JVC

INSTRUCTION BOOK

SOLID STATE STEREO INTEGRATED AMPLIFIER

MODEL JA-S8

FEATURES

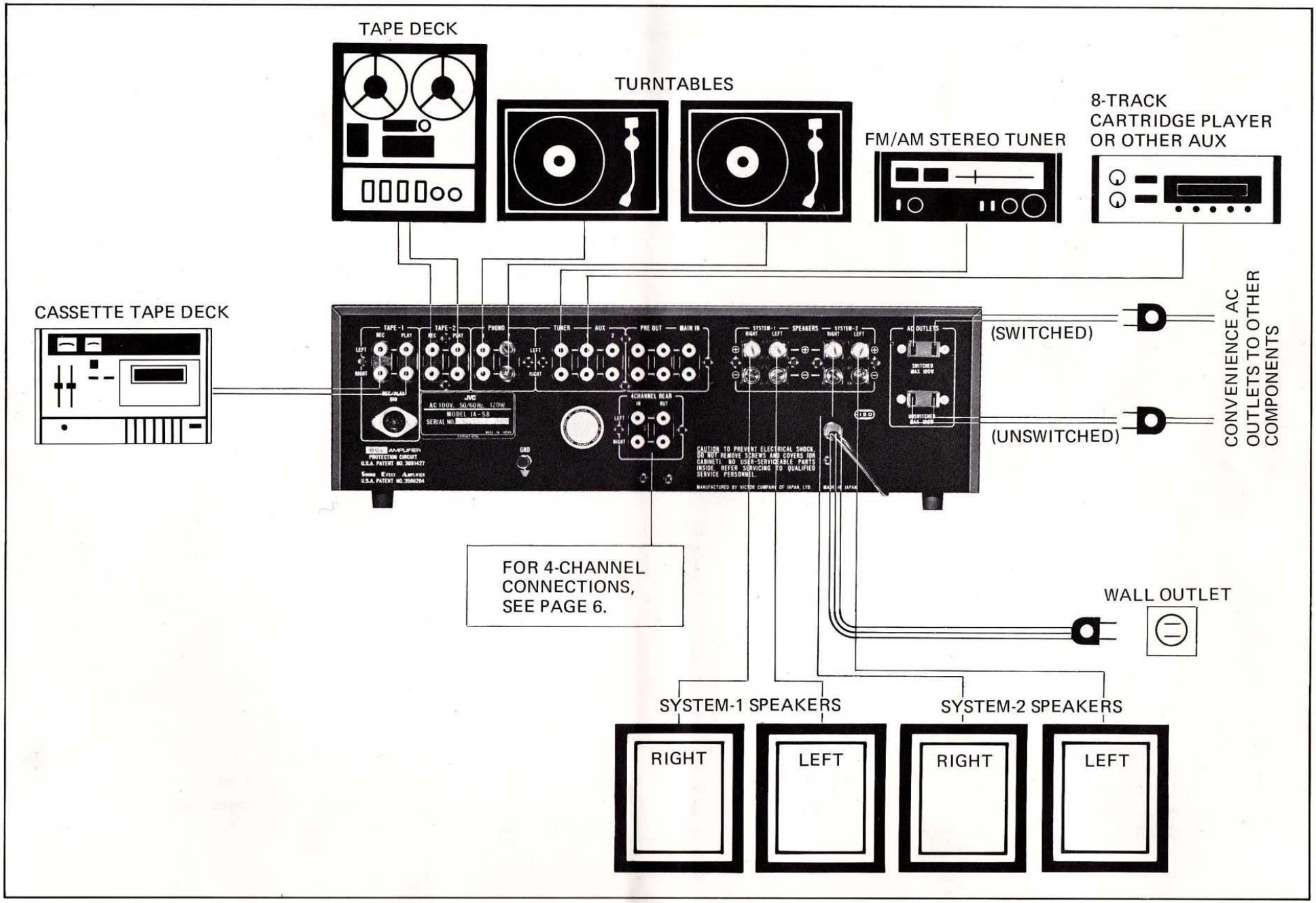
1. Auto-restoring triple protection circuit for speakers and power transistors
2. Circuits designed for ideal transient response
3. S.E.A. (Sound Effect Amplifier) tone control system
4. S.E.A. recording and two-way dubbing facilities
5. All-stage direct-coupled pure complementary OCL power circuit
6. Low-noise NPN-PNP hybrid 2-stage direct-coupled equalizer of Darlington connection
7. Effective subsonic (low) and high filters
8. Connects up to two pairs of stereo speaker systems
9. Two sets of PRE OUT terminals for convenience
10. 4-channel adaptable design
11. Unique chassis layout reduces shielded wiring

