



SERVICE MANUAL
MUSIC CENTRE
MODEL MC-8000



SPECIFICATIONS

FM Section

Tuning range	87.5MHz ~ 108MHz
Usable sensitivity	0.9 μ V (75 ohms)
Total harmonic distortion	0.2%
Image response ratio	45dB
Signal to noise ratio	70dB
Stereo separation	35dB
Aerial	Impedance 300 ohms balanced and 75 ohms unbalanced

MW Section

Tuning range	525kHz ~ 1,605kHz
Sensitivity	600 μ V/m (S/N: 26dB)
Image response ratio	40dB
Aerial	Ferrite bar aerial

LW Section

Tuning range	150kHz ~ 350kHz
Sensitivity	2mV/m (S/N: 26dB)
Image response ratio	35dB
Aerial	Ferrite bar aerial

AMPLIFIER SECTION

Power output (1kHz, both channels driven into 8 ohms, THD 0.5%)	25 watts + 25 watts (4 ohms) 20 watts + 20 watts (8 ohms)
Total harmonic distortion (1kHz from AUX)	0.05% (10 watts per channel power output, 4 ohms)
Input sensitivity/Impedance	MIC 1.5 mV/10k ohms
Frequency response	30Hz~20kHz (\pm 1.5 dB)
Hum and Noise	60dB (DIN)
Tone controls	
BASS	\pm 8dB (100Hz)
TREBLE	\pm 8dB (10kHz)

TURNTABLE SECTION

Type	Electronically controlled fully automatic operation
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Phono Motor Section

Drive mechanism	Belt drive
Motor	DC servo motor
Platter	30cm (Aluminum die-cast)
Platter speed	33-1/3, 45 r.p.m
Wow and flutter	0.06% (W.R.M.S)
Signal to noise ratio	55dB (IEC-B), 65dB (DIN-B)

Tonearm Section


Type	Linear tracking, straight tubular type, statically balanced
Cartridge	AT-71 (Audio technical)
Stylus	Diamond
Stylus pressure	2 gr

CASSETTE DECK SECTION

Tracks	4 track, 2 channel
Tape speed	4.75cm/sec.
Recording system	AC bias (85kHz)
Erasing system	AC erasing (85kHz)
Playback equalization	
Normal	3,180 μ sec./120 μ sec.
Special and Metal	3,180 μ sec./70 μ sec.
Frequency response	
Normal	30Hz~13,000Hz
Special and Metal	30Hz~16,000Hz
Signal to noise ratio	
DOLBY NR out	45dB (DIN)
DOLBY NR in	52dB (DIN)
Wow and flutter	0.07% (W.R.M.S)
Channel separation	25dB
Crosstalk	50dB
Motor	DC servo motor

GENERAL

Power (Mains) consumption	170 watts (IEC nominal)
Dimensions (W x H x D)	460 x 585 x 245 mm (18-1/8 x 23-3/4 x 9-5/8")
Weight	18.5 kg (40.8 lbs)
Accessories	T shaped FM aerial AM lead aerial Screwdriver (For Preset FM adjustment) Black mat 17,30 cm (For transparent or coloured records) Wrench (For fitting turntable) Cloth cover

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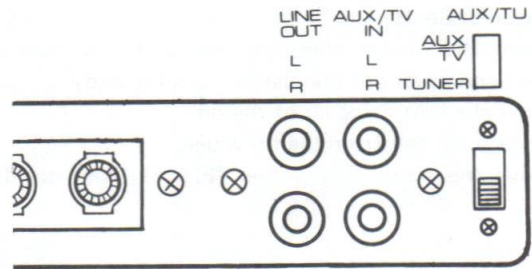
Noise reduction system manufactured under license from Dolby laboratories.

Design and specifications are subject to change without notice for reason of improvement.

INSTRUCTION OF TUNER SECTION

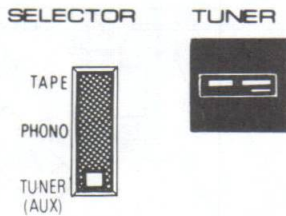
ATTENTION about AUX/TV ↔ TUNER switch

- Usually, in case of using the tuner of MC-8000, set the AUX/TV ↔ TUNER switch on the rear side to TUNER position.
- Contraly, by setting this switch to AUX/TV side, it is possible to select source connected AUX/TV IN terminal by the SELECTOR on the front panel.

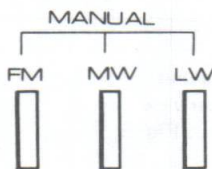


LISTENING TO FM, MW, LW BROADCAST (Manual Tuning)

Set the SELECTOR switch to the TUNER position. This will cause the TUNER symbol to illuminate on the selector display.

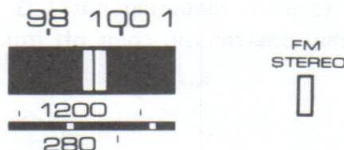


Using the MANUAL button, select the FM, MW or LW broadcast.



Set it to the desired station.

When proper tuning is attained for that particular broadcasting station, the centre of the dial pointer will grow in red more intensively is the optimum tuning point. When an FM stereo broadcast is being received, "FM STEREO" indicator will be illuminated.

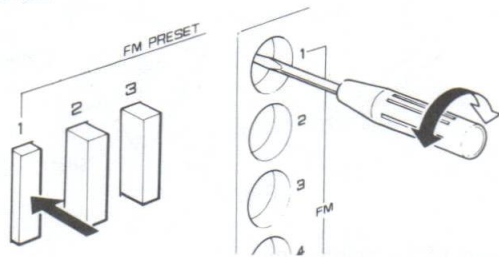


Select the desired volume level with the VOLUME control. The volume of the left-side and right-side speakers can be adjusted by means of the BALANCE control located inward of the VOLUME control.

FM PRESETTING

The MC-8000 is capable of presetting six FM stations. Presetting is performed in the following manner.

1. Depress PRESET button 1, and while monitoring an actual broadcast, either through speakers or through headphones, turn the PRESET TUNING 1 screw using the supplied screwdriver to obtain proper tuning. (When the screw is turned, the pointer of the frequency meter will indicate that particular frequency.)
2. Similar to 1, set PRESET button 2, by adjusting PRESET TUNING screw.
3. Preset all the six FM stations following the above procedures.

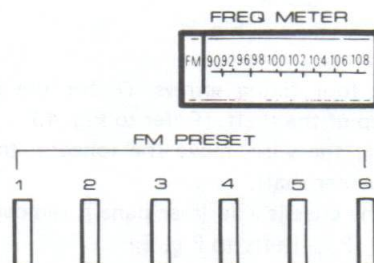


4. When you wish to change presetting, this can be accomplished by following the ordinary presetting procedures.

LISTENING TO FM BROADCAST (Preset Tuning)

Set the SELECTOR to the TUNER position.

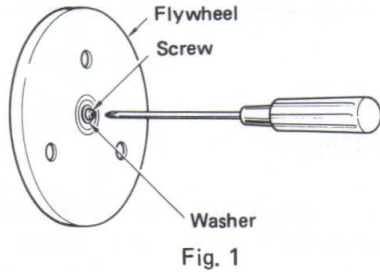
Select the desired FM station. The frequency that has been preset in the frequency meter will be displayed.



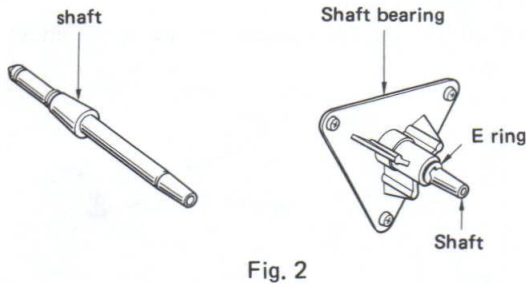
DISASSEMBLY INSTRUCTIONS Turntable Section

1. Removal of Shaft

- 1) Remove the platter clamping nut with the supplied wrench and dismount the platter from the body.
- 2) Remove the bottom cover of the set.
- 3) Disengage the belt from the fly-wheel.
- 4) Remove the screw and washer (Fig. 1) fixing the fly-wheel.

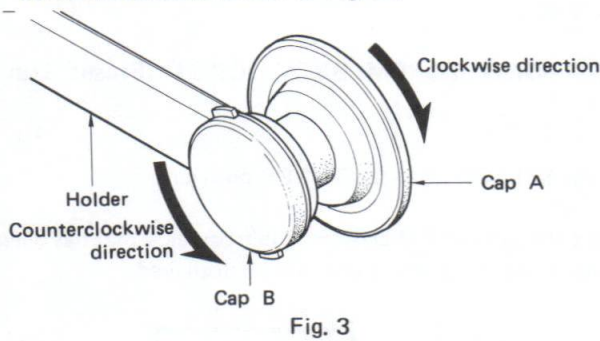


- 5) If the fly-wheel and shaft are too tightly fit together, insert a plus screwdriver into the forward end of the shaft, and gently hit the screwdriver. The fly-wheel will easily come off.
- 6) Remove the shaft's E-ring (Fig. 2). The shaft will come off toward your side.

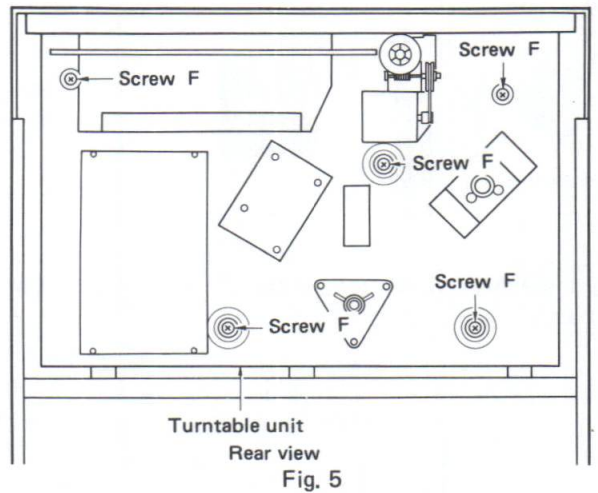
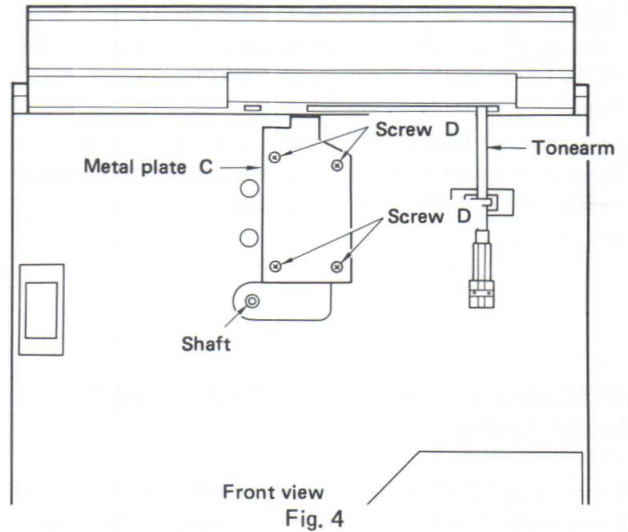


2. Removal of Turntable Unit

- 1) Take off the platter and the rear cover.
- 2) Remove the disc holder cap from the holder, turning it counterclockwise. (Refer to Fig. 3.)



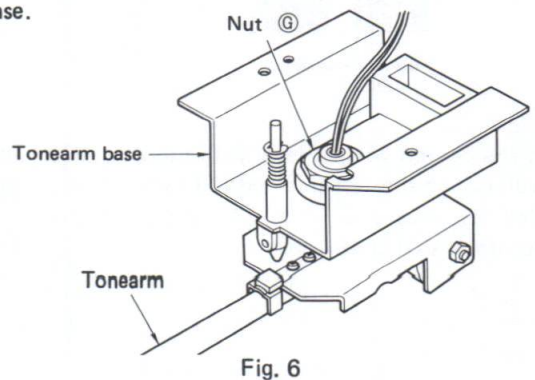
- 3) Unscrew the four fixing screws D for the metal C located on top of the shaft. (Refer to Fig. 4.)
- 4) While slipping the wire, move the tonearm to a point close to the center shaft.
- 5) Now, from the chassis side (rear panel), remove the five fixing screws F. (Refer to Fig. 5.)



- 6) With this, the turntable unit can be removed from the cabinet.

3. Replacement of Tonearm

- 1) Remove the two tonearm fixing screws.
- 2) Using a soldering iron, disconnect the four output cords (2 single-core shield cords and 2 single cords) from the tonearm.
- 3) When the tonearm mounting nut (G of Fig. 6) is removed, the tonearm will come off from the tonearm base.



DISASSEMBLY INSTRUCTIONS Tuner & Amplifier Section

1. Removal of Rear Cover (Refer to Fig. 1.)

- 1) Remove the 14 screws ① (black bind head tapping screw, 3 x 16).
- 2) Remove the screw ② (black bind head tapping screw, 3 x 16).
- 3) Unscrew the two screws ③ (black bind head, M3 x 8) and shake proof washer on the threaded section to the right.
- 4) Remove the screw ④ (black bind head tapping screw, 3 x 10).
- 5) Remove the four screws ⑤ (black bind head tapping screw, 4 x 10).
- 6) When the two screws ⑥ (black bind head tapping screw, 3 x 12) are removed, the power switch c. board and knob will come off.
- 7) Pull out the lead connectors from the transformer (Fig. 2) at 7 points.

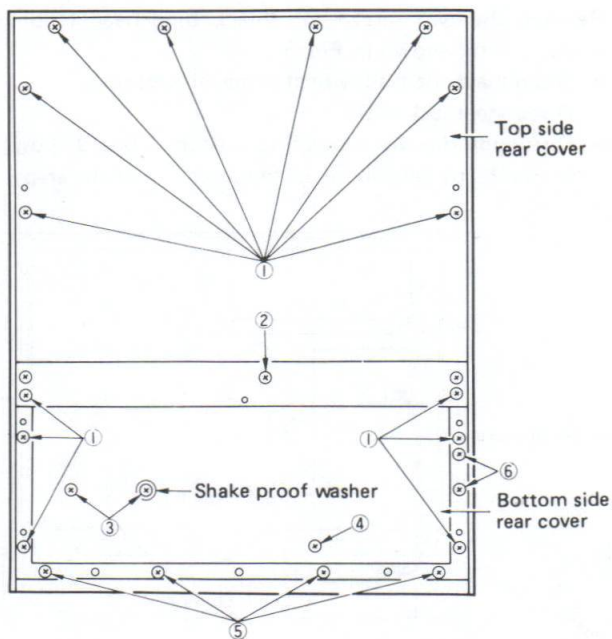


Fig. 1

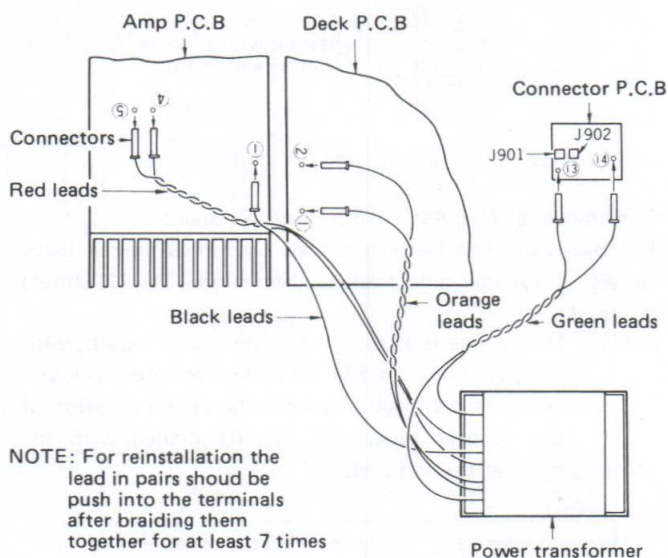


Fig. 2

NOTE: For reinstallation the lead in pairs should be push into the terminals after braiding them together for at least 7 times

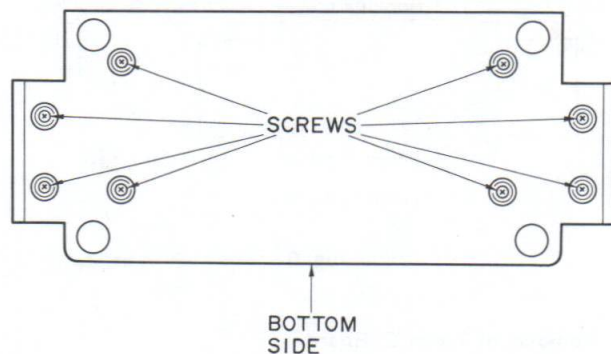


Fig. 3

2. Drawing Out Lower-section Body

- 1) The bottom plate can be removed by removing the eight screws (yellow bind head, M4 x 16) and washers shown in Fig. 3. This will allow access to the amplifier and cassette Deck PCB.
- 2) Unscrew the six screws (yellow bind head tapping screw, 4 x 10) and washers located inside the cabinet. (Refer to Fig. 4.)

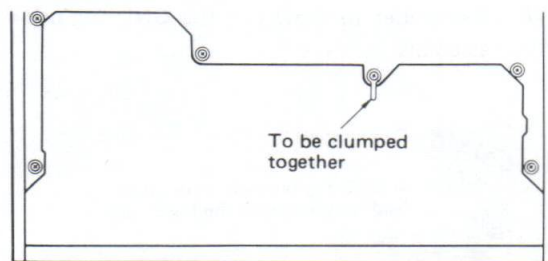


Fig. 4

- 3) Remove the two screws ① (black bind head tapping screw, 3 x 16) shown in Fig. 5.
- Disconnect the lead wire clumper of Section B.
 - Disconnect jack J701.
 - Dismount the disc operating button c. board shown in Fig. 6, by pushing it in the direction of the arrow.

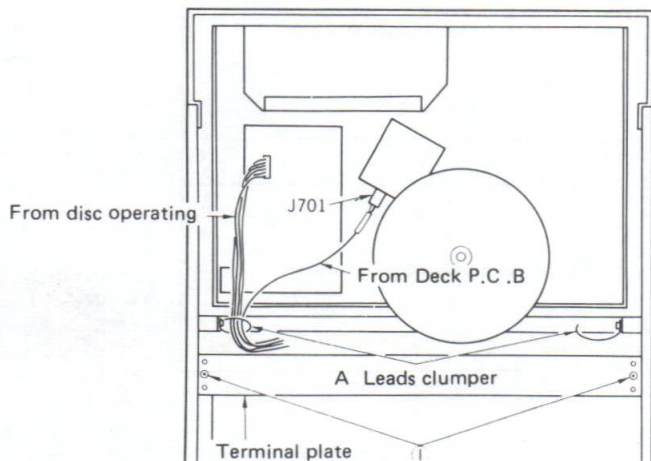


Fig. 5

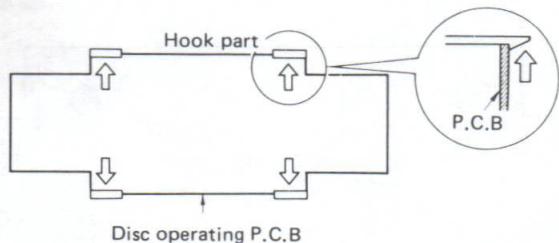


Fig. 6

3. Removal of Tuner C. Board

- 1) Pull out the tuning knob.
- 2) Remove the two screws (yellow bind head, 3 x 12) shown in Fig. 7.

NOTE: Remember to draw out the GND lug prior to assembly.

