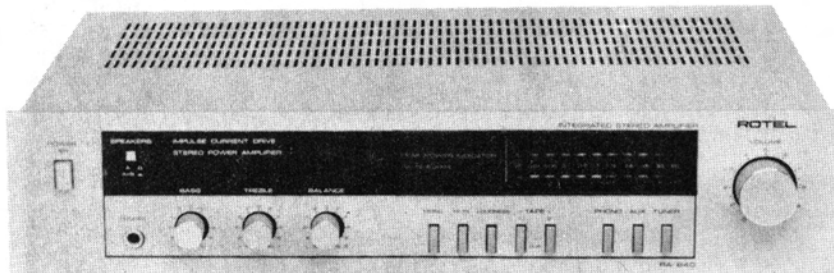


Quality Uncompromised

**ROTEL**®

# Technical Manual



STEREO INTEGRATED AMPLIFIER

## RA-840

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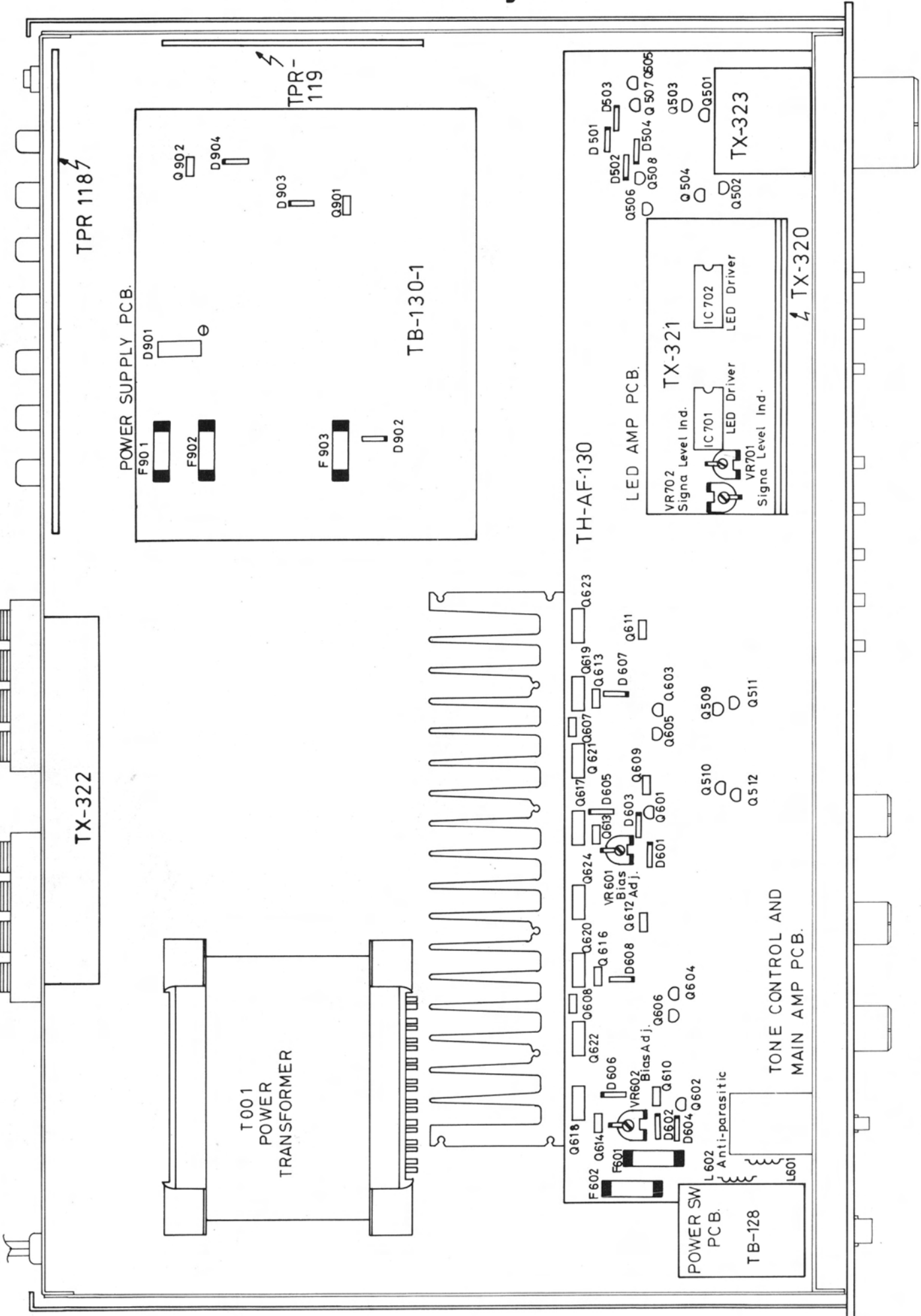
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2-4 ERICA ROAD, STACEY BUSHES, MILTON KEYNES,  
BUCKINGHAMSHIRE, ENGLAND

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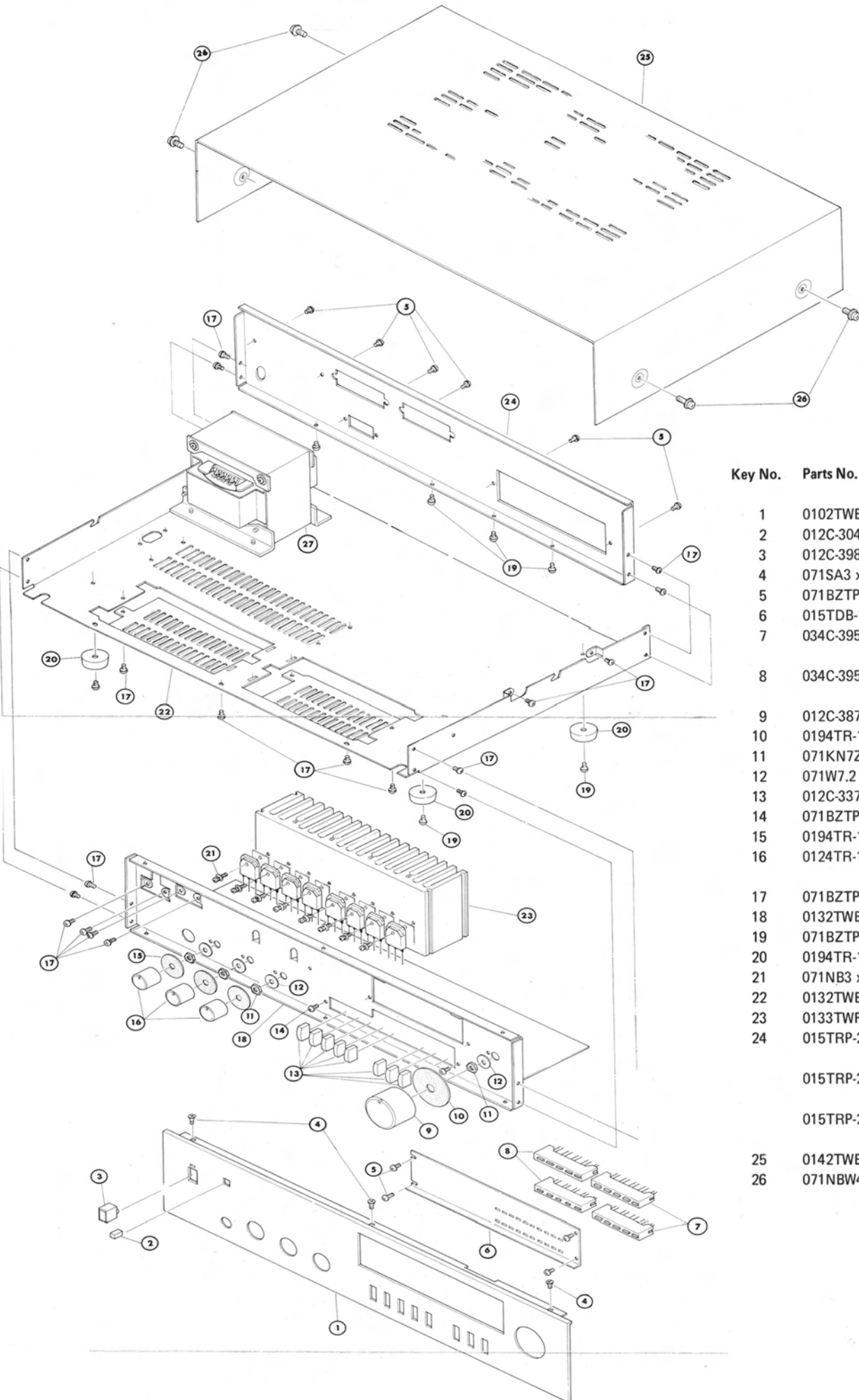
# Chassis Layout

