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# SERVICE MANUAL

INTEGRATED STEREO AMPLIFIER

## SANSUI AU-X701/X901



### CAUTION

1. Parts identified by the  $\triangle$  symbol on the schematic diagram and the parts list are critical for safety. Use only replacement parts that have critical characteristics recommended by the manufacturer.
2. Make leakage-current or resistance measurements to determine that exposed parts are acceptably insulated from the supply circuit before returning the appliance to the customer.

### •SPECIFICATIONS

#### AU-X701

##### Power output

Min. RMS, both channels driven, from 20 to 20,000 Hz, with no more than 0.005% total harmonic distortion.

100 watts per channel into 8 ohms.

**Load impedance**..... 4 to 16 ohms

##### Total harmonic distortion

..... less than 0.005% at or below rated min. RMS power output

##### Intermodulation distortion

(60 Hz: 7 kHz = 4:1 SMPTE method)

..... less than 0.005% at rated power output

##### Frequency response (at 1 watt)

Overall (from CD)..... 1 to 300,000 Hz, +0 dB -3 dB

##### RIAA curve deviation (PHONO-MM, 20 Hz to 20 kHz)

..... +0.2 dB, -0.2 dB

##### Input sensitivity and impedance (at 1 kHz)

PHONO (MC)..... 300  $\mu$ V/100 ohms

##### European models only

PHONO (MC TRANS)..... 160  $\mu$ V/16 ohms

PHONO (MM)..... 2.5 mV/47 kohms

(Max. input capability: 210 mV at 1 kHz, less than 0.01% total harmonic distortion)

CD, TUNER, LINE..... 150 mV/47 kohms

TAPE/DAT PLAY-1, 2, 3

..... 150 mV/47 kohms

PROCESSOR RETURN  
..... 150 mV/47 kohms

##### Output level (1,000 Hz)

TAPE/DAT REC-1, 2, 3

..... 150 mV into 47 kohms

PROCESSOR SEND..... 150 mV into 47 kohms

##### Signal to noise ratio (short-circuit, A-network)

PHONO (MM)..... 88 dB

CD, TUNER, LINE..... 110 dB

TAPE/DAT PLAY-1, 2, 3

..... 110 dB

##### Controls and Filter

BASS.....  $\pm$ 5 dB at 50 Hz

TREBLE.....  $\pm$ 5 dB at 15 kHz

SUBSONIC..... -3 dB at 16 Hz (6 dB/oct)

MUTING..... -20 dB

LOUDNESS..... +8 dB at 50 Hz

+6 dB at 10 kHz

(VOLUME: -30 dB position)

**Power requirements**..... AC 120V/220V/240V,  
50/60 Hz

For U.S.A. & Canada... AC 120V, 60 Hz

**Power consumption**..... 380 watts 460 VA Rated  
720 watts Maximum

**Dimensions**..... 448 mm (17-11/16") W  
160 mm (6-9/16") H  
441 mm (17-3/8") D

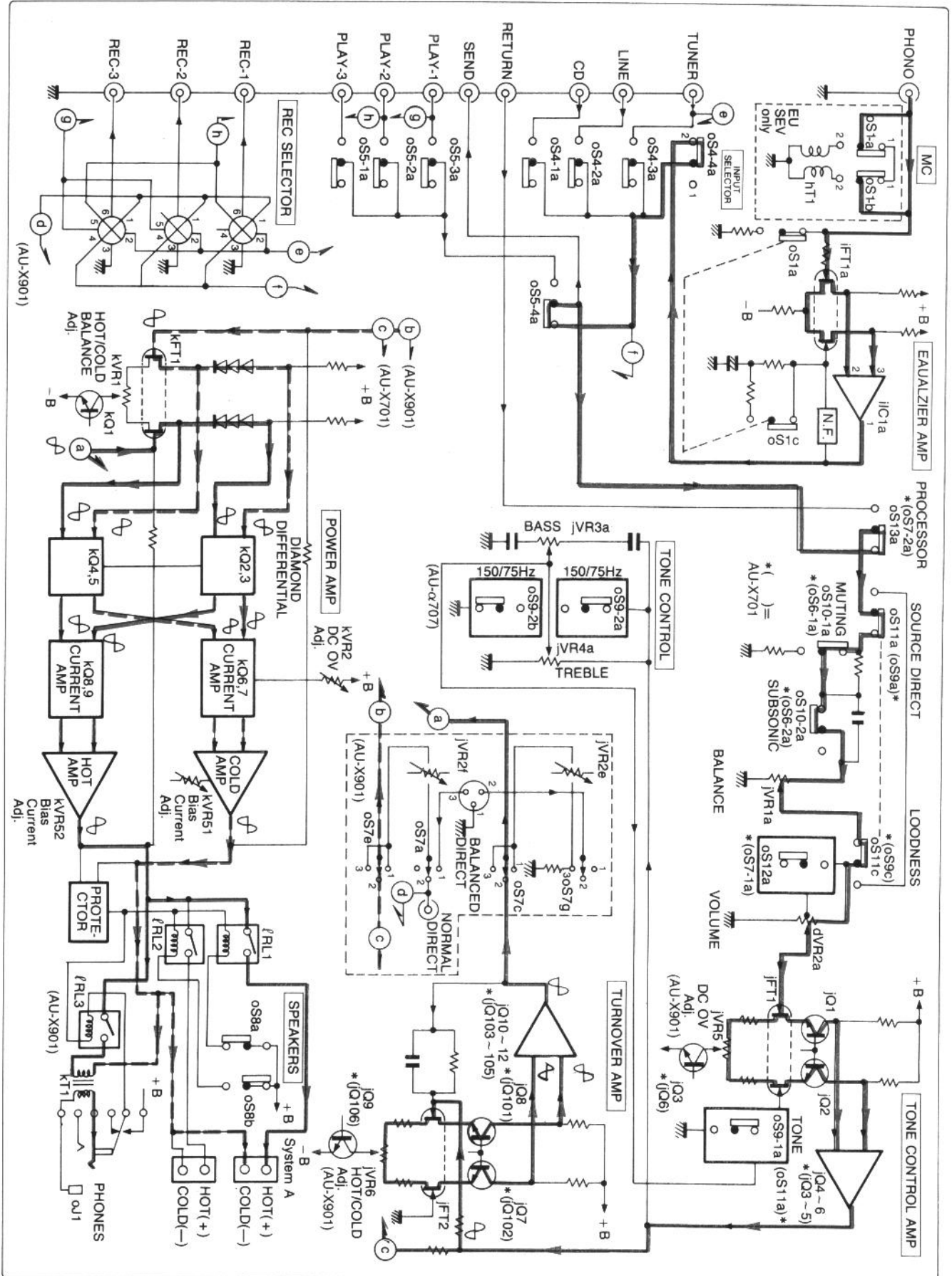
**Weight**..... 17.1 kg (37.7 lbs) net  
19 kg (41.9 lbs) packed

to be continued ►

**Sansui**

SANSUI ELECTRIC CO., LTD.

# 1. BLOCK DIAGRAM

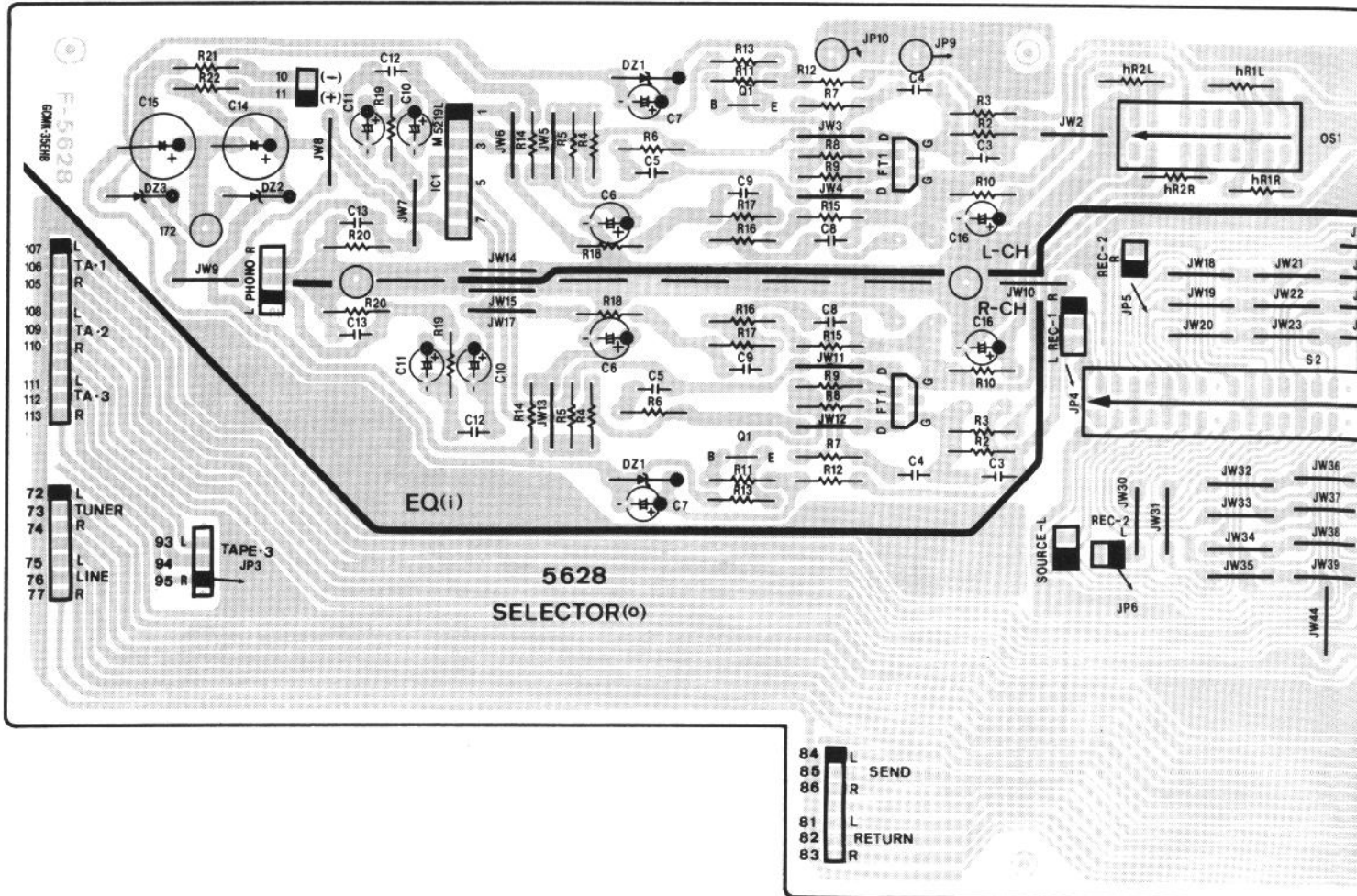




## 4. PARTS LOCATION ON BOARD

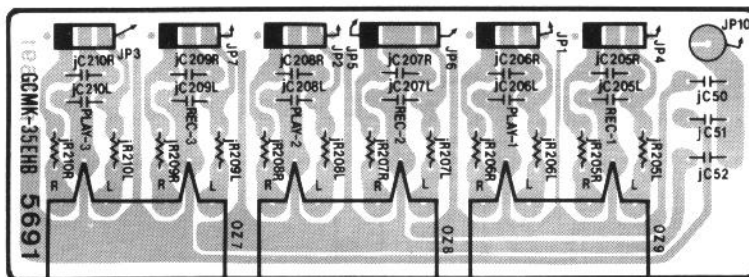
### 4-1. F-5628 EQ Amp & Input Terminal Board <AU-X701>

Pattern Side



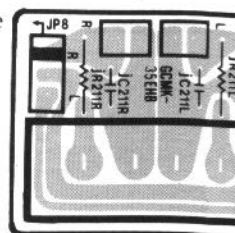
### 4-3. F-5691 Tape Terminal Board <AU-X701-EU·SEV/AU-X901-XX·UL·EU·SEV·CSA>

Component Side



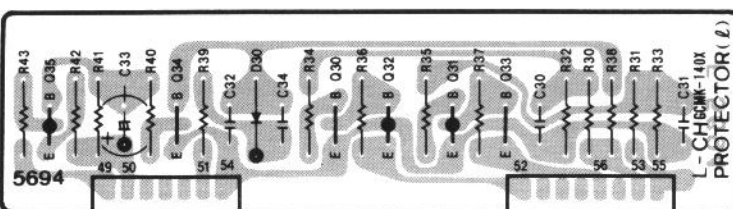
### 4-4. F-5692 Power Amp Direct

Component Side



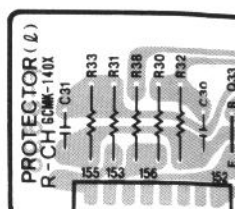
### 4-5. F-5694 L-CH Power Limiter Board

