (PATTERN SIDE)

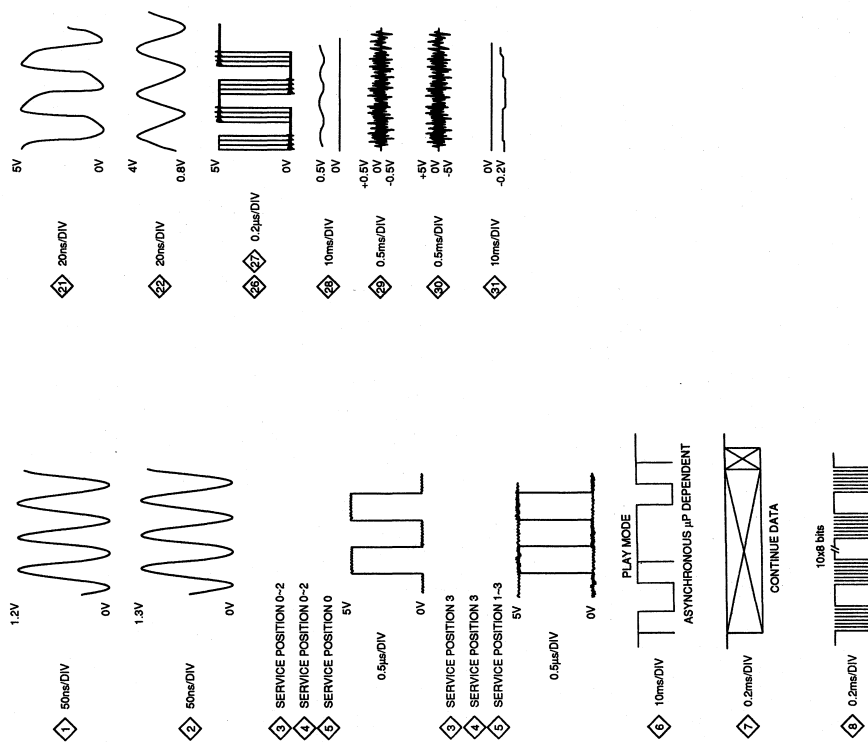
QH04 QH12 QH14 QH06 QH08 QH03 QN07 QH11 QH13 QM01 QN01-QN04 Q802
 QH10 QH06 QH02 QH08 QH05 QH09 QH01 QH07 Q502 QN25 QN24 QN20 Q852
 Q901 Q806 QN92 QN91 QD01 Q503 Q805 QF02 QF51 QF52 QF61 Q811 Q105 QF01 Q104

PP16 MAIN PCB



WAVE FORM

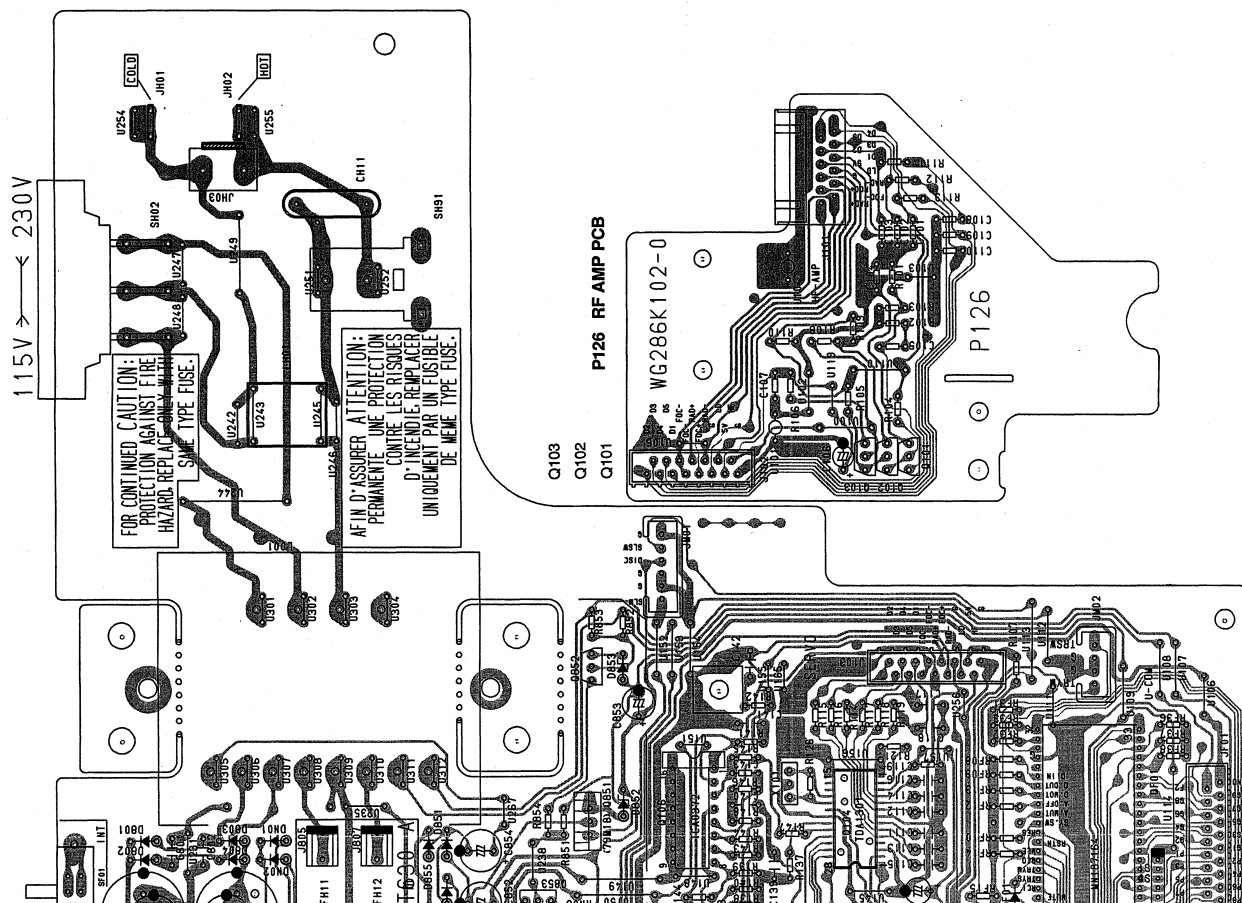
All of the wave forms are monitored with PLAY mode.



