eurovox

SERVICE MANUAL

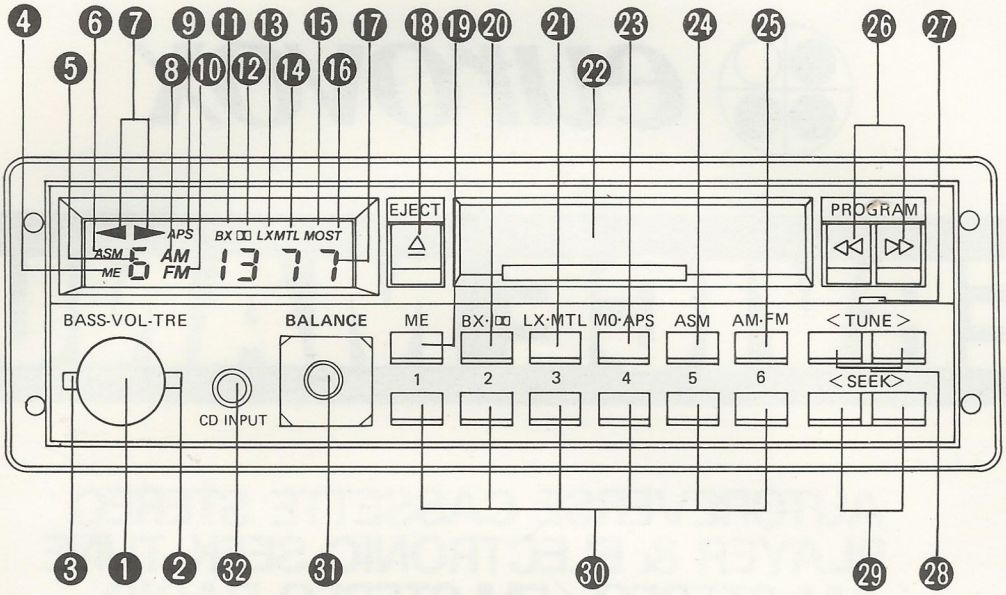
AUTOREVERSE CASSETTE STEREO PLAYER & ELECTRONIC SEEK TUNE AM STEREO/FM STEREO RADIO,

with Long Range, High Power, Joystick, Dolby NR
12 Programmable Memories & 12 Auto Store Memories

MCC-6860E

Printed in Japan Jun. '88 Modification Reserved

LOCATION OF CONTROLS



1. Power On-Off Switch/Volume Control/Clock Call Switch (Push)
2. Treble Control
3. Bass Control
4. Memory Enable (ME) Indicator
5. Digital Channel Number Indicator
6. Automatic Station Store Memory (ASM) Indicator
7. Program Indicators
8. AM Indicator
9. Automatic Program Selection (APS) Indicator
10. FM Indicator
11. Wide/Narrow (BX) Indicator
12. Dolby Noise Reduction Indicator
13. Local (LX) Indicator
14. Metal Tape Selector (MTL) Indicator
15. Mono (MO) Indicator
16. Stereo (ST) Indicator
17. Digital Frequency/Clock Display
18. Manual Cassette Eject Button
19. Memory Enable Switch
20. Wide/Narrow (BX) Selector, Dolby Noise Reduction Switch
21. Local/Distant Selector, Metal Tape Selector
22. Cassette Door
23. Stereo/Mono Selector, Automatic Program Selection Switch
24. Automatic Station Store Memory Switch
25. AM/FM Waveband Selector
26. Fast Forward/Fast Rewind, Program Selector Button
27. Security Code Indicator
28. Manual Tuning Switch
29. Automatic Seek Tuning Switch
30. Memory Address Switches
31. Joystick Balance Control
32. Digital Input Socket

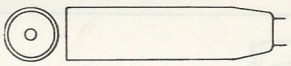
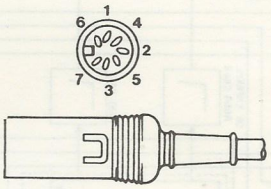
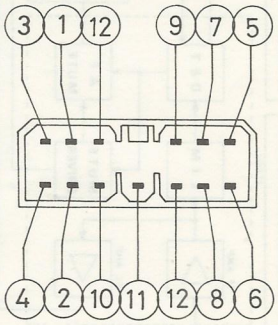
GENERAL INFORMATION

SEMICONDUCTORS: 11 ICs, 3 FETs, 63 Transistors, 69 Diodes, 1 LCD, 2 LEDs

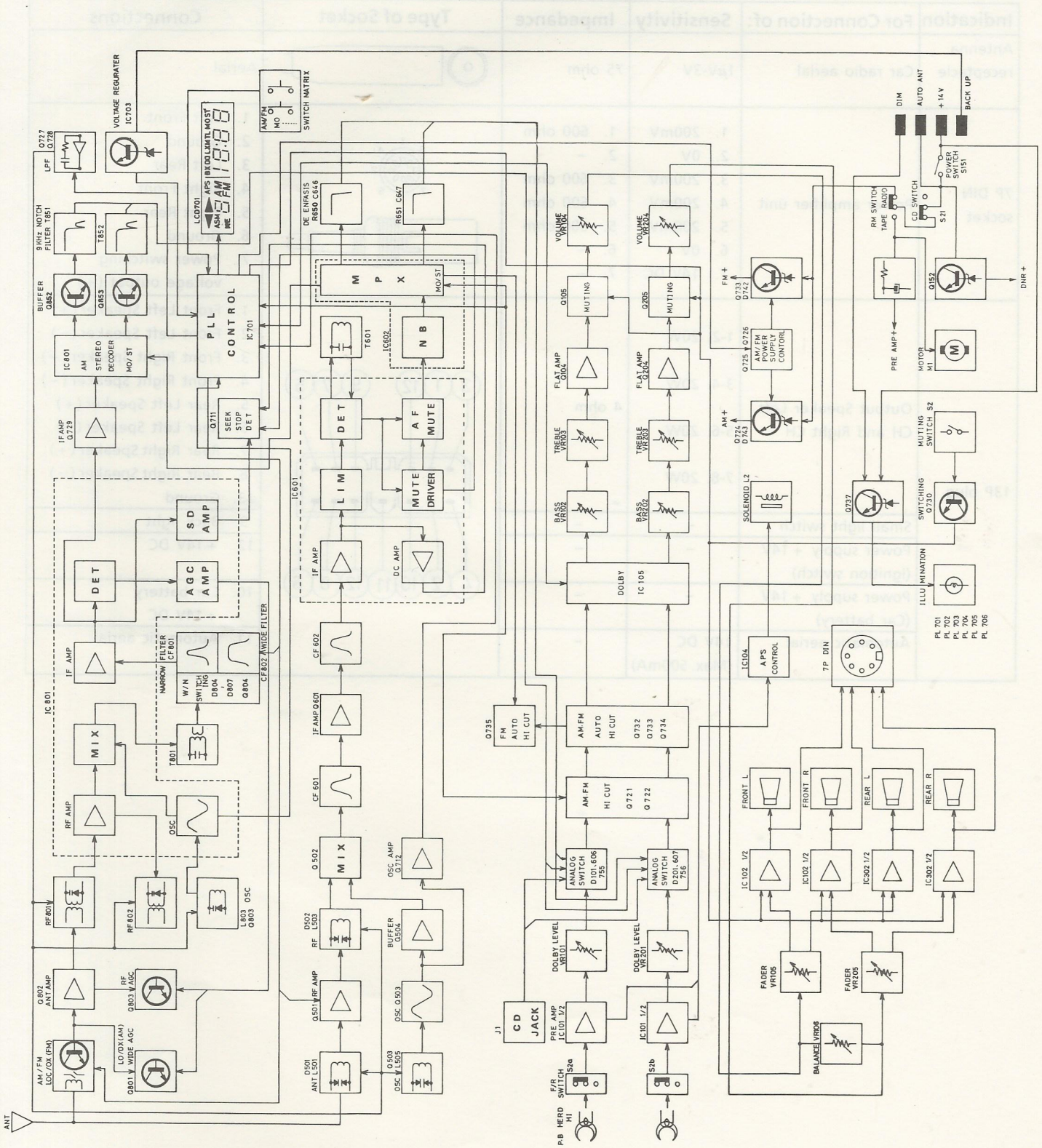
DESCRIPTION	REF. No.	Q'TY	EQUIVALENT
(AM Radio)			
AM IC LA1135	IC801	1	
AM stereo decoder IC MC1302BP	IC802	1	
IF amplifier transistor 2SC2458L(BL)	Q729	1	2SC1815(BL), 2SC2784(K) or (E), 2SC2458(BL)
RF AGC transistor 2SC2814(F4)	Q801, 803	2	2SC2716(O), 2SC2619(B)
Radio frequency amplifier FET 2SK163(M)	Q802	1	2SK523(M)
Switching transistor, BX 2SA1342	Q804	1	
IF amplifier transistor 2SC2814(F4)	Q805	1	2SC2716(0), 2SC2619(B)
Audio buffer transistor 2SC2603(F) or (E)	Q852, 853	2	2SC2785(E) or (F), 2SC536(F) or (G), 2SC1740S(Q) or (R)
Switching transistor (MO/ST) 2SA1115(E) or (F)	Q854	1	2SA1175(E) or (H), 2SA933S(Q) or (R)
Buffer transistor 2SC2603(F) or (E)	Q855	1	2SC2785(E) or (F), 2SC536(F) or (G), 2SC1740S(Q) or (R)
Buffer transistor 2SC2458L(BL)	Q856	1	2SC1815(BL), 2SC2784(K) or (E), 2SC2458(BL)
Switching transistor DTC144ES	Q857, 858	2	
Switching diode MA165	D755, 756	2	1S1588, 1S2076, GMA-01, 1SS133
Varactor diode SVC321SP	D801, 802, 803	3	1SV149
Switching diode 1SS110	D804, 805, 806, 807	4	1SS133, 1S1555
Voltage shift diode 1SS110	D808	1	1SS133, 1S1555
(FM Radio)			
IF IC LA1140	IC601	1	
NB/MPX IC STK3400A	IC602	1	
Radio frequency amplifier FET 3SK101(GR)	Q501	1	3SK74
Mixer transistor 2SC2714(R)	Q502	1	2SC2714(O) or (Y)
Oscillator transistor 2SC2714(R)	Q503	1	2SC2714(O) or (Y)
Oscillator buffer FET 3SK302	Q504	1	3SK360
IF amplifier transistor 2SC930(D)	Q601	1	2SC2787(K) or (L)
Switching transistor DTC144ES	Q602	1	
Noise amplifier transistor 2SC2458L(BL)	Q603	1	2SC1815(BL), 2SC2784(K) or (E), 2SC2458(BL)
Varactor diode 1SV103	D501, 502, 503	3	SVC211
Voltage shift diode MA165	D601, 602, 603, 605, 754	5	1S1588, 1S2076, GMA-01, 1SS133
LED TLR211	D604	1	
Switching diode MA165	D606, 607	2	1S1588, 1S2076, GMA-01, 1SS133
(PLL Control)			
PLL LSI and controller μPD1708AG-715	IC701	1	
Regulator IC AN8005	IC703	1	
Switching transistor 2SC2412(K)	Q701, 704, 705	3	
Switching transistor DTA144EK	Q702, 706, 707, 708, 741	5	
Switching transistor DTC144EK	Q703, 740	2	
OSC buffer amplifier transistor (FM) 2SC930(D)	Q712	1	2SC2787(K0 or (L)
AGC cut transistor DTC144ES	Q713	1	
Switching transistor, LOC/DX, Mute, BX DTC144ES	Q714, 719, 739	3	
Switching transistor, LOC/DX, DTC124ES	Q715	1	
Switching transistor, W/N 2SA1115(E) or (F)	Q716	1	
Switching transistor, W/N DTC144ES	Q717	1	
Switching transistor, MO DTC144ES	Q718	1	
Low pass filter transistor 2SC2458L(BL)	Q727, 728	2	2SC1815(BL), 2SC2784(K) or (E), 2SC2458(BL)
Muting transistor DTA124ES	Q738	1	

DESCRIPTION	REF. No.	Q'TY	EQUIVALENT
Switching diode RLS73	D701, 702 704, 705, 706, 707, 708, 709, 710, 711, 712, 713, 757, 758	14	
LED PR4524K	D703	1	
Matrix diode DAP401	D714-717, 718-721	2	
Arc suppresser diode MA165	D729	1	1S1588, 1S2076, GMA-01, 1SS133
Switching diode MA165	D730, 731, 732, 733, 734	5	1S1588, 1S2076, GMA-01, 1SS133
Zener diode EQA02-09(SA)	D739	1	MZ309, RD10E(B1), HZ9(C2)
Voltage shift diode MA165	D752	1	1S1588, 1S2076, GMA-01, 1SS133
Noise suppresser diode EQA02-09(SA)	D753	1	MZ309, RD10E(B1), HZ9(C2)
(Regulator and mute)			
Switching transistor DTC144ES	Q720, 725, 726	3	
Regulator transistor 2SD973(S)	Q723, 724	2	
Switching diode MA165	D741, 744, 745, 746	4	1S1588, 1S2076, GMA-01, 1SS133
Zener diode EQA02-09(SA)	D742, 743	2	MZ309, RD10E(B1), HZ9(C2)
(Search stop and AM/FM auto hi-cut)			
Switching transistor 2SC2458L(BL)	Q711, 735	2	2SC1815(BL), 2SC2784(K) or (E), 2SC2458(BL)
High cut transistor 2SD1021(F) or (E)	Q721, 722	2	
Band pass filter and amplifier transistor 2SC2458L(BL)	Q732, 733	2	2SC1815(BL), 2SC2784(K) or (E), 2SC2458(BL)
Switching transitor 2SC536(F) or (G)	Q734	1	2SC2785(E) or (F), 2SC2603(F) or (E), 2SC1740S(Q) or (R)
Switching diode MA165	D725, 726, 727, 728, 735, 736, 737, 738	8	1S1588, 1S2076, GMA-01, 1SS133
(Audio)			
Pre amplifier IC M51522L	IC101	1	
Power amplifier IC AN7171K	IC102, 302,	2	
CPS IC M51143AL	IC104	1	
Dolby IC HA12046	IC105	1	
Switching transistor DTC144ES	Q101, 102, 201, 730	4	
Switching transistor 2SC2673(Q)	Q103	1	
Flat amplifier transistor 2SC2812(L6)	Q104, 204	2	
Muting transistor 2SD1048	Q105, 205	2	
Regulator transistor 2SC2458L(BL)	Q152	1	2SC1815(BL), 2SC2784(K) or (E), 2SC2458(BL)
Switching transistor 2SC536(F) or (G)	Q731	1	2SC2785(E) or (F), 2SC2603(F) or (E), 2SC1740S(Q) or (R)
Arc suppresser diode DS135(D)	D1	1	ERB12(02)
Switching diode RLS73	D21, 22	2	
Protector diode DS135(D)	D51	1	ERB12(02)
Switching diode MA165	D101, 102, 201	3	1S1588, 1S2076, GMA-01, 1SS133
Zener diode EQA02-09(SA)	D157	1	MZ309, RD10E(B1), HZ9(C2)
(Display)			
Regulator transistor 2SC1846(R)	Q737	1	
Switching diode MA165	D748	1	1S1588, 1S2076, GMA-01, 1SS133
Zener diode EQA02-09(SA)	D754	1	
LCD Display with switches	LCD701	1	

