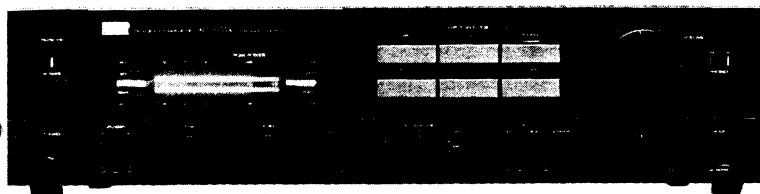


# SERVICE MANUAL

## INTEGRATED AMPLIFIER SANSUI AU-G55X/G33X



### CAUTION

1. Parts identified by the  $\Delta$  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.

**Sansui**

SANSUI ELECTRIC CO., LTD.

### •SPECIFICATIONS

#### Power output <AU-G55X>

Min. RMS, both channels driven, from 20 to 20,000 Hz, with no more than 0.004% total harmonic distortion.

65 watts per channel into 8 ohms.

#### Power output <AU-G33X>

Min. RMS, both channels driven, from 20 to 20,000 Hz, with no more than 0.004% total harmonic distortion.

45 watts per channel into 8 ohms.

Load impedance..... 8 ohms

#### Total harmonic distortion

..... less than 0.004% at or below rated min. RMS power output

#### Intermodulation distortion

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

..... less than 0.004% at rated power output

#### Frequency response (at 1 watt)

Overall (from AUX, CD, TUNER, TAPE PLAY-1, 2) .... DC to 180,000 Hz, +0 dB  
-3.0 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)..... 250  $\mu$ V/100 ohms

(Max. input capability: 15 mV at 1 kHz, less than 0.008% total harmonic distortion)

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

(Max. input capability; 150 mV at 1 kHz, less than 0.005% total harmonic distortion)

CD, AUX..... 150 mV/47 kohms

TUNER, TAPE PLAY-1, 2

..... 150 mV/47 kohms

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

PHONO (MC)..... 67 dB

PHONO (MM)..... 85 dB

CD, AUX..... 105 dB

TUNER, TAPE PLAY-1, 2

..... 105 dB

#### Controls and Filter

BASS..... +10 dB, -8 dB at 50 Hz

TREBLE.....  $\pm$ 7 dB at 10kHz

LOUDNESS ..... +9 dB at 50 Hz

+5 dB at 10kHz

(VOLUME: -30 dB position)

#### FILTERS

LOW..... -3 dB at 20 Hz (6 dB/oct)

HIGH..... -3 dB at 10 kHz (6 dB/oct)

#### Power requirements <AU-G55X>

Power voltage..... 120/220/240V (50/60 Hz)

For U.S.A. & Canada

..... 120V (60 Hz)

Power consumption.... 290 watts 351 VA Rated

440 watts Maximum

#### Power requirements <AU-G33X>

Power voltage..... 120/220/240V (50/60 Hz)

For U.S.A. & Canada

..... 120V (60 Hz)

Power consumption.... 260 watts 321 VA Rated

400 watts Maximum

#### Dimensions .....

430 mm (16-5/16") W

111 mm (4-3/8") H

329 mm (13") D

#### Weight <AU-G55X> .....

8.4 kg (18.5 lbs) net

9.5 kg (20.9 lbs) packed

#### Weight <AU-G33X> .....

8.1 kg (17.9 lbs) net

9.2 kg (20.3 lbs) packed

\* Design and specifications subject to changes without notice for improvements.

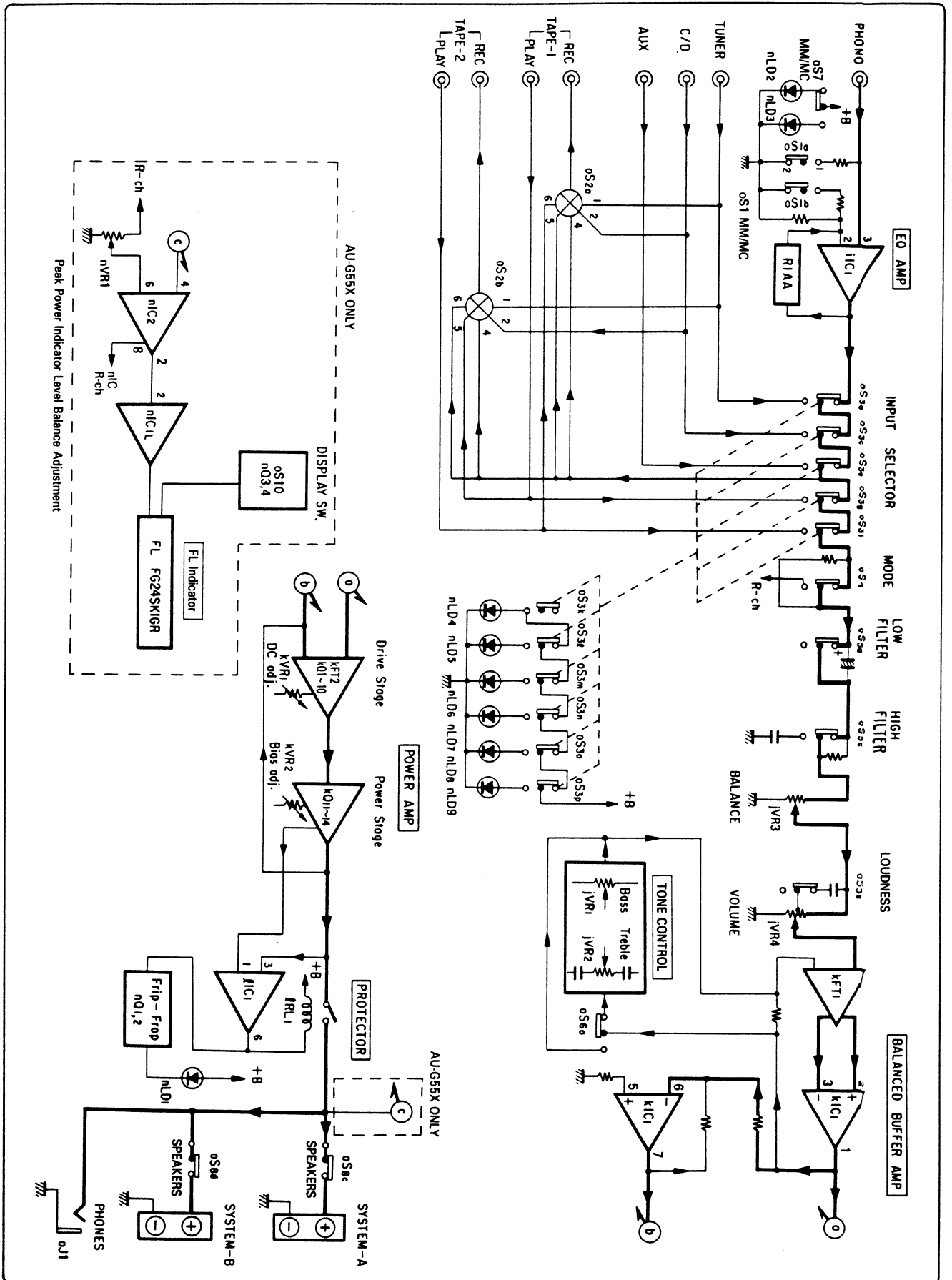
\* Due to local laws and regulations, this unit sold in some areas are not equipped with variable voltage selectors.