Q852

Q851 Q106

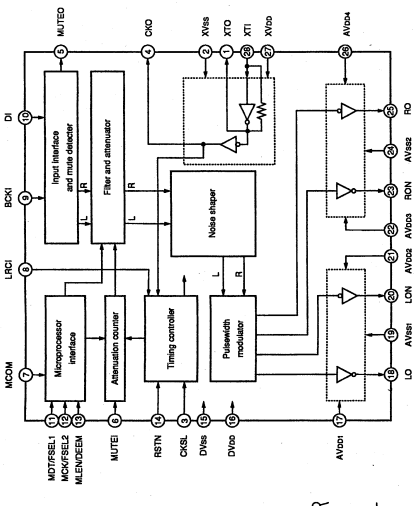
QF01 Q104



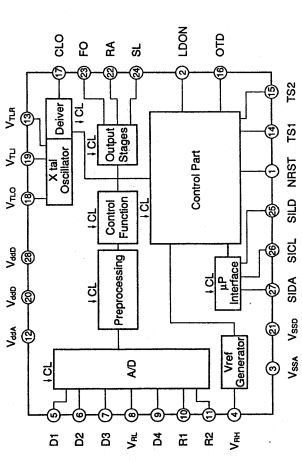
[illegible]

NOTE ON
Symbol 
marked with
risk of fire

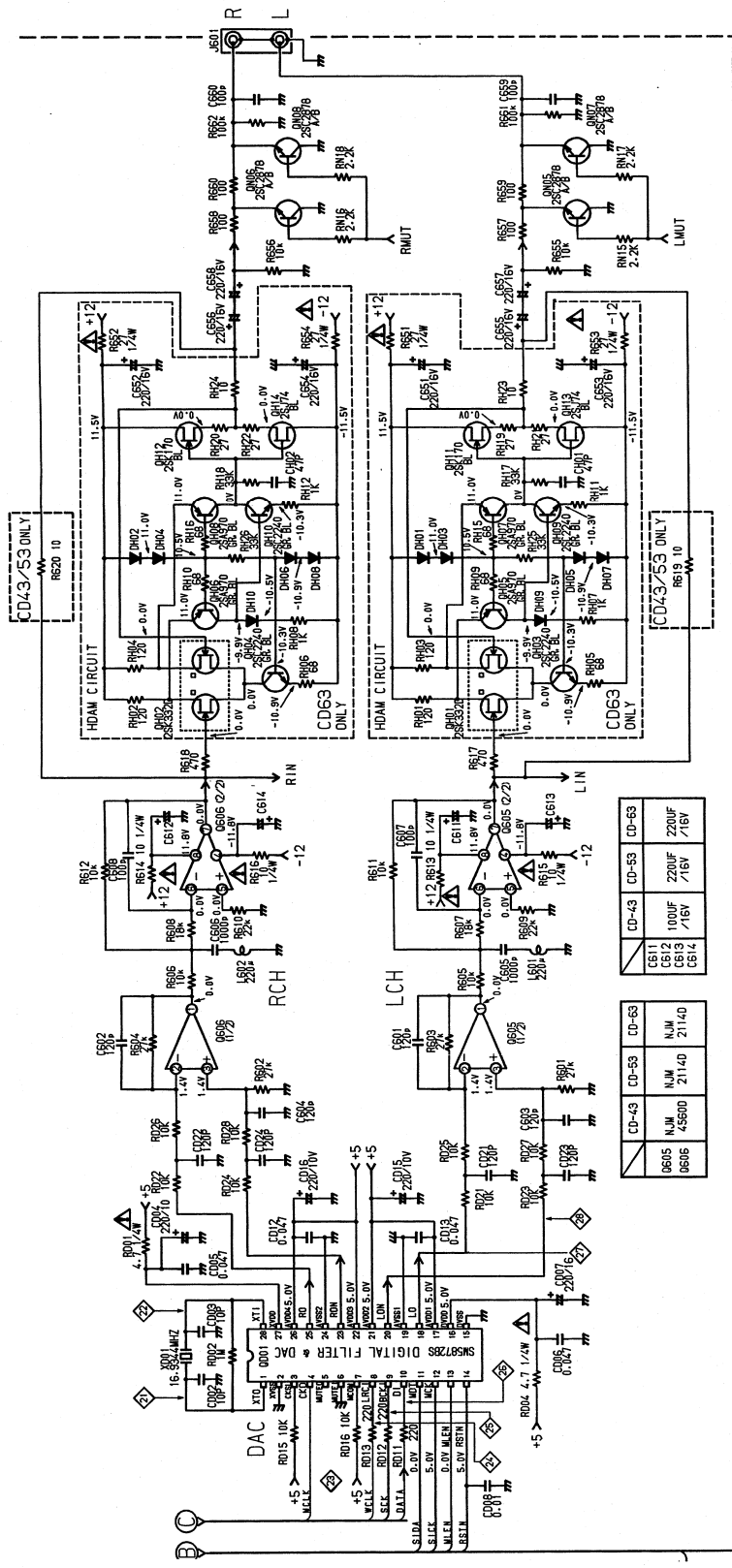
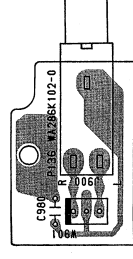
QD01 SM5872BS



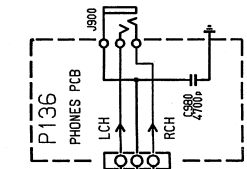
Q104 TDA1301T



P136 PHONES PCB



0102	Q501	Q652	QF52	2SC5365P OR 2SC7458 OR 2SC3311 OR 2SC1740S
0F61	QN01	QN02	QN04	QN20
0103	Q653	Q654	QF51	QN24
0N25	Q655	Q656	QF51	QN24
0F01	DH03	DF04	DF51	DF52
DH01	DH02	DH03	DH04	DH05
DH06	DH07	DH08	DH09	DH10
DH07	DN23	DN24	DN05	



