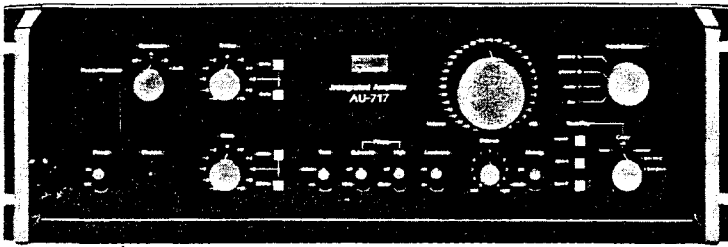


SERVICE MANUAL

INTEGRATED STEREO AMPLIFIER

SANSUI AU-517/717



SPECIFICATIONS

AU-517

Power output	Min. RMS, both channels driven, from 20 to 20,000 Hz, with no more than 0.025% total harmonic distortion 65 watts per channel into 8 ohms
Load impedance	8 ohms
Power bandwidth	20 to 20,000 Hz at or below rated min. RMS power output and total harmonic distortion
Total harmonic distortion (POWER AMP IN)	less than 0.025% at or below rated min. RMS power output
Intermodulation distortion (70 Hz:7 kHz = 4:1 SMPTE method)	less than 0.025%
Frequency response (at 1 watt) (POWER AMP IN)	0 to 20,000 Hz +0 dB -3 dB
RIAA curve deviation (PHONO)	+0.2 dB -0.2 dB (20 to 20,000 Hz)
Damping factor	approximately 60 at 8 ohms load
Input sensitivity and impedance (1 kHz, for rated power output)	
PHONO	2.5 mV/47 kilohms (Max. input capability: 320 mV at 1 kHz, less than 0.01% harmonic distortion)
AUX, TAPE	150 mV/47 kilohms
Output level (1,000 Hz)	
TAPE REC. (pin jack)	150mV/47 kilohms
PRE OUT	1V/47 kilohms
Channel separation (1 kHz, at rated power output)	
PHONO	better than 60 dB
AUX	better than 65 dB
Hum and noise (short-circuit, A-network)	
PHONO	-78 dB
AUX	-100 dB
Controls	
BASS	+10 dB (50 Hz)
TREBLE	+10 dB (15 kHz)
SUBSONIC FILTER	-3 dB (16 Hz), 6 dB/oct
LOUDNESS (-30 dB)	9 dB at 50 Hz 7 dB at 10 kHz
Power requirements	
Power voltage	100, 120, 220, 240V (50/60Hz) 120V (Usable 110 - 130V) 60 Hz (for U.S.A. & Canada only)
Power consumption	
Maximum consumption	660 watts
Rated consumption	345 watts 420 VA
Dimensions	430 mm (16-15/16") W 168 mm (6-5/8") H 389 mm (15-3/8") D
Weight	16.5 kg (36.4 lbs) net 18.5 kg (40.8 lbs) packed

* Design and specifications subject to change without notice for improvements.

Sansui

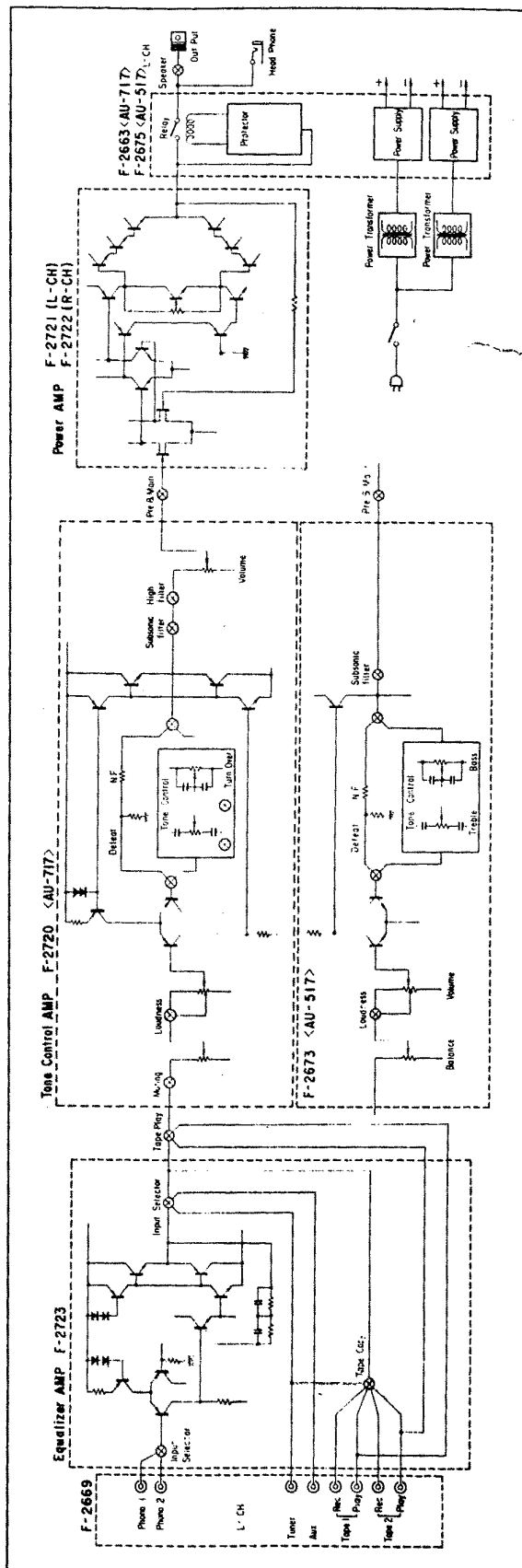
SANSUI ELECTRIC CO., LTD.

