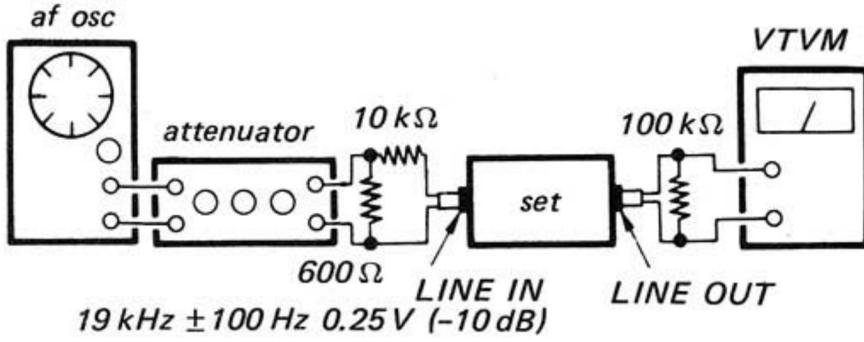


MPX Filter Adjustment

Setting:

MPX FILTER switch: ON
REC LEVEL-LINE control: Standard record
(See page 20.)

Procedure:

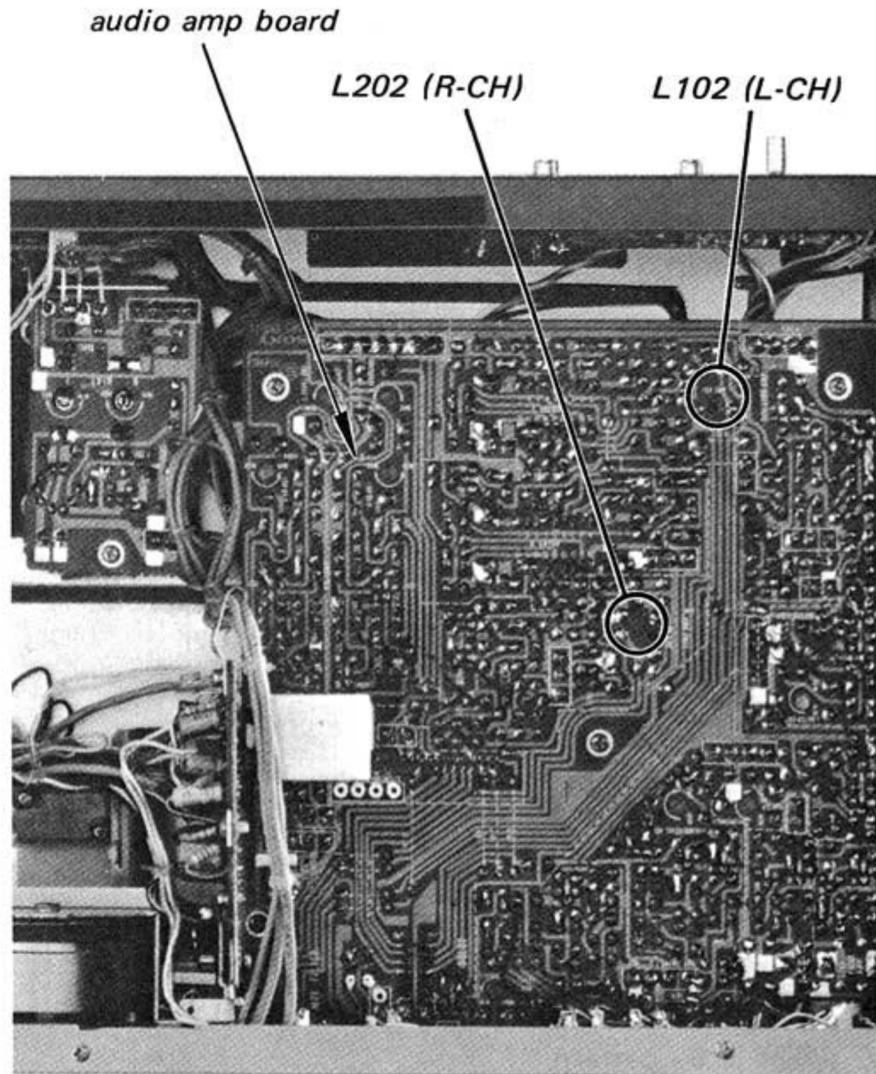


Adjust L102 (L-CH) and L202 (R-CH) for a minimum reading on VTVM.

Specification:

LINE OUT level: less than 22 mV (-32 dB)

Adjustment Location:



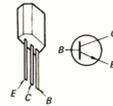
SECTION 4 DIAGRAMS

4-1. MOUNTING DIAGRAM - Amplifier Section -

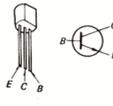
- Conductor Side -

Note: () : Replacement Semiconductors.

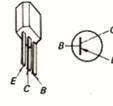
- Q102, 103
 - Q202, 203
 - Q301, 302
 - Q401, 402
 - Q104, 105
 - Q204, 205
 - Q107-110
 - Q207-210
 - Q112, 113
 - Q212, 213
 - Q115
 - Q501, 502
- : 2SC632A
- : 2SC634A



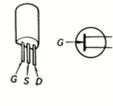
- Q106, 111
 - Q206, 211
 - Q114:
- : 2SC1474
- : 2SC1475



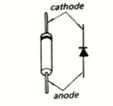
- Q116:
- : 2SA678



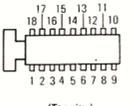
- Q101, 201:
- : 2SK43



- D101, 201
 - D102, 202
- : 1T22 (1T22A)

