



CONCORD

AM-FM STEREO RECEIVER

MODEL : CR-200

SERVICE DATA

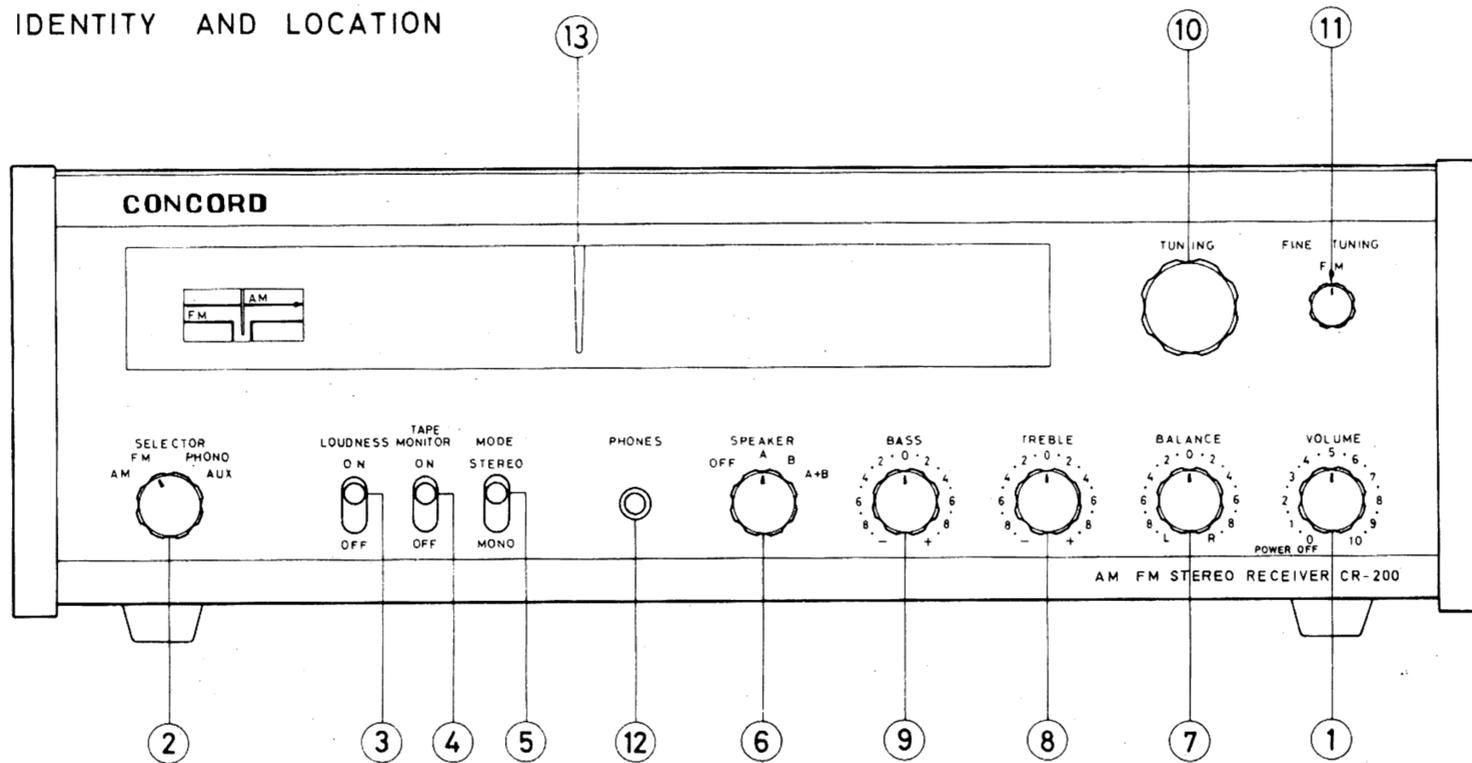
CONCORD DIVISION
BENJAMIN ELECTRONIC SOUND CORPORATION
Farmingdale, New York 11735

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CR-200 FRONT LAYOUT

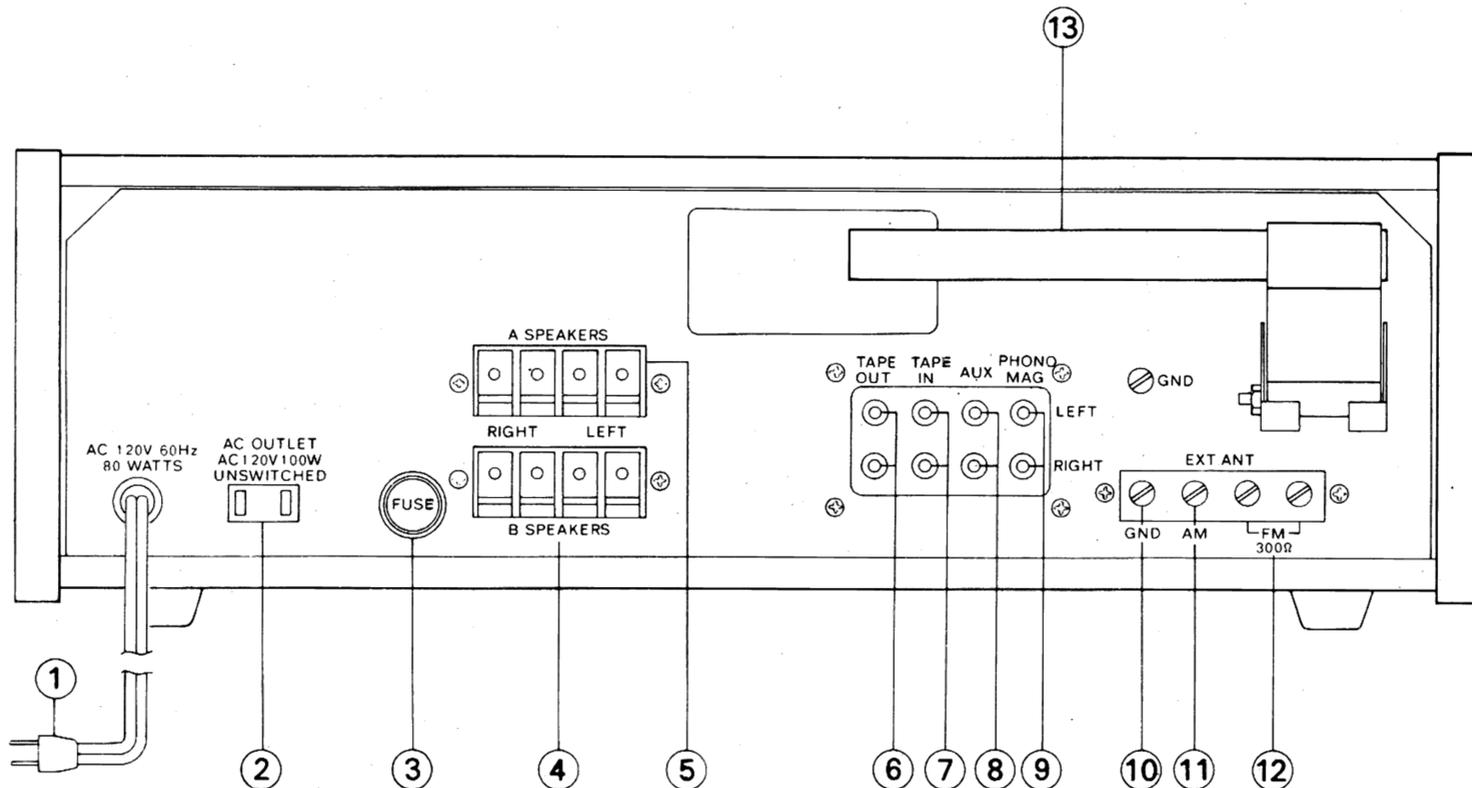
FRONT PANEL CONTROLS:
IDENTITY AND LOCATION



- | | |
|--|-------------------------------------|
| ① POWER SWITCH with VOLUME CONTROL | ⑦ BALANCE CONTROL |
| ② SELECTOR SWITCH: AM, FM, PHONO and AUX. | ⑧ TREBLE CONTROL |
| ③ LOUDNESS SWITCH. | ⑨ BASS CONTROL |
| ④ TAPE MONITOR SWITCH | ⑩ TUNING |
| ⑤ MODE SWITCH: STEREO - MONO. | ⑪ FINE TUNING |
| ⑥ SPEAKER SELECTOR SWITCH: OFF, A, B, and A + B. | ⑫ PHONE JACK |
| | ⑬ DIAL POINTER AND STEREO INDICATOR |

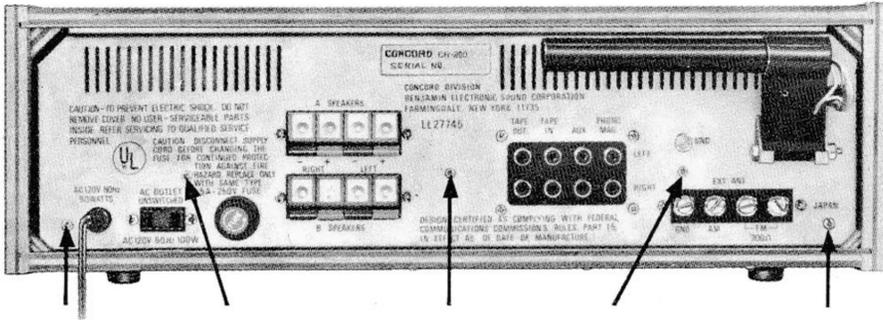
CR-200 REAR PANEL

REAR PANEL LOCATION: TERMINALS

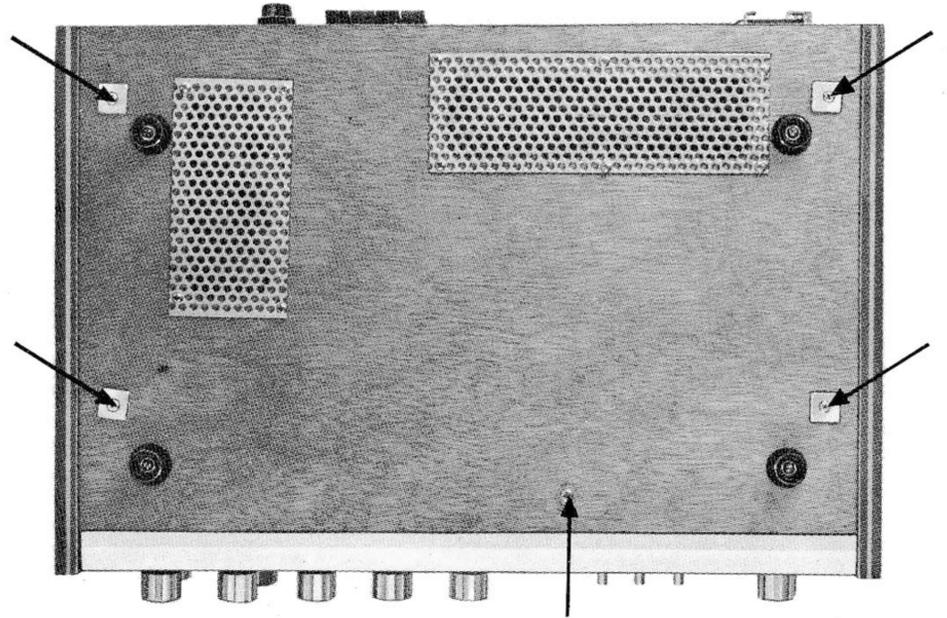


- | | |
|---------------------------------------|---|
| ① PLUG AC 120V 60Hz. | ⑧ AUXILIARY INPUT. |
| ② UNSWITCHED AC OUTLET (AC 120V 100W) | ⑨ PHONOGRAPH INPUT (MAG. type CARTRIDGE). |
| ③ FUSE HOLDER. | ⑩ GND. |
| ④ OUTPUT RIGHT and LEFT A SPEAKERS. | ⑪ EXTERNAL ANTENNA INPUT AM. |
| ⑤ OUTPUT RIGHT and LEFT B SPEAKERS. | ⑫ EXTERNAL ANTENNA INPUT FM (IMPEDANCE 300 OHM.). |
| ⑥ TAPE OUT. | ⑬ AM BAR ANTENNA. |
| ⑦ TAPE IN. | |