### CAUTION

1. The symbols, UL, CSA, SA, BS, UK, EU, AS and XX (EXPORT) on the parts list and the schematic diagram mean followings respectively.
  - UL..... Manufactured for U.S.A market.  
(Underwriters Laboratories approved model.)
  - CSA ..... Manufactured for Canadian market.
  - SA..... Manufactured for South African market.
  - BS, UK ..... Manufactured for United Kingdom market.
  - EU ..... Manufactured for European market.
  - AS..... Manufactured for Australian market.
  - XX (EXPORT) ..... Standard Version.
  - NON MARK ..... Common Parts.
  
2. Some printed circuit boards are not supplied as the assembled. To separate these in this service manual, the stock No's are not indicated at the ends of the board names. However, the individual parts on the circuit boards are provided by orders.
  
3. Since some of capacitors and resistors are omitted from parts lists in this service manual, refer to the Common Parts List for capacitors & resistors, which was issued on February 1983.
  
4. Abbreviations in this service manual are as follows.

•Abbreviations List	
C.R. : Carbon Resistor	E.B.L. : Low Leak Bi-Polar Electrolytic Capacitor
S.R. : Solid Resistor	Ta.C. : Tantalum Capacitor
Ce.R. : Cement Resistor	F.C. : Film Capacitor
M.R. : Metal Film Resistor	M.P. : Metalized Paper Capacitor
F.R. : Fusing Resistor	P.C. : Polystyrene Capacitor
N.I.R. : Non-Inflammable Resistor	G.C. : Gimmic Capacitor
A.R. : Array Resistor	A.C. : Array Capacitor
C.C. : Ceramic Capacitor	V.R. : Variable Resistor
C.T. : Ceramic Capacitor, Temperature Compensation	S.V.R. : Semi Variable Resistor
E.C. : Electrolytic Capacitor	SW. : Switch
E.L. : Low Leak Electrolytic Capacitor	Chip R. : Chip Resistor
E.B. : Bi-Polar Electrolytic Capacitor	Chip C. : Chip Capacitor

# 1. BLOCK DIAGRAM



## 2. ADJUSTMENT (See Top View on page 8)

### 2-1. Driver Circuit Adjustment

- Note:**
- 1) Master Volume .... Minimum
  - 2) Room Temperature ... 18°C ~ 28°C (65°F ~ 83°F)
  - 3) For this adjustment, run the unit for more than 20 minutes after the power is switched ON.
  - 4) Before turning ON power switch, set kVR1 on F-4702 to center position.
  - 5) Before turning ON power switch, set kVR2 on F-4702 fully counterclockwise.

STEP	SUBJECT	MEASURE OUTPUT	ADJUST	ADJUST FOR	REMARKS
1.	DC 0V Adj. L-CH	Speaker Terminal (L-ch)	kVR1, L-ch (F-4702)	DC 0V ± 5 mV	
2.	DC 0V Adj. R-CH	Speaker Terminal (R-ch)	kVR1, R-ch (F-4702)	DC 0V ± 5 mV	
3.	Bias Current Adj. L-CH	Between emitters of power transistors (kQ13 & kQ14) (Across kR50L)	kVR2, L-ch (F-4702)	DC 10mV ± 3 mV	
4.	Bias Current Adj. R-CH	Between emitters of power transistors (kQ13 & kQ14) (Across kR50R)	kVR2, R-ch (F-4702)	DC 10mV ± 3 mV	

### 2-2. PEAK POWER Indicator Level Balance Adjustment

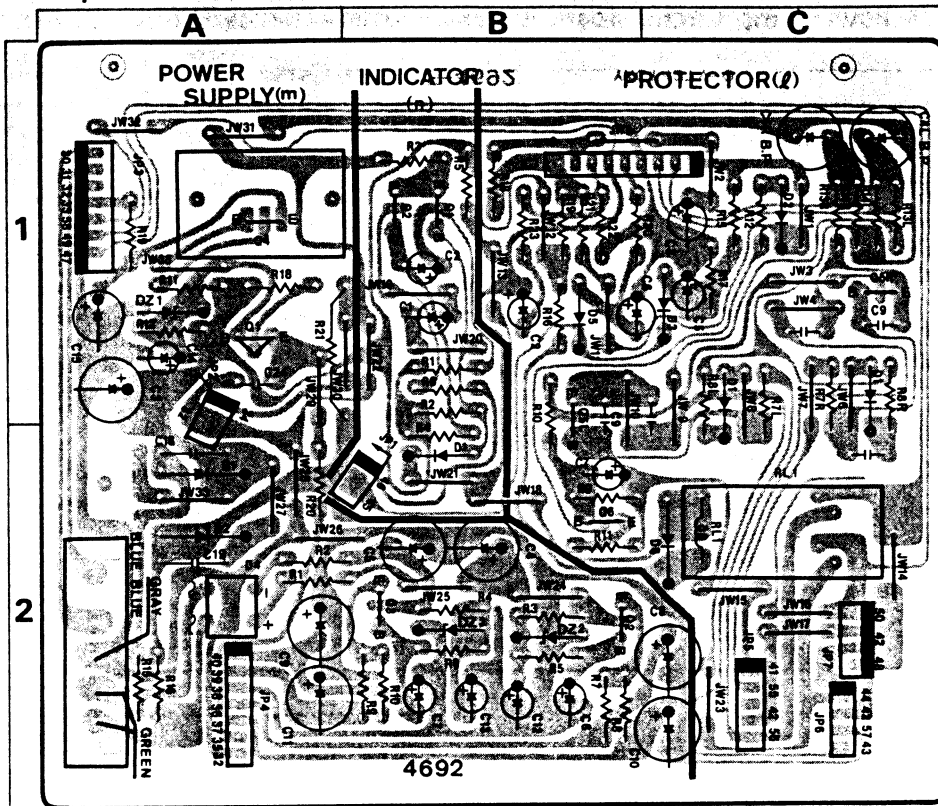
**Note:** Before adjustment, turn nVR1 on F-4705 fully clockwise from conductor side.

