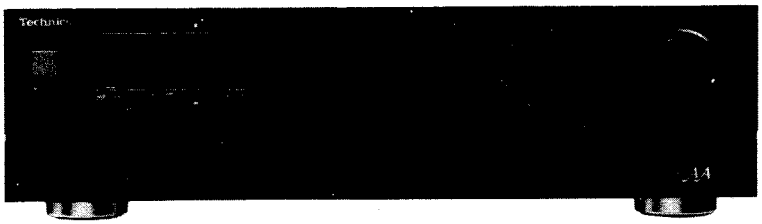
ORDER NO. HAD8601320C0
A3

Service Manual

Amplifier

SU-A200

Stereo Control Amplifier



Color

(K) . . . . Black Type

Color	Areas
(K)	[M] . . . .U.S.A.
(K)	[MC] . . . Canada
(K)	[E] . . . . Scandinavia, Switzerland
(K)	[EF] . . . France
(K)	[Ei] . . . . Italy
(K)	[EK] . . . United Kingdom
(K)	[EH] . . . Holland
(K)	[EGA] . . F.R. Germany
(K)	[EB] . . . Belgium
(K)	[XA] . . . Asia, Oceania, Latin America, Middle Near East and Africa
(K)	[XL] . . . Australia
(K)	[PA] . . . Far East PX
(K)	[PE] . . . European Military

SPECIFICATIONS

(IHF'78)

■ AUDIO SECTION

Total harmonic distortion (20Hz ~ 20kHz)

PHONO MM (IHF'78)	0.001%
(2V output at Vol. max)	0.0009%
PHONO MC (IHF'78)	0.0015%
(2V output at Vol. max)	0.001%
TUNER, CD, AUX, AV1/TV, AV2 DIGITAL TAPE 1, TAPE 2/VCR, TAPE 3/DA TAPE (IHF'78)	0.001%
(2V output at Vol. max)	0.0009%
DIRECT (IHF'78)	0.0009%
(2V output at Vol. max)	0.0008%

Input sensitivity and impedance

PHONO MM	0.63mV/47kΩ
MC	25μV/220Ω
TUNER, CD, AUX, AV1/TV, AV2, DIGITAL TAPE 1, TAPE 2/VCR, TAPE 3/DA TAPE	36 mV/39kΩ
DIRECT	36 mV/15kΩ

PHONO maximum input voltage (1 kHz, RMS)

MM	150mV

S/N

PHONO MM	80 dB (90 dB, IHF' 66)
MC	77 dB (75 dB, IHF' 66)
TUNER, CD, AUX, AV1/TV, AV2, DIGITAL TAPE 1, TAPE 2/VCR, TAPE 3/DA TAPE	101 dB (109 dB, IHF' 66)
DIRECT	102 dB (110 dB, IHF' 66)

Frequency response

PHONO MM	20Hz ~ 20kHz, RIAA standard curve, ±0.2 dB
	20Hz ~ 100kHz, RIAA standard curve, ±0.5 dB
TUNER, CD, AUX, AV1/TV, AV2, DIGITAL TAPE 1, TAPE 2/VCR, TAPE 3/DA TAPE	20Hz ~ 20kHz, (+0, –0.1 dB)
	0.5Hz ~ 180kHz, (+0, –3.0 dB)
DIRECT	20Hz ~ 20kHz, (+0, –0.1 dB)
	0.5Hz ~180kHz, (+0. –3.0 dB)

Subsonic filter	20Hz, –12 dB/oct.
High-cut filter	7kHz, –6 dB/oct.
Muting	–20 dB

Output voltage and impedance

PRE OUT	rated 2V/4Ω
	max. 8V/4Ω
REC OUT TAPE 1, TAPE 2/VCR. TAPE 3/DA TAPE	150mV/600Ω

■ VIDEO SECTION

Output voltage (at 1V input, unbalanced)	1±0.1 Vp-p
Maximum input voltage	1.5Vp-p
Input/output impedance	75 ohms unbalanced

Technics

Matsushita Services Company
50 Meadowland Parkway,
Secaucus, New Jersey 07094

Panasonic Sales Company, Division of Matsushita Electric of Puerto Rico, Inc.
Ave. 65 De Infanteria, KM 9.7
Victoria Industrial Park
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91-238, Kauhi St. Ewa Beach
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5770 Ambler Drive, Mississauga,
Ontario, L4W 2T3

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P.O. Box 288, Central Osaka Japan

Panasonic Tokyo Office
Matsushita Electric Trading Co., Ltd.
6th Floor, World Trade Center Bldg.,
No. 4-1, Hamamatsu-cho 2-Chome,
Minato-ku, Tokyo 105, Japan

SU-A200

■ GENERAL

Power consumption	20W
Power supply	AC120V 60Hz
Dimensions (W x H x D)	430 x 125 x 360mm
Weight	9.2kg

Note:
Total harmonic distortion is measured by the digital spectrum analyzer (H.P. 3045 system).

Specifications are subject to change without notice for further improvement.
Weight and dimensions shown are approximate.

■ CONTENTS

■ SAFETY PRECAUTION

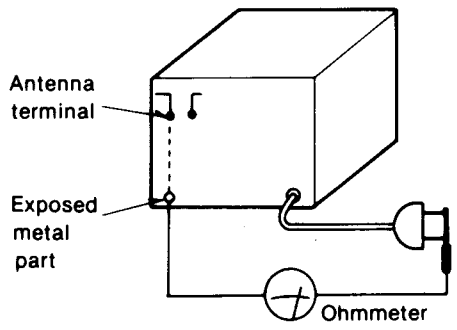
(This "safety precaution " is applied only in U.S.A.)

1. Before servicing, unplug the power cord to prevent an electric shock.
2. When replacing parts, use only manufacturer's recommended components for safety.
3. Check the condition of the power cord. Replace if wear or damage is evident.
4. After servicing, be sure to restore the lead dress, insulation barriers, insulation papers, shields, etc.
5. Before returning the serviced equipment to the customer, be sure to make the following insulation resistance test to prevent the customer from being exposed to a shock hazard.

• INSULATION RESISTANCE TEST

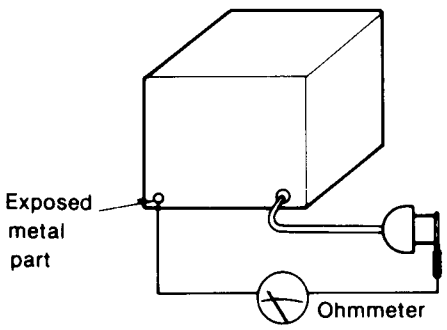
1. Unplug the power cord and short the two prongs of the plug with a jumper wire.
2. Turn on the power switch.
3. Measure the resistance value with ohmmeter between the jumpered AC plug and each exposed metal cabinet part, such as screwheads antenna, control shafts, handle brackets, etc. Equipment with antenna terminals should read between 3MΩ and 5.2MΩ to all exposed parts. (Fig. A) Equipment without antenna terminals should read approximately infinity to all exposed parts. (Fig. B)

Note: Some exposed parts may be isolated from the chassis by design. These will read infinity.



(Fig. A)

Resistance = 3MΩ—5.2MΩ



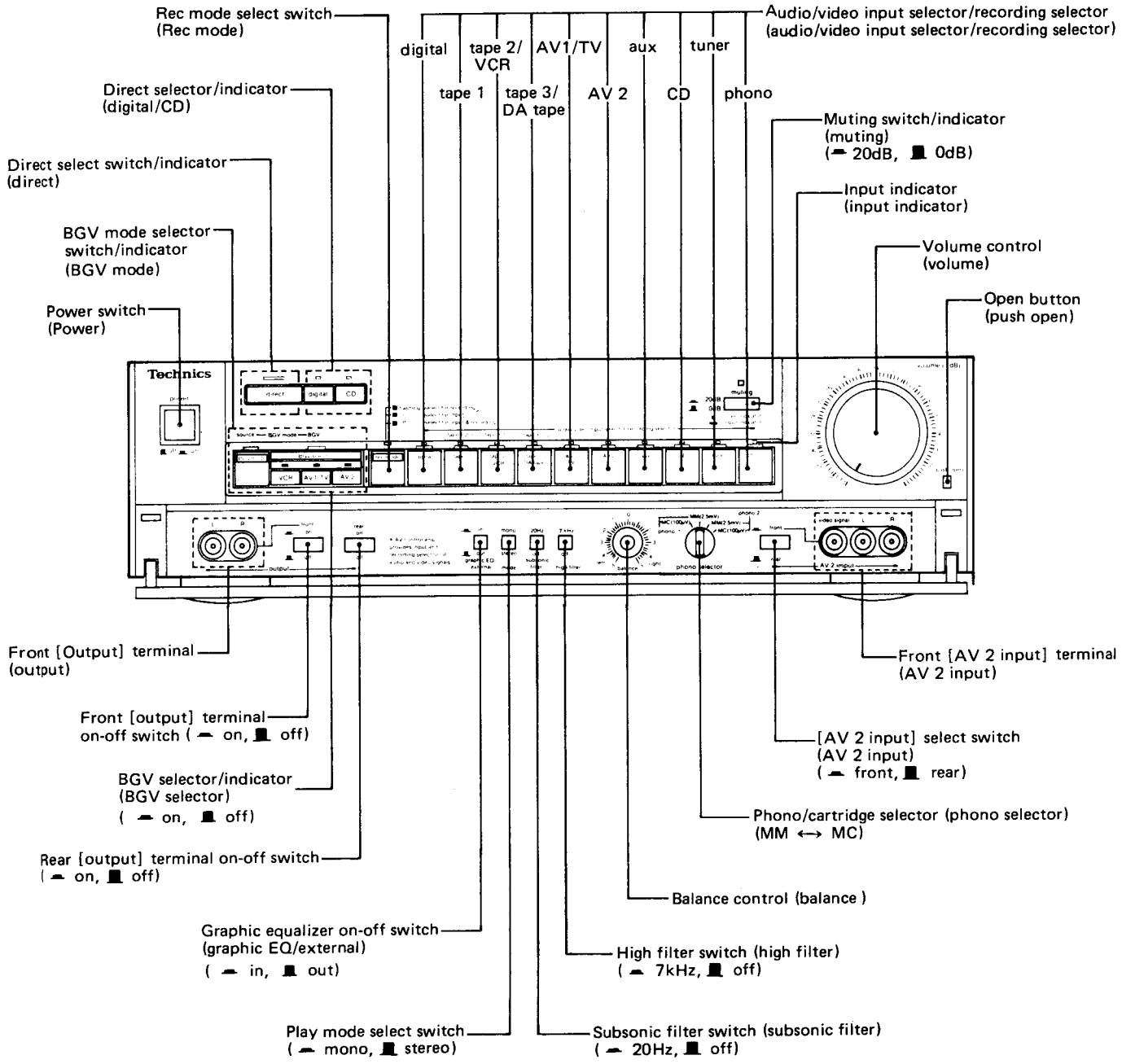
(Fig. B)

Resistance = Approx ∞

4. If the measurement is outside the specified limits, there is a possibility of a shock hazard. The equipment should be repaired and rechecked before it is returned to the customer.

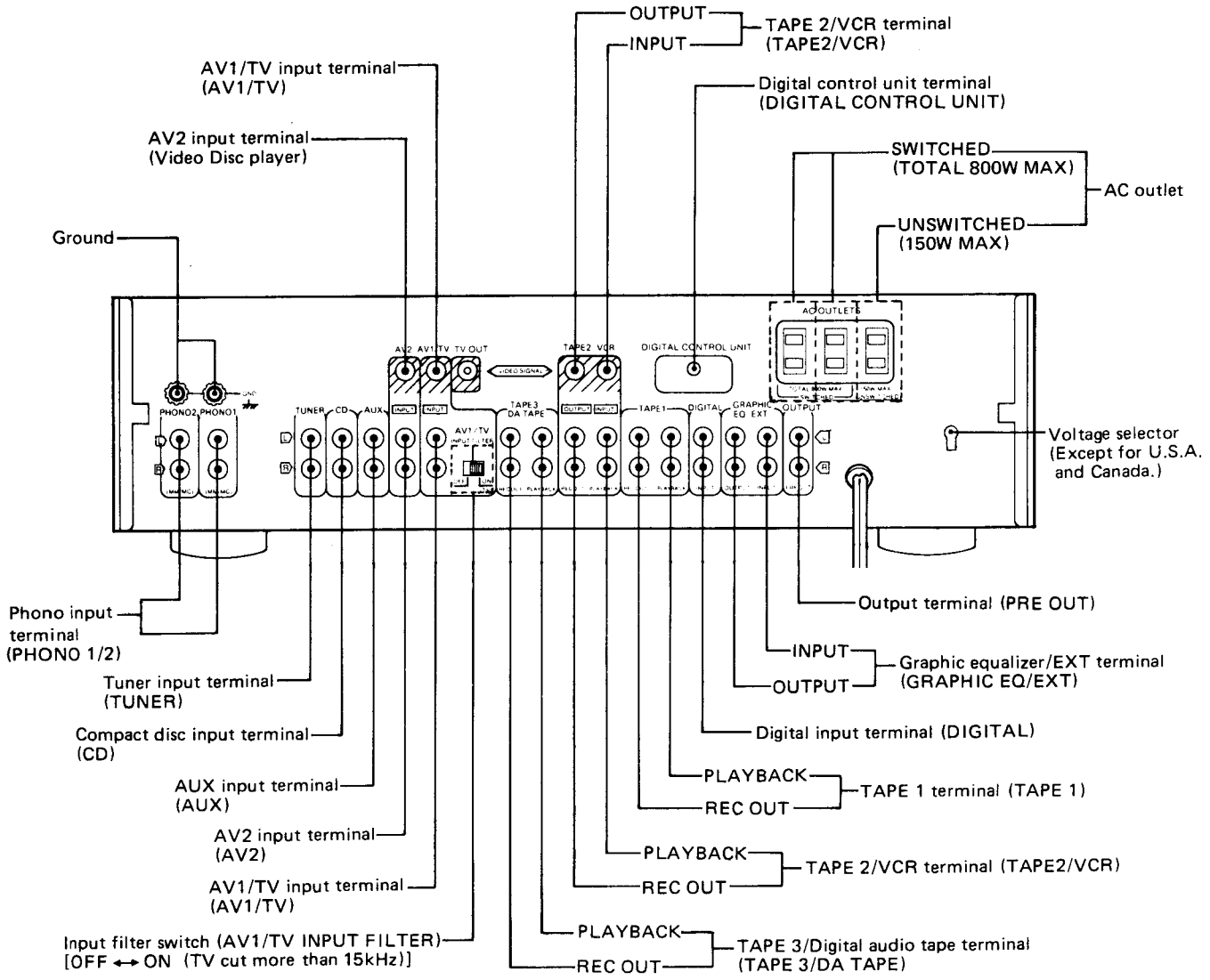
■ LOCATION OF CONTROLS

• FRONT



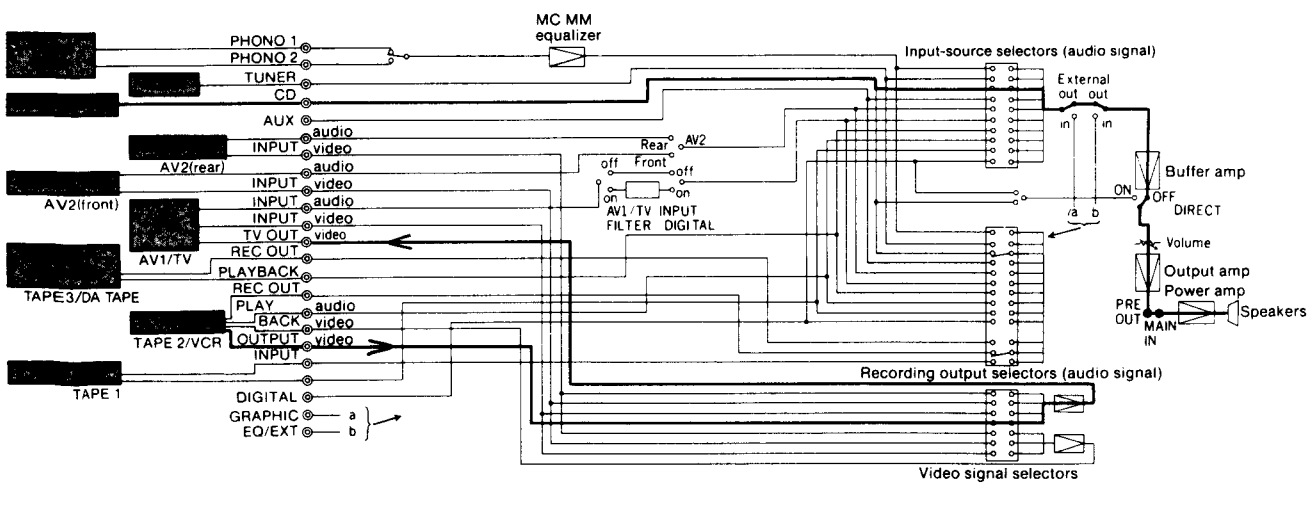
- The power supply for this unit varies depending upon the areas. Also, the parts used for power supply are different. So, refer to the circuit diagram and the replacement parts list.
  * 120V (60 Hz) for U.S.A. and Canada.
  * 110V/127V/220V/240V (50/60 Hz) for other areas.
  * Phono input capacitance is about 150pF.

• REAR

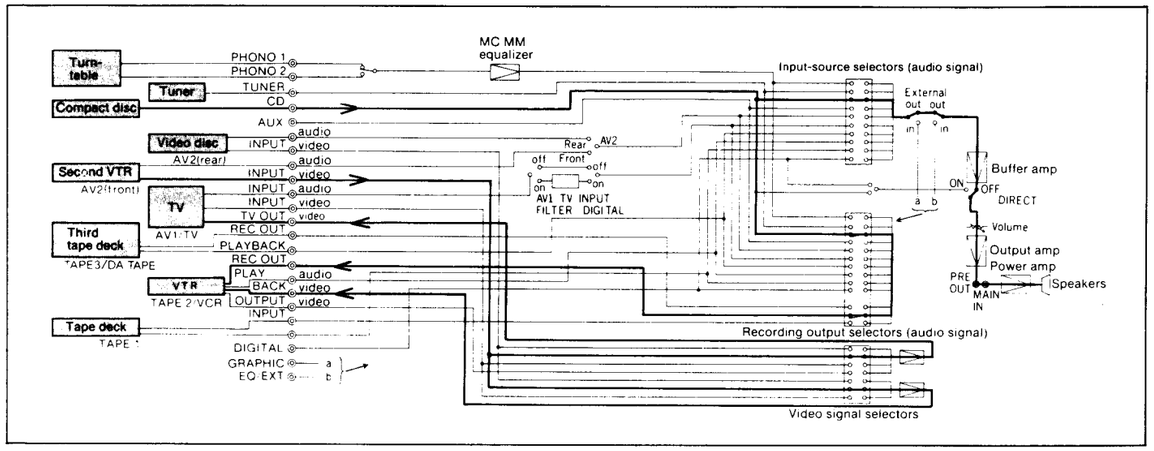


■ OPERATION

• To watch a video tape while listening to a compact disc.



