SERVICE MANUAL

PRE AMPLIFIER

SANSUI C-77

Sansui

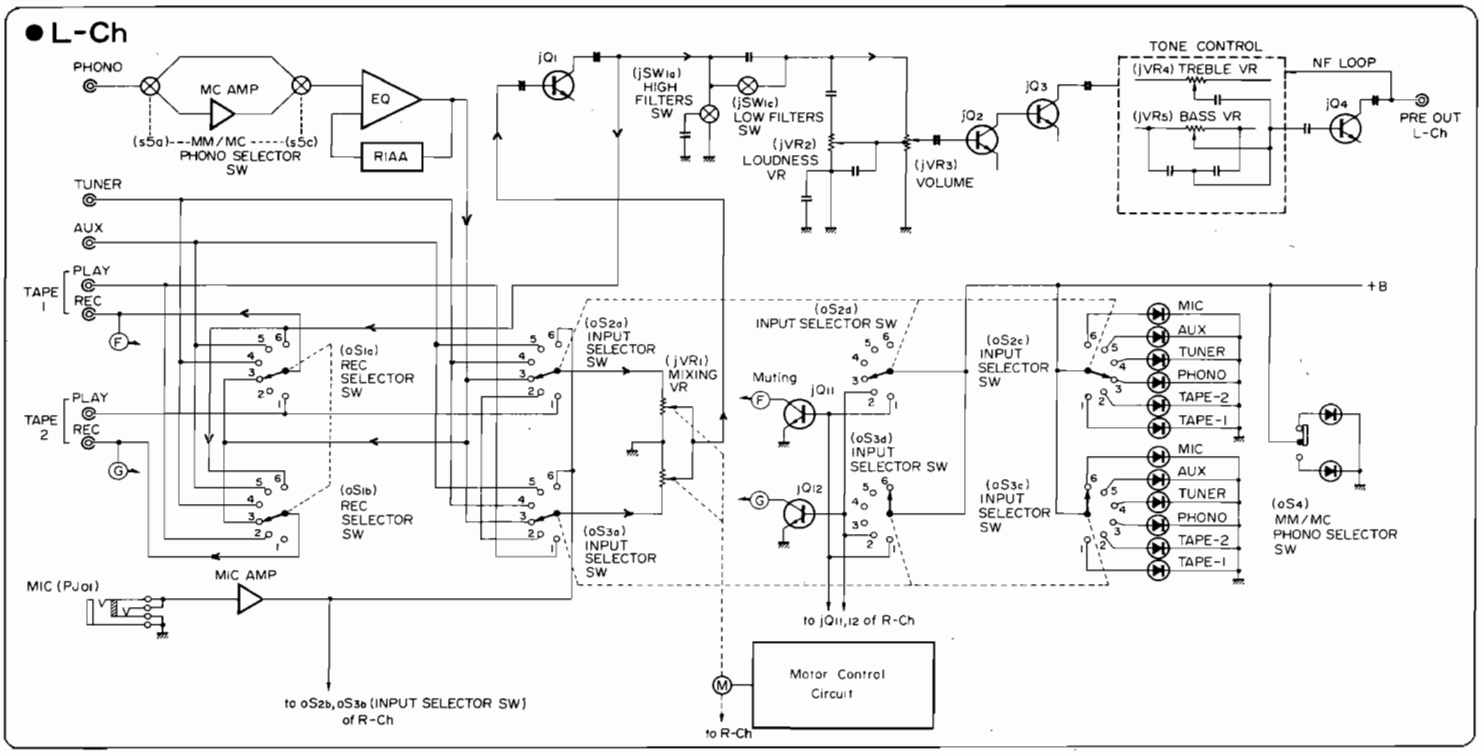
SANSUI ELECTRIC CO., LTD.

