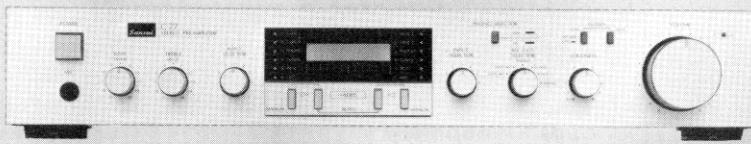


# SERVICE MANUAL

## PRE AMPLIFIER

### SANSUI C-77



#### SPECIFICATIONS

<b>Total harmonic distortion</b> (1,000 Hz)	
AUX, TUNER, TAPE PLAY . . . . .	less than 0.03 % at 1V
<b>Frequency response</b> (at 0.5 V) . . . . .	5 to 70,000 Hz, +0.5 dB, -2 dB
<b>RIAA curve deviation</b> (PHONO, 20 Hz to 20 kHz)	+0.5 dB, -0.5 dB
<b>Input sensitivity and impedance</b> (1,000 Hz)	
PHONO-MM . . . . .	2.5 mV/47 kilohms (Max. input capability; 100 mV at 1 kHz, less than 0.5 % total harmonic distortion)
PHONO-MC . . . . .	180μV/10 ohms
AUX, TUNER, TAPE PLAY . . . . .	150 mV/47 kilohms
MIC . . . . .	7 mV/10 kilohms
<b>Output level and impedance</b> (1,000 Hz)	
TAPE REC . . . . .	150 mV/47 kilohms
OUTPUT . . . . .	1.0 V/47 kilohms
<b>Hum and noise</b> (short-circuit, A-network)	
PHONO-MC . . . . .	60 dB
PHONO-MM . . . . .	80 dB
AUX, TUNER, TAPE PLAY . . . . .	90 dB
<b>Controls</b>	
BASS . . . . .	+10 dB, -10 dB (50 Hz)
TREBLE . . . . .	+10 dB, -10 dB (10 kHz)
LOW FILTER . . . . .	-3 dB (30 Hz), 6 dB/oct.
HIGH FILTER . . . . .	-3 dB (7 kHz), 6 dB/oct.
LOUDNESS . . . . .	8 dB (50 Hz) (Volume control -30 dB)
<b>Power requirements</b>	
Power voltage . . . . .	110 ~ 120, 220 ~ 240 V (50/60 Hz)
For USA and Canada . . . . .	120 V (60 Hz)
Power consumption . . . . .	7 watts Rated
<b>Dimensions</b> . . . . .	430 mm (16-15/16") W 74 mm (2-15/16") H 247 mm (9-3/4") D
<b>Weight</b> . . . . .	3.1 kg (6.8 lbs) net 3.9 kg (8.6 lbs) packed

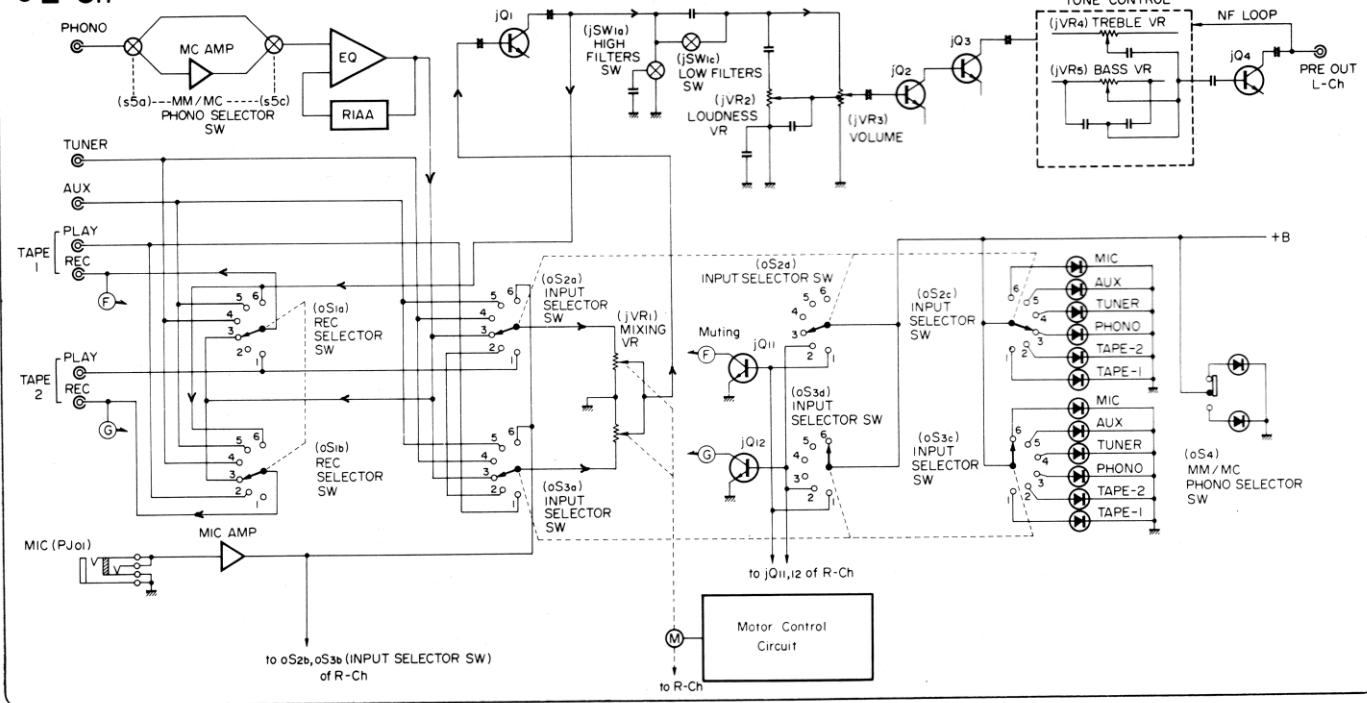
\* Design and specifications subject to changes without notice for improvements.