CONTENTS

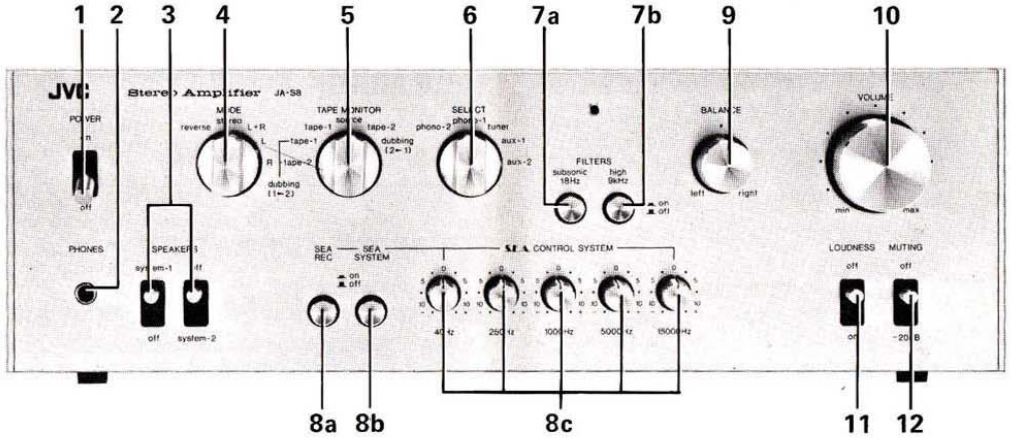
CAUTION NOTICE

- DO NOT attempt repairs or rear-panel adjustments while AC power cord is connected to primary AC power source.
- DO NOT change speaker connections or attach other components while AC power is switched on; speaker damage could result.
- DO NOT operate amplifier on a power line voltage more than 10% over specified voltage; power transistors and other important parts may be severely damaged.
- DO NOT use amplifier where temperature exceeds 35°C (90°F) or where relative humidity exceeds 90%.
- DO be sure to connect inputs and speakers correctly; in case of incorrect connections or short-circuits, reproduction may be out of phase. Unstable sound image, or activation of protection circuit could result.
- DO be sure to provide adequate ventilation space around amplifier in use to protect power transistors, especially when, for some reason, square-wave signals of continuous power over 10 watts are fed to amplifier for more than one hour.
- When amplifier is turned on, speakers receive signals only after a few seconds' delay. DO NOT adjust switches and controls for seven or eight seconds after amplifier is turned on to avoid possible damage to speakers.
- DO turn off amplifier and correct abnormalities if protection circuit is activated. NEVER touch any part of circuit inside amplifier's chassis. When abnormal condition is corrected, protection circuit will be automatically restored.
- DO be sure that the pin plugs are firmly inserted into the pin jacks; this will help prevent hum and damage to speakers.
- When two sets of stereo speaker systems are connected and driven at the same time, the impedance of each speaker must be 8 ohms or over.
- DO follow the instructions in this Instruction Book in full before attempting to operate amplifier.

CONNECTION DIAGRAM



FRONT-PANEL DISPLAY CALLOUTS



1. **POWER SWITCH**
   Controls main AC power supply to amplifier.
2. **PHONES JACK**
   Receives any standard stereo headphone set. It is always "live".
3. **SPEAKERS SWITCHES**
   SYSTEM-1 and 2: The speakers connected to the SPEAKER terminals SYSTEM-1 and/or SYSTEM-2 on the rear panel will be heard.
   OFF: When both switches are set to OFF, no sound will be heard.
4. **MODE SWITCH**
   STEREO: Normal stereo reproduction.
   REVERSE: Reverse stereo channel distribution (left signals to right, right to left).
   L: Left signals are distributed to and heard through both the left and right speakers.
   R: Right signals are distributed to and heard through both the left and right speakers.
   L + R: Left and right inputs are mixed and reproduced as mono through both the left and right speakers.
5. **TAPE MONITOR SWITCH**
   SOURCE: Whenever program sources other than tapes are to be heard, this switch should be in SOURCE position.
   TAPE-1 and 2: To hear (or monitor) a tape deck connected to the rear-panel TAPE-1 or 2 terminals.
   DUBBING: To dub from one connected deck to another.
   See TAPE RECORDING/PLAYBACK/DUBBING, page 4.
6. **SELECT SWITCH**
   This 5-position switch selects which program source is heard.
   PHONO-1 and 2: Used when playing records.
   TUNER: Used to play connected tuner.
   AUX-1 and 2: Used to play connected 8-track cartridge player and other components.
7. **FILTER BUTTONS**
   SUBSONIC (LOW) FILTER (7a): Eliminates turntable rumble and other low-frequency noises.
   HIGH FILTER (7b): Eliminates tape hiss, record surface noise and other high-frequency noises.
8. **S.E.A.**
   S.E.A. REC BUTTON (8a): Makes possible the use of S.E.A. while making tape recording through TAPE REC terminals on rear panel. See TAPE RECORDING/PLAYBACK/DUBBING, page 4.
   S.E.A. SYSTEM BUTTON (8b): Makes possible the use of S.E.A. during both reproduction and recording.
   S.E.A. CONTROL SYSTEM (8c): See S.E.A., page 7.
9. **BALANCE CONTROL**
   Adjust left/right balance of output.
10. **VOLUME CONTROL**
    Regulates left/right output levels simultaneously. See also 4-CHANNEL CONNECTIONS, page 6.
11. **LOUDNESS SWITCH**
    Boosts low- and high-end frequency responses to compensate for low-volume listening levels.
12. **MUTING SWITCH**
    Reduces output level (volume) to one tenth.