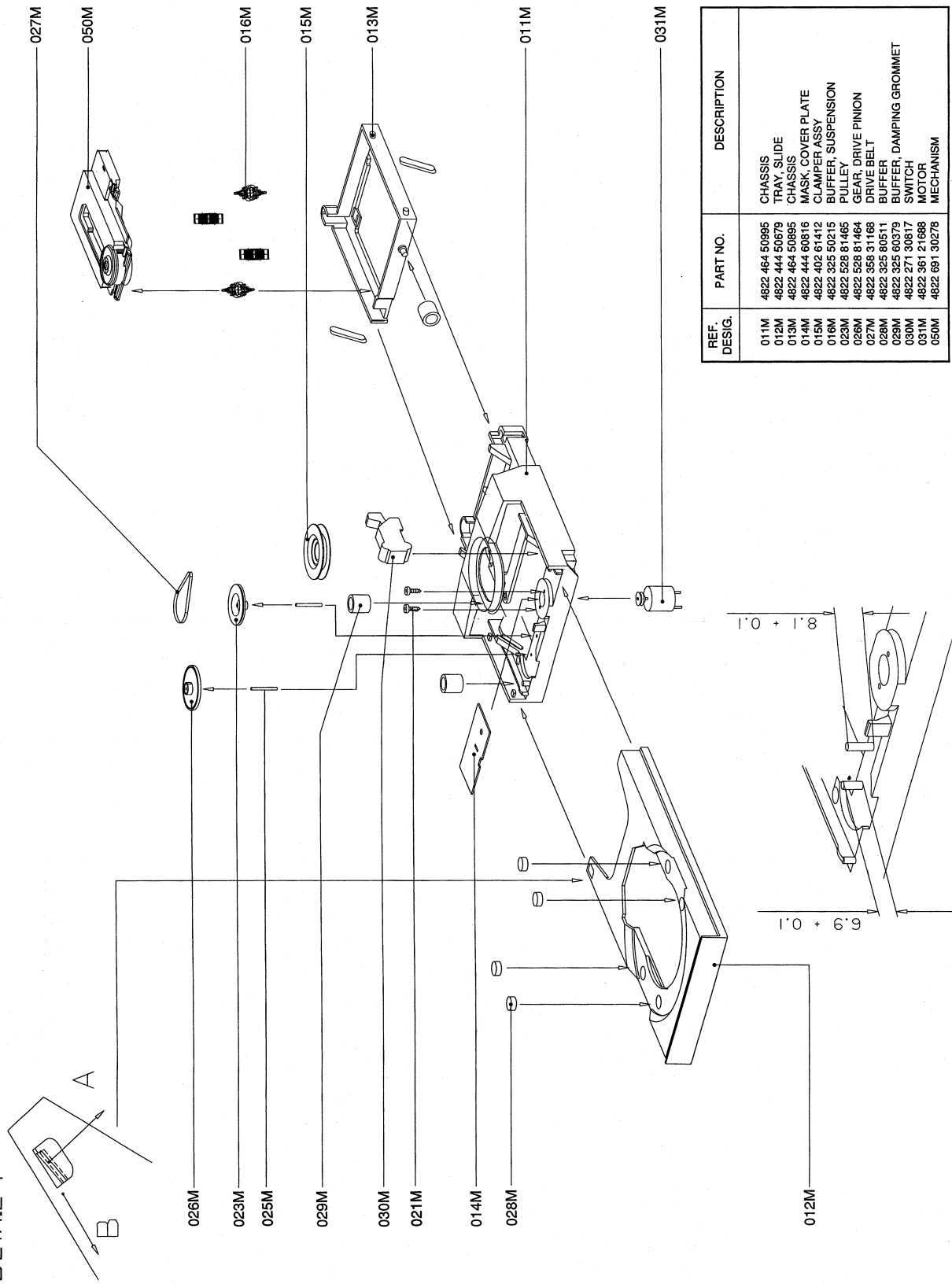
NOTE ON SAFETY:
 Symbol Δ Fire or electrical shock hazard. Only original parts should be used to replace any part marked with symbol Δ . Any other component substitution (other than original type), may increase risk of fire or electrical shock hazard.

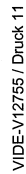
VALUE IS UNDER CONDITION OF STOP

8. EXPLODED VIEW AND PARTS LIST

LOADER

DETAIL I





— 24 —

9. ELECTRICAL PARTS LIST

ASSIGNMENT OF COMMON PARTS CODES.

RESISTOR
R * :** (1) GD05 xxx 140, Carbon film fixed resistor, $\pm 5\%$ 1/4W
R * :** (2) GD05 xxx 180, Carbon film fixed resistor, $\pm 5\%$ 1/6W

① — Resistance value

Examples :
 ① Resistance value
 0.1 Ω ... 001 10 Ω ... 100 1 k Ω ... 102 100 k Ω ... 104
 0.5 Ω ... 005 18 Ω ... 180 2.7 k Ω ... 272 680 k Ω ... 684
 1 Ω ... 010 100 Ω ... 101 10 k Ω ... 103 1 M Ω ... 105
 6.8 Ω ... 068 390 Ω ... 391 22 k Ω ... 223 4.7 M Ω ... 475

(Note) Please distinguish 1/4W from 1/6W by the shape of parts used actually.

C * :** CERAMIC CAP.
 (1) DD1x xxx 370, Ceramic capacitor
 ① Disc type
 ② Temp. coeff. P350 ~ N1000, 50V

① — Capacity value
 ② — Tolerance

Examples :
 ① Tolerance (Capacity deviation)
 $\pm 0.25pF$... 0
 $\pm 0.5pF$... 1
 $\pm 5\%$... 5

* Tolerance of COMMON PARTS handled here are as follows :

① Capacity value
 0.5 pF ... 005 3 pF ... 030 100 pF ... 101
 1 pF ... 010 17 pF ... 100 220 pF ... 221
 1.5 pF ... 015 47 pF ... 470 560 pF ... 561

C * :** CERAMIC CAP.
 (1) DK16 xxx 300, High dielectric constant ceramic capacitor
 ① Disc type
 ② Temp. chara. 2B4, 50V

Examples :
 ① Capacity value
 100 pF ... 101 1000 pF ... 102 10000 pF ... 103
 470 pF ... 471 2200 pF ... 222

C * :** ELECTROLY CAP. ($\frac{\square}{\square}$), FILM CAP. ($\frac{\square}{\square}$)
 (1) EA xxx xx 10, Electrolytic capacitor
 ① One-way lead type,
 ② Tolerance $\pm 20\%$

Examples :
 ① Capacity value
 0.1 μF ... 104 4.7 μF ... 475 100 μF ... 107
 0.33 μF ... 334 10 μF ... 106 330 μF ... 337
 1 μF ... 105 22 μF ... 226 1100 μF ... 118
 2200 μF ... 228

① Working voltage
 6.3 V ... 006 25 V ... 025
 10 V ... 010 35 V ... 035
 16 V ... 016 50 V ... 050

(2) DF15 xxx 350, Plastic film capacitor
 ① One-way type, Mylar $\pm 5\%$ 50V
 ② Capacity value

Examples :
 ① Capacity value
 0.001 μF (1000pF) ... 102 0.1 μF ... 104
 0.0018 μF ... 182 0.56 μF ... 564
 0.01 μF ... 103 1 μF ... 105
 0.015 μF ... 153

NOTE : The above CODES (R *** , R *** , R *** , C *** , C *** , and C ***) are omitted on the schematic diagram in some case.