*Sansui*

SANSUI ELECTRIC CO., LTD.

# 1. BLOCK DIAGRAM

## ● L-Ch



# 2. OPERATIONS

## 2-1. Outlines (See Block Diagram and Fig. 2-1.)

From among L-ch or R-ch six independent source systems (PHONO, TUNER, AUX, TAPE-1, TAPE-2, and MIC), two systems are selected by two input selector switches ( $oS2a$ : front panel right side;  $oS3a$ : front panel left side). The selected source signals of two systems are next applied across a mixing volume ( $jVR1$ ). In accordance with the positions of contact points of the  $jVR1$ , the ratio of two-system source signal levels (Signal A/Signal B) varies as shown in Fig. 2-1, Operation of Mixing Volume ( $jVR1$ ). This ratio is the output signal of the  $jVR1$  and also becomes a pre-out signal after passing through the next tone control amplifier.

On the other hand, a plastic color plate which displays sliding mixing volume ( $jVR1$ ) shaft positions and two-system mixing conditions is moved by a motor; this motor is operated by a motor control circuit.

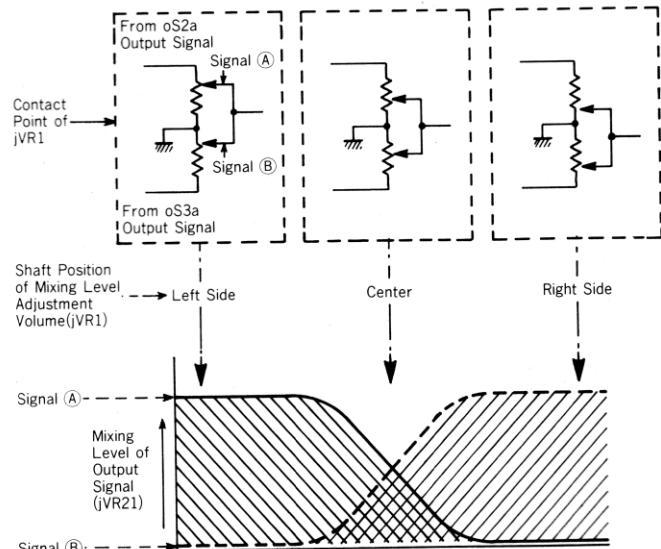
## 2-2. Motor Control Circuit (See Fig. 2-2)

### A. Operation at the time when AUTO SW ( $\triangleright$ ) $jSW5$ is depressed

If FADER AUTO SW  $jSW5$  is depressed for a moment, since a bias voltage is developed between the base and emitter of  $jQ7$ ,  $jQ7$  is turned ON. By this operation, transistor  $jQ5$  is also turned ON, and thereby the motor is rotated in the normal direction (clockwise) continuously. However, when a bias voltage is developed between the base and emitter of  $jQ7$ , the electrolytic capacitor  $jC25$  is also charged. The capacitor  $jC25$  is next discharged and  $jQ7$  is kept turned ON during this discharging time, even when the switch contact of  $jSW5$  is opened.