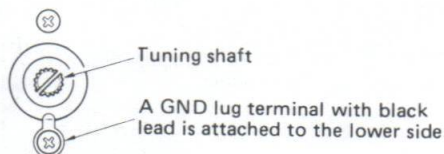


Fig. 7

- 3) Remove the two plastic rivets ① shown in Fig. 8. This is accomplished by pulling out Section A of the rivet first in the manner shown in Fig. 9, and then pulling out Section B.

NOTE: For reinstallation, insert Section B (Fig. 9) of the plastic rivet first, and then insert Section A.

- 4) When the screw ② (yellow bind head tapping screw, 3 x 12) shown in Fig. 8 is removed, the Tuner C. Board will come off toward the back.

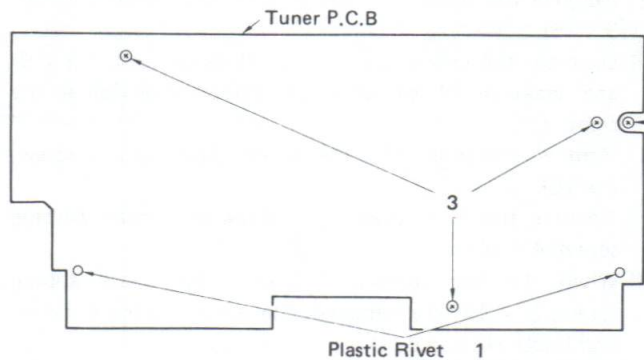


Fig. 8

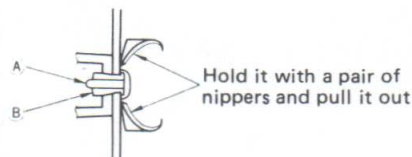


Fig. 9

4. Removal of Dial Ass'y from Tuner C. Board

The dial ass'y can be dismounted by removing the three screws ③ (yellow bind head tapping screw, 3 x 12) shown in Fig. 8.

NOTE: Mount the dial ass'y onto the circuit board, with VR201 shown in Fig. 10 turned counterclockwise as far as it will go and with the center position of the pointer shown in Fig. 10 aligned with the mark at the left end.

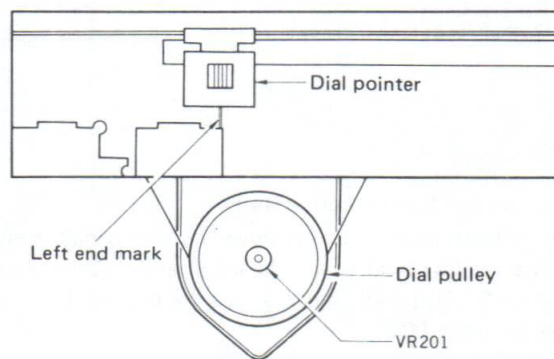


Fig. 10

- 1) After pulling out the VOLUME, BALANCE, BASS and TREBLE knobs, take off the nuts used for fixing the shafts.

DISASSEMBLY INSTRUCTION

..... Cassette Deck Section

1. Removal of Cassette Deck C. Board and Mechanism Ass'y

The Cassette Deck C. Board and mechanism ass'y can be removed in the condition with the mechanism mounted on the c. board.

- 1) Following the Disassembly Instructions for the Tuner and Amplifier Section, take off the rear cover and draw out the lower-section body toward the front.
- 2) Take off the cassette cover.
- 3) After pulling out the REC LEVEL and MIXING knobs, remove the nut fixing the variable resistors (VRs).
- 4) Using a nipper, or the like, cut off the wire clamber fixing the wiring leading out from the panel section. Also disconnect the plugs connected to the Cassette Deck C. Board.

NOTE: When reinstalling, arrange the wiring neatly and fix it to its former position using the wire clamber.

- 5) Remove the four screws (yellow bind head, 3 x 12) shown in Fig. 1 used for fixing the mechanism ass'y.
- 6) Remove the two screws (black bind head, tapped, 3 x 8) shown in Fig. 2.
- 7) Disengage the belt on the tape counter.
- 8) The circuit board and mechanism ass'y can be dismounted in this condition. The mechanism ass'y is secured by bending the pawls which are inserted into the circuit board. To take off the mechanism ass'y, unbend these pawls first, using a pair of pliers.

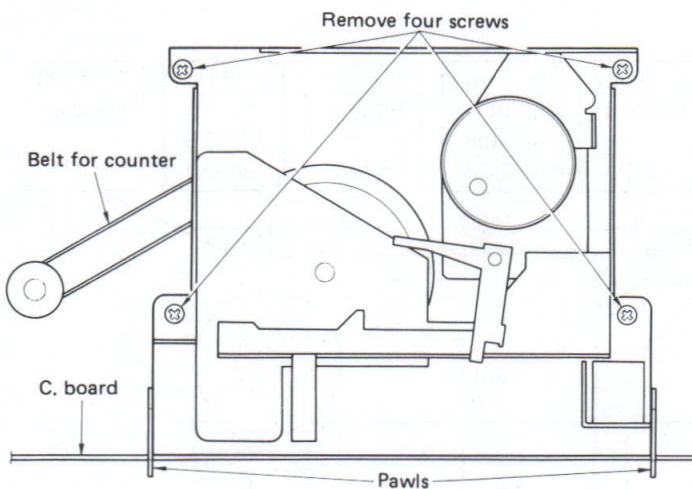


Fig. 1

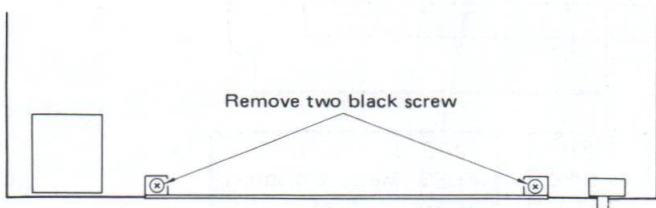


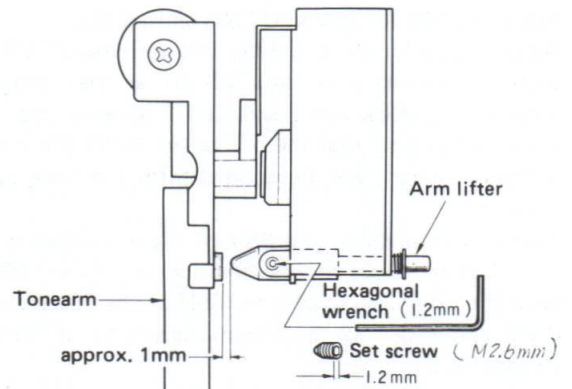
Fig. 2

ADJUSTMENT INSTRUCTIONS

..... Turntable Section

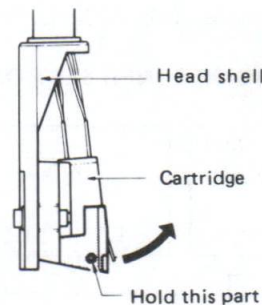
Height Adjustment for Tonearm Lifter

- 1) Using a 1.2 mm hexagon wrench, loosen the set screw on the tonearm lifter.
- 2) Adjust it so that there will be about a 1 mm clearance between the tonearm and tonearm lifter when the tonearm is at the rest position (STOP mode). Fix the tonearm lifter in place.

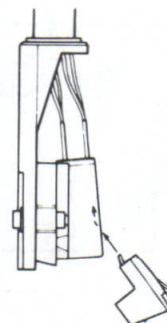


HOW TO REPLACE A CARTRIDGE

1. The stylus can be removed by taking out as shown in the illustration.



2. When inserting a new stylus, slide the protruding part into the cartridge, and then move the stylus back in the reverse direction the previous step as shown below.



ADJUSTMENT INSTRUCTIONS ... Tuner Section

Before Starting Adjustment

Confirm alignment of the pointer's center with the mark at the left end (Point A shown on page 8) when the dial pointer is moved to the minimum frequency position. (At this time, VR201 will be at its position turned fully counterclockwise.)

1. LW Adjustment

- 1) Turn on the MANUAL LW switch.
- 2) Adjust VR208 for 25V at Q214's emitter (E).
- 3) Adjust V209 for IV at the hot-side terminal of VR209.
- 4) With the tuning knob and VR201 at their positions turned fully clockwise (maximum frequency position), adjust VR213 so that the pointer of M201 (Frequency indicator meter) will be aligned with the scale at the right end.
- 5) With pointer aligned with 88M of the holder, adjust LW coil L301 and T301 for maximum sensitivity at 140kHz.
- 6) With the pointer aligned with 108M of the holder, adjust C303 and C321 for maximum sensitivity at 360kHz.
- 7) Repeat (5) and (6).

2. MW Adjustment

- 1) Turn on the MANUAL MW switch.
- 2) Adjust VR208 and VR209 as described as above, the LW adjustment steps (2) through (4).
3. With the tuning knob and VR201 turned fully counterclockwise (minimum receiving frequency), adjust T302 so as to enable reception of 520kHz. Then, with VR201

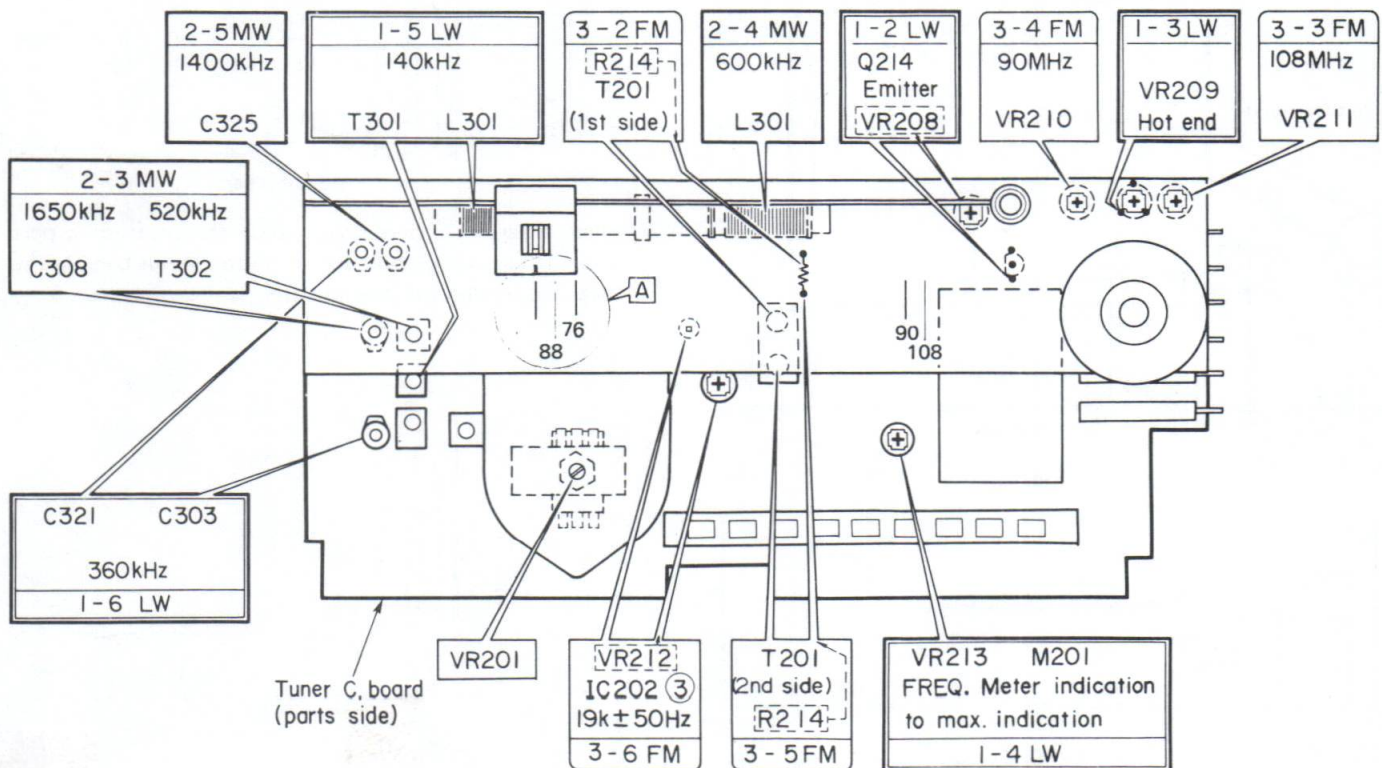
turned fully clockwise (maximum receiving frequency), adjust C308 so as to enable reception of 1,650kHz.

- 4) Receive 600 kHz and adjust the position of L601's (bar antenna's) coil for maximum sensitivity.
- 5) Receive 1,400 kHz and adjust C325 for maximum sensitivity.
- 6) Repeat steps (6) and (7).

3. FM Adjustment

- 1) Turn on MANUAL FM switch.
- 2) Adjust the primary side of T201 so that the voltage at both ends of R214 will become zero in the no-signal mode in the neighborhood of 98 MHz.
- 3) Align pointer with the "108" mark position found to the right (higher frequency side) of Point A shown in figure on page 8. In this condition, adjust VR211 so as to enable reception of 108 MHz.
- 4) As in Step 3, align pointer to the "88" mark position and adjust VR210 so as to enable reception of 88 MHz.
- 5) Receive signals of 98 MHz, 65 dBf, 1 kHz, 100% modulation (MONO) and adjust the secondary side of T201 for minimum distortion. Also, readjust the primary side of T201 so that the voltage at both ends of R214 will be zero. Repeat adjustments of the primary and secondary sides several times.
- 6) Change modulation of Step 5 to 0 %. After inserting a resistor of about 22 k Ω at Pin 3 of IC202, connect a frequency counter and adjust VR212 for a counter reading of 19 kHz \pm 50Hz.

ADJUSTING POINTS OF TUNER SECTION

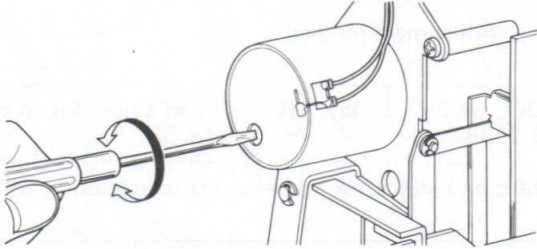


ADJUSTMENT INSTRUCTION

..... Mechanism Section of Cassette Deck

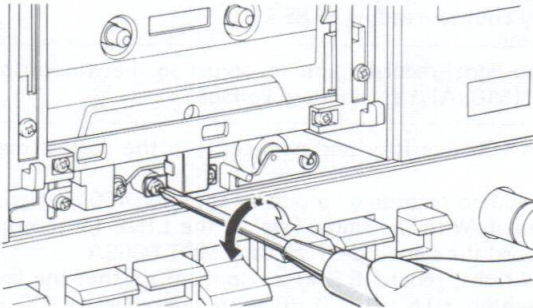
1. Tape speed

- 1) Connect a frequency counter to the LINE OUT terminal.
- 2) Play Test Tape MTT-111 (3kHz), and adjust the variable resistor of the servo circuit with a minus screw driver (inserting it through the motor-adjusting hole) so that the reading of the frequency counter will be within $3,000 \text{ Hz } \begin{matrix} +10 \\ -0 \end{matrix} \text{ Hz}$.



2. Head Azimuth Adjustment

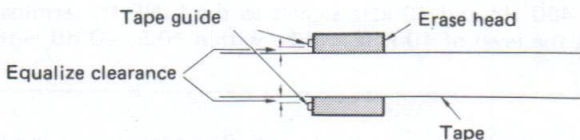
- 1) Connect an AC voltmeter to the output terminal.
- 2) While playing Test Tape MTT-215E (8 kHz), adjust the head azimuth adjustment screw for maximum output for the L-ch and R-ch.
- 3) After adjustment, apply screw-lock paint to the screw.



3. Erase Head Adjustment

- 1) Load the cassette tape (MC-10C) provided with a mirror and play it.
- 2) Adjust the adjustment screw so that the clearances between the tape guide attached to the ERASE head and the tape will be even for the upper and lower sides.
- 3) On completion of adjustment, apply screw-lock paint to the screw.

- * Be sure to make perfect adjustments as "wrinkles" and "creases" may develop on the tape surface when adjustment is insufficient.



ADJUSTMENT INSTRUCTION.....Circuitry Section of Cassette Deck

- | | | |
|--|--|-----------------|
| 1) Audio Generator .20Hz to 20kHz | 5) Frequency Counter | 6) Oscilloscope |
| 2) Attenuator0 to 90dB, in 0.1 or 0.5dB step | 7) Test Tapes | |
| 3) AC VoltmeterF res.; 20 to 100kHz or more,
R in; not less than 100k Ω
Sens.; -60dB(V) or better | MTT-111;3kHz . . .for tape speed adjustment | |
| | MCT-400L;400Hz .for Normal, Dolby NR level and
Meter indication | |
| 4) Tester20k Ω /V | MCT-600SAfor "Special" bias current, blank | |

Adjustment of Playback Mode

Adjustment			Measuring Position	Adjustment Method
Step	Item	Location		
1	PB Output Level	VR501 VR601	C516 C616	Play Test Tape MCT-400L (400Hz, Dolby NR level) and adjust for an output of within 580 mV \pm 25dB.
2	Meter Indication		Level meter	Play Test Tape MCT-400L and adjust for a level meter indication of within 0 dB \pm 0.5 dB.

Adjustment of Recording Mode

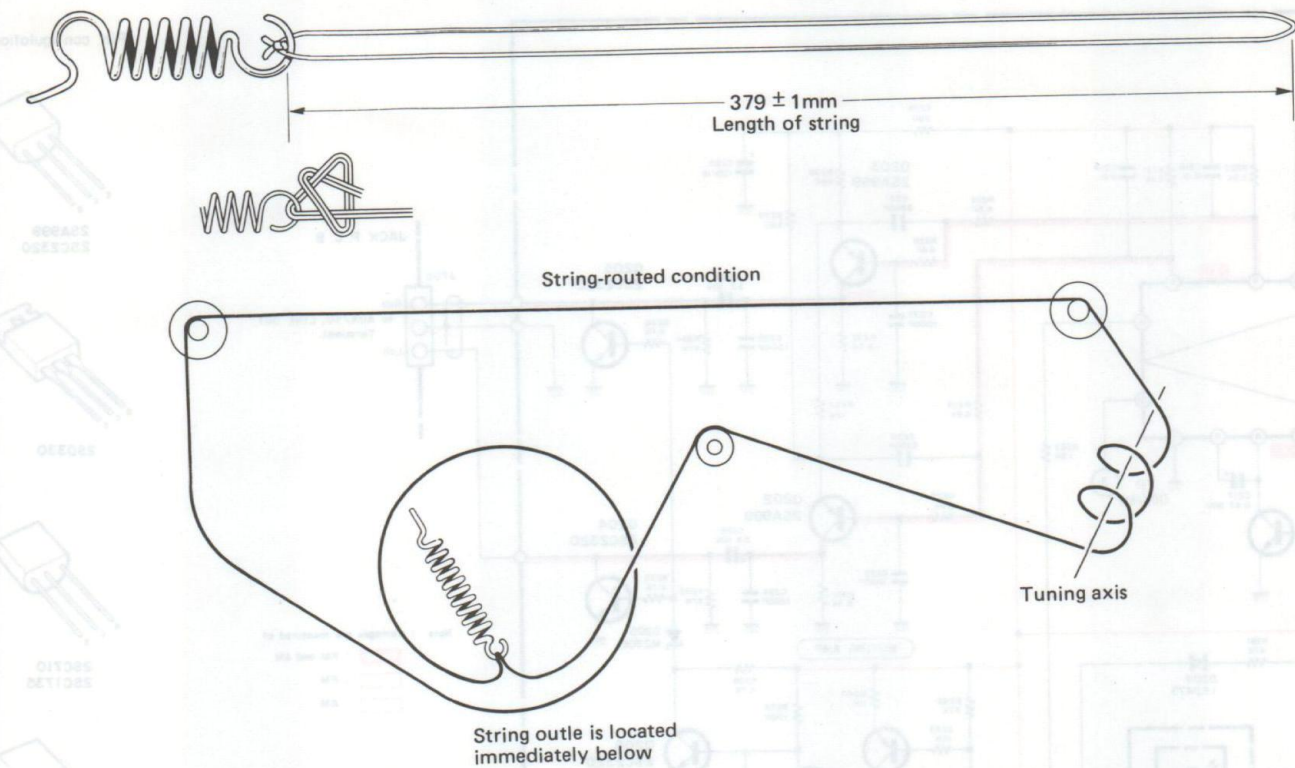
For the following adjustments insert a 100 Ω resistor "between the head's minus terminal and head lead's minus terminal during recording", and use it as the measuring points.

