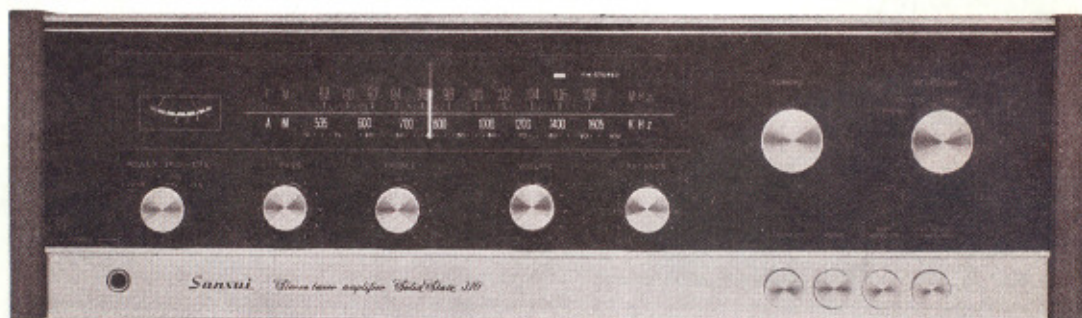


OPERATING INSTRUCTIONS & SERVICE MANUAL

SOLID STATE AM/FM STEREO TUNER AMPLIFIER

SANSUI 310



Sansui

SANSUI ELECTRIC CO., LTD.

Congratulations on joining the thousands of proud, satisfied owners of quality stereo components from Sansui.

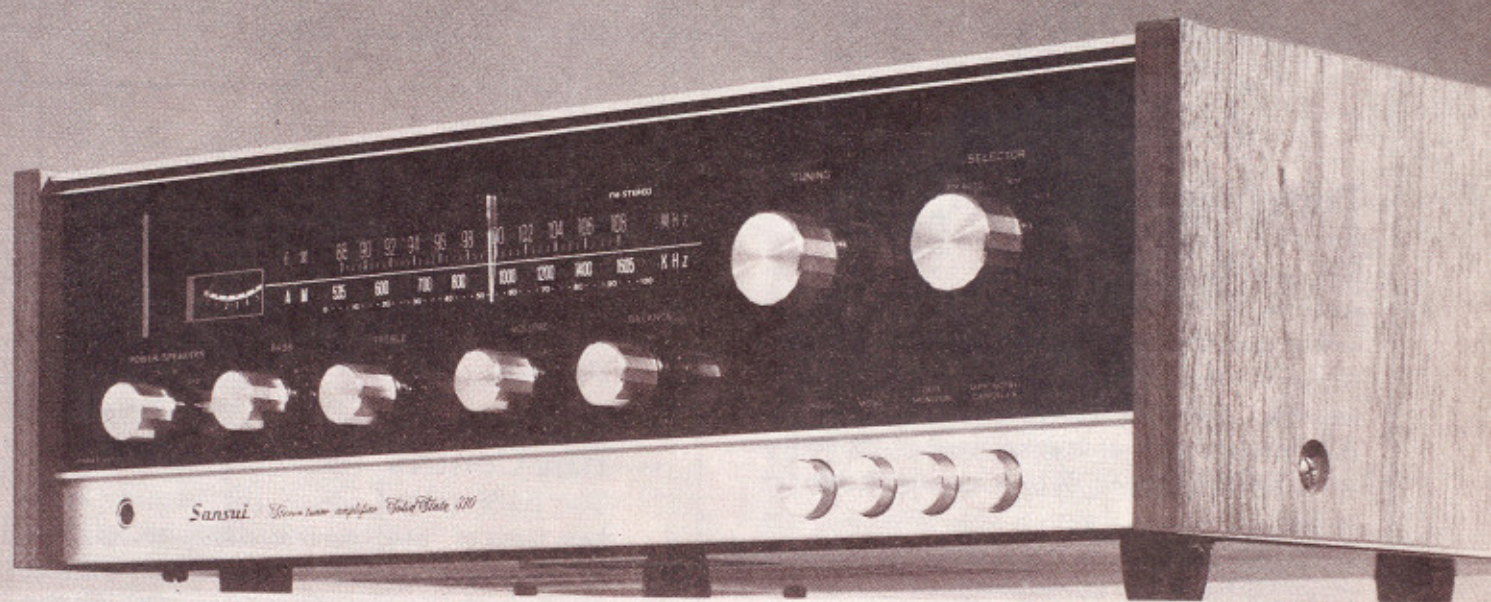
As the world's foremost audio-only specialist, Sansui has spared no effort in making the Sansui 310 AM/FM Stereo Receiver the most powerful, most versatile and most sophisticated receiver available at its price. With the latest dual-gate MOS FET and IC components, two-element ceramic filter, all-silicon transistor circuitry, ability to handle two sets of speaker systems simultaneously or individually, and functional front panel design, the 310 considerably advances the art of stereophonic reproduction.

Before leaving our factory, your new 310 receiver was tested, inspected and certified to be in perfect operating conditions. It is now up to you to keep it that way.

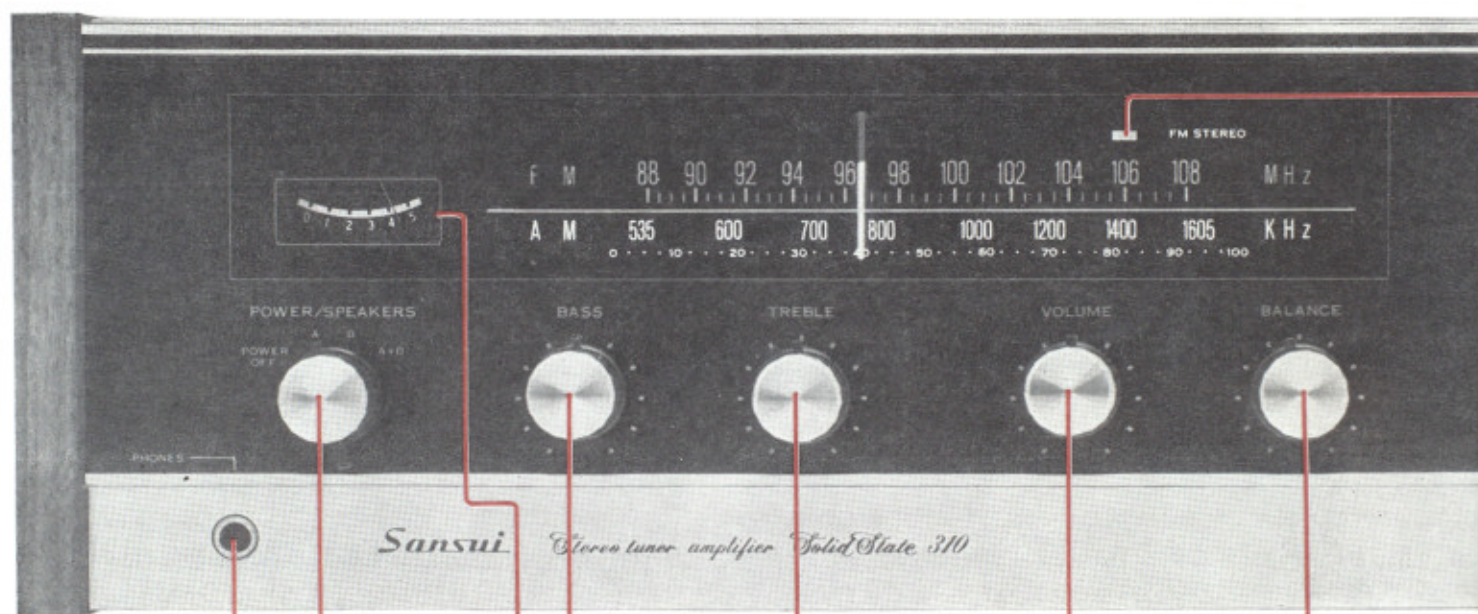
This manual has been prepared to guide you in installing and operating the receiver correctly. It contains some very helpful information on making antenna connections, using controls properly and operating components most effectively. Please read it carefully before operating the receiver and retain it for future reference.

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SWITCHES AND CONTROLS



Power/Speakers Switch

For your convenience, the POWER switch and SPEAKERS selector have been combined. The receiver is off when the POWER/SPEAKERS switch is in the POWER OFF position. The receiver is turned on when the switch is turned to any other position:

A—Selects a pair of speaker systems connected to the SPEAKER SYSTEM A outputs on the rear panel.

B—Selects a pair of speaker systems connected to the SPEAKER SYSTEM B outputs.

A+B—Selects both A and B speaker systems simultaneously.

Headphones Jack

This jack accommodates headphones for monitoring or private listening. Turn the POWER/SPEAKERS switch to any other position than POWER OFF and plug the headphones into this jack. Sound from the speakers will be automatically cut off.

Treble Control

The TREBLE control adjusts the intensity of the treble tones of both channels simultaneously. To emphasize the treble, turn the control clockwise. To diminish the treble, turn the control counter-clockwise.

Bass Control

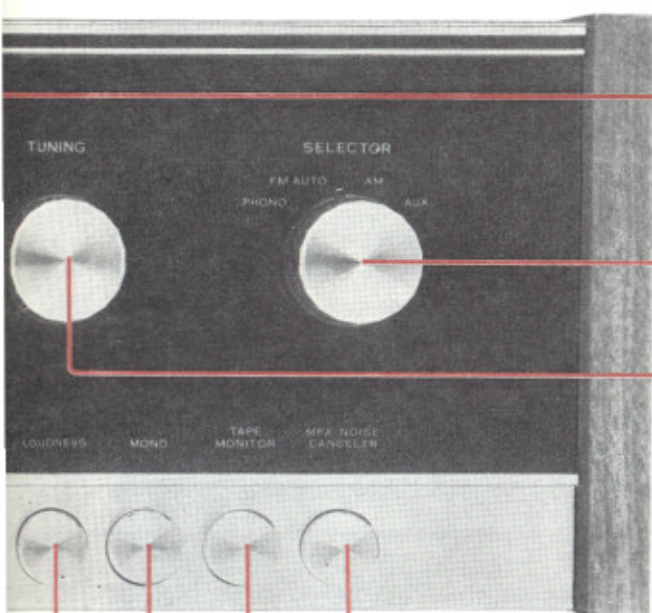
The BASS control adjusts the intensity of the bass tones of both channels simultaneously. To emphasize the bass, turn the control clockwise. To diminish the bass, turn the control counter-clockwise.

Volume Control

The VOLUME control regulates the total volume of sound from both speakers.

Tuning Meter

This meter aids in pinpointing a station. The station is perfectly tuned when the needle swings as far to the right as possible.



FM Stereo Indicator

This indicator lights up when the dial pointer crosses a station making an FM stereo broadcast.

Selector Switch

PHONO—Selects a record player connected to the PHONO inputs on the rear panel.

FM AUTO—Selects FM programs, automatically switching between mono and stereo.

AM—Selects AM programs.

AUX—Selects a program source connected to the AUX inputs on the rear panel.

Tuning Knob

Turn the TUNING knob to find the AM or FM station of your choice.

MPX Noise Canceler

The MPX NOISE CANCELER switch is used to eliminate noise on FM stereo programs. The switch should be used sparingly, however. With the switch depressed, the stereo separation may be impaired.

Tape Monitor Switch

The TAPE MONITOR switch is used to monitor the quality of tape recordings as picked up by the playback head or to playback pre-recorded tapes. If you want to hear the sound from any other source, the switch must be again pushed to its original 'up' position.

NOTE: Tape monitoring is only possible with a tape deck having a separate playback preamplifier, as well as separate recording and playback heads.