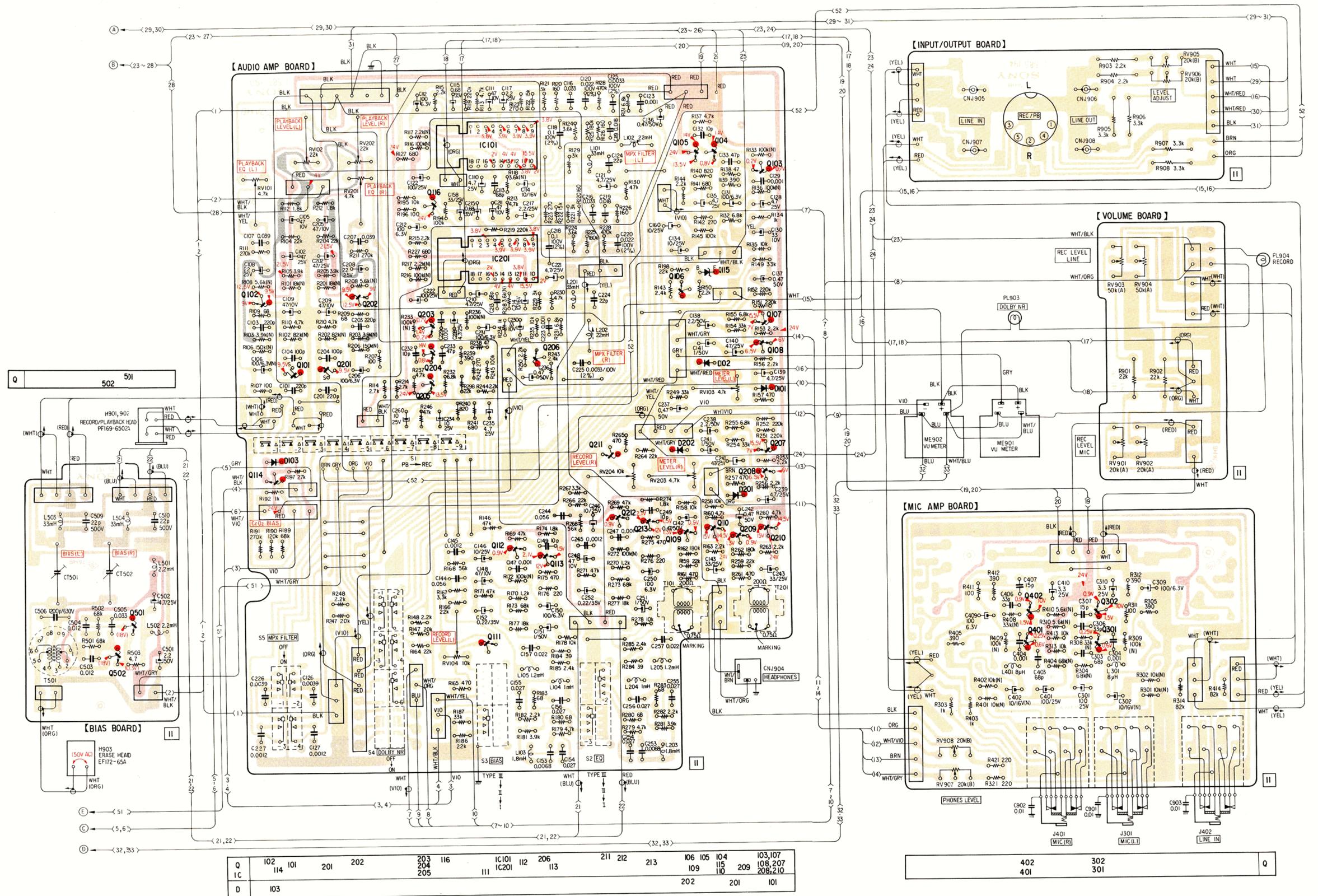
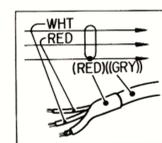


- IC101, 201:
- : CX064



(Top view)

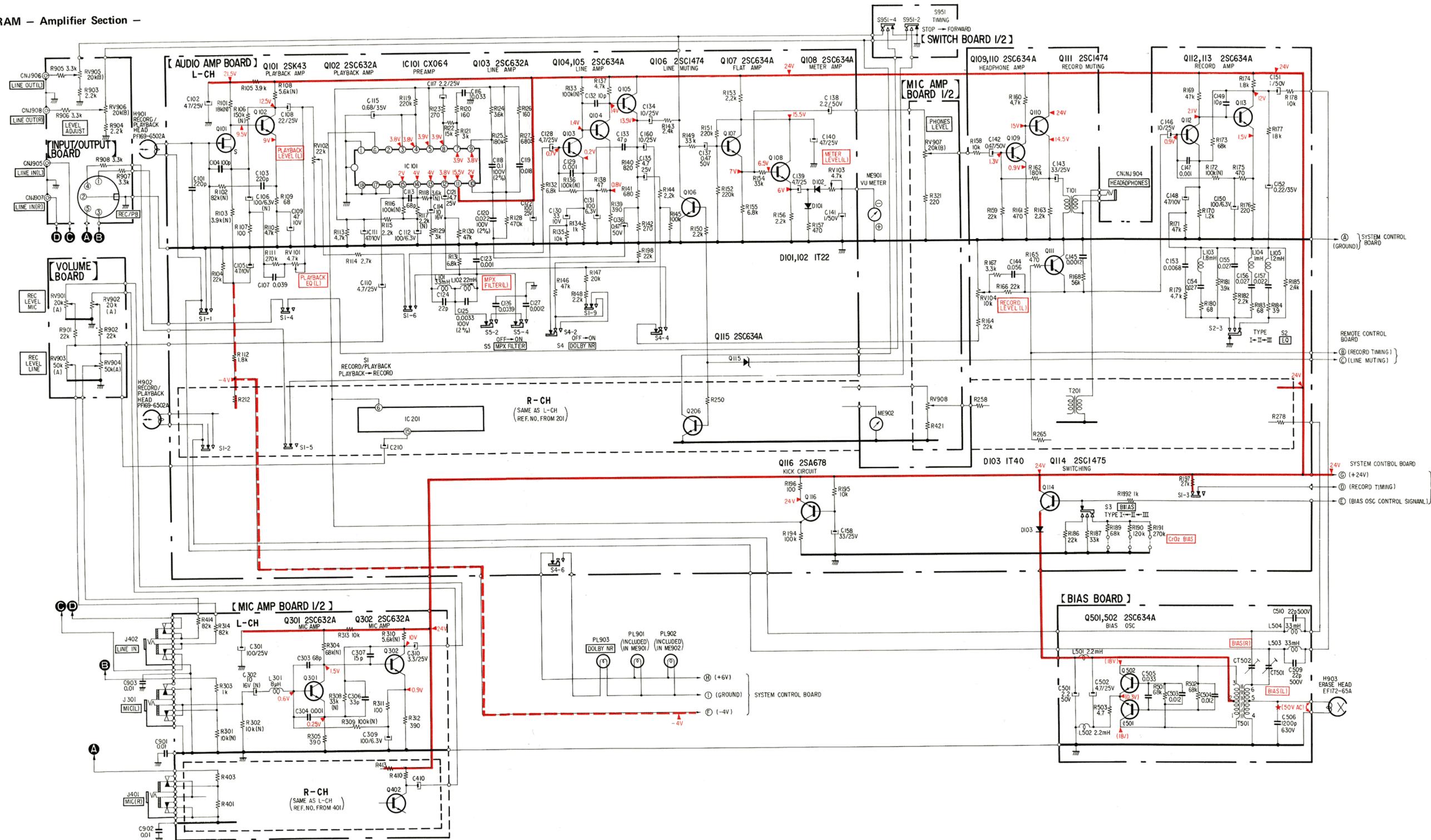
- Note:
- : B+ pattern
 - : B- pattern
 - Color code of sleeving over the end of the jacket.