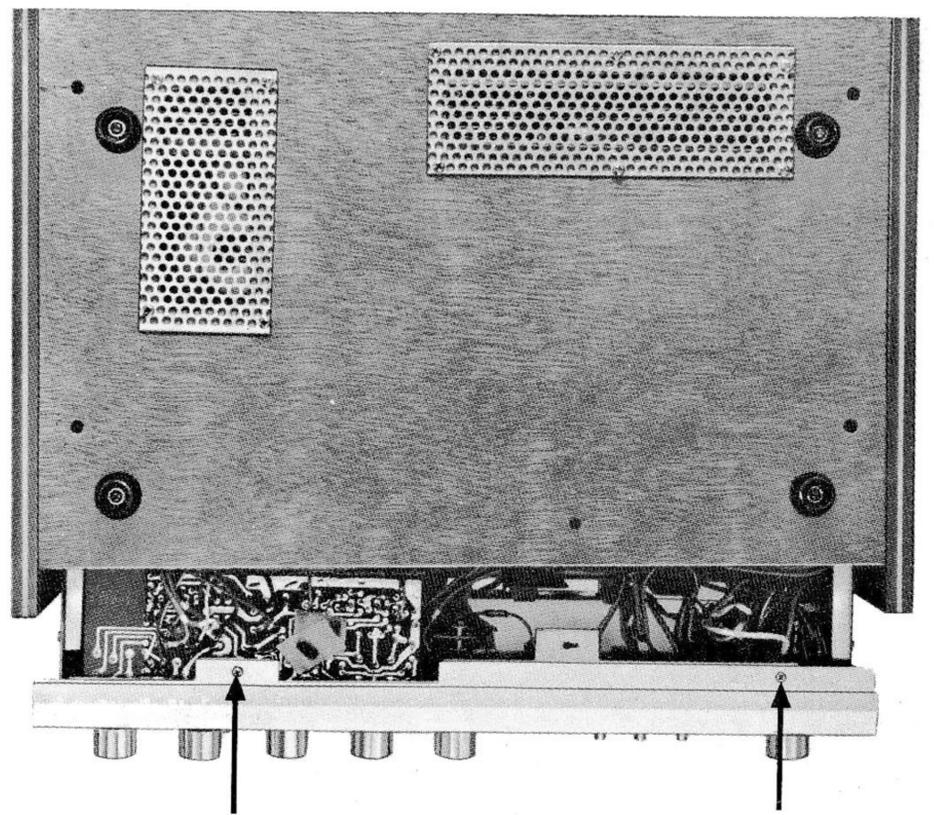
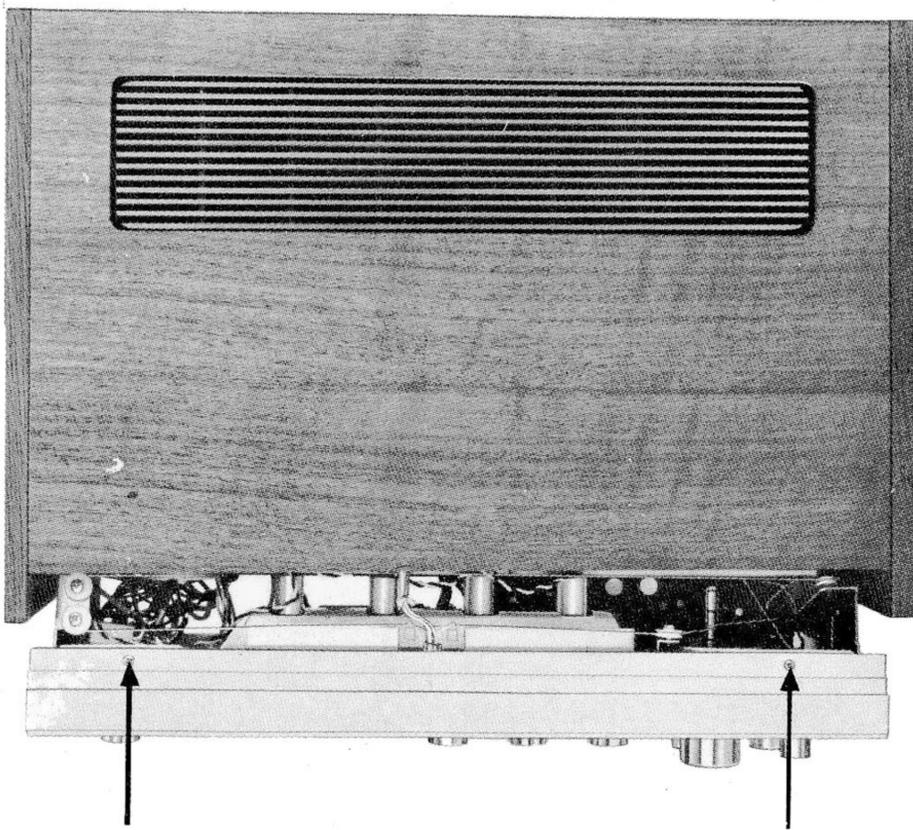
DISASSEMBLY INSTRUCTIONS



- 1) To remove rear panel from chassis.
Remove the five Phillips head screws on the rear panel which are indicated by arrow marks.



- 2) To remove chassis from wooden cabinet.
Turn the cabinet upside down and remove the five Phillips head screws on the bottom cabinet which are marked by arrow marks.



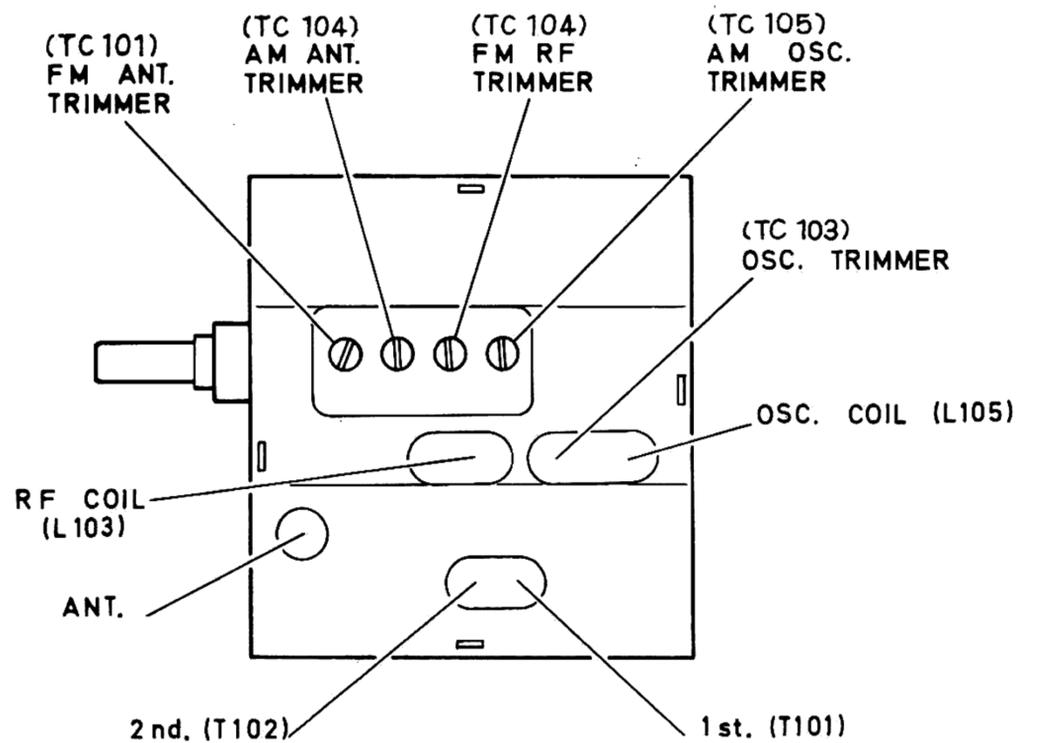
- 3) Removal of front panel (Aluminum panel)
 - a) Remove the chassis from wooden cabinet as described in 2).
 - b) Pull out the front panel with the main chassis.
 - c) Remove the two Phillips head screws which are marked by arrow marks.
Also remove the two Phillips head screws from the bottom of this front panel.

ALIGNMENT INSTRUCTIONS

EQUIPMENT REQUIRED

1. AM Signal Generator
2. AC Voltmeter
3. Oscilloscope

TUNER FRONT END COIL & TRIMMER LOCATIONS



AM IF & RF ALIGNMENT

- NOTES:
- Signal generator output should be no higher than necessary to obtain an output reading.
 - Maintain line voltage at 120 volts.
 - Set SELECTOR Switch to AM.

STEP	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	RADIO DIAL SETTING	INDICATOR	ADJUSTMENT	REMARKS
1	Fashion loop of several turns of wire and radiate signal into the loop antenna.	455 KHz (400 Hz, 30% MOD)	Point of non-interference (near 600 KHz)	AC Voltmeter to TAPE OUT JACK	T202 (1st IFT) T203 (2nd IFT) T205 (3rd IFT)	Adjust for maximum reading.
2	Same as above.	600 KHz (400Hz, 30% MOD)	600 KHz	Same as above	T201 (OSC Coil) L201 (ANT Coil)	Adjust for maximum reading.
3	Same.	1400 KHz (400Hz, 30% MOD)	1400 KHz	Same	TC105 (OSC Trimmer) TC104 (ANT Trimmer)	Adjust for maximum reading.
4	Repeat steps 2 and 3 until no further change is noticed.					

AM ALIGNMENT SET-UP

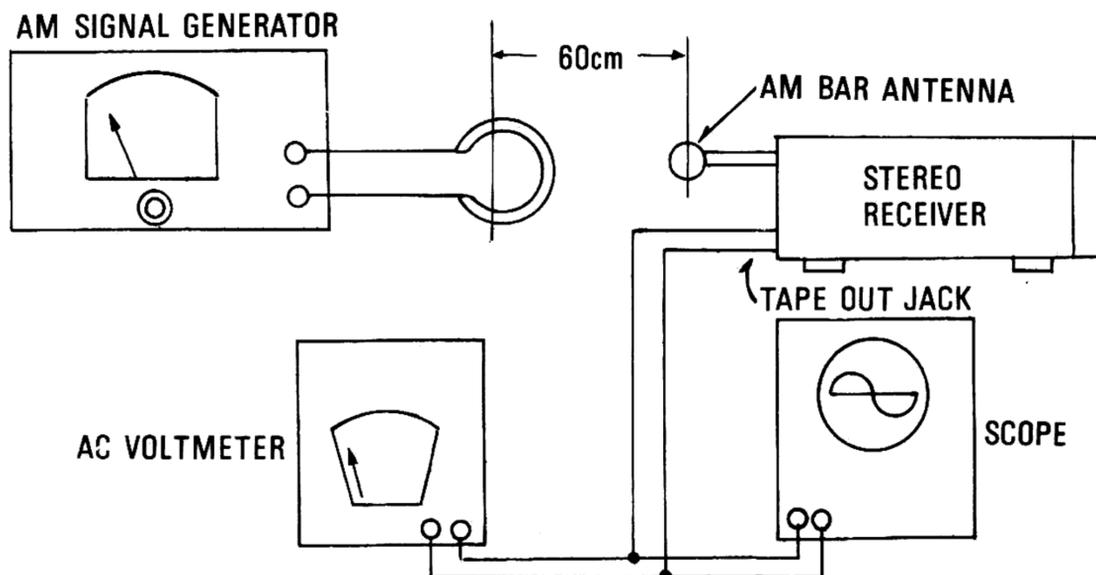


Fig. 2

FM RF & IF ALIGNMENT

EQUIPMENT REQUIRED

1. FM Signal Generator Output Level: 60 dB (1mV)
2. Sweep Generator
3. AC Voltmeter
4. Oscilloscope
5. Distortion Meter

STEP	GENERATOR COUPLING	GENERATOR FREQUENCY	RADIO DIAL SETTING	INDICATOR	ADJUSTMENT	REMARKS
1	Sweep Generator to "IN" terminal on FM Front end board.	10.7 MHz (1400 KHz Sweep)	Any dial setting where no noise or interference exists.	Scope to R248 (MPX IN) AM/FM IF Board.	T208 FM IFT T207, T206 T204 FM IFT	Adjust for maximum amplitude and proper linearity between ± 150 KHz markers. Refer to Fig. 3A
3	Sweep Generator to FM Antenna Terminal thru FM Dummy antenna (300 Ω).				T102 FM IFT T204 FM IF	
3	Same as above				T208 primary and secondary.	
4	Signal Generator to FM Antenna Terminal thru FM Dummy antenna (300 Ω).	98 MHz (400 Hz, 100% MOD.)	Tune for maximum reading on meter.	Distortion Meter to TAPE OUT Jack.	T208 secondary.	Adjust for minimum distortion.
5	Same as above	90 MHz	90 MHz	AC Voltmeter and Scope to TAPE REC Jack	L103 (FM OSC) L102 (FM RF) L101 (FM RF)	Adjust for maximum reading on meter
6	Same	106 MHz	106 MHz		TC103 (FM OSC Trimmer) TC102 (FM RF Trimmer) TC101 (FM ANT Trimmer)	
7	Repeat steps 5 and 6 until no further improvement is noticed.					

