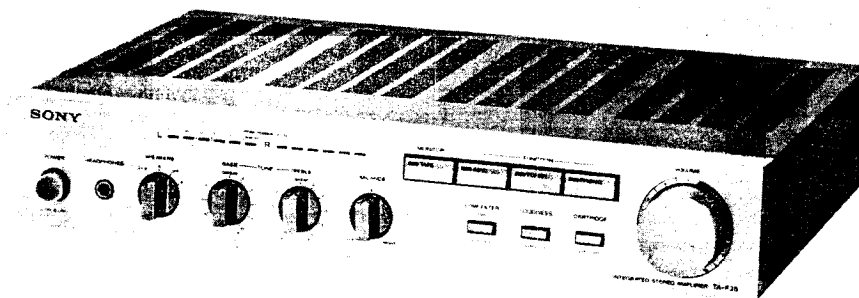


TA-F35

US Model
Canadian Model
AEP Model
UK Model



INTEGRATED STEREO AMPLIFIER

SPECIFICATIONS

POWER AMPLIFIER SECTION

Power Output and Total Harmonic

Distortion: With 8Ω loads, both channels driven, from
(US, Canadian 20 – 20,000 Hz; rated 40 watts per channel
model) minimum RMS power, with no more than
0.015% total harmonic distortion from
250 mW to rated output.

Continuous RMS power output:

(Less than 0.015% THD, both channels
driven simultaneously) 40 + 40 watts (8 ohms)
According to DIN 45500
(AEP, UK model) 40 + 40 watts (8 ohms)

Power bandwidth (IHF): 20 Hz – 20 kHz

Dynamic headroom: 1.8 dB*

Harmonic distortion: Less than 0.015% at rated output
Less than 0.01% at 20 W output

Intermodulation (IM) distortion:

(60 Hz : 7 kHz = 4 : 1) Less than 0.015% at rated output
Less than 0.01% at 20 W output

Frequency response: PHONO RIAA equalization curve ± 0.2 dB
TUNER

AUX 5 Hz – 60 kHz $+0$ dB
TAPE -1

Residual noise: Less than 180 μ V (8 ohms, network A)

Damping factor: 50 (8 ohms, 1 kHz)

— Continued on page 2 —

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.

ATTENTION AU COMPOSANT AYANT RAPPORT À LA SÉCURITÉ!

LES COMPOSANTS IDENTIFIÉS PAR UNE TRAME ET UNE MARQUE  SUR LES DIAGRAMMES SCHEMATIQUES, LES VUES EXPLOSÉES ET LA LISTE DES PIÈCES SONT CRITIQUES POUR LA SÉCURITÉ DE FONCTIONNEMENT. NE REMPLACER CES COMPOSANTS QUE PAR DES PIÈCES SONY DONT LES NUMÉROS SONT DONNÉS DANS CE MANUEL OU DANS LES SUPPLÉMENTS PUBLIÉS PAR SONY.

SONY[®]
SERVICE MANUAL

TA-F35

Inputs :

	Sensitivity	Impedance	Maximum input capability (1 kHz)	S/N (weighting network, input level)
PHONO (MM)	2.5 mV	50 kΩ	150 mV	88 dB 79 dB* (A, 2.5 mV)
PHONO (MC)	0.17 mV	100 Ω	11 mV	73 dB 73 dB* (A, 0.25 mV)
TUNER AUX TAPE	150 mV	50 kΩ	—	101 dB 78 dB* (A, 150 mV)

* '78 IHF

Measured with rated output power into 8-ohm loads (both channels driven simultaneously) at 1 kHz

Outputs :

REC OUT
Voltage 150 mV
Impedance 4.7 kilohms
SPEAKER A, B
Accepts speakers of 8 - 16 ohms.
HEADPHONES
Accepts low and high impedance headphones.

Tone controls :

BASS
±10 dB at 100 Hz (turnover frequency 500 Hz)
TREBLE
±10 dB at 25 kHz (turnover frequency 5 kHz)

Loudness (att. 30 dB)
Low filter :

+ 10 dB at 100 Hz, + 3 dB at 10 kHz
6 dB/octave attenuation below 15 Hz

General

System:

Preamplifier section : low-noise NF type equalizer amp.; NF type tone control
Power amplifier section : pure-complementary SEPP dc power amplifier with all stages direct coupled

Power Requirements:

US, Canadian model: 120V ac, 60 Hz
UK model: 240V ac (or 220V ac adjustable by authorized Sony personnel), 50 Hz
AEP model: 220V ac (or 240V ac adjustable by authorized Sony personnel), 50 Hz

Power Consumption:

UK model: 250W
AEP model: 240W
US model: 90W
Canadian model: 140W

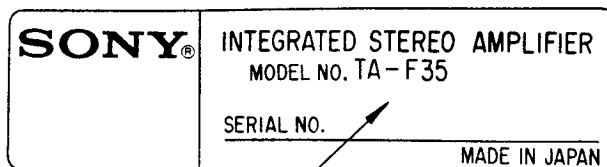
Dimensions:

Approx. 430 × 80 × 335 mm (w/h/d)
(17 × 3 1/4 × 13 3/4 inches)
including projecting parts and controls
Approx. 6.2 kg (13 lbs 11 oz) net
Approx. 7.2 kg (15 lbs 14 oz) in shipping carton

Weight :

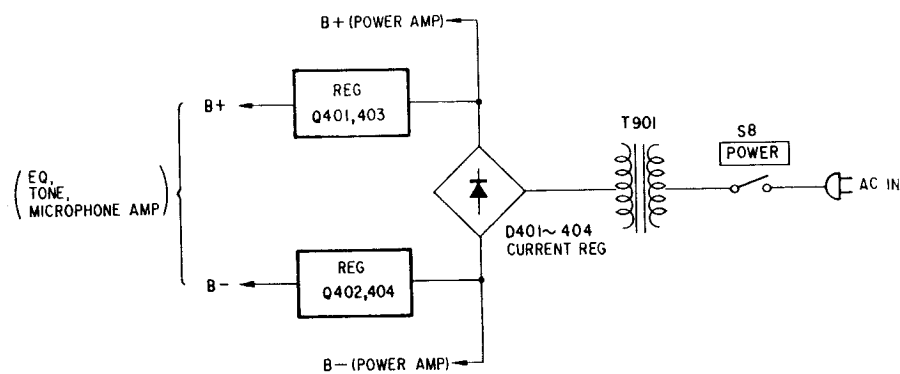
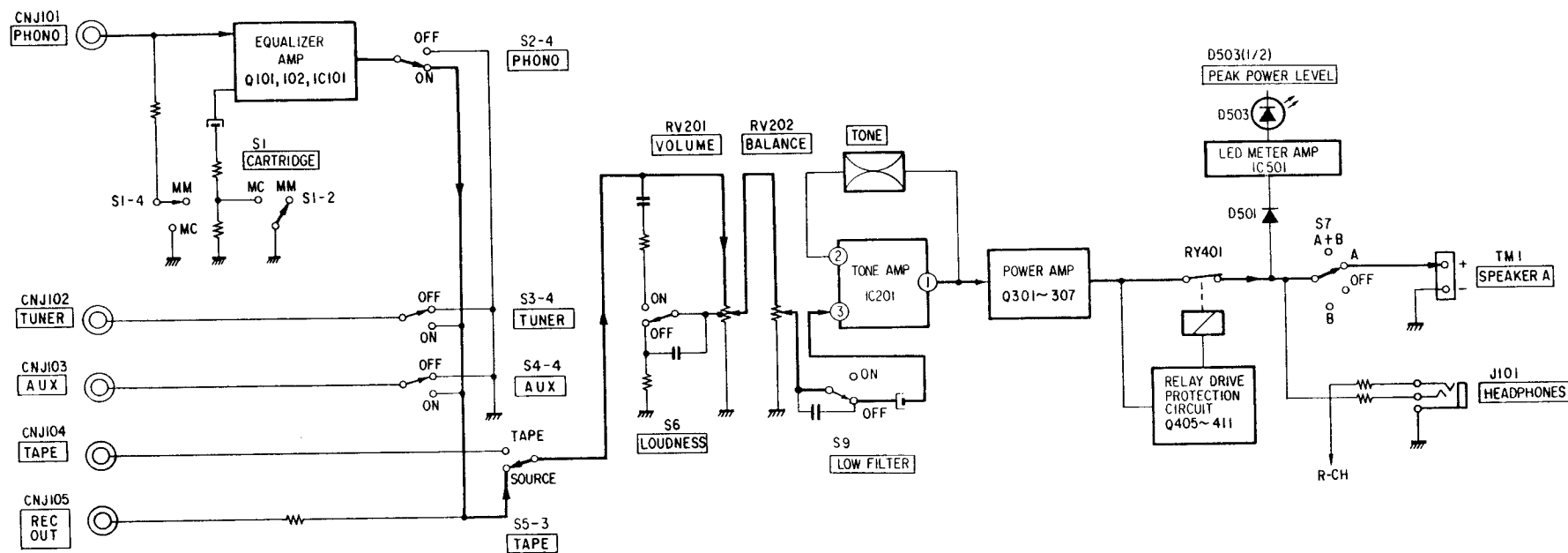
MODEL IDENTIFICATION

Specification Label



US model : AC 120V 60Hz 90W
Canadian model : AC 120V 60Hz 140W
AEP model : AC 220V ~50/60Hz 240W
UK model : AC 240V ~50/60Hz 250W

SECTION 1
BLOCK DIAGRAM



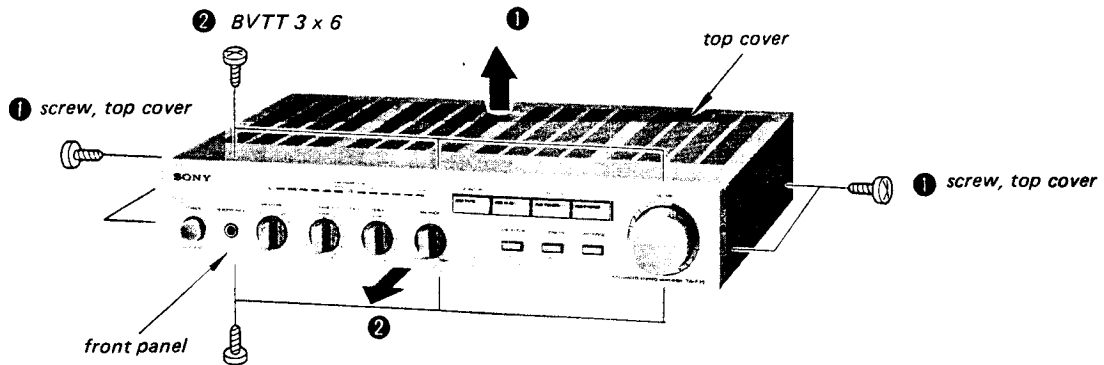
R-CH: SAME AS L-CH

SECTION 2 DISASSEMBLY

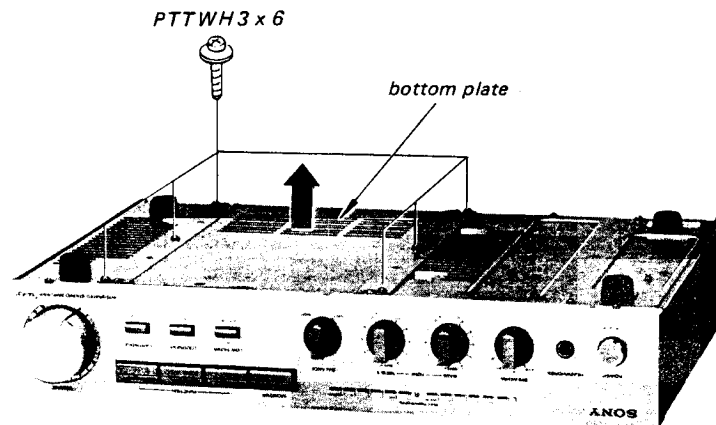
- Follow the disassembly procedure in the numerical order given.

