



Service Manual

Nakamichi

CA-7A

CA-7

CA-7E

CA-70

Control Amplifier



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1. GENERAL

1.1. Voltage Selector

Voltage selector is installed on the rear panel for Saudi Arabia and Other versions of the Nakamichi CA-7.
This voltage selector can select either 120 V or 220-240 V at customer's disposal.

Schematic Ref. No.	Part No.	Description	Q'ty	Schematic Ref. No.	Part No.	Description	Q'ty
01	FA03556A	Package Ass'y (CA-7A)	1	02	OF04014A	Packing L	1
	FA03557A	Package Ass'y (CA-7 (Canada))	1	03	OF04000A	Packing R	1
	FA03554A	Package Ass'y (CA-7 (Australia))	1	04	OF03670A	Poly-Sheet	1
	FA03553A	Package Ass'y (CA-7 (Saudi Arabia & Other))	1		OM03457A	Voltage Seal 240V (CA-7 (Australia) & CA-7E (UK))	2
	FA03551A	Package Ass'y (CA-7E (UK))	1		OM03642A	Voltage Seal 220V-240V (CA-7 (Saudi Arabia & Other))	2
	FA03555A	Package Ass'y (CA-7E (except UK))	1		OD04047A	US Pack (CA-70)	1
	FA03552A	Package Ass'y (CA-70)	1		OD04616A	Warranty Card (CA-70)	1
	OF03995A	Carton Box CA-7A	1				
	OF03992A	Carton Box CA-7	1				
	OF03993A	Carton Box CA-7E	1				
	OF03994A	Carton Box CA-70	1				

1.2. Package Ass'y and Parts List

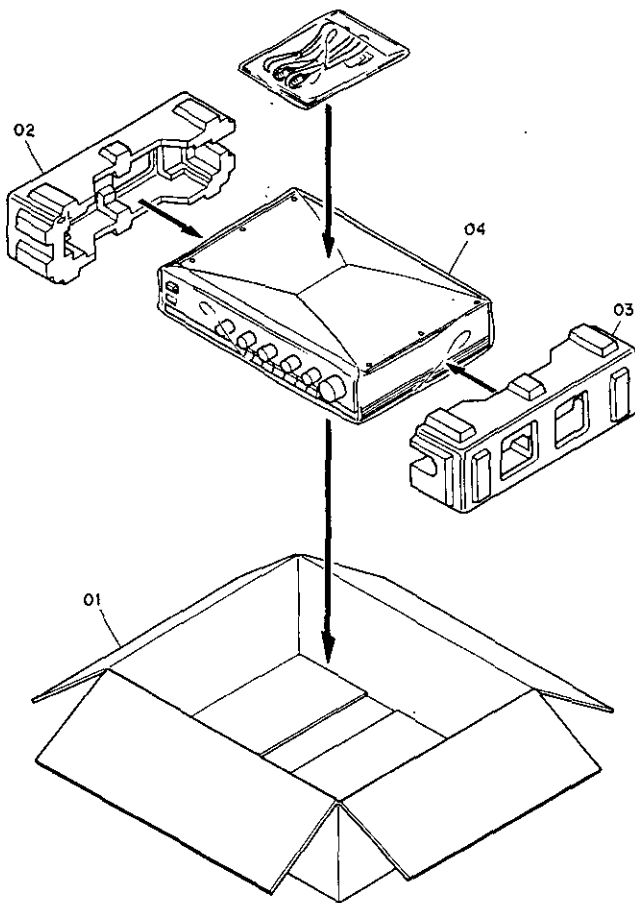


Fig. 1.1

1.3. Accessory Ass'y and Parts List

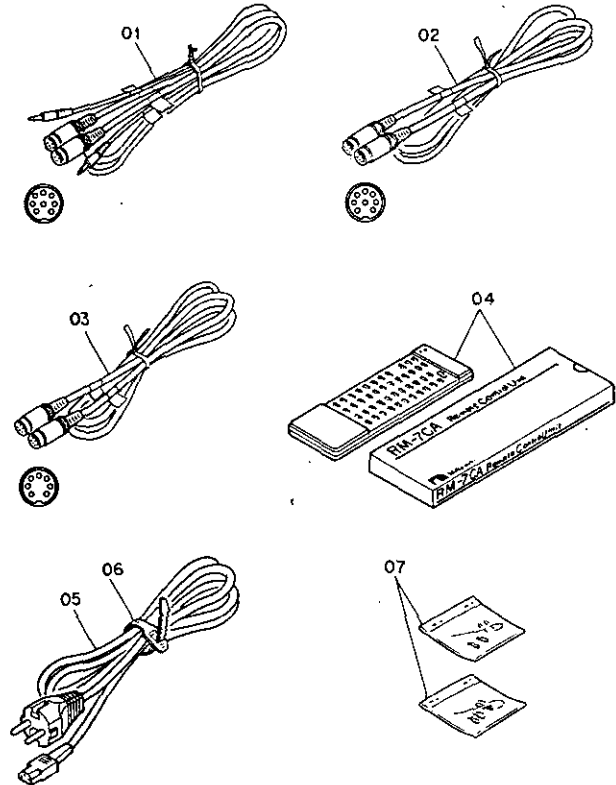


Fig. 1.2

Note: RM-7CA is supplied per unit.

Schematic Ref. No.	Part No.	Description	Q'ty	Schematic Ref. No.	Part No.	Description	Q'ty
	DA04005A	Accessory Ass'y (CA-7A)	1		DA04018A	Resistor Set	1
	DA03998A	Accessory Ass'y (CA-7(Canada))	1		(0B20164A) RK 3.16 1/2W G		(1)
	DA04001A	Accessory Ass'y (CA-7 (Australia))	1		(0B20169A) RK 11.5 1/2W G		(1)
	DA04004A	Accessory Ass'y (CA-7 (Saudi Arabia))	1		(0B20186A) RK 26.1 1/2W G		(1)
	DA04000A	Accessory Ass'y (CA-7 (Other))	1		(0B20196A) RK 42.2 1/2W G		(1)
	DA03997A	Accessory Ass'y (CA-7E (UK))	1		(0B20214A) RK 100 1/2W G		(2)
	DA04003A	Accessory Ass'y (CA-7E (Switzerland))	1		(0B81652A) Socket Pin OM-1		(4)
	DA04002A	Accessory Ass'y (CA-7E (except UK, Switzerland & Germany))	1		(0D03463A) Poly-Bag		(1)
	DA04054A	Accessory Ass'y (CA-7E (Germany))	1		0D04663A	Owner's Manual (CA-7A, CA-7 (except Canada) & CA-7E (UK))	1
	DA03999A	Accessory Ass'y (CA-70)	1		0D04761A	Owner's Manual (CA-7 (Canada) & CA-7E (except UK))	1
01	BA06562A	DIN Cord Ass'y (Deck)	1		0D04665A	Owner's Manual (CA-70)	1
	(0H05029A)	Cord Tape	(3)		0D04760A	Owner's Manual Supplement (CA-7 (Canada) & CA-7E (except UK))	1
02	(0B82777A)	DIN Cord 8P & Mini-Plug (Deck)	(1)		0D04668A	Owner's Manual Supplement (CA-7E (UK & Germany))	1
03	0B82778A	DIN Cord 8P (CDP)	1		0B04690A	Owner's Manual Supplement for Resistor (CA-7A, CA-7 (except Canada))	1
04	0B82779A	DIN Cord 7P (Tuner)	1		0D04712A	Owner's Manual Supplement for Resistor (CA-7 (Canada) & CA-7E)	1
05	DA04019A	Remote Control Unit RM-7CA	1		0D04711A	Owner's Manual Supplement for Resistor (CA-70)	1
	0B90222A	Power Cord (CA-7A & CA-7 (Canada))	1		0D03092B	Poly-Bag	1
	0B90139A	Power Cord (CA-7 (Australia))	1		0D04449A	Important Notice Card	1
	0B90229A	Power Cord (CA-7 (Saudi Arabia))	1		0D04184D	Warranty Card (CA-7A)	1
	0B90140A	Power Cord (CA-7E (UK))	1		0D04077A	Warranty Card (CA 7 (Canada))	1
	0B90154A	Power Cord (CA-7E (Switzerland))	1		0D04666A	Price Card (CA-70)	1
	0B90138A	Power Cord (CA-7E (except UK Switzerland & Germany))	1				
06	0F03887A	Cord Band (except CA-7 (Canada) & CA-70)	1				

2. PARTS LOCATION FOR ELECTRICAL ADJUSTMENT

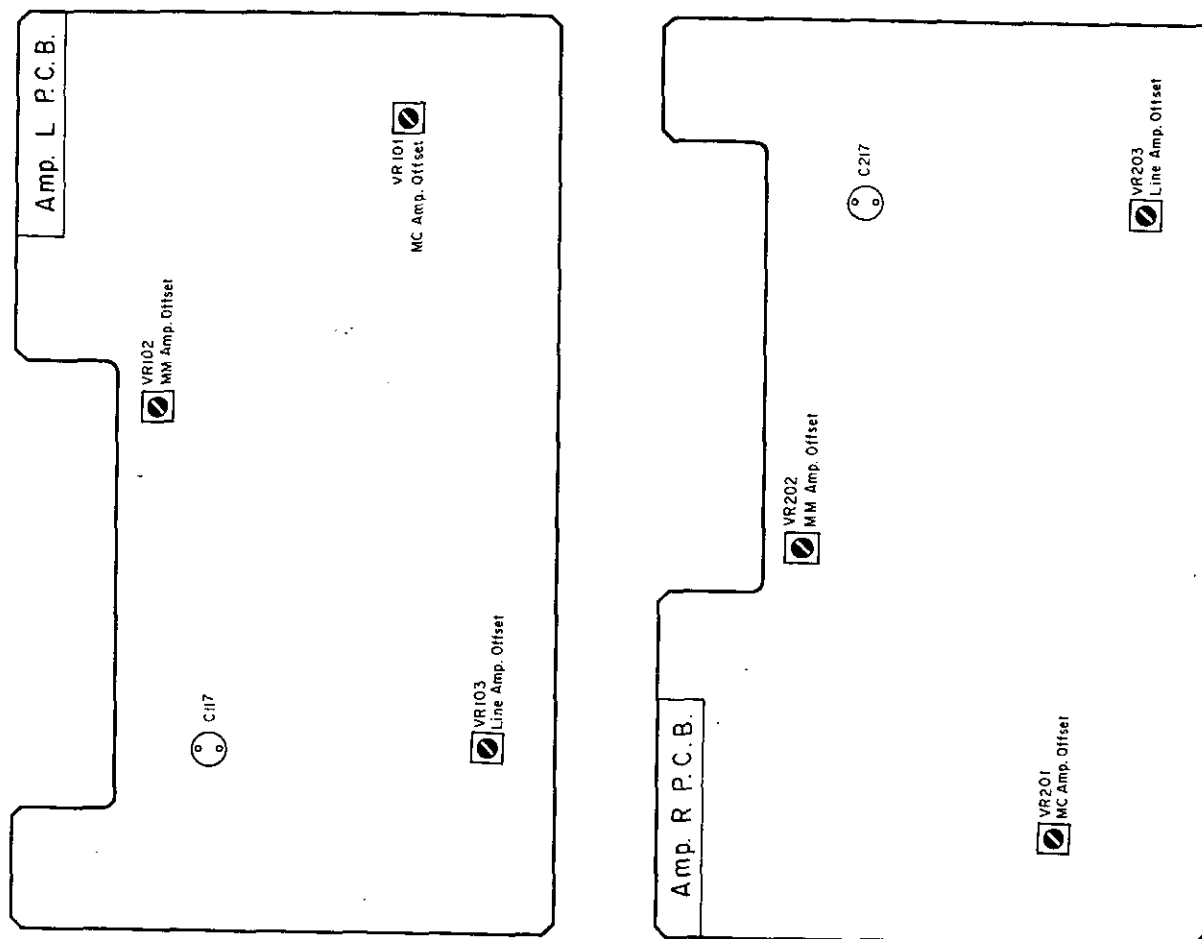


Fig. 2

3. ELECTRICAL ADJUSTMENTS

STEP	ITEM	SIGNAL SOURCE	OUTPUT CONNECTION	MODE	ADJUSTMENT	REMARKS
1	MC Amp. offset Adjustment	None	DC Millivoltmeter to Pin 7 of IC101 (IC201) on Amp. L (R) P.C.B.	Gain Selectors - 30 dB	Amp. L (R) P.C.B. VR101 VR201	Adjust VR101 (VR201) to obtain 0 ± 50 mV on the DC millivoltmeter.
2	MM Amp. Offset Adjustment	None	DC Millivoltmeter to Pin 7 of IC102 (IC202) on Amp. L (R) P.C.B.	Cartridge Selectors - MM	Amp. L (R) P.C.B. VR102 VR202	Adjust VR102 (VR202) to obtain 0 ± 10 mV on the DC millivoltmeter.
3	Line Amp. Offset Adjustment	None	DC Millivoltmeter to Line output Jacks 1	Listen Monitor Selector - CD	Amp. L (R) P.C.B. VR103 VR203	1. Short C117 (C217) on Amp. L (R) P.C.B. Ass'y. 2. Adjust VR103 (VR203) to obtain 0 ± 10 mV on the DC millivoltmeter. 3. Remove the short of C117 (C217).

4. MECHANISM ASS'Y AND PARTS LIST

4.1. Synthesis

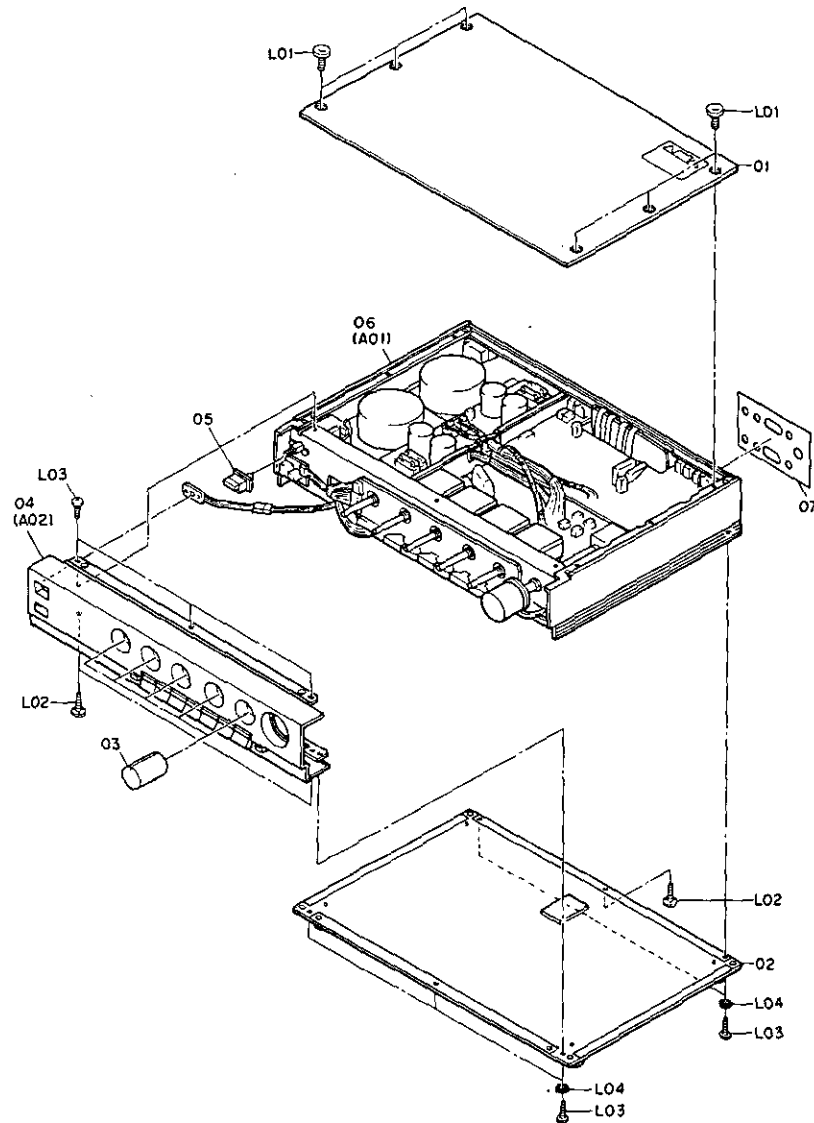


Fig. 4.1

Schematic Ref. No.	Part No.	Description	Q'ty	Schematic Ref. No.	Part No.	Description	Q'ty
01	HA05203A	Synthesis Serial No.: B10701001 -	1	04	HA05144A	Front Panel Ass'y (CA-7A)	1
					HA05143A	Front Panel Ass'y (CA-7)	1
					HA05146A	Front Panel Ass'y (CA-7E)	1
					HA05145A	Front Panel Ass'y (CA-70)	1
				05	HA04799B	Power Switch Knob Ass'y	1
				06	JA04262A	Chassis Ass'y (CA-7A)	1
					JA04263A	Chassis Ass'y (CA-7 (Canada))	1
					JA04260A	Chassis Ass'y (CA-7 (Australia))	1
					JA04265A	Chassis Ass'y (CA-7 (Saudi Arabia))	1
					JA04259A	Chassis Ass'y (CA-7 (Other))	1
					JA04261A	Chassis Ass'y (CA-7E (except Germany))	1
					JA04285A	Chassis Ass'y (CA-7E (Germany))	1
					JA04258A	Chassis Ass'y (CA-70)	1
				07	OM04887A	Caution Sheet (CA-7A, CA-7 & CA-7E)	1
02	HA05204A	Top Cover Ass'y (CA-7A, CA-7 & CA-7E (except Germany))	1		OM04886A	Caution Sheet (CA-70)	1
		(OH04993B) Top Cover			OM03797A	Voltage Seal 240V (CA-7E (UK))	1
		(OJ05266A) Top Cover Cushion F			OM04679A	SS Approval Label G	1
		(OJ05267B) Top Cover Cushion R			OM04836A	DBP Label (CA-7E (West Germany))	1
		(OH04993A) Vibration Isolating Sheet TP					
		(OM04377B) Caution Label					
		HA05247A Top Cover Ass'y (CA-7E (Germany) & CA-70)		L01	OH05012A	M4x8 @ S	6
		(OH04993B) Top Cover		L02	OE03366A	BT3x8 @ Binding Projected (Black Chromate)	3
		(OJ05266A) Top Cover Cushion F		L03	OE00921A	BT3x8 @ Binding (Black Chromate)	10
		(OJ05267B) Top Cover Cushion R		L04	OJ05315A	Washer 4mm (Black)	5
03	HA05126A	(OJ05354A) Vibration Isolating Sheet TPJB107	1				
		(OM04377B) Caution Label					
		HA05204A Bottom Cover Ass'y					
		(OH04994B) Bottom Cover					
		(OJ05354A) Leg T-H					
		(OJ05267A) Top Cover Cushion R					
		(OJ05270A) Bottom Cover Cushion S					
		(OJ05287A) Vibration Isolating Sheet BT					
		(OE00948A) BT3x10 @ Binding (Black Chromate)					
		(OM04377B) Caution Label					

