SERVICE MANUAL

FISHER

CA-870

WITH WIRELESS REMOTE CONTROL REM-885

Integrated Stereo Amplifier

(EUROPE)

132 299 40

NOTE:

This model is supplied with the Remote Control REM-885. For details, refer to the Remote Control REM-885 of the Service Manual (WM-17328).

WM-16687

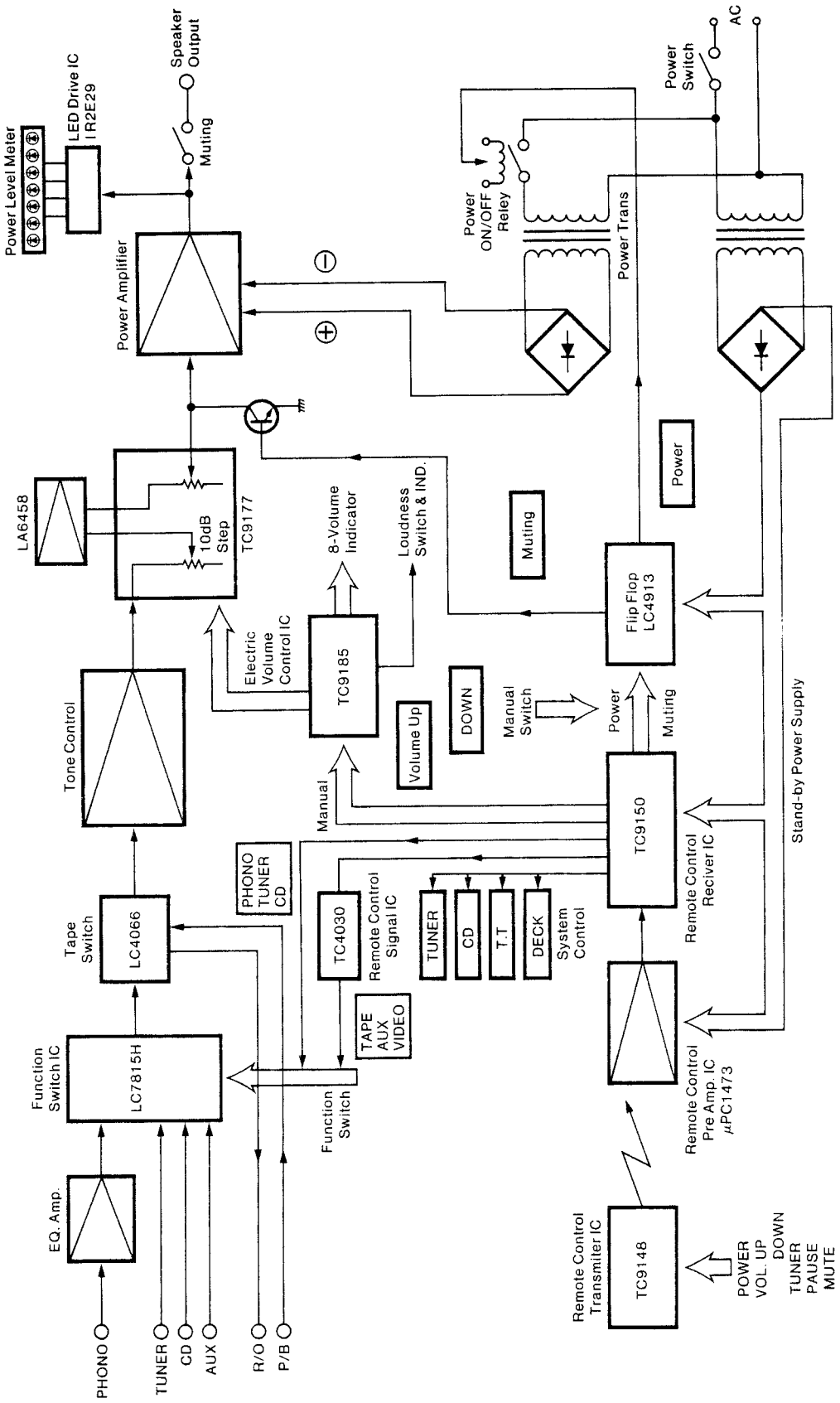
CONTENTS

SPECIFICATIONS

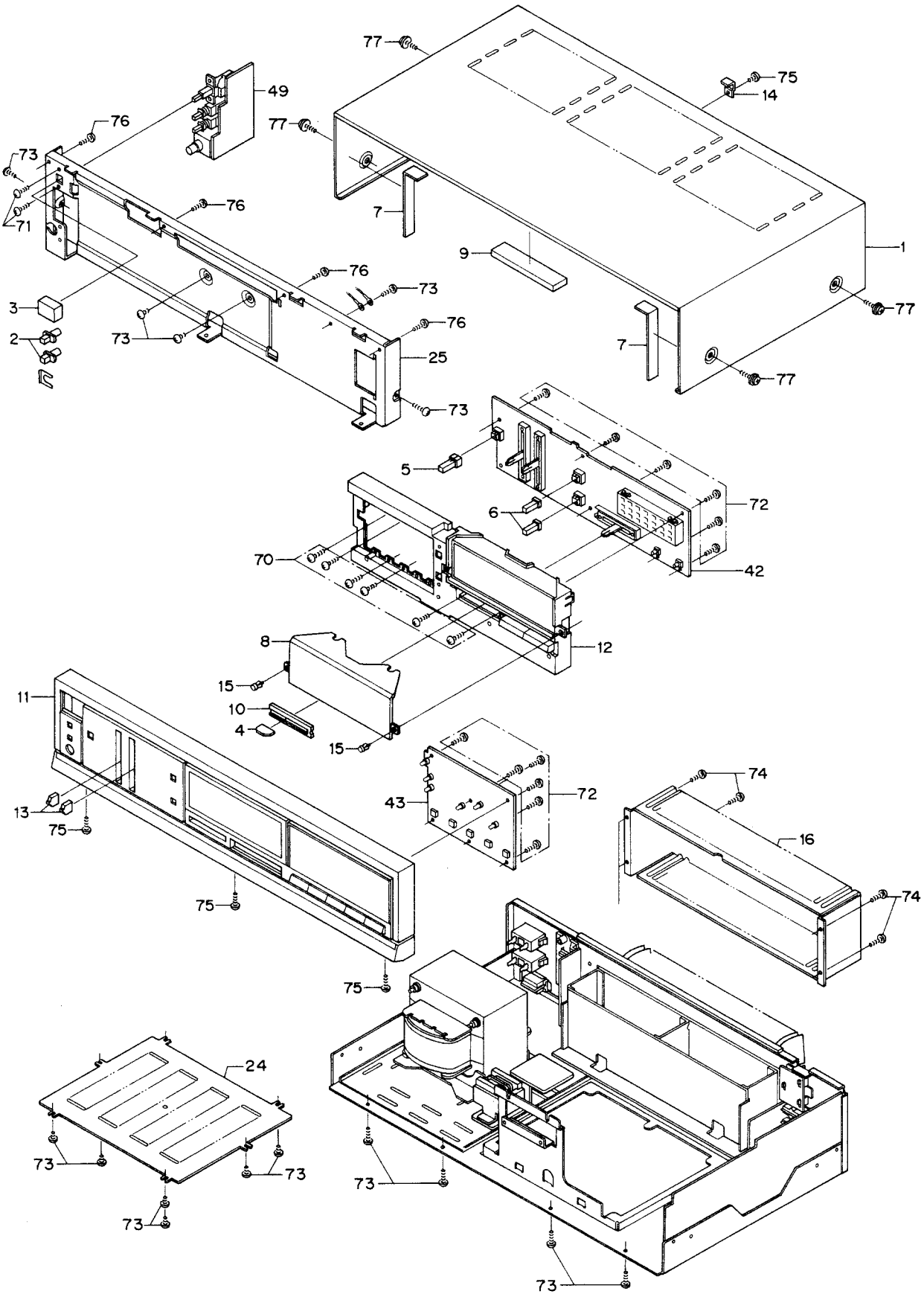
AMPLIFIER	CA-870
POWER AMPLIFIER SECTION **Minimum RMS sine wave power per channel within stated bandwidth at no more than stated distortion and with 8-ohm load**	**100 Watts**
Power Bandwidth	**20 Hz – 20 kHz**
Total Harmonic Distortion	**0.05 %**
I.M. Distortion	0.05 %
Speaker Damping	> 20
PREAMPLIFIER SECTION Frequency Response	
Phono (RIAA)	±1 dB
Aux (20 Hz – 20 kHz)	±1 dB
Input Sensitivity and Impedance	
Phono	2.5 mV/50 kΩ
Tape Monitor	150 mV/50 kΩ
Tuner/Video/Aux/CD	150 mV/50 kΩ
Phono Max. Input Capability	150 mV
Tone Controls	
Bass (100 Hz)	±10 dB
Treble (10 kHz)	±10 dB
Loudness Contour (100 Hz/10 kHz)	+8 dB/ +4 dB
Hum & Noise (IHF Short Circuit, A Network)	
Phono	70 dB
Tape Monitor	90 dB
Tuner/Video/Aux/CD	90 dB
GENERAL Power Requirements (50 Hz)	110 / 220 V AC
Power Consumption	560 VA
AC Outlets	2
Dimensions (W x H x D)	440 x 108 x 315 mm
Weight (approx.)	8.1 kg

Because its products are subject to continuous improvement, Fisher Corporation reserves the right to modify product designs and specifications without notice and without incurring any obligation.

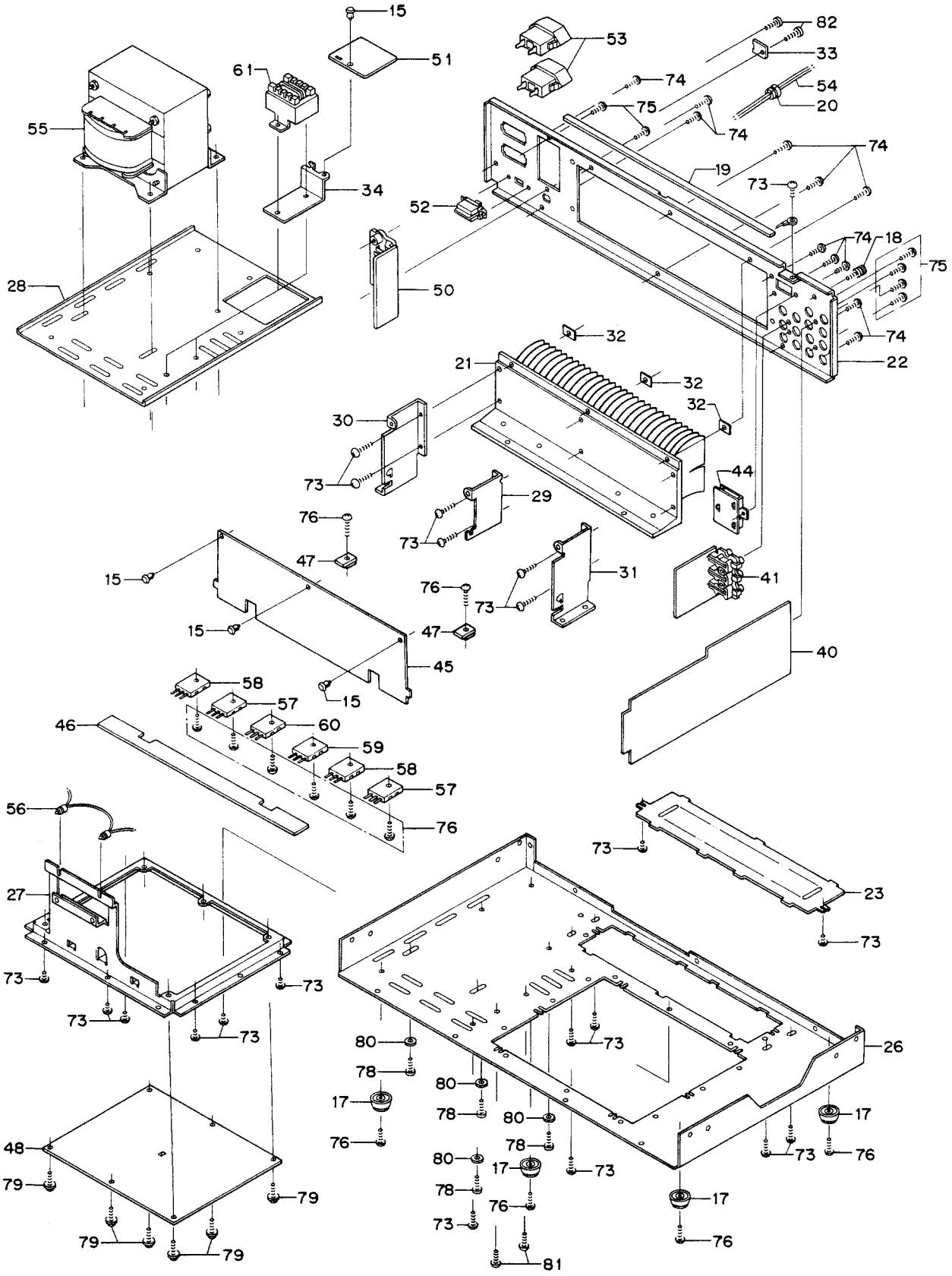
FUNCTIONAL BLOCK DIAGRAM



CABINET & CHASSIS EXPLODED VIEW (1)



CABINET & CHASSIS EXPLODED VIEW (2)



CABINET & CHASSIS PARTS LIST

Ref. No.	Part No.	Description	Q'ty
	PACKING PARTS LIST		
	3-9415-10300	Bag Polyethylene	1
	131-6-3009-36090	Pad	1
	131-6-3069-16350	Patching Sheet	1
	131-6-4559-11200	Serial No. Sheet	2
	131-6-9459-00300	Rubber Band	1
	141-6-1189-12909	Box Corrugate-Exp.	1
	141-6-1469-11700	Pad (Front)	1
	141-6-1469-11800	Pad (Rear)	1
	141-6-2519-22290	Sheet Polyethylene	1
	ACCESSORIES PARTS LIST		
	4-1929-70235	REM-885 (EUROPE)	1
	131-6-2719-10401	Bag Fan	1
	142-6-4119-32915	Explanatory Booklet	1
	CABINET & CHASSIS PARTS LIST		
	4-2379-21520	Terminal Lug	1
	131-6-4559-11200	Serial No. Sheet	1
1	131-2-1410-26504	Cover	1
2	131-2-1601-69601	Knob (Speaker Selector)	2
3	131-2-1601-93300	Knob (Power)	1
4	131-2-1601-93400	Knob (Balance)	1
5	131-2-1601-93600	Knob (Standby)	1
6	131-2-1601-93700	Knob Touch (Loudness, Muting)	2
7	131-2-3202-13400	Metal Reinf	2
8	131-2-3608-16401	Filter	1
9	131-2-5205-33300	Cushion	1
10	131-2-6113-52500	Shelter	1
11	141-0-1129-19700	Cabinet Front Assy	1
	131-2-1205-28800	Decorate Plate Dial	1
	131-2-1601-91800	Knob (Function)	1
	131-2-3608-16600	Filter	1
	131-2-6113-52400	Shelter	1
	141-2-1129-24001	Cabinet Front	1
	141-2-1449-61229	Plate Front	1
	141-2-1449-65004	Plate Decorate	1
	4-2359-78079	Connector 1P Assy	1
12	141-0-3519-24501	Mount P.C.B. Assy	1
	131-2-1601-93500	Knob (Volume)	1
	141-2-1449-65101	Screen LED	1
	141-2-3519-75500	Mount P.C.B.	1
13	141-2-1659-35900	Knob Slide (Tone)	2
14	141-2-3159-03300	Bracket Cover	1
15	131-2-4221-00600	Rivet	6
16	131-2-1410-34232	Cover Heatsink	1
17	131-2-1801-14100	Leg	4
18	131-2-4201-17800	Screw Ground	1
19	131-2-5205-15800	Cushion	1
20	131-2-6111-14200	Bushing (AC Line)	1
21	131-2-6201-36600	Heat Sink	1
22	141-2-1219-36811	Panel Rear	1
23	141-2-1259-09800	Bottom Cover	1
24	141-2-1259-09900	Bottom Cover	1
25	141-2-2149-26700	Panel Front	1
26	141-2-3119-28100	Chassis	1
27	141-2-3129-06300	Sub Chassis	1
28	141-2-3159-04400	Metal Reinforce	1
29	141-2-3889-04600	Bracket P.C.B.	1
30	141-2-3889-04700	Bracket Heat Sink (Left)	1
31	141-2-3889-04701	Bracket Heat Sink (Right)	1
32	141-2-4359-41200	Plate Sever	3
33	131-2-7104-00500	Plate Pad Switch	1
34	141-2-3889-05100	Bracket P.C.B.	1
35	141-2-4359-44000	Plate Sever	1
	ELECTRICAL PARTS LIST		
40	141-0-1939-14331	Input P.C.B. Assy	1
41	141-0-1939-14340	REC OUT P.C.B. Assy	1
42	141-0-1939-14350	Tone P.C.B. Assy	1
43	141-0-1939-14360	Function P.C.B. Assy	1
44	141-0-1939-14370	Control P.C.B. Assy	1
45	141-0-1939-14383	Main Amplifier P.C.B. Assy	1
46	141-0-1939-14393	Power Transistor P.C.B. Assy	1
47	141-0-1939-14400	Bias P.C.B. Assy	2
48	141-0-1939-14414	Power Supply P.C.B. Assy	1
49	141-0-1939-14422	Power Switch P.C.B. Assy	1
50	141-0-1939-14431	Speaker Out P.C.B. Assy	1
51	141-0-1939-14441	Fuse P.C.B. Assy	1
52	⚠ 4-2312-01020	Switch Slide (AC Selector) [SW801]	1
53	⚠ 4-2352-00450	AC Socket (AC Outlet)	2
54	⚠ 4-2432-00200	Power Cord	1
55	⚠ 4-2512-24120	Power Trans (Main)	1
56	4-6129-70660	Lamp	1
57	4-2039-72111	Transistor, 2SC 3280 (Q1, Q2)	2
or	4-2039-72772	Transistor, 2SD 1717 (Q1, Q2)	2
58	4-2039-72121	Transistor, 2SA 1301 (Q3, Q4)	2
or	4-2039-72762	Transistor, 2SB 1162 (Q3, Q4)	2
59	4-2039-71971	Transistor, 2SC 3281 (Q5)	1
60	4-2039-71961	Transistor, 2SA 1302 (Q6)	1
61	⚠ 4-2512-23760	Power Trans (Sub)	1
	SCREW PARTS LIST		
70	101-3-1302-00411	Screw, Pan Hd., +M2.0x4	6
71	131-3-1303-00611	Screw, Pan Hd. C SW, +M3.0x6	2
72	143-3-1902-60811	Screw, Brazier Hd. Tapping-B, +M2.6x8	12
73	143-3-1903-00611	Screw, Brazier Hd. Tapping-B, +M3.0x6	36
74	143-3-1903-00618	Screw, Brazier Hd. Tapping-B, +M3.0x6	15
75	143-3-1903-00818	Screw, Brazier Hd. Tapping-B, +M3.0x8	10
76	143-3-1903-01011	Screw, Brazier Hd. Tapping-B, +M3.0x10	16
77	141-2-4219-38400	Screw, Bind Hd. Tapping-B, +M4.0x8 Sems	4
78	131-2-4201-27802	Screw, C Tite	4
79	131-2-4201-25201	Screw, Brazier Hd. Tapping-B, +M3.0x8 Sems	6
80	131-2-4203-84200	Washer, 4.2x12x1.0 Z	4
81	131-2-4201-16701	Screw, Brazier Hd. Tapping-C, +M3.0x8	2
82	101-3-1703-00818	Screw, Bind Hd., +M3.0x8	2
C805	CC1-0-3500-ZG00C	Ceramic 0.01μF 50V +80,-20%	1
C806	CC1-0-3500-ZG00C	Ceramic 0.01μF 50V +80,-20%	1

NOTES:

1. Parts order must contain Model Number, Part Number and Description.
2. Ordering quantity of screws and resistors must be multiple of 10 pcs.

