DENON

Hi-Fi Component Tuner Amplifier

For European/Australian Models

SERVICE MANUAL
MODEL DRA-550

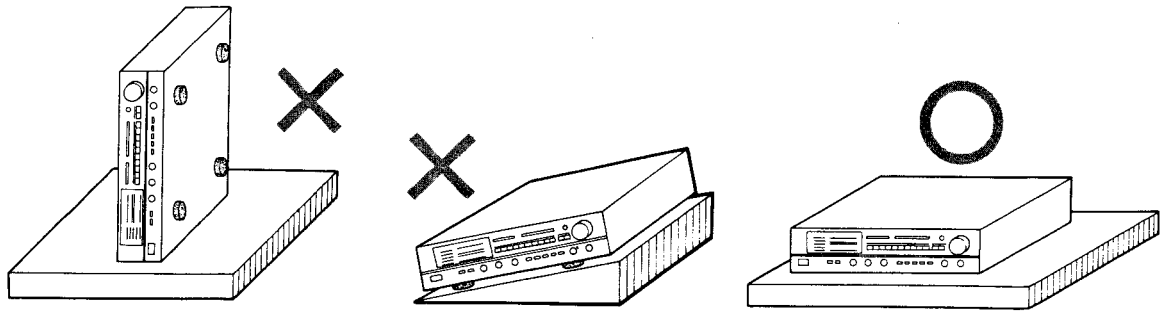
SOLID STATE
TUNER AMPLIFIER

CONTENTS

NIPPON COLUMBIA CO., LTD.

PRECAUTIONS FOR INSTALLATION

DRA-550 uses a newly developed heat emitting unit by employing heat pipes. Since the heat pipes contain a coolant, the DRA-550 must be set level or the desired heat emitting effect cannot be achieved. Always install this unit horizontally.



ADVICE FOR USE

- Do not place the set in direct sunlight, in hot areas such as near heating equipment, with high humidity or dust levels. This may cause damage to the unit.
- Check that all parts are connected correctly before turning on the power source.
- When user is absent for long periods, be sure to remove plug from wall socket.
- Do not use insecticide, benzene or thinner near the unit, or the cabinet color will fade. Avoid using polish: use a soft cloth (e.g. silicon cloth).
- Although the unti is designed to support weight, it is recommended that the user does not place anything too heavy on it. Consider air circulation before placing anything on the unit. If you place any equipment likely to induce hum, make sure there is enough space to between each piece of equipment prevent such hum.

SPECIFICATIONS

AMPLIFIER SECTION

Continuous Power Output:	50 W + 50 W at 8 ohm [(IEC65) Temperature limit output]
Power Bandwidth (IHF):	5 Hz ~ 40 kHz (T.H.D. 0.05% both ch. driven at 8 ohm)
Total Harmonic Distortion (20 Hz to 20 kHz):	−3 dB power into 8 ohm 0.0095%
Damping Factor:	More than 80 (at 1 kHz, 8 ohm)
Frequency Response:	PHONO RIAA Standard Curve (Recording Output) 20 Hz ~ 20 kHz ± 0.5 dB MM 50 Hz ~ 20 kHz ± 0.5 dB MC TAPE, VIDEO/DAD 20 Hz ~ 50 kHz ± 1.5 dB
Input Sensitivity and Impedance:	PHONO MM 2.5 mV 47 k ohm MC 0.25 mV 100 ohm TAPE, VIDEO/DAD 150 mV More than 33 k ohm
Maximum Input Level (at 1 kHz):	PHONO MM 150 mV MC 15 mV
Signal to Noise Ratio (IHF-A):	PHONO MM at 5.0 mV input 86 dB PHONO MC at 0.5 mV input 68 dB TAPE, VIDEO/DAD 95 dB
Tone Controls:	BASS ±8 dB at 100 Hz TREBLE ±8 dB at 10 kHz
Loudness, Control Effect:	VARIABLE LOUDNESS "10" POSITIONS, 50 Hz/10 kHz, +10 dB/ +5 dB
Subsonic Filter Effect:	15 Hz, −6 dB/oct.

TUNER SECTION

[FM]	
Receiving Range:	87.5 ~ 108 MHz
Usable Sensitivity:	1.0 μV (11.2 dBf)
50 dB Quieting Sensitivity:	MONO 2.0 μV (17.2 dBf) STEREO 23 μV (38.5 dBf)
Signal to Noise Ratio:	MONO 82 dB STEREO 80 dB
Total Harmonic Distortion:	MONO 0.1% at 1 kHz STEREO 0.3% at 1 kHz
Capture Ratio:	1.5 dB
Image Rejection:	75 dB
AM Suppression:	60 dB
Selectivity:	70 dB (±400 kHz)
Frequency Response:	30 Hz ~ 15 kHz $^{+0.2}_{-1.5}$ dB
Stereo Separation:	45 dB at 1 kHz
[AM]	
Receiving Range:	522 ~ 1611 kHz
Usable Sensitivity:	18 μV
Signal to Noise Ratio:	55 dB

GENERAL

Power Supply:	AC 220 V 50 Hz (for Europe) AC 240 V 50 Hz (for UK & Australia)
Power Consumption:	100 W
Dimensions:	434 mm (17-3/32")W x 112 mm (4-13/32")H x 400 mm (15-3/4")D
Weight:	7.9 kg (17 lbs, 6 oz)

Design and specifications are subject to change without prior notice.

NOTE: The following codes correspond to the appropriate models.
E2 for Europe, EA for Australia, EK for U.K.
This Service Manual is prepared base on E2 Gold Version.

NAME AND FUNCTION OF PARTS
FRONT PANEL

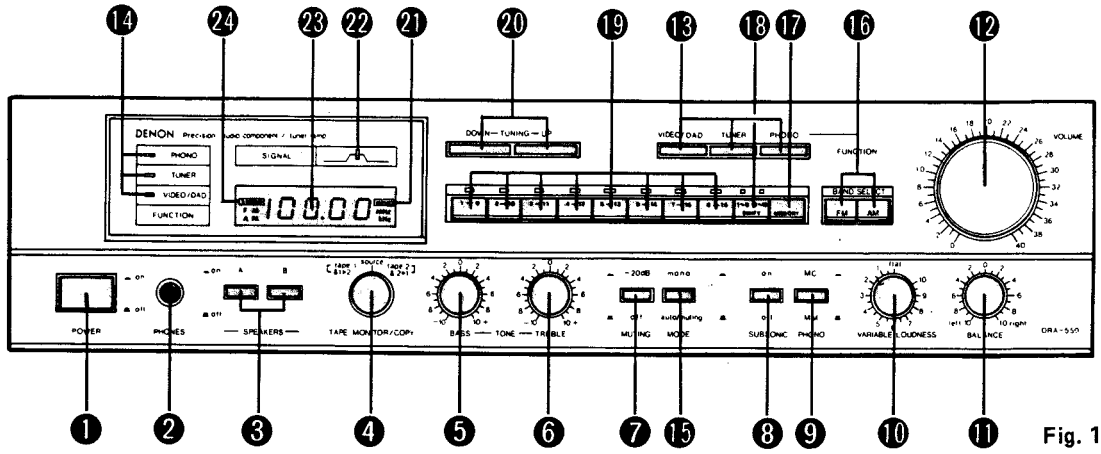


Fig. 1

① POWER (Power Switch)
② PHONES (Headphone Jack)
③ SPEAKERS (Speaker Select Switch)
④ TAPE MONITOR/COPY (Tape Monitor/Copy Switch)
⑤ BASS (Bass Control)
⑥ TREBLE (Treble Control)
⑦ MUTING (Muting Switch)
⑧ SUBSONIC FILTER (Subsonic Filter Switch)
⑨ PHONO (Cartridge Select Switch)
⑩ VARIABLE LOUDNESS (Loudness Control)
⑪ BALANCE (Balance Control)
⑫ VOLUME (Volume Control)
⑬ FUNCTION (Input Select Switch)
• PHONO, • TUNER, • VIDEO/DAD
⑭ FUNCTION INDICATOR
⑮ MODE (FM Mode, Tuning Mode and Muting Switch)
▙: auto/muting, ▁: mono
⑯ BAND SELECT (Band Select Buttons)
• AM, • FM
⑰ MEMORY (Memory Button)
⑱ SHIFT (Shift Button)
⑲ PRESET CHANNEL 1 ~ 16 (Station Presetting Buttons)
⑳ TUNING (Tuning Buttons)
UP, DOWN
㉑ MEMORY INDICATOR
㉒ SIGNAL (Signal Strength Indicator)
㉓ FREQUENCY DISPLAY
㉔ STEREO (Stereo Indicator)

BACK PANEL

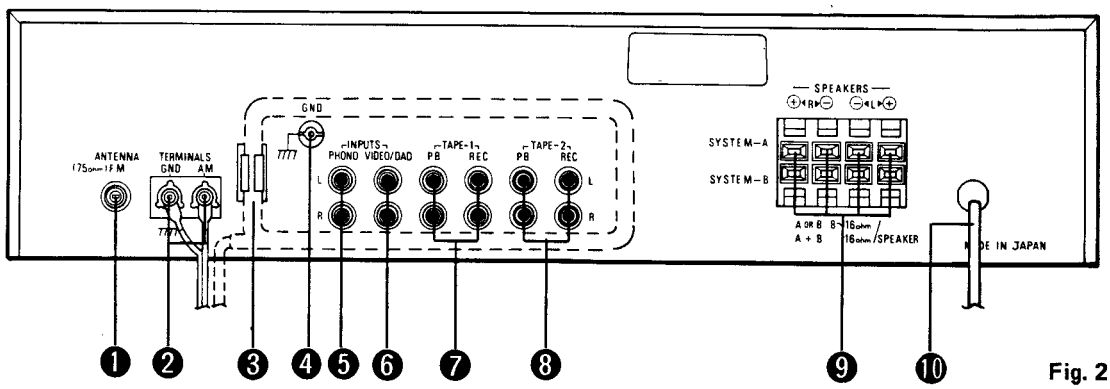


Fig. 2

① FM ANT 75 ohm (FM Antenna Terminal)
② AM ANT (AM Antenna Terminal)
③ AM LOOP ANT (AM Loop Antenna)
④ GND (Grounding Terminal)
⑤ PHONO (Photo Input Terminals)
⑥ VIDEO/DAD (Input Terminals)
⑦ ⑧ TAPE-1, -2 (Playback and Recording Terminals)
⑨ SPEAKERS (Speaker Terminals)
⑩ AC CORD (Power Cord)

CONNECTIONS

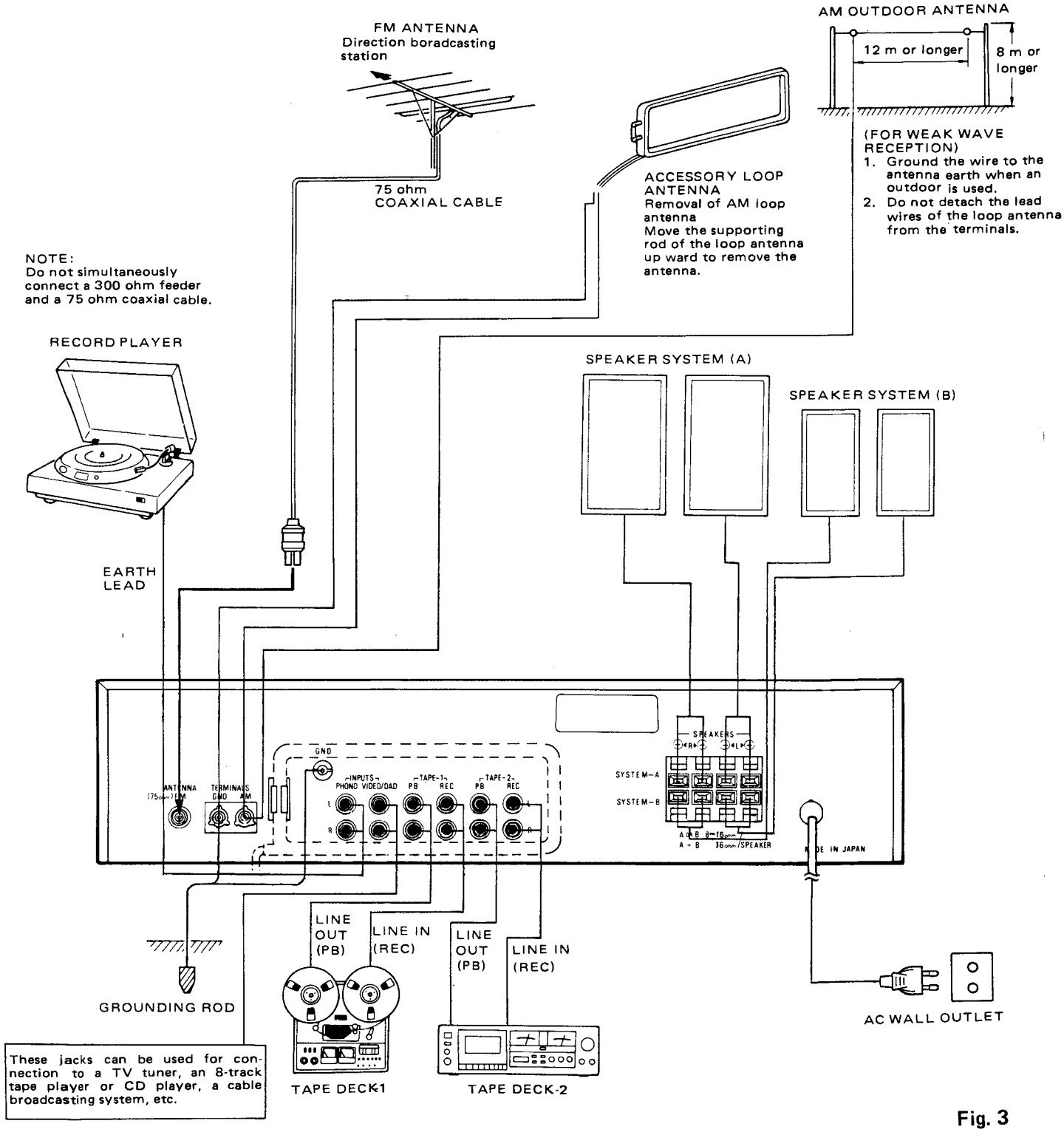


Fig. 3

- Do not plug the power source cord into an AC outlet until all the connections are completed.
- Connect the right (R) channel plug to the right (R) channel jack, and the left channel plug to the left channel jack.
- Insert the plugs firmly into the corresponding jacks. If a connection is incomplete, noise may be generated.
- Plug the power source cord for audio equipment into the AC OUTLET terminal. Do not use this terminal for other electric appliances such as hair dryer. (NOT INCLUDED IN SYSTEM FOR EUROPEAN USE).
- Do not bundle the pin plug cords with the power source cord and do not place the pin plug cords near the power transformer, or humming and other noise may be generated.
- Always connect the pin plug cord to the input terminal 'PHONO" because this terminal is highly sensitive. If this terminal is not connected, induction hum may be generated.