• To record a combination of compact disc sounds and video tape images.



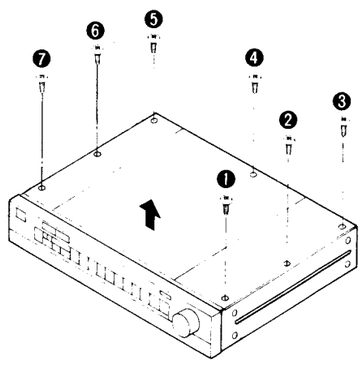
■ BEFORE REPAIR

(1) Turn off the power supply. Using a 10Ω, 5W resistor, short-circuit both ends of power supply capacitors (C501,502) and memory backup capacitors (C708, 709) of IC701 in order to discharge the voltage.
(2) Before turning the power supply on, after completion of repair, slowly apply the primary voltage by using a power supply voltage controller to make sure that the consumed current at 60Hz/50Hz in no-signal mode is shown with respect to supply voltage 110V/120V/127V/220V/240V.

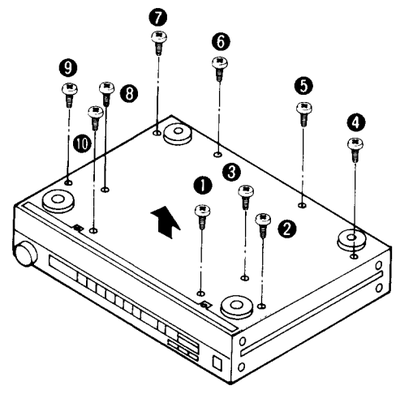
Power supply voltage		AC 110V	AC120V	AC127V	AC220V	AC240V
Consumed current	50Hz	120 ~ 230mA	110 ~ 210mA	110 ~ 210mA	60 ~ 115mA	55 ~ 105mA
	60Hz	110 ~ 220mA	100 ~ 200mA	100 ~ 200mA	55 ~ 110mA	50 ~ 100mA

■ DISASSEMBLY INSTRUCTIONS

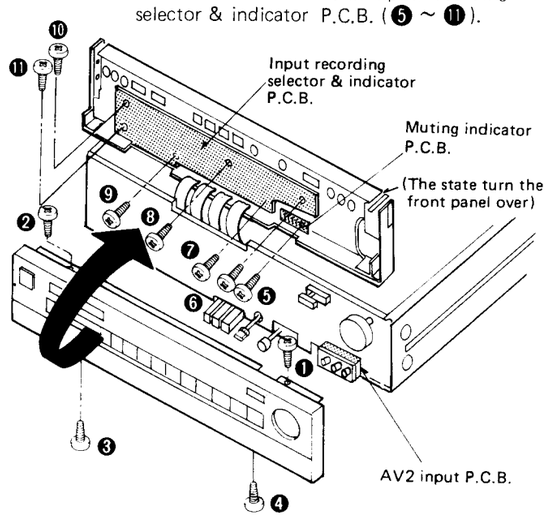
Ref. No. 1	How to remove the top board
Procedure 1	• Remove the 7 screws (❶ ~ ❼).



Ref. No. 2	How to remove the bottom board
Procedure 2	• Remove the 10 screws (❶ ~ ❿).

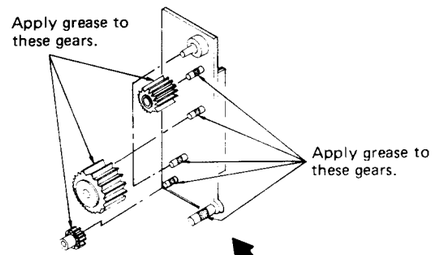


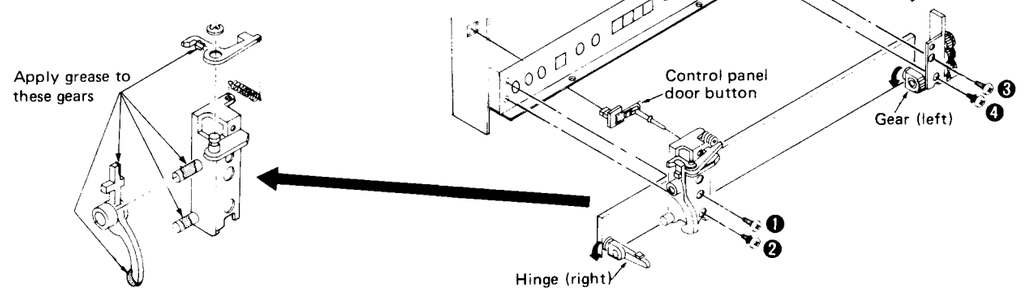
Ref. No. 3	How to remove the front panel
Procedure 1 →3	• Remove the 4 screws (❶ ~ ❹). • Turn it over as shown by arrow. • Remove the 1 screw of muting indicator P.C.B. and the 6 screws of input/recording selector & indicator P.C.B. (❺ ~ ⓫).



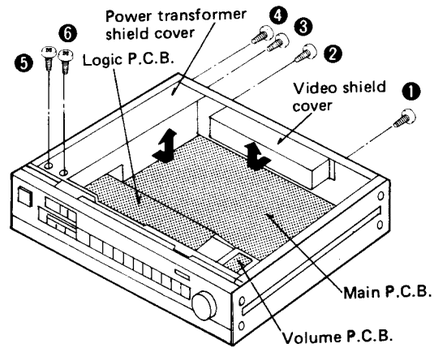
Ref. No. 4	How to remove the control panel door
Procedure 1 →3 →4	• Remove the 4 screws (❶ ~ ❹). • Turn the control panel door hinge and gear counter-clockwise.

Note) When assembling, apply grease (Part No. SZZ0L09) to movable parts.





Ref. No. 5	How to remove the shild cover of video and power transformer P.C.B.
Procedure 1 →5	• Remove the 2 screws of video P.C.B. (❶~ ❷). • Remove the 4 screws of power transformer P.C.B. (❸ ~ ❻).



Ref. No. 6	How to remove the video and BNC TERMINAL P.C.B. ([E] [EK] [EGA] [EF] [Ei] [EB] [EH] [XA] and [XL] areas only)
Procedure 1 →5 →6	• Remove the 4 screws (❶ ~ ❹) and 1 connector (J602) of the video P.C.B. • Remove the nylon rivet (❺ ~ ❼) of BNC P.C.B. (Refer to Fig. A)

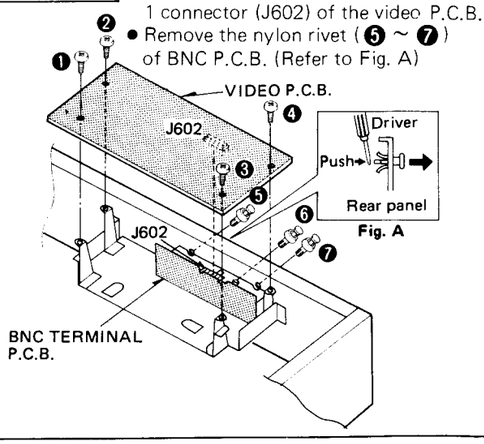


Fig. A

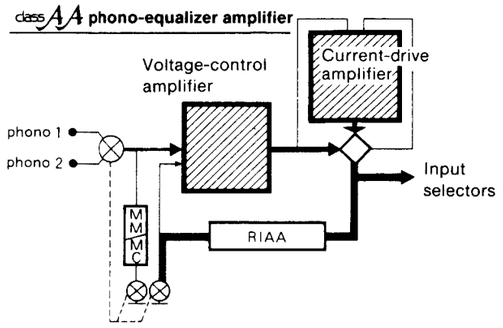
■ FEATURES

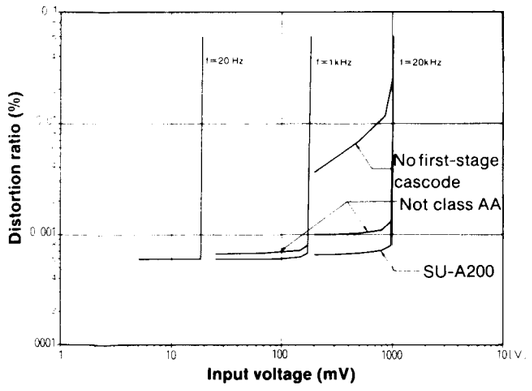
Today is the digital age and the age of AV.
So it's natural that control amplifiers are expected to meet the needs of these new times.
" class AA ", "active-servo power supply" and "compact disc/digital direct" ... functions which so thoroughly express the high quality and overwhelming D range of digital.
Recording selector and electronic AV equipped with 10+2 inputs to perfectly meet the needs of AV.
"Background video" selector for even more sophisticated control.
The SU-A200 ... a true AV and digital control amplifier to meet today's newest needs and today's greatest challenges!

class AA and active-servo power supply

A new dimension of quality in control amplifiers is what class AA means.
For this unit, this technology is used in the phono-equalizer and pre-out output amplifier.
Beautiful, pure, class A sound, without being affected by severe fluctuations of the signal or by load conditions, is reproduced.
In addition, this unit also includes the active-servo power supply, the perfect, stabilized power supply that operates in silence that even exceeds that of car batteries, often said to be the ideal power supply in that respect.

class AA phono-equalizer amplifier



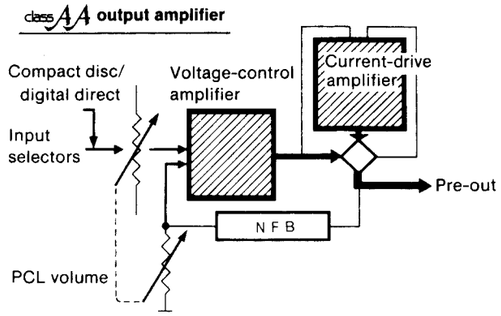


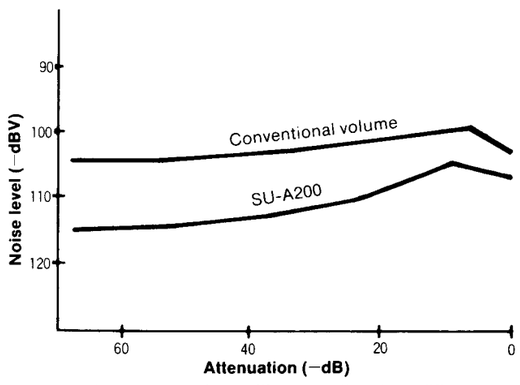
class AA phono-equalizer distortion characteristic curve

Newly developed low-noise volume

Thanks to the use of the newly developed PCL volume (Pure Conductive Low-noise variable resistor), when the volume is set to a reduced position for actual use, the output amplifier is set to low gain and, in addition, the noise level is greatly improved.
Furthermore, the "direct through" function is equipped for compact discs and digital. The result is a pre-amplifier which reproduces digital silence as silence, without using selectors, filters or other circuits.

class AA output amplifier





Noise comparison with conventional amplifier

AV/recording selector and "background video" selectors

Multiple inputs are an absolute must in the evolution of AV. This unit controls 10+2 systems of inputs and outputs. Moreover, there is simultaneous control of visual signals at three of those systems (AV1/TV, AV2 and VCR).
In addition, the "background video" selectors can be used for individual control of sound and images.
This is a multi-function amplifier which can also be used by AV fans for full control functions of an AV system.

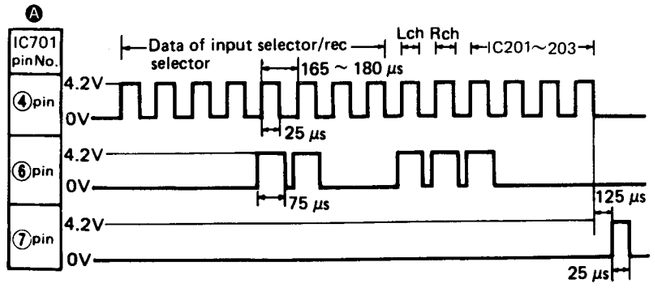
Luxuriously appointed as only the finest amplifier could be

All input/output terminals and all relays gold-plated, 3 mm thick, heavyweight (3.0 kg) top panel ... and so many other luxurious features found in every circuit and every component of this control amplifier.

■ FUNCTION OF TERMINAL (Analog Function Control IC701 : μPD7506CT209)

Pin. No.	Symbol	Input/Output	Active	Description of terminal
1	P43	—	—	Input side indicator 4-bit output. Input indicator drive signal to IC703 pin ⑫ . [Refer to Ⓑ]
2	x 2	—	—	Not used in this unit.
3	P03/x 1	—	—	Connected to ground.
4	CLK	Output	H	Clock output port for analog switch. Clock signal output to IC201 ~ 203 pins ⑩ during data transmission. [Refer to Ⓐ]
5	P21/PTOUT	Output	H	Indicater "rec selector" light up at "H". Push (once) the "rec selector" → Selection of input selector: 4.3V / 0V
6	DATA	Output	H	Data output for analog switch. Data signal output to IC203 pin ⑭ . [Refer to Ⓐ]
7	ST	Output	H	Strobe output port for analog switch. Strobe signal output to IC201 ~ 203 pins ⑪ during data transmission. [Refer to Ⓐ]
8	P60	Output	H	Rec side indicator 4-bit output. Rec indicator drive signal output to IC704 pins ⑫ ~ ⑮ . [Refer to Ⓑ]
9	P61			
10	P62			
11	P63			
12	CL1	Input	—	External clock oscillation, frequency (400kHz) input port. 0.3Vp-p
13	CL2	—	—	Not used in this unit.
14	V_{DD}	—	—	Power supply input terminal. (Apply 4.4V)
15	RESET	Input	H	Input terminal for reset signal. Power switch "ON": 4.3V / 0V → Power switch "OFF": 1V / 0V
16	P10	Input	H	Input terminal for key return signal from external key matrix.
17	P11			
18	P12			
19	P13			
20	P50	Output	H	Output terminal for key scan signal for external key matrix.
21	P51			
22	P52			
23	P53	Output	H	Muting signal output during input switch or Rec switch operation. 4.3V / 0V. Push the each input selector or muting switch.
24	P00/INT	Input	—	Mode shifting port.
25	P40	Output	H	Input side indicator 4-bit output. Input indicator drive signal to IC703 pins ⑬ ~ ⑮ . [Refer to Ⓑ]
26	P41			
27	P42			
28	V_{SS}	—	—	Ground terminal.