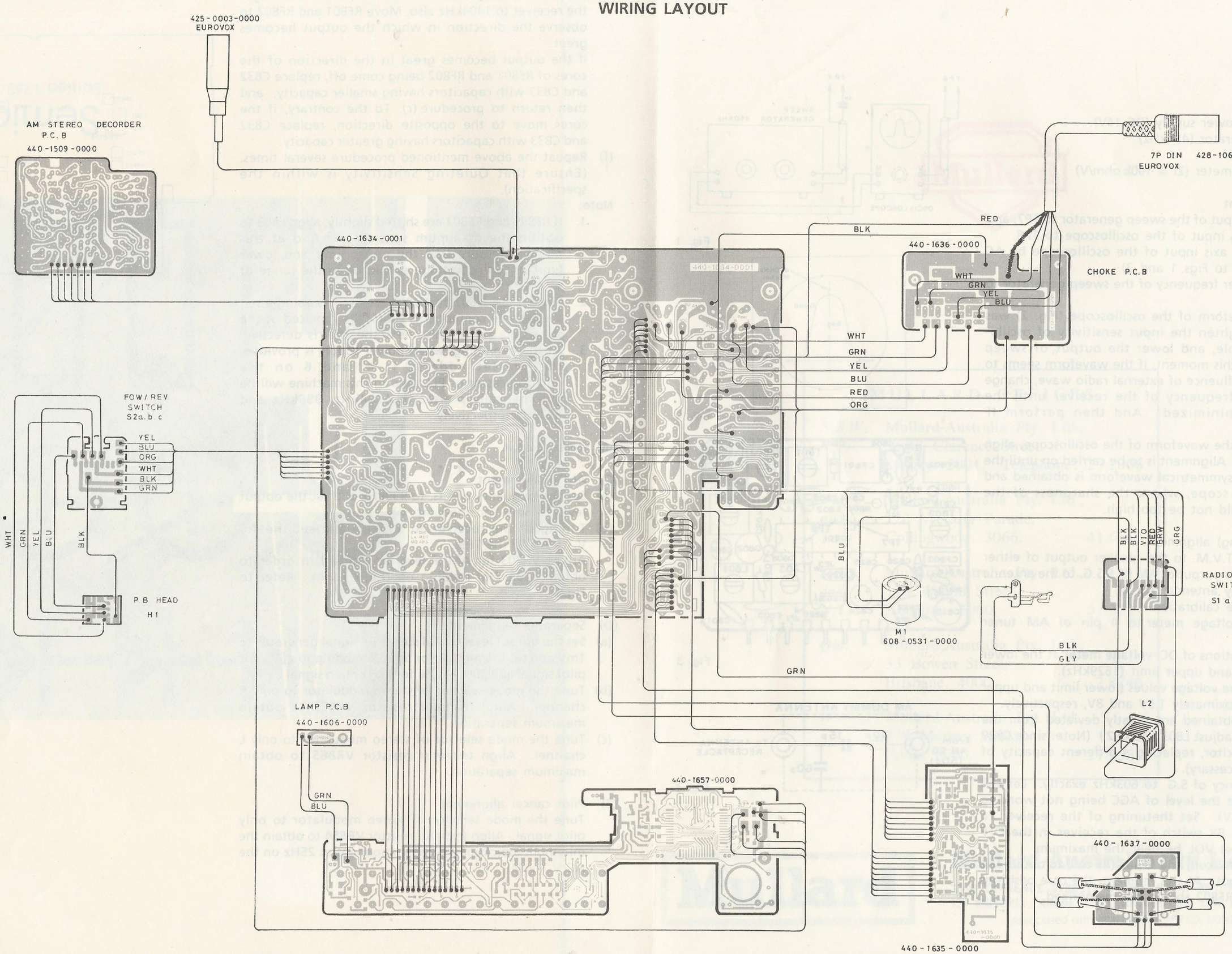
INPUT AND OUTPUT

Indication	For Connection of:	Sensitivity	Impedance	Type of Socket	Connections
Antenna receptacle	Car radio aerial	1μV-3V	75 ohm		Aerial
7P DIN socket	Power amplifier unit	1. 200mV 2. 0V 3. 200mV 4. 200mV 5. 200mV 6. 0V 7. 14V DC	1. 600 ohm 2. – 3. 600 ohm 4. 600 ohm 5. 600 ohm 6. – 7. –		1. Left Front 2. Ground 3. Left Rear 4. Right Front 5. Right Rear 6. Ground 7. Power switching voltage output (+)
13P plug	Output Speaker Left CH and Right CH	1-2. 20W 3-4. 20W 5-6. 20W 7-8. 20W	4 ohm		1. Front Left Speaker (+) 2. Front Left Speaker (–) 3. Front Right Speaker (+) 4. Front Right Speaker (–) 5. Rear Left Speaker (+) 6. Rear Left Speaker (–) 7. Rear Right Speaker (+) 8. Rear Right Speaker (–) 13. Ground
	Small light switch	–	–		9. Back light
	Power supply +14V (Ignition switch)	–	–		12. +14V DC
	Power supply +14V (Car battery)	–	–		10. Car battery +14V DC
	Automatic aerial	14V DC (Max. 500mA)	–		11. Automatic aerial

CIRCUIT FUNCTION DIAGRAM



WIRING LAYOUT



SERVICE ALIGNMENT PROCEDURE

RADIO SECTION

AM Circuit

Equipment Required

1. AC V.T.V.M.
2. Stabilized power supply (DC 14V)
3. Sweep generator (450kHz)
4. AM RF S.S.G.
5. DC voltage meter (Zi ≧ 100k ohm/V)

(A) AM IF alignment

(a) Connect the output of the sweep generator to TP7, and the vertical axis input of the oscilloscope to TP8. Let the vertical axis input of the oscilloscope be AC coupling (Refer to Figs. 1 and 3).

(b) Adjust the center frequency of the sweep generator to 450kHz.

(c) When the waveform of the oscilloscope (Fig. 2) was confirmed, heighten the input sensitivity of oscilloscope as possible, and lower the output of sweep generator. At this moment, if the waveform seems to be under the influence of external radio wave, change the receiving frequency of the receiver until the influence is minimized. And then perform IF adjustment.

(d) While viewing the waveform of the oscilloscope, align T801 and T802. Alignment is to be carried on until the maximum and symmetrical waveform is obtained and shown on the scope, where the sharpness of the waveform should not be too high.

(B) AM RF (Tracking) alignment

(a) Connect the V.T.V.M. to the speaker output of either channel, and the output of AM RF S.S.G. to the antenna through dummy antenna (Fig. 4).

(b) Turning voltage calibration
Connect DC voltage meter to 4 pin of AM tuner board.
Read the indications of DC voltage meter at the lower limit (522kHz) and upper limit (1629kHz).
Confirm that the voltage values (lower limit and upper limit) are approximately 1.5V and 8V, respectively.
If the values obtained are greatly deviated from the standard ones, adjust L803 and C829 (Note: since C829 is a fixed capacitor, replacing a different capacity of capacitor is necessary).

(c) Set the frequency of S.G. to 603kHz exactly. Let the output level be the level of AGC being not working (less than 30μV). Set thetuning of the receiver to 603kHz. Place BX switch of the receiver in the OFF position, and let VOL be near the maximum.

(d) Align RF801 (ANT coil) and RF802 (RF coil) to obtain the maximum output. At this moment, the core positions of RF801 and RF802 should be memorized.

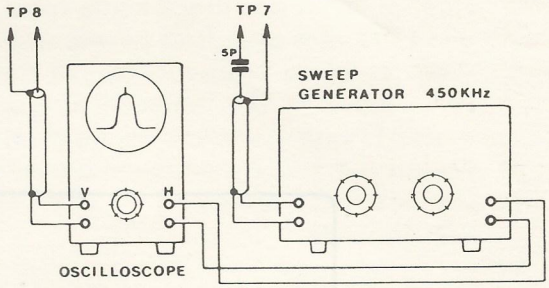


Fig. 1

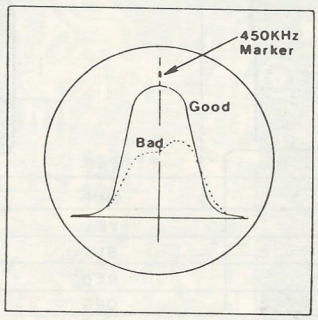


Fig. 2

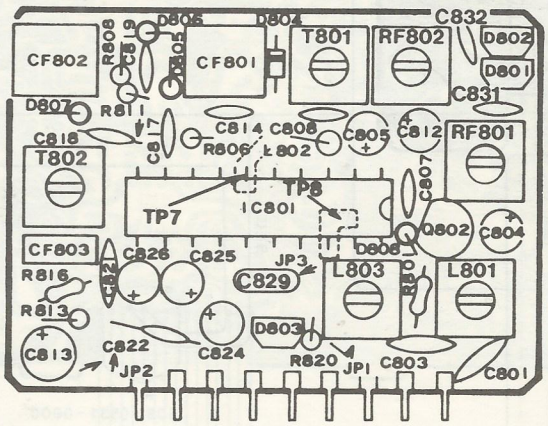


Fig. 3

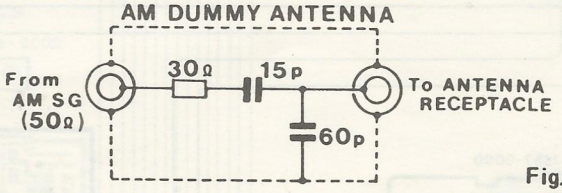


Fig. 4

(e) Set the frequency of S.G. to 1404kHz, and the tuningof the receiver to 1404kHz also. Move RF801 and RF802 to observe the direction in which the output becomes great.
If the output becomes great in the direction of the cores of RF801 and RF802 being come off, replace C832 and C833 with capacitors having smaller capacity, and then return to procedure (c). To the contrary, if the cores move to the opposite direction, replace C832 and C833 with capacitors having greater capacity.

(f) Repeat the above mentioned procedure several times. (Ensure that Quieting Sensitivity is within the specification).

Note:

1. If RF801 and RF802 are shifted slightly, align L803 to obtain the maximum sensitivity. And at this moment, ensure that the upper limit and lower limit of tuning voltage should be in the range of 1V – 8.5V.
2. Since D801, D802 and D803 are used as a single set, these three components should be replaced at the same time even if only one of the three is defective.
3. At the beginning, when power supply is provided, the pre-set address 1, 4, and 6 on the microprocessor of PLL used in this machine will be automatically pre-set to 1404kHz, 999kHz and 603kHz respectively.

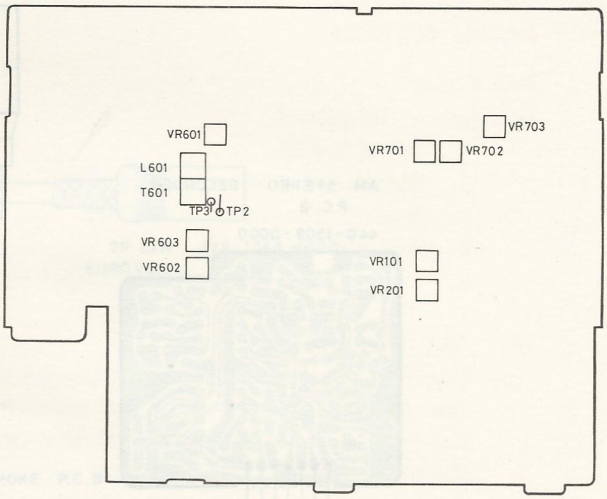


Fig. 5

AM Stereo Circuit

(C) AM IF alignment

(a) Set the frequency of S.G. to 999kHz and set the output level to 5mV (no modulation).

(b) Tuning of the receiver to 999kHz and set the AC V.T.V.M. to the TP9.
Adjust VR703 for AM IF level adjustment in order to obtain 220mV of reading on the V.T.V.M. Refer to Fig.5.

(D) Separation alignment

(a) Set the output level of AM stereo RF signal generator to 1mV and set the modulator to 60% modulation (4% for pilot signal and 30% + 30% for 1kHz main signal L + R).

(b) Tune the mode selector of stereo modulator to only R channel. Align trimmer resistor VR852 to obtain maximum separation.

(c) Tune the mode selector of stereo modulator to only L channel. Align trimmer resistor VR865 to obtain maximum separation.

(E) Pilot cancel alignment
Tune the mode selector of stereo modulator to only pilot signal. Align trimmer resistor VR854 to obtain the minimum indication of leak component at 25Hz on the AC V.T.V.M.

FM Circuit

Equipment Required

1. AC V.T.V.M.
2. Stabilized power supply (DC 14V)
3. Sweep generator (10.7MHz)
4. FM RF Signal generator
5. Frequency counter
6. Stereo modulator
7. DC Voltage meter (Zi ≧ 100k ohm/V)

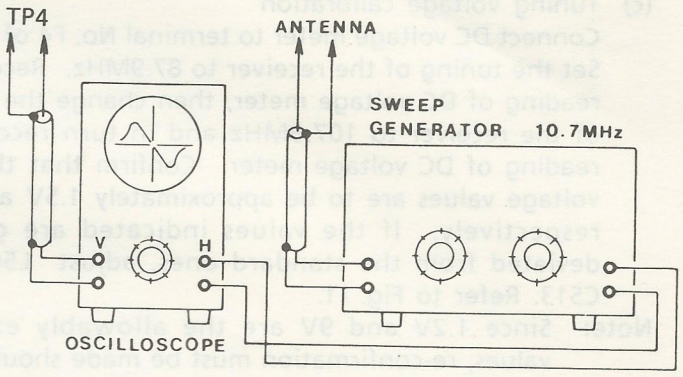


Fig. 6

(A) FM IF alignment

(a) Connect the output of sweep generator to the antenna, and the vertical input of oscilloscope to TP4. Refer to Fig. 6.

(b) Set the center frequency of sweep generator to 10.7MHz.

Note: Heighten the input sensitivity of oscilloscope as possible. The output level of sweep generator should be set at the level at which the limiter of IF amplifier can not be working.

(c) Align T501 in order that the waveform of the oscilloscope may be the same as that shown in Fig. 7. The amplitude of the waveform should be maximum and symmetrical with respect to the vertical axis, and the end portion should be round shaped.

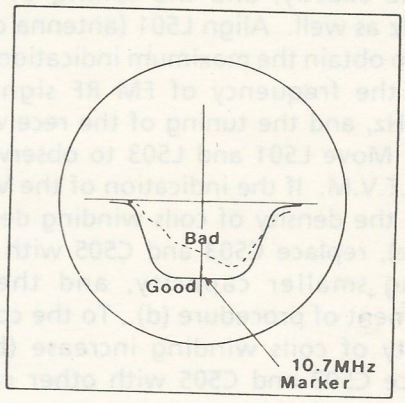


Fig. 7

(d) Place C.R circuit in Fig. 8 to the vertical input of oscilloscope, and connect the input to TP5. At this moment, the input sensitivity of oscilloscope is lower than that in procedure (b), and the output level of sweep generator will lower further.

(e) Align T601 to have the waveform shown on the oscilloscope be the same as that shown in Fig. 9.

(f) Connect the output of FM RF signal generator to the antenna through dummy antenna. Set the frequency of FM RF sweep generator to 98MHz exactly, and tune the receiver to 98MHz as well. Let the output level of FM RF sweep generator be 1mV. Refer to Fig. 10.

(g) Connect DC voltage meter to TP2 and TP3. The voltage range of the meter should be set lower than 0.5V and then align T601 until the indication of voltage meter is at 0V.

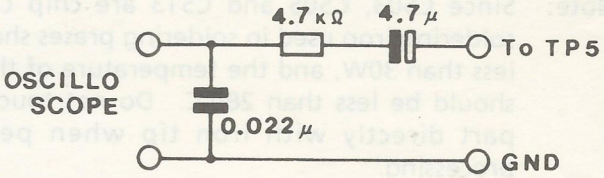


Fig. 8

(B) FM RF board alignment

(a) Connect FM RF S.G. to the antenna of the receiver through dummy antenna, and AC V.T.V.M. to the speaker output of either channel.

(b) Set the output level of FM RF signal generator to 3μV, and modulation to 1kHz deviation (30%). Adjust VOL of the receiver to the adequate position in accordance with indication of AC V.T.V.M.

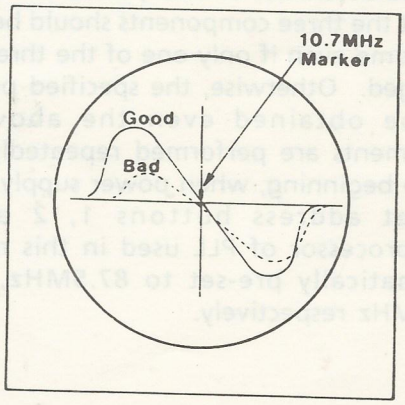


Fig. 9

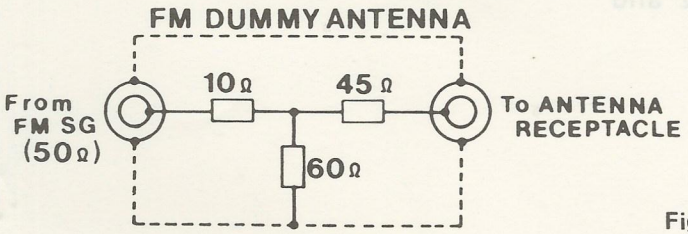


Fig. 10

(c) Tuning voltage calibration
Connect DC voltage meter to terminal No. F4 of FM RF. Set the tuning of the receiver to 87.9MHz. Record the reading of DC voltage meter, then change the tuning of the receiver to 107.9MHz and in turn record the reading of DC voltage meter. Confirm that the two voltage values are to be approximately 1.5V and 7V, respectively. If the values indicated are greatly deviated from the standard ones, adjust L505 and C513. Refer to Fig. 11.

Note: Since 1.2V and 9V are the allowably extreme values, re-confirmation must be made should L505 or C513 be moved for further alignment.

(d) Tune the frequency of FM RF signal generator to 90MHz exactly, and the tuning of the receiver to 90MHz as well. Align L501 (antenna coil) and L503 (RF coil) to obtain the maximum indication of the V.T.V.M.

(e) Tune the frequency of FM RF signal generator to 106MHz, and the tuning of the receiver to 106MHz as well. Move L501 and L503 to observe the reading of the V.T.V.M. If the indication of the V.T.V.M. increases when the density of coils winding decreases (becomes coarse), replace C503 and C505 with other capacitors having smaller capacity, and then perform the alignment of procedure (d). To the contrary, when the density of coils winding increase (becomes dense), replace C503 and C505 with other capacitors having larger capacity.
Refer to Fig. 11.