TOP COVER/ FRONT PANEL REMOVAL

- ① : top cover
- ①, ② : front panel



BOTTOM PLATE REMOVAL



SECTION 3 ADJUSTMENTS

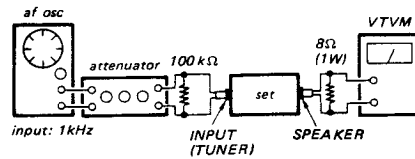
TA-F35 TA-F35

NOTE:

1. DC BIAS and DC BALANCE adjustments should be made about several minutes later after the POWER switch is turned on.
2. Make the DC BIAS adjustment first.
3. Repeat DC BIAS and DC BALANCE adjustments two or three times.
4. After replacing the power transistors, DC BIAS and DC BALANCE adjustments should be performed.

Indicator Sensitivity Adjustment

Procedure:



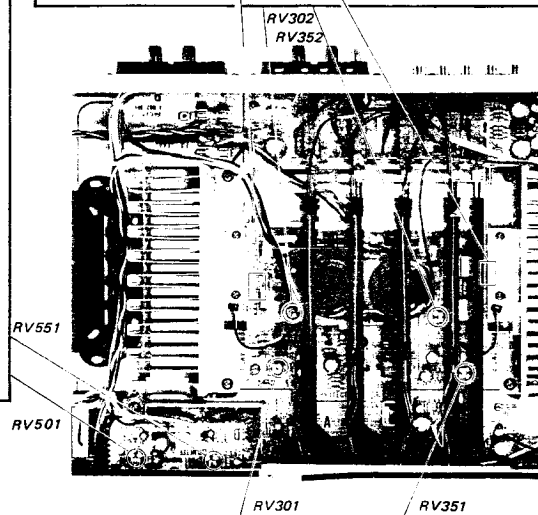
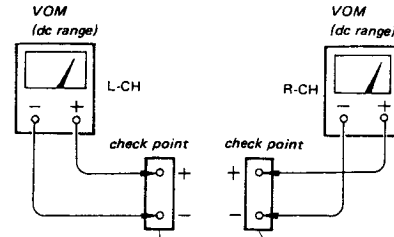
1. Turn the VOLUME control fully clockwise.
2. Adjust the input level of the set for 1W (2.5V) reading on the VTVM.
3. Adjust RT501 (L-CH) and RT551 (R-CH) so that the PEAK POWER LEVEL indicators of 1W and less light up.



DC Bias Adjustment

Procedure: Adjust RV302 (L-CH) and RV352 (R-CH) for 15mV readings with no signal input.

Adjustment Location:

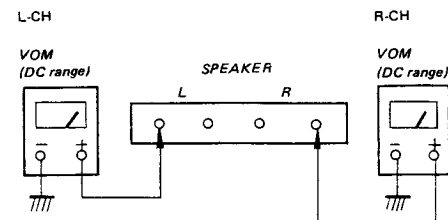


DC Balance Adjustment

Procedure:

Adjust RV301 (L-CH) and RV351 (R-CH) for 0V readings with no signal input.

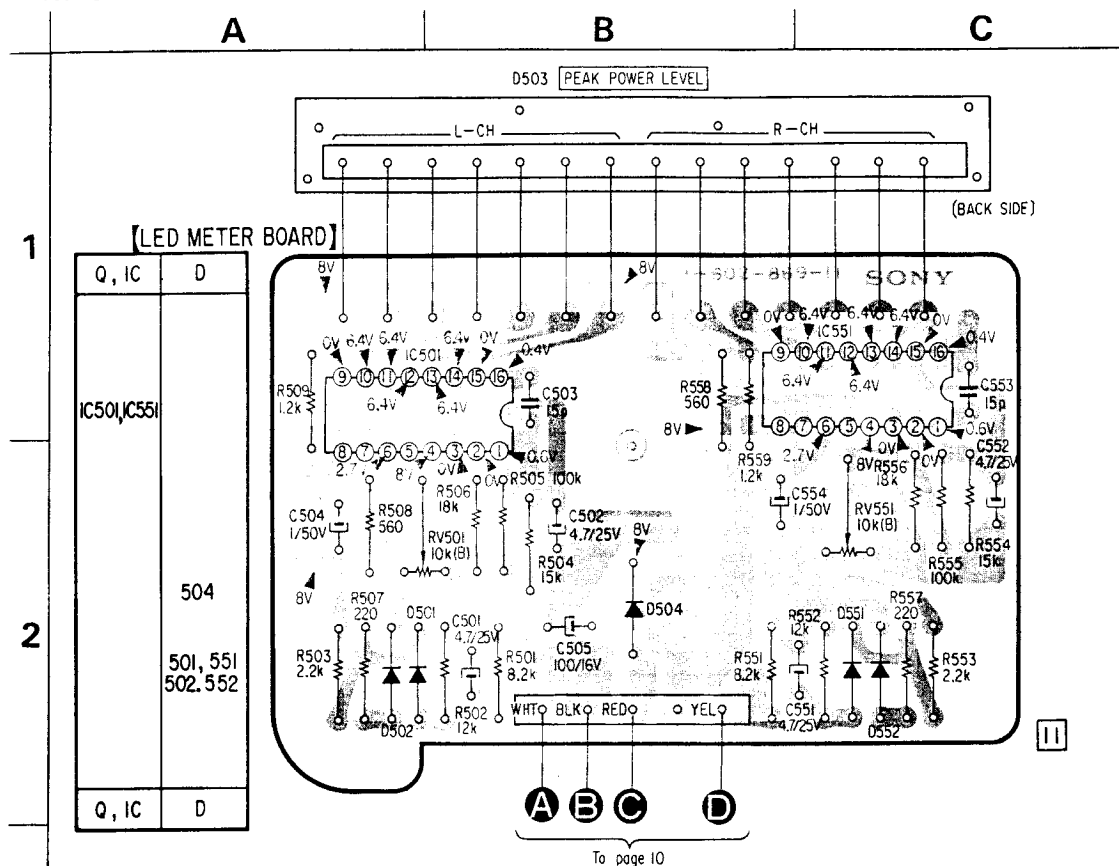
Adjustment Location:



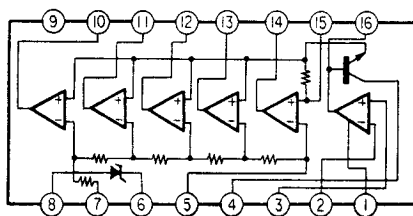
SECTION 4 DIAGRAMS

4-1. MOUNTING DIAGRAM

— Conductor Side —

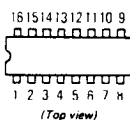


IC501, 551

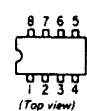


Semiconductor Lead Layouts

LB1405



NJM4559D



2SA733
2SB647
2SB647A



2SA771



2SA798



2SA1027
2SA1027R



2SB731



2SC900
2SC1362
2SC1364
2SD666



2SC945
2SC1400
2SC2240



2SC1986



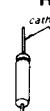
2SC2291



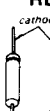
2SD809



1T22AM
1S188AN
1S1555
1SS53



10E2
IN4002
RD6.2E
RD6.2EB



30D2



SV04S



U05G



A

B

C

D

1

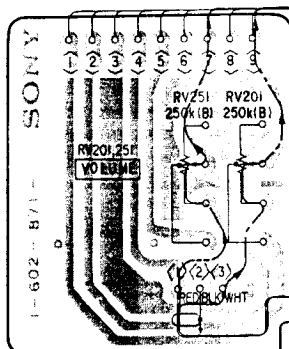
2

3

4

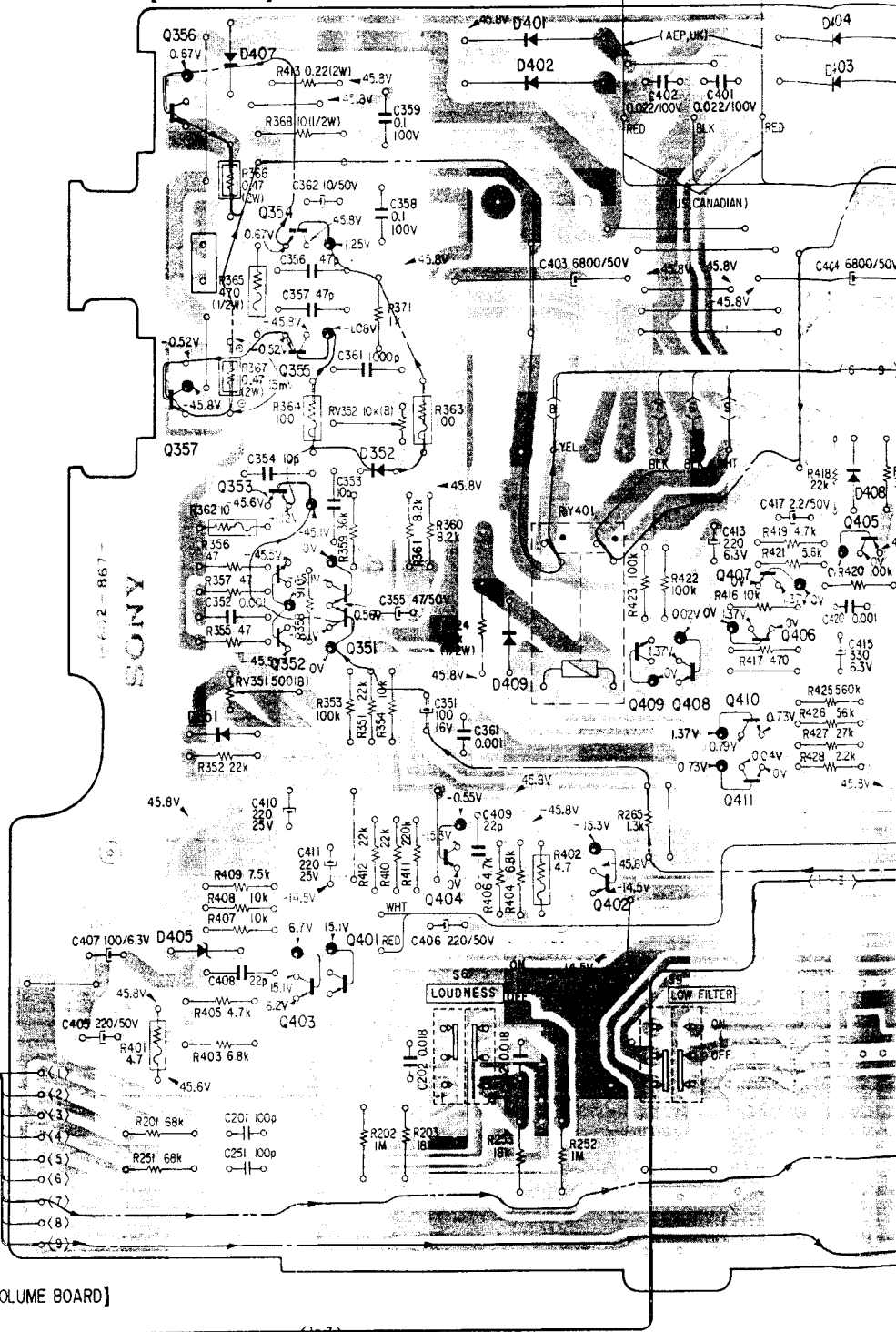
5

Q	IC	D
356	306	401 404 406 407 402 403
354	101 304 102 IC101	
355	152 305 151	410
357	307	
353	303	352 302 408
405 407		
352 351 406	302 301	409
409 408		
410		411
411		351 301
404 402		
403 401 IC201		405



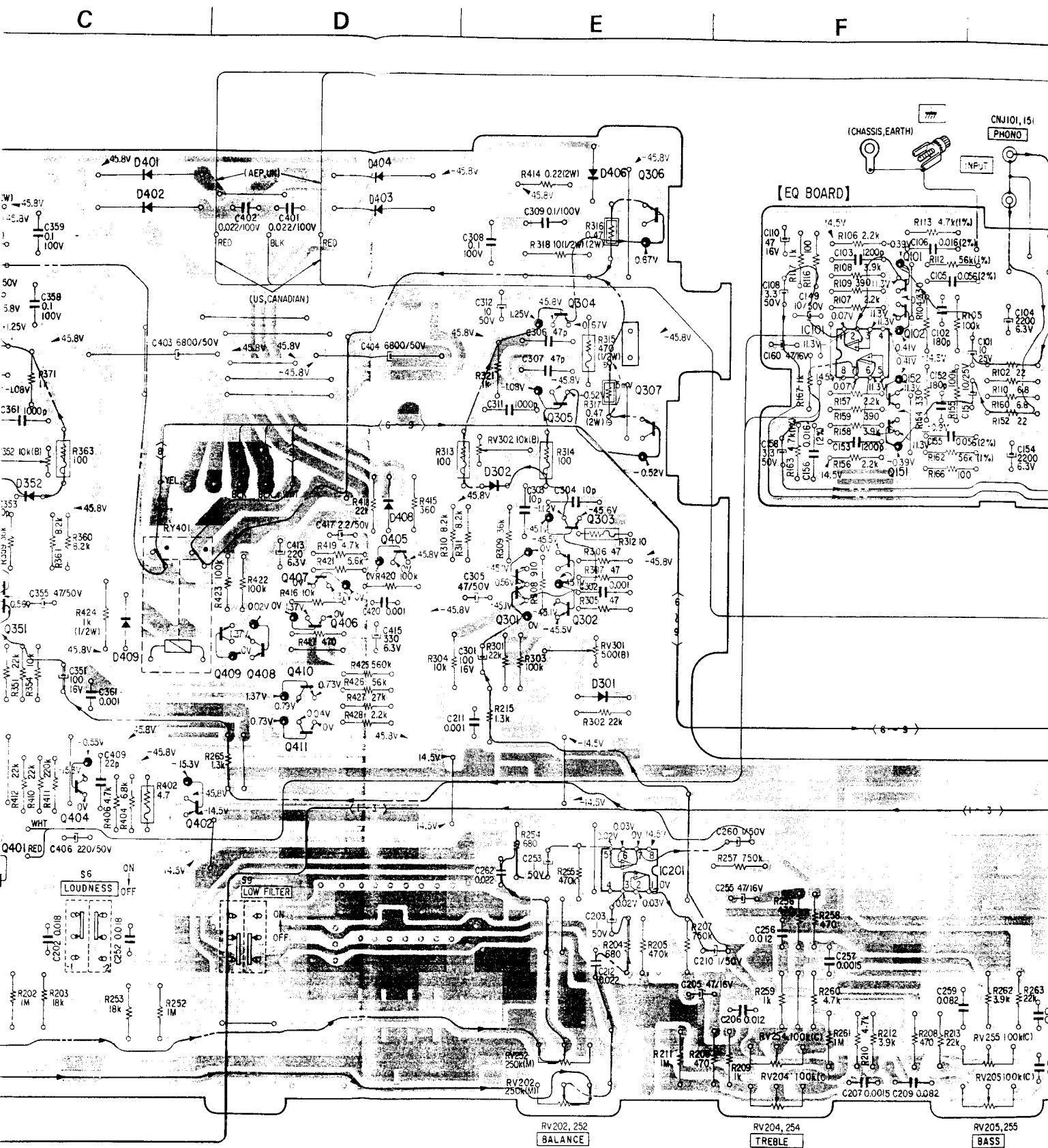
[VOLUME BOARD]

[AUDIO BOARD]



- — : parts extracted from the component side.
- : B + pattern

- : signal path
- : L-CH signal path
- : R-CH signal path



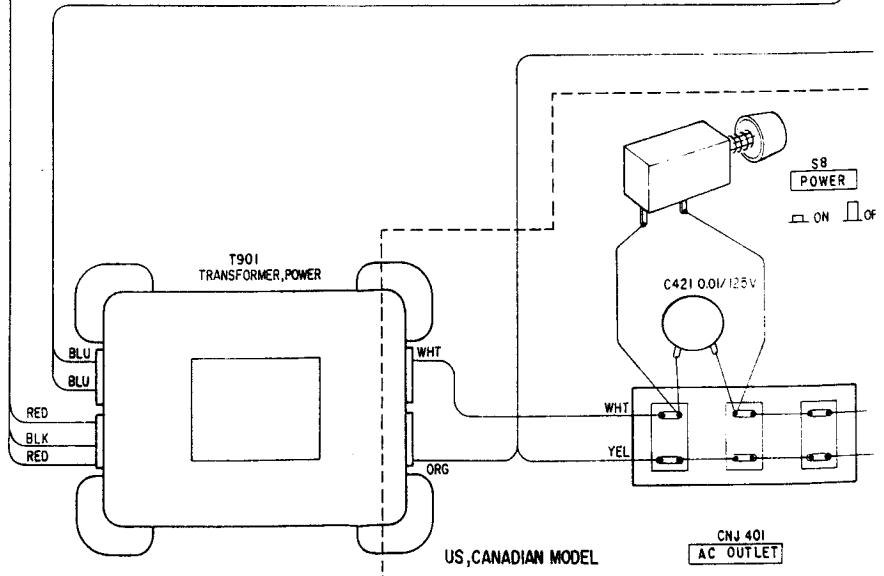
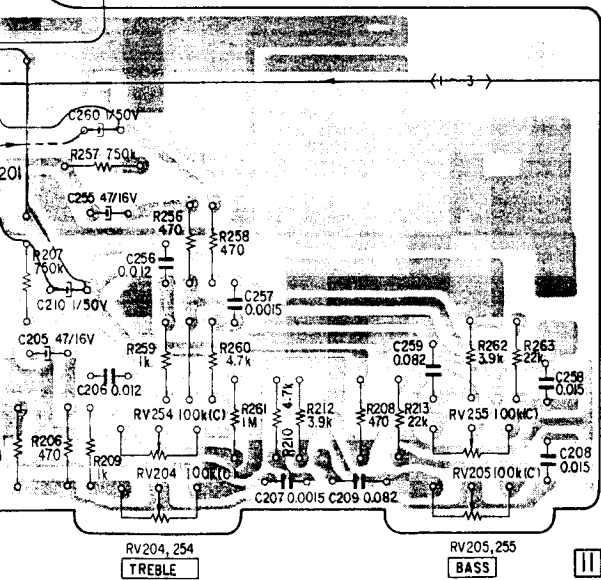
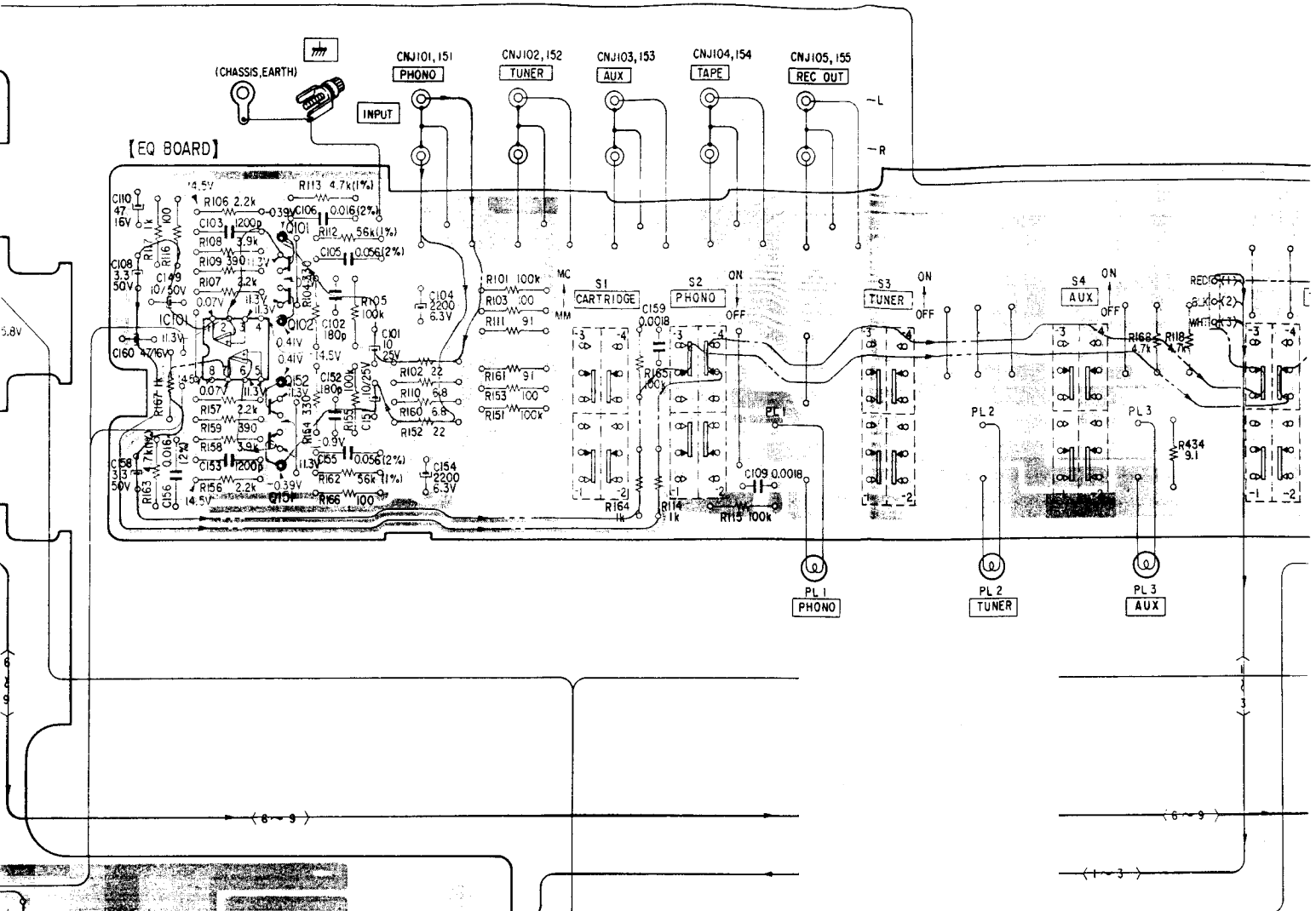
→ : signal path
 → : L-CH signal path
 → : R-CH signal path