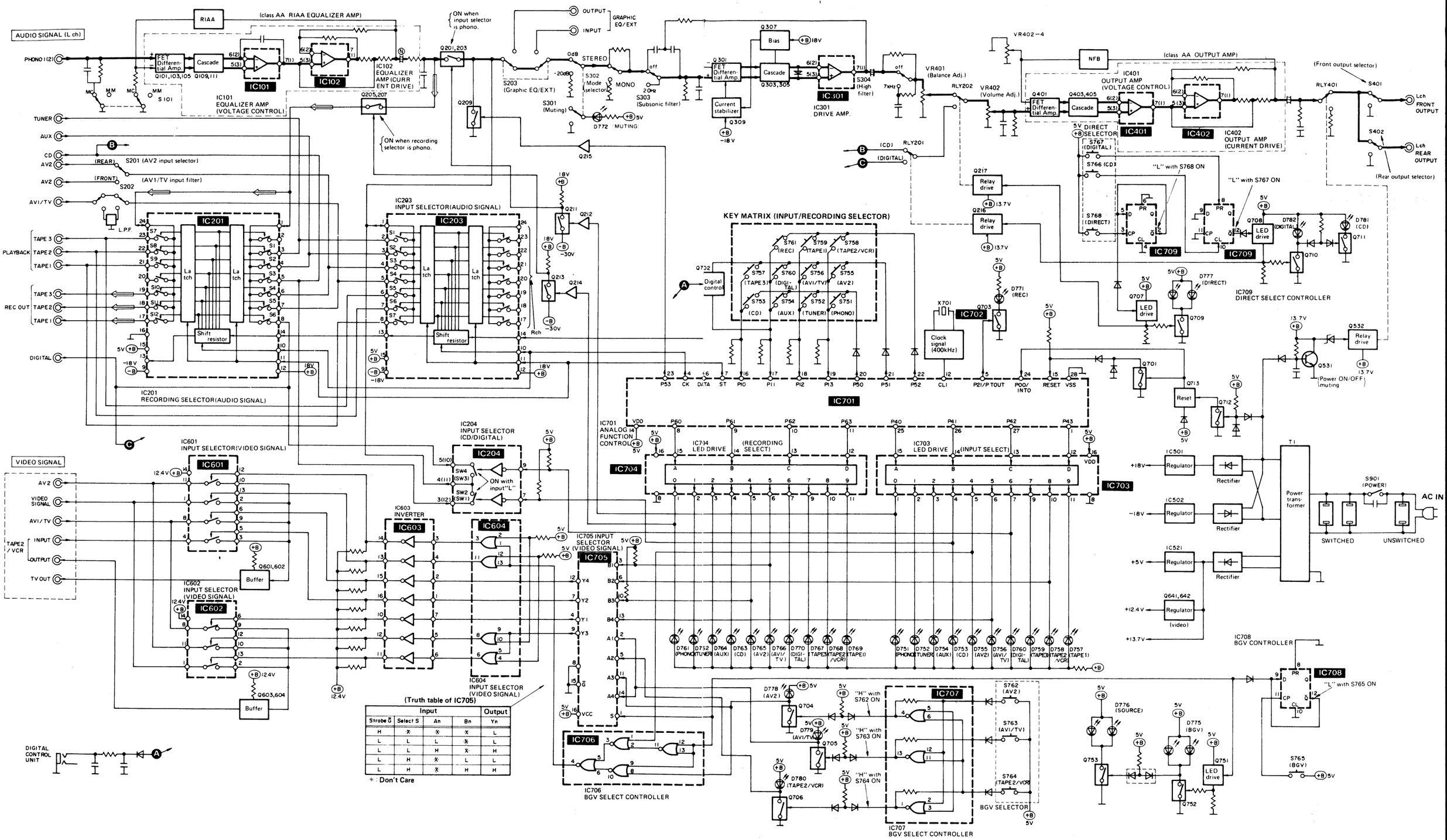
Ⓐ

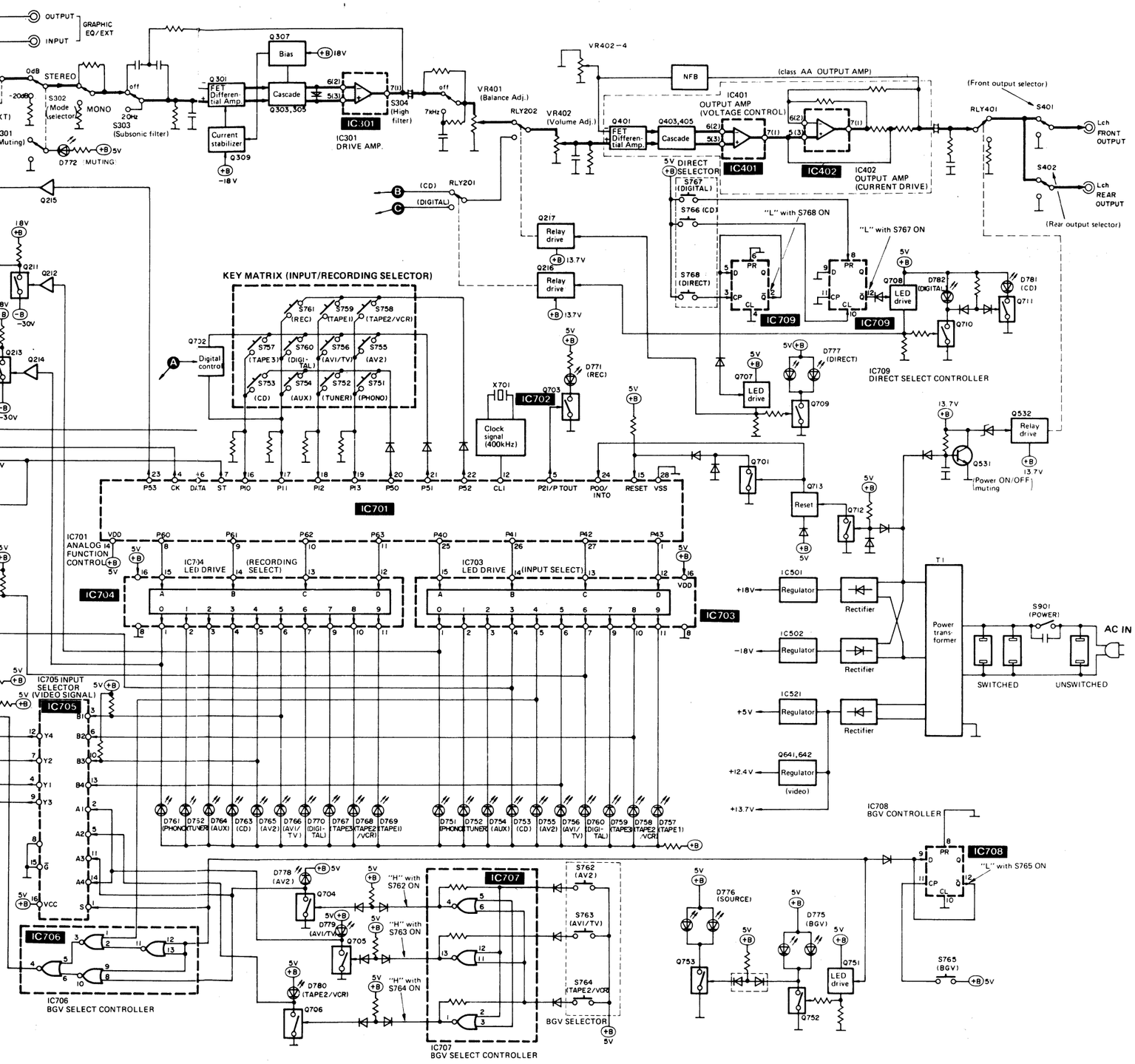


Ⓑ

Input selector \ Pin No. of IC701	⑧ ㉕	⑨ ㉖	⑩ ㉗	⑪ ①
PHONO	L	L	L	L
TUNER	H	L	L	L
AUX	L	H	L	L
CD	H	H	L	L
AV2	L	L	H	L
AV1/TV	H	L	H	L
DIGITAL	L	H	H	L
TAPE 3	H	H	H	L
TAPE 2/VCR	L	L	L	H
TAPE 1	H	L	L	H

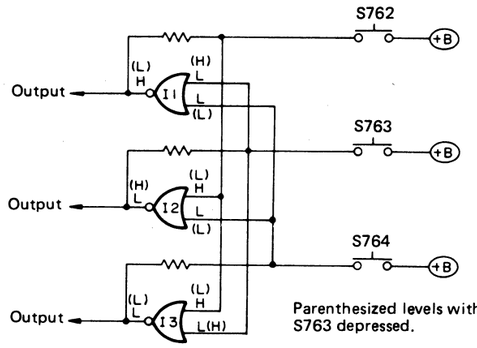
■ BLOCK DIAGRAM





■ BASIC OPERATION OF BGV SELECTOR CONTROL CIRCUIT (IC707)

The input selector control circuit is a flip-flop circuit using NOR gate. The output of NOR gate goes "L" when even one of the input terminals is at "H". For example, with tact switch S762 depressed as shown below, the level of signal applied to input terminals of I2 and I3 is "H", and the output goes "L". The outputs of I2 and I3 are applied to input terminals of I1, causing only the level of I1 to go "H". With S763 depressed, "H" is applied to input terminals of I1 and I3, causing the output of I1 to change from "H" to "L". The output is then applied to I2 and I3, changing the output of I2 to "H" and that of I3 to "L". The circuit of this unit is of 3-stage configuration as shown in the block diagram, and operates as explained above.



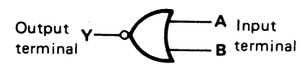


Table of logic

Output	Input	
Y	A	B
H	L	L
L	H	L
L	L	H
L	H	H

■ SWITCH OF OPERATION (IC201～203)

• IC201, 202

(off : –)

Mode selection by recording selector with phono signal playback.	SW / Mode	S1	S2	S3	S4	S5	S6	S7	S8	S9	S10	S11	S12
	phono	—	—	—	—	—	—	—	—	—	ON	ON	ON
	tuner	ON	—	—	—	—	—	—	—	—	ON	ON	ON
	aux	—	ON	—	—	—	—	—	—	—	ON	ON	ON
	CD	—	—	ON	—	—	—	—	—	—	ON	ON	ON
	AV 2	—	—	—	ON	—	—	—	—	—	ON	ON	ON
	AV 1/TV	—	—	—	—	ON	—	—	—	—	ON	ON	ON
	tape 3 (tape 3→1)	—	—	—	—	—	ON	—	—	—	—	—	ON
	tape 2 (tape 2→1)	—	—	—	—	—	—	ON	—	—	—	—	ON
	tape 1 (tape 1→2)	—	—	—	—	—	—	—	ON	—	ON	—	—
	digital	—	—	—	—	—	ON	—	—	—	ON	ON	ON

• IC203

(off : –)

Mode selection by input selector.	SW / Mode	S1	S2	S3	S4	S5	S6	S7
	phono	—	—	—	—	—	—	—
	tuner	ON	—	—	—	—	—	—
	aux	—	ON	—	—	—	—	—
	AV 2	—	—	ON	—	—	—	—
	AV 1/TV	—	—	—	ON	—	—	—
	tape 3	—	—	—	—	ON	—	—
	tape 2	—	—	—	—	—	ON	—
	tape 1	—	—	—	—	—	—	ON

■ TRUTH TABLE OF IC (IC703, 704, 708, 709)

• IC703, 704

Mode	Input				Output									
	D	C	B	A	0	1	2	3	4	5	6	7	8	9
phono	L	L	L	L	L	H	H	H	H	H	H	H	H	H
tuner	L	L	L	H	H	L	H	H	H	H	H	H	H	H
aux	L	L	H	L	H	H	L	H	H	H	H	H	H	H
CD	L	L	H	H	H	H	H	L	H	H	H	H	H	H
AV2	L	H	L	L	H	H	H	H	L	H	H	H	H	H
AV1/TV	L	H	L	H	H	H	H	H	H	L	H	H	H	H
digital	L	H	H	L	H	H	H	H	H	H	L	H	H	H
tape 3	L	H	H	H	H	H	H	H	H	H	H	L	H	H
tape2/VCR	H	L	L	L	H	H	H	H	H	H	H	H	L	H
tape 1	H	L	L	H	H	H	H	H	H	H	H	H	H	L

• IC708, 709

Input				Output	
CL	PR	D	CP△	Qn+1	$\overline{Qn}$+1
L	H	*	*	H	L
H	L	*	*	L	H
H	H	*	*	L	H
L	L	L	↓	L	H
L	L	H	↓	H	L
L	L	*	↓	Qn*	$\overline{Qn}$*

* : D'ont care • : No change
△ : Level change

■ REPLACEMENT PARTS LIST

Notes: 1. Part numbers are indicated on most mechanical parts. Please use this part number for parts orders.
2. Important safety notice:
Components identified by ⚠ mark have special characteristics important for safety. When replacing any of these components use only manufacturer's specified parts.
3. Bracketed indications in Ref. No. columns specify the area. Parts without these indications can be used for all areas.
4. The "Ⓢ" mark is service standard parts and may differ from production parts.
5. The unit of resistance is OHM (Ω).
K = 1000Ω, M = 1000KΩ
6. The unit of capacitance is MICROFARAD (μF).
P = 10^{-6} μF
7. The parenthesized numbers in the column of description stand for the quantity per set.

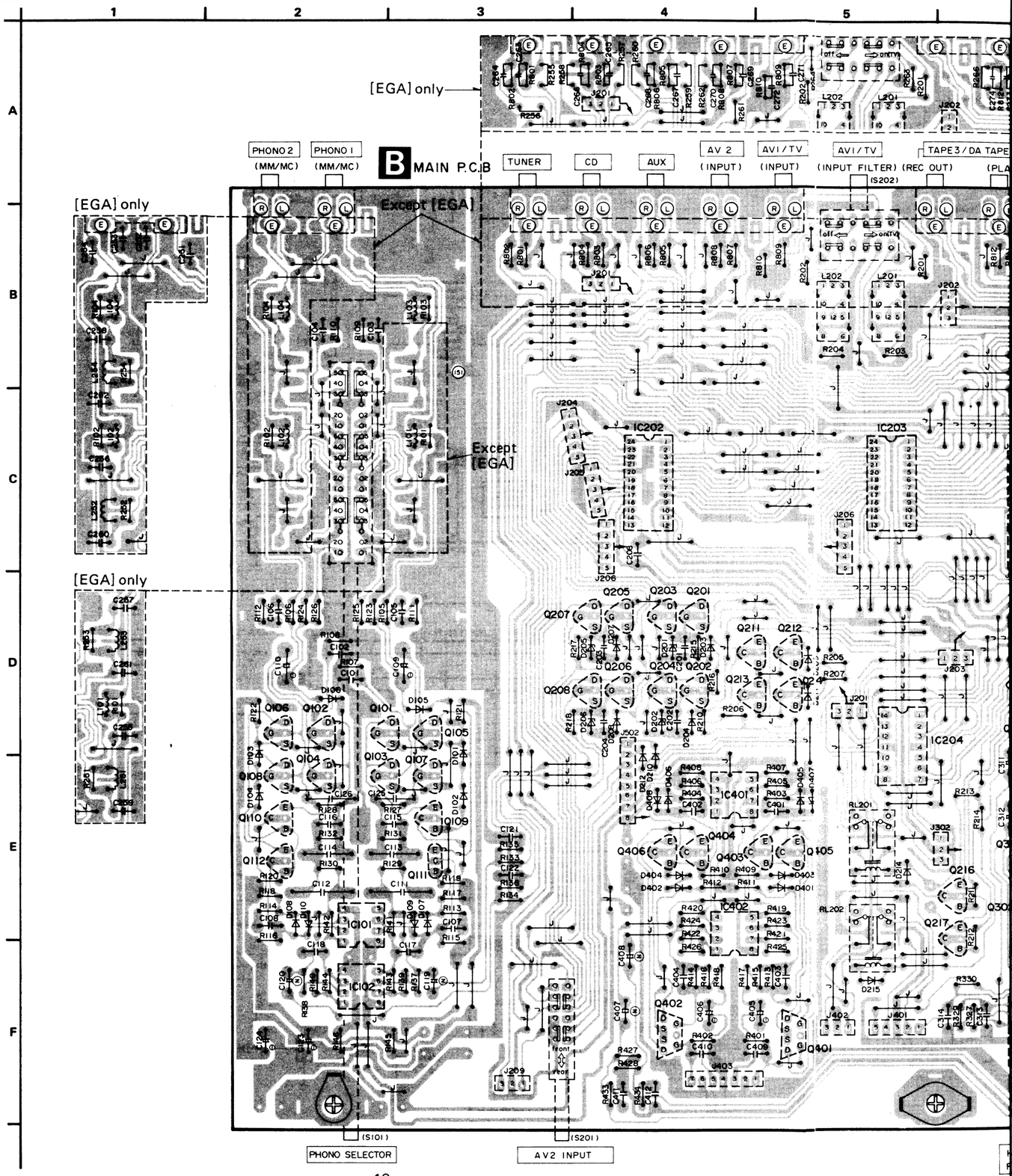
Resistor Type	Wattage	Tolerance
ERD : Carbon	10 : 1/8W	J : ± 5%
ERG : Metal Oxide	25 : 1/4W	G : ± 2%
ERC : Solid	2F : 1/4W	K : ±10%
	S2 : 1/4W	
	S1 : 1/2W	
	12 : 1/2W	

Capacitor Type		Voltage			Tolerance
		ECEA Type	Other		
ECEA....N	: Non-polar Electrolytic	2R3 : 2.3V	05	: 50V DC	C : ±0.25pF
ECEA	: Electrolytic	DC	1H	: 50V DC	J : ± 5%
ECCD	: Ceramic	OJ : 6.3V	1	: 125V DC	K : ±10%
ECKD	: Ceramic	1C : 16V	2H	: 500V DC	Z : +80%, −20%
ECQM	: Polyester	1E : 25V	KC	: 400V AC	M : ±20%
ECQV	: Polyester	1V : 35V			
ECQP	: Polypropylene	1H : 50V			
EECW	: Liquid electrolyte double layer capacitor	50 : 50V			
		25 : 25V			
ECKF	: Ceramic	2A : 100V			

● RESISTORS

Ref. No.	Part No.	Value
R101, 102 [EGA] only	ERDS2TJ222	2.2K
R101, 102 [other]	ERDS2TJ102	1K
R103, 104 [EGA] only	ERDS2TJ222	2.2K
R103, 104 [other]	ERDS2TJ102	1K
R105, 106	ERDS2TJ2R2	2.2
R107, 108	ERDS2TJ473	47K
R109, 110	ERDS2TJ221	220
R111, 112	ERDS2TJ102	1K
R113, 114	ERDS2TJ470	47
R115, 116	ER0S2TKG1001	1K
R117, 118	ER0S2TKG1001	1K
R119, 120	ERDS2TJ333	33K
R121, 122	ER0S2TKG1001	1K
R123, 124	ER0S2TKF82R0	82
R125, 126	ERDS2TJ3R3	3.3
R127, 128	ERDS2TJ221	220
R129, 130	ER0S2TKF4702	47K
R131, 132	ER0S2TKF3901	3.9K
R133, 134	ERDS2TJ334	330K
R135, 136	ERDS2TJ561	560
R137, 138	ER0S2TKG1001	1K
R139, 140	ER0S2TKG3301	3.3K
R141, 142	ER0S2TKG10R0	10
R143, 144	ER0S2TKG33R0	33
R145, 146 ⚠	ERD25FJ221	220
R201, 202	ERDS2TJ102	1K
R203, 204	ERDS2TJ332	3.3K
R205	ERDS2TJ103	10K
R206	ERDS2TJ473	47K
R207	ERDS2TJ103	10K
R208	ERDS2TJ334	330K
R209	ERDS2TJ472	4.7K
R210	ERDS2TJ473	47K
R211, 212	ERDS2TJ272	2.7K
R213, 214	ERDS2TJ121	120
R215, 216	ERDS2TJ104	100K
R217, 218	ERDS2TJ104	100K
R251, 252 [EGA] only	ERDS2TJ222	2.2K
R253, 254 [EGA] only	ERDS2TJ222	2.2K
R255, 256 [EGA] only	ERDS2TJ471	470
R257, 258 [EGA] only	ERDS2TJ471	470
R259, 260 [EGA] only	ERDS2TJ471	470
R261, 262 [EGA] only	ERDS2TJ471	470
R263, 264 [EGA] only	ERDS2TJ471	470
R265, 266 [EGA] only	ERDS2TJ471	470
R267, 268 [EGA] only	ERDS2TJ471	470
R269, 270 [EGA] only	ERDS2TJ471	470
R271, 272 [EGA] only	ERDS2TJ471	470
R273, 274 [EGA] only	ERDS2TJ471	470
R275, 276 [EGA] only	ERDS2TJ471	470
R301, 302	ERDS2TJ333	33K
R303, 304	ERDS2TJ392	3.9K
R305, 306	ERDS2TJ472	4.7K
R307, 308	ERDS2TJ124	120K
R309, 310	ERDS2TJ224	220K
R311, 312	ERDS2TJ473	47K
R313, 314	ERDS2TJ181	180
R315, 316	ERDS2TJ332	3.3K
R317, 318	ERDS2TJ332	3.3K
R319, 320	ERDS2TJ103	10K
R321, 322	ERDS2TJ154	150K
R323, 324	ERDS2TJ102	1K
R325, 326	ERDS2TJ103	10K
R327, 328	ERDS2TJ471	470
R329, 330	ERDS2TJ824	820K
R331	ERDS2TJ824	820K
R401, 402	ERDS2TJ224	220K
R403, 404	ERDS2TJ101	100
R405, 406	ERDS2TJ222	2.2K
R407, 408	ERDS2TJ222	2.2K
R409, 410	ERDS2TJ473	47K
R411, 412	ERDS2TJ222	2.2K
R413, 414	ERDS2TJ333	33K
R415, 416	ERDS2TJ332	3.3K
R417, 418	ERDS2TJ221	220
R419, 420	ER0S2TKG10R0	10
R421, 422	ER0S2TKG33R0	33
R423, 424	ER0S2TKG1001	1K
R425, 426	ER0S2TKG3301	3.3K
R427, 428	ERDS2TJ823	82K
R429, 430	ERDS2TJ560	56
R431, 432	ERDS2TJ560	56
R433, 434	ERDS2TJ101	100
R435, 436	ERDS2TJ272	2.7K
R501	ERDS2TJ102	1K
R502	ERDS2TJ333	33K
R503	ERDS2TJ102	1K
R504	ERDS2TJ333	33K
R521	ERG5AJ150	15
R531	ERDS2TJ682	6.8K
R532	ERDS2TJ104	100K
R533	ERDS2TJ472	4.7K
R534	ERDS2TJ153	15K
R535	ERDS2TJ224	220K
R537	ERDS2TJ274	270K
R538	ERDS2TJ121	120
R541 ⚠	ERD25FJ221	220
R543, 544	ERDS2TJ100	10
R601, 602	ERDS2TJ820	82
R603, 604	ERDS2TJ820	82
R605	ERDS2TJ272	2.7K
R606	ERDS2TJ680	68
R607	ERDS2TJ330	33
R608, 609	ERDS2TJ680	68
R610	ERDS2TJ272	2.7K
R611	ERDS2TJ121	120
R612	ERDS2TJ151	150
R613	ERDS2TJ272	2.7K
R614	ERDS2TJ680	68
R615	ERDS2TJ330	33
R616, 617	ERDS2TJ680	68
R618	ERDS2TJ272	2.7K
R619	ERDS2TJ121	120
R620	ERDS2TJ151	150
R621	ERDS2TJ222	2.2K
R622	ERDS2TJ122	1.2K
R623, 624	ERDS2TJ272	2.7K
R625, 626	ERDS2TJ272	2.7K
R627, 628	ERDS2TJ103	10K
R651	ERDS2TJ472	4.7K
R701	ERDS2TJ823	82K
R703	ERDS2TJ103	10K
R704	ERDS2TJ472	4.7K
R705	ERDS2TJ473	47K
R706, 707	ERDS2TJ104	100K
R708, 709	ERDS2TJ104	100K
R710	ERDS2TJ681	680
R711, 712	ERDS2TJ473	47K
R713, 714	ERDS2TJ473	47K
R715	ERDS2TJ473	47K
R716, 717	ERDS2TJ103	10K
R718	ERDS2TJ103	10K
R719, 720	ERDS2TJ272	2.7K
R721	ERDS2TJ272	2.7K
R722	ERDS2TJ103	10K
R724, 725	ERDS2TJ103	10K
R726	ERDS2TJ272	2.7K
R727, 728	ERDS2TJ103	10K
R729	ERDS2TJ103	10K
R730, 731	ERDS2TJ272	2.7K
R733	ERDS2TJ223	22K
R734	ERDS2TJ333	33K
R735, 736	ERDS2TJ103	10K
R751, 752	ERDS2TJ151	150
R753, 754	ERDS2TJ151	150
R755, 756	ERDS2TJ151	150
R757, 758	ERDS2TJ151	150
R759, 760	ERDS2TJ151	150
R761, 762	ERDS2TJ103	10K
R763	ERDS2TJ103	10K
R764	ERDS2TJ103	10K
R765, 766	ERDS2TJ272	2.7K
R767, 768	ERDS2TJ151	150
R769	ERDS2TJ151	150
R801, 802	ERDS2TJ473	47K
R803, 804	ERDS2TJ473	47K
R805, 806	ERDS2TJ473	47K
R807, 808	ERDS2TJ473	47K
R809, 810	ERDS2TJ473	47K
R811, 812	ERDS2TJ473	47K
R813, 814	ERDS2TJ473	47K
R815, 816	ERDS2TJ473	47K
R817, 818	ERDS2TJ473	47K
R819, 820	ERDS2TJ473	47K
R821, 822	ERDS2TJ473	47K