STEP	SUBJECT	SETTING	ADJUSTMENT
1.	PEAK POWER Indicator Level Balance Adjustment	1. Feed 1kHz sine-wave signal from audio oscillator to AUX terminals, L-ch and R-ch of the unit. 2. Turn the master volume until the 11th segment from the left of the L-ch indicator just turns on.	1. Turn nVR1 slowly counterclockwise until the same segment of the R-ch just turns on.



3-3. F-4692 Protector Circuit Board (Stock No. 00835301 = AU-G55X/Stock No. 00833401 = AU-G33X)

Component Side

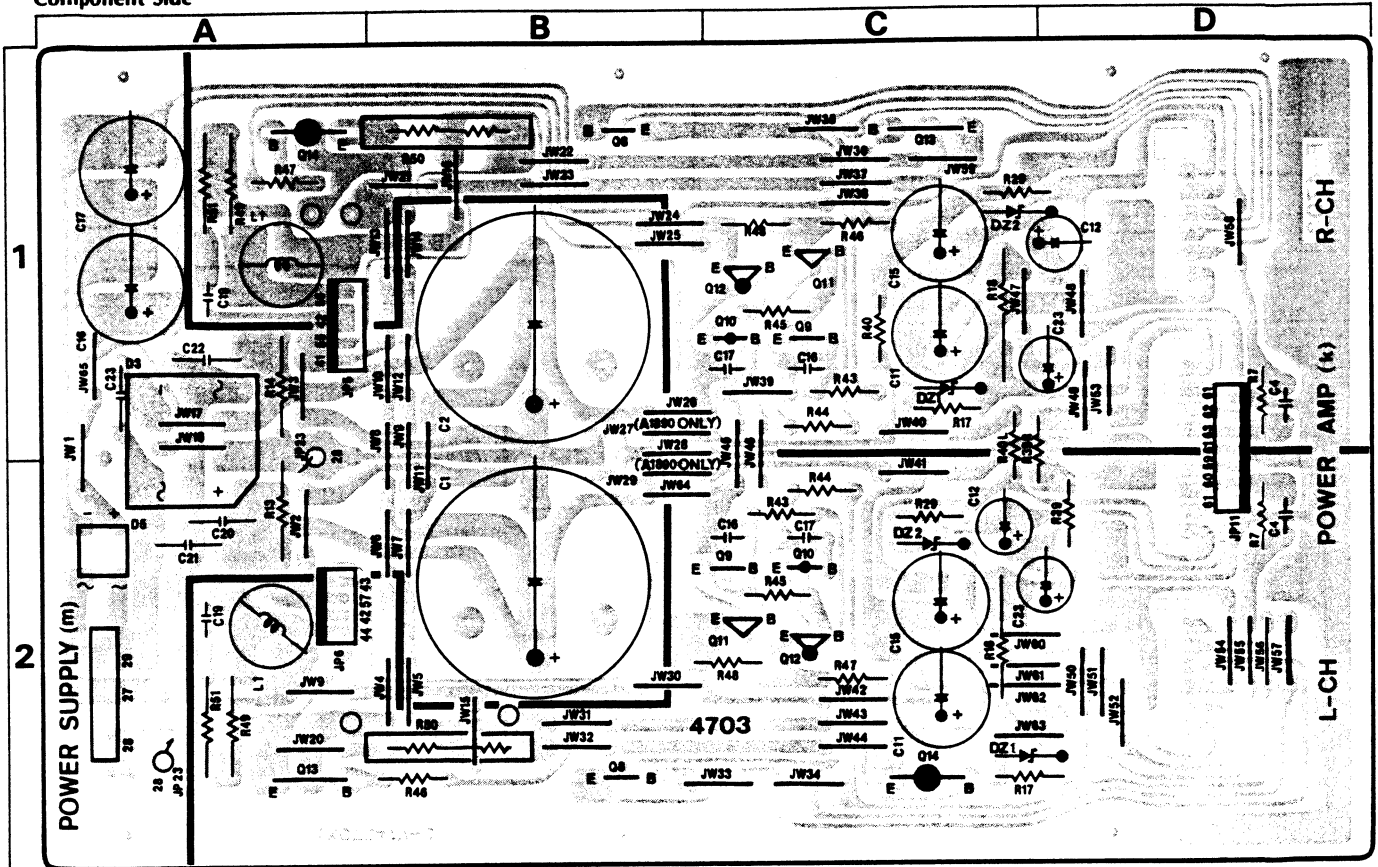


Parts List

Parts No.	Stock No.	Description	Parts No.	Stock No.	Description
• Transistor			△ mR1	46227400	4.7Ω 1/2W N.I.R.
IQ5	46581701	2SC1845	△ mR2	46227400	4.7Ω 1/2W N.I.R.
IQ6	46581601	2SA992	△ mR7	46228200	22Ω 1/2W N.I.R.
• IC			△ mR8	46228800	68Ω 1/2W N.I.R.
△ IIC1	46207600	TA7317P	△ mR9	46228800	68Ω 1/2W N.I.R.
• Diode			△ mR10	46228200	22Ω 1/2W N.I.R.
ID1	03117600	1S2473T77	△ mR11	46228600	47Ω 1/2W N.I.R. (AU-G55X)
ID2	03117600	1S2473T77	△ mR15	46227200	3.3Ω 1/2W N.I.R.
ID3	03117600	1S2473T77	△ mR16	46227200	3.3Ω 1/2W N.I.R.
ID5	03117600	1S2473T77	△ mR18	46229100	120Ω 1/2W N.I.R.
ID6	03117700	10E-2	△ mR19	46227800	10Ω 1/2W N.I.R. (AU-G55X)
IC2	46310700	0.47μF 100V E.C.	△ mR20	46229800	470Ω 1/2W N.I.R.
IC3	46295200	47μF 16V E.C.	△ mR21	46908900	82Ω 3W N.I.R. (AU-G55X)
IC4	48145900	220μF 6.3V E.B.	mC3	46300600	220μF 35V E.C.
IC5	46302400	1μF 50V E.C.	mC4	46300600	220μF 35V E.C.
IC6	46300000	47μF 35V E.C.	mC5	46300600	220μF 35V E.C.
IC7	46302800	10μF 50V E.C.	mC6	46297700	47μF 25V E.C.
IC9	46283300	0.022μF 50V F.C.	mC7	46297700	47μF 25V E.C.
IRL1	46254900	Relay AP24D2	mC8	46298300	220μF 25V E.C.
△ IR16	46229400	220Ω 1/2W N.I.R.	mC9	46298300	220μF 25V E.C.
• Transistor			mC10	46298300	220μF 25V E.C.
△ mQ1	03083901	2SD313AL	mC11	46298300	220μF 25V E.C.
△	or 46546701	2SD880	mC12	46302400	1μF 50V E.C.
△ mQ2	46614101	2SC3243	mC13	46302400	1μF 50V E.C.
△ mQ3	46614001	2SA1283	mC14	46302400	1μF 50V E.C.
△ mQ4	03083901	2SD313AL (AU-G55X)	mC15	46297800	100μF 25V E.C. (AU-G55X)
△	or 46546701	2SD880 (AU-G55X)	mC18	08680400	0.01μF 500V C.C.
