

JVC INSTRUCTION MANUAL

AM/FM STEREO RECEIVER

WITH SEA

MODEL 5010

Protector Circuit

A highly developed protector circuit guards your model 5010 receiver. If a short circuit or electrical overloading occurs, this circuit will automatically protect the transistors of the Audio Circuit. If this happens, sound will be heard off and on intermittently about every second — but you have no need to fear damage to transistors. Just switch off the power and check the speaker circuit. After checking the speaker line and speaker terminal, decrease the volume and switch on the power again. If the protector circuit still functions, switch off the power again and have your receiver checked by our authorized service personnel.

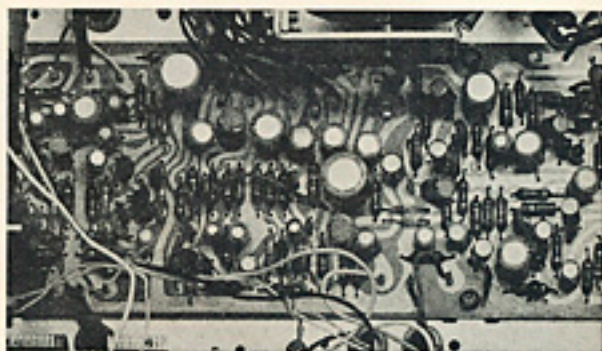


Fig. 1

FM External Antenna Connection

The 5010 receiver is provided with a built-in AC line antenna for FM and a feeder antenna is usually not needed. However, in FM fringe reception areas an external FM antenna may be required. In this case, unscrew the SHORT LINK for the FM internal antenna and connect the external antenna.



Without an external antenna

Fig. 2



With an external antenna

Fig. 3

Front Panel Controls and Indicators

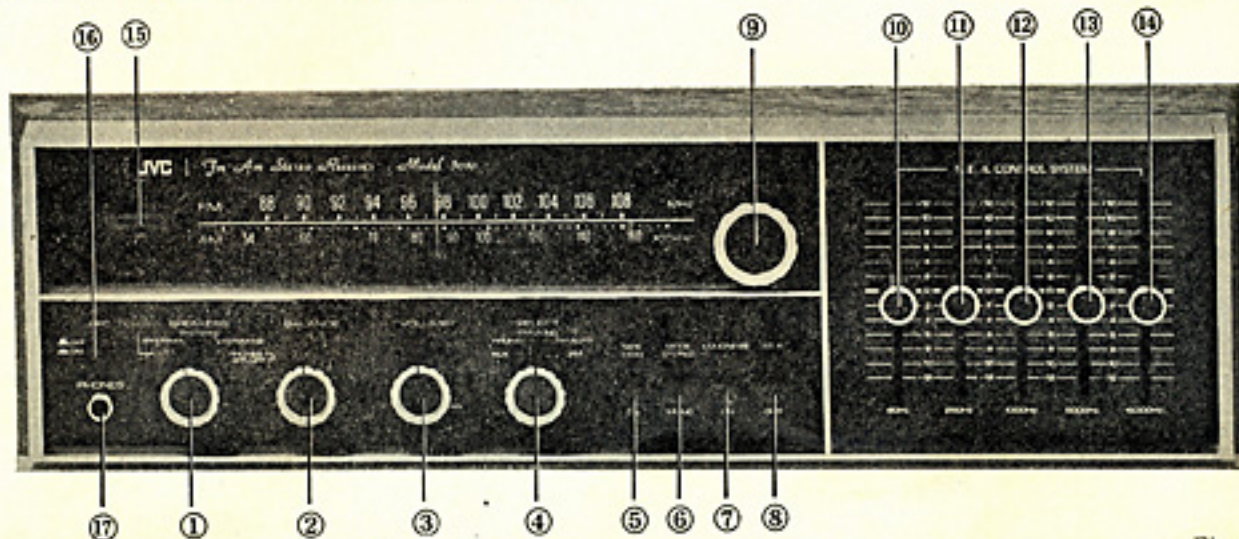


Fig. 4

(1) Power Switch and Speaker Selection

When this knob is turned to any position except the "OFF" position, power is being supplied the receiver and the pilot lamp is on and the dial scale illuminated. Turn the knob to "System 1" when using the upper speaker terminals and to "System 2" when using the lower speaker terminals on the rear panel. When using "System 1" and "System 2" together, turn the knob to the "System 1 + 2" position. Turn the knob to the "Spk OFF" position when using headphones only.

(2) Balance Control

This knob balances the sound volume between left and right channels. The sound is increased toward the left channel when the knob is turned left, and vice versa.

(3) Volume Control

A counter-clockwise turn will lower the volume. A clockwise turn will raise it.

(4) Selector

AUX: Use this position when the terminal "AUX" is used.

PHONO: Use this position when playing a record.

FM MONO: Use this position to eliminate noises caused by weak electric waves during FM stereo broadcasts. The 5010 then receives the broadcast monaurally, but with more clarity. When receiving an FM mono broadcast, there is no difference between the "FM Stereo" and the "FM Mono" position.

FM AUTO: At this position, FM Stereo is automatically reproduced whenever the stereo signal is broadcast. If a station switches from MONO to stereo broadcast, the 5010 will also switch when the selector is in this position.

AM: Use this position for AM broadcasts.

(5) Tape Monitor

This switch is usually set at the "out" position. At the "monitor" position, speakers do not produce sound. The "monitor" position is used only when reproducing recorded sounds with a tape recorder.

(6) Mode

Set this switch at "mono" for monaural reproduction, or at "Stereo" for stereo reproduction.

(7) Loudness

This switch controls sound tone at lower levels. Set it at "LOUDNESS" when listening to soft music.

(8) SEA Switch

Flip this switch up, and the SEA controls 10, 11, 12, 13, 14, of Fig 4 are put into operation.

(9) Tuning Knob

This knob is used for the tuning of FM, FM Stereo and AM broadcasts.

(10) 60Hz SEA Knob

With this knob set at "0", low frequency characteristics are flat. To emphasize a heavy low sound, move the knob toward "plus" (+). To deemphasize it, move the knob toward "minus" (-).

(11) 250Hz Knob

At position "0", the sound characteristic in this frequency zone remains flat. To reduce reverberation, move the knob toward "minus" (-).

(12) 1KHz Knob

The characteristic remains flat at position "0", and the sound is of standard quality.