4.2. Chassis Ass'y (A01)

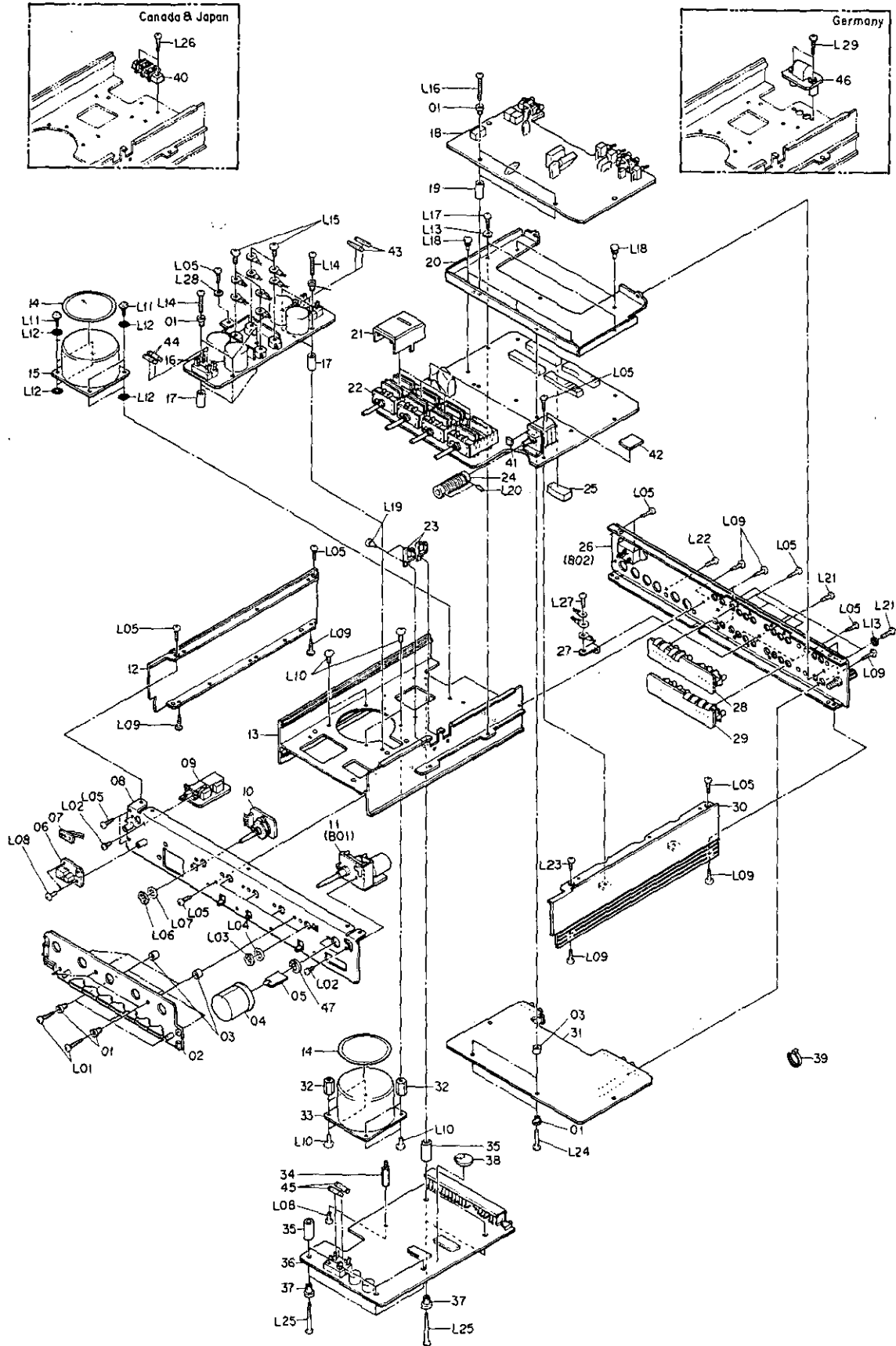


Fig. 4.2

Schematic Ref. No.	Part No.	Description	Qty	Schematic Ref. No.	Part No.	Description	Qty
A01	JA04262A	Chassis Ass'y (CA-7A)	1	36	BA06337A	Logic P.C.B. Ass'y (CA-7A & CA-7 (Canada, Saudi Arabia & Other))	1
	JA04263A	Chassis Ass'y (CA-7 (Canada))	1		BA06338A	Logic P.C.B. Ass'y (CA-7 (Australia) & CA-7E)	1
	JA04260A	Chassis Ass'y (CA-7 (Australia))	1		BA06336A	Logic P.C.B. Ass'y (CA-70)	1
	JA04265A	Chassis Ass'y (CA-7 (Saudi Arabia))	1		OJ05019A	Collar Bushing NB-300	5
	JA04259A	Chassis Ass'y (CA-7 (Other))	1		OB90141A	Lithium Battery CR2032-FT	1
	JA04261A	Chassis Ass'y (CA-7E (except Germany))	1		OB90019A	Insu-Lock SKB-80	23
	JA04285A	Chassis Ass'y (CA-7E (Germany))	1		OB81684A	2P Terminal (CA-7 (Canada) & CA-70)	1
	JA04258A	Chassis Ass'y (CA-70)	1			BS Damper 2VR107	2
		Serial No.: B10701001 -				BS Damper 1VR107	1
						Fuse 500mA (CA-7A, CA-7 (Canada, Saudi Arabia & Other))	2
01	OJ04703A	Collar Bushing TB-300	15	41	OJ05310A	Fuse T250mA (CA-7 (Australia) & CA-7E)	2
02	BA06340A	Function Switch P.C.B. Ass'y	1	42	OJ05309A	Fuse 500mA (CA-70)	2
03	OJ05012A	Collar Bushing TA-305	8	43	OB90231A	Fuse 1A (CA-7A, CA-7 (Canada, Saudi Arabia & Other))	2
04	HA05127B	Volume Knob Ass'y	1	44	OB08252A	Fuse T500mA (CA-7 (Australia) & CA-7E)	2
	(OH04999B)	Volume Knob Lens	(1)		OB90122A	Fuse 500mA (CA-70)	2
	(OH04990B)	Volume Knob	(1)		OB90231A	Fuse 1A (CA-7A, CA-7 (Canada, Saudi Arabia & Other))	2
	(OH05223B)	Volume Knob Base	(1)		OB08457A	Fuse T500mA (CA-7 (Australia) & CA-7E)	2
05	BA06343A	Volume Indicator P.C.B. Ass'y	1	45	OB90244A	Fuse 1A (CA-70)	2
06	BA06341A	Remote Control Sensor P.C.B. Ass'y	1		OB90246A	Fuse 500mA (CA-7A, CA-7 (Canada, Saudi Arabia & Other))	2
07	BA06335A	Power Indicator P.C.B. Ass'y	1	46	OB08252A	Fuse T250mA (CA-7 (Australia) & CA-7E)	2
08	JA04267A	Front Chassis Ass'y	1		OB90122A	Fuse 500mA (CA-70)	2
09	BA06328A	Power Switch P.C.B. Ass'y (CA-7A, CA-7 (Canada) & CA-70)	1	47	BA06688A	Line Filter P.C.B. Ass'y (CA-7E (Germany))	1
					OJ05258B	Selector Knob Himelton	1
	BA06568A	Power Switch P.C.B. Ass'y (CA-7 (Australia) & CA-7E (except Germany))	1	L01	OE00870A	BT3x14 @ Binding	6
	BA06589A	Power Switch P.C.B. Ass'y (CA-7 (Saudi Arabia & Other))	1	L02	OE00612A	M3x6 @ Pan (2A)	4
	BA06799A	Power Switch P.C.B. Ass'y (CA-7E (Germany))	1	L03	—	Nut (Rotary Switch)	(4)
10	BA06327A	Record Out Selector P.C.B. Ass'y	1	L04	—	Washer (Rotary Switch)	(4)
11	JA04253A	Volume Control Ass'y	1	L05	OE00921A	BT3x8 @ Binding (Black Chromate)	19
12	OH04995B	Side Panel L	1	L06	—	Nut (Volume)	(1)
13	OJ05220C	Main Chassis	1	L07	—	Washer (Volume)	(1)
14	OM04860A	Power Transformer Label	2	L08	OE00896A	M3x6 @ Binding	3
15	OB50083B	Power Transformer (CA-7A & CA-7 (Canada))	1	L09	OE03366A	BT3x8 @ Binding Projected (Black Chromate)	9
	OB50084A	Power Transformer (CA-7 (Australia) & CA-7E)	1	L10	OE03310A	M4x6 @ Binding (Black Chromate)	8
	OB50085A	Power Transformer (CA-7 (Saudi Arabia & Other))	1	L11	OE03278A	BT3x8 @ Binding with Washer	4
	OB50079A	Power Transformer (CA-70)	1	L12	OJ05313A	Washer 4x8x1.0 Fiber with Adhesive Tape	8
16	BA06332A	Power Supply P.C.B. Ass'y CA-7A & CA-7 (Canada, Saudi Arabia & Other))	1	L13	OE03406A	Washer 3mm (Black)	4
	BA06333A	Power Supply P.C.B. Ass'y (CA-7 (Australia) & CA-7E)	1	L14	OE00739A	M3x18 @ Binding (Bronze)	5
	BA06777A	Power Supply P.C.B. Ass'y (CA-7E (Germany))	1	L15	—	M4x6 @ Binding (Gold)	4
	BA06331A	Power Supply P.C.B. Ass'y (CA-70)	1	L16	OE03363A	M3x25 @ Binding (Bronze)	2
				L17	OE03028A	BT3x8 @ Binding (Nickel)	2
17	OJ05008A	Collar Bushing TA-310	5	L18	OJ05254A	Plastic Rivet 3x5.5	5
18	BA06322A	Amp. L P.C.B. Ass'y	1	L19	OJ05255A	Plastic Rivet 3x6.5	2
19	OJ04704A	Collar Bushing TA-314	2	L20	OE03005A	M3x5 Hex. Socket Head	2
20	OJ05221A	Shield Plate	1	L21	OE00594A	M3x8 @ Binding (Bronze)	4
21	OH04988B	Switch Cover	4	L22	OE00818A	M3x8 @ Binding (Black Chromate)	1
22	BA06324A	Input Selector P.C.B. Ass'y	1	L23	OE00941A	BT3x5 @ Binding (Black Chromate)	1
23	OJ05256A	Wire Holder LWS-2W	2	L24	OE03364A	M3x14 @ Binding (Bronze)	2
24	OJ05233A	Volume Joint Arm	1	L25	OE03362A	BT3x30 @ Binding	5
25	OJ05283A	Cushion	1	L26	OE03403A	BT3x14 @ Binding (Black Chromate)	2
26	HA05133A	Rear Panel Ass'y (CA-7A)	1	L27	OE03395A	M3x8 @ Binding	1
	HA05134A	Rear Panel Ass'y (CA-7 (Canada))	1		OE03410A	Washer 4mm (Black)	1
	HA05131A	Rear Panel Ass'y (CA-7 (Australia))	1	L28	OE03294A	BT3x14 @ Binding (Black Chromate)	2
	HA05130A	Rear Panel Ass'y (CA-7 (Saudi Arabia & Other))	1	L29			
	HA05132A	Rear Panel Ass'y (CA-7E (except Germany))	1				
	HA05255A	Rear Panel Ass'y (CA-7E (Germany))	1				
	HA05129A	Rear Panel Ass'y (CA-70)	1				
27	OJ05246A	Ground Bracket	1				
28	BA06325A	Pin Jack L P.C.B. Ass'y	1				
29	BA06326A	Pin Jack R P.C.B. Ass'y	1				
30	OH04996C	Side Panel R	1				
31	BA06323A	Amp. R P.C.B. Ass'y	1				
32	OJ05245A	Transformer Spacer	4				
33	OB50080B	Power Transformer (CA-7A & CA-7 (Canada))	1				
	OB50081A	Power Transformer (CA-7 (Australia) & CA-7E)	1				
	OB50082A	Power Transformer (CA-7 (Saudi Arabia & Other))	1				
	OB50078A	Power Transformer (CA-70)	1				
34	OJ05251A	Spacer 20mm	1				
35	OJ05249A	Collar Bushing NA-320	5				

4.3. Front Panel Ass'y (A02)

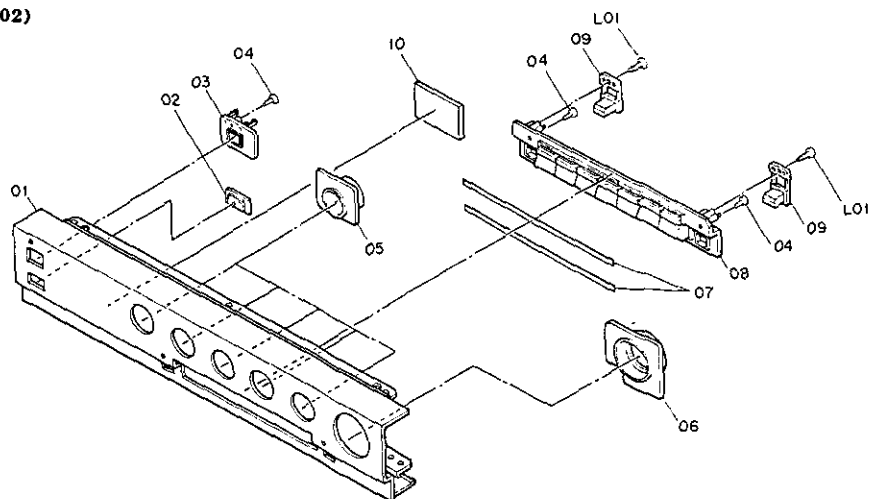


Fig. 4.3

4.4. Volume Control Ass'y (B01)

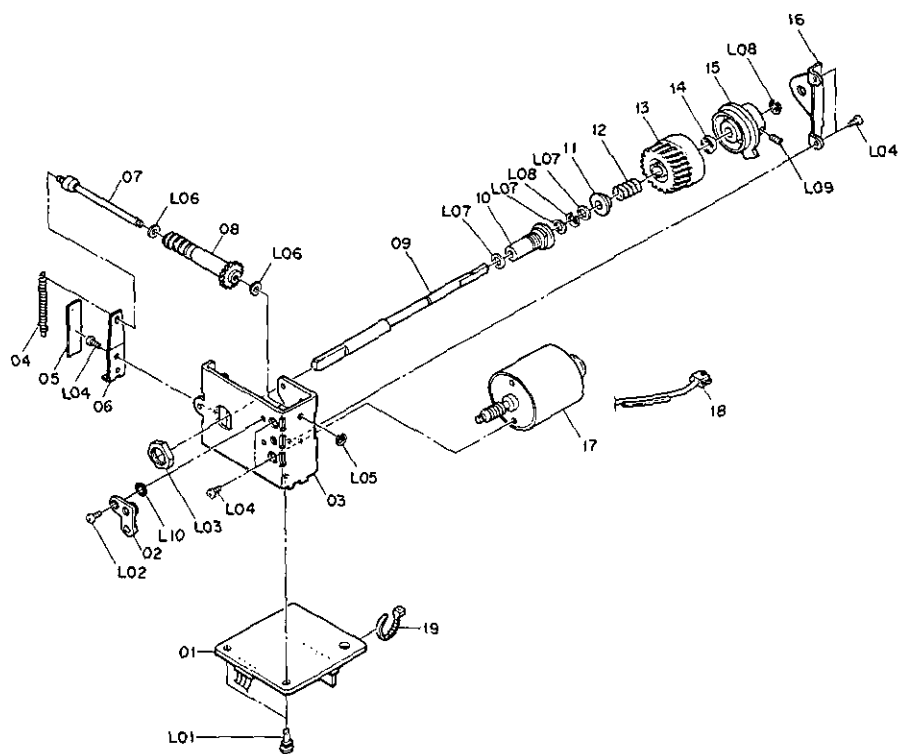


Fig. 4.4

Schematic Ref. No.	Part No.	Description	Qty	Schematic Ref. No.	Part No.	Description	Qty
A02	HA05144A	Front Panel Ass'y (CA-7A)	1	04	OH04639B	Lens	3
	HA05143A	Front Panel Ass'y (CA-7)	1	05	OH04648B	Volume Knob Holder	5
	HA05146A	Front Panel Ass'y (CA-7E)	1	06	OH04998A	Volume Holder	1
	HA05145A	Front Panel Ass'y (CA-70)	1	07	OJ05277A	Adhesive Tape	2
	Serial No.: B10701001 -			08	HA05128C	Input Button Ass'y	1
01	OH05003B	Front Panel (CA-7A)	1	09	OH04992A	Mute Button	2
	OH04989B	Front Panel (CA-7)	1	10	OJ05286A	Vibration Isolating Sheet F	1
	OH05005B	Front Panel (CA-7E)	1	L01	OE00853A	BT2x6 @ Binding	2
	OH05004B	Front Panel (CA-70)	1				
	OH04777B	Remote Control Lens	1				
02	OJ05218A	Power Switch Knob Guide	1				

