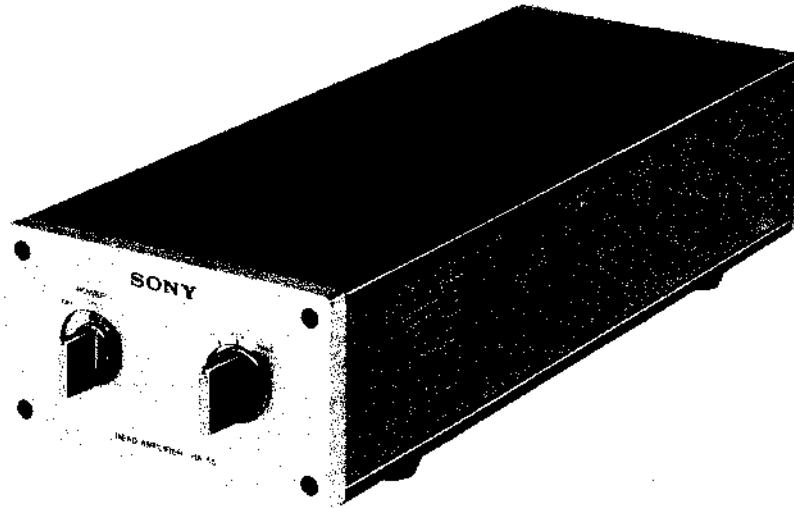


HA-55

Canadian Model
AEP Model




HEAD AMPLIFIER

SPECIFICATIONS

Power Requirement:	120 V ac, 60 Hz (Canadian model) 110, 120, 220, or 240 V ac adjustable, 50/60 Hz (AEP model)
Power Consumption:	8 W (Canadian model) 10 W (AEP model)
Voltage Gain:	27 dB
Equivalent Input Noise Level:	-157 dBV (RIAA + A curve, closed-circuit)
Harmonic Distortion:	0.003 % (1 kHz)
Frequency Response:	6-500,000 Hz $_{-1}^{+0}$ dB
Maximum Input Capability:	20 mV
Input Impedance:	25 Ω /100 Ω
Dimensions:	Approx. 135 (w) x 80 (h) x 345 (d) mm 5 $\frac{3}{8}$ (w) x 3 $\frac{1}{8}$ (h) x 13 $\frac{3}{8}$ (d) inches
Weight:	Approx. 3.2 kg, 7 lb

SAFETY-RELATED COMPONENT WARNING!!

COMPONENTS IDENTIFIED BY SHADING AND  MARK ON THE SCHEMATIC DIAGRAMS, EXPLODED VIEWS AND IN THE PARTS LIST ARE CRITICAL TO SAFE OPERATION. REPLACE THESE COMPONENTS WITH SONY PARTS WHOSE PART NUMBERS APPEAR AS SHOWN IN THIS MANUAL OR IN SUPPLEMENTS PUBLISHED BY SONY.

SONY[®]
SERVICE MANUAL

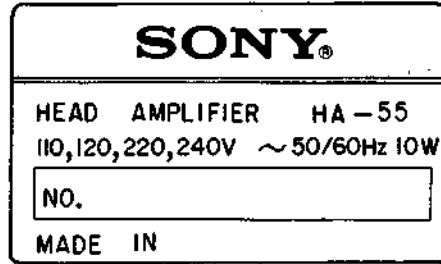
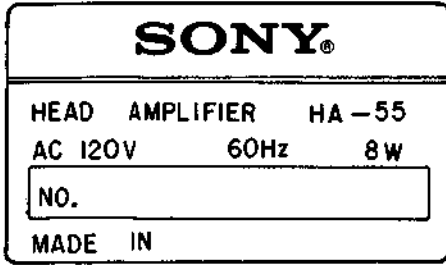
1212