On the occasion, be confirmed common parts on the parts list.

REF. DESIG.	PART NO.	DESCRIPTION
C ***		CERAMIC CAPACITOR, 50V: C502
ΔRD01	4822 111 90967	P116-RESISTORS 4.7 Ω $\pm 5\%$ 1/4W FUSE
ΔRD04	4822 111 90967	4.7 Ω $\pm 5\%$ 1/4W FUSE
ΔRF01	4822 111 90967	4.7 Ω $\pm 5\%$ 1/4W FUSE
ΔRN08	4822 111 90967	4.7 Ω $\pm 5\%$ 1/4W FUSE
ΔRY11	4822 111 90967	4.7 Ω $\pm 5\%$ 1/4W FUSE [CD53/CD63]
ΔR122	4822 111 90967	4.7 Ω $\pm 5\%$ 1/4W FUSE
ΔR123	4822 111 90967	4.7 Ω $\pm 5\%$ 1/4W FUSE
ΔR127	4822 111 90967	4.7 Ω $\pm 5\%$ 1/4W FUSE
ΔR128	4822 111 90967	4.7 Ω $\pm 5\%$ 1/4W FUSE
ΔR136	4822 111 90967	4.7 Ω $\pm 5\%$ 1/4W FUSE
ΔR149	4822 116 60307	21 Ω $\pm 5\%$ 1/4W FUSE
ΔR150	4822 116 60307	1 Ω $\pm 5\%$ 1/4W FUSE
ΔR164	4822 116 60307	1 Ω $\pm 5\%$ 1/4W FUSE
ΔR165	4822 116 60307	1 Ω $\pm 5\%$ 1/4W FUSE
ΔR508	4822 111 90967	4.7 Ω $\pm 5\%$ 1/4W FUSE
ΔR511	4822 111 90967	4.7 Ω $\pm 5\%$ 1/4W FUSE
ΔR613	4822 052 10109	10 Ω $\pm 5\%$ 1/4W
ΔR616		
ΔR651		
ΔR654	4822 115 90197	27 Ω $\pm 2\%$ 1/4W FUSE [CD63]
R ***		P116-RESISTORS (COMMON) CARBON FILM FIXED RESISTOR $\pm 5\%$ 1/6W: RF02, RD11~RD16, RD21~RD28, RF02, RF03, RF06, RF08~RF10, RF12~RF17, RF20, RF21, RF51~RF57, RF61[CD53/CD63], RH01~RH12[CD63] RH15~RH26[CD63], RN01, RN02, RN04~RN07, RN08, RN10, RN15~RN18, RN23, RN26~RN31, RN91, RN92, RT01, RT02, RT10[CD63], R107, R114~R119, R121, R124~R126, R129~R135, R137~R148, R151~R157, R159~R163, R501~R507, RH09, R510, R514, R601~R612, R617[CD63], R618[CD63], R619[CD43/CD53], R620[CD43/CD53], R655~R662, R651~R655, R601~R606, R609, R910, R913, R914
DF01	4822 130 33305	P116-SEMICONDUCTORS DIODE, 1SS176, MA165, 1SS254 30V 0.1A
DF03	4822 130 33305	DIODE, 1SS176, MA165, 1SS254 30V 0.1A
DF04	4822 130 33305	DIODE, 1SS176, MA165, 1SS254 30V 0.1A
DF51	4822 130 33305	DIODE, 1SS176, MA165, 1SS254 30V 0.1A
DF52	4822 130 33305	DIODE, 1SS176, MA165, 1SS254 30V 0.1A
DH01	4822 130 33305	DIODE, 1SS176, MA165, 1SS254 30V 0.1A [CD63]
DH10		
ΔDN01	4822 130 80839	DIODE, SS688G VRM=400V IO=1A IO=1A
ΔDN04		