4.5. Rear Panel Ass'y (B02)

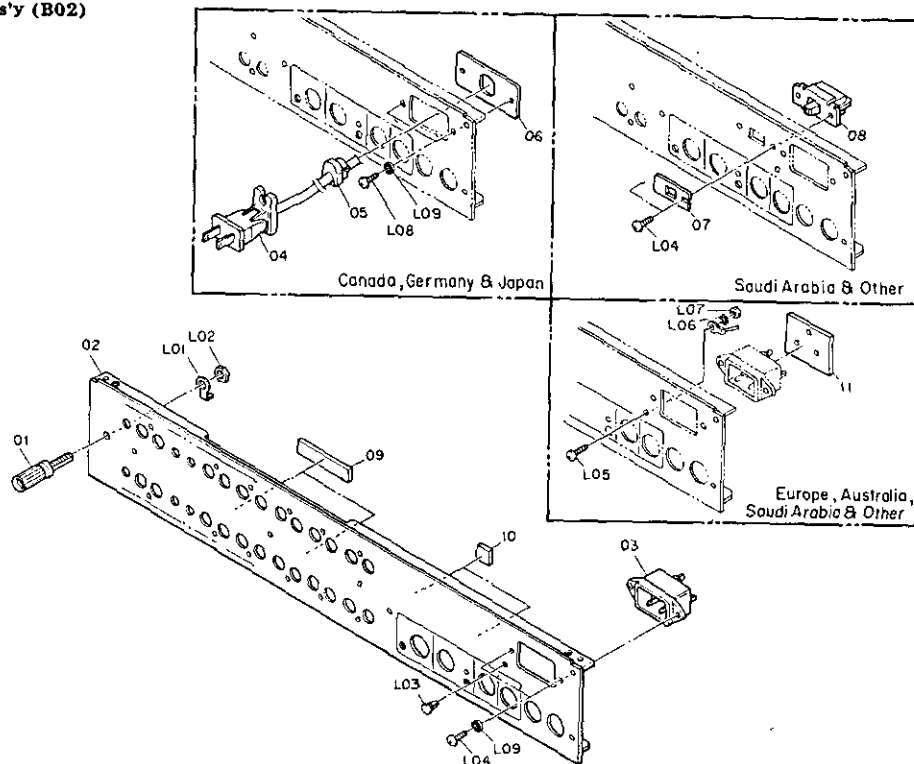


Fig. 4.5

Schematic Ref. No.	Part No.	Description	Qty	Schematic Ref. No.	Part No.	Description	Qty
B01	JA04253A	Volume Control Ass'y Serial No.: B10701001 -	1		0H05011C	Rear Panel (CA-7 (Australia))	1
01	BA06342A	Motor P.C.B. Ass'y	1		0H05006C	Rear Panel (CA-7 (Saudi Arabia & Other))	1
02	0J05231A	Thrust Spring B	1		0H05008C	Rear Panel (CA-7E (except Germany))	1
03	0J05239A	Volume Chassis	1		0H05079A	Rear Panel (CA-7E (Germany))	1
04	0J05243A	Warm Shaft Spring	1		0H05009C	Rear Panel (CA-70)	1
05	0J05282A	Cushion	1		0B90087A	AC Inlet (except CA-7 (Canada), CA-7E (Germany) & CA-70)	1
06	0J05241A	Worm Thrust Spring	1	C3			
07	JA04255A	Worm Shaft Ass'y	1		0B90156A	Power Cord SJ17328 (CA-7 (Canada))	1
08	0J05232B	Worm Gear	1	04			
09	0J05234A	Volume Shaft	1		0B80124A	Power Cord (CA-7E (Germany))	1
10	0J05235A	Volume Bearing	1		0B80085A	Power Cord (CA-70)	1
11	0J05230A	Spring Flange	1	05			
12	0J05242A	Friction Spring	1		0B90157A	Cord Bushing (CA-7 (Canada) & CA-7E (Germany))	1
13	0J05228A	Volume Gear	1		0B90186A	Cord Bushing (CA-70)	1
14	0J05236A	Ball Bearing 4mm	1	06			
15	0J05229B	Clutch Disc	1		0H04772A	Bushing Holder (CA-7 (Canada) & CA-7E (Germany))	1
16	0J05240A	Volume Shaft Holder	1		0H04856A	Bushing Holder (CA-70)	1
17	JA04257A	Volume Control Motor Ass'y	1	07			
18	0B82789A	2P-H Connector	1		0M03948A	Voltage Lock Plate (CA-7 (Saudi Arabia & Other))	1
19	0B90019A	Insu-lock SKB-80	1	08			
L01	0J05254A	Plastic Rivet 3x5.5	2		0B07092U	Voltage Selector (CA-7 (Saudi Arabia & Other))	1
L02	0E00922A	M2x3 @ Pan (Black Chromate)	1	09			
L03	0E00150A	Nut Hex. M8	1	10			
L04	0E00783A	M2x3 @ Pan (Black Chromate)	5	11			
L05	0E00042A	E-Ring 1.5mm	1		0J05308A	Vibration Isolating Sheet 2R	2
L06	0E03356A	Washer 2.1x4x0.5	2		0J05307A	Vibration Isolating Sheet 1R	2
L07	0E03357A	Washer 4.1x6x0.25	3		0B60430A	AC Receptacle P.C.B. (CA-7 (Australia, Saudi Arabia & Other) & CA-7E (except Germany))	1
L08	0E00181A	E-Ring 3mm	2		0M03700A	Earth Mark Label (CA-7E)	1
L09	0E03005A	M3x5 Cup Point Hex. Socket Head	1	L01		Earth Lug (Ground Terminal)	(1)
L10	0E03061A	Plastic Washer 2.1mm	1	L02		Nut (Ground Terminal)	(1)
				L03		Hole Plug (CA-7A, CA-7 & CA-70)	1
				L04		M3x8 @ Binding (Bronze) (except CA-7 (Canada), CA-7E (Germany) & CA-70)	2
B02	HA05133A	Rear Panel Ass'y (CA-7A)	1	L05		M4x8 @ Binding (Bronze) (CA-7E (except Germany))	1
	HA05134A	Rear Panel Ass'y (CA-7 (Canada))	1	L06		Washer 4mm (CA-7E (except Germany))	1
	HA05131A	Rear Panel Ass'y (CA-7 (Australia))	1	L07		Nut Hex. M4 (CA-7E (except Germany))	1
	HA05130A	Rear Panel Ass'y (CA-7 (Saudi Arabia & Other))	1	L08		BT3x8 @ Binding (Black Chromate) (CA-7 (Canada), CA-7E (Germany) & CA-70)	2
	HA05132A	Rear Panel Ass'y (CA-7E (except Germany))	1		0E03406A	Washer 3mm (Cu Black) (CA-7A, CA-7 (Australia & Other) & CA-7E)	2
	HA05255A	Rear Panel Ass'y (CA-7E (Germany))	1				
	HA05129A	Rear Panel Ass'y (CA-70) Serial No.: B10701001 -	1	L09			
01	0B81685A	Ground Terminal T-5435	1				
02	0H04997C	Rear Panel (CA-7A)	1				
	0H05007C	Rear Panel (CA-7 (Canada))	1				

Notes: 1. Mounting diagram shows a dip side view of the printed circuit board.

2. Diode is 1SS53, 1S1555, or 1SS176 unless otherwise specified.

3. Abbreviation for part name:

TR — Transistor, SiD — Silicon Diode, ZD — Zener Diode

RK — Carbon Resistor, RM — Metal Film Resistor, RF — Fail Safe Type Resistor

CE — Electrolytic Capacitor, CM — Mylar Capacitor, CC — Ceramic Capacitor, CP — PP Capacitor

CMM — Metalized Mylar Capacitor, CSP — Polystyrene Capacitor, C — Mica Capacitor

4. Part name marked with * shows a chip part. (RK*: Chip Carbon Resistor)

5.1. Power Switch P.C.B. Ass'y

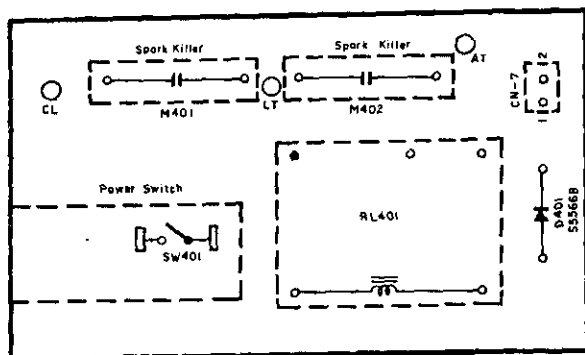


Fig. 5.1.1 For CA-7A, CA-7 (Canada) & CA-70

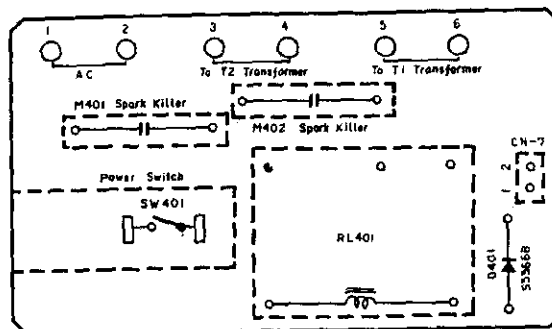


Fig. 5.1.2 For CA-7 (Australia) & CA-7E

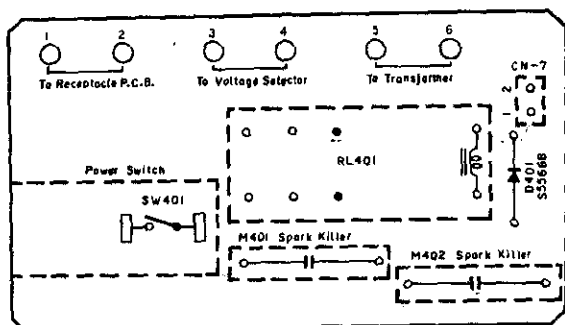


Fig. 5.1.3 For CA-7 (Saudi Arabia & Other)

Schematic Ref. No.	Part No.	Description	Schematic Ref. No.	Part No.	Description	Schematic Ref. No.	Part No.	Description
Q320 Q321	BA06481A	Set B P.C.B. Ass'y (CA-7A, CA-7 (Canada) & CA-70)		BA06325A	Pin Jack L P.C.B. Ass'y (1)	D401 RL401 SW401 CN7 M401,402	BA06568A	Power Switch P.C.B. Ass'y (CA-7 (Australia) & CA-7E (except Germany))
	BA06566A	Set B P.C.B. Ass'y (CA-7 (Australia, Saudi Arabia & Other) & CA-7E)		BA06326A	Pin Jack R P.C.B. Ass'y (1)		BA06799A	Power Switch P.C.B. Ass'y (CA-7E (Germany))
	OB10198A	TR 2SA1358		BA06327A	Record Out Selector P.C.B. Ass'y (1)		OB60427A	Power Switch P.C.B.
	OB10199A	TR 2SC3421		BA06335A	Power Indicator P.C.B. Ass'y (1)		OB06109A	SiD GP08B
	OB82865B	Pin Ground Code (1)	D401 RL401 SW401 CN7 M401,402	BA06328A	Power Switch P.C.B. Ass'y (CA-7A, CA-7 (Canada) & CA-70)		OB90212A	Relay DC24V
	OE03319A	M3x8 @ Binding (Nickel) (3)					OB71006A	Power Switch
	OE03395A	M3x8 @ Binding Cu (2)					OB81223A	2P-T Post (White)
	OJ05221B	Shield Plate (1)					OB90232A	Spark Killer
	OJ05254A	Plastic Rivet 3x5.5 (6)					OB90019A	Insu-Lock SKB80 (1)
	OJ05263A	Volume Plate (1)				D401 RL401 SW401 CN7 M401,402	BA06589A	Power Switch P.C.B. Ass'y (CA-7 (Saudi Arabia & Other))
	OJ05290A	Heat Sink B (1)		OB60402C	Power Switch P.C.B. SiD \$5566B		OB60429A	Power Switch P.C.B.
	OJ05308A	BS Damper 1 (1)		OB90212A	Relay DC24V		OB06109A	SiD GP08B
	OJ05310A	BS Damper 2 (2)		OB71006A	Power Switch		OB90240A	Relay DC24V
	OJ05312A	Tape 2 (4)		OB81223A	2P-T Post (White)		OB71006A	Power Switch
	BA06324A	Input Selector P.C.B. Ass'y (1)		OB90213A	Spark Killer		OB81223A	2P-T Post (White)
							OB90232A	Spark Killer
							OB90019A	Insu-Lock SKB80 (2)

5.2. Power Indicator P.C.B. Ass'y

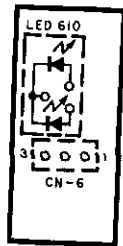


Fig. 5.2

5.3. Volume Indicator P.C.B. Ass'y

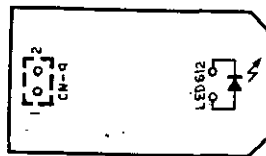


Fig. 5.3

5.4. Remote Control Sensor P.C.B. Ass'y

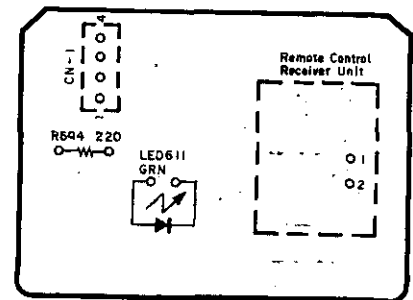


Fig. 5.4

5.5. Motor P.C.B. Ass'y

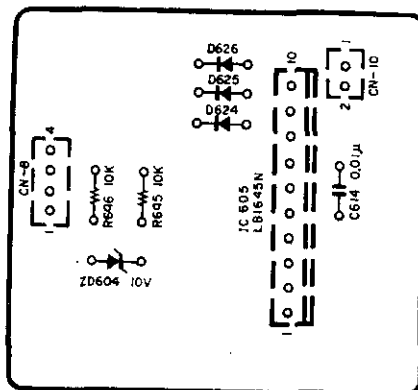


Fig. 5.5

5.6. Record Out Selector P.C.B. Ass'y

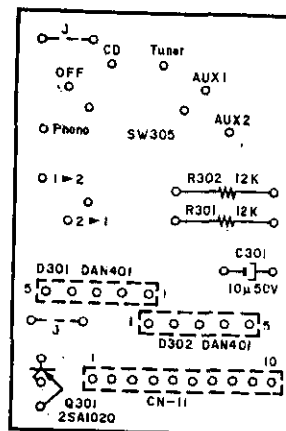


Fig. 5.6.1
Serial No.: B10701061 -

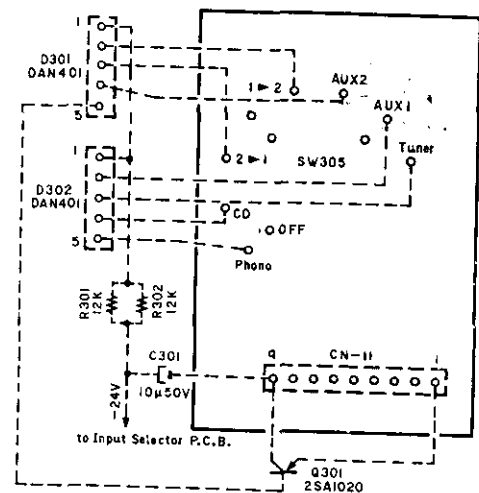


Fig. 5.6.2
Serial No.: B10701001 - 01060

Schematic Ref. No.	Part No.	Description	Schematic Ref. No.	Part No.	Description	Schematic Ref. No.	Part No.	Description
LED610	BA06335A	Power Indicator P.C.B. Ass'y	LED611	BA06341A	Remote Control Sensor P.C.B. Ass'y	Q301 D301,302 R301,302 C301 SW305 CN11	BA06327A	Record Out Selector P.C.B. Ass'y
	OB60404A	Power Indicator P.C.B.		OB60407B	Remote Control Sensor P.C.B.		OB60401C	Record Out Selector P.C.B.
	OB16021A	LED* SLM28DMWP-97 (GRN,ORN) 3P-H Connector		OB12363A	LED SLB-26MG (GRN) RK 220 1/6W J 4P-S Post		OB10015A	TR 2SA1020 (O,Y)
LED612	OB82790A	3P-H Connector	IC605 ZD604 D624,625 626 R695,696 C614 CN8 CN10	OB09661A	Remote Control Receiver Unit (1)	Q301 D301,302 R301,302 C301 SW305 CN11	OB12497A	D-Array DAN401
	BA06343A	Volume Indicator P.C.B. Ass'y		OB81038A	LED Holder (1)		OB09263A	RK 12K 1/4W J
	OB60409B	Volume Indicator P.C.B.		OB19005A	LED Holder (1)		OB40461A	CE 10μ 50V
CN9	OB12402A	LED SLH-34MC (GRN) 2P-H Connector	BA06342A	Motor P.C.B. Ass'y	Q301 D301,302 R301,302 C301 SW305 CN11	Q301 D301,302 R301,302 C301 SW305 CN11	OB70090A	Rotary Switch
	OB82788B	2P-H Connector		OB60408B	Motor P.C.B.		OB83049A	10P Connector
				OB11250A	IC LB1645N			
				OB12309A	ZD 10V MTZ10C			
				OB06398A	SID 1SS176			
				OB09701A	RK 10K 1/6W J			
				OB05681A	CM 0.01μ 50V J			
				OB82787A	4P-H Connector			
				OB81036A	2P-S Post			

5.7. Pin Jack L P.C.B. Ass'y

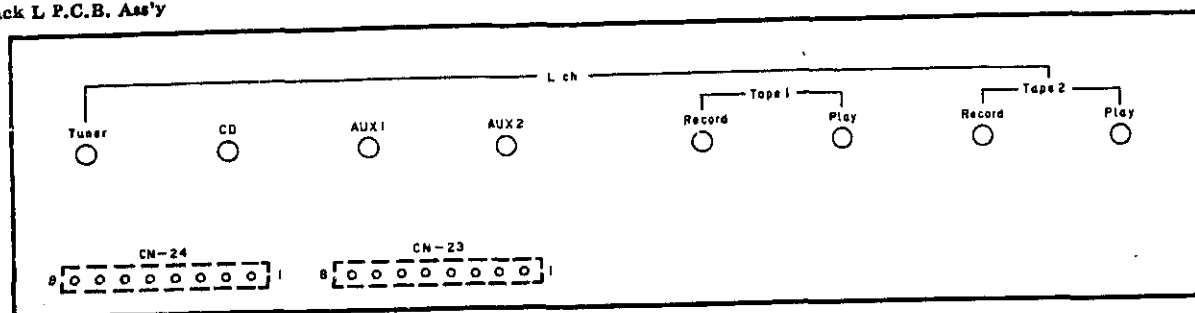


Fig. 5.7

5.8. Pin Jack R P.C.B. Ass'y

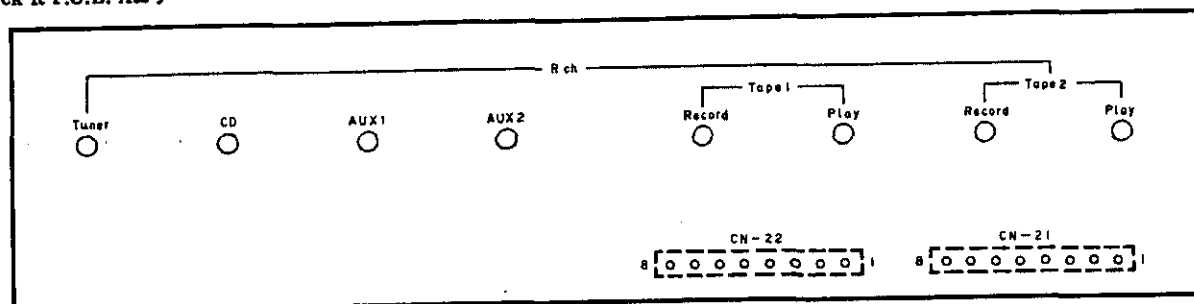


Fig. 5.8

Schematic Ref. No.	Part No.	Description	Schematic Ref. No.	Part No.	Description	Schematic Ref. No.	Part No.	Description
CN21,22	BA06325A	Pin Jack L P.C.B. Ass'y		BA06332A	Power Supply P.C.B. Ass'y (CA-7A & CA-7 (Canada, Saudi Arabia & Other))	R417,418 421,422 C401,402	OB25484A	RM 26.1 1/4W F
	OB60399B	Pin Jack L P.C.B.		BA06333A	Power Supply P.C.B. Ass'y (CA-7 (Australia) & CA-7E (except Germany))		OB40425A	CE 8200μ 16V (CA-7A, CA-7 & CA-7E (except Germany))
	OB81019A	Dip Mate 8P		BA06777A	Power Supply P.C.B. Ass'y (CA-7E (Germany))		OB40455A	CE 8200μ 16V (CA-7E (Germany) & CA-70)
CN23,24	BA06326A	Pin Jack R P.C.B. Ass'y		BA06331A	Power Supply P.C.B. Ass'y (CA-70)	C403,404	OB40426A	CE 3900μ 50V (CA-7A, CA-7 & CA-7E (except Germany))
	OB60400B	Pin Jack R P.C.B.		OB60403C	Power Supply P.C.B. TR 2SA970 (BL)		OB40456A	CE 3900μ 50V (CA-7E (Germany) & CA-70)
	OB81019A	Dip Mate 8P		OB10050A			OB41786A	CSP 560P 160V
LED601,609	BA06340A	Function Switch P.C.B. Ass'y	Q401,404 405,411 414,415 Q402,403 406,412 413,416 Q407,408 417,418 Q408,410 418,420 ZD401,402 ZD403,404	OB08142A	TR 2SC2240 (BL)	C405-408	OB90215A	Fuse Holder (CA-7A, CA-7 (Canada, Saudi Arabia & Other) & CA-70) (4)
	OB60406B	Function Switch P.C.B.		OB10198A	TR 2SA1358		OB90216A	Fuse Holder (CA-7 (Australia) & CA-7E) (4)
	OB12274A	LED SLR-34MG3 (GRN)		OB10199A	TR 2SC3421		OB81649A	Terminal P-100 (4)
LED602-608	OB12392A	LED SLV-31MC (GRN) (7)		OB12166A	ZD 9.1V RD9.1JS-T1B3		OB82866B	Audio Ground Code (1)
SW601-609	OB70062A	Tact Switch		OB12206A	ZD 36V RD36JS-T1B1		OB82893A	Relay DC Code (1)
CN2	OB81043A	9P-S Post		OB12102A	SID 10DF-2 (8)		OE00741A	M3x12 Ø Binding (Nickel) (4)
CN3	OB81044A	10P-S Post		SID 1SS53 (8)			OE00972A	Nut Hex. M3 (4)
CN4	OB81039A	5P-S Post		OB09305A	RM 100K 1/4W F		OJ05289A	Heat Sink A (1)
CN8	OB81038A	4P-S Post		OB22630A	RM 604 1/4W F		OB90239A	Transistor Seat (8)
CN9	OB81036A	2P-S Post		OB09491A	RM 1K 1/4W F			
	OJ05216A	LED House	(2)	OB22718A	RM 6.65 1/4W F			
	OJ05217A	Reflector	(1)	OB22567A	RM 100 1/4W F			
				OB09502A	RM 1M 1/4W F			