FM ALIGNMENT SET-UP

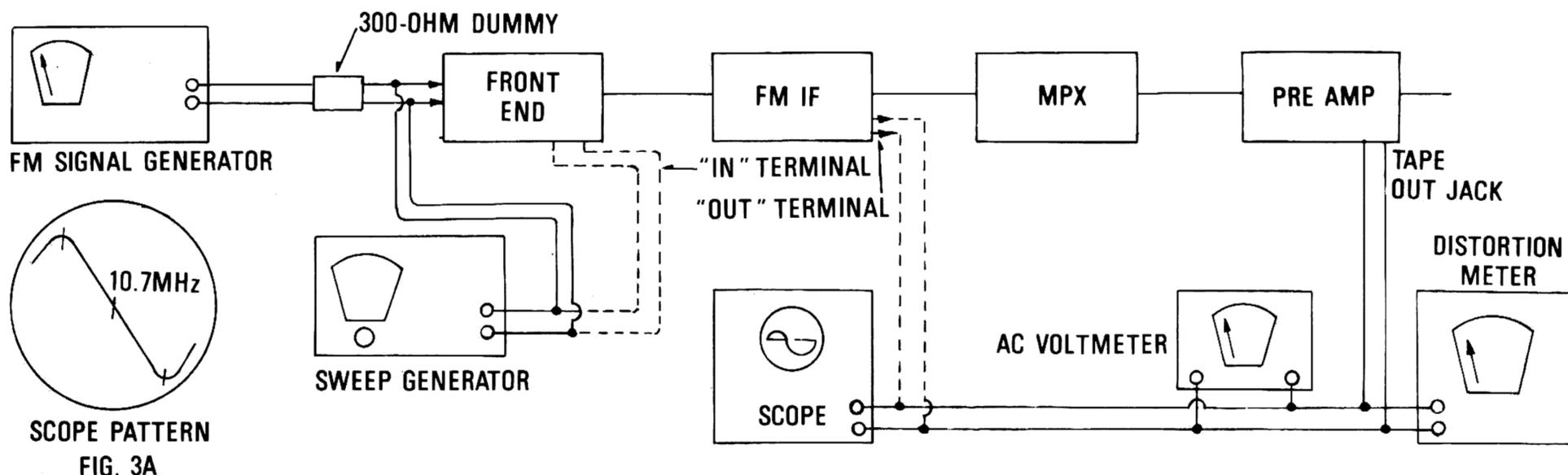


Fig. 3

FM STEREO ALIGNMENT

EQUIPMENT REQUIRED

1. Stereo Modulator.....Connect Stereo Modulator to EXT. Mod. terminal of FM signal generator.
Modulation Rate of 19 KHz Pilot Signal.....8 ~10%
2. FM Signal Generator.....Output Level60 dB (1 mV)
Frequency.....Approximately 98 MHz.
Deviation75 KHz at 100% modulation of composite signal.
3. Audio Generator
4. AC Voltmeter
5. Oscilloscope
6. Distortion Meter

PRELIMINARIES

- Set SELECTOR Switch to "FM". Dial setting at approximately 98 MHz.

MULTIPLEX & SEPARATION ALIGNMENT

STEP	SIGNAL GENERATOR COUPLING	STEREO MODULATOR	INDICATOR	ADJUSTMENT	REMARKS
1	Connect to FM Antenna Terminal thru FM Dummy antenna (300Ω).	Composite MPX signal 1 KHz on left channel ONLY.	AC Voltmeter and scope connected to IC2 NO. 1 pin	T209 (19 KHz trans)	Adjust for maximum reading.
2	Same as above	Same as above	Distortion Meter connected to TAPE OUT jack of left channel	T210 (38 KHz trans)	Adjust for minimum distortion reading.
3	Same	Same	AC Voltmeter connected to TAPE OUT jack of right channel	VR-R250 (Separation control)	Adjust for minimum reading – at least 30 dB below the reading obtained in step 1.
4	Same	Composite MPX signal 1 KHz on right channel ONLY.	AC Voltmeter connected to TAPE OUT jack of left channel	VR-R250 (Separation Control)	Same as above

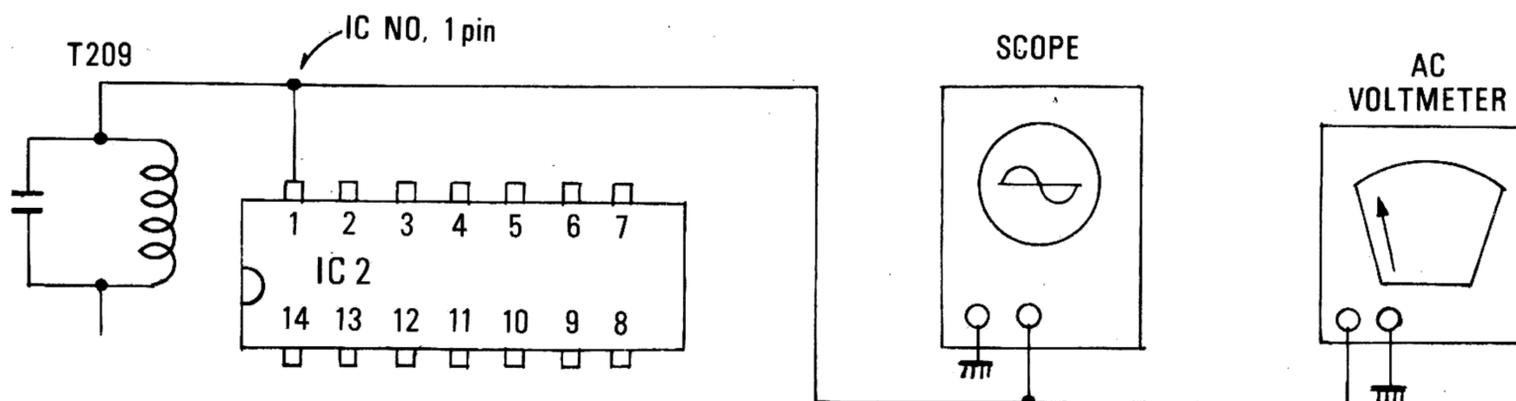


Fig. 4

MULTIPLEX & SEPARATION ALIGNMENT

STEP	SIGNAL GENERATOR COUPLING	STEREO MODULATOR	INDICATOR	ADJUSTMENT	REMARKS
5	Connect to FM Antenna Terminal thru FM Dummy antenna as shown below.	Composite MPX signal 1 KHz on right channel ONLY.	AC Voltmeter connected to TAPE OUT jack of right channel.		Same AC Voltmeter reading as obtained in Step 1. The reading may vary 30 dB.
6	Same as above	Composite MPX signal 1 KHz on left channel ONLY.	Same as above.		Minimum AC Voltmeter reading — at least 30 dB below the reading obtained in Step 1.

MPX ALIGNMENT SET-UP

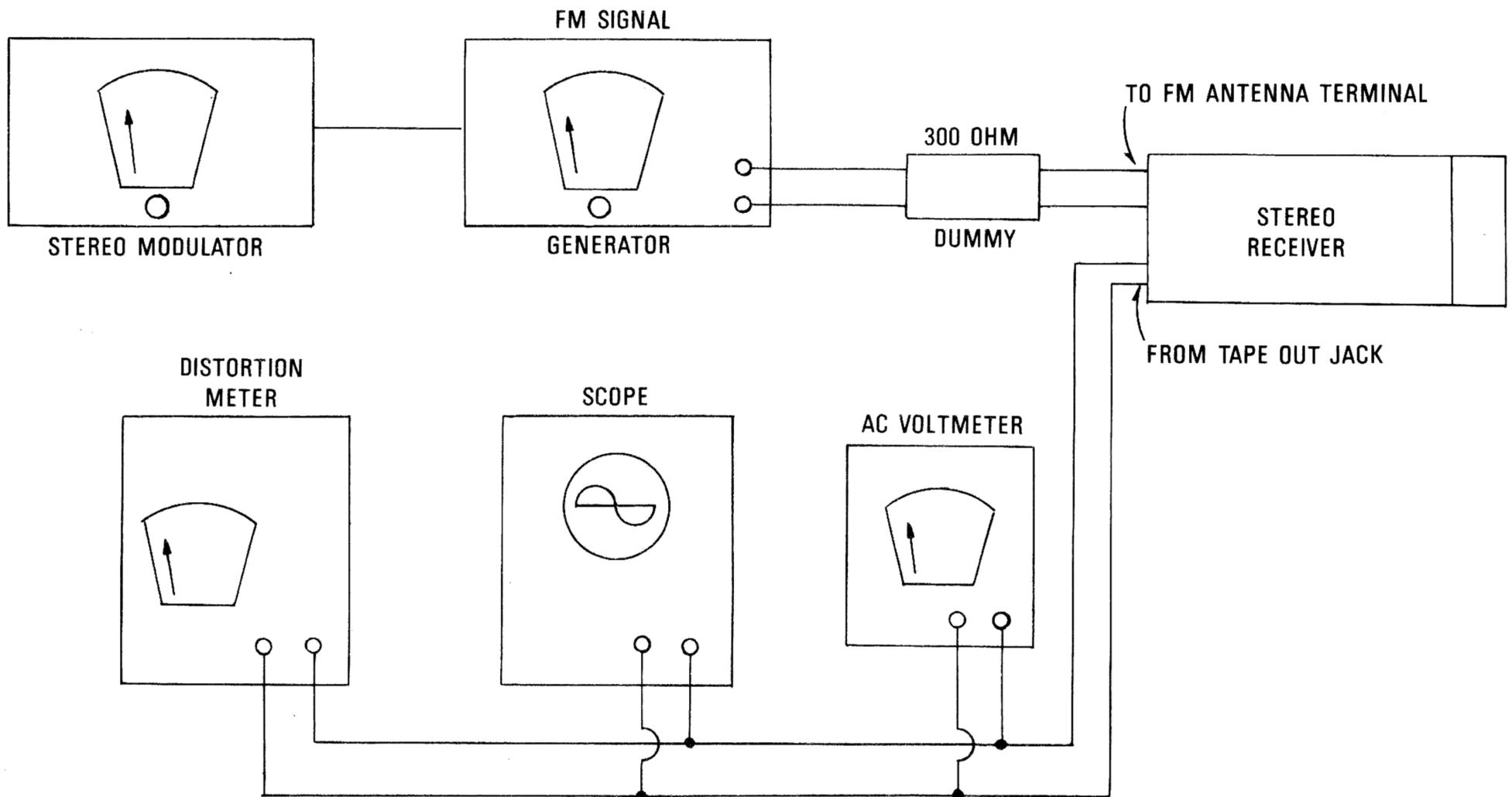
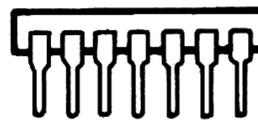
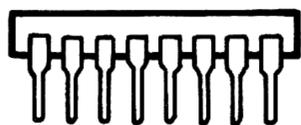
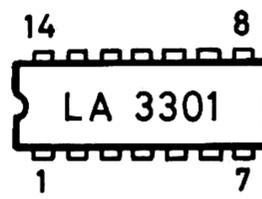
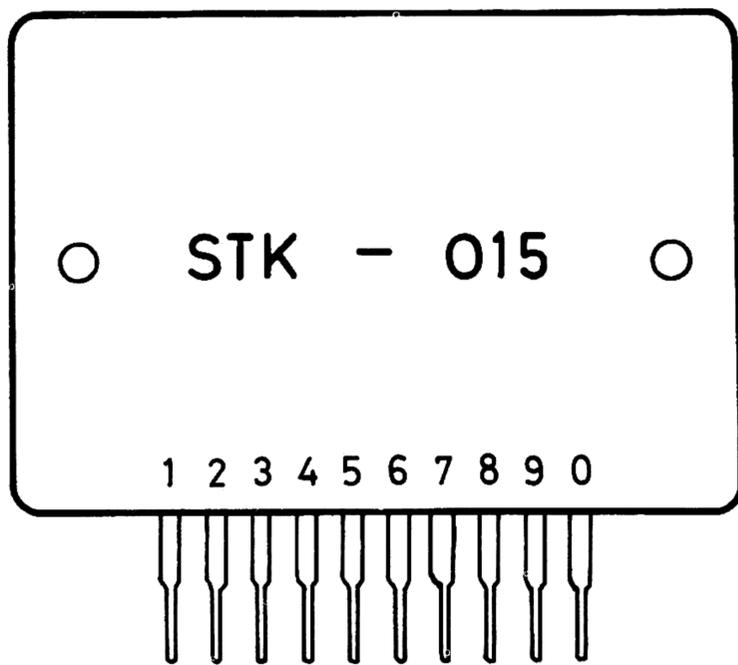
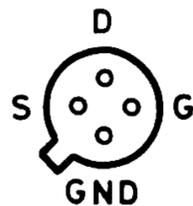