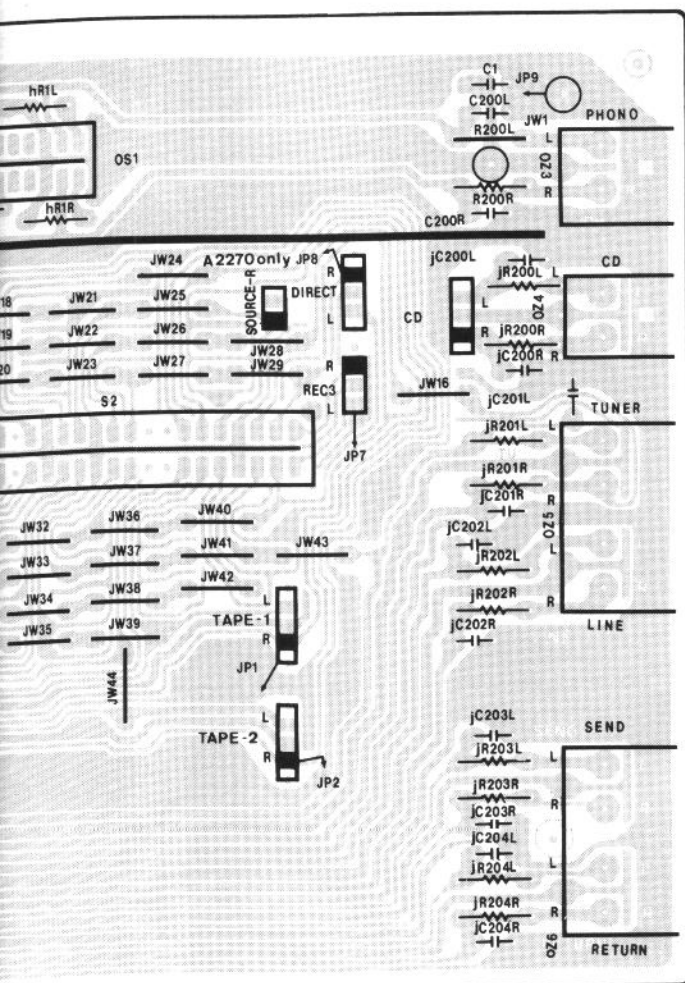
Component Side



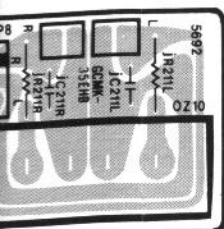
### 4-6. F-5695 R-CH Power Limite

Component Side

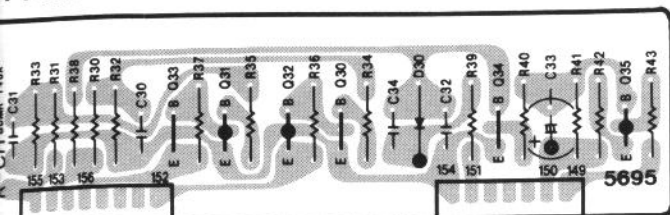




### er Amp Direct Terminal Board <AU-X901>

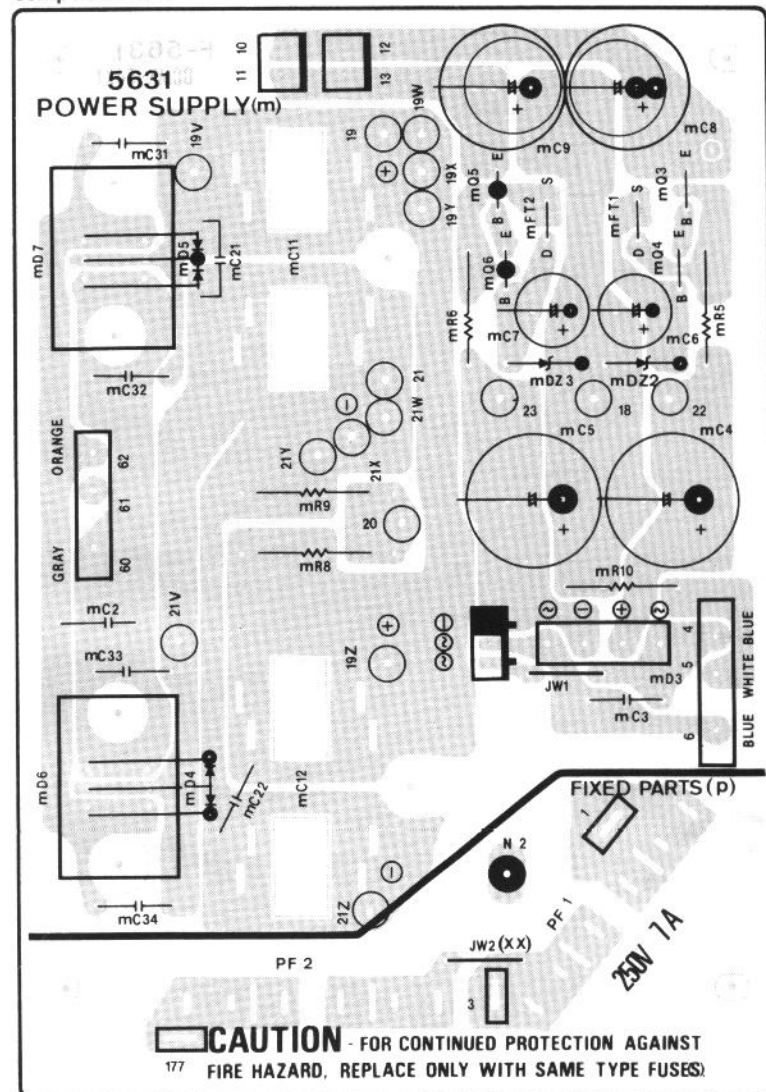


#### 4 Power Limiter Board



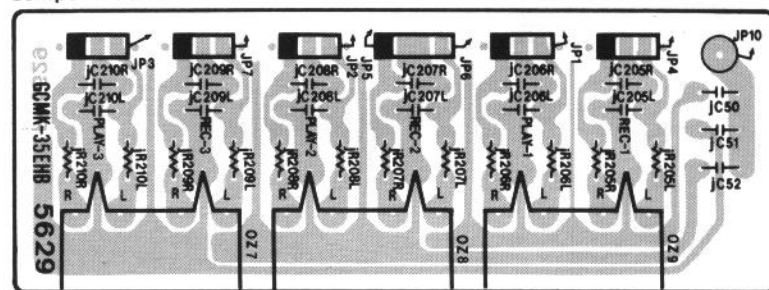
#### 4-2. F-5631 Power Supply Board

### Component Side



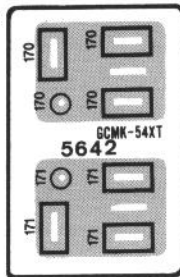
#### 4-7. F-5629 Tape Terminal Board <AU-X701-XX•UL•CSA>

### Component Side



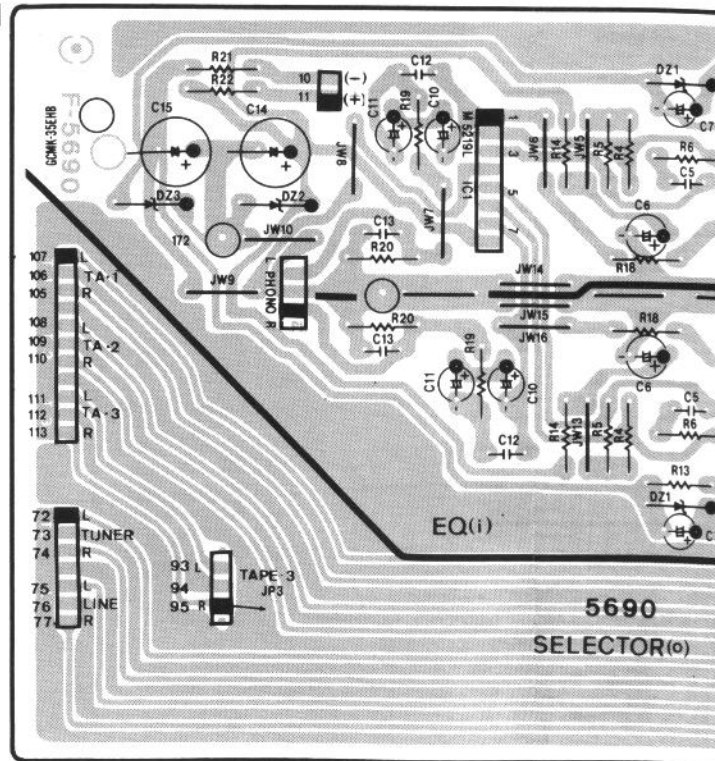
## 4-8. F-5642 AC Outet Board (EU, SEV)

Component Side



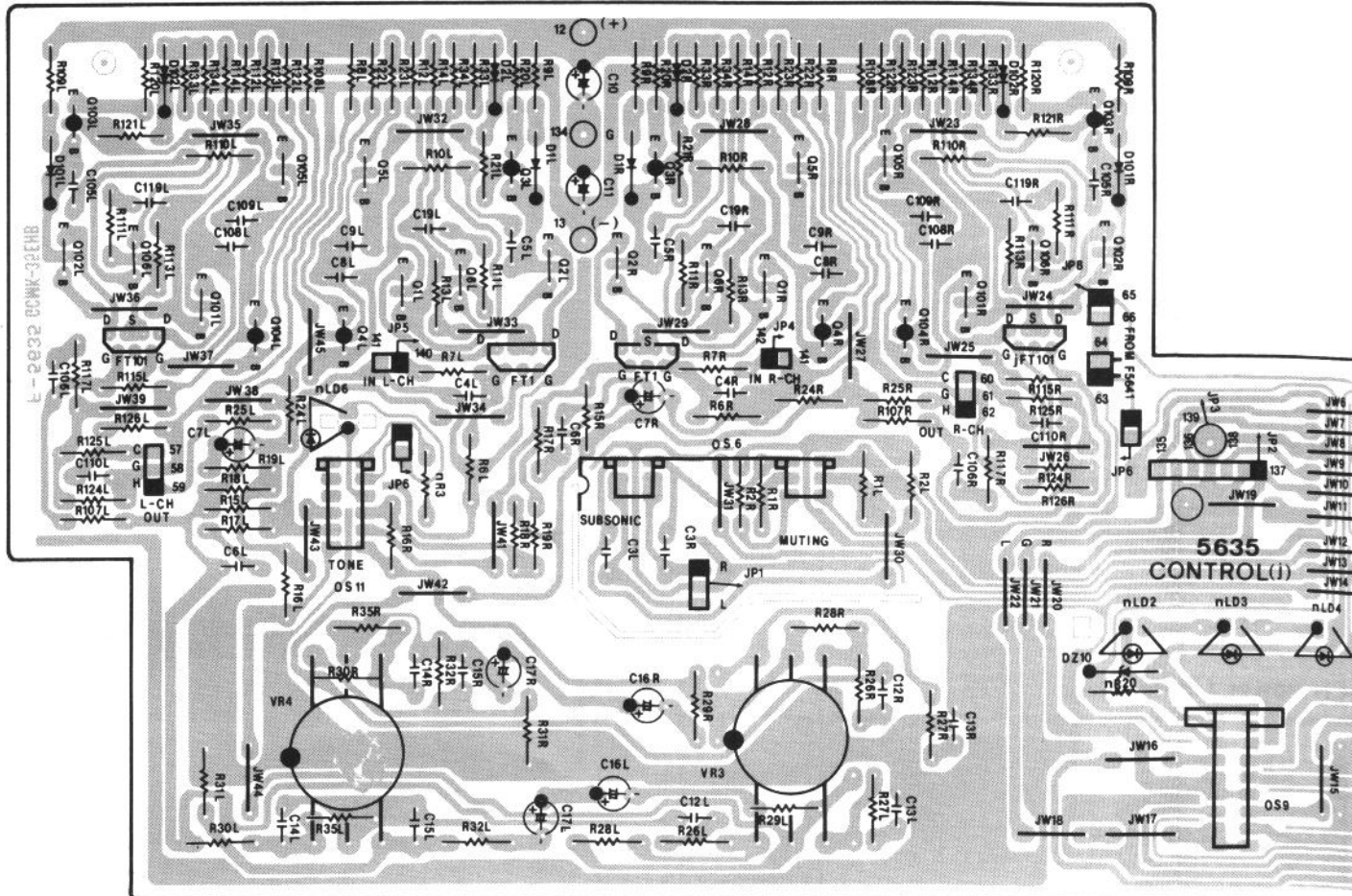
## 4-9. F-5690 EQ Amp &amp; Input Terminal Board &lt;AU-X901/AU-X701-EU&gt;