Mono Switch

To listen to monophonic records or tapes, depress the MONO switch. A monophonic record player or tape deck may be connected to either right or left input on the rear panel. You can hear sound from both speakers.

For stereo operation, push the switch again to go back to its original position.

Loudness Switch

When the LOUDNESS switch is depressed at low volumes, it provides the correct amount of bass and treble boost required to compensate for the tendency of the human ear to lose these frequencies at low listening levels.

Balance Control

This control is used to equalize the sound levels from both speakers to achieve the optimum stereo effect. Turning the control clockwise accents the right channel by reducing the left channel output. Turning the control counterclockwise accents the left channel by reducing the right channel output.

CONNECTIONS/OPERATIONS

Speaker Connections

Two pairs of stereo speaker systems can be connected to the 310. You can install one set of speaker systems in your listening room and another set in the same room or remotely in other rooms of your home. These two sets of speakers can be used individually or simultaneously by means of the front POWER/SPEAKERS switch.

Note: When you want to use two pairs of stereo speaker systems simultaneously, their impedance must be more than 8 ohms each. If you want to connect two or more speakers to one channel in parallel, their combined impedance must be more than 4 ohms.

To connect speakers to the 310:

1. Connect the plus terminal of the speaker on your right (as viewed from the listening area) to the right channel SPEAKER SYSTEM A terminal marked + on the rear of the amplifier.
2. Connect the minus terminal (marked —, COM, GND, etc) of the right speaker to the right channel SPEAKER SYSTEM A terminal marked —.
3. The left speaker connections are made at the left channel SPEAKER SYSTEM A terminals in the manner described above.
4. Turn the POWER/SPEAKERS switch to the **A** position.

To connect another set of speakers to the 310, connect such speakers to the SPEAKER SYSTEM B terminals of each channel. The POWER/SPEAKERS switch should then be turned to the **B** or **A+B** position.

Antenna Connections

FM Antennas

Indoor Dipole Antenna: The 300-ohm folded dipole antenna (supplied) is for indoor use in urban or strong-signal areas. Connect the two leads from the dipole to the ANTENNA terminals marked FM 300Ω on the rear panel, open the dipole antenna to a full 'T' and tack it up on a wall behind the component cabinet. It is necessary to position the antenna for the best signal pickup before the antenna is permanently tacked.

Outdoor Antenna: An outdoor antenna is recommended for optimum performance in all areas. Best

results will be obtained with a rotator-driven antenna. Rotate the antenna until the best pickup is obtained. If the antenna picks up ignition noise, move it back from a well-traveled street. The lead-in must be as short as possible because it also picks up such noise.

Connect the 300-ohm antenna to the ANTENNA terminals marked FM 300Ω. An unbalanced 75-ohm antenna can be connected to the 310 with coaxial cable. Connect the center conductor to the FM 75Ω terminal and the shield to the G terminal.

AM Antennas

Ferrite Bar Antenna: The highly sensitive bar antenna, located on the rear panel of the receiver, is usually adequate for AM reception. Pull it away from the back of the chassis.

Outdoor Antenna: In weak-signal or fringe areas, a simple outdoor antenna may suffice. Connect one end of PVC wire (supplied) to the AM-A terminal and hook another end outdoors as illustrated on the opposite page.

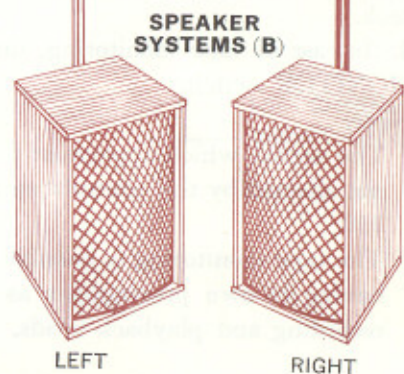
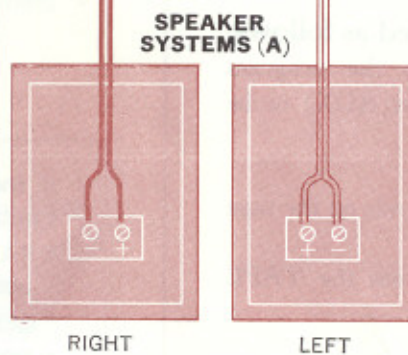
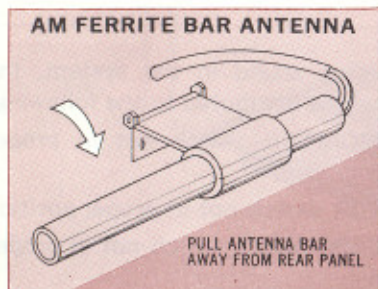
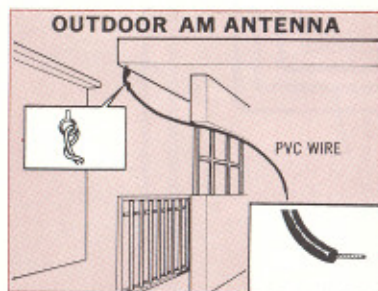
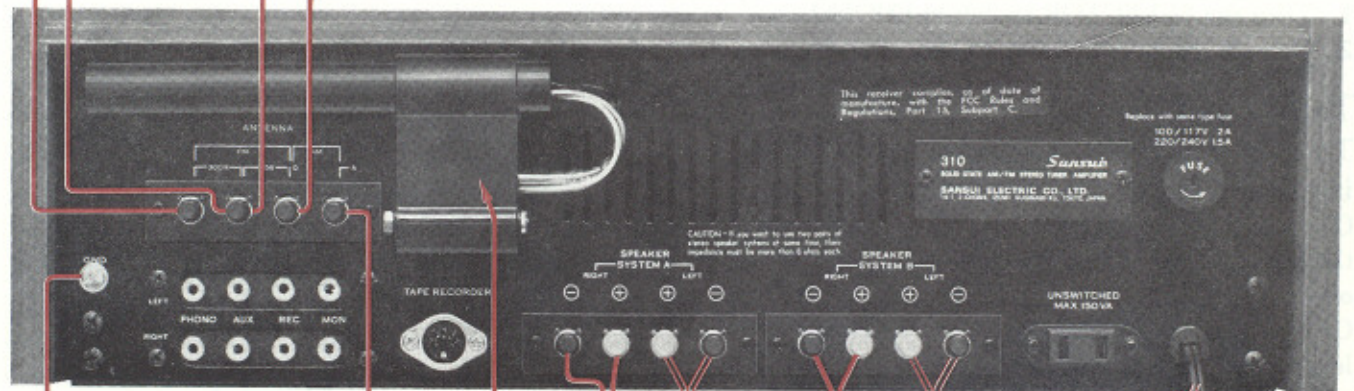
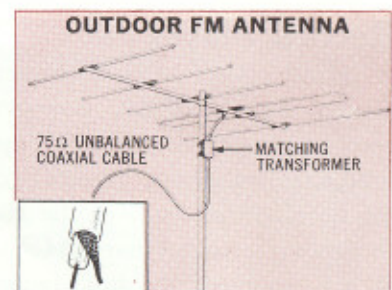
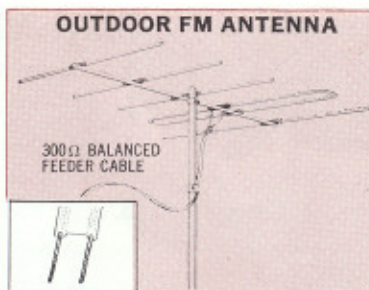
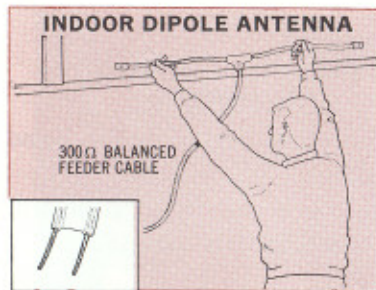
Grounding

Connect a PVC wire or enameled wire from the GND terminal to a grounded metal conductor such as a cold-water pipe or copper plate buried underground. It is dangerous, however, to connect it to a gas pipe. The grounding eliminates the possibility of hum and may reduce noise on radio programs.

Radio Reception

1. Turn the SELECTOR switch to FM AUTO or AM as desired.
2. Turn the TUNING knob to select the desired station. The station is perfectly tuned when the needle in the tuning meter swings as far to the right as possible.

The FM stereo indicator glows when an FM stereo broadcast is received. It remains lit during the stereo reception.



CONNECTIONS/OPERATIONS

Record Player

A record player using a magnetic cartridge can be played through the 310. Connect the outputs of the record player to the PHONO inputs on the receiver with shielded cables. Be sure to connect the grounding terminal (or lead) of the record player to the grounding terminal marked GND of the rear panel. It may suppress the hum noise which may otherwise occur.

To Listen to Records:

1. Turn the SELECTOR switch to PHONO.
2. Operate the record player to play records.

Tape Deck

To connect a tape deck which uses connecting cables fitted with pin plugs:

Connect the left channel output of the tape deck to the left channel MON input, and the right channel output of the deck to the right channel MON input. Connect the left channel input of the deck to the left channel REC output, and the right channel input of the deck to the right channel REC output.

To connect a tape deck which uses only one connecting cable with DIN 5-pin plugs:

Plug the tape deck into the TAPE RECORDER socket on the rear of the amplifier.

Recording

To record from the 310, proceed as follows:

1. Set the SELECTOR switch to the program source (PHONO, FM AUTO, AM or AUX) to be recorded.
2. Reproduce the program source.
3. Make appropriate settings of controls on the tape deck.
4. In case of tape monitoring, depress the TAPE MONITOR switch.

Note:

- * The signal which appears at the REC outputs is not affected by the controls and switches of the 310.
- * The tape monitoring is possible with a tape deck having its own preamplifier as well as separate recording and playback heads.