• MODEL IDENTIFICATION

— Specification Label —

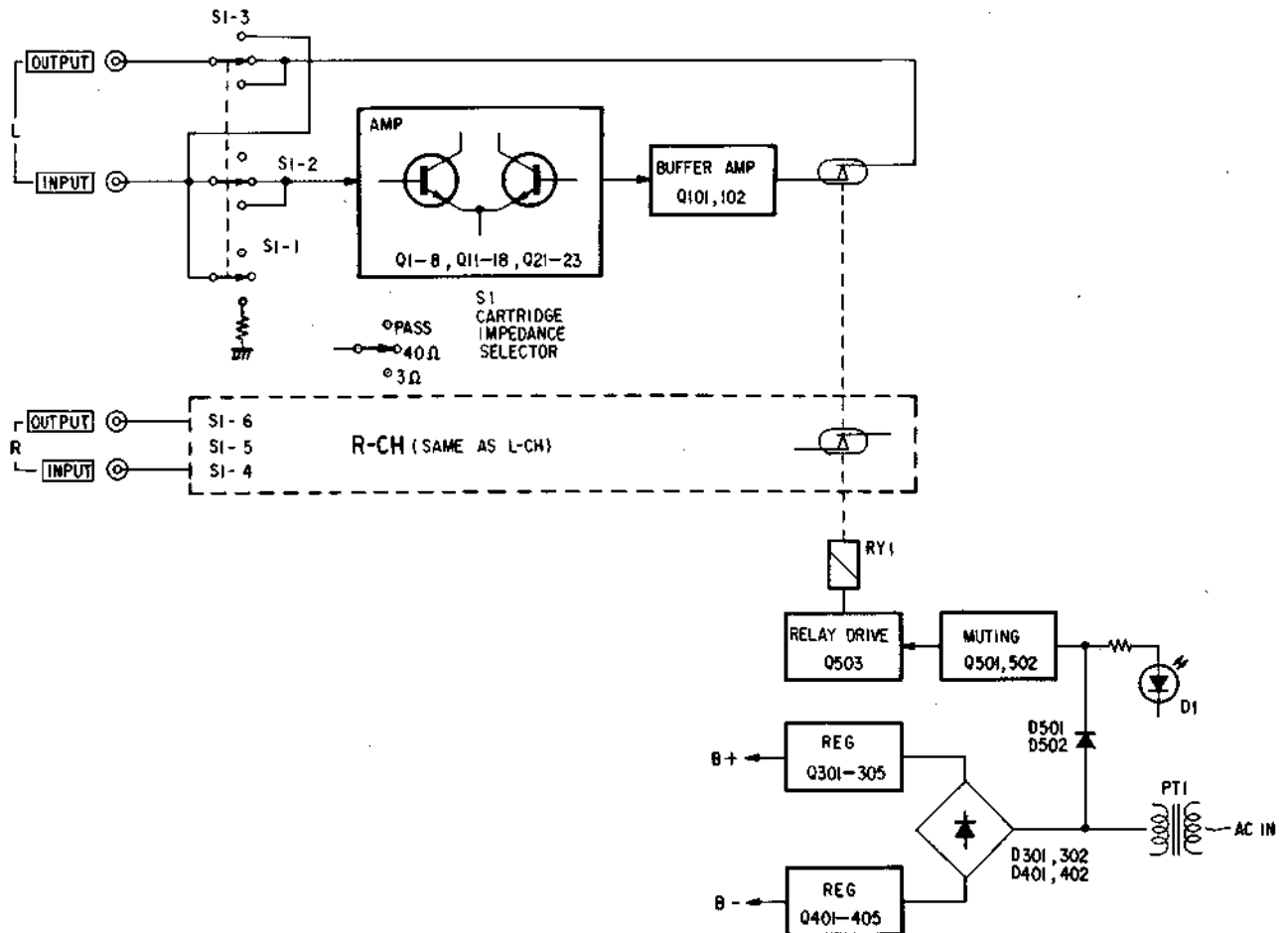
Canadian model

AEP model



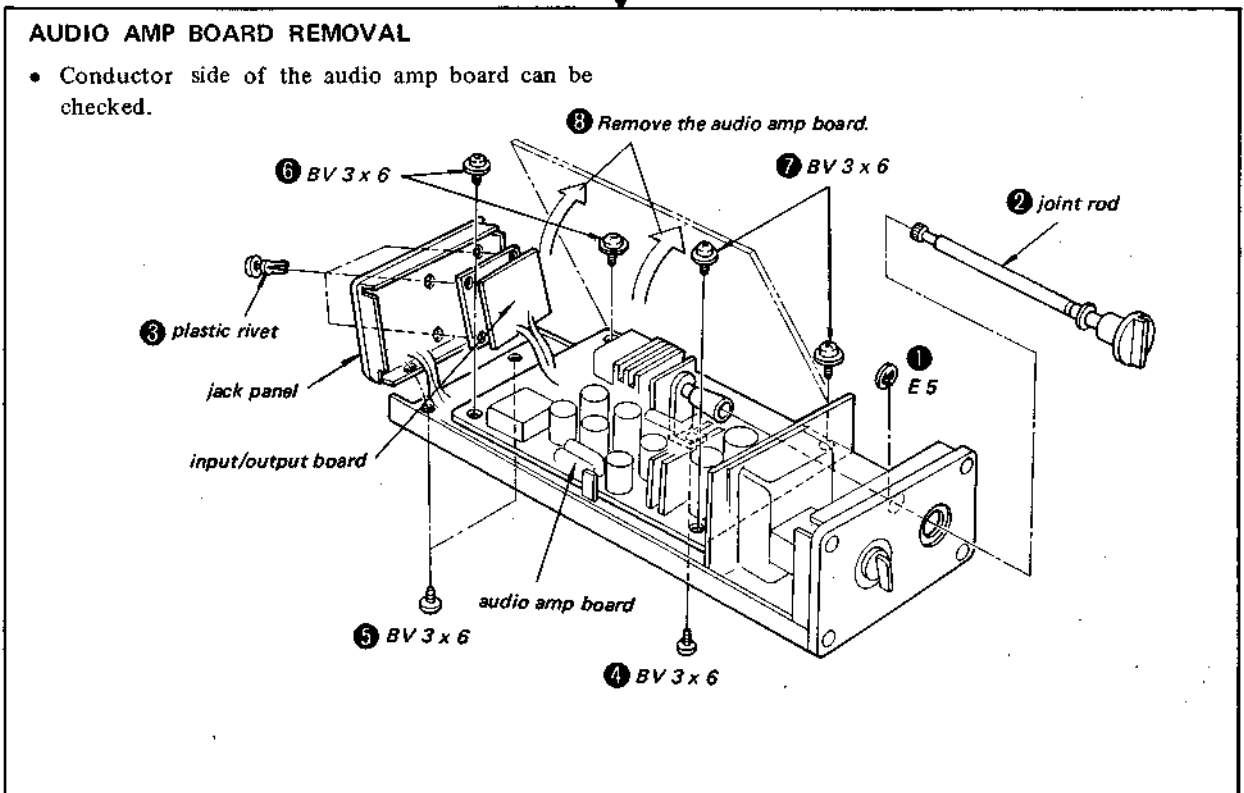
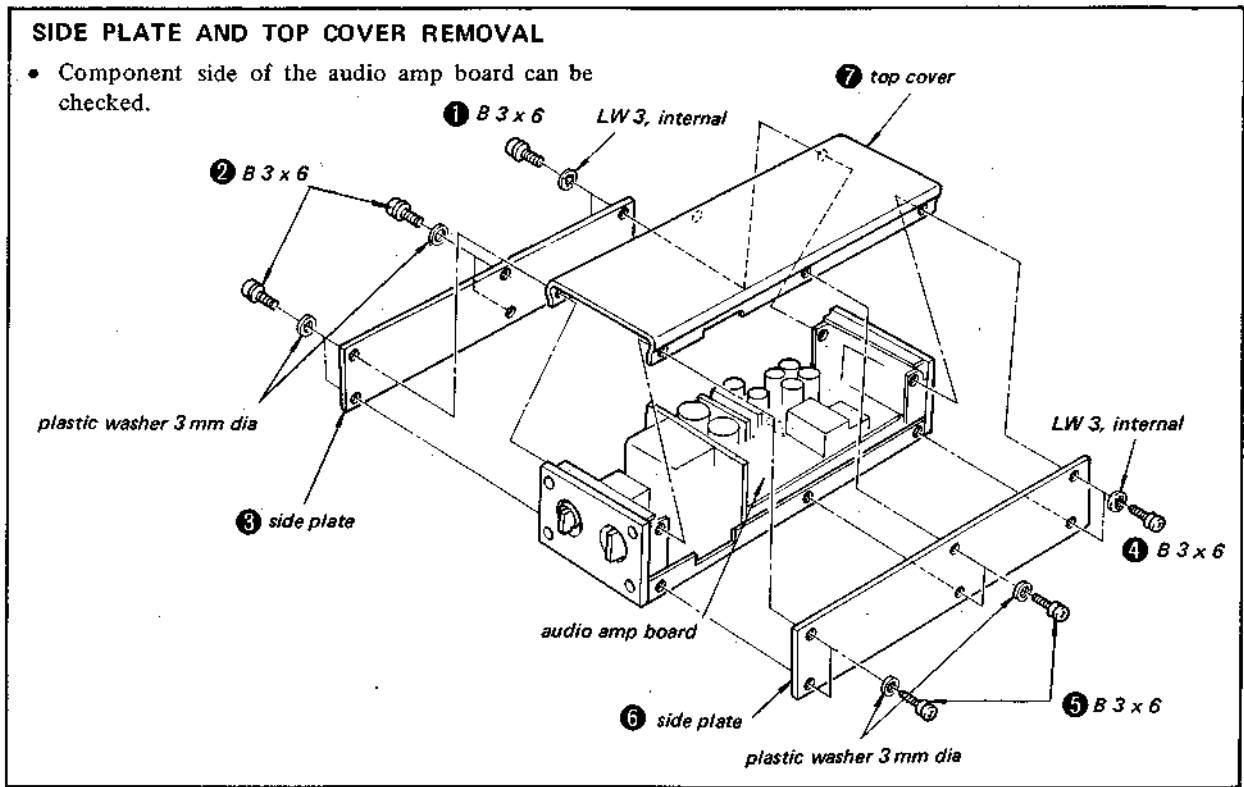
SECTION 1 OUTLINE