■ PRINTED CIRCUIT BOARDS



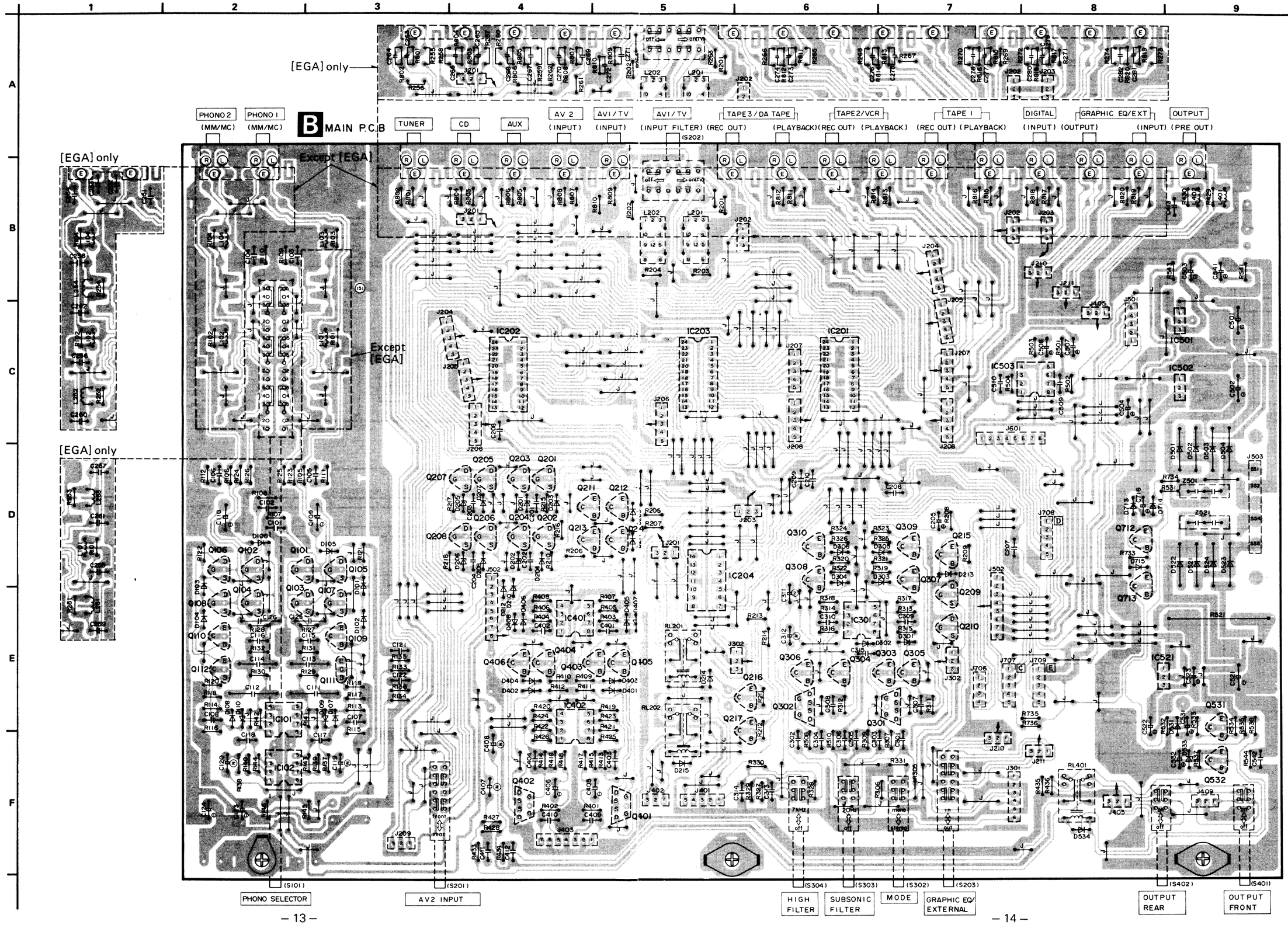
■ PRINTED CIRCUIT BOARDS

I may differ

μF).

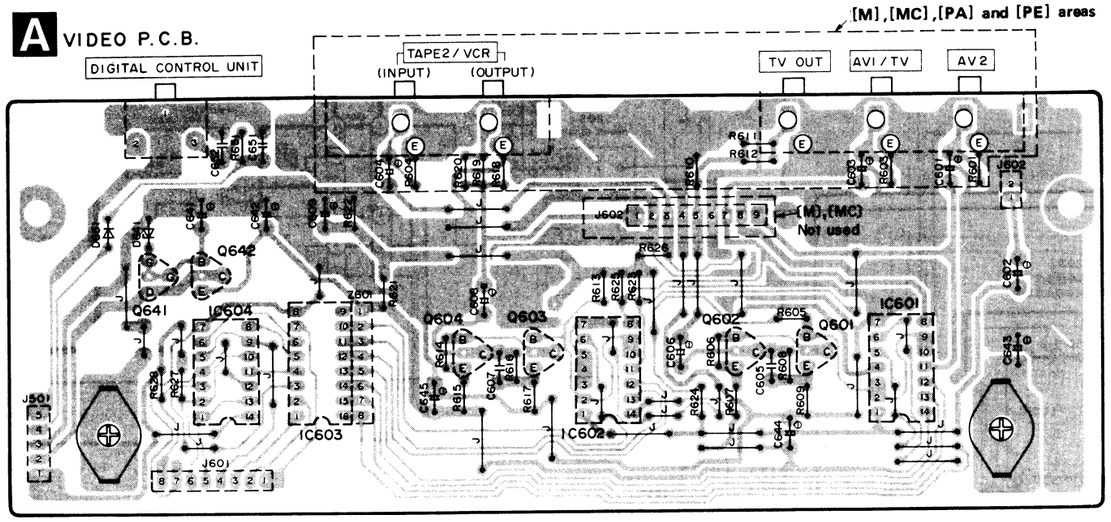
of descrip-

Tolerance
±0.25pF
± 5%
±10%
+80%, −20%
±20%

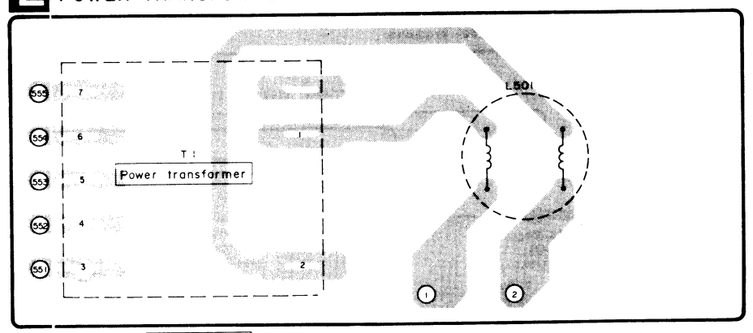


10 11 12 13 14 15 16 17 18 19

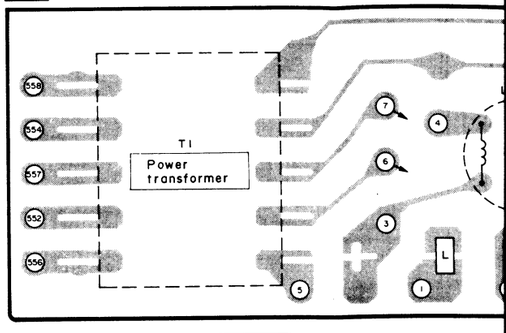
A VIDEO P.C.B.



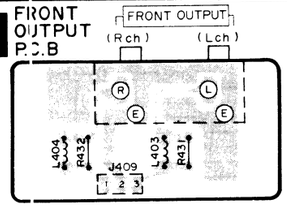
E POWER TRANSFORMER P.C.B. [M] and [MC] areas



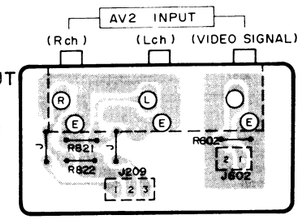
E POWER TRANSFORMER P.C.B. Except [M],[MC]



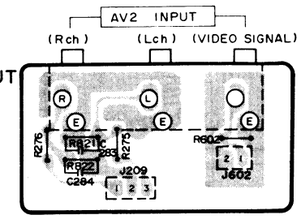
J FRONT OUTPUT P.C.B



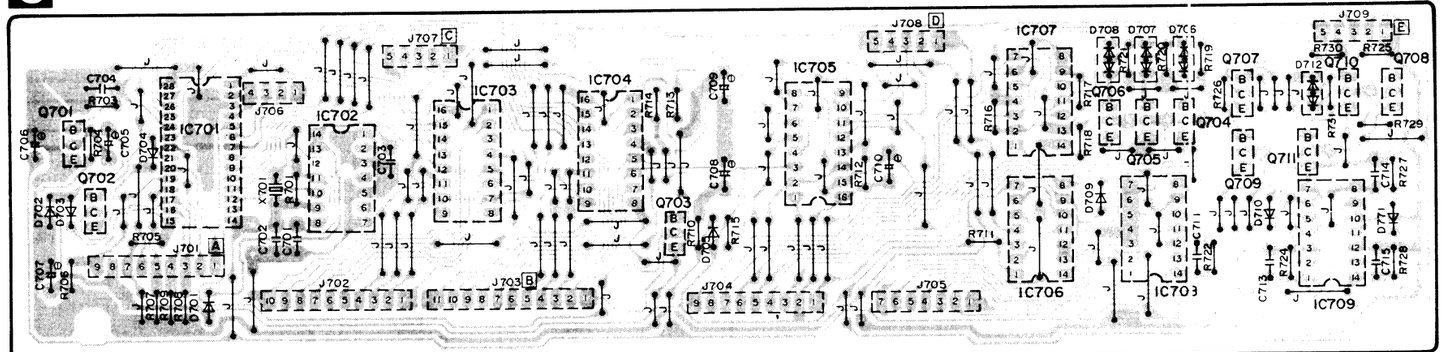
F AV2 INPUT P.C.B. Except [EGA]



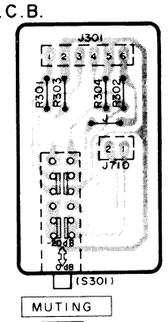
F AV2 INPUT P.C.B. [EGA] only



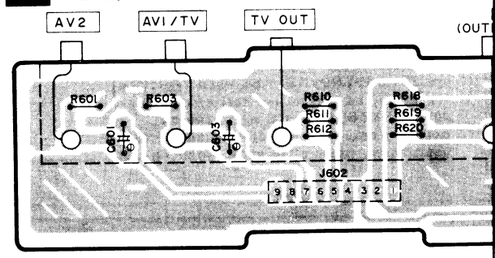
C LOGIC P.C.B.



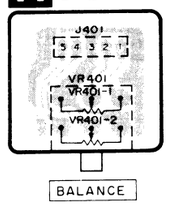
I AUDIO MUTING P.C.B.



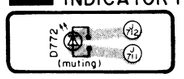
L BNC TERMINAL P.C.B. Except [M],[MC],[PA],[PE]



H BALANCE P.C.B.

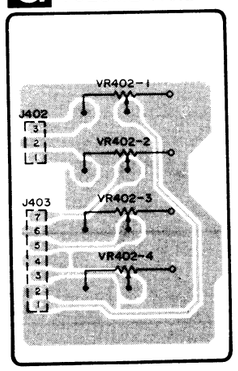


K MUTING INDICATOR P.C.B.

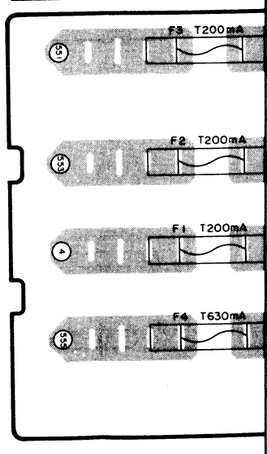


D INPUT/RECORDING (VIDEO) SELECTOR & INDICATOR P.C.B.

G VOLUME P.C.B

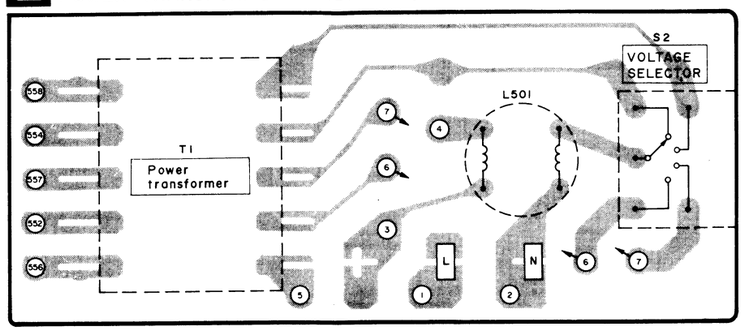


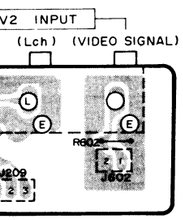
M FUSE P.C.B. Except



17 18 19 20

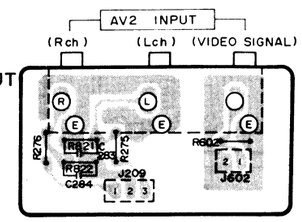
E POWER TRANSFORMER P.C.B. Except [M],[MC]



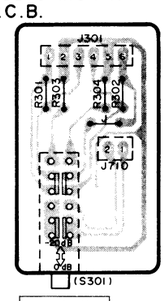


F AV2 INPUT P.C.B.

[EGA] only

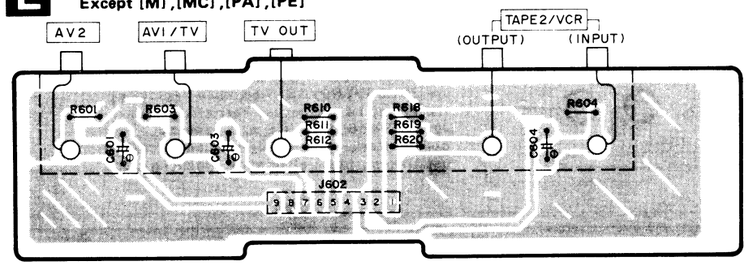


AUDIO MUTING P.C.B.