1. SPECIFICATIONS

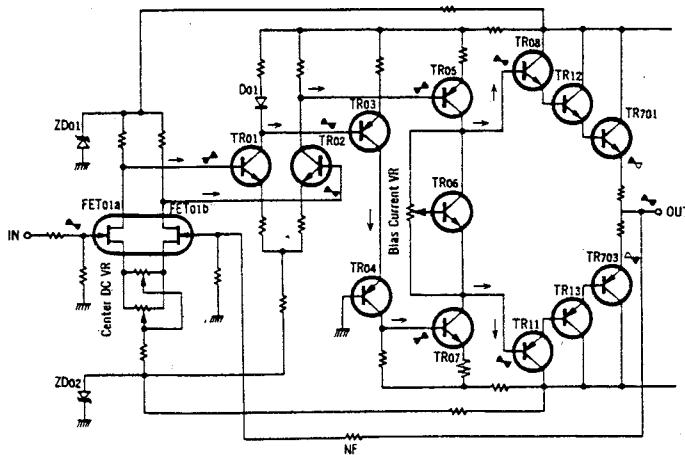
AU-717

Power output	
Min. RMS, both channels driven, from 20 to 20,000 Hz, with no more than 0.025% total harmonic distortion	85 watts per channel into 8 ohms
Load impedance	8 ohms
Power bandwidth	20 to 20,000 Hz at or below rated min. RMS power output and total harmonic distortion
Total harmonic distortion (POWER AMP IN)	less than 0.025% at or below rated min. RMS power output
Intermodulation distortion (70 Hz: 7 kHz = 4:1 SMPTE method)	less than 0.025%
Frequency response (at 1 watt) (POWER AMP IN)	0 to 200,000 Hz +0 dB -3 dB
RIAA curve deviation (PHONO)	+0.2 dB -0.2 dB (20 to 20,000 Hz)
Damping factor	approximately 60 at 8 ohms load
Input sensitivity and impedance (1 kHz, for rated power output)	
PHONO	2.5 mV/47 kilohms (Max. input capability; 350 mV at 1 kHz, less than 0.01% total harmonic distortion)
AUX, TAPE	150 mV/47 kilohms
Output level (1,000 Hz)	
TAPE REC (pin jack)	150 mV/47 kilohms
PRE OUT	1 V/47 kilohms
Channel separation (1 kHz, at rated power output)	
PHONO	better than 60 dB
AUX	better than 65 dB
Hum and noise (short-circuit, A-network)	
PHONO	78 dB
AUX	100 dB
Controls	
BASS	±10 dB (50 Hz)
Tone selector	200, 400 Hz
TREBLE	±10 dB (15 kHz)
Tone selector	3, 6 kHz
SUBSONIC FILTER	-3 dB (16 Hz), 6 dB/oct
HIGH FILTER	-3 dB (10 kHz), 6 dB/oct
MUTING	-20 dB
LOUDNESS (-30 dB)	9 dB at 50 Hz 7 dB at 10 kHz
Power requirements	
Power voltage	100, 120, 220, 240V (50/60Hz) 120V (Usable 110 - 130V) 60 Hz (for U.S.A. & Canada only)
Power consumption	
Maximum consumption	735 watts
Rated consumption	425 watts 500 VA
Dimensions	
	430 mm (16-15/16") W 168 mm (6-5/8") H 389 mm (15-3/8") D
Weight	
	17.8 kg (39.2 lbs) net 19.8 kg (43.7 lbs) packed

2. BLOCK DIAGRAM



3. ADVANTAGE AND OPERATION OF POWER AMPLIFIER CIRCUITRY SECTION



3-1. Advantage

- ◇ There is necessity not to decrease the phase response till DC range in order to increase the music signal response of extremely low frequency range. Therefore, this amplifier is employing no capacitors except ones for phase compensation, and has an almost perfect transient characteristics.
- ◇ The first stage FET (2SK97) is a dual FET of even characteristics and has a large Gm and no-leakage current at normal temperature.
To avoid the influence by temperature drift, such as center voltage (0V) deviation, this FET is used as differential amplifier and operates at cross point which is the optimum point of drain current (at about 3mA) against the temperature drift.
- ◇ Transistors, TR05 and TR07, the push-pull pre-driver stage functions as current differential amplifier that the stabilized operation can be obtained. In addition, the collector current of these transistors is enough high to make linearity excellent.
- ◇ Since this Amplifier employs phase advancer circuits [C06, C08, C15, R29, C16 and R30], which have not been frequently used, to compensate the phase characteristics on high frequency range and is also made to have enough

current on each stage to increase the through-rate, the performance on high frequency range is conspicuously improved.

- ◇ To avoid the voltage deviation, regulated power supply circuit composed of ZD01, ZD02 is employed.

3-2. Operation

The use of differential amplification at first stage dual FET, (FET01, FET02) and connection of the FET to the differential amplifier composed of TR01, TR02, make possible to obtain enough gain and remarkable low distortion.

The output signals of TR01 and TR02 are antiphase. The output signal of TR02 adds to TR05, on the other hand, the output phase of TR01 is inverted by TR03, then, it becomes input signal of TR04 and TR07 which are cascoded connection. The output signals at TR05 and TR07 are inphase that the operation of this stage is push-pull drive and current differential amplification. The power amplifier of the final stage is composed of SEPP (Single Ended Push-Pull) symmetry complementary in 3-stage darlington connection type. TR09 and TR10 are composing current limiter circuit to protect power transistor from break-down by overload.

4. ADJUSTMENTS

4-1. Driver Circuit Board Adjustments (See the picture of top view on page 3.)