(f) Repeat the alignment of procedure (d) and (e) to obtain the maximum indication of the V.T.V.M.

Note: Since C503, C505 and C513 are chip capacitors, soldering iron used in soldering prases should be of less than 30W, and the temperature of the iron tip should be less than 280°C. Do not touch ceramic part directly with iron tip when performing processing.

Note:

1. If the change of indication of the V.T.V.M. is only a bit when moving L501 and L503 for adjustment, adjust L505 at 90MHz to obtain maximum sensitivity.
2. The characteristics of D501, D502 and D503 are similar so that the three components should be replaced at the same time even if only one of the three is defective or damaged. Otherwise, the specified performance may not be obtained even the above mentioned adjustments are performed repeatedly.
3. At the beginning, when power supply is provided, the pre-set address buttons 1, 2 and 3 on the microprocessor of PLL used in this machine will be automatically pre-set to 87.5MHz, 98.1MHz and 107.9MHz respectively.

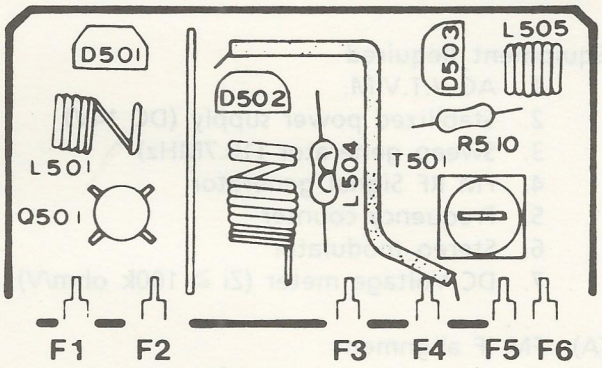


Fig. 11

(g) Gain adjustment
Tune the frequency of FM RF signal generator to 98MHz and output level to 3.2μV (no modulation). Set the tuning of the receiver to 98MHz, and set VOL to the maximum. Align trimmer resistor VR601 to obtain the minimum indication of the V.T.V.M.

Note: Noise may be small even if trimmer resistor is dialed to the extreme position, counterclockwise. But, the optimum position of trimmer resistor is, in general at central part.

(C) FM MPX Circuit alignment

(a) Tune the frequency of FM RF signal generator to 98MHz and output level to the no modulation value of 1mV.

(b) MPX separation alignment
Set the output level of FM RF signal generator to 1mV, and set the modulator to 75kHz deviation (10% for pilot signal and 90% for 1kHz main signal L + R). Tune the frequency of FM RF signal generator to 98MHz and receive 98MHz by the receiver. Adjust balance volume to have the right and left volumes be equal.

(c) Tune the mode selector of the stereo modulator to only R channel. Align trimmer resistor VR602 to obtain maximum separation Fig. 5.

(d) Stereo noise control level alignment
Let the stereo modulator be at the same state as that set in procedure (d) and then set the output level of FM RF signal generator to 316μV. Align trimmer resistor VR603 to have separation of 20dB. Fig. 5.

Note: Regarding relationship between a signal output level and a reading of the signal generator,

(1) Count directly a reading of the attenuator. In case the output of the signal generator is "Load type".

(2) Count 1/2 of a reading of the attenuator, in case the output of the signal generator is "Open type".

PLL Microprocessor Circuit

Equipment Required

1. Stabilized power supply (DC 14V)
2. Frequency counter with more than 7 digits

Adjustment in crystal oscillator frequency

(a) Connect the input of frequency counter to TP9. Place the band changeover switch of the receiver in AM position and set receiving frequency to 1404kHz.

(b) Align trimmer capacitor TC701 to have the indication of frequency counter be of 1854000Hz. Refer to Fig. 12.

Note: If receiving frequency of the receiver is not 1404kHz, let the receiving frequency be added by 450kHz, by performing the alignment of TC701 (trimmer capacitor). Correctly perform the alignment; otherwise radio will be affected.

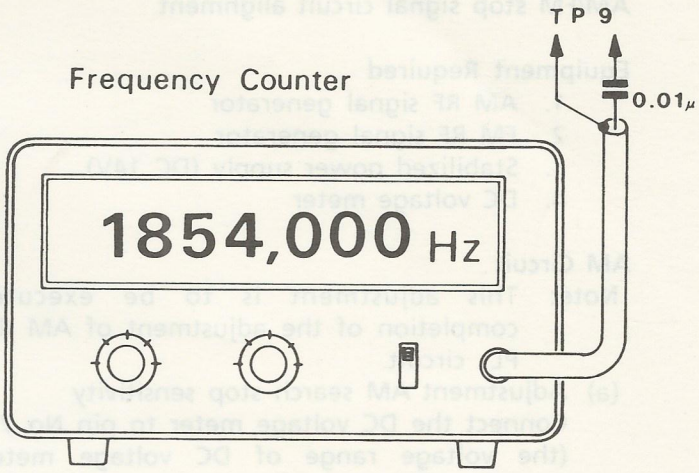


Fig. 12

AM/FM stop signal circuit alignment

Equipment Required

1. AM RF signal generator
2. FM RF signal generator
3. Stabilized power supply (DC 14V)
4. DC voltage meter

AM Circuit

Note: This adjustment is to be executed after completion of the adjustment of AM IF, RF and PLL circuit.

(a) Adjustment AM search stop sensitivity
Connect the DC voltage meter to pin No. 7 of IC701 (the voltage range of DC voltage meter is 5V range). And set the frequency of AM signal generator to 999kHz and set the output to 40μV.
While observing DC voltage meter, align trimmer resistor VR702. The alignment is made until the indication of DC voltage 3~4V. Refer to Fig. 5.

FM Circuit

Note: This adjustment is to be executed after completion of the adjustment of FM IF RF and PLL circuit.

(a) Confirmation of search stop band
Connect the output of FM RF signal generator to the antenna, and DC voltage meter to pin No. 7 of IC701 (The voltage range of DC voltage meter is set at 5V). Let the output level of FM RF signal generator be of 1mV and set the frequency to 98MHz. Set the tuning of the receiver to 98MHz to confirm receiving condition.

(b) While observing the DC voltage meter, change the frequency of FM RF signal generator from the set frequency to higher frequency and to lower frequency. Record or memorize the frequencies at which the reading of DC voltage meter starts dropping.
Confirm that the differential of the two frequencies recorded or memorized is to be about 40~60kHz.
If these two frequencies are unbalanced, execute procedure (f) and (g) of (A) FM IF alignment again.

(c) Adjustment of FM search stop sensitivity
Set the frequency of FM RF signal generator to 98MHz and set the output to 14μV. While observing DC voltage meter, align trimmer resistor VR701. The alignment is made until the indication of DC voltage is of 3~4V.
Refer to Fig. 5.

TROUBLESHOOTING

RADIO SECTION

SYMPTOM	DEFECTIVE CIRCUIT		DEFECTIVE POINT AND CAUSE
NO SOUND	AM/FM SECTION	Antenna input circuit	* Antenna input circuit defective. Check wiring. * Poor antenna contact. Due to lower sensitivity, it does search scanning but not search stop.
		Power supply circuit or muting circuit	* Power supply circuit defective. * Q722 defective. * Analogue switch circuit defective. Check pin voltage of D606, D607, D755, D756.
		Antenna input circuit	* Antenna input circuit defective. Noise choke coil L801 defective.
		Power supply circuit	* Power supply circuit defective.
	AM SECTION	RF, OSC, IF circuit	* AM IC IC801 defective. Check pin voltage of IC801. * Semiconductor defective. Check for voltage of semiconductor. * RF801, RF802, T801, T802 or L801 open. * CF801 defective.
		Connection of AM board	* Insufficient soldering at the terminal of AM board. * Cracked pattern at the terminal of AM board.
	FM SECTION	Power supply circuit	* Power supply circuit defective.
		RF OSC circuit	* Semiconductor defective. Check for voltage of semiconductor. * D501, D502, D503 defective. * L501, L502, L503, L505 and T501 open or insufficient soldering.
		IF circuit	* Semiconductor defective. Check pin voltage of Q601 and IF IC IC601. * CF601, CF602, T601, L601 defective. * Trimmer resistor VR601 defective.
		NB MPX output circuit	* NB circuit defective. Check pin voltage of IC602. * MPX circuit defective. Check pin voltage of IC603.
		Analogue switch circuit	* Diode D606, D607 defective.
INSUFFICIENT SOUND	AM/FM SECTION	Antenna input circuit	* Poor antenna contact. * Relay RL701 defective.
	AM SECTION	RF IF circuit	* Deviation in tracking alignment (RF801, RF802). * Deviation in IF transformer T801 and T802. * ANT amplifier Q803 defective. * Semiconductor Q801, Q802 defective.
	FM SECTION	RF IF circuit	* Deviation in tracking alignment (L501, L503). * RF amplifier Q501 defective. * Diode D501 and D502 defective. * IF transformer T501 defective. * IF amplifier Q601 and IC IC601 defective. Check for voltage of Q601 and IC601. * T601 misalignment. * L601 defective.

TROUBLESHOOTING

SYMPTOM	DEFECTIVE CIRCUIT		DEFECTIVE POINT AND CAUSE
INSUFFICIENT SOUND	FM SECTION	NB circuit	* NB circuit defective. Check pin voltage of IC602.
		MPX circuit	* MPX circuit defective. Check pin voltage of IC603.
DISTORTED SOUND	AM SECTION	IF circuit	* AM IC IC801 defective. * Semiconductor Q802, Q804 defective.
	FM SECTION	IF circuit	* Misalignment or defective of T601.
OSCILLATION	AM/FM SECTION	Power supply circuit	* Capacitor C138, C338 defective.
	AM SECTION	RF IF circuit	* Capacitor C809, C810 and C815 defective.
	FM SECTION	RF IF circuit	* RF circuit defective. C513, C515 and C517 defective. * IF circuit defective. C602, C604, C606, C607, C609 and C611 defective.
POOR NB		NB circuit	* NB IC defective. Check pin voltage of IC602. * Capacitor C617, C618, C619 and C620 defective. * Capacitor C622 defective.
POOR MUTE IN SEARCH SCANNING AND AM/FM SWITCH POP NOISE	MUTE SECTION		* Semiconductor defective. * Diode D733, D744 or transistor Q738 defective. * Capacitor C718 open. * Q102, Q202 defective.
POOR STEREO EFFECT		MPX circuit	* VR602 and VR603 misalignment. * Ceramic resonator CX601 defective. * MPX IC defective. Check pin voltage of IC603.
ENGINE NOISE IS EXTREME	MOTOR COMPARTMENT		* Missing or poor connection of resistor wire on high tension coil or car. Insert noise preventing resistor between ignition coil and distributor of car. * Missing or poor connection of noise silencer by alternator of car. Install specified noise silencer on the alternator. * Missing or poor connection of grounding wire between engine chassis and engine, transmission and engine chassis of car.
	ANTENNA GROUND CIRCUIT		* Missing or poor connection of grounding wire for antenna to grounding point of the car chassis.
LESS SENSITIVITY DRIFT OCCURS WITH AIR CONDITIONER IS ON			* If the set was installed near the blower of the air conditioner, the sensitivity drift will be created by the temperature (Hot or Cold). Avoid installing the set near air conditioner or installing the set near airconditioner is unavoidable, isolate the set by isolating material from the air conditioner.

TROUBLESHOOTING

TAPE SECTION

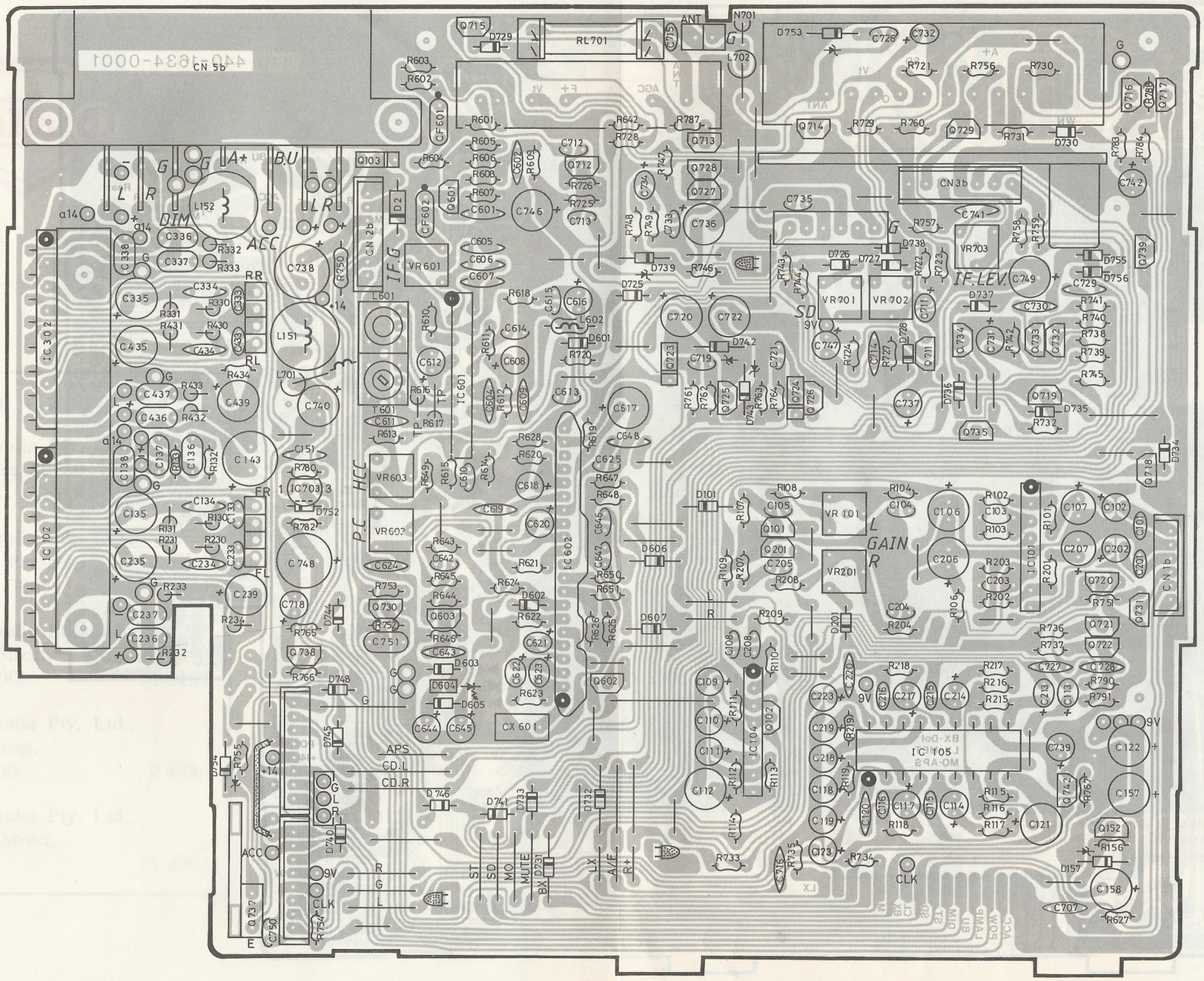
SYMPTOM	DEFECTIVE CIRCUIT		DEFECTIVE POINT AND CAUSE
NO SOUND	Power supply circuit		* Switch S5 and S151 defective.
	Mechanism or motor		* Motor does not run. Motor defective. Resistor R750 defective. * Mechanism defective. Check for running of tape. * Cassette does not lock in operating position. Solenoid L1 open.
	Pre amplifier circuit		* Pre amplifier defective. Check each pin voltage of pre amplifier IC101. * Leakage of large amount of DC current into capacitor C107 or C207. * Head lead wire open. * Capacitor C106, C206 short.
DISTORTED SOUND OR INSUFFICIENT SOUND	Pre amplifier circuit		* Pre amplifier circuit defective. Check each pin voltage of pre amplifier IC101.
	Head		* Head surface dirty. * Head azimuth angle misalignment.
OSCILLATION	Pre amplifier circuit		* C101, C104, C201 or C204 capacity insufficient or open.
ABNORMAL TAPE SPEED	Mechanism or motor		* Mechanism defective. * Motor defective.
WOW AND FLUTTER	Flywheel drive section		* Flywheel, capstan or intermediate gear defective. * Reel table defective. * Belt, pinchroller, idler, flywheel or pulley defective. * Motor defective.
NO SELECTION	Cassette program selection circuit		* Cassette program selection defective. Check each pin voltage of APS IC104. * Capacitor C108 or C208 defective. * Transistor Q102 defective.
DOES NOT WORK FUNCTION SWITCHES	PROG switch	PROG circuit	* Program switch defective.
	FF, REW switch	FF, REW circuit	* FF, REW switch defective.