Pattern Side



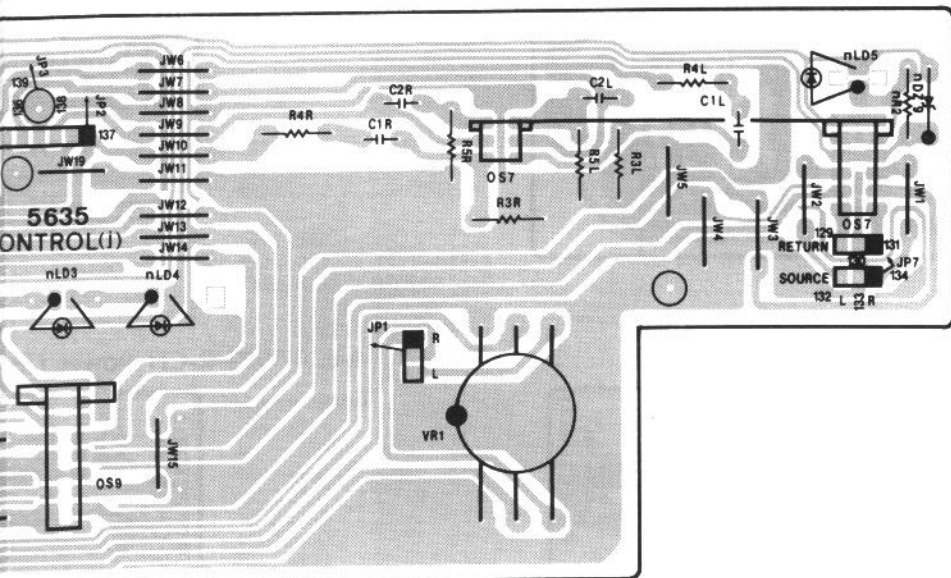
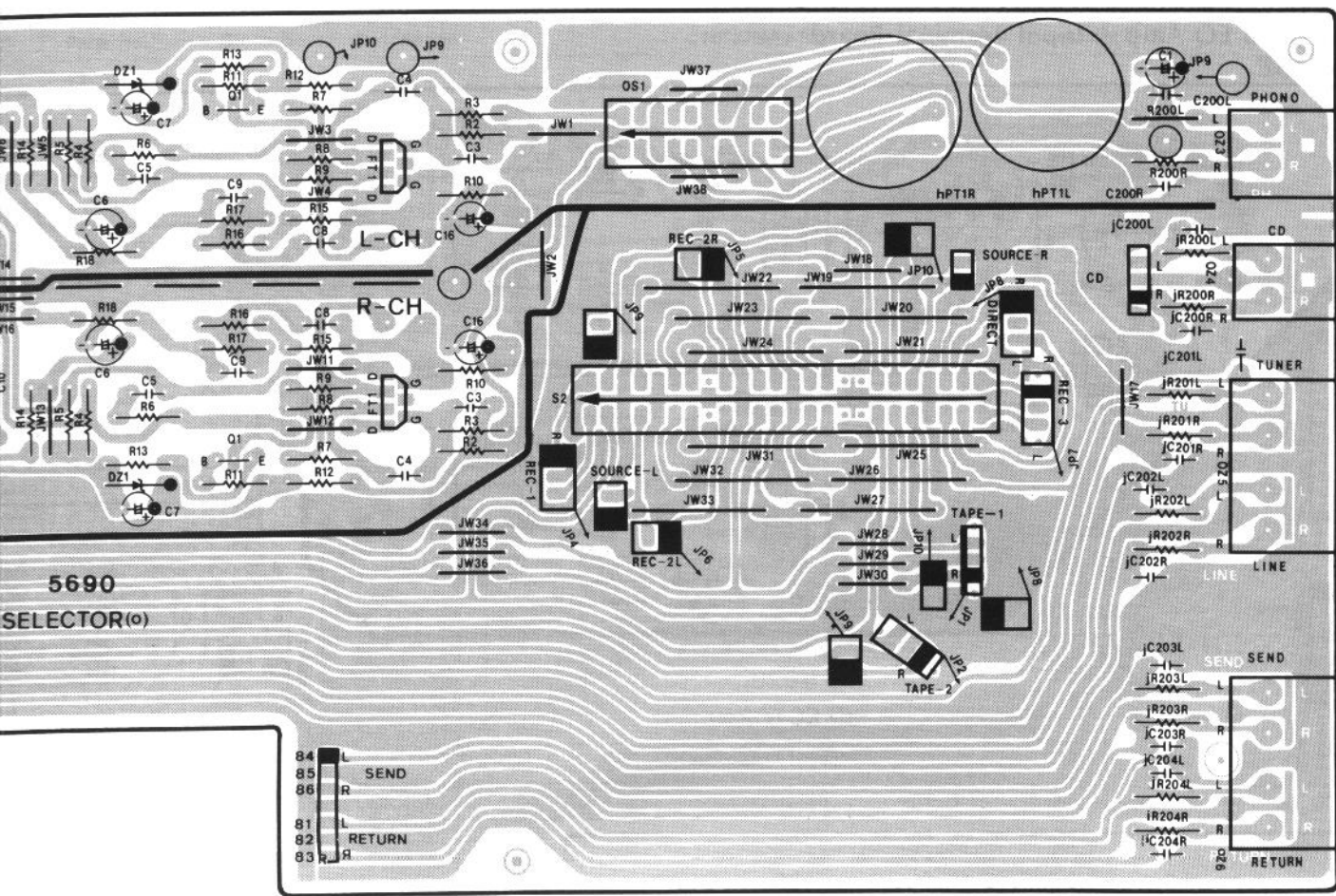
## 4-10. F-5635 Tone Control Amp Board &lt;AU-X701&gt;

Component Side



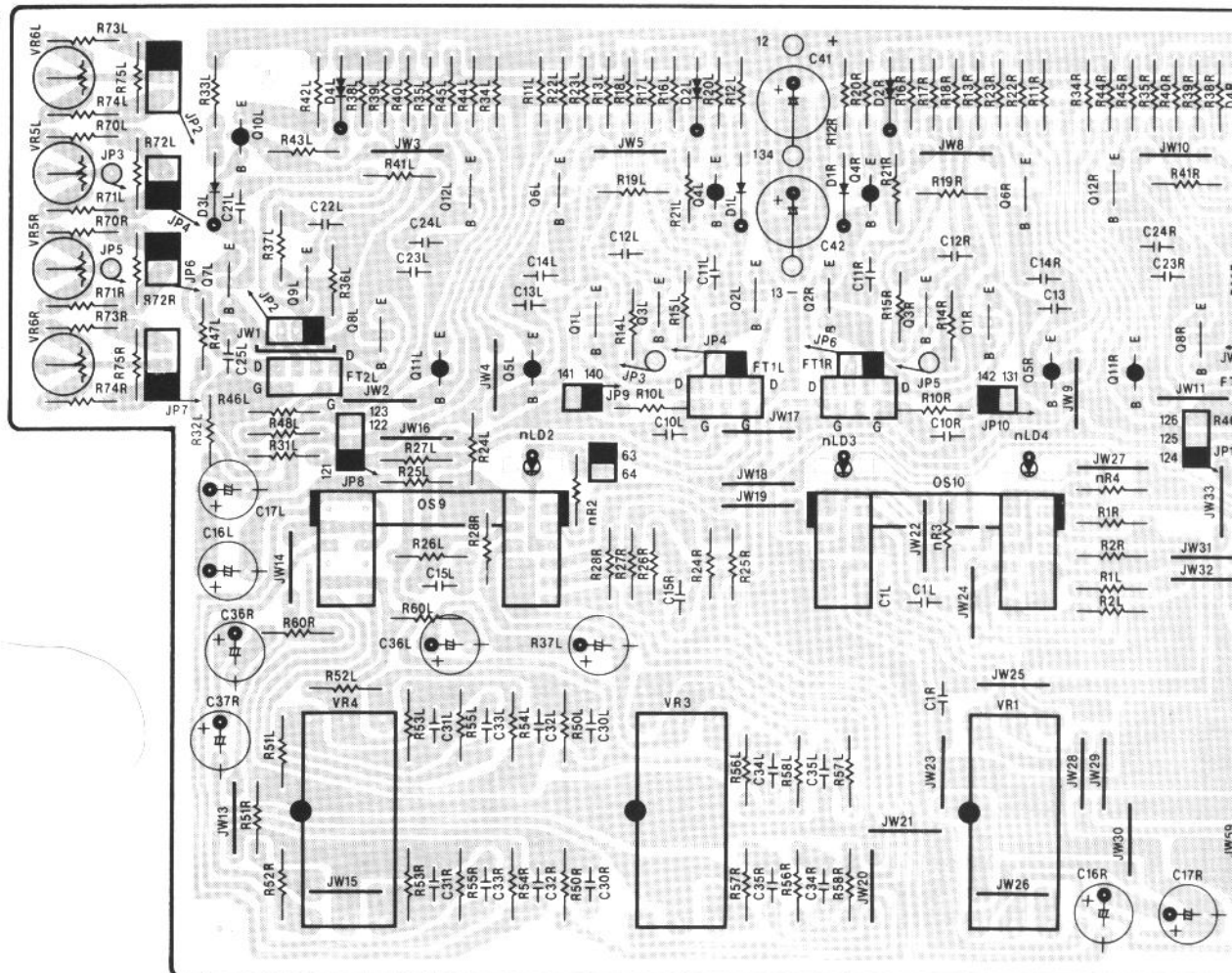


J-X901/AU-X701-EU•SEV>



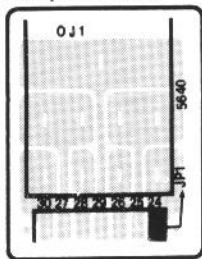
## 4-11. F-5643 Tone Control Amp Board &lt;AU-X901&gt;