• Diode			mC19	08680400	0.01μF 500V C.C.
△ mD1	03117700	10E-2	• Transistor		
△ mD2	03117700	10E-2	nQ1	46367101	2SC2603
△ mD4	46273600	DBB10-B	or 46367301	2SC2458	
• Zener Diode			or 46391901	2SC2785	
mDZ1	46115100	05Z18-Y	nQ2	46367101	2SC2603
or 46115200	05Z18-Z		or 46367301	2SC2458	
mDZ2	46115400	05Z20-Y	or 46391901	2SC2785	
or 46115500	05Z20-Z		△ nR22	08908100	2.2kΩ 1/4W C.R. (AU-G55)
mDZ3	46115400	05Z20-Y	• Diode		
or 46115500	05Z20-Z		nD1	03117600	1S2473T77
			nC1	46302700	4.7μF 50V E.C.
			nC2	46302700	4.7μF 50V E.C.

3-4. F-4703 Driver Amp & Power Supply Circuit Board (Stock No. 00836401 = AU-G55X/Stock No. 00834401 = AU-G33X)

Component Side



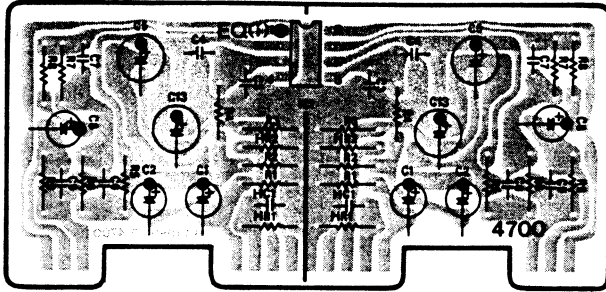
Parts List

Parts No.	Stock No.	Description
• Transistor		
△ kQ8	03067401	2SC1845
kQ9	48113001	2SC2229
kQ10	48112901	2SA949
kQ11	03086101	2SD357
kQ12	03034401	2SB527
△ kQ13	46085301	2SC2581 (AU-G55X)
△	or 48120101	2SC3182 (AU-G55X)
△	07203201	2SA1104 (AU-G33X)
△ kQ14	46085401	2SA1106 (AU-G55X)
△	or 48120001	2SA1265 (AU-G55X)
△	07203301	2SC2579 (AU-G33X)
• Zener Diode		
kDZ1	46115000	05Z18-X
	or 46115100	05Z18-Y
kDZ2	46115600	05Z22-X
	or 46115700	05Z22-Y
△ kR18	46625600	1.2kΩ 2W N.I.R.
△ kR29	46230300	1.2kΩ 1/2W N.I.R.
△ kR39	46228900	82Ω 1/2W N.I.R.
△ kR40	46228900	82Ω 1/2W N.I.R.
△ kR45	46230200	1kΩ 1/2W N.I.R.
△ kR46	46227400	4.7Ω 1/2W N.I.R.

Parts No.	Stock No.	Description
△ kR47	46227400	4.7Ω 1/2W N.I.R.
△ kR48	46229300	180Ω 1/2W N.I.R.
△ kR49	46247300	2.2Ω 1W N.I.R.
△ kR50	46644800	0.22 × 2Ω 5W Ce.R.
△ kR51	46622700	4.7Ω 2W N.I.R.
kC19	46284100	0.1μF 50V F.C.
kL1	42903700	Inductor 1μH
• Diode		
△ mD3	46864000	RB602
△	or 46865300	DBA60C
△ mD5	46273700	DBB10-C (AU-G55X)
△ mR13	46251600	8.2k 1W N.I.R.
△ mR14	46241600	8.2k 1W N.I.R.
mC1	48076400	10000μF 63V E.C. (AU-G55X)
	48076300	8200μF 56V E.C. (AU-G33X)
mC2	48076400	10000μF 63V E.C. (AU-G55X)
	48076300	8200μF 56V E.C. (AU-G33X)
mC20	08680400	0.01μF 500V C.C.
mC21	08680400	0.01μF 500V C.C.
mC22	08680400	0.01μF 500V C.C.
mC23	08680400	0.01μF 500V C.C.