Fig. 5

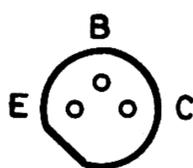
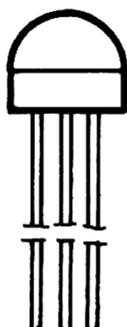
INTEGRATED CIRCUIT CONNECTIONS



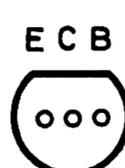
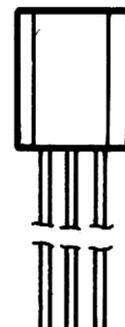
TRANSISTOR CONNECTIONS



SF 8193 1

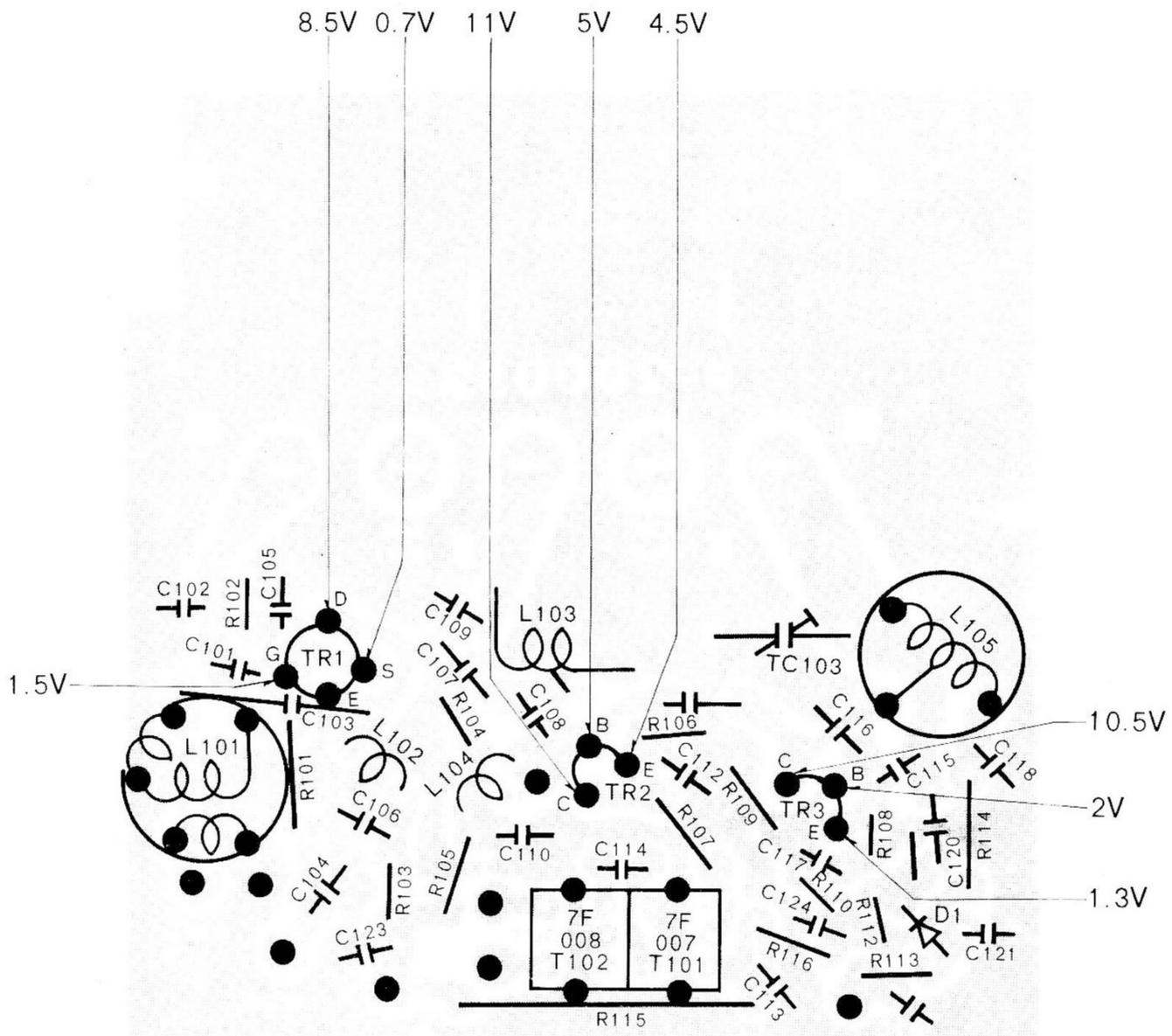


NJ 202
NJ 100
CS 1676

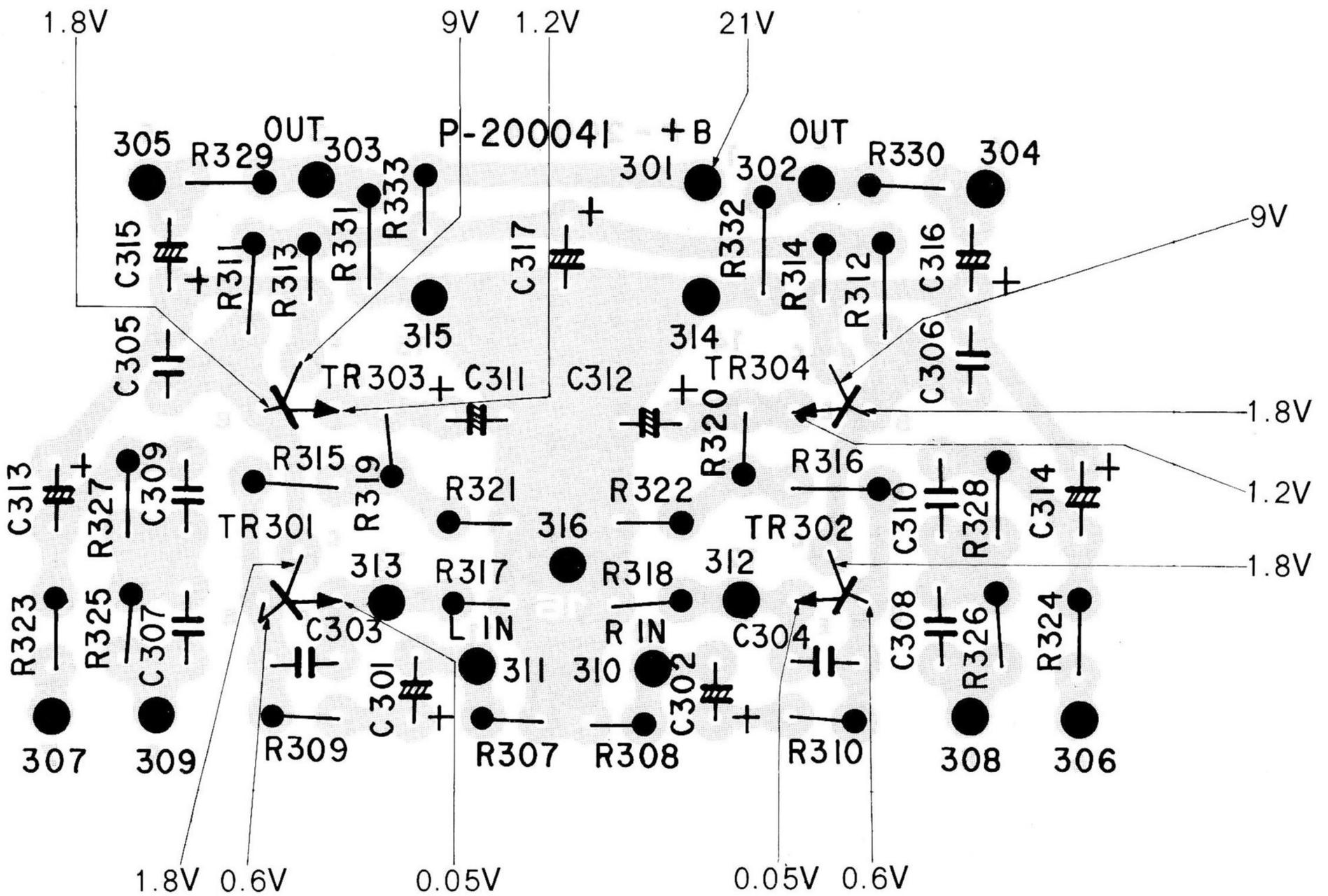


2SC 644
2SC 828