TROUBLESHOOTING

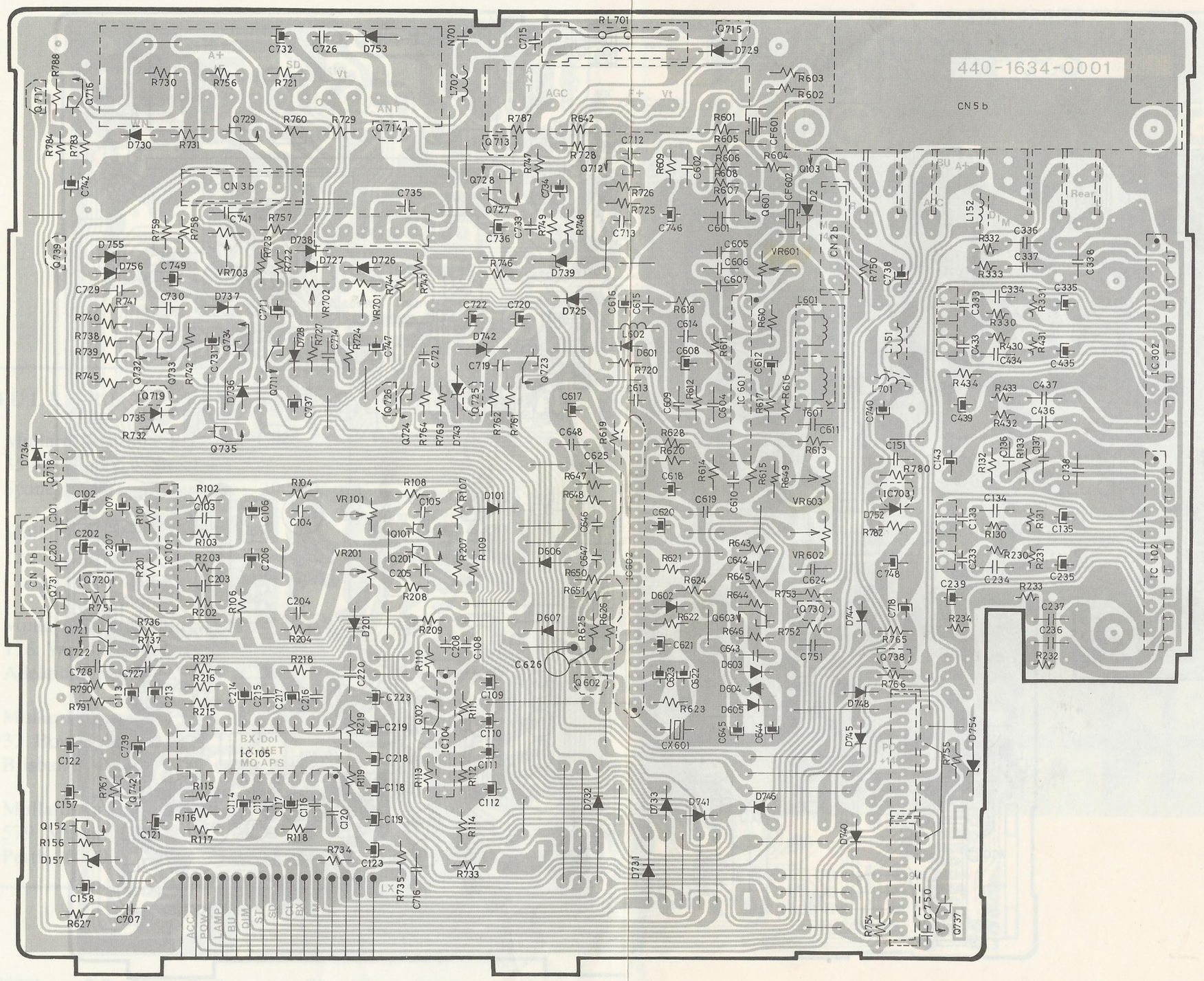
RADIO AND TAPE SECTION

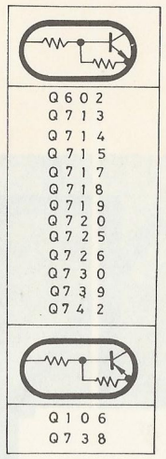
SYMPTOM	DEFECTIVE CIRCUIT		DEFECTIVE POINT AND CAUSE
NO SOUND	Power supply circuit		* Fuse open. Radio / Tape switch S1 or CD switch S5 defective. * Faulty connection to the battery. * Lead wire cold soldered.
	Amplifier circuit		* Ripple filter defective. Transistor Q152 open. * Flat amplifier defective. Check each pin voltage of flat amplifier Q104, Q204. Power amplifier IC102 or IC302 defective.
DISTORTED SOUND OR INSUFFICIENT SOUND	DNR circuit		* Capacitor C158 defective.
	Tone control circuit		* Variable resistor VR102, VR103, VR202, VR203 defective.
	Amplifier circuit		* Flat amplifier circuit defective. Check pin voltage of transistor Q104, Q204. * Power amplifier IC IC102, IC302 defective.
OSCILLATION	Power supply circuit		* C51, C59 capacity insufficient or open.
	Amplifier circuit		* Ripple filter defective. Transistor Q152 defective. C132, C138, C232, C332, C338 or C432 capacity insufficient or open.
ENGINE NOISE IS EXTREME	Grounding wire circuit		* Missing or poor connection of grounding wire between main unit and power amplifier.
	Amplifier circuit		* Ripple filter defective. Transistor Q152 short. * Capacitor C158 insufficient or open. * Capacitor C51, C52, C59 open.
NO FREQUENCY DISPLAY			* Defective IC701, IC703, D752.
NO SEARCH SCANNING	AM / FM SECTION	Stop circuit	* Seek switch defective. * Search stop circuit defective. Lead wire open.
	AM SECTION	PLL circuit	* IC701 defective. Lead wire open.
	FM SECTION	PLL circuit	* IC IC701 defective. * Q712 defective.
THE UNIT SEARCH SCANNS BUT DOES NOT STOP	AM / FM SECTION	Stop circuit	* Transistor Q711 defective.
	AM SECTION		* Diode D727 or Trimmer resistor VR702 defective. * AM IC IC801 defective. * Ceramic filter CF802 defective.
	FM SECTION		* Diode D726 or Trimmer resistor VR701 defective. * IF IC IC601 defective.
IN THE CASE OF FM, THE RECEIVING FREQUENCY CAN ONLY BE MATCHED EVERY 8 STEPS (800 kHz)			* IC701 defective.

MAIN CIRCUIT BOARD COMPONENT LOCATION GUIDE



TOP VIEW


440-1634-0001
CN 5 b
CN 3 b
CN 1 b
CN 2 b
IC 105
IC 302
IC 102
IC 601
IC 703
IC 750
ACC
POW
LAMP
BU
DIM
ST
SD
CT
BX
AN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Q 7 1 3
Q 7 1 4
Q 7 1 5
Q 7 1 7
Q 7 1 8
Q 7 1 9
Q 7 2 0
Q 7 2 5
Q 7 2 6
Q 7 3 0
Q 7 3 9
Q 7 4 2
Q 1 0 6
Q 7 3 8

BOTTOM VIEW

REF. NO. 49 CTP-1424-3 MAIN CIRCUIT BOARD ASSEMBLY PARTS LIST

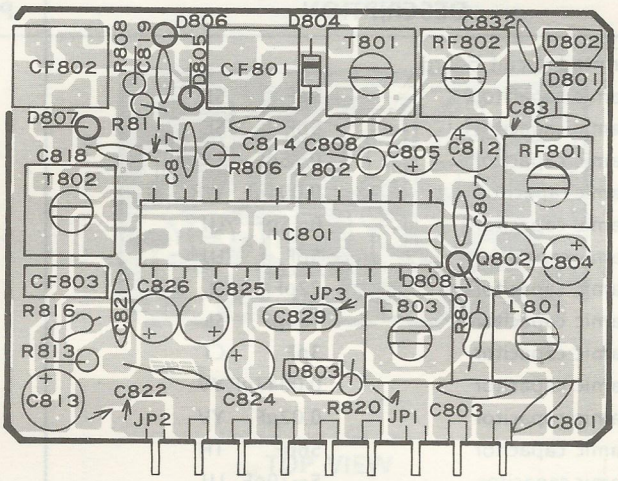
REF. NO.	DESCRIPTION			PART NO.	MFR'S NO.
–	Main printed circuit board				440-1634-0001
C101, 201	Ceramic capacitor	680pF	50V		261-681K-1HJB-005
C102, 109, 113, 117, 119, 123, 202, 213, 217, 219, 223, 608, 718	Electrolytic capacitor	1μF	50V		250-1R0M-1H00-014
C103, 203	Monolithic capacitor	0.0068μF	25V		262-682K-1EJR-006
C104, 133, 204, 233, 333, 433	Monolithic capacitor	0.0022μF	25V		262-222K-1EJR-005
C105, 108, 205, 208	Monolithic capacitor	0.015μF	25V		262-153K-1EJR-005
C106, 206	Electrolytic capacitor	100μF	16V		250-101M-1C00-033
C107, 207	Electrolytic capacitor	33μF	10V		250-330M-1A00-022
C110, 111, 114, 214, 620, 645, 742	Electrolytic capacitor	4.7μF	25V		250-4R7M-1E00-014
C112, 740	Electrolytic capacitor	47μF	16V		250-470M-1C00-033
C115, 215	Monolithic capacitor	0.0047μF	25V		262-472K-1EJR-005
C116, 216	Monolithic capacitor	0.018μF	25V		262-183K-1EJR-010
C118, 218	Electrolytic capacitor	0.33μF	50V		250-R33M-1H00-014
C120, 220, 648	Monolithic capacitor	0.033μF	25V		262-333K-1EJR-016
C121, 158, 722, 749	Electrolytic capacitor	47μF	10V		250-470M-1A00-033
C122, 135, 157, 235, 239, 335, 435, 439, 617, 720, 736, 746	Electrolytic capacitor	100μF	10V		250-101M-1A00-033
C134, 151, 234, 334, 434, 602, 604, 605, 606, 607, 609, 611	Monolithic capacitor	0.047μF	25V		262-473M-1EJR-020
C136, 137, 138, 236, 237, 336, 337, 338, 436, 437, 751	Metallized polyester film capacitor	0.1μF	50V		275-104J-1H00-001
C143, 738	Electrolytic capacitor	470μF	16V		250-471M-1C00-047
C601, 626, 643, 707, 716, 741	Monolithic capacitor	0.022μF	25V		262-223M-1EJR-011
C610, 613, 614	Ceramic capacitor	33pF	50V		260-330K-1H00-005
C612, 737	Electrolytic capacitor	2.2μF	50V		250-2R2M-1H00-014
C615, 726	Ceramic capacitor	47pF	50V		260-470K-1H00-005
C616, 747	Electrolytic capacitor	10μF	16V		250-100M-1C00-014
C618, 644, 731, 739	Electrolytic capacitor	22μF	6.3V		250-220M-0J00-014
C619	Monolithic capacitor	0.0033μF	25V		262-332M-1EJR-005
C621, 622, 732	Tantalum electrolytic capacitor	1μF	16V		255-1R0M-1C00-020
C623	Tantalum electrolytic capacitor	0.22μF	16V		255-R22M-1C00-020
C624	Monolithic capacitor	0.033μF	25V		262-333M-1EJR-016
C625	Monolithic capacitor	0.01μF	25V		262-103K-1EJR-005
C642, 713, 733	Monolithic capacitor	0.01μF	25V		262-103M-1EJR-005
C646, 647	Monolithic capacitor	0.0082μF	25V		262-822K-1EJR-005
C711	Tantalum electrolytic capacitor	0.1μF	16V		255-R10M-1C00-020
C712	Ceramic capacitor	3pF	50V		260-3R0D-1HCJ-005
C714	Monolithic capacitor	0.01μF	25V		262-103M-1EJR-020
C715	Ceramic capacitor	5pF	50V		260-5R0D-1HCH-005
C719, 721	Monolithic capacitor	0.015μF	25V		262-153M-1EJR-005
C727, 728	Monolithic capacitor	0.018μF	25V		262-183K-1EJR-011

REF. NO.	DESCRIPTION			PART NO.	MFR'S NO.
C729, 730	Monolithic capacitor	0.022μF	25V		262-223K-1EJR-011
C734	Tantalum electrolytic capacitor	3.3μF	10V		255-3R3M-1A00-021
C735	Ceramic capacitor	330pF	50V		261-331K-1HJB-005
C748	Electrolytic capacitor	470μF	10V		250-471M-1A00-047
C750	Ceramic capacitor	0.001μF	50V		261-102K-1HJB-005
CF601, 602	Ceramic filter			EOP-0010-0	360-0010-0401
CN1b	6P plug			ESC-0243	412-0243-0000
CN2b	7P plug			ESC-0112	412-0112-0000
CN3b	7P plug			ESC-0209	412-0209-0000
CX601	Ceramic resonator			EOC-0024	361-0024-0400
D2	Diode DS135(D)			ETD-DS135	304-0023-1000
D101, 201, 601, 602, 603, 605, 606, 607, 725, 726, 727, 728, 729, 730, 731, 732, 733, 734, 735, 736, 737, 738, 740, 741, 744, 745, 746, 748 752, 755, 756	Diode MA165			ETD-MA165	304-0037-0000
D157, 739, 742, 743, 753, 754	Zener diode EQA02-09(SA)			ETD-EQA0209	306-0018-1000
D604	Light emitting diode TLR211			ETD-TLR211	320-0027-0000
IC101	Pre amplifier IC M51522L			ETI-M51522L	310-0062-0000
IC102, 302	Power IC AN7171K			ETI-AN7171K	310-0305-0000
IC104	CPS IC M51143AL			ETI-M51143AL	310-0086-0000
IC105	Dolby IC HA12046			ETI-HA12046	310-0109-0000
IC601	FM IF IC LA1140			ETI-LA1140	310-0083-0000
IC602	NB/MPX IC STK3400A			ETI-STK3400A	310-0310-0000
IC703	Regulator IC AN8005			ETI-AN8005	310-0243-0000
L151, 152	Inductor	2.2mH		ELD-0301	351-0301-1700
L601	Inductor	22μH		ELD-0209	351-0209-0900
L602	Choke coil	4.7μH		ELD-0334	351-0334-1200
L701	Inductor			ELD-0200	351-0200-1200
L702	Choke coil			ELA-0035	352-0035-1100
N701	Surge protector			EIN-0005	431-0005-0000
Q101, 102, 201, 602, 713, 714, 717, 718, 719, 720, 725, 726, 730, 739, 742	Digital transistor DTC144ES			ETTC-DTC144ES	302-0115-0000
Q103	Transistor 2SC2673(Q)			ETTC-2SC2673	302-0092-1100
Q152, 603, 711, 727, 728, 729, 732, 733 735	Transistor 2SC24358L (BL)			ETTC-2SC2458L	302-0078-1400
Q601, 712	Transistor 2SC930 (D)			ETTC-2SC930	302-0014-1000
Q715	Digital transistor DTC124ES			ETTC-DTC124ES	302-0125-0000
Q716	Transistor 2SA1115 (E)			ETTA-2SA1115	301-0033-1100
Q721, 722	Transistor 2SD1021 (F)			ETTD-2SD1021	302-0097-1300
Q723, 724	Transistor 2SD973 (S)			ETTD-2SD973	302-0098-1200
Q731, 734	Transistor 2SC536 (F)			ETTC-2SC536	302-0007-1200