Adjustment			Measuring Position	Adjustment Method
Step	Item	Location		
1	Bias frequency	T481	Both ends of 100 Ω resistor	<ul style="list-style-type: none"> Put the set in the no-signal recording mode. Adjust for a frequency counter reading of 85 kHz.
2	Bias current	VR481 VR482	Both ends of 100 Ω resistor	<ul style="list-style-type: none"> With the set in the no-signal recording mode, adjust so that the output voltage will be 51 mV (510μA), i.e., standard voltage.
			Connect AC voltmeter to LINE OUT	<ul style="list-style-type: none"> Take out the inserted 100Ω resistor and connect it in the normal manner. Put the set in the "specified recording" mode by applying 400 Hz signals to the LINE IN terminal. With the signal level at the LINE IN terminal lowered by 30 dB, record the signals on Test Tape MCT-606SA. Under the same conditions, record 6.3 kHz. Confirm so that the level of 6.3 kHz will be within +0.5 dB, -0 dB with reference to 400 Hz when the tape is played. If this value cannot be obtained, adjust the "standard voltage" and reconfirm.
3	Recording current	VR504 VR604	Both ends of 100 Ω resistor	<ul style="list-style-type: none"> Put the set in the "specified recording" mode and stop the bias oscillator. With the Tape selector set to "SPECIAL", set to the "standard voltage", of 5.8mV (58μA).
			Connect AC voltmeter to LINE OUT terminal	<ul style="list-style-type: none"> Take out the inserted 100Ω resistor and connect it in the normal manner. After putting the set in the "specified recording" mode by applying 400 Hz signals to the LINE IN terminal, lower the signal level at the LINE IN terminal by 30 dB and record the signals on Test Tape MCT 606SA. When the tape is played back, the level should be the same as that during monitor (SOURCE). If the levels do not agree, adjust the "standard voltage" and reconfirm.
4	Peaking	L503 L603	Both ends of 100 Ω resistor	<ul style="list-style-type: none"> Put the set in the "specified recording" mode and stop the bias oscillator. Lower the level at the LINE IN terminal by 10 dB. Alternately apply 400 Hz and 10 kHz signals to the LINE IN terminal and adjust so that the level of 10 kHz will be within +0.5, -0 dB with reference to 400 Hz.

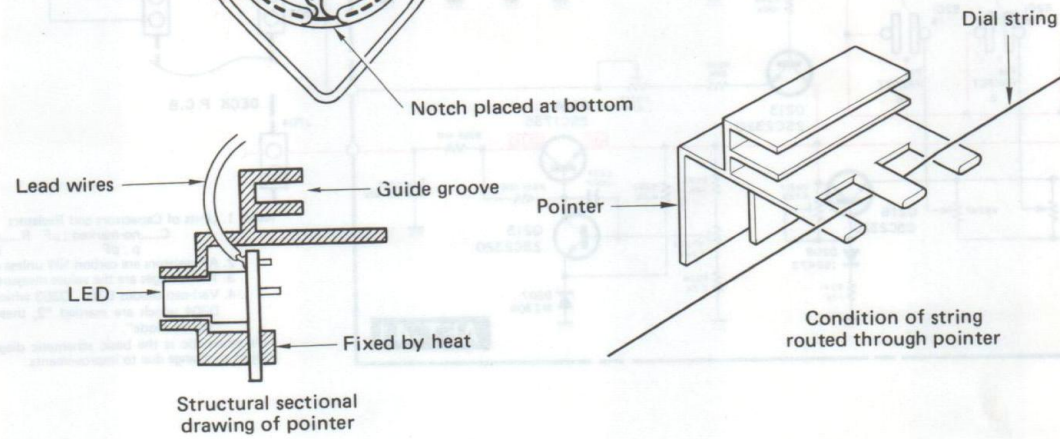
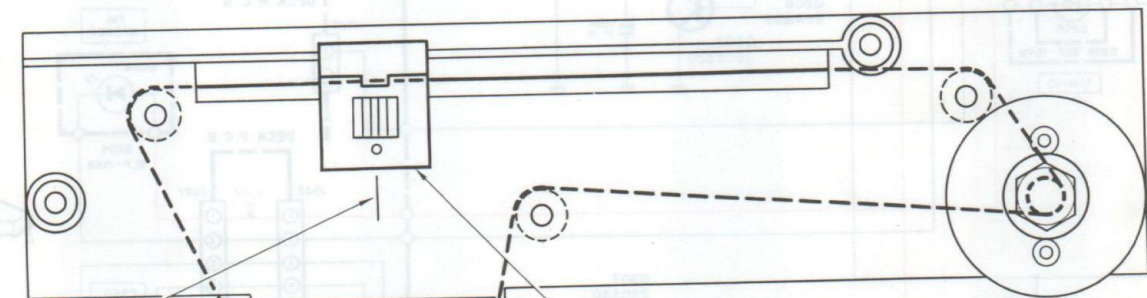
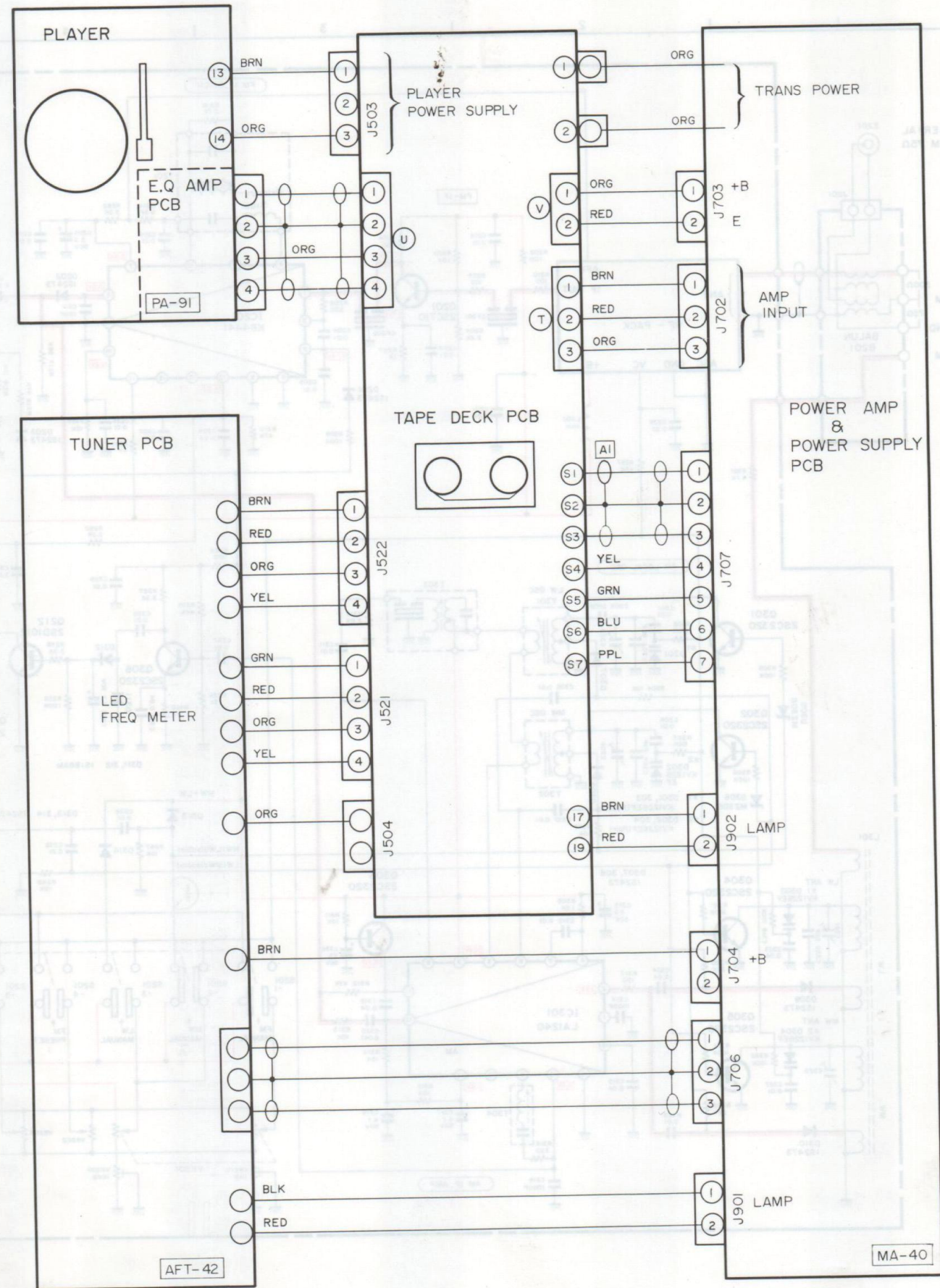
* "Specified recording" Mode

The "specified recording" mode is the mode obtained by applying the rated input level (-10dB) signals to the input terminal, and then adjusting the recording level control knob so that the rated output level (-7 dB) will be obtained at the output terminal.

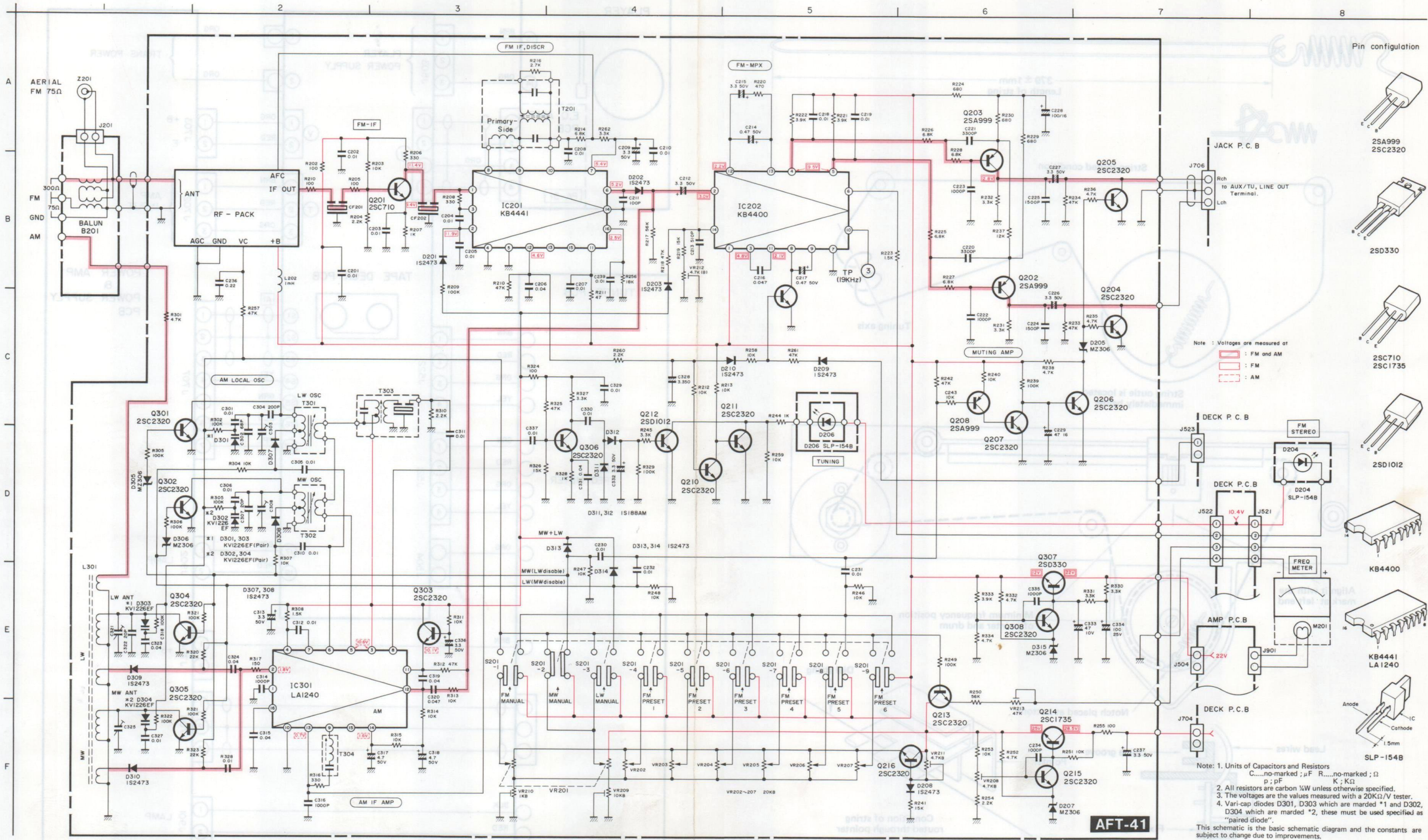
DIAL THREADING



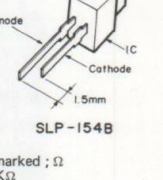
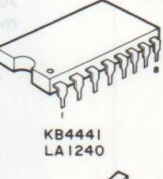
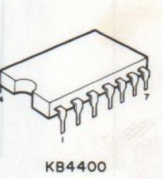
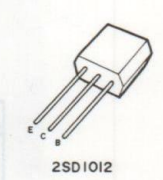
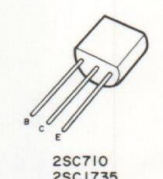
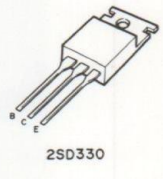
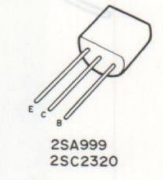
BLOCK CONNECTING DIAGRAM



SCHEMATIC DIAGRAM Tuner Section



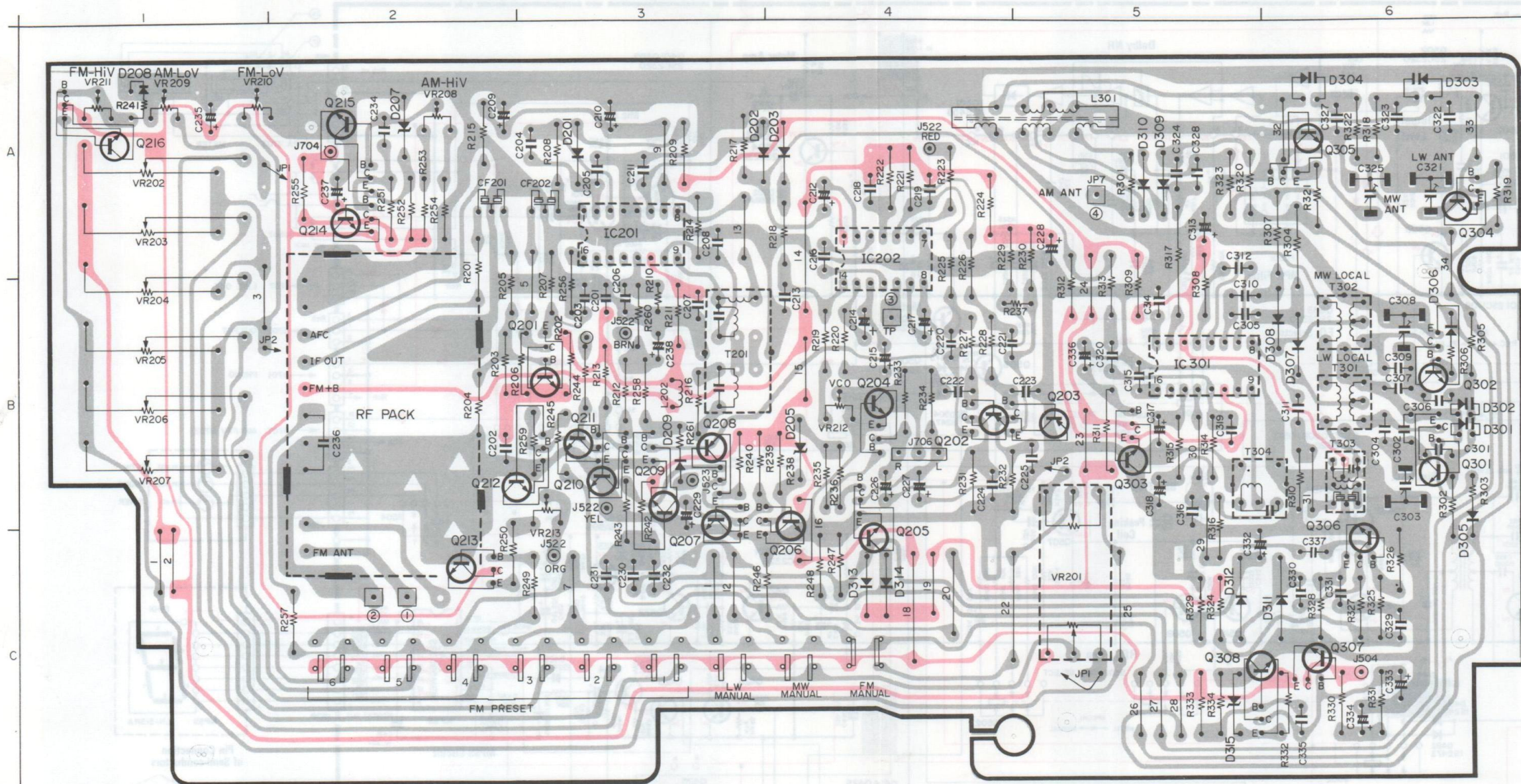
Pin configuration



Note: Voltages are measured at
 : FM and AM
 : FM
 : AM

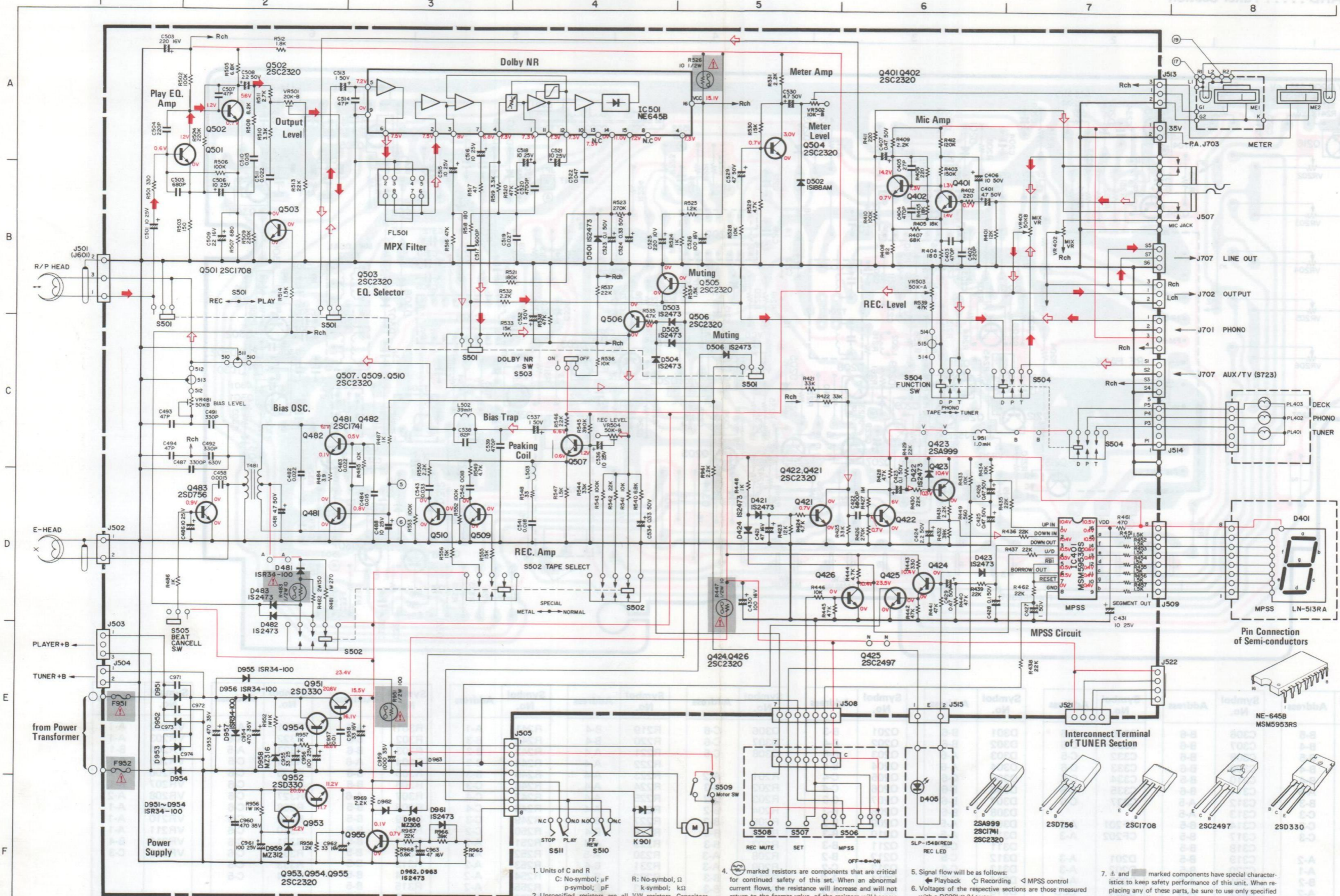
Note: 1. Units of Capacitors and Resistors
 C.....no-marked ; μ F R.....no-marked ; Ω
 p ; pF K ; K Ω
 2. All resistors are carbon 1/4W unless otherwise specified.
 3. The voltages are the values measured with a 20K Ω /V tester.
 4. Vari-cap diodes D301, D303 which are marked *1 and D302, D304 which are marked *2, these must be used specified as "paired diode".
 This schematic is the basic schematic diagram and the constants are subject to change due to improvements.