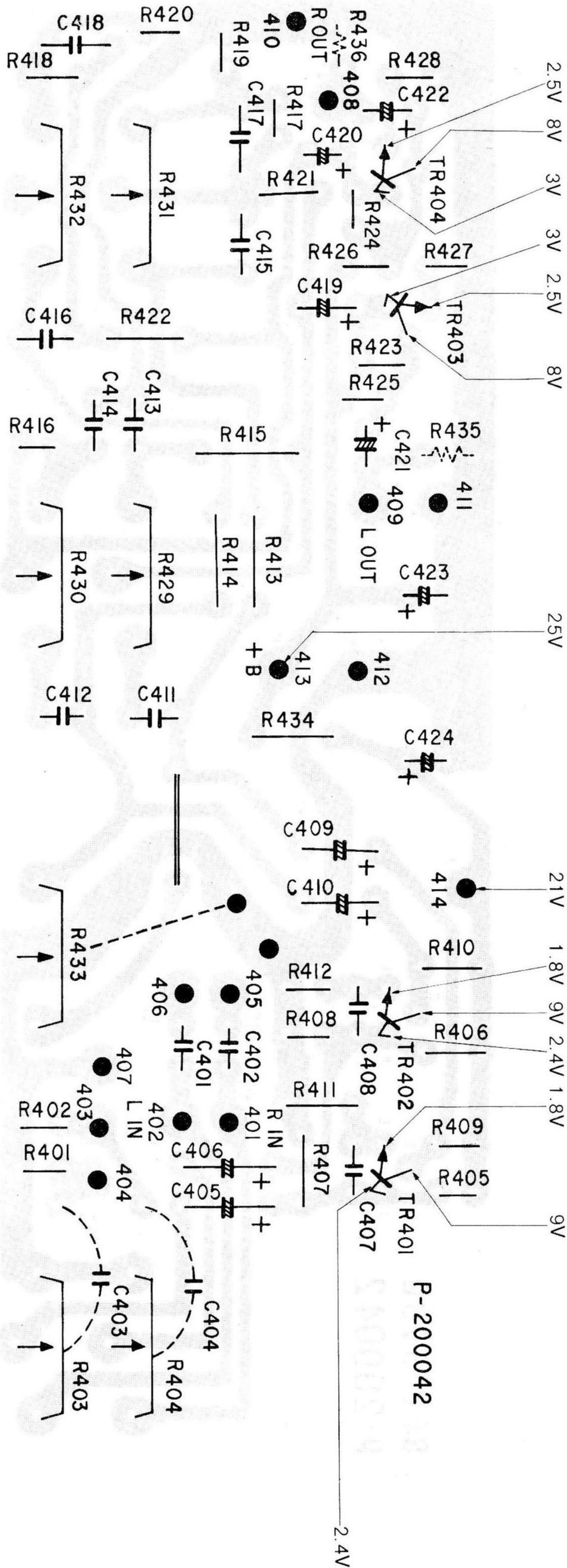
AM/FM FRONT END



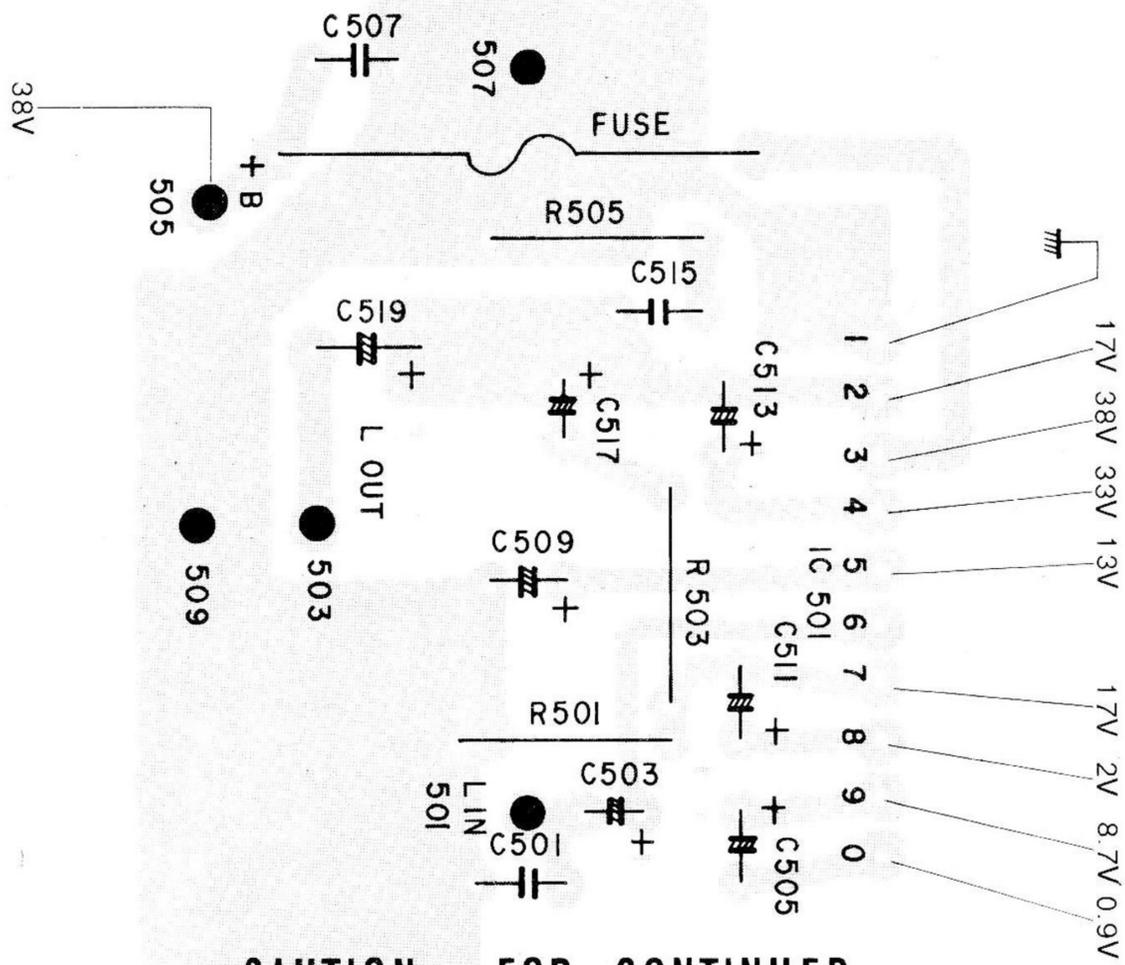
PRE-AMP BOARD



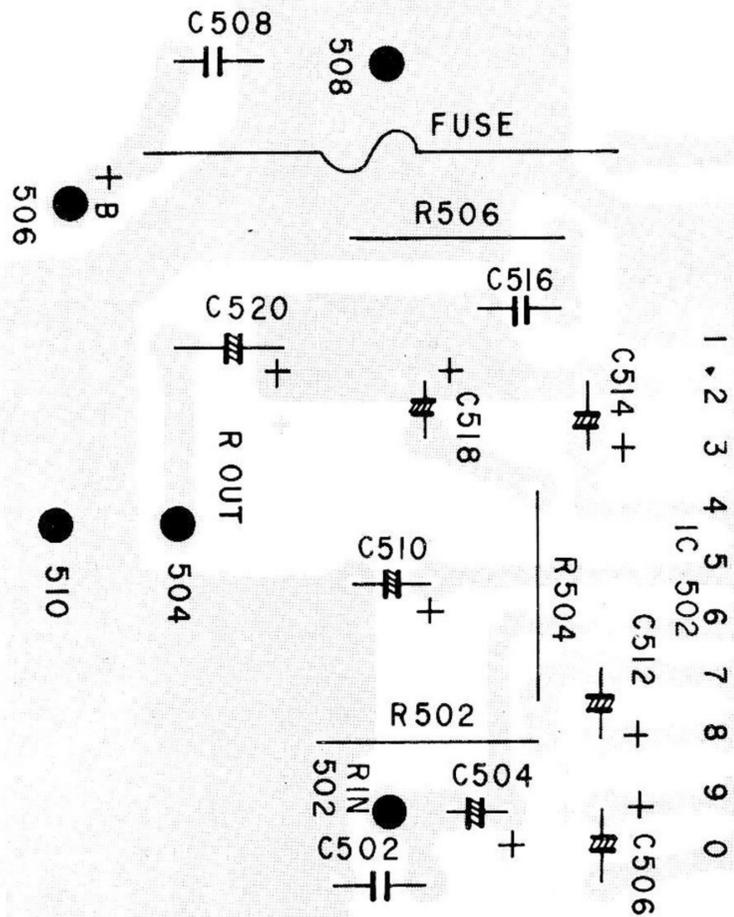
TONE CONTROL BOARD



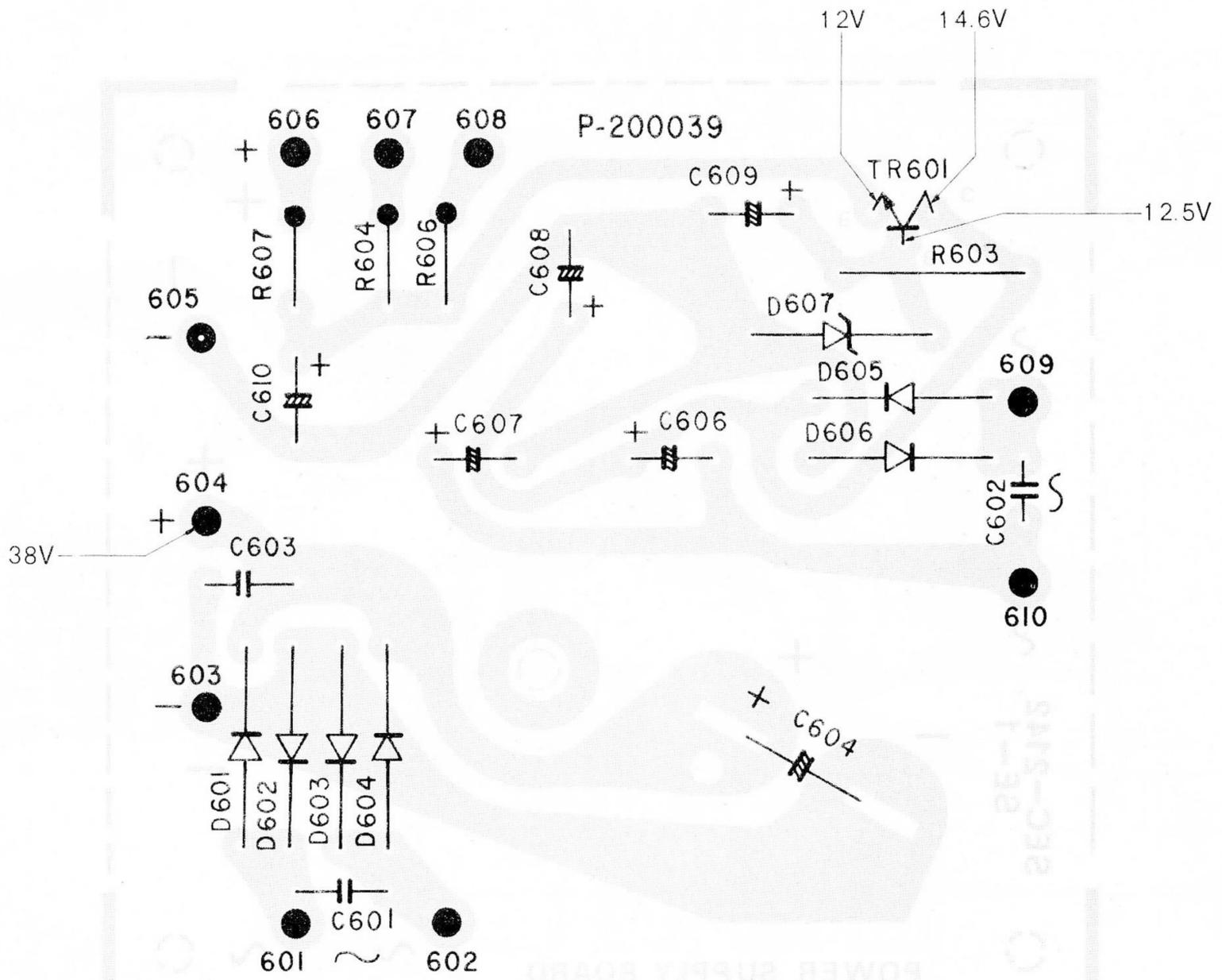
MAIN AMP. BOARD



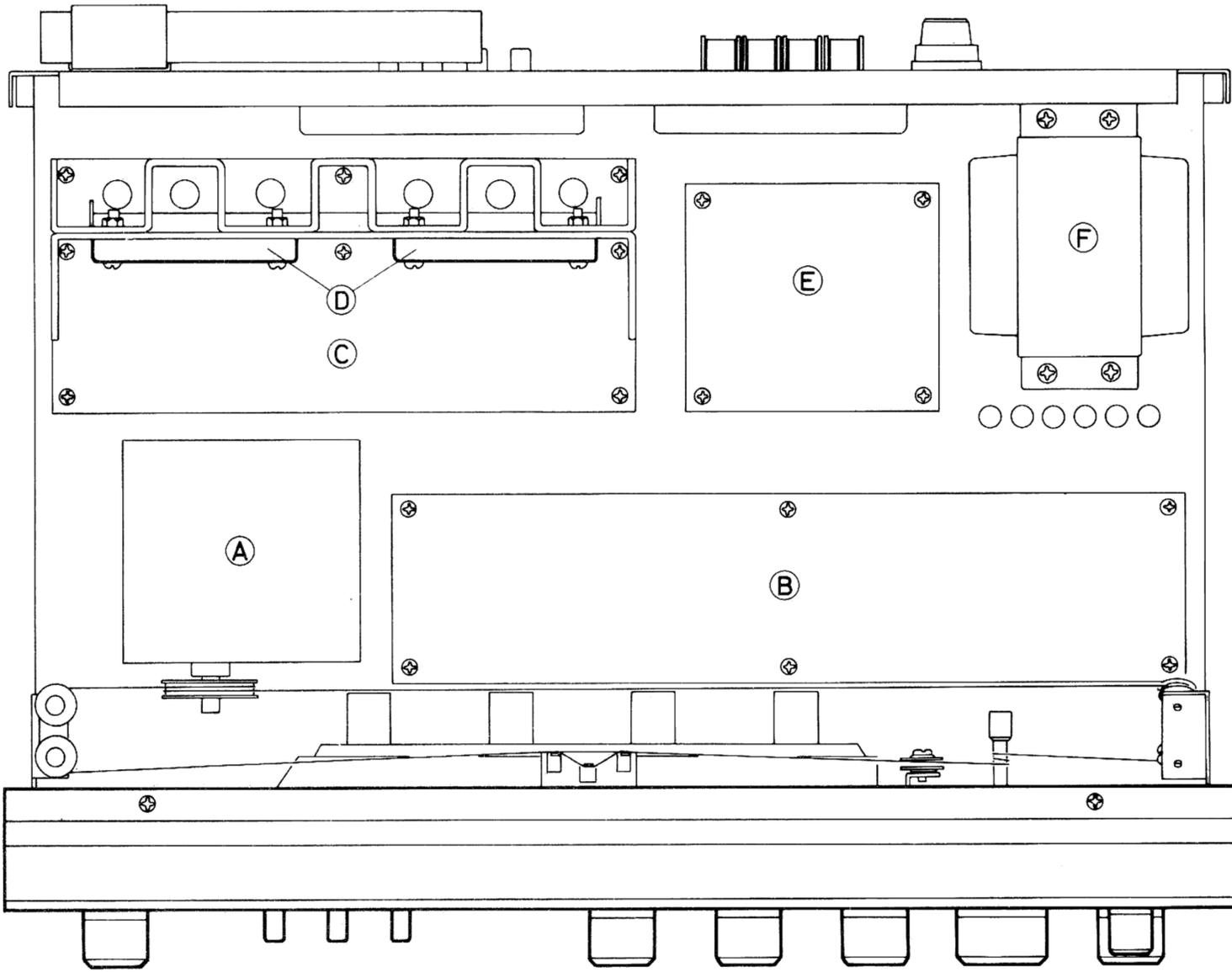
CAUTION - FOR CONTINUED PROTECTION AGAINST FIRE HAZARD, REPLACE ONLY WITH SAME TYPE 1.5A - 250V FUSE.