1-1. BLOCK DIAGRAM

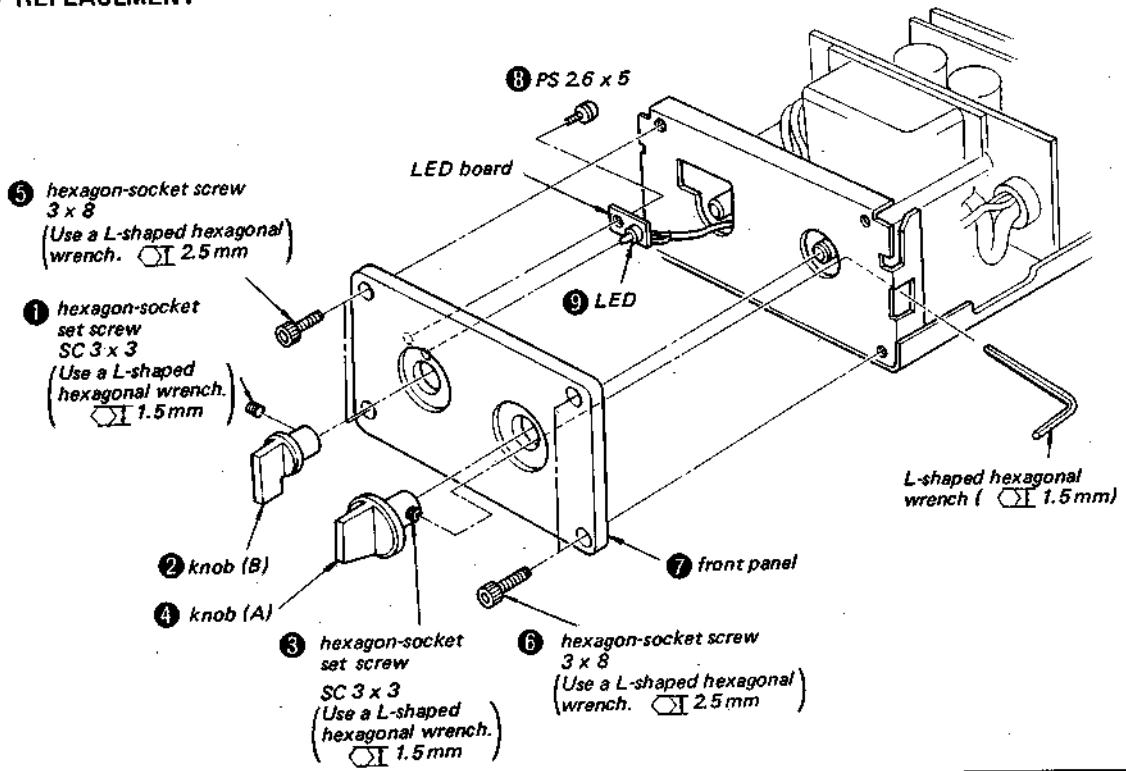


SECTION 2 DISASSEMBLY

Remove the parts in the numerical order.



LED REPLACEMENT

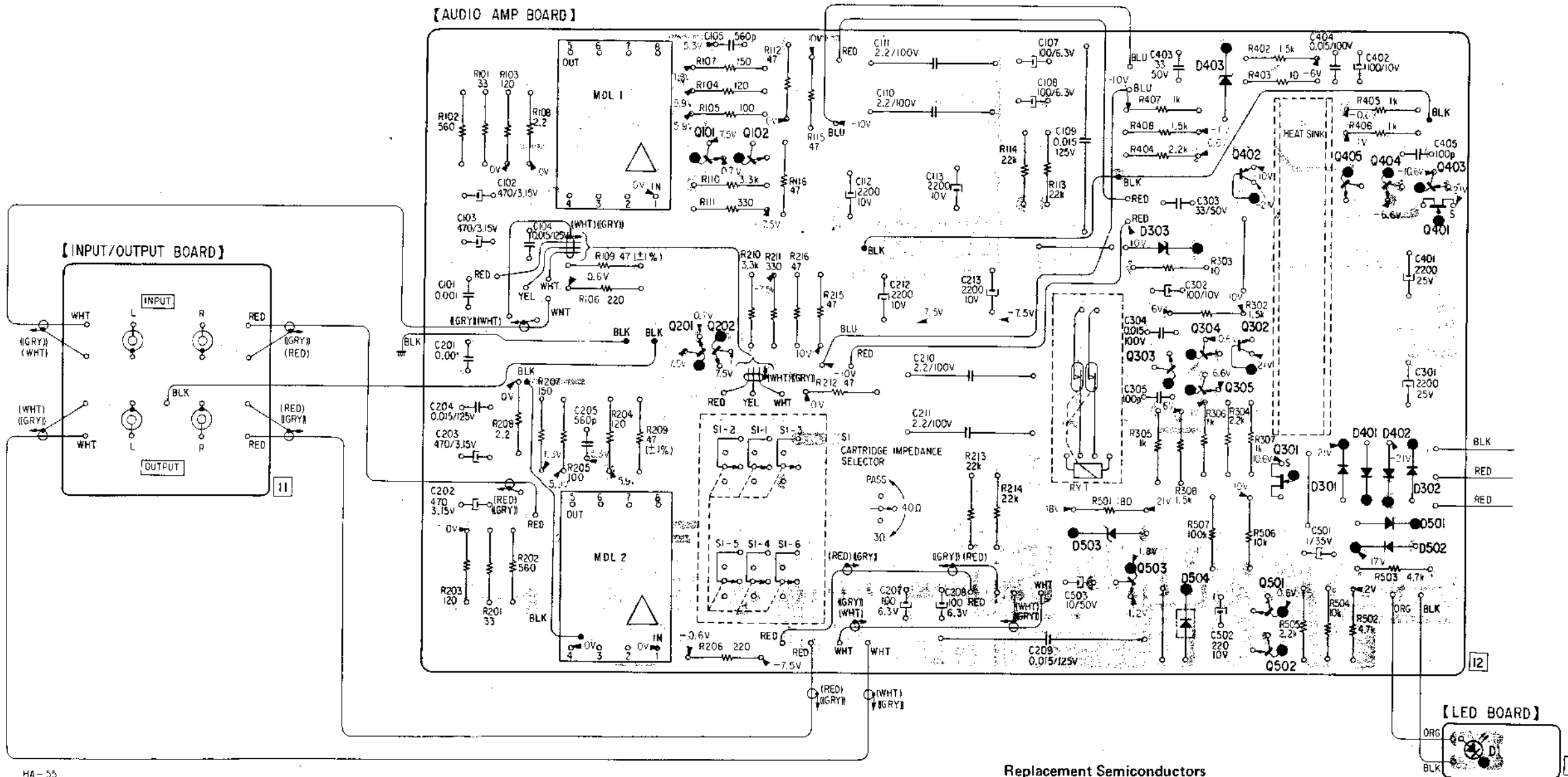


SECTION 3

DIAGRAMS

3-1. MOUNTING DIAGRAM - Audio Amp Board - - Conductor Side -

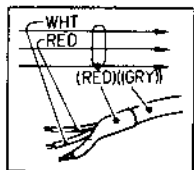
Q	101 102	303 304 305	402 301	405 404 403	Q
	201 202		501 502		
D		503 303 504	403	301 401, 402 501 302	D
				502	



HA-55

Note:

- Color code of sleeving over the end of the jacket.