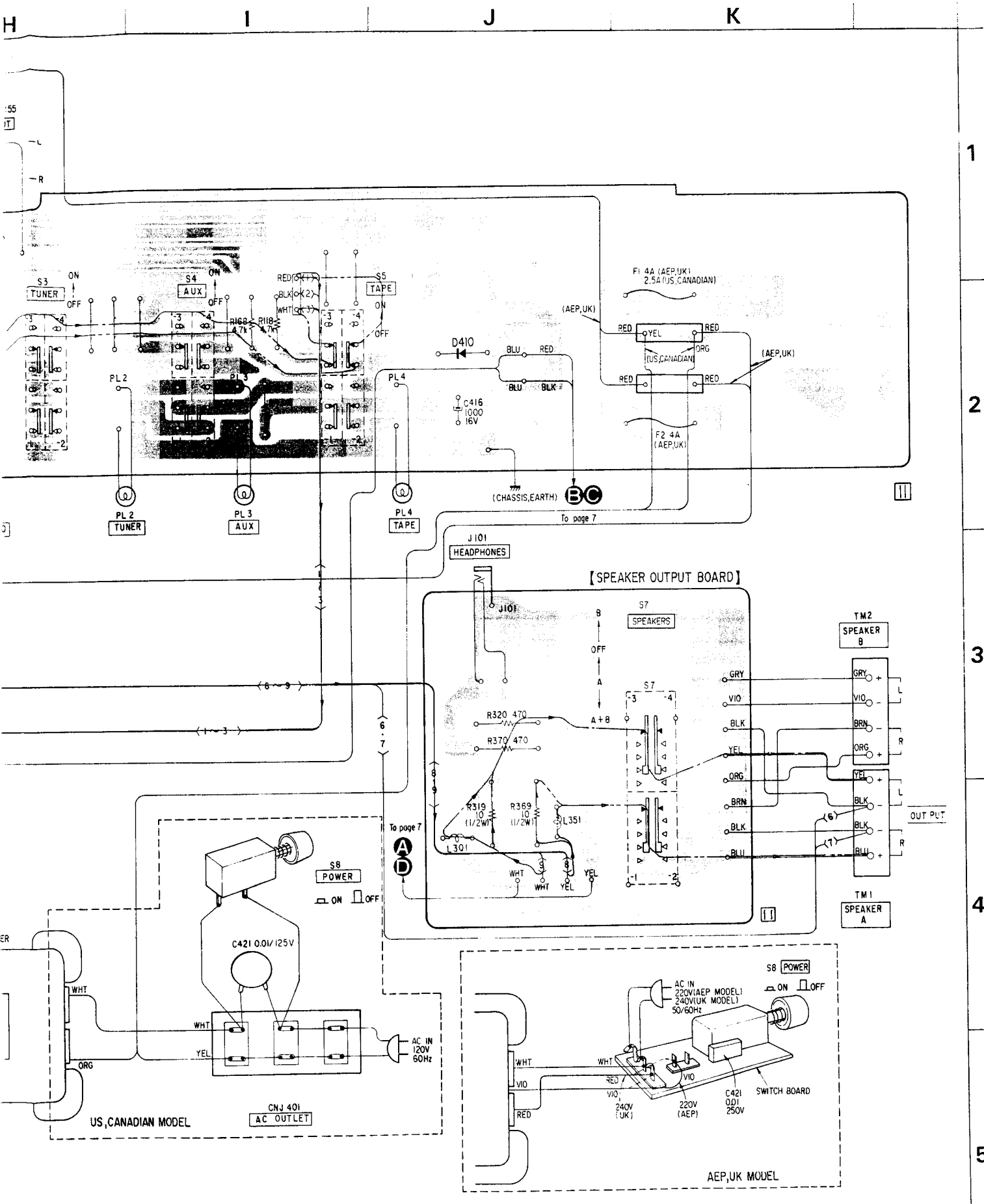
F

G

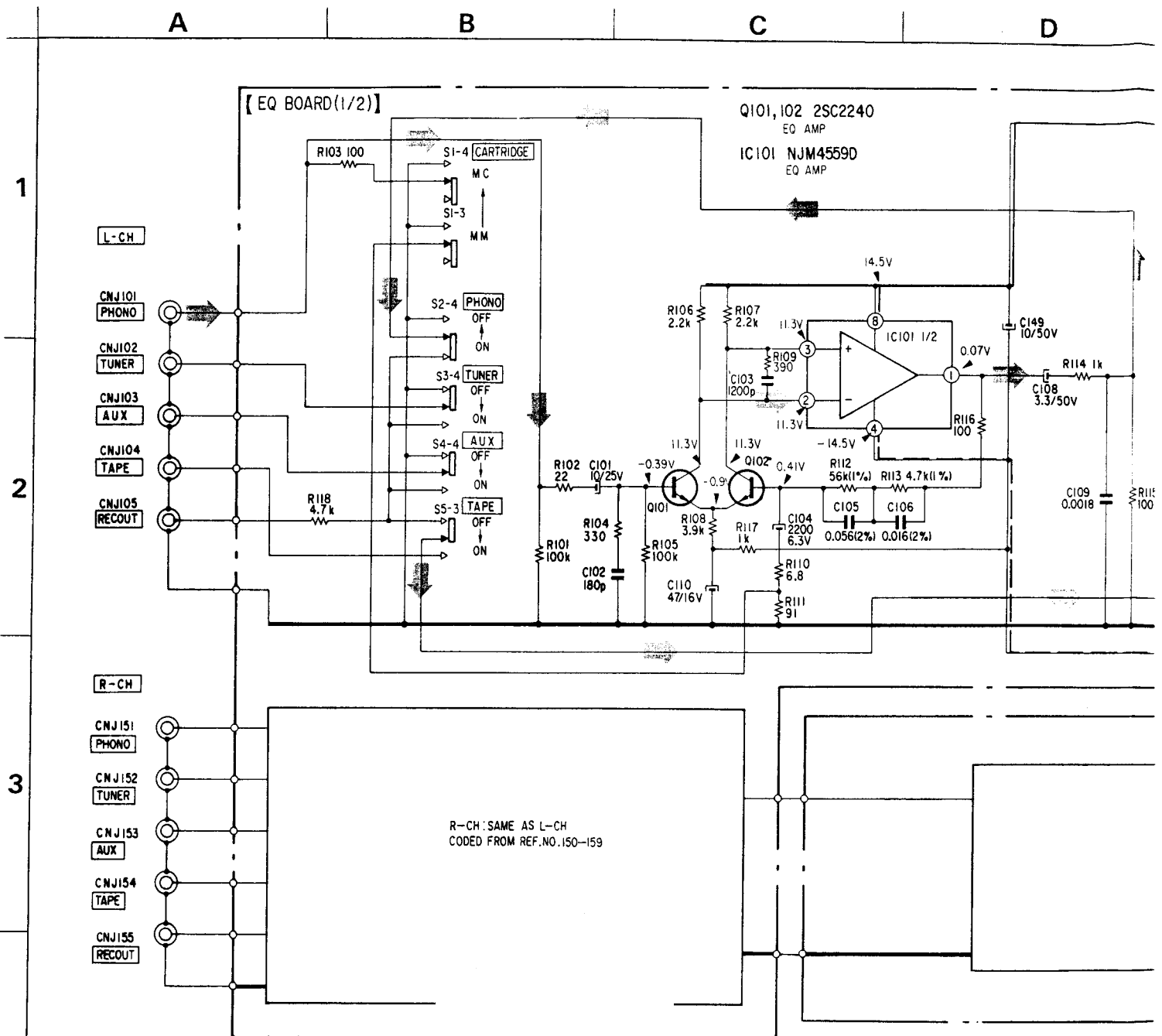
H

I





4.2. SCHEMATIC DIAGRAM

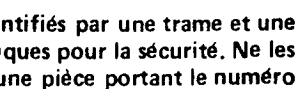


- All capacitors are in μF unless otherwise noted. pF : μF 50WV or less are not indicated except for electrolytics and tantalums.
- All resistors are in ohms, $\frac{1}{4}\text{W}$ unless otherwise noted. k Ω : 1000 Ω ; M Ω : 1000 k Ω
- : nonflam resistor
- : fusible resistor.
- : panel designation.
- Components for right channel have same values as for left channel.
- : signal path

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

- Voltages are dc with respect to ground unless otherwise noted.
- Voltage variations may be noted due to normal production tolerances.
- : adjustment for repair.
- Readings are taken under no-signal conditions with a VOM (20 k Ω /V).
- : B+ bus.
- : B- bus.