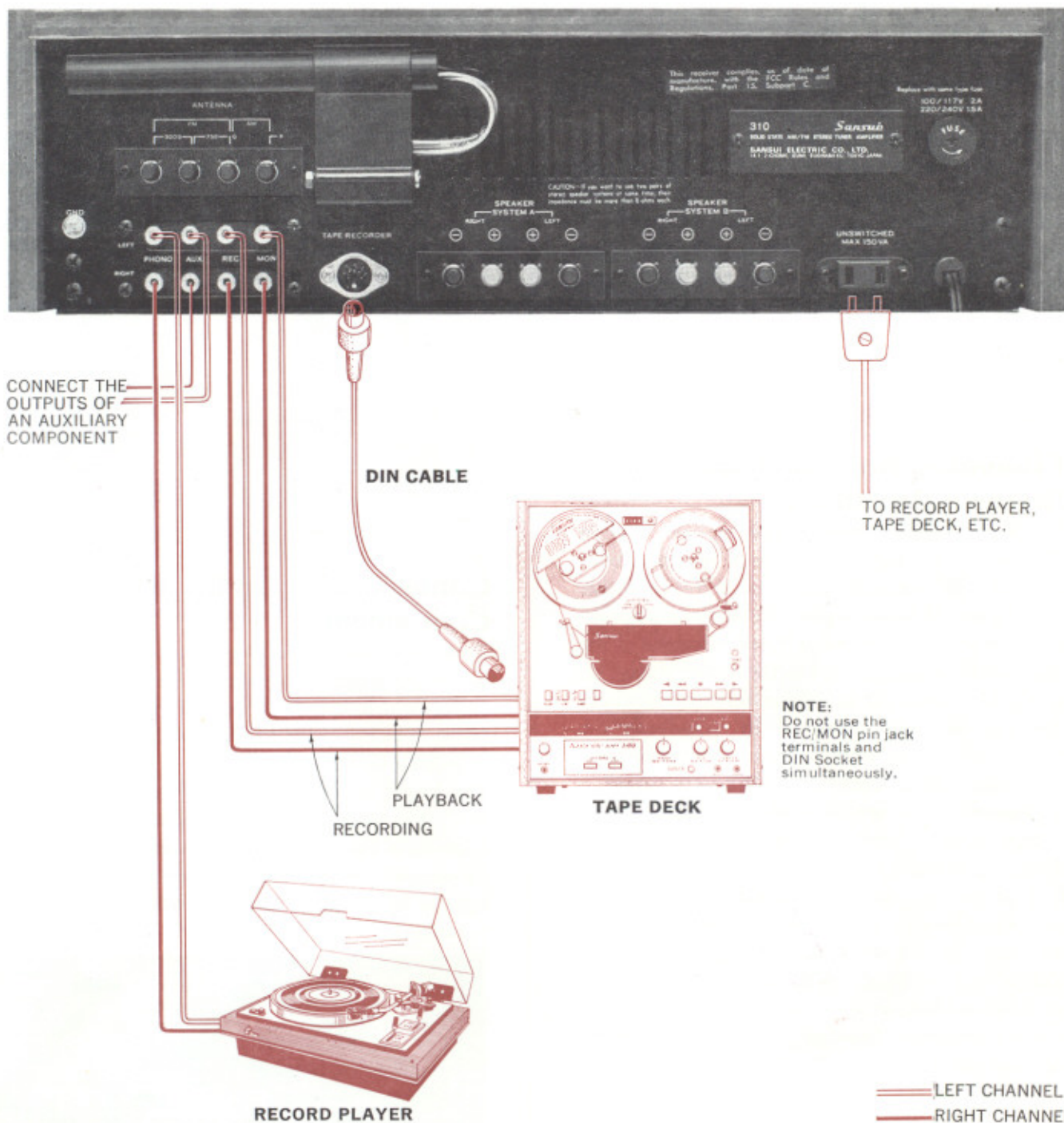
Playback

To listen to tapes, proceed as follows:

1. Depress the TAPE MONITOR switch.
2. Operate the tape deck to reproduce the sound from pre-recorded tapes.
3. Use the controls and switches of the 310 according to your personal taste and room acoustics.

If there is no sound in the system, the trouble may be attributed to the following:

- * TAPE MONITOR switch not in proper position
- * SELECTOR switch not in proper position
- * POWER/SPEAKERS switch not in proper position
- * VOLUME control in fully counterclockwise position
- * Improper connections of wires between units



SIMPLE MAINTENANCE HINTS

Noise on FM Programs

Noise on FM programs may be attributed to either insufficient antenna input or interference from other electrical appliances.

In weak-signal or fringe areas, install an outdoor multi-element antenna with a rotator and position it for the best signal pickup.

If the antenna picks up ignition noise, move it back from the well-traveled street. If still noisy, use coaxial cable (unbalanced 75-ohm), not the 300-ohm lead-in. In this case, be sure to attach a matching transformer to the antenna. Connect the center conductor of the coaxial cable to the FM 75 Ω terminal, and the shield to the G terminal on the rear of the 310.

If Booming Noise is Heard When Playing a Record...

Unpleasant booming hum or howling noise may be heard when playing a record or a recorded tape. This is almost invariably due to one of these reasons:

- 1) If the record player is placed directly on a speaker enclosure or very close to it, the vibration of the speaker will be transmitted to the record player, resulting in a booming phenomenon called howling. This can be easily corrected by separating the record player away from the record player or placing a thick cushion underneath the record player.
- 2) Booming noise is produced if the record player or tape deck is connected with wires or cables other than shielded cables.
- 3) If neither of the above reasons applies, check the connections of various cables. Shielding wire and conductor of a shielded cable may be conversely soldered to a pin plug; the record player motor may not be grounded, or the grounding of its tonearm may be incomplete. In either case, unpleasant booming noise could result.

AC Outlet

One AC outlet is provided on the receiver's rear panel, and can be used like any other outlet for AC house current. Plug a record player or tape deck into this outlet for power supply. The voltage supplied by the AC outlet is same as the power supply voltage used.

The outlet has a maximum capacity of 150VA, and is not controlled by the POWER/SPEAKERS switch on the receiver's front panel.

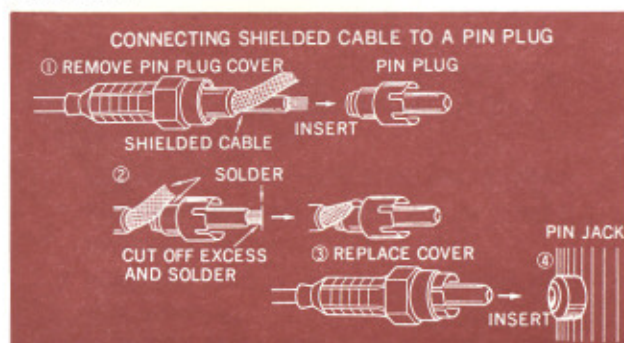


Connection of Additional Components

To connect such audio components as a tape deck or record player, be sure to use thick, shielded cables which distribute only a minimum capacitance. The use of ordinary lamp cord usually results in picking up hum.

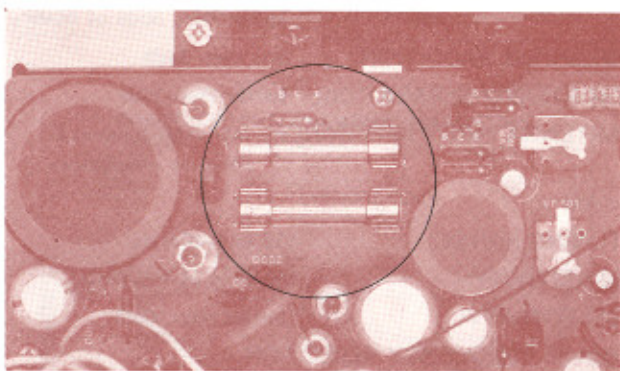
The length of such cable should not exceed 6 or 7 feet. The longer they are, the more the high frequencies of the program is attenuated.

To connect a monophonic component, use either the right or left channel terminal, whichever is easier to connect.



Should a Quick-acting Fuse Blow...

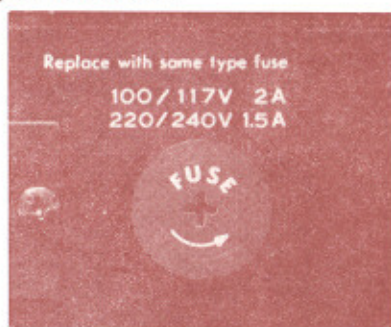
The expensive silicon power transistors on the 310 are safely protected by a pair of quick-acting fuses in the right and left channels. If there should occur overcurrent or overload, either or both of these fuses will instantly blow and the sound will cut off. If this happens, remove the power plug from its wall AC outlet immediately, eliminate the cause, then replace the blown fuses with the new 2-ampere quick-acting fuses (supplied). To reach them, remove the wood bonnet from the set.



Power Fuse

Should the receiver fail to operate when the power switch is turned on, it may be attributed to a blown power fuse. To check, remove the line cord from its wall AC outlet and then the fuse holder. If it is blown, replace it with a new fuse of the same capacity (1.5-ampere fuse 220-240 volt operation, 2-ampere fuse for 100-117 volt operation).

Caution: Never use the quick-acting and power fuses other than specified herein.



Heat Dissipation

Transistors being relatively sensitive to heat, careful consideration has been given in designing the 310 to the efficiency of heat dissipation from the wood bonnet. For this reason, it is strongly recommended not to place anything on top of the receiver, encase it in a tightly closed box or operate it in direct sunlight. If either of these conditions cannot be avoided, take special care to increase the heat dissipation, or it may eventually lead to a breakdown.

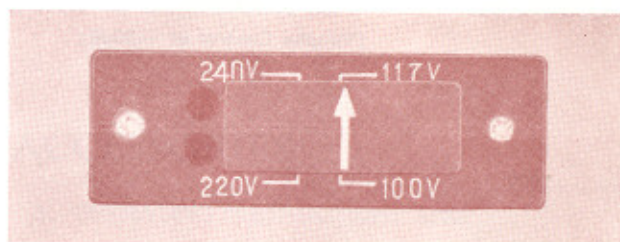
Voltage Adjustment

The 310 is shipped with the voltage selector pre-adjusted at the factory to your area. If the receiver is to be operated from different voltage line, the voltage selector must be changed to the appropriate position required for your new area. To reach the voltage selector, remove the two screws from the cover with the nameplate on the rear panel and then remove the cover. To change, remove the plug, and insert the latter so that its arrow head points to 100V, 117V, 220V or 240V as required.

Caution:

The receiver may be damaged if the voltage selector is set to the wrong position different from the line voltage in your area.

- For 100-117 volt operation
 - a 2-ampere power fuse is required.
- For 220-240 volt operation
 - a 1.5-ampere power fuse is required.



SPECIFICATIONS

AUDIO SECTION

POWER OUTPUT

MUSIC POWER (IHF):	44W at 4 ohms load 36W at 8 ohms load
CONTINUOUS POWER:	18/18W at 4 ohms load 15/15W at 8 ohms load

TOTAL HARMONIC DISTORTION:

less than 1% at rated output

POWER BANDWIDTH (IHF): 25 to 25,000Hz

FREQUENCY RESPONSE	at normal listening level
AUX (over all):	30 to 35,000Hz $\pm$ 2dB

CHANNEL SEPARATION	at rated output, 1,000Hz
PHONO:	better than 50dB
AUX:	better than 55dB

HUM AND NOISE (IHF)

PHONO:	less than -70dB
AUX:	less than -75dB

INPUT SENSITIVITY

PHONO:	at rated output, 1,000Hz 3mV (50k ohms)
AUX:	180mV (100k ohms)
TAPE MON (pin):	180mV (100k ohms)
TAPE RECORDER (DIN):	180mV (100k ohms)

RECORDING OUTPUT

TAPE REC (pin):	at rated input, 1,000Hz 180mV
TAPE RECORDER (DIN):	30mV

LOAD IMPEDANCE: 4 to 16 ohms

EQUALIZER PHONO: RIAA NF type

DAMPING FACTOR: 30 at 8 ohms load

TONE CONTROLS

BASS:	+12dB -12dB at 50Hz
TREBLE:	+12dB -12dB at 10,000Hz
LOUDNESS:	+8dB at 50Hz, +3dB at 10,000Hz (Volume Control at -30dB)

TUNER SECTION

<FM>

TUNING RANGE: 88 to 108MHz

SENSITIVITY (20dB quieting):	2.3 μ V
(IHF):	2.8 μ V

TOTAL HARMONIC DISTORTION:

less than 1%

SIGNAL TO NOISE RATIO: better than 60dB

SELECTIVITY: better than 45dB

CAPTURE RATIO (IHF): 3dB

IMAGE FREQUENCY REJECTION:

better than 50dB at 98MHz

SPURIOUS RADIATION: less than 34dB

FM STEREO SEPARATION: better than 35dB

ANTENNA INPUT IMPEDANCE: 300 ohms balanced 75 ohms unbalanced

<AM>

TUNING RANGE: 535 to 1,605kHz

SENSITIVITY: 180 μ V/m at 1,000kHz

SELECTIVITY: better than 40dB

IMAGE FREQUENCY REJECTION:

better than 60dB

GENERAL

SEMICONDUCTORS:

Transistors: 35, FET: 1, Diodes: 24, IC: 1

POWER REQUIREMENTS

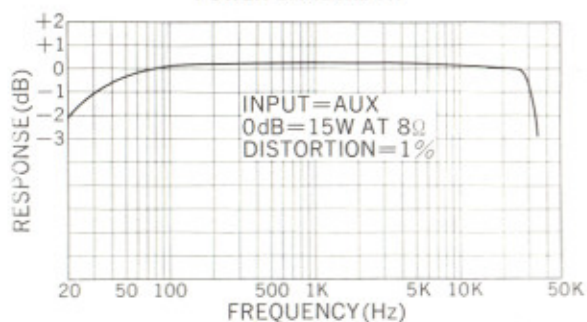
POWER VOLTAGE:	100, 117, 210, 240V $\pm$ 50/60Hz
POWER CONSUMPTION:	50W (rated)

DIMENSIONS:	435mm (17 $\frac{3}{16}$ " W 125mm (4 $\frac{15}{16}$ " H 280mm (11 $\frac{1}{16}$ " D
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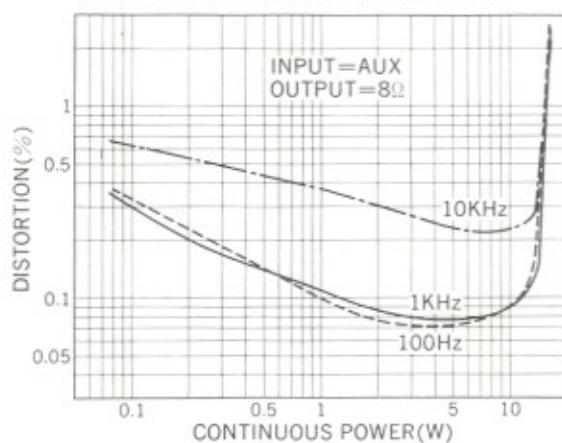
WEIGHT:	7.6kg (16.8 lbs.)
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CHARACTERISTICS/ACCESSORIES

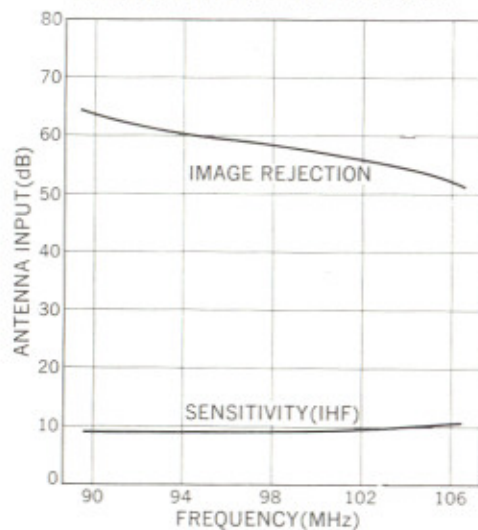
POWER BANDWIDTH



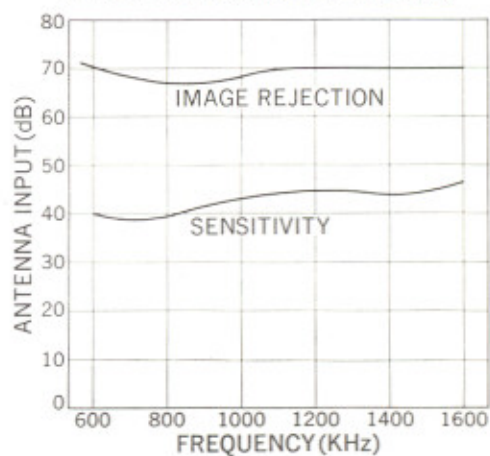
POWER OUTPUT HARMONIC DISTORTION



FM SENSITIVITY & IMAGE REJECTION



AM SENSITIVITY & IMAGE REJECTION



ACCESSORIES

1. OPERATING INSTRUCTIONS AND SERVICE MANUAL..... 1
2. OPERATING SHEET 1
3. FM ANTENNA 1
4. AM ANTENNA 1
5. PIN PLUGS 2
6. BUTTERFLY BOLTS 2
7. WASHERS..... 2
8. POLISHING CLOTH 1
9. QUICK ACTING FUSES (2A) 2

SCHEMATIC DIAGRAM

CSA Type Connection of the A.C. Supply Circuit

See wiring-in Fuse

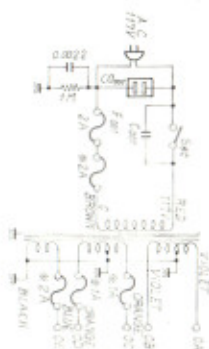


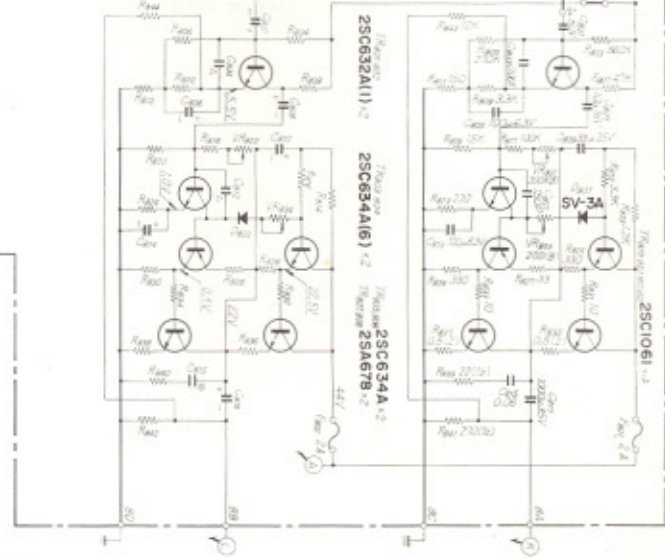
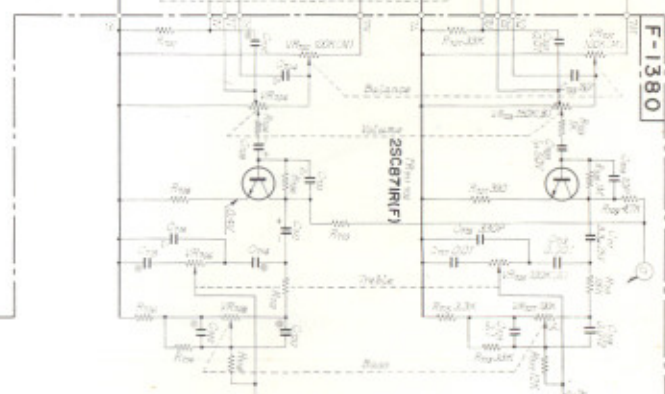
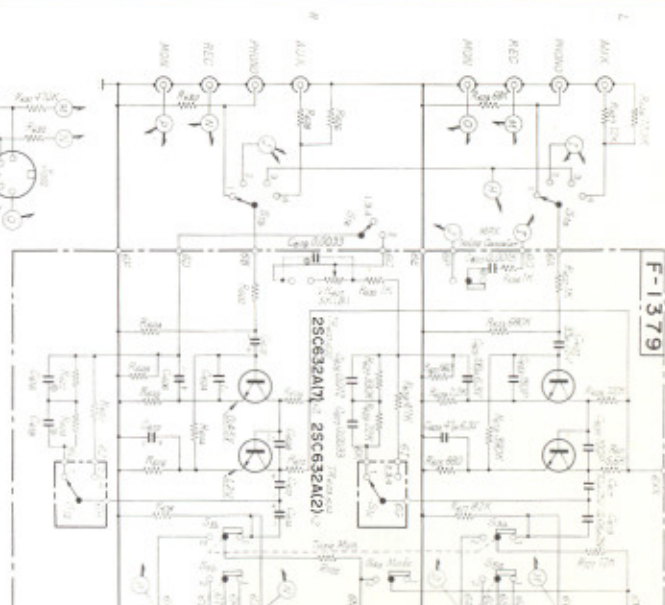
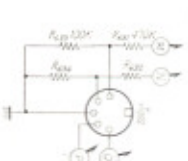
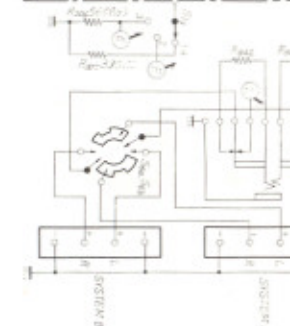
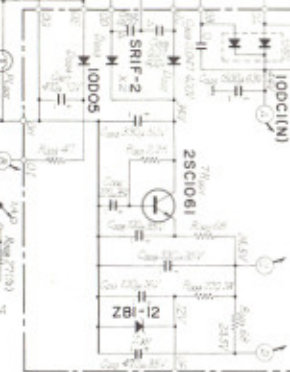
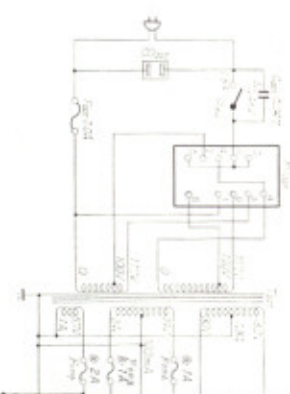
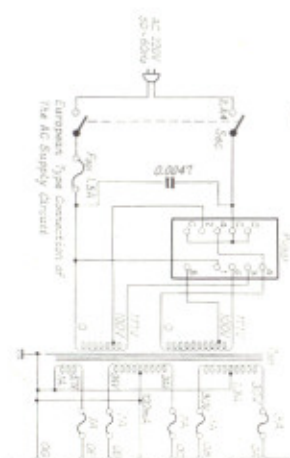
Fig. 1(a) Selector
1. POWER
2. TV
3. AV
4. AUX

Fig. 1(b) Mode Selector
1. OFF
2. ON

Fig. 1(c) Power & Standby Selector
1. Power ON
2. System A
3. System B
4. System A+B

Fig. 1(d) Mode Selector
1. OFF
2. ON

Fig. 1(e) Mode Selector
1. OFF
2. ON



GENERAL TROUBLESHOOTING CHART

If the amplifier is otherwise operating satisfactorily, the more common causes of trouble may generally be attributed to the following:

1. Incorrect connections or loose terminal contacts. Check the speakers, record player, tape deck, antenna and line cord.
2. Improper operation. Before operating any audio com-

ponent, be sure to read the manufacturer's instructions.

3. Improper location of audio components. The proper positioning of components, such as speakers and record player, is vital to stereo.

4. Defective audio components.

The following are some other common causes of malfunction and what to do about them.