Component Side



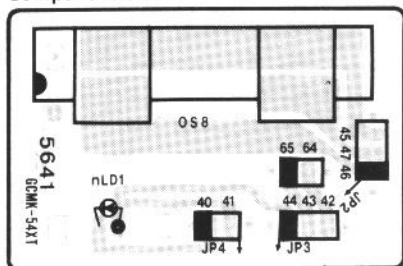
## 4-13. F-5640 Head Phones Board

Component Side



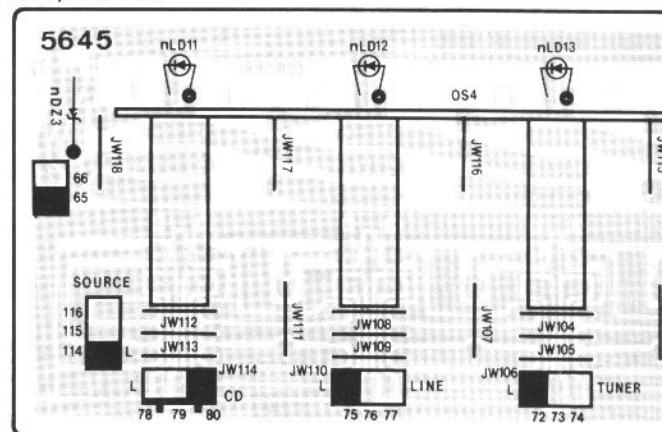
## 4-15. F-5641 SP SW. Board

Component Side



## 4-14. F-5645 Input Selector Board &lt;AU-X901&gt;

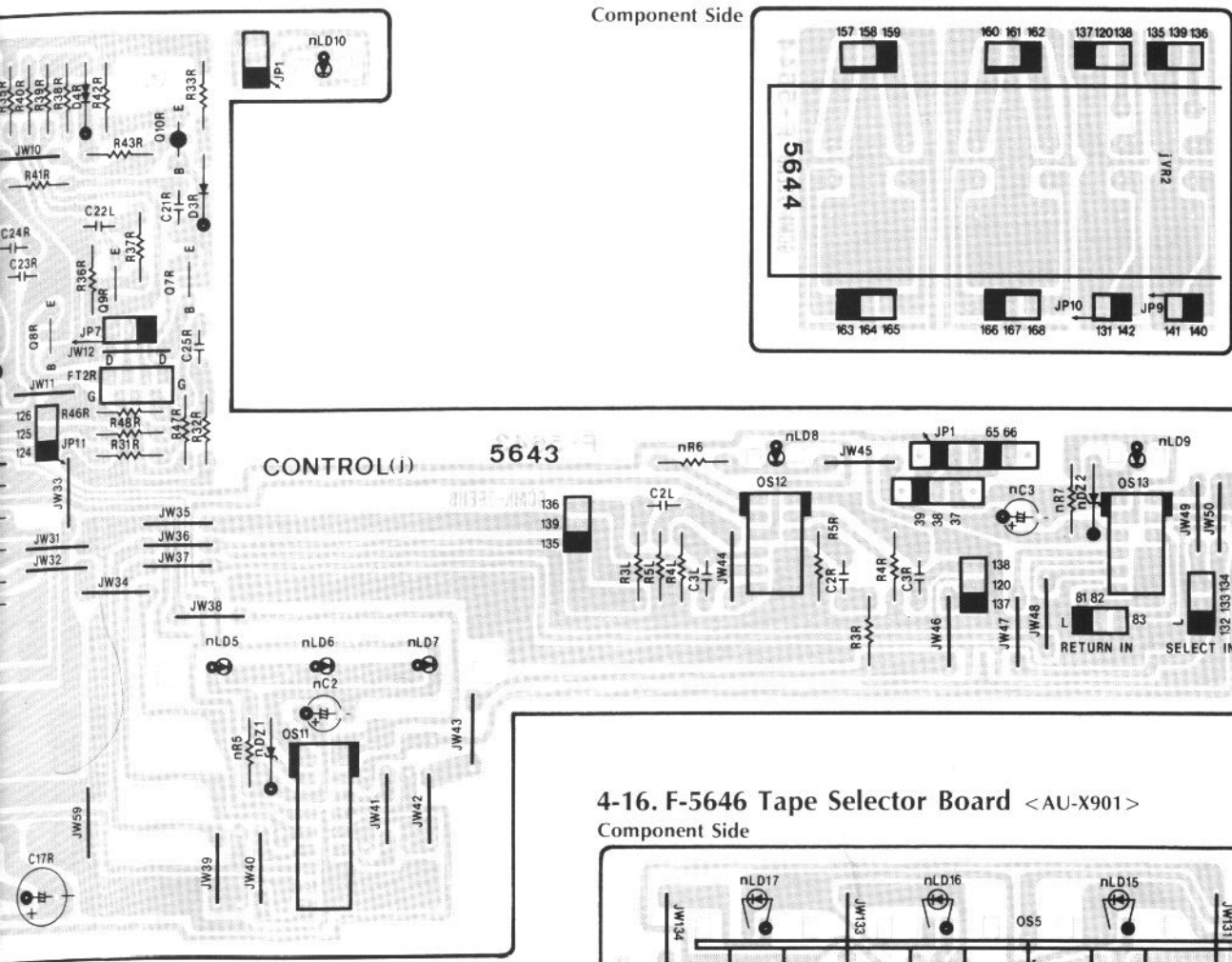
Component Side





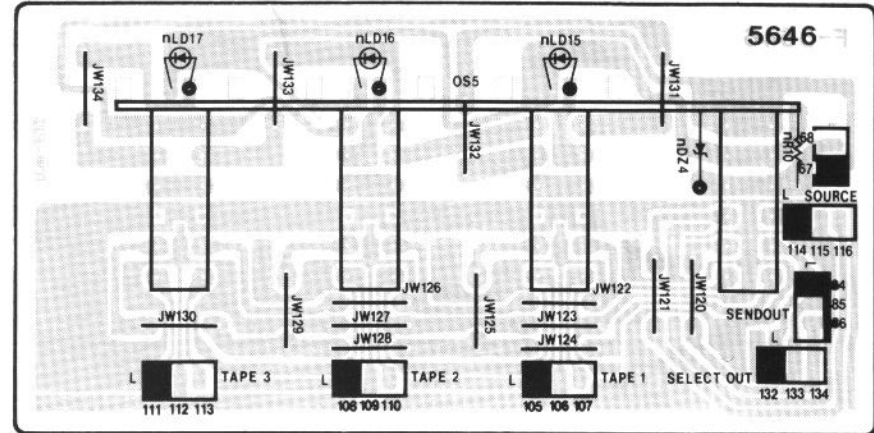
# 4-12. F-5644 Volume Board <AU-X901>

Component Side



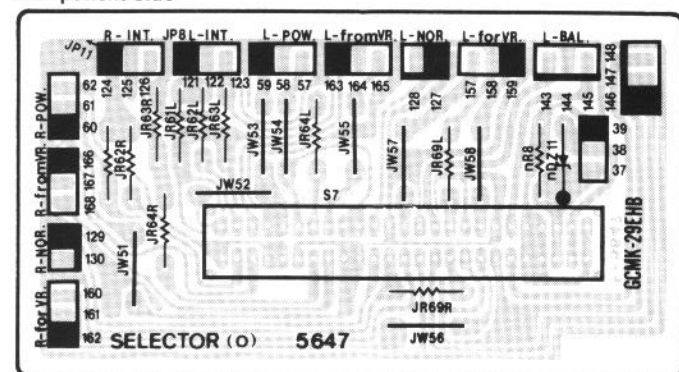
# 4-16. F-5646 Tape Selector Board <AU-X901>

Component Side



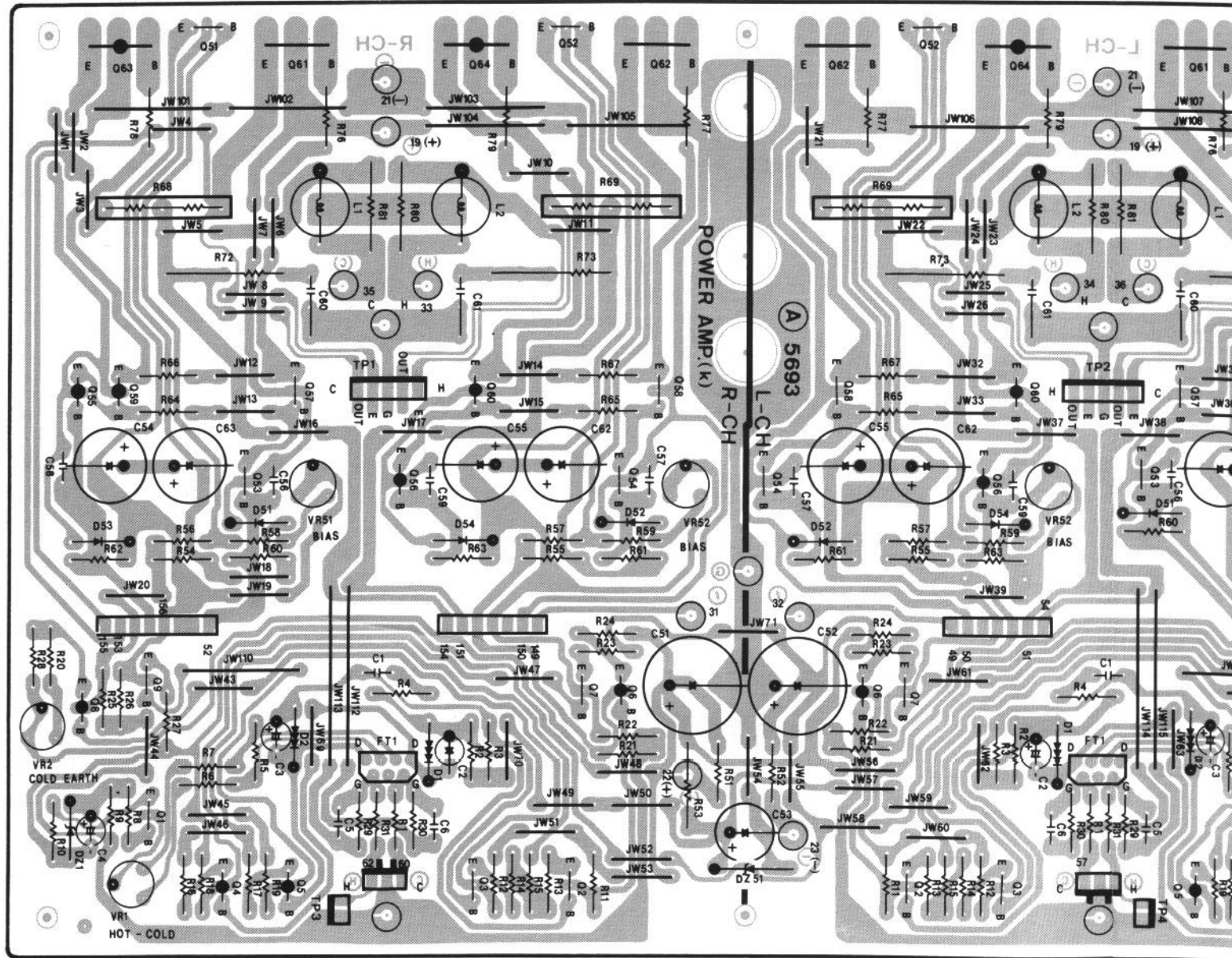
# 4-17. F-5647 Power Amp Direct SW. Board <AU-X901>

Component Side



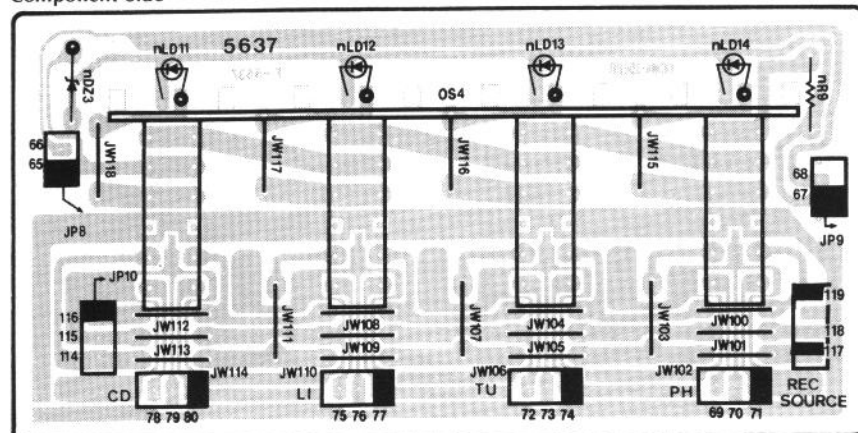
## 4-18. F-5693 Power Amp Board

Component Side



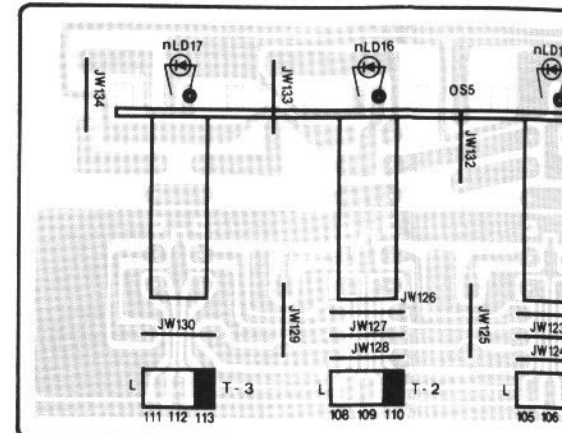
## 4-20. F-5637 Input Selector Board &lt;AU-X701&gt;

Component Side



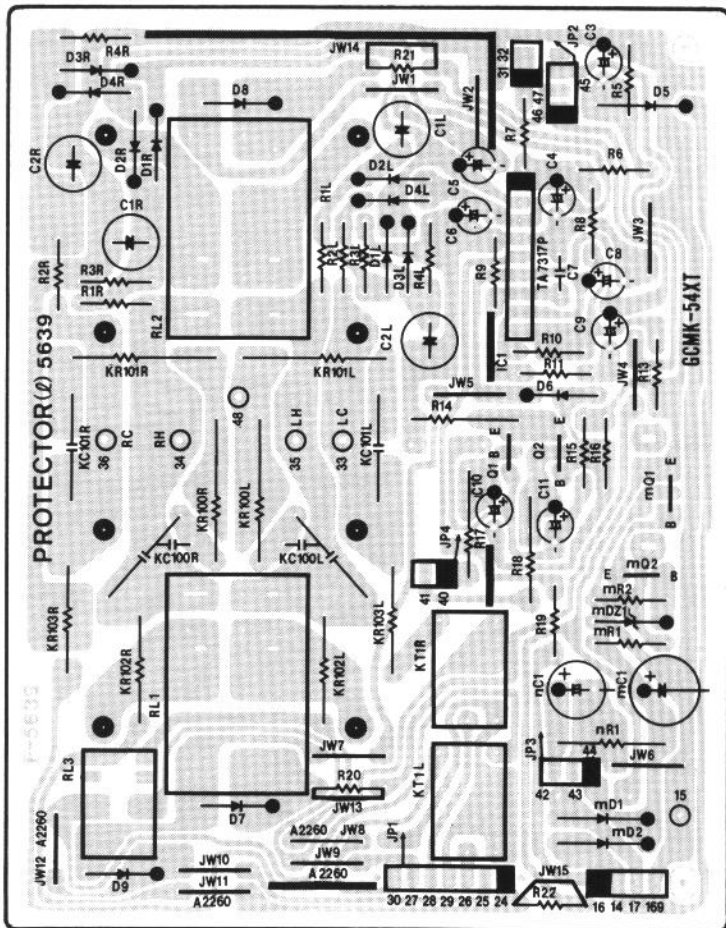
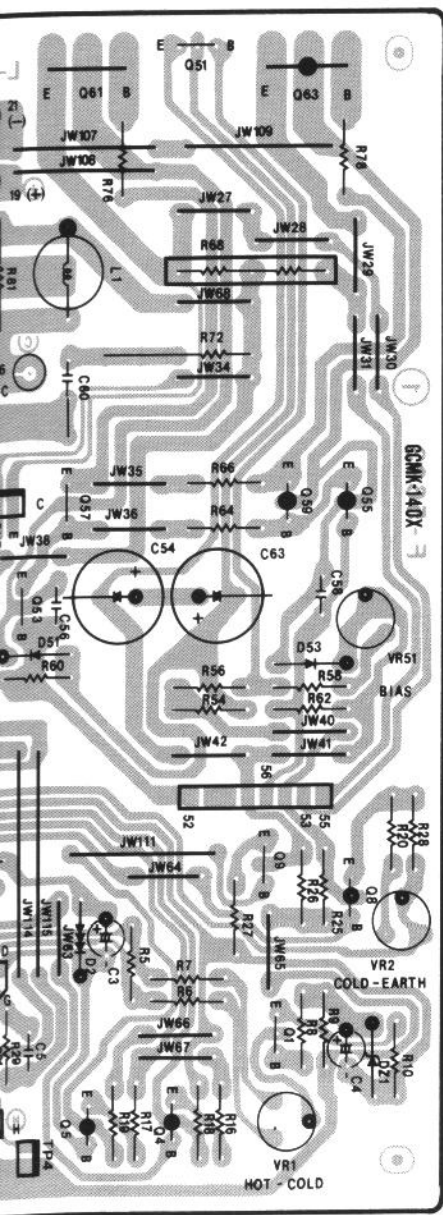
## 4-21. F-5638 Tape Selector Board &lt;AU-X701&gt;