5.9. Function Switch P.C.B. Ass'y

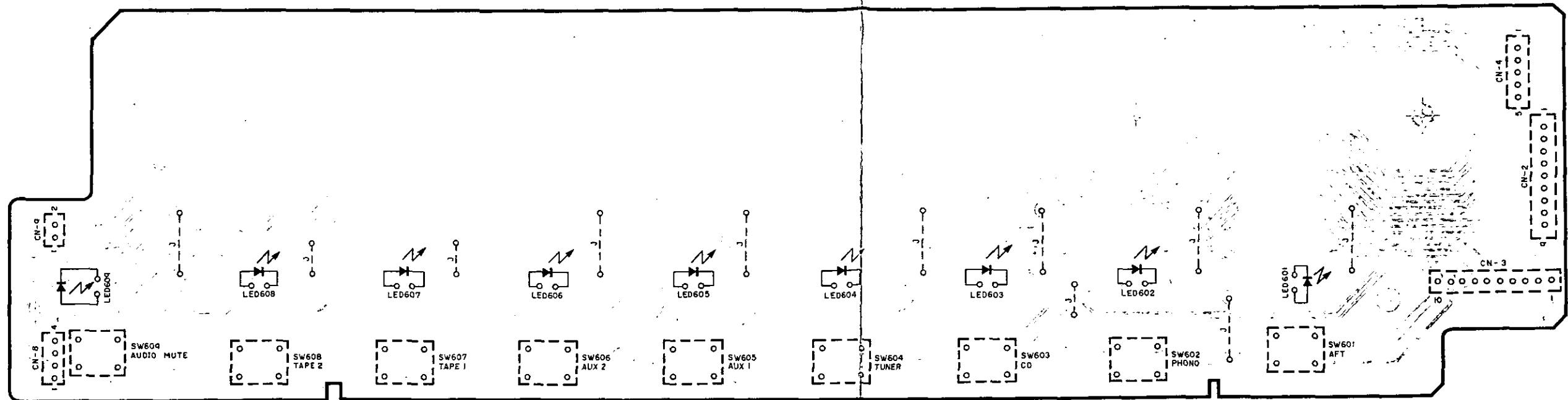


Fig. 5.9

5.10. Power Supply P.C.B. Ass'y

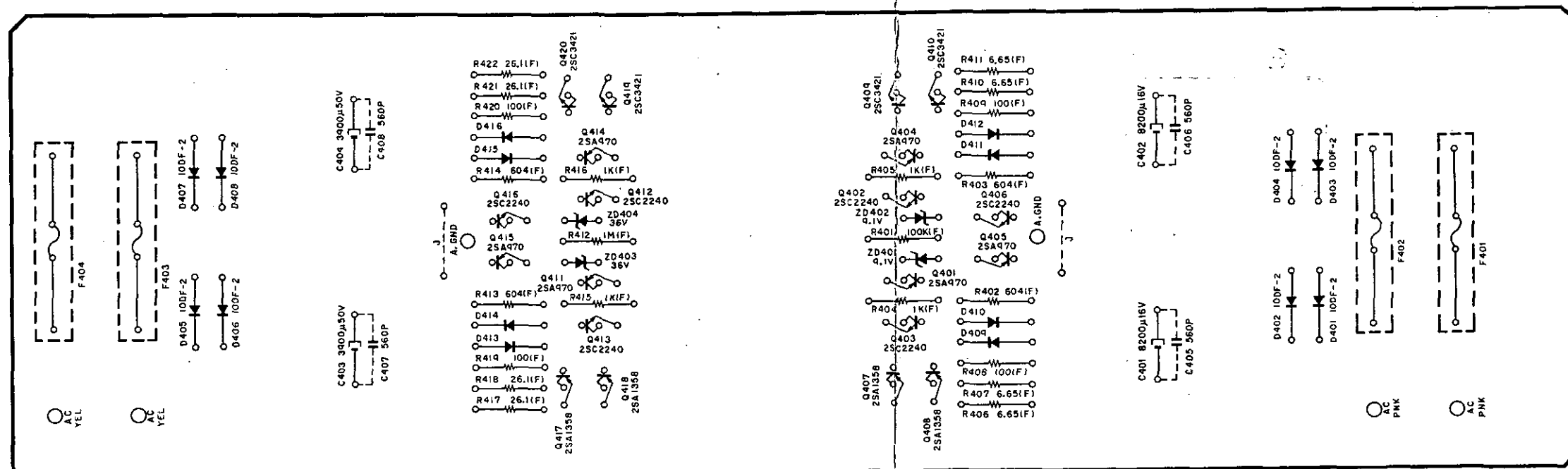


Fig. 5.10

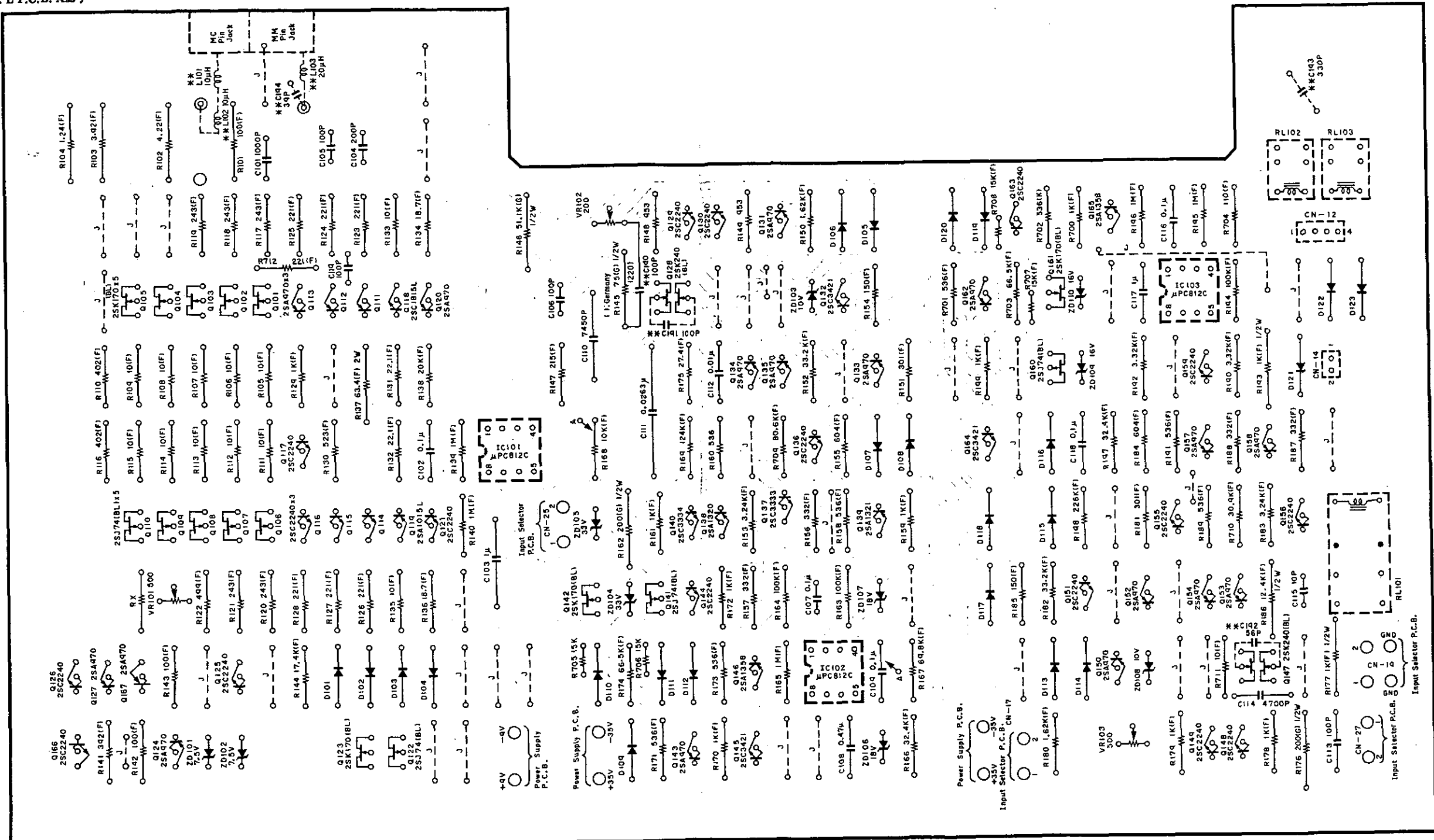


Fig. 5.11

Note: Parts marked with ** are for CA-7 (Germany)).

Schematic Ref. No.	Part No.	Description	Schematic Ref. No.	Part No.	Description	Schematic Ref. No.	Part No.	Description
	BA06322A	Amp. L P.C.B. Ass'y	R158,160	OB22713A	RM 536 1/4W F		OB82882A	Mute Relay L Code (1)
	-- MC Amp. --		R171,173			L101,102	OB82887A	AFT DC L Code (1)
IC101	OB11254A	IC μ PC812	R159,161	OB09491A	RM 1K 1/4W F		OB51246A	Coil 10 μ H (CA-7E (Germany))
Q101-105	OB10112A	FET 2SK170 (BL) (6)	R170,172			L103	OB51245A	Coil 20 μ H (CA-7E (Germany))
Q106-110	OB10169A	FET 2SJ74 (BL) (6)	R162	OB20410A	RK 200 1/2W G	C190,191	OB41764A	CSP 100P 160V J (CA-7E (Germany))
Q111-113	OB10050A	TR 2SA970 (BL) (7)	R163,164	OB09305A	RM 100K 1/4W F	C192	OB41796A	CSP 56P 160V J (CA-7E (Germany))
Q114-117	OB06142A	TR 2SC2240 (BL) (8)	R165	OB09502A	RM 1M 1/4W F	C193	OB41795A	CSP 330P 160V J (CA-7E (Germany))
Q118	OB10201A	TR 2SC1815L	R166	OB22731A	RM 32.4K 1/4W F	C194	OB41747A	C 39P 100V J (CA-7E (Germany))
Q119	OB10200A	TR 2SA1015L	R167	OB22741A	RM 69.8K 1/4W F			
ZD101,102	OB12158A	ZD 7.5V	R168	OB22729A	RM 10.0K 1/4W F			
		RD7.5JS-T1B1	R169	OB22745A	RM 124K 1/4W F			
D101-104	OB06181A	SiD 1SS53 (4)	R174	OB09510A	RM 66.5K 1/4W F			
VR101	OB32104A	Semi VR 500	R175	OB22738A	RM 27.4 1/4W F			
R102	OB22723A	RM 4.22 1/4W F	R705,706	OB22361A	RM 15K 1/4W F			
R103	OB22722A	RM 3.92 1/4W F	R709	OB09459A	RM 80.6K 1/4W F			
R104	OB22721A	RM 1.24 1/4W F	C104	OB41765A	CSP 200P 160V J			
R105-109	OB22666A	RM 10 1/4W F (12)	C105,106	OB41764A	CSP 100P 160V J			
R110,116	OB22661A	RM 402 1/4W F	C108	OB41776A	CM 0.47 μ 125V K			
R117-121	OB22679A	RM 243 1/4W F (5)	C109	OB41764A	CM 0.1 μ 63V J			
R122	OB22645A	RM 499 1/4W F	C110	OB41722A	CSP 7450P 100V F			
R123-128	OB22642A	RM 221 1/4W F (7)	C111	OB41723A	CSP 0.0263 μ 100V F			
R129	OB09491A	RM 1K 1/4W F	C112	OB41767A	CSP 0.01 μ 160V J			
R130	OB22739A	RM 523 1/4W F		OB70087A	Toggle Switch (1)			
R131,132	OB22709A	RM 22.1 1/4W F	IC103	OB11254A	IC μ PC812			
R134,136	OB22743A	RM 18.7 1/4W F	Q147	OB10188A	FET 2SK240 (BL)			
R137	OB20409A	RK 63.4 2W F	Q148,149	OB06142A	TR 2SC2240 (BL)			
R138	OB09439A	RM 20K 1/4W F	151,155					
R139,140	OB09502A	RM 1M 1/4W F	156,159					
R141	OB22696A	RM 392 1/4W F	163					
R142,143	OB22567A	RM 100 1/4W F	Q150,152	OB10050A	TR 2SA970 (BL)			
R144	OB22711A	RM 17.4K 1/4W F	153,154					
C101	OB41725A	CSP 1000P 100V J	157,158					
C102	OB41476A	CM 0.1 μ 63V J	162					
C103	OB41543A	CM 1 μ 125V	Q160	OB10169A	FET 2SJ74 (BL)			
C119	OB41764A	CSP 100P 160V J	Q161	OB10112A	FET 2SK170 (BL)			
	OB70087A	Toggle Switch (1)	Q164	OB10199A	TR 2SC3421			
	OB81653A	Socket Pin (2)	Q165	OB10198A	TR 2SA1358			
	-- RIAA Eq. Amp. --		ZD108	OB12168A	ZD 10V			
IC102	OB11254A	IC μ PC812	ZD109,110	OB12184A	ZD 16V			
Q128	OB10188A	FET 2SK240 (BL)						
Q129,130	OB06142A	TR 2SC2240 (BL)	D113-123	OB06181A	SiD 1SS53 (11)			
Q136,144			VR103	OB32104A	Semi VR 500			
Q131,133	OB10050A	TR 2SA970 (BL)	R176	OB20410A	RK 200 1/2W G			
Q134,135			R177,193	OB20411A	RK 1K 1/2W F			
Q137	OB10199A	TR 2SC3421	R178,179	OB09491A	RM 1K 1/4W F			
Q138	OB10103A	TR 2SC3333	199,700					
Q139	OB10102A	TR 2SA1320	R180	OB22728A	RM 1.62K 1/4W F			
Q140	OB10142A	TR 2SA1321	R181	OB22695A	RM 301 1/4W F			
Q141	OB10143A	TR 2SC3334	R182	OB09446A	RM 33.2K 1/4W F			
Q142	OB10169A	FET 2SJ74 (BL)	R183	OB09540A	RM 3.24K 1/4W F			
Q146	OB10112A	FET 2SK170 (BL)	R184	OB22630A	RM 604 1/4W F			
ZD103	OB10198A	TR 2SA1358	R185	OB22633A	RM 150 1/4W F			
	OB12168A	ZD 10V	R186	OB20395A	RK 12.4K 1/2W F			
		RD10JS-T1B2	R187,188	OB09760A	RM 332 1/4W F			
ZD104,105	OB12205A	ZD 33V	R189,191	OB22713A	RM 536 1/4W F			
		RD33JS-T1B3	701,702					
ZD106,107	OB12185A	ZD 18V	R190,192	OB09829A	RM 3.32K 1/4W F			
		RD18JS-T1B1	R194	OB09305A	RM 100K 1/4W F			
D105-112	OB06181A	SiD 1SS53 (8)	R195,196	OB09502A	RM 1M 1/4W F			
VR102	OB32117A	Semi VR 200	R197	OB22731A	RM 32.4K 1/4W F			
R145	OB20208A	RK 75 1/2W G (Except CA-7E (Germany))	R198	OB22742A	RM 226K 1/4W F			
			R703	OB09510A	RM 66.5K 1/4W F			
	OB20401A	RK 220 1/2W (CA-7E (Germany))	R704	OB22726A	RM 110 1/4W F			
R146	OB20344A	RK 51.1K 1/2W G	R707,708	OB22361A	RM 15K 1/6W F			
R147	OB22744A	RM 215 1/4W F	R710	OB22660A	RM 30.9K 1/4W F			
R148,149	OB22569A	RM 953 1/4W F	R711	OB22666A	RM 10.0 1/4W F			
R150	OB22728A	RM 1.62K 1/4W F	C113	OB41764A	CSP 100P 160V J			
R151	OB22695A	RM 301 1/4W F	C114	OB41766A	CSP 4700P 160V J			
R152	OB09446A	RM 33.2K 1/4W F	C115	OB41763A	CSP 10P 160V J			
R153	OB09540A	RM 3.24K 1/4W F	C116,118	OB41476A	CM 0.1 μ 63V J			
R154	OB22633A	RM 150 1/4W F	C117	OB41543A	CM 1 μ 125V K			
R155	OB22630A	RM 604 1/4W F	RL101	OB90086A	Relay MR62-24S			
R156,157	OB09760A	RM 332 1/4W F	RL102,103	OB90211A	Relay FBR 22ND24			
				-- Miscellaneous --				
				OB60396C	Amp L P.C.B.			
				OB81630A	Pin Jack T5882 (2)			
				OB82863A	AFT Relay L Code (1)			
				OB82869B	DC L.H.N Code (1)			
				OB82870B	DC L.H.P Code (1)			
				OB82873B	DC L.L.N Code (1)			
				OB82874B	DC L.L.P Code (1)			
				OB82875B	Line L Code (1)			
				OB82876B	EQ L Out Code (1)			
				OB82880B	AFT L Code (1)			