POWER SUPPLY BOARD

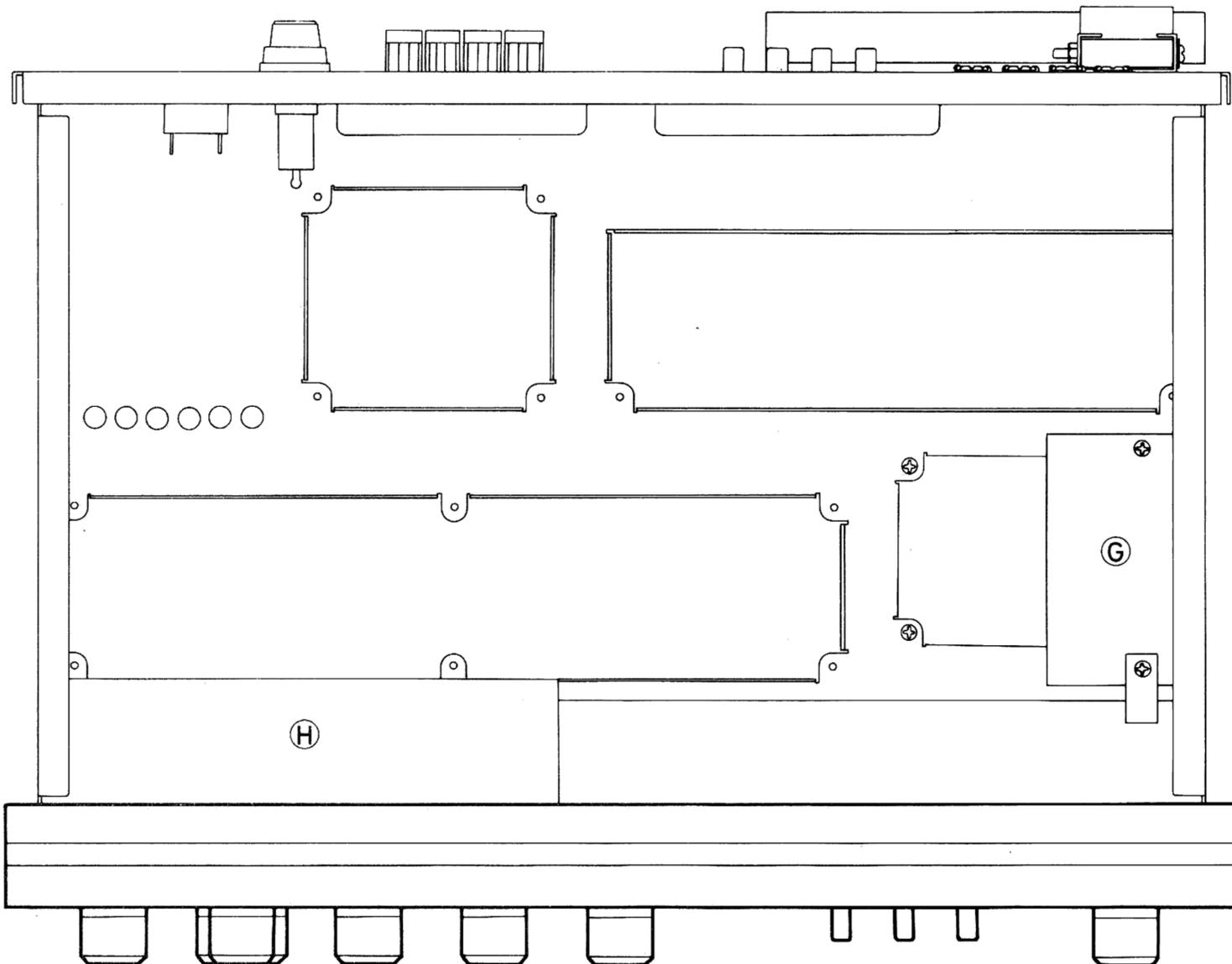


CHASSIS TOP VIEW



- Ⓐ FM TUNER.
- Ⓑ AM TUNER, AM FM IF & MULTIPLEX BOARD.
- Ⓒ MAIN AMP BOARD.
- Ⓓ POWER IC
- Ⓔ POWER SUPPLY BOARD.
- Ⓕ POWER TRANSFORMER.

CHASSIS BOTTOM VIEW



- Ⓖ PRE AMP BOARD.
- Ⓖ TONE CONTROL BOARD.

CR-200

ELECTRICAL PARTS LIST

PART NO.	REF. NO.	DESCRIPTION	Q'ty	
TRANSISTORS				
BC11228	TR1	Transistor	FET SE8193-1	1
BC11229	TR2,3	Transistor	NJ-202B	2
BC11230	TR13,14,15,16	Transistor	2SC828 Rors	4
BC11231	TR17,18,11,12	Transistor	2SC644 Rors	4
BC11232	TR19	Transistor	CS1676	1
BC11233	TR4,5,6,7,8,9	Transistor	NJ100B	6
BC11234	TR10	Transistor	CS1676	1
DIODES				
BC11235	D1	Vari-Cap Diode	1TT210	1
BC11236	D16	Zener Diode	ZPD-13	1
BC11237	D10,11,12,13,14,15,	Silicon Diode	SP1K	6
BC11238	D7,8	Diode	1S188FM	2
BC11239	D2,3,4,5,6	Diode	1S188AM	5
BC11240	TH1	Thermistor	D-12S	1
INTEGRATED CIRCUITS				
BC11241	IC1	IC	UPC 27C	1
BC11242	IC2	IC	LA3301	1
BC11243	IC3,4	IC	STK015	2
RESISTORS				
BC11101	R116	Carbon Resistor	RD ¼UZ 22 ohm K	1
BC11102	R256,257	Carbon Resistor	RD ¼UZ 47 ohm K	2
BC11103	R206	Carbon Resistor	RD ¼UZ 68 ohm K	1
BC11104	R216,102,114	Carbon Resistor	RD ¼UZ 100 ohm K	3
BC11105	R107	Carbon Resistor	RD ¼UZ 270 ohm K	1
BC11106	R210,249,103	Carbon Resistor	RD ¼UZ 330 ohm K	3
BC11107	R215,236	Carbon Resistor	RD ¼UZ 470 ohm K	2
BC11108	R205,239,242,243	Carbon Resistor	RD ¼UZ 1K ohm K	4
BC11109	R106,204,219,237	Carbon Resistor	RD ¼UZ 1.5K ohm K	4
BC11110	R208,212	Carbon Resistor	RD ¼UZ 1.8K ohm K	2
BC11111	R203,217,211,222	Carbon Resistor	RD ¼UZ 2.2K ohm K	4
BC11112	R231,254,255	Carbon Resistor	RD ¼UZ 3.3K ohm K	3
BC11113	R224,238,253	Carbon Resistor	RD ¼UZ 4.7K ohm K	3
BC11114	R223	Carbon Resistor	RD ¼UZ 5.6K ohm K	1
BC11115	R105,108,110,248,251	Carbon Resistor	RD ¼UZ 6.8K ohm K	5
BC11116	R109	Carbon Resistor	RD ¼UZ 8.2K ohm K	1
BC11117	R111,201,213,225,234,235, 244,245,202	Carbon Resistor	RD ¼UZ 10K ohm K	9
BC11118	R218	Carbon Resistor	RD ¼UZ 15K ohm K	1
BC11119	R240	Carbon Resistor	RD ¼UZ 20K ohm K	1
BC11120	R207	Carbon Resistor	RD ¼UZ 27K ohm K	1
BC11121	R104,209,214	Carbon Resistor	RD ¼UZ 33K ohm K	3
BC11122	R112	Carbon Resistor	RD ¼UZ 82K ohm K	1
BC11123	R101,113,117,221,228	Carbon Resistor	RD ¼UZ 100K ohm K	5
BC11124	R226	Carbon Resistor	RD ¼UZ 220K ohm K	1
BC11125	R317	Carbon Resistor	RD ¼UZ 390 ohm J	1
BC11126	R319,320	Carbon Resistor	RD ¼UZ 470 ohm J	2
BC11127	R321,322	Carbon Resistor	RD ¼UZ 560 ohm J	2
BC11128	R454	Carbon Resistor	RD ¼UZ 680 ohm J	1
BC11129	R411,412,427,428	Carbon Resistor	RD ¼UZ 1K ohm J	4
BC11130	R309,310,419,420	Carbon Resistor	RD ¼UZ 2.2K ohm J	4

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ELECTRICAL PARTS LIST

PART NO.	REF. NO.	DESCRIPTION	Q'ty
BC11131	R333	Carbon Resistor RD ¼UZ 1.5K ohm J	1
BC11132	R401,402	Carbon Resistor RD ¼UZ 3.3K ohm J	2
BC11133	R421,422	Carbon Resistor RD ¼UZ 5.6K ohm J	2
BC11134	R409,410,425,426	Carbon Resistor RD ¼UZ 6.8K ohm J	4
BC11135	R313,314,323,324	Carbon Resistor RD ¼UZ 8.2K ohm J	4
BC11136	R329,330	Carbon Resistor RD ¼UZ 10K ohm J	2
BC11137	R417,418	Carbon Resistor RD ¼UZ 12K ohm J	2
BC11138	R325,326	Carbon Resistor RD ¼UZ 15K ohm J	2
BC11139	R413,414	Carbon Resistor RD ¼UZ 22K ohm J	2
BC11140	R315,416	Carbon Resistor RD ¼UZ 27K ohm J	2
BC11141	R307,308,311,312,315,316, 407,408	Carbon Resistor RD ¼UZ 100K ohm J	8
BC11142	R327,328,331,332	Carbon Resistor RD ¼UZ 220K ohm J	4
BC11143	R405,406	Carbon Resistor RD ¼UZ 680K ohm J	2
BC11144	R423,424	Carbon Resistor RD ¼UZ 1.2M ohm	2
BC11145	R229	Carbon Resistor RD ¼PZ 22 ohm K	1
BC11146	R220	Carbon Resistor RD ¼PZ 33 ohm K	1
BC11147	R246	Carbon Resistor RD ¼PZ 47 ohm K	1
BC11148	R103,241	Carbon Resistor RD ¼PZ 330 ohm K	2
BC11149	R227,230	Carbon Resistor RD ¼PZ 470 ohm K	2
BC11150	R204	Carbon Resistor RD ¼PZ 2.2K ohm K	1
BC11151	R260	Carbon Resistor RD ¼PZ 4.7K ohm K	1
BC11152	R247	Carbon Resistor RD ¼PZ 6.8K ohm K	1
BC11153	R233	Carbon Resistor RD ¼PZ 10K ohm K	1
BC11154	R258,259	Carbon Resistor RD ¼PZ 82K ohm K	2
BC11155	R117,258,259	Carbon Resistor RD ¼PZ 100K ohm K	3
BC11156	R305,306	Carbon Resistor RD ¼PZ 10K ohm J	2
BC11157	R303,304	Carbon Resistor RD ¼PZ 100K ohm J	2
BC11158	R301,302	Carbon Resistor RD ¼PZ 560K ohm J	2
BC11159	R606	Carbon Resistor RD ¼UZ 100 ohm K	1
BC11160	R604	Carbon Resistor RD ¼UZ 120 ohm K	1
BC11161	R252	Carbon Resistor RD ¼UZ 330 ohm K	1
BC11162	R602	Carbon Resistor RD ¼PZ 330 ohm K	1
BC11163	R601	Carbon Resistor RD ¼PZ 680 ohm K	1
BC11164	R603	Carbon Resistor RD ¼PZ 1.5K ohm K	1
BC11165	R505,506	Carbon Resistor RD ¼PZ 4.7K ohm J	2
BC11166	R501,502	Carbon Resistor RD ¼PZ 47 ohm J	2
BC11167	R503,504	Carbon Resistor RD ¼PZ 2.2K ohm J	2
VARIABLE RESISTORS			
BC11168	R250	Semi-fixed Resistor 1K ohm	1
BC11169	R232	Semi-fixed Resistor 50K ohm	1
BC11259	R403,404	Variable Resistor 50KB 2 Gang	1
BC11260	R433	Variable Resistor 100KW 2 Gang	1
BC11261	R429,430,431,432	Variable Resistor 100 KA 2 Gang	2
BC11262	R118	Variable Resistor 100 KA (Fine Tuning)	1
CAPACITORS			
BC11170	C245,515,516	Mylar Capacitor CQ92MIH 473 M	3
BC11171	C253,254	Mylar Capacitor CQ92MIH 104 M	2
BC11172	C307,308	Mylar Capacitor CQ92MIH 472 K	2
BC11173	C309,310	Mylar Capacitor CQ92MIH 223 K	2
BC11174	C401,402,411,412	Mylar Capacitor CQ92MIH 102 K	4
BC11175	C413,414	Mylar Capacitor CQ92MIH 103 K	2
BC11176	C415,416	Mylar Capacitor CQ92MIH 153 K	2