Note: Les composants identifiés par une trame et une marque sont critiques pour la sécurité. Ne les remplacer que par une pièce portant le numéro spécifié.

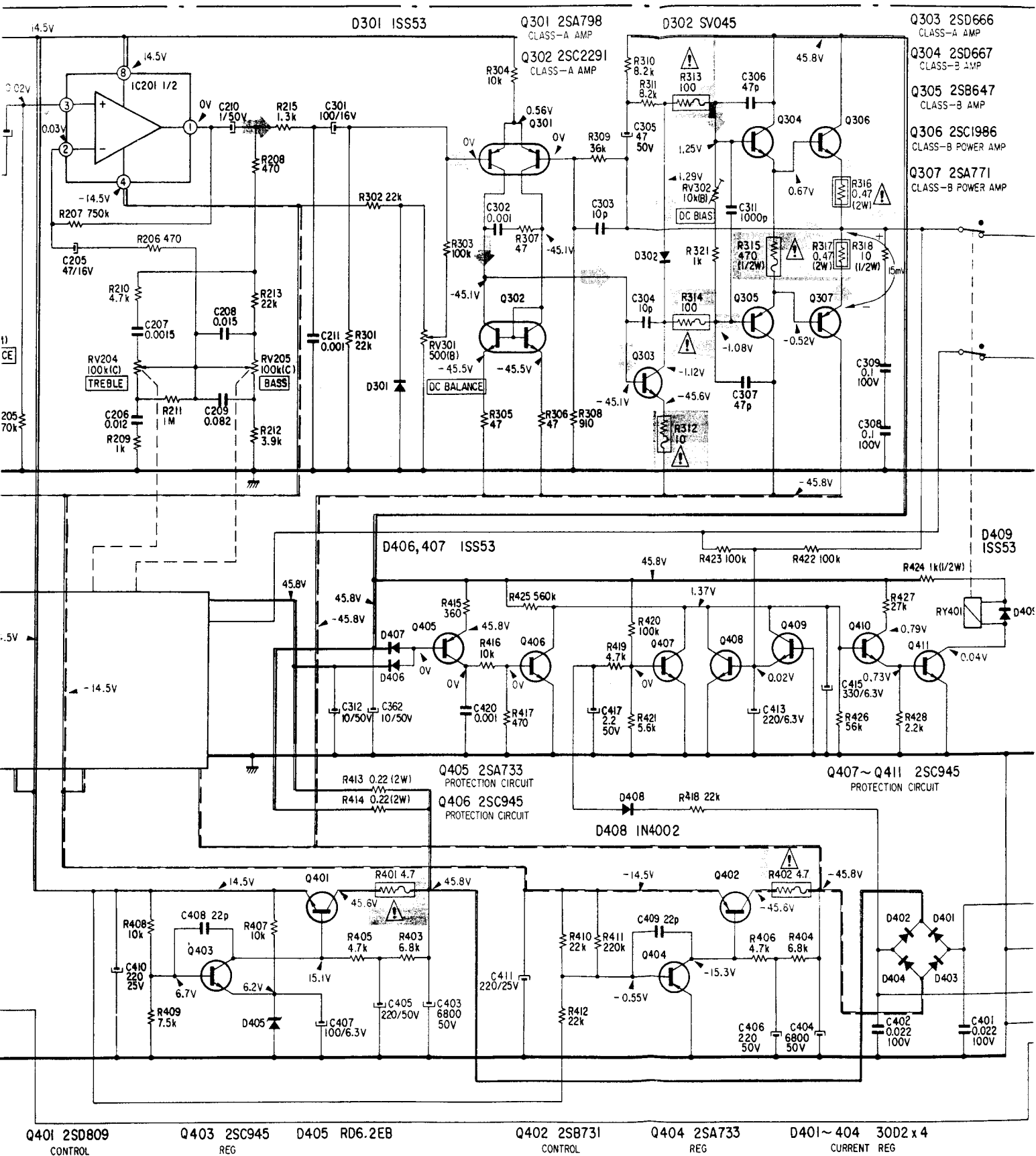


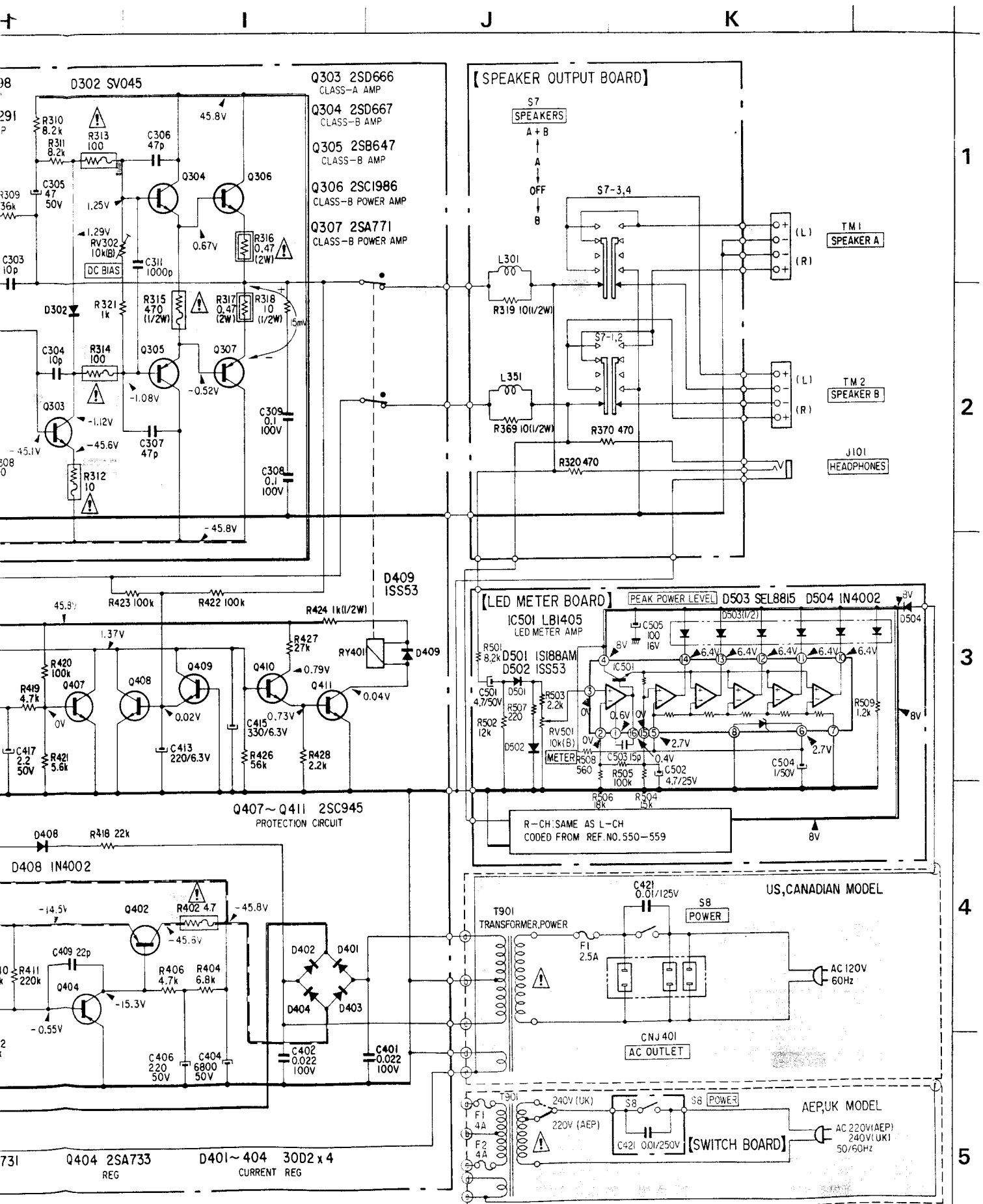
F

G

H

I



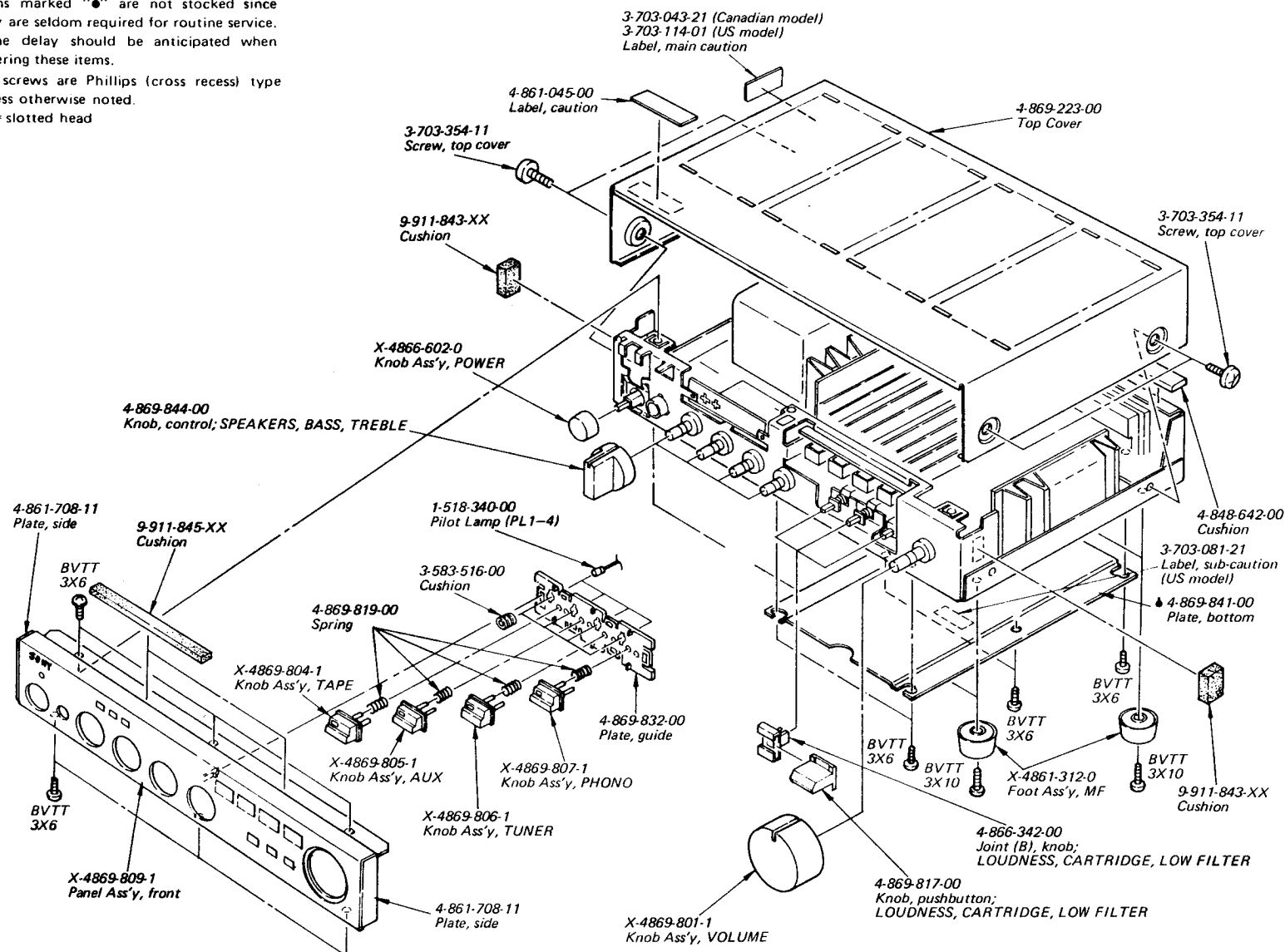


SECTION 5
EXPLODED VIEWS

5-1.

Note:

- Items marked "▲" are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.
- All screws are Phillips (cross recess) type unless otherwise noted.
- (-) = slotted head

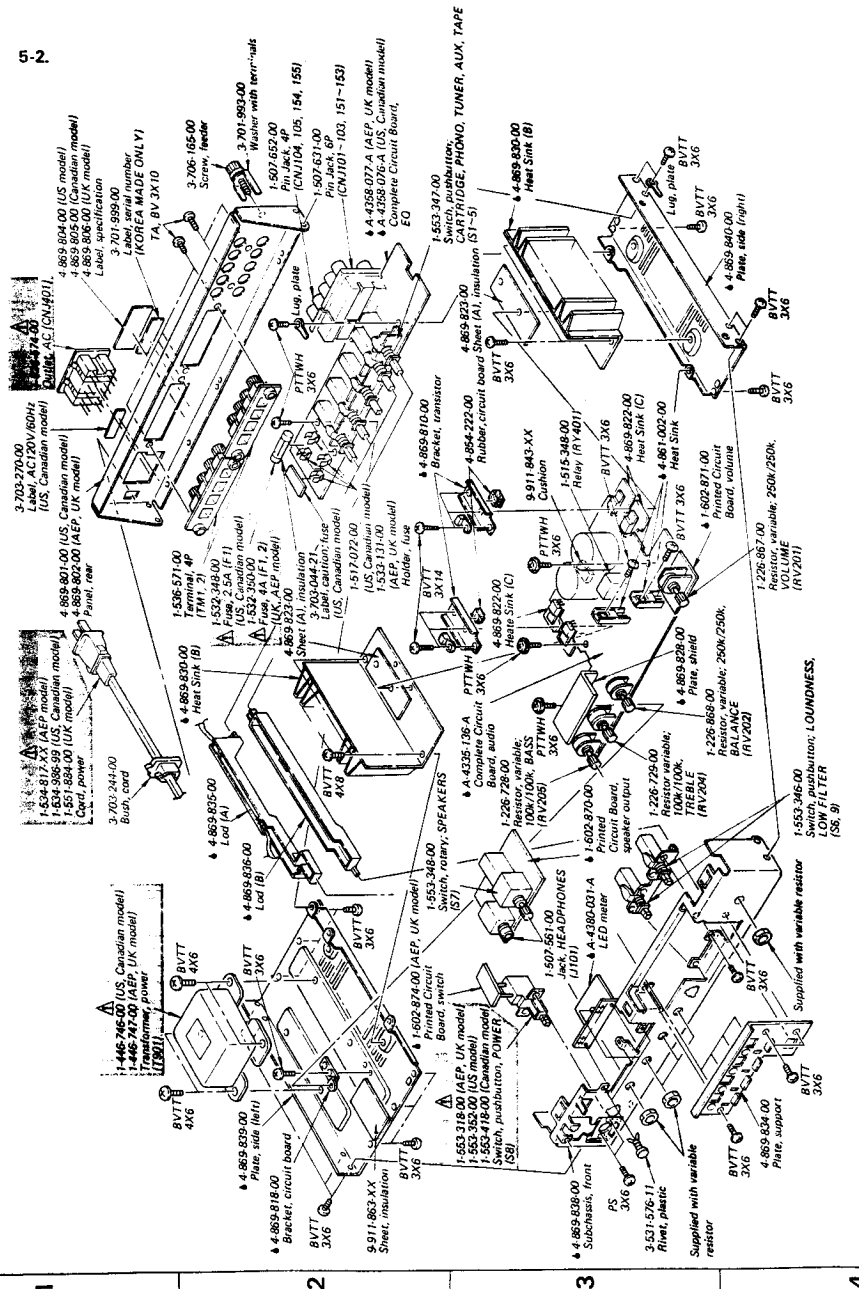


Note: The components identified by shading and mark ▲ are critical for safety. Replace only with part number specified.

Note: Les composants identifiés par une trame et une marque ▲ sont critiques pour la sécurité. Ne les remplacer que par une pièce portant le numéro spécifié.

SECTION 6
ELECTRICAL PARTS LIST

5-2.



-15-

Ref. No. Part No. Description

SEMICONDUCTORS

Transistors

Q101, 102	8-729-140-02	2SC1400
Q151, 152	8-729-679-82	2SA798
Q301, 351	8-729-629-12	2SC2291
Q302, 352	8-729-300-62	2SD666A
Q303, 353	8-729-306-72	2SD667A
Q305, 355	8-729-300-72	2SB647A
Q306, 356	8-729-398-62	2SC1986
Q307, 357	8-729-377-12	2SA771
Q401	8-729-180-93	2SD809
Q402	8-729-173-13	2SB731

Q403	8-729-663-47	2SC1364
Q404, 405	8-729-612-77	2SA1027R
Q406-411	8-729-663-47	2SC1364

ICs

IC101, 201	8-759-745-59	NJM4559D
IC501, 551	8-759-814-05	LB1405

Diodes

D301, 351	8-719-815-55	1S1555
D302, 352	8-719-300-11	SV04S
D401-404	8-719-911-55	U05G
D405	8-719-162-07	RD6.2E
D406, 407	8-719-815-55	1S1555
D408	8-719-200-02	10E2
D409	8-719-815-55	1S1555
D410	8-719-200-02	10E2
D501	8-719-422-21	1T22AM
D502	8-719-815-55	1S1555
D504	8-719-200-02	10E2