Schematic Ref. No.	Part No.	Description	Schematic Ref. No.	Part No.	Description	Schematic Ref. No.	Part No.	Description
	BA06323A	Amp. R P.C.B. Ass'y	R258,260	OB22713A	RM 536 1/4W F		OB82872B	DC R.L.P Code (1)
	— MC Amp. —		271,273				OB82877B	Line R Code (1)
IC201	OB11254A	IC μ PC812	R259,261	OB09491A	RM 1K 1/4W F		OB82878B	EQ R Out Code (1)
Q201-205	OB10112A	FET 2SK170 (BL)	270,272				OB82879B	AFT R Code (1)
223		(6)	R262	OB20410A	RK 200 1/2W G	L 201,202	OB82883A	Mute Relay R Code (1)
Q206-210	OB10169A	FET 2SJ74 (BL)	R263,264	OB09305A	RM 100K 1/4W F		OB82888A	AFT DC R Code (1)
222		(6)	R265	OB09502A	RM 1M 1/4W F		OB51246A	Coll 10 μ H (CA-7E (Germany))
Q211-213	OB10050A	TR 2SA970 (BL)	R266	OB22731A	RM 32.4K 1/4W F	L203	OB51245A	Coll 20 μ H (CA-7E (Germany))
220,224		(7)	R267	OB22741A	RM 69.8K 1/4W F	C290,291	OB41764A	CSP 100P 160V J (CA-7E (Germany))
227,267			R268	OB22729A	RM 10.0K 1/4W F		OB41796A	CSP 56P 160V J (CA-7E (Germany))
Q214-217	OB06142A	TR 2SC2240 (BL)	R269	OB22745A	RM 124K 1/4W F	C292	OB41795A	CSP 330P 160V J (CA-7E (Germany))
221,225		(8)	R274	OB09510A	RM 66.5K 1/4W F		OB41747A	C 39P 100V J (CA-7E (Germany))
226,266			R275	OB22738A	RM 27.4 1/4W F			
Q218	OB10201A	TR 2SC1815L	R805,806	OB22361A	RM 15K 1/4W F			
Q219	OB10200A	TR 2SA1015L	R809	OB09459A	RM 80.6K 1/4W F			
ZD201,202	OB12158A	ZD 7.5V	C204	OB41765A	CSP 200P 160V J	C293		
		RD7.5JS-T1B1	C205,206	OB41764A	CSP 100P 160V J	C294		
		(4)	C208	OB41776A	CM 0.47 μ 125V K			
D201-204	OB06181A	SID 1SS53	C209	OB41767A	CM 0.1 μ 63V J			
VR201	OB32104A	Semi VR 500	C210	OB41722A	CSP 7450P 100V F			
R202	OB22723A	RM 4.22 1/4W F	C211	OB41723A	CSP 0.0263 μ 100V F			
R203	OB22722A	RM 3.92 1/4W F	C212	OB41767A	CSP 0.01 μ 160V J			
R204	OB22721A	RM 1.24 1/4W F		OB70087A	Toggle Switch (1)			
R205-209	OB22666A	RM 10 1/4W F		OB70088A	Toggle Switch (1)			
211-215		(12)		— Line Amp. —				
233,235								
R210,216	OB22661A	RM 402 1/4W F	IC203	OB11254A	IC μ PC812			
R217-221	OB22579A	RM 243 1/4W F	Q247	OB10188A	FET 2SK240 (BL)			
		(5)	Q248,249	OB06142A	TR 2SC2240 (BL)			
R222	OB22645A	RM 499 1/4W F	251,255					
R223-228	OB22642A	RM 221 1/4W F	256,259					
712		(7)	263					
R229	OB09491A	RM 1K 1/4W F	Q250,252	OB10050A	TR 2SA970 (BL)			
R230	OB22739A	RM 523 1/4W F	253,254					
R231,232	OB22709A	RM 22.1 1/4W F	257,258					
R234,236	OB22743A	RM 18.7 1/4W F	262					
R237	OB20409A	RK 63.4 2W F	Q260	OB10169A	FET 2SJ74 (BL)			
R238	OB09439A	RM 20K 1/4W F	Q261	OB10112A	FET 2SK170 (BL)			
R239,240	OB09502A	RM 1M 1/4W F	Q264	OB10199A	TR 2SC3421			
R241	OB22696A	RM 392 1/4W F	Q265	OB10198A	TR 2SA1358			
R242,243	OB22567A	RM 100 1/4W F	ZD208	OB12168A	ZD 10V			
R244	OB22711A	RM 17.4K 1/4W F			RD10JS-T1B2			
C201	OB41725A	CSP 1000P 100V J	ZD209,210	OB12184A	ZD 16V			
C202	OB41476A	CM 0.1 μ 63V J			RD16JS-T1B3			
C203	OB41543A	CM 1 μ 125V	D213-223	OB06181A	SID 1SS53 (11)			
C219	OB41764A	CSP 100P 160V J	VR203	OB32104A	Semi VR 500			
	OB70087A	Toggle Switch (1)	R276	OB20410A	RK 200 1/2W G			
	OB81653A	Socket Pin (2)	R277,293	OB20411A	RK 1K 1/2W F			
			R278,279	OB09491A	RM 1K 1/4W F			
	— RIAA Eq. Amp. —		299,800					
IC202	OB11254A	IC μ PC812	R280	OB22728A	RM 1.62K 1/4W F			
Q228	OB10188A	FET 2SK240 (BL)	R281	OB22695A	RM 301 1/4W F			
Q229,230	OB06142A	TR 2SC2240 (BL)	R282	OB09446A	RM 33.2K 1/4W F			
236,244			R283	OB09540A	RM 3.24K 1/4W F			
Q231,233	OB10050A	TR 2SA970 (BL)	R284	OB22630A	RM 604 1/4W F			
234,235			R285	OB22633A	RM 150 1/4W F			
243			R286	OB20395A	RK 12.4K 1/2W F			
Q232,245	OB10199A	TR 2SC3421	R287,288	OB09760A	RM 332 1/4W F			
Q237	OB10103A	TR 2SC3333	R289,291	OB22713A	RM 536 1/4W F			
Q238	OB10102A	TR 2SA1320	801,802					
Q239	OB10142A	TR 2SA1321	R290,292	OB09829A	RM 3.32K 1/4W F			
Q240	OB10143A	TR 2SC3334	R294	OB09305A	RM 100K 1/4W F			
Q241	OB10169A	FET 2SJ74 (BL)	R295,296	OB09502A	RM 1M 1/4W F			
Q242	OB10112A	FET 2SK170 (BL)	R297	OB22731A	RM 32.4K 1/4W F			
Q246	OB10198A	TR 2SA1358	R298	OB22742A	RM 226K 1/4W F			
ZD203	OB12168A	ZD 10V	R803	OB09510A	RM 66.5K 1/4W F			
		RD10JS-T1B2	R804	OB22726A	RM 110 1/4W F			
ZD204,206	OB12205A	ZD 33V	R807,808	OB22361A	RM 15K 1/6W F			
		RD33JS-T1B3	R810	OB22660A	RM 30.9K 1/4W F			
ZD206,207	OB12185A	ZD 18V	R811	OB22666A	RM 10.0 1/4W F			
		RD18JS-T1B1	C213	OB41764A	CSP 100P 160V J			
D205-212	OB06181A	SID 1SS53 (8)	C214	OB41766A	CSP 4700P 160V J			
VR202	OB32117A	Semi VR 200	C215	OB41763A	CSP 10P 160V J			
R245	OB20208A	RK 75 1/2W G (Except CA-7E (Germany))	C216,218	OB41476A	CM 0.1 μ 63V J			
			C217	OB41543A	CM 1 μ 125V K			
			RL201	OB90086A	Relay MR62-24S			
			RL202,203	OB90211A	Relay FBR 22ND24			
	OB20401A	RK 220 1/2W (CA-7E (Germany))		— Miscellaneous —				
R246	OB20344A	RK 51.1K 1/2W G						
R247	OB22744A	RM 215 1/4W F		OB60397C	Amp. R P.C.B.			
R248,249	OB22569A	RM 953 1/4W F		OB81630A	Pin Jack T5882 (2)			
R250	OB22728A	RM 1.62K 1/4W F		OB82864A	AFT Relay R Code (1)			
R251	OB22695A	RM 301 1/4W F						
R252	OB09446A	RM 33.2K 1/4W F		OB82867B	DC R.H.N Code (1)			
R253	OB09540A	RM 3.24K 1/4W F		OB82868B	DC R.H.P Code (1)			
R254	OB22633A	RM 150 1/4W F		OB82871B	DC R.L.N Code (1)			
R255	OB22630A	RM 604 1/4W F						
R256,257	OB09760A	RM 332 1/4W F						

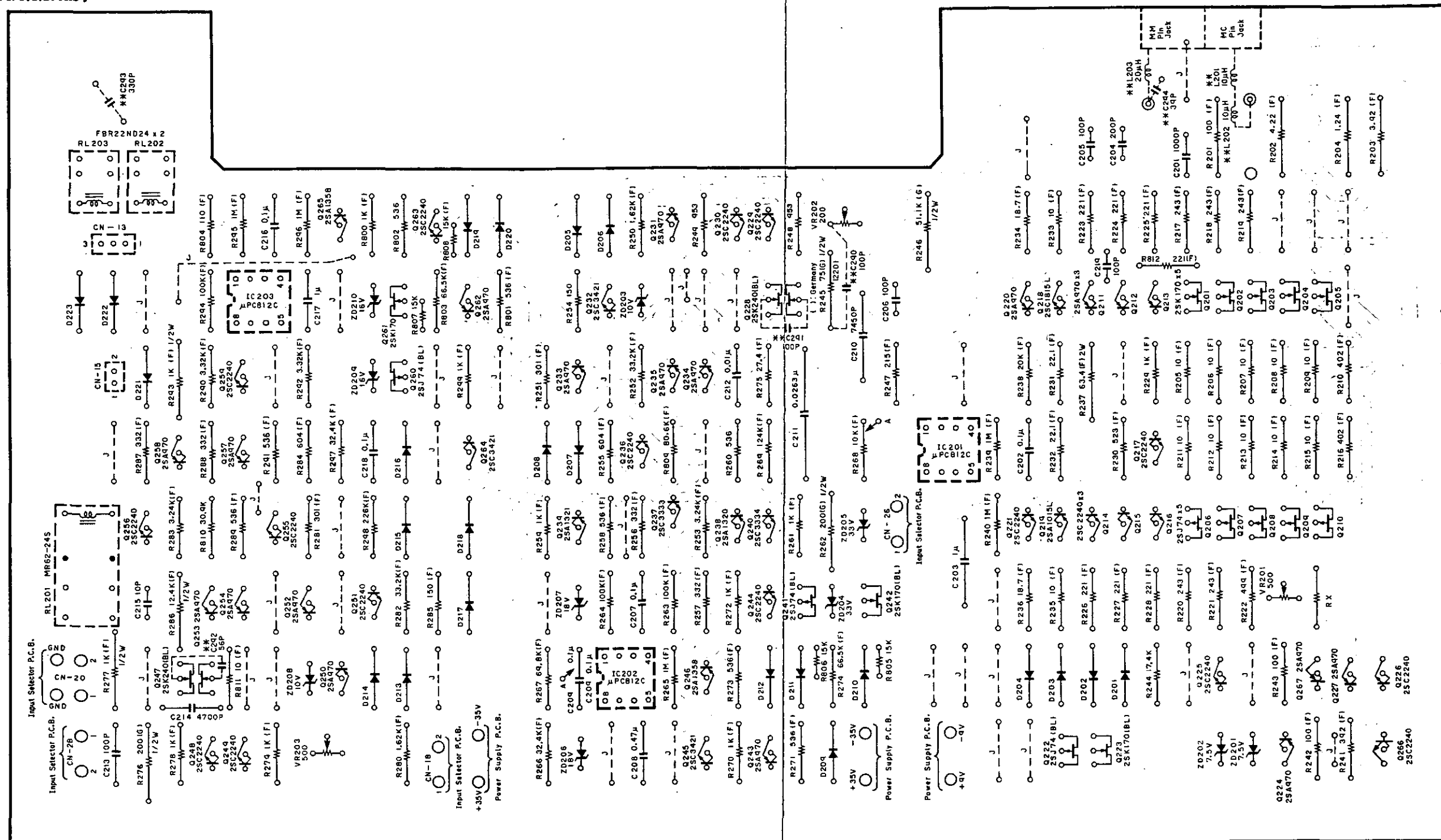
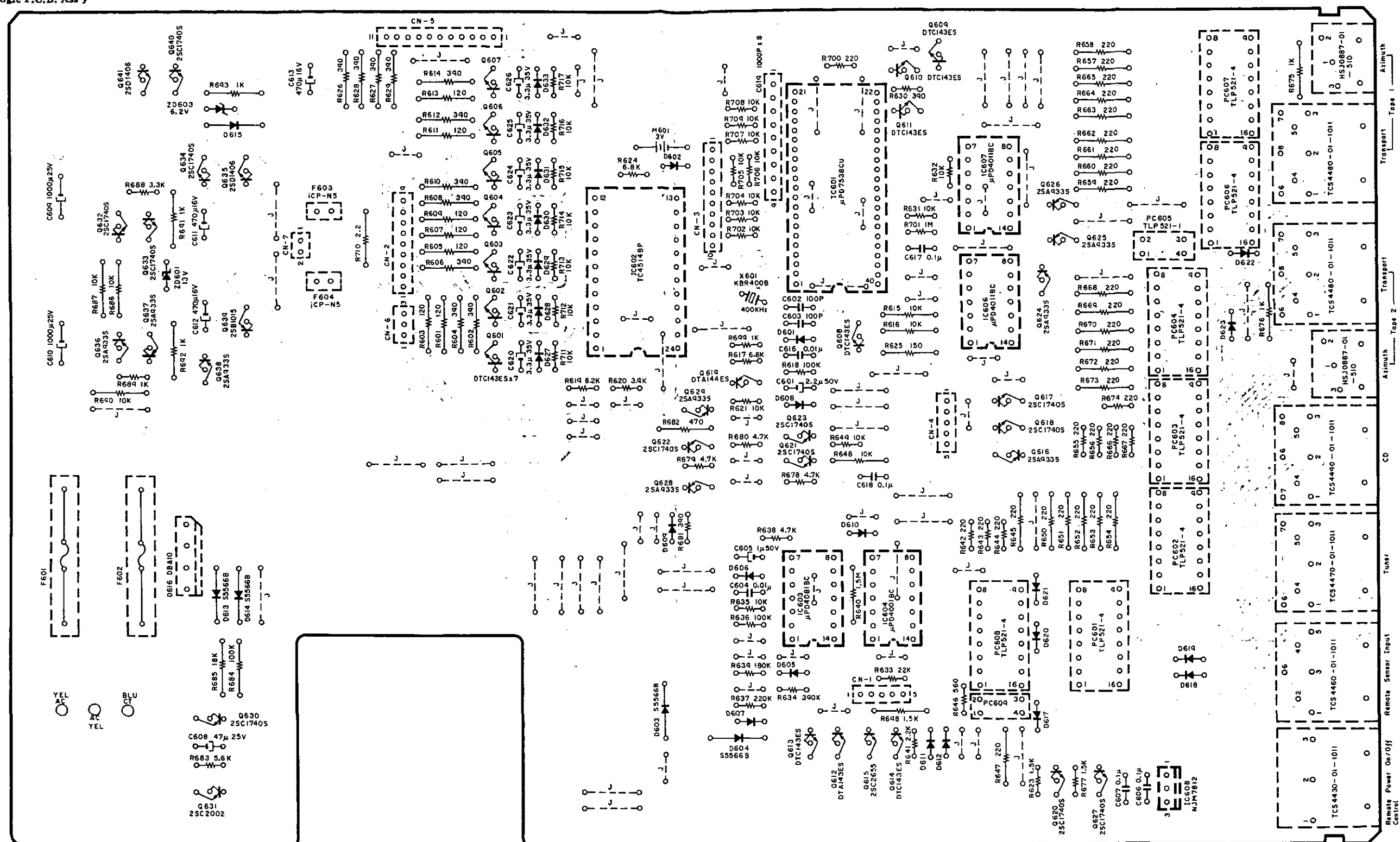


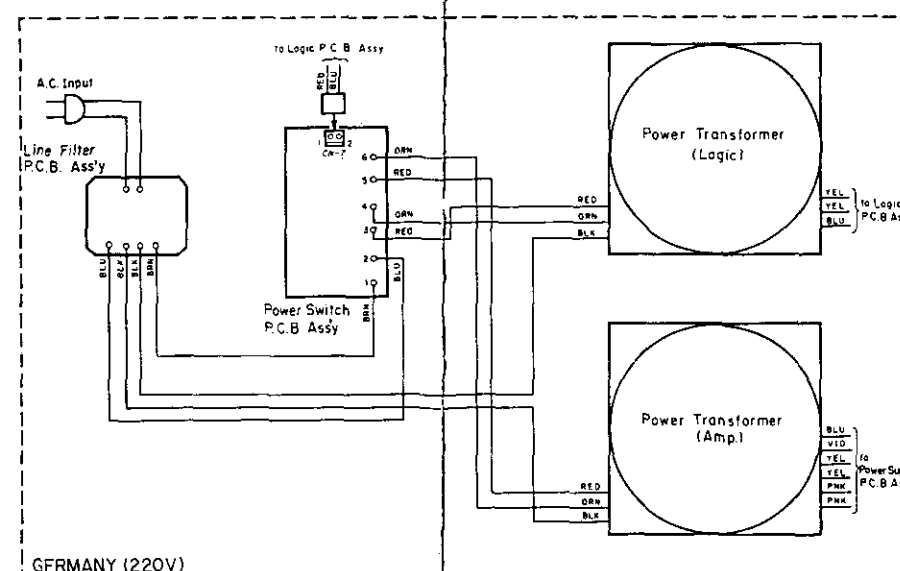
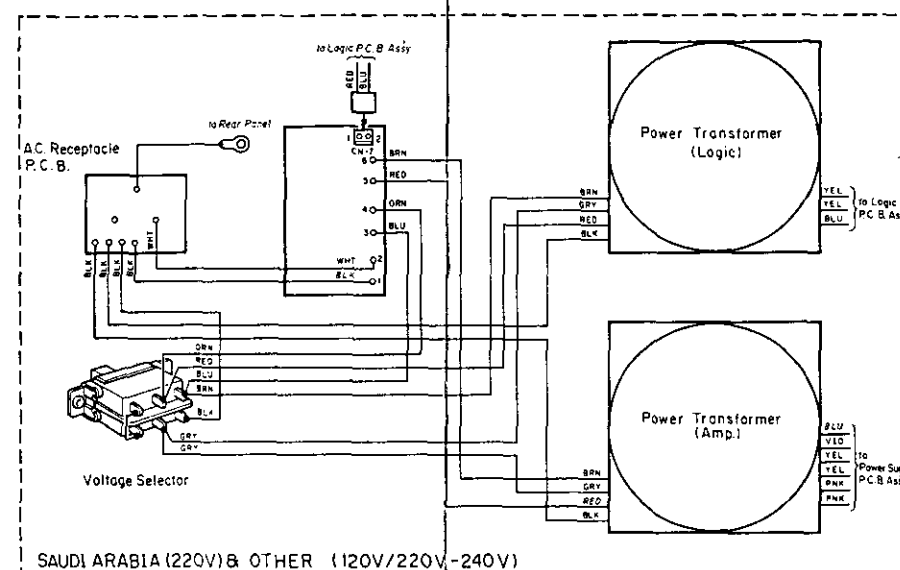
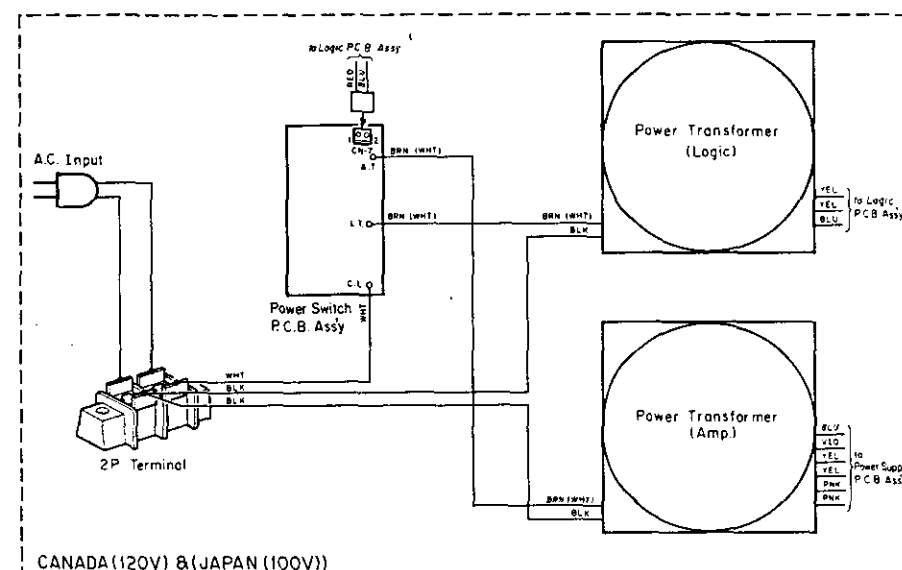
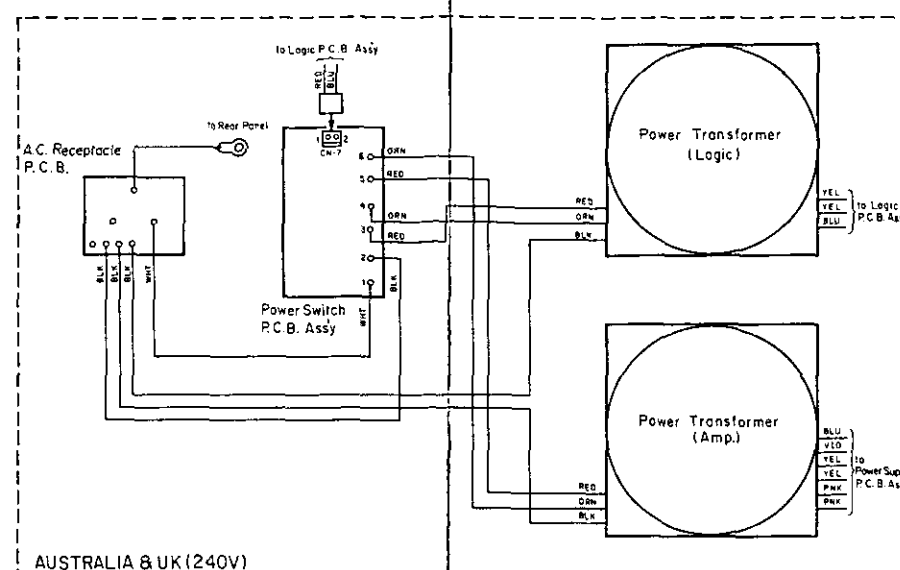
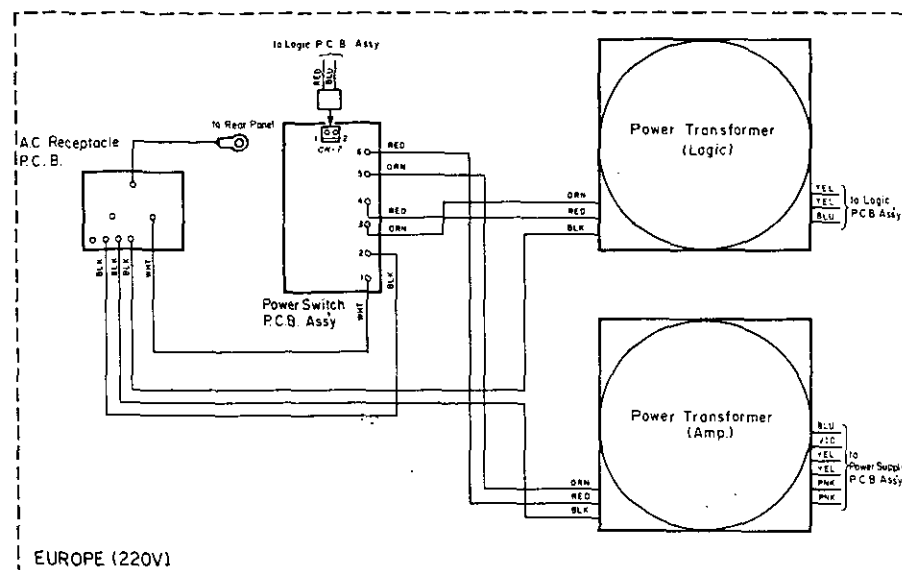
Fig. 5.12

Note: Parts marked with ** are for CA-7 (Germany)).