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ELECTRICAL PARTS LIST

PART NO.	REF. NO.	DESCRIPTION	Q'ty
BC11177	C403,404,417,418	Mylar Capacitor CQ92MIH 154 K	4
BC11178	C244	Mylar Capacitor CQ92MIH 102 M	1
BC11179	C210,214	Mylar Capacitor CQ92MIH 472 M	2
BC11180	C224,225	Mylar Capacitor CQ92MIH 103 M	2
BC11181	C227	Mylar Capacitor CQ92MIH 153 M	1
BC11182	C251,252	Mylar Capacitor CQ92MIH 203 M	2
BC11183	C204,207	Mylar Capacitor CQ92MIH 223 M	2
BC11184	C249	Polystrene Capacitor CQSIH 252 J	1
BC11185	C248	Polystrene Capacitor CQSIH 103 J	1
BC11186	C226	Electrolytic Capacitor CE04W 0.47 μ F/10V	1
BC11187	C218	Electrolytic Capacitor CE04W 3.3 μ F/16V	1
BC11188	C246,250	Electrolytic Capacitor CE04W 4.7 μ F/10V	2
BC11189	C220,228,233,235,242,503,504	Electrolytic Capacitor CE04W 10 μ F/16V	7
BC11190	C239	Electrolytic Capacitor CE04W 220 μ F/16V	1
BC11191	C247	Electrolytic Capacitor CE04W 470 μ F/10V	1
BC11192	C405,406,409,410,419,420, 421,422	Electrolytic Capacitor CE04W 3.3 μ F/25V	8
BC11193	C313,424,509,510	Electrolytic Capacitor CE04W 220 μ F/25V	4
BC11194	C424	Electrolytic Capacitor CE04W 220 μ F/35V	1
BC11195	C125	Electrolytic Capacitor CE04W 1 μ F/16V	1
BC11196	C609,610	Electrolytic Capacitor CE04W 470 μ F/16V	2
BC11197	C608	Electrolytic Capacitor CE04W 470 μ F/25V	1
BC11198	C606,607	Electrolytic Capacitor CE04W 1,000 μ F/16V	2
BC11199	C313,314,315,316	Electrolytic Capacitor CE04W 4.7 μ F/25V	4
BC11200	C311,312	Electrolytic Capacitor CE04W 100 μ F/10V	2
BC11201	C517,518	Electrolytic Capacitor CE04W 10 μ F/25V	2
BC11202	C511,512	Electrolytic Capacitor CE04W 47 μ F/10V	2
BC11203	C505,506,513,514	Electrolytic Capacitor CE04W 47 μ F/25V	4
BC11204	C519,520	Electrolytic Capacitor CE04W 1,000 μ F/25V	2
BC11205	C604	Lug Type Electrolytic Capacitor 2200 μ F 50V	1
BC11206	C605	Electrolytic Capacitor CE02W 1,000 μ F/35V	1
BC11207	C303,304,305,306,318	Ceramic Capacitor CC451H 101 K	4
BC11208	C407,408	Ceramic Capacitor CC451H 471 K	2
BC11209	C601,602,603	Ceramic Capacitor CC451H 103 Z	3
BC11210	C103	Ceramic Capacitor CC45 25VF 010 D	1
BC11211	C111	Ceramic Capacitor CC45 25VF 020 D	1
BC11212	C120	Ceramic Capacitor CC45 25VF 050 D	1
BC11213	C230	Ceramic Capacitor CC45 25VF 080 D	1
BC11214	C108,115,116,119,212,230	Ceramic Capacitor CC45 25VF 100 J	6
BC11215	C240,241	Ceramic Capacitor CC45 25VF 101 J	2
BC11216	C102,109	Ceramic Capacitor CC45 25VF 150 J	2
BC11217	C110,243	Ceramic Capacitor CC45 25VF 151 J	2
BC11218	C232	Ceramic Capacitor CC45 25VF 220 J	1
BC11219	C104,107,114	Ceramic Capacitor CC45 25VF 300 J	3
BC11220	C225,256	Ceramic Capacitor CC45 25VF 471 J	2
BC11221	C501,502	Ceramic Capacitor CC45 25V 561 K	2
BC11222	C104,105,106,113,117,118, 121,123,124,126,217,221,222	Ceramic Capacitor CK45 25V 103 Z	13
BC11223	C112,211,215,216,223,231, 235,237,238	Ceramic Capacitor CK45 25V 203 Z	10
BC11224	C202,205,206,208,209,213, 129,229	Ceramic Capacitor CK45 25V 403 Z	8
BC11225	C601,602,603	Ceramic Capacitor CC451H 103 Z	3
BC11226	C507,508	Ceramic Capacitor CH451 103 Z	2
BC11227	C301,302	Tantalum Capacitor 2.2 μ F 10V	2

CR-200 ELECTRICAL PARTS LIST

PART NO.	REF. NO.	DESCRIPTION	Q'ty
TRIMMER AND VARIABLE CONDENSER			
BC11263	TC-1	Trimmer Capacitor 1T-8	1
BC11265	VC-1	Variable Capacitor C751J116	1
TRANSFORMERS AND COILS			
BC11244	T101	Balum Coil	1
BC11245	T201	OSC Coil OCO12	1
BC11246	T202	AM IFT OA-010	1
BC11247	T203	AM IFT OA-011	1
BC11248	T206	AM IFT 7A-014	1
BC11249	L101	Antenna Coil	1
BC11250	L103	RF Coil	1
BC-11251	L105	OSC Coil	1
BC11252	T207	FM IFT 7F-007	1
BC11253	T208	FM IFT 7A-008	1
BC11254	T209	FM IFT 10F-014	1
BC11255	T204	Ceramic Filter CF-015	1
BC11256	T210	MPX Coil OM-008	1
BC11257	T211	MPX Coil OM-009	1
BC11264	L101,102	Choke Coil	2
BC11051		Power Supply Transformer	1
SWITCHES			
BC11028		Rotary Switch A (Selector)	1
BC11029		Rotary Switch B (Speaker)	1
BC11030		Lever Switch	3
PILOT LAMPS			
BC11024		Lamp 6.3V 0.15A A	4
BC11025		Lamp 6.3V 0.15A B (Green)	1
METER			
BC11027		Tuning Meter	1
MOUNTED CIRCUIT BOARDS			
BC11034		FM Tuner Mounted Board	1
BC11035		I.F. Mounted Board	1
BC11036		Pre-Amp Mounted Board	1
BC11037		Main Amp Mounted Board	1
BC11038		Tone Control Mounted Board	1
BC11039		Power Supply Mounted Board	1
PRINTED CIRCUIT BOARDS			
BC11054		Printed Circuit Board (Tuner)	1
BC11055		Printed Circuit Board (I.F.)	1
BC11056		Printed Circuit Board (Tone)	1
BC11057		Printed Circuit Board (Pre-Amp)	1
BC11058		Printed Circuit Board (Main Amp)	1
BC11059		Printed Circuit Board (Power)	1
COMBINATION COMPONENTS			
BC11258	FL1,2	Twin Filter B3EN-0102	2

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MECHANICAL PARTS LIST & MECHANICAL HARDWARE

PART NO.	REF. NO.	DESCRIPTION	Q'ty
BC11001		Cabinet Ass'y	1
BC11002	1	Cabinet	1
BC11003	2	Ventilation Board (plastic)	1
BC11004	3	Ventilation Plate (metal) A	1
BC11005	4	Ventilation Plate (metal) B	1
BC11006	7	Foot	4
BC11007		Shield Plate A	1
BC11008		Shield Plate B	1
BC11009		Front Panel Ass'y	1
BC11010	8	Front Panel	1
BC11011	12	Dial Window Panel	1
BC11012	10	Tuning Knob	1
BC11013	11	Fine Tuning Knob	1
BC11014	9	Control Knob	6
BC11015	14	Knob Seat	3
BC11016	15	Front Chassis Ass'y	1
BC11017	43	Sub-Pulley	5
BC11018	64	Shaft for Sub-Pulley	5
BC11019	13	Dial Plate	1
BC11020	45	Tuning Shaft Ass'y	1
BC11021		Main Pulley	1
BC11022	50	Dial String	1
BC11023	49	Pointer Ass'y	1
BC11026	41	Lamp Socket	5
BC11031	34	Headphone Jack	1
BC11032	20	Main Chassis	1
BC11033	21	Back Panel	1
BC11040	26	Jack Ass'y	1
BC11041	27	Speaker Connector	2
BC11042	25	Antenna Terminal	1
BC11043	39	AC Cord	1
BC11044	29	Cord Stopper	2
BC11045	28	AC Outlet	1
BC11046	30	Fuse Holder	1
BC11047		Fuse 1.5A A	1

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MECHANICAL PARTS LIST & MECHANICAL HARDWARE

PART NO.	REF. NO.	DESCRIPTION	Q'ty
BC11048		Pig-Tail Fuse 1.5A B	2
BC11049	23	AM Antenna	1
BC11050		FM Dipole Antenna	1
BC11052	60	Heat Sink	1
BC11053		Tuner Case	1
BC11095		Name Plate	1
BC11060	46	Lug Board 1L2P	3
BC11061		Wire Stay A	1
BC11062	77	Wire Stay B	1
BC11063		Screw 3 × 3 CPS	1
BC11064	61	Screw 3 × 8 PTII	33
BC11065		Screw 3 × 8 P	10
BC11066	69	Screw 3 × 8 PS	4
BC11067		Screw 3 × 8 PT	3
BC11068	63	Screw 3 × 5 P	1
BC11069	65	Screw 3 × 5 PT	1
BC11070		Screw 3 × 14 CPS	1
BC11071	68	Screw 2.6 × 8 F	2
BC11072	67	Screw 4 × 10 P	4
BC11073	70	Screw 4 × 40 P	1
BC11074	74	Screw 3 × 16 PS	4
BC11075	62	Screw for Ground BSBN1	1
BC11076	81	Nut 3 m/m	18
BC11077	79	Nut 4 m/m	5
BC11078	80	Nut 2.6 m/m	2
BC11079		Nut 9 m/m	1
BC11081		Spring Washer 3 m/m	18
BC11082	85	Spring Washer 4 m/m	4
BC11083		Spring Washer 2.6 m/m	2
BC11084	84	Washer 3 m/m	6
BC11085		Washer 4 m/m	4
BC11086		Washer 9 m/m	1
BC11087	86	E-Ring 2 m/m	1
BC11088	51	Dial Spring	1