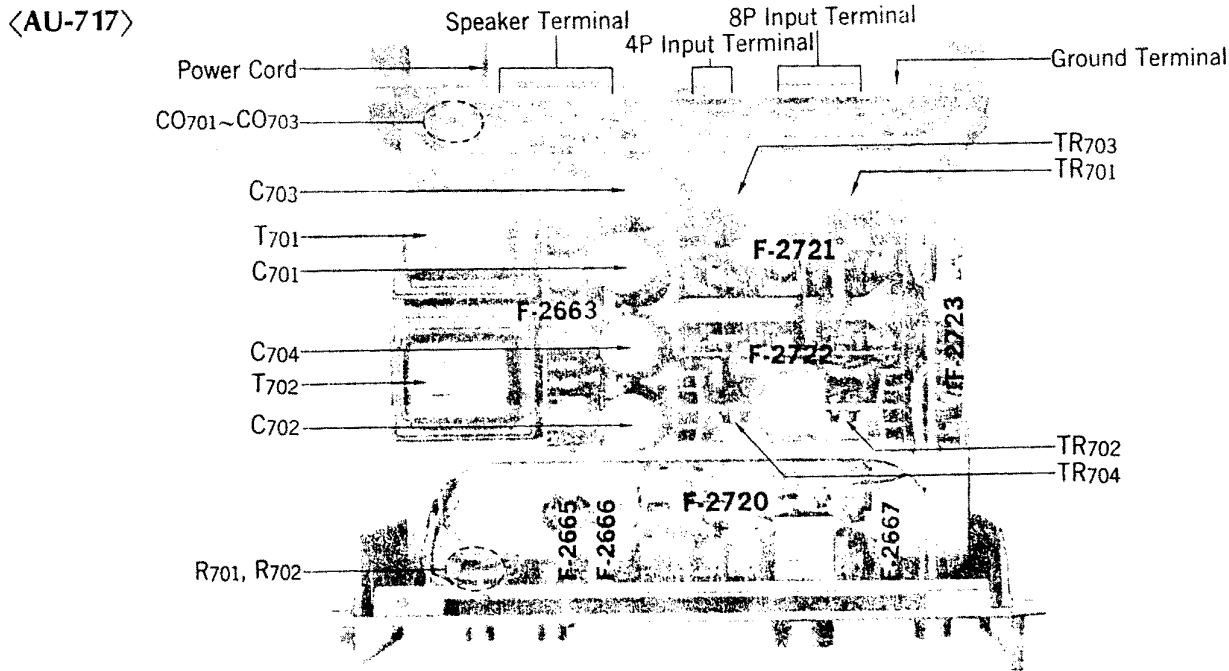
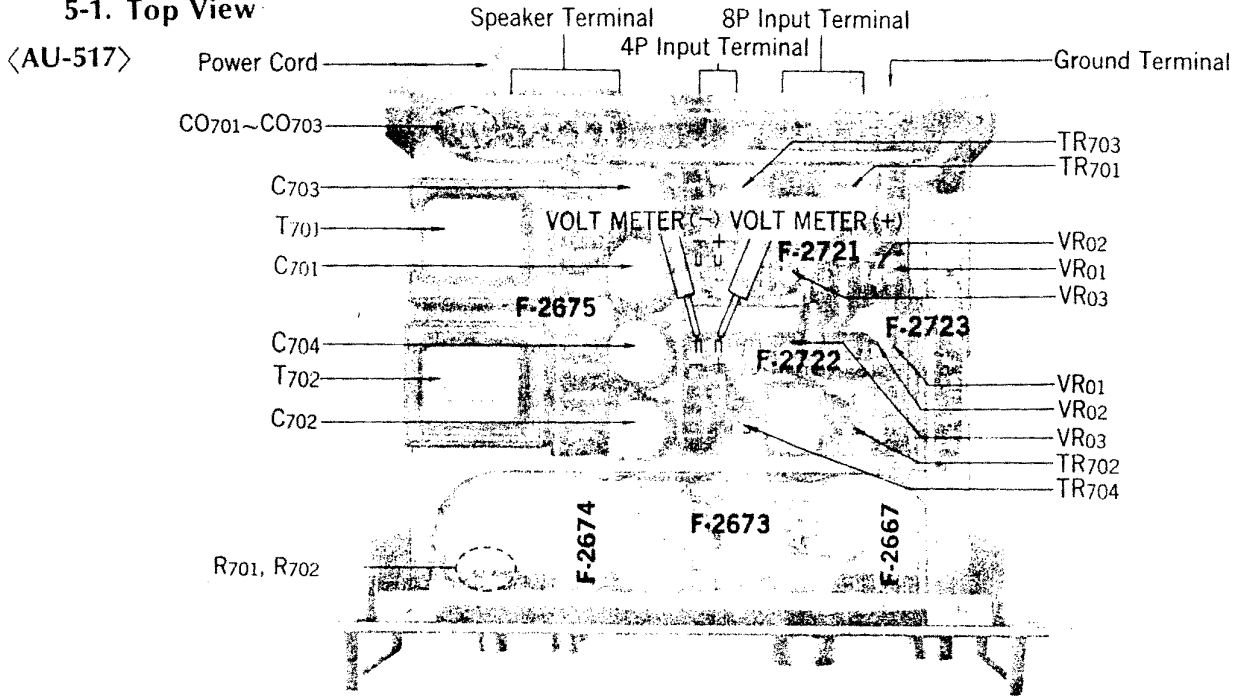
- Note: 1. Master Volume.....Minimum
2. Room Temperature.....

3. For adjustment, run the unit for more than 3 minutes after the power is switched on.

STEP	SUBJECT	EQUIPMENT	MEASURE OUTPUT	ADJUST	ADJUST FOR	CONDITION
1.	DC 0V L-CH	DC Volt Meter	Speaker Terminal	F-2721 VR01, VR02	DC 0V ± 5mV	<ul style="list-style-type: none"> ◦ Set VR01 and VR02 to center position. ◦ Then, for the purpose of proceeding the accurate adjustment, set the voltage to 0 volt by VR01 first and VR02 next.
2.	DC 0V R-CH	Same as above	Same as above	F-2722 VR01, VR02	DC 0V ± 5mV	
3.	Bias Current L-CH	Same as above	TP Terminal (+) (-) of F-2721	F-2721 VR03	DC 20mV ± 1mV	<ul style="list-style-type: none"> ◦ By turning VR03 counterclockwise, the bias current is decreased gradually.
4.	Bias Current R-CH	Same as above	TP Terminal (+) (-) of F-2723	F-2722 VR03	DC 20mV ± 1mV	