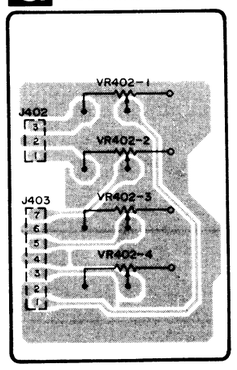


MUTING

L BNC TERMINAL P.C.B. Except [M],[MC],[PA],[PE]

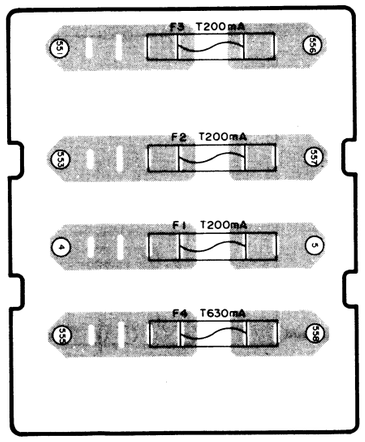


G VOLUME P.C.B



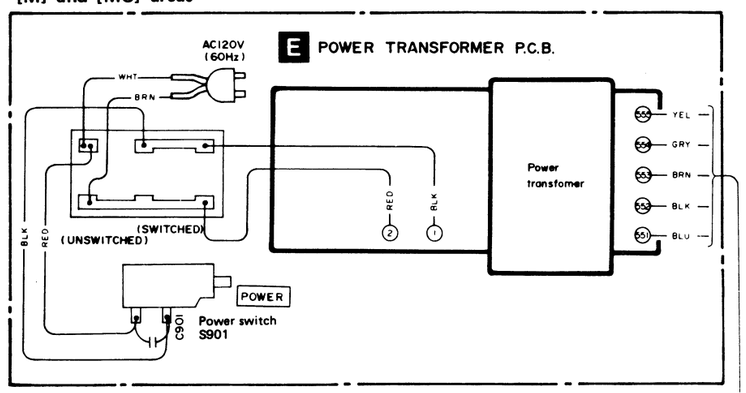
VOLUME

M FUSE P.C.B. Except [M],[MC]

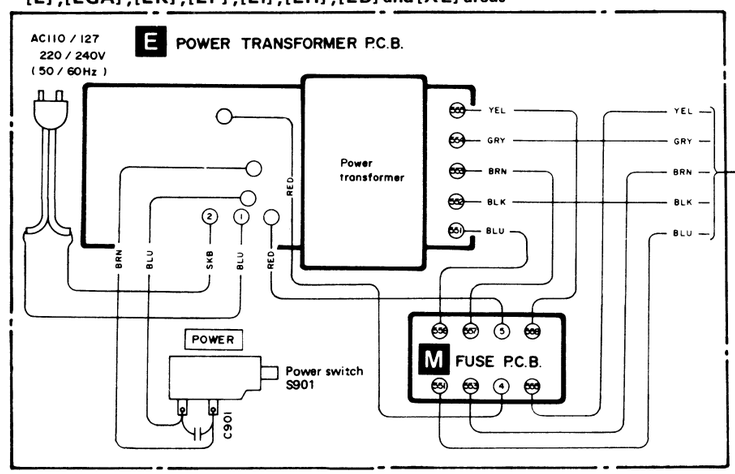


WIRING CONNECTION DIAGRAM

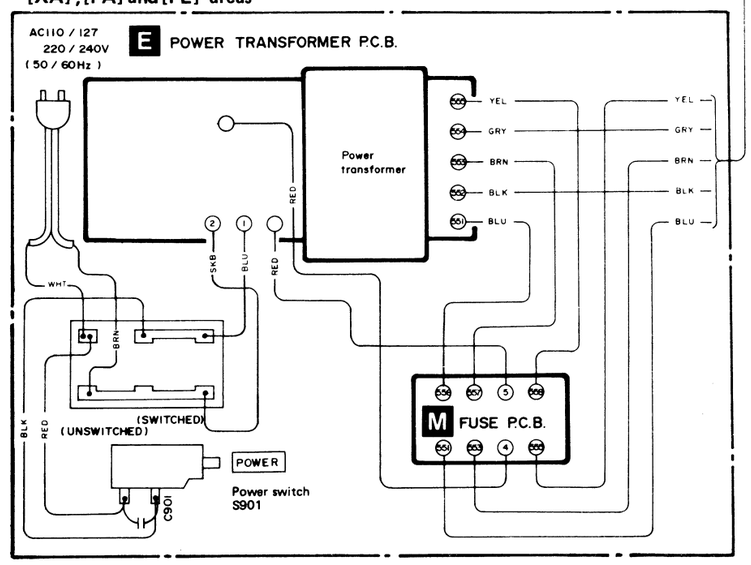
[M] and [MC] areas



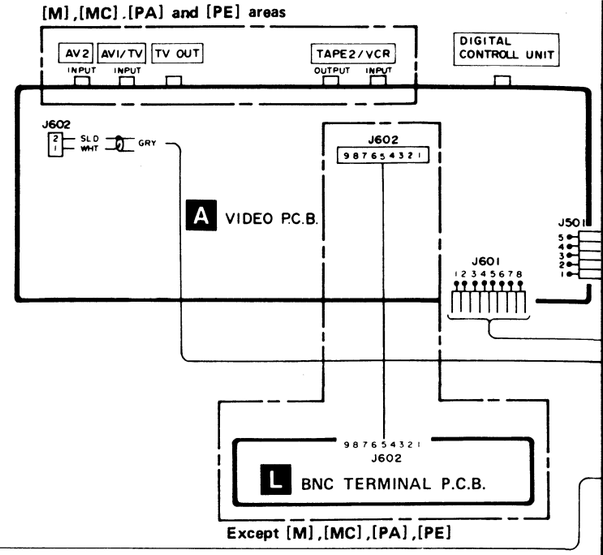
[E],[EGA],[EK],[EF],[Ei],[EH],[EB] and [XL] areas



[XA],[PA] and [PE] areas

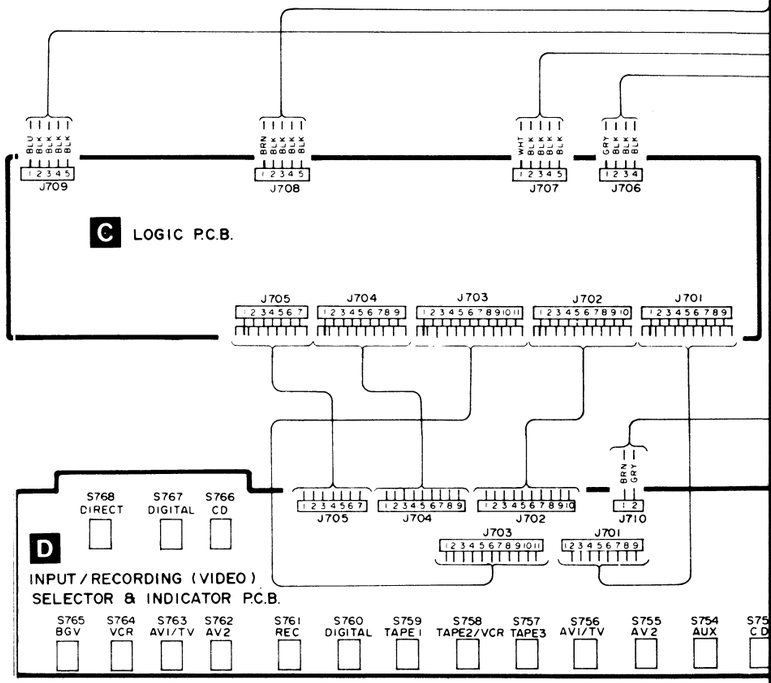


[M],[MC],[PA] and [PE] areas

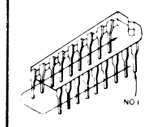


Note
WHT : White
RED : Red
GRY : Grey
BRN : Brown
BLK : Black
SLD : Shield Line
BLU : Blue
YEL : Yellow
SKB : Sky Blue

Except [M],[MC],[PA],[PE]



• Terminal guide of transistors, IC's and diodes



M5219P M5238P	8 Pin
MN4001B MN4066B MN4069UB MN74HC02 MN74HC32 SVITC4013BP μPD6360C	14 Pin
DN74LS145 MN74HC157 SVITD62504P	16 Pin
μPD6364CA	24 Pin
μPD7506CT209	28 Pin

2SK389
1. D1
2. G1
3. S1
4. sub
5. S2
6. G2
7. D2

AN78M05 AN79M18
AN78M18
1 Vin
2 GND
3 Vout

UN4211

2SC1815 2SC1384
2SA1015

UN4111

CONNECTION DIAGRAM

as

AC120V (60Hz)

E POWER TRANSFORMER P.C.B.

Power transfomer

RED BLK

YEL GRY BRN BLK BLU

POWER

Power switch S901

,[EF],[Ei],[EH],[EB] and [XL] areas

POWER TRANSFORMER P.C.B.

Power transfomer

YEL GRY BRN BLK BLU

SKB BLU RED

POWER

Power switch S901

M FUSE P.C.B.

C901

E] areas

OWER TRANSFORMER P.C.B.

Power transfomer

YEL GRY BRN BLK BLU

M FUSE P.C.B.

POWER

Power switch S901

Note

WHT	: White
RED	: Red
GRY	: Grey
BRN	: Brown
BLK	: Black
SLD	: Shield Line
BLU	: Blue
YEL	: Yellow
SKB	: Sky Blue

[M],[MC],[PA] and [PE] areas

AV2 AV1/TV TV OUT TAPE2/VCR

INPUT INPUT OUTPUT INPUT

DIGITAL CONTROLL UNIT

J602 SLD WHT GRY

J602 98765432 1

A VIDEO P.C.B.

J601 12345678

J501

L BNC TERMINAL P.C.B.

98765432 1 J602

Except [M],[MC],[PA],[PE]

OUTPUT DIGITAL TAPE2/VCR AV1/TV INPUT FILTER AV2 CD GND PHONO2

GRAPHIC EQ/EXT TAPE1 TAPE3/DA TAPE AV1/TV AUX TUNER PHONO1

PRE OUT INPUT OUTPUT INPUT PLAYBACK REC OUT PLAYBACK REC OUT PLAYBACK REC OUT (MM/MC) (MM/MC)

ON ⟷ OFF (TV) S202

chassis

BLK

S101 MC ↕ MM

PHONO SELECTOR

B MAIN P.C.B.

J501

BLU BLK BRN GRY YEL

87654321 J601

J708 J709 J707 J706

J709 J708 J707 J706

C LOGIC P.C.B.

J705 J704 J703 J702 J701

J409 J301 J401 J402 J403 J209

S401 FRONT REAR OUTPUT

S203 EXTERNAL

S302 MODE

S303 FILTER

S304 HIGH FILTER

S201 FRONT/REAR AV2 INPUT

K MUTING INDICATOR P.C.B.

D INPUT/RECORDING (VIDEO) SELECTOR & INDICATOR P.C.B.

S768 DIRECT S767 DIGITAL S766 CD

S765 BGV S764 VCR S763 AVI/TV S762 AV2 S761 REC S760 DIGITAL S759 TAPE I S758 TAPE2/VCR S757 TAPE3 S756 AVI/TV S755 AV2 S754 AUX S753 CD S752 TUNER S751 PHONO

J705 J704 J703 J702 J701 J710

J409 J

OUTPUT

FRONT OUTPUT P.C.B.

J301 J710 S301

I MUTING

AUDIO MUTING P.C.B.

J401 VR401

H BALANCE

BALANCE P.C.B.

G VOLUME P.C.B.

J402 J403 VR402

VOLUME

J209 J602

A L VIDEO SIGNAL

AV2 INPUT

F AV2 INPUT P.C.B.

• Terminal guide of transistors, IC's and diodes

M5219P M5238P	8 Pin
MN4001B MN4066B MN4069UB MN74HC02 MN74HC32 SVITC4013BP μPD6360C	14 Pin
DN74LS145 MN74HC157 SVITD62504P	16 Pin
μPD6364CA	24 Pin
μPD7506CT-209	28 Pin

2SK389 1. D1 2. G1 3. S1 4. sub 5. S2 6. G2 7. D2

AN78M05 AN79M18 AN78M18 1 Vin 2 GND 3 Vout

UN4211

2SC3311 2SD1424 2SA1309

2SK369 DRAIN GATE SOURCE

LN846RP

MA4043M MA4130M MA4062M

SVDSR1K2

2SC1815 2SA1015 2SC1384

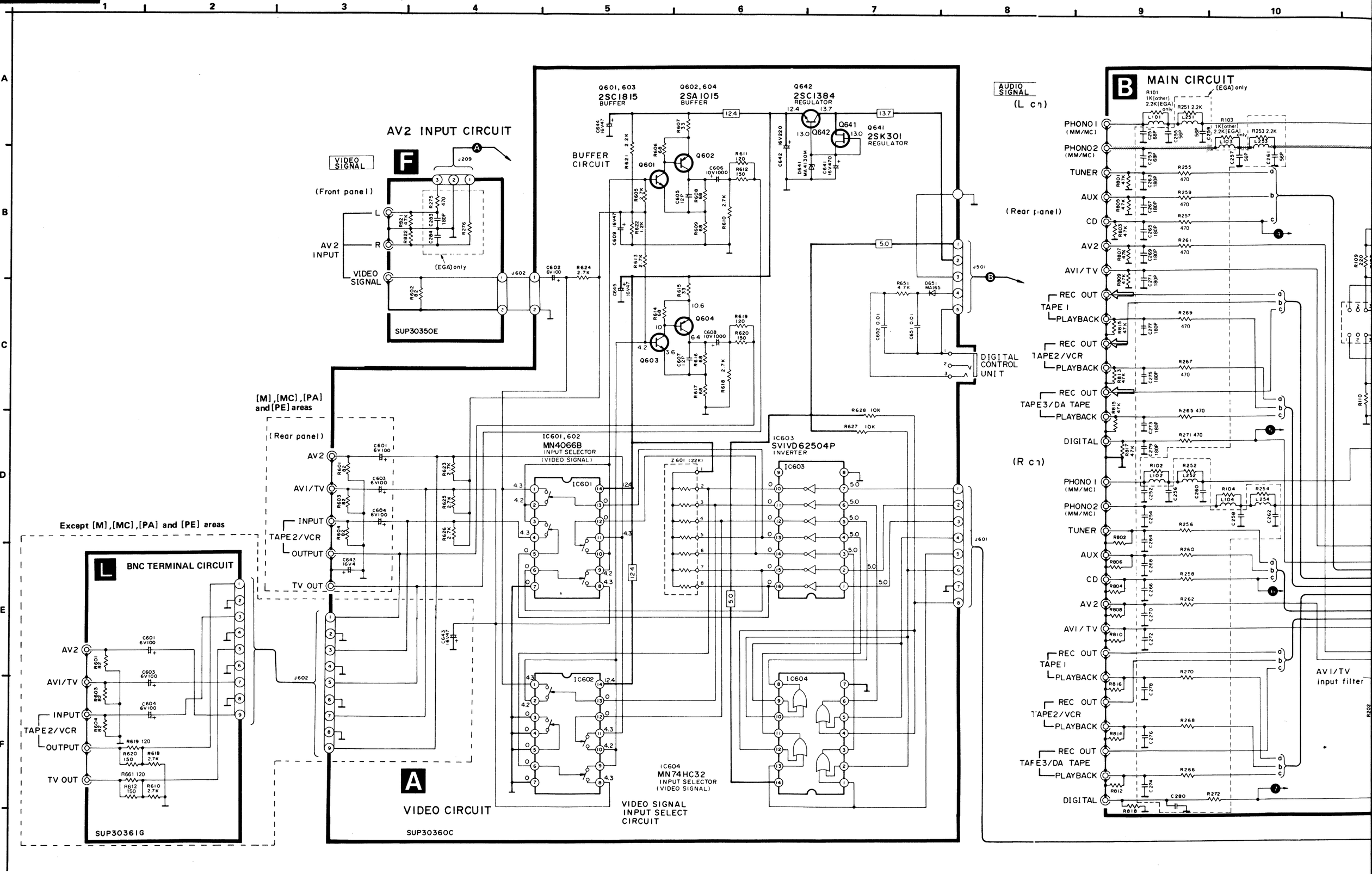
UN4111

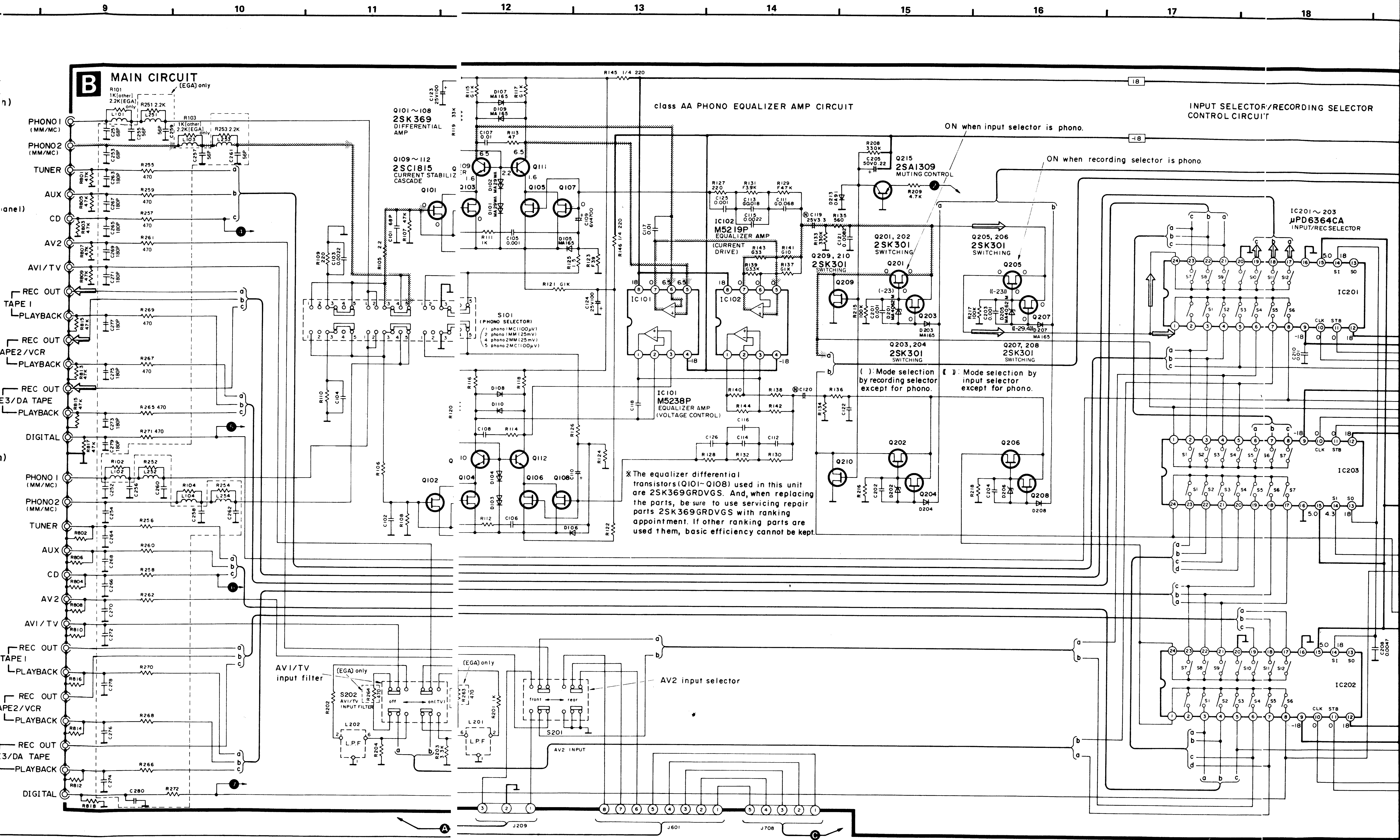
2SK301 1. DRAIN 2. GATE 3. SOURCE

LN0202YP4

MC911

MA165, MA167 MA29WA, OA91FV


AV2 INPUT CIRCUIT
VIDEO SIGNAL
F
(Front panel)
L
R
AV2 INPUT
VIDEO SIGNAL
(EGA) only
SUP30350E
J209
J602
BUFFER CIRCUIT
Q601, 603
2SC1815
BUFFER
Q602, 604
2SA1015
BUFFER
Q642
2SC1384
REGULATOR
Q641
2SK301
REGULATOR
Q601
Q602
Q603
Q604
Q642
Q641
D641
MA4130M
D651
MA165
DIGITAL CONTROL UNIT
J501
AUDIO SIGNAL
(L ch)
(R ch)
B
MAIN CIRCUIT
(EGA) only
PHONO1 (MM/MC)
PHONO2 (MM/MC)
TUNER
AUX
CD
AV2
AVI/TV
REC OUT
TAPE1 PLAYBACK
TAPE2/VCR PLAYBACK
TAPE3/DA TAPE PLAYBACK
DIGITAL
(Rear panel)
[M], [MC], [PA] and [PE] areas
Except [M], [MC], [PA] and [PE] areas
AV2
AVI/TV
INPUT
TAPE2/VCR
OUTPUT
TV OUT
L
BNC TERMINAL CIRCUIT
SUP30361G
A
VIDEO CIRCUIT
SUP30360C
IC601, 602
MN4066B
INPUT SELECTOR
(VIDEO SIGNAL)
IC601
IC602
VIDEO SIGNAL INPUT SELECT CIRCUIT
IC603
SVIVD62504P
INVERTER
IC604
MN74HC32
INPUT SELECTOR
(VIDEO SIGNAL)
J601
AVI/TV input filter


B MAIN CIRCUIT
class AA PHONO EQUALIZER AMP CIRCUIT
INPUT SELECTOR/RECORDING SELECTOR CONTROL CIRCUIT
ON when input selector is phono.
ON when recording selector is phono.
Q101 ~ 108 2SK369 DIFFERENTIAL AMP
Q109 ~ 112 2SC1815 CURRENT STABILIZ CASCADE
Q215 2SA1309 MUTING CONTROL
IC102 M5219P EQUALIZER AMP (CURRENT DRIVE)
IC101 M5238P EQUALIZER AMP (VOLTAGE CONTROL)
Q201, 202 2SK301 SWITCHING
Q205, 206 2SK301 SWITCHING
Q209, 210 2SK301 SWITCHING
Q203, 204 2SK301 SWITCHING
Q207, 208 2SK301 SWITCHING
( ): Mode selection by recording selector except for phono.
【 】: Mode selection by input selector except for phono.
IC201 ~ 203 μPD6364CA INPUT/REC SELECTOR
S101 (PHONO SELECTOR)
※The equalizer differential transistors (Q101~Q108) used in this unit are 2SK369GRDVGS. And, when replacing the parts, be sure to use servicing repair parts 2SK369GRDVGS with ranking appointment. If other ranking parts are used them, basic efficiency cannot be kept.
AV1/TV input filter
AV2 input selector
S202 AV1/TV INPUT FILTER
S201
AV2 INPUT
PHONO 1 (MM/MC)
PHONO 2 (MM/MC)
TUNER
AUX
CD
AV2
AV1/TV
REC OUT
TAPE 1
PLAYBACK
TAPE2/VCR
DA TAPE
DIGITAL
J209
J601
J708

class AA PHONO EQUALIZER AMP CIRCUIT

INPUT SELECTOR/RECORDING SELECTOR CONTROL CIRCUIT

ON when input selector is phono.