Therefore, if FADER AUTO SW is depressed for a moment, the plastic color plate which displays the mixing state is moved continuously by the motor from the left to the right end in accordance with the operation explained above.

Fig. 2-1 Operation of Mixing Volume ( $jVR1$ )



### B. Operation at the time when FADER AUTO SW ( $\triangleright$ ) $jSW5$ is first depressed and FADER MANUAL SW ( $\triangleleft$ ) $jSW4$ is next depressed

As explained under Paragraph A, if FADER SW ( $\triangleright$ )  $jSW5$  is depressed for a moment, the motor is kept rotated in the normal direction during a discharge time of  $jC25$  (almost the same as a time necessary for the plastic color plate to move from the left to the right end). However, in order to stop the plastic color plate at any desired position when moving, depress FADER MANUAL SW ( $\triangleleft$ )  $jSW4$ .

- \* By depressing jSW4, since bias voltages are developed between the bases and emitters of jQ6 and jQ9, transistors jQ6 and jQ9 are both turned ON. Accordingly, the electrolytic capacitor jC25 connected across the collector and emitter of jQ9 is quickly discharged (under a short condition), then the base voltage of the transistor jQ7 rises, jQ7 is turned OFF, jQ5 is also turned OFF, and thus the motor stops.

### C. Operation at the time when FADER MANUAL SW ( $\triangleleft$ ) jSW4 is depressed

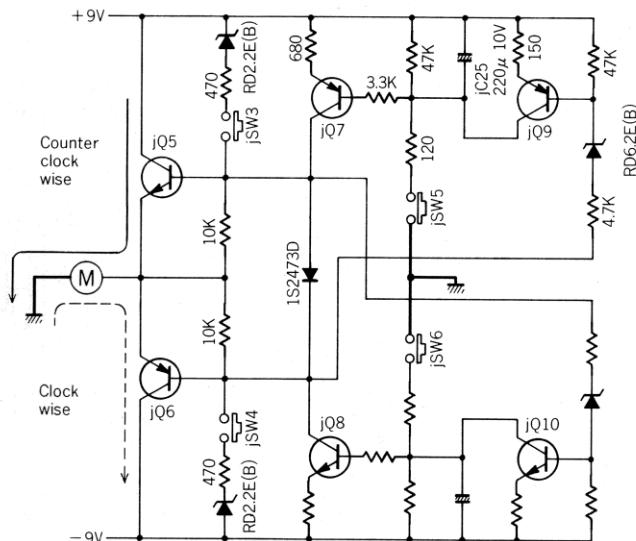
While the switch, jSW4 is pushed continuously, the bias voltage between the base and emitter of jQ6 turns the transistor, jQ6 ON. By this, the motor starts rotating in reverse direction (counterclockwise), and the plastic color plate moves from right to left end.

The circuit operation at the time when FADER MANUAL SW ( $\triangleleft$ ) jSW4 is depressed is the same as that explained under Mark \* in Paragraph B.

### D. Operation at the time when FADER AUTO SW ( $\triangleleft$ ) jSW6 is first depressed and next FADER MANUAL SW ( $\triangleright$ ) jSW3 is depressed.

Explanation on the respective operations of the jSW4 and jSW5 are omitted here, as the operation at the time when these switches are depressed is almost the same as that of jSW4 and jSW5 described under Paragraphs A to C. However, the motor rotates in the reverse direction (counterclockwise) and the plastic color plate moves reversely.

Fig. 2-2 Motor Control Circuit

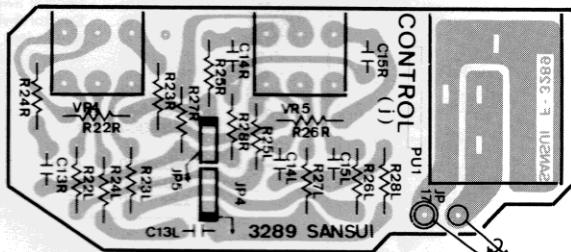


Switch No.	Indication of Front Panel	Revolving direction of the Motor
jSW3	FADER MANUAL $\triangleright$	Counter clock wise
jSW5	FADER AUTO $\triangleright$	//
jSW4	FADER MANUAL $\triangleleft$	Clock wise
jSW6	FADER AUTO $\triangleleft$	//