Component Side



4-19. F-5639 Protector Board

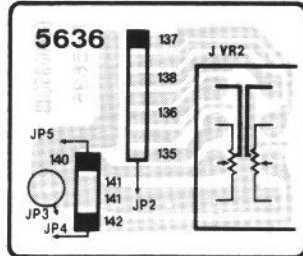
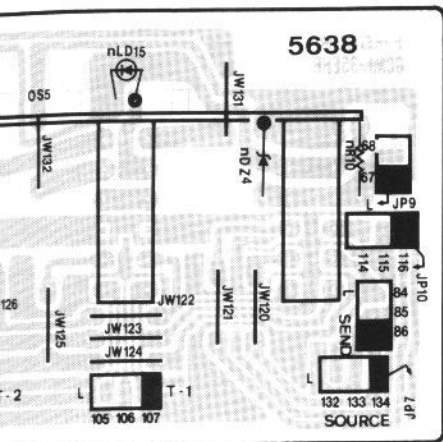
Pattern Side



ard <AU-X701>

4-22. F-5636 Volume Board <AU-X701>

Component Side





A

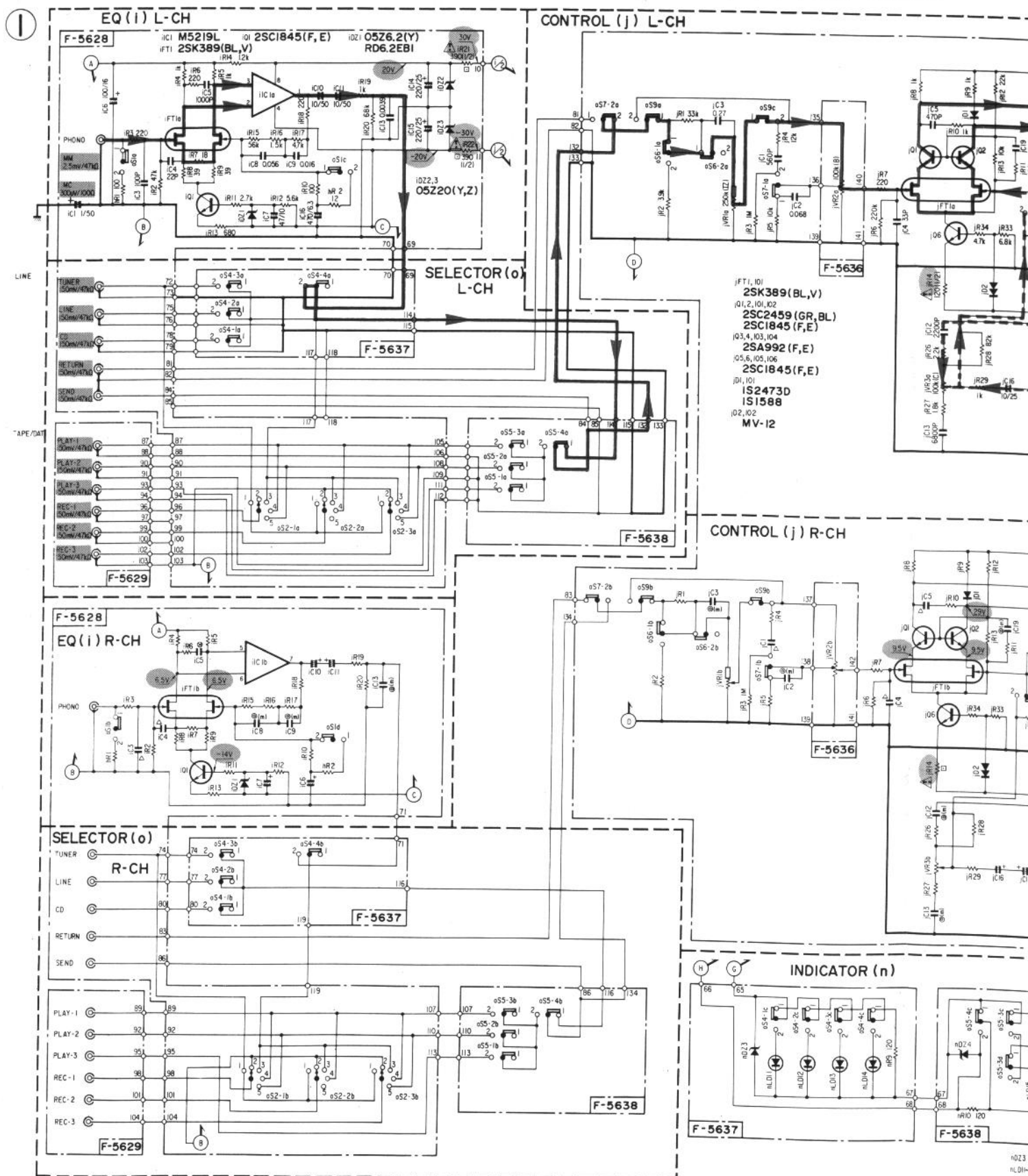
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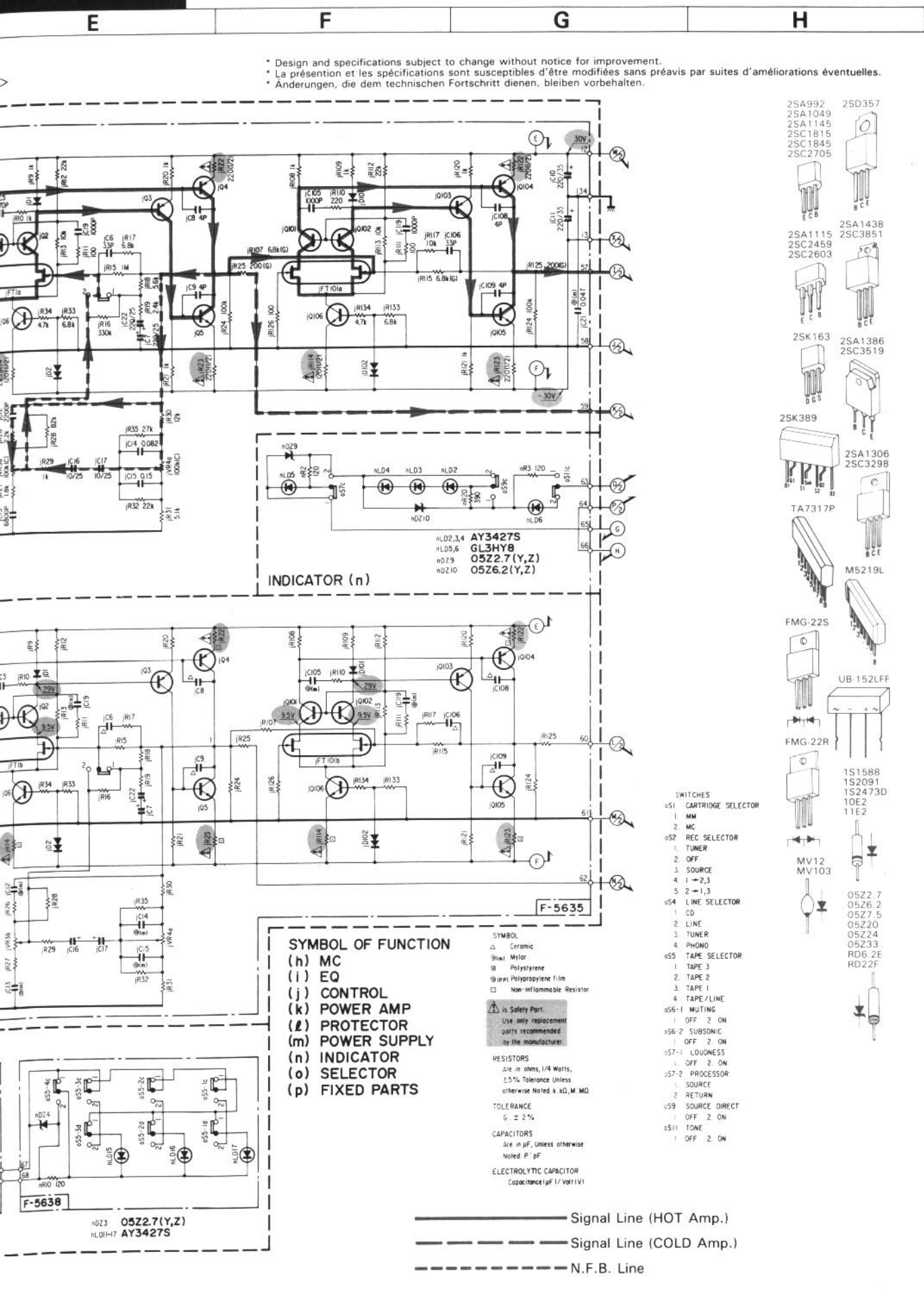
C

D

## 6. SCHEMATIC DIAGRAM

6-1. EQ Amp &amp; Control Amp Section (XX, UL, CSA) &lt;AU-X701&gt;





\* Design and specifications subject to change without notice for improvement.  
\* 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.

- 2SA992
- 2SA1049
- 2SA1145
- 2SC1815
- 2SC1845
- 2SC2705
- 2SD357
- 2SA1438
- 2SC3851
- 2SA1115
- 2SC2459
- 2SC2603
- 2SK163
- 2SA1386
- 2SC3519
- 2SK389
- 2SA1306
- 2SC3298
- TA7317P
- M5219L
- FMG-22S
- UB-152LFF
- FMG-22R
- 1S1588
- 1S2091
- 1S2473D
- 10E2
- 11E2
- MV12
- MV103
- 05Z2.7
- 05Z6.2
- 05Z7.5
- 05Z20
- 05Z24
- 05Z33
- RD6.2E
- RD22F

INDICATOR (n)

nLD2,3,4 AY3427S  
nLD5,6 GL3HY8  
nD7,9 05Z2.7(Y,Z)  
nDZ10 05Z6.2(Y,Z)

SYMBOL OF FUNCTION  
(h) MC  
(i) EQ  
(j) CONTROL  
(k) POWER AMP  
(l) PROTECTOR  
(m) POWER SUPPLY  
(n) INDICATOR  
(o) SELECTOR  
(p) FIXED PARTS

SYMBOL  
△ Ceramic  
□ Mylar  
⊗ Polystyrene  
⊙ Polypropylene film  
□ Non-inflammable Resistor  
⚠ is Safety Part.  
Use only replacement parts recommended by the manufacturer.  
RESISTORS  
Are in ohms, 1/4 Watts, ±5% Tolerance Unless otherwise noted. k, M, G.  
TOLERANCE  
G. ± 2%  
CAPACITORS  
Are in μF, Unless otherwise noted. p, nF.  
ELECTROLYTIC CAPACITOR  
Capacitance (μF / Volt/V)

- SWITCHES
- o51 CARTRIDGE SELECTOR  
1. MM  
2. MC
  - o52 REC SELECTOR  
1. TUNER  
2. OFF  
3. SOURCE  
4. 1 → 2,3  
5. 2 → 1,3
  - o54 LINE SELECTOR  
1. CD  
2. LINE  
3. TUNER  
4. PHONO
  - o55 TAPE SELECTOR  
1. TAPE 3  
2. TAPE 2  
3. TAPE 1  
4. TAPE / LINE
  - o56-1 MUTING  
1. OFF 2. ON
  - o56-2 SUBSONIC  
1. OFF 2. ON
  - o57-1 LOUDNESS  
1. OFF 2. ON
  - o57-2 PROCESSOR  
1. SOURCE  
2. RETURN
  - o59 SOURCE DIRECT  
1. OFF 2. ON
  - o511 TONE  
1. OFF 2. ON

— Signal Line (HOT Amp.)  
— Signal Line (COLD Amp.)  
--- N.F.B. Line

INDICATOR (n)