PRODUCT SAFETY NOTICE

Each precaution in this manual should be followed during servicing. Components identified with the IEC symbol ⚠ in the parts list and the schematic diagram designate components in which safety can be of special significance. When replacing a component identified with ⚠, use only the replacement parts designated, or parts with the same ratings of resistance, wattage or voltage that are designated in the parts list in this manual. Leakage-current or resistance measurements must be made to determine that exposed parts are acceptably insulated from the supply circuit before returning the product to the customer.

RECOMMENDED TEST EQUIPMENTS

The following test equipments are recommended to completely test and align the Amplifier:

- Line Voltage Isolation Transformer
- AC DC Multimeter
- Accurately Calibrated AC Voltmeter
- Oscilloscope (Flat to 100 kHz Minimum)
- Low-Distortion Audio Sine-Wave Generator
- Harmonic Distortion Analyzer
- Two (2) Load Resistors 8-ohms, 250 Watts (Minimum Rating)

HARMONIC DISTORTION TEST

CAUTION: Limit the following tests to no more than ten minutes each. Use 8-ohm resistors, with a minimum power rating of 250 watts when connecting a load across the SPEAKERS terminal.

CONTROL SETTINGS:

Unplug the AC power cord and set the front panel controls as follows:

- POWER switch to the OFF position.
- SPEAKERS switch to the OFF position.
- LOUDNESS CONTOUR switch to the OFF position.
- TONE control to the center position.
- BALANCE control to the center position.
- FUNCTION switch to the VIDEO/AUX position.
- VOLUME DOWN button to the MINIMUM position.
- LEFT CHANNEL DRIVEN

ONE CHANNEL DRIVEN:

1) Connect a low distortion audio generator to LEFT AUX IN jack. Set generator frequency to 1 kHz and output to minimum.

2) Connect an 8-ohm load resistor between SPEAKERS SYSTEM-A LEFT and COM terminals. Connect a Harmonic Distortion Analyzer and an AC VTVM in parallel across the 8-ohm load.

3) Connect the AC power cord and set SPEAKERS switch to ON position. Set the volume level to a MAX level by Pressing the VOLUME UP button.

4) Increase generator output for 100 Watts RMS (28.2 volts across the 8-ohm load). Harmonic Distortion Analyzer should measure 0.05 % distortion or less.

5) Repeat steps 1 through 4 for RIGHT CHANNEL.

BOTH CHANNELS DRIVEN

Connect 8-ohm load resistors across LEFT and RIGHT SPEAKERS SYSTEM-A terminals. Adjust generator output and "VOLUME" control for 100 watts at Left and Right Channels (28.2 volts across the 8-ohm loads). Harmonic Distortion Analyzer should measure 0.05 % distortion or less at each channel.

CAUTION: This precision high-fidelity instrument should be serviced only by qualified personnel, trained in the repair of transistor equipment and printed circuitry.

POWER AMPLIFIER ADJUSTMENT

BEFORE ADJUSTMENT

Unplug the AC power cord and set the front panel controls as follows:

- Power switch to the OFF position.
- Set the SPEAKERS switch to the OFF position.
- Set the volume level to a minimum level by Pressing the VOLUME DOWN button.
- IDLING CURRENT ADJUSTMENT VR401/VR402 (on the Main Amplifier P.C.Borad) setting to mechanical center position.
- Connect the AC power cord and Power switch to the ON position.

IDLING CURRENT ADJUSTMENT

This adjustment is very sensitive to changes in ambient temperature. Allow set to operate for 5 minutes before attempting this adjustment.

LEFT CHANNEL AMPLIFIER

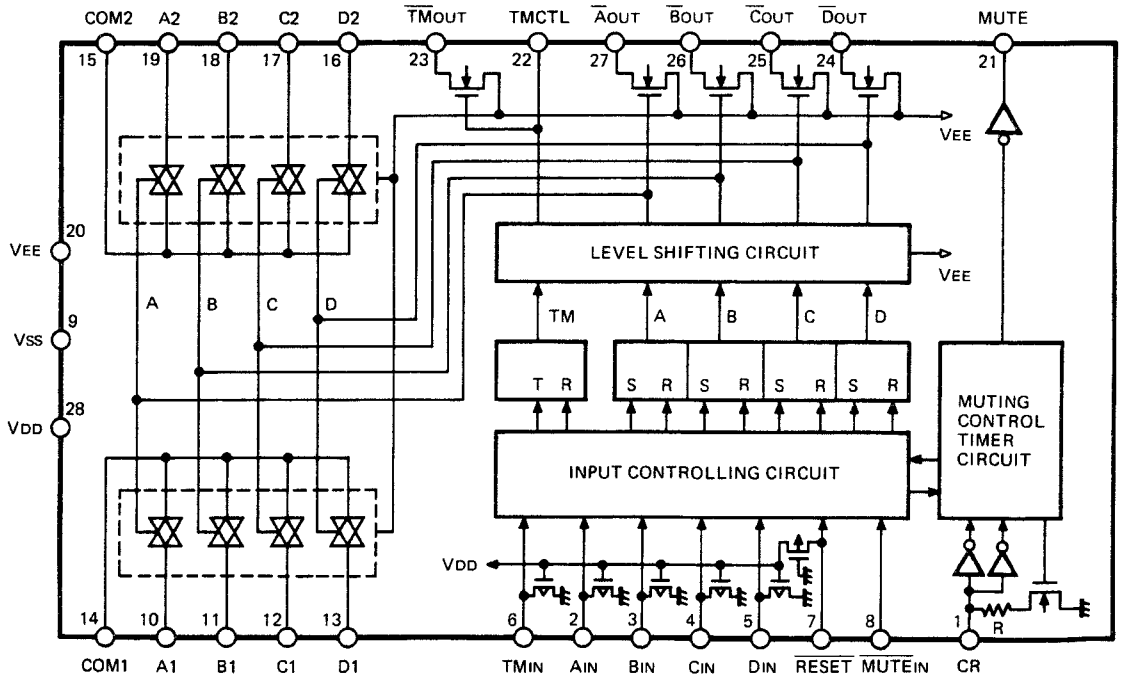
1) Connect the DC Voltmeter between Pins T404 and T403 on the Main Amplifier P.C.Board.
2) Adjust the VR401 for an indication of 15mV ±5mV on the DC Voltmeter.

RIGHT CHANNEL AMPLIFIER

1) Connect the DC Voltmeter between Pins T402 and T401 on the Main Amplifier P.C.Board.
2) Adjust the VR402 for an indication of 15mV ±5mV on the DC Voltmeter.

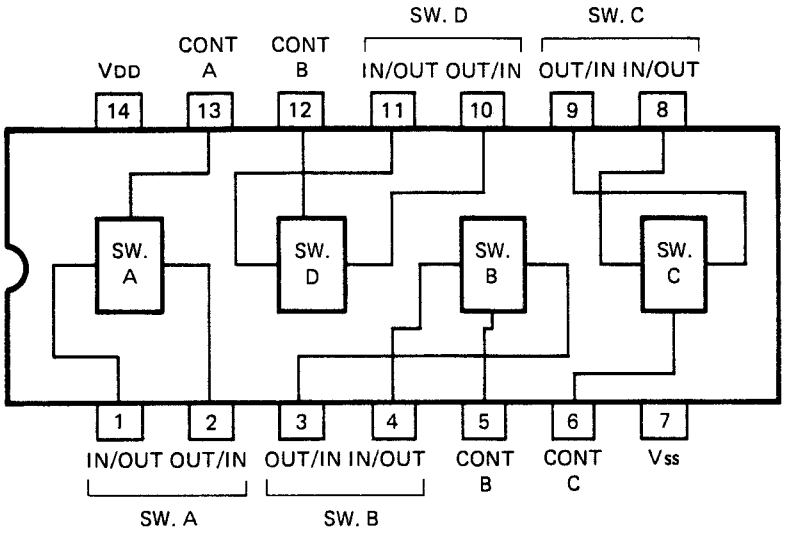
INTEGRATED CIRCUIT BLOCK DIAGRAM

FUNCTION ANALOG SWITCH IC LC 7815 H

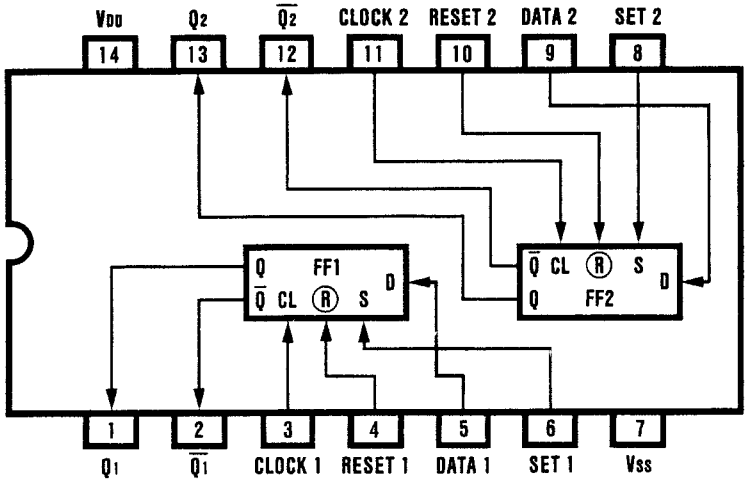


INTEGRATED CIRCUIT BLOCK DIAGRAM (Continued)

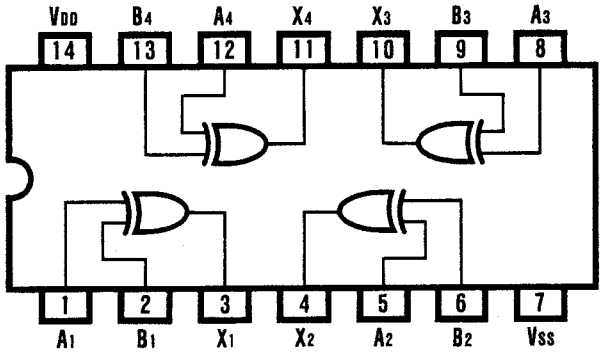
TAPE INPUT ANALOG SWITCH IC LC 4066 B



POWER ON/OFF MUTING IC LC 4913 B

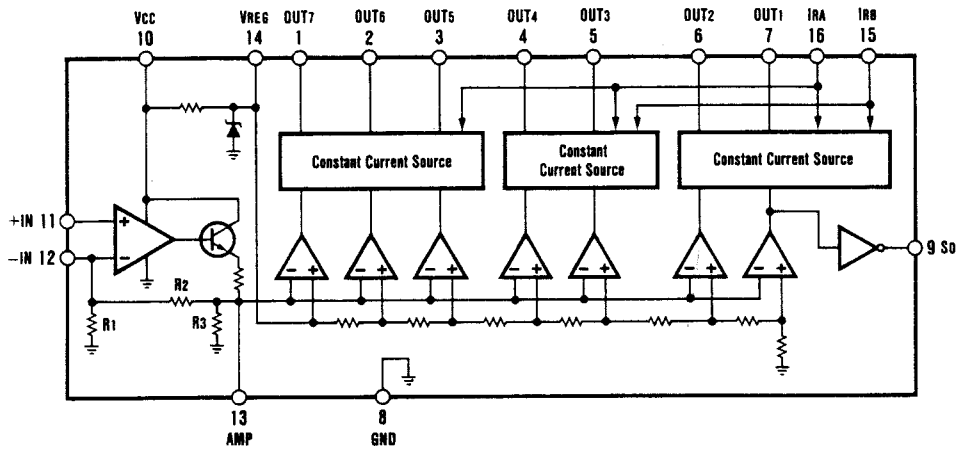


REMOTE CONTROL SIGNAL IC TC 4030

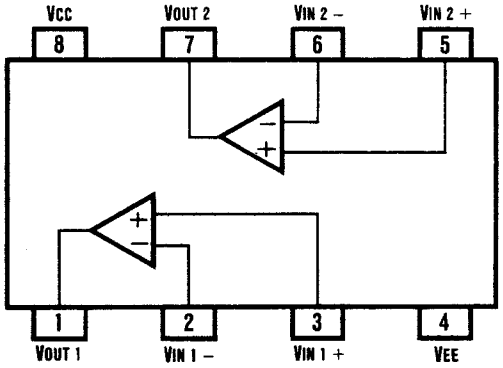


INTEGRATED CIRCUIT BLOCK DIAGRAM (Continued)

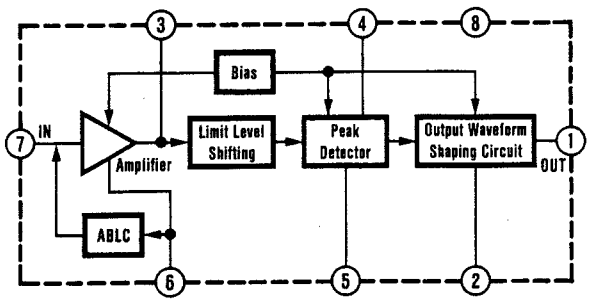
POWER LEVEL METER DRIVE AMP IC IR 2E29



PHONO / TONE CONTROL AMP IC NJM 2068 DD

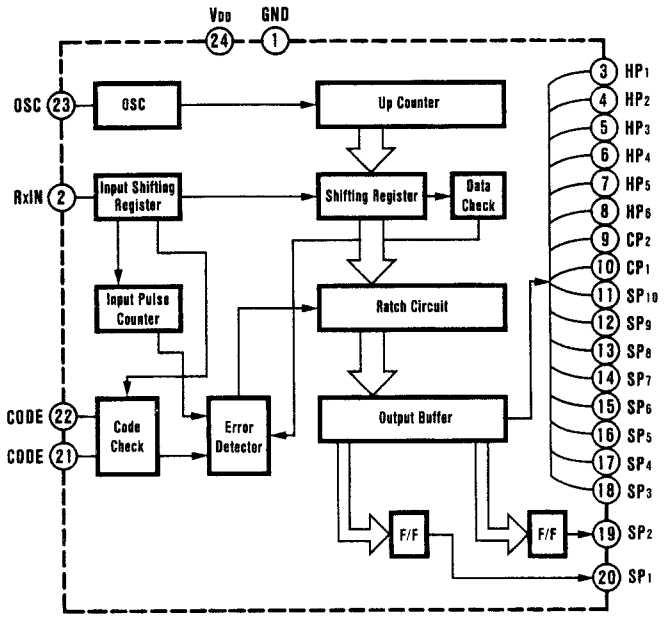


REMOTE CONTROL PRE AMP IC μPC 1473 HA

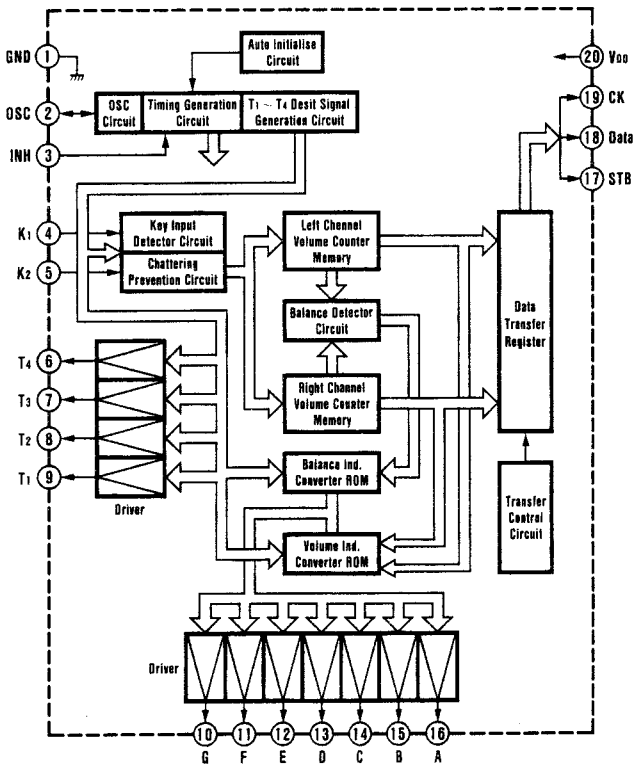


INTEGRATED CIRCUIT BLOCK DIAGRAM (Continued)