POWER CORD SPEAKER B SPEAKER A TAPE 2 TAPE 1 AUX TUNER PHONO GND



S10 POWER S9 SPEAKER A+B S8 S7 S6 S5 S4 S3 S2 S1 MONO HI-FIL LOUDNESS TAPE PHONO AUX TUNER BALANCE TREBLE BASS VOLUME

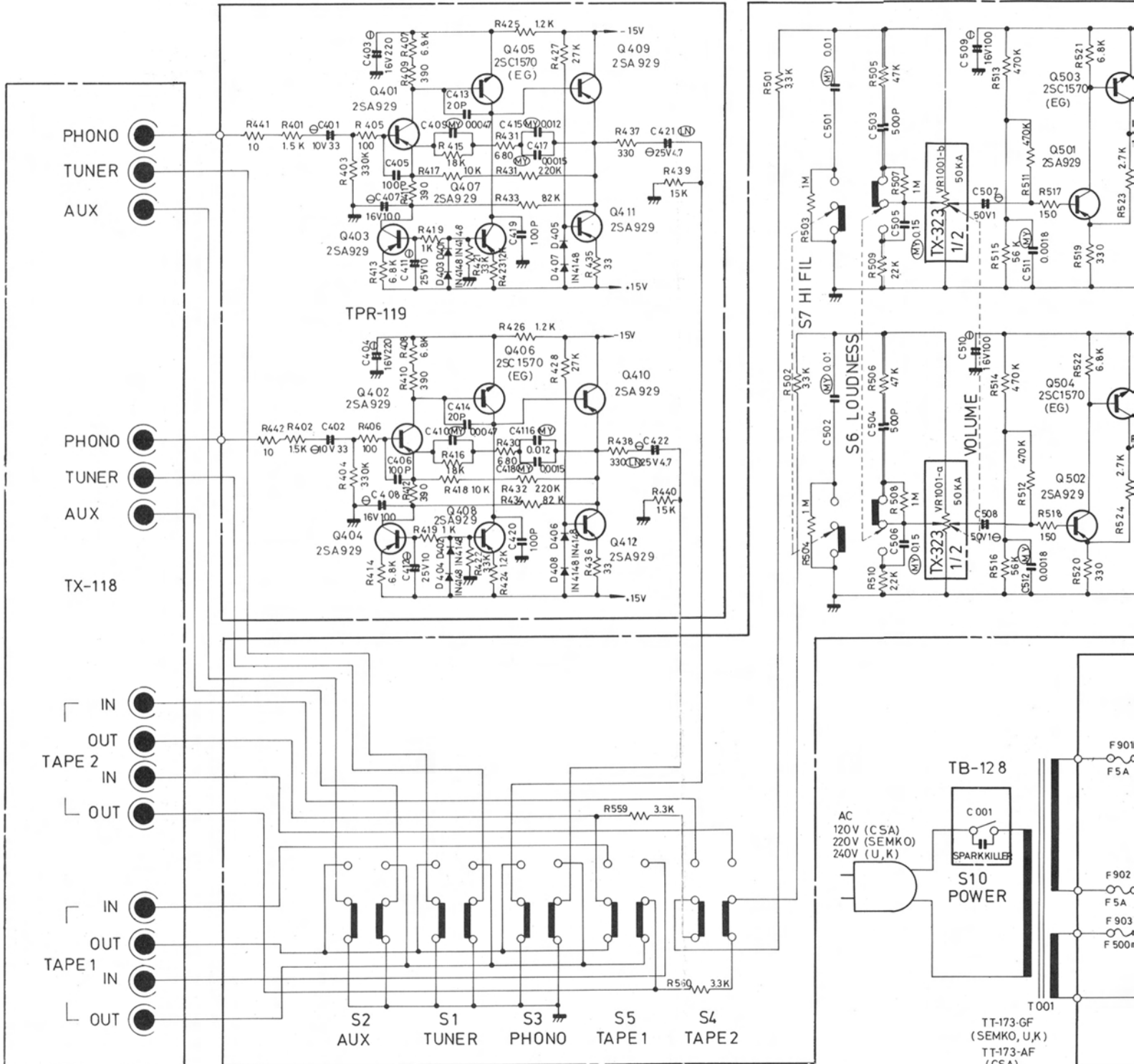
# Disassembly Diagram

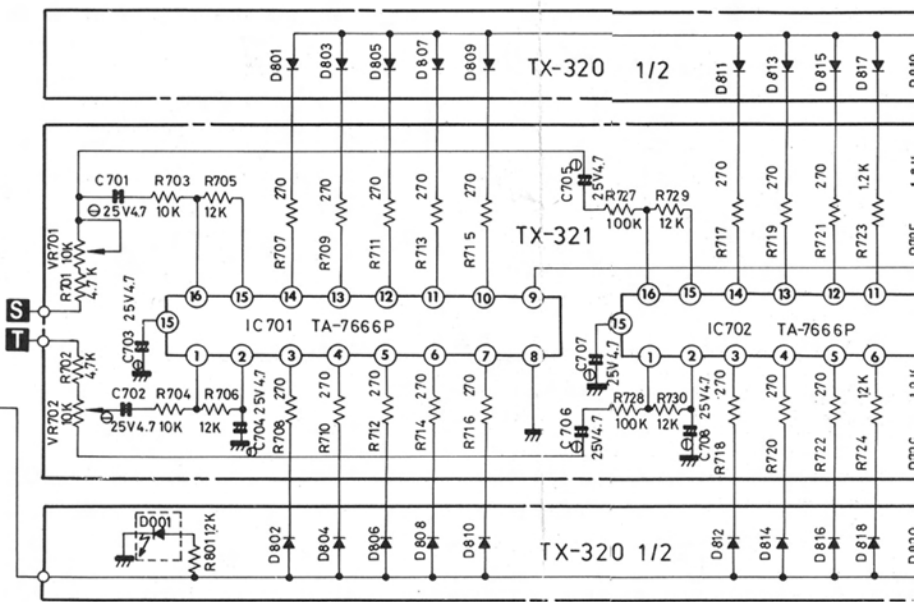
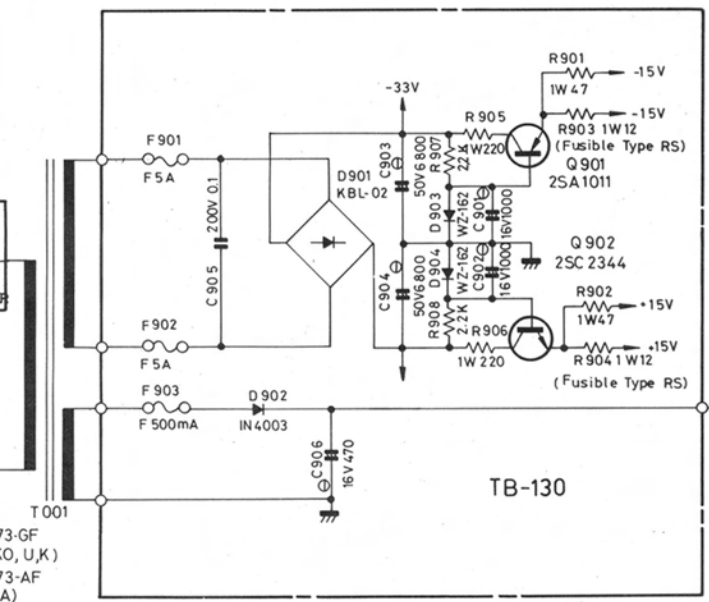
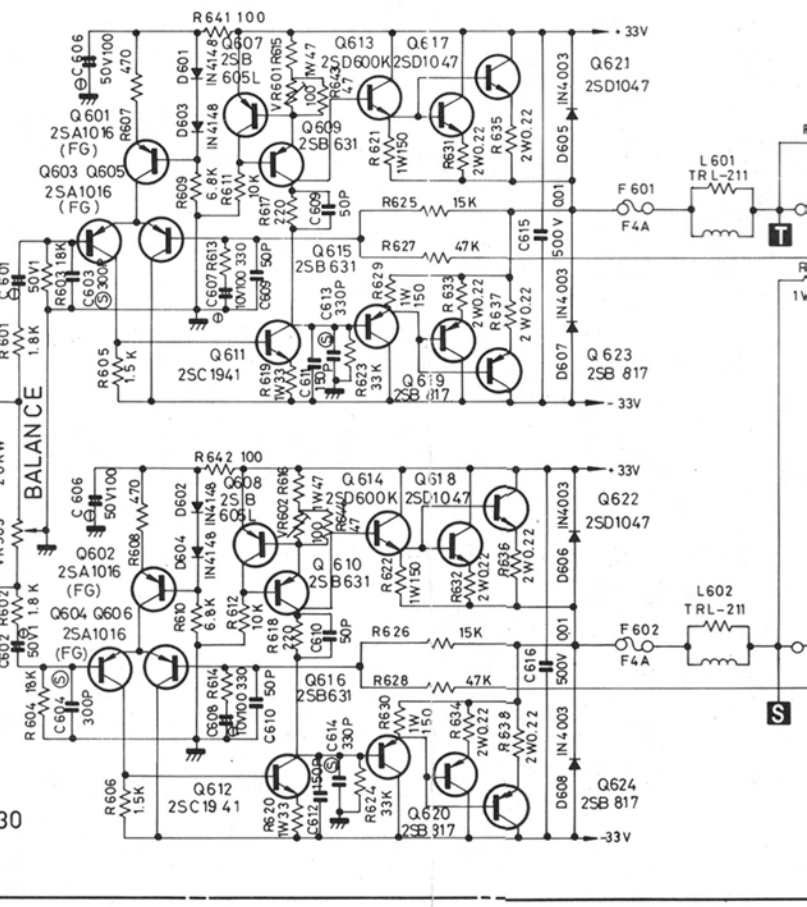
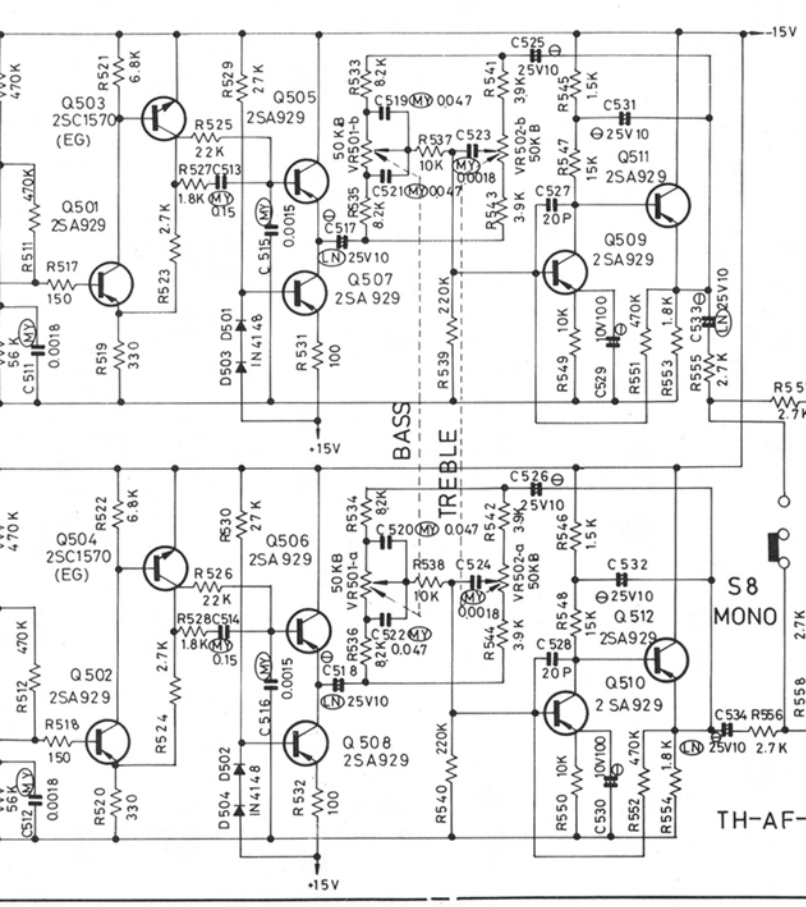


Key No.	Parts No.	Description
1	0102TWE-1	Front Panel
2	012C-3049A#4	Push Button
3	012C-3982	Push Button
4	071SA3 x 6N	Screw, MF3 x 6Ni
5	071BZTP3 x 8B	Screw, TPV3 x 8BK
6	015TDB-170	LED Ornamental Plate
7	034C-3952	LED With Holder (GGRR)
8	034C-3951	LED With Holder (GGGG)
9	012C-3871-T	Knob, (VOLUME)
10	0194TR-1083B#3	Felt
11	071KN7Z	Nut, M7
12	071W7.2 x 12 x 0.5	Washer, 7.2φ x 12φ x 0.5t
13	012C-3372#1	Push Button
14	071BZTP3 x 6Z	Screw, TPV3 x 6Ni
15	0194TR-1083#1	Felt
16	0124TR-1540	Knob (BASS/TREBLE/BALANCE)
17	071BZTP3 x 6Z	Screw, TPV3 x 6Ni
18	0132TWE-2#2	Front Chassis
19	071BZTP3 x 8Z	Screw, TPV3 x 8Ni
20	0194TR-1257A	Plastic Foot
21	071NB3 x 15N	Screw, MV3 x 15Ni
22	0132TWE-4	Chassis Body
23	0133TWF-3#1	Heat Sinking Board
24	015TRP-278	Printed Rear Chassis (TRP-278)
	015TRP-279	Printed Rear Chassis (TRP-279)
	015TRP-280	Printed Rear Chassis (TRP-280)
25	0142TWE-5#6	Upper Cover
26	071NBW4 x 6N	Screw, MPW4 x 6Ni