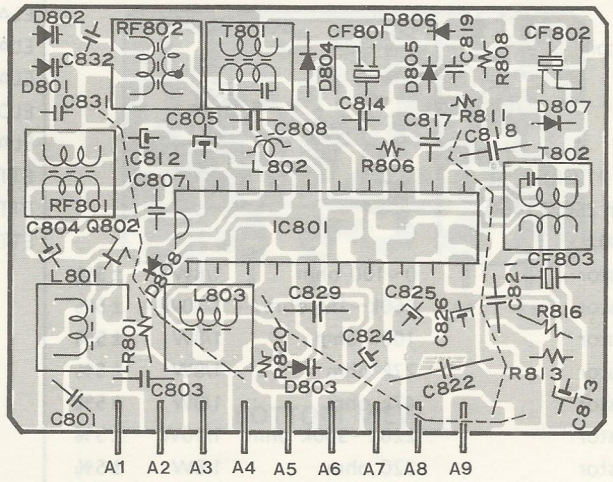
REF. NO.	DESCRIPTION				PART NO.	MFR'S NO.
Q737	Transistor 2SC1846 (R)				ETTC-2SC1846	302-0121-1100
Q738	Digital transistor DTA124ES				ETTA-DTA124ES	301-0046-0000
R101, 202, 602	Carbon film resistor	150 ohm	1/6W	±5%		200-151J-2C00-010
R102, 112, 202, 647, 648, 723, 734, 735, 753	Carbon film resistor	22k ohm	1/6W	±5%		200-223J-2C00-010
R103, 203	Carbon film resistor	330k ohm	1/6W	±5%		200-334J-2C00-010
R104, 204	Carbon film resistor	3.9k ohm	1/6W	±5%		200-392J-2C00-010
R106, 113, 606, 607, 609, 650, 651, 730, 738, 748, 752, 762, 766	Carbon film resistor	1k ohm	1/6W	±5%		200-102J-2C00-010
R107, 207, 434, 613, 615, 724, 727, 732, 740, 741, 743, 744, 745, 788, 790, 791	Carbon film resistor	100k ohm	1/6W	±5%		200-104J-2C00-010
R108, 208, 618, 736, 737, 739, 757	Carbon film resistor	4.7k ohm	1/6W	±5%		200-472J-2C00-010
R109, 209	Carbon film resistor	27k ohm	1/6W	±5%		200-273J-2C00-010
R110, 644	Carbon film resistor	1M ohm	1/6W	±5%		200-105J-2C00-010
R111	Carbon film resistor	560k ohm	1/6W	±5%		200-564J-2C00-010
R114, 604, 608	Carbon film resistor	330 ohm	1/6W	±5%		200-331J-2C00-010
R115, 215, 611, 649, 720, 729, 751, 754, 758, 759, 767	Carbon film resistor	10k ohm	1/6W	±5%		200-103J-2C00-010
R116, 156, 216, 625, 626, 645, 731	Carbon film resistor	3.3k ohm	1/6W	±5%		200-332J-2C00-010
R117, 119, 217, 219, 620, 726, 783, 784	Carbon film resistor	47k ohm	1/6W	±5%		200-473J-2C00-010
R118, 218	Carbon film resistor	6.2k ohm	1/6W	±5%		200-622J-2C00-010
R130, 230, 330, 430	Carbon film resistor	220 ohm	1/6W	±5%		200-221J-2C00-001
R131, 231, 331, 431	Carbon film resistor	330 ohm	1/6W	±5%		200-331J-2C00-001
R132, 133	Carbon film resistor	2.2 ohm	1/6W	±5%		200-2R2J-2C00-010
R232, 233, 332, 333, 432, 433	Carbon film resistor	2.2 ohm	1/6W	±5%		200-2R2J-2C00-001
R234	Carbon film resistor	100k ohm	1/6W	±5%		200-104J-2C00-001
R601, 603	Carbon film resistor	1.8k ohm	1/6W	±5%		200-182J-2C00-010
R605, 643, 742, 760, 763	Carbon film resistor	2.2k ohm	1/6W	±5%		200-222J-2C00-010
R610, 624	Carbon film resistor	15k ohm	1/6W	±5%		200-153J-2C00-010
R612	Carbon film resistor	12k ohm	1/6W	±5%		200-123J-2C00-010
R614	Carbon film resistor	68k ohm	1/6W	±5%		200-683J-2C00-010
R616	Carbon film resistor	15k ohm	1/6W	±5%		200-153J-2C00-010
R617	Carbon film resistor	10k ohm	1/6W	±5%		200-103J-2C00-010
R619, 642	Carbon film resistor	10 ohm	1/6W	±5%		200-100J-2C00-010
R621	Carbon film resistor	56k ohm	1/6W	±5%		200-563J-2C00-010
R622, 721	Carbon film resistor	33k ohm	1/6W	±5%		200-333J-2C00-010
R623	Carbon film resistor	5.1k ohm	1/6W	±5%		200-512J-2C00-010
R627, 733	Carbon film resistor	2.7k ohm	1/6W	±5%		200-272J-2C00-010

REF. NO.	DESCRIPTION				PART NO.	MFR'S NO.
R628, 749	Carbon film resistor	820 ohm	1/6W	±5%		200-821J-2C00-010
R646, 747	Carbon film resistor	220 ohm	1/6W	±5%		200-221J-2C00-010
R722	Carbon film resistor	5.6k ohm	1/6W	±5%		200-562J-2C00-010
R725, 746, 755, 787	Carbon film resistor	470 ohm	1/6W	±5%		200-471J-2C00-010
R728, 765, 780	Carbon film resistor	100 ohm	1/6W	±5%		200-101J-2C00-010
R750	Carbon film resistor	3.3 ohm	1/2W	±5%		200-3R3J-2H00-010
R756	Carbon film resistor	820k ohm	1/6W	±5%		200-824J-2C00-010
R761, 764	Carbon film resistor	5.6 ohm	1/6W	±5%		200-5R6J-2C00-010
R782	Carbon film resistor	4.7 ohm	1/6W	±5%		200-4R7J-2C00-010
RL701	Read relay				ESR-0068	402-0068-2600
T601	Detector coil				ELD-0210	351-0210-0900
VR101, 202, 602	Trimmer resistor	50k ohm-B			ECRV-1007	340-1007-0200
VR601	Trimmer resistor	330 ohm-B			ECRV-1001	340-1001-0200
VR603	Trimmer resistor	20k ohm-B			ECRV-1006	340-1006-0200
VR701, 702	Trimmer resistor	100k ohm-B			ECRV-1008	340-1008-0200
VR703	Trimmer resistor	10k ohm-B			ECRV-1005	340-1005-0200
	Cord clamp				PP-0544	100-6544-0000
	Flat cable				WX-0251	471-0251-0000

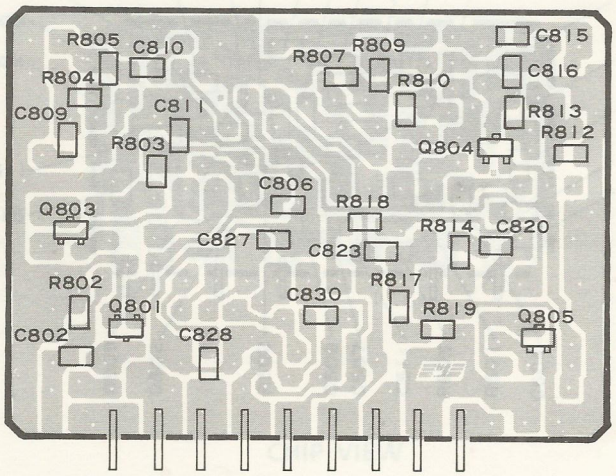
AM RF CIRCUIT BOARD COMPONENT LOCATION GUIDE



TOP VIEW



BOTTOM VIEW

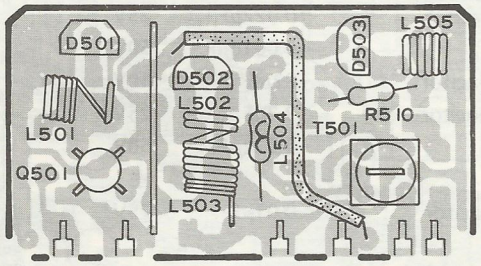


CHIP VIEW

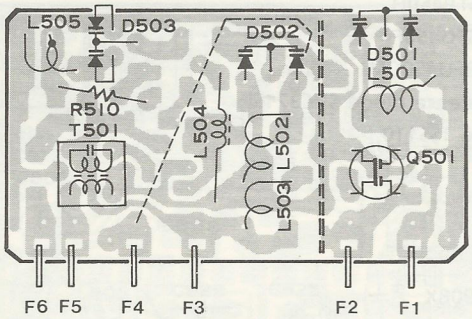
REF. NO. 33 AR-0203 AM RF CIRCUIT BOARD ASSEMBLY PARTS LIST

REF. NO.	DESCRIPTION				PART NO.	MFR'S NO.
–	AM RF printed circuit board					440-1666-0000
C801, 803, 821	Monolithic capacitor	0.022μF	25V			262-223K-1EJR-011
C802	Chip capacitor	0.0018μF	50V			263-182K-1HJV-200
C804, 812	Electrolytic capacitor	22μF	10V			250-220M-1A00-012
C805, 825	Electrolytic capacitor	3.3μF	25V			250-3R3M-1H00-012
C806, 809, 810, 811, 820	Chip capacitor	0.022μF	50V			263-223K-1EJV-200
C807, 808, 814, 817, 818, 819	Monolithic capacitor	0.01μF	25V			262-103K-1EJR-005
C813	Electrolytic capacitor	33μF	10V			250-330M-1A00-021
C815, 816, 823	Chip capacitor	0.01μF	50V			263-103K-1EJV-200
C822	Ceramic capacitor	22pF	50V			260-220K-1H00-005
C824	Electrolytic capacitor	0.47μF	50V			250-R47M-1H00-012
C826	Electrolytic capacitor	4.7μF	25V			250-4R7M-1E00-012
C827, 828	Chip capacitor	0.022μF	50V			263-223K-1EJV-210
C829	Q. P capacitor	360~430pF	50V	±5%		272-391J-2A00-012
C830, 831, 832	Ceramic capacitor	0~20pF	50V			260-200K-1HCH-200
CF801	Ceramic filter SFP450H				EOP-0016	360-0016-0400
CF802	Ceramic filter SFG450F				EOP-0060	360-0060-0400
CF803	Ceramic filter BFU450C4N				EOP-0017	360-0017-0400
D801, 802, 803	Variable capacitance diode SVC321SP				ETD-SVC321SP	305-0014-0000
D804, 805, 806, 807, 808	Switching diode 1SS110				ETD-1SS110	304-0041-0000
IC801	AM IC LA1135				ETI-LA1135	310-0148-0000
L801	Coil R12-0170X				ELD-0330	351-0330-1300
L802	Inductor 56μH				ELD-0343	351-0343-1200
L803	OSC coil R12-2908X				ELD-0333	351-0333-1300
Q801, 803, 805	Transistor 2SC2814(F4)				ETTC-2SC2814	302-0083-1200
Q802	FET 2SK163(M)				ETTF-2SK163	300-0043-1200
Q804	Transistor 2SA1342				ETTA-2SA1342	301-0058-0000
R801	Carbon film resistor	10k ohm	1/6W	±5%		200-103J-2C00-010
R802	Chip resistor	1M ohm	1/10W	±5%		202-105J-2A00-050
R803	Chip resistor	22 ohm	1/10W	±5%		202-220J-2A00-050
R804, 805	Chip resistor	220k ohm	1/10W	±5%		202-224J-2A00-050
R806, 808, 811	Carbon film resistor	10k ohm	1/6W	±5%		200-103J-2C00-000
R807, 809, 812	Chip resistor	1k~10k ohm	1/10W	±5%		202-103J-2A00-050
R810	Chip resistor	0~560 ohm	1/10W	±5%		202-561J-2A00-050
R813, 817, 819	Chip resistor	10k ohm	1/10W	±5%		202-103J-2A00-050
R814	Chip resistor	51~220 ohm	1/10W	±5%		202-221J-2A00-050
R815	Carbon film resistor	100k~1M ohm	1/6W	±5%		200-105J-2C00-000
R816	Carbon film resistor	330~1k ohm	1/6W	±5%		200-102J-2C00-000
R818	Chip resistor	82 ohm	1/8W	±5%		202-820J-2B00-040
R820	Carbon film resistor	100k ohm	1/6W	±5%		200-104J-2C00-000
RF801	RF coil R12-4422X				ELD-0331	351-0331-1300
RF802	RF coil R12-4435X				ELD-0332	351-0332-1300
T801	IFT R12-4437A				ELD-0309	351-0309-1300
T802	IFT R12-8466A				ELD-0315	351-0315-1300

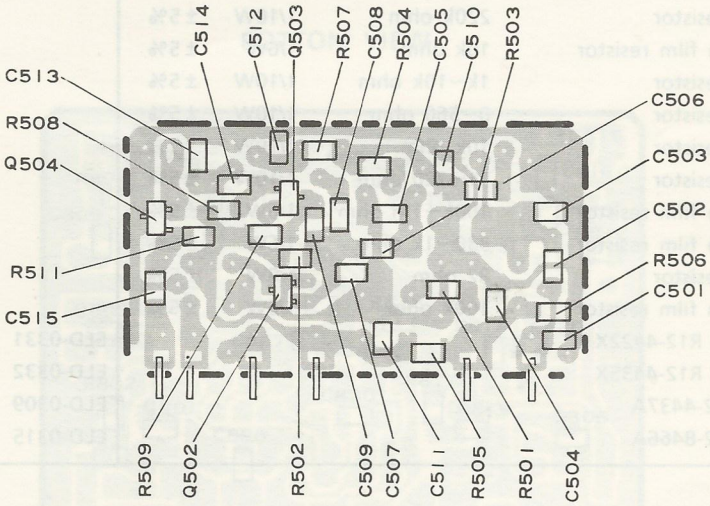
FM RF CIRCUIT BOARD COMPONENT LOCATION GUIDE



TOP VIEW



BOTTOM VIEW

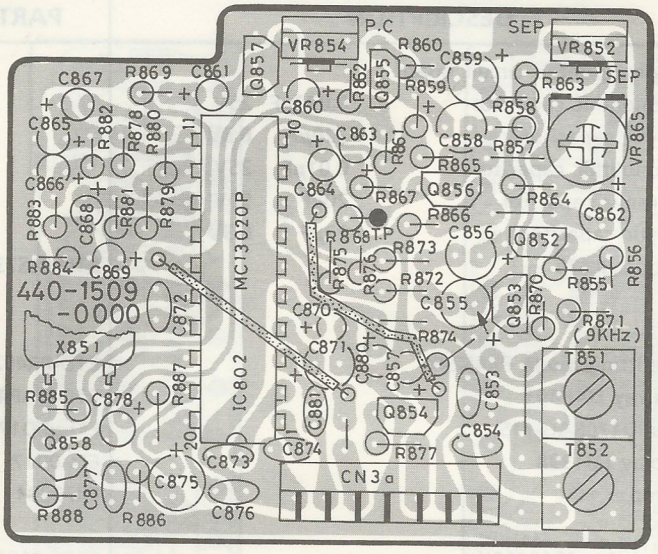


CHIP VIEW

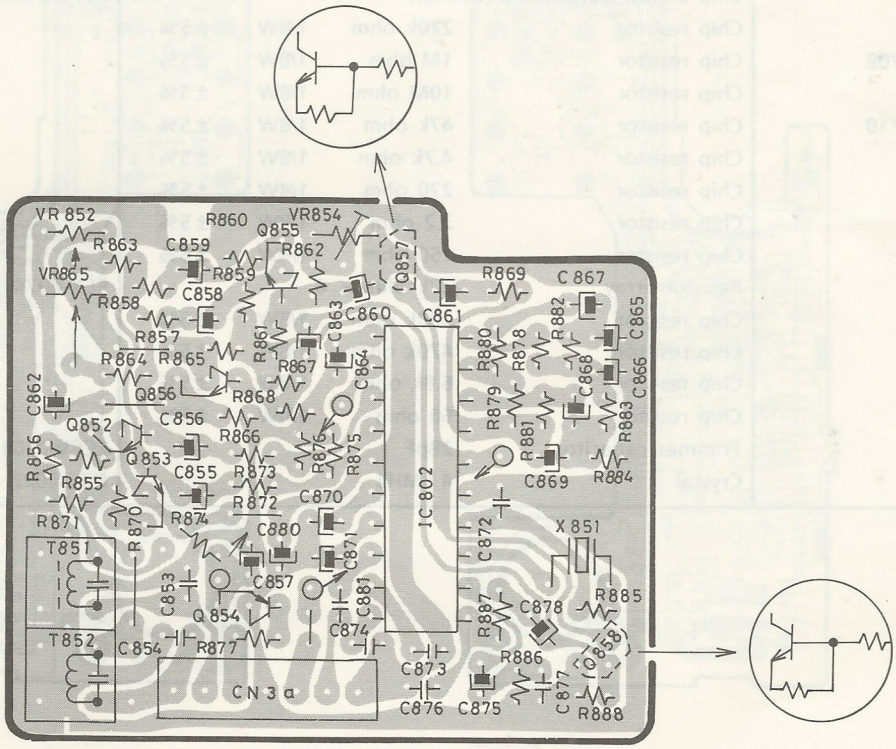
REF. NO. 35 AR-0202 FM RF CIRCUIT BOARD ASSEMBLY PARTS LIST