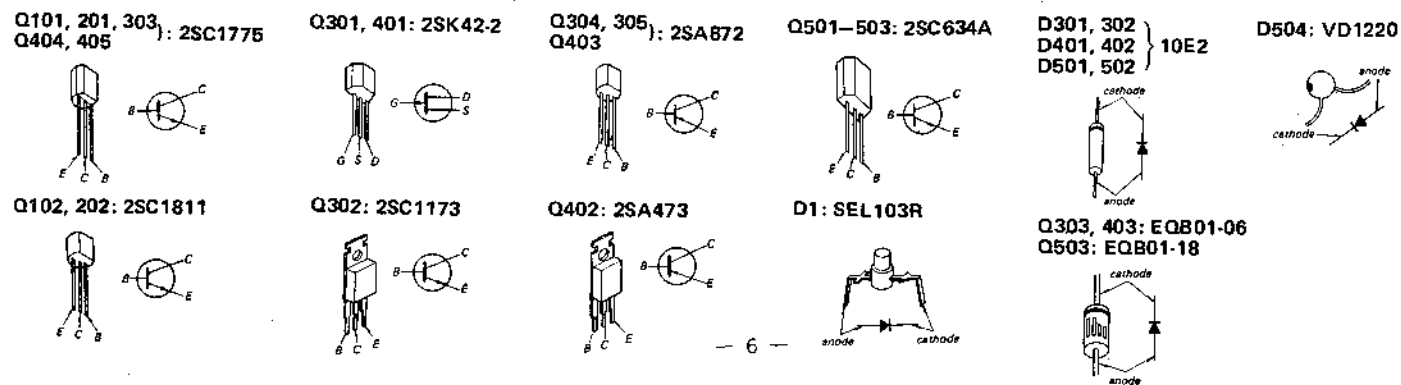


- : B+ pattern

- Voltages are dc with respect to ground unless otherwise noted.
- Readings are taken under no signal conditions with a VOM (20 kΩ/V).

- : parts extracted from the component side.
- : parts extracted from the conductor side.

Replacement Semiconductors



3-2. SCHEMATIC DIAGRAM

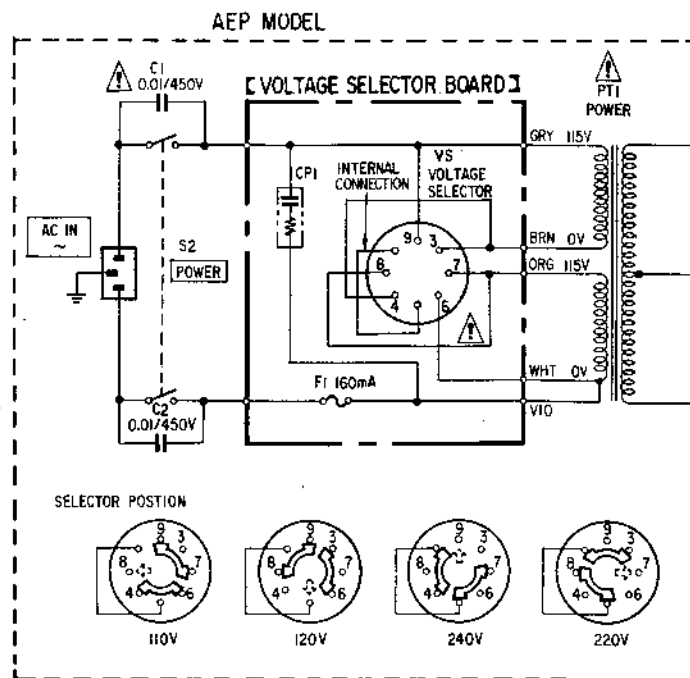
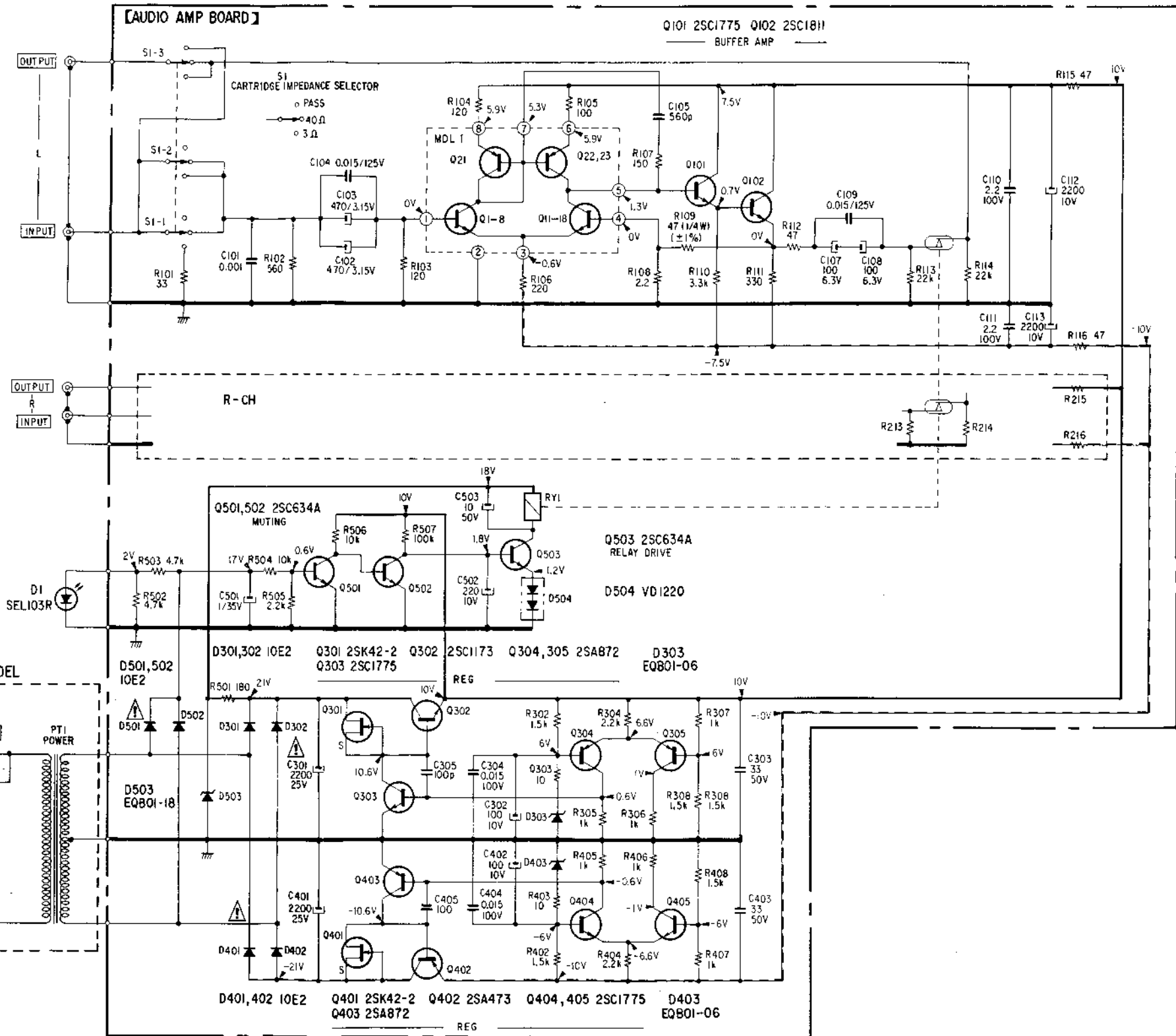
Note:

- Components for right channel have same values as for left channel. Reference numbers are coded from 200.
- All capacitors are in μF unless otherwise noted. $\text{pF} = \mu\mu\text{F}$. 50WV or less are not indicated except for electrolytics.
- All resistors are in ohms, $\frac{1}{2}\text{W}$ unless otherwise noted. $\text{k}\Omega = 1000 \Omega$, $\text{M}\Omega = 1000 \text{k}\Omega$.
- —: B+ bus.
- □: panel designation.
- - - - : B- bus.
- Voltages are dc with respect to ground unless otherwise noted.
- Readings are taken under no signal conditions with a VOM (20 $\text{k}\Omega/\text{V}$).
- Voltage variations may be noted due to normal production tolerances.

Switch

Ref. No.	Switch	Position
S1	cartridge impedance selector	40 Ω
S2	POWER	OFF

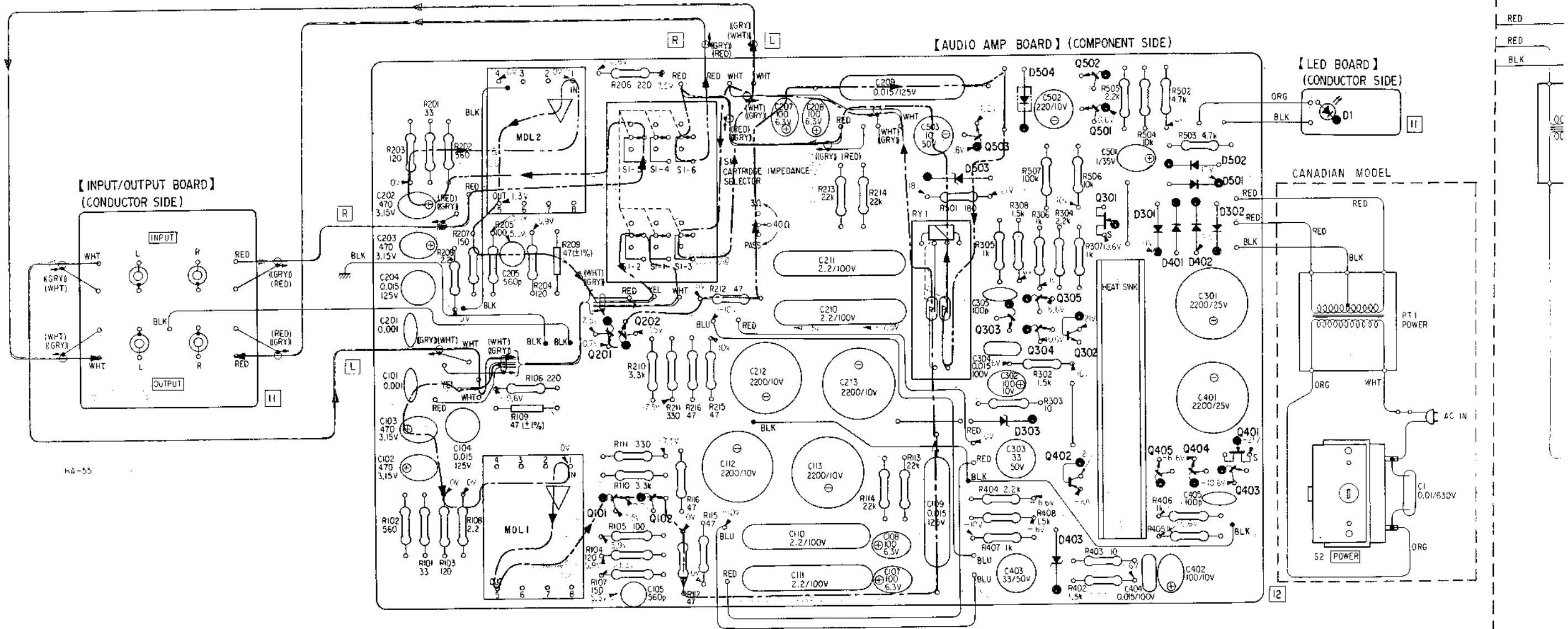
Note: The components identified by shading and Δ mark are critical for safety. Replace only with part number specified.



3-3. MOUNTING DIAGRAM

- Component Side -

Q	201,202	503	303	305	302	502	405	404	401	Q
	101 102			304	402	501			403	
D		503	303	504				502		D
				403			301	401	402	302