ANTENNA INSTALLATION

- FM OUTDOOR ANTENNA CONNECTION (Fig. 4)

  Use a coaxial cable of 75-ohm resistance, to connect the outdoor antenna and the tuner. The coaxial cable of 75-ohm resistance (3C–2V, 5C–2V) is preferable to obtain better performance of the tuner.

  * Contact your local dealer for details on selection and installation of the FM outdoor antenna. When connecting the coaxial cable to the antenna terminal using with the DIN connector, please refer to the following procedures respectively. The 300-ohm outdoor antenna and the T-type indoor antenna can be connected by using the antenna adaptor.

- AM ANTENNA CONNECTION (Fig. 5)

  Attach AM Loop antenna to antenna holder on back panel. Connect leads to AM and GND. Use this terminal also for an outdoor antenna.

  Orient the loop antenna horizontally to obtain optimum reception.

  In places where strong, clear signals can not be received, due to location and/or environmental conditions, connect an insulated wire to the AM antenna terminals and attach it to the wall. Where broadcast stations are distant and only weak signals are received, or where signals are blocked by obstacles, install an AM outdoor antenna.

  * Even if an AM outdoor antenna is installed, do not detach the AM loop antenna.

GROUNDING

If there is much noise during reception, it is recommended that a grounding wire be used.

Connect a thick insulated wire to the "GND" terminal, and wind the unconnected bare end around a metal water pipe, a grounding rod, or a grounded copper plate.

* Never connect grounding the wire to a gas pipe. This could cause fire or explosion.

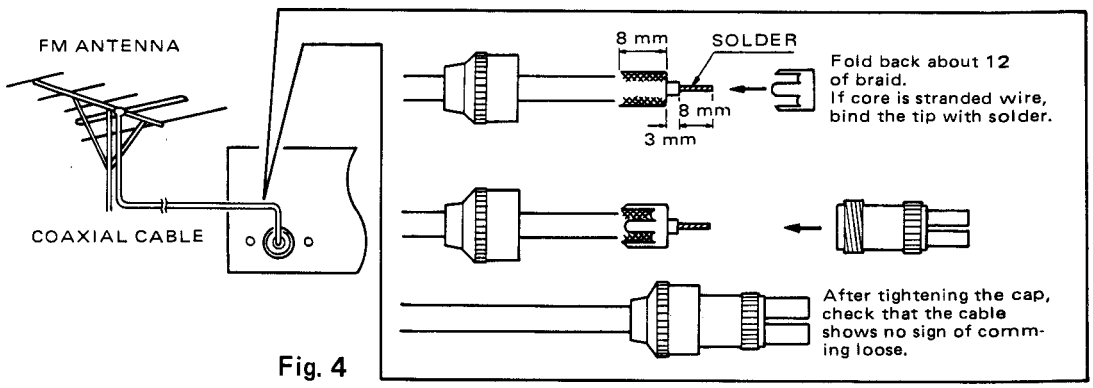
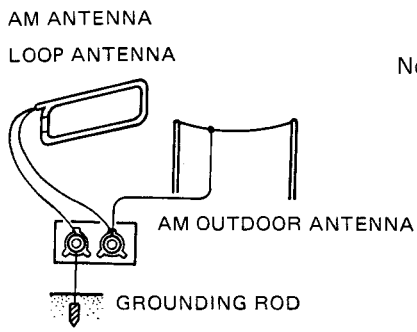


Fig. 4



Note: Even if an external AM antenna is used, the LOOP antenna connect AM loop antenna to the back panel. Be sure the lead terminal does not touch the metal part of back panel.

Fig. 5

BLOCK DIAGRAM

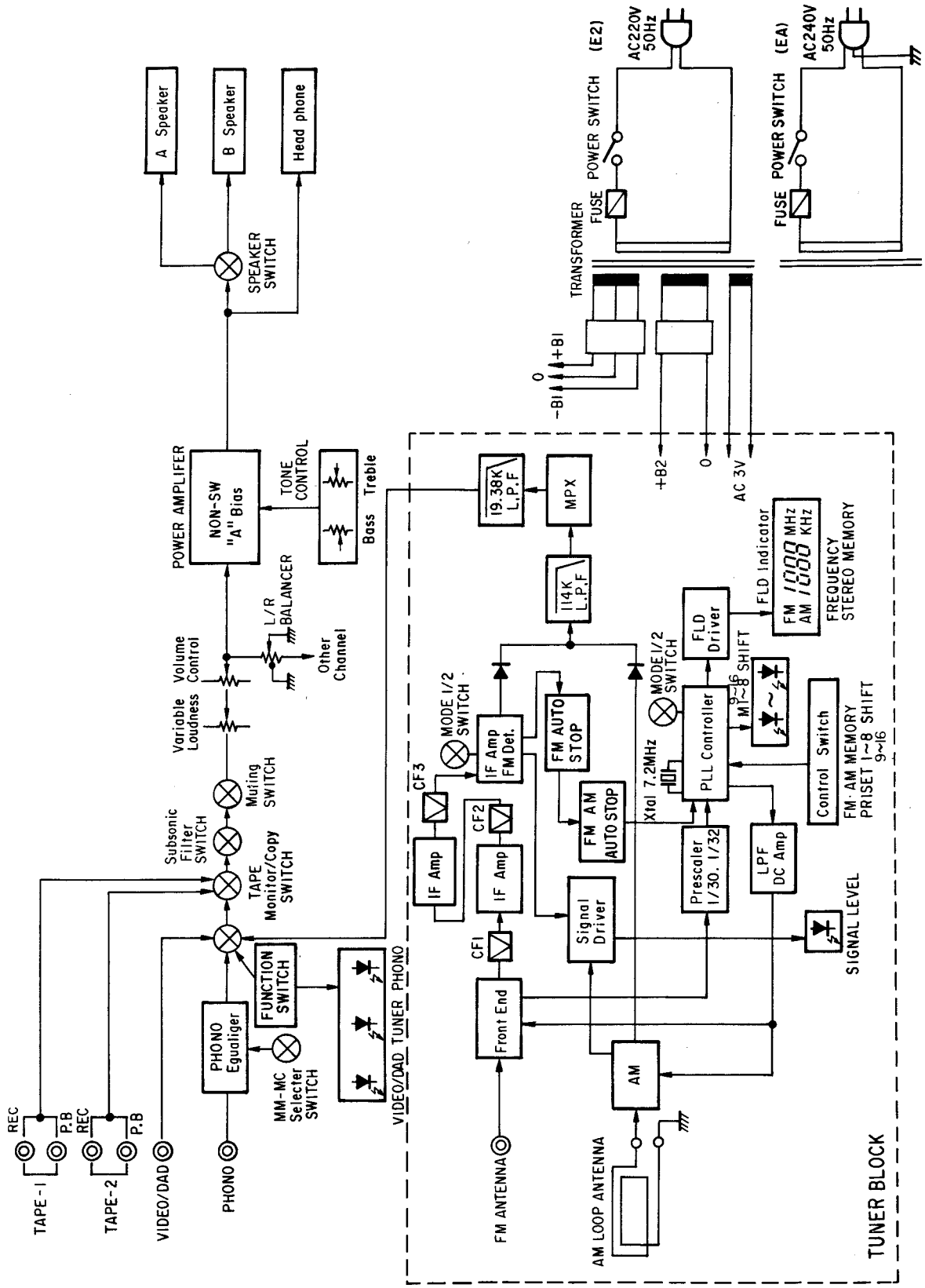


Fig. 6

METHOD OF ADJUSTMENTS

When making adjustments, be sure the power supply is at the rated voltage and the room air is in normal condition with respect to temperature and humidity.

• Amplifier Section

1. IDLING CURRENT (FIG. 7)

(1) Set controls as follows'

POWER Switch → off ( )
VOLUME Control → 0 (min.)
SPEAKERS → off ( )
Temperature → 15°C ~ 30°C
VR501 and VR502 of the ETC0731B (AMP. TUNER Unit) → Center
Power supply → AC 220 V ±1 %, 50 Hz. (For EA: AC 240 V 50 Hz)

(2) Connect Digital Voltmeter to the test points 501 (+), 502 (–) and 503 (+), 504 (–) of the ETC073-1J.

(3) Turn the Power Switch on and rotate VR501 clockwise so that the Digital Voltmeter reads 1 mV ± 0.2 mV DC at the test point 501, 502. Follow the same procedure to VR502 for test point 503, 504.

(4) Warm up three minutes, then readjust VR501 and VR502 as in step (3) so that the Digital Voltmeter reads 4.0 mV ±0.5 mV DC.

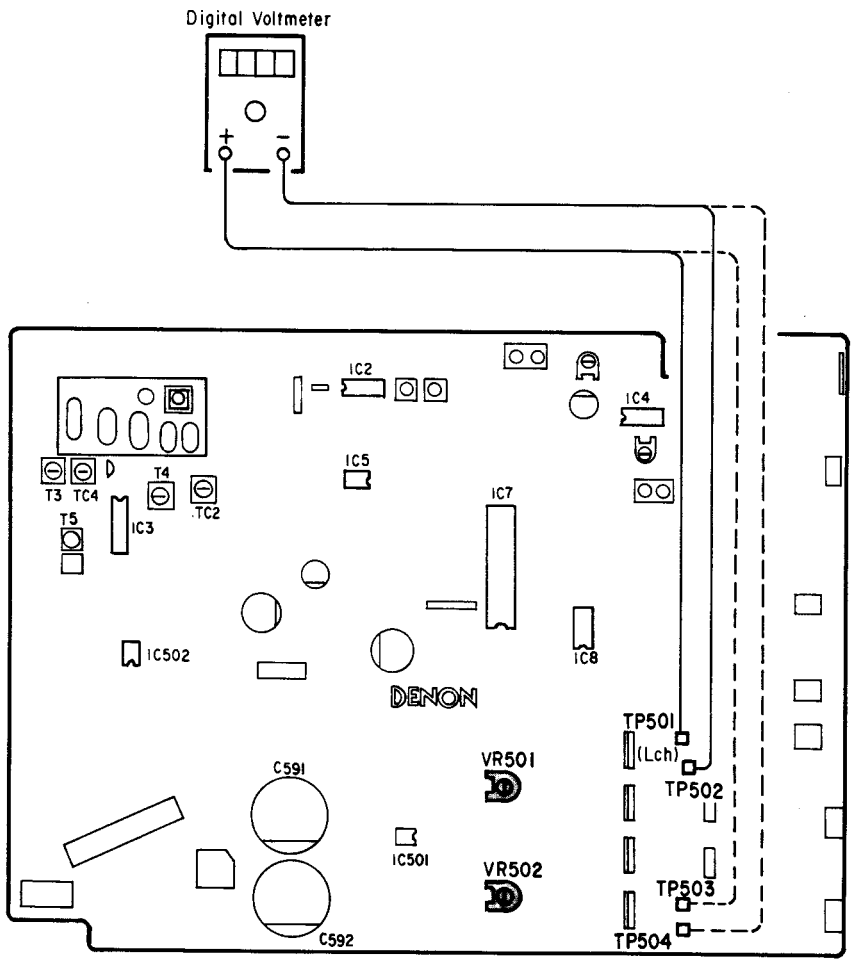


Fig. 7

FM/MPX ALIGNMENT (Fig. 8)

Table 1

Step	Alignment Item	Tuning Frequency Setting	Input					Output		Adjustment		Remarks
			Type	Frequency	Input Level	Modulation	Coupling	Type	Connect to	Points	Adjust to	
1	76 kHz	98 MHz	FM Standard Signal Generator Mono.	98 MHz	60 dBμ	1 kHz 100%	Antenna Terminal	Frequency Counter	T.P. 3 T.P. 4 (GND)	VR1	76 kHz ± 50 Hz	Function: FM Mode: Auto
2	Tuning Center	98 MHz	FM SSG, Mono	98 MHz	60 dBμ	None	Antenna Terminal	Center Meter	T.P. 1, 2	T-1	Center of Tuning Meter	Function: FM Mode: Auto
3	Distortion (Mono)	98 MHz	FM SSG, Mono	98 MHz	60 dBμ	1 kHz 100%	Antenna Terminal	Distortion Meter	Output TAPE 2 REC (L)	T-2	Minimum Distortion	Function: FM Mode: Auto
4	Distortion (Stereo)	98 MHz	FM SSG Stereo (L)	98 MHz	60 dBμ	Main: 1 kHz L-ch 90% Pilot: 10%	Antenna Terminal	Distortion Meter	Output TAPE 2 REC (L)	IFT on Front End	Minimum Distortion	Function: FM Mode: Auto
5	Noise Center & Distortion	Repeat 2, 3 and 4 to obtain minimum distortion and same time indicating of center meter at center condition.										
6	Separation	98 MHz	FM SSG Stereo (L), (R)	98 MHz	60 dBμ	Main: 1 kHz L-ch 90% Pilot: 10%	Antenna Terminal	Audio V.M.	Output TAPE 2 REC (L), (R)	VR-2	Maximum Separation	Function: FM Mode: Auto

AM ALIGNMENT (Fig. 9)

1	AM IF	–	AM IF Sweep	–	Input Level is not over to Works A.G.C.	–	AM Antenna Terminal	Oscilloscope	T.P. 6	T-5	Maximum Height and Best Symmetry Curve	Function: AM Center of Wave Form: 450 kHz
2	Receiving Band Alignment	522 kHz	AM SSG	522 kHz	Input Level is not over to Works A.G.C.	400 Hz 30%	Loop Antenna	Electric DC Voltmeter	T.P. 5, T.P. 7 (GND)	T-4	1.2V ± 20 mV	Function: AM
		1611 kHz	AM SSG	1611 kHz	Input Level is not over to Works A.G.C.	400 Hz 30%	Loop Antenna	Electric DC Voltmeter	T.P. 5, T.P. 7 (GND)	TC-2	8.0V ± 20 mV	Function: AM
3	Tracking Alignment	603 kHz	AM SSG	603 kHz	Input Level is not over to Works A.G.C.	400 Hz 30%	Loop Antenna	Audio V.M.	Output TAPE 1 REC (L)	T-3	Maximum Output	Function: AM
		1404 kHz	AM SSG	1404 kHz	Input Level is not over to Works A.G.C.	400 Hz 30%	Loop Antenna	Audio V.M.	Output TAPE 1 REC (L)	TC-1	Maximum Output	Function: AM
4	Signal LED	999 kHz	AM SSG	999 kHz	55 dB/m	400 Hz 30%	Loop Antenna	–	–	VR-3	To Light-up Signal LED	Function: AM