Schematic Ref. No.	Part No.	Description	Schematic Ref. No.	Part No.	Description
	BA06337A	Logic P.C.B. Ass'y (CA-7A & CA-7 (Canada, Saudi Arabia & Other))	R675,676 691,692 693	OB01857A	RK 1K 1/4W J
	BA06338A	Logic P.C.B. Ass'y (CA-7 (Australia) & CA-7E)	R682 R683 R684 R685 R688 R689,699 R698 R701 R710	OB05576A OB09695A OB01889A OB05560A OB09689A OB09677A OB05698A OB09749A OB09925A	RK 470 1/4W J RK 5.6K 1/6W J RK 100K 1/4W J RK 18K 1/4W J RK 3.3K 1/6W J RK 1K 1/6W J RK 1.5K 1/4W J RK 1M 1/6W J RK 2.2 1/4W J
	BA06336A	Logic P.C.B. Ass'y (CA-70)	C601 C602,603 C604,616 C605 C606,607 617,618	OB09372A OB09282A OB05681A OB01405A OB41298A	CE 2.2μ 50V CC 100P 50V K CM 0.01μ 50V J CE 1μ 50V CMM 0.1μ 50V J
IC601	OB60405C	Logic P.C.B.	C608 C609,610 C611,612 613 C619 C620-626 PC601,602 603,604 606,607 608 PC605,609	OB01409A OB40424A OB40423A OB42007A OB40169A OB10186A OB10183A	CE 47μ 25V CE 1000μ 25V CE 470μ 16V C-Network 1000Px8 CE 3.3μ 35V (7) Photocoupler TLP521-4 GB Photocoupler TLP521-1 GB
IC602	OB11249A	IC μPD7538CU	X601 F603,604 CN1 CN2 CN3 CN4 CN5 CN6 CN7	OB02390A OB11248A OB82780A OB82781A OB82782A OB82783A OB82784B OB82785B OB82786A OB90089A	Crystal 400kHz IC Protector ICP-N5 4P/5P-H Connector 9P-H Connector 10P-H Connector 5P-H Connector 11P-H Connector 3P-H Connector 2P-H Connector Fuse Holder (CA-7A, CA-7 (Canada, Saudi Arabia & Other) & CA-70) (2) Fuse Holder (CA-7 (Australia) & CA-7E) (2)
IC603	OB06219A	IC TC4514BP		OB81376A OB81610A OB81611A OB81612A OB81613A	Terminal P-104 (4) 3P DIN Socket (1) 6P DIN Socket (1) 7P DIN Socket (1) 8P DIN Socket A (2)
IC604	OB06143A	IC μPD4081BC		OB81614A	8P DIN Socket B (1)
IC606,607	OB06178A	IC μPD4001BC		OB81615A	Stereo Mini Jack (2)
IC608	OB06380A	IC NJM7812		OJ05250A	DIN Bracket (1)
Q601-611 613,614	OB10070A	TR DTC143ES (13)			
Q612	OB10060A	TR DTA143ES			
Q615	OB06429A	TR 2SC2655 (Y)			
Q616,624 625,626 628,629 636,637 638	OB10026A	TR 2SA933S (Q,R,S)			
Q617,618 620,621 622,623 627,630 632,633 634,640	OB10030A	TR 2SC1740S (Q,R,S,E)			
Q619	OB10053A	TR DTA144ES			
Q631	OB06322A	TR 2SC2002 (K,L)			
Q635,641	OB06452A	TR 2SD1406 (Y)			
Q639	OB06451A	TR 2SB1015 (Y)			
ZD601,602	OB12318A	ZD 13V MTZ13C			
ZD603	OB12295A	ZD 6.2V MTZ6.2C			
D601,602 605-612 617-623 627-633	OB06398A	SID 1SS176 (24)			
D603,604 613,614	OB12362A	SID S5566B			
D615	OB06181A	SID 1SS53			
D616	OB06282A	Diode Bridge DBA10			
R601,603 605,607 609,611 613	OB09797A	RK 120 1/4W J			
R602,604 606,608 610,612 614,626 627,628 629	OB05691A	RK 390 1/4W J			
R615,616 648,686 687,690	OB01888A	RK 10K 1/4W J			
R617,624 R618,636 R619 R620 R621,631 635,649 702-709 711-717	OB09697A OB09725A OB09699A OB09691A OB09701A	RK 6.8K 1/6W J RK 100K 1/6W J RK 8.2K 1/6W J RK 3.9K 1/6W J RK 10K 1/6W J (19)			
R623,677 R625 R630,681 R633 R634 R637 R638,678 679,680	OB09681A OB05795A OB09667A OB09709A OB09739A OB09733A OB09693A	RK 1.5K 1/6W J RK 150 1/4W J RK 390 1/6W J RK 22K 1/6W J RK 390K 1/6W J RK 220K 1/6W J RK 4.7K 1/6W J			
R639 R640 R641 R642,643 644,655 656,666 667,674 700	OB09731A OB09380A OB09685A OB09661A	RK 180K 1/6W J RK 1.5M 1/4W J RK 2.2K 1/6W J RK 220 1/6W J			
R645,647 650-654 657-665 668-673 R646	OB01933A OB09671A	RK 220 1/4W J (22) RK 560 1/6W J			

Schematic Ref. No.	Part No.	Description	Schematic Ref. No.	Part No.	Description
	BA06324A	Input Selector P.C.B. Ass'y	R132,141 150,159 168,177 232,241 250,259 268,277	OB26032A	RM*200 1/8W F
	— AFT —		R178,179 180,181 278,279 280,281	OB26009A	RM*100K 1/8W F
Q101,104 201,204 Q102,105 202,205 Q103,106 203,206 D101,102 103,104 201,202 203,204	OB06142A	TR 2SC2240 (BL)	C101,201 C102,202 C103,203 C104,204 C105,205 C106,206	OB41770A OB41769A OB41543A OB41771A OB41726A OB41764A OB70089A	CP 0.018μ 50V J CP 0.01μ 50V J CM 1μ 125V K CP 0.1μ 50V J CM 10μ 100V K CSP 100P 160V J Rotary Switch
VR301 R101,106 112,201 206,212 R102,108 202,208 R103,109 203,209 R104,110 204,210 R105,111 205,211 R107,113 207,213 R114,214 R115,215 R116,216 R117,118 129,138 147,156 165,174 217,218 229,238 247,256 265,274	OB06181A	SID 1SS53	SW301,302 303,304		
	OB30071A	Master Volume			
	OB09774A	RM 1.13K 1/4W F			
	OB22695A	RM 301 1/4W F		— Monitor —	
	OB22734A	RM 28.7K 1/4W F	Q301-319 Q303 Q304 ZD301,302	OB14170A OB10112A OB10169A OB12195A	TR* 2SC2713 (19) FET 2SK170 (BL) FET 2SJ74 (BL) ZD 24V
	OB22567A	RM 100 1/4W F	D105-120 205-220 301-304 R301,303 305,307 309,311 313,315 317,319 321,323 325,327 329,331 333,339 344	OB13064A	RD24JS-T1B2 SID*MA221 (36)
	OB09491A	RM 1K 1/4W F		OB23113A	RK*47K 1/8W J
	OB22736A	RM 35.7K 1/4W F			
	OB26027A	RM*845 1/8W F	R302,304 306,308 310,312 314,316 318,320 322,324 326,328 330,332 334,340 341	OB23073A	RK*1K 1/8W J
	OB26035A	RM*909 1/8W F			
	OB26036A	RM*976 1/8W F	R335,336 R337,338 R342,343 C301,302 PC301,302	OB23097A OB25053A OB23101A OB41772A OB10186A	RK*10K 1/8W J RM 33.2 1/4W F RK*15K 1/8W J CSP 1000P 160V J Photocoupler TLP521-4 GB
	OB26024A	RM*1.05K 1/8W F	PC303	OB10184A	Photocoupler TLP521-2 GB
			RL101-116 201-216	OB90211A	Relay FBR22ND24 (32)
				— Miscellaneous —	
			CN5 CN11 CN12 CN13 CN14,15 CN16,17 18 CN19,20 25,26 27,28 CN21,22 23,24	OB60398C OB81034A OB81033A OB81027A OB81026A OB81025A OB81223A OB81654A OB81019A OB82884A OB82885A	Input Selector P.C.B. 11P-T Post (White) 10P-T Post 4P-T Post (White) 3P-T Post (White) 2P-T Post (White) 2P-T Post (White) 2P-T Post (White) 2P-T Post Dip Mapte 8P WH8D-1 Line Input Code (8) Relay Ground Code (1)
				BA06688A	Line Filter P.C.B. Ass'y (CA-7E (Germany))
				OB60451A OB51244A OB90019A OJ04703A OJ05008A	Line Filter P.C.B. Line Filter LF-4A (1) Insu-Lock SKB-80(1) Collar Bushing TB-300 (2) Collar Bushing TA-310 10 (2)



Notes: 1. Table of wire colors

BRN — Brown	BLU — Blue	PNK — Pink
RED — Red	VIO — Violet	
YEL — Yellow	WHT — White	
ORN — Orange	GRY — Gray	
GRN — Green	BLK — Black	

2. Component side view of the P.C.B. is illustrated unless otherwise specified.

3. Wire tube color is shown in ().

Fig. 7.2

8. BLOCK DIAGRAM

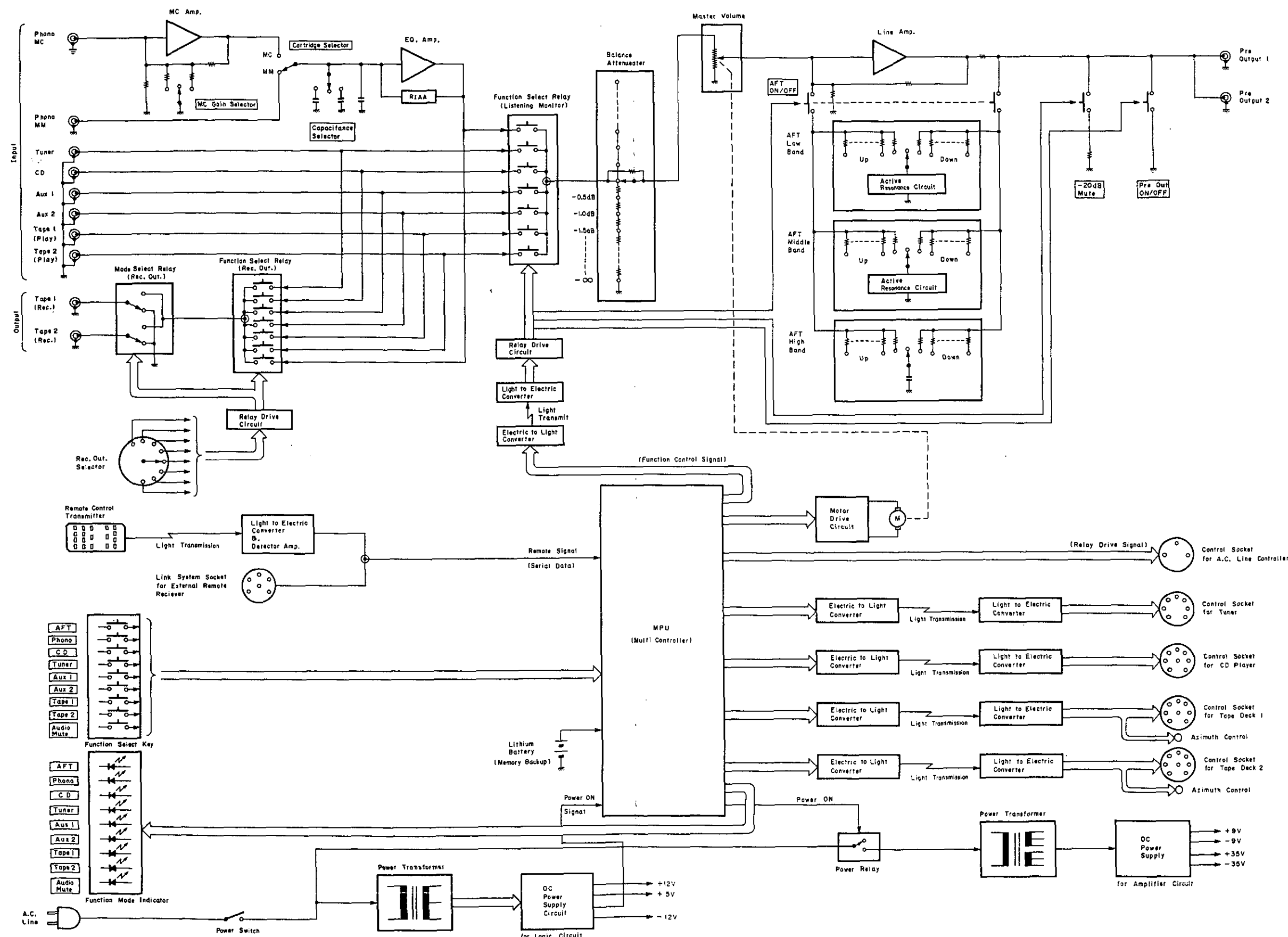


Fig. 8

9. REMOTE SENSOR RS-7 (OPTION)

9.1. Mechanism Ass'y and Parts List

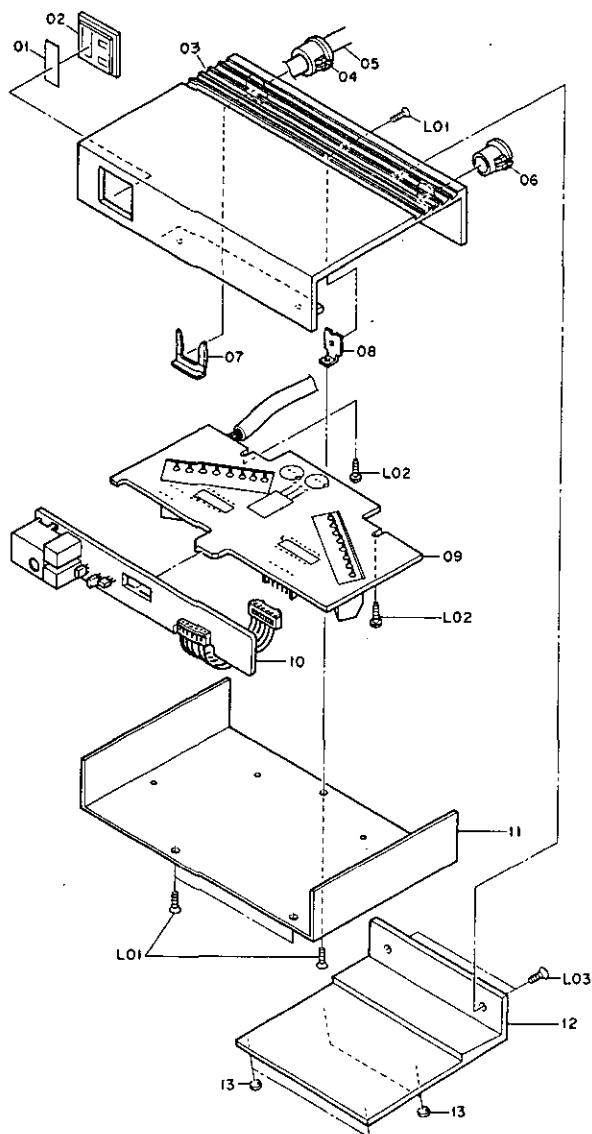


Fig. 9.1

Schematic Ref. No.	Part No.	Description	Qty	Schematic Ref. No.	Part No.	Description	Qty
	FA03577A	Package Ass'y RS-7	1		OJ05301A	Snap Bushing	1
	OF04016A	Package	1		OE03404A	Anchor Nut	2
	OF04015A	Sleeve	1		OE03405A	Screw for Anchor Nut	2
	OF04017A	Partition	1		OE03402A	ST2x6 @ Binding (Black Chromate)	2
	DA04028A	Accessory Ass'y (U.S.A., Canada, Australia, Saudi Arabia & Other)	1			Remote Sensor RS-7 Serial No.: N61901001 -	
	DA04029A	Accessory Ass'y (Europe)	1	01	OJ05314A	Remote Filter	1
	DA04030A	Accessory Ass'y (Japan)	1	02	OH05028A	Remote Lens	1
	OD04705A	Owner's Manual (English) (except Japan)	1	03	OH05025B	Top Cover	1
	OD04714A	Owner's Manual (French, German) (Europe)	1	04	OJ05301A	Snap Bush	1
	OD04713A	Owner's Manual (Japanese) (Japan)	1	05	OB82894A	8P DIN Cord	1
	OD04449A	Important Notice Card	1	06	OJ05302A	Hole Plug	1
	OD04352C	Warranty Card (U.S.A., Canada, Australia, Saudi Arabia & Other)	1	07	OJ05092A	Snap Plate	1
	OD04706A	Price Card (Japan)	1	08	OJ05297A	Bottom Angle	1
	OB81687A	6P DIN Plug	1	09	BA06495A	Control P.C.B. Ass'y	1
	OB81686A	Snap Plate	1	10	BA06494A	Receiver P.C.B. Ass'y	1
				11	OH05026A	Bottom Cover	1
				12	OH05027B	Unit Stand	1
				13	OJ05303A	Leg	4
				L01	OE03401A	ST2x6 @ Countersunk	4
				L02	OE03402A	ST2x6 @ Binding (Black Chromate)	2
				L03	OE00940A	M3x6 @ Countersunk (Black Chromate)	2