REF. DESIG.	PART NO.	DESCRIPTION
C508	4822 122 30103	CERAMIC 0.022 μF +80%-20% 50V
C509	4822 122 40589	CERAMIC 0.047 μF +80%-20% 50V
C510	4822 124 90363	ELECT 220 μF 10V
C511	4822 124 90363	ELECT 220 μF 10V
C512	4822 124 40589	CERAMIC 0.047 μF $\pm 20\%$ 50V
C513	4822 122 40589	CERAMIC 0.047 μF $\pm 20\%$ 50V
C514	4822 126 10364	CERAMIC 100PF $\pm 10\%$
C601		
C604		FILM 120PF $\pm 5\%$ 100V [CD63]
C601	4822 126 11559	FILM 120PF $\pm 5\%$ 100V
C604		FILM 120PF $\pm 5\%$ 100V
C607	5322 122 32265	CERAMIC 100PF $\pm 5\%$ 50V [CD63]
C608		[CD43/CD53]
C608	5322 122 32265	FILM 100PF $\pm 5\%$ 100V [CD63]
C611		CERAMIC 100PF $\pm 5\%$ 50V
C611	4822 124 90364	[CD43/CD53]
C614		ELECT 220 μF 16V [CD53/CD63]
C611	4822 124 90354	ELECT 100 μF 16V [CD43]
C614		
C651	4822 124 90364	ELECT 220 μF 16V [CD63]
C654		
C655		
C658	4822 124 90364	ELECT 220 μF 16V
C659	4822 126 10364	CERAMIC 100PF $\pm 10\%$ [CD63]
C660	5322 122 32265	CERAMIC 100PF +80%-20% 50V
C660	4822 126 10364	CERAMIC 100PF $\pm 10\%$ [CD63]
C660	4822 122 32265	CERAMIC 100PF +80%-20% 50V [CD43/CD53]
C801	4822 122 30103	CERAMIC 0.022 μF +80%-20% 50V
C802	4822 122 30103	CERAMIC 0.022 μF +80%-20% 50V
ΔC803	4822 124 41541	ELECT 470 μF 35V [CD63]
ΔC804	4822 124 41538	ELECT 220 μF 35V [CD43/CD53]
ΔC804	4822 124 41541	ELECT 470 μF 35V [CD63]
ΔC804	4822 124 41538	ELECT 220 μF 35V [CD43/CD53]
ΔC805	4822 124 22277	ELECT 470 μF 16V [CD63]
ΔC805	4822 124 90354	ELECT 100 μF 16V [CD63]
ΔC805	4822 124 41539	ELECT 47 μF 16V [CD43]
ΔC806	4822 124 41539	ELECT 470 μF 16V [CD63]
ΔC806	4822 124 90354	ELECT 100 μF 16V [CD43]
C811	4822 122 40589	CERAMIC 0.047 μF +80%-20% 50V
C812	4822 122 40589	CERAMIC 0.047 μF +80%-20% 50V
ΔC813	4822 124 90352	ELECT 470 μF 16V
ΔC814	4822 124 22722	ELECT 1000 μF 16V
C815	4822 124 80773	ELECT 3300 μF 6.3V
ΔC852	4822 124 90355	ELECT 100 μF 50V
C853	4822 124 80772	ELECT 47 μF 35V
ΔC854	4822 124 90355	ELECT 100 μF 50V
C901	4822 124 41534	ELECT 10 μF 25V
C902	4822 124 41534	ELECT 10 μF 25V
C903	4822 124 90354	ELECT 100 μF 16V
C904	4822 124 90354	ELECT 100 μF 16V
C ***		P116-CAPACITORS (COMMON) PLASTIC FILM CAPACITOR ONE-WAY TYPE, MYLAR $\pm 5\%$ 50V: CT01, C131, C132, C133, C139~C142, C149, C155, C156, C506, C605, C606
C ***		HIGH DIELECTRIC CONSTANT CERAMIC CAPACITOR, 50V: CT03, C117, C118, C505