ON when recording selector is phono.

Q215 2SA1309 MUTING CONTROL

IC102 M5219P EQUALIZER AMP (CURRENT DRIVE)

IC101 M5238P EQUALIZER AMP (VOLTAGE CONTROL)

Q201, 202 2SK301 SWITCHING

Q209, 210 2SK301 SWITCHING

Q205, 206 2SK301 SWITCHING

Q203, 204 2SK301 SWITCHING

Q207, 208 2SK301 SWITCHING

( ): Mode selection by recording selector except for phono.

《 》: Mode selection by input selector except for phono.

※The equalizer differential transistors (Q101~Q108) used in this unit are 2SK369GRDVGS. And, when replacing the parts, be sure to use servicing repair parts 2SK369GRDVGS with ranking appointment. If other ranking parts are used them, basic efficiency cannot be kept.

IC201~203 μPD6364CA INPUT/REC SELECTOR

IC201

IC202

IC203

IC204 μPD6360C INPUT SELECTOR (CD, DIGITAL)

SW1~4: ON with input "L"

GRAPHIC EQ/EXT

OUTPUT L R

INPUT L R

S203 (GRAPHIC EQ/EXT)

(EGA) only

Graphic EQ/EXT selector

SUP30350C AUDIO MUTING CIRCUIT

S301 (MUTING)

Audio muting

Q211, 213 UN4211 SIGNAL RESET

Q212, 214 2SA1309A BUFFER

AV2 input selector

J601 J708 J501 J707 J706 J710

DRIVE AMP CIRCUIT

Q301, 302 2SK389 DIFFERENTIAL AMP
Q303～306 2SC3311 CURRENT STABILIZER CASCADE
Q307, 308 2SA1309 BIAS
Q309, 310 2SC3311 CURRENT STABILIZER CASCADE

BALANCE CIRCUIT

SUP30350D H Balance Adj.

VOLUME CIRCUIT G SUP30360F Volume Adj

Front output s

Power ON/OFF muting

RL401

class AA OUTPUT CIRCUIT

IC401 M5238P OUTPUT AMP (VOLTAGE CONTROL)

Q401, 402 2SK389 DIFFERENTIAL AMP

Q403～406 2SC3311 CURRENT STABILIZER CASCADE

IC301 M5219P DRIVE AMP

S302 (MODE)

S303 (SUBSONIC)

Subsonic filter

S304 (HIGH FILTER)

High filter

RL202

RL201

CD/DIGITAL select

Playback mode selector

SUP30350A

IC706 MN4001B BGV SELECT C

IC702 MN4069UB CLOCK GENERATOR

Analog switch select signal

Q701 UN4211 SWITCHING (RESET)

CLOCK OSC CIRCUIT

IC701 μPD7506CT209 ANALOG FUNCTION CONTROL

Xta'l 400kHZ

Key return signal

Key scan signal

IC703 DN74LS145 LED DRIVE (INPUT SELECT)

Memory backup

IC704 DN74LS145 LED DRIVE (REC SELECT)

Q703 UN4211 LED DRIVE (REC)

INPUT/RECORDING INDICATOR DRIVE CIRCUIT

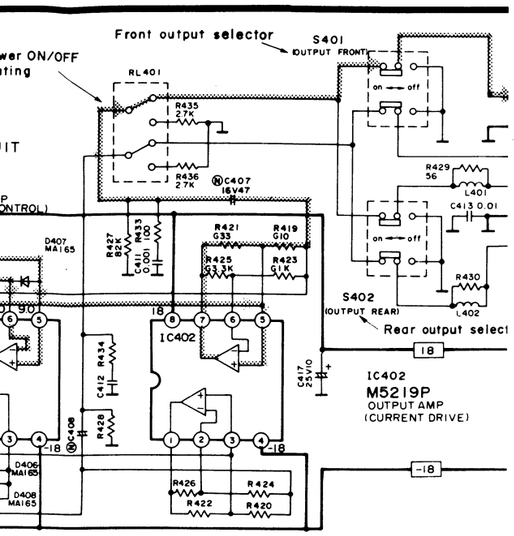
Q702 UN4111 DIGITAL CONTROL

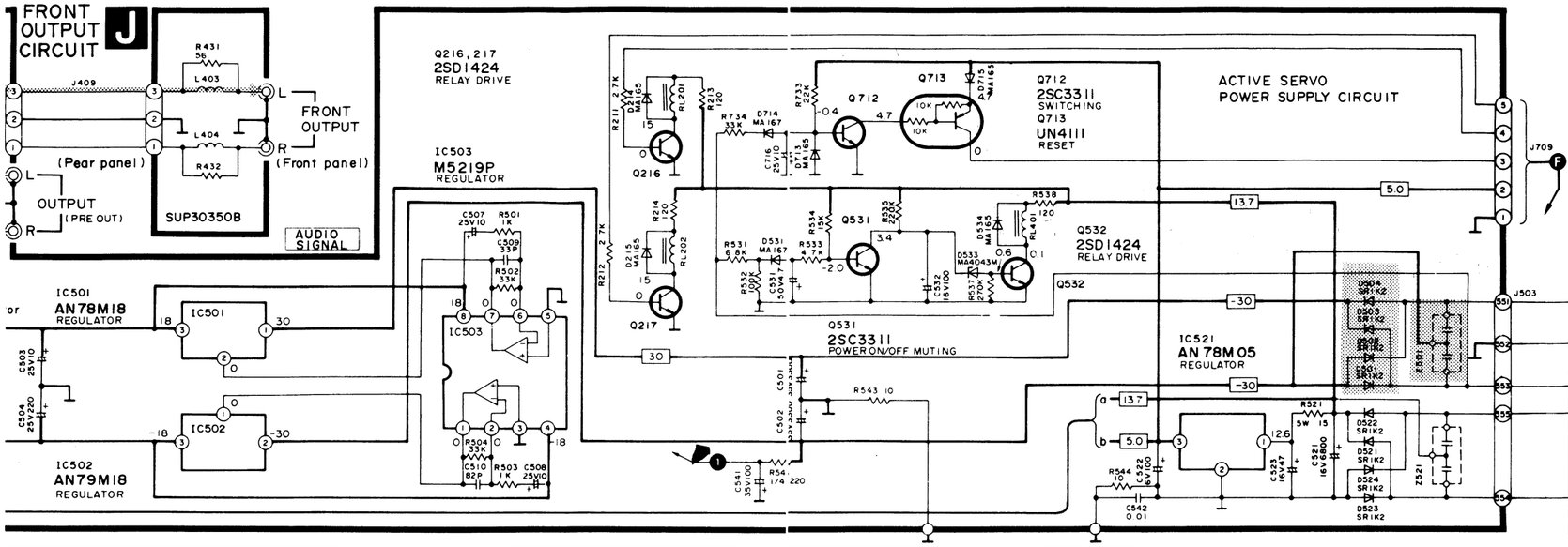
SUP30360A

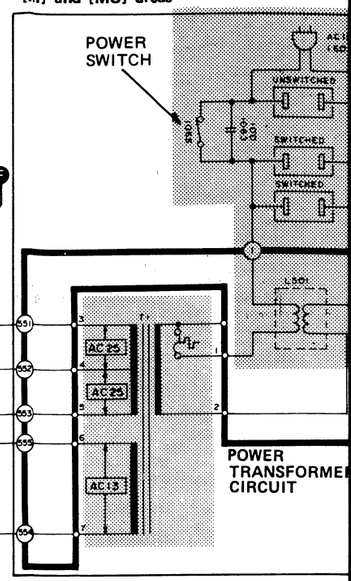
INPUT/RECORDING (VIDEO) SELECTOR & INDICATOR CIRCUIT