REMOTE CONTROL RECEIVER IC TC 9150 P

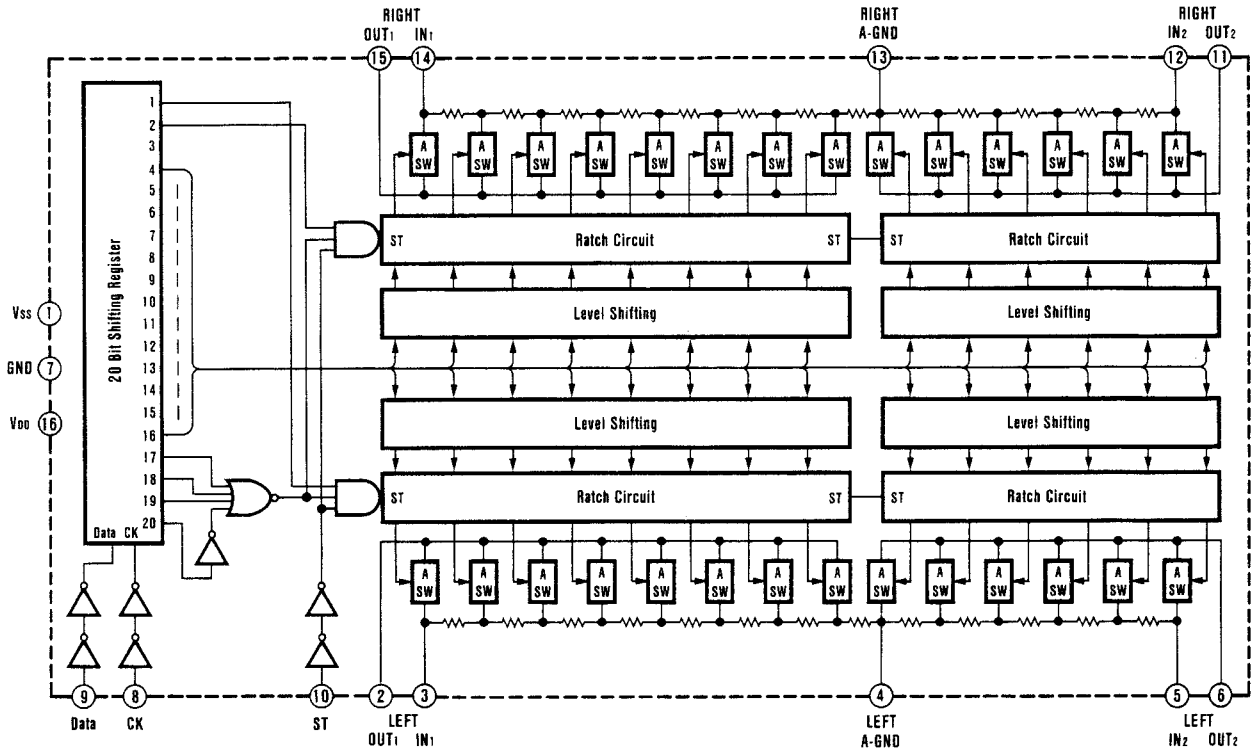


ELECTRONIC VOLUME CONTROL IC TC 9185 P



INTEGRATED CIRCUIT BLOCK DIAGRAM (Continued)

ELECTRONIC VOLUME (with Loudness) IC TC 9177 P



P.C.BOARD PARTS LIST

Ref. No.	Part No.	Description				Q'ty
	INPUT P.C.B. ASSY					
40	141-0-1939-14331	Input P.C.B. Assy				1
	4-2262-26250	Input P.C.B.				1
	4-2352-01650	Pin Jack 4P (Phono, Tuner)				1
	4-2352-01650	Pin Jack 4P (CD, Video/Aux)				1
A	4-2362-00900	Plug 8P				1
B	4-2369-73160	Connector 6P				1
C	4-2369-73410	Connector 7P				1
D	4-2362-00770	Plug 2P				1
E	4-2369-73150	Connector 5P				1
F	4-2369-73880	Plug 12P				1
G	4-2369-73690	Plug 9P				1
	141-2-3229-56000	Plate Shield				1
	CAPACITORS					
C101	CC3-3-1500-KE00C	Ceramic	330pF	50V	±10%	1
C102	CC3-3-1500-KE00C	Ceramic	330pF	50V	±10%	1
C103	CC2-2-1500-KE00C	Ceramic	220pF	50V	±10%	1
C104	CC2-2-1500-KE00C	Ceramic	220pF	50V	±10%	1
C105	CD4-7-5250-0001V	Electrolytic	4.7μF	25V		1
C106	CD4-7-5250-0001V	Electrolytic	4.7μF	25V		1
C107	CC2-2-1500-KE00C	Ceramic	220pF	50V	±10%	1
C108	CC2-2-1500-KE00C	Ceramic	220pF	50V	±10%	1
C109	CD4-7-6160-0006V	Electrolytic	47μF	16V		1
C110	CD4-7-6160-0006V	Electrolytic	47μF	16V		1
C111	CM1-8-3500-K00SV	Mylar	0.018μF	50V	±10%	1
C112	CM1-8-3500-K00SV	Mylar	0.018μF	50V	±10%	1
C113	CM4-7-2500-K00SV	Mylar	0.0047μF	50V	±10%	1
C114	CM4-7-2500-K00SV	Mylar	0.0047μF	50V	±10%	1
C115	CD4-7-5250-0001V	Electrolytic	4.7μF	25V		1
C116	CD4-7-5250-0001V	Electrolytic	4.7μF	25V		1
C117	CC2-2-1500-KE00C	Ceramic	220pF	50V	±10%	1
C118	CC2-2-1500-KE00C	Ceramic	220pF	50V	±10%	1
C135	CD4-7-5250-0001V	Electrolytic	4.7μF	25V		1
C136	CD4-7-5250-0001V	Electrolytic	4.7μF	25V		1
C137	CD4-7-5250-0001V	Electrolytic	4.7μF	25V		1
C138	CD4-7-5250-0001V	Electrolytic	4.7μF	25V		1
C141	CD4-7-6160-0006V	Electrolytic	47μF	16V		1
C142	CD4-7-6160-0006V	Electrolytic	47μF	16V		1
C143	CD4-7-6160-0006V	Electrolytic	47μF	16V		1
C144	CD4-7-6160-0006V	Electrolytic	47μF	16V		1
C145	CD2-2-5500-0001V	Electrolytic	2.2μF	50V		1
C146	CD1-0-8160-0001V	Electrolytic	1000μF	16V		1
C147	CD1-0-4500-0001V	Electrolytic	0.1μF	50V		1
C148	CD1-0-5500-0001V	Electrolytic	1μF	50V		1
C151	CD1-0-5500-0001V	Electrolytic	1μF	50V		1
C152	CD1-0-5500-0001V	Electrolytic	1μF	50V		1
C153	CD1-0-5500-0001V	Electrolytic	1μF	50V		1
C154	CM1-0-2500-K00SV	Mylar	0.001μF	50V	±10%	1
C155	CD2-2-5500-0001V	Electrolytic	2.2μF	50V		1
C156	CC4-7-3500-ZG00C	Ceramic	0.047μF	50V	+80,-20%	1
C157	CC4-7-3500-ZG00C	Ceramic	0.047μF	50V	+80,-20%	1
C158	CD1-0-6250-0001V	Electrolytic	10μF	25V		1
C160	CC1-0-3500-ZG00C	Ceramic	0.01μF	50V	+80,-20%	1
C161	CC1-0-3500-ZG00C	Ceramic	0.01μF	50V	+80,-20%	1
C162	CC1-0-3500-ZG00C	Ceramic	0.01μF	50V	+80,-20%	1
C163	CC1-0-3500-ZG00C	Ceramic	0.01μF	50V	+80,-20%	1
C164	CC1-0-3500-ZG00C	Ceramic	0.01μF	50V	+80,-20%	1
C165	CC1-0-3500-ZG00C	Ceramic	0.01μF	50V	+80,-20%	1
	SEMICONDUCTORS					
D101	202-5-1410-00110	Diode, GMA 01				1
D102	202-5-9040-44210	Diode, DS 442				1
D103	202-5-1410-00110	Diode, GMA 01				1
D104	202-5-1410-00110	Diode, GMA 01				1
D107	202-5-9040-44210	Diode, DS 442				1
D108	202-5-9040-44210	Diode, DS 442				1
D109	202-5-1410-00110	Diode, GMA 01				1
D110	202-5-1410-00110	Diode, GMA 01				1
D111	202-5-1410-00110	Diode, GMA 01				1
D112	202-5-1410-00110	Diode, GMA 01				1
IC101	4-2069-75310	IC, NJM 2068 DD				1
IC102	206-5-8897-81520	IC, LC 7815 MG				1
IC103	206-5-8144-06610	IC, LC 4066 BH				1
IC104	4-2069-75210	IC, TC 9150 P				1
IC105	207-5-6474-91310	IC, LC 4913				1
IC108	4-2069-74950	IC, TC 4030 B				1
or	4-2069-74930	IC, MSM 4030 BRS				1
Q101	203-5-5000-53660	Transistor, 2SC 536				1
Q102	203-5-5000-53660	Transistor, 2SC 536				1
Q107	203-5-7230-60860	Transistor, 2SA 608				1
Q108	203-5-7230-60860	Transistor, 2SA 608				1
Q109	203-5-7230-60860	Transistor, 2SA 608				1
Q110	203-5-7230-60860	Transistor, 2SA 608				1
Q111	203-5-7230-60860	Transistor, 2SA 608				1
Q112	203-5-7230-60860	Transistor, 2SA 608				1
Q113	203-5-5000-53660	Transistor, 2SC 536				1
Q114	203-5-5000-53660	Transistor, 2SC 536				1
Q115	203-5-5000-53660	Transistor, 2SC 536				1
Q116	203-5-5000-53660	Transistor, 2SC 536				1
Q117	203-5-5000-53660	Transistor, 2SC 536				1
	RESISTORS					
R101	RD1-0-2161-JH000	Carbon	1kΩ	1/6W	±5%	1
R102	RD1-0-2161-JH000	Carbon	1kΩ	1/6W	±5%	1
R103	RD1-0-4161-JH000	Carbon	100kΩ	1/6W	±5%	1
R104	RD1-0-4161-JH000	Carbon	100kΩ	1/6W	±5%	1
R105	RD1-0-4161-JH000	Carbon	100kΩ	1/6W	±5%	1
R106	RD1-0-4161-JH000	Carbon	100kΩ	1/6W	±5%	1
R107	RD3-3-1161-JH000	Carbon	330Ω	1/6W	±5%	1
R108	RD3-3-1161-JH000	Carbon	330Ω	1/6W	±5%	1
R109	RD2-2-4161-JH000	Carbon	220kΩ	1/6W	±5%	1
R110	RD2-2-4161-JH000	Carbon	220kΩ	1/6W	±5%	1
R111	RD1-5-3161-JH000	Carbon	15kΩ	1/6W	±5%	1
R112	RD1-5-3161-JH000	Carbon	15kΩ	1/6W	±5%	1
R113	RD1-0-4161-JH000	Carbon	100kΩ	1/6W	±5%	1
R114	RD1-0-4161-JH000	Carbon	100kΩ	1/6W	±5%	1
R115	RD1-0-2161-JH000	Carbon	1kΩ	1/6W	±5%	1
R116	RD1-0-2161-JH000	Carbon	1kΩ	1/6W	±5%	1
R117	RD1-0-2161-JH000	Carbon	1kΩ	1/6W	±5%	1
R118	RD1-0-2161-JH000	Carbon	1kΩ	1/6W	±5%	1
R119	RD4-7-4161-JH000	Carbon	470kΩ	1/6W	±5%	1
R120	RD4-7-4161-JH000	Carbon	470kΩ	1/6W	±5%	1
R121	RD1-0-2161-JH000	Carbon	1kΩ	1/6W	±5%	1
R122	RD1-0-2161-JH000	Carbon	1kΩ	1/6W	±5%	1
R123	RD4-7-4161-JH000	Carbon	470kΩ	1/6W	±5%	1
R124	RD4-7-4161-JH000	Carbon	470kΩ	1/6W	±5%	1
R125	RD1-0-2161-JH000	Carbon	1kΩ	1/6W	±5%	1
R126	RD1-0-2161-JH000	Carbon	1kΩ	1/6W	±5%	1
R127	RD4-7-4161-JH000	Carbon	470kΩ	1/6W	±5%	1
R128	RD4-7-4161-JH000	Carbon	470kΩ	1/6W	±5%	1
R151	RD1-0-2251-JM000	Carbon	1kΩ	1/4W	±5%	1
R152	RD1-0-2251-JM000	Carbon	1kΩ	1/4W	±5%	1
R153	RD1-8-1251-JM000	Carbon	180Ω	1/4W	±5%	1
R154	RD1-8-1251-JM000	Carbon	180Ω	1/4W	±5%	1
R155	RD2-7-2161-JH000	Carbon	2.7kΩ	1/6W	±5%	1
R156	RD1-8-1161-JH000	Carbon	180Ω	1/6W	±5%	1
R157	RD2-2-4161-JH000	Carbon	220kΩ	1/6W	±5%	1

P.C.BOARD PARTS LIST (Continued)

Ref. No.	Part No.	Description				Q'ty
R158	RD2-2-2161-JH000	Carbon	2.2kΩ	1/6W	±5%	1
R159	RD1-0-3161-JH000	Carbon	10kΩ	1/6W	±5%	1
R160	RD5-6-3161-JH000	Carbon	56kΩ	1/6W	±5%	1
R161	RD1-5-4161-JH000	Carbon	150kΩ	1/6W	±5%	1
R162	RD1-5-4161-JH000	Carbon	150kΩ	1/6W	±5%	1
R163	RD4-7-2161-JH000	Carbon	4.7kΩ	1/6W	±5%	1
R164	RD4-7-2161-JH000	Carbon	4.7kΩ	1/6W	±5%	1
R165	RD1-0-2161-JH000	Carbon	1kΩ	1/6W	±5%	1
R166	RD1-0-2161-JH000	Carbon	1kΩ	1/6W	±5%	1
R167	RD4-7-3161-JH000	Carbon	47kΩ	1/6W	±5%	1
R168	RD2-2-3161-JH000	Carbon	22kΩ	1/6W	±5%	1
R169	RD2-2-3161-JH000	Carbon	22kΩ	1/6W	±5%	1
R170	RD4-7-3161-JH000	Carbon	47kΩ	1/6W	±5%	1
R171	RD4-7-3161-JH000	Carbon	47kΩ	1/6W	±5%	1
R172	RD4-7-3161-JH000	Carbon	47kΩ	1/6W	±5%	1
R173	RD4-7-3161-JH000	Carbon	47kΩ	1/6W	±5%	1
R174	RD4-7-3161-JH000	Carbon	47kΩ	1/6W	±5%	1
R175	RD1-8-3161-JH000	Carbon	18kΩ	1/6W	±5%	1
R176	RD1-8-3161-JH000	Carbon	18kΩ	1/6W	±5%	1
R177	RD1-8-3161-JH000	Carbon	18kΩ	1/6W	±5%	1
R178	RD1-8-3161-JH000	Carbon	18kΩ	1/6W	±5%	1
R179	RD1-8-3161-JH000	Carbon	18kΩ	1/6W	±5%	1
R180	RD1-8-3161-JH000	Carbon	18kΩ	1/6W	±5%	1
R181	RD1-8-3161-JH000	Carbon	18kΩ	1/6W	±5%	1
R182	RD1-8-3161-JH000	Carbon	18kΩ	1/6W	±5%	1
R183	RD1-8-3161-JH000	Carbon	18kΩ	1/6W	±5%	1
R184	RD1-8-3161-JH000	Carbon	18kΩ	1/6W	±5%	1
R185	RD1-2-4161-JH000	Carbon	120kΩ	1/6W	±5%	1
R186	RD1-0-3161-JH000	Carbon	10kΩ	1/6W	±5%	1
R187	RD1-2-4161-JH000	Carbon	120kΩ	1/6W	±5%	1
R188	RD1-0-3161-JH000	Carbon	10kΩ	1/6W	±5%	1
R189	RD5-6-2251-JM000	Carbon	5.6kΩ	1/4W	±5%	1
R190	RD2-2-2161-JH000	Carbon	2.2kΩ	1/6W	±5%	1
R191	RD3-9-3161-JH000	Carbon	39kΩ	1/6W	±5%	1
R192	RD5-6-3161-JH000	Carbon	56kΩ	1/6W	±5%	1
R193	RD5-6-3161-JH000	Carbon	56kΩ	1/6W	±5%	1
R194	RD5-6-3161-JH000	Carbon	56kΩ	1/6W	±5%	1
R195	RD4-7-2161-JH000	Carbon	4.7kΩ	1/6W	±5%	1
R198	RD1-0-2161-JH000	Carbon	1kΩ	1/6W	±5%	1
R199	RD1-0-2161-JH000	Carbon	1kΩ	1/6W	±5%	1
R351	RD3-3-2161-JH000	Carbon	3.3kΩ	1/6W	±5%	1
R352	RD3-3-2251-JM000	Carbon	3.3kΩ	1/4W	±5%	1
R353	RD3-3-2161-JH000	Carbon	3.3kΩ	1/6W	±5%	1
R354	RD3-3-2161-JH000	Carbon	3.3kΩ	1/6W	±5%	1
R355	RD3-3-2161-JH000	Carbon	3.3kΩ	1/6W	±5%	1
R356	RD3-3-2161-JH000	Carbon	3.3kΩ	1/6W	±5%	1
R357	RD3-3-2161-JH000	Carbon	3.3kΩ	1/6W	±5%	1
R358	RD3-3-2161-JH000	Carbon	3.3kΩ	1/6W	±5%	1
R359	RD3-3-2161-JH000	Carbon	3.3kΩ	1/6W	±5%	1
R360	RD3-3-2161-JH000	Carbon	3.3kΩ	1/6W	±5%	1
R361	RD3-3-2161-JH000	Carbon	3.3kΩ	1/6W	±5%	1
R362	RD3-3-2161-JH000	Carbon	3.3kΩ	1/6W	±5%	1
R363	RD1-0-4161-JH000	Carbon	100kΩ	1/6W	±5%	1