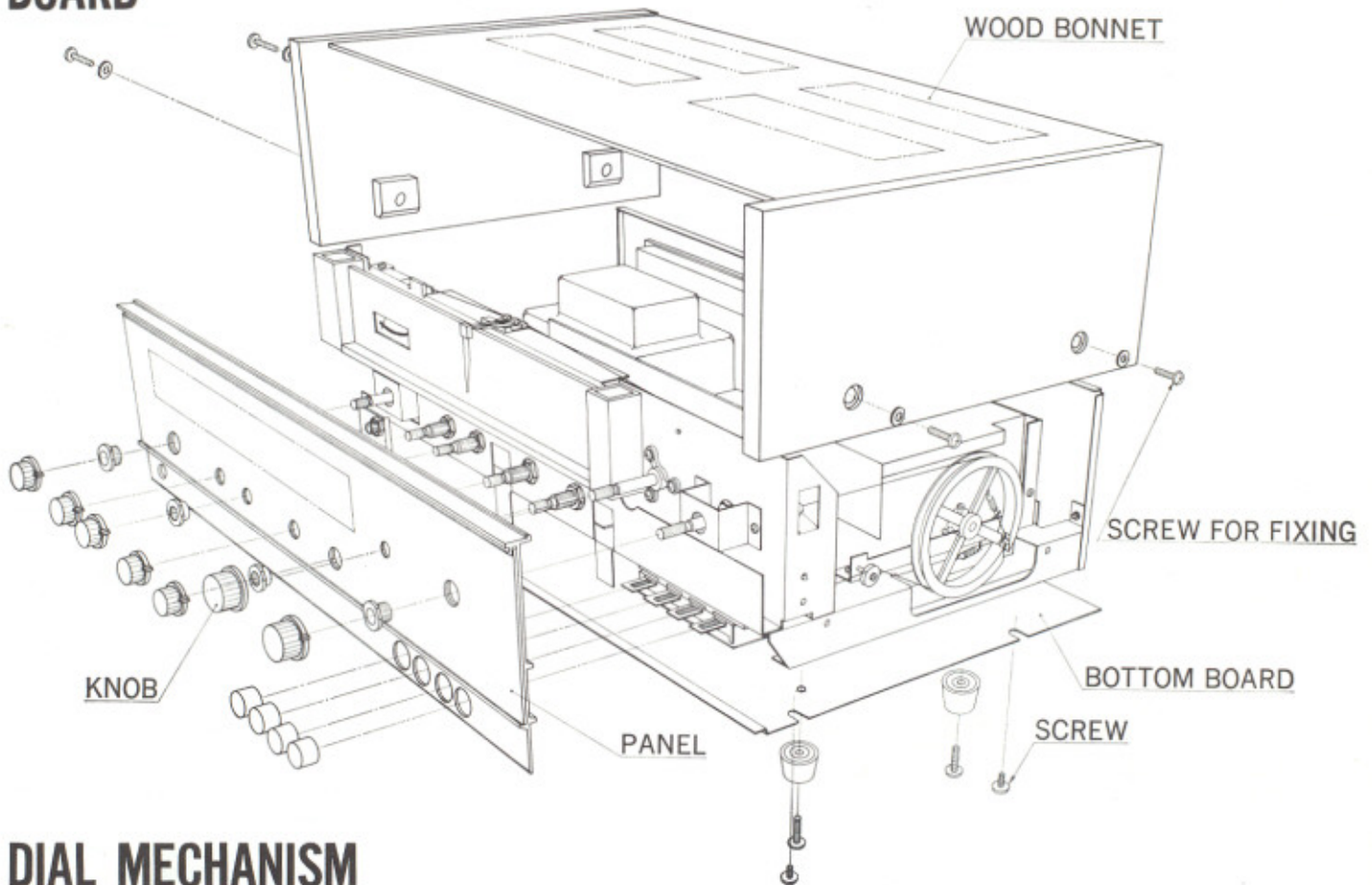
PROGRAM	SYMPTOM	PROBABLE CAUSE	WHAT TO DO
AM, FM or FM-MPX reception	A. Constant or intermittent noise heard at times or in a certain area.	* Discharge or oscillation caused by electrical appliances, such as fluorescent lamp, TV set, D.C. motor, rectifier or oscillator * Natural phenomena, such as atmospherics, static or thunders bolts * Insufficient antenna input due to ferroconcrete wall or long distance from the station * Wave interference from other electrical appliances	* Attach a noise limiter to the electrical appliance, or attach it to the amplifier's power source * Install an outdoor antenna and ground the amplifier to raise the signal-to-noise ratio. * Reverse the power cord plug-receptacle connections. * If the noise occurs at a certain frequency, attach a wave trap to the ANT. input. * Keep the set at a proper distance from other electrical appliances.
	B. The needle of the tuning meter does not move sharply	* Receiver is located in a weak signal area	* The needle swing varies depending on the stations
	C. The zero point of the meter diverges much	* Regional difference in field intensity.	* The unit is not at fault.
AM reception	A. Noise heard at a particular time of a day, in a certain area or over part of dial	* Due to the nature of AM broadcasts	* Install the antenna for maximum antenna efficiency. See "ANTENNA" in the operating instructions. * In some cases, the noise can be eliminated by grounding the amplifier or reversing the power cord plug-receptacle connections.
	B. High-frequency noise	* Adjacent-channel interference or beat interference * TV set is too close to audio system	* Although such noise cannot be eliminated by the amplifier, it is advisable to adjust the TREBLE control from midpoint to left * Keep the TV set at a proper distance from the audio system.
FM reception	A. Noisy	* Poor noise limiter effect or too low SN ratio due to insufficient antenna input.	* Install the antenna (supplied) for maximum signal strength. * If this does not prove effective, use an outdoor antenna designed exclusively for FM. When you use a TV antenna for both TV and FM with a splitter, make sure TV reception is not affected * An excessively long antenna may cause noise

Note: FM reception is affected considerably by transmission conditions of stations: power and antenna efficiency. As a result, you may receive one station quite well while receiving another station poorly

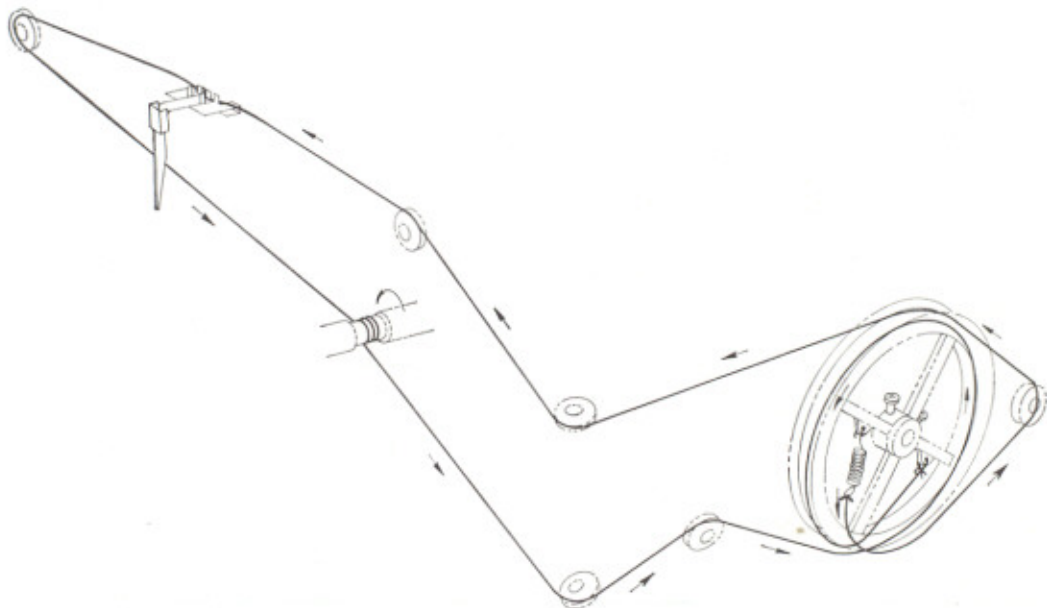
PROGRAM	SYMPTOM	PROBABLE CAUSE	WHAT TO DO
FM reception (cont'd)	B. A series of pops	* Ignition noise caused by starting of an automobile engine	* Install the antenna and its lead-in wire in proper distance from the road or raise the antenna input as described above
	C. Tuning noise between stations	* This results from the nature of the FM reception. As the station signal becomes weak, the noise limiter effect is decreased, and the amplification of the limiter, in turn, is enlarged, generating a noise	* Turn down the volume during tuning
FM-MPX reception	A. Noise heard during FM-MPX reception while not heard during FM mono reception	* Weaker signal because the service area of the FM-MPX broadcast is only half that of the FM mono broadcast	* Install the antenna for maximum antenna input * Switch on the MPX NOISE CANCELER and/or turn the TREBLE control from midpoint, left
	B. Clearness of channel separation is decreased during reception	* Excess heat	* Circulation of air is important to the amplifier. Be sure that air is flowing under the amplifier
	C. The stereo indicator blinks on and off	* Interference	* The indicator is not at fault, adjust VR ₄₀₁
	D. The stereo indicator blinks on and off even though stereo station is not received	* Interference	* The indicator is not at fault, adjust VR ₄₀₁
Record playing or tape playback	A. Hum or howling	* Record player placed directly on speaker box * Wire other than shielded wire used * Loose terminal contact * Shielded wire too close to line cord, fluorescent lamp or other electrical appliances * Nearby amateur radio station or TV transmission antenna	* Place a cushion between the player and the speaker box or place them away from each other * The connecting shielded wire should be as short as possible * Consult the nearest Radio Regulatory Bureau
	B. Surface noise	* Worn or old record * Worn stylus * Stylus dusty * Improper stylus pressure	* Recondition the playback head of the tape deck or the stylus of the record player * Adjust the TREBLE control from midpoint, left
All stereo programs	BALANCE control is not at midpoint when equal sound comes from left and right channels	* It is important to adjust for equal sound from both channels. It should not always be set to the midpoint	* Depress the MONO switch and then set the BALANCE control to a position where equal sound comes from both channels

DIASSEMBLY PROCEDURE

REMOVING THE FRONT PANEL, WOOD BONNET AND BOTTOM BOARD



DIAL MECHANISM



PRINTED CIRCUIT BOARDS AND PARTS LIST

W: Parts No. X: Parts Name Y: Stock No. Z: Position of Parts

FM, MPX, AM BLOCK <F-1353-1B>

W	X	Y	Z
R101	100k Ω	0101104	1, 2 D
R102	220k Ω	0100224	1, 2 D
R103	1M Ω	0101105	1 D
R104	150 Ω	0100151	1 D
R105	120 Ω	0100121	1 D
R106	5.6k Ω	0101562	1 D
R107	12k Ω	0101123	1 D
R108	3.9k Ω	0101392	1 D
R109	470 Ω	0100471	1 C
R110	8.2k Ω	0100822	1 D
R111	27 Ω	0100270	1 C, D
R112	2.2k Ω	0101222	1 D
R113	2.2k Ω	0100222	1 D
R114	1k Ω	0101102	1, 2 C
R201	3.3k Ω	0100332	1 C
R202	1.5k Ω	0100152	1 C
R203	1k Ω	0100102	1, 2 C
R204	330 Ω	0100331	1 C
R205	3.3k Ω	0100332	1 C
R206	1.5k Ω	0100152	1, 2 C
R207	100 Ω	0100101	1 C
R208	1k Ω	0100102	1, 2 C
R209	330 Ω	0100331	1 C
R210	1k Ω	0101102	1, 2 C
R211	330 Ω	0101331	1 C
R212	68 Ω	0100680	1 B
R213	5.6k Ω	0100562	1 B
R214	390 Ω	0100391	1 B
R215	1k Ω	0100102	1 B
R216	1k Ω	0100102	1 B
R217	6.8k Ω	0100682	1 B
R218	6.8k Ω	0100682	1 B
R219	100 Ω	0101101	1 B
R220	100 Ω	0101101	1, 2 B
R221	15k Ω	0100153	2 C
R222	4.7k Ω	0100472	2 C
R223	1k Ω	0100102	1, 2 C
R224	100 Ω	0100101	2 B, C
R225	4.7k Ω	0100472	1, 2 B
R226	15k Ω	0100153	2 B
R227	1k Ω	0100102	1, 2 B
R228	4.7k Ω	0100472	2 B
R301	10k Ω	0100103	2 C
R302	100 Ω	0101101	3 C
R303	22 Ω	0100220	3 C
R304	1k Ω	0100102	3 C
R307	2.2k Ω	0100222	3 C
R309	1k Ω	0100102	3 C
R310	22 Ω	0100220	3 C
R311	1k Ω	0100102	3 C
R312	15k Ω	0100153	3 C
R313	4.7k Ω	0100472	3 C
R314	6.8k Ω	0101682	2 C
R315	10k Ω	0100103	2, 3 C
R316	33k Ω	0101333	2 C
R317	39k Ω	0100393	2, 3 C
R318	39 Ω	0100390	2, 3 C

$\pm 10\% \frac{1}{4}W$ CR.