3-5. F-4700 EQ Amp Circuit Board (Stock No. 00836101)

Component Side

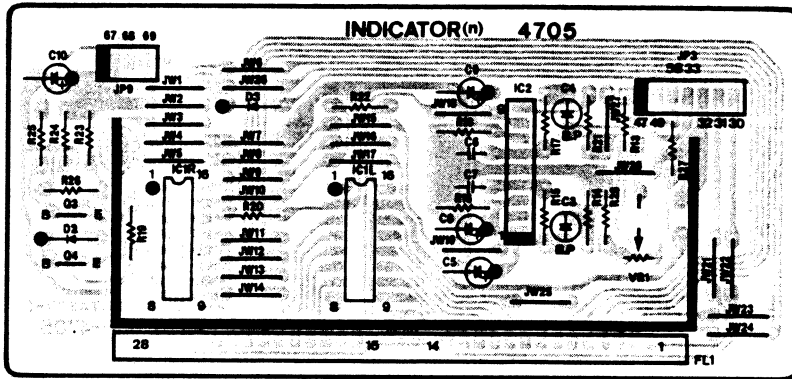


Parts List

Parts No.	Stock No.	Description
hC1	46653600	150pF 100V F.C.
•IC		
iIC1	46638700	M5220P
iC3	46654000	220pF 100V F.C.
iC4	46653200	100pF 100V F.C.
iC6	46697000	0.056μF 50V F.C.
iC7	46695700	0.016μF 50V F.C.
iC9	46282400	3300pF 50V F.C.

3-6. F-4705 F.L Indicator Circuit Board (Stock No. 00836601) <AU-G55X only>

Component Side



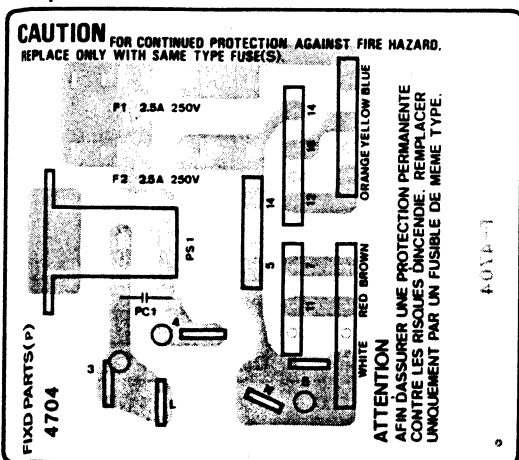
Parts List

Parts No.	Stock No.	Description
•Transistor		
nQ3	46367101	2SC2603
	or 46367301	2SC2458
	or 46391901	2SC2785
nQ4	46367101	2SC2603
	or 46367301	2SC2458
	or 46391901	2SC2785
•IC		
niC1	46254700	HA12010
niC2	03610000	TA7318P

Parts No.	Stock No.	Description
•Diode		
nD2	03117600	1S2473T77
nD3	03117600	1S2473T77
nFL1	46526600	FL. Display Tube FG24SK6GR
nC3	48103200	0.47μF 50V E.B.
nC4	48103200	0.47μF 50V E.B.
nC6	46282900	0.01μF 50V F.C.
nC7	46282900	0.01μF 50V F.C.
nVR1	07241100	2kΩ S.V.R., meter level adj.

3-7. F-4704 POWER SW. Board

Component Side



Parts List

Parts No.	Stock No.	Description
△pC1	46425800	0.01μF 400V C.C
△pF1	07188800	Fuse 3.0A 250V (AU-G55X XX)
△	07189200	Fuse 6.0A 250V (AU-G55X UL, CSA)
△	07184900	Fuse 1.6A 250V (AU-G55X EU)
△	07188700	Fuse 2.5A 250V (AU-G33X XX)
△	07189100	Fuse 5.0A 250V (AU-G33X UL, CSA)
△	07184800	Fuse 1.25A 250V (AU-G33X EU)
△pF2	07188800	Fuse 3.0A 250V (AU-G55X XX)
△	07188700	Fuse 2.5A 250V (AU-G33X XX)
△pS1	48113300	Push SW., POWER (XX, EU)
△	48065100	Push SW., POWER (UL, CSA)





### 3-11. F-4690 Input Terminal Board

Component Side

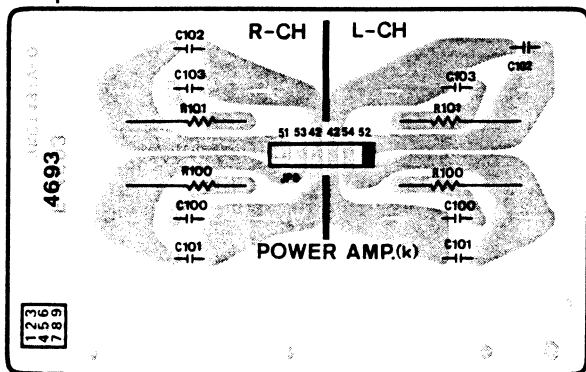


Parts List

Parts No.	Stock No.	Description
oZ3	46363800	Terminal Board 4P, TAPE-1
oZ4	46363800	Terminal Board 4P, TPAE-2/PCM

### 3-12. F-4693 SPEAKERS Terminal Board

Component Side

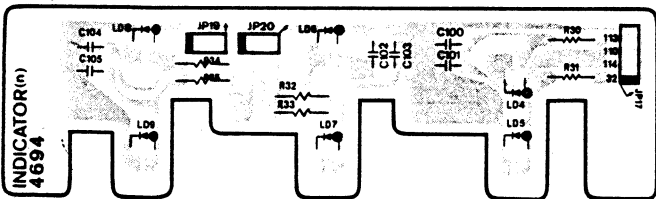


Parts List

Parts No.	Stock No.	Description
oZ5	48123100	Terminal Board 8P, SPEAKER

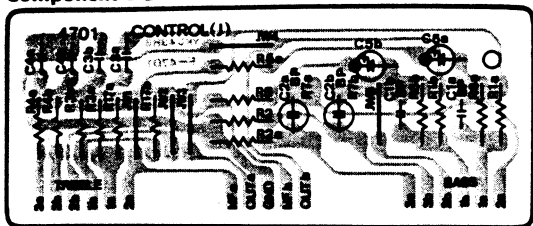
### 3-13. F-4694 Indicator Board

Component Side



### 3-18. F-4701 Control Board

Component Side

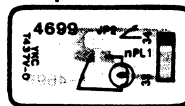


Parts List

Parts No.	Stock No.	Description
jC1	46697300	0.075 $\mu$ F 50V F.C.
jC2	46936900	0.15 $\mu$ F 50V E.B.
jC3	46695500	0.013 $\mu$ F 50V F.C.
jC4	46283500	0.033 $\mu$ F 50V F.C.