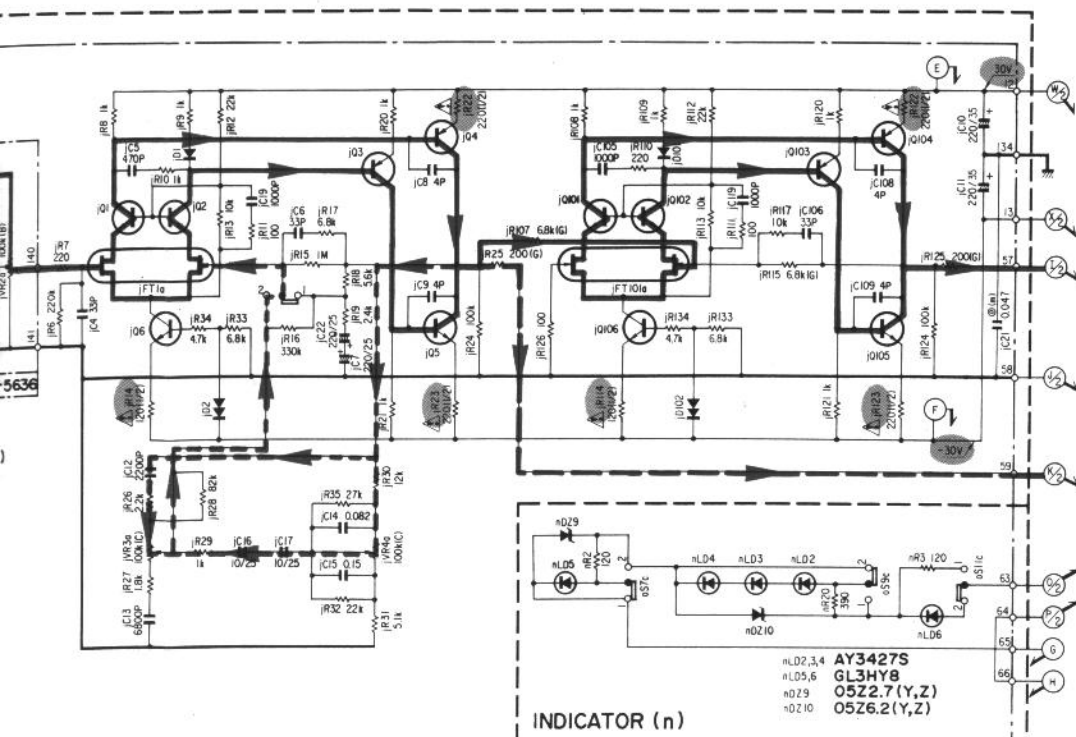
E

F

G

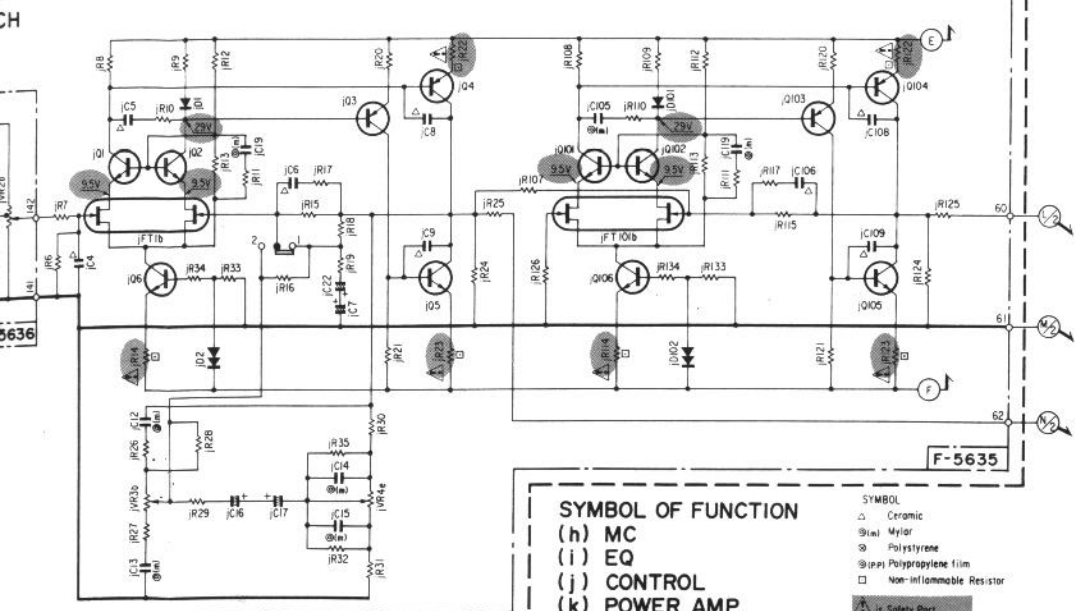
H

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 \* Änderungen, die dem technischen Fortschritt dienen, bleiben vorbehalten.



INDICATOR (n)

nLD2,3,4 AY3427S  
 nLD5,6 GL3HY8  
 nLD9,10 05Z2.7(Y,Z)  
 nLD11 05Z6.2(Y,Z)



# SYMBOL OF FUNCTION

- (h) MC
- (i) EQ
- (j) CONTROL
- (k) POWER AMP
- (l) PROTECTOR
- (m) POWER SUPPLY
- (n) INDICATOR
- (o) SELECTOR
- (p) FIXED PARTS

SYMBOL  
 △ Ceramic  
 ⊗/m/ Polystyrene  
 ⊗/p/ Polypropylene film  
 □ Non-Inflammable Resistor

⚠ Safety Part  
 Use only replacement parts recommended by the manufacturer

RESISTORS  
 Are in ohms, 1/4 Watts, ±5% Tolerance Unless otherwise noted. k, M, MQ

TOLERANCE  
 ± 2%

CAPACITORS  
 Are in pF, Unless otherwise noted. p, pF

ELECTROLYTIC CAPACITOR  
 Capacitance (μF) / Volt (V)

- SWITCHES
- 051 CARTRIDGE SELECTOR
  - 1. MC
  - 052 REC SELECTOR
  - 1. TUNER
  - 2. OFF
  - 3. SOURCE
  - 4. 1-2,3
  - 5. 2-1,3
  - 054 LINE SELECTOR
  - 1. CD
  - 2. LINE
  - 3. TUNER
  - 4. PHONO
  - 055 TAPE SELECTOR
  - 1. TAPE 3
  - 2. TAPE 2
  - 3. TAPE 1
  - 4. TAPE / LINE
  - 056-1 MUTING
  - 1. OFF 2. ON
  - 056-2 SUBSONIC
  - 1. OFF 2. ON
  - 057-1 LOUDNESS
  - 1. OFF 2. ON
  - 057-2 PROCESSOR
  - 1. SOURCE
  - 2. RETURN
  - 059 SOURCE DIRECT
  - 1. OFF 2. ON
  - 0511 TONE
  - 1. OFF 2. ON

\* FTZ MODEL only

2SA992  
 2SA1049  
 2SA1145  
 2SC1815  
 2SC1845  
 2SC2705

2SD357  
 2SA1438  
 2SC3851

2SA1115  
 2SC2459  
 2SC2603

2SK163  
 2SA1386  
 2SC3519

2SK389  
 2SA1306  
 2SC3298

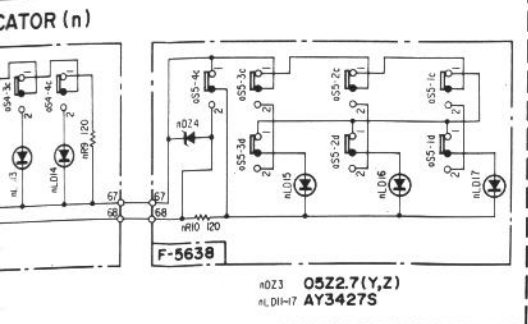
TA7317P  
 M5219L

FMG-22S  
 UB-152LFF

FMG-22R  
 1S1588  
 1S2091  
 1S2473D  
 10E2  
 11E2

MV12  
 MV103

05Z2.7  
 05Z6.2  
 05Z7.5  
 05Z20  
 05Z24  
 05Z33  
 RD6.2E  
 RD22F



nDZ3 05Z2.7(Y,Z)  
 nLD11-17 AY3427S

- Signal Line (HOT Amp.)
- Signal Line (COLD Amp.)
- N.F.B. Line

1

2

3

4

5

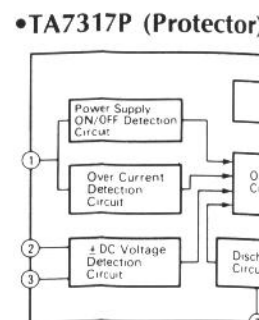
③



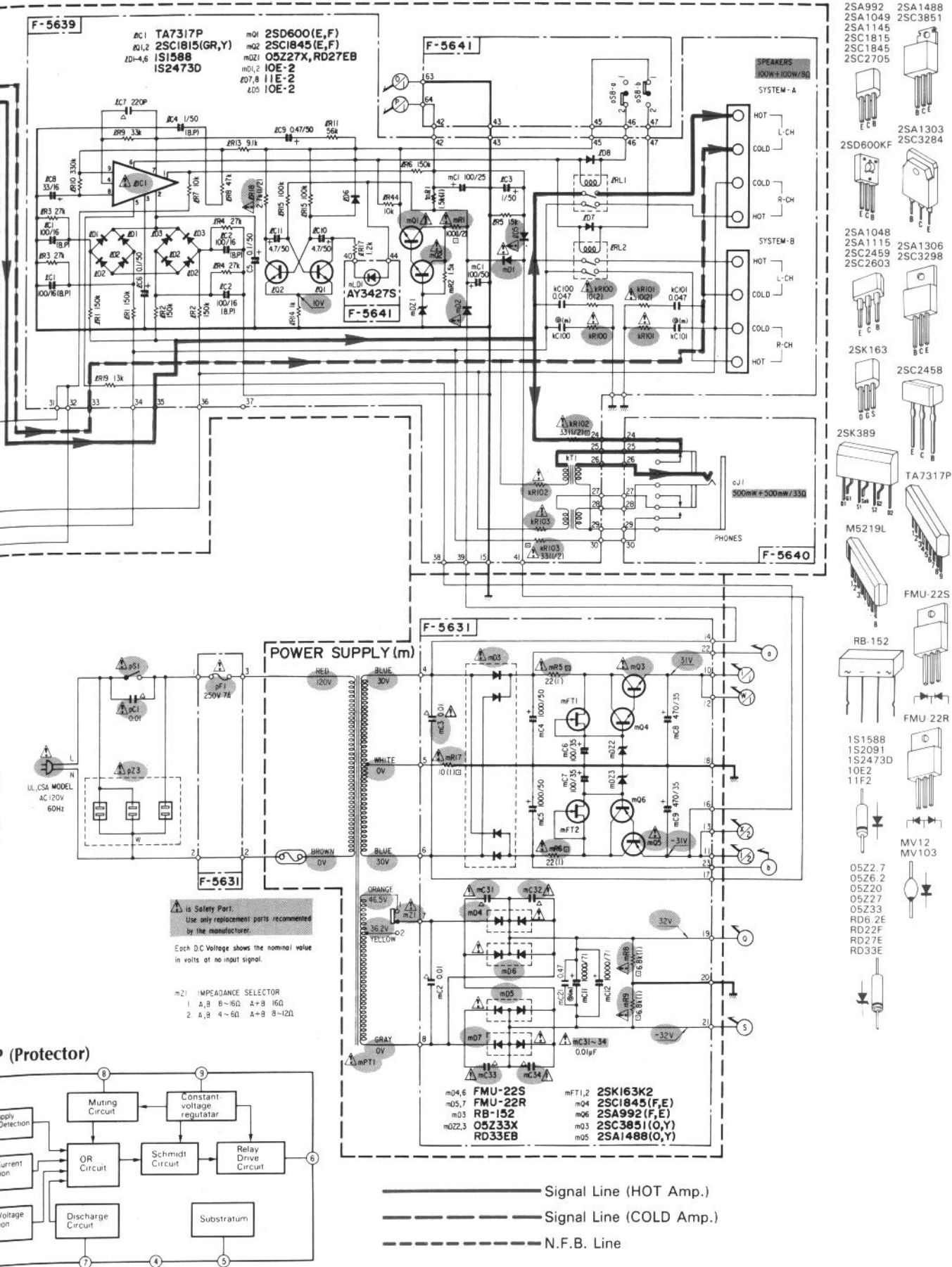
CAPACITORS  
are in  $\mu\text{F}$ , Unless Otherwise  
Noted P/pF

ELECTROLYTIC CAPACITANCE  
Capacitance( $\mu\text{F}$ )/Volt(V)

TOLERANCE  
C ± 2%



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\* Änderungen, die dem technischen Fortschritt dienen, bleiben vorbehalten.