SPECIFICATIONS

Total harmonic distortion (1,000 Hz)
AUX, TUNER, TAPE PLAY . . . . less than 0.03 % at 1V
Frequency response (at 0.5 V) . . . . . 5 to 70,000 Hz, +0.5 dB, –2 dB
RIAA curve deviation (PHONO, 20 Hz to 20 kHz)
. . . . . +0.5 dB, –0.5 dB
Input sensitivity and impedance (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
Output level and impedance (1,000 Hz)
TAPE REC . . . . . 150 mV/47 kilohms
OUTPUT . . . . . 1.0 V/47 kilohms
Hum and noise (short-circuit, A-network)
PHONO-MC . . . . . 60 dB
PHONO-MM . . . . . 80 dB
AUX, TUNER, TAPE PLAY . . . . 90 dB
Controls
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) 5 dB (10 kHz)
Power requirements
Power voltage . . . . . 110 ~ 120, 220 ~ 240 V (50/60 Hz)
For USA and Canada . . . . . 120 V (60 Hz)
Power consumption . . . . . 7 watts Rated
Dimensions . . . . . 430 mm (16-15/16") W
74 mm (2-15/16") H
247 mm (9-3/4") D
Weight . . . . . 3.1 kg (6.8 lbs) net
3.9 kg (8.6 lbs) packed

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

1. BLOCK DIAGRAM



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 when 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.

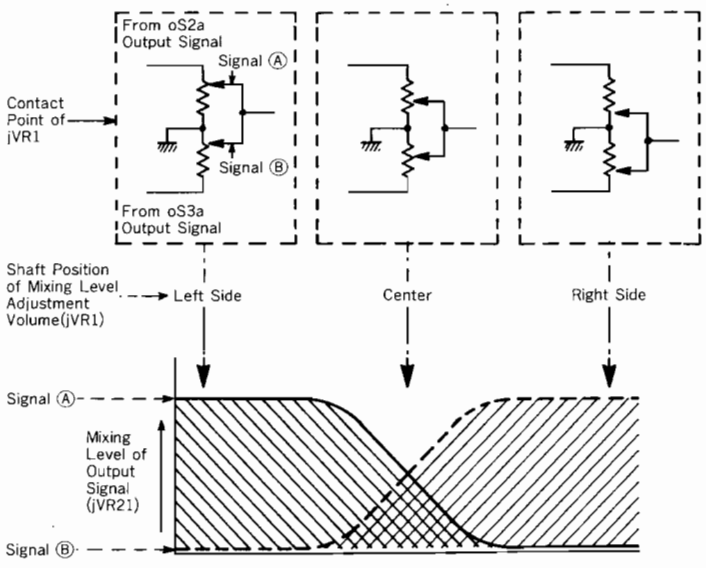
2-2. Motor Control Circuit (See Fig. 2-2)

A. Operation at the time when AUTO SW (▷) 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 (▷) jSW5 is first depressed and FADER MANUAL SW (◁) jSW4 is next depressed

As explained under Paragraph A, if FADER SW (▷) 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 (◁) 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 (◁) jSW4 is depressed

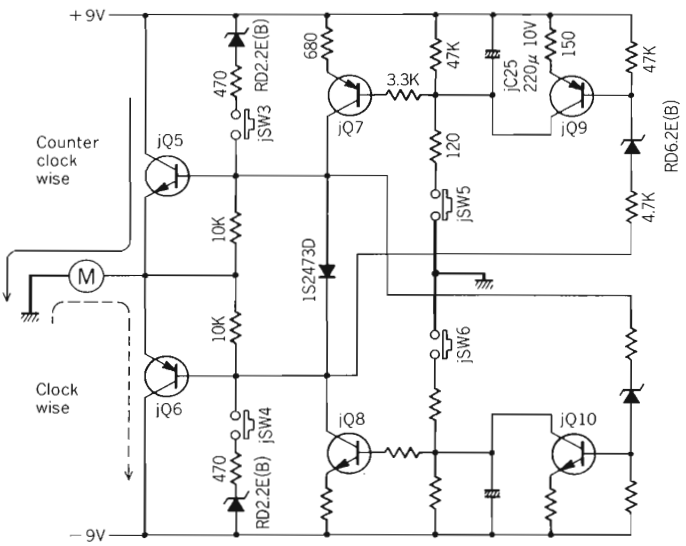
While the switch, jSW4 is pushed continuously, the bias voltage between the base and emitter of jQ6 turns the transistor, jQ6 ON. By this, the motor starts rotating in reverse direction (counterclockwise), and the plastic color plate moves from right to left end.