TAPE RECORDING/PLAYBACK/DUBBING

The JA-S8 amplifier is equipped with two stereo sets of terminals for recording and playback of tape. To these terminals you can connect any stereo (or mono) reel-to-reel, cassette or cartridge tape deck or recorder (hereinafter collectively referred to as "recorder"), equipped with standard RCA-type connection leads and/or a DIN connector.

RECORDING OPERATION

You can record any program source available through the amplifier (PHONO/TUNER/AUX) to either (or both) of two recorders through the TAPE-1 and/or TAPE-2 terminals. With TAPE MONITOR switch in SOURCE position, you will hear the source before the signals leave the amplifier. (See illustration 1, below). To monitor the signals as channeled through the recorder (with some exceptions as discussed in DUBBING OPERATION), set TAPE MONITOR switch to either TAPE-1 or TAPE-2 to which the rear-panel connection corresponds. (See illustration 2, below.)

NOTE: Adjustments of amplifier's volume, S.E.A., filters and other controls have no effect on the tape being recorded.
(See also S.E.A. RECORDING, page 5.)

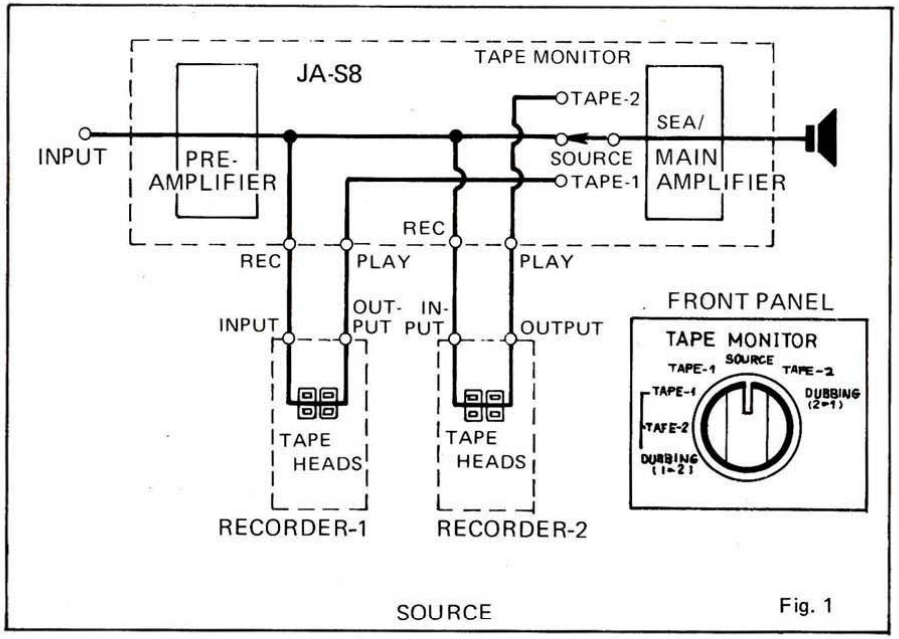


Fig. 1

PLAYBACK OPERATION

Setting TAPE MONITOR switch to either TAPE-1 or TAPE-2 will allow amplifier to reproduce a tape played on the corresponding recorder.

DUBBING OPERATION

The unique dubbing facilities of the JA-S8 allow you to copy (or "reprint") the contents of one stereo (or mono) tape played on either recorder to a blank tape on the other recorder.
To dub a recorded tape from TAPE-1 to TAPE-2, set TAPE MONITOR switch to a) DUBBING 1 → 2 TAPE-1 or b) DUBBING 1 → 2 TAPE-2 position. When set to position a), you will hear (monitor) the signals as they leave TAPE-1. When set to position b), you will hear the signals as they enter TAPE-2 IF THE RECORDER CONNECTED TO THE TAPE-2 TERMINALS IS A 3-HEAD TYPE. This is further explained in the table in illustration 3, below. To dub a recorded tape from TAPE-2 to TAPE-1, set TAPE MONITOR switch to DUBBING 2 → 1. If the recorder connected to the TAPE-1 terminals is a 3-head type, you will hear the signals as they enter the TAPE-1 recorder. This also is further explained in the table on the next page.