## 3. PARTS LOCATION & PARTS LIST

### 3-1. F-3289 Tone Control Circuit Board

Component Side



Parts List

Parts No.	Stock No.	Description
pJ1	07219700	Mic Jack
jVR4	07210200	100kΩ (B) x 2 Volume, treble
jVR5	07210200	100kΩ (B) x 2 Volume, bass

### 3-2. F-3288 Switch Circuit Board

Parts List

Parts No.	Stock No.	Description
jS1	07209800	Selector Switch, high/low filter
oS4	07211200	Selector Switch, MM/MC

Since some of capacitors and resistors are omitted from parts lists in this Service Manual, refer to the new Common Parts List for capacitors & resistors.

### 3-3. F-3287 Input Mode Indicator Circuit Board

Parts List

Parts No.	Stock No.	Description
07592800		6P LED Holder
•LED		
nLD7S	03192000	SLS32GG
nLD8S	03192000	SLS32GG
nLD9S	03192000	SLS32GG
nLD10S	03192000	SLS32GG
nLD11S	03192000	SLS32GG
nLD12S	03192000	SLS32GG

### 3-4. F-3286 Input Mode Indicator Circuit Board

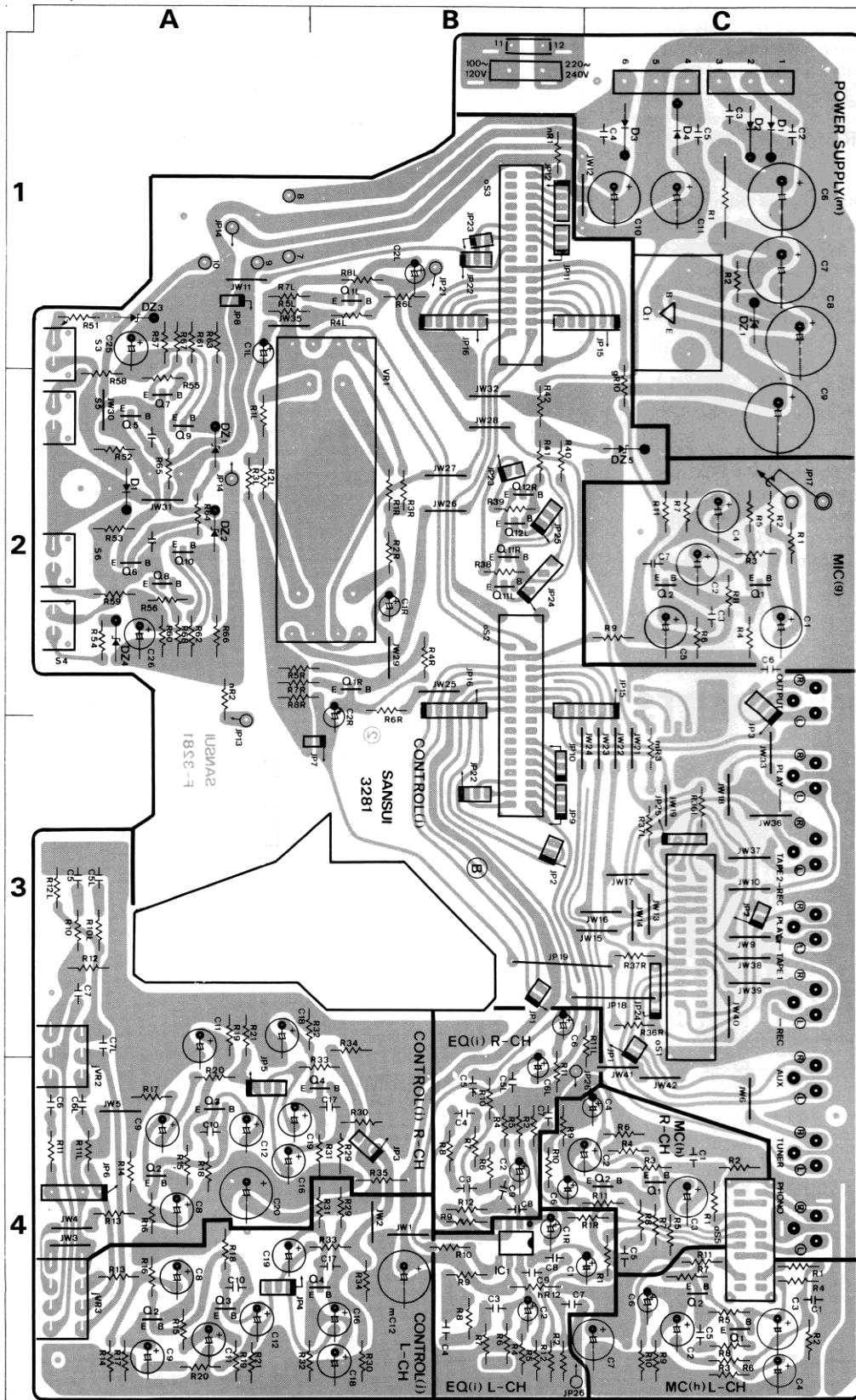
Parts List

Parts No.	Stock No.	Description
07592800		6P LED Holder
•LED		
nLD1S	03192100	SLS32UR
nLD2S	03192100	SLS32UR
nLD3S	03192100	SLS32UR
nLD4S	03192100	SLS32UR
nLD5S	03192100	SLS32UR
nLD6S	03192100	SLS32UR

- The circuit boards, F-3286, F-3287, F-3288, F-3289 are not supplied as the assembled, the individual parts on the circuit boards, however are provided for orders.