Q	IC	102	101	201	202	203	116	IC101	112	206	211	212	213	106	105	104	103,107
D		103				204	205	111	IC201	113				109	110	209	108, 207, 208, 110

		402	302	Q
		401	301	

4-2. SCHEMATIC DIAGRAM – Amplifier Section –



- Note:**
- Components for right channel have the same values as for left channel.
 - 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. $\text{k}\Omega = 1000\Omega$, $\text{M}\Omega = 1000\text{k}\Omega$
 - All adjustable resistors have characteristic curve B, unless otherwise noted.
 - (N) : low-noise capacitor and resistor.
 - 2% indicates component tolerance.
 - Transistor is used for Q115.
 - — : B+ bus.
 - □ : panel designation.
 - □ : adjustment for repair.
 - ⚡ : chassis ground.
 - - - - : B- bus.
 - Voltages are dc with respect to ground unless otherwise noted.
 - Readings are taken under no signal conditions in stop mode with a VOM (20 $\text{k}\Omega/\text{V}$).
 - () : record
 - AC voltage readings indicated by * in the bias oscillator circuit are taken with a VTVM.
 - Voltage variations may be noted due to normal production tolerances.
 - Switch:

Ref. No.	Switch	Position
S1	RECORD/PLAYBACK	PLAYBACK
S2	EQ	TYPE III
S3	BIAS	TYPE III
S4	DOLBY NR	OFF
S5	MPX FILTER	OFF
S951	TIMING	STOP

4-3. MOUNTING DIAGRAM -- System Control Section --

-- Conductor Side --

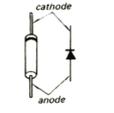
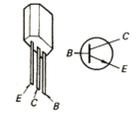
Note: () : Replacement Semiconductors.

Q601,602
Q701,702,704,705
Q707-709,712-721
Q723-725,727,728
Q730-732,734,735
Q737,738,740-745
Q951

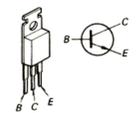
D602,718,719,734
D736,739
D601,712-717,
D723-725,720
D731-733,735
D737,738,740-743
D951-956

1T22 (1T22A)

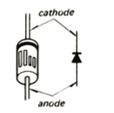
1T40 (1S1555)



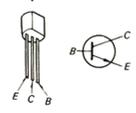
Q603,733: 2SC1173
Q703,706: 2SC1061



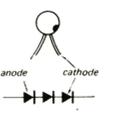
D701-708,721 : SIB01-02 (10E2)
D726-730 : EQA01-07S (EQB01-07)
D711: : EQA01-12R (EQB01-12Z)



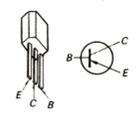
Q722: 2SC1318 (2SC1475)
Q726,729 : 2SC1384 (2SC1475)
Q736,739



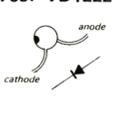
D603,722: MV203V (10E-2)