REF. DESIG.	PART NO.	DESCRIPTION
DN05	4822 130 33305	DIODE, 1SS176,MA165,1SS254 30V 0.1A
DN06	4822 130 33948	ZENER DIODE, 04AZ5.6-Y 5.6V
DN07	4822 130 33305	DIODE, 1SS176,MA165,1SS254 30V 0.1A
DN23	4822 130 33305	DIODE, 1SS176,MA165,1SS254 30V 0.1A
DN24	4822 130 33305	DIODE, 1SS176,MA165,1SS254 30V 0.1A
△D151	4822 130 80839	DIODE, S5688G VRM=400V IO=1A
△D152	4822 130 80839	DIODE, S5688G VRM=400V IO=1A
△D801 S	4822 130 80839	DIODE, S5688G VRM=400V IO=1A
△D804 S	4822 130 80839	DIODE, S5688G VRM=400V IO=1A
△D811 S	4822 130 80839	DIODE, S5688G VRM=400V IO=1A
△D814 S	4822 130 80839	DIODE, S5688G VRM=400V IO=1A
△D852	4822 130 80318	ZENER DIODE 04AZ6.8-Z 6.8V
D853	4822 130 33759	ZENER DIODE 04AZ4.7-Y 4.7V
△D854	4822 130 80839	DIODE, S5688G VRM=400V IO=1A
QD01	4822 209 32762	IC, DIG.FIL & DAC SM5872BS
QF01	4822 209 32887	IC, MAIN CPU MN187164
QF02	4822 209 73951	IC, RESET IC PST523D (4.2V) LOW
QF51	4822 130 42715	TRANSISTOR 2SA608SP, 2SA1048, 2SA1309, 2SA933S
QF52	4822 130 42298	TRANSISTOR 2SC536SP, 2SC2458, 2SC3311, 2SC1740S
QF61	4822 130 42298	TRANSISTOR 2SC536SP, 2SC2458, 2SC3311, 2SC1740S [CD53/CD63]
QH01	4822 130 63382	F.E.T. 2SK332D-6A [CD63]
QH02	4822 130 63382	F.E.T. 2SK332D-6A [CD63]
QH03	4822 130 43233	TRANSISTOR 2SC2240 (GR, BL) [CD63]
QH04	4822 130 43233	TRANSISTOR 2SC2240 (GR, BL) [CD63]
QH05 S	4822 130 42951	TRANSISTOR 2SA970 (GR, BL) [CD63]
QH08	4822 130 43233	TRANSISTOR 2SC2240 (GR, BL) [CD63]
QH09	4822 130 43233	TRANSISTOR 2SC2240 (GR, BL) [CD63]
QH10	4822 130 43233	TRANSISTOR 2SC2240 (GR, BL) [CD63]
QH11	5322 130 41844	F.E.T. 2SK170 BL VGDS=-40V PD=0.4V [CD63]
QH12	5322 130 41844	F.E.T. 2SK170 BL VGDS=-40V PD=0.4V [CD63]
QH13	4822 130 62649	F.E.T. 2SJ74 BL VGDS=25V PD=24W [CD63]
QH14	4822 130 62649	F.E.T. 2SJ74 BL VGDS=25V PD=24W [CD63]
△QM01	4822 209 62755	IC, DUAL POWER OP AMP TCA0372
QN01 S	4822 130 42298	TRANSISTOR 2SC536SP, 2SC2458, 2SC3311, 2SC1740S
QN04 S	4822 130 43818	TRANSISTOR 2SC2878 (A, BRANK)
QN08	4822 130 42298	TRANSISTOR 2SC536SP, 2SC2458, 2SC3311, 2SC1740S
QN20	4822 130 42715	TRANSISTOR 2SA608SP, 2SA1048, 2SA1309, 2SA933S
QN24	4822 130 42715	TRANSISTOR 2SA608SP, 2SA1048, 2SA1309, 2SA933S
QN25	4822 130 42715	TRANSISTOR 2SA608SP, 2SA1048, 2SA1309, 2SA933S