### 3-19. F-4699 Pilot Lamp Board <AU-G55X only>

Component Side

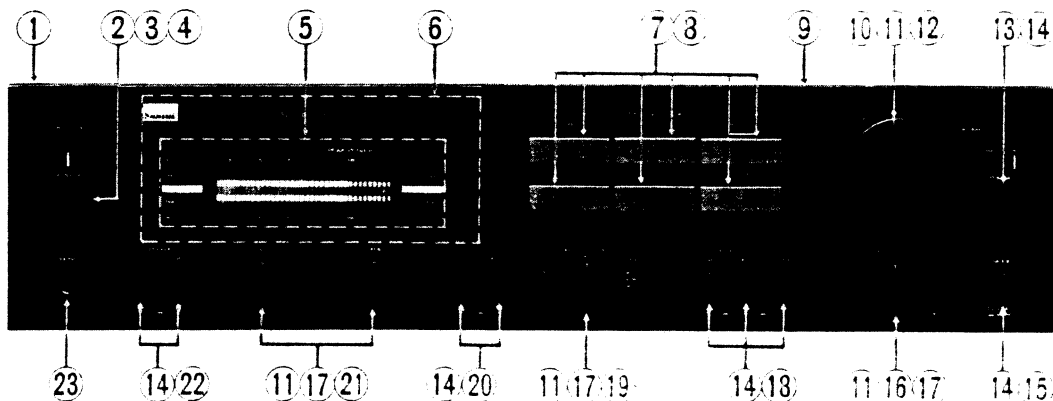


Parts List

Parts No.	Stock No.	Description
nPL1	46315900	Pilot Lamp 0.15A 12V

## 4. OTHER PARTS

### 4-1. Front View

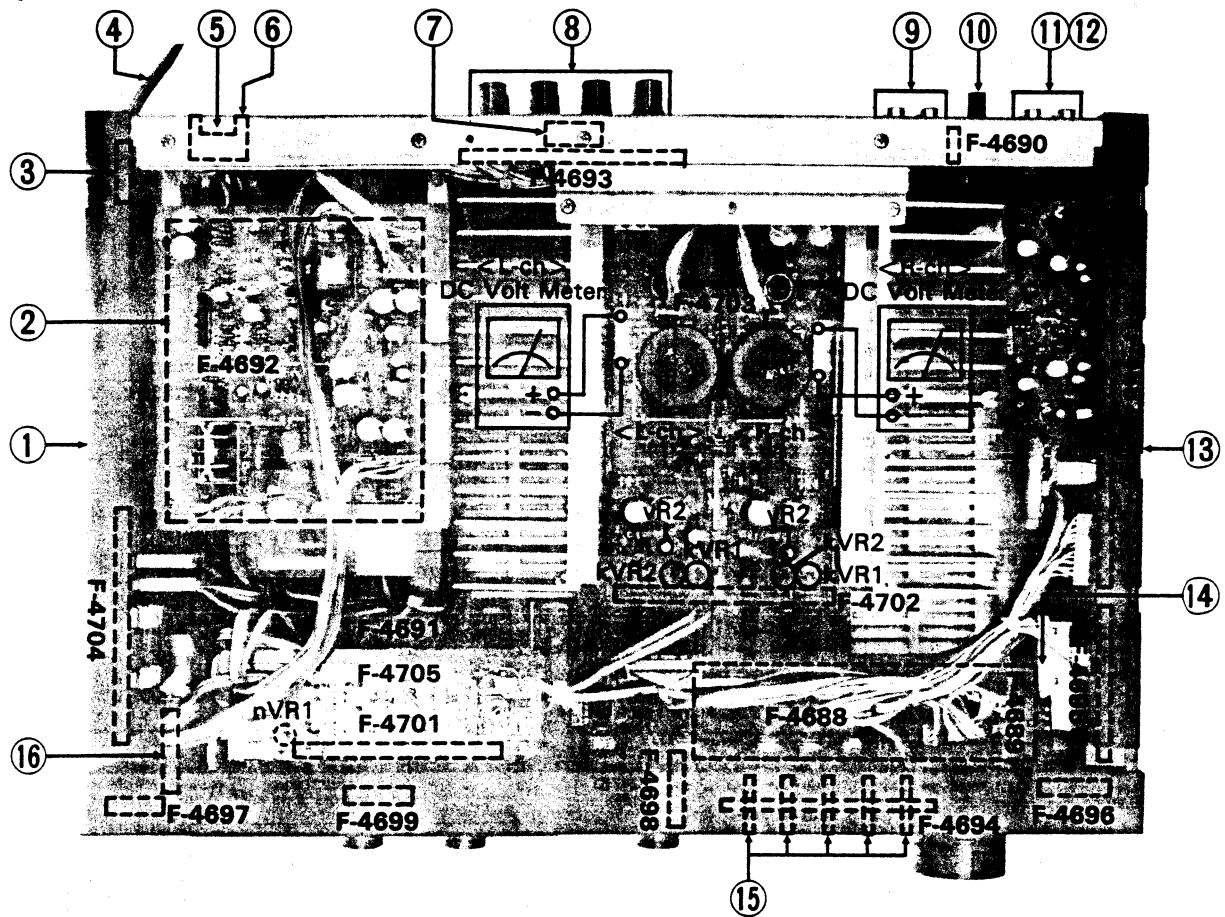


Parts List <Front View>

Parts No.	Stock No.	Description
1	47648500	Front Panel Ass'y (AU-G55X)
	47648400	Front Panel Ass'y (AU-G33X)
2	47633700	Knob, POWER
3	47637300	Joint Shaft (1)
Δ 4	48113300	Push SW., POWER (XX, EU)
Δ 4	48065100	Push SW., POWER (UL, CSA)
5	46526600	FL. Display Tube (AU-G55X only)
6	47637000	Display Plate (AU-G55X only)
7	48076800	Push SW., INPUT SELECTOR
8	47637400	Joint Shaft (2)
9	47703600	Bonnet (XX, UL, CSA)
	47648300	Bonnet (EU)
10	48077600	150k $\Omega$ (B) x 2 V.R., VOLUME
11	<del>47636600</del>	FS Holder <i>4728 7500 ?</i>
12	47636400	Knob, VOLUME