## 3-5. F-3281 MC, MM EQ/MIC/Fader Control/Power Supply Circuit Board (Stock No. 07086201)

Component Side



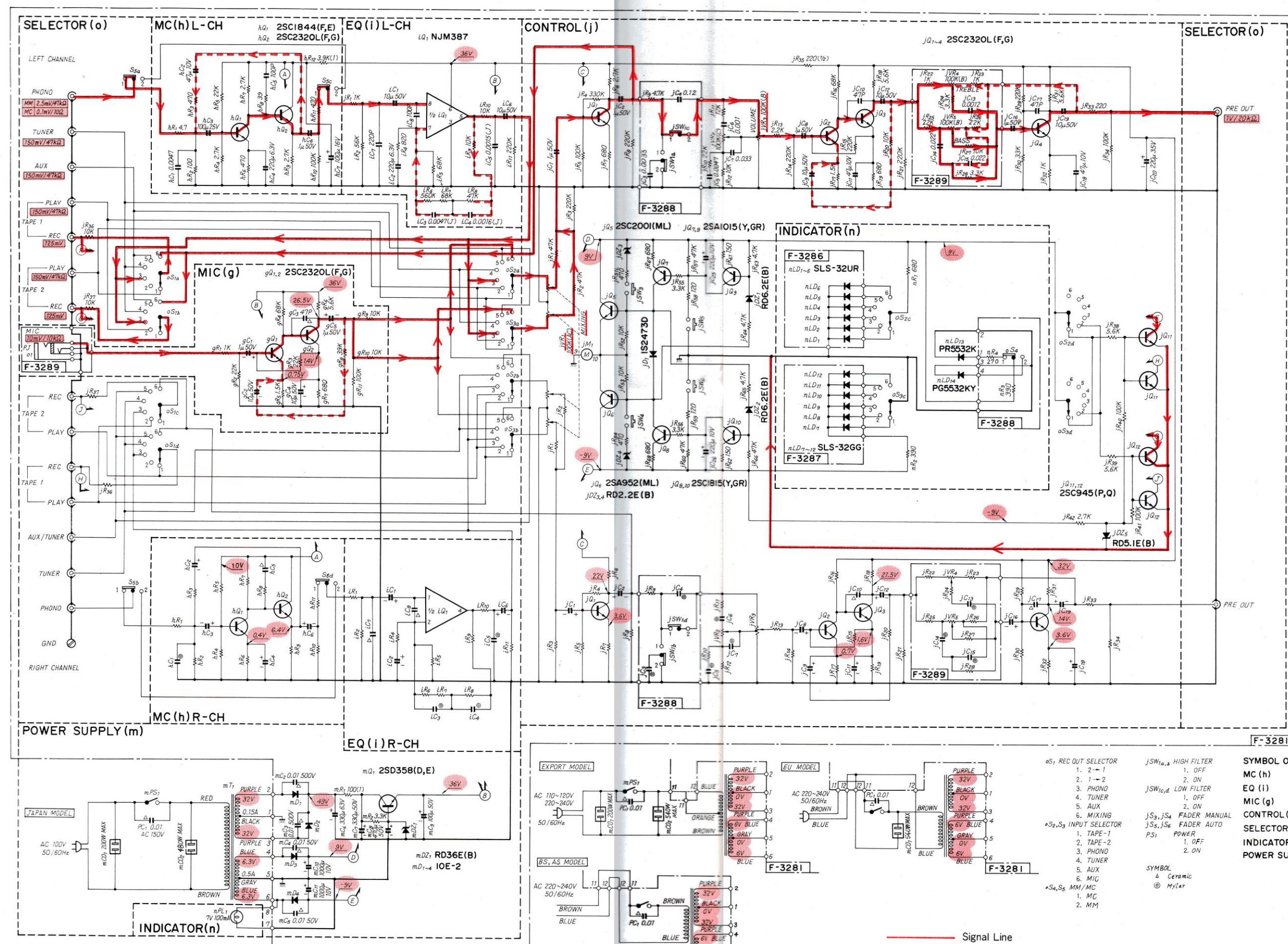
## Parts List

Parts No.	Stock No.	Description
<b>Transistor</b>		
gQ1	07225400, 1	2SC2320L F, G
hQ1	03068500, 1	2SC1844 F, E
jQ1	07225400, 1	2SC2320L F, G
mQ1	03084801, 2	2SD358 D, E
gQ2	07225400, 1	2SC2320L F, G
hQ2	07225400, 1	2SC2320L F, G
jQ2	07225400, 1	2SC2320L F, G
jQ3	07225400, 1	2SC2320L F, G
jQ4	07225400, 1	2SC2320L F, G
iQ5	07206900, 1	2SC2001 M, L
jQ6	07206800, 1	2SA952 M, L
jQ7	03010900, 1	2SA992 F, E
jQ8	03067400, 1	2SC1845 F, E
jQ9	03010900, 1	2SA992 F, E
jQ10	03067400, 1	2SC1845 F, E
jQ11	03059501, 2	2SC945 Q, P
jQ12	03059501, 2	2SC945 Q, P
mR1	00179100	100Ω 1W N.I.R.
hR12	00182800	3.9kΩ 1W N.I.R.
hC3	00324000	100μF 25V E.L.
<b>IC</b>		
iQ1	07211100	NJM387D-A
<b>Diode</b>		
jD1	03117600	1S2473D
mD1	03117700	10E-2
mD2	03117700	10E-2
mD3	03117700	10E-2
mD4	03117700	10E-2
<b>Zener Diode</b>		
jDZ1	03177400	RD6.2E-B
rDZ1	03181000	RD36E-B
jDZ2	03177400	RD6.2E-B
jDZ3	03181600	RD2.2E-B
jDZ4	03181600	RD2.2E-B
jDZ5	03183400	RD5.1E-B
jVR1	07210300	100kΩ (A,C) x 2 Slide Volume, mixing
jVR2	07210100	100kΩ (C) x 2 Volume, loudness
jVR3	07210000	100kΩ (B) x 2 Volume, master
oS1	07209400	Selector Switch, REC OUT
oS2	07209500	Selector Switch, input
jS3	07209300	Key Switch, fader
oS3	07209600	Selector Switch, input
jS4	07209300	Key Switch, fader
jS5	07209300	Key Switch, fader
jS6	07200500	Selector Switch, MM/MC
jS6	07209300	Key Switch, fader
mPL1	04004500 22007200 22007100	Pilot Lamp 7V 100 mA 6P Input Terminal 4P Input Terminal