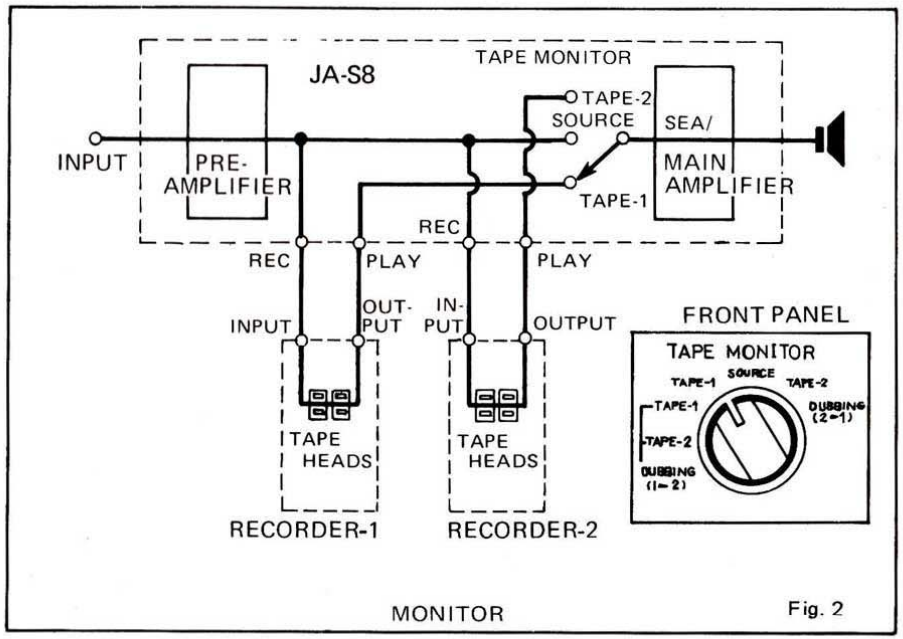


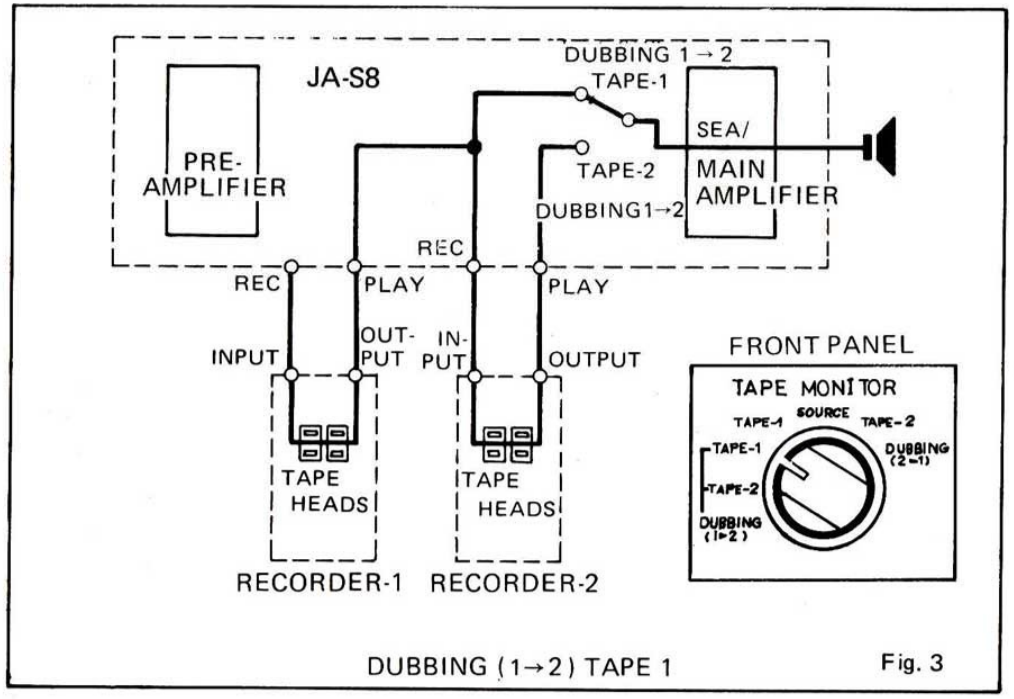
Fig. 2

Terminals	No. of heads of each connected recorder	TAPE MONITOR Switch Position		
		DUBBING 1→2		DUBBING 2→1
		TAPE-1	TAPE-2	
TAPE-1 TAPE-2	2 2	Sound being recorded on TAPE-2 recorder.	No sound.	No sound.
TAPE-1 TAPE-2	2 3		Sound just recorded on TAPE-2 recorder.	No sound.
TAPE-1 TAPE-2	3 2		No sound.	Sound just recorded on TAPE-1 recorder.
TAPE-1 TAPE-2	3 3		Sound just recorded on TAPE-2 recorder.	Sound just recorded on TAPE-1 recorder.