Parts No.	Stock No.	Description
13	48077300	Push SW., PHONO
14	47636300	Push Knob, PHONOMODE, LOW, HIGH, LOUDNESS, TONE, DISPLAY, SPEAKER
15	48077000	Push SW., MODE
16	48077400	250k $\Omega$ (MN) V.R., BALANCE
17	47636600	Knob, BALANCE, REC SELECTOR, TREBLE, BASS
18	48076900	Push SW., LOW, HIGH, LOUDNESS
19	48077700	Rotary Flex with Flexible Wire, REC SELECTOR
	48077000	Push SW., DISPLAY, TONE
21	48077500	50k $\Omega$ (C) V.R., TREBLE, BASS
22	48077200	Push SW., SPEAKERS
23	46579600	Jack, PHONES

4-2. Top View



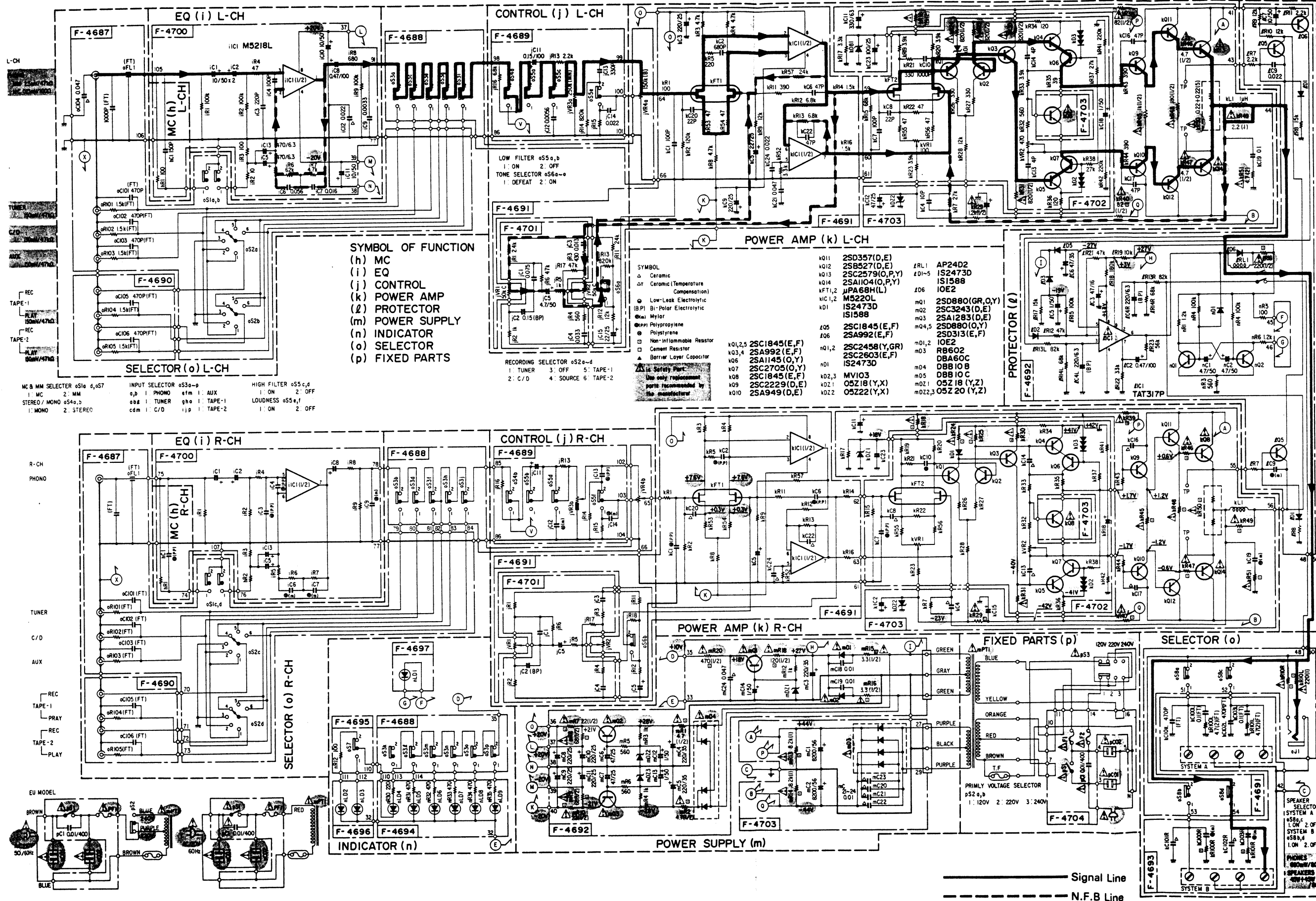
Parts List <Top View>

Parts No.	Stock No.	Description
1	47608900	Side Panel Ass'y (L)
△ 2	15018101	Power Transformer (AU-G55X XX)
△	15018102	Power Transformer (AU-G55X UL, CSA)
△	15018105	Power Transformer (AU-G55X EU)
△	15018001	Power Transformer (AU-G33X XX)
△	15018002	Power Transformer (AU-G33X UL, CSA)
△	15018005	Power Transformer (AU-G33X EU)
3	47157300	AC Cord Cover
△ 4	48004700	Power Supply Cord (XX)
△	46407700	Power Supply Cord (UL, CSA)
△	46128900	Power Supply Cord (EU)
△ 5	48062100	Slide SW., VOLTAGE SELECTOR (XX)
△	07204700	Slide SW., VOLTAGE SELECTOR (EU)