PRINTED CIRCUIT BOARD Tuner Section



Symbol No.	Address	Symbol No.	Address	Symbol No.	Address	Symbol No.	Address	Symbol No.	Address	Symbol No.	Address	Symbol No.	Address	Symbol No.	Address	Symbol No.	Address	Symbol No.	Address	Symbol No.	Address
C201	B-3	C223	B-5	C306	B-6	C330	C-6	D301	B-6	Q201	B-3	Q306	C-6	R219	B-4	R301	A-5	R321	A-6	VR202	A-1
C202	B-2	C224	B-4	C307	B-6	C331	C-6	D302	B-6	Q202	B-4	Q307	C-6	R220	B-4	R302	B-6	R322	A-6	VR203	A-1
C203	B-3	C225	B-5	C308	B-6	C332	C-5	D303	A-6	Q203	B-5	Q308	C-5	R221	A-4	R303	B-6	R323	A-5	VR204	B-1
C204	A-3	C226	B-4	C309	B-6	C333	C-6	D304	A-6	Q204	B-4	R201	A-2	R222	A-4	R304	A-6	R324	C-5	VR205	B-1
C205	A-3	C227	B-4	C310	B-5	C334	C-6	D305	C-6	Q205	C-4	R202	B-3	R223	A-4	R305	B-6	R325	C-6	VR206	B-1
C206	B-3	C228	A-5	C311	B-6	C335	C-6	D306	B-6	Q206	C-4	R203	B-2	R224	A-4	R306	B-6	R326	C-6	VR207	B-1
C207	B-3	C229	B-3	C312	A-5	C337	C-6	D307	B-6	Q207	C-3	R204	B-2	R225	A-4	R307	A-6	R327	C-6	VR208	A-2
C208	A-3	C230	C-3	C313	A-5	CF201	A-2	D308	B-6	Q208	B-3	R205	B-2	R226	A-4	R308	B-5	R328	C-6	VR209	A-1
C209	A-2	C231	C-3	C314	B-5	CF202	A-3	D309	A-5	Q209	B-3	R206	B-3	R227	B-4	R309	B-5	R329	C-5	VR210	A-1
C210	A-3	C232	C-3	C317	B-5	D201	A-3	D310	A-5	Q210	B-3	R207	B-3	R228	B-4	R310	B-6	R330	C-6	VR211	A-1
C211	A-3			C318	B-5	D202	A-3	D311	C-6	Q211	B-3	R208	A-3	R229	A-4	R311	B-5	R331	C-6	VR212	B-4
C212	A-4	C234	A-2	C319	B-5	D203	A-4	D312	C-5	Q212	B-2	R209	A-3	R230	A-5	R312	B-5	R332	C-6	VR213	C-3
C213	B-4	C235	A-1	C320	B-5	D204	A-4	D313	C-4	Q213	C-2	R210	B-3	R231	B-4	R313	B-5	R333	C-5		
C214	B-4	C236	B-2	C321	A-6	D205	LED	D314	C-5	Q214	A-2	R211	B-3	R232	B-4	R314	B-5	R334	C-5		
C215	B-4	C237	A-2	C322	A-6	D206	LED	D315	B-3	Q215	A-2	R212	B-3	R233	B-3	R315	B-5				
C216	A-4	C238	B-3	C323	A-6	D207	A-2	IC201	A-3	Q216	A-1	R213	B-3	R234	B-4	R316	C-5				
C217	B-4			C324	A-5	D208	A-1	IC202	A-4	Q301	B-6	R214	A-3	R235	B-4	R317	A-5				
C218	A-4	C301	B-6	C325	A-6	D209	B-3	IC301	B-5	Q302	B-6	R215	A-2	R236	B-4	R318	A-6				
C219	A-4	C302	B-6							Q303	B-5	R216	B-3	R237	B-5	R319	A-6				
C220	B-4	C303	B-6	C327	A-6					Q304	A-6	R217	A-3	R238	B-4	R320	A-5				
C221	B-4	C304	B-6	C328	A-5					Q305	A-6	R218	A-4	R239	B-4						
C222	B-4	C305	B-5	C329	C-6									R240	B-3						

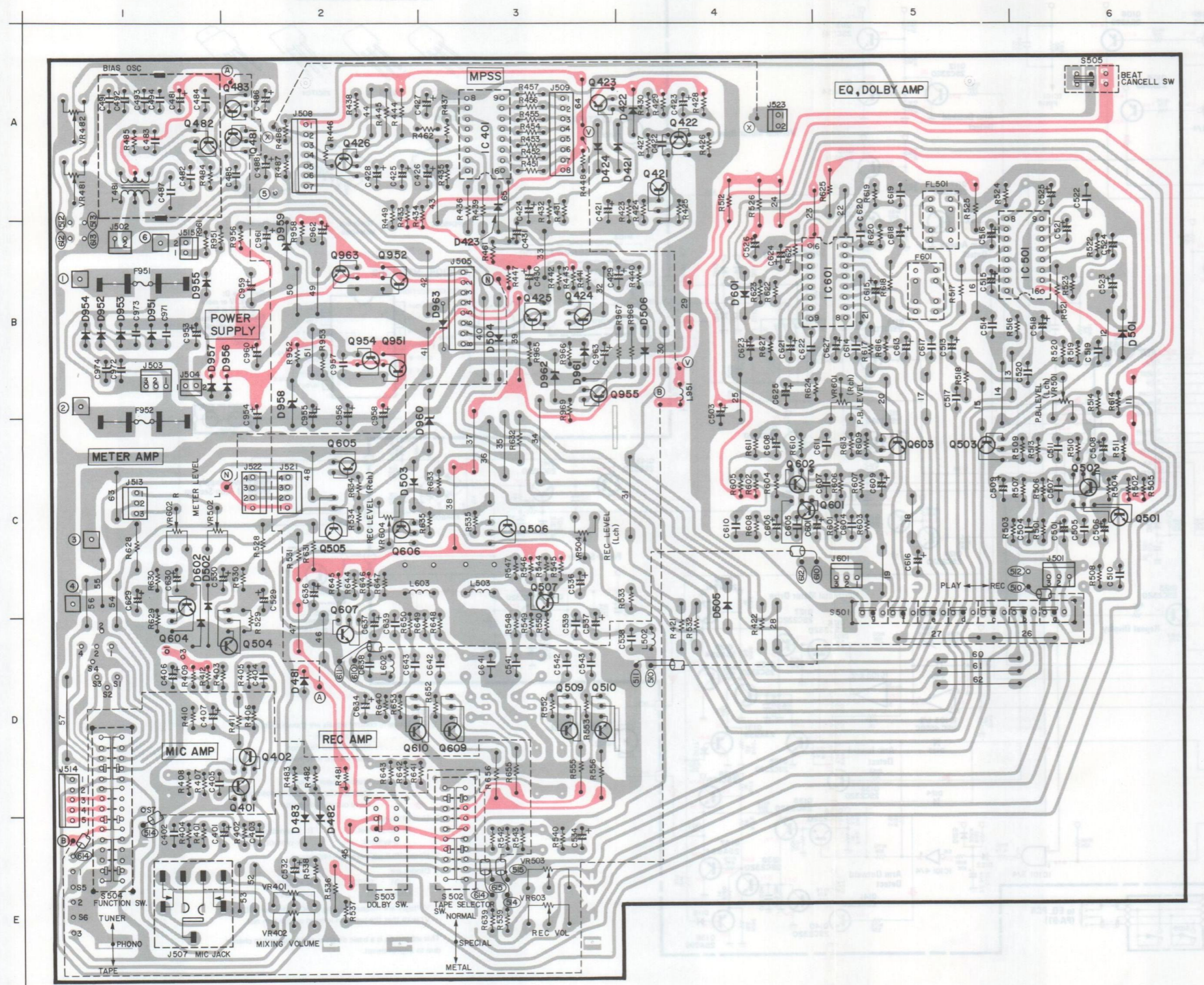
SCHEMATIC DIAGRAM Deck Section



- Units of C and R
C: No-symbol, μ F
p-symbol, pF
R: No-symbol, Ω
k-symbol, k Ω
- Unspecified resistors are all $\frac{1}{4}$ W resistors. Capacitors without voltage indications have a 50V withstand voltage.
- Values of components without specified figures are the same as those of the other channel.
- ⚠ marked resistors are components that are critical for continued safety of this set. When an abnormal current flows, the resistance will increase and will not return to the former value, of the resistors will become defective due to disconnection. Replace only with service parts of the exact type as specified.
- Signal flow will be as follows:
▶ Playback ◀ Recording ◀ MPSS control
- Voltages of the respective sections are those measured with a DC20k Ω /V tester.
- ⚠ and ⚡ marked components have special characteristics to keep safety performance of this unit. When replacing any of these parts, be sure to use only specified on the parts list.

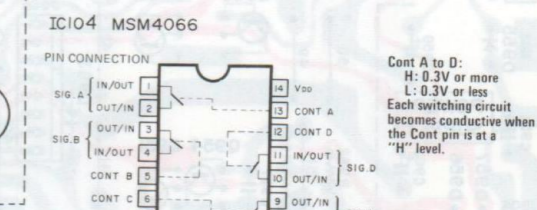
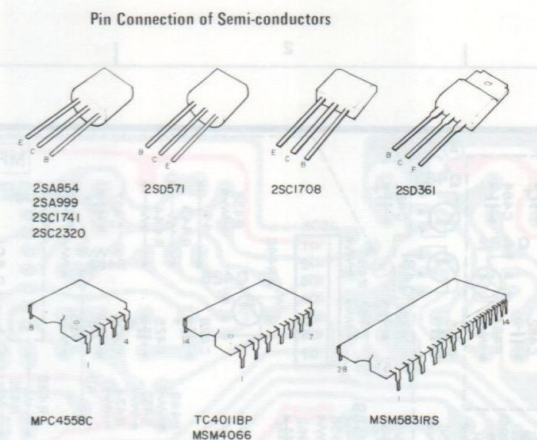
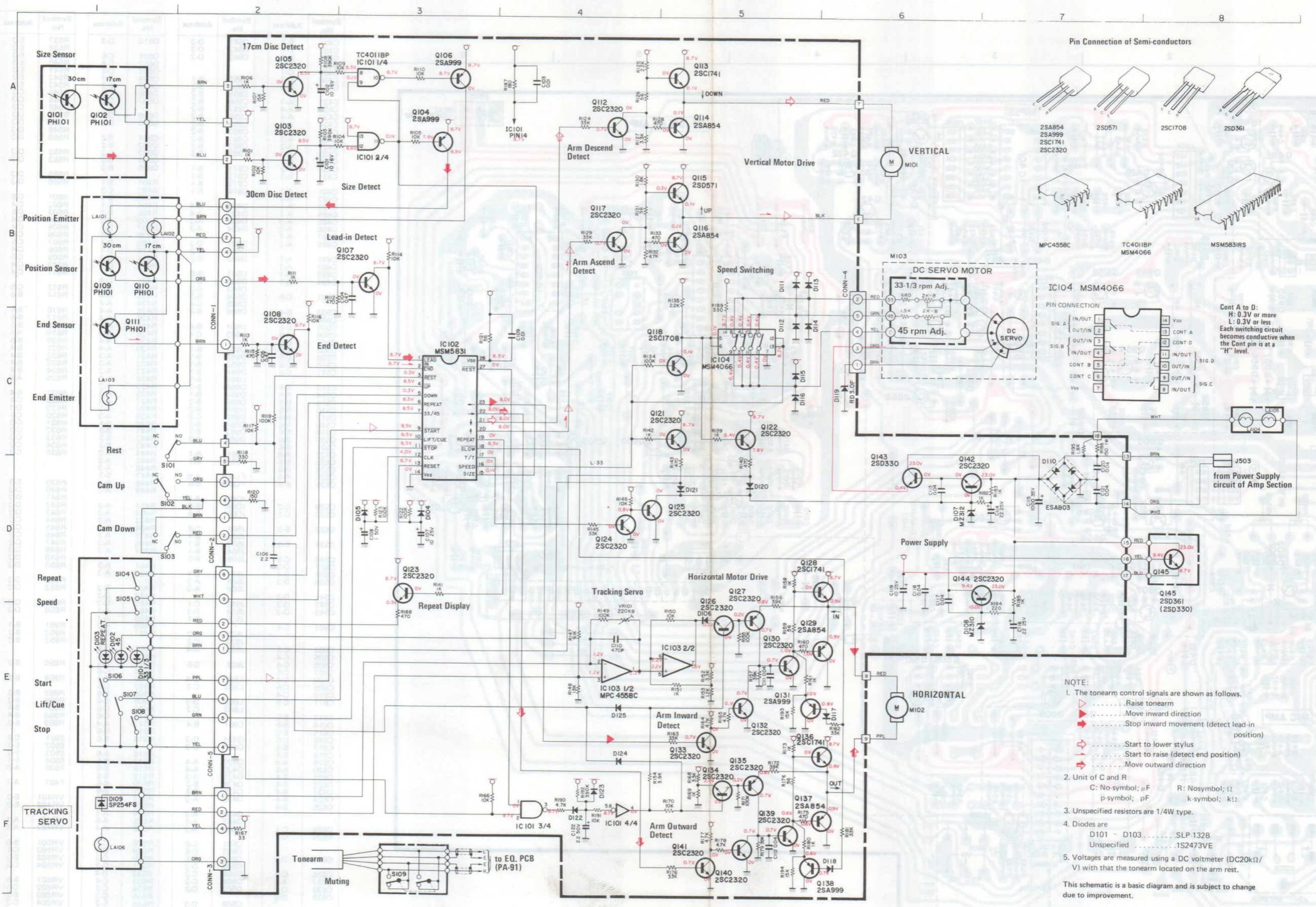
This schematic is the basic diagram and the constants are subject to change due to improvement.

PRINTED CIRCUIT BOARD Deck Section



Symbol No.	Address	Symbol No.	Address	Symbol No.	Address	Symbol No.	Address
C401	E-1	C641	D-3	Q510	D-3	R537	E-2
C402	E-1	C642	D-3	Q601	C-5	R538	E-2
C403	E-2	C643	D-2	Q602	C-4	R539	E-3
C404	D-2			Q603	C-5	R540	E-3
C405	D-1			Q604	D-1	R541	E-3
C406	D-1	C953	B-1	Q605	C-2	R542	E-3
C407	D-1	C954	B-2	Q606	C-2	R543	E-3
		C955	B-2	Q607	C-2	R544	C-3
C421	A-3	C956	B-2			R545	C-3
C422	A-4	C957	B-2	Q609	D-3	R546	C-3
C423	A-4	C958	B-2	Q610	D-2	R547	C-3
C424	A-3	C959	B-2			R548	D-3
C425	A-2	C960	B-2			R549	D-3
C426	A-3	C961	B-2	Q951	B-2	R550	D-3
C427	A-3	C962	B-3	Q952	B-2		
C428	A-2	C963	B-3	Q953	B-2		
C429	B-3			Q954	B-2		
C430	B-3	C971	B-1	Q955	B-3		
C431	B-3	C972	B-1			R555	D-3
		C973	B-1	R401	E-1	R556	D-3
		C974	B-1	R402	E-2		
C481	A-1			R403	D-1	R601	C-5
C482	A-1			R404	E-1	R602	C-4
C483	A-1	D421	A-4	R405	B-2	R603	C-5
C484	A-1	D422	A-4	R406	D-2	R604	C-4
C485	A-2	D423	A-3	R407	D-1	R605	C-4
C486	A-2	D424	A-3	R408	D-1	R606	C-5
C487	A-1			R409	D-1	R607	C-5
C488	A-2	D481	D-2	R410	D-1	R608	C-4
		D482	E-2	R411	D-2	R609	C-5
		D483	E-2	R412	D-1	R610	C-4
C491	A-1					R611	C-4
C492	A-1			D501	B-6		
C493	A-1			D502	C-1	R421	D-4
C494	A-1			D503	C-2	R422	D-4
				D504	C-3	R423	A-4
C501	C-6			D505	C-4	R424	A-4
				D506	B-4	R425	A-4
C503	B-4					R426	A-4
C504	C-6			D601	B-4	R427	A-4
C505	C-6			D602	C-1	R428	A-4
C506	C-6					R429	A-4
C507	C-6					R430	A-4
C508	C-6			D951	B-1	R431	A-3
C509	C-5			D952	B-1	R432	A-3
C510	C-6			D953	B-1	R433	A-2
C511	C-6			D954	B-1	R434	A-2
				D955	B-1	R435	A-3
C513	B-5			D956	B-2	R436	A-3
C514	B-5					R437	A-3
C515	B-5			D958	B-2	R438	A-2
C516	B-5			D959	B-2	R439	A-2
C517	B-5			D960	B-3	R440	B-4
C518	B-5					R441	B-3
C519	B-5			D962	B-3	R442	B-3
C520	B-6			D963	B-3	R443	B-3
C521	B-6					R444	A-2
C522	A-6	F951	B-1			R445	A-2
C523	B-6	F952	B-1			R446	A-2
C524	B-6			FL501	A-5	R447	B-3
C525	A-6			FL601	B-5	R448	A-3
C526	B-4					R449	A-2
						R639	E-3
C529	C-2			IC401	A-3	R640	D-2
C530	C-1			IC501	B-6	R641	D-2
				IC601	B-5	R642	D-2
C532	E-2			J501	C-6	R643	D-2
C534	E-3			J502	B-1	R644	C-2
				J503	B-1	R645	C-2
C536	C-3			J504	B-1	R646	C-2
C537	D-3			J505	B-3	R647	C-2
C538	D-4					R648	D-3
C539	D-3					R649	D-2
						R650	D-2
C541	D-3			R461	B-3		
C542	D-3			R462	A-3		
C543	D-3					R652	D-3
						R653	D-2
C601	C-4			R481	D-2		
				R482	D-2	R655	D-3
				R483	D-2	R656	D-3
				J513	C-1		
				J514	D-1		
				J515	B-1		
				J521	C-2	R951	B-1
				J522	C-2	R952	B-2
				J523	A-4	R953	B-2
C604	C-5					R501	C-6
C605	C-4					R502	C-6
C606	C-4			J601	C-5	R503	C-5
C607	C-5					R504	C-6
C608	C-4			L502	D-4	R505	C-6
C609	C-5			L503	C-3	R506	C-6
C610	C-4					R507	C-6
C611	C-5			L602	D-2	R508	C-6
				L603	C-2	R509	C-6
						R510	C-6
						R511	C-6
C613	B-5			L951	B-4	R512	A-4
C614	B-5					R513	C-6
C615	B-5					R514	B-6
C616	C-5			Q401	D-2		
C617	B-5			Q402	D-2	S501	C-5
C618	B-5					S502	E-3
C619	A-5					S503	E-2
C620	B-5			Q421	A-4	S504	E-1
C621	B-4			Q422	A-4	S505	A-6
C622	B-4			Q423	A-3		
C623	B-4			Q424	B-3	T481	A-1
C624	B-4			Q425	B-3		
C625	B-4			Q426	A-2	VR401	E-2
						VR402	E-2
				Q481	A-2		
				Q482	A-1	VR481	A-1
				Q483	A-2	VR482	A-1
C629	C-1						
C630	C-1						
				Q501	C-6	VR501	B-6
				Q502	C-6	VR502	C-1
C634	D-2			Q503	C-5	VR503	E-3
				Q504	D-2	VR504	C-3
C636	C-2			Q505	C-2		
C637	A-2			Q506	C-3	VR601	B-5
C638	D-2			Q507	C-3	VR602	C-1
C639	D-2			Q509	D-3	VR603	E-3
						VR604	C-2