## Abbreviations

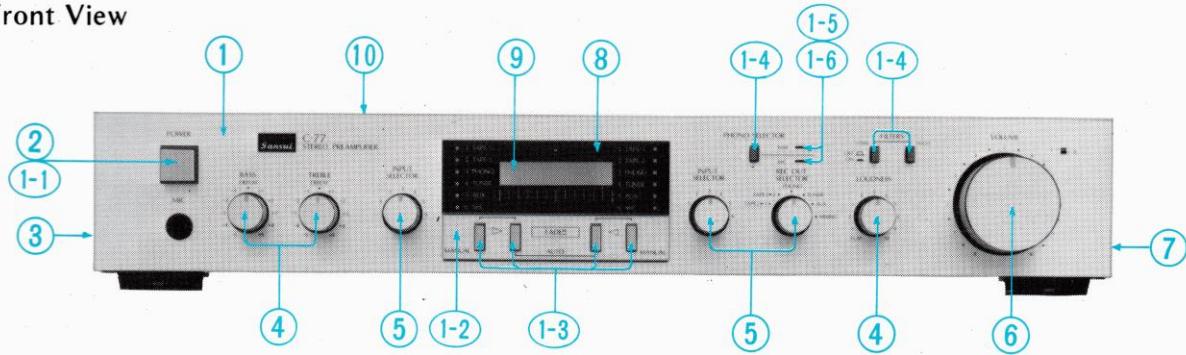
C.R.	Carbon Resistor
S.R.	Solid Resistor
Ce.R.	Cement Resistor
M.R.	Metal Film Resistor
F.R.	Fusing Resistor
N.I.R.	Non-Inflammable Resistor
C.C.	Ceramic Capacitor
C.T.	Ceramic Capacitor, Temperature Compensation
E.C.	Electrolytic Capacitor
E.L.	Low Leak Electrolytic Capacitor
E.B.	Bi-Polar Electrolytic Capacitor
E.BL.	Low Leak Bi-Polar Electrolytic Capacitor
Ta.C.	Tantalum Capacitor
F.C.	Film Capacitor
M.P.	Metalized Paper Capacitor
P.C.	Polystyrene Capacitor
G.C.	Gimmick Capacitor