HA-55

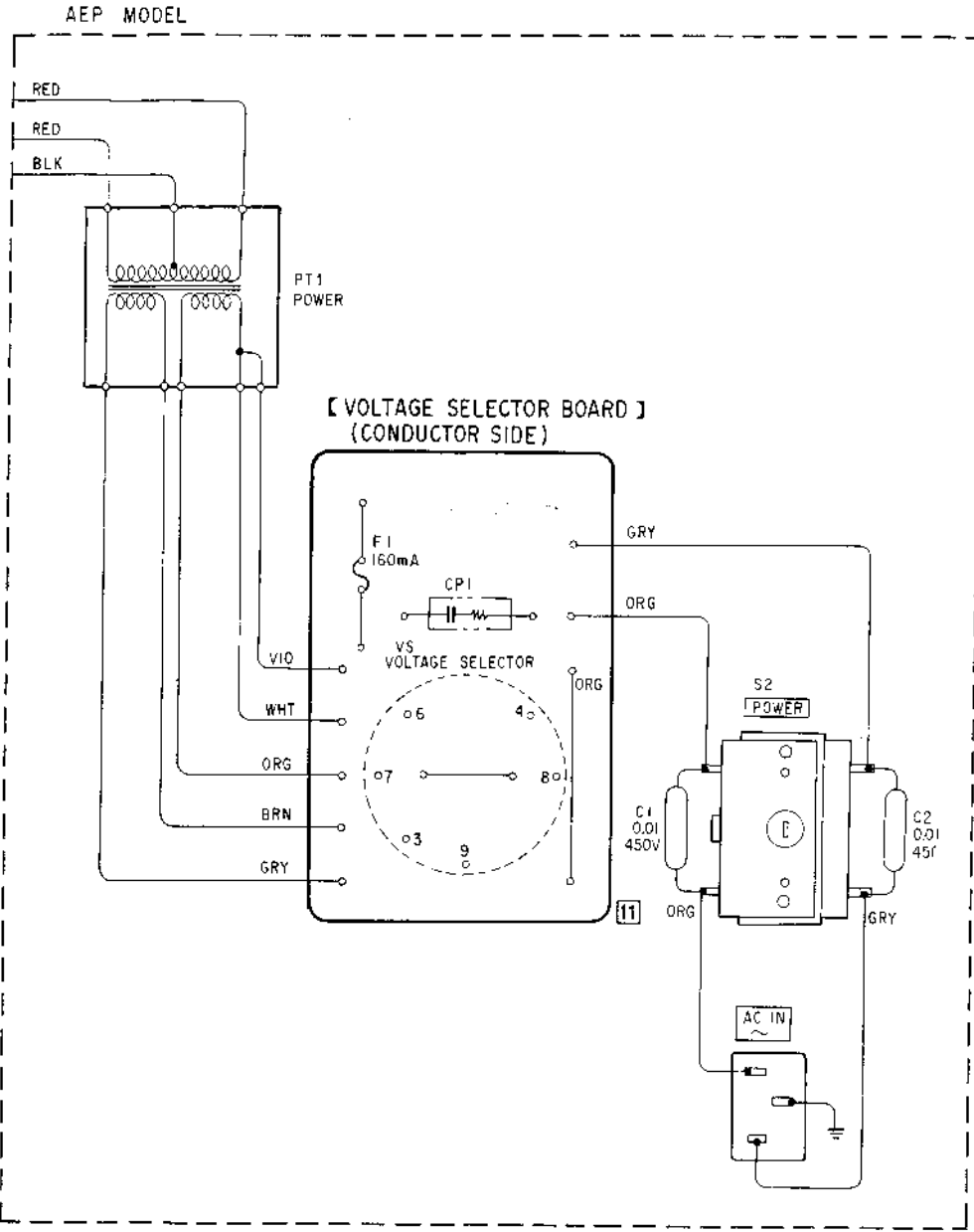
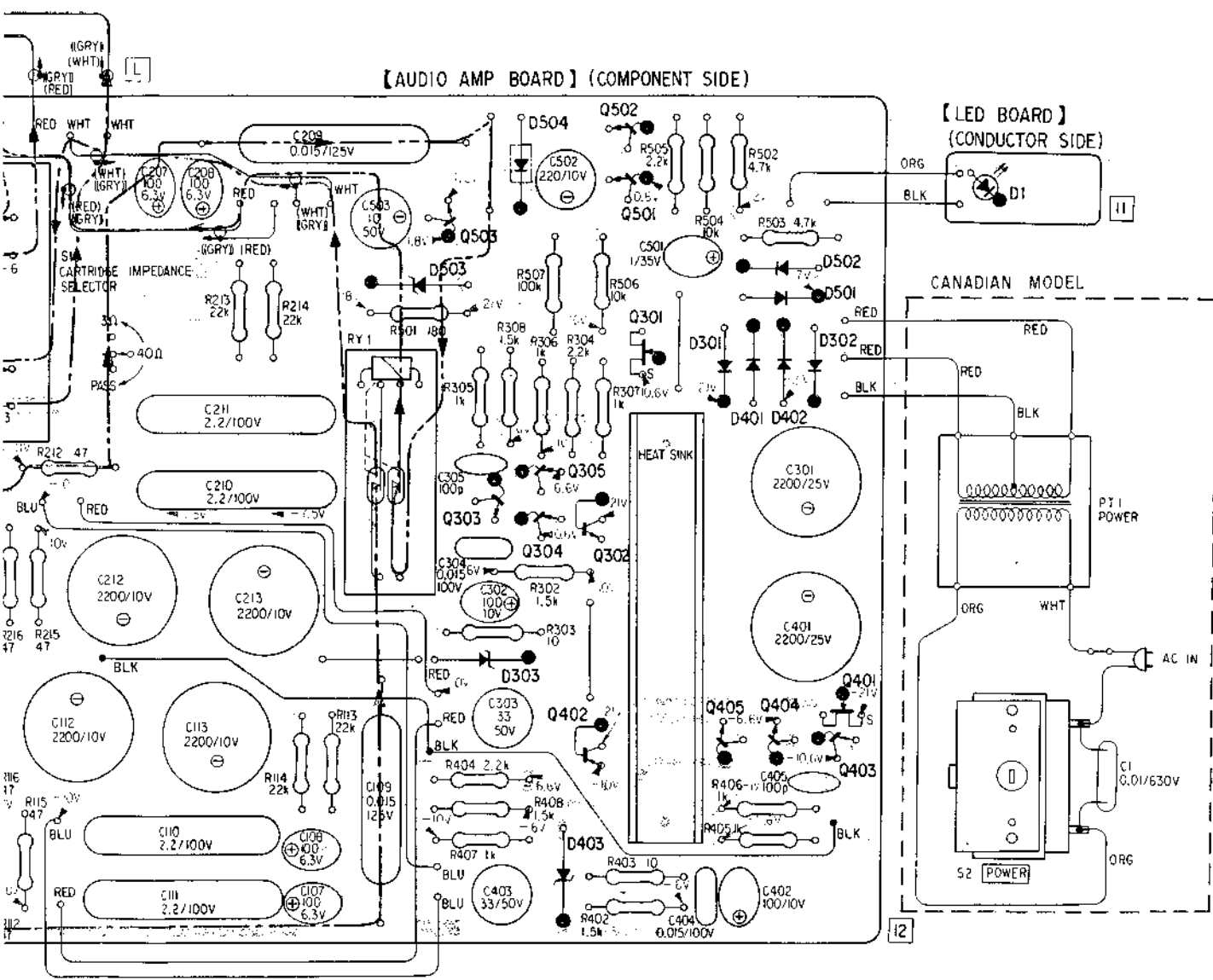
Replacement Semiconductors

- Q101, 201, 303, Q404, 405: 2SC1775
- Q301, 401: 2SK42-2
- Q304, 305, Q403: 2SA872
- Q501-503: 2SC634A
- D301, 302, D401, 402, D501, 502: 10E2
- D504: VD1220
- Q102, 202: 2SC1811
- Q302: 2SC1173
- Q402: 2SA473
- D1: SEL103R
- Q303, 403: EQB01-06
- Q503: EQB01-18

Note:

- Color code of sleeving over the end of the jacket.
- : B+ pattern
- Signal Path
 - L-CH
 - R-CH
- Voltages are dc with respect to ground unless otherwise noted.
- Readings are taken under no signal conditions with a VOM (20 kΩ/V).
- ○ — : parts extracted from the component side.
- ● — : parts extracted from the conductor side.