(13) 5KHz Knob

If you hear a metallic reverberation, set this knob at "0" or move it toward "minus" (-).

(14) 15KHz Knob

With this knob at "0", the high frequency characteristics are flat. Sharp sounds are emphasized when this knob is moved toward "plus" (+), and deemphasized when it is moved toward "minus" (-).

(15) Tuning Indicator

For pinpoint station, reception, watch the movement of the needle in this indicator. Best tuning is obtained when the needle makes the biggest swing clockwise

(16) AFC Switch (Automatic Frequency Control)

This gives you very easy FM tuning. FM AFC may

emphasize the tuning of a stronger station. In such case, do not use the FM AFC.

(17) Head Phone Terminal

To avoid disturbing others and for maximum enjoyment yourself, plug the JVC stereo headphone STH-2E/5950 into this terminal.

Rear Panel Controls and Indicators

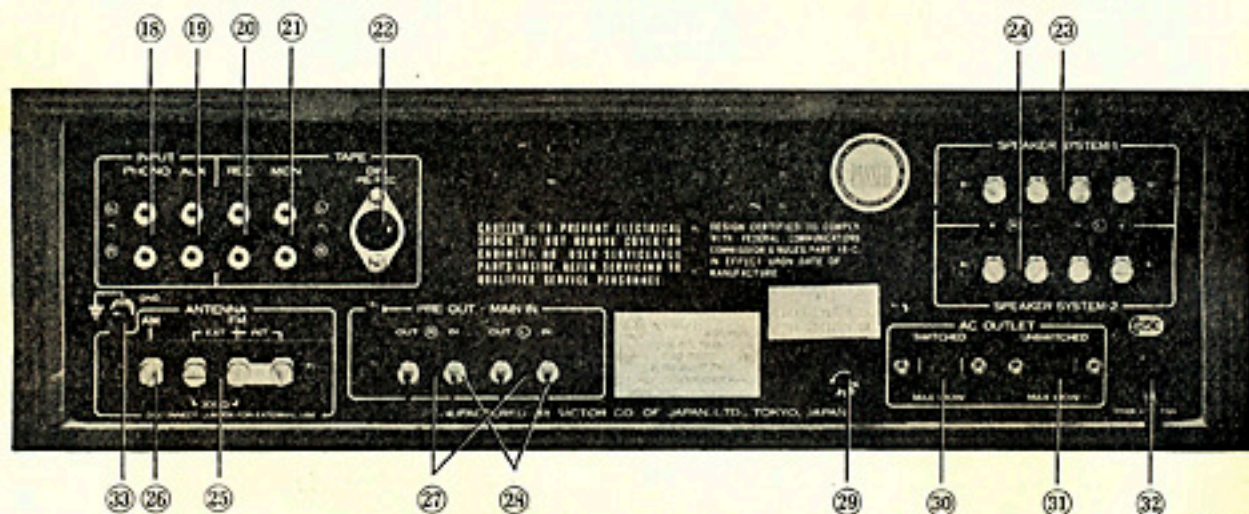


Fig. 5

(18) Input terminal "Phono"

A player with an output from 1.5mV to 5mV can be connected to this pin jack. The upper side is for the left channel and lower side is for the right channel.

(19) Input Terminal "AUX"

This serves as an auxiliary reproducing terminal. The upper side is for the left channel and the lower side is for the right channel.

(20) Tape Recording Terminal

The line input of a tape recorder with built-in pre-amplifier is connected to this recording output jack.

(21) Tape Monitor

The line output of the tape recorder is connected to this input jack for monitoring.

(22) DIN Standard Socket

This terminal is uniform with respect to impedance and level of input and output, according to DIN standards. It provides simultaneous recording and reproduction through one connection.

(23) Speaker Connection Terminals "System 1."

This terminal should be connected to speakers with impedances from 4Ω to 16Ω. The terminal marked "L" is connected to the speaker cord on the left side. The one marked "R" is connected to the speaker cord on the right side. Make sure that the terminal marked (+) is connected to the plus side of the speaker, and the one marked (-) is connected to the minus side of speaker.

(24) Speaker Connection Terminal, "System 2."

(25) FM Antenna Terminals (See Page 1.)

(26) AM Antenna Terminals

Normally, sensitivity is improved and external noise is eliminated with the use of the bar antenna. If the bar antenna is not adequate, connect an external antenna to this terminal. A "reverse L" antenna, 24 Feet high and 36 Feet long, would be best.

(27) Pre Main Amplifier Connections

The "Pre" and "Main" terminals are connected by wires to the right and left channels, respectively. Use them when connecting the JVC reverberation amplifier ECA-101E.

(28) Main Terminals

Use these terminals when connecting another pre-amplifier in a multi-channel system.

(29) Fuse Socket

This socket contains a 125V-1A fuse. To replace a broken fuse, turn the fuse knob counter-clockwise.

(30) AC Outlet

This outlet is controlled by the power switch (1) and has maximum capacity of 100W.