SCHEMATIC DIAGRAM Turntable Section



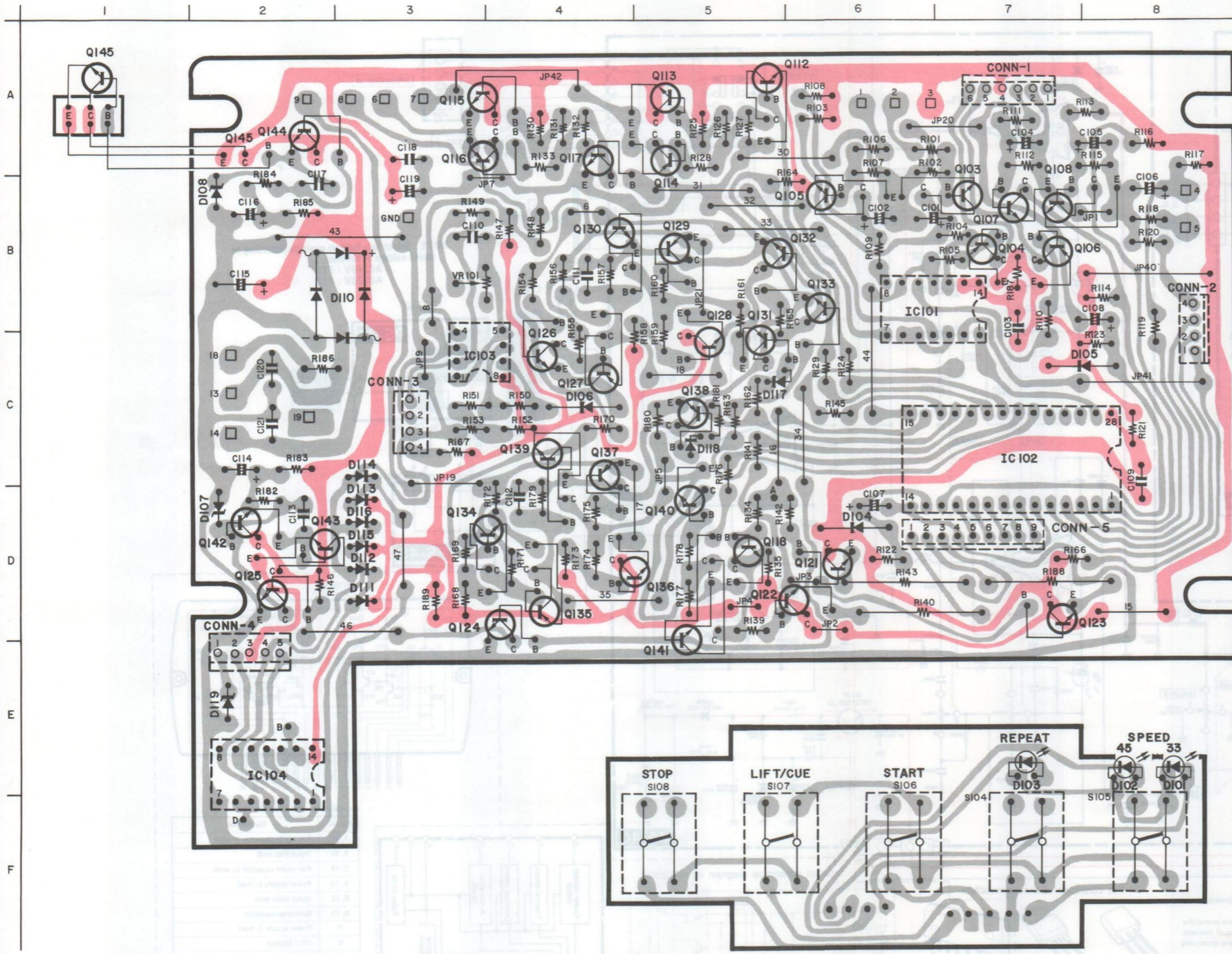
Cont A to D:
 H: 0.3V or more
 L: 0.3V or less
 Each switching circuit becomes conductive when the Cont pin is at a "H" level.

NOTE:

- The tonearm control signals are shown as follows.
 - Raise tonearm
 - Move inward direction
 - Stop inward movement (detect lead-in position)
 - Start to lower stylus
 - Start to raise (detect end position)
 - Move outward direction
- Unit of C and R
 - C: No-symbol; μ F
 - R: No-symbol; Ω
 - p-symbol; pF
 - k-symbol; k Ω
- Unspecified resistors are 1/4W type.
- Diodes are
 - D101 ~ D103 SLP 132B
 - Unspecified 1S2473VE
- Voltages are measured using a DC voltmeter (DC20k Ω /V) with that the tonearm located on the arm rest.

This schematic is a basic diagram and is subject to change due to improvement.

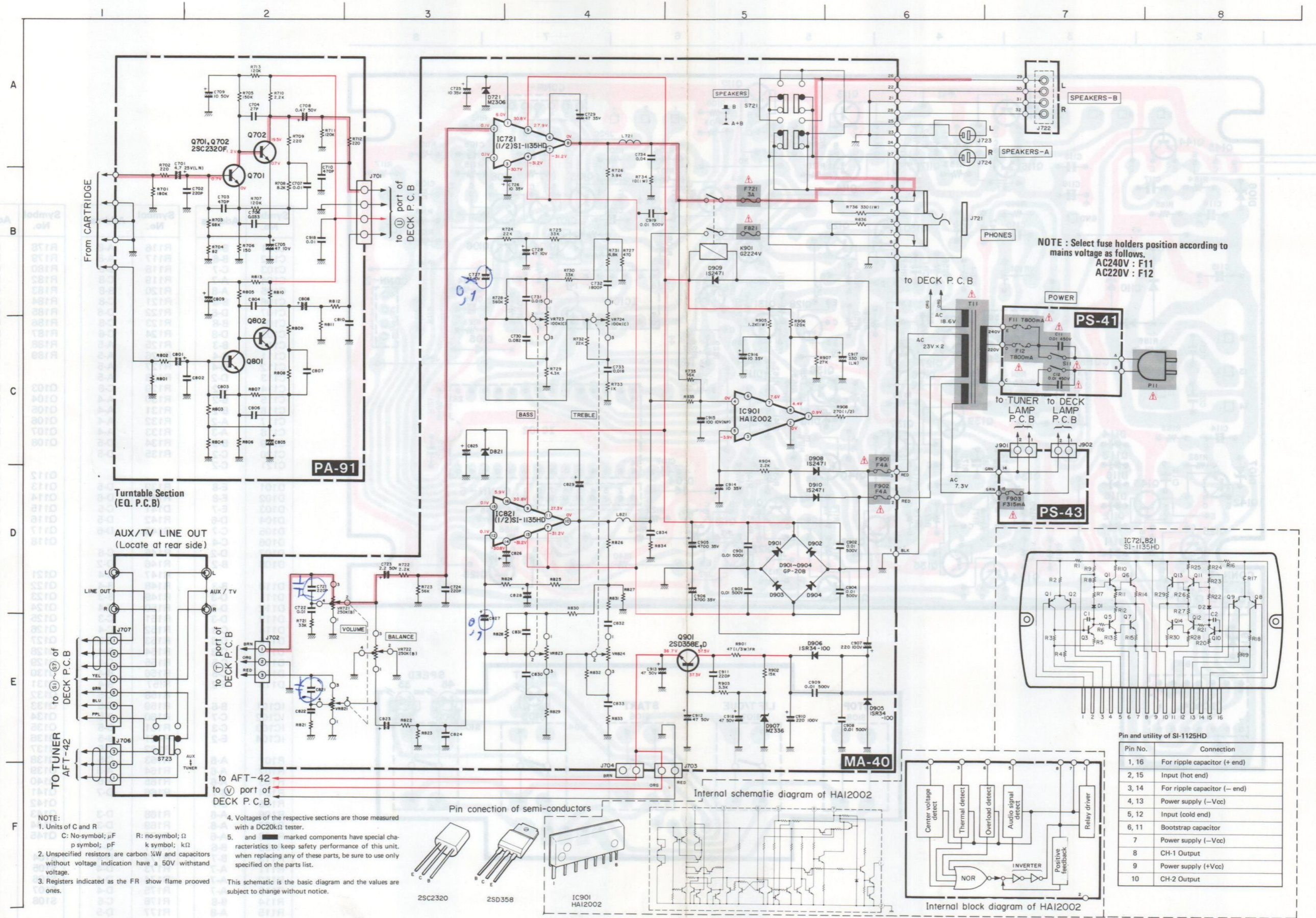
PRINTED CIRCUIT BOARD Turntable Section



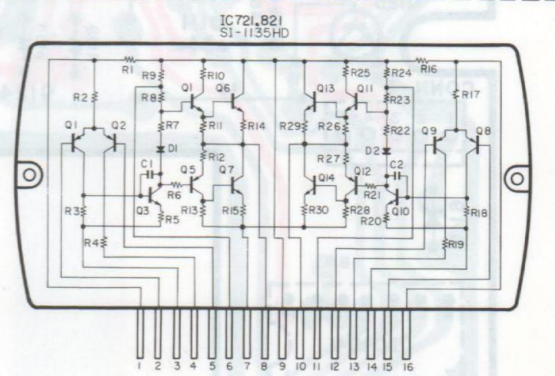
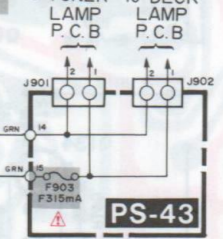
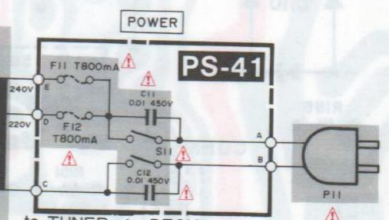
Symbol No.	Address	Symbol No.	Address	Symbol No.	Address
C101	B-6	R116	A-8	R178	D-5
C102	B-6	R117	A-8	R179	D-4
C103	C-7	R118	B-8	R180	C-5
C104	A-7	R119	C-8	R182	D-2
C105	A-8	R120	B-8	R183	C-2
C106	B-8	R121	C-8	R184	A-2
C107	D-6	R122	D-6	R185	B-2
C108	B-8	R123	C-8	R186	C-2
C109	D-8	R124	C-6	R187	B-7
C110	B-3	R125	A-5	R188	D-7
C111	B-4	R126	A-5	R189	D-3
C112	D-4	R127	A-5		
C113	D-2	R128	A-5		
C114	C-2	R129	C-6	Q103	B-7
C115	B-2	R130	A-4	Q104	B-7
C116	B-2	R131	A-4	Q105	B-6
C117	A-2	R132	A-4	Q106	B-7
C118	A-3	R133	A-4	Q107	B-7
C119	B-3	R134	D-5	Q108	B-7
C120	C-2	R135	D-5		
C121	C-2				
D101	E-8	R139	D-5	Q112	A-6
D102	E-8	R140	D-6	Q113	A-5
D103	E-7	D141	C-5	Q114	A-5
D104	D-6	R142	D-5	Q115	A-3
D105	C-7	R143	D-6	Q116	A-3
D106	C-4			Q117	A-4
D107	D-2	R145	C-6	Q118	D-5
D108	B-2	R146	D-2		
		R147	B-4		
D110	B-3	R148	B-4	Q121	D-6
D111	D-3	R149	B-3	Q122	D-5
D112	D-3	R150	C-4	Q123	D-7
D113	D-3	R151	C-3	Q124	D-3
D114	C-3	R152	C-4	Q125	D-2
D115	D-3	R153	C-3	Q126	C-4
D116	D-3	R154	B-4	Q127	C-4
D117	C-5	R155	C-4	Q128	B-5
D118	C-5	R156	B-4	Q129	B-5
D119	E-2	R157	B-4	Q130	B-4
		R158	C-5	Q131	B-5
IC101	B-6	R159	C-5	Q132	B-6
IC102	C-7	R160	B-5	Q133	B-6
IC103	C-3	R161	B-5	Q134	D-3
IC104	E-2	R162	C-5	Q135	D-4
		R163	C-5	Q136	D-5
R101	A-6	R164	A-5	Q137	C-4
R102	A-6	R165	B-6	Q138	C-5
R103	A-6	R166	D-7	Q139	C-4
R104	B-7			Q140	C-5
R105	B-7			Q141	E-5
R106	A-6	R168	D-3	Q142	D-2
R107	A-6	R169	D-3	Q143	D-2
R108	A-6	R170	C-4	Q144	A-2
R109	B-6	R171	D-4	Q145	A-1
R110	B-7	R172	D-4		
R111	A-7	R173	D-4	S104	F-7
R112	A-7	R174	D-4	S105	F-8
R113	A-7	R175	D-4	S106	F-6
R114	B-8	R176	C-5	S107	F-5
R115	A-8	R177	D-5	S108	F-5

SCHMATIC DIAGRAM Amplifier Section

CIRCUIT BOARD Turntable Section



NOTE: Select fuse holders position according to mains voltage as follows.
 AC240V : F11
 AC220V : F12



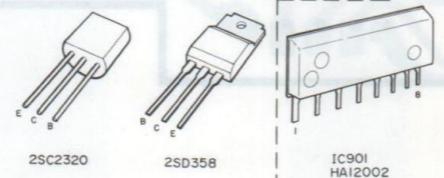
Pin and utility of SI-1135HD

Pin No.	Connection
1, 16	For ripple capacitor (+ end)
2, 15	Input (hot end)
3, 14	For ripple capacitor (- end)
4, 13	Power supply (-Vcc)
5, 12	Input (cold end)
6, 11	Bootstrap capacitor
7	Power supply (-Vcc)
8	CH-1 Output
9	Power supply (+Vcc)
10	CH-2 Output

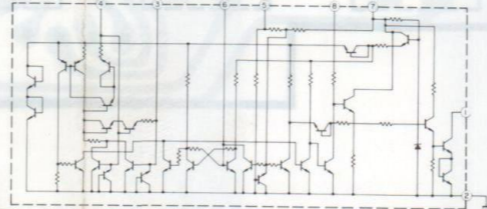
NOTE:
 1. Units of C and R
 C: No-symbol; μ F
 p symbol; pF
 R: no-symbol; Ω
 k symbol; k Ω
 2. Unspecified resistors are carbon $\frac{1}{4}$ W and capacitors without voltage indication have a 50V withstand voltage.
 3. Registers indicated as the FR show flame proofed ones.

4. Voltages of the respective sections are those measured with a DC20k Ω tester.
 5. and marked components have special characteristics to keep safety performance of this unit, when replacing any of these parts, be sure to use only specified on the parts list.
 This schematic is the basic diagram and the values are subject to change without notice.