REF. NO.	DESCRIPTION				PART NO.	MFR'S NO.
–	FM RF printed circuit board					440-1665-0000
C501	Chip ceramic capacitor	9pF	SL			260-9R0D-1H00-200
C502	Chip ceramic capacitor	5pF	SL			260-5R0D-1H00-210
C503	Chip ceramic capacitor	0~5pF	CK			260-5R0D-1HCK-210
C504	Chip ceramic capacitor	0.001μF	WR			263-102K-1HAR-210
C505	Chip ceramic capacitor	0~5pF	UJ			260-5R0D-1HUJ-210
C506	Chip ceramic capacitor	5pF	UJ			260-5R0D-1HUJ-210
C507	Chip ceramic capacitor	22pF	SL			260-220K-1H00-210
C508	Chip ceramic capacitor	150pF	SL			260-151K-1H00-210
C509	Chip ceramic capacitor	3pF	CJ			260-3R0D-1HCJ-210
C510	Chip ceramic capacitor	0.0047μF	YV			263-472K-1HJV-200
C511	Chip ceramic capacitor	0.02μF	YV			263-203K-1HJV-210
C512	Chip ceramic capacitor	56pF	TH			260-560K-1HTH-210
C513	Chip ceramic capacitor	5~10pF	UJ			260-100D-1HUJ-210
C514	Chip ceramic capacitor	3pF	UJ			260-3R0D-1HUJ-210
C515	Chip ceramic capacitor	47pF	SL			260-470D-1H00-210
D501, 502, 503	Variable capacitance diode 1SV103				ETD-1SV103	305-0013-0000
L501	ANT coil				ELA-0117	352-0117-1300
L502	RF load coil				ELA-0118	352-0118-1300
L503	RF coil				ELA-0119	352-0119-1300
L504	Trap coil				ELD-0328	351-0328-1200
L505	OSC coil				ELA-0120	352-0120-1300
Q501	FET 3SK101(GR)				ETTF-3SK101	300-0020-1100
Q502, 503	Transistor 2SC2714(R)				ETTC-2SC2714	302-0081-1000
Q504	FET 3SK302				ETTF-3SK302	300-0049-0000
R501	Chip resistor	0~100 ohm	1/8W	±5%		202-101J-2B00-040
R502	Chip resistor	560k~1M ohm	1/10W	±5%		202-105J-2A00-050
R503, 504, 507	Chip resistor	100k ohm	1/8W	±5%		202-104J-2B00-040
R505	Chip resistor	27k ohm	1/8W	±5%		202-273J-2B00-040
R506	Chip resistor	47k ohm	1/8W	±5%		202-473J-2B00-040
R508	Chip resistor	220k~560k ohm	1/10W	±5%		202-564J-2A00-050
R509	Chip resistor	220 ohm	1/8W	±5%		202-221J-2B00-040
R510	Carbon film resistor	56 ohm	1/6W	±5%		200-560J-2C00-010
R511	Chip resistor	470 ohm	1/10W	±5%		202-471J-2A00-050
T501	IFT 10.7MHz 41K5-D				ELD-0329	351-0329-1300

AM STEREO CIRCUIT BOARD COMPONENT LOCATION GUIDE



TOP VIEW



BOTTOM VIEW

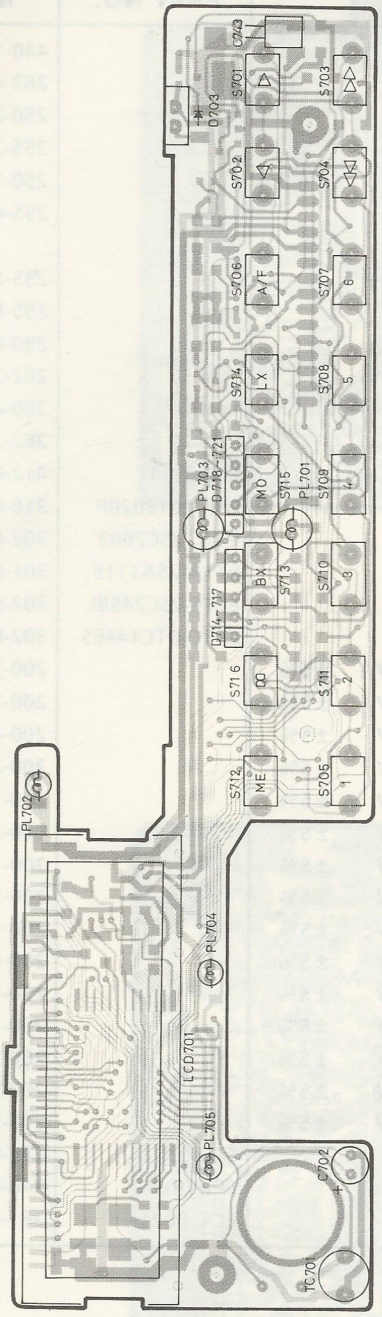
REF. NO. 36 CRP-1433-2 AM STEREO CIRCUIT BOARD ASSEMBLY PARTS LIST

REF. NO.	DESCRIPTION				PART NO.	MFR'S NO.
–	AM stereo printed circuit board					440-1509-0001
C853, 854	Monolithic capacitor	0.0047μF	25V			262-472K-1EJR-005
C855, 856	Electrolytic capacitor	2.2μF	50V			250-2R2M-1H00-012
C857, 864, 865	Tantalum electrolytic capacitor	2.2μF	10V			255-2R2M-1A00-021
C858, 859, 862, 871	Electrolytic capacitor	10μF	16V			250-100M-1C00-012
C860, 861, 863, 866, 867, 878, 880	Tantalum electrolytic capacitor	4.7μF	10V			255-4R7M-1A00-021
C868, 869	Tantalum electrolytic capacitor	0.47μF	16V			255-R47K-1C00-020
C870	Tantalum electrolytic capacitor	0.1μF	16V			255-R10M-1C00-020
C872	Ceramic capacitor	50pF	50V			290-0007-0000
C873, 874, 876, 877	Monolithic capacitor	0.0033μF	25V			262-332K-1EJR-005
C875	Electrolytic capacitor	47μF	6.3V			250-470M-0J00-019
C881	Monolithic capacitor	0.01μF	25V			262-103M-1EJR-005
CN3a	7P socket				ESC-0211	412-0211-0000
IC802	AM stereo decoder IC MC13020P				ETI-MC13020P	310-0159-0000
Q852, 853, 855	Transistor 2SC2603(F)				ETTC-2SC2603	302-0091-1200
Q854	Transistor 2SA1115(E)				ETTA-2SA1115	301-0033-1100
Q856	Transistor 2SC2458L (BL)				ETTC-2SC2458L	302-0078-1400
Q857, 858	Digital transistor DTC144ES				ETTC-DTC144ES	302-0115-0000
R855, 856, 870, 871	Carbon film resistor	3.3k ohm	1/6W	±5%		200-332J-2C00-000
R857, 858, 887	Carbon film resistor	22k ohm	1/6W	±5%		200-223J-2C00-000
R859, 860, 875, 876	Carbon film resistor	4.7k ohm	1/6W	±5%		200-472J-2C00-000
R861, 862, 867, 881	Carbon film resistor	220k ohm	1/6W	±5%		200-224J-2C00-000
R863, 864	Carbon film resistor	15k ohm	1/6W	±5%		200-153J-2C00-000
R865, 866	Carbon film resistor	2.2k ohm	1/6W	±5%		200-222J-2C00-000
R868, 874, 877	Carbon film resistor	100k ohm	1/6W	±5%		200-104J-2C00-000
R869	Carbon film resistor	33k ohm	1/6W	±5%		200-333J-2C00-000
R872, 873	Carbon film resistor	10k ohm	1/6W	±5%		200-103J-2C00-000
R878, 886	Carbon film resistor	430 ohm	1/6W	±5%		200-431J-2C00-000
R879	Carbon film resistor	56k ohm	1/6W	±5%		200-563J-2C00-000
R880, 882, 883	Carbon film resistor	1.5k ohm	1/6W	±5%		200-152J-2C00-000
R884	Carbon film resistor	910 ohm	1/6W	±5%		200-911J-2C00-000
R885	Carbon film resistor	82 ohm	1/6W	±5%		200-820J-2C00-000
R888	Carbon film resistor	560k ohm	1/6W	±5%		200-564J-2C00-000
T851, 852	Notch coil 9kHz				ELD-0302	351-0302-0900
VR852, 854, 865	Trimmer resistor	22k ohm-B			ECRV-0363	340-0363-0100
X851	Ceramic resonator				EOC-0021	361-0021-0400

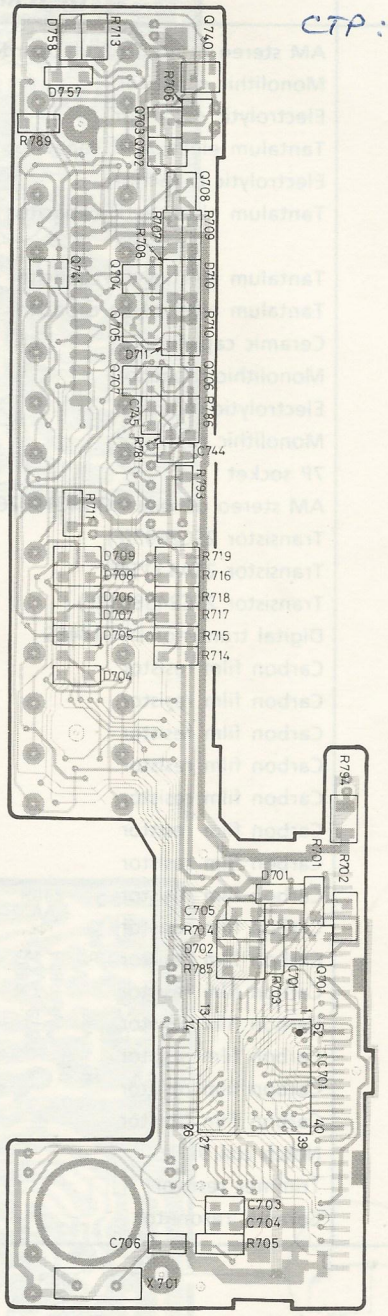
LCD DISPLAY CIRCUIT BOARD COMPONENT LOCATION GUIDE

Cost 96.17.

CTP : 1646



TOP VIEW

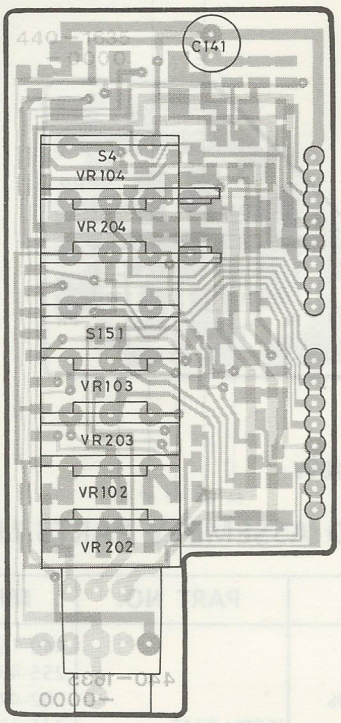


BOTTOM VIEW

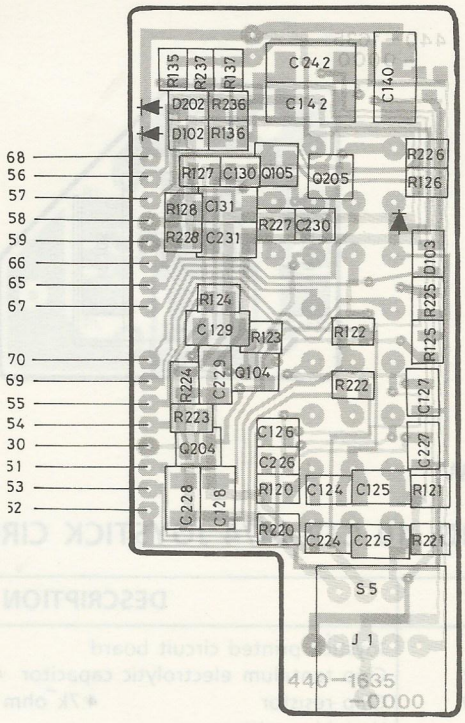
REF. NO. 7 CTP-1401-1 LCD DISPLAY CIRCUIT BOARD ASSEMBLY PARTS LIST

REF. NO.	DESCRIPTION				PART NO.	MFR'S NO.
–	LCD display printed circuit board					440-1657-0000
C701, 744, 745	Chip monolithic capacitor	0.022μF	25V			262-223M-1EJR-200
C702	Electrolytic capacitor	220μF	6.3V			250-221M-0J00-032
C703, 704, 705	Chip monolithic capacitor	0.01μF	25V			262-103M-1EJR-200
C706	Chip ceramic capacitor	20pF	50V			260-200D-1HCH-200
C743	Electrolytic capacitor	22μF	6.3V			250-220M-0J00-010
D701, 702, 704, 705, 706, 707, 708, 709, 710, 711, 757, 758	Chip diode RLS73				ETD-RLS73	304-0073-0001
D703	Light emitting diode PR4524K				ETD-PR4524K	320-0077-0000
D714~717, 718~721	Diode array DAP401				ETD-DAP401	304-0076-0000
IC701	PLL IC μPD1708AG-715				ETI-μPD1708AG-715	310-0293-0000
LDC701	LCD display LU1398				EIX-0017	333-0017-0000
PL701, 702, 703, 704, 705	Pilot lamp				EIL-0221	430-0221-0000
Q701, 704, 705	Chip transistor 2SC2412K				ETTC-2SC2412K	302-0163-0000
Q702, 706, 707, 708, 741	Chip digital transistor DTA144EK				ETTA-DTA144EK	301-0068-0000
Q703, 740	Chip digital transistor DTC144EK				ETTC-DTC144EK	302-0149-0000
R701	Chip resistor	220k ohm	1/8W	±5%		202-224J-2B00-040
R702, 707, 708	Chip resistor	1M ohm	1/8W	±5%		202-105J-2B00-040
R703	Chip resistor	10M ohm	1/8W	±5%		202-106J-2B00-040
R704, 709, 710	Chip resistor	47k ohm	1/8W	±5%		202-473J-2B00-040
R705	Chip resistor	4.7k ohm	1/8W	±5%		202-472J-2B00-040
R706	Chip resistor	270 ohm	1/4W	±5%		202-271J-2E00-091
R711, 793	Chip resistor	2.2 ohm	1/8W	±5%		202-2R2J-2B00-040
R713	Chip resistor	150 ohm	1/4W	±5%		202-151J-2E00-091
R714~719	Resistor array	22k ohm × 6			ECX-0074	370-0074-0100
R781, 786	Chip resistor	100k ohm	1/8W	±5%		202-104J-2B00-040
R785	Chip resistor	470k ohm	1/8W	±5%		202-474J-2B00-040
R789	Chip resistor	6.8k ohm	1/8W	±5%		202-682J-2B00-040
R794	Chip resistor	68 ohm	1/4W	±5%		202-680J-2E00-091
TC701	Trimmer capacitor	28pF			ECCV-0101	345-0101-0100
X701	Crystal	4.5MHz			EOC-0022	361-0022-0000

CONTROL CIRCUIT BOARD COMPONENT LOCATION GUIDE



TOP VIEW

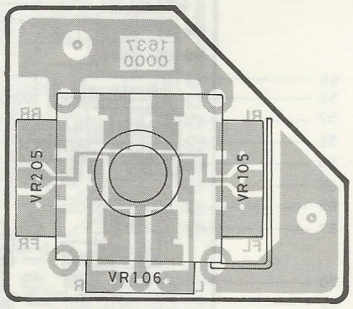


BOTTOM VIEW

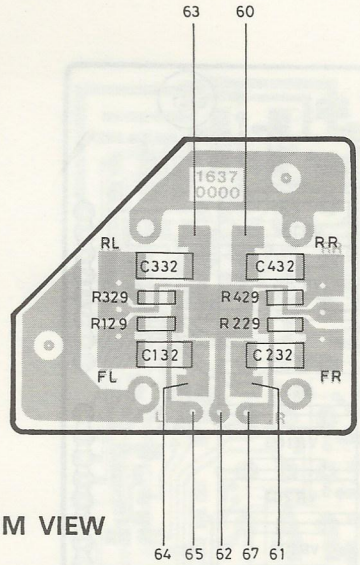
REF. NO. 13 CAP-1473 CONTROL CIRCUIT BOARD ASSEMBLY PARTS LIST

REF. NO.	DESCRIPTION				PART NO.	MFR'S NO.
–	Control printed circuit board					440-1635-0000
C124, 224	Chip ceramic capacitor	0.068μF	25V			263-683K-1EJB-211
C125, 225	Chip tantalum electrolytic capacitor	0.33μF	35V			255-R33M-1F00-005
C126, 226	Chip ceramic capacitor	0.01μF	50V			263-103K-1HJB-200
C127, 227	Chip ceramic capacitor	0.047μF	25V			263-473K-1EJB-211
C128, 129, 228, 229	Chip tantalum electrolytic capacitor	1μF	16V			255-1R0M-1C00-005
C130, 230	Chip ceramic capacitor	0.001μF	50V			263-102K-1HJB-200
C131, 231	Chip tantalum electrolytic capacitor	0.15μF	35V			255-R15M-1F00-005
C140, 142, 242	Chip tantalum electrolytic capacitor	4.7μF	10V			255-4R7M-1A00-005
C141	Electrolytic capacitor	47μF	16V			250-470M-1C00-021
D102, 103, 202	Chip diode RLS73				ETD-RLS73	304-0073-0000
J1 (S5)	Stereo jack				ESJ-0307	411-0307-0000
Q104, 204	Chip transistor 2SC2812 (L6)				ETTC-2SC2812	302-0109-1200
Q105, 205	Chip transistor 2SD1048				ETTD-2SD1048	302-0154-0000
R120, 135, 220	Chip resistor	3.3k ohm	1/10W	±5%		202-332J-2A00-050
R121, 221	Chip resistor	680 ohm	1/10W	±5%		202-681J-2A00-050
R122, 222	Chip resistor	1k ohm	1/10W	±5%		202-102J-2A00-050
R123, 223	Chip resistor	560k ohm	1/10W	±5%		202-564J-2A00-050
R124, 224	Chip resistor	1.2k ohm	1/10W	±5%		202-122J-2A00-050
R125, 225	Chip resistor	220 ohm	1/10W	±5%		202-221J-2A00-050
R126, 128, 226, 228	Chip resistor	1.5k ohm	1/10W	±5%		202-152J-2A00-050
R127, 227	Chip resistor	22k ohm	1/10W	±5%		202-223J-2A00-050
R136, 137, 236, 237	Chip resistor	15k ohm	1/10W	±5%		202-153J-2A00-050
	Variable resistor with switch				ECRV-0048	341-0048-0100
S4	Clock call					
S151	Power ON/OFF					
VR102, 202	Bass control	20k ohm-A				
VR103, 203	Treble control	20k ohm-C				
VR104, 204	Volume control	50k ohm-A				