REC OUT P.C.B. ASSY

41	141-0-1939-14340	REC OUT P.C.B. Assy	1
	4-2262-26260	REC OUT P.C.B.	1
C	4-2359-76979	Connector 7P Assy	1
D	4-2359-78375	Connector 2P Assy	1
	4-2359-78651	Pin Jack 6P (Video, Tape)	1

CAPACITORS

C131	CD4-7-5250-0001V	Electrolytic	4.7μF	25V		1
C132	CD4-7-5250-0001V	Electrolytic	4.7μF	25V		1
C133	CD4-7-5250-0001V	Electrolytic	4.7μF	25V		1
C134	CD4-7-5250-0001V	Electrolytic	4.7μF	25V		1

SEMICONDUCTORS

Q103	203-5-5000-53660	Transistor, 2SC 536	1
Q104	203-5-5000-53660	Transistor, 2SC 536	1
Q105	4-2039-70950	Transistor, 2SC 2878	1
Q106	4-2039-70950	Transistor, 2SC 2878	1

RESISTORS

R129	RD1-0-2161-JH000	Carbon	1kΩ	1/6W	±5%	1
R130	RD1-0-2161-JH000	Carbon	1kΩ	1/6W	±5%	1
R131	RD1-8-4161-JH000	Carbon	180kΩ	1/6W	±5%	1
R132	RD1-8-4161-JH000	Carbon	180kΩ	1/6W	±5%	1
R133	RD1-0-2161-JH000	Carbon	1kΩ	1/6W	±5%	1
R134	RD1-0-2161-JH000	Carbon	1kΩ	1/6W	±5%	1
R135	RD8-2-3161-JH000	Carbon	82kΩ	1/6W	±5%	1
R136	RD8-2-3161-JH000	Carbon	82kΩ	1/6W	±5%	1
R137	RD1-0-2161-JH000	Carbon	1kΩ	1/6W	±5%	1
R138	RD1-0-2161-JH000	Carbon	1kΩ	1/6W	±5%	1
R139	RD1-8-4161-JH000	Carbon	180kΩ	1/6W	±5%	1
R140	RD1-8-4161-JH000	Carbon	180kΩ	1/6W	±5%	1
R141	RD2-2-3161-JH000	Carbon	22kΩ	1/6W	±5%	1
R142	RD2-2-3251-JM000	Carbon	22kΩ	1/4W	±5%	1
R143	RD1-0-2161-JH000	Carbon	1kΩ	1/6W	±5%	1
R144	RD1-0-2161-JH000	Carbon	1kΩ	1/6W	±5%	1
R145	RD4-7-2161-JH000	Carbon	4.7kΩ	1/6W	±5%	1
R146	RD4-7-2161-JH000	Carbon	4.7kΩ	1/6W	±5%	1
R147	RD2-7-4161-JH000	Carbon	270kΩ	1/6W	±5%	1
R148	RD2-7-4161-JH000	Carbon	270kΩ	1/6W	±5%	1
R149	RD1-0-2161-JH000	Carbon	1kΩ	1/6W	±5%	1
R150	RD1-0-2161-JH000	Carbon	1kΩ	1/6W	±5%	1

TONE P.C.B. ASSY

42	141-0-1939-14350	Tone P.C.B. Assy	1
	4-2262-26270	Tone P.C.B.	1
VR201	4-2229-75980	Slide Volume (W-200kΩ, Balance)	1
VR202	4-2229-75990	Slide Volume (SW-250kΩx2, Bass)	1
VR203	4-2229-75990	Slide Volume (SW-250kΩx2, Treble)	1
SW201	4-2319-78470	Tact Switch (Volume Up)	1
SW202	4-2319-78470	Tact Switch (Volume Down)	1
SW203	4-2319-78450	Tact Switch W/L.E.D. (Loudness)	1
SW204	4-2319-78450	Tact Switch W/L.E.D. (Muting)	1
SW205	4-2319-78460	Tact Switch (Standby ON)	1
E	4-2359-77806	Connector 5P Assy	1
G	4-2359-79241	Connector 9P Assy	1
H	4-2359-79296	Connector 6P Assy	1
I	4-2359-79242	Connector 9P Assy	1
	141-2-2419-34300	Mount LED	1
	141-2-3229-56100	Cover Shield	1
	141-2-3769-18600	Spacer LED	1

CAPACITORS

C201	CD4-7-5250-0002V	Electrolytic	4.7μF	25V		1
C202	CD4-7-5250-0002V	Electrolytic	4.7μF	25V		1
C203	CC1-8-1500-KE00C	Ceramic	180pF	50V	±10%	1
C204	CC1-8-1500-KE00C	Ceramic	180pF	50V	±10%	1
C205	CD4-7-5250-0002V	Electrolytic	4.7μF	25V		1
C206	CD4-7-5250-0002V	Electrolytic	4.7μF	25V		1
C207	CD4-7-5250-0002V	Electrolytic	4.7μF	25V		1
C208	CD4-7-5250-0002V	Electrolytic	4.7μF	25V		1
C209	CD4-7-5250-0002V	Electrolytic	4.7μF	25V		1

P.C.BOARD PARTS LIST (Continued)

Ref. No.	Part No.	Description				Q'ty
C210	CD4-7-5250-0002V	Electrolytic	4.7μF	25V		1
C211	CM3-3-3500-J00TV	Mylar	0.033μF	50V	±5%	1
C212	CM3-3-3500-J00TV	Mylar	0.033μF	50V	±5%	1
C213	CC2-2-1500-KE00C	Ceramic	220pF	50V	±10%	1
C214	CC2-2-1500-KE00C	Ceramic	220pF	50V	±10%	1
C215	CC1-0-1500-KE00C	Ceramic	100pF	50V	±10%	1
C216	CC1-0-1500-KE00C	Ceramic	100pF	50V	±10%	1
C217	CC1-0-1500-KE00C	Ceramic	100pF	50V	±10%	1
C218	CC1-0-1500-KE00C	Ceramic	100pF	50V	±10%	1
C219	CD1-0-6160-0002V	Electrolytic	10μF	16V		1
C220	CD1-0-6160-0002V	Electrolytic	10μF	16V		1
C221	CD4-7-5250-0002V	Electrolytic	4.7μF	25V		1
C222	CD4-7-5250-0002V	Electrolytic	4.7μF	25V		1
C223	CM3-9-2500-J00BV	Mylar	0.0039μF	50V	±5%	1
C224	CM3-9-2500-J00BV	Mylar	0.0039μF	50V	±5%	1
C225	CM2-7-3500-J00BV	Mylar	0.027μF	50V	±5%	1
C226	CM2-7-3500-J00BV	Mylar	0.027μF	50V	±5%	1
C227	CM2-2-3500-J00BV	Mylar	0.022μF	50V	±5%	1
C228	CM2-2-3500-J00BV	Mylar	0.022μF	50V	±5%	1
C229	CM1-5-4500-J00TV	Mylar	0.15μF	50V	±5%	1
C230	CM1-5-4500-J00TV	Mylar	0.15μF	50V	±5%	1
C231	CD1-0-6250-0002V	Electrolytic	10μF	25V		1
C232	CD1-0-6250-0002V	Electrolytic	10μF	25V		1
C233	CD1-0-6250-0002V	Electrolytic	10μF	25V		1
C234	CD1-0-6250-0002V	Electrolytic	10μF	25V		1
C235	CD1-0-6250-0002V	Electrolytic	10μF	25V		1
C236	CD1-0-6250-0002V	Electrolytic	10μF	25V		1
C241	CD4-7-6250-0002V	Electrolytic	47μF	25V		1
C242	CD4-7-6250-0002V	Electrolytic	47μF	25V		1
C243	CD1-0-6250-0002V	Electrolytic	10μF	25V		1
C244	CC2-2-1500-KE00C	Ceramic	220pF	50V	±10%	1
C245	CD2-2-763A-0006V	Electrolytic	220μF	6.3V		1
C251	CC1-0-2500-KE00C	Ceramic	0.001μF	50V	±10%	1
C299	CM1-0-4500-J00TV	Mylar	0.1μF	50V	±5%	1
	SEMICONDUCTORS					
D201	D00---SLP--273B-	L.E.D., SLP 273 B (Power Level Meter)				1
D202	D00---SLP--273B-	L.E.D., SLP 273 B (Power Level Meter)				1
D203	D00---SLP--273B-	L.E.D., SLP 273 B (Power Level Meter)				1
D204	D00---SLP--273B-	L.E.D., SLP 273 B (Power Level Meter)				1
D205	D00---SLP--273B-	L.E.D., SLP 273 B (Power Level Meter)				1
D206	D00---SLP--273B-	L.E.D., SLP 273 B (Power Level Meter)				1
D207	D00---SLP--273B-	L.E.D., SLP 273 B (Power Level Meter)				1
D208	D00---SLP--273B-	L.E.D., SLP 273 B (Power Level Meter)				1
D209	D00---SLP--273B-	L.E.D., SLP 273 B (Power Level Meter)				1
D210	D00---SLP--273B-	L.E.D., SLP 273 B (Power Level Meter)				1
D211	D00---SLP--273B-	L.E.D., SLP 273 B (Power Level Meter)				1
D212	D00---SLP--273B-	L.E.D., SLP 273 B (Power Level Meter)				1
D213	D00---SLP--273B-	L.E.D., SLP 273 B (Power Level Meter)				1
D214	D00---SLP--273B-	L.E.D., SLP 273 B (Power Level Meter)				1
D215	4-2029-74200	L.E.D., SLP 673 B (Volume Level)				1
D216	4-2029-74200	L.E.D., SLP 673 B (Volume Level)				1
D217	4-2029-74200	L.E.D., SLP 673 B (Volume Level)				1
D218	4-2029-74200	L.E.D., SLP 673 B (Volume Level)				1
D219	4-2029-74200	L.E.D., SLP 673 B (Volume Level)				1
D220	4-2029-74200	L.E.D., SLP 673 B (Volume Level)				1
D221	4-2029-74200	L.E.D., SLP 673 B (Volume Level)				1
D222	4-2029-74200	L.E.D., SLP 673 B (Volume Level)				1
D223	202-5-1410-00110	Diode, GMA 01				1
D224	202-5-1410-00110	Diode, GMA 01				1
D225	202-5-1410-00110	Diode, GMA 01				1
D226	202-5-1410-00110	Diode, GMA 01				1
IC201	4-2069-73580	IC, IR 2 E 29				1
IC202	4-2069-73580	IC, IR 2 E 29				1

Ref. No.	Part No.	Description				Q'ty
IC203	4-2069-74760	IC, TC 9185 P				1
IC204	4-2069-74770	IC, TC 9177 P				1
IC205	4-2069-75310	IC, NJM 2068 DD				1
or	206-5-2726-45810	IC, LA 6458 DS				1
Q201	203-5-5000-53660	Transistor, 2SC 536				1
Q202	203-5-5000-53660	Transistor, 2SC 536				1
Q203	203-5-5000-53660	Transistor, 2SC 536				1
Q204	203-5-7230-60860	Transistor, 2SA 608				1
Q205	203-5-5000-53660	Transistor, 2SC 536				1
Q206	203-5-7230-60860	Transistor, 2SA 608				1
Q207	203-5-5000-53660	Transistor, 2SC 536				1
Q208	203-5-7230-60860	Transistor, 2SA 608				1
Q209	203-5-5000-53660	Transistor, 2SC 536				1
Q210	203-5-5000-53660	Transistor, 2SC 536				1
Q211	203-5-7230-60860	Transistor, 2SA 608				1
Q212	203-5-5000-53660	Transistor, 2SC 536				1
	RESISTORS					
R201	RD5-6-3161-JH000	Carbon	56kΩ	1/6W	±5%	1
R202	RD5-6-3161-JH000	Carbon	56kΩ	1/6W	±5%	1
R205	RD2-2-4161-JH000	Carbon	220kΩ	1/6W	±5%	1
R206	RD2-2-4161-JH000	Carbon	220kΩ	1/6W	±5%	1
R207	RD2-2-4161-JH000	Carbon	220kΩ	1/6W	±5%	1
R208	RD2-2-4161-JH000	Carbon	220kΩ	1/6W	±5%	1
R209	RD1-8-4161-JH000	Carbon	180kΩ	1/6W	±5%	1
R210	RD1-8-4161-JH000	Carbon	180kΩ	1/6W	±5%	1
R211	RD4-7-1161-JH000	Carbon	470Ω	1/6W	±5%	1
R212	RD4-7-1161-JH000	Carbon	470Ω	1/6W	±5%	1
R213	RD1-5-3161-JH000	Carbon	15kΩ	1/6W	±5%	1
R214	RD1-5-3161-JH000	Carbon	15kΩ	1/6W	±5%	1
R215	RD1-5-3251-JM000	Carbon	15kΩ	1/4W	±5%	1
R216	RD1-5-3161-JH000	Carbon	15kΩ	1/6W	±5%	1
R217	RD2-2-2161-JH000	Carbon	2.2kΩ	1/6W	±5%	1
R218	RD2-2-2161-JH000	Carbon	2.2kΩ	1/6W	±5%	1
R219	RD1-8-2161-JH000	Carbon	1.8kΩ	1/6W	±5%	1
R220	RD1-8-2161-JH000	Carbon	1.8kΩ	1/6W	±5%	1
R221	RD3-3-2161-JH000	Carbon	3.3kΩ	1/6W	±5%	1
R222	RD3-3-2161-JH000	Carbon	3.3kΩ	1/6W	±5%	1
R223	RD3-3-1161-JH000	Carbon	330Ω	1/6W	±5%	1
R224	RD3-3-1161-JH000	Carbon	330Ω	1/6W	±5%	1
R225	RD4-7-3161-JH000	Carbon	47kΩ	1/6W	±5%	1
R226	RD5-6-2161-JH000	Carbon	5.6kΩ	1/6W	±5%	1
R227	RD1-0-1251-JM000	Carbon	100Ω	1/4W	±5%	1
R228	RD1-0-1161-JH000	Carbon	100Ω	1/6W	±5%	1
R229	RD1-0-1161-JH000	Carbon	100Ω	1/6W	±5%	1
R230	RD1-0-1161-JH000	Carbon	100Ω	1/6W	±5%	1
R231	RD5-6-2161-JH000	Carbon	5.6kΩ	1/6W	±5%	1
R232	RD5-6-2161-JH000	Carbon	5.6kΩ	1/6W	±5%	1
R233	RD1-8-2161-JH000	Carbon	1.8kΩ	1/6W	±5%	1
R234	RD4-7-3161-JH000	Carbon	47kΩ	1/6W	±5%	1
R235	RD1-8-3251-JM000	Carbon	18kΩ	1/4W	±5%	1
R236	RD1-0-2161-JH000	Carbon	1kΩ	1/6W	±5%	1
R237	RD2-2-3161-JH000	Carbon	22kΩ	1/6W	±5%	1
R238	RD4-7-3161-JH000	Carbon	47kΩ	1/6W	±5%	1
R239	RD1-8-3161-JH000	Carbon	18kΩ	1/6W	±5%	1
R240	RD1-8-3161-JH000	Carbon	18kΩ	1/6W	±5%	1
R241	RD4-7-3161-JH000	Carbon	47kΩ	1/6W	±5%	1
R242	RD1-8-3161-JH000	Carbon	18kΩ	1/6W	±5%	1
R243	RD1-8-3161-JH000	Carbon	18kΩ	1/6W	±5%	1
R244	RD1-2-2251-JM000	Carbon	1.2kΩ	1/4W	±5%	1
R246	RD1-0-2161-JH000	Carbon	1kΩ	1/6W	±5%	1
R247	RD2-2-3161-JH000	Carbon	22kΩ	1/6W	±5%	1
R248	RD5-6-2161-JH000	Carbon	5.6kΩ	1/6W	±5%	1
R249	RD2-2-3161-JH000	Carbon	22kΩ	1/6W	±5%	1

P.C.BOARD PARTS LIST (Continued)