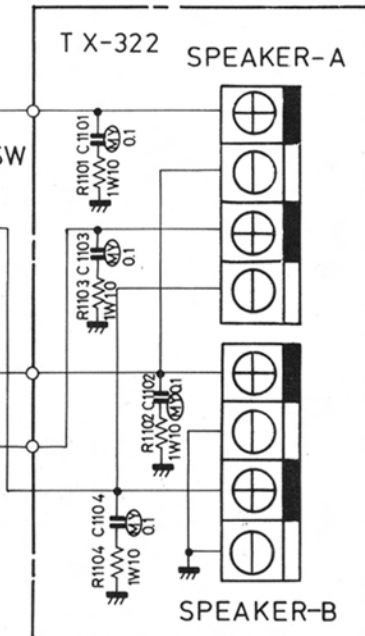
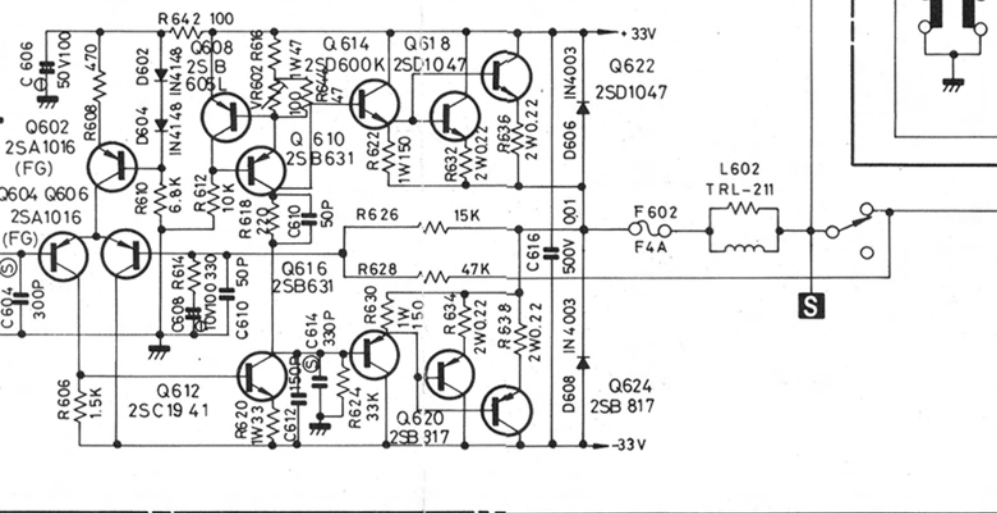
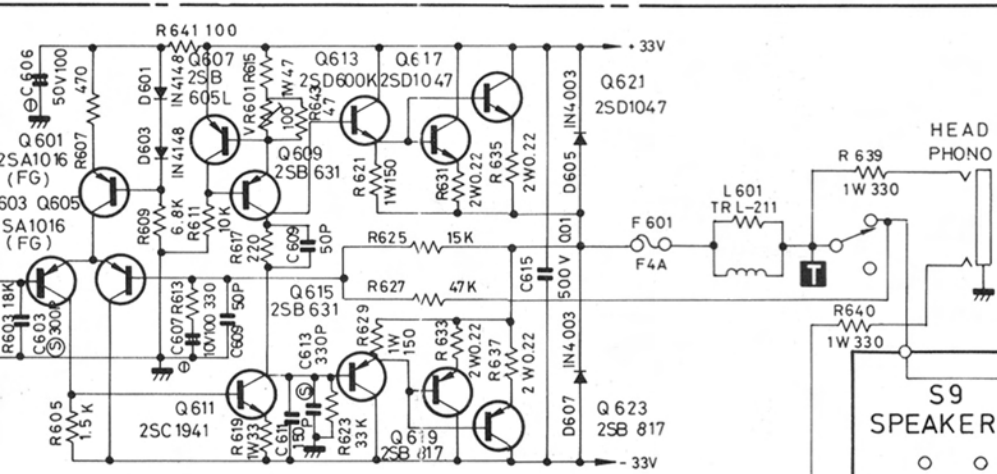
# Schematic Diagram

NOTE: PARTS AND CIRCUIT SUBJECT TO CHANGES FOR IMPROVEMENTS WITHOUT PRIOR NOTICE. MODEL RA-840





ITEM	SCHEMATIC LOCATION (LAST)	
EQUALIZER	R442	C422
TONE CONTROL	R560	C534
MAIN AMP	R644	C616
LED AMP	R731	C708
POWER SUPPLY	R909	C906
SPEAKER P.C.B.	R1104	C1104



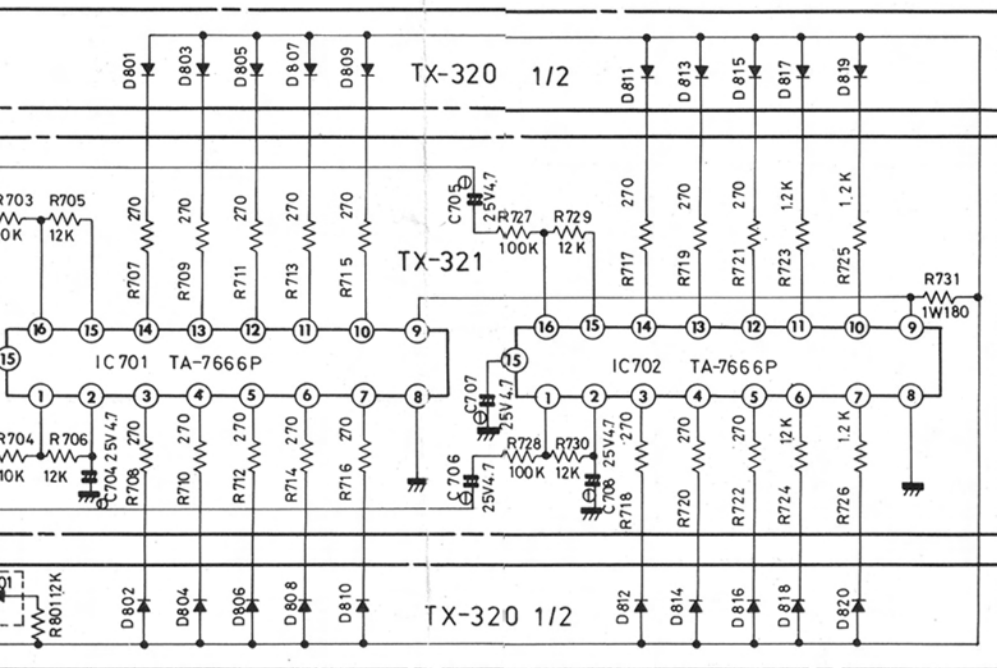
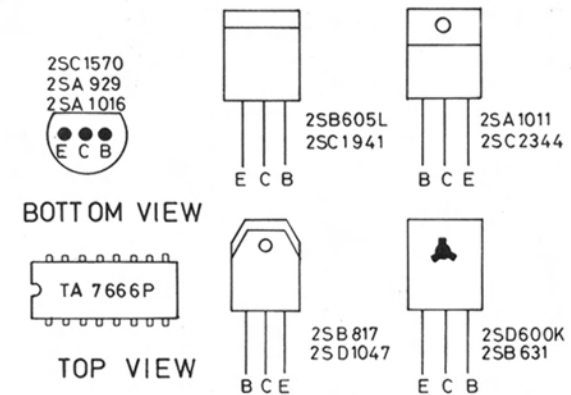
### RESISTORS