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

D. Operation at the time when FADER AUTO SW (◁) jSW6 is first depressed and next FADER MANUAL SW (▷) 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



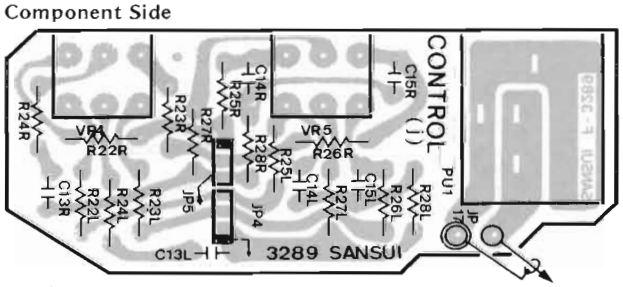
Switch No.	Indication of Front Pannel	Revolving direction of the Motor
jSW3	FADER MANUAL ▷	Counter clock wise
jSW5	FADER AUTO ▷	//
jSW4	FADER MANUAL ◁	Clock wise
jSW6	FADER AUTO ◁	//

3. PARTS LOCATION & PARTS LIST

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.

3-1. 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

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

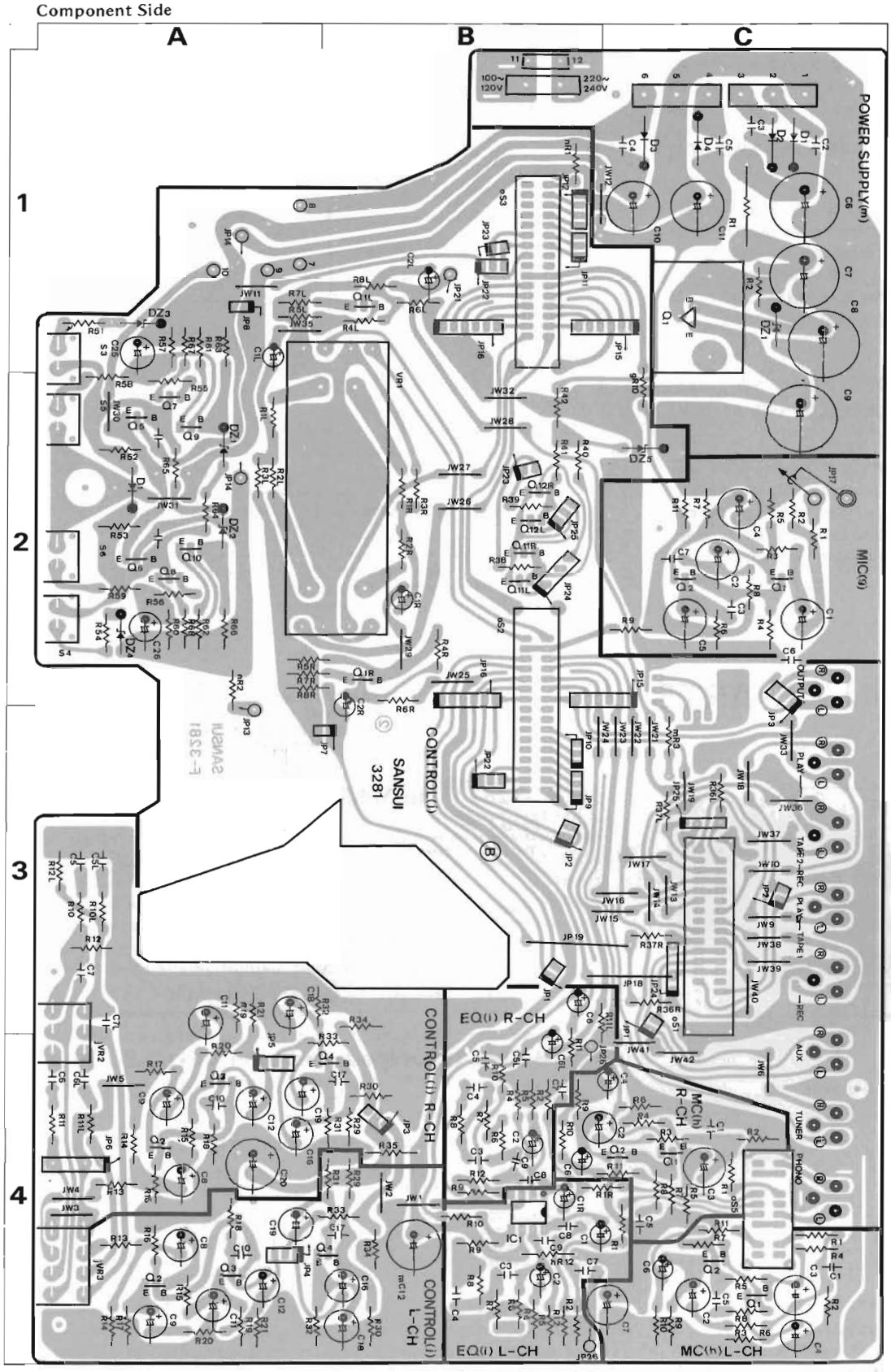
Parts List

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



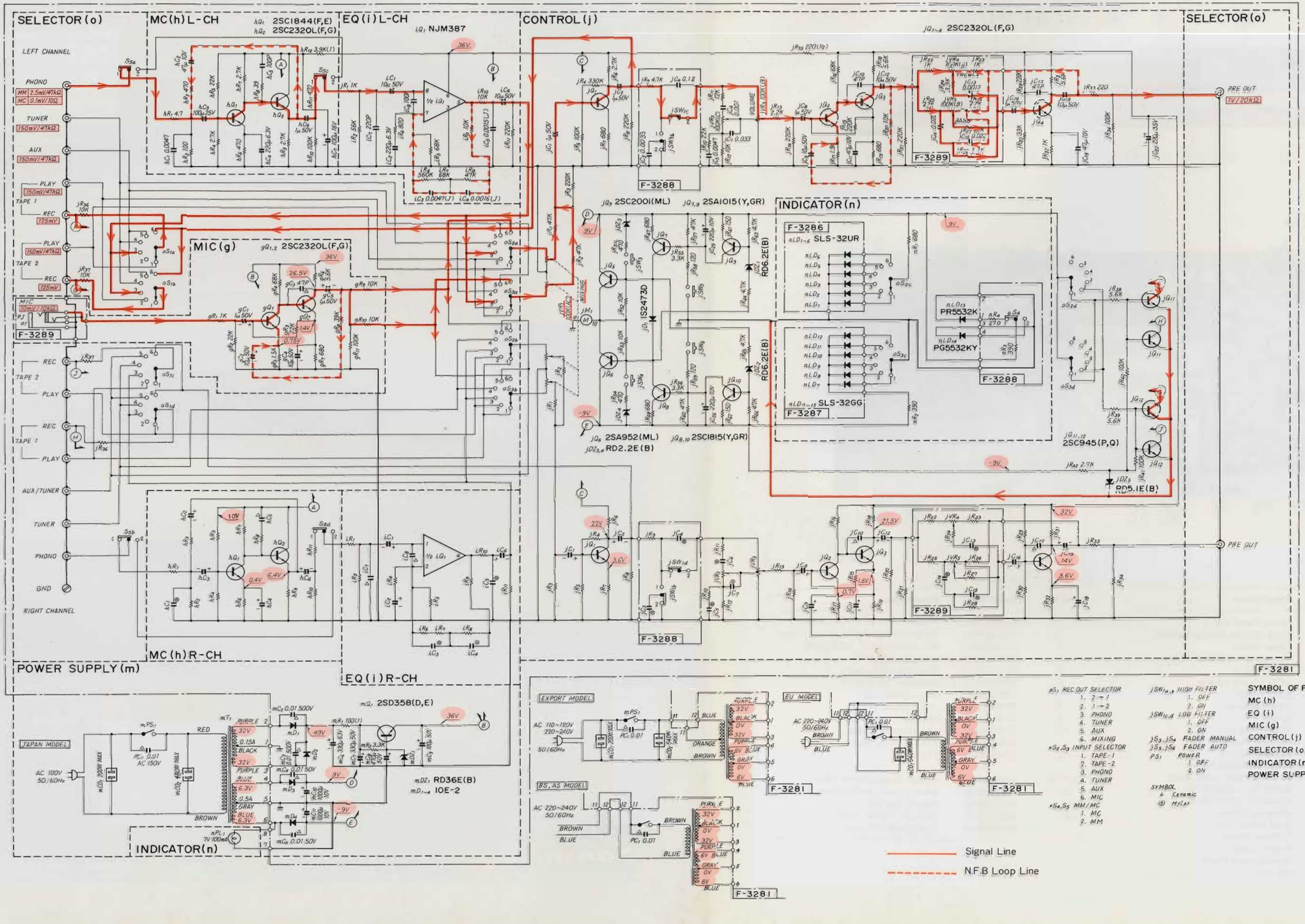
Parts List

Parts No.	Stock No.	Description
●Transistor		
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
jQ5	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.
●IC		
iQ1	07211100	NJM387D-A
●Diode		
jD1	03117600	1S2473D
mD1	03117700	10E-2
mD2	03117700	10E-2
mD3	03117700	10E-2
mD4	03117700	10E-2
●Zener Diode		
jDZ1	03177400	RD6.2E-B
mDZ1	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
oS5	07200500	Selector Switch, MM/MC
jS6	07209300	Key Switch, fader
mPL1	04004500	Pilot Lamp 7V 100 mA
	22007200	6P Input Terminal
	22007100	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. . . . Gimmic Capacitor