Ref. No.	Part No.	Description				Q'ty
R271	RD1-0-4161-JH000	Carbon	100kΩ	1/6W	±5%	1
R272	RD1-0-4161-JH000	Carbon	100kΩ	1/6W	±5%	1
	FUNCTION P.C.B. ASSY					
43	141-0-1939-14360	Function P.C.B. Assy				1
	4-2262-26280	Function P.C.B.				1
SW301	4-2312-05300	Keyboard Switch 6mm (Phono)				1
SW302	4-2312-05300	Keyboard Switch 6mm (Tuner)				1
SW303	4-2312-05300	Keyboard Switch 6mm (Compact Disc)				1
SW304	4-2312-05300	Keyboard Switch 6mm (Video/Aux)				1
SW305	4-2312-05300	Keyboard Switch 6mm (Tape Monitor)				1
L301	4-2599-71341	Coil 38kHz				1
A	4-2359-77397	Connector 8P Assy				1
B	4-2359-79243	Connector 6P Assy				1
	131-2-4208-28000	Spacer				6
	131-2-4208-49500	Spacer				1
	141-2-3229-54500	Cover Shield				1
	CAPACITORS					
C301	CD1-0-6160-0002V	Electrolytic	10μF	16V		1
C302	CD2-2-663A-0002V	Electrolytic	22μF	6.3V		1
C303	CD1-0-6160-0002V	Electrolytic	10μF	16V		1
C304	CM3-3-3500-J00TV	Mylar	0.033μF	50V	±5%	1
C305	CD4-7-663A-0002V	Electrolytic	47μF	6.3V		1
C307	CI1-0-3250-MF00R	Boundary	0.01μF	25V	±20%	1
C308	CI1-0-3250-MF00R	Boundary	0.01μF	25V	±20%	1
C309	CI1-0-3250-MF00R	Boundary	0.01μF	25V	±20%	1
C310	CI1-0-3250-MF00R	Boundary	0.01μF	25V	±20%	1
C311	CI1-0-3250-MF00R	Boundary	0.01μF	25V	±20%	1
C312	CC4-7-3500-ZG00C	Ceramic	0.047μF	50V	+80,-20%	1
	SEMICONDUCTORS					
D301	4-2029-74470	Diode, SPI 06 FC				1
D302	DYY---SLR--54VT-	L.E.D., SLR 54 VT (Power/Standby)				1
D303	DYY---SLR--54PT-	L.E.D., SLR 54 PT (Phono)				1
D304	DYY---SLR--54PT-	L.E.D., SLR 54 PT (Tuner)				1
D305	DYY---SLR--54PT-	L.E.D., SLR 54 PT (Compact Disc)				1
D306	DYY---SLR--54PT-	L.E.D., SLR 54 PT (Video/Aux)				1
D307	DYY---SLR--54VT-	L.E.D., SLR 54 VT (Tape Monitor)				1
D308	202-5-3210-10011	Zener Diode, GZA 10 X				1
D309	202-5-3210-10011	Zener Diode, GZA 10 X				1
D315	202-5-1410-00110	Diode, GMA 01				1
IC301	4-2069-74780	IC, μPC 1473 HA				1
Q301	203-5-5000-53660	Transistor, 2SC 536				1
	RESISTORS					
R301	RD1-0-2161-JH000	Carbon	1kΩ	1/6W	±5%	1
R302	RD2-2-0161-JH000	Carbon	22Ω	1/6W	±5%	1
R303	RD1-5-3161-JH000	Carbon	15kΩ	1/6W	±5%	1
R304	RD1-0-4161-JH000	Carbon	100kΩ	1/6W	±5%	1
R305	RD1-0-3161-JH000	Carbon	10kΩ	1/6W	±5%	1
R306	RD4-7-0161-JH000	Carbon	47Ω	1/6W	±5%	1
R307	RD3-9-1251-JM000	Carbon	390Ω	1/4W	±5%	1
R309	RD5-6-1251-JM000	Carbon	560Ω	1/4W	±5%	1
R310	RD1-2-2251-JM000	Carbon	1.2kΩ	1/4W	±5%	1
R311	RD1-0-3251-JM000	Carbon	10kΩ	1/4W	±5%	1
R312	RD1-0-2161-JH000	Carbon	1kΩ	1/6W	±5%	1
	CONTROL P.C.B. ASSY					
44	141-0-1939-14370	Control P.C.B. Assy				1
	4-2262-26290	Control P.C.B.				1
	4-2369-73970	Plug 3P (Turntable)				1
	4-2369-73980	Plug 4P (CD)				1
	4-2369-74200	Plug 2P (Deck)				1
	4-2369-75580	Plug 5P (Tuner)				1
F	131-0-4006-31424	Cord Assy				1
	141-2-3889-04500	Bracket Connect P.C.B.				1
	MAIN AMPLIFIER P.C.B. ASSY					
45	141-0-1939-14383	Main Amplifier P.C.B. Assy				1
	4-2262-26301	Main Amplifier P.C.B.				1
	4-2329-70440	Relay				1
	⚠ 4-2342-00340	Fuse F5.0A				2
	4-2352-00200	Fuse Holder				4
VR401	4-2229-73353	Potentiometer (B-100Ω)				1
VR402	4-2229-73353	Potentiometer (B-100Ω)				1
L401	4-2552-00650	AF Coil (2μH)				1
L402	4-2552-00650	AF Coil (2μH)				1
H	4-2369-73160	Connector 6P				1
J	4-2359-79213	Connector 5P Assy				1
K	4-2359-79284	Connector 3P Assy				1
N	4-2369-75980	Plug 2P				1
	CAPACITORS					
C401	CC2-2-1500-KE00C	Ceramic	220pF	50V	±10%	1
C402	CC2-2-1500-KE00C	Ceramic	220pF	50V	±10%	1
C403	CD4-7-5250-0001V	Electrolytic	4.7μF	25V		1
C404	CD4-7-5250-0001V	Electrolytic	4.7μF	25V		1
C405	CC2-2-1500-KE00C	Ceramic	220pF	50V	±10%	1
C406	CC2-2-1500-KE00C	Ceramic	220pF	50V	±10%	1
C407	CC2-2-1500-KE00C	Ceramic	220pF	50V	±10%	1
C408	CC2-2-1500-KE00C	Ceramic	220pF	50V	±10%	1
C409	CD2-2-763A-0001V	Electrolytic	220μF	6.3V		1
C410	CD2-2-763A-0001V	Electrolytic	220μF	6.3V		1
C413	4-2239-72020	Ceramic	3pF	500V	±0.5pF	1
C414	4-2239-72020	Ceramic	3pF	500V	±0.5pF	1
C415	4-2239-71190	Capacitor	27pF	500V	±10%	1
C416	4-2239-71190	Capacitor	27pF	500V	±10%	1
C419	4-2239-71120	Capacitor	18pF	500V	±10%	1
C420	4-2239-71120	Capacitor	18pF	500V	±10%	1
C421	CM1-0-4500-J00TV	Mylar	0.1μF	50V	±5%	1
C422	CM1-0-4500-J00TV	Mylar	0.1μF	50V	±5%	1
C423	CD1-0-5500-0001V	Electrolytic	1μF	50V		1
C424	CD1-0-5500-0001V	Electrolytic	1μF	50V		1
C425	CD4-7-6101-0001V	Electrolytic	47μF	100V		1
C426	CD4-7-6101-0001V	Electrolytic	47μF	100V		1
C427	CD4-7-6101-0001V	Electrolytic	47μF	100V		1
C428	CD4-7-6101-0001V	Electrolytic	47μF	100V		1
C429	CD1-0-6250-0001V	Electrolytic	10μF	25V		1
C433	4-2239-72120	Ceramic	220pF	500V	±10%	1
C434	4-2239-72120	Ceramic	220pF	500V	±10%	1
C435	CM3-9-3500-K00SV	Mylar	0.039μF	50V	±10%	1
C436	CM3-9-3500-K00SV	Mylar	0.039μF	50V	±10%	1
C437	CC2-2-1500-KE00C	Ceramic	220pF	50V	±10%	1
C438	CC2-2-1500-KE00C	Ceramic	220pF	50V	±10%	1
	SEMICONDUCTORS					
D401	202-5-9040-44210	Diode, DS 442				1
D402	202-5-9040-44210	Diode, DS 442				1
D403	202-5-9040-44210	Diode, DS 442				1
D404	202-5-9040-44210	Diode, DS 442				1
D405	202-5-9040-44210	Diode, DS 442				1
D406	202-5-9040-44210	Diode, DS 442				1
D407	202-5-9040-44210	Diode, DS 442				1
D408	202-5-9040-44210	Diode, DS 442				1
D410	202-5-3210-18011	Zener Diode, GZA 18 X				1

P.C.BOARD PARTS LIST (Continued)

Ref. No.	Part No.	Description				Q'ty
D412	202-5-0220-01010	Diode, DSF 10 C				1
D413	202-5-9600-44610	Diode, DS 446				1
D414	202-5-9600-44610	Diode, DS 446				1
D415	202-5-9600-44610	Diode, DS 446				1
D416	202-5-9600-44610	Diode, DS 446				1
Q401	4-2039-70950	Transistor, 2SC 2878				1
Q402	4-2039-70950	Transistor, 2SC 2878				1
Q403	TMM---2SC1-583-F	Transistor, 2SC 1583				1
Q404	TMM---2SC1-583-F	Transistor, 2SC 1583				1
Q405	4-2039-71180	Transistor, 2SC 2291				1
Q406	4-2039-71180	Transistor, 2SC 2291				1
Q409	203-5-7230-60860	Transistor, 2SA 608				1
Q410	203-5-7230-60860	Transistor, 2SA 608				1
Q411	203-5-6931-20980	Transistor, 2SA 1209				1
Q412	203-5-6931-20980	Transistor, 2SA 1209				1
Q413	203-5-5632-91180	Transistor, 2SC 2911				1
Q414	203-5-5632-91180	Transistor, 2SC 2911				1
Q417	203-5-4711-24980	Transistor, 2SA 1249				1
Q418	203-5-4711-24980	Transistor, 2SA 1249				1
Q421	4-2039-72202	Transistor, 2SC 2603				1
or	203-5-7252-27460	Transistor, 2SC 2274				1
Q422	4-2039-72212	Transistor, 2SA 1115				1
or	203-5-6820-98460	Transistor, 2SA 984				1
	RESISTORS					
R401	RD1-0-2161-JH000	Carbon	1kΩ	1/6W	±5%	1
R402	RD1-0-2161-JH000	Carbon	1kΩ	1/6W	±5%	1
R403	RD5-6-2251-JM000	Carbon	5.6kΩ	1/4W	±5%	1
R404	RD5-6-2251-JM000	Carbon	5.6kΩ	1/4W	±5%	1
R405	RD6-8-3161-JH000	Carbon	68kΩ	1/6W	±5%	1
R406	RD6-8-3161-JH000	Carbon	68kΩ	1/6W	±5%	1
R407	RD8-2-2251-JM000	Carbon	8.2kΩ	1/4W	±5%	1
R408	RD8-2-2251-JM000	Carbon	8.2kΩ	1/4W	±5%	1
R409	RD1-2-2161-JH000	Carbon	1.2kΩ	1/6W	±5%	1
R410	RD1-2-2161-JH000	Carbon	1.2kΩ	1/6W	±5%	1
R411	RD5-6-0251-JM000	Carbon	56Ω	1/4W	±5%	1
R412	RD5-6-0251-JM000	Carbon	56Ω	1/4W	±5%	1
R413	RD3-9-3251-JM000	Carbon	39kΩ	1/4W	±5%	1
R414	RD3-9-3251-JM000	Carbon	39kΩ	1/4W	±5%	1
R415	RD5-6-0251-JM000	Carbon	56Ω	1/4W	±5%	1
R416	RD5-6-0251-JM000	Carbon	56Ω	1/4W	±5%	1
R417	RD8-2-2251-JM000	Carbon	8.2kΩ	1/4W	±5%	1
R418	RD8-2-2251-JM000	Carbon	8.2kΩ	1/4W	±5%	1
R419	RD3-3-3251-JM000	Carbon	33kΩ	1/4W	±5%	1
R420	RD3-3-3251-JM000	Carbon	33kΩ	1/4W	±5%	1
R421	RD8-2-0251-JM000	Carbon	82Ω	1/4W	±5%	1
R422	RD8-2-0251-JM000	Carbon	82Ω	1/4W	±5%	1
R423	RF4-7-0251-JK000	Fuse	47Ω	1/4W	±5%	1
R424	RF4-7-0251-JK000	Fuse	47Ω	1/4W	±5%	1
R425	RD4-7-0251-JM000	Carbon	47Ω	1/4W	±5%	1
R426	RD4-7-0251-JM000	Carbon	47Ω	1/4W	±5%	1
R427	RF1-0-0251-JH000	Fuse	10Ω	1/4W	±5%	1
R428	RF1-0-0251-JK000	Fuse	10Ω	1/4W	±5%	1
R429	RF1-0-0251-JH000	Fuse	10Ω	1/4W	±5%	1
R430	RF1-0-0251-JK000	Fuse	10Ω	1/4W	±5%	1
R431	RD3-9-3251-JM000	Carbon	39kΩ	1/4W	±5%	1
R432	RD3-9-3251-JM000	Carbon	39kΩ	1/4W	±5%	1
R433	RH4-7-2102-JZ003	Metal	4.7kΩ	1W	±5%	1
R435	RF3-3-1501-JZ000	Fuse	330Ω	1/2W	±5%	1
R436	RF3-3-1501-JZ000	Fuse	330Ω	1/2W	±5%	1
R439	RF2-2-A251-JK000	Fuse	2.2Ω	1/4W	±5%	1
R440	RF2-2-A251-JH000	Fuse	2.2Ω	1/4W	±5%	1
R443	RD4-7-A251-JM000	Carbon	4.7Ω	1/4W	±5%	1
R444	RD4-7-A251-JM000	Carbon	4.7Ω	1/4W	±5%	1

Ref. No.	Part No.	Description				Q'ty
R445	RH1-0-0102-JZ003	Metal	10Ω	1W	±5%	1
R446	RH1-0-0102-JZ003	Metal	10Ω	1W	±5%	1
R447	RD2-7-4251-JM000	Carbon	270kΩ	1/4W	±5%	1
R448	RD2-7-4251-JM000	Carbon	270kΩ	1/4W	±5%	1
R449	RF3-9-1501-JZ000	Fuse	390Ω	1/2W	±5%	1
R451	RD5-6-2251-JM000	Carbon	5.6kΩ	1/4W	±5%	1
R452	RD5-6-2251-JM000	Carbon	5.6kΩ	1/4W	±5%	1
R453	RD6-8-1251-JM000	Carbon	680Ω	1/4W	±5%	1
R454	RD6-8-1251-JM000	Carbon	680Ω	1/4W	±5%	1
R455	RD1-0-3251-JM000	Carbon	10kΩ	1/4W	±5%	1
R456	RD1-0-3251-JM000	Carbon	10kΩ	1/4W	±5%	1
R457	RD1-2-2251-JM000	Carbon	1.2kΩ	1/4W	±5%	1
R458	RD1-2-2251-JM000	Carbon	1.2kΩ	1/4W	±5%	1
R459	RD1-8-2251-JM000	Carbon	1.8kΩ	1/4W	±5%	1
R460	RD1-8-2251-JM000	Carbon	1.8kΩ	1/4W	±5%	1
R461	RD4-7-4251-JM000	Carbon	470kΩ	1/4W	±5%	1
R462	RD4-7-4251-JM000	Carbon	470kΩ	1/4W	±5%	1
R471	RF8-2-0251-JH000	Fuse	82Ω	1/4W	±5%	1
R472	RF8-2-0251-JH000	Fuse	82Ω	1/4W	±5%	1
	POWER TRANSISTOR P.C.B. ASSY					
46	141-0-1939-14393	Power Transistor P.C.B. Assy				1
	4-2262-26310	Power Transistor P.C.B.				1
	111-2-6220-11100	Wire Wrap Terminal				4
	CAPACITORS					
C431	4-2239-72120	Ceramic	220pF	500V	±10%	1
C432	4-2239-72120	Ceramic	220pF	500V	±10%	1
C439	CC1-2-1500-KE00C	Ceramic	120pF	50V	±10%	1
C440	CC1-2-1500-KE00C	Ceramic	120pF	50V	±10%	1
	SEMICONDUCTORS					
Q415	203-5-5143-11780	Transistor, 2SC 3117				1
Q416	203-5-5143-11780	Transistor, 2SC 3117				1
Q423	203-5-4900-60060	Transistor, 2SD 600				1
Q424	203-5-4910-63160	Transistor, 2SB 631				1
	RESISTORS					
R437	RF2-2-A251-JH000	Fuse	2.2Ω	1/4W	±5%	1
R438	RF2-2-A251-JH000	Fuse	2.2Ω	1/4W	±5%	1
R441	4-2219-70370	Cement	0.22Ω×2	5W	±10%	1
R442	4-2219-70370	Cement	0.22Ω×2	5W	±10%	1
	BIAS P.C.B. ASSY					
47	141-0-1939-14400	Bias P.C.B. Assy				2
	4-2262-26320	Bias P.C.B.				1
	SEMICONDUCTORS					
D409	202-5-9040-44210	Diode, DS 442				1
Q419	4-2039-72100	Transistor, 2SD 947				1
	POWER SUPPLY P.C.B. ASSY					
48	141-0-1939-14414	Power Supply P.C.B. Assy				1
	4-2262-26331	Power Supply P.C.B.				1
	4-2329-70430	Relay				1
	⚠ 4-2349-20580	Fuse T3.15A				2
	⚠ 4-2349-21570	Fuse T6.3A				2
	4-2352-00200	Fuse Holder				8
I	4-2369-73690	Plug 9P				1
J	4-2369-76220	Plug 5P				1
K	4-2369-73130	Connector 3P				1

P.C.BOARD PARTS LIST (Continued)