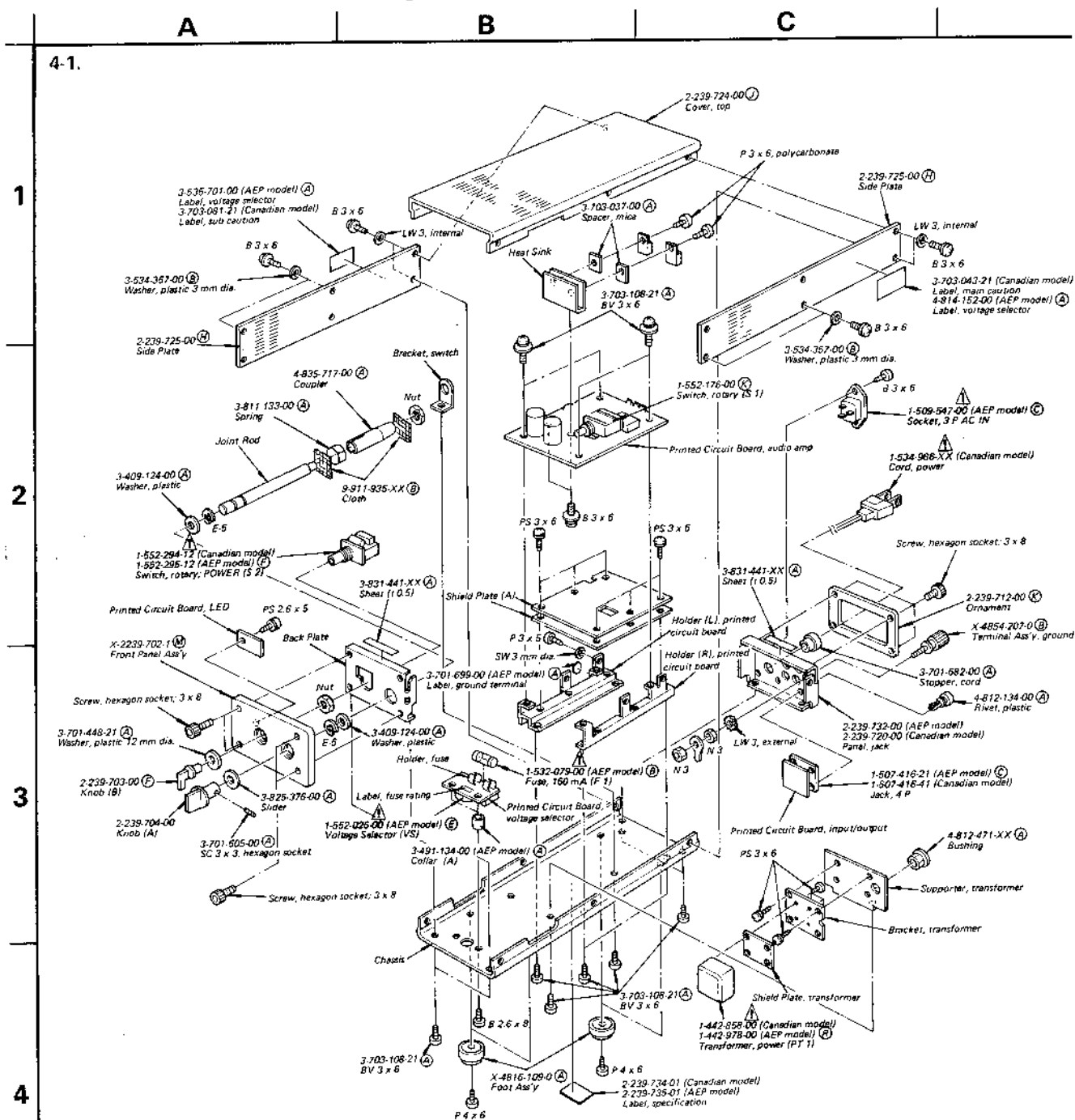
503	303	305	302	502	401	Q
		304	402	501	403	
503	303	504				D
		403		301	401 402 302	



Replacement Semiconductors

- Q101, 201, 303, 404, 405: 2SC1775
- Q301, 401: 2SK42-2
- Q304, 305, 403: 2SA872
- Q501-503: 2SC634A
- D301, 302, D401, 402, D501, 502: 10E2
- D504: VD1220
- Q102, 202: 2SC1811
- Q302: 2SC1173
- Q402: 2SA473
- D1: SEL103R
- Q303, 403: EQB01-06
- Q503: EQB01-18

SECTION 4
EXPLODED VIEW



- Note:**
- Items with no part number and/or no description are not stocked because they are seldom required for routine service.
 - All screws are Phillips (cross recess) type unless otherwise noted.
(-) = slotted head
 - Circled letters (A to Z) are applicable to European models only.

Note: The components identified by shading and Δ mark are critical for safety. Replace only with part number specified.

SECTION 5
ELECTRICAL PARTS LIST

Note: Circled letters (A to Z) are applicable to European models only.

Ref. No. Part No. Description

SEMICONDUCTORS

Transistors

Q101	(B) 2SC1775	
Q102	(C) 2SC1811	
Q201	(B) 2SC1775	
Q202	(C) 2SC1811	
Q301	(C) 2SK42-2	
Q302	(C) 2SC1173	
Q303	(B) 2SC1775	
Q304, 305	(B) 2SA872	
Q401	(C) 2SK42-2	
Q402	(C) 2SA473	
Q403	(B) 2SA872	
Q404, 405	(B) 2SC1775	
Q501-503	(B) 2SC634A	

Diodes

D1	(B) SEL103R	
D301, 302 Δ	(B) 10E2	
D303	(B) EQB01-06	
D401, 402 Δ	(B) 10E2	
D403	(B) EQB01-06	
D501, 502 Δ	(B) 10E2	
D503	(B) EQB01-18	
D504	(B) VD1220	

CAPACITORS

All capacitors are in μ F and ceramic unless otherwise noted.
50 WV or less are not indicated except for electrolytics.
pF = μ F, elect = electrolytic

C1	Δ 1-130-142-11	0.01	125 V	polyethylene (Canadian model)
C1, 2	Δ 1-115-148-11	(C) 0.01	450 V	paper (AEP model)

Note: The components identified by shading and Δ mark are critical for safety. Replace only with part number specified.

Ref. No. Part No. Description

C101, 201	1-102-074-11	(A) 0.001	
C102, 202	1-131-429-11	(G) 470	3.15 tantalum
C103, 203			
C104, 204	1-104-129-11	(C) 0.015	125 V polystyrol
C105, 205	1-130-113-11	(B) 560 p	polystyrol
C107, 207	1-131-295-11	(C) 100	6.3 V tantalum
C108, 208			
C109, 209	1-104-129-11	(C) 0.015	125 V polystyrol
C110, 210	1-130-084-11	(D) 2.2	100 V polyethylene
C111, 211			
C112, 212	1-121-659-11	(B) 2200	10 V elect
C113, 213			
C301, 401 Δ	1-123-067-11	(D) 2200	25 V elect
C302, 402	1-131-428-11	(F) 100	10 V tantalum
C303, 403	1-123-237-11	(B) 33	50 V elect
C304, 404	1-129-927-11	(B) 0.015	100 V polyethylene
C305, 405	1-102-975-11	(A) 100 p	
C501	1-131-215-11	(B) 1	35 V tantalum
C502	1-121-977-11	(B) 220	10 V elect
C503	1-121-738-11	(A) 10	50 V elect

RESISTORS

All resistors are in ohms and $\frac{1}{2}$ W carbon unless otherwise noted.