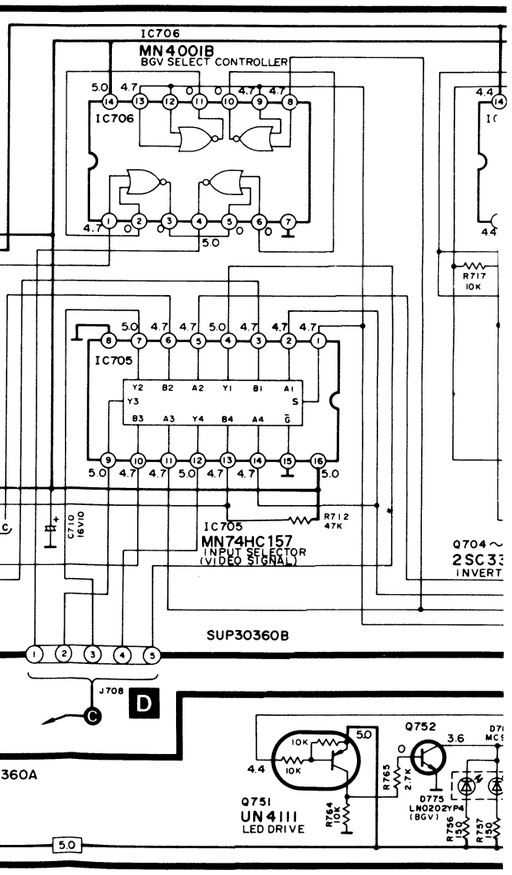
SUP 30360E K

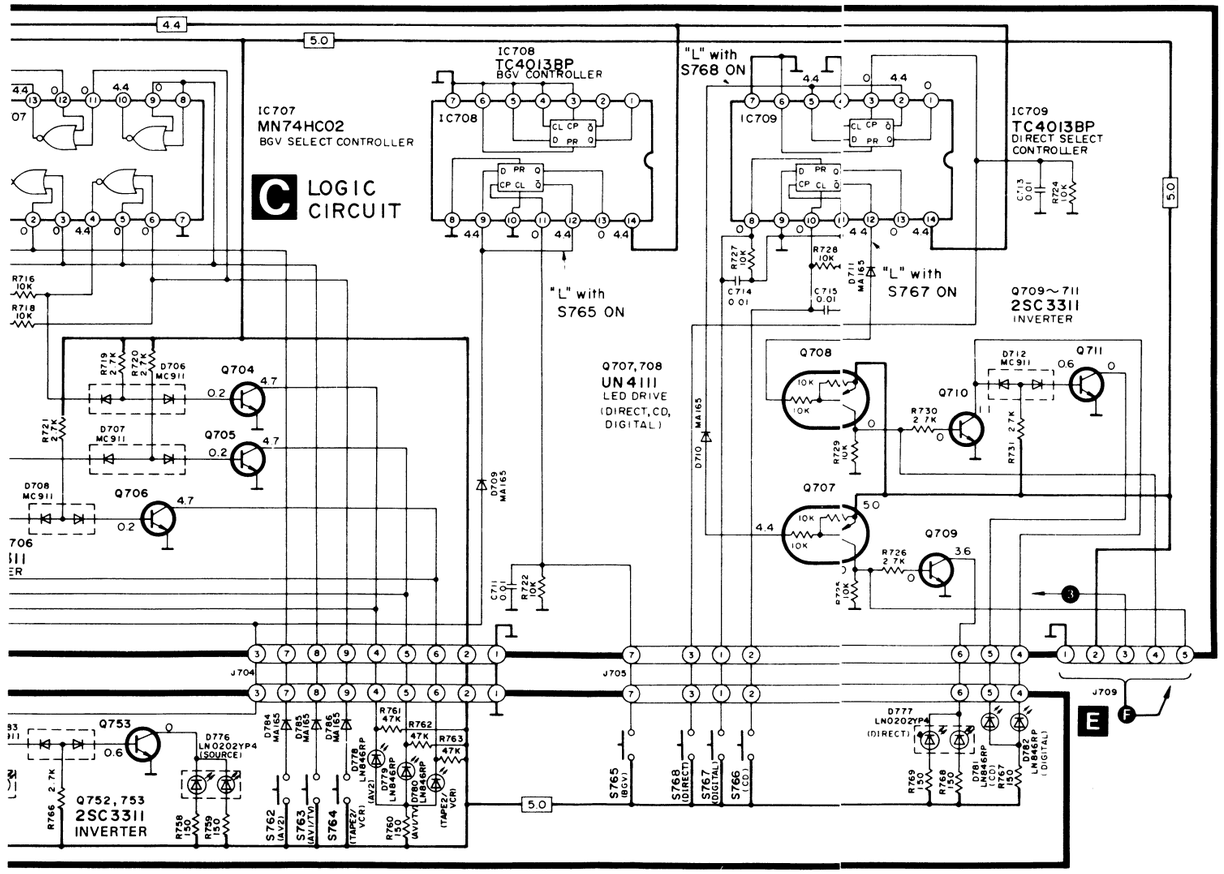
MUTING INDICATOR CIRCUIT





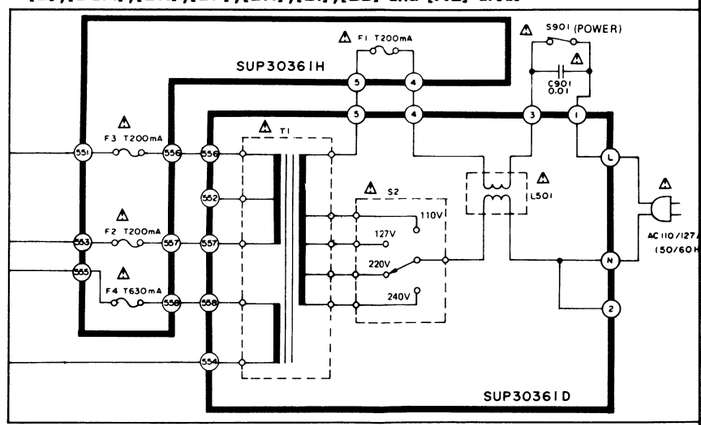




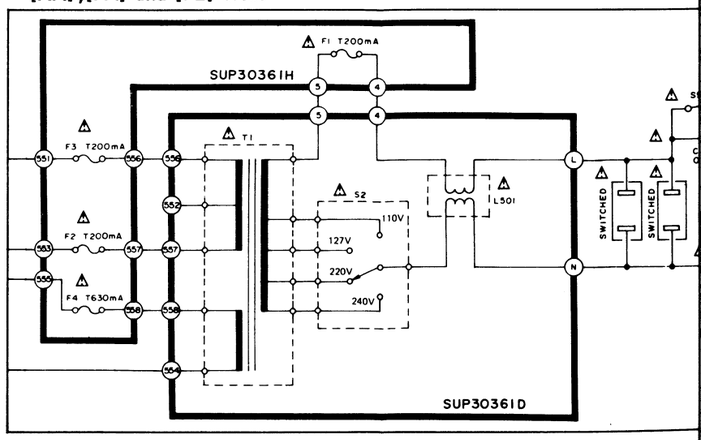


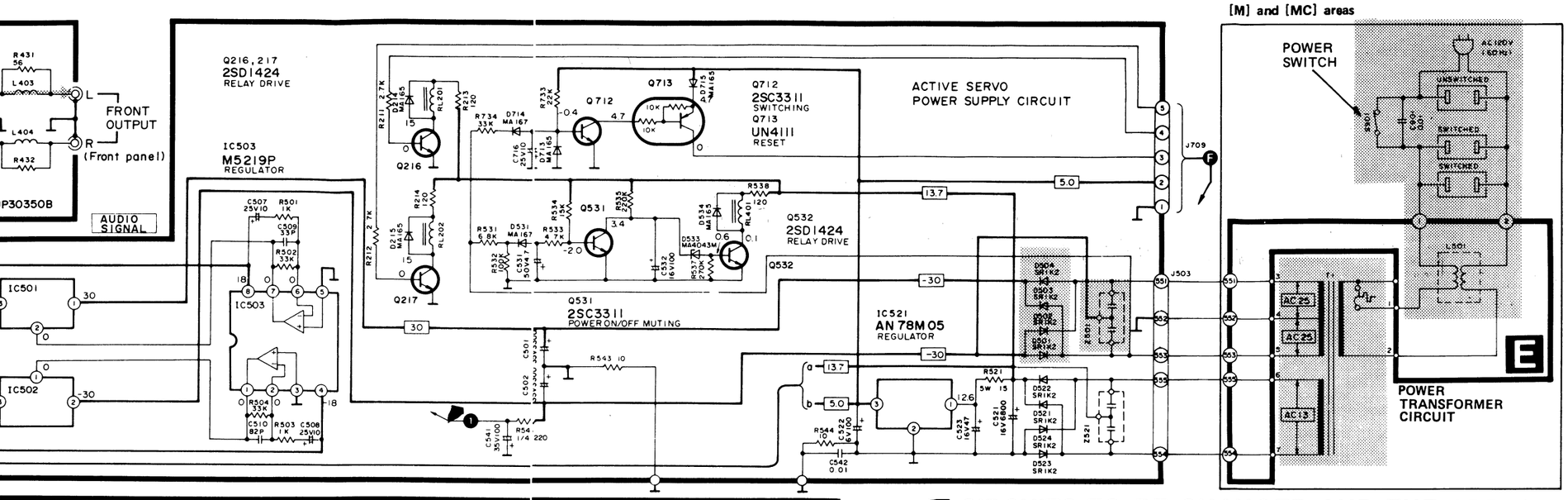
■ CIRCUITS TO BE CHANGED AND THE ARE

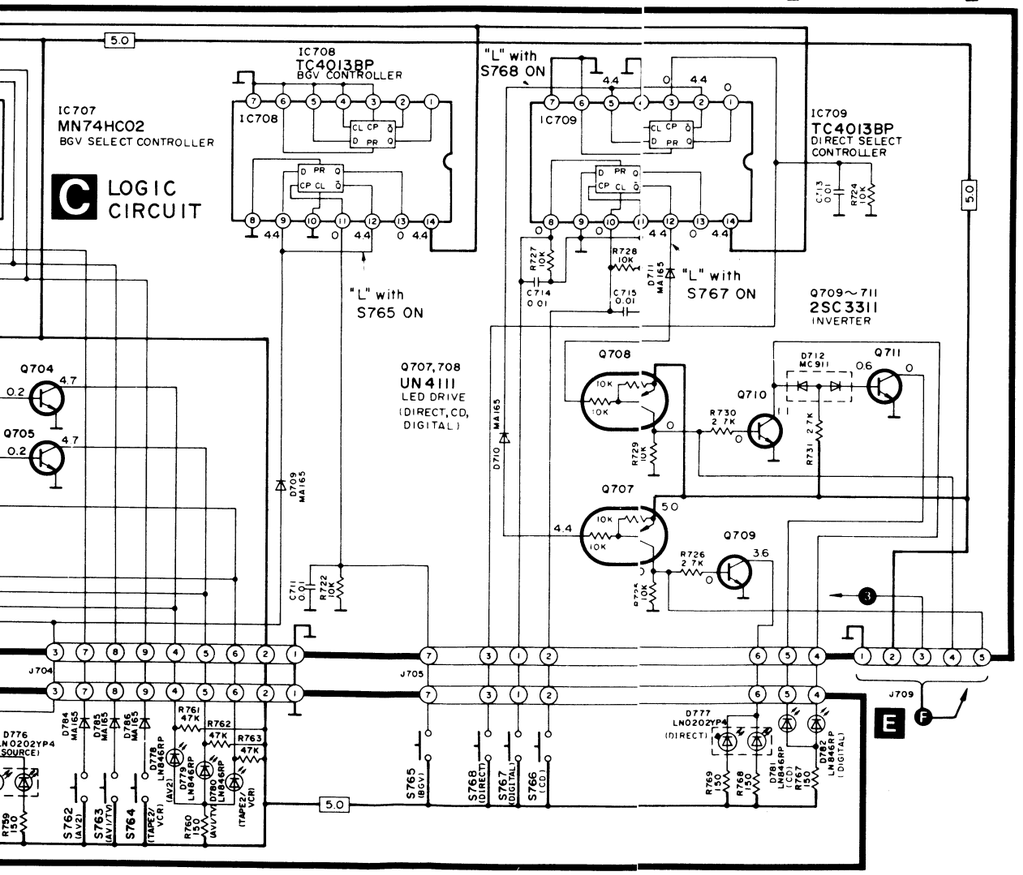
[E], [EGA], [EK], [EF], [EH], [Ei], [EB] and [XL] areas



[XA], [PA] and [PE] areas



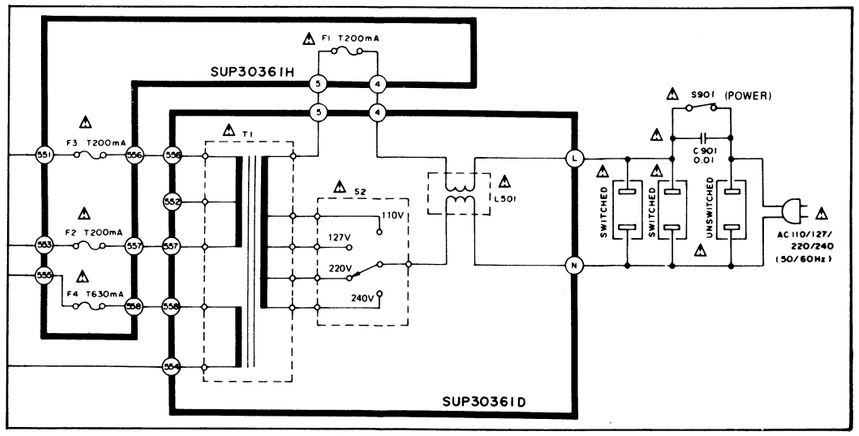




■ CIRCUITS TO BE CHANGED AND THE AREAS

[E],[EGA],[EK],[EF],[EH],[Ei],[EB] and [XL] areas

[XA],[PA] and [PE] areas



■ SCHEMATIC DIAGRAM

(This schematic diagram may be modified at any time with the development of new technology.)

Notes:

1. **S2 (For [E],[EGA],[EK],[EF],[EH],[Ei],[EB],[XL],[XA], [PA] and [PE] areas)**
   : Voltage selector switch **"220V"** position. (127V ↔ 110V ↔ 220V ↔ 240V)
2. **S101** : Phono selector in **"MC"** position. (MC ↔ MM)
3. **S201** : AV2 input selector in **"rear"** position. (rear ↔ front)
4. **S202** : AV1/TV input filter switch in **"off"** position. (off ↔ on [TV])
5. **S203** : Graphic EQ/external selector in **"output"** position. (output ↔ input)
6. **S301** : Muting switch in **"0dB"** position. (0dB ↔ 20dB)
7. **S302** : Playback mode selector in **"stereo"** position. (stereo ↔ mono)
8. **S303** : Subsonic filter switch in **"off"** position. (off ↔ 20Hz)
9. **S304** : High filter switch in **"off"** position. (off ↔ 7kHz)
10. **S401** : Front output switch in **"on"** position. (on ↔ off)
11. **S402** : Rear output switch in **"on"** position. (on ↔ off)
12. **S751 ~ S760** : Input/recording selector. [S751-phono, S752-tuner, S753-CD, S754-aux, S755-AV2, S756-AV1/TV, S757-tape,3, S758-tape 2/VCR, S759-tape 1, S760-digital]
13. **S761** : Recording mode selector.
14. **S762 ~ S764** : BGV selector [S762-AV2, S763-AV1/TV, S764-tape 2/VCR]
15. **S765** : BGV mode selector.
16. **S766, S767** : Direct selector. [S766-CD, S767-digital]
17. **S768** : Direct selector.
18. **S901** : Power switch in **"on"** position.
19. Important safety notice:
    Components identified by ⚠ mark have special characteristics important for safety. When replacing any of these components, use only manufacturer's specified parts.
20. All voltage values shown in circuitry are the standard values for the DC electronic circuit tester (high-impedance) with the chassis taken as standard. Therefore, there may exist some errors in the voltage values, depending on the internal impedance of the DC circuit tester.
21. Phono playback signal (L ch.)
    Phono recording signal (L ch.)
    Positive voltage lines and Negative voltage lines

IMPORTANT SAFETY NOTICE

The shaded area on this schematic diagram incorporates special features important for protection from fire and electrical shock hazards. When servicing, it is essential that only manufacturer's specified parts be used for the critical components in the shaded areas of the schematic.

*** Caution !**

IC and LSI are sensitive to static electricity.
Secondary trouble can be prevented by taking care during repair.

* Cover the parts boxes made of plastics with aluminum foil.
* Ground the soldering iron.
* Put a conductive mat on the work table.
* Do not touch the legs of IC or LSI with the fingers directly.

■ REPLACEMENT PARTS LIST

Notes:

1. Part numbers are indicated on most mechanical parts. Please use this part number for parts order.
2. Important safety notice: Components identified by ⚠ mark havespecial characteristics important for safety. When replacing any of these components, use only manufacturer's specified parts.
3. Bracketed indications in Ref. No. columns specify the area. Parts without these indications can be used for all areas.
4. The " Ⓢ " mark is service standard parts and may differ from production parts.
5. The parenthesized numbers in the column of description stand for the quantity per set.

● CAPACITORS

Ref. No.	Part No.	Value
C101, 102	ECCD1H680K	68P
C103, 104	ECQB1H222JZ	0.0022
C105, 106	ECKD1H102ZF	0.001
C107, 108	ECQB1H103JZ	0.01
C109, 110	ECEA0JU472	4700
C111, 112	ECQP1683GZ	0.068
C113, 114	ECQP1183GZ	0.018
C115, 116	ECQB1H222JZ	0.0022
C117, 118	ECQB1H103JZ	0.01
C119, 120	ECEA1EN3R3S	3.3
C121, 122	ECQB1H822JZ	0.0082
C123, 124	ECEA1EU101	100
C125, 126	ECQM1H102JZ	0.001
C201, 202	ECKD1H102ZF	0.001
C203, 204	ECKD1H102ZF	0.001
C205	ECEA1HUR22	0.22
C206, 207	ECQB1H472JZ	0.0047
C208	ECQB1H472JZ	0.0047
C209, 210	ECKD1H103ZF	0.01
C251, 252 [EGA] only	ECCD1H680K	68P
C253, 254 [EGA] only	ECCD1H680K	68P
C255, 256 [EGA] only	ECCD1H560K	56P
C257, 258 [EGA] only	ECCD1H560K	56P
C259, 260 [EGA] only	ECCD1H560K	56P
C263, 264 [EGA] only	ECCD1H181K	180P
C265, 266 [EGA] only	ECCD1H181K	180P
C267, 268 [EGA] only	ECCD1H181K	180P
C269, 270 [EGA] only	ECCD1H181K	180P
C271, 272 [EGA] only	ECCD1H181K	180P
C273, 274 [EGA] only	ECCD1H181K	180P
C275, 276 [EGA] only	ECCD1H181K	180P
C277, 278 [EGA] only	ECCD1H181K	180P
C279, 280 [EGA] only	ECCD1H181K	180P
C281, 282 [EGA] only	ECCD1H181K	180P
C283, 284 [EGA] only	ECCD1H181K	180P
C301, 302	ECQV1H683JZ	0.068

Ref. No.	Part No.	Value
C303, 304	ECQB1H333JZ	0.033
C305, 306	ECCD1H221K	220P
C307, 308	ECKD1H681KB	680P
C309, 310	ECQB1H333JZ	0.033
C311, 312	ECEA1CN470S	47
C313, 314	ECQV1H473JZ	0.047
C315	ECKD1H103ZF	0.01
C401, 402	ECQB1H472JZ	0.0047
C403, 404	ECCD1H271K	270P
C405, 406	ECEA0JU102	1000
C407, 408	ECEA1CN470S	47
C409, 410	ECCD1H820K	82P
C411, 412	ECQB1H102JZ	0.001
C413	ECKD1H103ZF	0.01
C417	ECEA1EU100	10
C501, 502	ECEA1VU332	3300
C503	ECEA1EU100	10
C504	ECEA1EU221	220
C507, 508	ECEA1EU100	10
C509	ECCD1H330K	33P
C510	ECCD1H820K	82P
C521	ECEA1CU682	6800
C522	ECEA0JU101	100
C523	ECEA1CU470	47
C531	ECEA1HU4R7	4.7
C532	ECEA1CU101	100
C541	ECEA1VU101	100
C542	ECKD1H103ZF	0.01
C601, 602	ECEA0JU101	100
C603, 604	ECEA0JU101	100
C605	ECCD1H120K	12P
C606	ECEA1AU102	1000
C607	ECCD1H120K	12P
C608	ECEA1AU102	1000
C609	ECEA1CU470	47
C641	ECEA1CU471	470
C642	ECEA1CU221	220
C643, 644	ECEA1CU470	47
C645	ECEA1CU470	47
C651, 652	ECKD1H103ZF	0.01
C701, 702	ECKD1H471KB	470P
C703, 704	ECKD1H103ZF	0.01
C705	ECEA1CU100	10
C706, 707	ECEA0JU101	100
C708, 709	EECW2R3A3R3E	3.3F
C710	ECEA1CU100	10
C711	ECKD1H103ZF	0.01
C713, 714	ECKD1H103ZF	0.01
C715	ECKD1H103ZF	0.01
C716	ECEA1EU100	10
C901	ECKDKC103PF2	0.01

Ref. No.	Part No.	Description
INTEGRATED CIRCUIT		
IC101, 401	M5238P	IC
IC102, 301, 402, 503	M5219P	IC
IC201~203	UPD6364CA	IC
IC204	UPD6360C	IC
IC501	AN78M18	IC
IC502	AN79M18	IC
IC521	AN78M05	IC
IC601, 602	MN4066B	IC
IC603	SVITD62504P	IC
IC604	MN74HC32	IC
IC701	UPD7506CT209	IC
IC702	MN4069UB	IC
IC703, 704	DN74LS145	IC
IC705	MN74HC157	IC
IC706	MN4001B	IC
IC707	MN74HC02	IC
IC708, 709	SVITC4013BP	IC
TRANSISTORS		
Q101~108	2SK369GRDVGS	Transistor
Q109~112	2SC1815L-G	Transistor
Q303~306, 309, 310, 403~406, 531, 704~706, 709~712, 752, 753	2SC3311-Q	Transistor
Q201~210	2SK301-S	Transistor
Q211, 213, 701, 703	UN4211	Transistor
Q212, 214, 215, 307, 308	2SA1309Q	Transistor
Q216, 217, 532	2SD1424S	Transistor
Q301, 302, 401, 402	2SK389-GR	Transistor
Q601, 603	2SC1815Y	Transistor
Q602, 604	2SA1015Y	Transistor
Q641	2SK301-R	Transistor
Q642	2SC1384NC-R	Transistor
Q702, 707, 708, 713, 751	UN4111	Transistor
DIODES		
D101~104, 303, 304, 401~404	MA29WA	Diode
D105~110, 203, 204, 207~212, 214, 215, 301, 302, 305, 306, 405~408, 534, 651, 701~705, 709~711, 713, 715, 773, 774, 784~786	MA165	Diode
D201, 202, 205, 206	MA4062-M	Diode (Zener)
D213	OA91	Diode
D501~504, 521~524	⚠ SVDSR1K2	Diode (Rectifier)
D531, 714	MA167	Diode (Zener)
D533	MA4043M	Diode (Zener)
D641	MA4130M	Diode (Zener)
D706~708, 712, 783	SVDMC911	Diode
D751~760, 775~777	LN0202YP4	Diode (LED)
D761~772, 778~782	LN846RP	Diode (LED)
COILS		
L101~104 [EGA] only	SLQW471-1P3	Choke
L101~104 [other]	SLQW470-2P	Choke
L201, 202	SLM1Z37-P	MPX
L251~254 [EGA] only	SLQW471-1P3	Choke
L401~404	ELEPK101KA	Choke
L501	SLQZ650MH49	Choke
CRYSTAL		
X701	SVFCSB400P-M	Crystal

Ref. No.	Part No.	Description
VARIABLE RESISTORS		
VR401	EWGGCA054703	Balance Control
VR402	EWIPSA040157	Volume Control
COMPORNENT COMBINATIONS		
Z501, 521	SXRFS203ZSM	Component Combination
Z601	EXBP87223M	Component Combination
FUSES		
F1, 2, 3 [EK] only	⚠ XBA2C02TB0	250V, T 200mA
F1, 2, 3 [other]	⚠ XBA2C02TR0	250V, T 200mA
F4 [EK] only	⚠ XBA2C06TB0	250V, T 630mA
F4 [other]	⚠ XBA2C06TR0	250V, T 630mA
SWITCHES		
S101	ESA26568	Phono Selector
S201	SSH1182	Input Front Rear
S202	RSS42A	TV Filter
S203, 302~304	SSH499	Graphic EQ/EXT, ST/Mono, Subsonic Filter, High Filter
S301	SSH1212	Muting
S401, 402	SSH2085	Output Front Rear
S751~768	SSG13	Input Selector
S901 [M, MC]	⚠ ESB9939T	Power
S901 [other]	⚠ ESB99399S	Power
S902 Except [M, MC]	⚠ SSR187-1	Voltage Selector
TRANSFORMER		
T1 [M, MC]	⚠ SLT5L256	Power Transformer
T1 [other]	⚠ SLT5L257	Power Transformer
RELAY		
RLY201, 202, 401	SFDYG5A237P	Relay

Ref. No.	Part No.	Description
CABINET and CHASSIS		
1 [EK]	SGXUA200-KK	Door Ass'y (1)
1 [other]	SGXUA200-KN	Door Ass'y (1)
2	SHR9575	Spacer, Door Lever (2)
3	SNE2083	Screw, Ornament Door (2)
4	SUB51	Door Lever (1)
5	SUB57	Lock Hinge (Right) (1)
6	SUE23-1	Holder, Hinge (Right) (1)
7	SUB55	Hinge (Right) (1)
8	SBC639-2	Button, Door Open (1)
9	XUC3FT	E Ring (1)
10	SHG6129	Spacer, Door Open Button (1)
11	SGXUA200-KN1	Ornament Plate Ass'y (Right) (1)
11-1	SHG6115	Rubber (2)
12	SGXUA200-KN2	Ornament Plate Ass'y (Left) (1)
13	SUB59	Gear, Hinge (Left) (3)
14	SUB65	Gear, Hinge (Left) (1)
15	SUB63	Gear, Hinge (Left) (1)
16	SUB53	Gear, Hinge (Left) (1)
17	SGWUA200-KM	Front Panel Ass'y (1)
17-1	SGW190K10A	Ornament Plate, Front Panel (1)
17-2	SGB627	Badge (1)