(31) Outlet

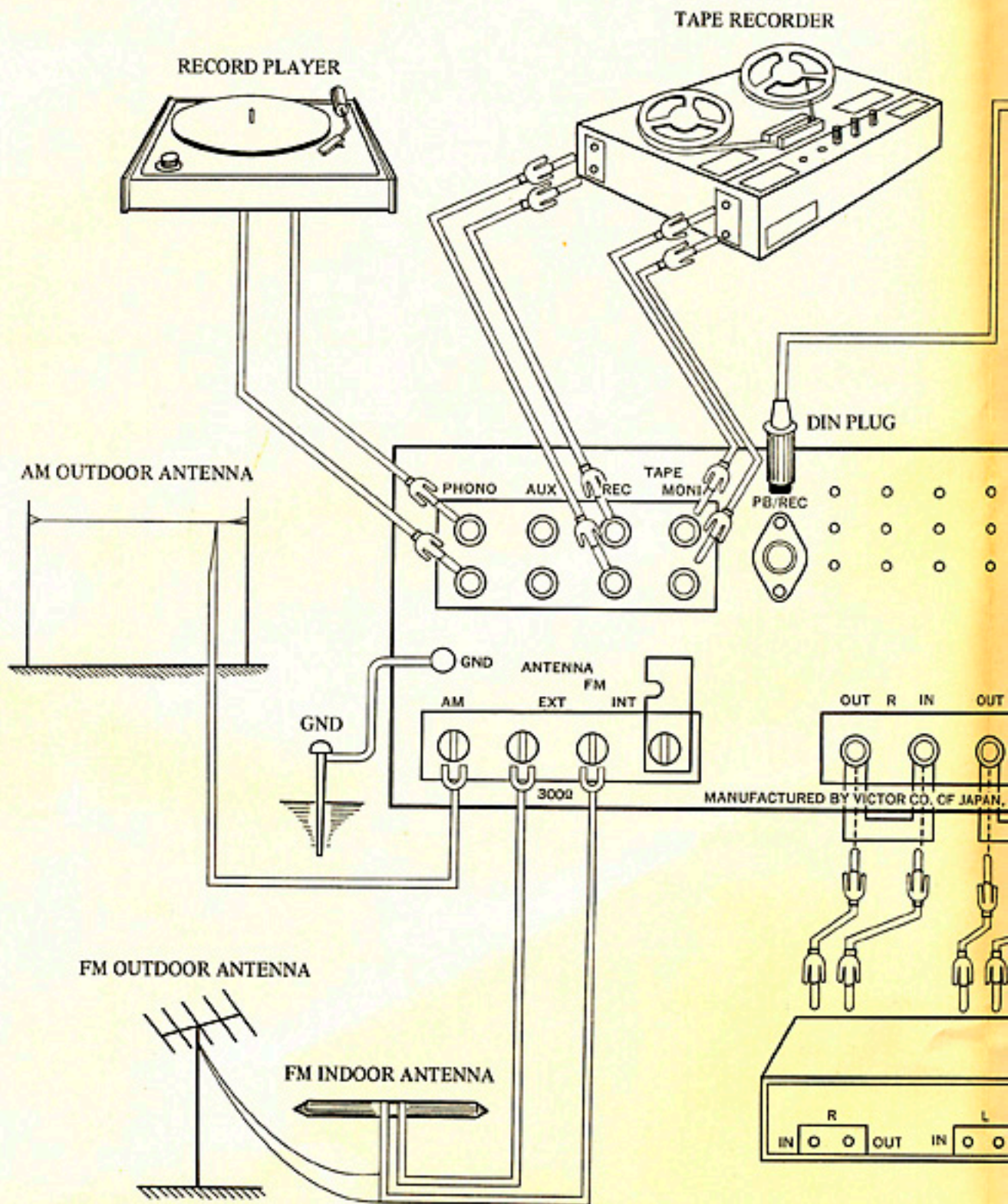
This outlet also has a maximum capacity of 100W, but it is not controlled by the power switch and is "Live" at all times.

(32) AC Power Cord

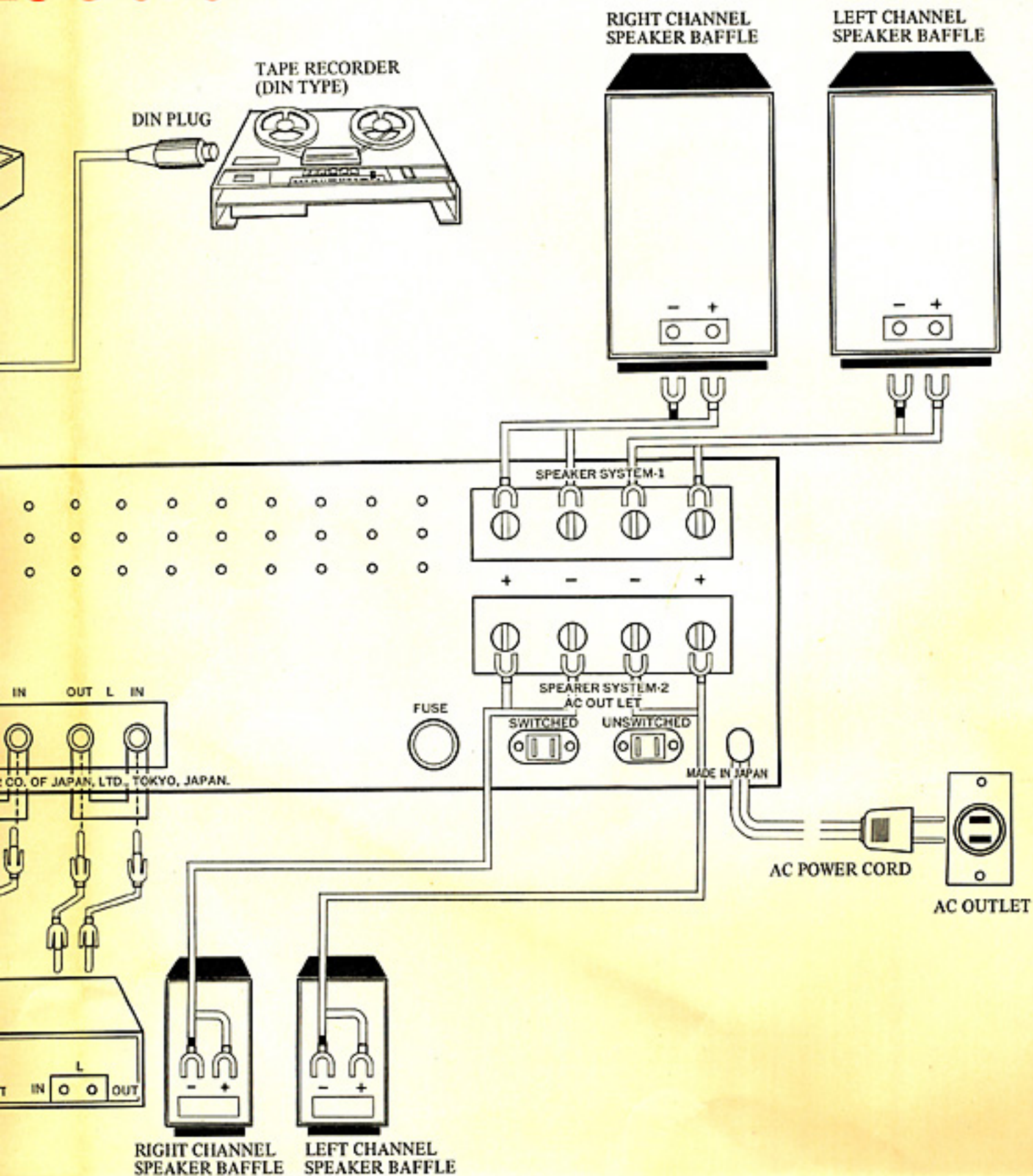
(33) Ground Terminal

If you use a ground lead for the receiver, it must be connected to this terminal.