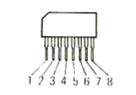
Q710,711: 2SA678



D709: VD1222



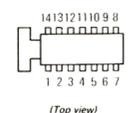
IC601: CX065



Q901: TPS603

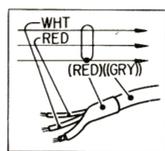


IC701: CX738

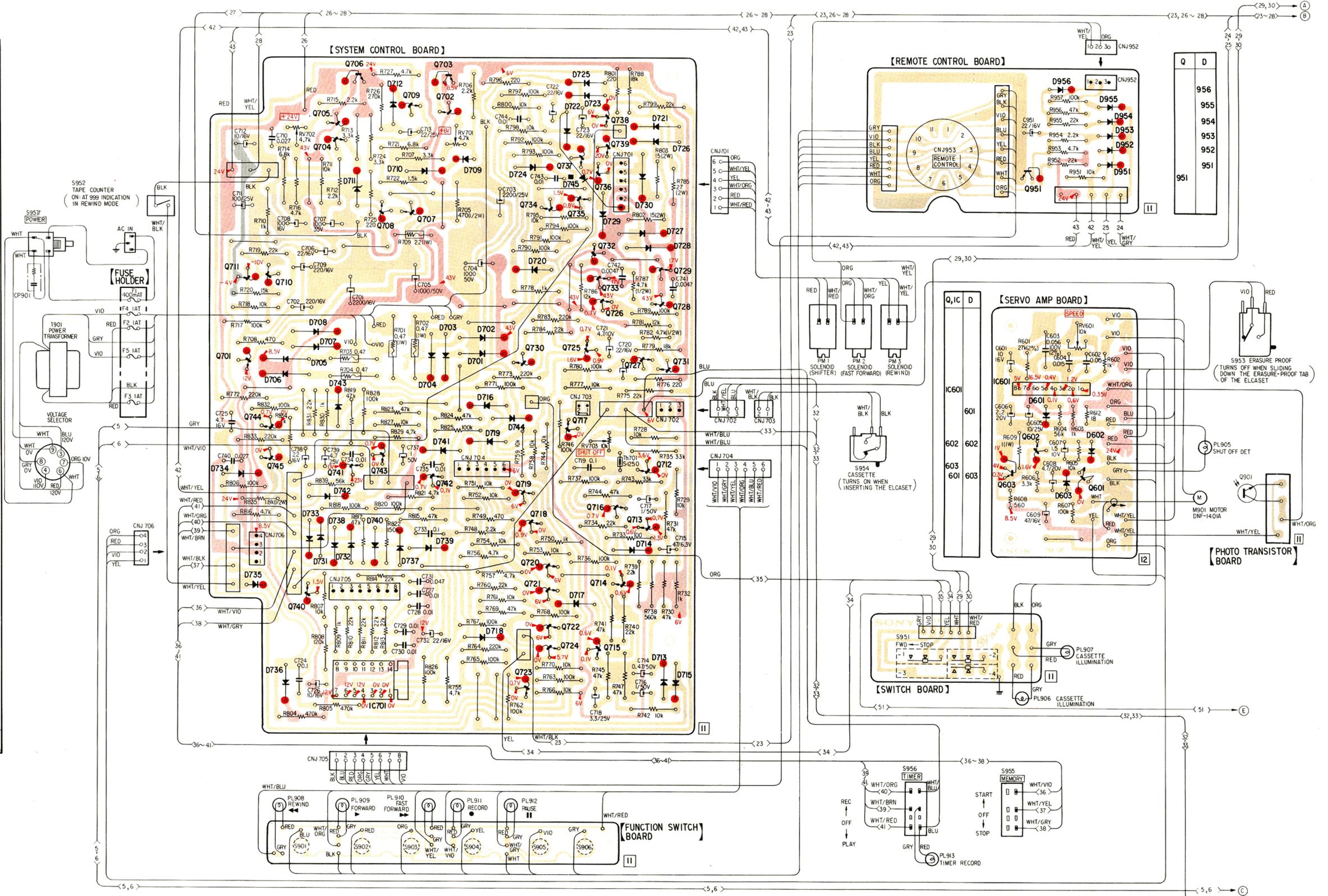


Note:

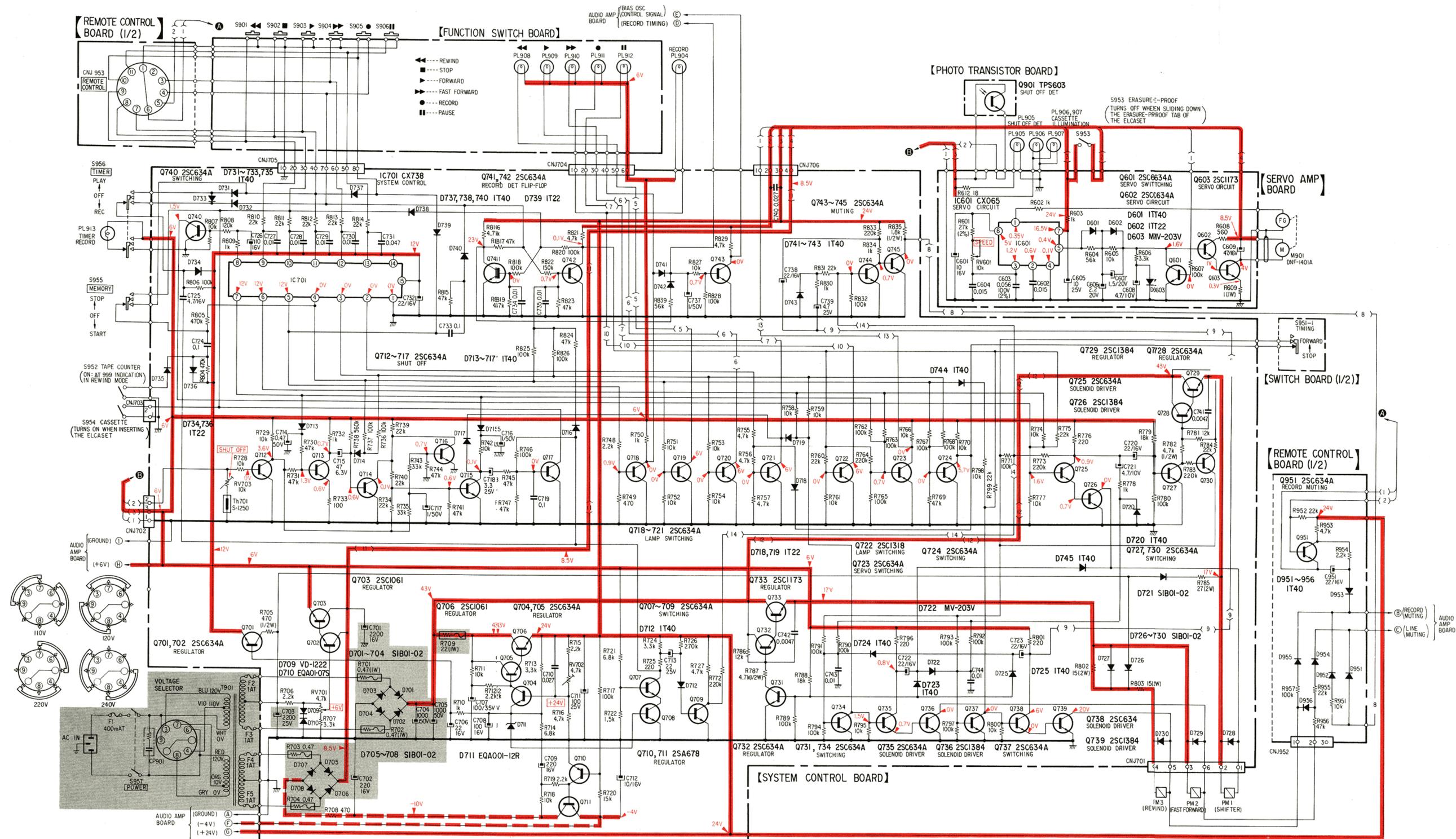
- : B+ pattern
- : B- pattern
- Color code of sleeving over the end of the jacket.