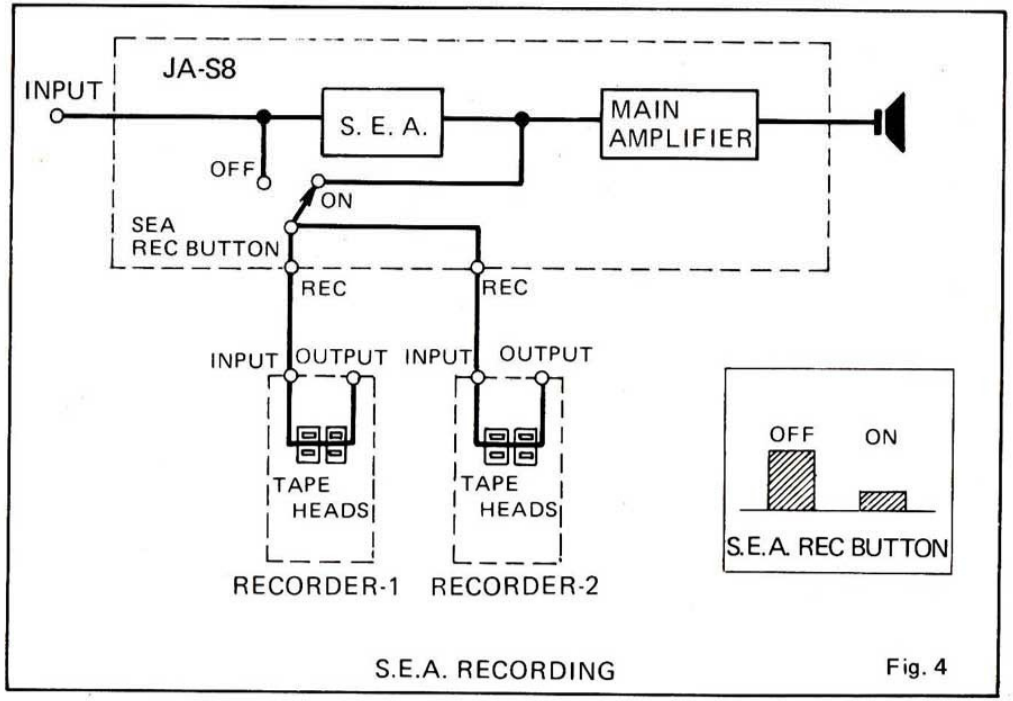
S.E.A. RECORDING OPERATION

A unique feature of this JVC amplifier allows you to use its S.E.A. Tone Control System while making recordings to a recorder attached to either set of the rear-panel TAPE REC terminals. Adjustments made to any or all of the five S.E.A. tone zone controls during the recording process will be reflected in the resulting tape recording provided that the S.E.A. REC button is ON. When recording through S.E.A., however, the TAPE MONITOR switch should be in SOURCE position; you can not monitor the recordings. (See illustration 4, below.)

NOTES:
1. The output signal levels of the S.E.A. amplifier are regulated by amplifier's VOLUME and MUTING controls. Therefore, when recording through S.E.A., set the volume level first, then adjust the recorder's recording level controls properly to obtain the desired recording levels. DO NOT ADJUST VOLUME AND/OR MUTING ONCE RECORDING IS UNDERWAY. It is recommended that you first adjust the S.E.A., switch the S.E.A. REC button and then adjust the input level on the recorder before recording, to avoid click noise on tape.
2. Since the rated level is obtained when the VOLUME is at the 12 o'clock position (relatively high), it is suggested that you turn off the speakers and monitor with headphones.



DUBBING (1→2) TAPE 1 Fig. 3



S.E.A. RECORDING Fig. 4

PRE/MAIN AMPLIFIERS

The preamplifier output and main amplifier input terminals are connected by cables. When the cables are removed, the pre and main amplifier sections of the JA-S8 are separated and may be used independently. When the preamplifier section is used, all the controls and switches remain "live", except for the SPEAKER switches. On the other hand, when the main amplifier is used, only the SPEAKER switches are operative with other controls and switches inoperative (i.e. the JA-S8 performs as a power amplifier).

A further design advantage enables you to leave the pre/main connection cables in place but still derive a preamplifier signal (through the second set of RPE OUT terminals) to be fed to such special equipment as an add-on amplifier, a separate VU meter or other measuring or testing instrument, etc. UNDER NORMAL OPERATION CONDITIONS THE PRE/MAIN CONNECTION CABLES SHOULD REMAIN IN PLACE.

SPEAKER CONNECTIONS

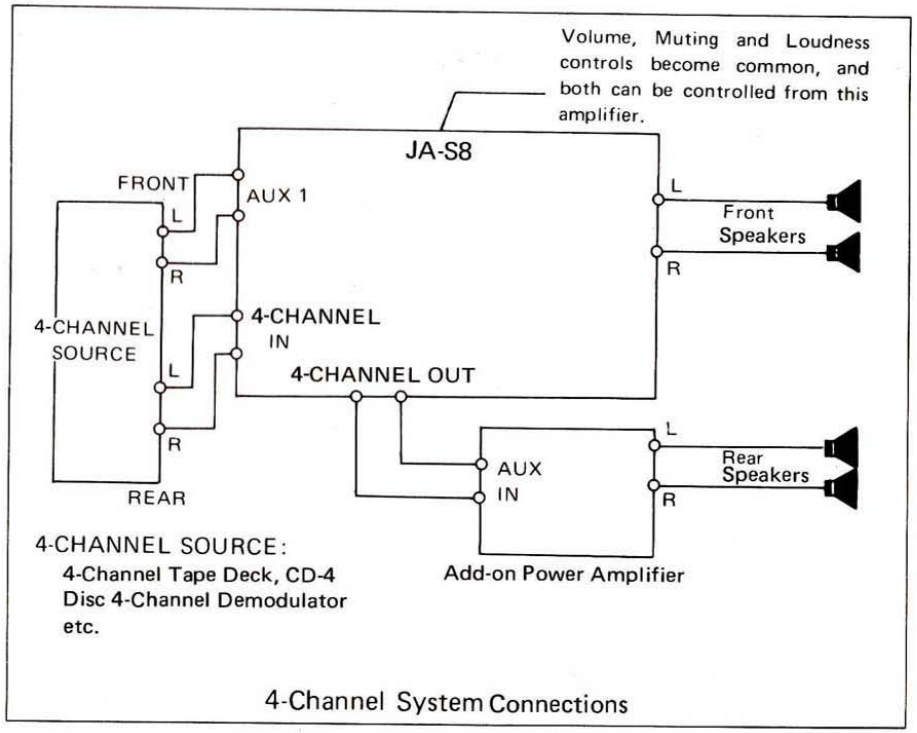
The JA-S8 connects up to two pairs of stereo speaker systems (1 and 2). Either pair can be driven independently by the SPEAKERS switches. The speaker terminals on the rear panel are grouped under the markings "1" and "2". Speaker connection cables from the left speaker in System 1 should be attached to the two right-hand terminals grouped under the marking "1"; and cables from the right speaker in that System should be attached to the two left-hand terminals grouped under "1". Accordingly, cables from the left and right speakers in System 2 are attached to the proper terminals under the marking "2".