1

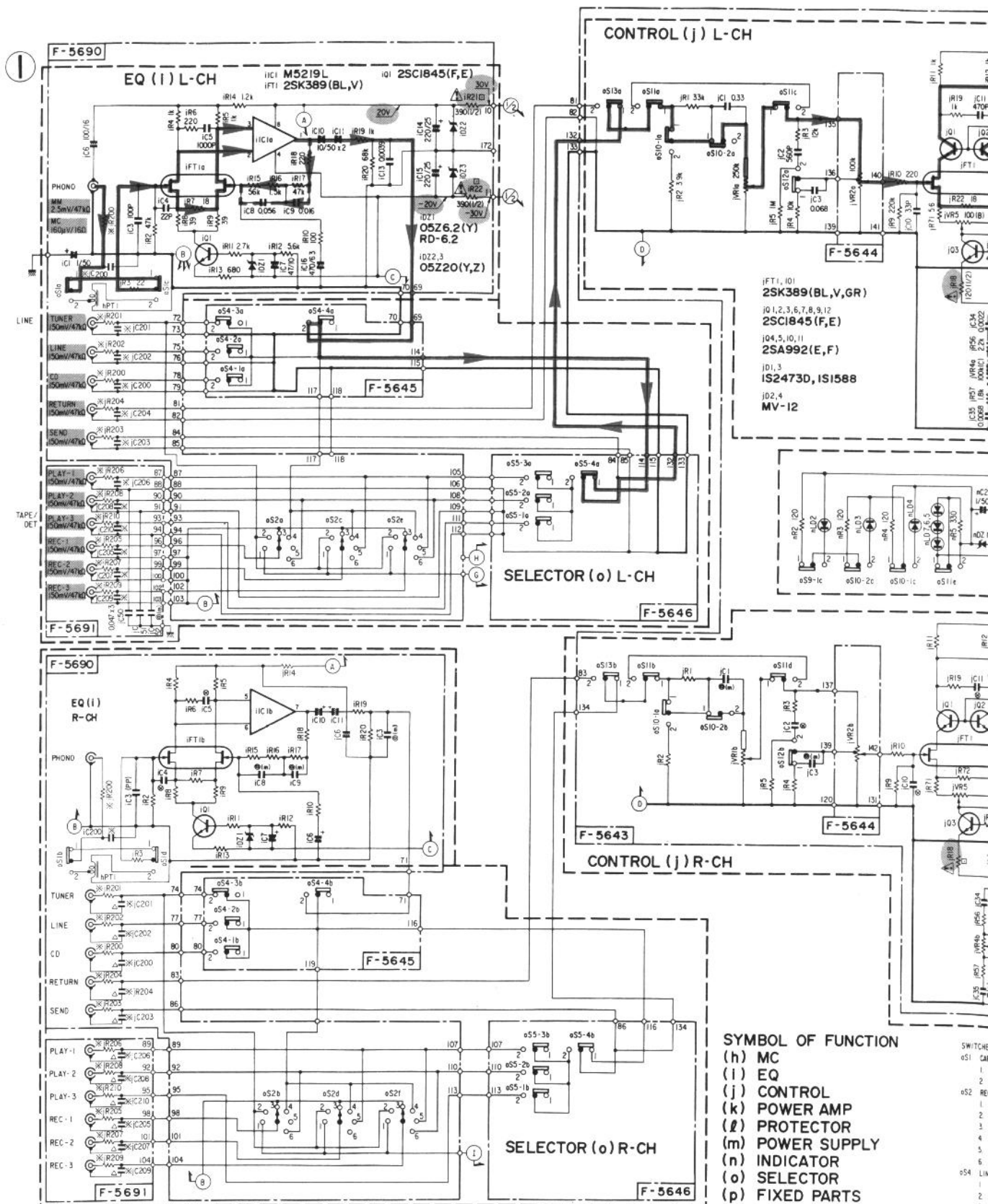
2

3

4

5







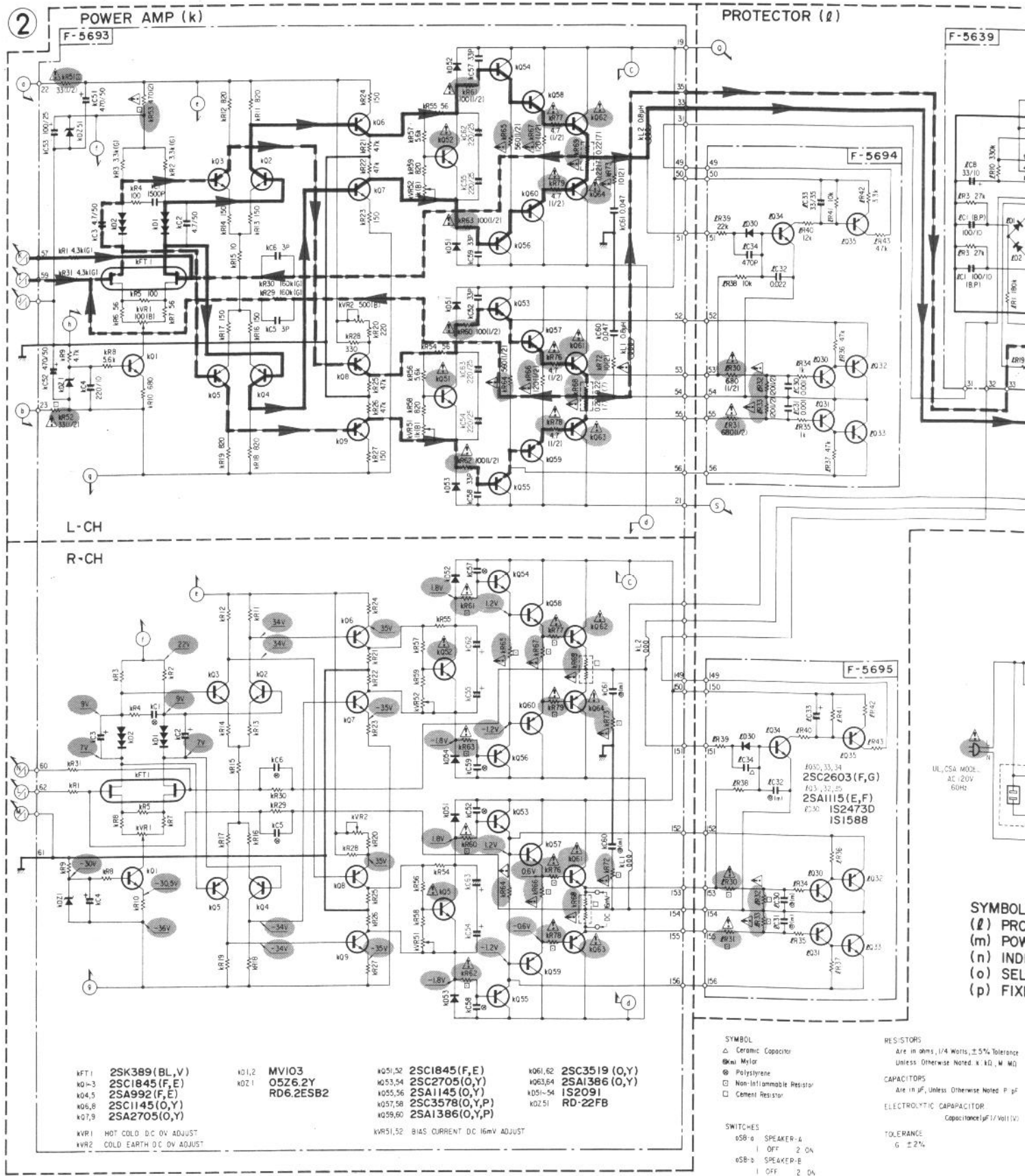
A

B

C

D

## 6-5. Power Amp &amp; Power Section &lt;AU-X901&gt;



SYMBOL

(l) PROTECTOR

(m) POWER

(n) INDICATOR

(o) SELECTOR

(p) FIXTURE

**RESISTORS**

Are in ohms, 1/4 Watts,  $\pm 5\%$  Tolerance Unless Otherwise Noted: K, M, W, MQ

**CAPACITORS**

Are in  $\mu F$ , Unless Otherwise Noted: P, pF

**ELECTROLYTIC CAPACITOR**

Capacitance  $\mu F/Volts$

**TOLERANCE**

G  $\pm 2\%$

**SWITCHES**

058 a SPEAKER-A  
1 OFF 2 ON  
058 b SPEAKER-B  
1 OFF 2 ON



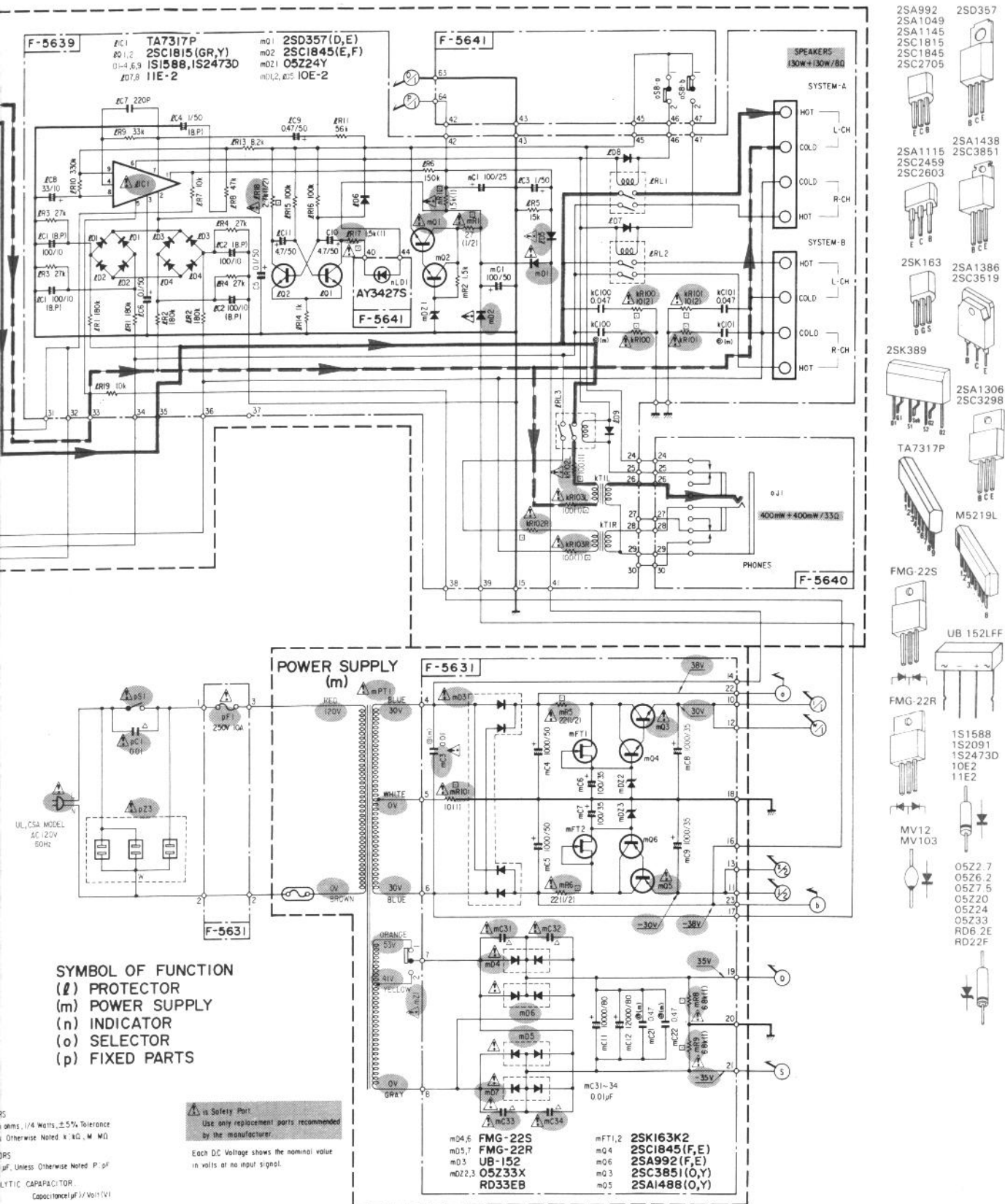
E

F

G

H

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 \* Änderungen, die dem technischen Fortschritt dienen, bleiben vorbehalten.



— Signal Line (HOT Amp.)  
 — Signal Line (COLD Amp.)  
 - - - N.F.B. Line

A

B

C

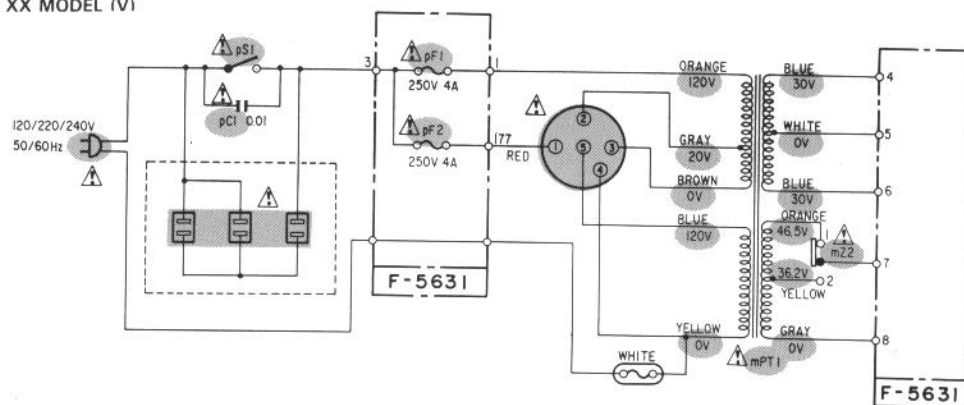
D

## 6-6. Power Supply (Primary Side) Section &lt;AU-X701&gt;

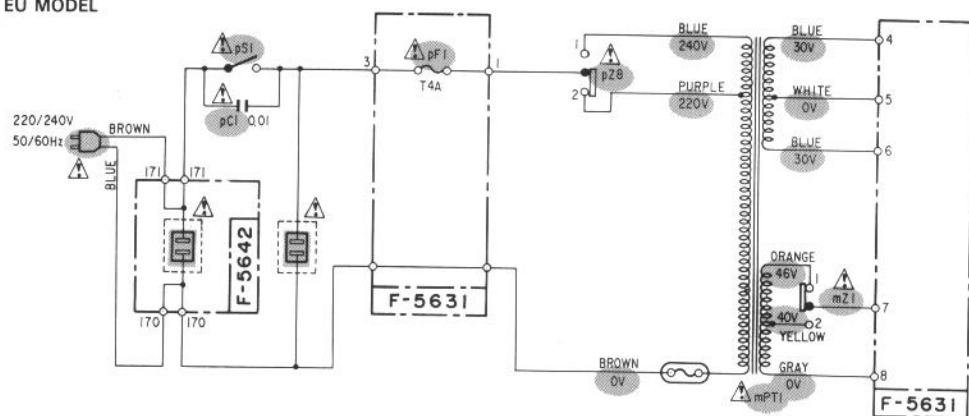
•AU-X701

4

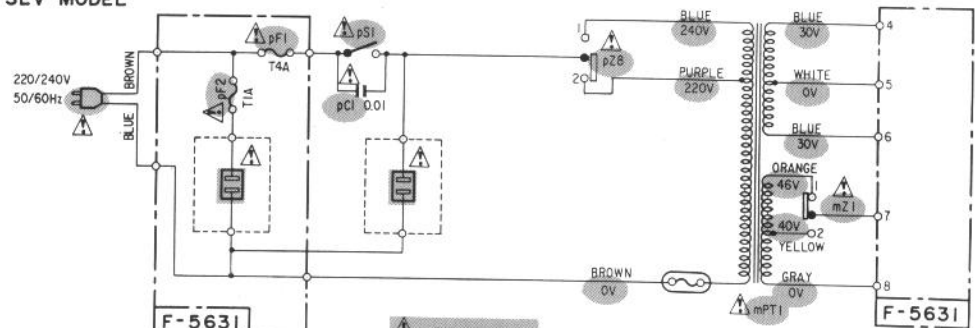
XX MODEL (V)