5. OTHER PARTS

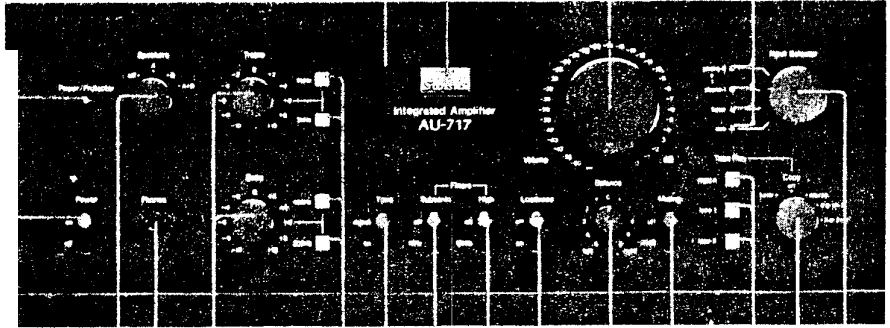
5-1. Top View



Parts List <AU-517/717>

Parts No.	Stock No.	Description	Parts No.	Stock No.	Description	Parts No.	Stock No.	Description
C703	0A37901	0.01 μ F 150V M.C.		2411240	Voltage Selector SW EU, BS			AU-717 Only
C707-714	0602109	1.0 μ F 100V M.C.		2230052	Ground Terminal	TR701, 702	0305840-2	25C1116 R.O.Y } Transistor
R701, 702	0202221	220 Ω 2W N.I.R.				TR703, 704	0300520-2	23A747 R.O.Y }
CO701-703	2450060	AC Outlet XX	AU-517 Only			C701-704	0559520	15000 μ F 63V E.C.
	5066280	AC Outlet EU, BS	TR701, 702	0306450-2	25C1403A R.O.Y } Transistor	T701, 702	4002580	Power Transformer XX
	2290190	Speaker Terminal	TR703, 704	0300830-2	25A745A R.O.Y }		4002584	Power Transformer EU, BS
	3800010	Power Cord XX	C701-704	0559518	12000 μ F 63V E.C.		4002582	Power Transformer UL, CSA
	3800190	Power Cord EU	T701, 702	4002590	Power Transformer XX	F701	0432290	5A 125V } Power Fuse XX
	3800320	Power Cord BS		4002594	Power Transformer EU, BS		0434060	10A 250V }
	2300060	Power Fuse Holder XX		4002592	Power Transformer UL, CSA		0435150	3.15A Power Fuse EU, BS
	2300090	Power Fuse Holder EU, BS	F701	0432270	3.5A 125V } Power Fuse XX			
	2410091	Voltage Selector Plug XX		0432500	7A 125V }			
	2410830	Voltage Selector Socket XX		0435140	2.5A Power Fuse EU, BS			

5-2. Front View <AU-717>



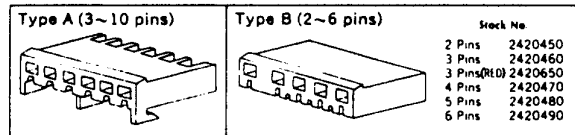
Parts List <AU-517/717>

Parts No.	Stock No.	Description	Parts No.	Stock No.	Description	Parts No.	Stock No.	Description			
1	5318850	N-7 Type Knob	10	5326620	Push Switch Knob	AU-717 Only	6	5326611	Lever Switch Knob		
	1015170.1	250kΩ (MN) × 2 Balance Volume L=25 P=5		5286721	Knob Guide			1171130	Lever Switch, Loudnes		
	2	5318840		K-7 Type Knob	1131400			Push Switch, Tape Play	5326611	Lever Switch Knob	
1015230.1		100kΩ (C) × 2 Treble, Bass Volume L=25 P=7	2430290	Head Phone Jack	1171130			Lever Switch, Subsonic Filter			
3	5318840	K-7 Type Knob	5006670	Banner	5318860			H-7 Type Knob	15	5318860	H-7 Type Knob
	1101780.1	Rotary Switch, Speakers	5336600	Sansui Badge	1090280			150kΩ × 2 5kΩ × 2 Volume L=25 P=9			
4	5318840	K-7 Type Knob	0319110	Light Emitted Diode	5326611			Lever Switch Knob	16	5326611	Lever Switch Knob
	1190410	Rotary Switch, Tape Copy	5507070	Leg	1171120			Lever Switch, Muting			
5	5318830	I-7 Type Knob	AU-517 Only					17	5326611	5326611	Lever Switch Knob
	1190410	Rotary Switch, Input Selector	6	5326611	Lever Switch, Loudnes					1171130	Lever Switch Knob
8	5326611	Lever Switch Knob	7	5326611	Lever Switch Knob	1171130	Lever Switch, High Filter				
	1171150	Lever Switch, Tone Defeat	1171120	Lever Switch, Subsonic filter	5326620	Push Switch Knob					
9	5326611	Lever Switch Knob	15	5318860	H-7 Type Knob	18	5286721			5286721	Knob Guide
	1171630	Lever Switch, Power	1090250	150kΩ × 2 Volume L=25 P=7	1131400					Push Switch, Turn Over	
	1171610	Lever Switch, Power EU, BS	19	7007570	Front Panel Ass'y	19	7007570			Front Panel Ass'y	
			20	5058730	Bottom Plate	20	5058730			Bottom Plate	
			21	0319110	Light Emitted Diode	21	0319110			Light Emitted Diode	

● Figures

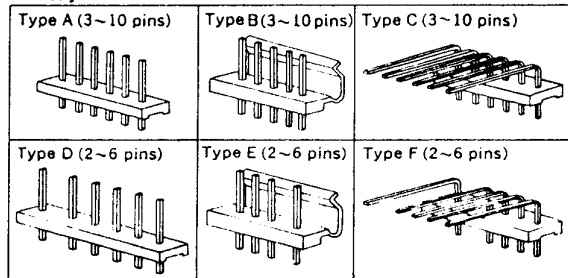
Connectors & Pin Ass'y

Connectors



NOTE: Since stock number of female connectors (type B) with wires are not shown in each parts list of Complete circuit board, please refer to the above parts list when ordering the connector