Ref. No.	Part No.	Description			Q'ty
	4-2439-72198	Wire 2 Parallel			1
	111-2-6220-11100	Wire Wrap Terminal			13
	131-2-6114-00200	Cover Safety			1
	131-2-6201-21500	Plate Heat Sink (for Q501, Q502, Q510)			3
	131-2-7103-52610	Label Fuse			1
	CAPACITORS				
C501	CC4-7-3151-ZG00C	Ceramic	0.047μF	150V +80,-20%	1
C502	CC4-7-3151-ZG00C	Ceramic	0.047μF	150V +80,-20%	1
C503	CC4-7-3151-ZG00C	Ceramic	0.047μF	150V +80,-20%	1
C504	CC4-7-3151-ZG00C	Ceramic	0.047μF	150V +80,-20%	1
C505	4-2239-72180	Electrolytic	6800μF	72V	1
C506	4-2239-72180	Electrolytic	6800μF	72V	1
C507	CC4-7-3151-ZG00C	Ceramic	0.047μF	150V +80,-20%	1
C508	CC4-7-3151-ZG00C	Ceramic	0.047μF	150V +80,-20%	1
C509	CC4-7-3151-ZG00C	Ceramic	0.047μF	150V +80,-20%	1
C510	CC4-7-3151-ZG00C	Ceramic	0.047μF	150V +80,-20%	1
C511	4-2239-72190	Electrolytic	4700μF	40V	1
C512	4-2239-72190	Electrolytic	4700μF	40V	1
C513	CD1-0-7250-0001V	Electrolytic	100μF	25V	1
C514	CD1-0-7250-0001V	Electrolytic	100μF	25V	1
C515	CD1-0-6250-0001V	Electrolytic	10μF	25V	1
C516	CD1-0-6250-0001V	Electrolytic	10μF	25V	1
C517	CD1-0-6250-0001V	Electrolytic	10μF	25V	1
C518	CD2-2-863A-0006V	Electrolytic	2200μF	6.3V	1
C519	CD1-0-7250-0001V	Electrolytic	100μF	25V	1
C520	CD2-2-5500-0001V	Electrolytic	2.2μF	50V	1
C521	CD2-2-763A-0006V	Electrolytic	220μF	6.3V	1
C523	CC4-7-3151-ZG00C	Ceramic	0.047μF	150V +80,-20%	1
C524	CC4-7-3151-ZG00C	Ceramic	0.047μF	150V +80,-20%	1
C525	CC4-7-3151-ZG00C	Ceramic	0.047μF	150V +80,-20%	1
C526	CC4-7-3151-ZG00C	Ceramic	0.047μF	150V +80,-20%	1
C527	CD2-2-7500-0001V	Electrolytic	220μF	50V	1
C528	CD1-0-6500-0001V	Electrolytic	10μF	50V	1
C529	CD1-0-5500-0001V	Electrolytic	1μF	50V	1
C530	4-2239-70970	Capacitor	0.01μF	400V	1
C551	CC4-7-3500-ZG00C	Ceramic	0.047μF	50V +80,-20%	1
C552	CC4-7-3500-ZG00C	Ceramic	0.047μF	50V +80,-20%	1
C553	CC4-7-3500-ZG00C	Ceramic	0.047μF	50V +80,-20%	1
C554	CC1-0-3500-ZG00C	Ceramic	0.01μF	50V +80,-20%	1
	SEMICONDUCTORS				
D501	212-5-5990-03020	Stack Diode, 30DC1S			1
D502	212-5-5990-03010	Stack Diode, 30DC1RS			1
D503	4-2029-73840	Diode, 30 D 2			1
D504	4-2029-73840	Diode, 30 D 2			1
D505	4-2029-73840	Diode, 30 D 2			1
D506	4-2029-73840	Diode, 30 D 2			1
D507	202-5-3210-18011	Zener Diode, GZA 18 X			1
D508	202-5-3210-18011	Zener Diode, GZA 18 X			1
D509	202-5-3210-05612	Zener Diode, GZA 5.6 Y			1
D510	202-5-9040-44210	Diode, DS 442			1
D511	202-5-0220-01010	Diode, DSF 10 C			1
D512	202-5-9040-44210	Diode, DS 442			1
D513	202-5-0220-01010	Diode, DSF 10 C			1
D515	202-5-0220-01010	Diode, DSF 10 C			1
D516	202-5-0220-01010	Diode, DSF 10 C			1
D517	202-5-0220-01010	Diode, DSF 10 C			1
D518	202-5-0220-01010	Diode, DSF 10 C			1
D519	202-5-3210-13011	Zener Diode, GZA 13 X			1
D520	202-5-3210-05612	Zener Diode, GZA 5.6 Y			1
D521	202-5-0220-01010	Diode, DSF 10 C			1
D523	4-2029-73840	Diode, 30 D 2			1
D524	4-2029-73840	Diode, 30 D 2			1

Ref. No.	Part No.	Description			Q'ty
Q501	203-5-8550-31350	Transistor, 2SD 313			1
Q502	203-5-7320-63251	Transistor, 2SB 632			1
Q503	203-5-6850-40050	Transistor, 2SD 400			1
Q504	203-5-7230-60860	Transistor, 2SA 608			1
Q505	203-5-5000-53660	Transistor, 2SC 536			1
Q506	203-5-5000-53660	Transistor, 2SC 536			1
Q507	203-5-7230-60860	Transistor, 2SA 608			1
Q508	203-5-7230-60860	Transistor, 2SA 608			1
Q509	203-5-5000-53660	Transistor, 2SC 536			1
Q510	203-5-7330-61261	Transistor, 2SD 612			1
	RESISTORS				
R501	RH2-2-0202-JZ003	Metal	22Ω	2W ±5%	1
R502	RH2-2-0102-JZ003	Metal	22Ω	1W ±5%	1
R503	RH2-2-0202-JZ003	Metal	22Ω	2W ±5%	1
R504	RH2-2-0102-JZ003	Metal	22Ω	1W ±5%	1
R505	RD1-0-2251-JM000	Carbon	1kΩ	1/4W ±5%	1
R506	RD1-0-2251-JM000	Carbon	1kΩ	1/4W ±5%	1
R507	RD3-3-1251-JM000	Carbon	330Ω	1/4W ±5%	1
R508	RD3-3-1251-JM000	Carbon	330Ω	1/4W ±5%	1
R509	RF1-2-0251-JK000	Fuse	12Ω	1/4W ±5%	1
R510	RF2-2-0251-JK000	Fuse	22Ω	1/4W ±5%	1
R511	RF2-7-0501-JZ000	Fuse	27Ω	1/2W ±5%	1
R512	RD8-2-1251-JM000	Carbon	820Ω	1/4W ±5%	1
R513	RD1-8-2251-JM000	Carbon	1.8kΩ	1/4W ±5%	1
R514	RD2-2-2251-JM000	Carbon	2.2kΩ	1/4W ±5%	1
R515	RD1-0-1161-JH000	Carbon	100Ω	1/6W ±5%	1
R516	RD4-7-3251-JM000	Carbon	47kΩ	1/4W ±5%	1
R517	RD1-8-3251-JM000	Carbon	18kΩ	1/4W ±5%	1
R518	RD4-7-3251-JM000	Carbon	47kΩ	1/4W ±5%	1
R519	RD4-7-2251-JM000	Carbon	4.7kΩ	1/4W ±5%	1
R520	RD6-8-1251-JM000	Carbon	680Ω	1/4W ±5%	1
R521	RD4-7-4251-JM000	Carbon	470kΩ	1/4W ±5%	1
R522	RD2-2-3251-JM000	Carbon	22kΩ	1/4W ±5%	1
R523	RD1-2-2251-JM000	Carbon	1.2kΩ	1/4W ±5%	1
R524	RD4-7-1251-JM000	Carbon	470Ω	1/4W ±5%	1
R525	RD1-0-3251-JM000	Carbon	10kΩ	1/4W ±5%	1
R526	RD4-7-2251-JM000	Carbon	4.7kΩ	1/4W ±5%	1
R527	RD4-7-3251-JM000	Carbon	47kΩ	1/4W ±5%	1
	POWER SWITCH P.C.B. ASSY				
49	141-0-1939-14422	Power Switch P.C.B. Assy			1
	4-2262-26340	Power Switch P.C.B.			1
SW601	⚠ 4-2319-76340	Switch Push Power (Power)			1
SW602	4-2319-77341	Switch Push 1key (Speaker A)			1
SW603	4-2319-77341	Switch Push 1key (Speaker B)			1
N	4-2359-79211	Connector 2P Assy			1
0	4-2439-72195	Wire 6 Parallel			1
	4-2352-00970	Headphone Jack 3P (Headphones)			1
	131-2-6114-00200	Cover safty			1
	111-2-6220-11100	Wire Wrap Terminal			2
	CAPACITOR				
C601	⚠ 4-2239-71040	Capacitor	0.001μF	400V	1
	RESISTORS				
R601	RH5-6-1202-JZ003	Metal	560Ω	2W ±5%	1
R602	RH5-6-1202-JZ003	Metal	560Ω	2W ±5%	1
R603	RD2-2-1251-JM000	Carbon	220Ω	1/4W ±5%	1
R604	RD2-2-1251-JM000	Carbon	220Ω	1/4W ±5%	1
R605	RD2-7-1251-JM000	Carbon	270Ω	1/4W ±5%	1
R606	RD2-7-1251-JM000	Carbon	270Ω	1/4W ±5%	1

P.C.BOARD PARTS LIST (Continued)

Ref. No.	Part No.	Description			Q'ty
	SPEAKER OUT P.C.B. ASSY				
50	141-0-1939-14431	Speaker Out P.C.B. Assy			1
	4-2262-26350	Speaker Out P.C.B.			1
	4-2379-71080	8P Push Terminal (Speaker)			1
	4-2372-00830	EC Terminal 1P			2
	111-2-6220-11100	Wire Wrap Terminal			2
	CAPACITORS				
C701	CC1-0-2500-KE00R	Ceramic	0.001μF	50V ±10%	1
C702	CC1-0-2500-KE00R	Ceramic	0.001μF	50V ±10%	1
C703	CC1-0-2500-KE00R	Ceramic	0.001μF	50V ±10%	1
C704	CC1-0-2500-KE00R	Ceramic	0.001μF	50V ±10%	1
	FUSE P.C.B. ASSY				
51	141-0-1939-14441	Fuse P.C.B. Assy			1
	4-2262-26361	Fuse P.C.B.			1
	⚠ 4-2349-20570	Fuse T2.5A			1
	4-2352-00200	Fuse Holder			2
	111-2-6220-11100	Wire Wrap Terminal			2

NOTES:

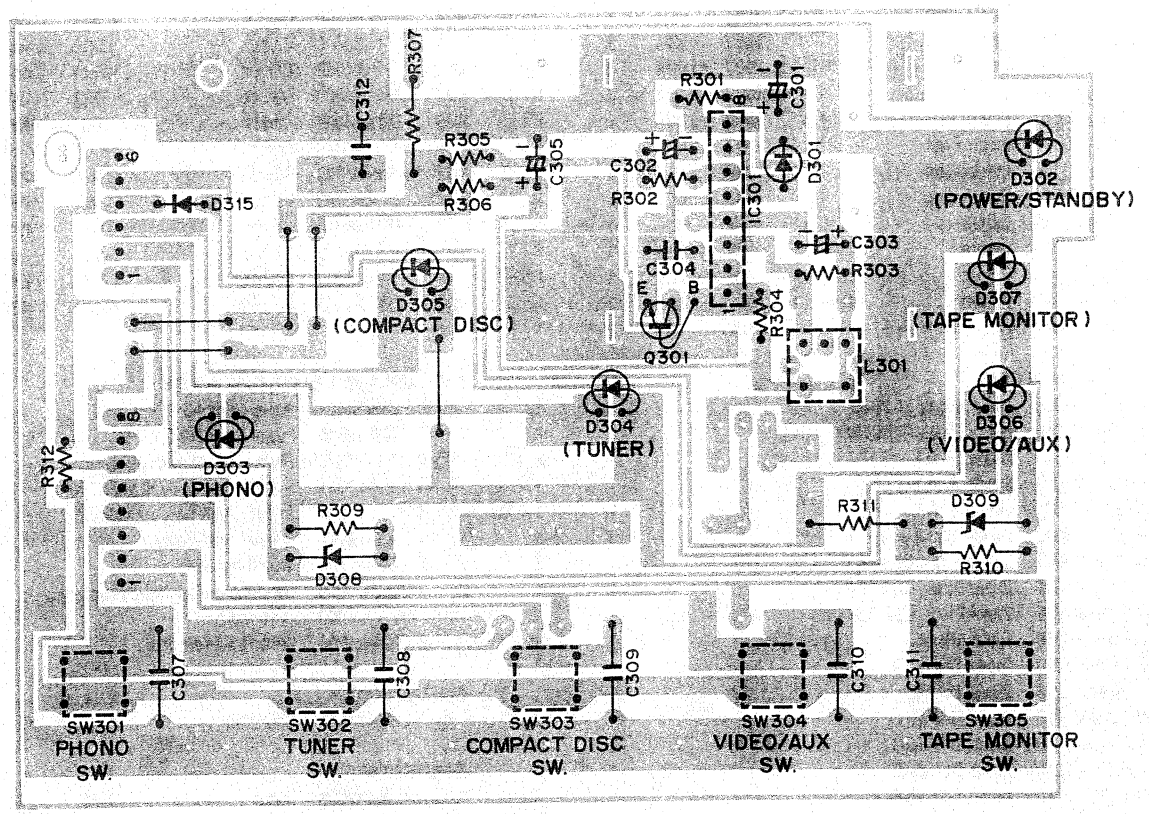
1. Parts order must contain Model Number, Part Number and Description.
2. Ordering quantity of screws and resistors must be multiple of 10 pcs.

PRODUCT SAFETY NOTICE

Each precaution in this manual should be followed during servicing. Components identified with the IEC symbol ⚠ in the parts list and the schematic diagram designate components in which safety can be of special significance. When replacing a component identified with ⚠, use only the replacement parts designated, or parts with the same ratings of resistance, wattage or voltage that are designated in the parts list in this manual. Leakage-current or resistance measurements must be made to determine that exposed parts are acceptably insulated from the supply circuit before returning the product to the customer.

FUNCTION P.C.BOARD

(BOTTOM VIEW)

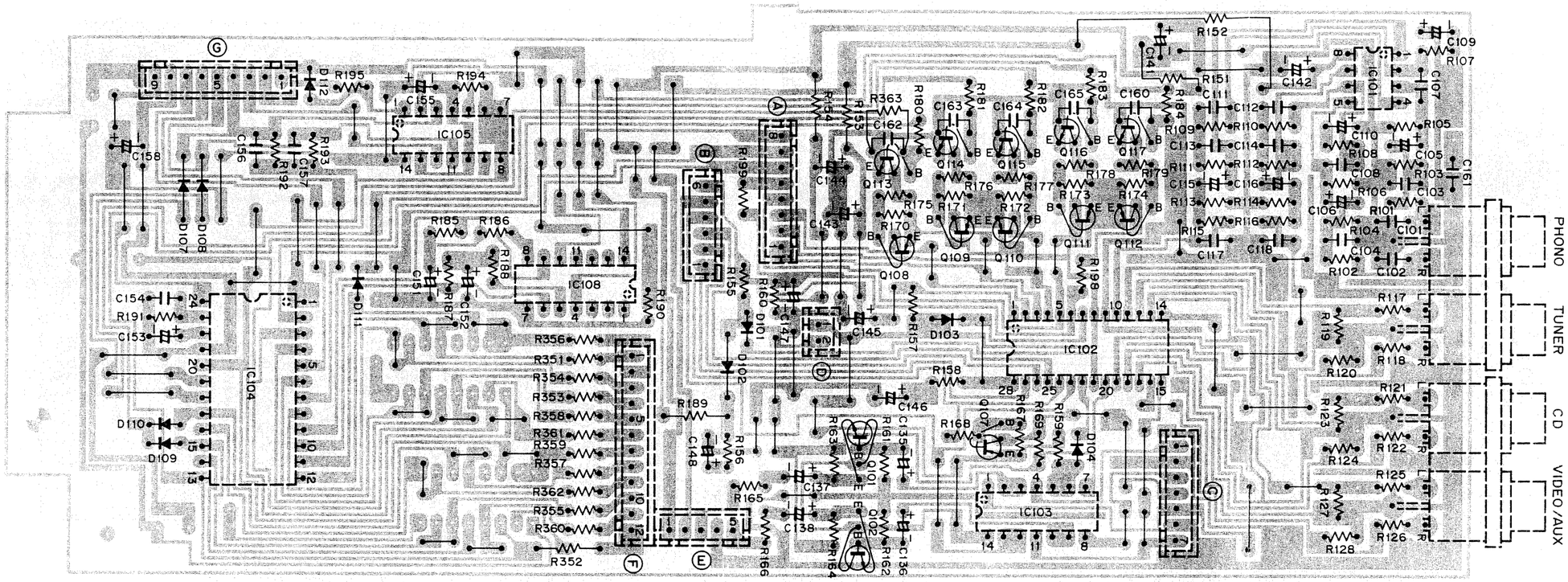


TRANSISTOR DC VOLTAGES				
SYMBOL No.	DEVICE	B	C	E
Q301	2SC536	0.6V	0V	0V

IC PIN NUMBERS DC VOLTAGES									
SYMBOL No.	DEVICE	1	2	3	4	5	6	7	8
IC301	μPC1473	0.6V	1.1V	5.2V	4.0V	0V	0.8V	1.4V	5.3V

INPUT PRINTED CIRCUIT BOARD

(BOTTOM VIEW)



TRANSISTOR DC VOLTAGES

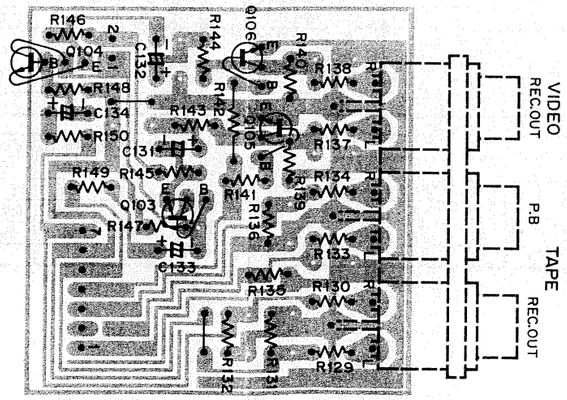
SYMBOL No.	DEVICE	B	C	E	SYMBOL No.	DEVICE	B	C	E	SYMBOL No.	DEVICE	B	C	E
Q101	2SC536	−1.3V	10.5V	−2.0V	Q110	2SA608	10.5V	10.5V	10.5V	Q114	2SC536	0.2V	10.4V	0V
Q107	2SA608	11.0V	−11.4V	10.5V	Q111	2SA608	0V	10.5V	10.5V	Q115	2SC536	0V	10.4V	0V
Q108	2SA608	10.5V	0V	10.5V	Q112	2SA608	9.8V	10.5V	10.5V	Q116	2SC536	0V	10.4V	0V
Q109	2SA608	10.5V	0V	10.5V	Q113	2SC536	0V	10.4V	0V	Q117	2SC536	0.7V	0V	0V

IC PIN NUMBERS DC VOLTAGES

SYMBOL No.	DEVICE	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
IC101	NJM2068	0V	0V	0V	−12.3V	0V	0V	0V	12.7V												
IC102	LC7815	10.3V	0V	0V	0V	0V	0V	10.3V	10.6V	0V	0V	0V	0V	0V	0V	0V	0V	0V	0V	0V	−10.7V
		21	22	23	24	25	26	27	28												
		0.9V	10.3V	−10.6V	10.5V	0V	0V	−10.4V	10.3V												
IC103	LC4066B	0V	0V	0V	0V	10.6V	10.6V	−10.8V	0V	0V	0V	0V	−10.6V	−10.6V	10.5V						
IC105	LC4913	0V	5.4V	0V	0V	5.4V	0V	0V	0V	5.2V	0V	0V	5.2V	5.2V	5.4V						
IC108	TC4030B	0V	0V	0V	0V	0V	0.4V	0V	0V	0.2V	0.3V	5.3V	0V	5.2V	5.3V						

REC OUT P.C.BOARD

(BOTTOM VIEW)