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EXPLODED VIEW PARTS LIST

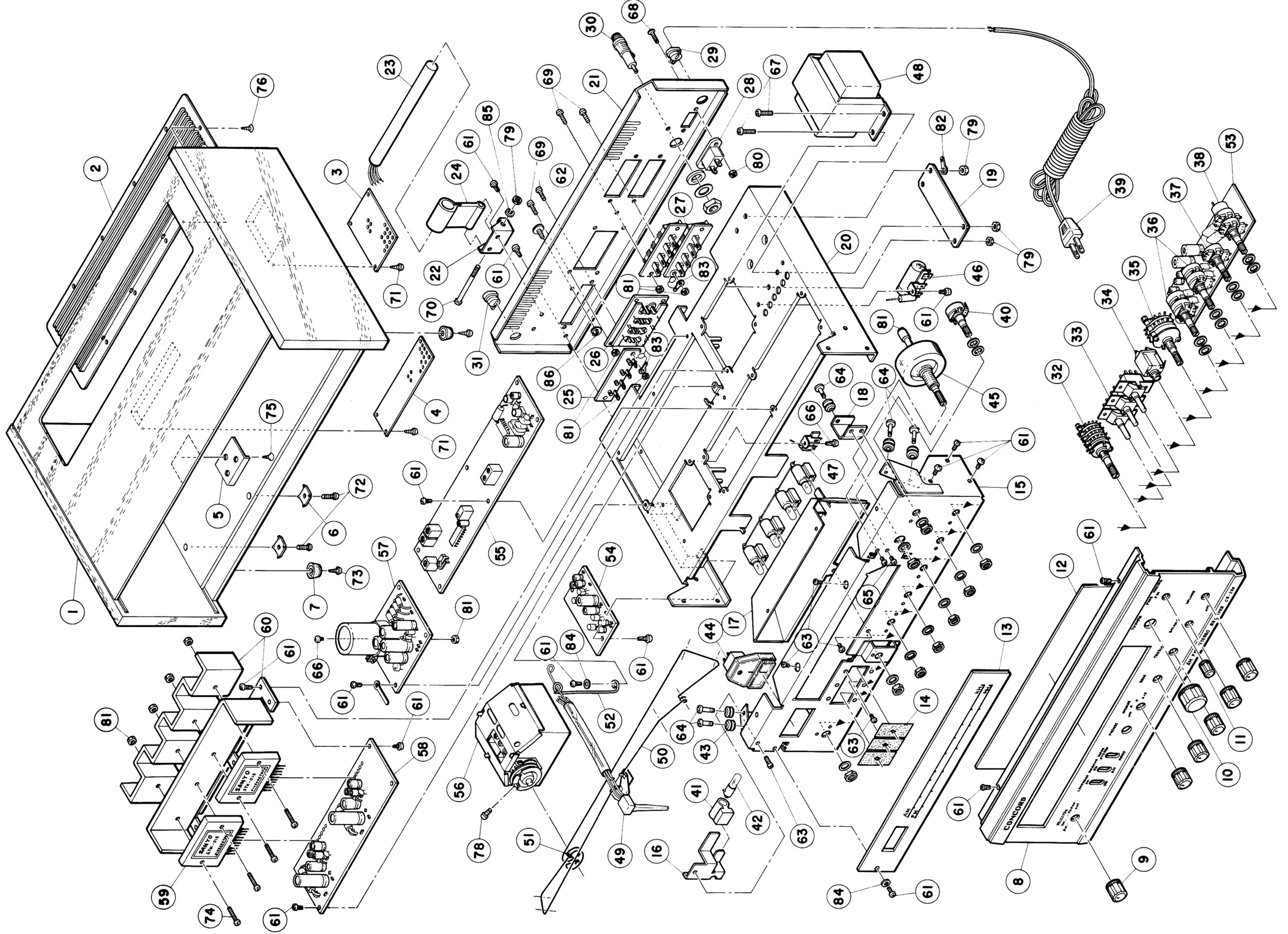
REF. NO.	PART NO.	DESCRIPTION	Q'ty
1	BC11002	Cabinet	1
2	BC11003	Ventilation Board (plastic)	1
3	BC11004	Ventilation Plate (metal) A	1
4	BC11005	Ventilation Plate (metal) B	1
5	BC11266	Cabinet Holder	1
6	BC11080	Sq. Washer	1
7	BC11006	Foot	4
8	BC11010	Front Panel	1
9	BC11014	Control Knob	6
10	BC11012	Tuning Knob	1
11	BC11013	Fine Tuning Knob	1
12	BC11011	Dial Window Panel	1
13	BC11019	Dial Plate	1
14	BC11015	Knob Seat	3
15	BC11016	Front Chassis Ass'y	1
16	BC11267	Lamp Angle	1
17	BC11268	Reflector	1
18	BC11269	Sub-Pulley for L metal	1
19	BC11270	Transformer Metal	1
20	BC11032	Main Chassis	1
21	BC11033	Back Panel	1
22	BC11271	Antenna Holder (metal)	1
23	BC11049	AM Antenna	1
24	BC11272	Antenna Holder (plastic)	1
25	BC11042	Antenna Terminal	1
26	BC11040	Jack Ass'y	1
27	BC11041	Speaker Connector	2
28	BC11045	AC Outlet	1
29	BC11044	Cord Stopper	2
31	BC11273	Cord Stopper	2
30	BC11046	Fuse Holder	1
32	BC11028	Rotary Switch A (Selector)	1
33	BC11030	Lever Switch	3
34	BC11031	Headphone Jack	1
35	BC11029	Rotary Switch B (Speaker)	1
36	BC11261	Variable Resistor 100 KA 2-Gang	1
37	BC11260	Variable Resistor 100 KW 2-Gang	2
38	BC11259	Variable Resistor 50 KB 2-Gang	1
39	BC11043	AC Cord	1
40	BC11262	Variable Resistor 100 KA (Fine Tuning)	1
41	BC11026	Lamp Socket	5
42	BC11025	Lamp 6.3V 0.15A B (Green)	1
43	BC11017	Sub-Pulley	5

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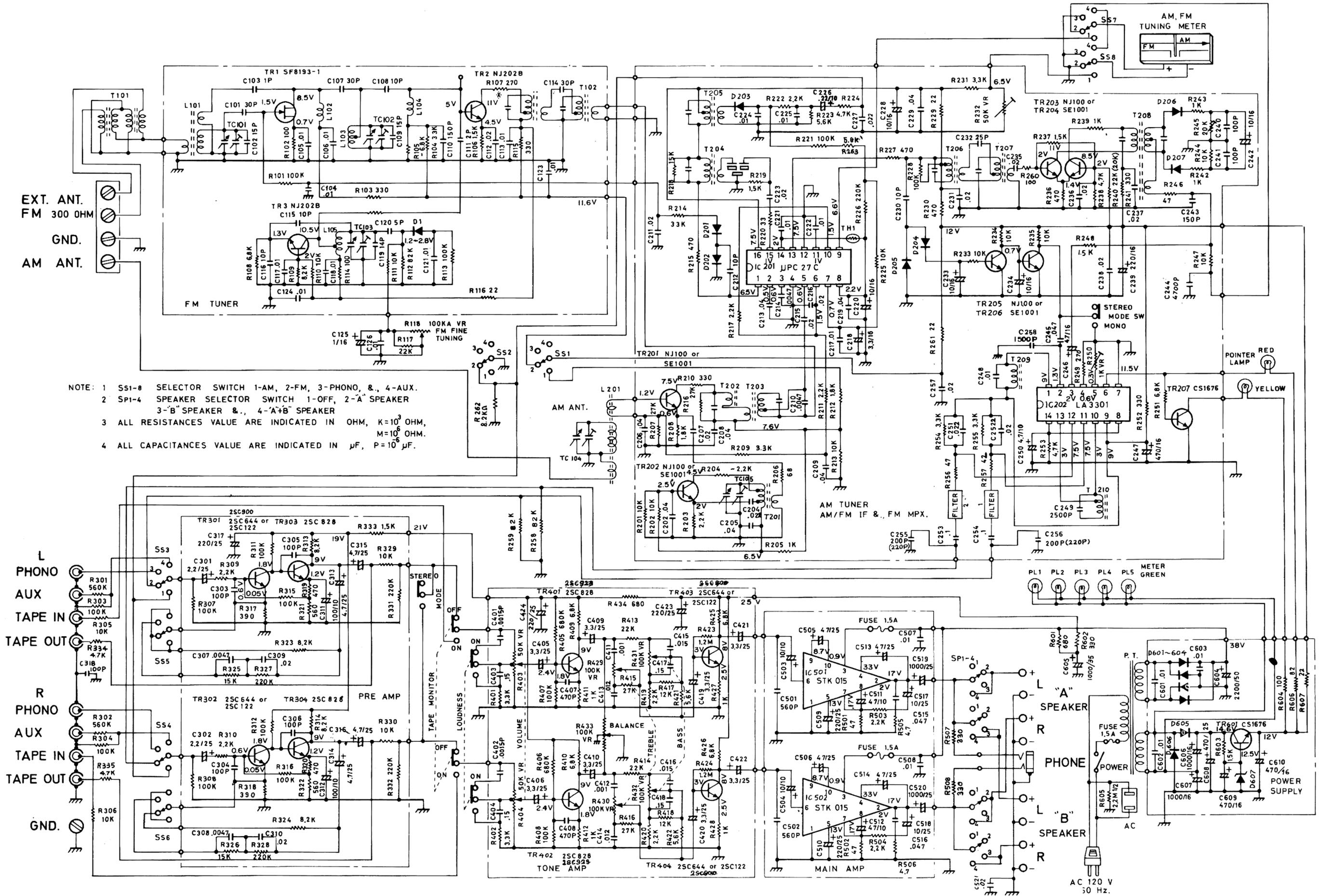
EXPLODED VIEW PARTS LIST

REF. NO.	PART NO.	DESCRIPTION	Q'ty
44	BC11027	Tuning Meter	1
45	BC11020	Tuning Shaft Ass'y	1
46	BC11060	Lug Board 1L2P	3
47	BC11274	Lug Board 1L1P	1
48	BC11051	Power Supply Transformer	1
49	BC11023	Pointer Ass'y	1
50	BC11022	Dial String	1
51	BC11088	Dial Spring	1
52	BC11275	Wire Stay	1
53	BC11038	Tone Control Mounted Board	1
54	BC11036	Pre-Amp Mounted Board	1
55	BC11035	I.F. Mounted Board	1
56	BC11034	FM Tuner Unit	1
57	BC11039	Power Supply Mounted Board	1
58	BC11037	Main Amp Mounted Board	1
59	BC11243	IC STK015	2
60	BC11052	Heat Sink	1
61	BC11064	Screw 3 × PT-II	33
62	BC11075	Screw for Ground BSBN1	1
63	BC11068	Screw 3 × 5 P	1
64	BC11018	Shaft for Sub-Pulley	5
65	BC11069	Screw 3 × 5 PT	1
66	BC11284	Screw 3 × 6 P	1
67	BC11072	Screw 4 × 10 P	4
68	BC11071	Screw 2.6 × 8 F	2
69	BC11066	Screw 3 × 8 PS	4
70	BC11073	Screw 4 × 40 P	1
71	BC11276	Screw 2.7 × 8 PW	1
72	BC11277	Screw 4 × 20 P	1
73	BC11278	Screw 3.1 × 13 PW	1
74	BC11074	Screw 3 × 16 PS	4
75	BC11279	Screw 3.1 × 6.3 FW	3
76	BC11280	Screw 3.1 × 10 FW	1
77	BC11062	Wire Stay B	1
78	BC11281	Screw 2.6 × 6	1
79	BC11077	Nut 4 m/m	5
80	BC11078	Nut 2.6 m/m	2
81	BC11076	Nut 3 m/m	18
82	BC11282	Lug 4 m/m	1
83	BC11283	Lug 3 m/m	2
84	BC11084	Washer 3 m/m	6
85	BC11082	Spring Washer 4 m/m	4
86	BC11087	E-Ring	1

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EXPLODED VIEW



CR-200 SCHEMATIC DIAGRAM



NOTE: 1 Ss1-8 SELECTOR SWITCH 1-AM, 2-FM, 3-PHONO, &, 4-AUX.
 2 SP1-4 SPEAKER SELECTOR SWITCH 1-OFF, 2-'A' SPEAKER
 3-'B' SPEAKER &, 4-'A+B' SPEAKER
 3 ALL RESISTANCES VALUE ARE INDICATED IN OHM, K=10³ OHM, M=10⁶ OHM.
 4 ALL CAPACITANCES VALUE ARE INDICATED IN μF, P=10⁻⁶ μF.

RECEIVER CR-200 DATA LIMITS

TEST	LIMIT	UNIT
A. AM SECTION FREQUENCY RANGE CALIBRATION AT 1400 KHz SENSITIVITY FOR S/N 20dB AT 1000KHz S/N RATIO AT 1mV/M AT 1000KHz DISTORTION 30% MOD. AT 5mV	<540, >1600 ±50 <500 >26 <3	KHz KHz μV/M dB %
B. FM SECTION FREQUENCY RANGE CALIBRATION AT 104MHz SENSITIVITY FOR 30dB S/N, 22.5KHz DEV. AT 98MHz MUTING SENSITIVITY AT 98MHz FINE TUNE METER SENSITIVITY AT SCALE AT 98MHz SEPARATION AT 1mV, 1KHz MOD BEACON SENSITIVITY DISTORTION, STEREO 1mV, 1KHz	<88, >108 ±500 <10 <20 150-250 >27 <30 <3	MHz KHz μV μV KHz μV dB μV %
C. AUDIO 1 KHz T.H.D. AT 10W INTO 8 OHM LOAD 1KHz T.H.D. AT 0.5W INTO 8 OHM LOAD SENSITIVITY, PHONO FOR 8W, 8 OHM LOAD AT 1KHz SENSITIVITY, AUX FOR 8W, 8 OHM LOAD AT 1KHz SENSITIVITY, TAPE IN FOR 8W, 8 OHM LOAD AT 1KHz S/N RATIO, PHONO (INPUT SHORT), 5mV INPUT S/N RATIO, AUX (INPUT SHORT), 200mV INPUT S/N RATIO, TAPE IN (INPUT SHORT), 400mV INPUT RESIDUAL NOISE HI FILTER AT 10KHz LO FILTER AT 100Hz	 <1.0 <5.0 <200 <400 >50 >55 <3 >-7 >-5	% % mV mV mV dB dB dB mV dB dB