Pin Ass'y



Abbreviations

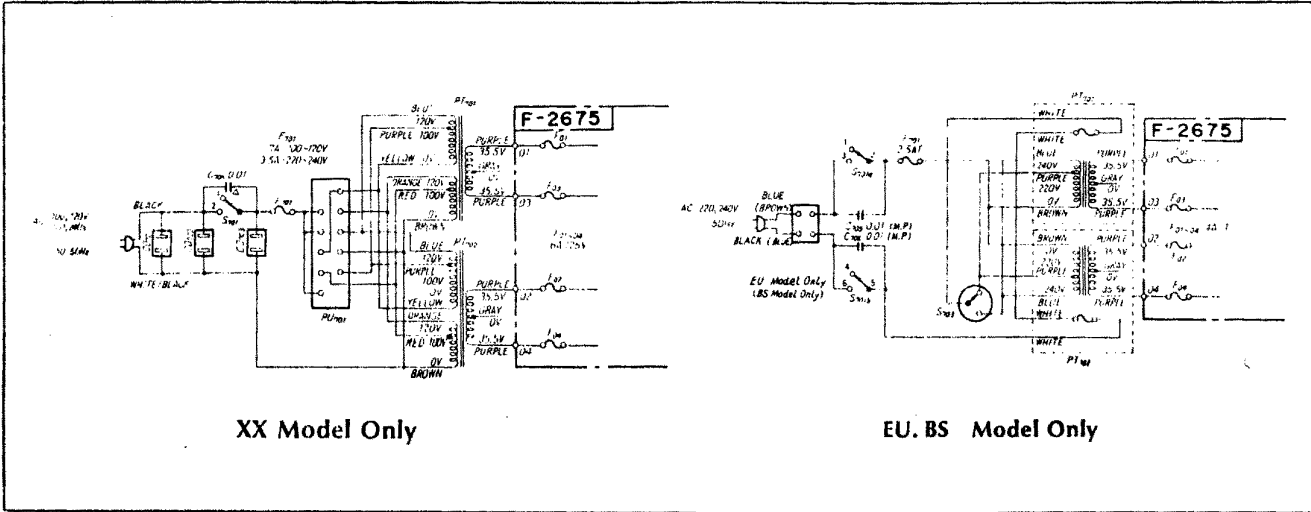
C.R. : Carbon Resistor	E.C. : Electrolytic Capacitor
S.R. : Solid Resistor	BP.E.C. : Bi-Polar Electrolytic Capacitor
Ce.R. : Cement Resistor	C.C. : Ceramic Capacitor
M.R. : Metal Film Resistor	MI.C. : Mica Capacitor
F.R. : Fusing Resistor	O.C. : Oil Capacitor
N.I.R. : Non-Inflammable Resistor	P.C. : Polystyrene Capacitor
M.C. : Mylar Capacitor	T.C. : Tantalum Capacitor

7. SCHEMATIC DIAGRAM

7-1. AU-517 Power Supply Section

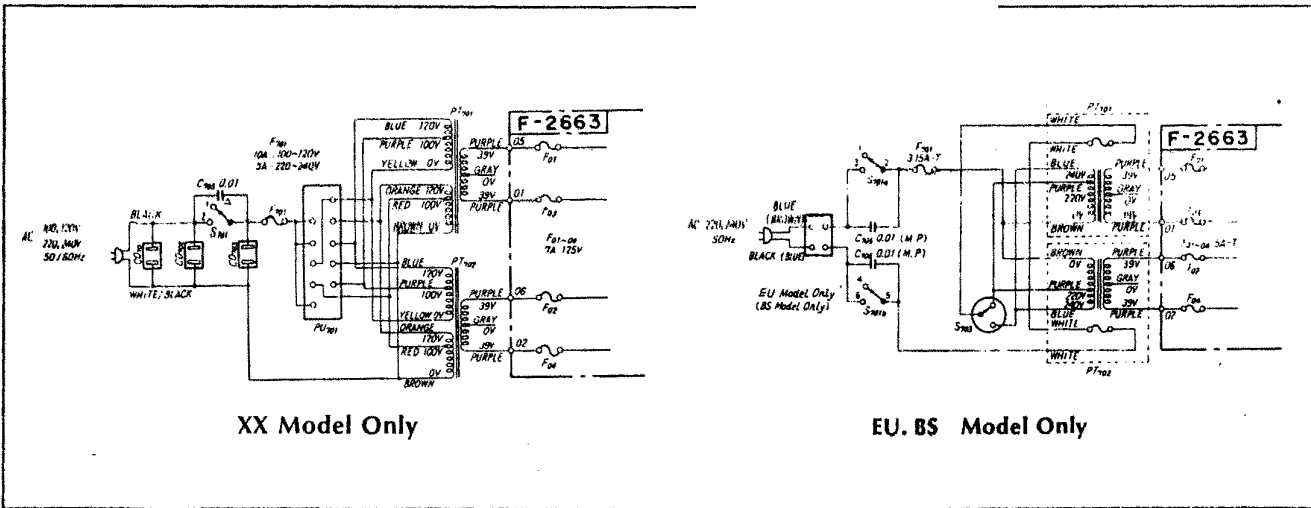
XX EU. BS Model Only

• La présentation et les spécifications sont susceptibles d'être modifiées sans préavis par suites d'améliorations éventuelles.
 • Änderungen, die dem technischen Fortschritt dienen, bleiben vorbehalten
 • Design and specifications subject to change without notice for improvement