W	X	Y	Z
R319	1.8k Ω	0100182	2 C
R320	56 Ω	0100560	3 C
R321	22k Ω	0100223	2 B, C
R322	39k Ω	0100393	2 B
R323	4.7k Ω	0100472	3 B
R324	15k Ω	0100153	3 B
R325	390 Ω	0100391	2 B
R326	470 Ω	0100471	3 B
R327	56 Ω	0101560	3 B
R328	100 Ω	0100101	3 B
R329	68k Ω	0100683	3 B
R330	10 Ω	0100100	3 B
R331	1k Ω	0100102	3 B
R332	82k Ω	0100823	3 B
R333	1k Ω	0100102	2 B
R334	10k Ω	0100103	2 B
R335	2.2k Ω	0100222	2 B
R336	100 Ω	0100101	3 B
R338	390 Ω	0100391	3 D
R339	1k Ω	0101102	3 D
R401	1k Ω	0100102	1 A
R402	100k Ω	0100104	1 A
R403	22k Ω	0100223	1 A
R404	15k Ω	0100153	1 A
R406	4.7k Ω	0100472	2 A
R407	100k Ω	0100104	2 A
R408	150 Ω	0100151	2 A
R409	3.9k Ω	0100392	2 A
R410	47k Ω	0100473	2 A
R411	22k Ω	0100223	2 A
R412	47k Ω	0100473	1 A
R413	22k Ω	0100223	2 A
R414	10 Ω	0100470	1, 2 A
R415	22k Ω	0100223	2 A
R416	2.2k Ω	0100222	2 A
R417	1.8k Ω	0100182	1 A
R418	100k Ω	0100104	2 A
R419	10k Ω	0100103	2 A
R420	47 Ω	0100470	2 A
R421	220k Ω	0100224	3 A
R422	220k Ω	0100224	3 A
R423	220k Ω	0100224	3 A
R424	220k Ω	0100224	3 A
R425	10k Ω	0100103	3 A
R426	10k Ω	0100103	3 A
R427	10k Ω	0100103	3 A
R428	10k Ω	0100103	3 A
R429	56k Ω	0100563	3 A
R430	56k Ω	0100563	2, 3 A
R431	100k Ω	0100104	3 A
R432	100k Ω	0100104	3 A
R433	39k Ω	0101393	
VR201	47k Ω (B) Tuning Meter Adj. (FM)	1035170	2 B
VR301	22k Ω (B) Tuning Meter Adj. (AM)	1035150	3 A, B
VR401	220k Ω (B) FM Separation Adj.	1035210	1 A
C101	10pF $\pm 5\%$ 50 V CC.	0664100	2 D

$\pm 10\% \frac{1}{4}W$ CR.

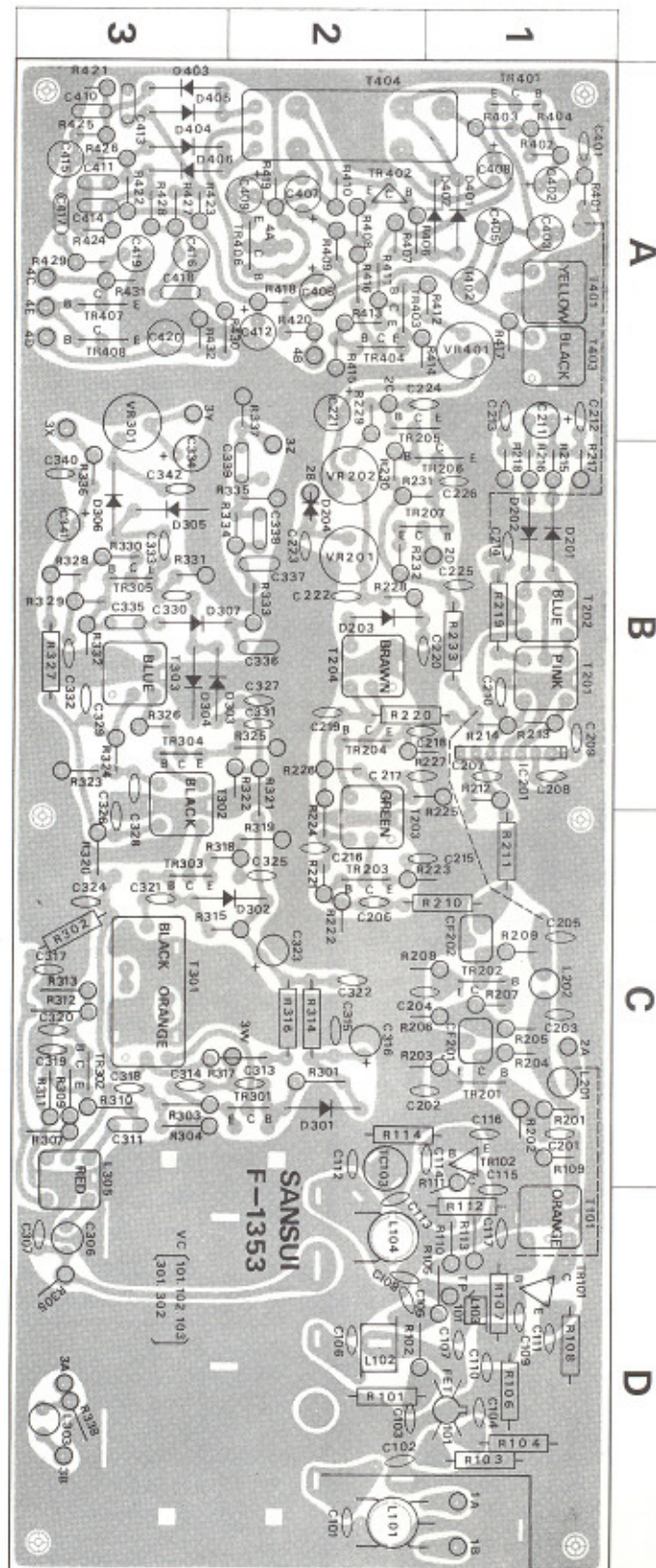
PRINTED CIRCUIT BOARDS AND PARTS LIST

W: Parts No. X: Parts Name Y: Stock No. Z: Position of Parts

<F-1353-1B> Cont'd

W	X	Y	Z
C102	1000pF ±20% 50 V CC.	0652102	2 D
C103	0.022μF	0656223	2 D
C104	0.022μF } +80% 25 V CC.	0656223	1 D
C105	0.022μF } -20%	0656223	2 D
C106	12pF ±5% 50 V CC.	0661120	2 D
C107	8.2pF ±0.5pF 50 V CC.	0669005	1 D
C108	1pF ±5% 50 V	0679008	2 D
C109	18pF	0661180	1 D
C110	220pF } ±5% 50 V CC.	0660221	1 D
C111	0.022μF } +80% 25 V CC.	0656223	1 D
C112	18pF } -20%	0669019	2 C
C113	8.2pF ±0.25pF 50 V CC.	0669015	2 D
C114	10pF ±5% 50 V CC.	0664100	1 C
C115	0.022μF } +80% 25 V CC.	0656223	1 D
C116	10pF } -20%	0664100	1 C
C117	0.022μF } +80% 25 V CC.	0656223	1 D
C118	0.022μF } -20%	0657223	1 D
C201	0.022μF	0656223	1 C
C202	0.022μF	0656223	1, 2 C
C203	0.022μF } +80% 25 V CC.	0656223	1 C
C204	0.022μF } -20%	0656223	1, 2 C
C205	0.022μF	0656223	1 C
C206	15pF ±10% 50 V CC.	0660150	2 C
C207	0.022μF	0656223	1 B
C208	0.022μF } +80% 25 V CC.	0656223	1 B
C209	0.022μF } -20%	0656223	1 B
C210	0.047μF	0656473	1 B
C211	10μF 16 V EC.	0512100	1 A
C212	220pF	0660221	1 A
C213	220pF } ±5% 50 V CC.	0660221	1 A
C214	220pF } -20%	0660221	1 B
C215	0.022μF	0656223	1, 2 C
C216	0.022μF	0656223	2 C
C217	0.022μF } +80% 25 V CC.	0656223	1, 2 B
C218	0.022μF } -20%	0656223	1, 2 B
C219	0.022μF	0656223	2 B
C220	0.022μF	0656223	1, 2 B
C221	3.3μF 35 V EC.	0514339	2 A
C222	0.022μF } +80% 25 V CC.	0656223	2 B
C223	0.022μF } -20%	0656223	2 B
C306	360pF ±5% 50 V SC.	0620361	3 D
C307	15pF ±5% 50 V CC.	0661150	3 D
C311	0.01μF ±10% 50 V MC.	0601107	3 C
C313	0.01μF } +80% 25 V CC.	0656103	2 C
C314	47pF } -20%	0660470	3 C
C315	0.047μF } +80% 25 V CC.	0656473	2 C
C316	1μF } -20%	0515109	2 C
C317	0.047μF } +80% 25 V CC.	0656473	3 C
C318	0.01μF } -20%	0656103	3 C
C319	1.5pF ±10% 50 V CC.	0660159	3 C
C320	0.022μF	0656223	3 C
C321	0.01μF } +80% 25 V CC.	0656103	3 C
C322	0.047μF } -20%	0656473	2 C
C323	3.3μF 16 V EC.	0512100	2 C
C324	0.047μF } +80% 25 V CC.	0656473	3 C
C325	0.047μF } -20%	0656473	2 C

W	X	Y	Z
C326	0.022μF	0656223	3 C
C327	0.047μF	0656473	2 B
C328	0.022μF	0656223	3 B
C329	0.047μF } +80% 25 V CC.	0656473	3 B
C330	0.022μF } -20%	0656223	3 B
C331	0.047μF	0656473	2 B
C332	0.047μF	0656473	3 B
C333	0.022μF	0656223	3 B
C334	47μF 6.3 V EC.	0510470	3 B
C335	0.0022μF	0601226	3 B
C336	0.0047μF } ±10% 50 V MC.	0601476	2 B
C337	0.01μF } -20%	0601107	2 B
C339	0.012μF ±10% 50 V MC.	0601127	2 B
C340	0.047μF } +80% 25 V CC.	0656473	3 B
C341	100μF 16 V EC.	0512101	3 B
C342	0.047μF } +80% 25 V CC.	0656473	3 B
C343	3.3μF 25 V EC.	0513339	2 B
C344	15pF	0660150	3 B
C401	68pF } ±10% 50 V CC.	0660680	1 A
C402	3.3μF 35 V EC.	0514339	1 A
C403	6800pF	0629001	1 A
C405	2200pF } ±5% 50 V SC.	0620222	1 A
C406	10μF 25 V EC.	0513100	2 A
C407	1μF 50 V EC.	0515109	2 A
C408	10μF 25 V EC.	0513100	1 A
C409	10μF 16 V EC.	0512100	2 A
C410	0.0022μF } ±10% 50 V MC.	0601226	3 A
C411	0.0022μF } -20%	0601226	3 A
C412	1μF 50 V EC.	0515109	2 A
C413	0.0022μF	0601226	3 A
C414	0.0022μF } ±10% 50 V MC.	0601226	3 A
C415	560pF } ±5% 50 V SC.	0620561	3 A
C416	560pF } -20%	0620561	3 A
C417	0.1μF } ±10% 50 V MC.	0601108	3 A
C418	0.1μF } -20%	0601108	3 A
C419	2200pF } ±5% 50 V SC.	0620222	3 A
C420	2200pF } -20%	0620222	3 A
VC101~103	FM } Variable Capacitor	1220090	3 D
VC301, 302	AM } Variable Capacitor	1220090	3 D
TC103	Trimmer Capacitor	1230050	2 D
CF201	Ceramic Filter	0910120	1 C
CF202		0910120	1 C
FET101	3SK-39 (Q, R)	0300800, 1	1 D
TR101	2SC1047 (B)	0305801	1 D
TR102	2SC930 (C)	0305790	1 C
TR201	2SC930 (D)	0305791	1 C
TR202		0305791	1 C
TR203		0305791	2 C
TR204	2SC929 (E)	0305791	2 B
TR301		0305723	2 C
TR302		0305792	3 C
TR303	2SC930 (E)	0305792	3 C
TR304		0305791	3 B
TR305		0305791	3 B