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

Note: Les composants identifiés par une trame et une marque  sont critiques pour la sécurité. Ne les remplacer que par une pièce portant le numéro spécifié.

Ref. No. Part No. Description

CAPACITORS

• All capacitors are in μF . Common capacitors are omitted. Refer to the lists on pages 18 and 19 for their part numbers.

C302, 311	1-161-323-00	0.001 50V ceramic
C352, 361	1-125-229-00	6800 50V electrolytic
C403, 404	1-130-455-00	0.01 250V film (AEP, UK model)
C421	1-161-744-00	0.01 400V ceramic (AEP, UK model)
	1-161-749-00	0.001 125V ceramic (US, Canadian model)

RESISTORS

All resistors are in ohms. Common $\frac{1}{4}\text{W}$ carbon resistors are omitted. Refer to the list on page 20 for their part numbers.

R312, 362	1-212-857-00	10 fusible
R313, 314	1-212-881-51	100 fusible
R363, 364	1-212-998-00	470 $\frac{1}{4}\text{W}$ fusible
R315, 365	1-217-153-00	0.47 2W metal plate (nonflammable)
R316, 317	1-244-825-00	10 $\frac{1}{4}\text{W}$ carbon
R366, 367	1-244-825-00	10 $\frac{1}{4}\text{W}$ carbon
R320, 370	1-244-865-00	470 $\frac{1}{4}\text{W}$ carbon
R401, 402	1-212-849-00	4.7 metal-oxide (nonflammable)
R413, 414	1-217-151-00	0.22 2W metal plate
R415	1-212-894-00	360 fusible
R424	1-244-873-00	1k $\frac{1}{4}\text{W}$ carbon
RV201	1-226-867-00	250k/250k, variable; VOLUME
RV202	1-226-868-00	250k/250k, variable; BALANCE
RV204	1-226-729-00	100k/100k, variable; TREBLE
RV205	1-226-728-00	100k/100k, variable; BASS
RV301, 351	1-226-232-00	500, adjustable; DC BALANCE
RV302, 352	1-226-236-00	10k, adjustable; DC BIAS
RV501, 551	1-226-236-00	10k, adjustable; LED METER

• Items marked "A" are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.