4. SCHEMATIC DIAGRAM



2SA562
2SA952
2SA1015
2SC945
2SC1815
2SC1844
2SC2001

2SC2320

2SD358

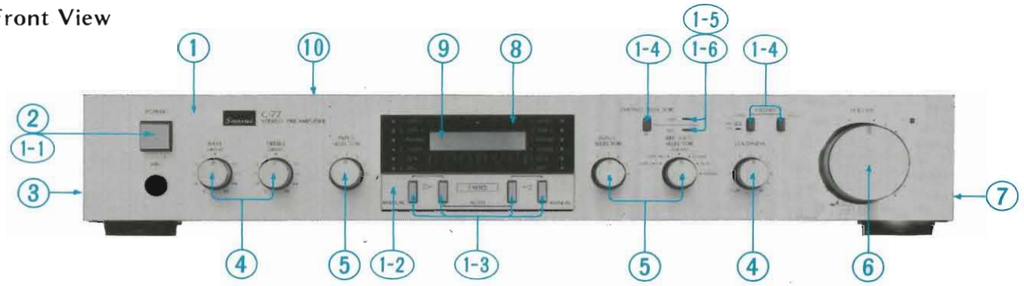
NJM387D

10E2
1S2473D

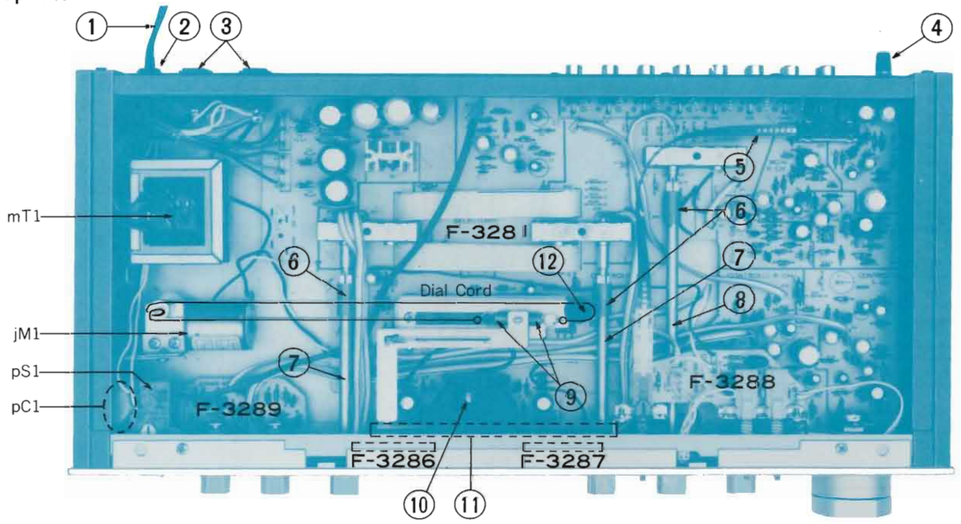
RD2.2E(B)
RD5.1E(B)
RD6.2E(B)
RD36E(B)

5. OTHER PARTS

5-1. Front View



5-2. Top View



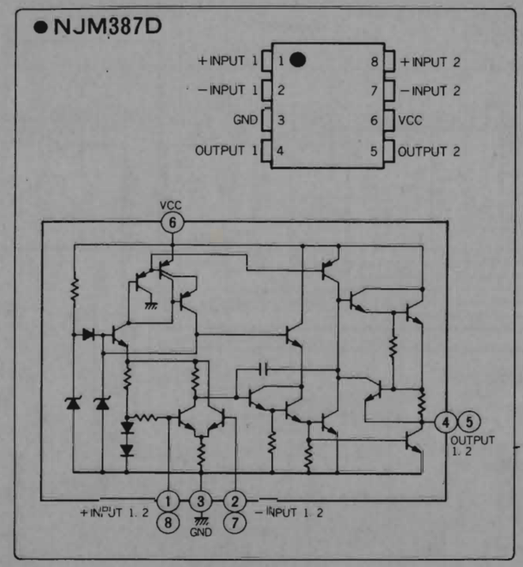
Parts List <Front View>

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	LED (Red)
	07220800	LED (Green)
2	53195000	Knob
3	07593500	Side Panel (L)
	55074500	Rubber Patch
4	53195600	Knob (US-07)
5	07592500	Knob (KN-0017)
	63062310	Bearing Plate, joint shaft
6	07592600	Knob (L) (KN-0018)
	07592700	Knob (R) (KN-0019)
	07593700	Masking Sheet
7	07593600	Side Panel (R)
	55074500	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



7. REPLACEMENT OF MAIN PARTS

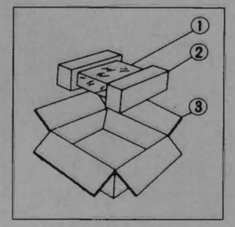
7-1. How to remove the illumination case