Q, IC	D
706,703	725
709,702	723
705,738	722,721
704,739	726
737	709
736	710,724
711	730
734	729
708,707	727
732	728
729	720
711,710,733	720
726,728	720
708,702	707
730,727	705,703
701,731	704,701
706	706
743,716	744
744,717	744
743	719
745,712	741
741	734
719	742
716	742
718,713	733,738,740
720	731,732,737
721	739,714
714	735
740	717
722	718
724,715	718
715	715
IC701	736,713,715
723	
Q, IC	D



4-4. SCHEMATIC DIAGRAM — System Control Section —



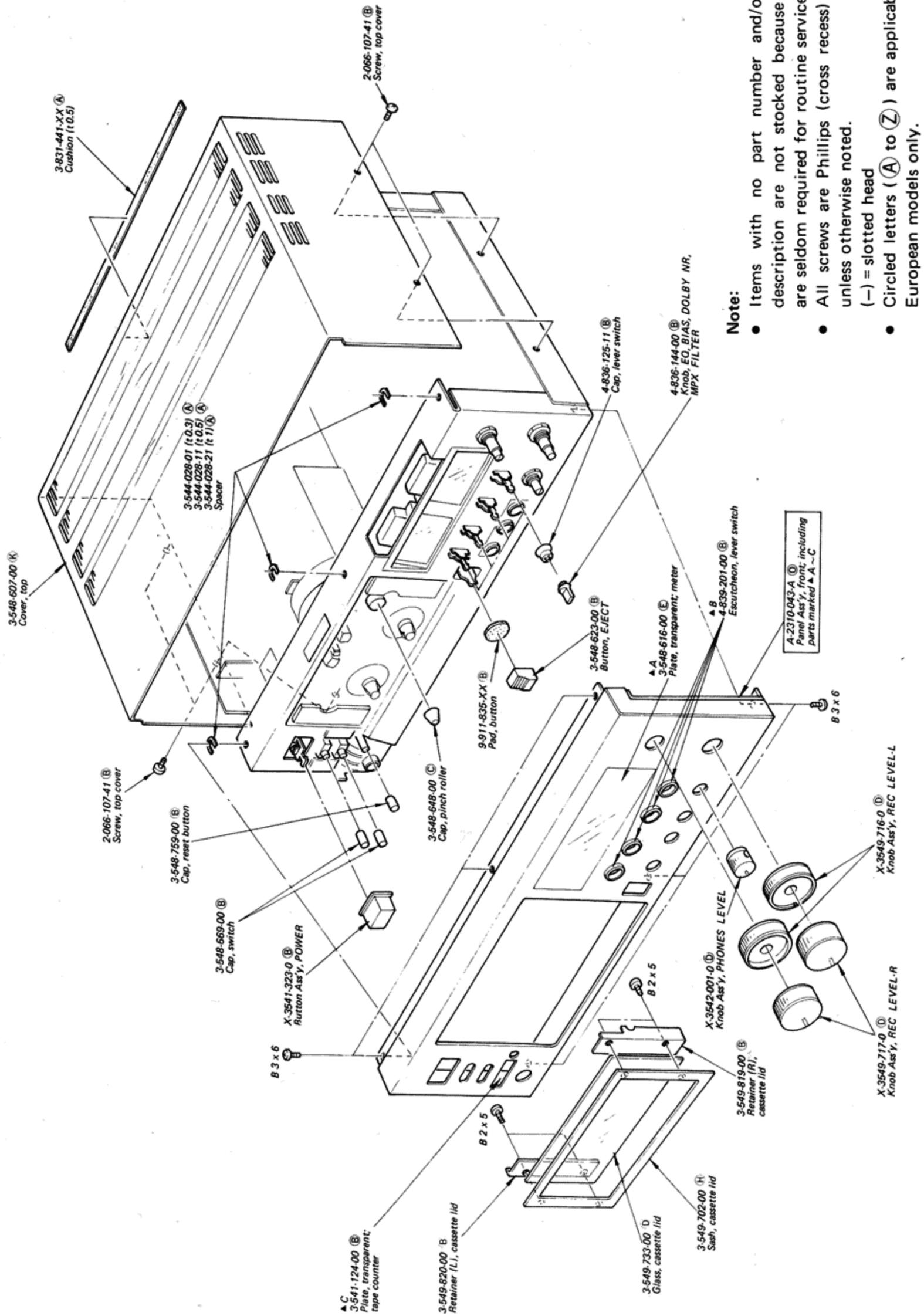
- Note:**
- All capacitors are in μF unless otherwise noted. $\text{pF} = \mu\text{F} \cdot 10^{-6}$. 50WV or less are not indicated except for electrolytics.
 - All resistors are in ohms, $\frac{1}{2}\text{W}$ unless otherwise noted. $\text{k}\Omega = 1000\Omega$, $\text{M}\Omega = 1000\text{k}\Omega$
 - All adjustable resistors have characteristic curve B, unless otherwise noted.
 - ---/--- : fusible resistor.
 - (N): low-noise capacitor and resistor.
 - 2% indicates component tolerance.
 - --- : B+ bus.
 - --- : panel designation.
 - --- : adjustment for repair.
 - --- : direct connection to points marked --- on the chassis.
 - --- : B- bus.
 - Voltages are dc with respect to ground unless otherwise noted.
 - Readings are taken under no signal conditions in forward mode with a VOM (20 $\text{k}\Omega/\text{V}$).
 - Voltage variations may be noted due to normal production tolerances.
 - Switch:

Ref. No.	Switch	Position
S901	REWIND	OFF
S902	STOP	OFF
S903	FORWARD	OFF
S904	FAST FORWARD	OFF
S905	RECORD	OFF
S906	PAUSE	OFF
S951	TIMING	STOP
S952	TAPE COUNTER	OFF
S953	ERASURE-PROOF	OFF
S954	CASSETTE	OFF
S955	MEMORY	OFF
S956	TIMER	OFF
S957	POWER	OFF

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

SECTION 5 EXPLODED VIEWS

5-1.