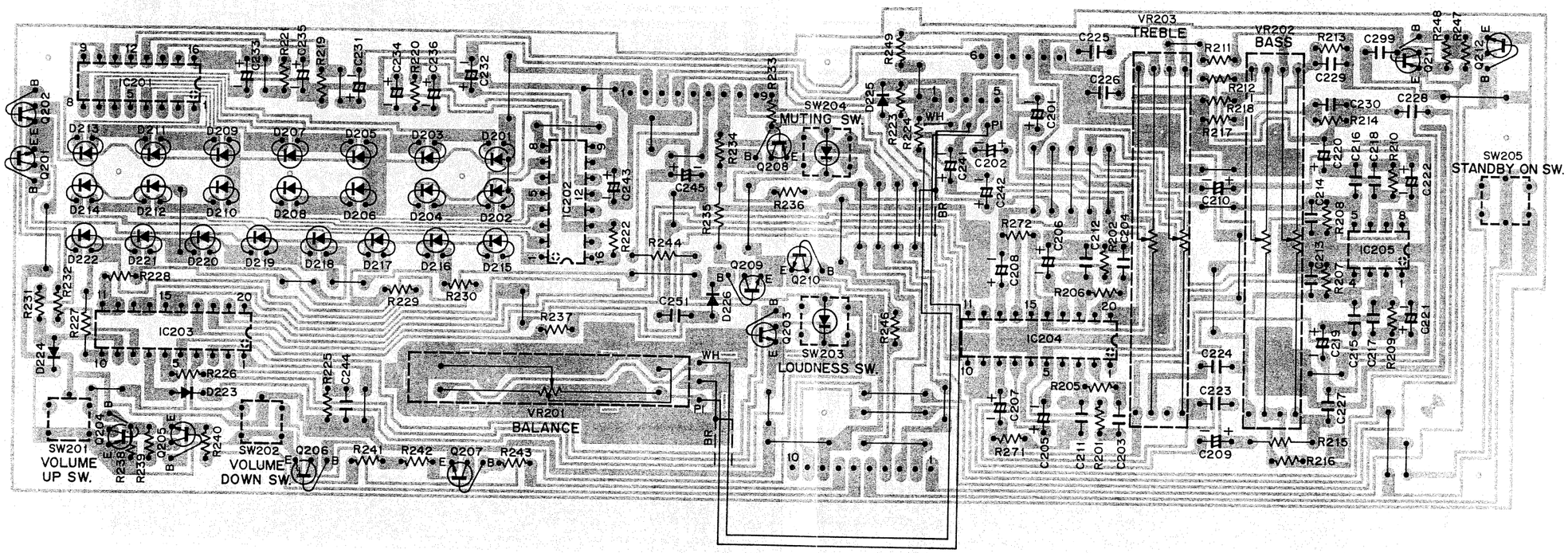


TRANSISTOR DC VOLTAGES

SYMBOL No.	DEVICE	B	C	E
Q103,104	2SC536	−1.2V	10.5V	−1.9V
Q105,106	2SC2878	−10.7V	0V	0V

TONE PRINTED CIRCUIT BOARD

(BOTTOM VIEW)



TRANSISTOR DC VOLTAGES

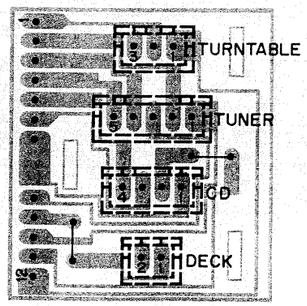
SYMBOL No.	DEVICE	B	C	E	SYMBOL No.	DEVICE	B	C	E	SYMBOL No.	DEVICE	B	C	E
Q201	2SC536	0.2V	1.1V	0V	Q205	2SC536	0V	2.7V	0V	Q209	2SC536	1.3V	5.3V	3.7V
Q202	2SC536	0.2V	2.4V	0V	Q206	2SA608	2.8V	0V	2.6V	Q210	2SC536	0V	3.7V	0V
Q203	2SC536	0V	0.5V	0V	Q207	2SC536	0V	2.7V	0V	Q211	2SA608	5.2V	−16.5V	5.2V
Q204	2SA608	0V	2.5V	2.6V	Q208	2SA608	5.3V	0V	0V	Q212	2SC536	0.3V	5.2V	0V

IC PIN NUMBERS DC VOLTAGES

SYMBOL No.	DEVICE	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
IC201,202	IR2E29	12.0V	13.6V	15.1V	15.6V	15.2V	13.6V	15.2V	0V	0V	16.7V	0V	0V	0V	2.6V	0V	0.9V				
IC203	TC9185P	0V	2.6V	4.7V	0V	0V	1.0V	1.1V	1.0V	1.0V	0.9V	0V	0V	0V	0V	0V	0V	0V	0V	0V	4.7V
IC204	TC9177P	−14.7V	0V	0V	0V	0V	0V	0V	0V	0V	0V	0V	0V	0V	0V	0V	0V	0V	0V	0V	15.1V
IC205	LA6458D	0V	0V	0V	−14.7V	0V	0V	0V	15.1V												

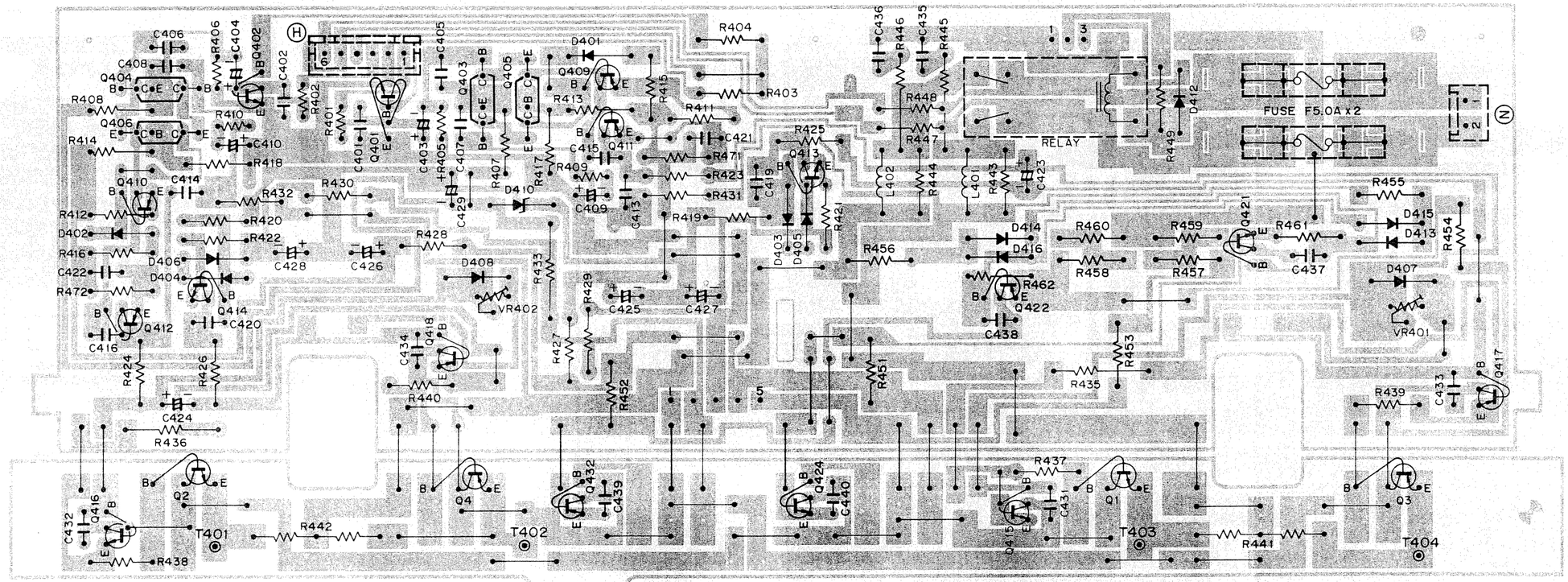
CONTROL P.C.BOARD

(BOTTOM VIEW)



MAIN AMP / POWER TRANSISTOR P.C.BOARD

(BOTTOM VIEW)

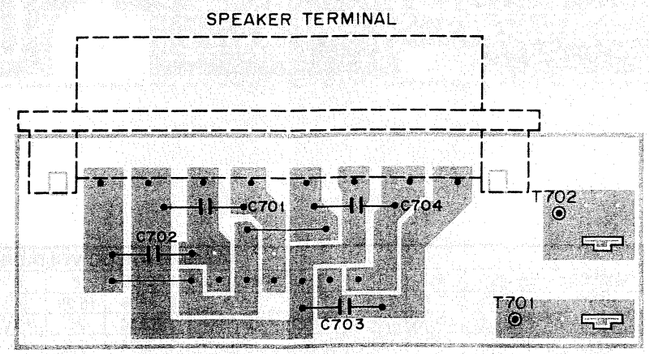


TRANSISTOR DC VOLTAGES

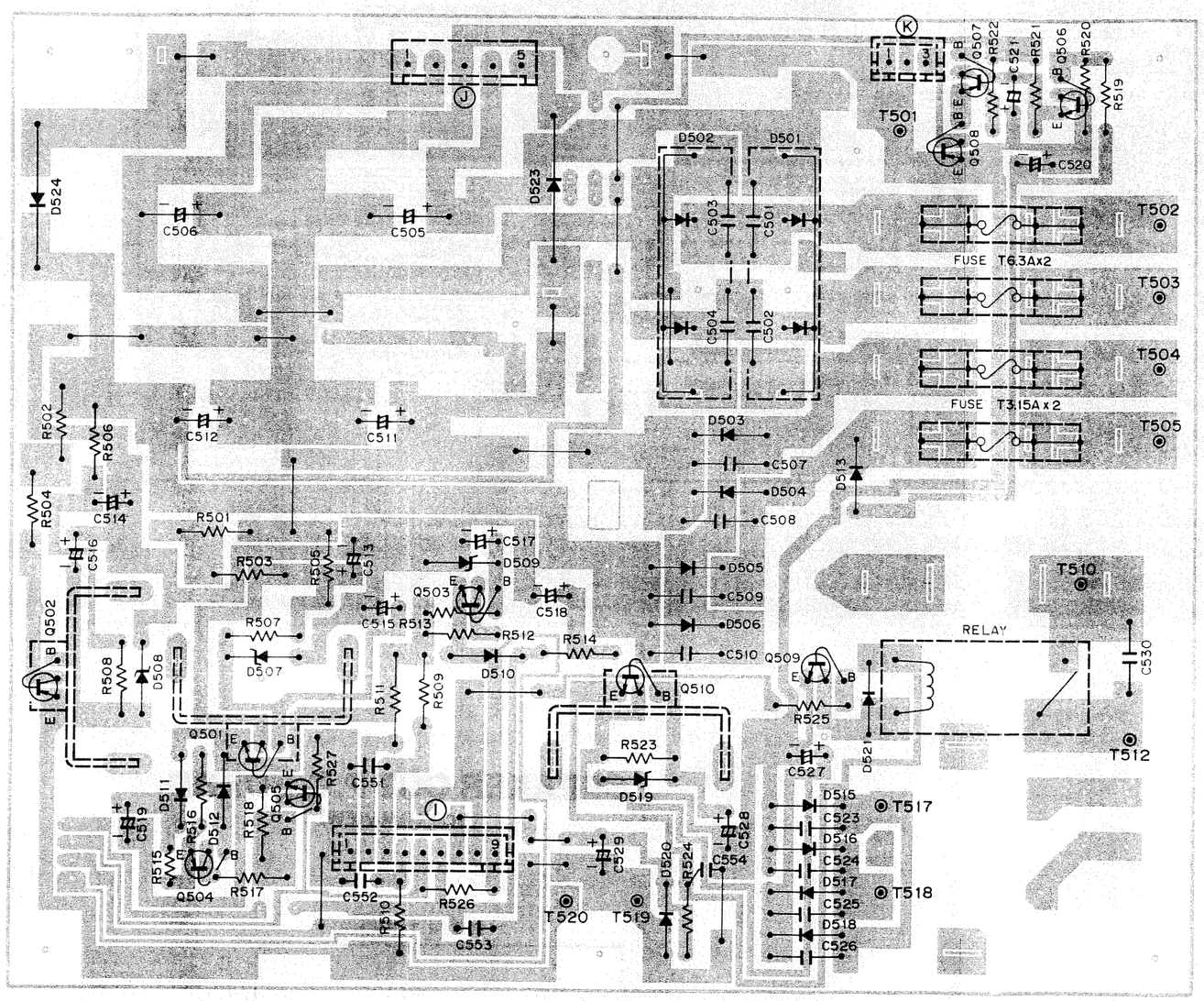
SYMBOL No.	DEVICE	B	C	E	SYMBOL No.	DEVICE	B	C	E
Q401,402	2SC2878	−16.4V	0V	0V	Q415,416	2SC3117	1.1V	60.4V	0.6V
Q403,404	2SC1583	−0.1V	9.9V	−0.7V	Q417,418	2SA1249	−1.1V	−60.5V	−0.6V
Q405,406	2SC2291	10.5V	60.0V	9.9V	Q419	2SD947	0V	0V	−1.1V
Q409,410	2SA608	60.0V	59.6V	61.0V					
Q411,412	2SA1209	59.6V	1.5V	60.7V	Q1,2	2SC3281	0.6V	60.4V	0V
Q413,414	2SC2911	−59.4V	−1.5V	−60.0V	Q3,4	2SA1302	−0.6V	−60.4V	0V

SPEAKER OUT P.C.BOARD

(BOTTOM VIEW)



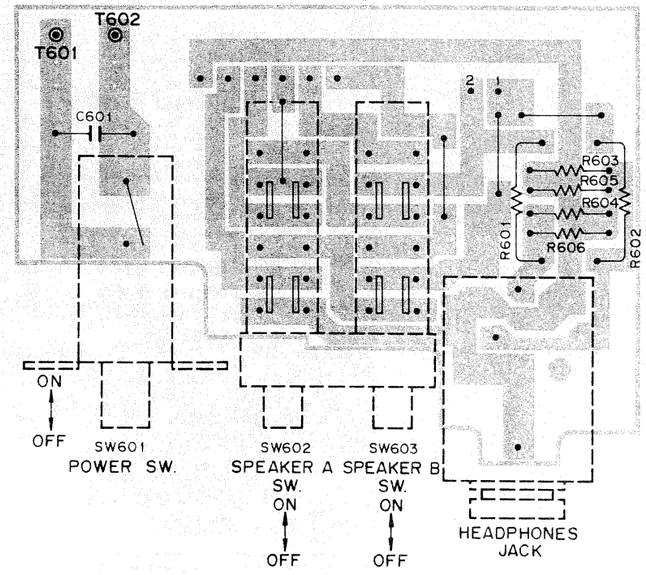
POWER SUPPLY PRINTED CIRCUIT BOARD
(BOTTOM VIEW)



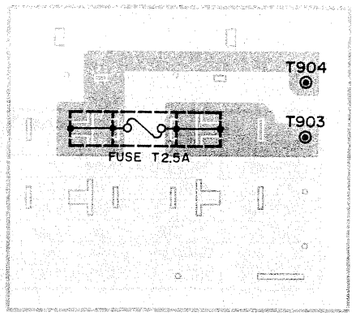
TRANSISTOR DC VOLTAGES

SYMBOL No.	DEVICE	B	C	E	SYMBOL No.	DEVICE	B	C	E	SYMBOL No.	DEVICE	B	C	E
Q501	2SD313	17.8V	27.2V	17.2V	Q504	2SA608	16.9V	0V	17.0V	Q507	2SA608	−1.4V	−0.8V	−0.8V
Q502	2SB632	−17.8V	−25.0V	−17.1V	Q505	2SC536	0V	4.7V	0V	Q508	2SA608	−0.8V	0V	0V
Q503	2SD400	5.8V	13.8V	5.2V	Q506	2SC536	−2.4V	0V	−1.4V	Q509	2SC536	0.7V	0.2V	0V

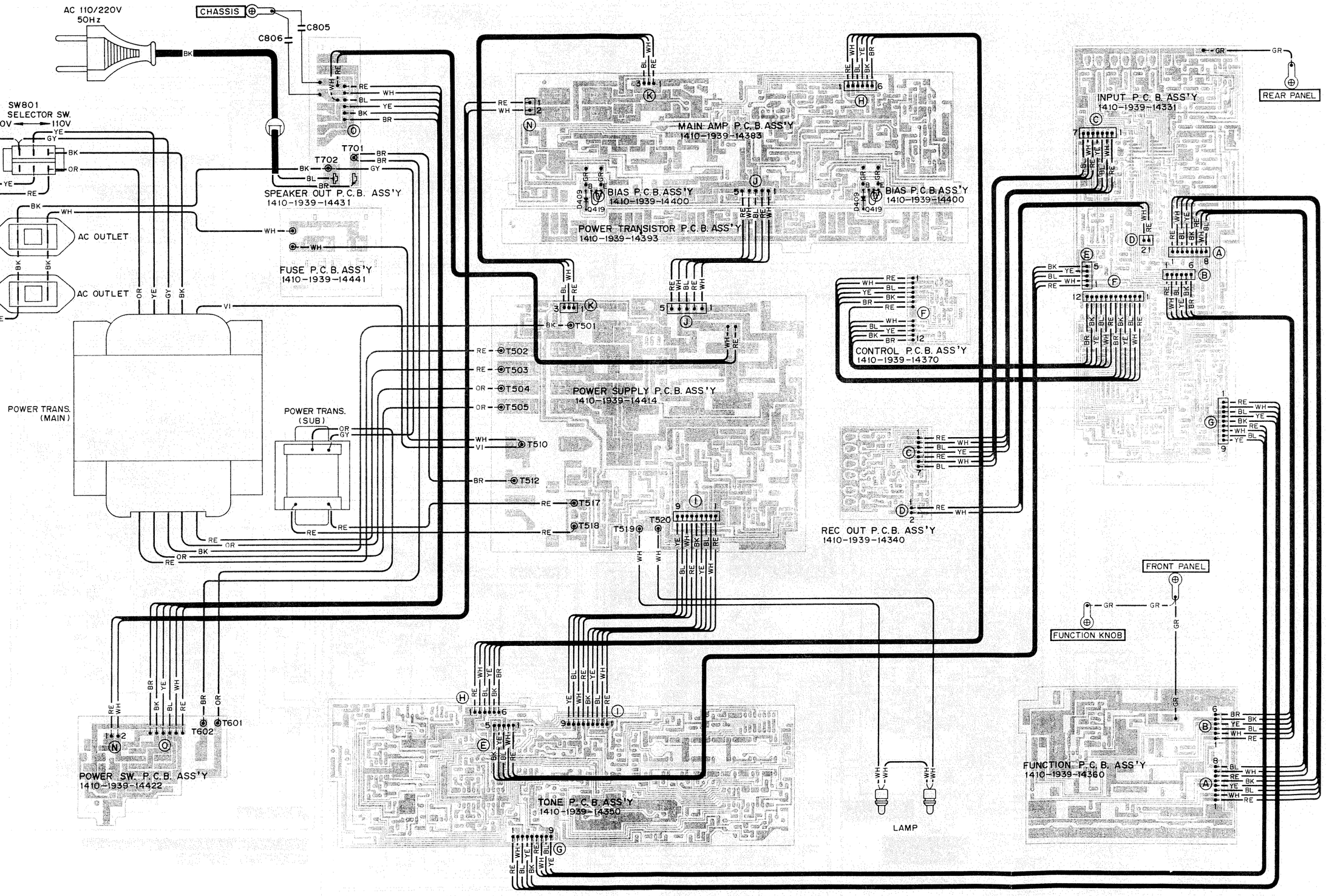
POWER SWITCH P.C.BOARD
(BOTTOM VIEW)