Rear Connections of the



me 5010



Preparations for Record Playing

1. Plug in the power cord — see (32) in Fig 5
2. Set the tape monitor switch (5) to the "Out" position.
3. Set the mode switch (6) to the "Stereo" Position except when playing a monaural record. In that case, set the switch to the "mono" position.
4. Turn the power switch to the right to illuminate the dial scale and provide power to the set. Then set the switch to the appropriate position for the speaker systems being used.
5. Set the select knob (4) to the "Phono" position.
6. Turn the sound volume control knob (3) clockwise.
7. Refer to the record player instruction manual for directions on operating the record player.
8. Knobs (3) and (2) control the sound volume. To increase the volume, turn knob (3) Right. To decrease sound, turn Left. To balance sound volume between left

- and right channels, use the sound volume balance knob. (2) A clockwise turn will increase the volume in the right channel and a counter-clockwise turn will increase the volume in the left channel. To obtain a balanced and comfortable soft sound, turn the loudness switch (7) to the "loudness" position. This automatically controls the sound volume.
9. Adjust knobs (10) (11) (12) (13) and (14) to get the precise sounds you prefer. See the "SEA System Control" for details.
 10. For late night listening when others might be disturbed, use the JVC NIVICO STH-2E/5950 headphones. Insert input into headphone terminal and set speaker system selector at "Spk OFF" position.
 11. Be sure that when you are through using your receiver, you set the power switch to the "OFF" position.

Preparations for Radio Reception

Follow steps 1 through 4 as for record playing. Then set the select knob (4) to AM or FM, depending on the type of broadcast desired.

Turn the station select knob (9) until you have reached the desired station frequency. The tuning meter pointer (15) will reach its furthest point to the right when the tuning is correct.

Then follow steps 8 through 11 as listed for record playing.

Directions for Recording

1. Connect the recording-reproducing cord between the recording-reproducing terminal under the DIN standard (22) in Fig 5 and the DIN terminal of the tape recorder.
2. Set the tape monitor switch (5) to the "Out" position.
3. If a stereo tape recorder is used, set the mode switch (6) to "Stereo." If a monaural tape recorder is used, set the switch to "Mono."

4. If you are recording an FM broadcast, set the select knob (4) to FM. If it is an AM broadcast, set the knob at "AM."
5. See your tape recorder instruction manual for details on the recording operations of your tape recorder.

for Reproducing

Follow the first two steps listed under Directions for Recording. Then set the monitor switch (5) to the "MON." position. With a stereo tape recorder, set the mode switch (6) to "Stereo," with a monaural tape recorder, set it to "Mono."

What is SEA?

All of the receivers from JVC incorporate the new JVC Sound Effect Amplifier (SEA) system. Until the company popularized it by incorporating it into a receiver for consumers, this type of tone control system was restricted to use in professional sound studios. With the SEA system, today's stereo enthusiast has more freedom and control over the sound he hears than was ever possible before. The advantages of the SEA system are:

1. It gives the listener complete control of sound throughout the entire frequency range.
2. It enables the listener to create entirely new sounds by mixing.
3. It allows the listener to compensate for vagaries in room acoustics.
4. It permits the listener to compensate for sound characteristics peculiar to such components as turntables, tape decks and speaker baffles.

Unlike the conventional tone controls found on most

better receivers, the SEA system divides the receiver's total frequency range into 5 different frequency zones. This permits more variation in the complex frequency characteristics of individual frequency zones within the total frequency range. As you can see by the graph, the SEA system permits a sharp slope to be obtained from the very start. With ordinary tone controls, this slope is limited to 6db/oct. Another advantage of the SEA system is that each independent frequency zone can be increased or decreased within a vary narrow range from 10 to 12db/oct. Perhaps the largest advantage of all is the SEA system's ability to control the difficult midranges. Ordinary tone controls can only handle the extreme high and low ends.

In the case of the 5-zone SEA system, the operator has independent control of the 60, 250, 1,000, 5,000 and 15,000Hz ranges. When a 7-zone SEA system is utilized, the range is split up into even narrower zones.

Frequency Control Characteristic of SEA

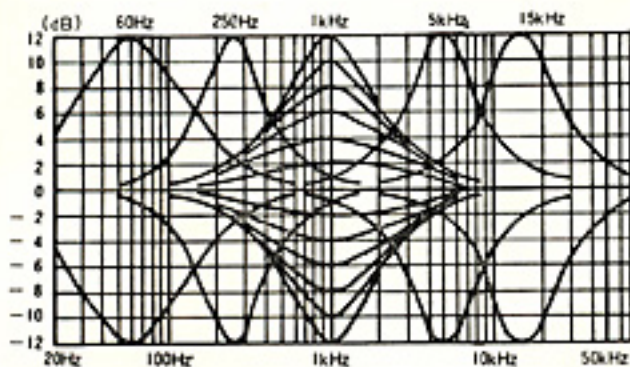


Fig. 6

Frequency Control Characteristic of Conventional Bass & Treble Tone Controls

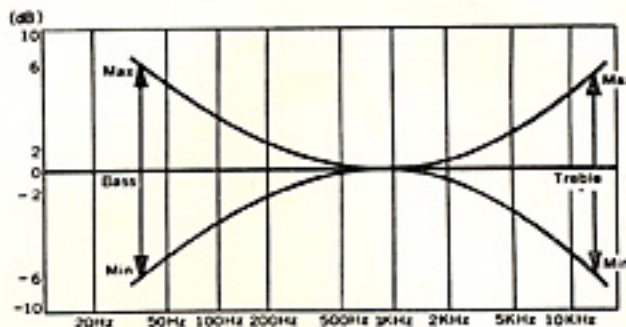


Fig. 7

HOW THE SEA SYSTEM WORKS

When listening to regular program sources, if the operator wants to boost the low frequency response, all that is required is to boost the 60Hz or 250Hz control. To bring out the important midrange—the ones closest to that of the human voice—the 1,000 or 5,000Hz control should be boosted. To increase extremely high end response, the 15,000Hz control can be boosted. Conversely, all of these ranges can be lowered by deemphasizing the response in each range.