Ref. No.	Part No.	Description
18	SUE25-1	Holder, Hinge (Left) (1)
19	SGL233-1	Transparent Plate (2)
20	SGX7814	Ornament, Video Selector Button (1)
21	SGX7812	Ornament Plate (1)
22	SUS223	Spring, Hinge (1)
23	SJJ73BK	Jack (1)
24 [M, MC, XA, PA, PE]	SHR301	Read Clamper (8)
24 [other]	SHR301	Read Clamper (7)
30	SBC787	Button, Input Selector (1)
31	SBC786	Button, Video Mode (1)
32	SBCUA200-KM	Button Ass'y, Video Selector (1)
33	SGXUA200-KN3	Grille Ass'y (1)
34	SMC6397	Sheet, Electric Conductor (1)
35	SBC784	Button, Input Selector (1)
36	SUH631-1	Side Panel (2)
39	SBN1200-1	Knob, Volume (1)
40	SBC433-3	Button (3)
41	SBN1202	Knob, Phono (1)
42	SBN1167-2	Knob, Blance (1)
43	SBC719-1	Button (4)
44	SBC666-3	Button, Power (1)
45	SHGA629	Sponge (7)
46	SUW2157	Bracket (2)
47	SJF3061-8A	Terminal, Output (1)
48	SJF3061-2A	Terminal, Input (1)
49	SBC439-2	Button, Muting (1)
50 [M]	SKUUA200-KM	Bottom Cover Ass'y (1)
50 [EK]	SKUUA200-KK	Bottom Cover Ass'y (1)
50 [other]	SKUUA200-KE	Bottom Cover Ass'y (1)
51	SKL295	Foot (4)
52	SMC1219	Bracket, Logic P.C.B. (1)
53	SUW2061-1	Bracket (1)
54	SHR9693	Holder, P.C.B. (6)
55	SMCUA200-KN1	Case, Volume Ass'y (1)
56	SMC1135-1	Shield Plate, Video P.C.B. (1)
57 [M, MC, PA, PE]	SJF3061-3A	Terminal, Video (1)
58 [M, MC, PA, PE]	SJF3061-7A	Terminal, Video (1)
59 [M, MC]	SGP6730-1A	Rear Panel (1)
59 [E]	SGPUA200-KE	Rear Panel Ass'y (1)
59 [EK]	SGPUA200-KK	Rear Panel Ass'y (1)
59 [XA]	SGP6730-3A	Rear Panel (1)
59 [PA, PE]	SGP6730-4A	Rear Panel (1)
59 [other]	SGP6730-2A	Rear Panel (1)
60 [M, MC]	⚠ SJS603	AC Outlet (1)
60 [XA, PA, PE]	⚠ SJS601-3	AC Output (1)
61 [M, MC, EK]	SHR129	Bushing, AC Cord (1)
61 [other]	SHR127	Bushing, AC Cord (1)
62 [M, MC]	⚠ SJA174	AC Cord (1)
62 [EK]	⚠ QFC1205M	AC Cord (1)
62 [XL]	⚠ SJAG23	AC Cord (1)
62 [XA, PA, PE]	⚠ SJA121	AC Cord (1)
62 [other]	⚠ SJA138-3	AC Cord (1)
63	SMC1217	Cover, Video P.C.B. (1)
64 [M, MC]	SMCUA200-KM	Cover, Power, P.C.B. (1)
64 [XA, PA, PE]	SMCUA200KP	Cover power P.C.B. (1)
64 [other]	SMCUA200-KE	Cover, Power, P.C.B. (1)
65	SML145-1	Bracket, Transformer (1)
66	SJF3057A	Terminal, Input (1)
67	SJF3062-2A	Terminal, Input (3)
68	SUB69	Connection Rod (7)

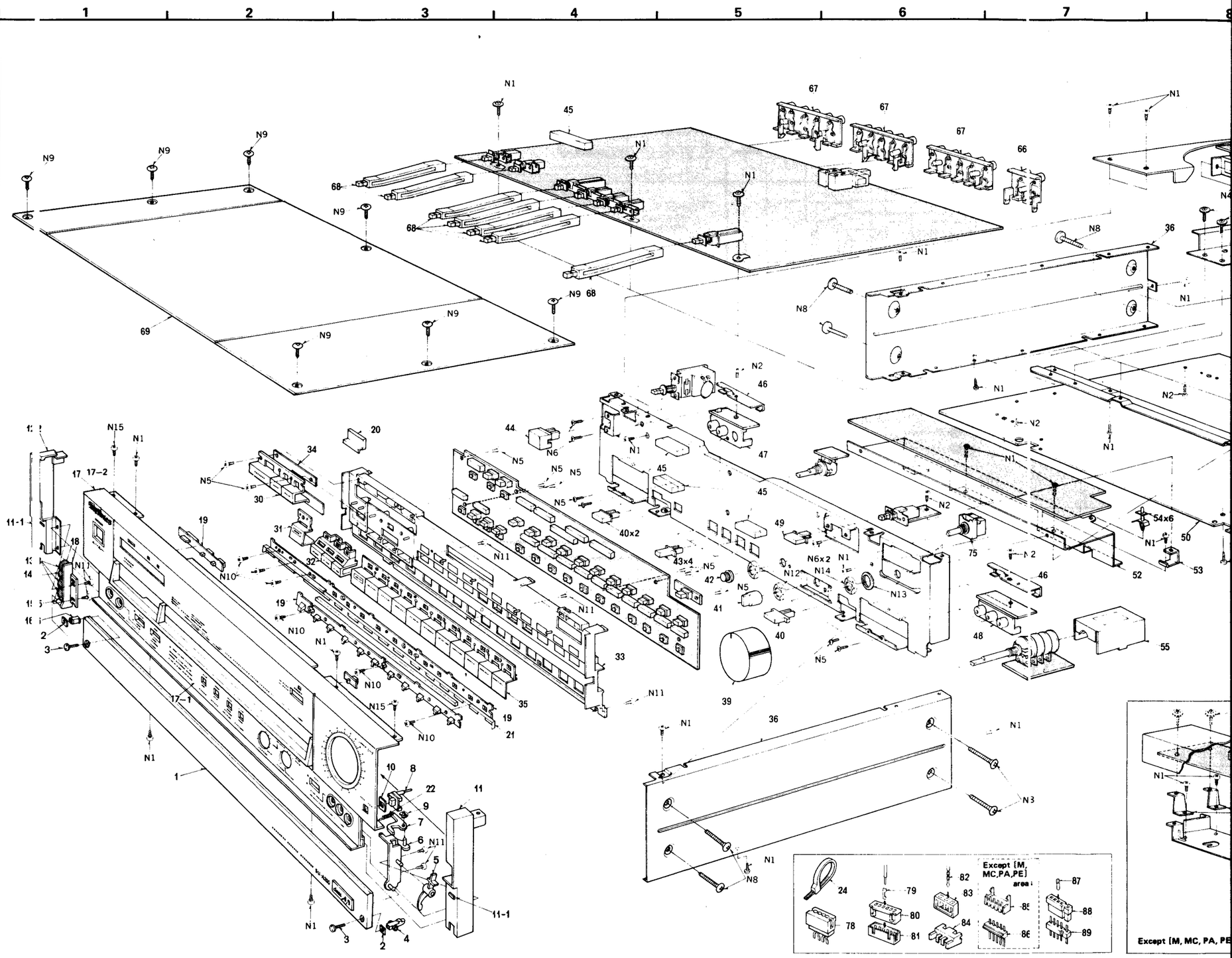
Ref. No.	Part No.	Description
69 [M]	SKCUA200-KM	Top Cover Ass'y (1)
69 [EK]	SKCUA200-KK	Top Cover Ass'y (1)
69 [other]	SKCUA200-KE	Top Cover Ass'y (1)
70	SNEA204-1S	Terminal, Ground (2)
71	SNE4017-1	Nut, Ground (2)
72	SNTA421-1	Spacer, Ground (2)
73	RJT204A	Lug, Ground (1)
74	SUW2985-1	Bracket (1)
75	ESA335025B	Phono Selector (1)
76	SJPA11-1	Short-pin (22)
77	SQX40026	Caution, Terminal of CD (1)
78	SJT30543-V	Connector (5 pin) (J501) (1)
78	SJT30843-V	Connector (8 pin) (J601) (1)
79	SJT783	Terminal, Connector (79)
80	SJS5215	Connector, (2 pin) (J602, 710)
80	SJS5331	Connector, (3 pin) (J402) (1)
80	SJS5425	Connector, (4 pin) (J706) (1)
80	SJS5523	Connector, (5 pin) (J707~709) (3)
80	SJS5715	Connector, (7 pin) (J403, 705) (2)
80	SJS5907	Connector, (9 pin) (J701, 704) (2)
80	SJS5025	Connector, (10 pin) (J702) (1)
80	SJS5031	Connector, (11 pin) (J703) (1)
81	SJT3213	Post, (2 pin) (J710) (1)
81	SJT3319	Post, (3 pin) (J402) (1)
81	SJT3415	Post, (4 pin) (J706) (1)
81	SJT3511	Post, (5 pin) (J707~709) (3)
81	SJT3709	Post, (7 pin) (J403, 705) (2)
81	SJT3907	Post, (9 pin) (J701, 704) (2)
81	SJT3005	Post, (10 pin) (J702) (1)
81	SJT3011	Post, (11 pin) (J703) (1)
82	SJT785	Terminal, Socket (139)
83	SJS5217	Socket, (2 pin) (J602, 710) (2)
83	SJS5337	Socket, (3 pin) (J201×2~203×2, J209×2~211×2, 405×2, 409×2, 402) (17)
83	SJS5431	Socket, (4 pin) (J706) (1)
83	SJS5529	Socket, (5 pin) (J707~709) (3)
83	SJS5633	Socket, (6 pin) (J301×2) (2)
83	SJS5717	Socket, (7 pin) (J403, 705) (2)
83	SJS5911	Socket, (9 pin) (J701, 704) (2)
83	SJS5027	Socket, (10 pin) (J702) (1)
83	SJS5049	Socket, (11 pin) (J703) (1)
84	SJT3215	Post, (2 pin) (J602) (1)
85 Except [M, MC, PA, PE]	SJT5901	Post, (9 pin) (J602) (1)
86 Except [M, MC, PA, PE]	SJT3901	Connector, (9 pin) (J602) (1)
87	SJT781	Terminal, Connector (1)
88	SJT3509	Connector, (5 pin) (J503) (1)
89	SJS5521	Post, (5 pin) (J503) (1)
90 Except [M, MC]	SMN1912	Bracket, Voltage Selector (1)
91 Except [M, MC,]	SHD3X21	Spacer, Fuse P.C.B. (4)
92 Except [M, MC, PA, PE]	SUW1617-2	Bracket, Video P.C.B. (4)
93 Except [M, MC, PA, PE]	SHR401-1	Lock Pin (3)
94 Except [M, MC, PA, PE]	SJS104	Terminal W/Washer and Nut, BNC (5)

Ref. No.	Part No.	
95 Except [M, MC, PA, PE]	SHR9777	Bake P Termin
96 Except [M, MC, PA, PE]	SMC6381-1	Shield Termin
97 Except [M, MC]	SJT347	Fuse H
SCREWS, WASHERS and NUTS		
N1 [M, MC]	XTBS3+8FFZ1	Tappin
N1 [other]	XTBS3+8FFZ1	Tappin
N2 [M, MC]	XTB3+8FFZ	Tappin
N2 [other]	XTB3+8FFZ	Tappin
N3	XTW3+8T	Tappin
N4	XTB4+8FFZ	Tappin
N5 [M, MC, PA, PE]	XTB3+8GFZ	Tappin
N5 [other]	XTB3+8GFZ	Tappin
N6 [M, MC]	XYNS3+C6-1S	⊕3×6
N6 [other]	XYNS3+C6-1S	⊕3×6
N7 [M, MC, PA, PE]	XTW3+8H	Tappin
N7 [other]	XTW3+8H	Tappin
N8	XSSS5+12F1S	Side Pa
N9	SNE2095-6	Top Co
N10	XTB3+10GFZ	Tappin
N11	XTW3+6T	Tappin
N12	SNE4021-1	Nut
N13	XWC9A	Washe
N14	XNS8FZ	Nut
N15	XTB3+6JFZ	Tappin
N16	XXE4D5FZS	
N17 Except [M, MC]	XTB3+14JFZ	Tappin
N18	XWC4B	Washe
N19	XNG4BS	Nut
ACCESSORIES		
A1	SFDHM03N02	Connec Audio
A2 [M, MC, PA, PE]	TSX299	Connec Video
A2 [other]	SJP2195	Connec BNC
A3 Except [M, MC, PA, PE]	SJP9005	Plug, B
A3 [XA, PA, PE]	SJP9215	Plug, A
A4 [M]	SQF12629	Instruct
A4 [MC]	SQF12630	Instruct
A4 [E]	SQF12631	Instruct
A4 [EGA]	SQF12632	Instruct
A4 [XA]	SQF12633	Instruct
A4 [PA, PE]	SQF12634	Instruct
A4 [EK, XL]	SQF12635	Instruct
PACKING		
P1 [MC]	SPG5515	Carton
P1 [EK]	SPG5516	Carton
P1 [XL]	SPG5517	Carton
P1 [EF]	SPG5518	Carton
P1 [other]	SPG5514	Carton
P2 [XL]	SPS3023-8	Pad (Le
P2 [other]	SPS3023-7	Pad (Le
P3 [XL]	SPS3025-7	Pad (Ri
P3 [other]	SPS3025-6	Pad (Ri
P4	SPS4488	Pad (To
P5	SPS4703	Pad (Co
P6	SPH220	Paper S
P7	SPP723	Polyeth

No.	Part No.	Description	
	SKCUA200−KM	Top Cover Ass'y	(1)
	SKCUA200−KK	Top Cover Ass'y	(1)
r]	SKCUA200−KE	Top Cover Ass'y	(1)
	SNEA204−1S	Terminal, Ground	(2)
	SNE4017−1	Nut, Ground	(2)
	SNTA421−1	Spacer, Ground	(2)
	RJT204A	Lug, Ground	(1)
	SUW2985−1	Bracket	(1)
	ESA335025B	Phono Selector	(1)
	SJPA11−1	Short-pin	(22)
	SQX40026	Caution, Terminal of CD	(1)
	SJT30543−V	Connector (5 pin) (J501)	(1)
	SJT30843−V	Connector (8 pin) (J601)	(1)
	SJT783	Terminal, Connector	(79)
	SJS5215	Connector, (2 pin) (J602, 710)	(2)
	SJS5331	Connector, (3 pin) (J402)	(1)
	SJS5425	Connector, (4 pin) (J706)	(1)
	SJS5523	Connector, (5 pin) (J707～709)	(3)
	SJS5715	Connector, (7 pin) (J403, 705)	(2)
	SJS5907	Connector, (9 pin) (J701, 704)	(2)
	SJS5025	Connector, (10 pin) (J702)	(1)
	SJS5031	Connector, (11 pin) (J703)	(1)
	SJT3213	Post, (2 pin) (J710)	(1)
	SJT3319	Post, (3 pin) (J402)	(1)
	SJT3415	Post, (4 pin) (J706)	(1)
	SJT3511	Post, (5 pin) (J707～709)	(3)
	SJT3709	Post, (7 pin) (J403, 705)	(2)
	SJT3907	Post, (9 pin) (J701, 704)	(2)
	SJT3005	Post, (10 pin) (J702)	(1)
	SJT3011	Post, (11 pin) (J703)	(1)
	SJT785	Terminal, Socket	(139)
	SJS5217	Socket, (2 pin) (J602, 710)	(2)
	SJS5337	Socket, (3 pin) (J201×2～203×2, J209×2～211×2, 405×2, 409×2, 402)	(17)
	SJS5431	Socket, (4 pin) (J706)	(1)
	SJS5529	Socket, (5 pin) (J707～709)	(3)
	SJS5633	Socket, (6 pin) (J301×2)	(2)
	SJS5717	Socket, (7 pin) (J403, 705)	(2)
	SJS5911	Socket, (9 pin) (J701, 704)	(2)
	SJS5027	Socket, (10 pin) (J702)	(1)
	SJS5049	Socket, (11 pin) (J703)	(1)
	SJT3215	Post, (2 pin) (J602)	(1)
t	SJT5901	Post, (9 pin) (J602)	(1)
t	SJT3901	Connector, (9 pin) (J602)	(1)
	SJT781	Terminal, Connector	(1)
	SJT3509	Connector, (5 pin) (J503)	(1)
	SJS5521	Post, (5 pin) (J503)	(1)
t	SMN1912	Bracket, Voltage Selector	(1)
t	SHD3X21	Spacer, Fuse P.C.B.	(4)
t	SUW1617−2	Bracket, Video P.C.B.	(4)
	SHR401−1	Lock Pin	(3)
t	SJS104	Terminal W/Washer and Nut, BNC	(5)

Ref. No.	Part No.	Description	
95 Except [M, MC, PA, PE]	SHR9777	Bake Plate, BNC Terminal	(1)
96 Except [M, MC, PA, PE]	SMC6381−1	Shield Plate, BNC Terminal	(1)
97 Except [M, MC]	SJT347	Fuse Holder	(8)
SCREWS, WASHERS and NUTS			
N1 [M, MC]	XTBS3+8FFZ1	Tapping, ⊕3×8	(28)
N1 [other]	XTBS3+8FFZ1	Tapping, ⊕3×8	(32)
N2 [M, MC]	XTB3+8FFZ	Tapping, ⊕3×8	(15)
N2 [other]	XTB3+8FFZ	Tapping, ⊕3×8	(19)
N3	XTW3+8T	Tapping, ⊕3×8	(4)
N4	XTB4+8FFZ	Tapping, ⊕4×8	(2)
N5 [M, MC, PA, PE]	XTB3+8GFZ	Tapping, ⊕3×8	(24)
N5 [other]	XTB3+8GFZ	Tapping, ⊕3×8	(20)
N6 [M, MC]	XYNS3+C6−1S	⊕3×6	(4)
N6 [other]	XYNS3+C6−1S	⊕3×6	(8)
N7 [M, MC, PA, PE]	XTW3+8H	Tapping, ⊕3×8	(2)
N7 [other]	XTW3+8H	Tapping, ⊕3×8	(4)
N8	XSSS5+12F1S	Side Panel	(8)
N9	SNE2095−6	Top Cover	(7)
N10	XTB3+10GFZ	Tapping, ⊕3×10	(6)
N11	XTW3+6T	Tapping, ⊕3×6	(7)
N12	SNE4021−1	Nut	(2)
N13	XWC9A	Washer	(1)
N14	XNS8FZ	Nut	(1)
N15	XTB3+6JFZ	Tapping, ⊕3×6	(2)
N16	XXE4D5FZS		(1)
N17 Except [M, MC]	XTB3+14JFZ	Tapping, ⊕3×14	(2)
N18	XWC4B	Washer	(3)
N19	XNG4BS	Nut	(2)
ACCESSORIES			
A1	SFDHM03N02	Connection Cord, Audio	(1)
A2 [M, MC, PA, PE]	TSX299	Connecttion Cord, Video	(1)
A2 [other]	SJP2195	Connection Cord, BNC	(1)
A3 Except [M, MC, PA, PE]	SJP9005	Plug, BNC Adaptor	(1)
A3 [XA, PA, PE]	SJP9215	Plug, AC Adaptor	(1)
A4 [M]	SQF12629	Instruction Book	(1)
A4 [MC]	SQF12630	Instruction Book	(1)
A4 [E]	SQF12631	Instruction Book	(1)
A4 [EGA]	SQF12632	Instruction Book	(1)
A4 [XA]	SQF12633	Instruction Book	(1)
A4 [PA, PE]	SQF12634	Instruction Book	(1)
A4 [EK, XL]	SQF12635	Instruction Book	(1)
PACKING			
P1 [MC]	SPG5515	Carton Box	(1)
P1 [EK]	SPG5516	Carton Box	(1)
P1 [XL]	SPG5517	Carton Box	(1)
P1 [EF]	SPG5518	Carton Box	(1)
P1 [other]	SPG5514	Carton Box	(1)
P2 [XL]	SPS3023−8	Pad (Left)	(1)
P2 [other]	SPS3023−7	Pad (Left)	(1)
P3 [XL]	SPS3025−7	Pad (Right)	(1)
P3 [other]	SPS3025−6	Pad (Right)	(1)
P4	SPS4488	Pad (Top)	(1)
P5	SPS4703	Pad (Corner)	(1)
P6	SPH220	Paper Sheet	(1)
P7	SPP723	Polyethylene Sheet	(1)

■ EXPLODED VIEW



Except [M, MC, PA, PE] areas

Except [M, MC]

Voltage selector

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