CONNECTION DIAGRAM OF MEASURING INSTRUMENTS

- FM

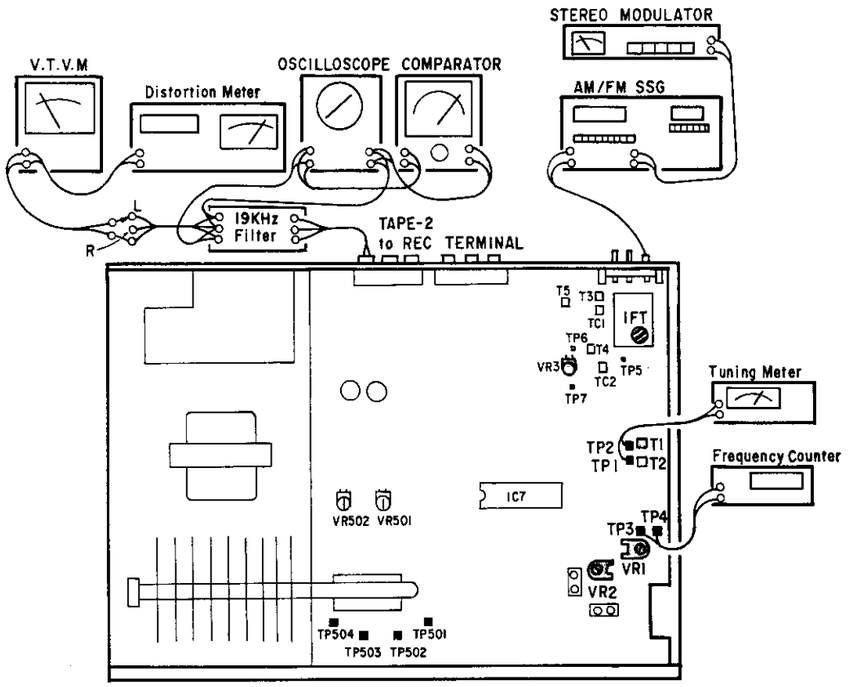


Fig. 8

- AM

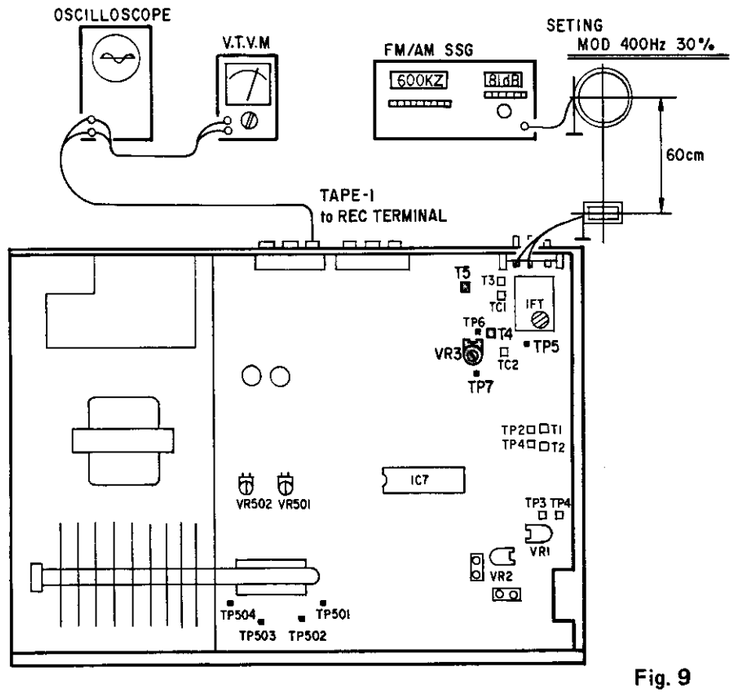


Fig. 9

ROUGH DIAGRAM OF ADJUSTMENT POINTS
ETC0731 AMP TUNER UNIT (Component Side)

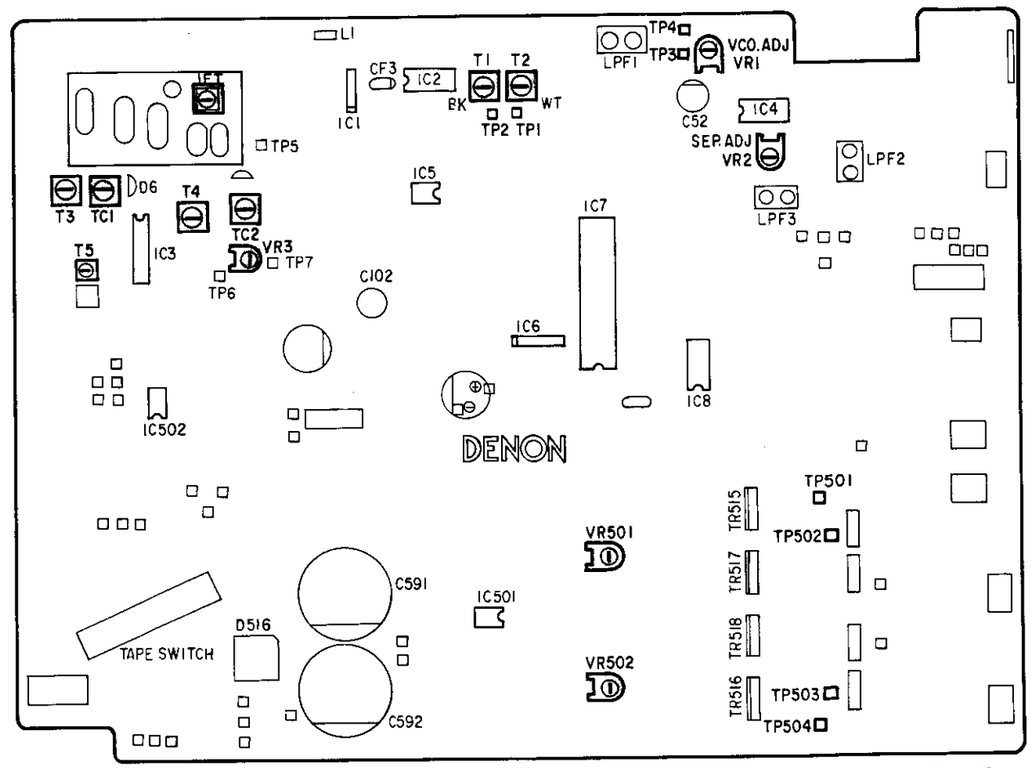


Fig. 10

TUNING METER JIG

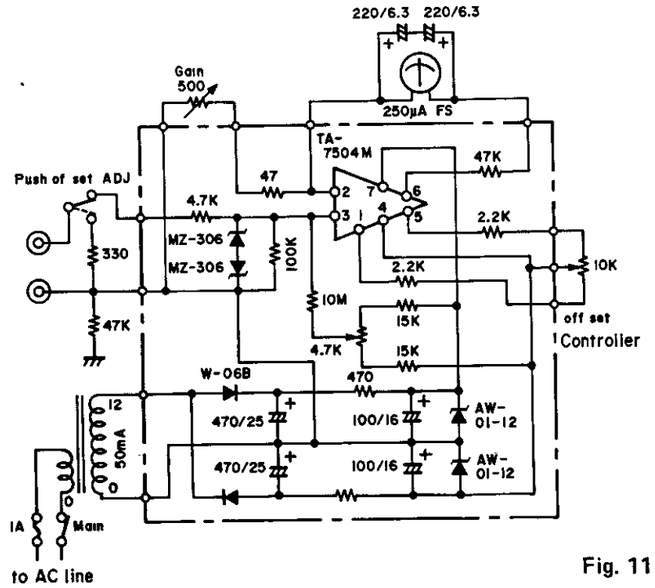
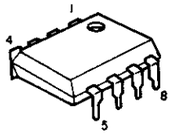


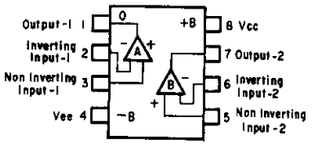
Fig. 11

SEMICONDUCTORS

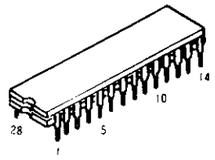
• IC's

NJM4558D-D
NJM2043D
(JRC)

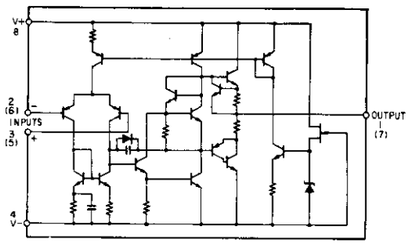


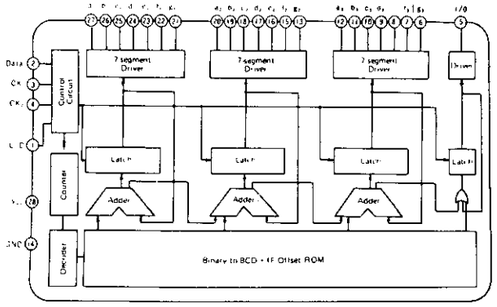


TD6301AP
(Toshiba)

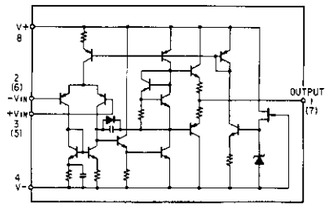


NJM4558D-D





NJM2043D

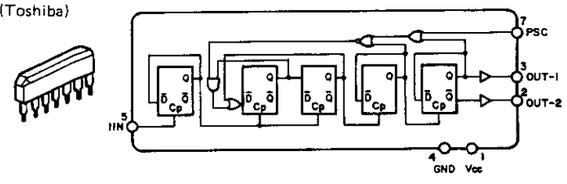


FUNCTIONS OF TERMINALS

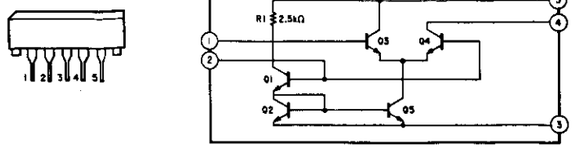
Pin No.	Name	Function
1	L/D	Output status select input terminal. Input terminal for selecting output status by the indicator (LED, FL, LCD).
2	Data	Receiving frequency data input terminal. Input serially by the system controller LSI.
3, 4	CK1 CK2	Received frequency data input control timing input terminal. Transferred simultaneously with data by the system controller LSI.
5	1/0	Segment drive output terminal. 100 MHz-unit display at FM time. Only 1 pin is used for output because of 1 to 0 in both FM/AM.

Pin No.	Name	Function
6~12	a^3~g^3	7-segment drive output terminal. 10 MHz-unit display at FM time. 100 kHz-unit display at AM time.
13, 15~20	a^2~g^2	7-segment drive output terminal. 1 MHz-unit display at FM time. 10 kHz-unit display at AM time.
21~27	a1~g1	7-segment drive output terminal. 100 kHz-unit display at FM time. 1 kHz-unit display at AM time.
14, 28	Vcc GND	Supply voltage applying terminal.

TD6104P
(Toshiba)



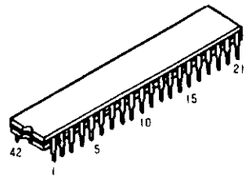
TA7060AP (Toshiba)



FUNCTIONS OF TERMINALS (TD6104P)

Pin No.	Name	Functions
5	f_{IN}	FM station signal input terminal Frequency range 60 – 140 MHz Input level 75 – 300 mVrms
3	OUT-1	Dividing an input signal into 1/30 or 1/32 through dividing output terminal f_{IN}. Output level 0.5(V)MIN
2	OUT-2	OUT-1 inverted signal output. Because of open emitter system, if it is to be used. External resistor is necessary. Open in general.
7	PSC	Dividing value select control terminal 1/32 when Vpcc ≧ 2(V), 1/30 when Vpcc ≦ 1(V)
6	C	for bias circuit. Connect C = 2200 pF (approx.) between the unit and the GND.
1 4	Vcc GND	Power terminal Vcc = 5V Icc = 5 mA (standard), 10 mA (max.)

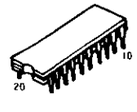
TC9147BP
(Toshiba)

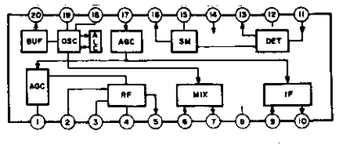


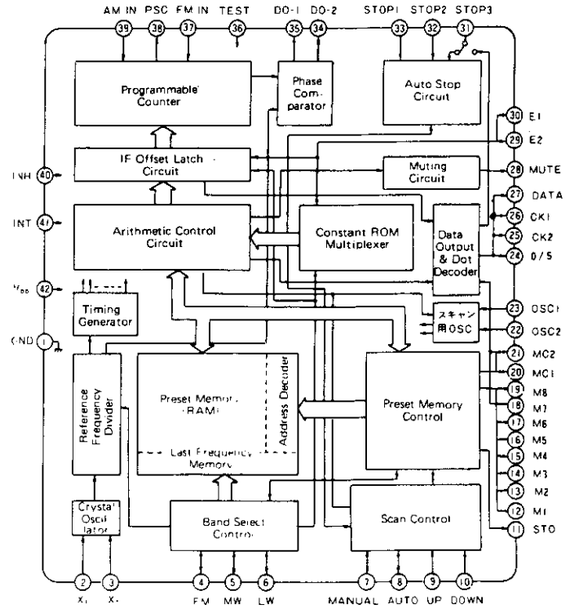
FUNCTIONS OF TERMINALS

Pin No.	Symbol	Name	Function
2	XT	Crystal oscillator terminal	Connects crystal 7.2 MHz for reference frequency.
3	XT		
4	FM	FM band specifying input	Selects FM, MW and LW in the mutual reset mode.
5	MW	MW band specifying input	
6	LW	LW band specifying input	
7	MANUAL	Manual tuning mode specifying input	Selects between manual operation and auto search operation in mutual reset mode at UP/DOWN channel select time.
8	AUTO	Auto search tuning mode specifying input	
9	UP	UP operation key input	UP/DOWN channel selection by connecting a push-key
10	DOWN	DOWN operation key input	
11	STO	Memory store instruction input	With this input, preset memory is set to write enable status.
12 ~ 19	M1 ~M8	Preset memory channel specifying input	Controls read/write of the internal 16-channel preset memory in conjunction with MC1 and MC2 input.
20 21	MC1 MC2	Memory control input	Sets the 16-channel preset memory to an 8-channel fixed system for FM/AM (MW + LW) or a 16-channel tandem system for FM+MW+LW (3 bands).
22	OSC2	Oscillator terminal for AM	C/R connecting terminal for oscillator, which determines scan speed at AM search time.
23	OSC1	Oscillator terminal for FM	C/R connecting terminal for oscillator, which determines scan speed at FM search time.
24	0/5	FM Europe 50 kHz output	Europe area FM band 50 kHz step indicating output. Set "H" at 50 kHz.
25 26 27	CK2 CK1 DATE	Received frequency data serial output	Otputs serial data and timing lock to driver TD6301 for receiving frequency digital display. CK1 output is used as Pcc output at the same time.