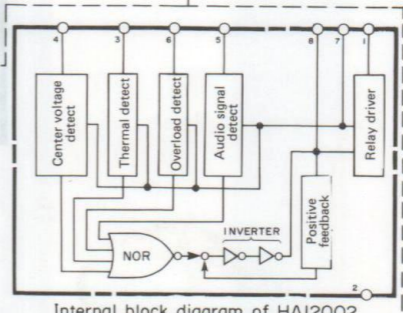
Pin connection of semi-conductors

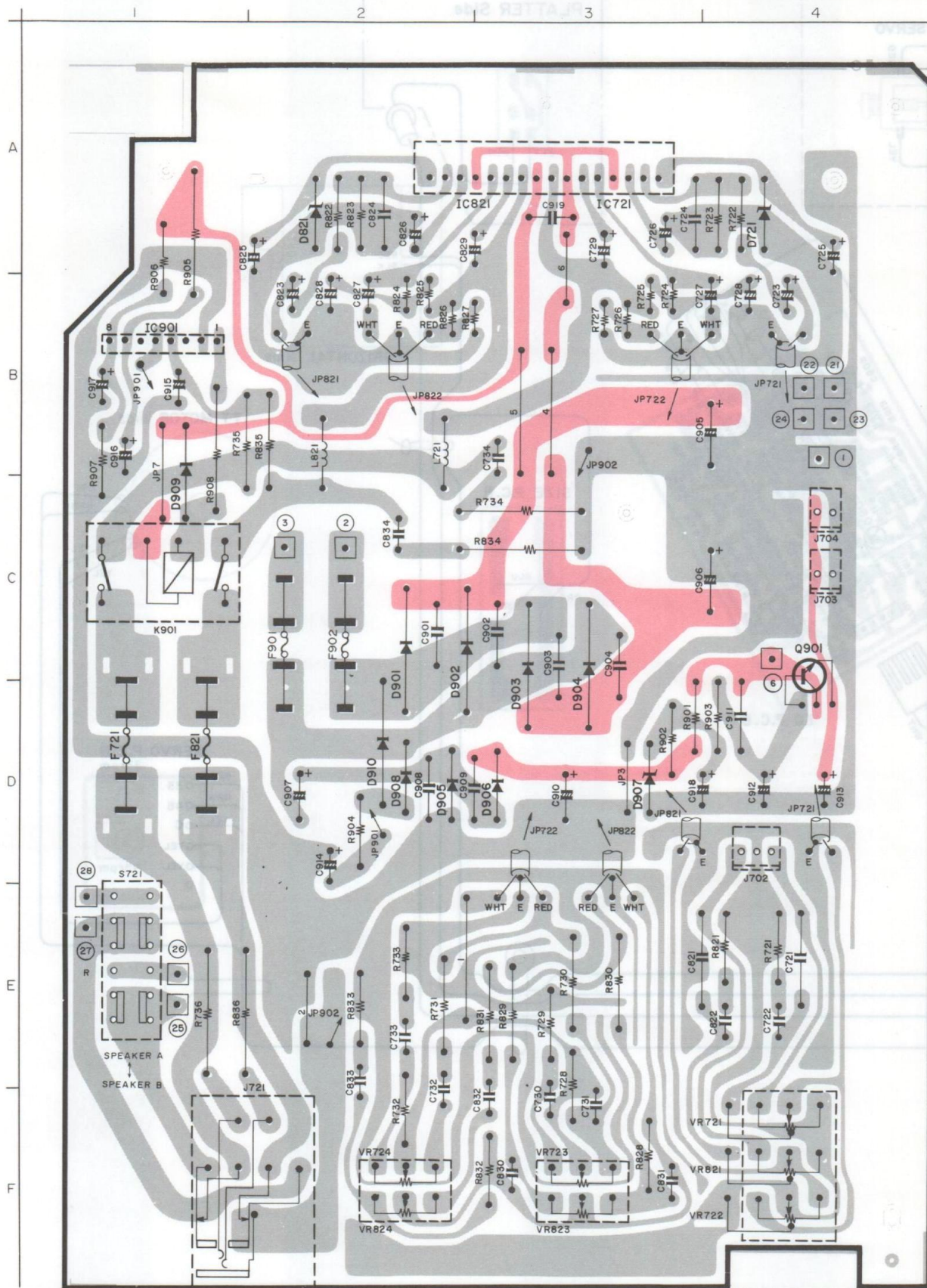


Internal schematic diagram of HAI2002

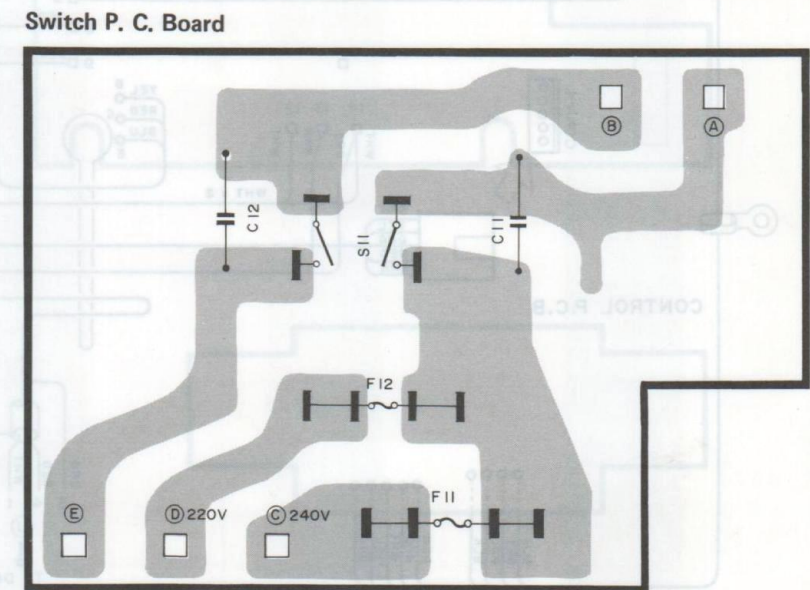
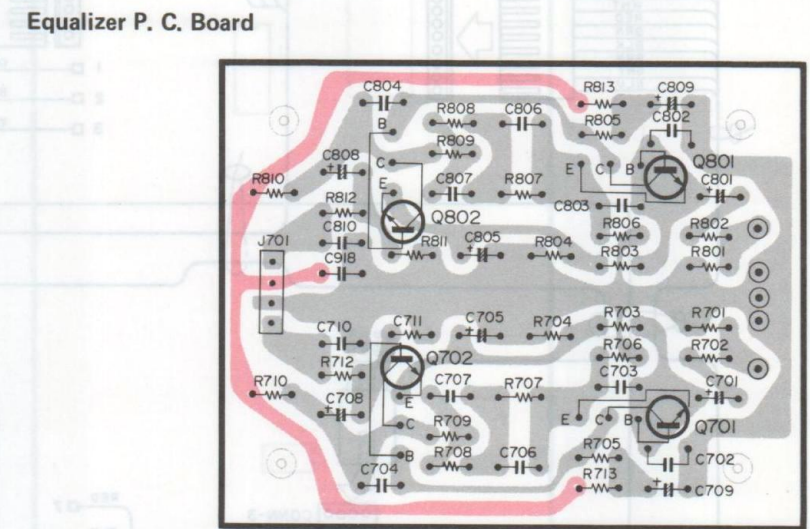
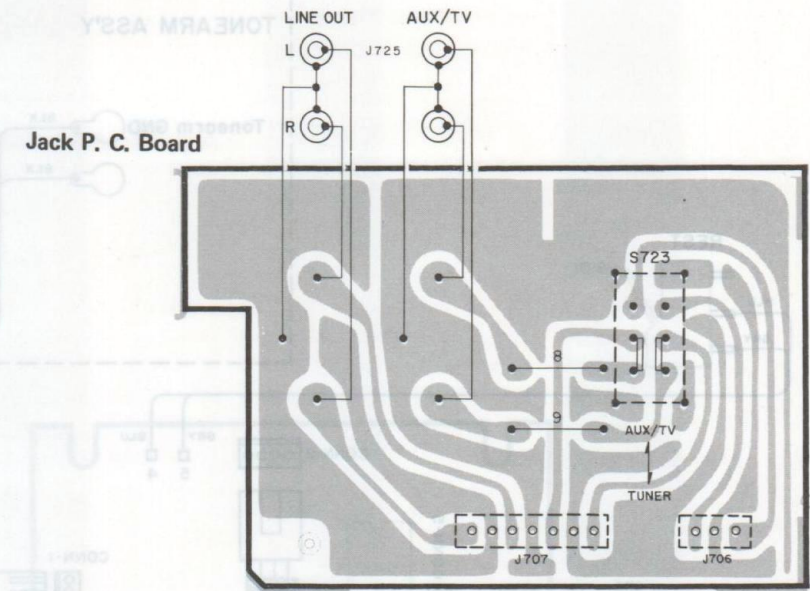


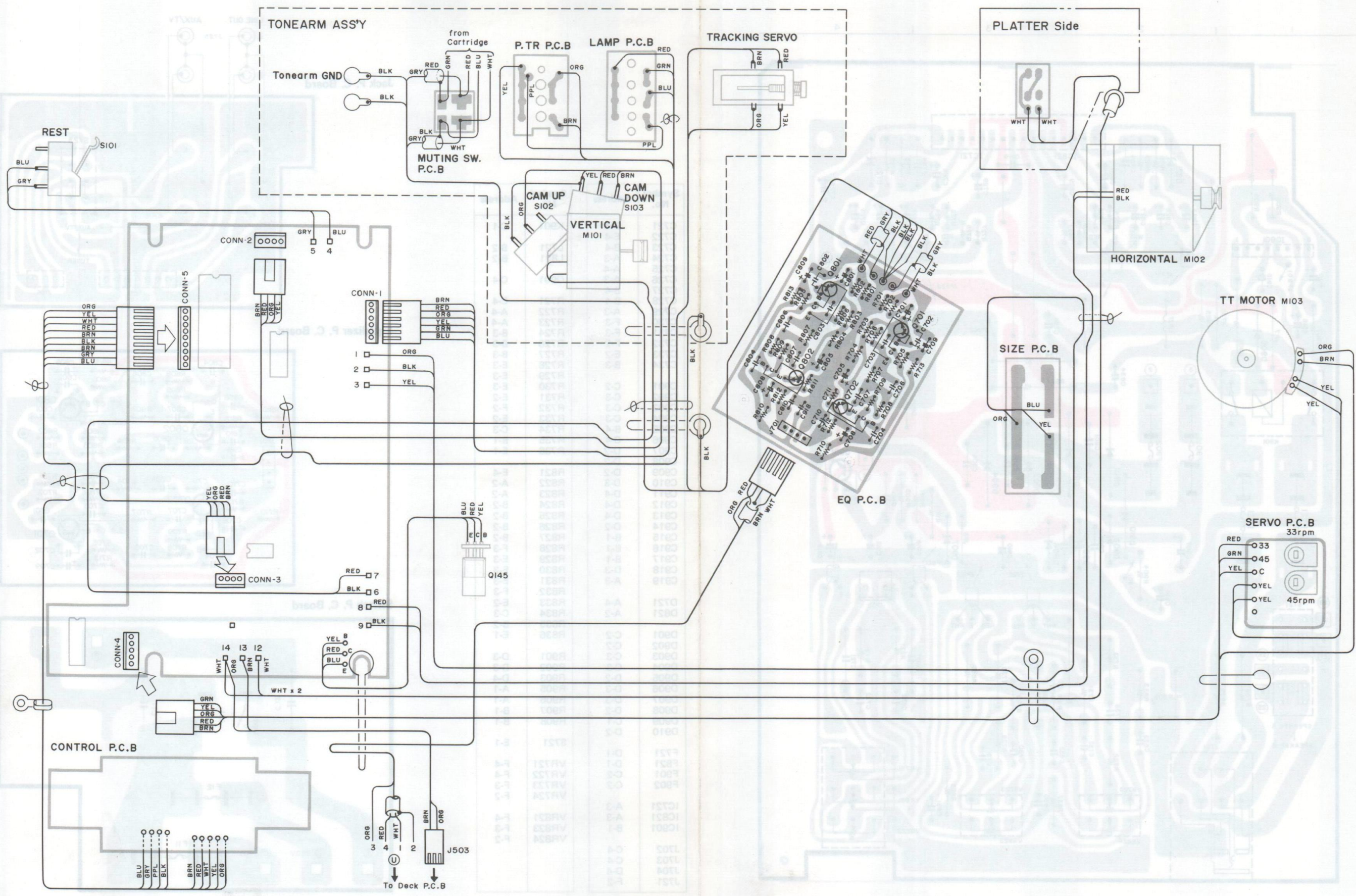
Internal block diagram of HAI2002





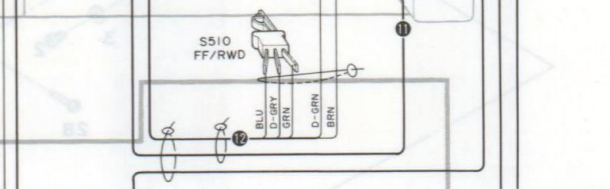
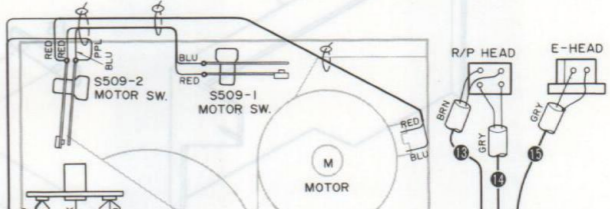
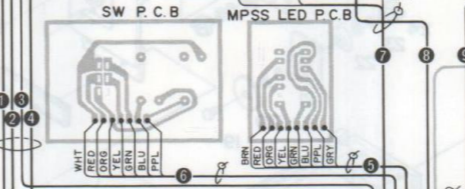
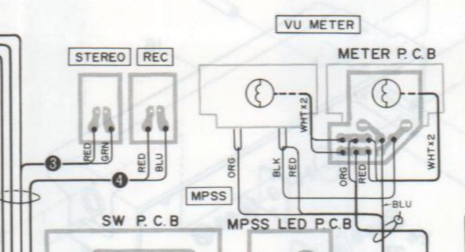
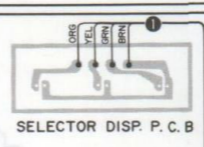
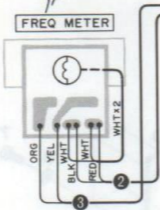
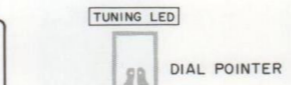
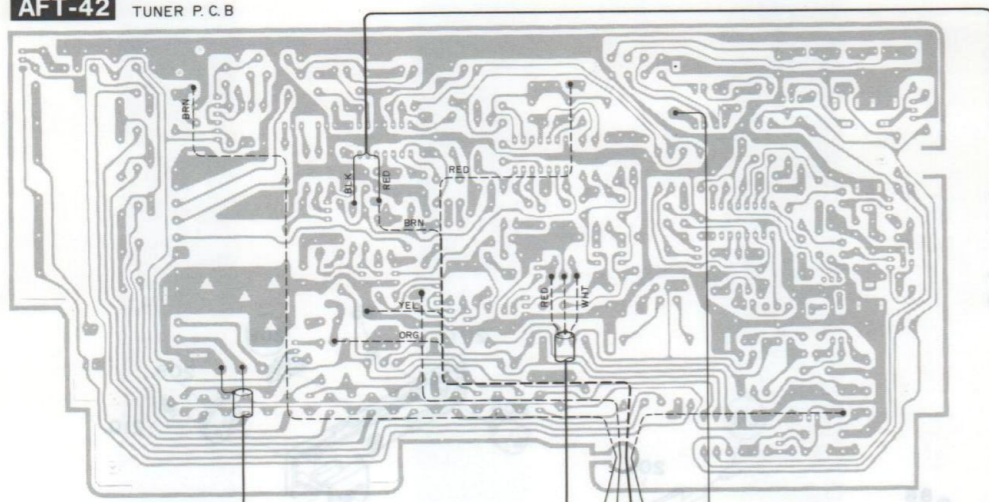
Symbol No.	Address	Symbol No.	Address
C721	E-4	K901	C-1
C722	E-4	L721	B-2
C723	B-4	L821	B-2
C724	A-3		
C725	A-4	Q901	C-4
C726	A-3		
C727	B-4		
C728	B-4	R721	E-4
C729	A-3	R722	A-4
C730	F-3	R723	A-4
C731	F-3	R724	B-3
C732	F-2	R726	B-3
C733	E-2	R727	B-3
C734	B-3	R728	E-3
		R729	E-3
C901	C-2	R730	E-3
C902	C-3	R731	E-2
C903	C-3	R732	F-2
C904	C-3	R733	E-2
C905	B-4	R734	C-3
C906	C-4	R735	B-1
C907	D-2	R736	E-1
C908	D-2		
C909	D-2	R821	E-4
C910	D-3	R822	A-2
C911	D-4	R823	A-2
C912	D-4	R824	B-2
C913	D-4	R825	B-2
C914	D-2	R826	B-2
C915	B-1	R827	B-2
C916	B-1	R828	F-3
C917	B-1	R829	E-3
C918	D-3	R830	E-3
C919	A-3	R831	E-3
		R832	F-3
		R833	E-2
		R834	C-3
		R835	B-2
		R836	E-1
D901	C-2		
D902	C-2	R901	D-3
D903	C-3	R902	D-3
D904	C-3	R903	D-4
D905	D-2	R905	A-1
D906	D-3	R906	A-1
D907	D-3	R907	B-1
D908	D-2	R908	B-1
D909	C-1		
D910	D-2	S721	E-1
F721	D-1		
F821	D-1	VR721	F-4
F901	C-2	VR722	F-4
F902	C-2	VR723	F-3
		VR724	F-2
IC721	A-3		
IC821	A-3	VR821	F-4
IC901	B-1	VR823	F-3
		VR824	F-2
J702	C-4		
J703	C-4		
J704	D-4		
J721	F-2		



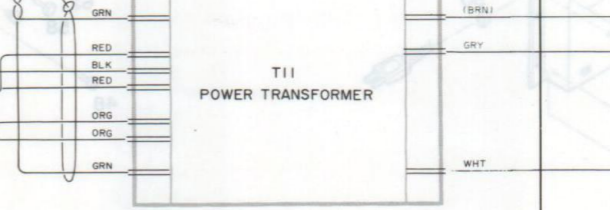
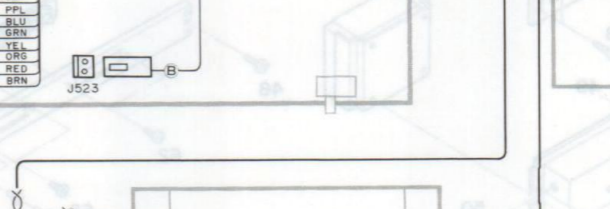
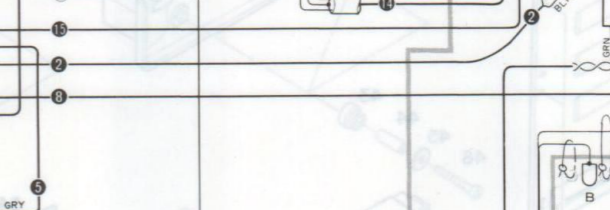
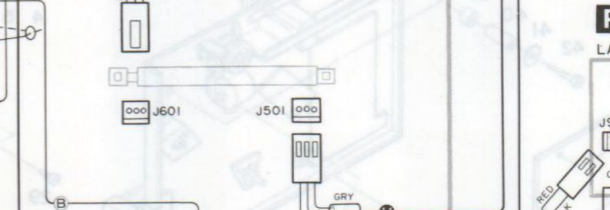
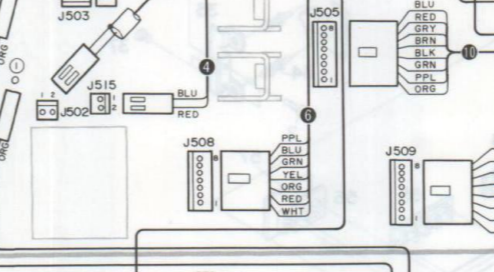
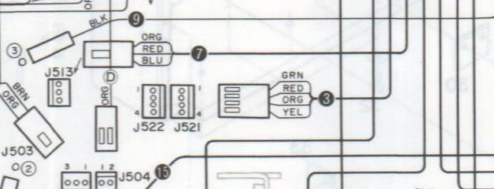
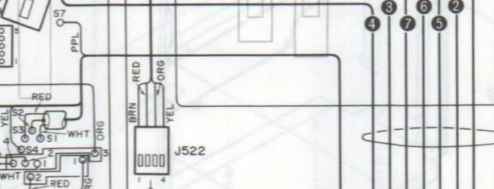
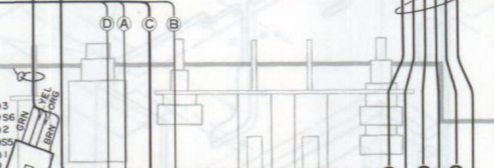
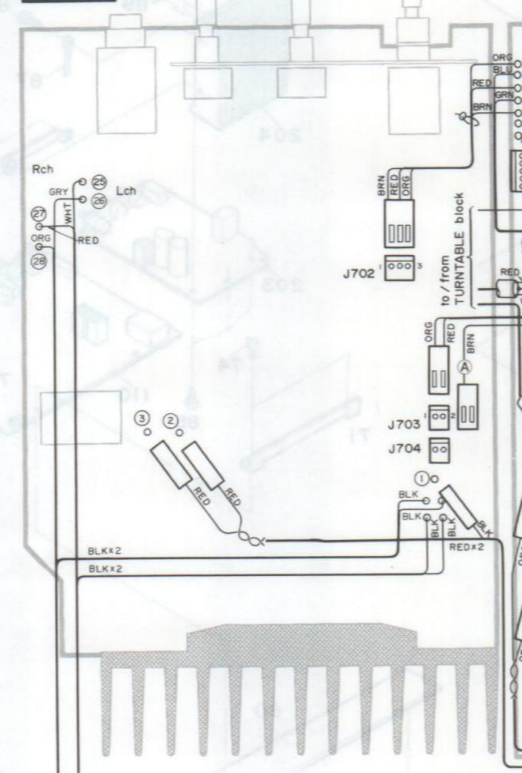