HOW IT COMPENSATES FOR COMPONENTS

Nearly all the moving magnet (MM) type phonograph cartridges on the market have resonance peaks between 10,000 and 15,000Hz which cause harsh, gravel-like noise to be played back in the high frequency ranges. By utilizing the SEA system's high frequency controls, this annoyance is greatly reduced and the sound is heard more naturally.

Because of recording techniques, phonograph records between various recording companies also differ in sounds reproduced. The SEA system enables the user to match the sounds of one record to that of another.

In most small bookshelf speaker systems, the lows as a rule are unduly attenuated under 200Hz. The SEA system allows these lows to be easily reproduced by correcting the low frequency characteristics of the speaker system.

On many vocal recordings, the phenomena of voice fading and being masked by instruments occur. The voice can easily be drawn out by emphasizing the 1,000 and 5,000Hz controls of the SEA system. Ordinary tone controls cannot do this.

HOW IT CAN CREATE NEW SOUNDS

Most stereo systems have a turntable or record changer and some kind of taping device as program source components. By utilizing these components with the SEA system, the sounds from the record can be mixed or altered and re-recorded in an altogether new form.

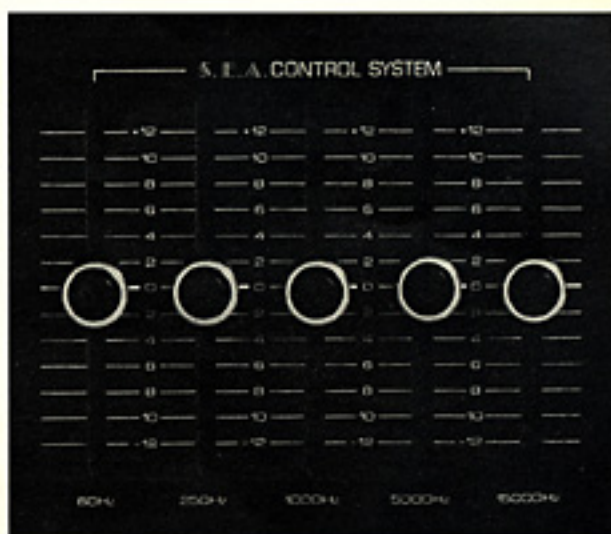


Fig. 8

HOW IT COMPENSATES FOR ROOM ACOUSTICS

Even when using the same stereo equipment, tone characteristics change when the equipment is moved to different acoustic environments such as large rooms, small ones, heavily furnished or sparsely furnished rooms. The SEA system allows practically every kind of room to be turned into an ideal listening environment. In the average size room, harmful standing wave occurs at approximately from 100 to 300Hz range which causes sound to become blurred and sound intensity to rise. This is quickly eliminated by utilizing the proper SEA system controls.

LISTENING ENVIRONMENT

In small rooms, the high end response is generally emphasized. Whenever it is too high howling occurs, a particularly annoying type of noise to most listeners. This is also quickly adjusted by using the proper SEA system controls.

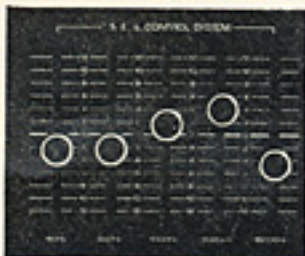
Low end response is generally emphasized in large rooms or halls. If it becomes too exaggerated, it can be corrected quite simply by the SEA system.

Distortion of the medium to high tones often occurs in rooms with a lot of sound-absorbent materials, such as drapes, carpets, stuffed furniture, etc. Again, this can be swiftly corrected by utilizing the SEA system.

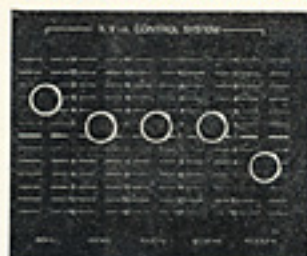
Westman's Sky Blvd.
282-2283

SE Division 8327
Western State
771-1176

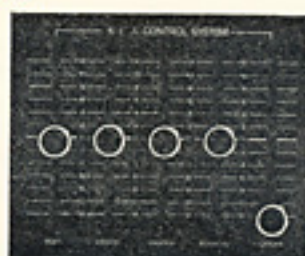
EXAMPLE OF ADJUSTMENT TO SOUND SOURCE



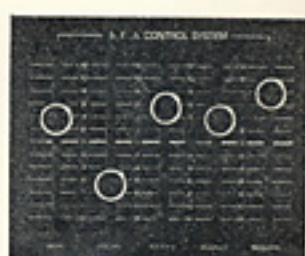
An ideal stereo setting for speech.



B.G.M.

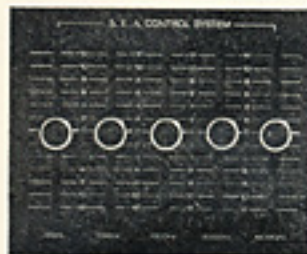


Noise filter (High-cut)