9.2. Mounting Diagrams and Parts List

9.2.1. Receiver P.C.B. Ass'y

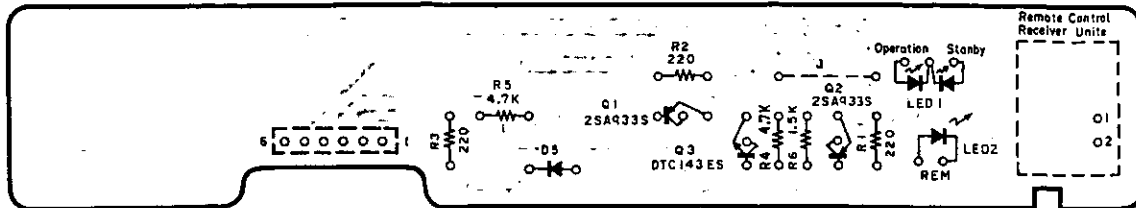


Fig. 9.2.1

9.2.2. Control P.C.B. Ass'y

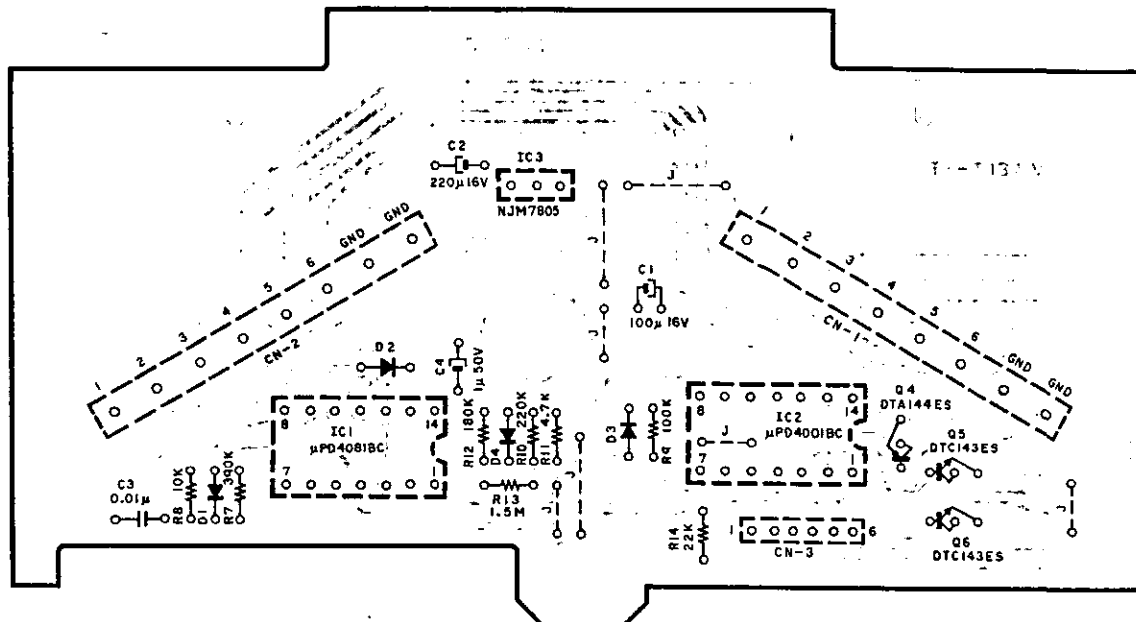


Fig. 9.2.2

Schematic Ref. No.	Part No.	Description	Schematic Ref. No.	Part No.	Description
	BA06494A	Receiver P.C.B. Ass'y		BA06495A	Control P.C.B. Ass'y
Q1,2	OB60412A	Receiver P.C.B.	IC1	OB60413A	Control P.C.B.
	OB10026A	TR 2SA933S (Q,R,S)	IC2	OB06219A	IC μ PD4081BC
Q3	OB10070A	TR DTC143ES	IC3	OB06143A	IC μ PD4001BC
LED1	OB12399A	LED SPB-26 (GRN, ORN)	Q4	OB11105A	IC NJM7805
LED2	OB12407A	LED SLB-26MW (GRN)	Q5,6	OB10053A	TR DTA144ES
D5	OB06398A	SID 1SS176	D1,2,3,4	OB10070A	TR DTC143ES
R1,2,3	OB09661A	RK 220 1/6W J	R7	OB06398A	SID 1SS176
R4,5	OB09693A	RK 4.7K 1/6W J	R8	OB09739A	RK 390K 1/6W J
R6	OB09681A	RK 1.5K 1/6W J	R9	OB09701A	RK 10K 1/6W J
CN3	OB82907A	6P-H Connector	R10	OB09725A	RK 100K 1/6W J
	OB19005A	Remote Control Receiver Unit (1)	R11	OB09733A	RK 220K 1/6W J
	OJ05244A	LED Reflector CA-7 (1)	R12	OB09693A	RK 4.7K 1/6W J
	OJ05300A	LED Reflector RS-7 (1)	R13	OB09731A	RK 180K 1/6W J
			R14	OB09380A	RK 1.5M 1/4W J
			C1	OB09709A	RK 22K 1/6W J
			C2	OB01400A	CE 100 μ 16V
			C3	OB01398A	CE 220 μ 16V
			C4	OB05681A	CE 0.01 μ 50V J
			CN1,2	OB01405A	CE 1 μ 50V
			CN3	OB81659A	8P Terminal S-306
				OB81029A	6P-T Post (White)

9.3. Schematic Diagram

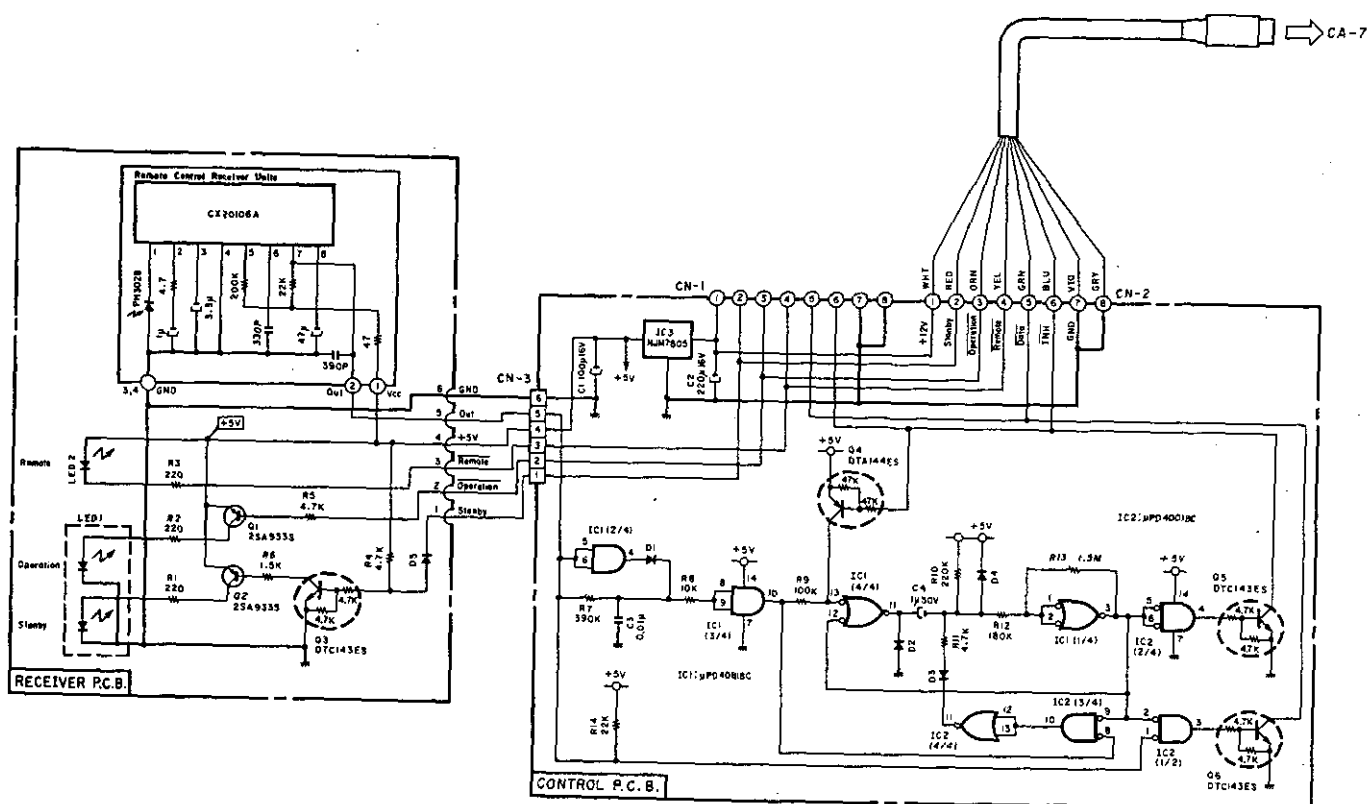


Fig. 9.3

Note: Diode is 1SS53, 1S1555, or 1SS176 unless otherwise specified.

10. SPECIFICATIONS

Input Sensitivity/Impedance

Phono MC (36 dB Gain)	40 μ V/100 ohms
(30 dB Gain)	80 μ V/100 ohms
(24 dB Gain)	160 μ V/100 ohms
Phono MM	2.5 mV/50 kohms
Tuner/CD/Aux/Tape	150 mV/12.5 kohms

Input Sensitivity (New IHF)

Phono MC (36 dB Gain)	10 μ V
(30 dB Gain)	20 μ V
(24 dB Gain)	40 μ V
Phono MM	0.625 mV
Tuner/CD/Aux/Tape	37.5 mV

Maximum Input Level (1 kHz, Non-Clipping Level, New IHF)

Phono MC (36 dB Gain)	5 mV
(30 dB Gain)	10 mV
(24 dB Gain)	20 mV
Phono MM	320 mV

Output Level/Impedance

Pre Out	2 V/1 kohms
Rec Out	150 mV/200 ohms

Maximum Output Level

(20 — 20,000 Hz, 1% THD, Pre Out, New IHF)	7V
--	----

Total Harmonic Distortion (20 — 20,000 Hz)

Phono MC to Rec Out, 1V	
(36 dB Gain)	Less than 0.004 %
(24 dB Gain)	Less than 0.002 %
Phono MM to Rec Out, 1V	Less than 0.002 %
Tuner/CD/Aux/Tape to Pre Out, 2V	
	Less than 0.002 %

Frequency Response

Tuner/CD/Aux/Tape	1 — 100,000 Hz + 0, —3 dB
	1 — 20,000 Hz + 0, —0.2 dB

RIAA Deviation

Phono MC	20 — 20,000 Hz $\pm$ 0.2 dB
Phono MM	20 — 20,000 Hz $\pm$ 0.2 dB

Signal to Noise Ratio (IHF A-WTD)

Phono MC (0.5 mV Input, 0.5 V Pre Out, Input Shorted)	
(36 dB Gain)	Better than 87 dB
(30 dB Gain)	Better than 86 dB
(24 dB Gain)	Better than 84 dB
Phono MM (5 mV Input, 0.5 V Pre Out, Input Shorted)	
	Better than 88 dB
Tuner/CD/Aux/Tape (0.5 V Input, 0.5 V Pre Out, Input Shorted)	
	Better than 94 dB

Stereo Separation (100 Hz/1 k Hz/10 k Hz)

Phono MC (0.5 mV Input, 1 V Pre Out, Input Shorted)	
(36 dB Gain)	95/100/90 dB
(24 dB Gain)	90/100/90 dB
Phono MM (5 mV Input, 1 V Pre Out, Input Shorted)	
	100/105/95 dB
Tuner/CD/Aux/Tape (0.5 V Input, 1V Pre Out, Input Shorted)	
	120/110/100 dB

AFT (Acoustical Fine Tuning) Characteristics

Low	25 Hz $\pm$ 5 dB (0.5 dB steps)
Mid	250 Hz $\pm$ 5 dB (0.5 dB steps)
High	30 kHz $\pm$ 5 dB (0.5 dB steps)

Audio Mute

	— 20 dB
--	---------

Remote Power On/Off Control Output

	24 V DC
--	---------

Power Source

	120, 120/220-240, 220 or 240 V AC,
	50/60 Hz (According to country of sale)

Power Consumption

	42 W max.
--	-----------

Dimensions

	435 (W) x 82 (H) x 310 (D) mm
	17-1/8 (W) x 3-1/4 (H) x 12-3/16 (D)
	inches

Approximate Weight

	7.2 kg, 15 lbs. 14 oz.
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<Remote Control Unit RM-7CA>

Principle Infrared pulse system

Power Supply	3 V DC (1.5 V x 2)
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Dimensions 62 (W) x 18 (H) x 175 (D) mm

2-7/16 (W) x 11/16 (H) x 6-7/8 (D) inches

Approximate Weight 130 g, 5 oz. (including batteries)

- Specifications and design are subject to change for further improvement without notice.

Service Manual

Nakamichi CA-7A, CA-7, CA-7E, CA-70

Nakamichi Corporation

Tokyo Office
Shinjuku Daiichi Seimei Bldg.
2-7-1 Nishishinjuku, Tokyo
Phone (03) 342-4461
Telex : 2324721 (NAKAM J)

Nakamichi U.S.A. Corporation

19701 South Vermont Avenue
Torrance, California 90502
Phone : (213) 538-8150

Nakamichi GmbH

Stephanienstrasse 6, 4000 Düsseldorf 1
Phone : (0211) 359036

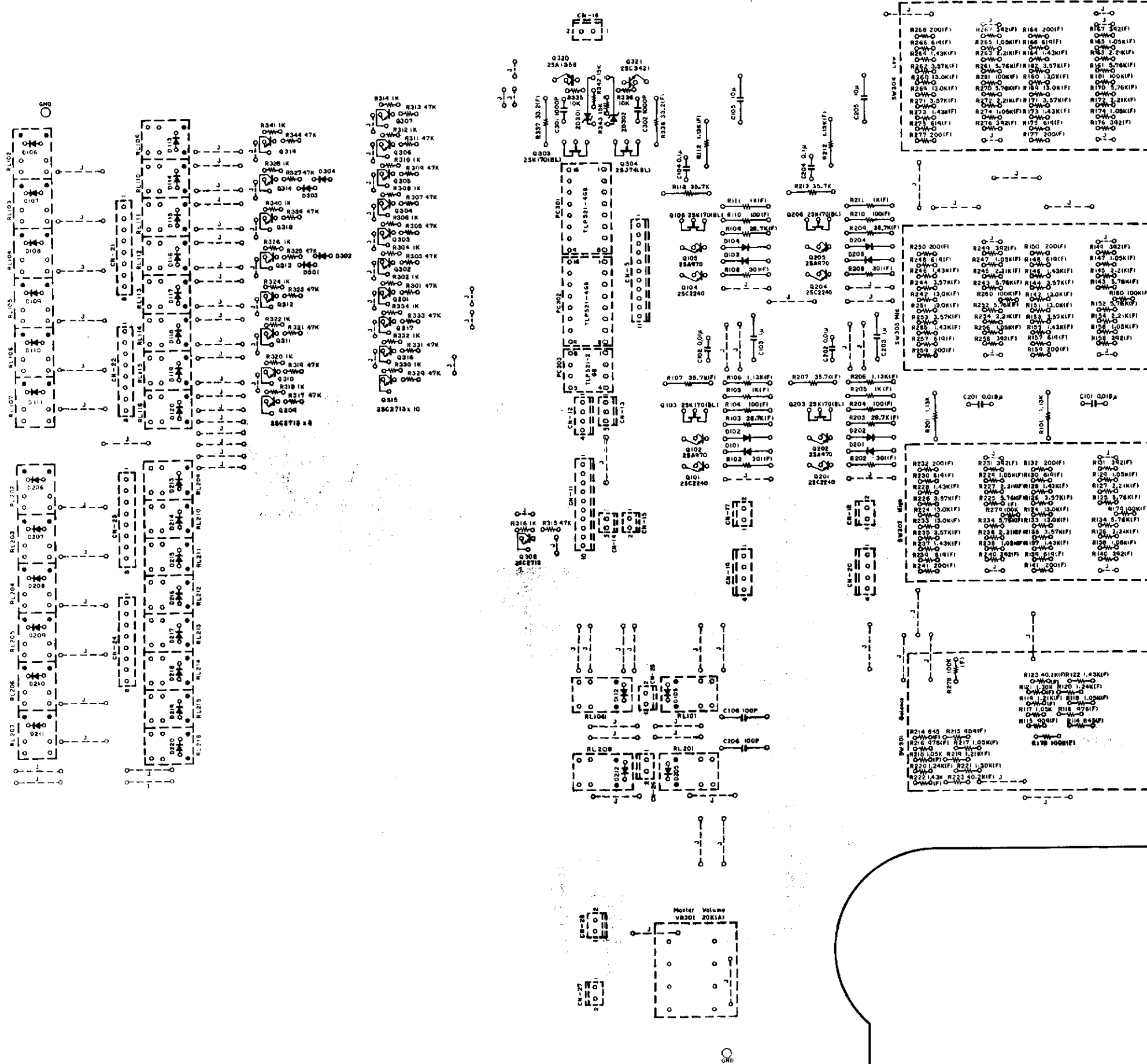


Fig. 6.14

6. SCHEMATIC DIAGRAMS

6.1. IC Block Diagrams

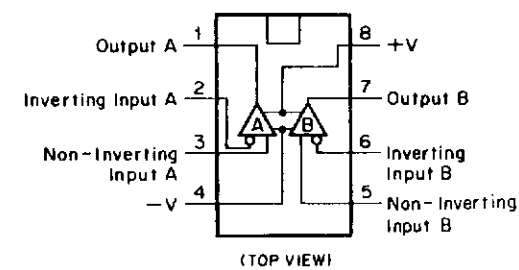


Fig. 6.1.1 Operational Amp. IC µPC812

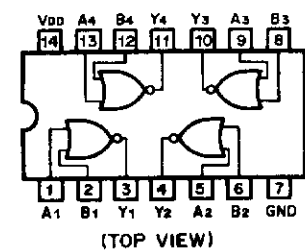


Fig. 6.1.2 NOR Gate C-MOS IC µPD4001BC

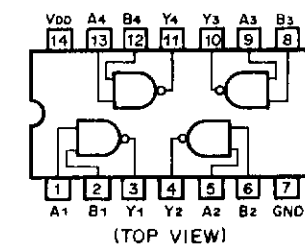


Fig. 6.1.3 NAND Gate C-MOS IC µPD4011BC

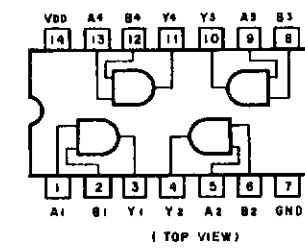


Fig. 6.1.4 AND Gate C-MOS IC µPD4081BC

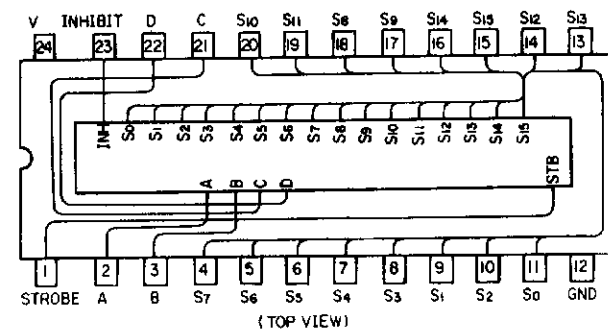


Fig. 6.1.5 4-to-16 Line Decoder IC TC4514BP

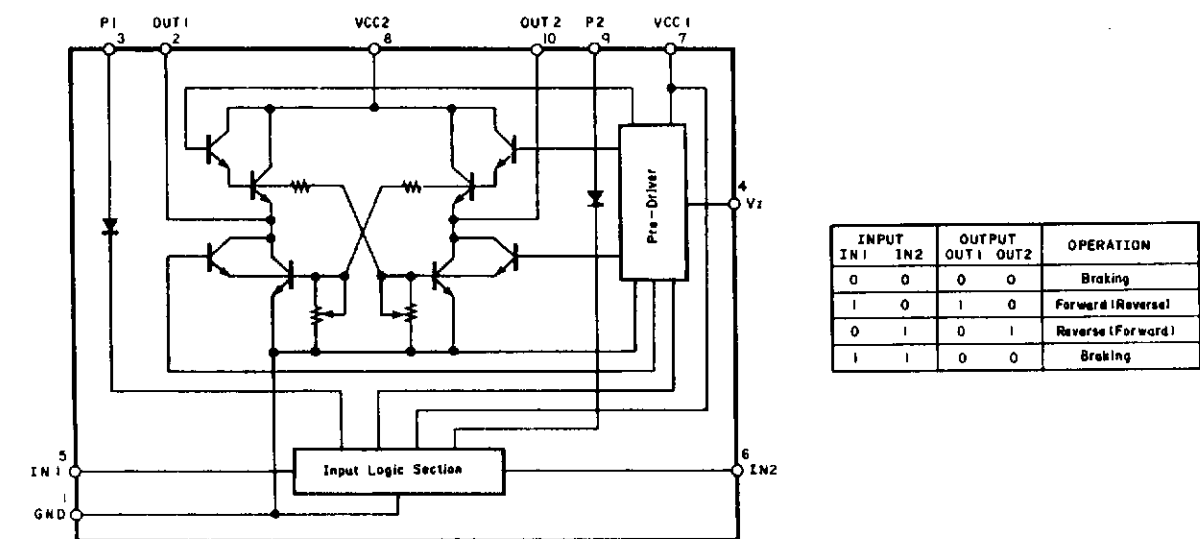


Fig. 6.1.6 Motor Control IC LB1645N

INPUT	IN1	IN2	OUTPUT	OUT1	OUT2	OPERATION
0	0	0	0	0	0	Braking
1	0	1	1	0	0	Forward (Reverse)
0	1	0	0	1	0	Reverse (Forward)
1	1	0	0	0	0	Braking