7-2. AU-717 Power Supply Section

XX EU. BS Model Only

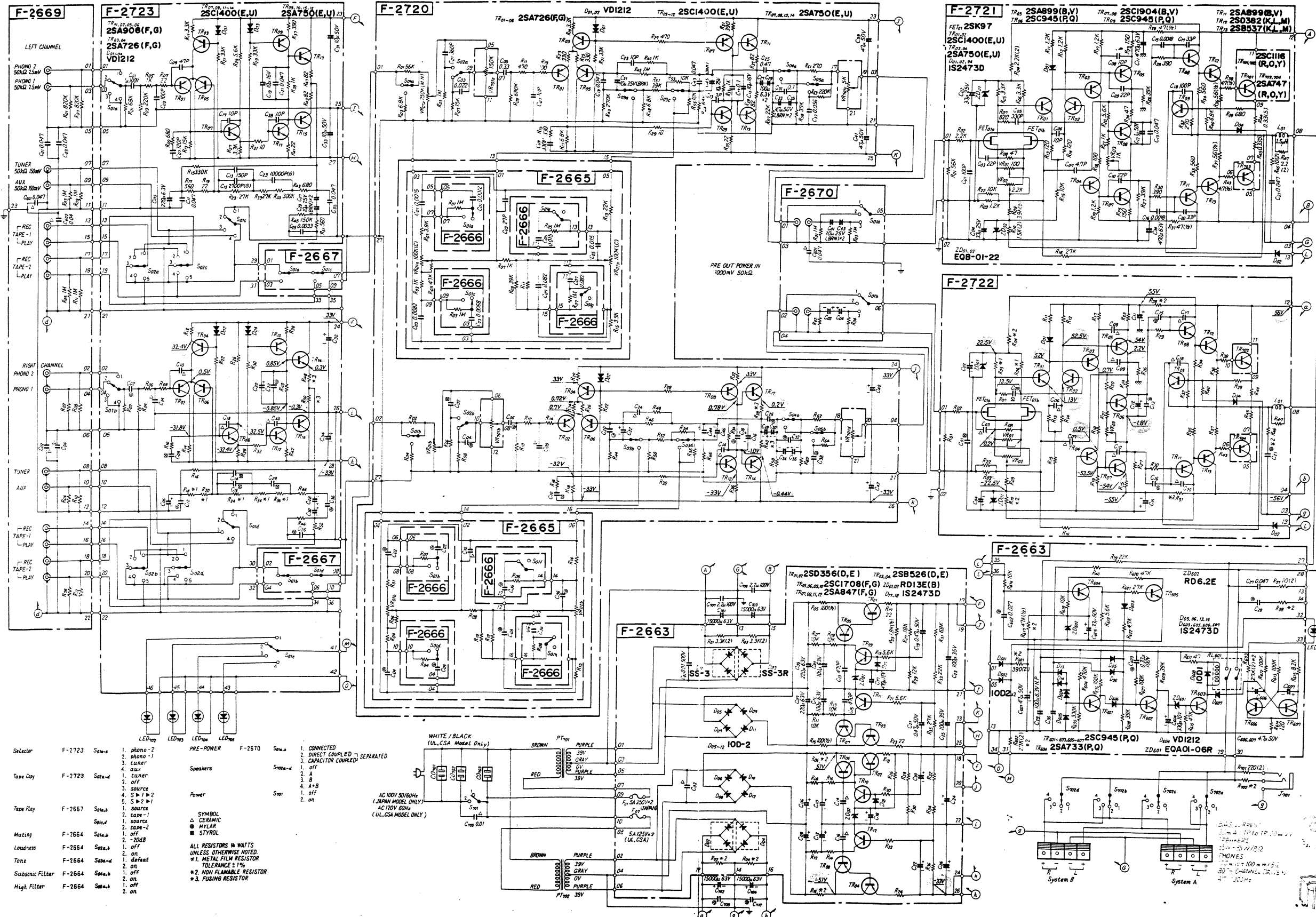


NOTE:

- AS to U.L., C.S.A., B.S., ES and XX marked in the Parts Lists, note the followings:
- U.L., C.S.A.....Approved parts used in the unit which is applicable to the U.S. and Canada under safety standard.
- B.S. Approved parts used in the unit which is applicable to British under safety requirement.
- E.U. Approved parts used in the unit which is applicable to Sweden, Denmark, Norway, Finland, West Germany, and Switzerland under safety requirement.
- XXParts used in the unit which is applicable to other countries excepting mentioned above.

※ In parts lists, parts with no above mark in of "Description" are all the same as XX marked parts.

7-4. AU-717



- 2SA733
- 2SA750
- 2SC945
- 2SC1400
- 2SA726
- 2SA474
- 2SA906
- 2SC1705
- 2SC116
- 2SA747
- 2SC116
- 2SA899
- 2SC1904
- 2SK97
- 10D2
- 100-2
- VDI212
- IS2473D
- EOA01 06F
- EOB01 1E
- EOC01 1E
- RD13E
- SS-3
- SS-3R

1

2

3

4

5

Select F-2723 Seta-4

1. phono-2
2. phono-1
3. tuner
4. aux

Tape Copy F-2723 Seta-4

1. tuner
2. off
3. source
4. S-1 > 2
5. S-2 > 1

Tape Play F-2667 Seta-5

1. source
2. tape-1
3. source
4. S-1 > 2
5. S-2 > 1

Muting F-2664 Seta-4

1. source
2. tape-2
3. off

Loudness F-2664 Seta-1

1. off
2. on
3. A
4. A+B
5. off
6. on

Tone F-2664 Seta-4

1. default
2. on
3. off
4. off
5. on

Subsonic Filter F-2664 Seta-1

1. off
2. on
3. off
4. on

High Filter F-2664 Seta-1

1. off
2. on

PRE-POWER F-2670 Seta-4

1. CONNECTED
2. DIRECT COUPLED
3. SEPARATED
4. CAPACITOR COUPLED

Speakers Seta-4

1. off
2. A
3. B
4. A+B
5. off
6. on

Power Seta-1

1. off
2. on

WHITE / BLACK (UL, CSA Model Only)