JOYSTICK CIRCUIT BOARD COMPONENT LOCATION GUIDE



TOP VIEW

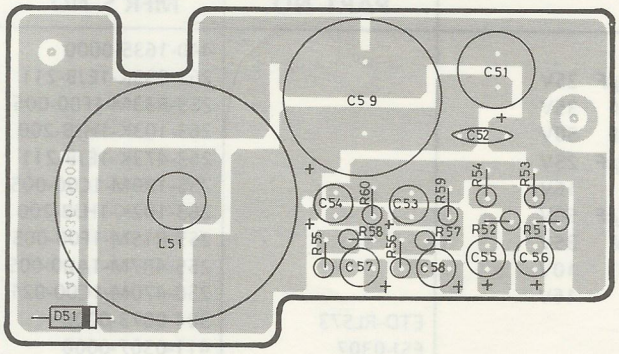


BOTTOM VIEW

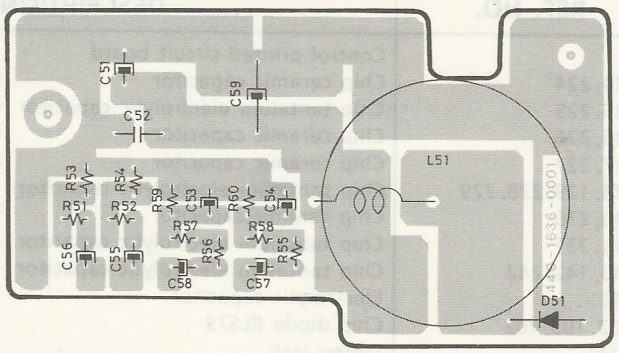
REF. NO. 10 CTP-1474 JOYSTICK CIRCUIT BOARD ASSEMBLY PARTS LIST

REF. NO.	DESCRIPTION	PART NO.	MFR'S NO.
–	Joystick printed circuit board		440-1637-0000
C132, 232, 332, 432	Chip tantalum electrolytic capacitor 4.7μF 10V		255-4R7M-1A00-005
R129, 229, 329, 429	Chip resistor 4.7k ohm 1/8W ±5%		202-472J-2B00-040
	Variable resistor	ECRV-0047	341-0047-0100
VR105, 205	Fader control 30k ohm-W		
VR106	Balance control 30k ohm-B		

CHOKE CIRCUIT BOARD COMPONENT LOCATION GUIDE



TOP VIEW

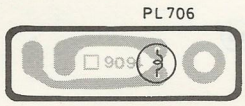


BOTTOM VIEW

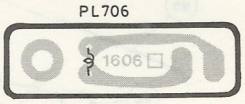
REF. NO. 26 CTP-1423 CHOKE CIRCUIT BOARD ASSEMBLY PARTS LIST

REF. NO.	DESCRIPTION	PART NO.	MFR'S NO.
–	Choke printed circuit board		440-1636-0001
C51	Electrolytic capacitor 470μF 16V		250-471M-1C00-047
C52	Monolithic capacitor 0.022μF 25V		262-223M-1EJR-011
C53, 54	Electrolytic capacitor 2.2μF 50V		250-2R2M-1H00-012
C55, 56, 57, 58	Electrolytic capacitor 10μF 16V		250-100M-1C00-012
C59	Electrolytic capacitor 2200μF 16V		250-222M-1C00-073
D51	Diode DS135 (D)	ETD-DS135	304-0023-1000
L51	Toroidal coil	ELD-0321	351-0321-1500
R51, 52, 55, 56	Carbon film resistor 15k ohm 1/6W ±5%		200-153J-2C00-000
R53, 54, 59, 60	Carbon film resistor 680 ohm 1/6W ±5%		200-681J-2C00-000
R57, 58	Carbon film resistor 1.2k ohm 1/6W ±5%		200-122J-2C00-000

LAMP CIRCUIT BOARD COMPONENT LOCATION GUIDE



TOP VIEW



BOTTOM VIEW

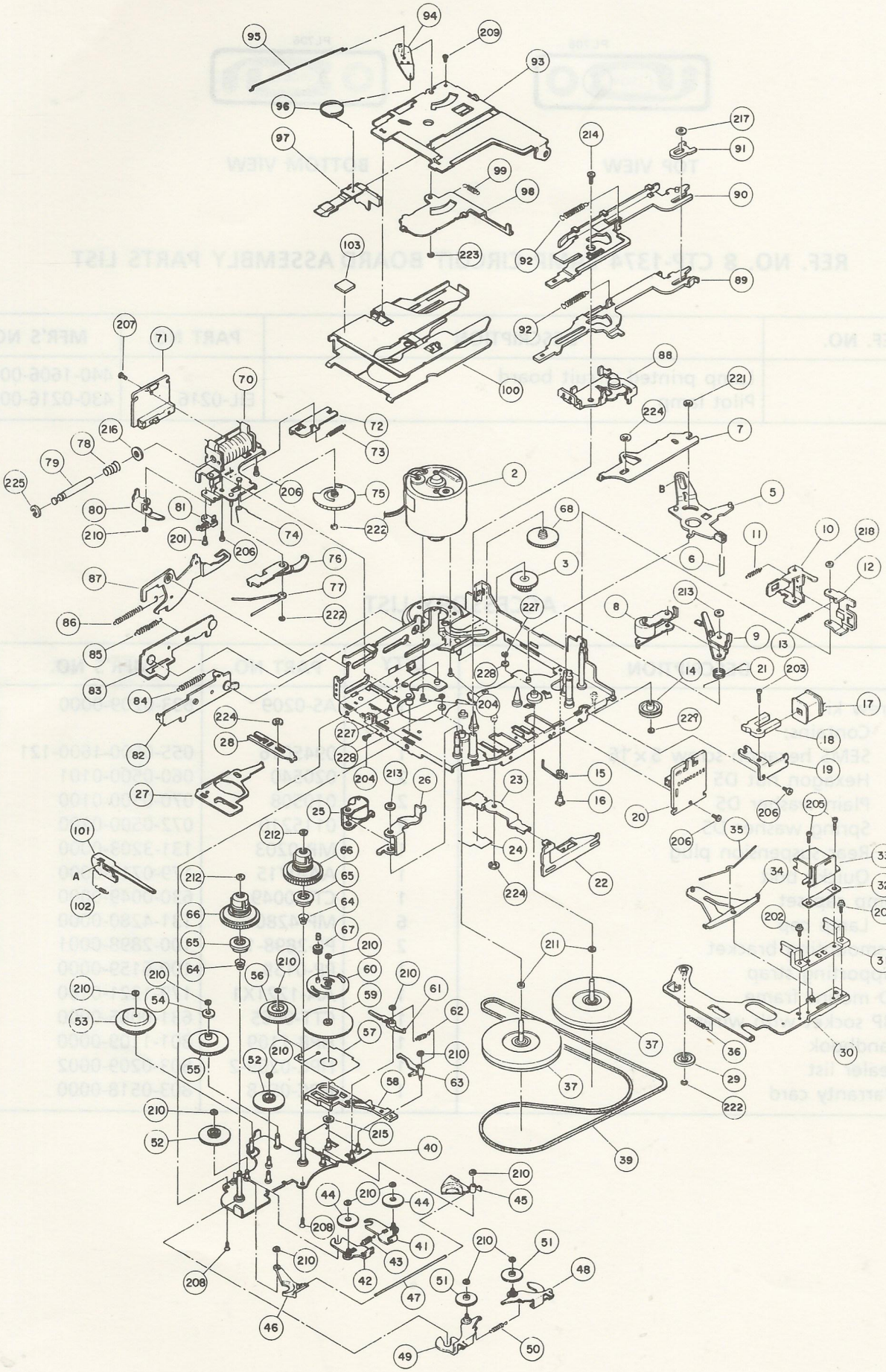
REF. NO. 8 CTP-1374 LAMP CIRCUIT BOARD ASSEMBLY PARTS LIST

REF. NO.	DESCRIPTION	PART NO.	MFR'S NO.
–	Lamp printed circuit board		440-1606-0000
PL706	Pilot lamp	EIL-0216	430-0216-0000

ACCESSORY LIST

DESCRIPTION	Q'TY	PART NO.	MFR'S NO.
Screw kit	1	AS-0209	633-0209-0000
Contains;			
SEMS hexagon screw 5 x 16	1	0945016	055-0500-1600-121
Hexagon nut D5	2	020540	060-0500-0101
Plain washer D5	2	010508	070-0500-0100
Spring washer D5	2	0115210	072-0500-0200
Rear suspension plug	1	MR-0203	131-3203-0000
Quicky bolt	1	AA-0715	179-0715-0000
Lamp cap set	1	CTT-0049	630-0049-0000
Lamp cap	6	MP-4280	131-4280-0000
Dismounting bracket	2	PL-2898-1	100-2898-0001
Supporting strap	1	PP-0159	100-6159-0000
CD mount frame	1	AA-1221X1	179-1221-0100
13P socket with wires	1	CTT-0065	631-0065-0000
Handbook	1	HPB-1109	801-1109-0000
Dealer list	1	HPC-0209-2	803-0209-0002
Warranty card	1	HPC-0518	803-0518-0000

EXPLODED VIEW – MECHANISM

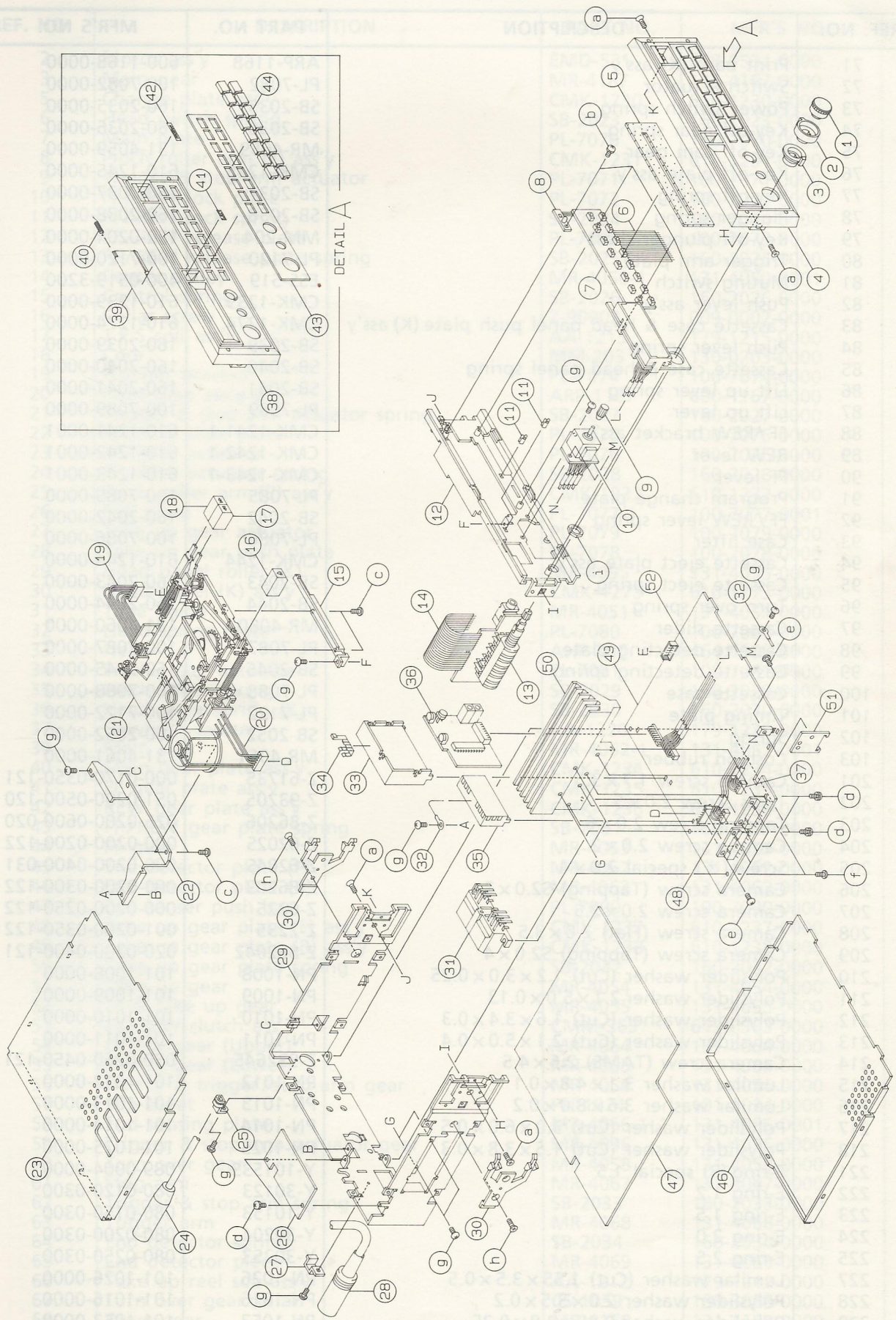


MECHANICAL PARTS LIST – MECHANISM

REF. NO.	DESCRIPTION	PART NO.	MFR'S NO.
2	Motor ass'y	EMD-531	608-0531-0000
3	Main gear	MR-4167	131-4167-0000
5	Change plate ass'y	CMK-1230	610-1230-0000
6	Head switch spring	SB-2023	160-2023-0000
7	Main plate	PL-7070	100-7070-0000
8	Pinch roller arm (F) ass'y	CMK-1231	610-1231-0000
9	Trigger & stop arm actuator	PL-7071	100-7071-0000
10	FF / REW lock plate	PL-7072	100-7072-0000
11	FF / REW lock spring	SB-2024	160-2024-0000
12	FF / REW release plate	PL-7073	100-7073-0000
13	FF / REW release plate spring	SB-2025	160-2025-0000
14	Center pulley	MR-4050-1	131-4050-0001
15	Control spring	SB-2026	160-2026-0000
16	Collar screw	Z-90002	009-0002-0000
17	T.P.S coil ass'y	AA-1215	179-1215-0000
18	Core	MM-203	130-0203-0000
19	Plunger bracket	PL-7074	100-7074-0000
20	Print base ass'y (H)	ARP-1167	600-1167-0000
21	Trigger & stop arm actuator spring	SB-2027	160-2027-0000
22	FF / REW slide plate	PL-7075	100-7075-0000
23	FF / REW actuator	PL-7076	100-7076-0000
24	FF / REW actuator spring	SB-2028	160-2028-0000
25	Pinch roller arm (R) ass'y	CMK-1232	610-1232-0000
26	Pull plate	PL-7077-1	100-7077-0001
27	Take up gear actuator	PL-7079	100-7079-0000
28	Take up gear push plate	PL-7078	100-7078-0000
29	Head panel roller (K)	MR-4095	131-4095-0000
30	Head panel (K) ass'y	CMK-1273	610-1273-0000
31	Tape guide	MR-4051	131-4051-0000
32	Head spring plate	PL-7080	100-7080-0000
33	Head	AHP-306	464-0306-0000
34	Pinch roller actuator	PL-7081	100-7081-0000
35	Pinch roller spring	SB-2029	160-2029-0000
36	Head panel spring (K)	SB-2030	160-2030-0000
37	Flywheel capstan	AA-1220	179-1220-0000
39	Main belt	MR-4052-1	131-4052-0001
40	Main gear plate ass'y	CMK-1234	610-1234-0000
41	FF gear plate ass'y	CMK-1235	610-1235-0000
42	REW gear plate ass'y	CMK-1236	610-1236-0000
43	FF / REW gear plate spring	SB-2051	160-2051-0000
44	FF gear	MR-4053	131-4053-0000
45	End detector plate (F)	MR-4062	131-4062-0000
46	End detector plate (R)	MR-4063	131-4063-0000
47	End senser push bar	PL-7090	100-7090-0000
48	Take up gear plate (F) ass'y	CMK-1237	610-1237-0000
49	Take up gear plate (R) ass'y	CMK-1238	610-1238-0000
50	Take up gear plate spring	SB-2032	160-2032-0000
51	Take up gear	MR-4054	131-4054-0000
52	FF & take up gear	MR-4055	131-4055-0000
53	FF / REW clutch ass'y	CMM-363	613-0363-0000
54	Device gear (Upper)	MR-4064	131-4064-0000
55	Device gear (Lower)	MR-4065	131-4065-0000
56	Device & trigger / stop arm gear	MR-4056	131-4056-0000
57	Slip sheet	PN-1024	101-1024-0000
58	End sensing plate	MR-4066-1	131-4066-0001
59	Trigger & stop arm actuator gear	MR-4096	131-4096-0000
60	Turn over gear	MR-4058	131-4058-0000
61	Stop arm	MR-4067	131-4067-0000
62	Trigger & stop arm spring	SB-2033	160-2033-0000
63	Trigger arm	MR-4068	131-4068-0000
64	End detector spring	SB-2034	160-2034-0000
65	End detector piece	MR-4069	131-4069-0000
66	Take up reel sub-ass'y	AA-1212	179-1212-0000
67	Turn over gear collar	CS-1059	150-3059-0000
68	Drive gear	MR-4168	131-4168-0000
70	Key-off bracket ass'y	AA-1214	179-1214-0000