LA1245
(Sanyo)

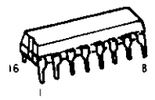




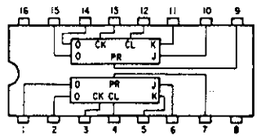


Pin No.	Symbol	Name	Function
28	MUTE	Muting signal output	Set "H" at muting output time.
29 30	E2 E1	Area specify input	Specifies an area, Japan, U.S.A. or Europe.
31	STOP3	AM-IF signal input	Counts IF 450 kHz signals at AM time and stops auto search.
32	STOP2	Auto search stop signal input	If "H" level is input STOP2 when "H" level is set to STOP1, the auto search is stopped. Used for AR1 or stereo channel receiving status discrimination.
33	STOP1	Scan speed slow input	When "H" level is input, reduces the auto search scan speed to 1/2.
34 35	DO-2 DO-1	Phase comparator output	Two tristate buffers are output in parallel from a single phase comparator.
36	TEST	Test terminal	Sets test mode with "H" level input.
37	FM_{IN}	FM programmable counter input	Connects the output of precaller TD6104P.
38	PSC	Prescaller control output	Controls dividing (1/30, 1/32) of the prescaller TD6104P.
39	AM_{IN}	FM programmable counter input	Inputs AM channel signal.
40	INH	Inhibit input	Oridinary operation at "H" level, and inhibit status at "L" level.
41	INT	Initialize input	Ordinary operation at "H" level, and initialization of internal status at "L" level
42 1	V_{DD} GND	Power applying terminal	Applies 5 ± 0.5 V. Up to 2 V is available as backup.

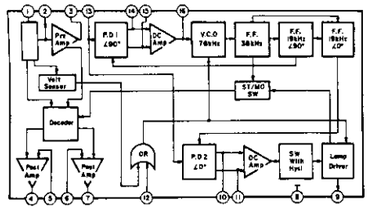
HD14027B
HA11225
HA12016
(Hitachi)



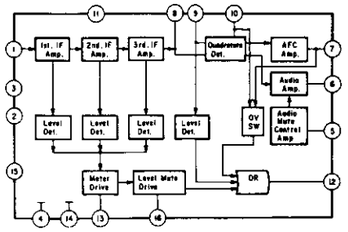
HD14027B



HA12016

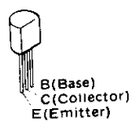


HA11225

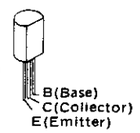


• TRANSISTORS

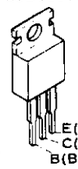
2SC461(C)
2SC1815(BL)
2SA1015(GR),(Y)
2SC1685(R)
2SA1564A(R)
2SC1685(O/R)
2SA988(E/F)
2SC1841(E/F)
2SC535(C)



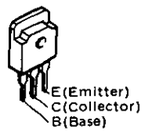
2SB647A(C)
2SD667A(C)
2SD468A(C)



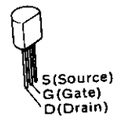
2SD880(Y)



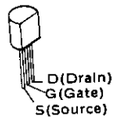
2SA1104(Y/O)
2SC2579(Y/O)



FET 2SK163M



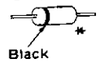
FET 2SK373Y



• DIODES (including LED)

1S2076A

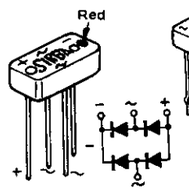
HZ6-B2
HZ-15-1
HZ-9B-2
HZ-12A
HZ-16-2



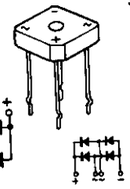
KB-265

Varactor
SVC321SP-D2

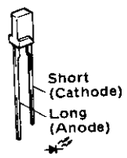
S1RBA20F



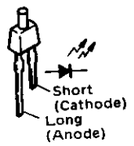
S4VB20F



SEL1321G (Green)
SEL1121R (Red)

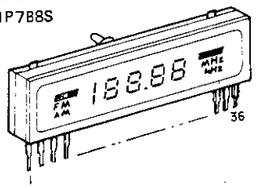


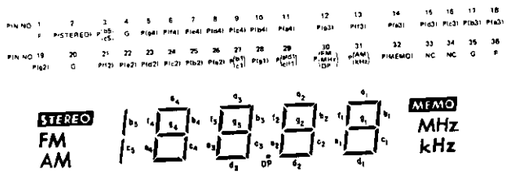
SEL1112R (Red)



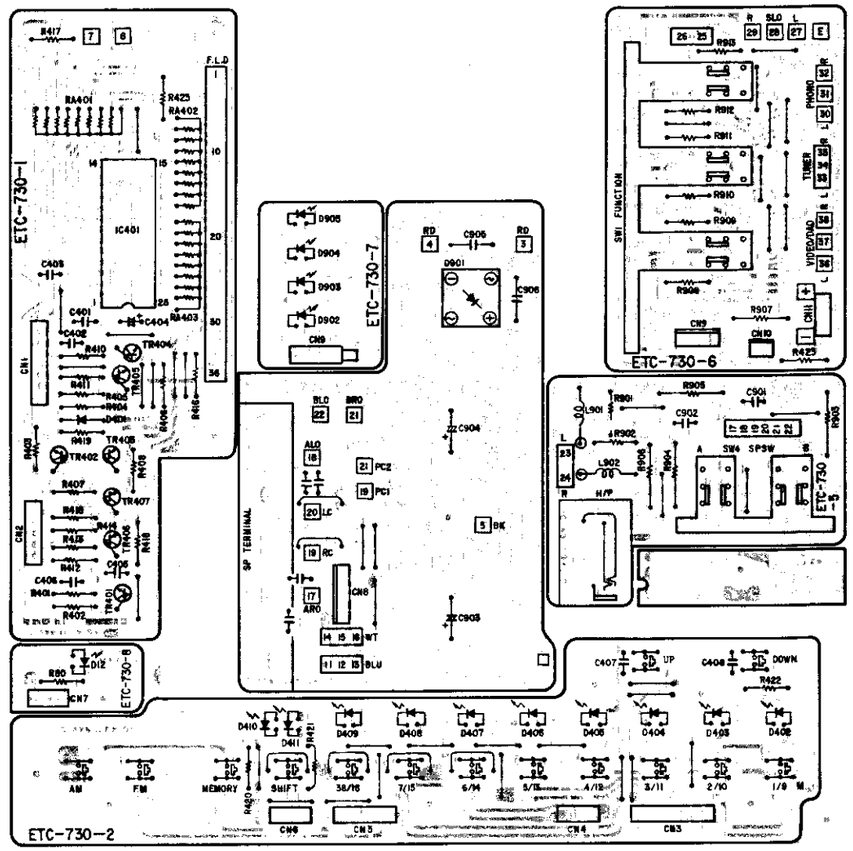
• ELECTRON RAY INDICATOR TUBE

F1P7S8S





PRINTED WIRING BOARD PATTERNS AND PARTS LIST
ETC0730J, ETC0730K CONTROL UNIT



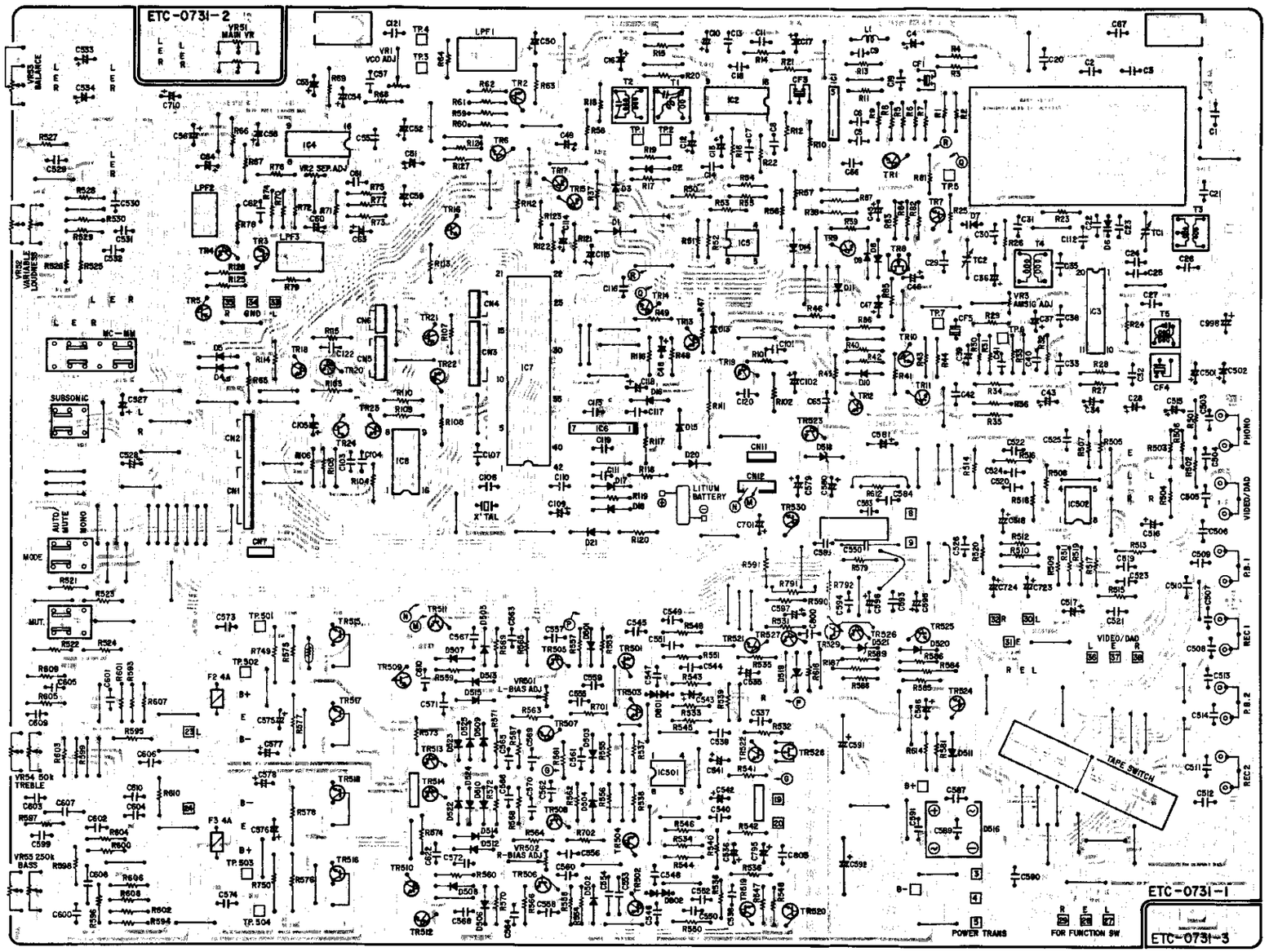
ETC0730J for E2, CONTROL UNIT PARTS LIST

Ref. No.	Part No.	Part Name & Descriptions
SEMICONDUCTORS		
IC401	2620453006	TD6301AP (TOSHIBA) IC
TR401, 402	2730294016	2SC1685(R) TRANSISTOR
TR403	2710178039	2SA564A(R) TRANSISTOR
TR404, 405	2730294016	2SC1685(R) TRANSISTOR
TR406, 407	2710178039	2SA564A(R) TRANSISTOR
D012	3939261014	SEL1321G(GREEN) LED
D401	2760049008	1S2076 DIODE
D402 ~409	3939261001	SEL1121R(RED) LED
D410, 411	3939260002	SEL1112R(RED) LED
D902 ~904	3939261014	SEL1321G(GREEN) LED
RESISTORS		
R080	2412092002	1 kohm ±5% ¼W CARBON
R401 ~404	2412130003	39 kohm ±5% ¼W CARBON
R405 ~409	2412116001	10 kohm ±5% ¼W CARBON
R410 ~415	2412130003	39 kohm ±5% ¼W CARBON
R416	2412116001	10 kohm ±5% ¼W CARBON
R417, 418	2412076002	220 ohm ±5% ¼W CARBON
R419	2412130003	39 kohm ±5% ¼W CARBON
R420	2412087004	620 ohm ±5% ¼W CARBON
R421	2412108006	4.7 kohm ±5% ¼W CARBON
R422	2412087004	620 ohm ±5% ¼W CARBON
R423	2412110007	5.6 kohm ±5% ¼W CARBON
R901, 902	2410282005	47 ohm ±5% ¼W CARBON
△R905, 906	2440033020	220 ohm ±5% 1W METAL OXIDE (NB)
R907	2410181009	680 ohm ±5% ½W CARBON
R908 ~911	2412068007	100 ohm ±5% ¼W CARBON
RA401 ~403	2462012003	10 kohm ±20% 1/8W RESISTOR ALLAY
CAPACITORS		
C401 ~403	2531006005	2200pF ±10% 50V CERAMIC
C407	2533633007	180pF ±5% 50V CERAMIC
C903, 904	2531003008	680pF ±10% 50V CERAMIC
C951 ~954	2551078000	0.033μF ±10% 50V PLASTIC FILM
OTHER PARTS		
	2221081204	P.W. BOARD
	EP-5667H1	TERMINAL PIN USED 10
	2090008120	JUMPER WIRE P=10mm USED 31
	2124407008	TACT SWITCH USED 14
	2124499003	2P PUSH SWITCH USED 1
	2124504008	INPUT SELECTOR SWITCH FUNCTION
	2050151004	8P PUSH TERMINAL SP OUTPUT
L001, 002	2359001004	INDUCTOR 1μH
	3934009019	FIP7F8S FLD
	2030241057	1P CONTACT ASS'Y
	2048100009	HEADPHONE JACK
	2050185038	3P WIRE HOLDER USED 6
	2050185041	4P WIRE HOLDER
	2050185054	5P WIRE HOLDER USED 2
	2050185070	7P WIRE HOLDER USED 2
	2050185067	6P WIRE HOLDER
	2050133048	4P NH CONNECTOR BASE
	1460703108	LED GUIDE
	4770210016	PUSH RIVET USED 3
	2032154003	2P CONNECTOR CORD USED 2
	2036116050	4P CONNECTOR CORD
	2042096009	8P CONNECTOR CORD
	2042090005	10P CONNECTOR CORD
	2046040006	12P CONNECTOR CORD

ETC0730K for EA CONTROL UNIT PARTS LIST (Same as ETC0730J CONTROL UNIT PARTS LIST except the followings.)