BROWN PT-201

PURPLE

RED

AC 100V 50/60Hz (JAPAN MODEL ONLY)

AC 120V 50Hz (UL, CSA MODEL ONLY)

SS-3

SS-3R

10D2

100-2

VDI212

IS2473D

EOA01 06F

EOB01 1E

EOC01 1E

RD13E

SS-3

SS-3R

System B

System A

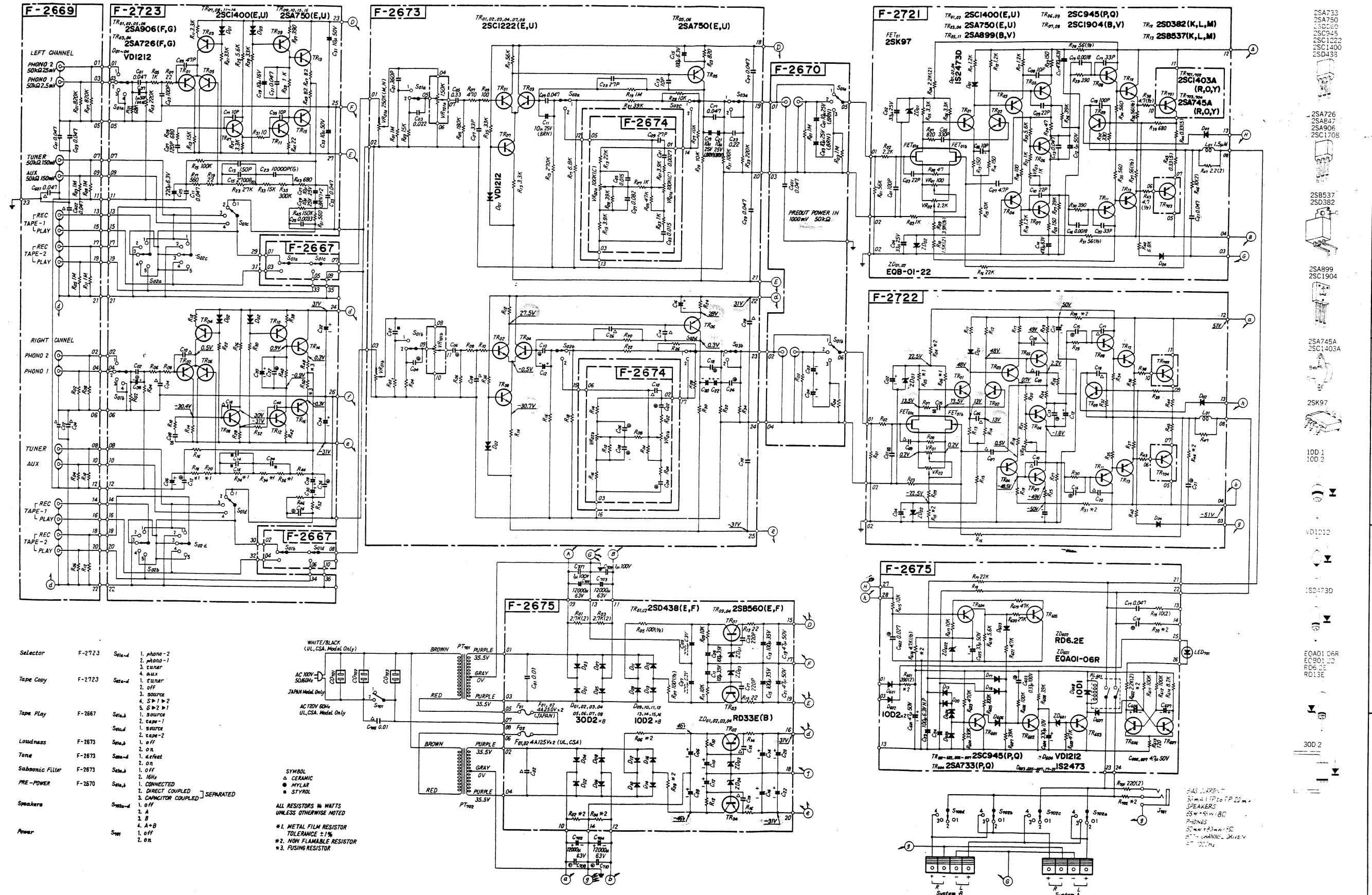
PHONES

100 mV 15Ω

30W CH-CHANNEL DRIVER

4-100Hz

7-3. AU-517



- 1
- 2
- 3
- 4
- 5

- 2SA733
- 2SA750
- 2SC560
- 2SC945
- 2SC1222
- 2SC1400
- 2SD433
- 2SA726
- 2SA847
- 2SA906
- 2SC1705
- 2B8537
- 2SD382
- 2SA899
- 2SC1904
- 2SA745A
- 2SC1403A
- 2SK97
- 10D1
- 10D2
- VDI212
- IS2473D
- EQA01-6FR
- EQB01-22
- RD6-01-13
- RD15E
- 30D2

Selector	F-2723	Set-d	1. phono-2 2. phono-1 3. tuner
Tape Copy	F-2723	Set-d	1. tuner 2. off 3. source 4. S > 1 > 2 5. S > 2 > 1
Tape Play	F-2667	Set-d	1. source 2. tape-1 3. source 4. tape-2
Loudness	F-2673	Set-d	1. off 2. on
Tone	F-2673	Set-d	1. a. effect 2. on
Subsonic Filter	F-2673	Set-d	1. off 2. 16Hz
PRE-POWER	F-2670	Set-d	1. CONNECTED 2. DIRECT COUPLED 3. CAPACITOR COUPLED] SEPARATED
Speakers		Set-d	1. off 2. A 3. B 4. A+B
Power		Set-d	1. off 2. on