Care must be taken to assure that the "+" cable from each speaker is attached to the "+" terminal for that speaker, and that the "–" cable is attached to the "–" terminal. Improper connections ("+" to "–" or vice versa) will put your speakers "out of phase" with each other and they will not respond properly. In case of a short in speaker cables or other malfunction, the protection circuit built into the JA-S8 will activate to protect the amplifier's vital power transistors and your speakers. When the malfunction is corrected, the circuit will restore itself automatically.

4-CHANNEL CONNECTIONS

The JA-S8 is designed to be easily integrated into a 4-channel high fidelity system. All that is needed to complete such a system is an additional pair of stereo speakers, another stereo integrated amplifier for the rear channels and a 4-channel source components (such as a CD-4 disc demodulator, a matrix decoder or a discrete 4-channel tape deck or cartridge player). Thanks to the advanced 4-gang VOLUME control in the JA-S8 you can control the volume (and the muting and the loudness) of all four channels when such a system is properly connected. (See illustration below.)

NOTE: It is possible to connect the PRE OUT terminals of the second stereo integrated amplifier to the 4-CHANNEL REAR IN terminals of the JA-S8, and to connect the MAIN IN terminals of that amplifier to the 4-CHANNEL REAR OUT terminals of the JA-S8.
This will result in a workable 4-channel interconnection, BUT MAY FALL TO PRODUCE IDENTICAL SOUND VOLUMES FROM THE FRONT AND REAR SPEAKERS IF THEIR IMPEDANCES ARE DIFFERENT.

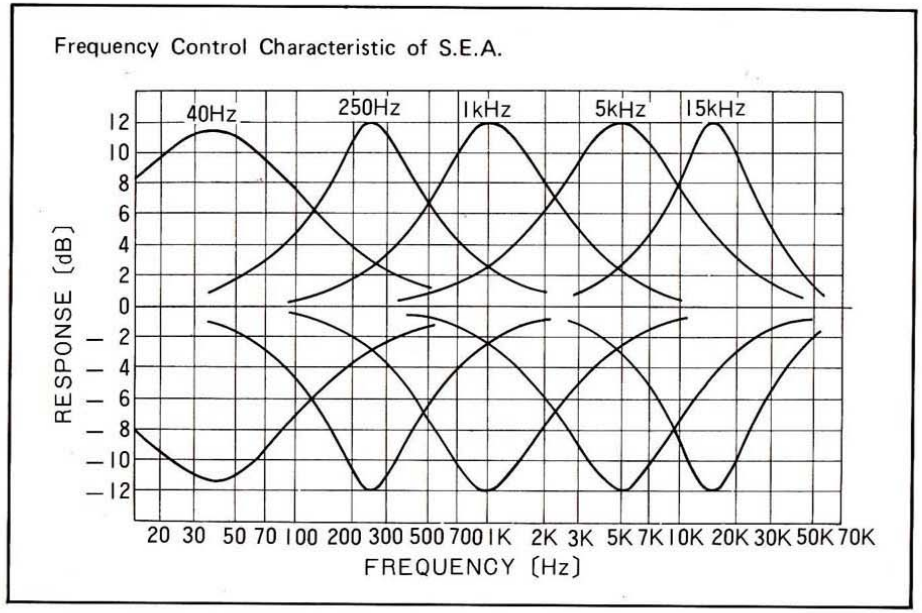


4-Channel System Connections

S.E.A. (SOUND EFFECT AMPLIFIER)

(U.S. Pat. No. 3566294)

Your amplifier is equipped with what has been called "the most effective tone control system we've ever tried" by one of the world's leading professional stereo review magazines, and just as highly acclaimed by other audio experts, technicians and ordinary users all over the world. The JVC-patented S.E.A. (Sound Effect Amplifier) Tone Control System gives you more control over the tonal quality of your entire stereo system than has ever before been possible. Here is what the S.E.A. in your amplifier means to you:

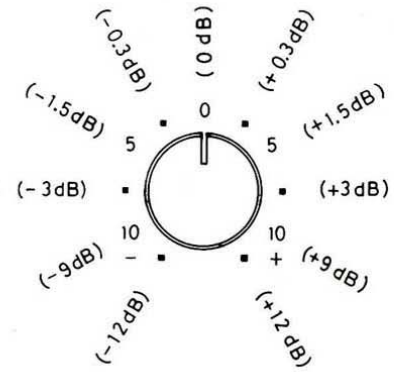


Delicate, Individualized Tone Control

Unlike other tone control systems which have only two or three controls with which to adjust the entire frequency range from low bass to high treble, the S.E.A. has five separate controls. As you can see from above graph, the S.E.A. gives a steeper gradient at both the high and low frequency ends of the frequency response curve than conventional systems. In particular, the S.E.A. makes possible continuous and delicate control of the critical low-midrange, midrange and upper-midrange frequencies at which most musical instruments and nearly all human voices are found. By adjusting some or all of the S.E.A. five tone zone controls, it is possible to enhance practically any part of any musical or other audio material and, in many cases, even create new sounds. A little experimentation on your part will bear this out.

How to Use the S.E.A.

The five tone zone controls in the S.E.A. adjust your amplifier's frequency response above and below their center positions of 40, 250, 1,000, 5,000 and 15,000Hz. Each control has click-stop positions above and below their "flat" points (0dB). Raising or boosting any one of the five controls will boost the level or volume of the amplifier's output around the center frequency indicated; lowering or cutting any control will do the opposite. Suggested uses of the S.E.A. are given below:

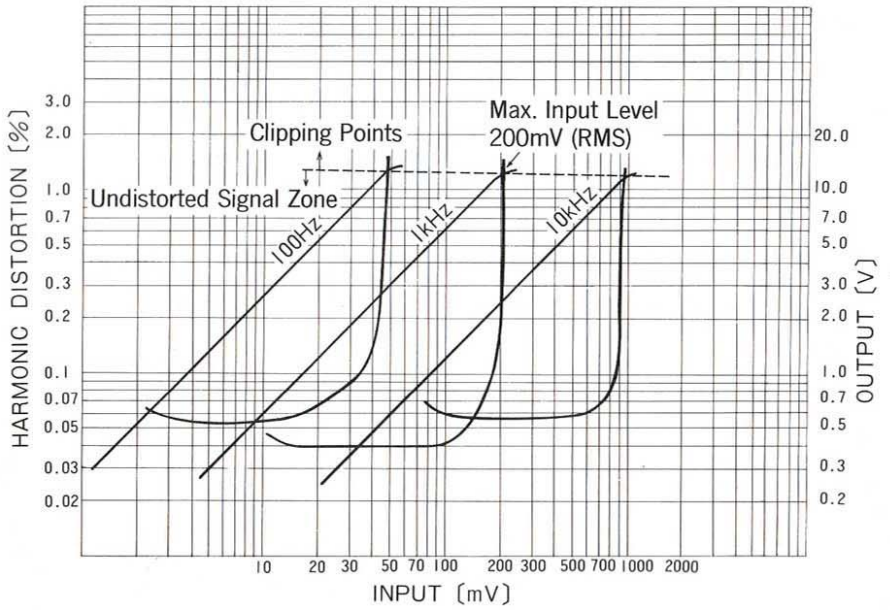


S.E.A. TONE ZONE CONTROLS

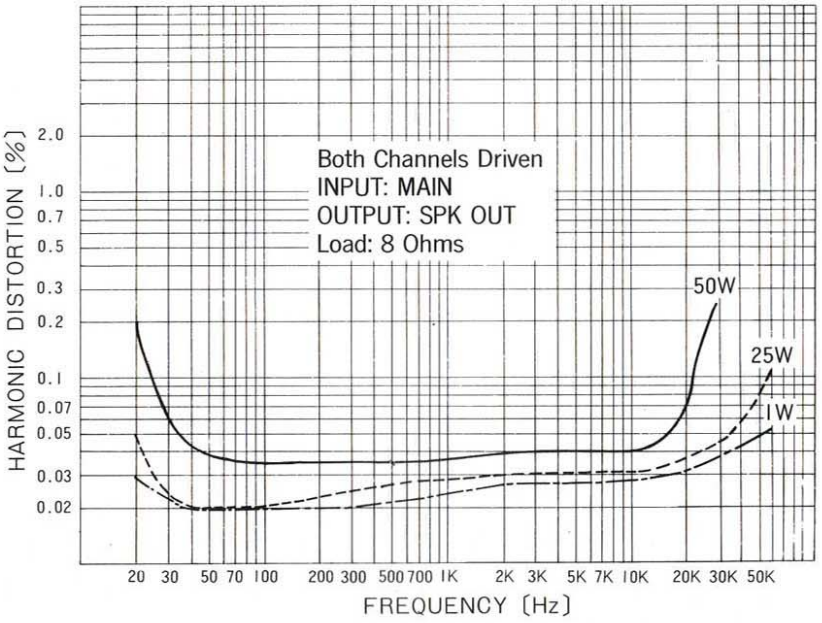
40Hz	Boost to bring out the rich tones of very low bass sounds such as those of an organ, drums, electric bass, etc. Cut to eliminate power hum, rumble or other unwanted bass sounds.
250Hz	Boost to add clarity to upper bass sounds such as woodwinds, cellos, the lower ranges of the human voice, etc. Cut to reduce imperfect speaker boom and to help enhance highs.
1,000Hz	Most effective in emphasizing or de-emphasizing the human voice and the tonal qualities of certain musical instruments.
5,000Hz	Boost to give greater clarity to brass and strings. Cut to lower responses in the upper mid-range frequencies.
15,000Hz	Boost to retain high frequencies, especially during low volume listening, and to add feeling of presence to all sounds. Cut to eliminate tape hiss, surface noise and any distortion in the high-frequency range.