PRINTED CIRCUIT BOARDS AND PARTS LIST

W: Parts No. X: Parts Name Y: Stock No. Z: Position of Parts

<F-1353-1B> Cont'd

W	X	Y	Z
TR401	2SC711 (E, F)	0305731, 2	1 A
TR402	2SA562 (O, Y)	0300220, 1	2 A
TR403	2SC711 (E, F)	0305731, 2	2 A
TR404		0305731, 2	2 A
TR406	2SC735 (O, Y)	0305640, 1	2 A
IC201	TA7061AP	0360060	1 B
D201	IN60P	0310970	1 B
D202		0310970	1 B
D203	IN60	0310330, 1	2 B
D204	DS-430	0340090	2 B
D301	IN60	0310330, 1	2 C
D302		0310330, 1	2, 3 C
D303		0310330, 1	3 B
D304		0310330, 1	3 B
D305		0310330, 1	3 B
D306		0310330, 1	3 B
D307		0310330, 1	2, 3 B
D401		0310401	1 A
D402	IN34A (Yellow)	0310401	1 A
D403		0310401	3 A
D404		0310401	3 A
D405		0310401	3 A
D406		0310401	3 A
T101	FM IF Transformer	4235790	1 D
T201	FM Discriminator	4235750	1 B
T202	FM Discriminator	4235760	1 B
T203	FM Meter Transformer	4235770	2 B, C
T204		4235780	2 B
T301	Ceramic Filter	4230550	3 C
T302	AM IF Transformer	4230510	3 B, C
T303		4230500	3 B
T401	MPX Coil	4240640	1 A
T402	Micro Inductor	4900100	1 A
T403	MPX Coil	4240650	1 A
T404	MPX Transformer	4240660	1, 2 A
L101	Antenna Coil	4200370	2 D
L102	RF Coil	4210090	2 D
L103	Trap Coil	4290110	1 D
L104	FM OSC Coil	4220270	2 D
L201	Micro Inductor	4900100	1 C
L202		4900100	1 C
L303	Micro Inductor	4900150	3 D
L305	AM OSC Coil	4220280	3 C, D

Abbreviations

CR : Carbon Resistor
CeR : Cement Resistor
SR : Solid Resistor
CC : Ceramic Capacitor
EC : Electrolytic Capacitor
AEC : Aluminum Soid Electrolytic Capacitor
MC : Mylar Capacitor
OC : Oil Capacitor
SC : Styrol Capacitor
TC : Tantalum Capacitor

TONE CONTROL, POWER AMP. & POWER SUPPLY BLOCK <F-1380>

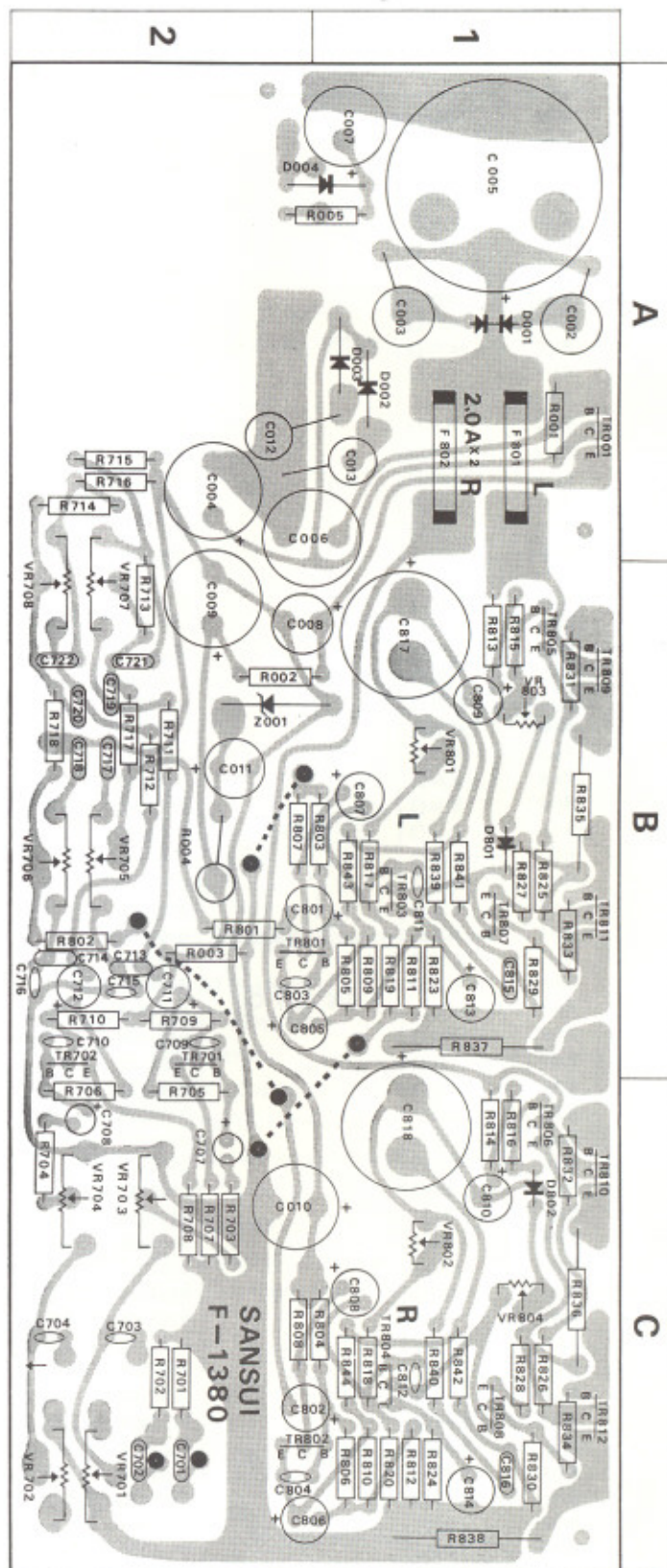
W	X	Y	Z	W	X	Y	Z
R701	33k Ω	0101333	2C	R841	270 Ω	0111271	1B
R702	33k Ω	0101333	2C	R842	270 Ω	0111271	1C
R703	1k Ω	0101102	2C	R843	12k Ω	0101123	1B
R704	1k Ω	0101102	2C	R844	12k Ω	0101123	1C
R705	1M Ω	0101105	2C				
R706	1M Ω	0101105	2C	R001	2.2k Ω	0101222	1A
R707	390 Ω	0101391	2C	R002	68 Ω	0101680	2B
R708	390 Ω	0101391	2C	R003	68 Ω	0101680	2B
R709	4.7k Ω	0101472	2B	R004	220 Ω	0104221	2B
R710	4.7k Ω	0101472	2B	R005	47 Ω	0101470	1, 2A
R711	18k Ω	0101183	2B				
R712	18k Ω	0101183	2B	VR701,702	100k Ω (HB) $\times$ 2	1010771	2C
R713	33k Ω	0101333	2B	VR703,704	250k Ω (B) $\times$ 2	1010750	2C
R714	33k Ω	0101333	2A	VR705,706	100k Ω (A) $\times$ 2	1010781	2B
R715	3.3k Ω	0101332	2A	VR707,708	100k Ω (A) $\times$ 2	1010781	2A, B
R716	3.3k Ω	0101332	2A	VR801	200k Ω (B)	1032150	1B
R717	12k Ω	0101123	2B	VR802	A.C. Balance Adj.	1032150	1C
R718	12k Ω	0101123	2B	VR803	200 Ω (B)	1032020	1B
				VR804	Bias Adj.	1032020	1C
R801	2.2k Ω	0101222	2B				
R802	2.2k Ω	0101222	2B	C701	0.01 μ F	0601107	2C
R803	560k Ω	0101564	1B	C702	0.01 μ F	0601107	2C
R804	560k Ω	0101564	1C	C703	150pF	0660151	2C
R805	270k Ω	0101274	1B	C704	150pF	0660151	2C
R806	270k Ω	0101274	1C	C707	1 μ F	0515109	2C
R807	4.7k Ω	0101472	2B	C708	1 μ F	0515109	2C
R808	4.7k Ω	0101472	1C	C709	10pF	0660100	2B
R809	3.3k Ω	0101332	1B	C710	10pF	0660100	2B
R810	3.3k Ω	0101332	1C	C711	3.3 μ F	0514339	2B
R811	150 Ω	0101151	1B	C712	3.3 μ F	0514339	2B
R812	150 Ω	0101151	1C	C713	0.001 μ F	0601106	2B
R813	1.2k Ω	0101122	1B	C714	0.001 μ F	0601106	2B
R814	1.2k Ω	0101122	1C	C715	330pF	0660330	2B
R815	3.3k Ω	0101332	1B	C716	330pF	0660330	2B
R816	3.3k Ω	0101332	1C	C717	0.01 μ F	0601107	2B
R817	100k Ω	0101104	1B	C718	0.01 μ F	0601107	2B
R818	100k Ω	0101104	1C	C719	0.012 μ F	0601127	2B
R819	15k Ω	0101153	1B	C720	0.012 μ F	0601127	2B
R820	15k Ω	0101153	1C	C721	0.1 μ F	0601108	2B
R823	220 Ω	0101221	1B	C722	0.1 μ F	0601108	2B
R824	220 Ω	0101221	1C				
R825	330 Ω	0101331	1B	C801	1 μ F	0515109	1, 2B
R826	330 Ω	0101331	1C	C802	1 μ F	0515109	1, 2C
R827	33 Ω	0101330	1B	C803	0.001 μ F	0656102	2B
R828	33 Ω	0101330	1C	C804	0.001 μ F	0656102	2C
R829	330 Ω	0101331	1B	C805	100 μ F	0510101	1, 2B
R830	330 Ω	0101331	1C	C806	100 μ F	0510101	1, 2C
R831	10 Ω	0101100	1B	C807	10 μ F	0512100	1B
R832	10 Ω	0101100	1C	C808	10 μ F	0512100	1C
R833	10 Ω	0101100	1B	C809	33 μ F	0513330	1B
R834	10 Ω	0101100	1C	C810	33 μ F	0513330	1C
R835	0.47 Ω	0152478	1B	C811	150pF	0660151	1B
R836	0.47 Ω	0152478	1C	C812	150pF	0660151	1C
R837	0.47 Ω	0152478	1B	C813	100 μ F	0510101	1B
R838	0.47 Ω	0152478	1C	C814	100 μ F	0510101	1C
R839	22 Ω	0111220	1B	C815	0.06 μ F	0601607	1B
R840	22 Ω	0111220	1C	C816	0.06 μ F	0601607	1C