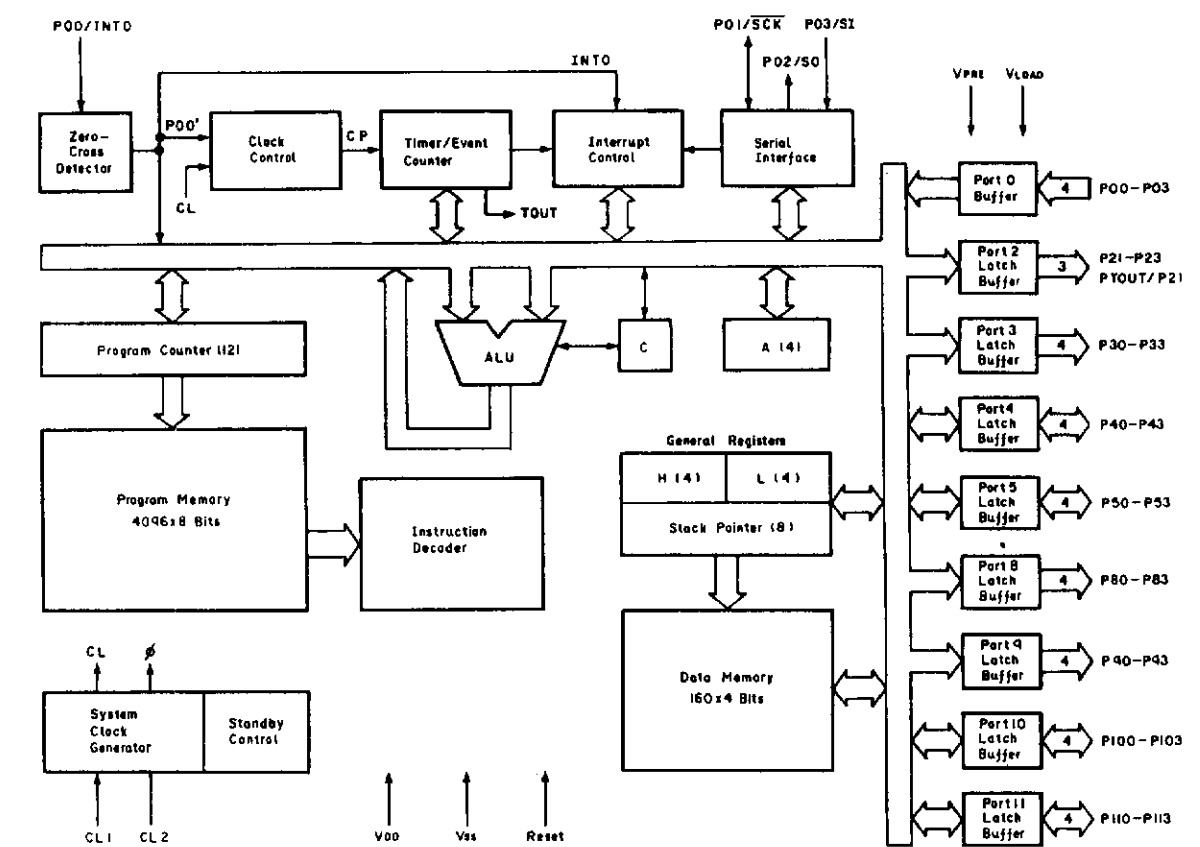
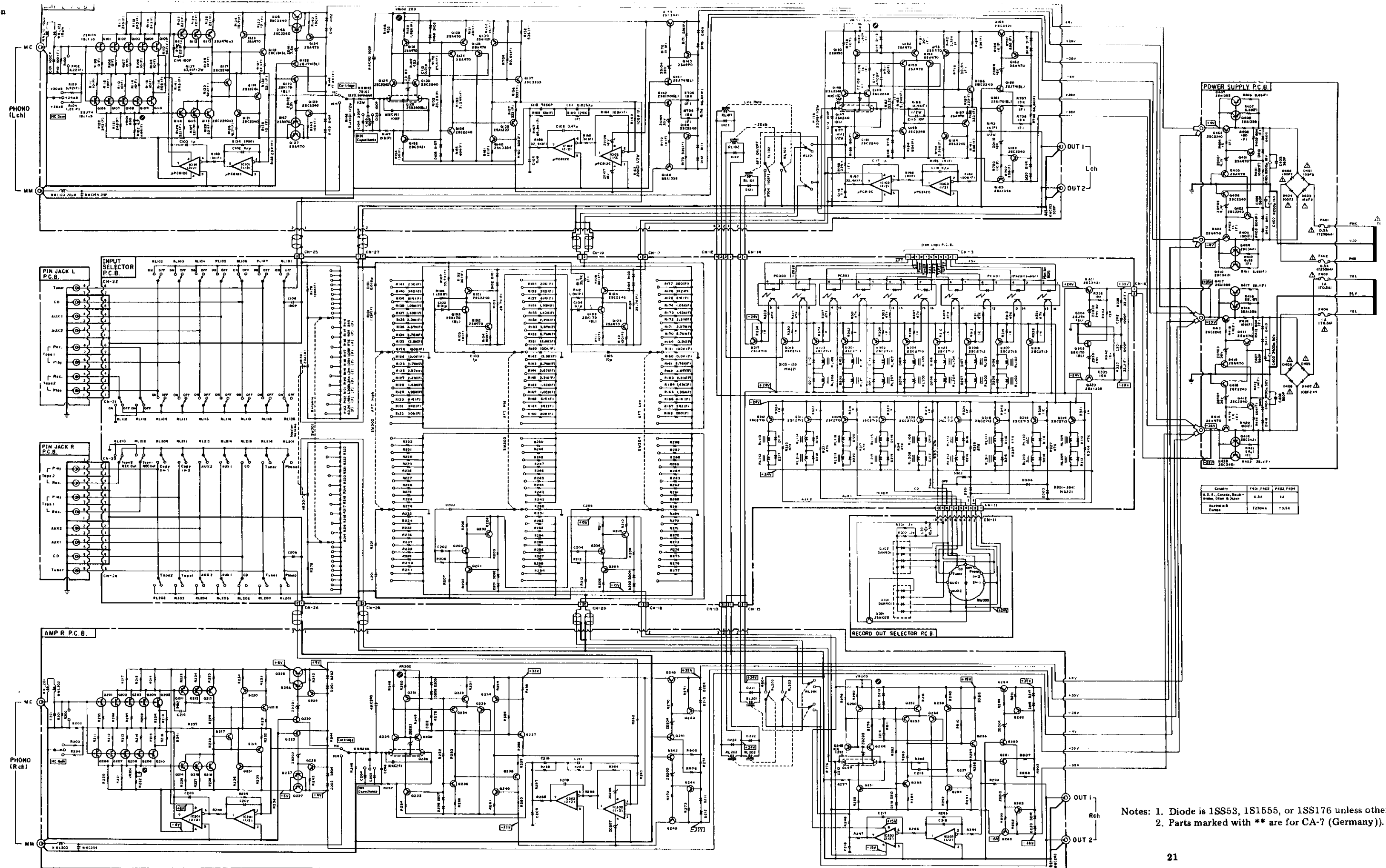


Fig. 6.1.7 Micro-processor µPD7538CU

6.2.1. Amplifier Section



Notes: 1. Diode is 1SS53, 1S1555, or 1SS176 unless otherwise specified.
2. Parts marked with ** are for CA-7 (Germany)).

Fig. 6.2.1

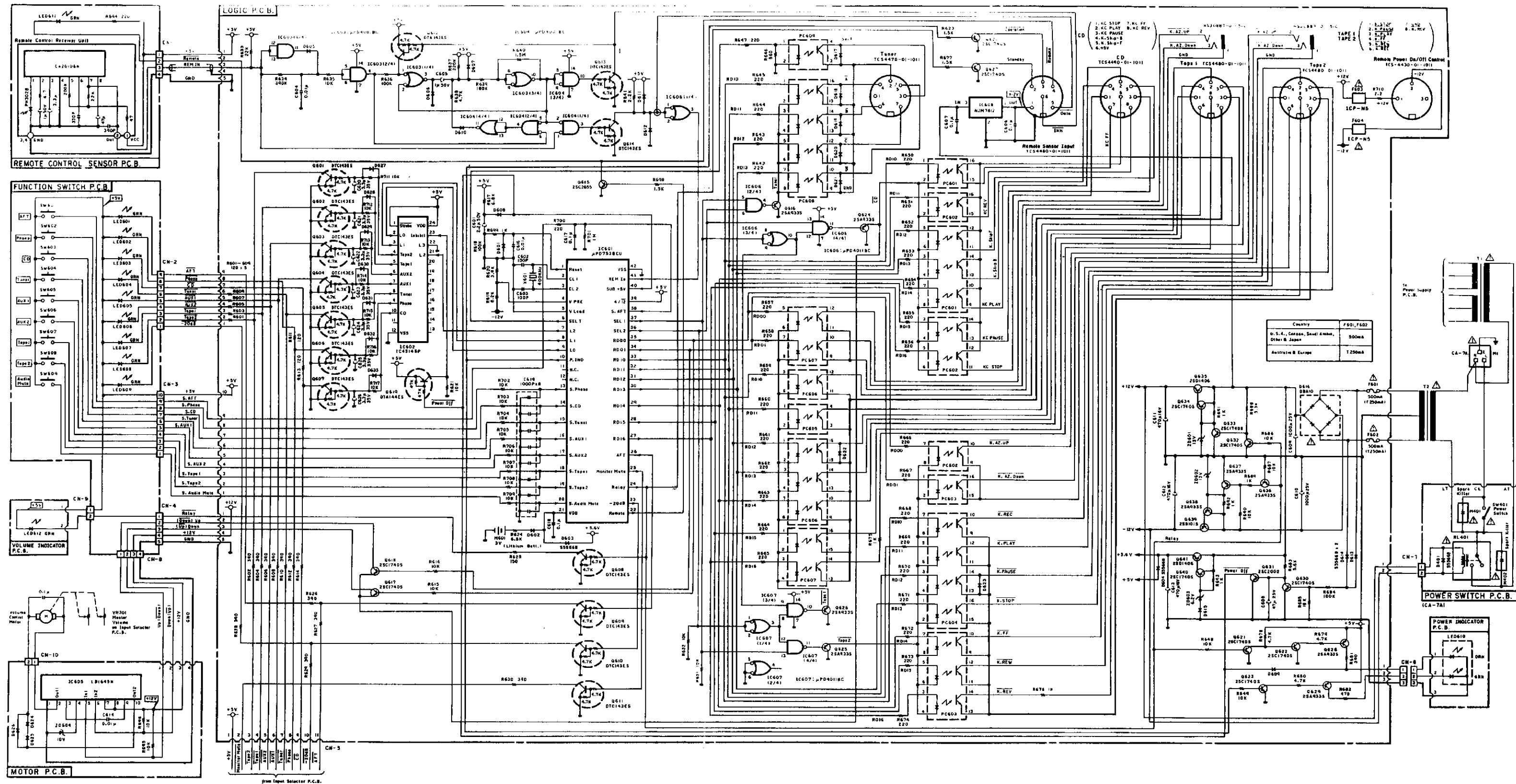
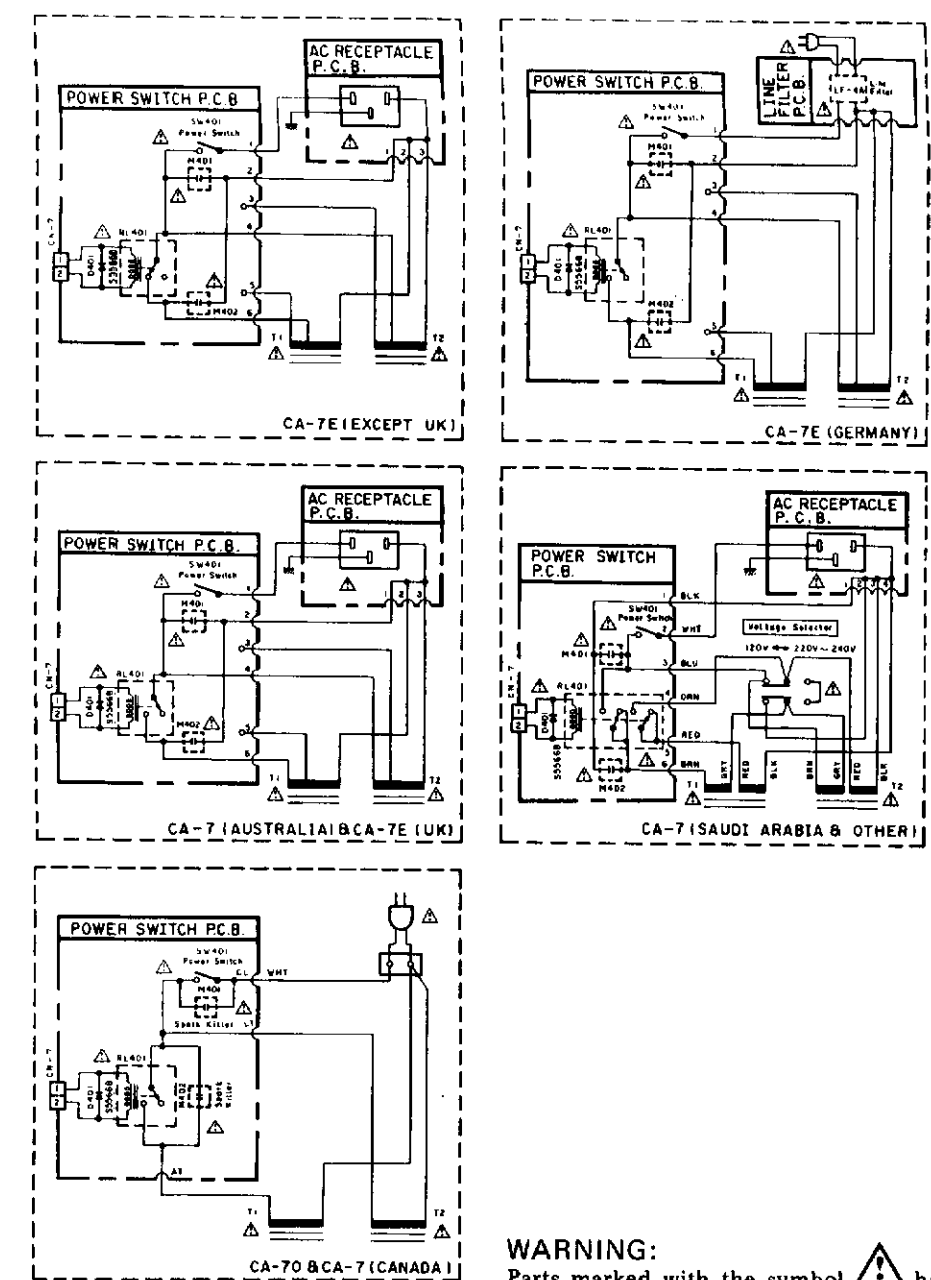


Fig. 6.2.2

Note: Diode is 1S853, 1S1555, or 1S176 unless otherwise specified.



WARNING:
Parts marked with the symbol ⚠ have critical characteristics.
Use **ONLY** replacement parts recommended by the manufacturer.
It is recommended that the unit be operated from a suitable DC supply or batteries during initial check-out procedures.

CAUTION:
Before returning the unit to the customer, make sure you make either (1) a leakage current check or (2) a line to chassis resistance check. If the leakage current exceeds 0.5 milliamp, or if the resistance from chassis to either side of the power cord is less than 240 k ohms, the unit is defective.
WARNING — DO NOT return the unit to the customer until the problem is located and corrected.

7. WIRING DIAGRAM

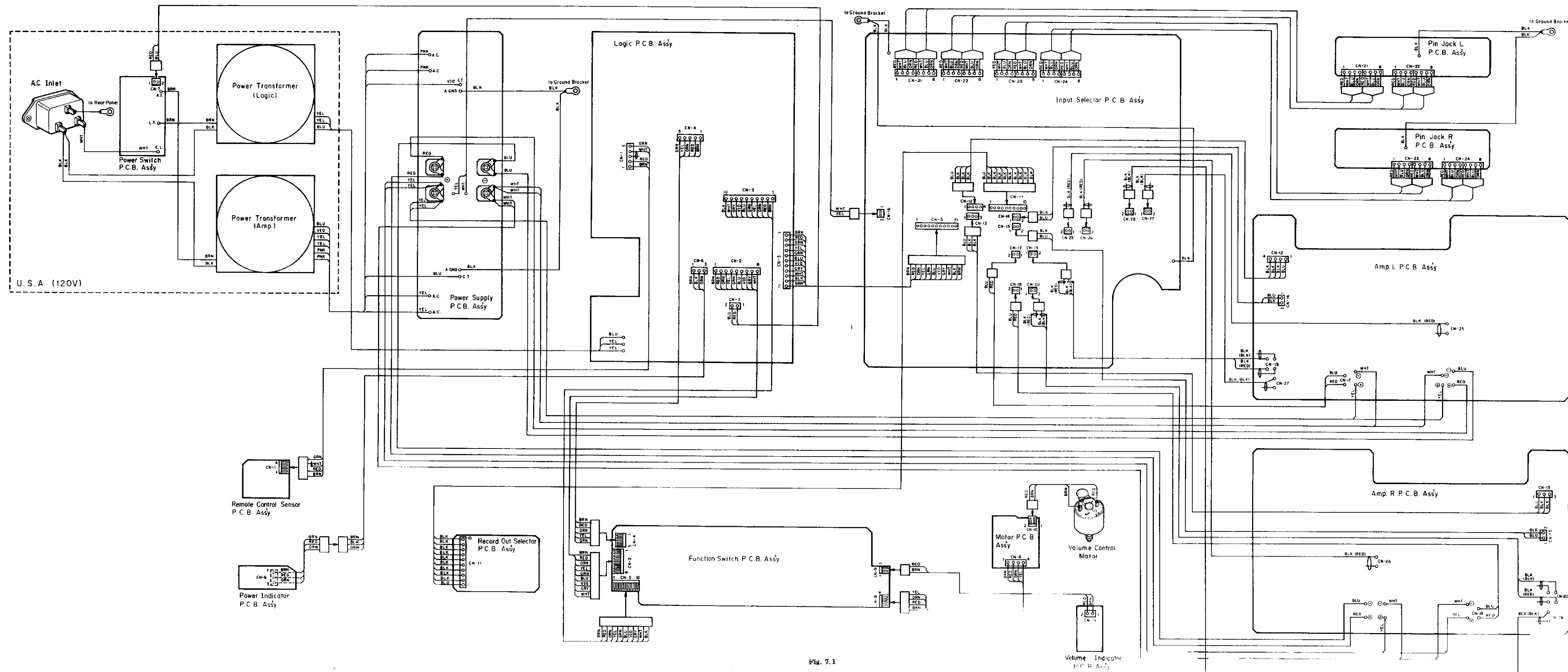


Fig. 7.1