5% -- TOLERANCE UNLESS OTHERWISE SPECIFIED  
 K -- KILO OHM  
 M -- MEGA OHM  
 RSU -- METAL OXIDE FILM RESISTOR  
 NON MARK LOW NOISE TYPE CARBON RESISTOR

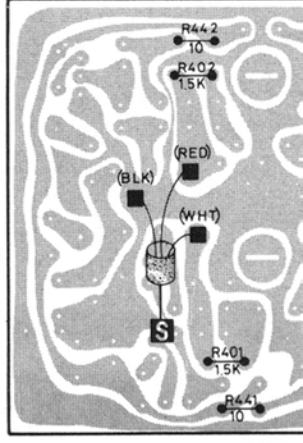
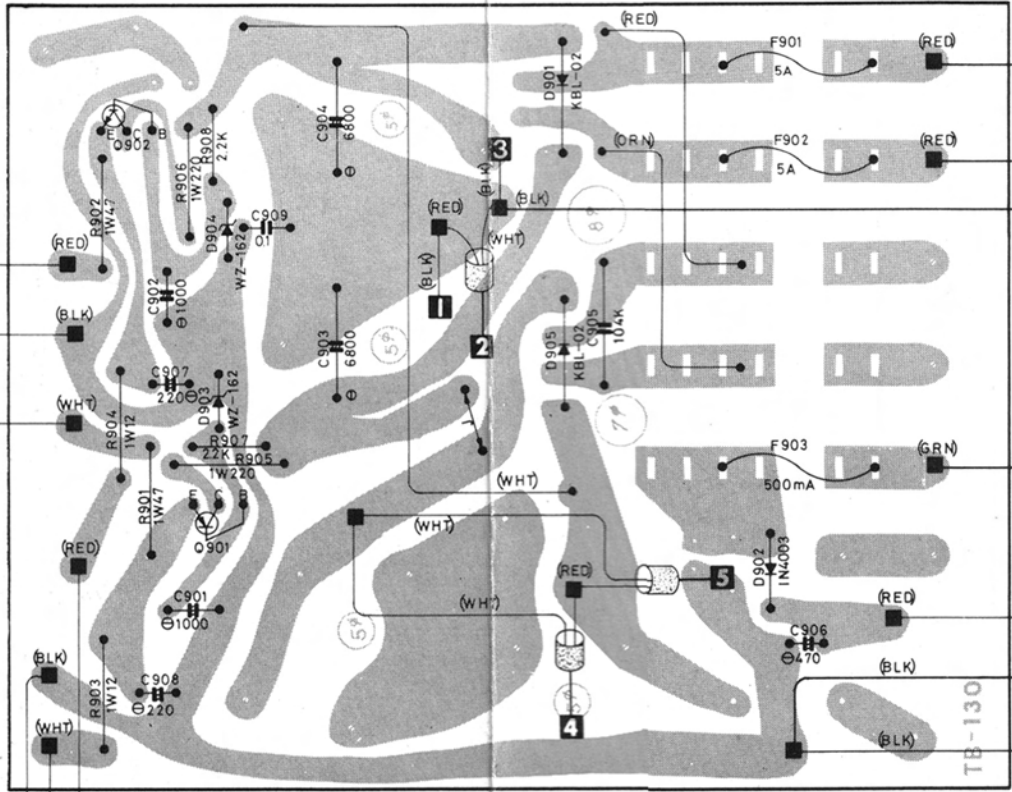
### CAPACITORS

MY -- MYLAR FILM CAPACITORS  
 E -- ELECTROLYTIC CAPACITORS  
 P -- POLYSTYRENE FILM CAPACITORS  
 N -- LOW NOISE ELECTROLYTIC CAPACITORS  
 NON MARK CERAMIC CAPACITORS  
 UNLESS OTHERWISE NOTED SCHEMATICALLY  
 CAPACITANCE VALUES ARE EXPRESSED

### SIDEVIEW

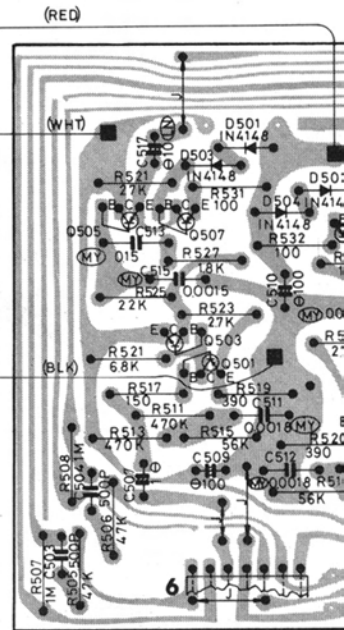
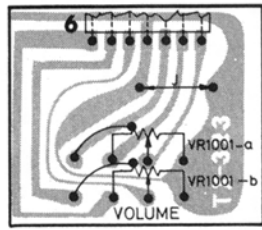
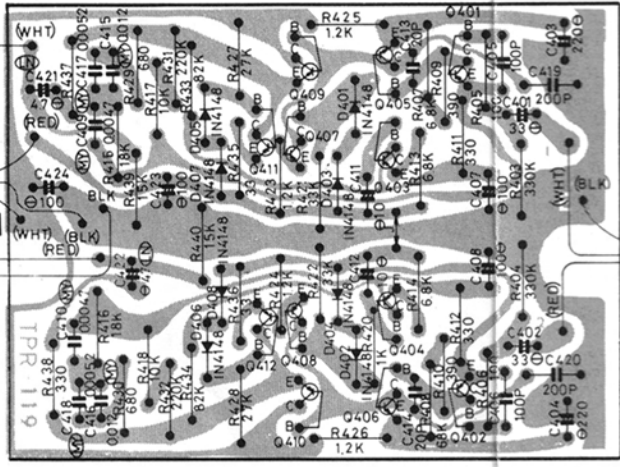