REF. DESIG.	PART NO.	DESCRIPTION
QN91	4822 130 43818	TRANSISTOR 2SC2878 (A, BRANK)
QN92	4822 130 43818	TRANSISTOR 2SC2878 (A, BRANK)
Q104	4822 209 32763	IC, DIGITAL SERVO CONT.TDA1301T
△Q105	4822 209 62755	IC, DUAL POWER OP AMP TCA0372
△Q106	4822 209 62755	IC, DUAL POWER OP AMP TCA0372
Q501	4822 130 42298	TRANSISTOR 2SC536SP, 2SC2458, 2SC3311, 2SC1740S
Q502	4822 130 42298	TRANSISTOR 2SC536SP, 2SC2458, 2SC3311, 2SC1740S
Q503	4822 209 32764	IC, CD DECODER SAA7345 (CD6)
Q605	4822 209 31153	IC, DUAL LOW NOISE OP-AMP NJM2114D [CD53/CD63]
Q605	4822 209 83627	IC, NJM4560D [CD43]
Q606	4822 209 31153	IC, DUAL LOW NOISE OP-AMP NJM2114D [CD53/CD63]
Q606	4822 209 83627	IC, NJM4560D [CD43]
△Q801	4822 209 31712	IC, NJM78M12FA
△Q802	4822 209 63641	IC, -12V 0.5A NJM79M12FA
△Q811	4822 209 31631	IC, +5V NJM7805FA
△Q851	4822 209 31788	IC, -18V 500MA REG.NJM79M18FA JRC
Q852	4822 130 42298	TRANSISTOR 2SC536SP, 2SC2458, 2SC3311, 2SC1740S
Q853	4822 130 42715	TRANSISTOR 2SA608SP, 2SA1048, 2SA1309, 2SA933S
Q854	4822 130 42715	TRANSISTOR 2SA608SP, 2SA1048, 2SA1309, 2SA933S
Q901	4822 209 83654	IC, NJM4556D
△FH11	4822 253 30414	P116-MISCELLANEOUS
△FH12	4822 253 30414	FUSE 630 MA 250V
JF01	4822 265 61251	FUSE 630 MA 250V
JF03	4822 267 41009	JACK 37 PIN FFC
JT11	4822 267 31369	TERMINAL 2P RCA PIN JACK (RC-5 IN/OUT)
J103	4822 265 41351	JACK, OPTICAL OUTPUT GP1F32T [CD63]
J601	4822 265 31045	JACK, 15P
J601	4822 267 31727	TERMINAL RCA 2P OUTPUT [CD63]
J805	4822 256 30329	TERMINAL RCA 2P OUTPUT [CD43/CD53]
J806	4822 267 30978	JACK, FUSE CLIP
J807	4822 256 30329	JACK, FUSE CLIP
J808	4822 267 30978	JACK, FUSE CLIP
LT01	4822 142 60388	JACK, FUSE CLIP
△L001	4822 146 21751	PULSE TRANSFORMER
△L001	4822 146 21749	POWER TRANSFORMER [/01]
L601	4822 157 62899	POWER TRANSFORMER [/02/05]
L602	4822 157 62899	CHOKE COIL 220μH
SF01	4822 277 21559	CHOKE COIL 220μH
△SH02	4822 277 21465	SLIDE SWITCH, IR INT/EXT [CD53/CD63]
△SH91	4822 276 13364	SLIDE SWITCH, VOLTAGE SELECTOR [/01B]
XD01	4822 242 72334	PUSH SWITCH, POWER
XF01	4822 242 72066	CRYSTAL 16.9344MHZ
X101	4822 242 81536	CERAMIC VIBRATOR CST8.0MHZ
C101	4822 126 10364	CERAMIC VIBRATOR CST8.46MTW
		P126-HF CIRCUIT BOARD
		P126-CAPACITORS
		CERAMIC 100PF ± 10%