## 4. SCHEMATIC DIAGRAM

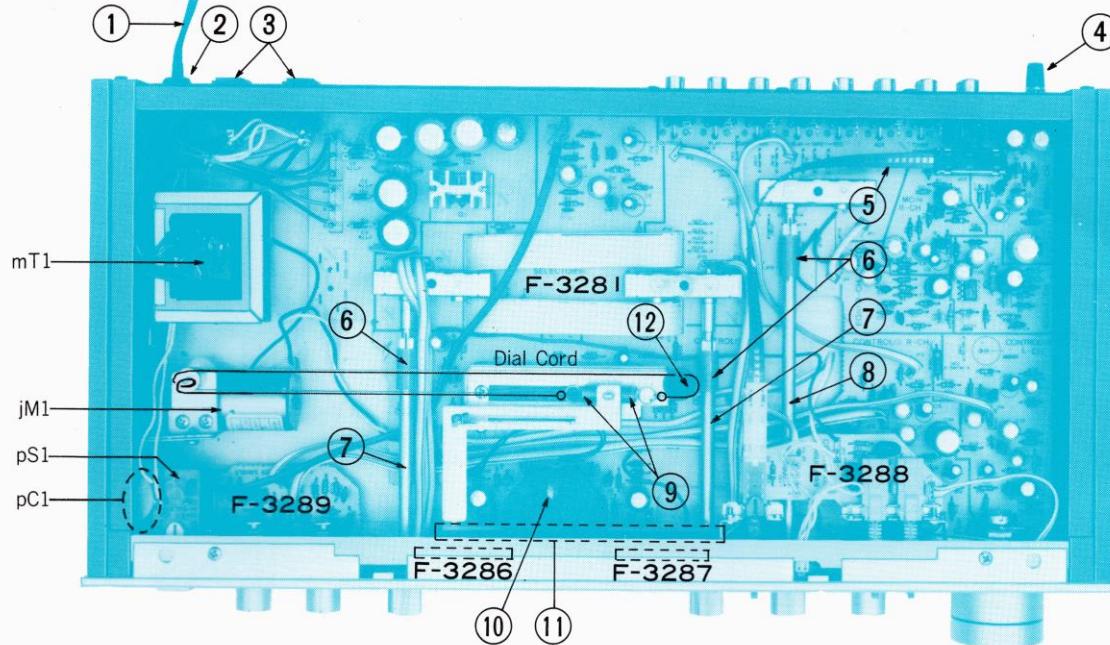


## 5. OTHER PARTS

### 5-1. Front View



### 5-2. Top View



Parts List <Front View>

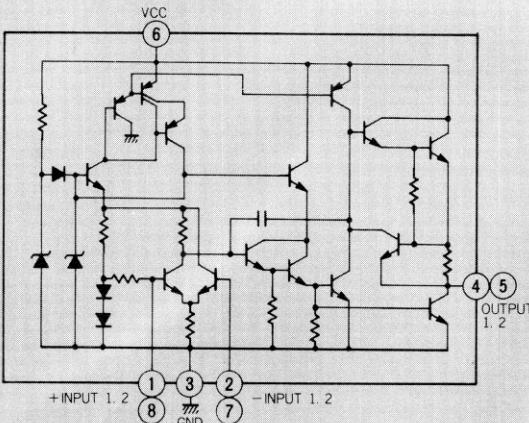
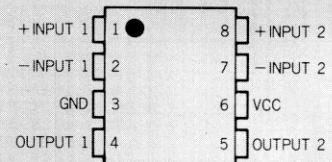
Parts No.	Stock No.	Description
1	07589700	Front Panel Ass'y
1-1	59560800	Knob Guide, power switch
1-2	07590200	Fader Panel
1-3	07599300	Key Switch Button Ass'y
1-4	07522500	Knob Ass'y
1-5	07597400	LED Fixing Spacer
1-6	{07220700 07220800}	LED (Red) LED (Green)
2	53195000	Knob
3	{07593500 55074500}	Side Panel (L) Rubber Patch
4	53195600	Knob (US-07)
5	{07592500 63062310 07592600}	Knob (KN-0017) Bearing Plate, joint shaft Knob (L) (KN-0018)
6	{07592700 07593700}	Knob (R) (KN-0019) Masking Sheet
7	{07593600 55074500}	Side Panel (R) Rubber Patch
8	07593400	Front Glass
9	07593200	Plastic Lens Sheet
10	07591000	Bonnet

Parts List <Top View>

Parts No.	Stock No.	Description
1	38004700	Power Cord (XX, UL, CSA)
2	39106000	Strain Relief 3φ (XX, UL, CSA)
3	07189600	AC Outlet (XX, UL, CSA)
4	22301500	Ground Terminal
5	07221300	Flexible Wire Ass'y
6	60460410	Coupler, joint shaft
7	07592400	Joint Shaft (2)
8	07592300	Joint Shaft (1)
9	07593800	Spring
10	07593000	Illumination Case
11	07593300	Plastic Color Plate
12	61467600	Pulley
mT1S	15000401	Power Transformer (XX)
jM1	07209900	Motor Ass'y (with Gear, Pulley)
pS1	11323500	Power Switch
pC1	00386000	0.01μF 150V C.C.
	60360530	Dial Cord (50 cm)

## 6. BLOCK DIAGRAM OF NJM387D

### • NJM387D



## 7. REPLACEMENT OF MAIN PARTS

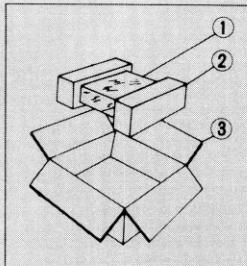