POWER SUPPLY C.B.D

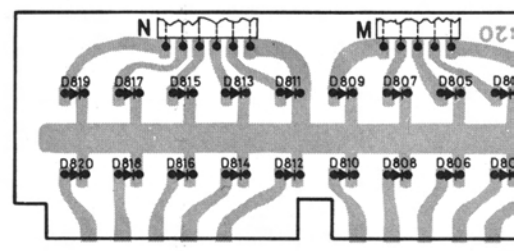
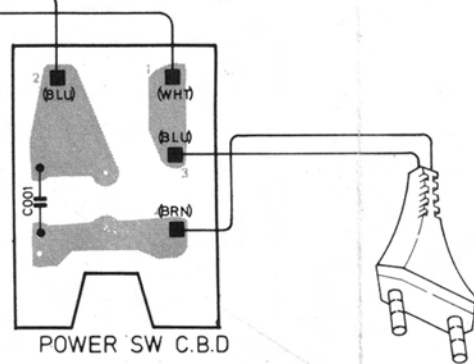
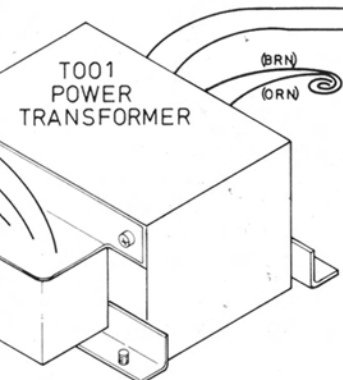
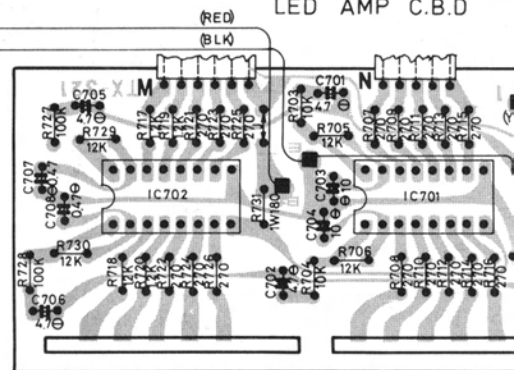
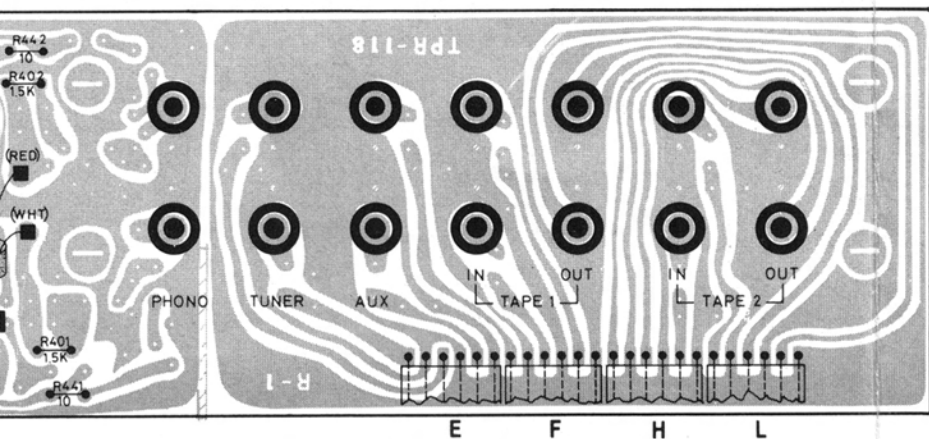