EU MODEL



SEV MODEL



pZ8 VOLTAGE SELECTOR  
1. 240V 2. 220V

mZ1 SPEAKER IMPEADANCE SELECTOR  
1. A+B 8~12Ω, A,B 4~16Ω  
2. A+B 16Ω, A,B 8~16Ω

⚠ is Safety Part.  
Use only replacement  
parts recommended  
by the manufacturer.

E

F

G

H

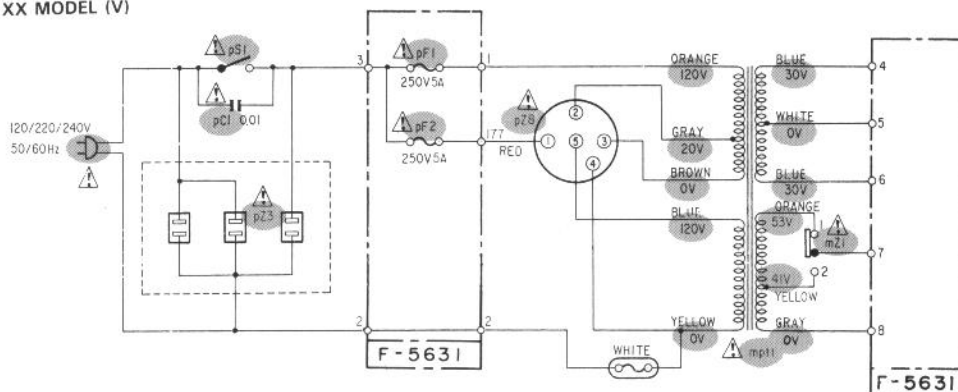
\* Design and specifications subject to change without notice for improvement.  
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 \* Änderungen, die dem technischen Fortschritt dienen, bleiben vorbehalten.

## 6-7. Power Supply (Primary Side) Section <AU-X901>

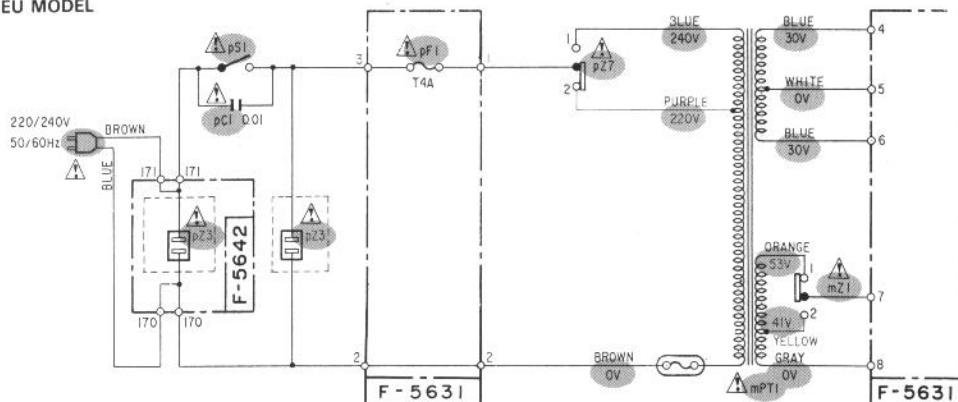
### •AU-X901

③

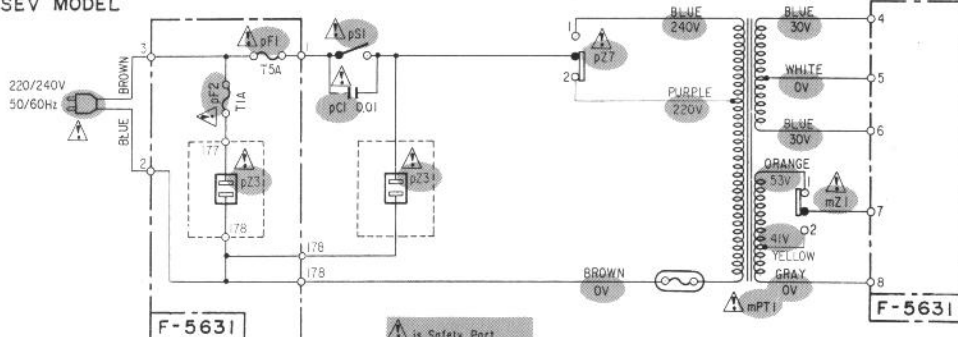
XX MODEL (V)



EU MODEL



SEV MODEL

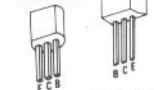


pZ7 VOLTAGE SELECTOR  
 1. 240V 2. 220V

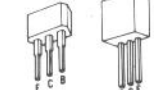
mZ1 SPEAKER IMPEADANCE SELECTOR  
 1. A or B 8-16Ω A and B 16Ω  
 2. A or B 4-6Ω A and B 8-12Ω

⚠ is Safety Part.  
 Use only replacement  
 parts recommended  
 by the manufacturer.

2SA992 2SD357  
 2SA1049  
 2SA1145  
 2SC1815  
 2SC1845  
 2SC2705



2SA1115 2SA1438  
 2SC2459 2SC3851  
 2SC2603



2SK163 2SA1386  
 2SC3519



2SK389 2SA1306  
 2SC3298



TA7317P M5219L



FMG-22S UB-152LFF



FMG-22R 1S1588  
 1S2091 1S2473D  
 10E2 11E2



MV12 MV103 05Z2.7  
 05Z6.2 05Z7.5  
 05Z20 05Z24  
 05Z33 RD6 2E  
 RD22F



05Z2.7 05Z6.2 05Z7.5  
 05Z20 05Z24 05Z33  
 RD6 2E RD22F



05Z2.7 05Z6.2 05Z7.5  
 05Z20 05Z24 05Z33  
 RD6 2E RD22F



05Z2.7 05Z6.2 05Z7.5  
 05Z20 05Z24 05Z33  
 RD6 2E RD22F



1

2

3

4

5



## 7. ADJUSTMENT

**Condition:** 1. Master Volume ..... Minimum  
2. Room Temperature ..... 18°C ~ 28°C (65°F ~ 83°F)

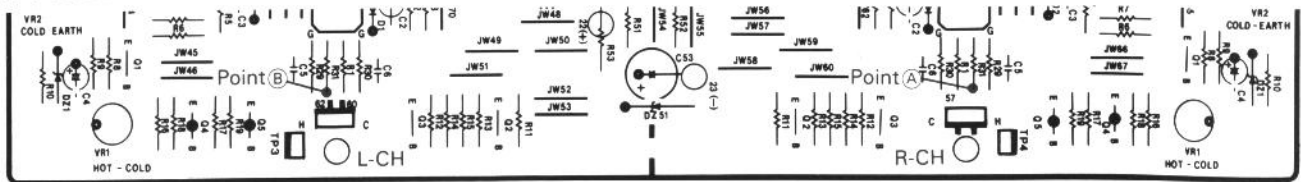
### 7-1. F-5693 Power Amp. Adjustment

STEP	SUBJECT	MEASURE OUTPUT	ADJUST	ADJUST FOR	REMARKS
1.	Center DC 0V Adj. <L-ch>	DC Voltage between Speaker Terminals COLD and GND <L-ch>	kVR2L	DC 0V $\pm$ 3 mV	<ul style="list-style-type: none"> <li>Set Speaker-A switch to "ON".</li> <li>Set the POWER AMP DIRECT &lt;AU-X901&gt; switch to normal position.</li> </ul>
2.	Center DC 0V Adj. <R-ch>	DC Voltage between Speaker Terminals COLD and GND <R-ch>	kVR2R	DC 0V $\pm$ 3 mV	
3.	Hot/Cold Balance Adj. <L-ch>	DC Voltage between Speaker Terminal HOT and GND. <L-ch>	kVR1L	DC 0V $\pm$ 3 mV	
4.	Hot/Cold Balance Adj. <R-ch>	DC Voltage between Speaker Terminal HOT and GND. <R-ch>	kVR1R	DC 0V $\pm$ 3 mV	

### 7-2. F-5643 Tone Control Amp. Adjustment <AU-X901>

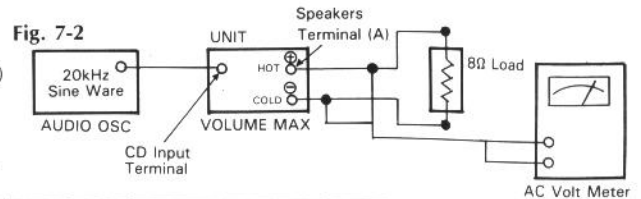
STEP	SUBJECT	MEASURE OUTPUT	ADJUST	ADJUST FOR	REMARKS
1.	Center DC 0V Adj. <L-ch>	DC Voltage between F-5693 Point(A) (kR31) and Chassis (See Fig. 7-1)	jVR5L	DC 0V $\pm$ 3 mV	<ul style="list-style-type: none"> <li>For this adjustment, remove the front panel.</li> <li>Set the POWER AMP DIRECT switch to integrated position.</li> <li>Set Speaker-A switch to "ON".</li> </ul>
2.	Center DC 0V Adj. <R-ch>	DC Voltage between F-5693 Point(B) (kR31) and Chassis (See Fig. 7-1)	jVR5R	DC 0V $\pm$ 3 mV	
3.	Hot/Cold Balance Adj. <L-ch>	DC Voltage between Speaker Terminals HOT and GND. <L-ch>	jVR6L	DC 0V $\pm$ 3 mV	
4.	Hot/Cold Balance Adj. <R-ch>	DC Voltage between Speaker Terminals HOT and GND. <R-ch>	jVR6R	DC 0V $\pm$ 3 mV	

Fig. 7-1 F-5693



### 7-3. F-5693 Power Amp. Adjustment

- **Note:** Perform this adjustment after the preheating (more than five minutes)  
 \* **Preheating**  
 1. Arrange the connection as shown in Fig. 7-2.  
 2. Set the output level of Audio OSC for obtaining 16.8V (35W) <AU-X701> or 20.6V (53W) <AU-X901> on the AC Volt Meter.  
 3. Set the Volume to minimum position after the preheating.



STEP	SUBJECT	MEASURE OUTPUT	ADJUST	ADJUST FOR	REMARKS
1.	Bias Current Adj. <Hot Side Amp. of L-ch>	DC Voltage between both edges of kR69 <L-ch> (See Fig. 7-3)	kVR52L	DC 17mV $\pm$ 2 mV	<ul style="list-style-type: none"> <li>Set the POWER AMP DIRECT &lt;AU-X901&gt; switch to normal position.</li> <li>After this adjustment position (Bias Current), repeat procedures as stated in 7-1 &amp; 7-2.</li> </ul>
2.	Bias Current Adj. <Cold Side Amp. of L-ch>	DC Voltage between both edges of kR68 <L-ch> (See Fig. 7-3)	kVR51L	DC 17mV $\pm$ 2 mV	
3.	Bias Current Adj. <Hot Side Amp. of R-ch>	DC Voltage between both edges of kR69 <R-ch> (See Fig. 7-3)	kVR52R	DC 17mV $\pm$ 2 mV	
4.	Bias Current Adj. <Cold Side Amp. of R-ch>	DC Voltage between both edges of kR68 <R-ch> (See Fig. 7-3)	kVR51R	DC 17mV $\pm$ 2 mV	

Fig. 7-3 F-5693