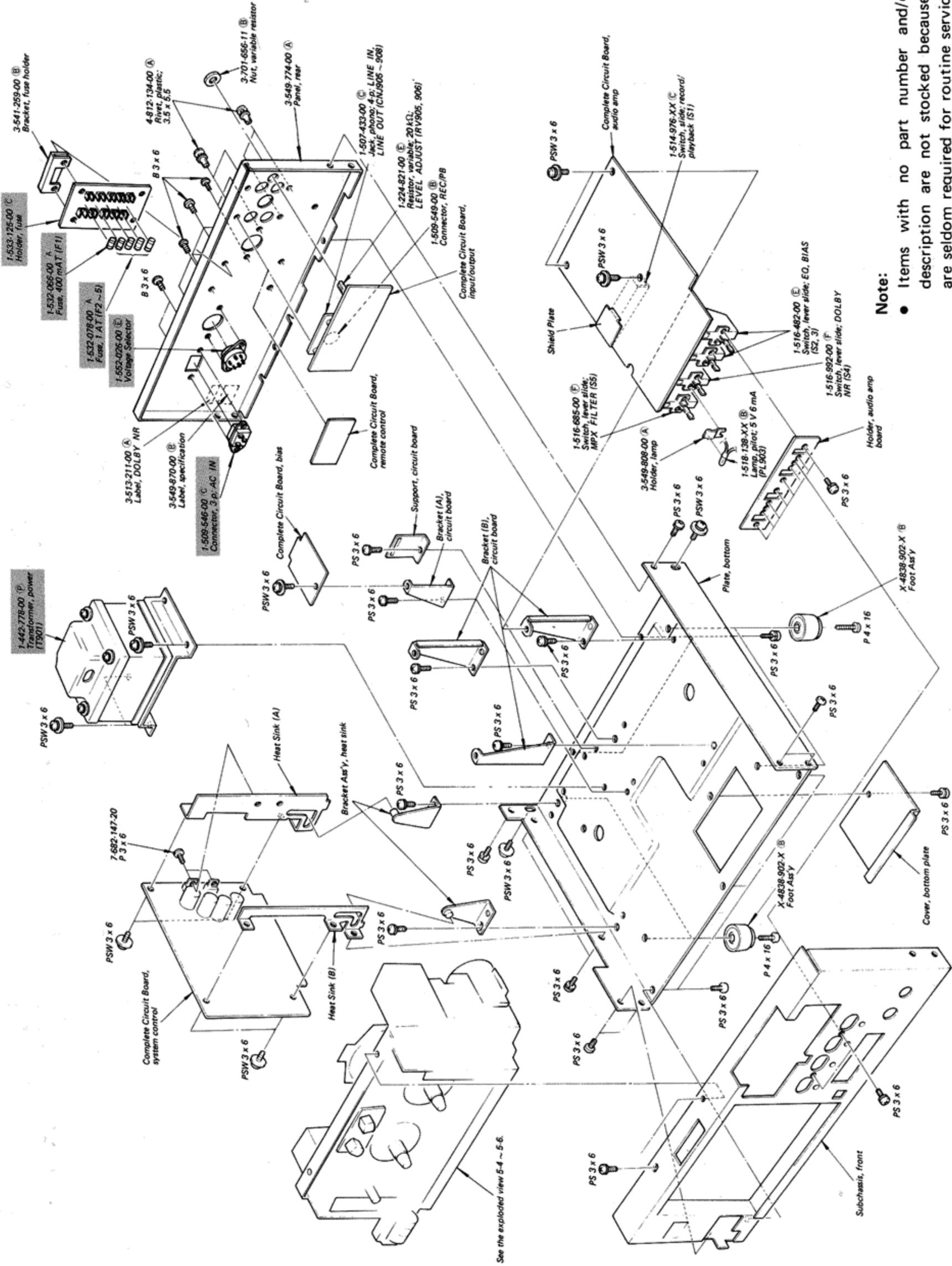


Note:

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

E D C B A

1 2 3 4



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 are critical for safety. Replace only with part number specified.

SECTION 6 ELECTRICAL PARTS LIST

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

<u>Ref. No.</u>	<u>Part No.</u>	<u>Description</u>	<u>Ref. No.</u>	<u>Part No.</u>	<u>Description</u>
SEMICONDUCTORS					
Transistors					
Q101,201	(F)	2SK43	Q737,738	(B)	2SC634A
Q102,202	(B)	2SC632A	⇒ Q739	(C)	2SC1475
Q103,203	(B)	2SC632A	Q740~745	(B)	2SC634A
Q104,204	(B)	2SC634A	Q901	(E)	TPS603
Q105,205	(B)	2SC634A	Q951	(B)	2SC634A
Q106,206	(B)	2SC1474	ICs		
Q107~110	(B)	2SC634A	IC101,201	(I)	CX064
Q207~210	(B)	2SC634A	IC601	(F)	CX065
Q111,211	(B)	2SC1474	IC701	(K)	CX738
Q112,212	(B)	2SC634A	Diodes		
Q113,213	(B)	2SC634A	⇒ D601	(B)	1S1555
Q114	(C)	2SC1475	⇒ D602	(B)	1T22A
Q115	(B)	2SC634A	D603	(B)	MV203V
Q116	(C)	2SA678	⇒ D701~708	(B)	10E2
Q301,401	(B)	2SC632A	D709	(B)	VD1222
Q302,402	(B)	2SC632A	⇒ D710	(B)	EQB01-07
Q501,502	(B)	2SC634A	⇒ D711	(B)	EQB01-12Z
Q601,602	(B)	2SC634A	⇒ D712~717	(B)	1S1555
Q603	(C)	2SC1173	⇒ D718,719	(B)	1T22A
Q701~702	(B)	2SC634A	⇒ D720	(B)	1S1555
Q703	(D)	2SC1061	⇒ D721	(B)	10E2
Q704,705	(B)	2SC634A	D722	(B)	MV203V
Q706	(D)	2SC1061	⇒ D723~725	(B)	1S1555
Q707~709	(B)	2SC634A	⇒ D726~730	(B)	10E2
Q710,711	(C)	2SA678	⇒ D731~733	(B)	1S1555
Q712~721	(B)	2SC634A	D735	(B)	1S1555
⇒ Q722	(C)	2SC1475	⇒ D736	(B)	1T22A
Q723~725	(B)	2SC634A	⇒ D737,738	(B)	1S1555
⇒ Q726	(C)	2SC1475	⇒ D739	(B)	1T22A
Q727,728	(B)	2SC634A	⇒ D740~743	(B)	1S1555
⇒ Q729	(C)	2SC1475	⇒ D951~956	(B)	1S1555
Q730~732	(B)	2SC634A	Thermistor		
Q733	(C)	2SC1173	Th701	1-800-198-XX	(A) S-1250
Q734,735	(B)	2SC634A			
⇒ Q736	(C)	2SC1475			

• ⇒: Due to standardization, interchangeable replacements may be substituted for parts specified in the diagrams.