TOO1  
POWER  
TRANSFO

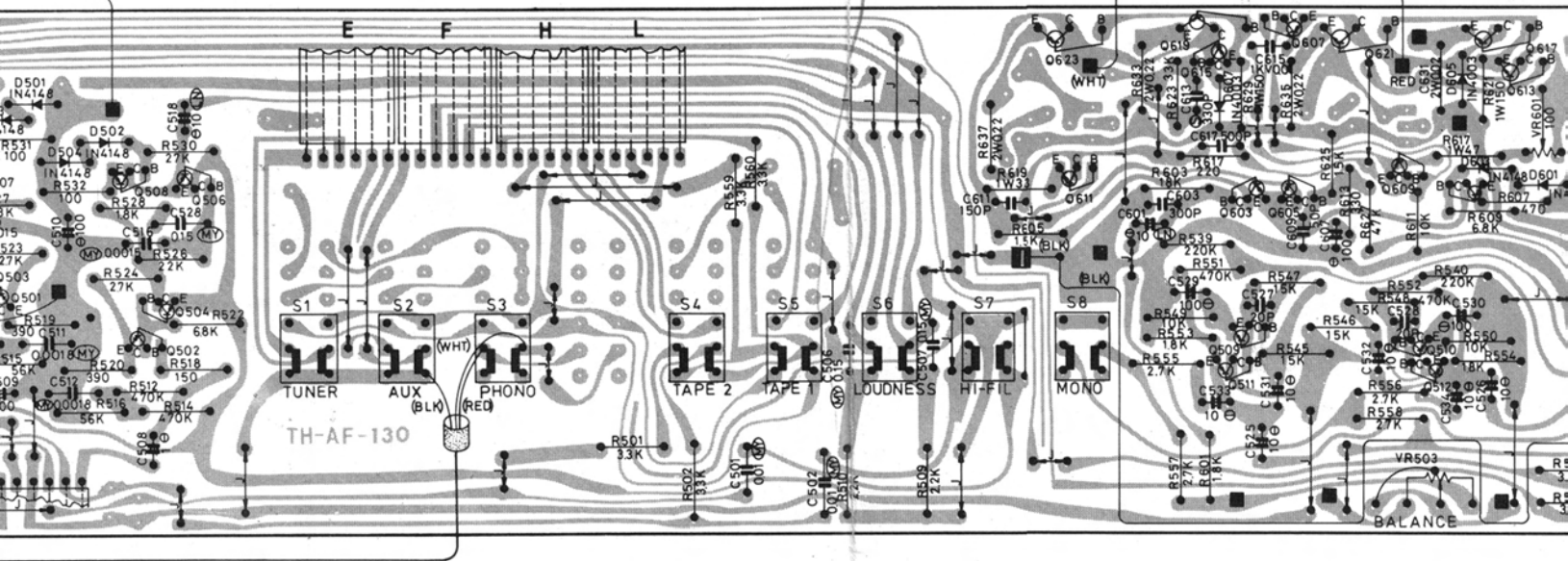
SQUALIZR C.B.D



TOO1  
POWER  
TRANSFO

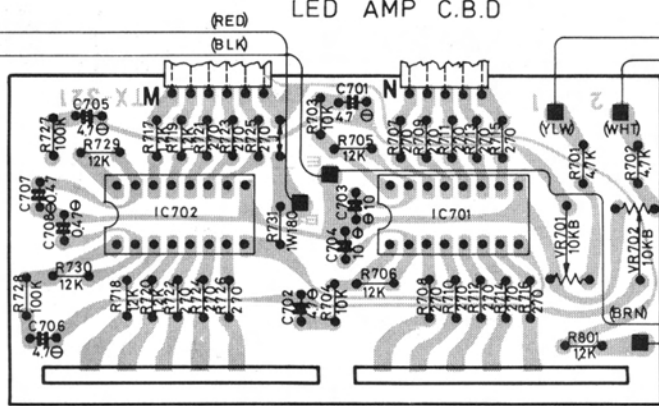


TONE CONTROL AND MAIN AMP C.B.D

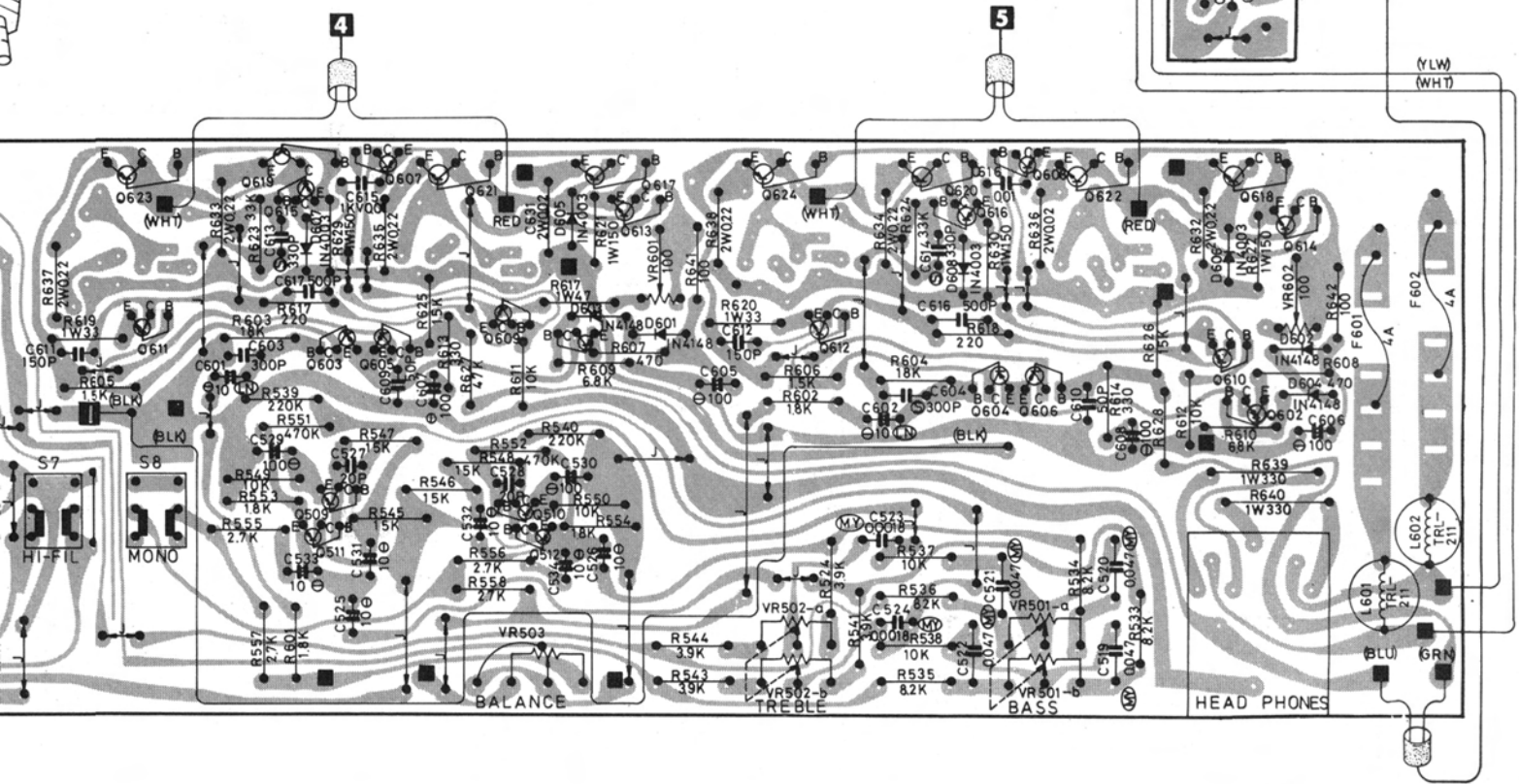
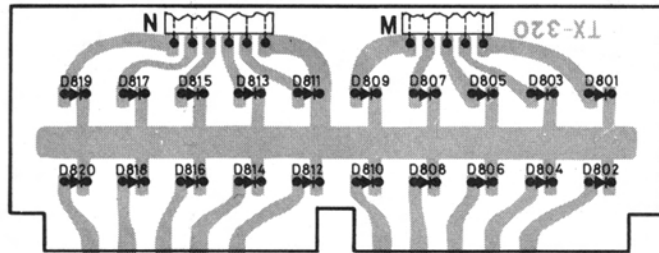
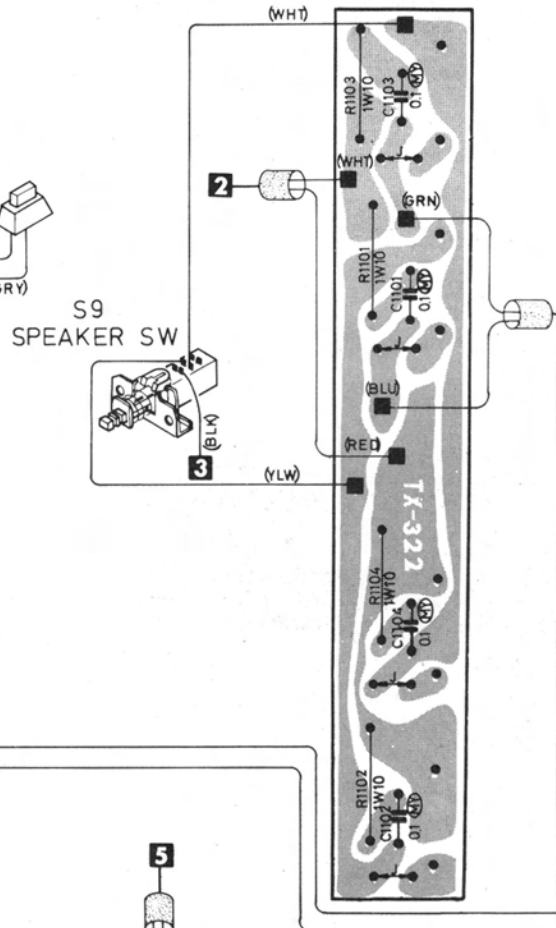