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

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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
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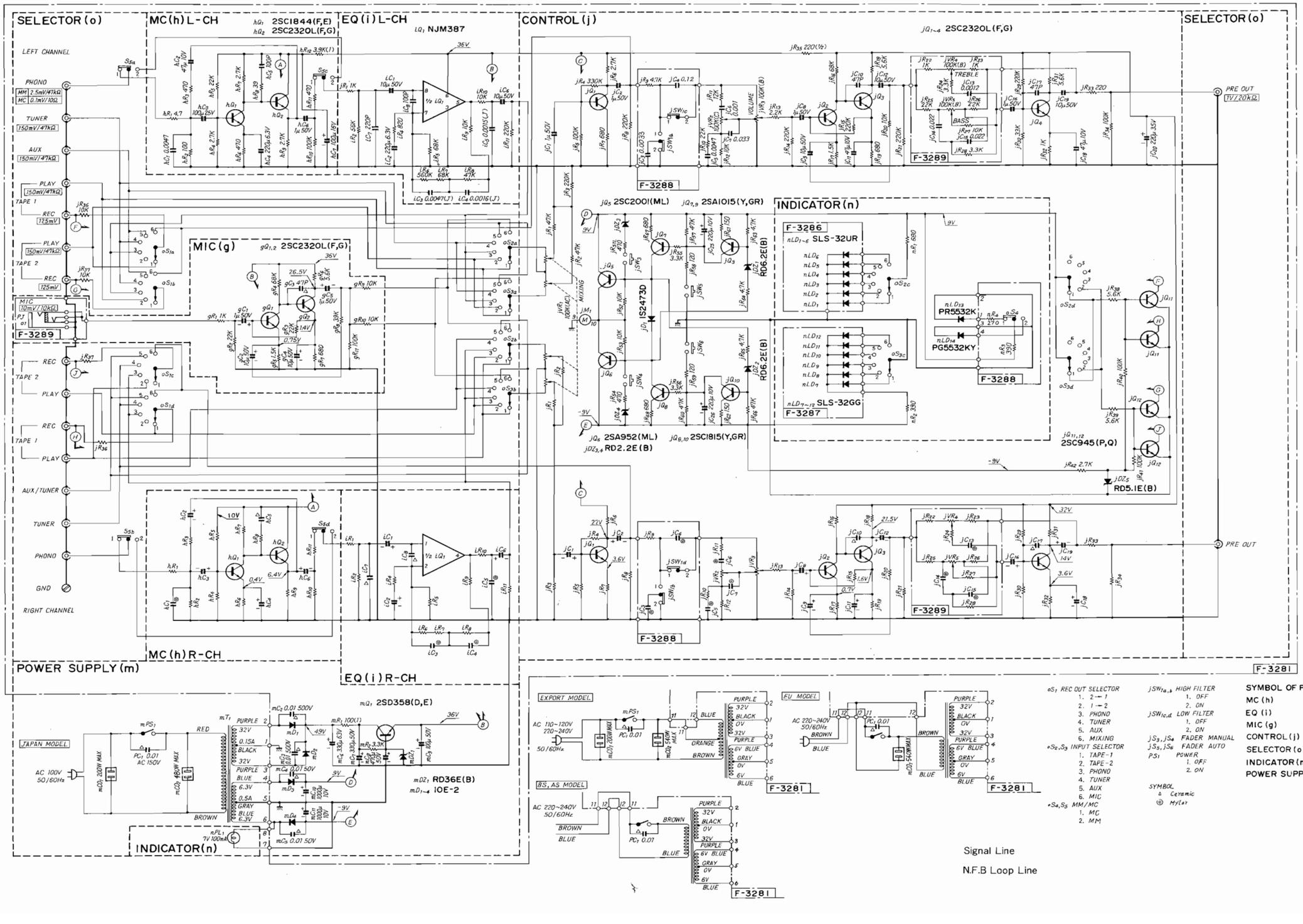
4. SCHEMATIC DIAGRAM



SYMBOL OF FUNCTION
MC (h)
EQ (i)
MIC (g)
CONTROL (j)
SELECTOR (o)
INDICATOR (n)
POWER SUPPLY (m)