-16-

Ti

Ref. No. Part No. Description

MISCELLANEOUS

CNJ101-103) CNJ151-153)	1-507-631-00	Pin Jack, 6p
CNJ104, 105) CNJ154, 155)	1-507-652-00	Pin Jack, 4p
CNJ401	△ 1-526-574-00	Outlet, AC
F1	△ 1-532-348-00	Fuse, 2.5A (US, Canadian model)
F1, 2	△ 1-532-350-00	Fuse, 4A (UK, AEP model)
J101	1-507-561-00	Jack, HEADPHONES
● L301, 351	1-420-838-00	Coil
RY401	1-515-348-00	Relay
PL1-4	1-518-340-00	Pilot Lamp
S1-5	1-553-347-00	Switch, pushbutton; CARTRIDGE, PHONO, TUNER, AUX, TAPE
S6	1-553-346-00	Switch, pushbutton; LOUDNESS
S7	1-553-348-00	Switch, rotary; SPEAKERS
S8	△ 1-553-318-00	Switch, pushbutton; POWER (AEP, UK model)
	△ 1-553-352-00	Switch, pushbutton; POWER (US model)
	△ 1-553-418-00	Switch, pushbutton; POWER (Canadian model)
S9	1-553-346-00	Switch, pushbutton; LOW FILTER
T901	△ 1-446-746-00	Transformer, power (US, Canadian model)
	△ 1-446-747-00	Transformer, power (AEP, UK model)
TM1, 2	1-536-571-00	Terminal, 4p
	1-517-072-00	Holder, fuse (US, Canadian model)
	1-533-131-00	Holder, fuse (AEP, UK model)
	△ 1-534-817-XX	Cord, power (AEP model)
	△ 1-534-986-99	Cord, power (US, Canadian model)
	△ 1-551-884-00	Cord, power (UK model)

COMPLETE CIRCUIT BOARDS

● A-4335-136-A	Audio
● A-4358-077-A	EQ (AEP, UK model)
● A-4358-076-A	EQ (US, Canadian model)
● A-4380-031-A	LED meter

PRINTED CIRCUIT BOARDS

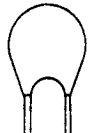
● 1-602-870-00	Speaker Out
● 1-602-871-00	Volume
● 1-602-874-00	Switch (AEP, UK model)

ACCESSORIES AND PACKING MATERIALS

<u>Part No.</u>	<u>Description</u>
3-701-630-00	Bag, polyethylene
3-783-201-11	Manual, instruction (AEP, UK model)
3-783-201-21	Manual, instruction (US model)
3-783-201-21 3-794-845-31	Manual, instruction (Canadian model)
4-863-543-00	Cushion
4-866-723-00	Sheet, polyethylene
4-869-846-00	Carton, individual

MYLAR CAPACITORS

RATING											
CAP. (μF)	50 VOLT.	100 VOLT.	200 VOLT.	CAP. (μF)	50 VOLT.	100 VOLT.	200 VOLT.	CAP. (μF)	50 VOLT.	100 VOLT.	200 VOLT.
	PART No.	PART No.	PART No.		PART No.	PART No.	PART No.		PART No.	PART No.	PART No.
0.001	1-108-227-00	1-108-365-00	1-108-409-00	0.01	1-108-239-00	1-108-377-00	1-108-421-00	0.1	1-108-251-00	1-108-389-00	1-108-433-00
0.0012	1-108-351-00	1-108-366-00	1-108-410-00	0.012	1-108-357-00	1-108-378-00	1-108-422-00	0.12	1-108-363-00	1-108-390-00	1-108-434-00
0.0015	1-108-228-00	1-108-367-00	1-108-411-00	0.015	1-108-240-00	1-108-379-00	1-108-423-00	0.15	1-108-252-00	1-108-391-00	1-108-435-00
0.0018	1-108-352-00	1-108-368-00	1-108-412-00	0.018	1-108-358-00	1-108-380-00	1-108-424-00	0.18	1-108-364-00	1-108-392-00	1-108-436-00
0.0022	1-108-220-00	1-108-369-00	1-108-413-00	0.022	1-108-242-00	1-108-381-00	1-108-425-00	0.22	1-108-254-00	1-108-393-00	1-108-437-00
0.0027	1-108-353-00	1-108-370-00	1-108-414-00	0.027	1-108-359-00	1-108-382-00	1-108-426-00	0.27	1-108-854-00	—	—
0.0033	1-108-232-00	1-108-371-00	1-108-415-00	0.033	1-108-244-00	1-108-383-00	1-108-427-00	0.33	1-108-855-00	—	—
0.0039	1-108-354-00	1-108-372-00	1-108-416-00	0.039	1-108-360-00	1-108-384-00	1-108-428-00	0.39	1-108-856-00	—	—
0.0047	1-108-234-00	1-108-373-00	1-108-417-00	0.047	1-108-246-00	1-108-385-00	1-108-429-00	0.47	1-108-857-00	—	—
0.0056	1-108-355-00	1-108-374-00	1-108-418-00	0.056	1-108-361-00	1-108-386-00	1-108-430-00				
0.0068	1-108-237-00	1-108-375-00	1-108-419-00	0.068	1-108-249-00	1-108-387-00	1-108-431-00				
0.0082	1-108-356-00	1-108-376-00	1-108-420-00	0.082	1-108-362-00	1-108-388-00	1-108-432-00				



TANTALUM CAPACITORS

RATING → : Use the high voltage rated one.							
CAP. (μF)	3.15 VOLT.	6.3 VOLT.	10 VOLT.	16 VOLT.	20 VOLT.	25 VOLT.	35 VOLT.
	PART No.	PART No.	PART No.	PART No.	PART No.	PART No.	PART No.
0.01					→	→	1-131-396-00
0.015						→	1-131-397-00
0.022						→	1-131-398-00
0.033						→	1-131-399-00
0.047						→	1-131-400-00
0.068					→	→	1-131-401-00
0.1					→	→	1-131-402-00
0.15					→	→	1-131-403-00
0.22					→	→	1-131-404-00
0.33					→	1-131-409-00	1-131-405-00
0.47	—	—	—	—	1-131-412-00	→	1-131-406-00
0.68	—	—	—	1-131-415-00	→	1-131-410-00	1-131-407-00
1.0	—	—	1-131-418-00	—	1-131-413-00	→	1-131-408-00
1.5	—	1-131-421-00	—	1-131-416-00	→	1-131-411-00	1-131-348-00
2.2	1-131-424-00	—	1-131-419-00	—	1-131-414-00	1-131-355-00	1-131-349-00
3.3	—	1-131-422-00	—	1-131-417-00	1-131-362-00	1-131-356-00	1-131-350-00
4.7	1-131-425-00	—	1-131-420-00	1-131-369-00	1-131-363-00	1-131-357-00	1-131-351-00
6.8	—	1-131-423-00	1-131-376-00	1-131-370-00	1-131-364-00	1-131-358-00	1-131-352-00
10	1-131-426-00	1-131-383-00	1-131-377-00	1-131-371-00	1-131-365-00	1-131-359-00	1-131-353-00
15	1-131-390-00	1-131-384-00	1-131-378-00	1-131-372-00	1-131-366-00	1-131-360-00	—
22	1-131-391-00	1-131-385-00	1-131-379-00	1-131-373-00	1-131-367-00		
33	1-131-392-00	1-131-386-00	1-131-380-00	1-131-374-00			
47	1-131-393-00	1-131-387-00	1-131-381-00	—			
68	1-131-394-00	1-131-388-00	—	—			
100	1-131-395-00	—	—	—			

TANTALUM CAPACITORS



RATING						
CAP. (μF)	3 VOLT.	6.3 VOLT.	10 VOLT.	16 VOLT.	20 VOLT.	35 VOLT.
	PART No.	PART No.	PART No.	PART No.	PART No.	PART No.
0.033						1-131-273-00
0.047						1-131-274-00
0.068						1-131-275-00
0.1						1-131-276-00
0.15						1-131-277-00
0.22			—	—	1-131-262-00	1-131-278-00
0.33			—	—	1-131-263-00	1-131-279-00
0.47			1-131-169-00	—	1-131-264-00	1-131-280-00
0.68			—	1-131-258-00	1-131-265-00	1-131-281-00
1.0			1-131-254-00	—	1-131-266-00	1-131-282-00
1.5		1-131-250-00	—	—	1-131-267-00	1-131-283-00
2.2		—	—	1-131-259-00	1-131-268-00	1-131-284-00
3.3		—	1-131-255-00	—	1-131-269-00	—
4.7		1-131-251-00	1-131-171-00	—	1-131-270-00	—
6.8		—	—	1-131-260-00	1-131-271-00	—
10	—	—	1-131-256-00	—	1-131-272-00	—
15	—	1-131-252-00	—	1-131-261-00		
22	—	—	1-131-257-00	—		
33	1-131-176-00	1-131-253-00	1-131-173-00	—		
47	1-131-288-00	1-131-174-00	—	—		
100	1-131-177-00					

ELECTROLYTIC CAPACITORS

RATING → : Use the high voltage rated one.						
CAP. (μF)	6.3 VOLT.	10 VOLT.	16 VOLT.	25 VOLT.	35 VOLT.	50 VOLT.
	PART No.	PART No.	PART No.	PART No.	PART No.	PART No.
0.47					→	1-121-726-00
1.0					→	1-121-391-00
2.2					→	1-121-450-00
3.3	→	→	→	1-121-392-00	→	1-121-393-00
4.7	→	→	→	1-121-395-00	→	1-121-396-00
10	→	→	1-121-651-00	1-121-398-00	→	1-121-738-00
22	→	→	1-121-479-00	1-121-480-00	1-121-662-00	1-121-152-00
33	→	→	1-121-403-00	1-121-404-00	1-121-652-00	1-121-405-00
47	→	1-121-352-00	1-121-409-00	1-121-410-00	1-121-653-00	1-121-411-00
100	→	1-121-414-00	1-121-415-00	1-121-416-00	1-121-357-00	1-121-417-00
220	1-121-419-00	1-121-420-00	1-121-421-00	1-121-422-00	1-121-261-00	1-121-423-00
330	1-121-751-00	1-121-805-00	1-121-521-00	1-121-654-00	1-121-655-00	1-121-656-00
470	1-121-424-00	1-121-425-00	1-121-426-00	1-121-733-00	1-121-361-00	1-121-810-00
1000	—	1-121-736-00	1-121-245-00	1-121-657-00	1-121-388-00	1-123-061-00
2200	1-121-658-00	1-121-659-00	1-121-660-00	1-123-067-00	1-121-984-00	—
3300	1-121-661-00	1-123-075-00	1-123-071-00	—	—	—

CAP. (μF)	100 VOLT.	160 VOLT.	250 VOLT.	350 VOLT.
	PART No.	PART No.	PART No.	PART No.
0.47	—	—	—	—
1.0	1-123-249-00	1-123-252-00	1-123-003-00	1-121-168-00
2.2	1-123-250-00	1-123-026-00	—	1-123-028-00
3.3	1-121-995-00	—	1-123-004-00	1-123-006-00
4.7	1-123-255-00	1-121-246-00	1-121-759-00	1-123-007-00
10	1-121-126-00	1-121-999-00	1-123-254-00	1-123-008-00
22	1-121-996-00	1-123-253-00	1-123-005-00	1-123-022-00
33	1-121-997-00	1-121-757-00	—	—
47	1-123-251-00	1-121-919-00	—	—
100	1-123-084-00	—	—	—