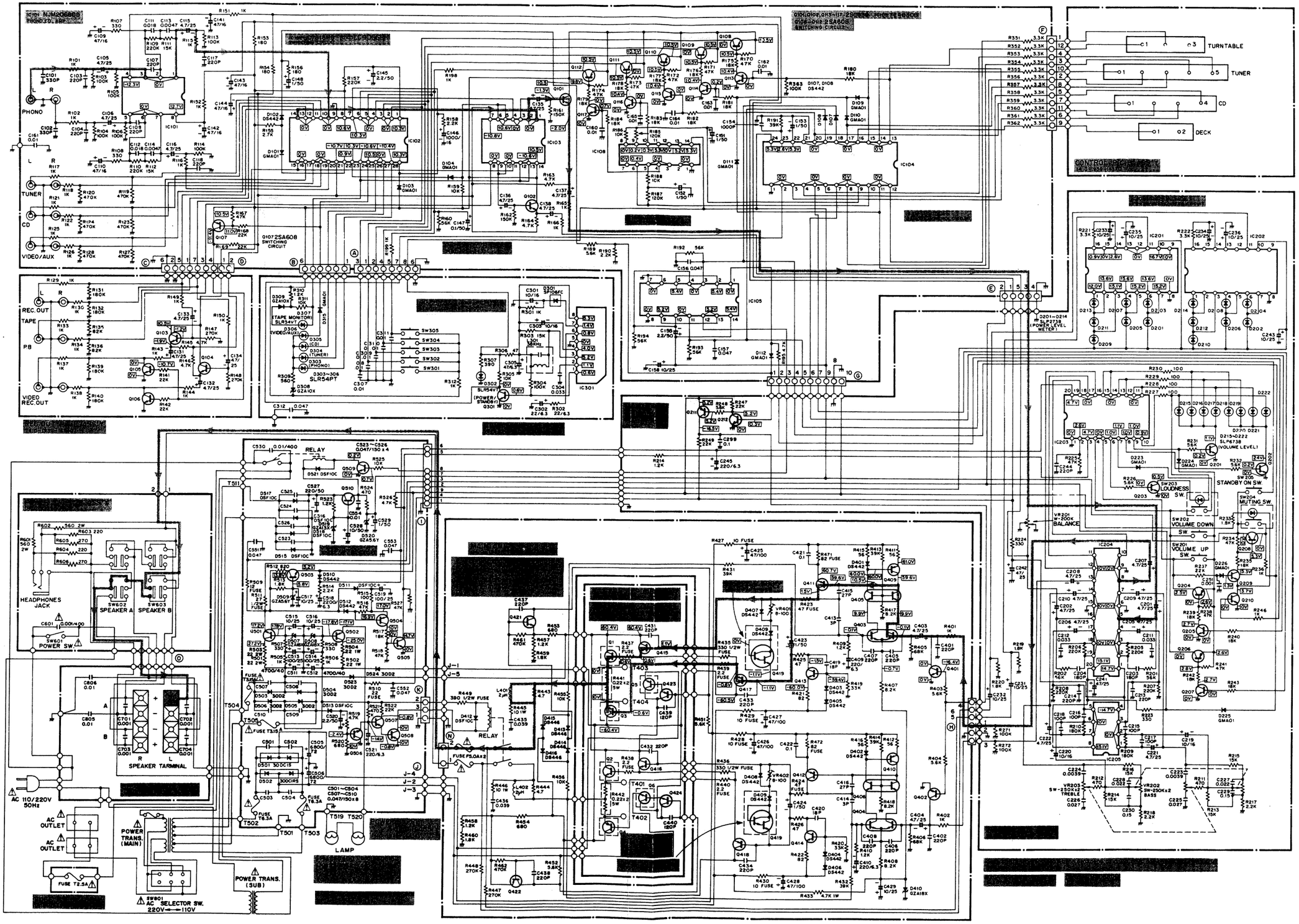
FUSE P.C.BOARD
(BOTTOM VIEW)



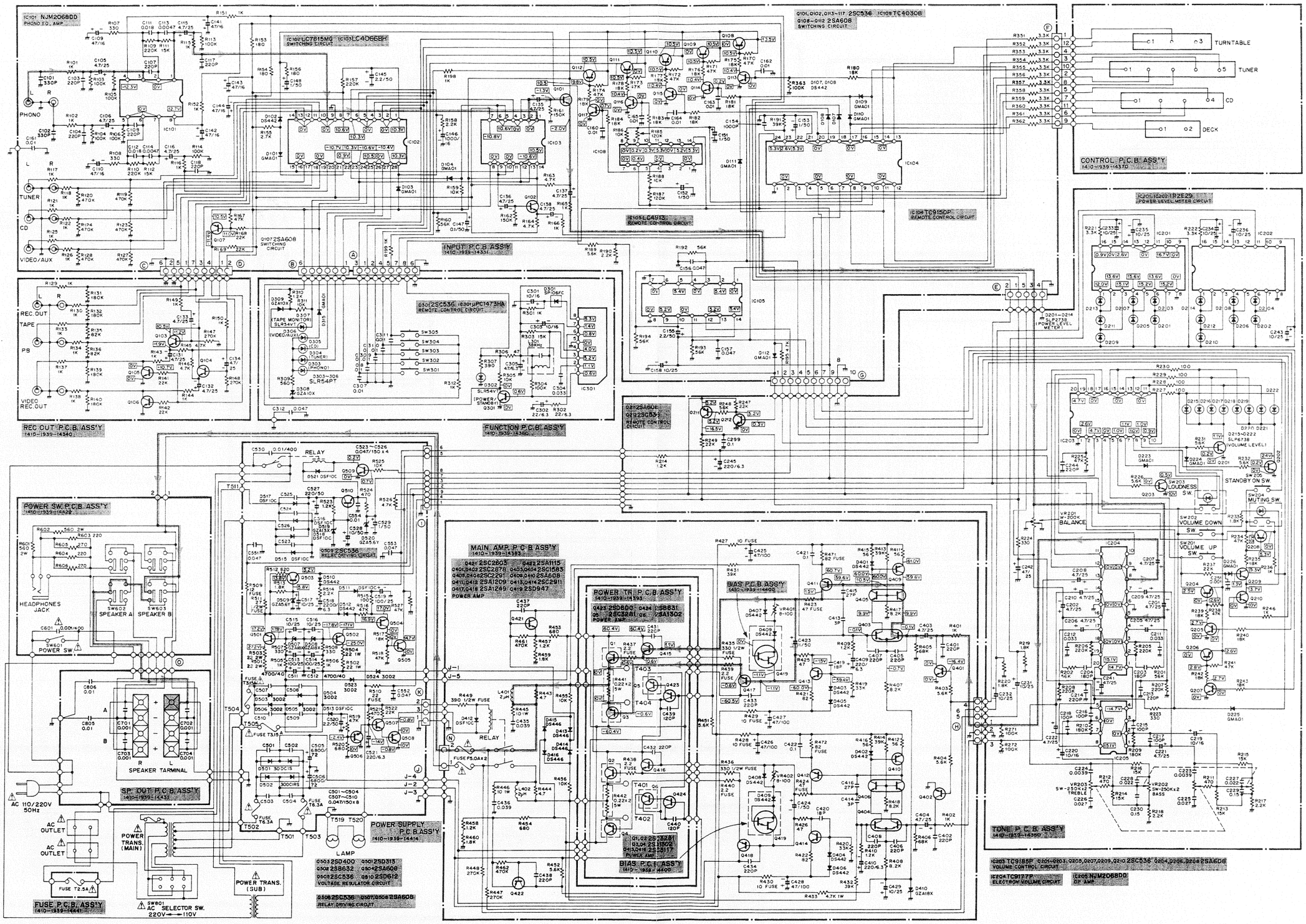
POINT TO POINT WIRING DIAGRAM



SCHEMATIC DIAGRAM

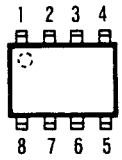


SCHEMATIC DIAGRAM

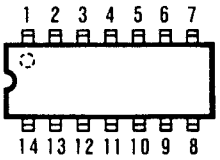


SEMICONDUCTOR LEAD IDENTIFICATION (Continued)

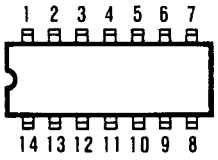
NJM 2068 DD BOTTOM VIEW



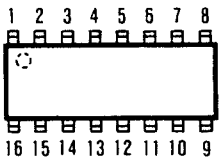
LC 4066 B
LC 4913 BOTTOM VIEW



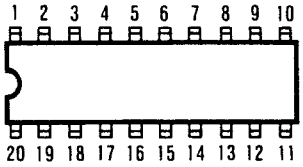
TC 4030 BOTTOM VIEW



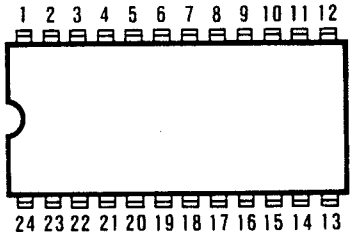
IR 2E29 BOTTOM VIEW



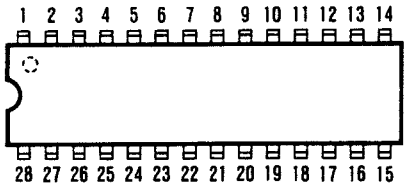
TC 9177 P
TC 9185 P BOTTOM VIEW



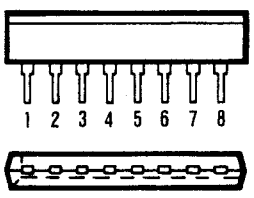
TC 9150 P BOTTOM VIEW



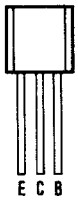
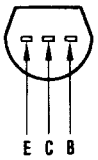
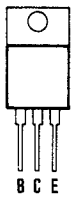
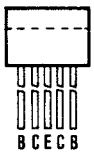
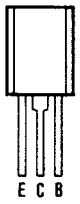
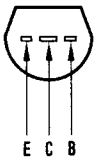
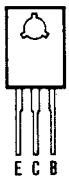
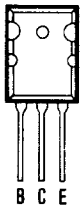
LC 7815 BOTTOM VIEW



μPC 1473 HA FRONT/BOTTOM VIEWS



SEMICONDUCTOR LEAD IDENTIFICATION

TRANSISTOR	FRONT VIEW	BOTTOM VIEW	TRANSISTOR	FRONT VIEW	BOTTOM VIEW
2SA 608 2SC 536 2SC 2878			2SD 313		
2SC 1583 2SC 2291			2SD 400		
2SA 1249 2SA 1209 2SB 632 2SC 2911 2SC 3117 2SD 947			2SA 1302 2SC 3281		
TERMINAL NAME					
B → BASE C → COLLECTOR E → EMITTER					

SWITCH NAME & POSITION

No.	Name	Position	No.	Name	Position
SW201	VOLUME UP Switch	OFF	SW303	COMPACT DISC Switch	OFF
SW202	VOLUME DOWN Switch	OFF	SW304	VIDEO / AUX Switch	OFF
SW203	LOUDNESS Switch	OFF	SW305	TAPE MONITOR Switch	OFF
SW204	MUTING Switch	OFF	SW601	POWER Switch	OFF
SW205	STANDBY ON Switch	OFF	SW602	SPEAKER A Switch	OFF
SW301	PHONO Switch	OFF	SW603	SPEAKER B Switch	OFF
SW302	TUNER Switch	OFF	SW801	AC SELECTOR Switch	220V

PRODUCT SAFETY NOTICE

Each precaution in this manual should be followed during servicing. Components identified with the IEC symbol ⚠ in the parts list and the schematic diagram designate components in which safety can be of special significance. When replacing a component identified with ⚠, use only the replacement parts designated, or parts with the same ratings of resistance, wattage or voltage that are designated in the parts list in this manual.
Leakage-current or resistance measurements must be made to determine that exposed parts are acceptably insulated from the supply circuit before returning the product to the customer.

NOTES:

1. All resistors values are indicated in "ohm" ($K=10^3$, $M=10^6$).
2. All capacitors values are indicated in "μF" ($P=10^{-12}$).
3. All voltages indicated on the schematics are measured under the following conditions.
   a. Use a V.T.V.M.
   b. All voltages ±10 % with respect to chassis ground
   c. No signals at input terminals
   d. AC input at 220 volts 50 Hz
4. This is a basic schematic diagram.

Because Fisher products are subject to continuous improvement, Fisher Corporation reserves the right to make any changes or modifications without notice.

CORRECTION NOTICE

FISHER

Date:January,19,1987

Please add this notice to the Service Manuals listed below

INTEGRATED STEREO AMPLIFIER

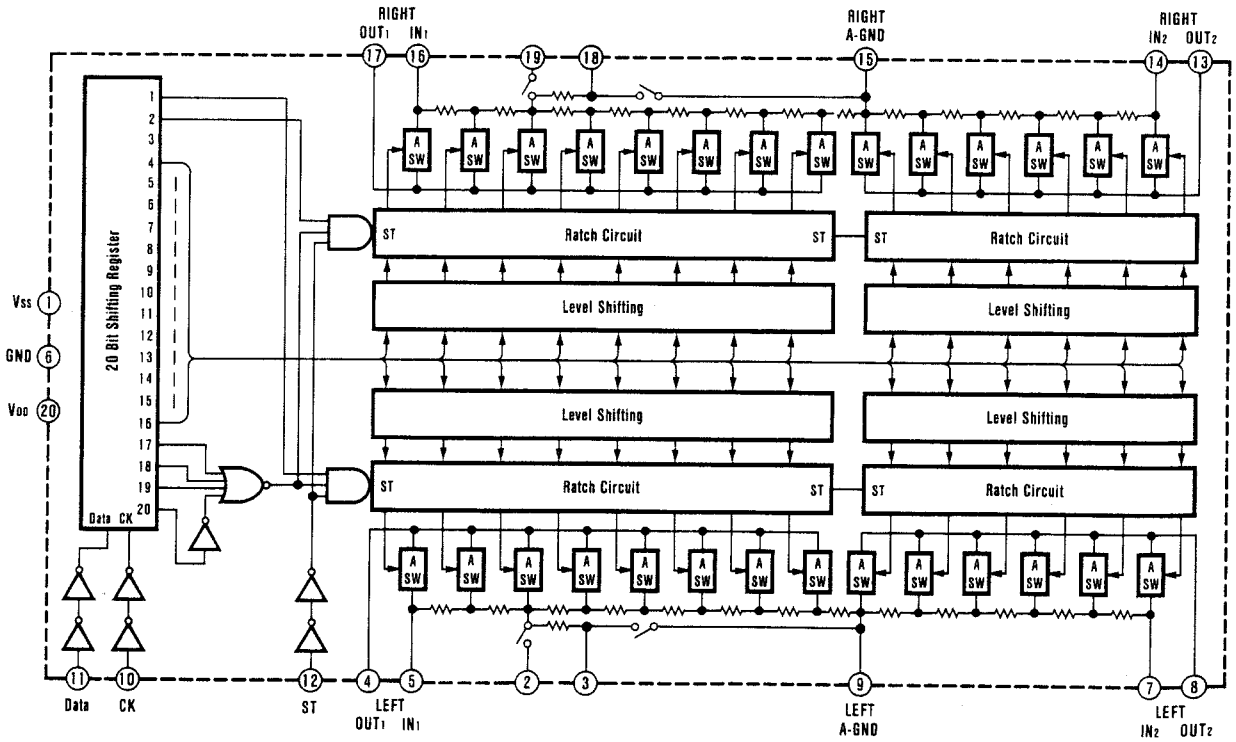
CA-870

(EUROPE) **REF:WM-16687** **Issue Number 1**

The following items were misprinted. Please make the neccesaly revision as indicated in the Service Manual Listed above.

No.	Page or Section		Ref. No.	Parts No.	Description	Q'ty	Remarks
1	IC Block Diagram Page 13		IC201	4-2069-74770	IC TC9177P	1	
						1	

ELECTRONIC VOLUME (with Loudness) IC TC 9177 P



Bezeichnung/Description

SERVICE MANUAL

Teile-Nr./Parts No. Menge/Quantity

WM16687 1

Lagerort LS-Nr.

31B06 639955 / 13

FISHER-HiFi Europa Vertriebs-GmbH

FISHER

FISHER Hi-Fi Europa Vertriebs GmbH

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8000 München 82 Tlx: 524033

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Qualitätskontrolle

Funkstörmeßlabor –127/128

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- Hi-Fi/Audio –168
- Video –172
- Autoradio –170
- Ersatzteillager –155/156
- Techn. Schulung –174

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January/'86/2,000 **Printed in Japan**