Ref. No.	Part No.	Part Name & Descriptions
CAPACITORS		
C903, 904	2531006005	2200pF ±10% 50V CERAMIC (CHANGE)
C951 ~954	2551078000	0.033μF ±10% 50V PLASTIC FILM (DELETE)

ETC0731J, ETC0731K AMP TUNER UNIT



ETC0731J AMP TUNER UNIT PARTS LIST for E2

Ref. No.	Part No.	Part Name & Descriptions	
		SEMICONDUCTORS	
IC001	2630099007	TA-7060AP (TOSHIBA)	IC
IC002	2630083000	HA11225 (HITACHI)	IC
IC003	2630145003	LA1245 (SANYO)	IC
IC004	2630123009	HA-12016 (HITACHI)	IC
IC005	2650030004	NJM4558D-D (JRC)	IC
IC006	2630232000	TD6104P (TOSHIBA)	IC
IC007	2620452104	TC9147BP (TOSHIBA)	IC
IC008	2620343006	HD14027B (HITACHI)	IC
IC501	2650030004	NJM4558D-D (JRC)	IC
IC502	2650037007	NJM-2043 (JRC)	IC
TR001	2730025023	2SC461(C)	TRANSISTOR
TR002 ~004	2730198015	2SC1815(BL)	TRANSISTOR
TR005	2710102021	2SA1015(GR)	TRANSISTOR
TR006, 007	2730198015	2SC1815(BL)	TRANSISTOR
TR008	2750020008	2SK163(M)	FET
TR009	2730198015	2SC1815(BL)	TRANSISTOR
TR010 ~014	2730294016	2SC1685(R)	TRANSISTOR
TR015	2710102021	2SA1015(GR)	TRANSISTOR
TR016	2730294016	2SC1685(R)	TRANSISTOR
TR017	2710102021	2SA1015(GR)	TRANSISTOR
TR018	2730294016	2SC1685(R)	TRANSISTOR
TR019	2740046005	2SD468A(C)	TRANSISTOR
TR020 ~022	2710178039	2SA564A(R)	TRANSISTOR
TR023	2730294016	2SC1685(R)	TRANSISTOR
TR024	2730269012	2SC1685(Q/P)	TRANSISTOR
TR501, 502	2710102005	2SA1015(Y)	TRANSISTOR
TR503, 504	2730198002	2SC1815(Y)	TRANSISTOR
TR505, 506	2710131021	2SA988(E/F)	TRANSISTOR
TR507, 508	2730235020	2SC1841(E/F)	TRANSISTOR
TR509, 510	2730294016	2SC1685(R)	TRANSISTOR
TR511, 512	2740060007	2SD667A(C)	TRANSISTOR
TR513, 514	2720053005	2SB647A(C)	TRANSISTOR
TR515, 516	2730232023	2SC2579(O/Y)	TRANSISTOR
TR517, 518	2710130022	2SA1104(O/Y)	TRANSISTOR
TR519, 520	2730198015	2SC1815(BL)	TRANSISTOR
TR521, 522	2730043021	2SC535(C)	TRANSISTOR
TR523	2740065044	2SD880(Y/GR)	TRANSISTOR
TR524	2730294016	2SC1685(R)	TRANSISTOR
TR525	2730198002	2SC1815(Y)	TRANSISTOR
TR526	2710102005	2SA1015(Y)	TRANSISTOR
TR527	2730294016	2SC1685(R)	TRANSISTOR
TR528	2750042002	2SK373(Y)	FET
D001 ~005	2760049011	1S2076A	DIODE
D006, 007	2760302004	SVC321SP-D2	VARACTOR
D008 ~011	2760049011	1S2076A	DIODE
D013	2760049011	1S2076A	DIODE
D015	2760173039	HZ6-B2	ZENER
D016 ~018, 021	2760049011	1S2076A	DIODE
D020	2760218033	HZ9B2	ZENER

ETC0731K AMP TUNER UNIT PARTS LIST for EA (Same as ETC0731J AMP TUNER UNIT PARTS LIST except the followings.)

Ref. No.	Part No.	Part Name & Descriptions	
		CAPACITORS	
C505 ~514	2531024003	0.01μF	+80,–20% 50V CERAMIC (DELETE)
C651, 652	2533643000	470pF	±5% 50V CERAMIC (DELETE)
C701, 702	2531003008	680pF	±10% 50V CERAMIC (DELETE)
C703, 704	2533627000	100pF	±5% 50V CERAMIC (DELETE)
C705, 706	2531003008	680pF	±10% 50V CERAMIC (DELETE)

Ref. No.	Part No.	Part Name & Descriptions

Ref. No.	Part No.	Part Name & Descriptions

Ref. No.	Part No.	Part Name & Descriptions	
D501 ~515	2760049011	1S2076A	DIODE
D516	2760338007	S4VB20F	DIODE
D517	2760239009	S1RBA20F	DIODE
D518	2760253014	HZ-15-1	ZENER
D519	2760053007	HZ-12A	ZENER
D520, 521	2760256008	HZ-16-2	ZENER
D522 ~525	2760049011	1S2076A	DIODE
D801, 802	2760216019	KB-265	DIODE
RESISTORS (not included Carbon Film ±5% ¼W Type)			
⚠R111	2440092029	330 ohm ±5% 2W	METAL OXIDE FILM (NB)
⚠R553 ~556	2412314081	560 ohm ±5% ¼W	CARBON FILM (NB)
⚠R557, 558	2412314007	100 ohm ±5% ¼W	CARBON FILM (NB)
⚠R561, 562	2412314007	100 ohm ±5% ¼W	CARBON FILM (NB)
⚠R573, 574	2412314023	470 ohm ±5% ¼W	CARBON FILM (NB)
⚠R575 ~578	2442013080	0.22 ohm ±5% 1W	METAL OXIDE FILM (NB)
⚠R579	2412321032	4.7 ohm ±5% ¼W	CARBON FILM (NB)
⚠R584 ~587	2440033017	220 ohm ±5% 1W	METAL OXIDE FILM (NB)
⚠R903, 904	2440017017	10 ohm ±5% 1W	METAL OXIDE FILM (NB)
VR001	2116000099	2 kohm	SEMI FIXED RESISTOR
VR002	2116000086	200 kohm	SEMI FIXED RESISTOR
VR003	2116000073	20 kohm	SEMI FIXED RESISTOR
VR051	2110432003	VARIABLE RESISTOR 100 kohm	MAIN
VR052	2110433002	VARIABLE RESISTOR 100 kohm	LOUDNESS
VR053	2110434001	VARIABLE RESISTOR 250 kohm	BALANCE
VR054	2110435000	VARIABLE RESISTOR 50 kohm	TREBLE
VR055	2110435013	VARIABLE RESISTOR 250 kohm	BASS
VR501, 502	2116000015	10 kohm	SEMI FIXED RESISTOR
CAPACITORS (not included Ceramic 50V ±5%, ±10% Type)			
C002, 003	2531024003	0.01μF	+80,–20% 50V CERAMIC
C004	2544132005	10μF	16V ELECTROLYTIC
C005 ~009	2531024003	0.01μF	+80,–20% 50V CERAMIC
C010	2544145005	0.47μF	50V ELECTROLYTIC
C011	2531024003	0.01μF	+80,–20% 50V CERAMIC
C012	2544145005	0.47μF	50V ELECTROLYTIC
C013	2531024003	0.01μF	+80,–20% 50V CERAMIC
C015	2544145005	0.47μF	50V ELECTROLYTIC
C016	2544136001	100μF	16V ELECTROLYTIC
C017	2544132005	10μF	16V ELECTROLYTIC
C018	2531025002	0.022μF	+80,–20% 50V CERAMIC
C019, 020	2531024003	0.01μF	+80,–20% 50V CERAMIC
C021	2531025002	0.022μF	+80,–20% 50V CERAMIC
C022	2531024003	0.01μF	+80,–20% 50V CERAMIC
C023	2533600001	7pF	±0.5pF 50V CERAMIC

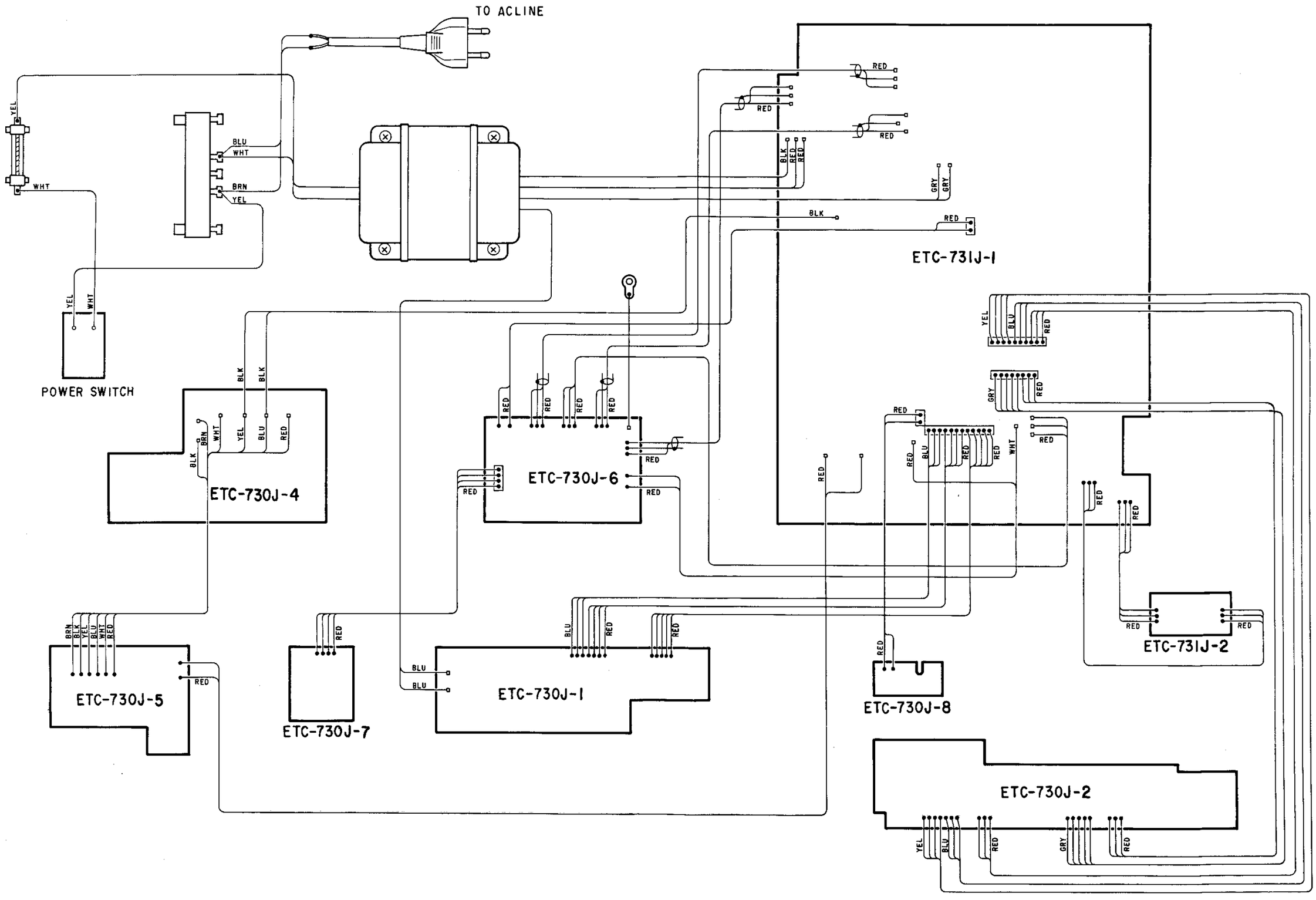
Ref. No.	Part No.	Part Name & Descriptions	
C024 ~027	2531024003	0.01μF	+80,–20% 50V CERAMIC
C028	2544132005	10μF	16V ELECTROLYTIC
C029	2531024003	0.01μF	+80,–20% 50V CERAMIC
C030	2533603008	10pF	±0.5pF 50V CERAMIC
C031	2556089007	390pF	±5% 50V PLASTIC FILM
C032	2531024003	0.01μF	+80,–20% 50V CERAMIC
C033	2551064001	0.0022μF	±10% 50V PLASTIC FILM
C034	2544136001	100μF	16V ELECTROLYTIC
C035	2531024003	0.01μF	+80,–20% 50V CERAMIC
C036	2544132005	10μF	16V ELECTROLYTIC
C037	2544146004	1μF	50V ELECTROLYTIC
C038	2531024003	0.01μF	+80,–20% 50V CERAMIC
C039	2544149001	4.7μF	50V ELECTROLYTIC
C040, 041	2531024003	0.01μF	+80,–20% 50V CERAMIC
C042	2531025002	0.022μF	+80,–20% 50V CERAMIC
C043 ~045	2544136001	100μF	16V ELECTROLYTIC
C046	2541016001	4.7μF	±20% 16V TANTALUM
C047	2544145005	0.47μF	50V ELECTROLYTIC
C048	2544017007	47μF	16V ELECTROLYTIC
C049 ~051	2544148002	3.3μF	50V ELECTROLYTIC
C052	2544163029	470μF	±20% 16V ELECTROLYTIC
C053	2544148002	3.3μF	50V ELECTROLYTIC
C054	2544146004	1μF	50V ELECTROLYTIC
C055	2551080001	0.047μF	±10% 50V PLASTIC FILM
C056	2544149001	4.7μF	50V ELECTROLYTIC
C057	2556099000	1000pF	±5% 50V PLASTIC FILM
C058	2544148002	3.3μF	50V ELECTROLYTIC
C059, 060	2544133004	22μF	16V ELECTROLYTIC
C061, 062	2551120039	0.0018μF	±5% 50V PLASTIC FILM
C063, 064	2544148002	3.3μF	50V ELECTROLYTIC
C065	2544132005	10μF	16V ELECTROLYTIC
C066 067	2531024003	0.01μF	+80,–20% 50V CERAMIC
C101	2531024003	0.01μF	+80,–20% 50V CERAMIC
C102	2544019005	220μF	16V ELECTROLYTIC
C103, 104	2531025002	0.022μF	+80,–20% 50V CERAMIC
C105	2544127007	220μF	6.3V ELECTROLYTIC
C108	2544090008	2200μF	±20% 6.3V ELECTROLYTIC
C109	2544006005	470μF	6.3V ELECTROLYTIC
C110 ~113	2531024003	0.01μF	+80,–20% 50V CERAMIC
C114, 115	2544147003	2.2μF	50V ELECTROLYTIC
C116, 117	2531024003	0.01μF	+80,–20% 50V CERAMIC
C118	2544129005	47μF	10V ELECTROLYTIC
C119 ~121	2531024003	0.01μF	+80,–20% 50V CERAMIC
C501, 502	2544146004	1μF	50V ELECTROLYTIC
C505 ~514	2531024003	0.01μF	+80,–20% 50V CERAMIC
C515, 516	2544132005	10μF	16V ELECTROLYTIC
C517, 518	2544161050	1000μF	±20% 6.3V ELECTROLYTIC
C519, 520	2551122024	0.068μF	±5% 50V PLASTIC FILM
C521, 522	2551121054	0.018μF	±5% 50V PLASTIC FILM
C523, 524	2551120000	0.001μF	±5% 50V PLASTIC FILM