PRINTED CIRCUIT BOARDS AND PARTS LIST

W: Parts No. X: Parts Name Y: Stock No. Z: Position of Parts

<F-1380> Cont'd

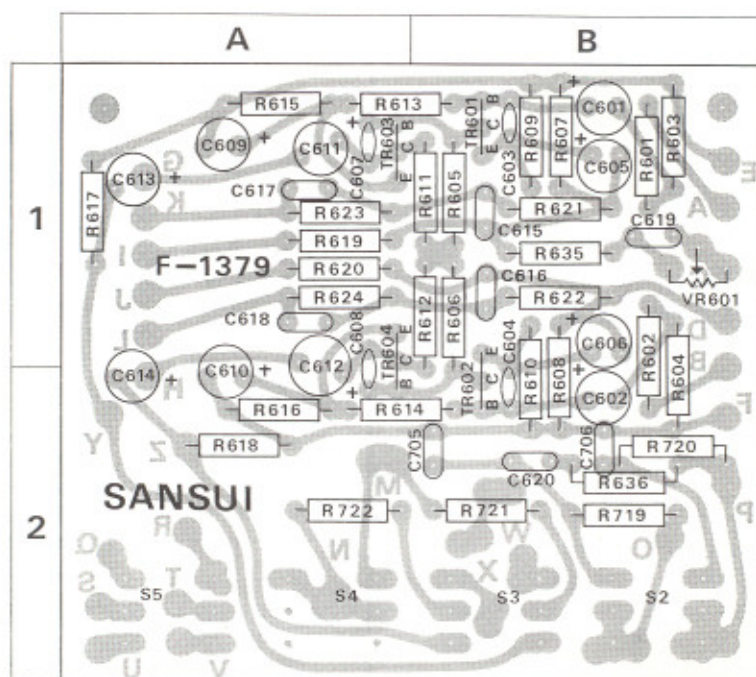
W	X	Y	Z
C817	1000 μ F	35 V EC.	0549004 1B
C818	1000 μ F		0549004 1C
C002	0.047 μ F	400 V OC.	0590477 1A
C003	0.047 μ F		0590477 1A
C004	330 μ F	50 V EC.	0515331 2A
C005	1500 μ F	63 V EC.	0549204 1A
C006	220 μ F	35 V EC.	0514221 1, 2 A
C007	470 μ F	10 V EC.	0511471 1A
C008	100 μ F		0514101 1, 2 B
C009	330 μ F	35 V EC.	0514331 2B
C010	470 μ F		0514471 1, 2 C
C011	100 μ F	16 V EC.	0512101 2B
C012	0.01 μ F	400 V OC.	0590107 2A
C013	0.01 μ F		0590107 1A
TR701	2SC871 Red(E)	0305474	2B
TR702		0305474	2B
TR801	2SC632A (1)	0305761	1, 2 B
TR802		0305761	1, 2 C
TR803	2SC634A (6)	0305891	1B
TR804		0305891	1C
TR805	2SC634A (6, 7)	0305891, 2	1B
TR806		0305891, 2	1C
TR807	2SA678 (6, 7)	0300291, 2	1B
TR808		0300291, 2	1C
TR809		0305770	1B
TR810		0305770	1C
TR811	2SC1061	0305770	1B
TR812		0305770	1C
TR001		0305770	1A
D801	SV-3A	0340070	1B
D802		0340070	1C
D001	10DC1 (N)	0130680	1A
D002	SR1F-2	0130870	1A
D003		0130870	1A
D004	10D05	0130880	1, 2 A
Z001	ZB1-12	0310641	2B
F801	Quick Acting Fuse (2A)	0433232	1A
F802		0433232	1C



HEAD AMP. BLOCK (F-1379B)

W	X	Y	Z
R601	1k Ω	0101102	1 B
R602	1k Ω	0101102	1, 2 B
R603	680k Ω	0101684	1 B
R604	680k Ω	0101684	1, 2 B
R605	100k Ω	0101104	1 B
R606	100k Ω	0101104	1 B
R607	560 Ω	0101561	1 B
R608	560 Ω	0101561	1, 2 B
R609	2.2k Ω	0101222	1 B
R610	2.2k Ω	0101222	1, 2 B
R611	5.6k Ω	0101562	1 B
R612	5.6k Ω	0101562	1 B
R613	390k Ω	0101394	1 A, B
R614	390k Ω	0101394	2 A, B
R615	680 Ω	0101681	1 A
R616	680 Ω	0101681	2 A
R617	82k Ω	0101823	1 A
R618	82k Ω	0101823	2 A
R619	4.7k Ω	0101472	1 A
R620	4.7k Ω	0101472	1 A
R621	330k Ω	0101334	1 B
R622	330k Ω	0101334	1 B
R623	22k Ω	0101223	1 A
R624	22k Ω	0101223	1 A
R635	1k Ω	0101102	1 B
R636	1k Ω	0101102	2 B
R721	12k Ω	0101123	2 B
R722	12k Ω	0101123	2 A
VR601	5k Ω (B)		1 B

W	X	Y	Z
C601	3.3 μ F	0519002	1 B
C602	3.3 μ F	0519002	2 B
C603	150 pF	0660151	1 B
C604	150 pF	0660151	2 B
C605	100 μ F	0510101	1 B
C606	100 μ F	0510101	1 B
C607	100 pF	0660101	1 A
C608	100 pF	0660101	1, 2 A
C609	47 μ F	0510470	1 A
C610	47 μ F	0510470	2 A
C611	10 μ F	0513100	1 A
C612	10 μ F	0513100	1, 2 A
C613	0.68 μ F	0563688	1 A
C614	0.68 μ F	0563688	2 A
C615	0.012 μ F	0600127	1 B
C616	0.012 μ F	0600127	1 B
C617	0.0033 μ F	0600336	1 A
C618	0.0033 μ F	0600336	1 A
C619	0.0033 μ F	0600336	1 B
C620	0.0015 μ F	0600156	2 B
TR601	25C632A (7) White	0305766	1 B
TR602	25C632A (2)	0305766	1, 2 B
TR603		0305764	1 A
TR604		0305764	1, 2 A
S2	MPX Noise Canceler	1130300	2 B
S3	Tape Monitor	1130300	2 B
S4	Mode	1130300	2 A
S5	Loudness	1130300	2 A



OTHERPARTS AND THEIR POSITION ON CHASSIS

W: Parts No. X: Parts Name Y: Stock No.

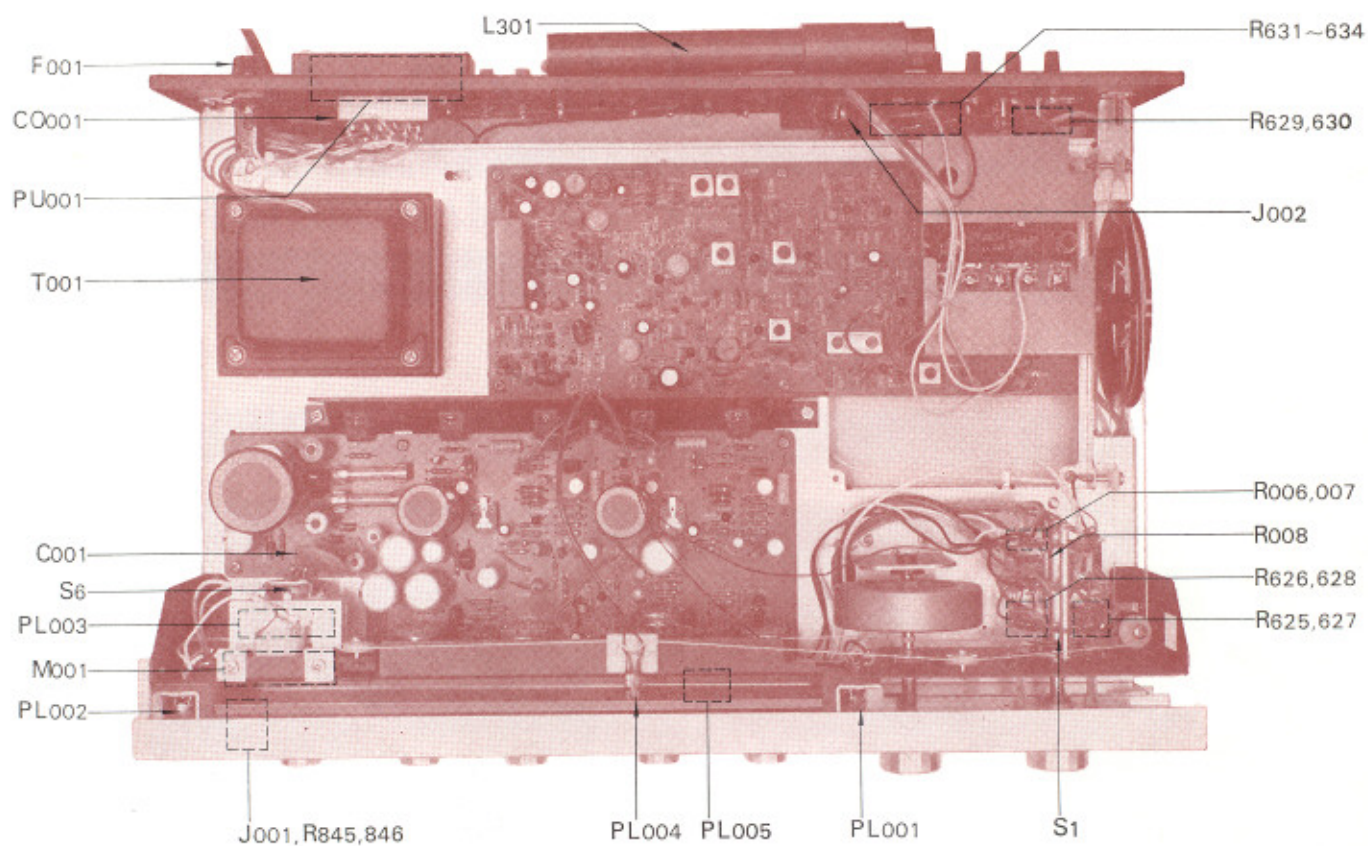
OTHER PARTS

W	X	Y	
R006	560Ω ± 5% ½W CR.	0103561	
R007	390Ω ± 5% 1 W CR.	0104391	
R008	27Ω ± 10% ½W SR.	0111270	
R009	33Ω ± 10% ¼W CR.	0101330	
R625	120kΩ	0101124	
R626	120kΩ	0101124	
R627	12kΩ	0101123	
R628	12kΩ	0101123	
R629	68kΩ	0101683	
R630	68kΩ	0101683	
R631	470kΩ	0101474	
R632	470kΩ	0101474	
R633	100kΩ	0101104	
R634	100kΩ	0101104	
R845	330Ω	± 10% ½W SR.	
R846	330Ω		
C001	0.0047μF +80% -20%	150V CC.	0659802
C002	220μF	16V EC.	0512221
C003	0.022μF +80% -20%	50V CC.	0657223
T001	Power Transformer		4001010
M001	Tuning Meter		4300390
PU001	Voltage Selector (Plug)		2410900
	Voltage Selector (Socket)		2410800
S1	Selector		1103370
S6	Power/Speakers Switch		1101350
J001	Headphones Jack		2430210
J002	DIN Socket marked TAPE RECORDER		2430040
PL001	Pilot Lamp	6.3V 250mA	0420020
PL002			0420020
PL003			0420020
PL004			0400100
PL005	Needle Indicator	5V 60mA	0400100
	FM Stereo Indicator	6V 30mA	0400110
F001	Power Fuse		
	100~117V	2.0A	0431242
	220~240V	1.5A	0431232
	Power Fuse Holder		2300060
F002	1A	Wired in Fuse	0431820
F003	1A		0431820
F004	2A		0431840
L301	Bar Antenna		4200440
CO001	AC Outlet		2450040

About Servicing

If anything should ever go wrong with your 310, or if you have any question about it, please contact the Sansui dealer from whom you purchased it or your nearest Sansui Authorized Service Station.

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



The Sansui logo, featuring the word "Sansui" in a stylized, italicized serif font, is positioned within a black rectangular box.

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