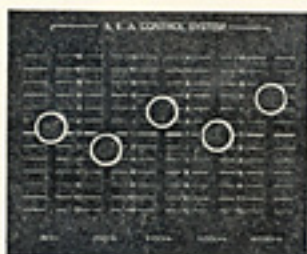


Clear and crisp sounds

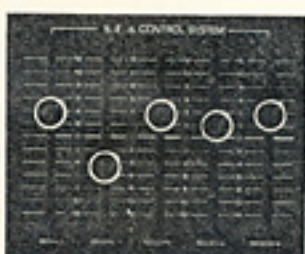
SETTINGS FOR CONCERT AND SYMPHONY MUSIC



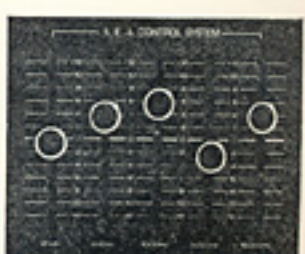
For a symphony orchestra



The full sounds of a latin band

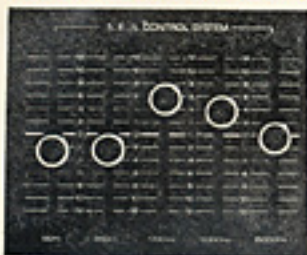


Female vocalists sound best

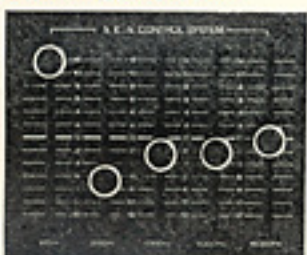


An ideal setting for popular songs

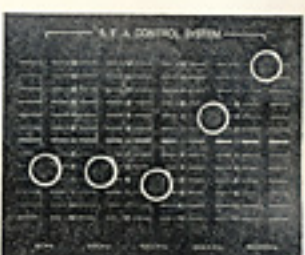
ENHANCING THE SOLO PERFORMANCE



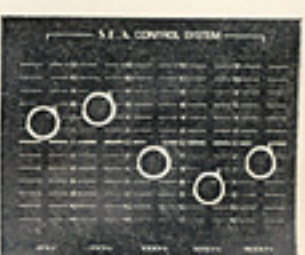
Tenor saxophone solos come alive



Brings out the heavy sound of base and drums

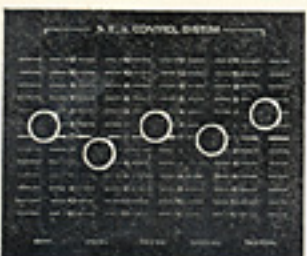


Rhythm performances are highlighted.

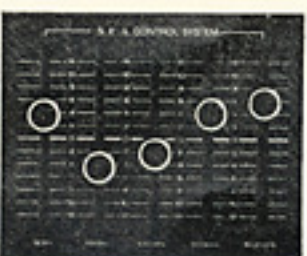


Brings out remarkable percussion sounds.

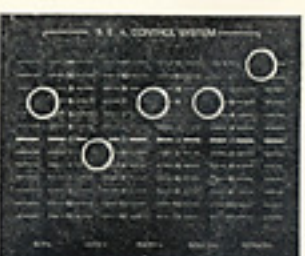
OTHER EXAMPLES



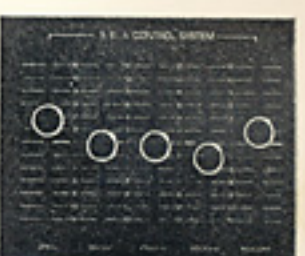
An ideal stereo setting for the home party



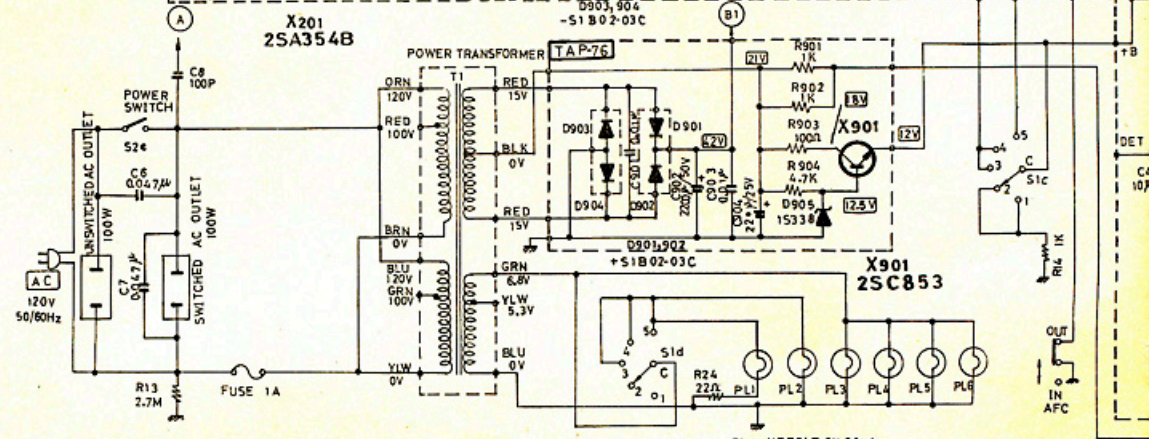
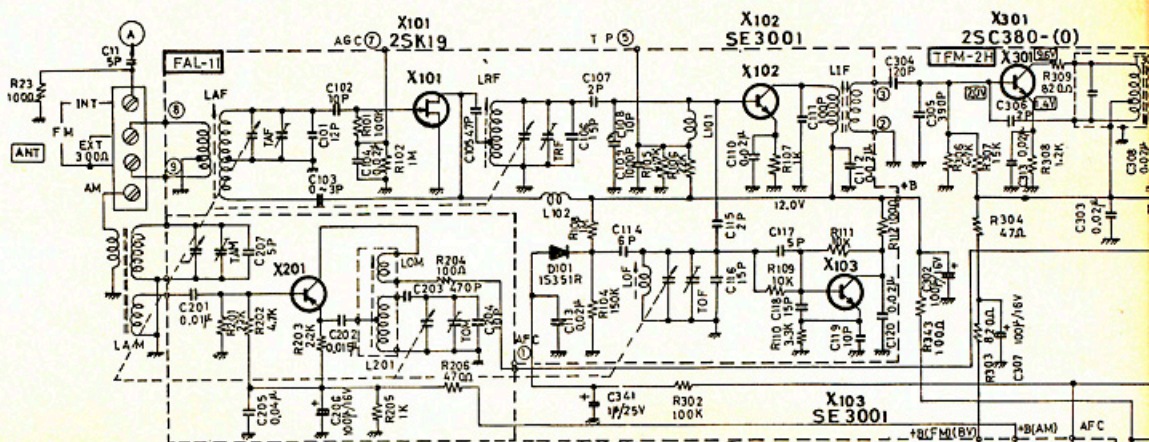
Even with a lower volume setting the loudness characteristics come through