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

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

<u>Ref. No.</u>	<u>Part No.</u>	<u>Description</u>
COILS		
All coils are microinductors unless otherwise noted.		
L101,201	1-407-879-00	(B) 33 mH
L102,202	1-407-240-00	(B) 22 mH, variable inductor
L103,203	1-407-197-XX	(A) 1.8 mH
L104,204	1-407-195-XX	(A) 1 mH
L105,205	1-407-196-XX	(B) 1.2 mH
L301,401	1-407-519-00	(B) 8 μ H
L501,502	1-407-198-XX	(B) 2.2 mH
L503,504	1-407-879-00	(B) 33 mH
TRANSFORMERS		
T101,201	1-427-284-00	(B) Output
T501	1-433-193-00	(C) Bias Osc
T901	1-442-778-00	(P) Power
CAPACITORS		
All capacitors are in μ F and electrolytic unless otherwise noted.		
50WV or less are not indicated except for electrolytics. pF = $\mu\mu$ F		
C101,201	1-107-093-11	(A) 220p silvered mica
C102,202	1-121-410-11	(B) 47 25V
C103,203	1-107-093-11	(A) 220p silvered mica
C104,204	1-107-085-11	(A) 100p silvered mica
C105,205	1-121-409-11	(A) 47 10V
C106,206	1-123-180-11	(B) 100 6.3V
C107,207	1-108-593-12	(B) 0.039 mylar
C108,208	1-121-480-11	(A) 22 25V
C109,209	1-121-409-11	(A) 47 10V
C110,210	1-121-395-11	(A) 4.7 25V
C111,211	1-121-409-11	(A) 47 10V
C112,212	1-121-413-11	(A) 100 6.3V
C113,213	1-107-081-11	(A) 68p silvered mica
C114,214	1-121-471-11	(A) 10 16V

<u>Ref. No.</u>	<u>Part No.</u>	<u>Description</u>
C115,215	1-131-214-11	(B) 0.68 35V tantalum
C116,216	1-108-591-12	(B) 0.033 mylar
C117,217	1-131-205-11	(B) 2.2 25V tantalum
C118,218	1-130-071-11	(B) 0.1 \pm 2% 100V film
C119,219	1-108-585-12	(B) 0.018 mylar
C120,220	1-130-072-11	(B) 0.022 \pm 2% 100V film
C121,221	1-121-395-11	(A) 4.7 25V
C122,222	1-121-416-11	(A) 100 25V
C123,223	1-108-227-12	(A) 0.001 mylar
C124,224	1-107-069-11	(A) 22p silvered mica
C125,225	1-129-794-21	(B) 0.0033 \pm 2% 100V film
C126,226	1-108-569-12	(B) 0.0039 mylar
C127,227	1-108-557-12	(B) 0.0012 mylar
C128,228	1-121-395-11	(A) 4.7 25V
C129,229	1-108-227-12	(A) 0.001 mylar
C130,230	1-121-402-11	(A) 33 10V
C131,231	1-121-413-11	(A) 100 6.3V
C132,232	1-107-061-11	(A) 10p silvered mica
C133,233	1-107-077-11	(A) 4.7p silvered mica
C134,234	1-121-398-11	(A) 10 25V
C135,235	1-121-395-11	(A) 4.7 25V
C136,236	1-121-726-11	(A) 0.47 50V
C137,237		(A) 0.47 50V
C138,238	1-121-450-11	(A) 2.2 50V
C139,239	1-121-395-11	(A) 4.7 25V
C140,240	1-121-410-11	(B) 47 25V
C141,241	1-121-391-11	(A) 1 50V
C142,242	1-121-726-11	(A) 0.47 50V
C143,243	1-121-404-11	(A) 33 25V
C144,244	1-108-597-12	(A) 0.056 mylar
C145,245	1-108-557-12	(A) 0.0012 mylar
C146,246	1-121-398-11	(A) 10 25V
C147,247	1-108-227-12	(A) 0.001 mylar
C148,248	1-121-409-11	(A) 47 10V
C149,249	1-107-061-11	(A) 10p silvered mica
C150,250	1-121-413-11	(A) 100 6.3V
C151,251	1-121-391-11	(A) 1 50V
C152,252	1-131-211-11	(B) 0.22 35V tantalum
C153,253	1-108-575-12	(B) 0.0068 mylar
C154~156	1-108-589-12	(A) 0.027 mylar
C254~256		(A) 0.027 mylar

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

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

<u>Ref. No.</u>	<u>Part No.</u>	<u>Description</u>	
C157,257	1-108-587-12	(B) 0.022	mylar
C158	1-121-404-11	(A) 33	25V
C160,260	1-121-398-11	(A) 10	25V
C301,401	1-121-416-11	(A) 100	25V
C302,402	1-121-916-11	(B) 10	16V
C303,403	1-107-081-11	(A) 68p	silvered mica
C304,404	1-108-227-11	(A) 0.001	mylar
C306,406	1-107-073-11	(A) 33p	silvered mica
C307,407	1-107-065-11	(A) 15p	silvered mica
C309,409	1-121-413-11	(A) 100	6.3V
C310-410	1-121-392-11	(A) 3.3	25V
C501	1-121-450-11	(A) 2.2	50V
C502	1-121-395-11	(A) 4.7	25V
C503,504	1-108-581-12	(B) 0.012	mylar
C505	1-108-591-12	(B) 0.033	mylar
C506	1-129-800-11	(B) 0.0012	630V plastic
C509,510	1-107-210-11	(A) 22p	500V silvered mica
C601	1-121-471-11	(A) 10	16V
C602	1-108-912-11	(B) 0.015	mylar
C603	1-129-899-11	(B) 0.056 ± 2%	100V plastic
C604	1-108-583-12	(B) 0.015	mylar
C605	1-121-398-11	(A) 10	25V
C606	1-131-196-21	(B) 2.2	20V tantalum
C607	1-131-202-21	(B) 1.5	20V tantalum
C608	1-131-192-21	(B) 4.7	10V tantalum
C609	1-121-409-11	(A) 4.7	16V
C701	1-123-070-11	(C) 2200	16V
C702	1-123-068-11	(B) 220	16V
C703	1-123-067-11	(D) 2200	25V
C704,705	1-123-061-11	(C) 1000	50V
C706	1-121-479-11	(A) 22	16V
C707	1-123-062-11	(B) 100	35V
C708	1-121-415-11	(B) 100	16V
C709	1-121-421-11	(B) 220	16V
C710	1-108-359-12	(A) 0.027	mylar
C711	1-121-416-11	(A) 100	25V
C712	1-121-471-11	(A) 10	16V
C713	1-121-988-11	(B) 22	25V
C714	1-121-726-11	(A) 0.47	50V
C715	1-131-191-21	(C) 47	6.3V tantalum