WIRING Tuner, Deck & Amplifier Section

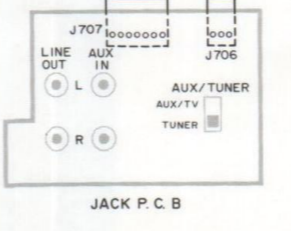
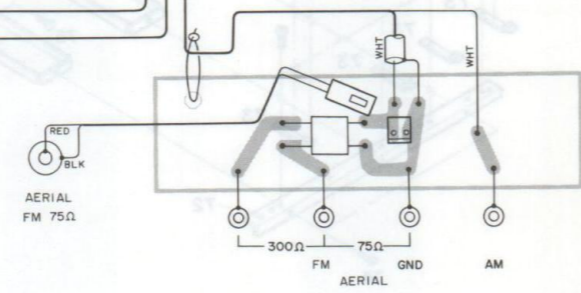
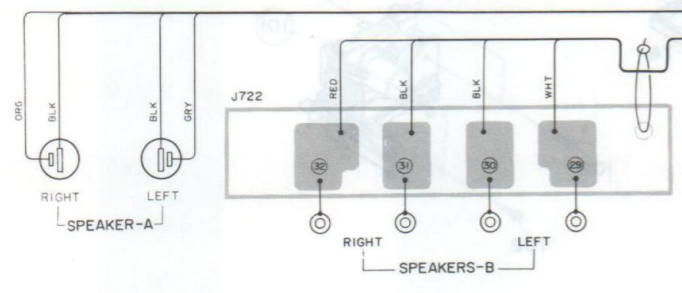
AFT-42 TUNER P.C.B



MA-40 AMP P.C.B

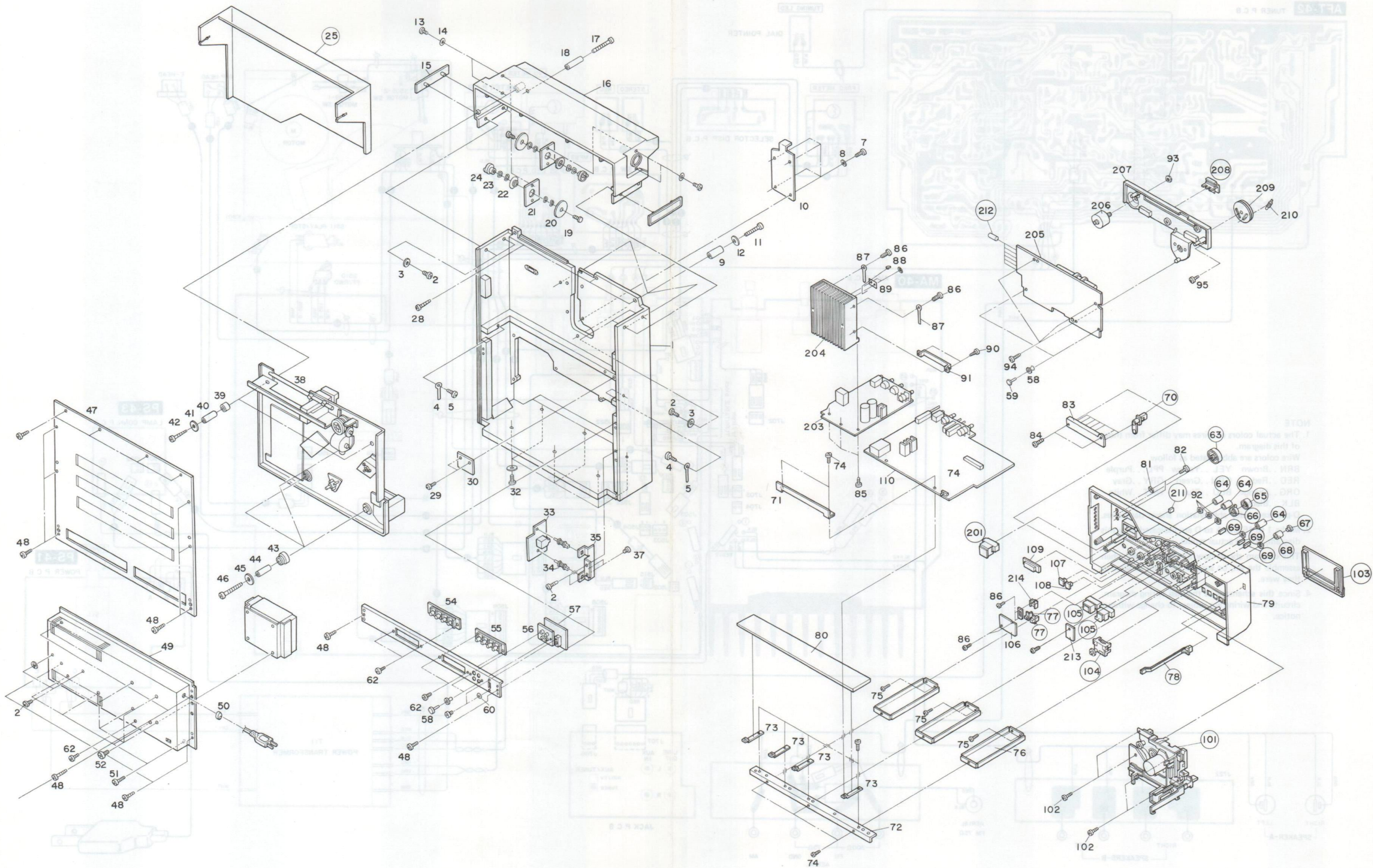


- NOTE**
1. The actual colors of wires may differ from those of this diagram.
Wire colors are abbreviated as follow.
BRN . .Brown YEL . .Yellow PPL . .Purple
RED . .Red GRN . .Green GRY . .Gray
ORG . .Orange BLU . .Blue WHT . .White
BLK . .Black
D-prefixed color abbreviation shows dark ones.
 2. Marks 1 to 15 and A to D are indicated only this diagram, not on actual model.
 3. This diagram shows how to tie the wires, when assemble the set, be sure to tie them as same as they were.
 4. Since this schematic is the basi wiring diagram, circuits and wiring are subject to change without notice.



EXPLODED VIEW . . . Overall

WIRING . . . Tuner, Deck & Amplifier Section



MECHANICAL PARTS DESCRIPTION Overall

Symbol No.	Part No.	Description
1		Cabinet
2		Screw M3 x 8
3		Washer
4		Screw (T1-3 x 12)
5		Lug Terminal
6		
7		Screw M4 x 14
8		Washer
9		Sleeve
10		Holder
11		Screw M4 x 10
12		Washer Spring
13		Screw Chrome M3 x 8
14		Washer
15		Ornament
16		Top cover
17		Screw M3 x 30
18		Sleeve
19		Screw M4 x 6
20		Spacer
21		Washer
22		Holder
23		Holder
24		Shaft for fixing dust cover
25	M07455690	Dust Cover
26		Washer
27		
28		Screw T1-3 x 12
29		Screw T1-3 x 12 (Black)
30		Holder
31		Washer
32		Screw M4 x 16
33		Holder
34		Knob
35		Holder
36		
37		Screw M3 x 6
38		Chassis
39		Sleeve
40		Sleeve
41		Washer
42		Screw T2-3 x 34
43		Sleeve
44		Sleeve
45		Washer
46		Screw M3 x 35
47		Rear Cover
48		Screw T1 x 3 x 16
49		Cover for Amp
50		Bush
51		
52		Screw M5 x 8
53		Washer Inner Toothed
54		Jack
55		Jack
56		Jack
57		Holder (for Jack)
58		Rivet Plastic
59		
60		Washer Shake-proof
61		
62		Screw T1-3 x 8
63	M04165210	Knob (Tuning)

Symbol No.	Part No.	Description
64	M04165213	Knob (Mix/TREBLE/BASS)
65	M04165214	Knob (Volume)
66	M04165215	Knob (Balance)
67	M04167212	Knob (Rec Level-L)
68	M04167211	Knob (Rec Level-R)
69	M04167213	Knob (Tape Selector/Dolby NR)
70	M04165211	Knob (Preset/Manual)
71		Holder
72		Holder
73		Holder
74		Screw T2-3 x 8
75		Screw T2-3 x 8
76		Holder
77	M04165216	Knob (MPSS Set)
78	M04165651	Knob (Power)
79	M04168650	Panel Front
80		Plate Insulation
81		Washer Shake-proof 3φ
82		Screw T1-3 x 12
83		Holder
84		Screw M3 x 8
85		Screw T2-3 x 8
86		
87		Lug Terminal
88		Spring
89		Fibre
90		Screw T2-3 x 8
91		Holder
92		Nut M7
93		Nut M12
94		Screw T1-3 x 12
95		
96		
97		
98		
99		
101		Mechanism Ass'y
102		Screw T1-3 x 12
103	M04165111	Cassette Cover
104	M04165404	Counter
105	M04165261	Meter Level
106		PCB Ass'y-MPSS
107		PCB Ass'y Stereo Indicator
108		PCB Ass'y-Rec Indicator
109	M04165456	Switch Selector (Tape/Phono/Tuner)
110		PCB Ass'y-Deck Power Supply
201	M04167260	Meter Tuning
202		PCB Ass'y-Stereo Indicator
203	U241B735G02	PCB Ass'y-Amplifier
204		Radiator
205	U241B734G02	PCB Ass'y-Tuner
206		Flywheel
207		Holder-Dial
208	M04165230	Pointer
209		Drum
210		Spring
211	M04165651	Knob (Speaker)
212	M04165211	Knob (Preset)
213		PCB (D401)
214	M04165217	Knob (MPSS)

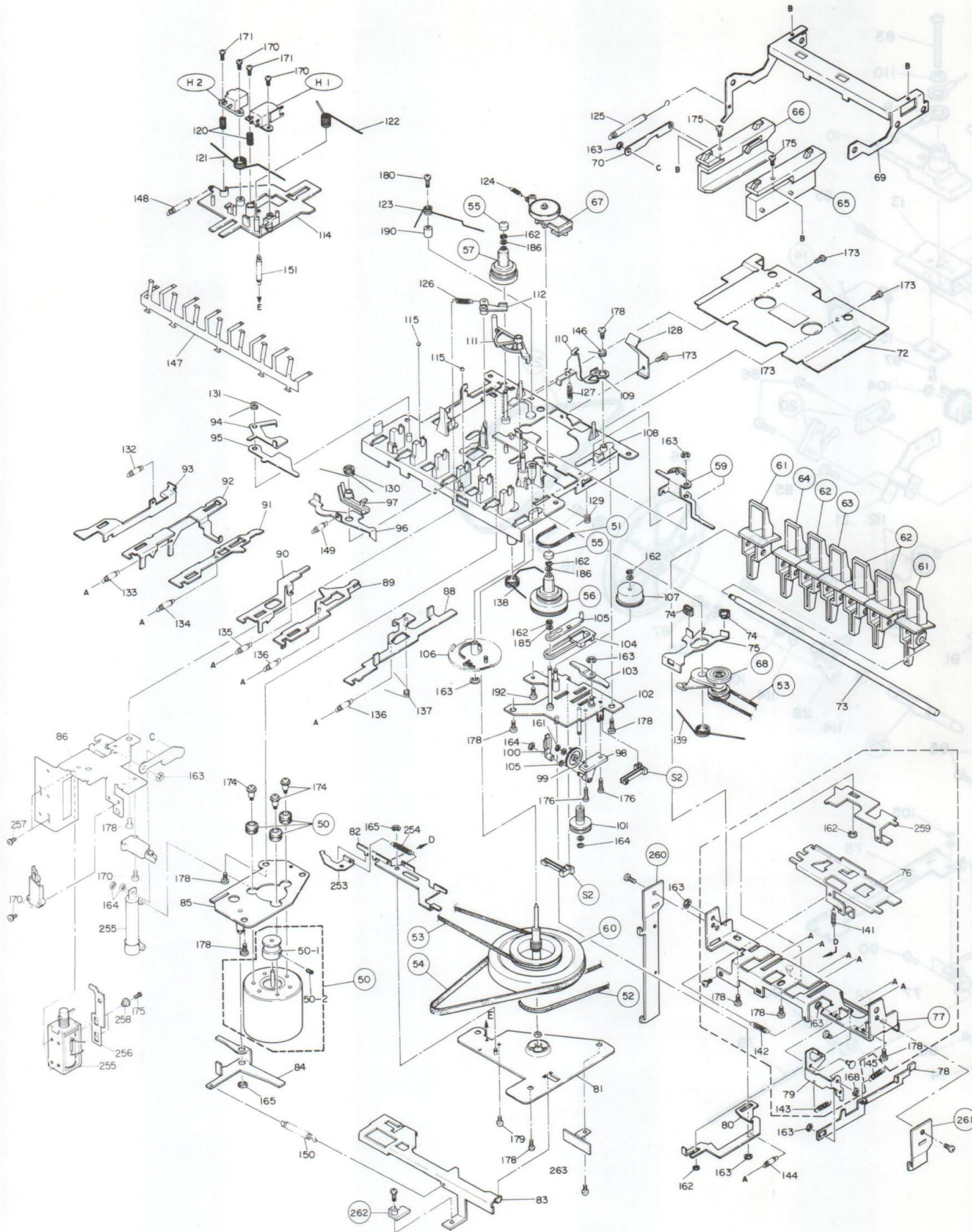
MECHANICAL PARTS DESCRIPTION

Symbol No.	Part No.	Description
1	M04165610	Tonearm Ass'y
2		Holder
3		Pin (Tonearm Lifter)
4		Holder
5		Nut M14
6		Shaft
7		Spring
8		Spring
9		Wire
10		Holder-Ass'y
11		Colour Metal
12		Rubber Spacer
13		Holder
14	M07469638	Motor (Vertical)
15		PCB Ass'y
16	M04165645	Cam
17		Holder
18	M04165646	Gear (Warm type for Vertical drive)
19	M05129552	Belt (Vertical Drive)
20	M07297450	Switch-Micro (up/down)
21		Holder
22	M04165540	Pulley
23		Pulley
24	M04165760	Cartridge Ass'y
25	M04162629	Belt (for flywheel)
26		Flywheel
27		Spring
28		Shaft Bearing
29	M04165602	Center Shaft
30		Lug Terminal
31	M07445621	Pulley-Motor
32		Rubber Spacer
33		Holder
34		Motor (for platter)
35		Boss
36		PCB Ass'y (Logic control)
37		PCB Ass'y (Equalizer)
38		Pin
39		Shield Plate
40		
41		PCB Ass'y
42		Holder
43	M07469639	Motor (Horizontal)
44	M04165621	Gear (Horizontal Drive, Large)
45	M04165622	Gear Ass'y (Horizontal Drive, Small)
46		Pulley (Small)
47		Pulley (Large)
48	M04162628	Belt (for Horizontal)
49		Cover (for Lamp)
50		Holder
51		Holder
52		Pin (for leading adjust)
53		Chassis Base
54	M04165601	Platter Ass'y
55	M04165715	Nut (for platter)
56		Spring
57		Colour Metal
58	M04165720	Holder (for cap support)
59		Shaft
60	M07445721	Cap (for disc clump)
61	M04165618	Arm-Rest
62		Rubber Cushion
63		Control Panel Ass'y

Symbol No.	Part No.	Description
64	M04165650	Knob (Start/Stop/Lift/Repeat/Speed)
65		PCB Ass'y
66		Rubber Cushion
67	M05067315	Transistor
68	M04165459	Switch-Micro (Rest)
69		Holder (for Rest Switch)
70		Pin (for rest adjust)
71		Colour Metal
72		Holder
73		Pulley
74		Spring
75		Slit Plate
76		Spring
77		Holder
78		Holder (for fixing shaft)
79		Shaft
80		
81		
82		
83		Screw Bind M3 x 25
84		Screw Bind M3 x 10
85		Screw M3 x 5
86		Set Screw M2.6 x 3
87		Screw Bind M2 x 5
88		Screw Bind M2.6 x 8
89		Set Screw M2.6 x 6
90		Screw Metal (Tap tight 3 x 6)
91		Screw Metal with collar (M2.6)
92		Screw Tapping 1-3 x 8
93		Screw Metal with Washer (M3)
94		Screw Polycarbonate M3 x 6
95		Screw Metal M3 x 16
96		Screw Metal (Tap tight 3 x 8)
97		Screw Bind M3 x 5
98		
99		
101		E-ring 2.5
102		E-ring 2.0
103		E-ring 5
104		E-ring 1.5
105		E-ring
106		E-ring
107		E-ring
108		
109		
110		Washer Toothed
111		Washer
112		Washer PL 2.1φ x 0.5t
113		Washer PL 3.1φ x 0.5t
114		Washer PL 2.1φ x 0.25t
115		Washer PL 5.2φ x 0.25t
116		Washer PL 3.1φ
117		Washer Metal 4φ

EXPLODED VIEW Deck Mechanism Section

MECHANICAL PARTS DESCRIPTION Deck Mechanism Section



Symbol No.	Part No.	Description
50	M05184501.	Motor Ass'y
50-1		Pulley
50-2		Screw-Set Screw
51	M04165550	Belt (Counter)
52	M05163553	Belt (Auto)
53	M05174550	Belt (FF)
54	M05163552	Belt (Capstan)
55	M05163060	Cap
56	M05163525	Reel Rest (Take-up)
57	M05163526	Reel Rest (Supply)
58	M05204390	Air damp Mechanism
59	M05163544	Pinch Roller
60	M05163520	Flywheel
61	M05177120	Knob (Eject/Pause)
62	M05177121	Knob (Stop/FF/Rew-
63	M05177122	Knob (Play)
64	M05195213	Knob (Rec)
65	M05163114	Holder-Cassette (R)
66	M05163115	Holder-Cassette (L)
67		Pulley Ass'y (Take-up Idler)
68	M05174540	Pulley Ass'y (Rew/FF)
69		Lever-Cassette
70		Lever-Case Support
71		
72	M05085176	Plate
73		Shaft (for push button)
74		Rubber-Brake
75		Link
76		Lever
77		Holder
78		Link-Auto-Stop
79		Lever-Stop
80		Link-Stop
81		Plate-Flywheel Support
82		Link
83		Link
84		Lever
85		Holder (for Motor fixing)
86		Holder
87		Lever-Cassette Case
88		Link-Pause
89		Link-FF
90		Link-Play
91		Link-REW
92		Link-REC
93		Link-Eject
94		Lever
95		Lever-Play Indicate
96		Lever
97		Lever-Plate Pushing
98		Holder
99		Gear
100		Lever
101		Gear
102		Holder (Take-up Reel Base)
103		Lever
104		Link
105		Lever-Rotate, Detect
106		Gear-Main Plate Drive
107		Gear-FF Drive
108		Base-Mechanism
109		Lever
110		Lever-Recoding Protect

Symbol No.	Part No.	Description
111		Lever-Main Plate Press
112		
113		Lever-Cueing, Repeat
114		Plate Main
115	M05021627	Steel Ball
116		Gear
117		Spring
118		Spring
119		Spring
120		Spring
121		Spring
122		Spring
123		Spring
124		Spring
125		Spring
126		Spring
127		Spring Cassette Press
128		Spring Cassette Press
129		Spring Cassette Press
130		Spring Cassette Press
131		Spring Cassette Press
132		Spring Cassette Press
133		Spring Cassette Press
134		Spring Cassette Press
135		Spring Cassette Press
136		Spring Cassette Press
137		Spring Cassette Press
138		Spring Cassette Press
139		Spring Cassette Press
140		Spring Cassette Press
150		Spring Cassette Press
151		Spring Cassette Press
161		E-ring 1.2φ
162		E-ring 1.5φ
163		E-ring 2.5φ
164		E-ring 2.0φ
165		E-ring 3.0φ
170		Screw M2 x 8
171		Screw M2 x 10
172		Screw M2 x 6
173		Screw 2-2.6 x 6
174		Screw 2.6 x 1.5 Special
175		Screw M2.6 x 5
176		Screw M2.6 x 8
177		Screw M2 x 4
178		Screw 1-3 x 8
179		Screw 2-3 x 6
180		Screw 2-3 x 4
190		Collar
192		Screw 1-3 x 14
251		Lamp
252		Holder
253		Link
254		Spring
255	M05204390	Solenoid
256		Link
257		Screw M2.6 x 4
258		Spacer
259		Link
260		Holder
261		Holder
262		Holder
263		Lug Terminal

PARTS LIST Amplifier, Tuner & Cabinet Section

NOTE: ⚠ and ■ marked components on the parts list have special characteristics to keep safety performance of this unit. When replacing any of these parts, be sure to use only specified parts.