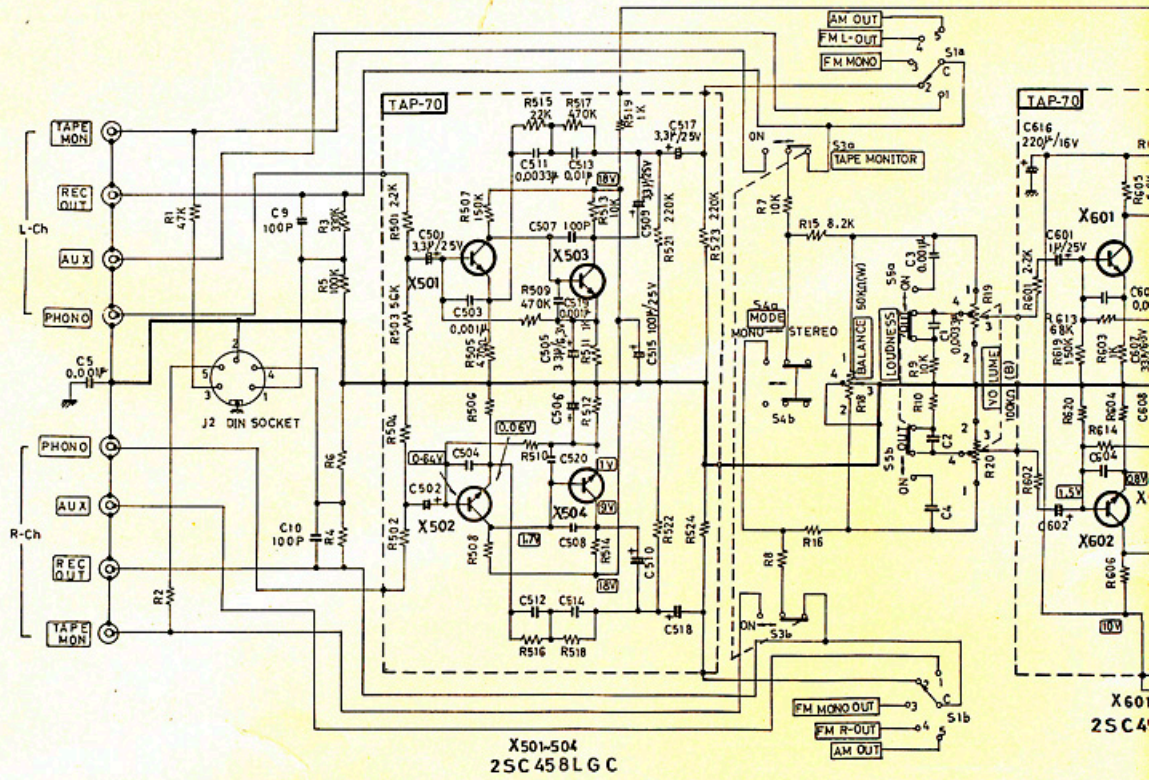
Good for demonstration recordings and sound effects.



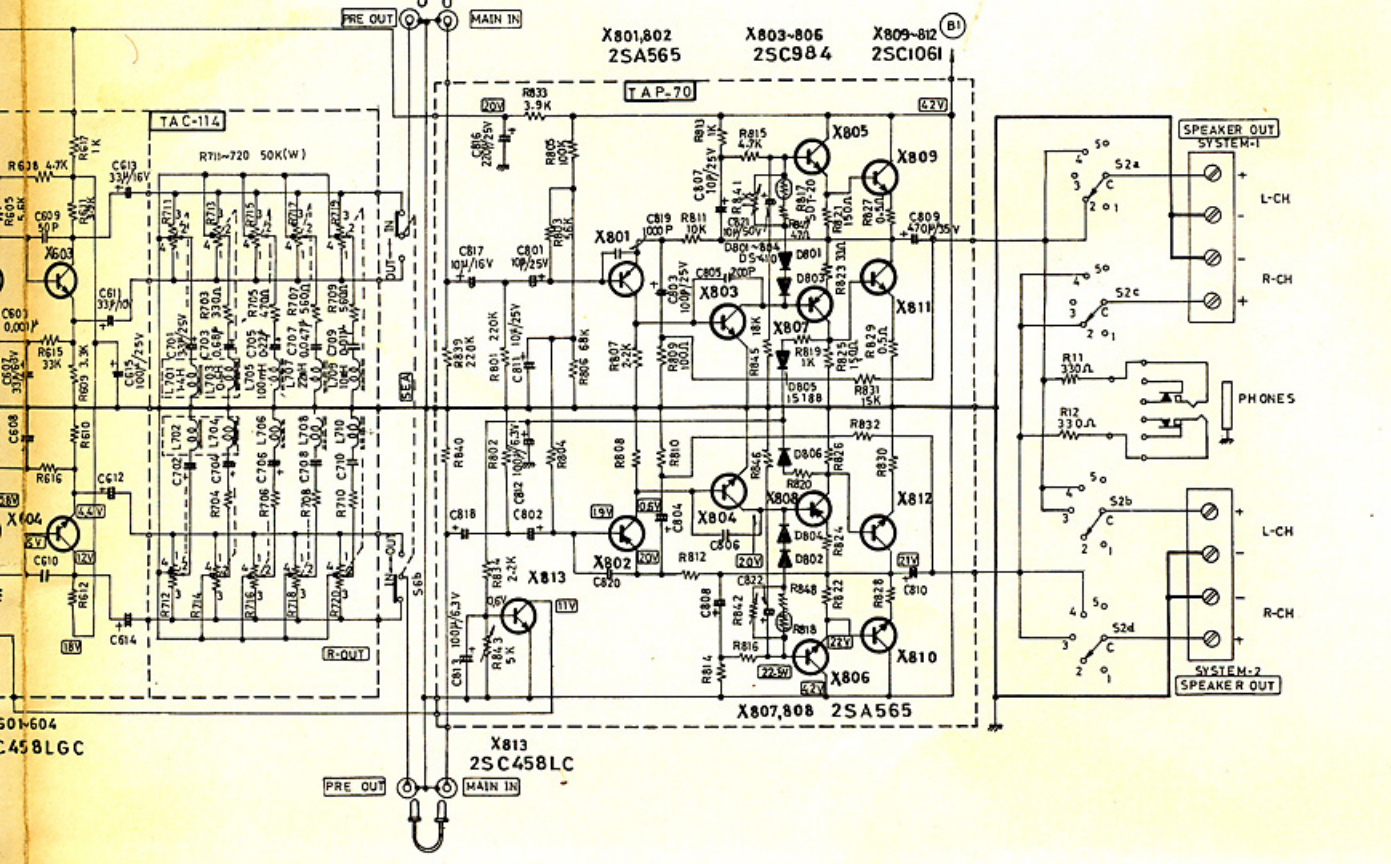
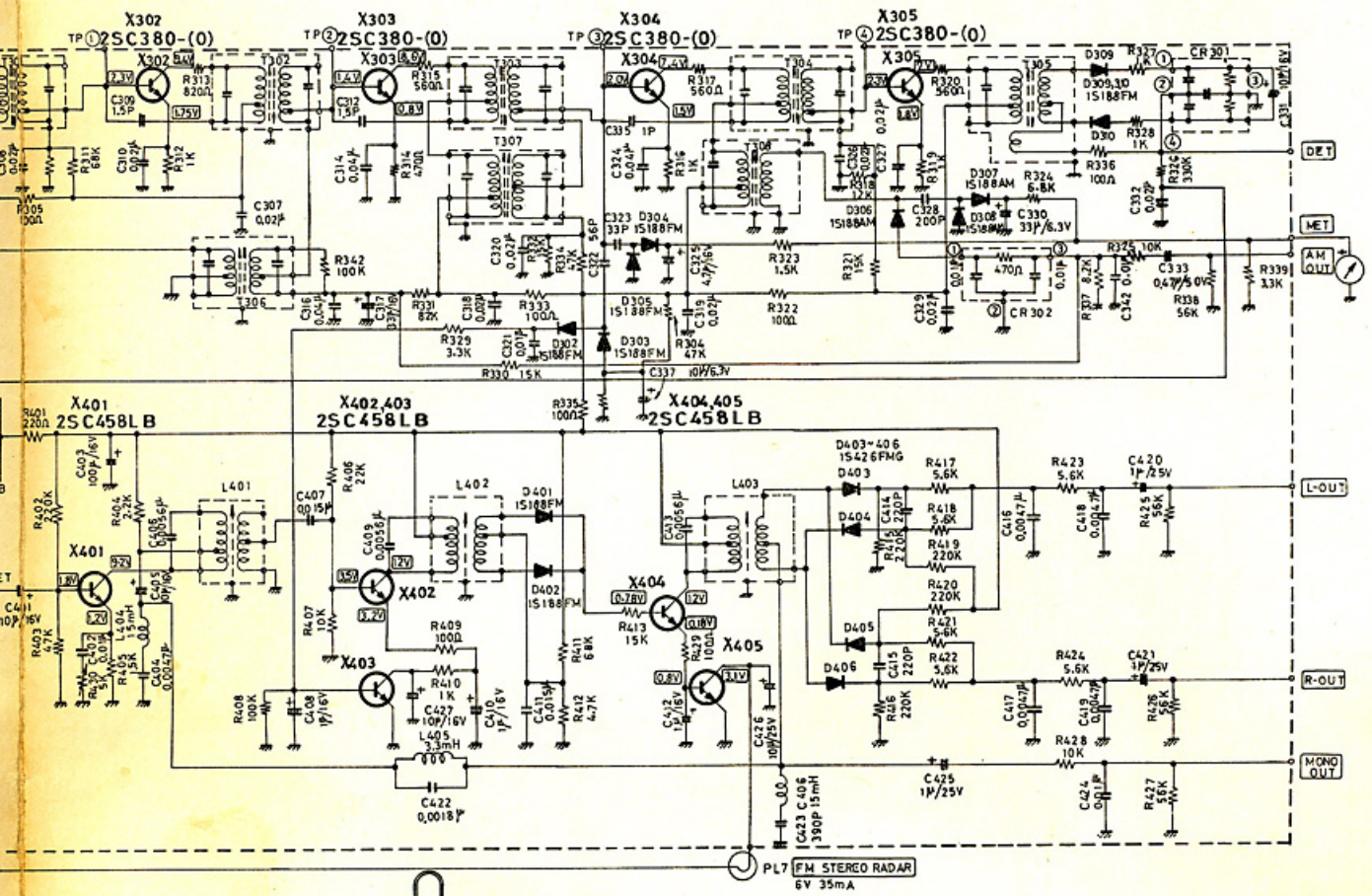
Excellent sound reproduction with headphones