Ref. No.	Part No.	Part Name & Descriptions	
C525, 526	2531024003	0.01μF	+80,–20% 50V CERAMIC
C527, 528	2549014018	0.22μF	±20% 50V ELECTROLYTIC
C531, 532	2551076002	0.022μF	±10% 50V PLASTIC FILM
C533 536	2544146004	1μF	50V ELECTROLYTIC
C539, 540	2533603008	10pF	±0.5pF 50V CERAMIC
C541, 542	2544132005	10μF	16V ELECTROLYTIC
C543	2531025002	0.022μF	+80,–20% 50V CERAMIC
C544	2544146004	1μF	50V ELECTROLYTIC
C545 ~548	2531025002	0.022μF	+80,–20% 50V CERAMIC
C553, 554	2531027000	0.1μF	+80,–20% 50V CERAMIC
C557, 558	2531025002	0.022μF	+80,–20% 50V CERAMIC
C561, 562	2531025002	0.022μF	+80,–20% 50V CERAMIC
C571, 572	2531024003	0.01μF	+80,–20% 50V CERAMIC
C575 ~580	2544146004	1μF	50V ELECTROLYTIC
C581	2544080005	1000μF	±20% 25V ELECTROLYTIC
C583, 584	2531024003	0.01μF	+80,–20% 50V CERAMIC
C586	2544146004	1μF	50V ELECTROLYTIC
C587 ~590	2531052004	4700pF	+100,–0 500V CERAMIC
C591	2546089004	8200μF	±20% 56V ELECTROLYTIC
C592	2546030024	5600μF	±20% 50V ELECTROLYTIC
C593, 594	2531024003	0.01μF	+80,–20% 50V CERAMIC
C595, 596	2544138009	47μF	25V ELECTROLYTIC
C597	2544136001	100μF	16V ELECTROLYTIC
C599, 600	2551074004	0.015μF	±10% 50V PLASTIC FILM
C601, 602	2551070008	0.0068μF	±10% 50V PLASTIC FILM
C605, 606	2551081000	0.056μF	±10% 50V PLASTIC FILM
C607, 608	2551085006	0.12μF	±10% 50V PLASTIC FILM
C609, 610	2551061004	0.0012μF	±10% 50V PLASTIC FILM
C621, 622	2531024003	0.01μF	+80,–20% 50V CERAMIC
C651, 652	2533643000	470pF	±5% 50V CERAMIC
C701, 702	2531003008	680pF	±10% 50V CERAMIC
C703, 704	2533627000	100pF	±5% 50V CERAMIC
C705, 706	2531003008	680pF	±10% 50V CERAMIC
C710	2544132005	10μF	16V ELECTROLYTIC
C723, 724	2544132005	10μF	16V ELECTROLYTIC
C795	2531024003	0.01μF	+80,–20% 50V CERAMIC
C800 ~805	2531024003	0.01μF	+80,–20% 50V CERAMIC
C901, 902	2551084607	0.1μF	±10% 50V PLASTIC FILM
TC001, 002	2130022008	TRIMMER CONDENCER	

Ref. No.	Part No.	Part Name & Descriptions
OTHER PARTS		
	2221082106	P.W. BOARD
	2090008120	JUMPER WIRE P=10mm USED 121
	EP-5667H1	TERMINAL PIN USED 44
L001	2350015947	INDUCTOR (2.2mH) USED 1
T001	2312026000	FM. IF. DET (A) USED 1
T002	2312027009	FM. IF. DET (B) USED 1
T003	2311061008	MW ANT TRANS USED 1
T004	2311076103	MW OSC COIL USED 1
T005	2310056001	AM IFT USED 1
LP001	2320056004	ANTI BIRDIE FILTER USED 1
LP002, 003	2320041006	LOW PASS FILTER USED 2
CF001	2610023006	FM CERAMIC FILTER
CF002	2610038004	FM CERAMIC FILTER
CF003	2610023006	FM CERAMIC FILTER
CF004	2610034008	AM CERAMIC FILTER (SEP450H) USED 1
CF005	2610031001	AM CERAMIC FILTER (BFU450C4) USED 1
	3990008038	X-TAL (7.2MHz) USED 1
	2124254002	SLIDE SW (REMOTE) USED 1
	2124501001	4P PUSH SWITCH USED 1
	4170233004	RADIATOR BLOCK USED 1
	4140240001	EARTH PLATE USED 2
	2020022008	FUSE HOLDER USED 4
F902, 903	2061035070	FUSE (4.0A) USED 2
	2160048007	FRONT END USED 1
	2050185038	3P WIRE HOLDER USED 8
	2050133022	2P NH CONNECTOR BASE USED 2
	2050133080	8P NH CONNECTOR BASE USED 1
	2050167001	10P CONNECTOR BASE USED 1
	2050167027	12P NH CONNECTOR BASE USED 1
	2050152003	6P CONNECTOR BASE USED 2
	2050208009	3P NJ ANT TERMINAL USED 1
	4700012022	PAN SCREW WITH W. SW 3x12 USED 4
	4737002018	TAPPING SCREW (S) 3x8 USED 2
	4159001008	F.S WASHER USED 2
	3940005007	LITUM BATTERY

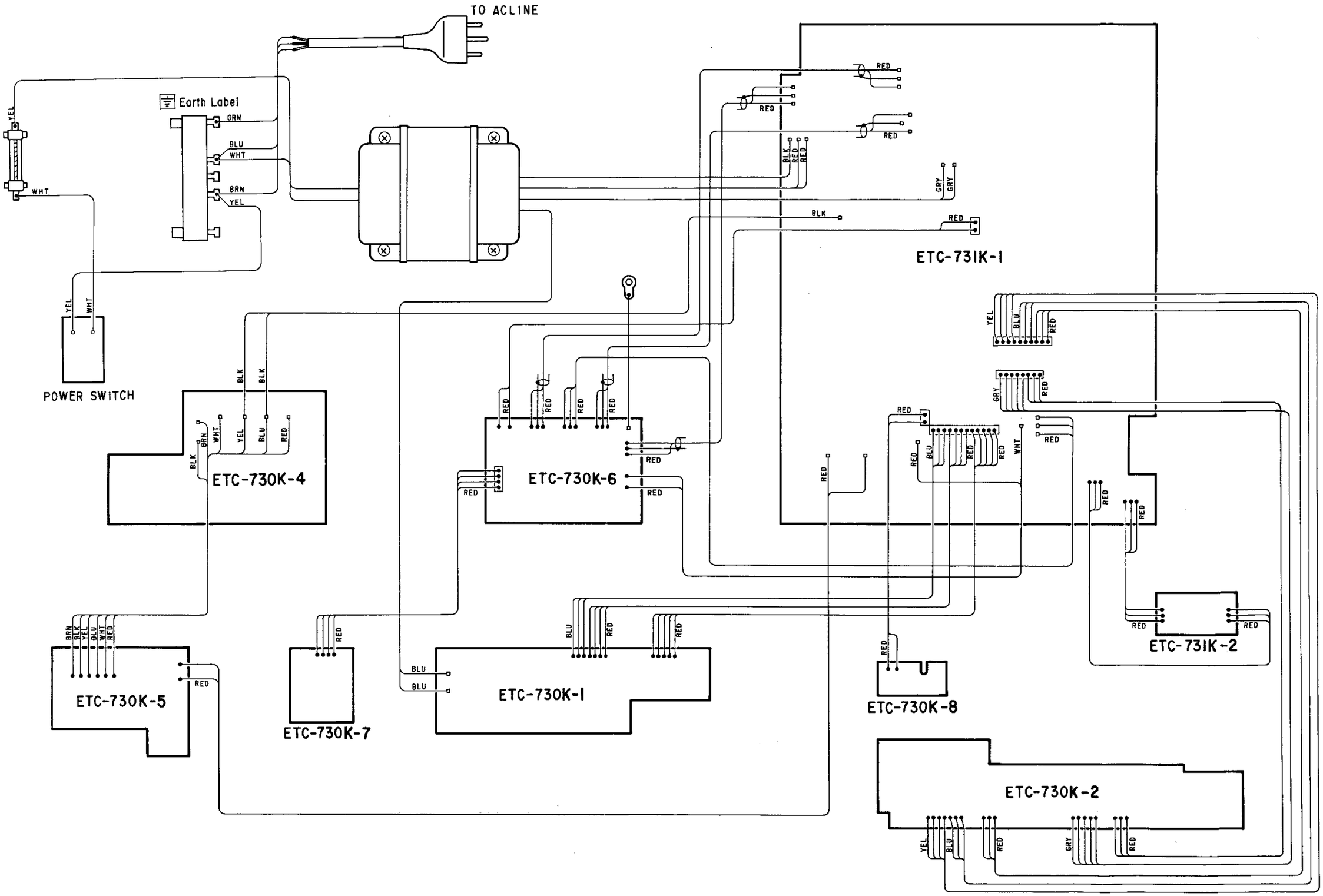
CONNECTION DIAGRAM
(This figure is the specifications of E2)

E2 VERSION

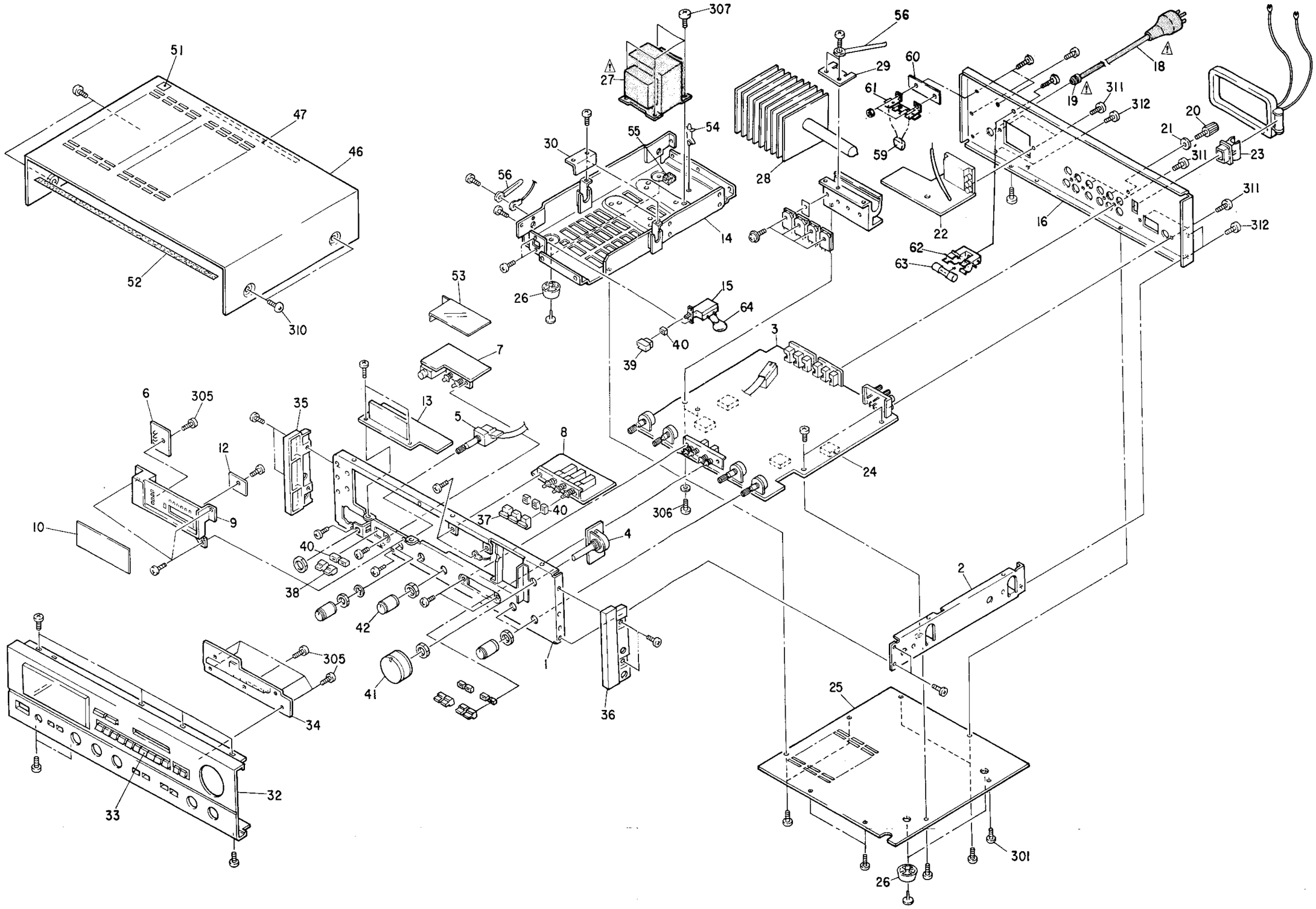


CONNECTION DIAGRAM
(This figure is the specifications of EA)