<u>Ref. No.</u>	<u>Part No.</u>	<u>Description</u>	
C716,717	1-121-391-11	(A) 1	50V
C718	1-121-392-11	(A) 3.3	25V
C719	1-108-290-12	(B) 0.1	mylar
C720	1-131-201-21	(B) 22	16V tantalum
C721	1-131-192-21	(B) 4.7	10V tantalum
C722,723	1-121-990-11	(A) 22	16V
C724	1-108-290-12	(B) 0.1	mylar
C725	1-121-257-11	(A) 4.7	16V (nonpolarized)
C726	1-121-968-11	(B) 10	16V
C727~730	1-161-136-11	(A) 0.01	ceramic
C731	1-161-140-11	(A) 0.047	ceramic
C732	1-121-479-11	(A) 22	16V
C733	1-108-290-12	(B) 0.1	mylar
C734,735	1-161-136-11	(A) 0.01	ceramic
C737	1-121-391-11	(A) 1	50V
C738	1-121-479-11	(A) 22	16V
C739	1-121-395-11	(A) 4.7	25V
C740	1-108-359-12	(A) 0.027	mylar
C741,742	1-161-166-11	(A) 0.0047	ceramic
C743,744	1-161-136-11	(A) 0.01	ceramic
C901~903	1-161-136-11	(A) 0.01	ceramic
C951	1-121-479-11	(A) 22	16V
CT501,502	1-141-010-XX	(B) Trimmer	

RESISTORS

All resistors are in ohms. Common ¼W carbon resistors are omitted. Check schematic diagram for values.

R601	1-212-688-11	(B) 27 k ± 2%	¼W	metal-oxide
R609	1-212-385-11	(A) 1	1W	metal-oxide
R701,702	1-217-465-11	(B) 0.47	1W	fusible
R703,704	1-217-371-11	(B) 0.47	¼W	fusible
R705	1-244-865-11	(A) 470	½W	carbon
R709	1-217-485-11	(B) 22	1W	fusible
R782	1-244-889-11	(A) 4.7 k	½W	carbon
R785	1-206-473-11	(A) 27	2W	metal-oxide
R787	1-244-889-11	(A) 4.7 k	½W	carbon

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

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

<u>Ref. No.</u>	<u>Part No.</u>	<u>Description</u>
R802,803	1-206-467-11	(A) 15 2W metal-oxide
R835	1-244-879-11	(A) 1.8 k ½W carbon
RV101,201	1-224-644-XX	(B) 4.7 k, adjustable
RV102,202	1-224-646-XX	(B) 22 k, adjustable
RV103,203	1-224-644-XX	(B) 4.7 k, adjustable
RV104,204	1-224-645-XX	(B) 10 k, adjustable
RV601	1-224-493-00	(B) 10 k, adjustable
RV701,702	1-224-251-XX	(C) 4.7 k, adjustable
RV703	1-224-252-XX	(C) 10 k, adjustable
RV901,902	1-224-561-00	(E) 20 k, variable; REC LEVEL-MIC
RV903,904	1-224-736-00	(E) 50 k, variable; REC LEVEL-LINE
RV905,906	1-224-821-00	(E) 20 k, variable; LEVEL ADJUST
RV907,908	1-224-822-00	(D) 20 k, variable; PHONES LEVEL

SWITCHES

S1	1-514-976-XX	(C) Slide, record/playback
S2,3	1-516-482-00	(E) Lever Slide, EQ, BIAS
S4	1-516-992-00	(F) Lever Slide, DOLBY NR
S5	1-516-685-00	(F) Lever Slide, MPX FILTER
S951	1-516-686-00	(C) Lever Slide, timing
S952		Included in tape counter
S953	1-516-028-XX	(F) Micro, erasure-proof
S954	1-514-722-XX	(C) Micro, cassette detecting
S955,956	1-516-974-00	(C) Slide, MEMORY, TIMER
S957	1-516-855-00	(E) Pushbutton, POWER

JACKS

CNJ904	1-507-507-00	(B) HEADPHONES
CNJ905~908	1-507-433-00	(C) Phono, 4-p; LINE IN, LINE OUT
J301,401	1-507-453-00	(C) MIC
J402	1-507-453-00	(C) LINE IN (STEREO)

MISCELLANEOUS

CP901	1-231-057-31	(B) Encapsulated Component
F1	1-532-066-00	(A) Fuse, 400 mA
F2~5	1-532-078-00	(A) Fuse, 1A

<u>Ref. No.</u>	<u>Part No.</u>	<u>Description</u>
H901,902	8-825-675-00	(O) Head, record/playback; PF169-6502A
H903	8-825-677-00	(I) Head, erase; EF172-65A
M901	8-835-004-00	(O) Motor, DNF-1401A
ME901,902	1-520-265-11	(K) Meter, VU
PL901,902	1-518-273-00	(B) Lamp, meter
PL903	1-518-138-XX	(B) Lamp, pilot; 5V 6 mA
PL904		
PL906~913	1-518-115-XX	(B) Lamp, pilot; 6V 35 mA
PM1~3	1-454-158-00	(F) Solenoid
	1-509-546-00	(C) Connector, 3-p; AC IN
	1-509-549-00	(B) Connector, REC/PB
	1-533-125-00	(C) Holder, fuse
	1-552-026-00	(E) Voltage Selector

ACCESSORIES AND PACKING MATERIALS

<u>Part No.</u>	<u>Description</u>
X-3545-408-0	(B) Cushion Ass'y, upper (UK model)
X-3549-744-0	(G) Carton Ass'y (AEP model)
X-3549-745-0	(C) Cushion Ass'y, upper (AEP model)
X-3701-018-3	(A) Tips Ass'y, head cleaning
1-534-049-31	(D) Cord, connection; RK-74H
1-534-819-00	(B) Cord, power (UK model)
3-429-126-00	(B) Bag, plastic; set
3-548-768-00	(B) Cushion, lower (front) (UK model)
3-548-769-00	(B) Cushion, lower (back) (UK model)
3-548-770-00	(A) Spacer, cassette lid
3-548-780-00	(C) Cushion, lower (front) (AEP model)
3-548-781-00	(C) Cushion, lower (back) (AEP model)
3-549-860-00	(E) Carton (UK model)
3-701-985-00	(B) Tape Driver
3-780-962-11	(C) Manual, instruction
8-893-508-10	(U) Tape, demonstration

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