REF. DESIG.	PART NO.	DESCRIPTION
C102	4822 126 10513	CERAMIC 47PF $\pm 5\%$
C103	4822 126 10513	CERAMIC 47PF $\pm 5\%$
C104	4822 126 11554	CERAMIC 18PF $\pm 5\%$
C105	4822 126 11069	CERAMIC 150PF $\pm 10\%$
C106	4822 124 41534	ELECT 10 μ F 25V
C107	4822 122 40589	CERAMIC 0.047 μ F $\pm 20\%$ 50V
C108	4822 126 11069	CERAMIC 150PF $\pm 10\%$
C109	4822 126 11069	CERAMIC 150PF $\pm 10\%$
C110	4822 126 11071	CERAMIC 330PF $\pm 10\%$
R***		P126-RESISTORS (COMMON) CARBON FILM FIXED RESISTOR $\pm 5\%$ 1/6W: R101~R106, R108~R113
Q101	4822 130 61748	P126-SEMICONDUCTORS TRANSISTOR 2SC2668 (O) TRANSISTOR 2SC536SP, 2SC2458, 2SC3311, 2SC1740S TRANSISTOR 2SA608SP, 2SA1048, 2SA1309, 2SA933S
Q102	4822 130 42298	
Q103	4822 130 42715	
J101	4822 265 41349	P126-MISCELLANEOUS JACK, 12P JACK, 15P
J102	4822 265 41351	
		P136-HEADPHONE CIRCUIT BOARD
C980	4822 122 30103	P136-CAPACITORS CERAMIC 0.022 μ F +80%-20% 50V
J900	4822 267 31691	P136-MISCELLANEOUS JACK, HEAD PHONE [01B/02B/05B] JACK, HEAD PHONE [CD53/01G/02G]
J900	4822 267 31692	
		PY16-FRONT CIRCUIT BOARD
CY01	4822 122 40589	PY16-CAPACITORS CERAMIC 0.047 μ F $\pm 20\%$ 50V
R***		PY16-RESISTORS (COMMON) CARBON FILM FIXED RESISTOR $\pm 5\%$ 1/6W: RY01
DY01	4822 130 33305	PY16-SEMICONDUCTORS DIODE, 1SS176, MA165, 1SS254 30V 0.1A
DY04		
JY01	4822 265 61252	PY16-MISCELLANEOUS JACK, 37 PIN CARD TYPE
SY01	4822 276 20508	PUSH SWITCH
SY14		
SY15	4822 276 13296	PUSH SWITCH
SY24		
VY01	4822 130 91287	DISPLAY UNIT
ZY01	4822 214 52009	PHOTO UNIT GP1U58XP [CD53/CD63]

NOTE ON SAFETY

Symbol Δ Fire or electrical shock hazard. Only original parts should be used to replace any part marked with symbol Δ . Any other component substitution (other than original type), may increase risk of fire or electrical shock hazard.