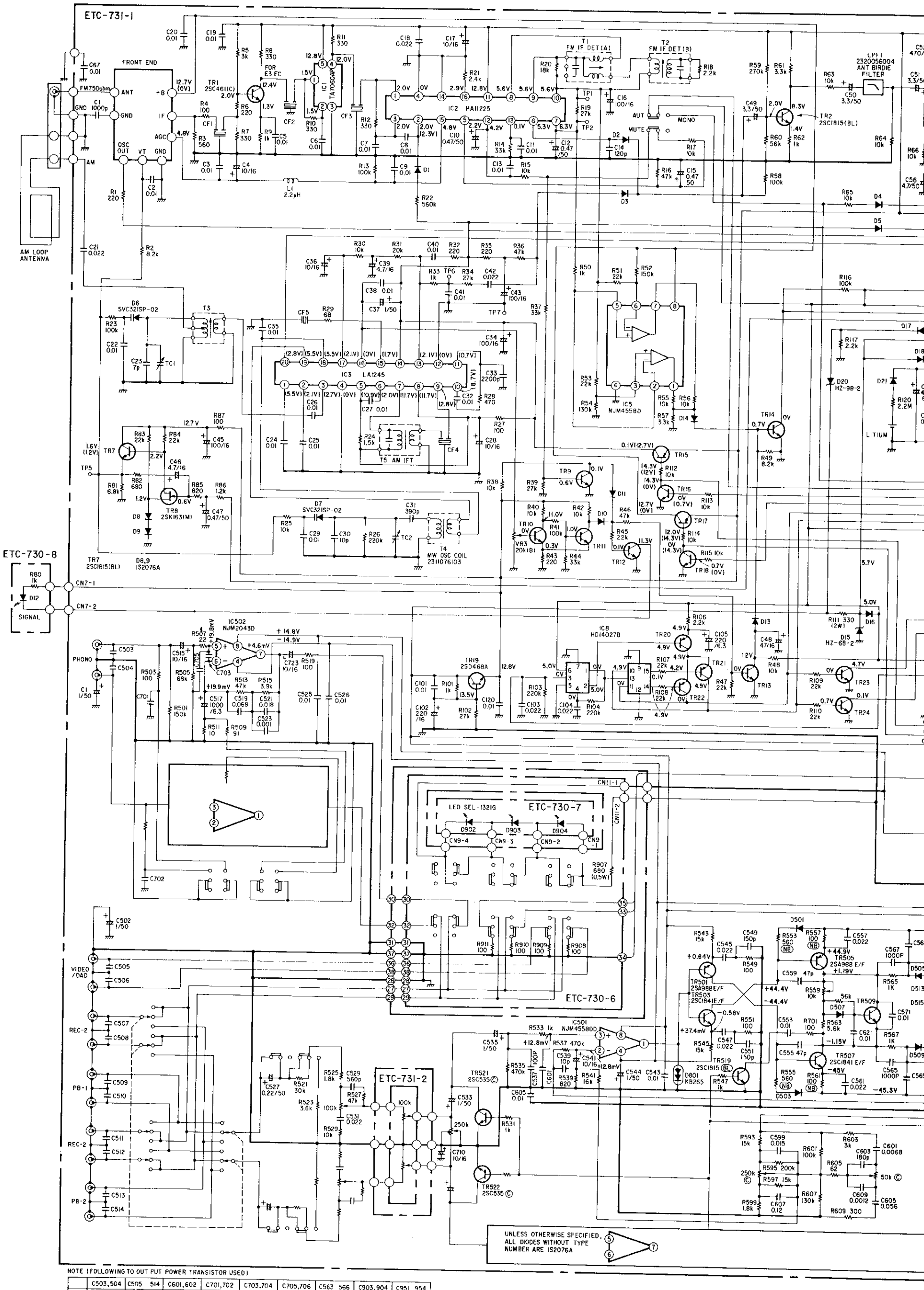
EA VERSION



EXPLODED VIEW OF CHASSIS AND CABINET
(This figure is the specifications of EA)



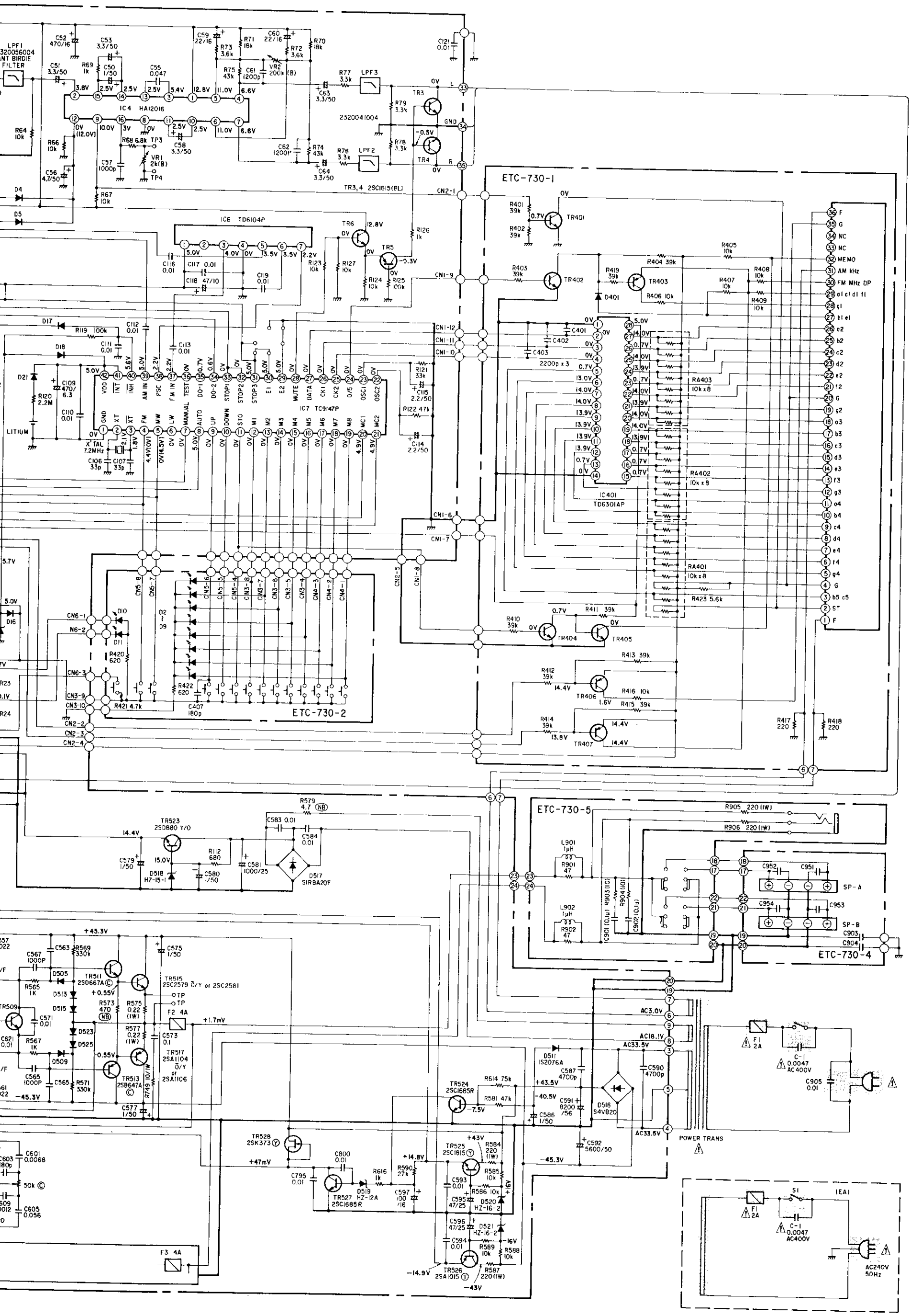
WIRING DIAGRAM



NOTE (FOLLOWING TO OUT PUT POWER TRANSISTOR USED)

	C503,504	C505 514	C601,602	C701,702	C703,704	C705,706	C563 566	C903,904	C951 954
E2	1000P	100P	470P	680P	100P	680P	68P	680P	0.033
EA	100P	—	—	—	—	—	47P	0.0022	—

⚠ ▨ Means important safety item, which must be replaced, when necessary, by a part specified or meeting the specification by the manufacturer.



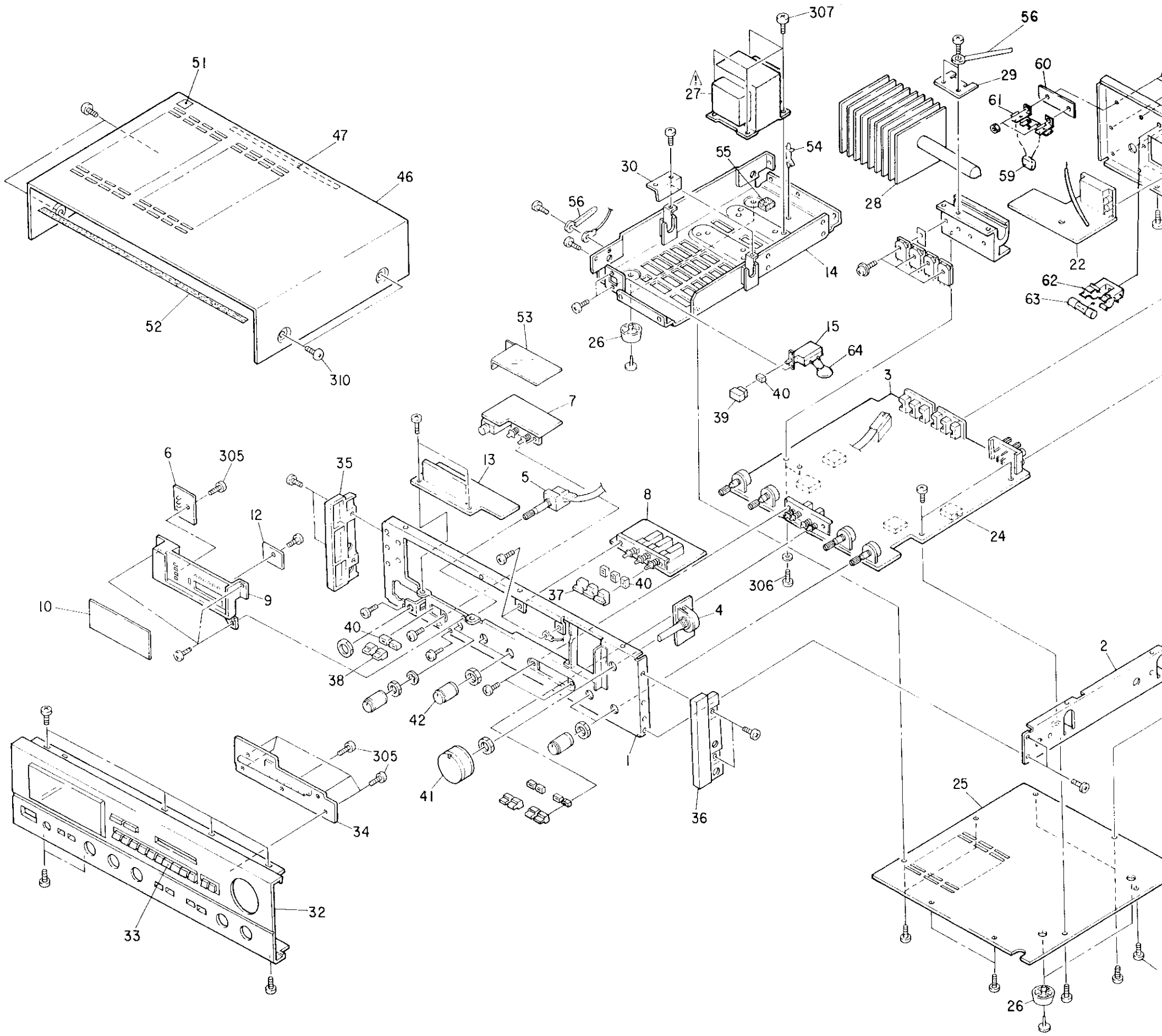
NIPPON COLUMBIA COMPANY, LTD.
No. 14-14, AKASAKA 4-CHOME, MINATO-KU, TOKYO, JAPAN
Telephone: Tokyo (584) 8111
Cable: NIPPONCOLUMBIA TOKYO Telex: JAPANOLA J22591

Printed in Japan

EXPLODED VIEW OF CHASSIS AND CABINET
(This figure is the specifications of E2)