REF. NO.	DESCRIPTION	PART NO.	MFR'S NO.
71	Print base (K) ass'y	ARP-1168	600-1168-0000
72	Switch actuator	PL-7082	100-7082-0000
73	Power switch spring	SB-2035	160-2035-0000
74	Key-off gear spring	SB-2036	160-2036-0000
75	Key-off cam gear	MR-4059	131-4059-0000
76	Key-off plate ass'y	CMK-1245	610-1245-0000
77	Key-off spring	SB-2037	160-2037-0000
78	Plunger spring	SB-2038	160-2038-0000
79	Key-off plunger shaft	MM-204	130-0204-0000
80	Trigger arm plate	PL-7120	100-7120-0000
81	Muting switch	ESS-519	400-0519-3200
82	Push lever ass'y	CMK-1239	610-1239-0000
83	Cassette case & head panel push plate (K) ass'y	CMK-1274	610-1274-0000
84	Push lever spring	SB-2039	160-2039-0000
85	Cassette case & head panel spring	SB-2040	160-2040-0000
86	Lift up lever spring	SB-2041	160-2041-0000
87	Lift up lever	PL-7089	100-7089-0000
88	FF / REW bracket ass'y	CMK-1241-1	610-1241-0001
89	REW lever	CMK-1242-1	610-1242-0001
90	FF lever	CMK-1243-1	610-1243-0001
91	Program change plate	PL-7085	100-7085-0000
92	FF / REW lever spring	SB-2042	160-2042-0000
93	Case lifter	PL-7086	100-7086-0000
94	Cassette eject plate ass'y	CMK-1244	610-1244-0000
95	Cassette eject spring	SB-2043	160-2043-0000
96	Turn over spring	SB-2044	160-2044-0000
97	Cassette slider	MR-4060	131-4060-0000
98	Cassette detecting plate	PL-7087	100-7087-0000
99	Cassette detecting spring	SB-2045	160-2045-0000
100	Cassette case	PL-7088	100-7088-0000
101	Timing plate	PL-7122	100-7122-0000
102	Spring	SB-2052	160-2052-0000
103	Cushion rubber	MR-4061	131-4061-0000
201	Camera screw 1.7 × 3.5	Z-61735	000-0170-0350-121
202	Tams screw 2.0 × 5	Z-93205	051-0200-0500-120
203	Tapping screw 2.0 × 6	Z-86206	025-0200-0600-020
204	Camera screw 2.0 × 2	Z-6202S	000-0200-0200-122
205	Screw (±) special 2.0 × 4	Z-6204S	000-0200-0400-031
206	Camera screw (Tapping) S2.0 × 3	Z-86203	000-0200-0300-122
207	Camera screw 2.0 × 2.5	Z-6225	000-0200-0250-122
208	Camera screw (Flat) 2.0 × 3.5	Z-2235	001-0200-0350-122
209	Camera screw (Tapping) S2.0 × 4	Z-862042	020-0200-0400-121
210	Polyslider washer (Cut) 1.2 × 3.0 × 0.25	PN-1008	101-1008-0000
211	Polyslider washer 2.1 × 5.0 × 0.13	PN-1009	101-1009-0000
212	Polyslider washer (Cut) 1.6 × 3.4 × 0.3	PN-1010	101-1010-0000
213	Polyslider washer (Cut) 2.1 × 5.0 × 0.4	PN-1011	101-1011-0000
214	Camera screw (TAMS) 2.6 × 4.5	Z-932645	050-0260-0450-121
215	Lumilar washer 3.1 × 4.8 × 0.1	PN-1012	101-1012-0000
216	Lumilar washer 3.6 × 8.0 × 0.2	PN-1013	101-1013-0000
217	Polyslider washer (Cut) 3.0 × 6.0 × 0.5	PN-1014	101-1014-0000
218	Polyslider washer (Cut) 1.6 × 3.8 × 0.3	PN-1025	101-1025-0000
221	E-ring (B) special 1.5	Y-10153S	089-0004-0000
222	E-ring 1.2	Y-30123	080-0120-0300
223	E-ring 1.5	Y-10153	080-0150-0300
224	E-ring 2.0	Y-30204	080-0200-0300
225	E-ring 2.5	Y-30253	080-0250-0300
227	Lumilar washer (Cut) 1.55 × 3.5 × 0.5	PN-1026	101-1026-0000
228	Polyslider washer 2.0 × 3.5 × 0.2	PN-1016	101-1016-0000
229	Polyslider washer 0.85 × 2.8 × 0.25	PN-1053	101-1053-0000

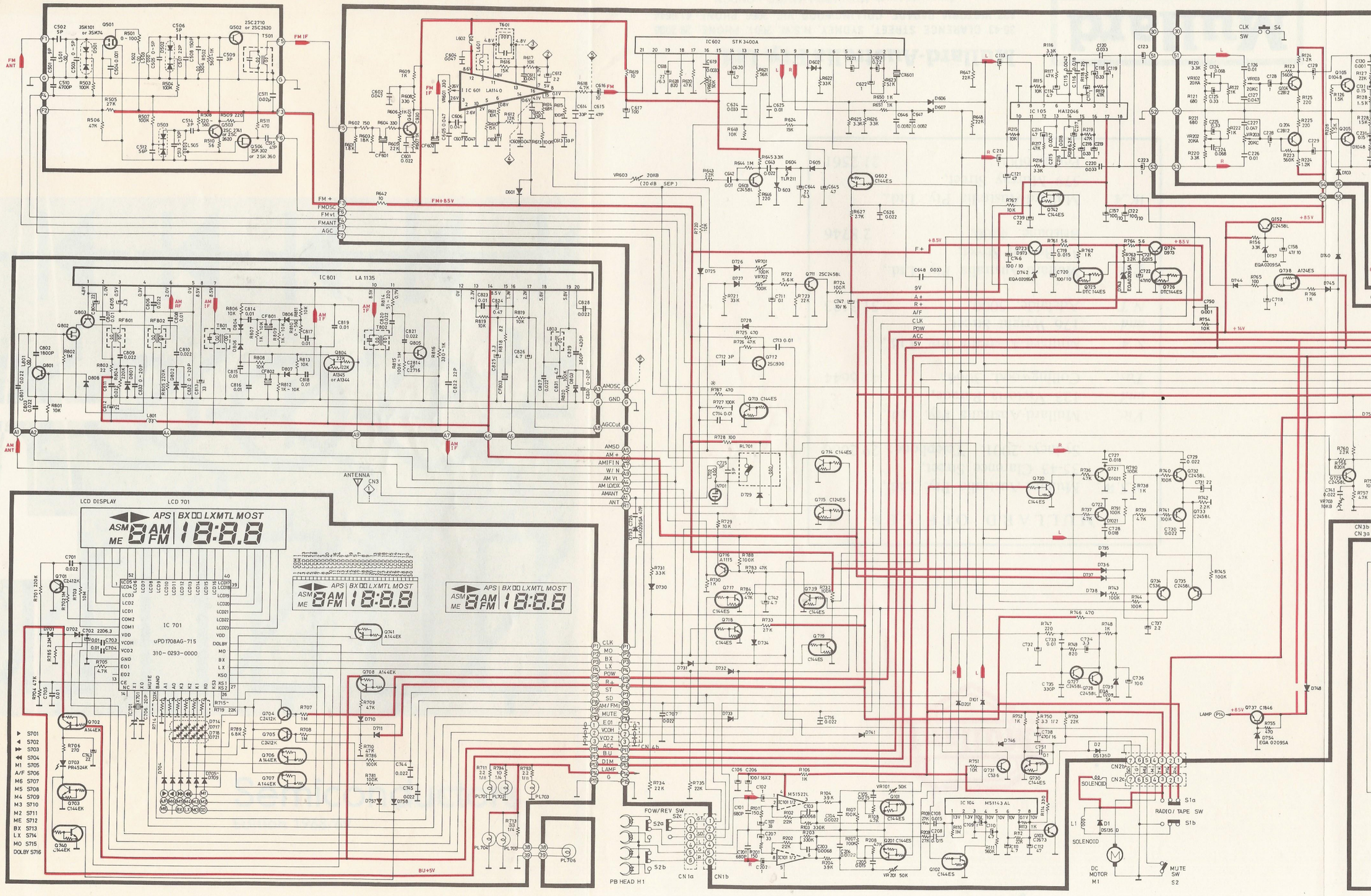
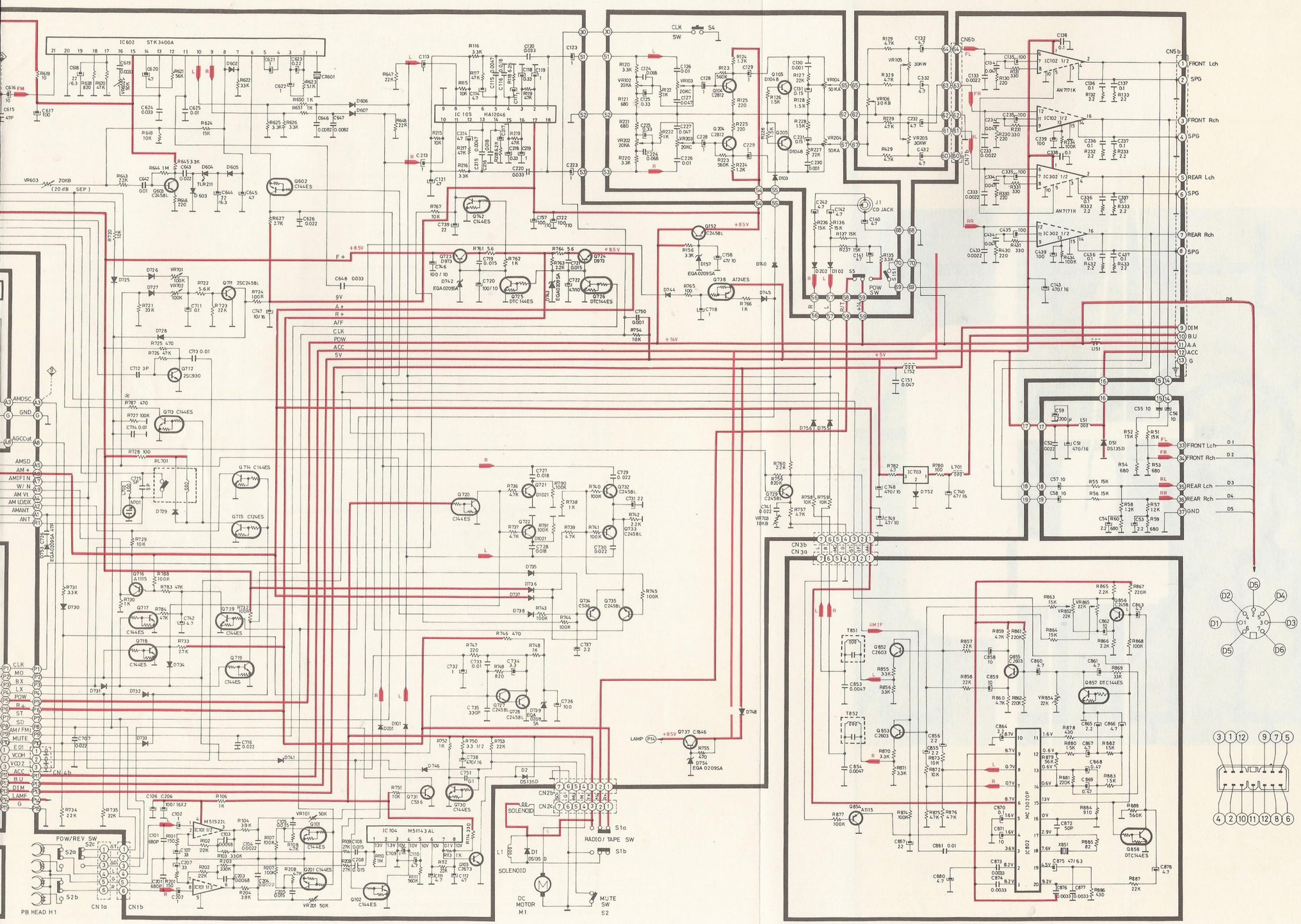
EXPLODED VIEW – CABINET



MECHANICAL PARTS LIST – CABINET

REF. NO.	DESCRIPTION	PART NO.	MFR'S NO.
1	Front knob (A)	MP-4240	131-4240-0000
2	Rear knob (B)	MP-4308	131-4308-0000
3	Rear knob (A)	MP-4307	131-4307-0000
4	Escutcheon ass'y	CMM-0491-2	613-0491-0002
5	Cushion	PN-1091	101-1091-0000
6	Flat cable	WX-0237-1	471-0237-0001
7	LCD Display PC board ass'y	CTP-1401-1	600-1401-0001
8	Lamp PC board ass'y	CTP-1374	600-1374-0000
9	Knob	MP-4309	131-4309-0000
10	Joystick PC board ass'y	CTP-1474	600-1474-0000
11	Spacer	MP-4164-1	131-4164-0001
12	Front chassis	CMK-1409	610-1409-0000
13	Control PC board ass'y	CAP-1473	600-1473-0000
14	Flat cable	WX-0251	471-0251-0000
15	Holder (C) - Mechanism	PL-7330-1	100-7330-0001
16	Button - Eject	MP-4245-2	131-4245-0002
17	Button - FF / REW (L)	MP-4244-2	131-4244-0002
18	Button - FF / REW (R)	MP-4243-2	131-4243-0002
19	6P socket with wires	AH-0181	421-0181-0000
20	7P socket with wires	AH-0214	421-0214-0000
21	Autoreverse cassette mechanism	AA-745-2	626-0005-3102
22	Holder (B) - Mechanism	PL-7278-1	100-7278-0001
23	Top lid	PL-7328	100-7328-0000
24	Aerial socket with cable	AH-0003	425-0003-0000
25	Holder - Aerial socket	PL-2109	100-2109-0000
26	Choke PC board ass'y	CTP-1423	600-1423-0000
27	Hoder - DIN socket	PL-2710	100-2710-0000
28	7P DIN socket with wires	WD-0068	428-1068-0000
29	Side chassis	PL-7327	100-7327-0000
30	Snap-in spring	PL-7281-2	100-7281-0002
31	13P plug	ESC-0327	412-0327-0000
32	Terminal lug	PP-0035	100-6035-0000
33	AM tuner	AR-0203	625-0203-0000
34	Holder - AM tuner	PL-7302	100-7302-0000
35	FM tuner	AR-0202	625-0202-0000
36	AM stereo PC board ass'y	CRP-1433-2	600-1433-0002
37	4P board-in connector	AH-0241	421-0241-0000
38	Escutcheon set	CMM-0489-2	613-0489-0002
39	Cassette door	MP-4254X5	131-4254-0500
40	Door spring	SC-2066	160-2066-0000
41	Function indicate sheet (A)	HPN-1540	181-1540-0000
42	Function indicate sheet (B)	HPN-1541	181-1541-0000
43	Function indicate sheet (F)	HPN-1553-1	181-1553-0001
44	Button	MP-4246-2	131-4246-0002
46	Bottom lid	PL-7329	100-7329-0000
47	Insulation paper	PN-1092	101-1092-0000
48	4P board-in connector	AH-0240	421-0240-0000
49	Main PC board ass'y	CTP-1424-3	600-1424-0003
50	Heatsink	MM-0215-1	130-0215-0001
51	Heatsink plate	PP-0553-1	100-6553-0001
52	6P board-in connector	AH-0179	421-0179-0000
a	Flush head screw 2.6 × 5	002265	001-0260-0500-021
b	SEMS screw 2 × 4	093204	050-0200-0400-121
c	Pan head screw 3 × 4	006304	000-0300-0400-021
d	SEMS screw 2.6 × 5	093265	050-0260-0500-121
e	Pan head screw 2.6 × 6	006266	000-0260-0600-021
f	Pan head screw 3 × 10 (P tight)	006310PT	020-0300-1000-421
g	Pan head screw 2.6 × 5 (Self tight)	006265ST	020-0260-0500-121
h	Flush head screw 3 × 6	002306	001-0300-0600-021
i	Hexagon nut D9	020920	064-0900-0000

SCHEMATIC DIAGRAM



SCHEMATIC DIAGRAM