CERAMIC CAPACITORS

RATING							
CAP. (pF)	50 VOLT.	CAP. (pF)	50 VOLT.	CAP. (pF)	50 VOLT.	CAP. (μF)	50 VOLT.
	PART No.		PART No.		PART No.		PART No.
0.5	1-101-837-00	22	1-102-959-00	150	1-101-361-00	0.001	1-102-074-00
0.75	1-101-586-00	24	1-102-960-00	160	1-101-367-00	0.0012	1-102-118-00
1.0	1-102-934-00	27	1-102-961-00	180	1-102-976-00	0.0015	1-102-119-00
1.5	1-101-576-00	30	1-102-962-00	200	1-102-977-00	0.0018	1-102-120-00
2.0	1-102-935-00	33	1-102-963-00	220	1-102-978-00	0.0022	1-102-121-00
3	1-102-936-00	36	1-102-964-00	240	1-102-979-00	0.0027	1-102-122-00
4	1-102-937-00	39	1-102-965-00	270	1-102-980-00	0.0033	1-102-123-00
5	1-102-942-00	43	1-102-966-00	300	1-102-981-00	0.0039	1-102-124-00
6	1-102-943-00	47	1-101-880-00	330	1-102-820-00	0.0047	1-102-125-00
7	1-102-944-00	51	1-101-882-00	360	1-102-821-00	0.0056	1-102-126-00
8	1-102-945-00	56	1-101-884-00	390	1-102-822-00	0.0068	1-102-127-00
9	1-102-946-00	62	1-101-886-00	430	1-102-823-00	0.0082	1-102-128-00
10	1-102-947-00	68	1-101-888-00	470	1-102-824-00	0.01	1-102-129-00
11	1-102-948-00	75	1-101-890-00	510	1-101-059-00	0.022	1-101-005-00
12	1-102-949-00	82	1-102-971-00	560	1-102-115-00	0.047	1-101-006-00
13	1-102-950-00	91	1-102-972-00	680	1-102-116-00		
15	1-102-951-00	100	1-102-973-00	820	1-102-117-00		
16	1-102-952-00	110	1-102-815-00				
18	1-102-953-00	120	1-102-816-00				
20	1-102-958-00	130	1-101-081-00				

0.001μF = 1,000pF

CERAMIC (SEMICONDUCTOR) CAPACITORS

RATING → : Use the high voltage rated one.					
CAP. (μF)	25 VOLT.	50 VOLT.	CAP. (μF)	25 VOLT.	50 VOLT.
	PART No.	PART No.		PART No.	PART No.
0.001	→	1-161-039-00	0.018	1-161-016-00	1-161-054-00
0.0012	→	1-161-040-00	0.022	1-161-017-00	1-161-055-00
0.0015		1-161-041-00	0.027	1-161-018-00	1-161-056-00
0.0018		1-161-042-00	0.033	1-161-019-00	1-161-057-00
0.0022		1-161-043-00	0.039	1-161-010-00	1-161-058-00
0.0027	→	1-161-044-00	0.047	1-161-021-00	1-161-059-00
0.0033	→	1-161-045-00	0.056	→	1-161-060-00
0.0039	→	1-161-046-00	0.068	→	1-161-061-00
0.0047	→	1-161-047-00	0.082	1-161-024-00	1-161-062-00
0.0056	→	1-161-048-00	0.1	1-161-025-00	1-161-063-00
0.0068	→	1-161-049-00			
0.0082	1-161-012-00	1-161-050-00			
0.01	1-161-013-00	1-161-051-00			
0.012	→	1-161-052-00			
0.015	1-161-015-00	1-161-053-00			

1/4 WATT CARBON RESISTORS

Ω	Part No.	Ω	Part No.	Ω	Part No.	Ω	Part No.	Ω	Part No.	Ω	Part No.	Ω	Part No.
1.0	1-246-401-00	10	1-246-425-00	100	1-246-449-00	1.0k	1-246-473-00	10k	1-246-497-00	100k	1-246-521-00	1.0M	1-246-545-00
1.1	1-246-402-00	11	1-246-426-00	110	1-246-450-00	1.1k	1-246-474-00	11k	1-246-498-00	110k	1-246-522-00	1.1M	1-210-814-00
1.2	1-246-403-00	12	1-246-427-00	120	1-246-451-00	1.2k	1-246-475-00	12k	1-246-499-00	120k	1-246-523-00	1.2M	1-210-815-00
1.3	1-246-404-00	13	1-246-428-00	130	1-246-452-00	1.3k	1-246-476-00	13k	1-246-500-00	130k	1-246-524-00	1.3M	1-210-816-00
1.5	1-246-405-00	15	1-246-429-00	150	1-246-453-00	1.5k	1-246-477-00	15k	1-246-501-00	150k	1-246-525-00	1.5M	1-210-817-00
1.6	1-246-406-00	16	1-246-430-00	160	1-246-454-00	1.6k	1-246-478-00	16k	1-246-502-00	160k	1-246-526-00	1.6M	1-210-818-00
1.8	1-246-407-00	18	1-246-431-00	180	1-246-455-00	1.8k	1-246-479-00	18k	1-246-503-00	180k	1-246-527-00	1.8M	1-210-819-00
2.0	1-246-408-00	20	1-246-432-00	200	1-246-456-00	2.0k	1-246-480-00	20k	1-246-504-00	200k	1-246-528-00	2.0M	1-210-820-00
2.2	1-246-409-00	22	1-246-433-00	220	1-246-457-00	2.2k	1-246-481-00	22k	1-246-505-00	220k	1-246-529-00	2.2M	1-210-821-00
2.4	1-246-410-00	24	1-246-434-00	240	1-246-458-00	2.4k	1-246-482-00	24k	1-246-506-00	240k	1-246-530-00	2.4M	1-244-754-00
2.7	1-246-411-00	27	1-246-435-00	270	1-246-459-00	2.7k	1-246-483-00	27k	1-246-507-00	270k	1-246-531-00	2.7M	1-244-755-00
3.0	1-246-412-00	30	1-246-436-00	300	1-246-460-00	3.0k	1-246-484-00	30k	1-246-508-00	300k	1-246-532-00	3.0M	1-244-756-00
3.3	1-246-413-00	33	1-246-437-00	330	1-246-461-00	3.3k	1-246-485-00	33k	1-246-509-00	330k	1-246-533-00	3.3M	1-244-757-00
3.6	1-246-414-00	36	1-246-438-00	360	1-246-462-00	3.6k	1-246-486-00	36k	1-246-510-00	360k	1-246-534-00	3.6M	1-244-758-00
3.9	1-246-415-00	39	1-246-439-00	390	1-246-463-00	3.9k	1-246-487-00	39k	1-246-511-00	390k	1-246-535-00	3.9M	1-244-759-00
4.3	1-246-416-00	43	1-246-440-00	430	1-246-464-00	4.3k	1-246-488-00	43k	1-246-512-00	430k	1-246-536-00	4.3M	1-244-760-00
4.7	1-246-417-00	47	1-246-441-00	470	1-246-465-00	4.7k	1-246-489-00	47k	1-246-513-00	470k	1-246-537-00	4.7M	1-244-761-00
5.1	1-246-418-00	51	1-246-442-00	510	1-246-466-00	5.1k	1-246-490-00	51k	1-246-514-00	510k	1-246-538-00	5.1M	1-244-762-00
5.6	1-246-419-00	56	1-246-443-00	560	1-246-467-00	5.6k	1-246-491-00	56k	1-246-515-00	560k	1-246-539-00		
6.2	1-246-420-00	62	1-246-444-00	620	1-246-468-00	6.2k	1-246-492-00	62k	1-246-516-00	620k	1-246-540-00		
6.8	1-246-421-00	68	1-246-445-00	680	1-246-469-00	6.8k	1-246-493-00	68k	1-246-517-00	680k	1-246-541-00		
7.5	1-246-422-00	75	1-246-446-00	750	1-246-470-00	7.5k	1-246-494-00	75k	1-246-518-00	750k	1-246-542-00		
8.2	1-246-423-00	82	1-246-447-00	820	1-246-471-00	8.2k	1-246-495-00	82k	1-246-519-00	820k	1-246-543-00		
9.1	1-246-424-00	91	1-246-448-00	910	1-246-472-00	9.1k	1-246-496-00	91k	1-246-520-00	910k	1-246-544-00		

HARDWARE NOMENCLATURE

Screw:

P 3 x 10

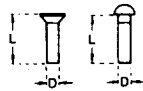
L: Length in mm

D: Diameter in mm

Type of head

Indicated slotted-head only.

Unless otherwise indicated, it means cross-recessed head (Phillips type).



Nut, Washer, Retaining ring:

N 3

Diameter of usable screw or shaft
Reference designation

Reference Designation	Shape	Description	Remarks
SCREWS			
P		pan-head screw	binding-head (B) screw for replacement
PWH		pan-head screw with washer face	binding-head (B) screw and flat washer for replacement
PS PSP		pan-head screw with spring washer	binding-head (B) screw and spring washer for replacement
PSW PSPW		pan-head screw with spring and flat washers	binding-head (B) screw and spring and flat washers for replacement
R		round-head screw	binding-head (B) screw for replacement
K		flat-countersunk-head screw	
RK		oval-countersunk-head screw	
B		binding-head screw	
T		truss-head screw	binding-head (B) screw for replacement
F		flat-fillister-head screw	
RF		fillister-head screw	
BV		brazer-head screw	

Reference Designation	Shape	Description	Remarks
SELF-TAPPING SCREWS			
TA		self-tapping screw	ex: TA, P 3 x 10
PTP		pan-head self-tapping screw	binding-head self-tapping (TA, B) screw for replacement
PTPWH		pan-head self-tapping screw with washer face	binding-head self-tapping (TA, B) screw and flat washer for replacement
PTTWH		pan-head thread-rolling screw with washer face	binding-head (B) screw and flat washer for replacement
SET SCREWS			
SC		set screw	
SC		hexagon-socket set screw	ex: SC 2.6 x 4, hexagon socket
NUT			
N		nut	
WASHERS			
W		flat washer	
SW		spring washer	
LW		internal-tooth lock washer	ex: LW3, internal
LW		external-tooth lock washer	ex: LW3, external
RETAINING RINGS			
E		retaining ring	
G		grip-type retaining ring	