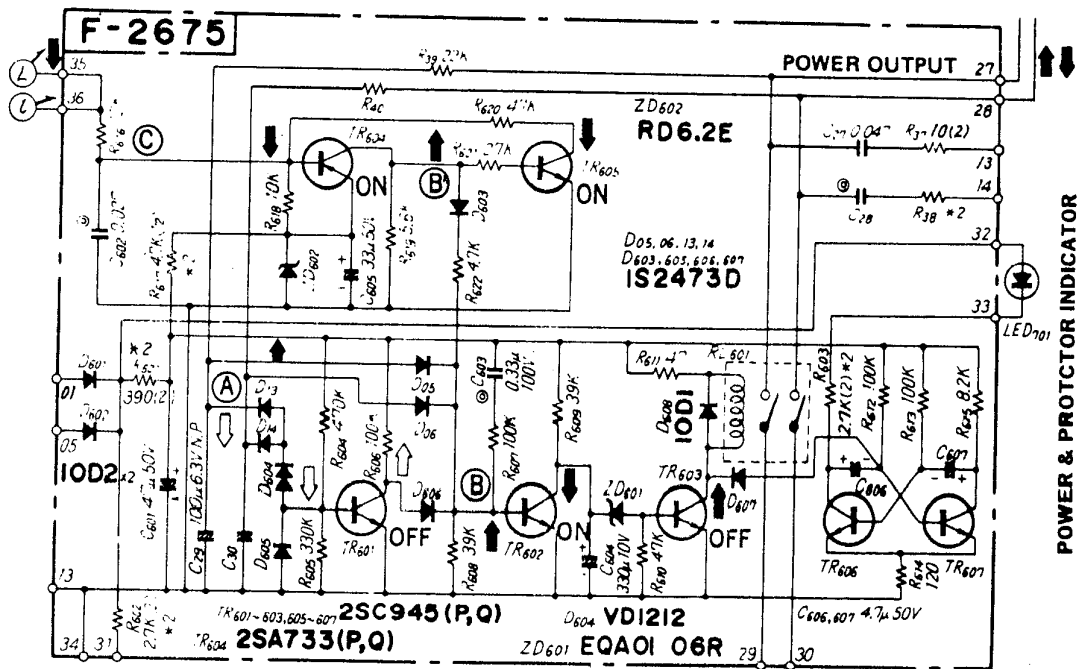
SYMBOL
 ▲ CERAMIC
 ● MYLAR
 ■ STYROL

ALL RESISTORS % WATTS
 UNLESS OTHERWISE NOTED
 *1. METAL FILM RESISTOR
 TOLERANCE ±1%
 *2. NON FLAMMABLE RESISTOR
 *3. FUSING RESISTOR

JAPAN
 30 MA (TP) TP 25 m.
 SPEAKERS
 8Ω W 8Ω 8Ω
 PHONES
 32Ω W 16Ω 16Ω
 5T 16Ω 16Ω 16Ω
 5T 16Ω 16Ω 16Ω

8. OPERATION OF PROTECTOR CIRCUIT

This protector circuit contains two functions at abnormal condition; a speaker protector circuit against DC voltage appearing at output, and speaker protector circuit against over-current.



A. Speaker Protection Circuit against DC voltage appearing at output (A)

1. When an abnormal negative voltage appears at output (A), TR601 turns off, TR602 turns on and TR603 turns off so that the relay, RL601, keeps off in order to protect loudspeakers from break-down.
2. While the relay, RL601, keeps OFF, zero voltage (center voltage) controlling TR607 through D607 will increase, resultly the LED701 as protector indicator, starts flickering.
3. When abnormal positive voltage appears at output (A), the voltage is supplied to TR602 directly, and the operation of the protector circuit is same as above mentioned 1.

B. Speaker Protection Circuit against abnormal over-current

1. At the moment when abnormal excessive current flows into power transistors, a transistor (TR09) detecting excessive over-current, on power stage becomes ON.
2. Then, DC voltage at (C) decreases, resultly TR604 turns on, and positive certain voltage appears at (B).
3. As mentioned above, when TR602 turns on, the relay, RL601, keeps OFF; a certain positive voltage at (B) turns on TR605 too, resultly collector voltage of TR605 decreases and its collector voltage keeps a certain voltage at (C) simultaneously.
4. By keeping a certain DC voltage at (C), the LED701 as protector indicator continues flickering, even though all circuits work completely.

C. Operation of astable multivibrator

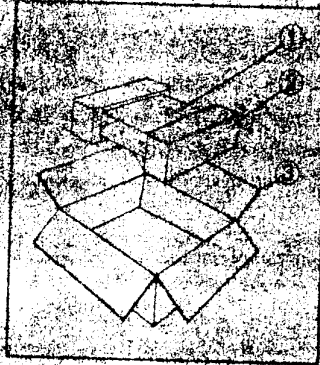
1. When control (bias) voltage is not supplied to the base of TR607 in abnormal condition, TR606 and TR607, on astable multivibrator repeat turning (switching) on and off alternately each other by charging and discharging of capacitors, C606 & C607, resultly, the LED701 as protector indicator continues flickering.
2. When the relay, RL601 is turned on, base voltage of TR607 becomes zero volt through D607 and TR606 becomes ON, resultly LED701 as power indicator lights up.

9. PACKING LIST

Parts No.	Stock No.	Description
1	9114670	Vinyl Cover
2	9028020	Styrofoam Packing (L)
	9028030	Styrofoam Packing (R)
3	9009710	Carton Case (AU-717)
	9009708	Carton Case (AU-517)

10. ACCESSORY PARTS LIST

Stock No.	Description
9201520	Operating Instructions (AU-517)
9201540	Operating Instructions (AU-717)
9192080	Hexagon Wrench (1.5mm)
9116580	Vinyl Bag For Wrench
9237540	Schematic Diagram (AU-517)
9237560	Schematic Diagram (AU-717)
9396340	Rock Mounting Adaptor (each)
9274100	Rear Stand (each)



THE QUALITY OF
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THE BEST THAT
IS AVAILABLE

MEMO



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