R101, 201	1-244-837-11	(A) 33	
R102, 202	1-244-867-11	(A) 560	
R103, 203	1-244-851-11	(A) 120	
R104, 204			
R105, 205	1-244-849-11	(A) 100	
R106, 206	1-244-857-11	(A) 220	
R107, 207	1-244-853-11	(A) 150	
R108, 208	1-244-809-11	(A) 2.2	
R109, 209	1-214-100-11	(B) 47 $\frac{1}{2}$ W	$\pm 1\%$ metal oxide
R110, 210	1-224-885-11	(A) 3.3k	
R111, 211	1-224-864-11	(A) 330	
R112, 212	1-224-841-11	(A) 47	
R113, 213	1-224-905-11	(A) 22k	
R114, 214			
R115, 215	1-224-841-11	(A) 47	
R116, 216			

SECTION 5
ELECTRICAL PARTS LIST

Note: Circled letters (A to Z) are applicable to European models only.

Note: Circled letters (A to Z) are applicable to European models only.

Ref. No. Part No. Description

SEMICONDUCTORS

Transistors

Q101	(B) 2SC1775
Q102	(C) 2SC1811
Q201	(B) 2SC1775
Q202	(C) 2SC1811
Q301	(C) 2SK42-2
Q302	(C) 2SC1173
Q303	(B) 2SC1775
Q304, 305	(B) 2SA872
Q401	(C) 2SK42-2
Q402	(C) 2SA473
Q403	(B) 2SA872
Q404, 405	(B) 2SC1775
Q501-503	(B) 2SC634A

Diodes

D1	(B) SEL103R
D301, 302	(B) 10E2
D303	(B) EQB01-06
D401, 402	(B) 10E2
D403	(B) EQB01-06
D501, 502	(B) 10E2
D503	(B) EQB01-18
D504	(B) VD1220

CAPACITORS

All capacitors are in μF and ceramic unless otherwise noted.
50 WV or less are not indicated except for electrolytics.
 $\text{pF} = \mu\text{F}$, elect = electrolytic

C1	(A) 1-130-142-11	0.01	125 V	polyethylene (Canadian model)
C1, 2	(A) 1-115-148-11	(C) 0.01	450 V	paper (AEP model)

Ref. No. Part No. Description

C101, 201	1-102-074-11	(A) 0.001		
C102, 202	1-131-429-11	(G) 470	3.15	tantalum
C103, 203				
C104, 204	1-104-129-11	(C) 0.015	125 V	polystyrol
C105, 205	1-130-113-11	(B) 560 p		polystyrol
C107, 207	1-131-295-11	(C) 100	6.3 V	tantalum
C108, 208				
C109, 209	1-104-129-11	(C) 0.015	125 V	polystyrol
C110, 210	1-130-084-11	(D) 2.2	100 V	polyethylene
C111, 211				
C112, 212	1-121-659-11	(B) 2200	10 V	elect
C113, 213				
C301, 401	(A) 1-123-067-11	(D) 2200	25 V	elect
C302, 402	1-131-428-11	(F) 100	10 V	tantalum
C303, 403	1-123-237-11	(B) 33	50 V	elect
C304, 404	1-129-927-11	(B) 0.015	100 V	polyethylene
C305, 405	1-102-975-11	(A) 100 p		
C501	1-131-215-11	(B) 1	35 V	tantalum
C502	1-121-977-11	(B) 220	10 V	elect
C503	1-121-738-11	(A) 10	50 V	elect

RESISTORS

All resistors are in ohms and $\frac{1}{2}\text{W}$ carbon unless otherwise noted.

R101, 201	1-244-837-11	(A) 33		
R102, 202	1-244-867-11	(A) 560		
R103, 203	1-244-851-11	(A) 120		
R104, 204				
R105, 205	1-244-849-11	(A) 100		
R106, 206	1-244-857-11	(A) 220		
R107, 207	1-244-853-11	(A) 150		
R108, 208	1-244-809-11	(A) 2.2		
R109, 209	1-214-100-11	(B) 47	$\frac{1}{2}\text{W} \pm 1\%$	metal oxide
R110, 210	1-224-885-11	(A) 3.3 k		
R111, 211	1-224-864-11	(A) 330		
R112, 212	1-224-841-11	(A) 47		
R113, 213	1-224-905-11	(A) 22 k		
R114, 214				
R115, 215	1-224-841-11	(A) 47		
R116, 216				

Ref. No. Part No. Description

R302, 402	1-224-877-11	(A) 1.5 k		
R303, 403	1-224-825-11	(A) 10		
R304, 404	1-244-881-11	(A) 2.2 k		
R305, 307	1-244-873-11	(A) 1		
R405, 407				
R308, 408	1-244-877-11	(A) 1.5 k		
R501	1-244-855-11	(A) 180		
R502, 503	1-244-889-11	(A) 4.7 k		
R504	1-244-897-11	(A) 10		
R505	1-244-881-11	(A) 2.2 k		
R506	1-244-897-11	(A) 10		
R507	1-244-921-11	(A) 100		

SWITCHES

S1	1-552-176-00	(K) Rotary, cartridge impedance selector
(A)	1-552-294-12	Rotary, POWER (Canadian model)
	1-552-295-12	(F) Rotary, POWER (AEP model)

MISCELLANEOUS

CP1	(A) 1-101-534-00	(C) Encapsulated Component (AEP model)
F1	(A) 1-532-079-00	(B) Fuse, 160 mA (AEP model)
MDL1, 2	A-2095-165-A	(P) Module
	1-442-858-00	Transformer, power (Canadian model)
PT1	(A) (
	1-442-978-00	(R) Transformer, power (AEP model)
RY1	1-515-294-21	(F) Relay, reed
VS	(A) 1-552-026-00	(E) Voltage Selector (AEP model)
	1-507-416-21	(C) Jack, 4 p (AEP model)
	1-507-416-41	Jack, 4 p (Canadian model)
	(A) 1-509-547-00	(C) Socket, 3 p AC IN (AEP model)
	(A) 1-534-986-XX	Cord, power (Canadian model)

ACCESSORIES & PACKING

Part No.	Description
1-551-315-00	(H) Cord, connection; RK-112
2-239-728-00	(C) Carton
2-239-730-00	(B) Side Cushion
2-239-731-00	(B) Cushion
2-502-809-00	(A) Bag, plastic; set
3-701-623-00	(A) Bag, plastic; printed matter
3-701-628-00	(A) Bag, plastic
3-701-684-11	(A) Card, voltage (AEP model)
3-703-112-01	Plug Guard (Canadian model)
3-770-100-11	(C) Manual, instruction

Note: The components identified by shading and (A) mark are critical for safety. Replace only with part number specified.

Note: The components identified by shading and (A) mark are critical for safety. Replace only with part number specified.

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