E2 VERSION

⚠ ▩ Means im
when necessary, b
by the manufactur



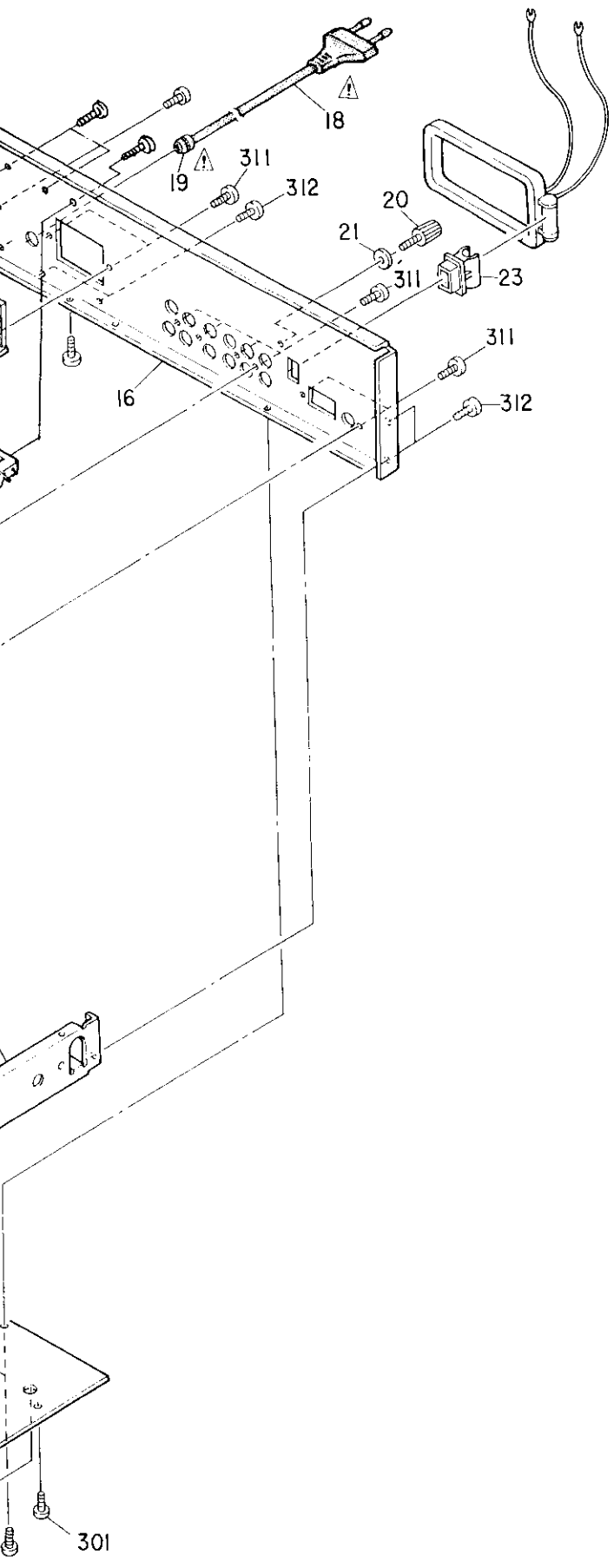
EXPLODED VIEW OF CHASSIS AND CABINET APRTS LIST (GOLD VERSION for E2)

Ref. No.	Part No.	Part Name & Descriptions
1	4110430003	FROTN CHASSIS ASS'Y
2	4110422008	SIDE CHASSIS
3	ETC0731J-1	AMP. TUNER UNIT
4	ETC0731J-2	MAIN VR UNIT
5	2124505007	ROTARY REMOTE SW
6	ETC0731J-1	CONTROL UNIT
7	ETC0730J-4	SP SW & H.P UNIT
8	ETC0730J-6	FUNCTION SW UNIT
9	1460695106	LED HOLDER
10	1430370118	INDICATOR SHEET
11	–	–
12	ETC0730J-8	SIGNAL UNIT
13	ETC0730J-7	F. LED UNIT
14	4110424006	TRANS CHASSIS ASS'Y
⚠15	2124409006	POWER SWITCH
16	1059003002	BACK PANEL
17	–	–
⚠18	2062002031	AC CORD
⚠19	4450028007	CORD BUSH
20	2050071016	TERMINAL ASS'Y
21	4770018001	WASHER (P-87)
22	ETC0730J-5	SP TERMINAL UNIT
23	1460494006	ANTENNA HOLDER
24	4610114023	CUSHION
25	1050608011	BOTTOM COVER

Ref. No.	Part No.	Part Name & Descriptions
26	1040111000	FOOT
⚠27	2339513004	POWER TRANS
28	4170231103	H.P RADIATOR
29	4121646006	RADIATOR BRACKET
30	4121648004	BRACKET
⚠31	4450033005	WIRE CLAMP BAND USED 10
*32	1441241207	FRONT PANEL ASS'Y
*33	1130601103	PUSH KNOB ASS'Y FOR TU MEMORY
34	ETC0730J-2	KEY LED UNIT
*35	1430374305	ESC BAR (L)
*36	1430375304	ESC BAR (R)
*37	1130604100	PUSH KNOB FOR FUNCTION
*38	1130536029	PUSH KNOB FOR SP. AM. MUTE
*39	1130515008	PUSH KNOB (A) FOR POWER
40	1440056007	FLEXIBLE RING
*41	1120458104	KNOB ASS'Y FOR MAIN VR
*42	1120459103	KNOB ASS'Y FOR TONE, TAPE
43	5130886005	FUSE LABEL
*44	1460338230	ESC PLATE (L)
*45	1460339239	ESC PLATE (R)
*46	1020178115	TOP COVER
47	1220095014	SPACER
48	–	–
49	–	–
50	–	–

Ref. No.	Part No.	Part Name & Descr
51	–	–
52	1220095001	SPACER
53	4150287009	ISOLATION SHEET
54	4150228000	PCB HOLDER
55	4610114007	CUSHION
56	EP-4772	CORD HOLDER
57	1439003004	BLIND SHEET
58	1439003017	BLIND SHEET
⚠59	2568023006	CAPACITOR 0.01μF/250
60	4150088004	INSULATING SHEET
61	2050089008	7PW TERMINAL
62	2020013101	FUSE HOLDER
⚠63	2061015061	FUSE 2A
⚠64	2538003014	CAPACITOR 0.0047μF/4
PACKING & ACCESSORIES (not included EXPLO		
a.	5058092049	LAMINATE ENVELOPE
b.	5030448103	CUSHION
*c.	5010999012	CARTON CASE
d.	5050061007	ENVELOPE
e.	5119103000	INST. MANUAL
f.	2311060009	LOOP ANTENNA

Means important safety item, which must be replaced, cessary, by a part specified or meeting the specification anufacturer.



EXPLODED VIEW OF CHASSIS AND CABINET PARTS LIST for EA

Ref. No.	Part No.	Part Name & Descriptions
1	4110430003	FRONT CHASSIS ASS'Y
2	4110422008	SIDE CHASSIS
3	ETC0731K-1	AMP. TUNER UNIT
4	ETC0731K-2	MAIN VR UNIT
5	2124505007	ROTARY REMOTE SW
6	ETC0730K-1	CONTROL UNIT
7	ETC0730K-4	SP SW & H.P UNIT
8	ETC0730K-6	FUNCTION SW UNIT
9	1460695106	LED HOLDER
10	1430370118	INDICATOR SHEET
11	–	–
12	ETC0730K-8	SIGNAL UNIT
13	ETC0730K-7	F. LED UNIT
14	4110424006	TRANS CHASSIS ASS'Y
⚠15	2124409006	POWER SWITCH
16	1059003002	BACK PANEL
17	–	–
⚠18	2062012005	AC CORD
⚠19	4450028007	CORD BUSH
20	2050071016	TERMINAL ASS'Y
21	4770018001	WASHER (P-87)
22	ETC0730K-5	SP TERMINAL UNIT
23	1460494006	ANTENNA HOLDER
24	4610114023	CUSHION
25	1050608011	BOTTOM COVER
26	1040111000	FOOT
⚠27	2339517000	POWER TRANSFORMER
28	4170231103	H.P RADIATOR
29	4121646006	RADIATOR BRACKET
30	4121648004	BRACKET
☆31	4450033005	WIRE CLAMP BAND USED 10
32	1441241207	FRONT PANEL ASS'Y
33	1130601103	PUSH KNOB ASS'Y FOR TU MEMORY
34	ETC0730K-2	KEY LED UNIT
35	1430374305	ESC BAR (L)
36	1430375304	ESC BAR (R)
37	1130604100	PUSH KNOB FOR FUNCTION
38	1130536029	PUSH KNOB FOR SP. AM. MUTE
39	1130515008	PUSH KNOB (A) FOR POWER
40	1140056007	FLEXIBLE RING
41	1120458104	KNOB ASS'Y FOR MAIN VR
42	1120459103	KNOB ASS'Y FOR TONE, TAPE
43	5130886005	FUSE LABEL
44	1460338230	ESC PLATE (L)
45	1460339239	ESC PLATE (R)
46	1020178115	TOP COVER
47	1220095014	SPACER
48	–	–
49	–	–
50	–	–
51	–	–
52	1220095001	SPACER
53	4150287009	ISOLATION SHEET
54	4150228000	PCB HOLDER
55	4610114007	CUSHION
56	EP-4772	CORD HOLDER
57	1439003004	BLIND SHEET
58	1439003017	BLIND SHEET
⚠59	2568023006	CAPACITOR 0.01μF/250 VAC
60	4150088004	INSULATING SHEET
61	2050089008	7PW TERMINAL
62	2020013101	FUSE HOLDER
⚠63	2061015061	FUSE 2A
⚠64	2538003014	CAPACITOR 0.0047μF/400 VAC

Ref. No.	Part No.	Part Name & Descriptions	Q'ty
SCREWS, NUTS & WASHERS			
301	4737002005	TAPPING SCREW (S) 3x6	48
302	–	NUT M7 (SP)	6
303	–	TOOTHED WASHER φ7 (SP)	1
304	–	NUT M12 (SP)	1
305	4737500015	TAPPING SCREW (P) 3x8	15
306	–	–	
307	4737004003	TAPPING SCREW (S) 4x8	4
308	–	–	
309	–	–	
310	4734801005	TAPPING SCREW (TRUSS) 4x8	4
311	4737500044	TAPPING SCREW (P) 3x8 (BLACK)	8
312	4737002034	TAPPING SCREW (S) 3x6 (BLACK)	6
313			
314			
315			

Ref. No.	Part No.	Part Name & Descriptions
PACKING & ACCESSORIES (not included EXPLODED VIEW)		
a.	5058092049	LAMINATE ENVELOPE
b.	5039103009	CUSHION
c.	5010999070	CARTON CASE
d.	5050061007	ENVELOPE
e.	5119103000	INST. MANUAL
f.	2311060009	LOOP ANTENNA

Note: ☆ Mark is not included EXPLODED VIEW.

Ref. No.	Part No.	Part Name & Descriptions	Q'ty
SCREWS, NUTS & WASHERS			
301	4737002005	TAPPING SCREW (S) 3x6	39
302	–	NUT M7 (SP)	6
303	–	TOOTHED WASHER φ7 (SP)	1
304	–	NUT M12 (SP)	1
305	4737500015	TAPPING SCREW (P) 3x8	15
306	–	–	
307	4737004003	TAPPING SCREW (S) 4x8	4
308	–	–	
309	–	–	
*310	4734801005	TAPPING SCREW (TRUSS) 4x8	4
311	4737500044	TAPPING SCREW (P) 3x8 (BLACK)	8
312	4737002034	TAPPING SCREW (S) 3x6 (BLACK)	15
313			
314			
315			

Note: ☆ Mark is not included EXPLODED VIEW.

BLACK VERSION PARTS LIST
(Same as GOLD VERSION except the followings.)

Ref. No.	Part No.	Part Name & Descriptions
32	1441241210	FRONT PANEL ASS'Y
33	1130601116	PUSH KNOB ASS'Y
35	1430374321	ESC BAR (L)
36	1430375317	ESC BAR (R)
37	1130604126	PUSH KNOB
38	1130536045	PUSH KNOB (B)
39	1130515121	PUSH KNOB (A)
41	1120458120	KNOB ASS
42	1120459129	KNOB ASS
44	1460338256	ESC PLATE (L)
45	1460339255	ESC PLATE (R)
46	1020178131	TOP COVER
310	4734454038	TAPPING SCREW (TRUSS) (2) 4x8
c.	5010999054	CARTON CASE (CHANGE)
g.	5139111014	COLOR LABEL (BLACK) (ADD)

Senderspeicher geht nach ca 3 Tg. verloren
Bitte Batt. einsetzen

Service Information

DENON

Model DRA-550, 350
Serial No. as under

No. 0010
Date June 18, 1985

Subject MEMORY EFFECTIVE TIME

PRESET MEMORY EFFECTIVE TIME

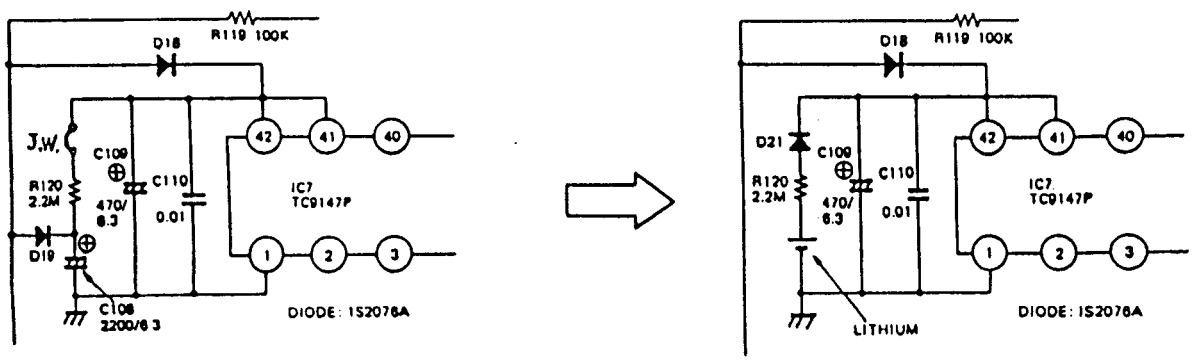
The effective time period of 3 days is expected for the above models. However, if longer memory duration is required, replace the memory capacitor with a lithium battery.

PROCEDURE:

Remove the top cover and the bottom cover.

1. Unsolder and remove C108 2,200uF/6.3V.
2. Mount 2pcs of wropping Pins Part No. EP-5667H2 at both (+) and (-) poles.
3. Unsolder and remove the jumper wire mounted over the D-21 symbol.
4. Mount Diode 1S2076A (Part No. 2760049011) at the D-21 symbol from where the above jumper wire has been removed.
5. Remove D-19 1S2076A.
6. Solder Lithium battery (Part No.3940005007), wrapping its leads around the wrapping pins provided by the above procedure (2).

Take note that the positive (+) and negative (-) leads matchy the symbols.



DRA-350E2	S/No.	2830001 - 2832500	S/No.	2430001 - 2431900
DRA-350BKE2	S/No.	2850001 - 2852750	S/No.	2450001 - 2451900
DRA-350BKEA	S/No.	2450001 - 2450100		
DRA-350BKEK	S/No.	2450001 - 2450100		
DRA-550E2	S/No.	2830001 - 2831000	S/No.	2430001 - 2430400
DRA-550BKE2	S/No.	2850001 - 2851200	S/No.	2450001 - 2450400
DRA-550EA	S/No.	2830001 - 2830200		

(Printed in Japan)