PL1 NEEDLE 6V 50mA
 PL2 TUNING METER 8V 0.3A
 PL3-DIAL SCALE 8V 0.3A



X501-504
 2SC4581GLC



501-604
 2SC458LC

Specifications

AUDIO SECTION

| | |
|------------------------------------|----------------------------------|
| Total dynamic power | : 40W (20W + 20W) IHF 4 Ω |
| | 34W (17W + 17W) IHF 8 Ω |
| Continuous power | : 32W (16W + 16W) IHF 4 Ω |
| | 26W (13W + 13W) IHF 8 Ω |
| Matching impedance | : 4 - 16 Ω |
| THD at rated power | : 1% at 1 KHz |
| IM distortion at rated power | : 1% |
| Power bandwidth | : 30 - 30 KHz -3db |
| Input sensitivity for rated output | : Phono (Mag.) 2.0mV |
| | Aux. 150mV |
| | Tape play 150mV |
| Equalizer | : Mag. RIAA |

SEA SECTION

| | |
|-----------------------|----------------------------------|
| SEA center frequency | : 60Hz, 250Hz, 1KHz, 5KHz, 15KHz |
| SEA control range | : ± 12 db |
| Gain | : 0db |
| Signal to noise ratio | : Mag. -65db |
| | Aux. -70db |

FM TUNER SECTION

| | |
|--------------------|---------------------------|
| Tuning range | : 88-108MHz |
| Usable sensitivity | : 2.5 μ V (IHF) |
| IF stages | : 5 stages |
| Image rejection | : 55db |
| THD | : 0.8% at 1KHz, 100% Mod. |
| Frequency response | : 30 - 20KHz ± 1 db |

FM MULTIPLEX SECTION

| | |
|---------------|----------------------------|
| Type | : Switching system |
| Separation | : Better than 33db at 1KHz |
| Distortion | : 1% |
| Detector type | : Balanced type |
| Filter | : SCA filter |

AM TUNER SECTION

| | |
|--------------------|--------------------------------|
| Tuning range | : 535 - 1,605KHz |
| Usable sensitivity | : 30 μ V |
| Image rejection | : 45db |
| Antenna | : Built in ferrite bar antenna |

| | |
|--------------|-----------------------|
| Power source | : AC 120V 50, 60Hz |
|--------------|-----------------------|

| | |
|-------------------|---|
| Power consumption | : 70W max. |
| Dimensions | : Height 4 $\frac{1}{2}$ " Width 16 $\frac{1}{2}$ " Depth 13" |

| | |
|--------|-------------|
| Weight | : 17.2 lbs. |
|--------|-------------|

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