Parts No.	Stock No.	Description
△ 6	48076600	AC OUTLET (XX, UL, CSA)
△	46161000	AC OUTLET (EU)
7	46739400	Slide SW., SPEAKER IMPEDANCE SELECTOR (AU-G55X XX, EU)
	46736600	Slide SW., SPEAKER IMPEDANCE SELECTOR (AU-G55X UL, CSA)
8	48123100	8P Terminal Board, SPEAKERS
9	46363800	4P Terminal Board, TAPE-1-TAPE-2/PCM
10	22301510	Ground Terminal
11	46438100	2P Terminal Board, PHONO
12	46546800	6P Terminal Board, TUNER, CD, AUX
13	47638600	Side Panel Ass'y (R)
14	48077900	Flexible Wire
15	47637400	Joint Shaft (2)
16	47637300	Joint Shaft (1)

5-2. AU-G33X

• 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.



**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  
 △ Ceramic (Temperature Compensation)  
 ○ Low-Leak Electrolytic  
 (BP) Bi-Polar Electrolytic  
 ● Mylar  
 ● Polypropylene  
 ○ Polystyrene  
 □ Non-Inflammable Resistor  
 □ Cement Resistor  
 ▲ Barrier Layer Capacitor

**RECORDING SELECTOR s22-a**  
 1: TUNER 3: OFF 5: TAPE-1  
 2: C/D 4: SOURCE 6: TAPE-2

K01,2,5	2SC1845(E,F)	K01,2	2SC2458(Y,GR)
K03,4	2SA992(E,F)	K01,2	2SC2603(E,F)
K06	2SA1145(O,Y)	K01,2	IS2473D
K07	2SC2705(O,Y)	K01,2	IS1588
K08	2SC1845(E,F)	K01,2	2SC1845(E,F)
K09	2SC2229(D,E)	K01,2	05Z18(Y,X)
K10	2SA949(D,E)	K02,2	05Z22(Y,X)

- 2SA992
- 2SA1145
- 2SC1283
- 2SC1845
- 2SC2229
- 2SC2705
- 2SC3243
- 2SD313AL
- 2SD880
- 2SB527
- 2SD357
- 2SA1106
- 2SA1265
- 2SC2581
- 2SC3182
- 2SC2458
- 2SC2603
- μPA68H
- 2SC2785
- M5220L
- TA7317P
- TA7318P
- SEL2413E
- SEL1210S
- HA12010
- DBA60C
- RB602
- 1S2473
- 10E.2
- 0Z 18
- 0Z 20
- 0Z 22

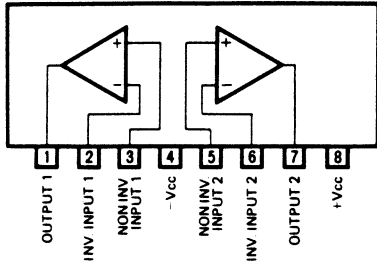
— Signal Line  
 - - - N.F.B Line

1  
2  
3  
4  
5

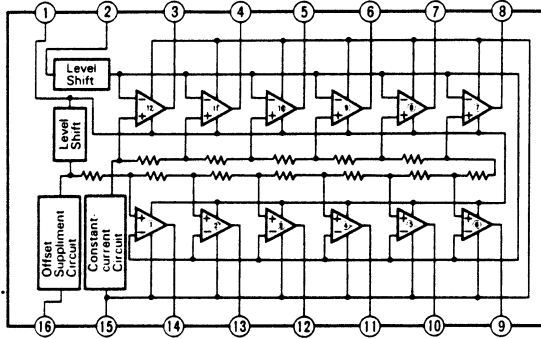


## 6. INTERIOR BLOCK DIAGRAM OF IC

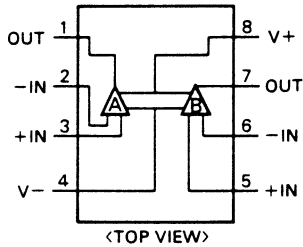
•M5220L (Audio Pre Amp. IC)



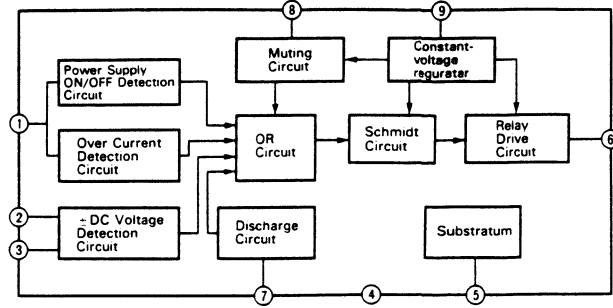
•HA12010 (FL Display Tube Drive IC)



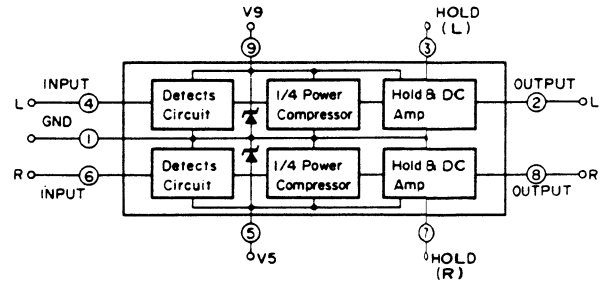
•M5220P (OP Amp. IC)



•TA7317P (Speaker Protector IC)

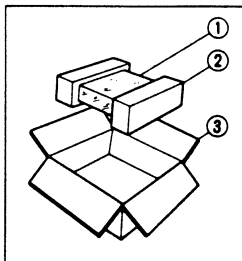


•TA7318P (Meter Drive IC)



## 7. PACKING LIST

Parts No.	Stock No.	Description
1	91167620	Vinyl Bag
2	47675300	Styrofoam Packing
3	47648200	Carton Case (AU-G55X)
	47648100	Carton Case (AU-G33X)



## 8. ACCESSORY LIST

Stock No.	Description
46960800	Operating Instruction (AU-G55X)
46958300	Operating Instruction (AU-G33X)