Symbol No.	Part No.	Description
Diodes		
D201	M05200320	1S2473
D202	M05200320	1S2473
D203	M05200320	1S2473
D204	M07444320	SLP-154B (LED)
D205	M07492320	MZ306 (Zener)
D206	M07444320	SLP-1S4B (LED)
D207	M07492320	MZ306 (Zener)
D208	M05200320	1S2473
D209	M05200320	1S2473
D210	M05200320	1S2473
D301	M04167321	KV1226EF (Pair)
D303	M04167321	KV1226EF (Pair)
D302	M04167321	KV1226EF (Pair)
D304	M04167321	KV1226EF (Pair)
D305	M07492320	MZ306 (Zener)
D306	M07492320	MZ306 (Zener)
D307	M05200320	1S2473
D308	M05200320	1S2473
D309	M05200320	1S2473
D310	M05200320	1S2473
D311	M07496320	1S188AM
D312	M07496320	1S188AM
D313	M05200320	1S2473
D314	M05200320	1S2473
D315	M07492320	MZ306 (Zener)
D721	M07492320	MZ306 (Zener)
D821	M07492320	MZ306 (Zener)
D901	M07301320	GP-30G
D902	M07301320	GP-30G
D903	M07301320	GP-30G
D904	M07301320	GP-30G
D907	M04167320	MZ330 (Zener)
D908	M07492321	1S2471
D909	M07492321	1S2471
ICs		
IC201	M07460343	KB4441
IC202	M07361344	KB4400
IC301	M07465344	LA1240
IC721	M07390345	SI-1135HD 1/2
IC821	M07390345	SI-1135HD 1/2
IC901	M07447343	HA-12002
Transistors		
Q201	M04070304	2SC710
Q202	M07390304	2SA999
Q203	M07390304	2SA999
Q204	M07390303	2SC2320
Q205	M07390303	2SC2320
Q206	M07390303	2SC2320

Symbol No.	Part No.	Description
Q207	M07390303	2SC2320
Q208	M07390304	2SA999
Q209	M07390303	2SC2320
Q210	M07390303	2SC2320
Q211	M07390303	2SC2320
Q212	M07454303	2SD1012
Q213	M07390303	2SC2320
Q214	M07128303	2SC1735
Q215	M07390303	2SC2320
Q216	M07390303	2SC2320
Q301	M07390303	2SC2320
Q302	M07390303	2SC2320
Q304	M07390303	2SC2320
Q305	M07390303	2SC2320
Q306	M07390303	2SC2320
Q307	M07151310	2SD330
Q308	M07390303	2SC2320
Q901	M07071304	2SD358
Electronical Parts		
B201	M07085500	Trans Balun
C11	M07470360	C-Paper-450V 103M ⚠
C12	M07470360	C-Paper-450V 103M ⚠
C901	M07492360	C-Ceramic-500V 103M
C902	M07492360	C-Ceramic-500V 103M
C903	M07492360	C-Ceramic-500V 103M
C904	M07492360	C-Ceramic-500V 103M
C908	M07492360	C-Ceramic-500V 103M
C909	M07492360	C-Ceramic-500V 103M
C919	M07492360	C-Ceramic-500V 103M
C303	M07496355	VC-Trimmed
C308	M07496355	VC-Trimmed
C321	M07496355	VC-Trimmed
C325	M07496355	VC-Trimmed
CF201	M04167380	Ceramic-Filter
CF202	M04167380	Ceramic-Filter
F11	M04167490	Fuse-800mA-SEMCO ⚠
F721	M07362491	Fuse-3.15A-SEMCO ⚠
F821	M07362491	Fuse-3.15A-SEMCO ⚠
F901	M07362490	Fuse-4A-SEMCO ⚠
F902	M07362490	Fuse-4A-SEMCO ⚠
F903	M07341490	Fuse-315mA-SEMCO ⚠
J721	M07492475	Jack-Phones
J722	M04167575	Terminal Board
J723	M07335470	Connector-DIN
J724	M07335470	Connector-DIN
J725	M04167475	Pin Jack
K901	M04165465	Relay
L202	M04167530	Coil
L301	M04167540	Coil-ANT.
L721	M07492530	Coil
L821	M07492530	Coil
M201	M04167260	Meter
P11	M07459440	Power cord ⚠

PARTS LIST Turntable Section

NOTE: Δ and \square marked components on the parts list have special characteristics to maintain the safety performance of this unit. When replacing any of these parts, be sure to use only those specified parts.

Symbol No.	Part No.	Description
S11	M05113430	SW-Push (Power) Δ
S102	M04167450	SW-Push (Manual/FM Preset)
S721	M07444454	SW-Push (Speakers)
S723	M04165454	SW-Slide (LIN/AUX)
T11	M04167549	Trans-Power Δ
T201	M07482510	Trans-IF
T302	M04168510	Coil-OSC
T303	M07474511	Trans-IF
T304	M07470512	Trans-IF
VR201	M04165400	VR-W-Blook
VR202	M04165401	VR-Semi-B20K
VR203	M04165401	VR-Semi-B20K
VR204	M04165401	VR-Semi-B20K
VR205	M04165401	VR-Semi-B20K
VR206	M04165401	VR-Semi-B20K
VR207	M04165401	VR-Semi-B20K
VR208	M07115352	VR-Semi-B4.7K
VR209	M05067352	VR-Semi-B10K
VR210	M05067353	VR-Semi-B1K
VR211	M07115352	VR-Semi-B4.7K
VR212	M07115352	VR-Semi-B4.7K
VR213	M05091351	VR-Semi-B47K
VR721	M04165402	VR-TRI-B250K25 1/3
VR821	M04165402	VR-TRI-B250K25 1/3
VR722	M04165402	VR-TRI-B250K25 1/3
VR723	M04165403	VR-W-C100K25 1/2
VR823	M04165403	VR-W-C100K25 1/2
VR724	M04165403	VR-W-C100K25 1/2
VR824	M04165403	VR-W-C100K25 1/2
Z201	M07498470	Connector (Ant 75 ohm)
Z202	M04167576	Terminal Board
	M04167319	RF-PACK
Miscellaneous		
	M04168651	Knob (Power)
	M04167210	Knob (Speaker)
	M04165213	Knob (Bass/Treble/Mixing)
	M04165215	Knob (Balance)
	M04165214	Knob-Ass'y (Volume)
	M04165210	Knob-Ass'y (Tuning)
	M04165211	Knob (Preset)
	M04167213	Knob (Tape Select/Dolby NR/ Selector)
	M04165650	Knob (Start/Stop/Lift/Repeat/ Speed)
	M04165217	Knob (MPSS/FM Mode)
	M04165216	Knob (MPSS Set/Rec Mute)
	M04165212	Knob Ass'y (Manual/FM Preset)
	M04165230	Pointer

Symbol No.	Parts No.	Description
Diodes		
D101	M04165320	SLP-132B (LED)
D102	M04165320	SLP-132B (LED)
D103	M04165320	SLP-132B (LED)
D104	M07060320	1S2473VE
D105	M07060320	1S2473VE
D106	M07060320	1S2473VE
D107	M07141322	MZ314 (ZENER)
D108	M07171322	MZ310 (ZENER)
D109	M07297320	SP254FS
D110	M07300323	ESAB03
D111	M07060320	1S2473VE
D112	M07060320	1S2473VE
D113	M07060320	1S2473VE
D114	M07060320	1S2473VE
D115	M07060320	1S2473VE
D116	M07060320	1S2473VE
D117	M07060320	1S2473VE
D118	M07060320	1S2473VE
D119	M04165321	RD 3.0F (ZENER)
D120	M07060320	1S2473VE
D121	M07060320	1S2473VE
ICs		
IC101	M07297343	TC4011BP
IC102	M07437343	MSM-5831RS
IC103	M07370343	MPC4558C
IC104	M07445343	MSM4066
Transistors		
Q101	M07191303	PH101 (PHOTO)
Q102	M07191303	PH101 (PHOTO)
Q103	M07390303	2SC2320
Q104	M07390304	2SA999
Q105	M07390303	2SC2320
Q106	M07390304	2SA999
Q107	M07390303	2SC2320
Q108	M07390303	2SC2320
Q109	M07191303	PH101 (PHOTO)
Q110	M07191303	PH101 (PHOTO)
Q112	M07390303	2SC2320
Q113	M07137307	2SC1741
Q114	M07137308	2SA854
Q115	M07228303	2SD571
Q116	M07137308	2SA854
Q117	M07390303	2SC2320
Q118	M07113310	2SC1708
Q121	M07390303	2SC2320
Q122	M07390303	2SC2320
Q123	M07390303	2SC2320
Q124	M07390303	2SC2320
Q125	M07390303	2SC2320

PARTS LISTCassette Deck Section

NOTE: Δ and \square marked components on the parts list have special characteristics to maintain the safety performance of this unit. When replacing any of these parts, be sure to use only those specified parts.

Symbol No.	Parts No.	Description
Q126	M07390303	2SC2320
Q127	M07390303	2SC2320
Q128	M07137307	2SC1741
Q129	M07137308	2SA854
Q130	M07390303	2SA2320
Q131	M07390304	2SA999
Q132	M07390303	2SC2320
Q133	M07390303	2SC2320
Q134	M07390303	2SC2320
Q135	M07390303	2SC2320
Q136	M07137307	2SC2320
Q137	M07137308	2SA854
Q138	M07390304	2SA999
Q139	M07390303	2SC2320
Q140	M07390303	2SC2320
Q141	M07390303	2SC2320
Q142	M07390303	2SC2320
Q143	M07151310	2SD330
Q144	M07390303	2SC2320
Q145	M05067315	2SD361
Electrical parts		
C115	M07502360	C-ELECT-35V1000
LA101	M07374251	LAMP-12V 0.05A
LA102	M07374251	LAMP-12V 0.05A
LA103	M07374251	LAMP-12V 0.05A
LA104	M07297250	LAMP-5V 0.06A
LA105	M07297250	LAMP-5V 0.06A
LA106	M07374251	LAMP-12V 0.05A
M101	M07469638	MOTOR (VERTICAL)
M102	M07469639	MOTOR (HORIZONTAL)
M103	M04167638	MOTOR-ASS'Y
S101	M04165459	SW-MICRO
S102	M07297450	SW-MICRO
S103	M07297450	SW-MICRO
S104	M07445660	SW-PUSH
S105	M07445660	SW-PUSH
S106	M07445660	SW-PUSH
S107	M07445660	SW-PUSH
S108	M07445660	SW-PUSH
S109	M07445661	SW-SLIDE
VR101	M05104360	VR-SEMI-B220K

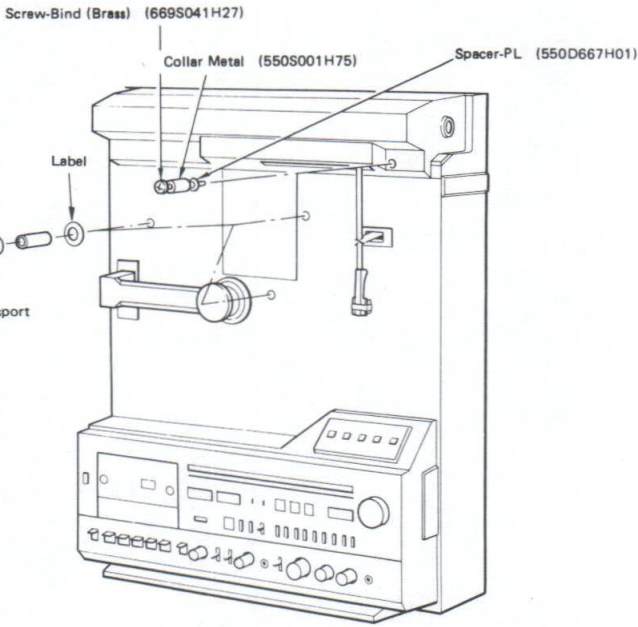
Symbol No.	Parts No.	Description
Diodes		
D401	M04167326	LN513RA (LED)
D405	M07444320	SLP-154B (LED)
D421	M05200320	1S2473
D422	M05200320	1S2473
D423	M05200320	1S2473
D424	M05200320	1S2473
D481	M07391320	1SR34-100
D482	M05200320	1S2473
D483	M05200320	1S2473
D501	M05200320	1S2473
D502	M07496320	1S188FM
D503	M05200320	1S2473
D504	M05200320	1S2473
D505	M05200320	1S2473
D506	M05200320	1S2473
D601	M05200320	1S2473
D602	M07496320	1S188FM
D603	M05200320	1S2473
D604	M05200320	1S2473
D605	M05200320	1S2473
D606	M05200320	1S2473
D951	M07391320	1SR34-100
D952	M07391320	1SR34-100
D953	M07391320	1SR34-100
D954	M07391320	1SR34-100
D955	M07391320	1SR34-100
D956	M07391320	1SR34-100
D957	M07391320	1SR34-100
D958	M07492322	MZ-316 (Zener)
D959	M07496321	MZ-312 (Zener)
D960	M07446324	MZ-305 (Zener)
D961	M05200320	1S2473
ICs		
IC401	M05177343	MSM5953RS
IC501	M04162343	NE645B
IC601	M04162343	NE645B
Transistors		
Q401	M07390303	2SC2320
Q402	M07390303	2SC2320
Q421	M07390303	2SC2320
Q422	M07390303	2SC2320
Q423	M07390304	2SA999
Q424	M07390303	2SC2320
Q425	M05147313	2SC2497
Q426	M07390303	2SC2320
Q481	M07141303	2SC1741
Q482	M07061304	2SD330
Q483	M07370305	2SD756
Q501	M07113310	2SC1708
Q502	M07390303	2SC2320
Q503	M07390303	2SC2320

NOTE: ⚠ and ■ marked components on the parts list have special characteristics to maintain the safety performance of this unit. When replacing any of these parts, be sure to use only those specified parts.

Symbol No.	Part No.	Description
Q504	M07390303	2SC2320
Q505	M07390303	2SC2320
Q506	M07390303	2SC2320
Q507	M07390303	2SC2320
Q509	M07390303	2SC2320
Q510	M07390303	2SC2320
Q601	M07113310	2SC1708
Q602	M07390303	2SC2320
Q503	M07390303	2SC2320
Q604	M07390303	2SC2320
Q605	M07390303	2SC2320
Q606	M07390303	2SC2320
Q607	M07390303	2SC2320
Q609	M07390303	2SC2320
Q610	M07390303	2SC2320
Electrical parts		
FL501	M05184480	FILTER
FL601	M05184480	FILTER
H1	M04165830	HEAD-REC/PLAY
H2	M05176831	HEAD-ERASE
J507	M07496475	JACK (Mic)
K901	M05204390	SOLENOID
L502	M05175420	COIL-393J
L503	M05110420	COIL-472J
L602	M05175420	COIL-393J
L603	M05110420	COIL-472J
L951	M04167536	COIL-102J
ME1	M04165261	METER
ME2	M04165261	METER
PL401	M04168250	LAMP-12V 0.05A
PL402	M04168250	LAMP-12V 0.05A
PL403	M04168250	LAMP-12V 0.05A
R447	M07133420	R-FUSE-1/2 W 10-K ⚠
R483	M07133420	R-FUSE-1/2 W 10-K ⚠
R526	M07133420	R-FUSE-1/2 W 10-K ⚠
R951	M05067365	R-FUSE-1/2 W100-K ⚠
S501	M05163431	SW-SLIDE
S502	M05147431	SW-LEVER
S503	M05162430	SW-LEVER
S504	M04165456	SW-LEVER
S505	M04165457	SW-SLIDE
S506	M04165458	SW-SLIDE
S507	M07445660	SW-PUSH
S508	M07445660	SW-PUSH
S509	M05163433	SW-REEF
S510	M05163433	SW-REEF
S511	M05174437	SW-MICRO
T481	M04167535	COIL-OSC
VR401	M04165406	VR-W-B50k25
VR402	M04165406	VR-W-B50k25
VR481	M05175361	VR-SEMI-B50K
VR482	M05175361	VR-SEMI-B50K
VR501	M05175360	VR-SEMI-B20k

Symbol No.	Part No.	Description
VR502	M05200360	VR-SEMI-B10K
VR503	M04165405	VR-W-A50K25
VR504	M05175361	VR-SEMI-B50K
VR601	M05175360	VR-SEMI-B20K
VR602	M05200360	VR-SEMI-B10K
VR603	M04165405	VR-W-A50K25
VR604	M05175361	VR-SEMI-B50K
Miscellaneous		
	M04165550	Belt (for counter)
	M05174550	Belt (FF/REW)
	M05163552	Belt (Capstan)
	M05163553	Belt (End stop)
	M04165404	Counter
	M05177120	Knob (Eject/Pause)
	M05177121	Knob (FF/REW/STOP)
	M05177122	Knob (Play)
	M05195213	Knob (Rec)
	M04167211	Knob-Ass'y (Level-R)
	M04167212	Knob-Ass'y (Level-L)
	M05163060	Reel Cap
	M05021627	Steel Ball
Packing Materials, etc.		
300	M07460540	Lead-MW/LW Antenna
300	M04057540	Antenna-FM
300	M04165012	Driver
300	M04165013	Spanner
300	M07445603	Adaptor
300	M07445747	Spacer
300	M07445777	Screw-Metal
301	M04165725	Shade for LP
302	M04165726	Shade for EP
303	M04165901	Cushion-Paper
304	M07445690	Dust cover
305	M04165910	Cushion-Mold
306	M04165910	Cushion-Mold

PACKAGING INSTRUCTION



- * Accessories (Contents of package)
- | | |
|-----------------------|---------------|
| Parts bag | (U871S006H21) |
| Instruction booklet | (U871B005H89) |
| Warranty card | (U850B090H28) |
| Lead (for AM antenna) | (M07460540) |
| Antenna-FM | (M04057540) |
| Driver | (M04165012) |
| Spanner | (M04165013) |
| Adaptor-45r.p.m | (M07445603) |
| Spacer | (M07445747) |
| Screw-Metal | (M07445777) |