### 7-1. How to remove the illumination case

- 1) First, remove the bonnet and the bottom plate.
- 2) Remove the front panel.
- 3) Pull out the vinyl pipe covering the mixing volume (jVR1) shaft.
- 4) Remove the driving arm for the plastic color plate.
- 5) Pull out the plastic color plate from the illumination case.
- 6) Remove the LED printed boards, F-3286 and F-3287 from the illumination case. (Note that eight arms or claws fastening the printed boards protrude on the illumination case.)
- 7) Remove two screws fastening illumination case and then take out the illumination case from the back panel (chassis).

**Note:** When mounting the illumination case (on which the boards F-3286 and F-3287 are fixed) on the back panel, carefully fix the illumination case so that the lead wires from the LEDs on printed boards, F-3286 and F-3287 do not come into contact with the back panel.

## 8. PACKING LIST

Parts No.	Stock No.	Description
1	07599500	Vinyl Cover
2	07585700	Styrofoam Packing
3	07586000	Carton Case



## 9. ACCESSORY PARTS LIST

Stock No.	Description
38103200	PJP Cord
07576800	Operating Instructions

SANSUI ELECTRONICS CORPORATION: 1250 Valley Brook Ave. Lyndhurst, N.J. 07071 U.S.A.

333 West Alondra Blvd. Gardena, California 90247 U.S.A.

3036 Koapaka St. Honolulu, Hawaii 96819 U.S.A.

SANSUI AUDIO EUROPE N.V.: North Trade Bldg (9th floor) Noorderlaan 133-Bus 1,2030 Antwerp, Belgium

SANSUI AUDIO EUROPE S.A.: Arabella center, 6 Frankfurt AM Main, Lyoner Strasse 44-48, West Germany

SANSUI ELECTRIC COMPANY LTD.: 14-1, Izumi 2-chome, Suginamiku, Tokyo 168 Japan PHONE: (03) 323-1111/TELEX: 232-2076

**Sansui**