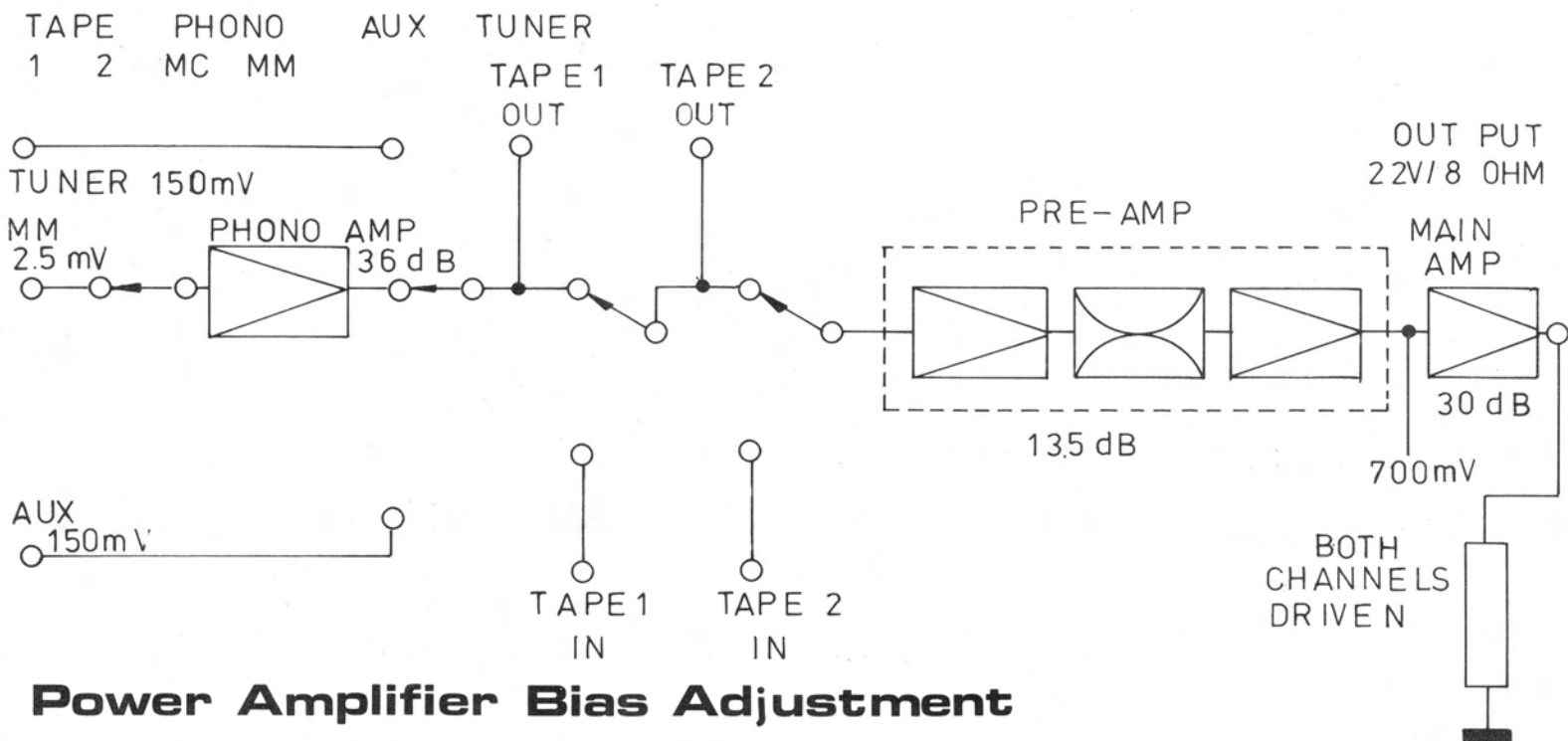
### LED AMP C.B.D



### SPEAKER C.B.D



# Gain Diagram



## Power Amplifier Bias Adjustment

**Instruments:** DC milli-voltmeter

**Notes:** Prior to Bias Adjustment, run about 5 minutes with rated output (8 ohm) and warm up Power Transistor and Heat Sink.

Set Volume Control to Minimum.

Step	Coupling		Adjust	Adjust for
	Plus Lead	Minus Lead		
1	TP1	TP2	VR601	DC milli-voltmeter reads 4.4mV
2	TP3	TP4	VR602	

## Power Indicator Calibration

**Instruments:** Audio Generator and AC VTVM

- Set AUX Switch to "ON" position.
  - Set VOLUME Control to Max. position.
  - Set Tone Control Switch to Defeat position.
1. Connect 8 ohm 50W resistor to R-ch and L-ch at Speaker-A terminals.
  2. Connect AC VTVM in parallel with this 8 ohm load of L-ch or R-ch.
  3. Connect Audio Generator to Input terminal of L-ch or R-ch, and apply 1KHz (Since wave signals. Adjust input level so that reading on AC VTVM is 18.8V (40W/8 ohm).
  4. Adjust Potentiometer VR701, (VR702 R-ch) so that Power Indicator must be light up until 10 LEDs (40W)

# Repair Parts List

Schematic Location	Parts No.	Description
<b>TRANSISTORS, DIODES AND IC'S</b>		
Q401-404	0332SA929-EF	2SA929 (E, F), Phono Amp.
Q405, 406	0332SC1570-EF	2SC1570 (E, F), Phono Amp.
Q407, 408 409-412	0332SA929-EF	2SA929 (E, F), Phono Amp.
Q501, 502	0332SA929-EF	2SA929 (E, F), Flat, Tone Amp.
Q503, 504	0332SC1570-EF	2SC1570 (E, F), Flat, Tone Amp.
Q505-510	0332SA929-EF	2SA929 (E, F), Flat, Tone Amp.
Q601, 602	0332SA1016-EF	2SA1016 (E, F), Constant Current
Q603-606	0332SA1016-EF	2SA1016 (E, F), Differential Amp.
Q607, 608	0332SB605-L	2SB605 (L), Main Amp. Bias Compensator
Q609, 610	0332SB631-DE	2SB631 (D, E), Main Amp. Bias Compensator
Q611, 612	0332SC1941-KL	2SC1941 (K, L), Pre-Driver
Q613, 614	0332SD600-DE	2SD600 (D, E), Driver
Q615, 616	0332SB631-DE	2SB631 (D, E), Driver
Q617, 618 621, 622	0332SD1047-D	2SD1047 (D), Power Amp.
Q619, 620 623, 624	0332SB817-D	2SB817 (D), Power Amp.
D501-504	0341N4148	1N4148, Bias Diode
D601-604	0341N4148	1N4148, Bias Compensator
D605-608	0341N4003	1N4003, Protection Diode
D801-809 802-810	034C-3951	SEL9511G, Power Level Ind. (GGGGG)
D811-819 812-820	034C-3952	SEL9511M01, Power Level Ind. (GGRR)
D901	034KBL-02	KBL-02, Rectifier
D902	0341N4003	1N4003, Rectifier
D903, 904	034HZ16-2	HZ16-2, Zener Regulator, 16V½W
D001	034LN224RP	LN224RP, Power Ind. LED (RED)
IC701, 702	031TA-7666P	TA-7666P, LED Driver
<b>COILS AND VARIABLE RESISTORS</b>		
L601, 602	021TRL-211	Anti-Parasitic
VR501, 502	0514TR-685	50KBx2, BASS/TREBLE Control
VR503	0514TR-1572	20KW x 1, BALANCE Control
VR601, 602	0518-1-401-100	100ohm, Bias Adj.
VR701, 702	0518-1-401-10K	10KB, Signal Level Ind.
VR1001	0514TR-1532	50KA x 2, VOLUME Control

Schematic Location	Parts No.	Description
<b>SWITCHES AND OTHERS</b>		
S1-8	0614TR-1567A	Switch, Push 9-Key, TUNER/AUX/PHONO/TAPE2/TAPE1/LOUDNESS/HI FIL/MONO
S9	0614TR-1289A	Switch, Push 1-Key, SPEAKER
S10	061C-3700	POWER Switch (for UL, CSA)
	061C-3600A	POWER Switch (for BEAB. . .)
T001	022TT-173-AF	Power Transformer (120 only)
	022TT-173-GF	Power Transformer (Multi Type)
F601, 602	036L250V4A	Fuse, 4A, Speaker Protector (Long Size)
	036ASG3-250V4A	Fuse, 4A, Speaker Protector (Long Size UL)
	036M4A	Fuse, 4A, Speaker Protector (Mini Size)
	036 (S) F4A	Fuse, F4A, Speaker Protector (Mini Size "S" "D" mark)
F901, 902	036L250V5A	Fuse, 5A, AC Circuit Protector (Long Size)
	036ASG3-250V5A	Fuse, 5A, AC Circuit Protector (Long Size UL)
	036M5A	Fuse, 5A, AC Circuit Protector (Mini Size)
	036 (S) F5A	Fuse, F5A, AC Circuit Protector (Mini Size "S" "D" mark)
F903	036L250V0.5A	Fuse, 0.5A, AC Circuit Protector (Long Size)
	036ASG3250V0.5A	Fuse, 0.5A, AC Circuit Protector (Long Size UL)
	036M500mA	Fuse, 500mA, AC Circuit Protector (Mini Size)
	036 (S) F500mA	Fuse, F500mA, AC Circuit Protector (Mini Size "S" "D" mark)