PERFORMANCE GRAPHS

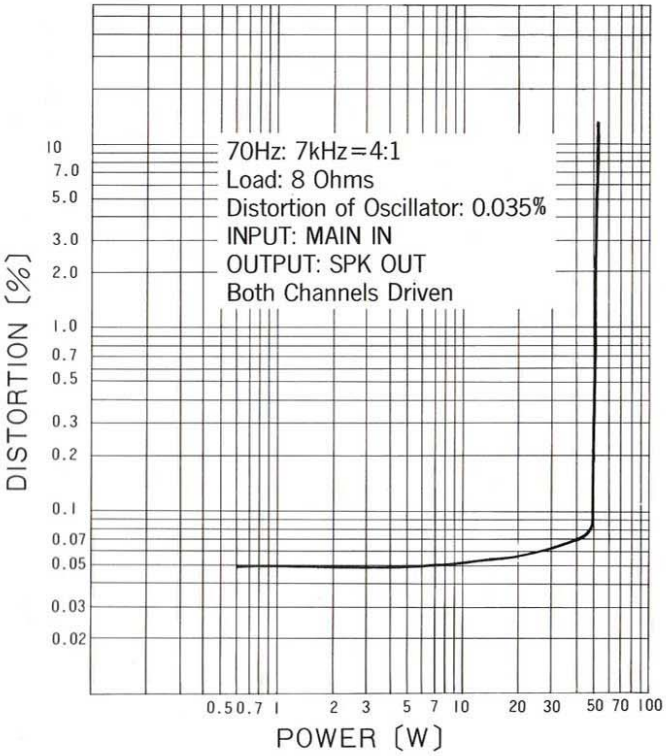
CHARACTERISTICS OF PHONO EQUALIZER



POWER BANDWIDTH



POWER vs. INTERMODULATION DISTORTION



SPECIFICATIONS

POWER AMPLIFIER SECTION

RMS Continuous Power Both Channels Driven No more than 0.25% T.H.D. 20Hz-20kHz Power Bandwidth :	50 Watts per channel at 8-ohm load 55 Watts per channel at 4-ohm load
RMS Continuous Power Both Channels Driven No more than 0.25% T.H.D. 1kHz :	55 Watts per channel at 8-ohm load 60 Watts per channel at 4-ohm load
Total Dynamic Power (IHF) Both Channels Driven :	Total 160 Watts (80 Watts per channel) at 8 ohms Total 210 Watts (105 Watts per channel) at 4 ohms
IHF Power Bandwidth :	10Hz – 40kHz
Total Harmonic Distortion :	0.3% at rated output 0.05% at half rated output
Intermodulation Distortion :	0.3% at rated output 0.1% at half rated output
Frequency Response :	10Hz – 150kHz (–3dB)
Signal-to-Noise Ratio :	92dB
Load Impedance :	4 ohms – 16 ohms (System 1 or 2) 8 ohms – 16 ohms (System 1 + 2)
Damping Factor :	30 at 8 ohms

PREAMPLIFIER SECTION

Input Sensitivity/Impedance :	Phono	2.5mV/50k ohms
	AUX	200mV/50k ohms
	Tape Mon.	200mV/50k ohms
Signal-to-Noise Ratio :	Phono	66dB (RMS)
	AUX	88dB (RMS)

Phono Equalizer Deviation :	±0.5dB from RIAA Curve
Phono Equalizer Overload :	200mV (RMS), 560mV (P-P)
Frequency Response :	10Hz – 30kHz (±0.5dB)
S.E.A. Center Frequencies :	40, 250, 1000, 5000, 15000Hz
S.E.A. Control Range :	±12dB
Subsonic (Low) Filter :	6dB/oct. at 18Hz
High Filter :	–6dB/oct. at 9kHz
Dimensions :	5-7/16"(H) x 16-1/2"(W) x 13-1/8..(D) [13.5cm(H) x 42.0cm(W) x 33.3cm(D)]
Weight :	NET 10.0 kg. (22.1 lbs.) GROSS 11.5 kg. (25.3 lbs.)

Comparison Table for Line Voltage, Power Consumption, Primary Fuse by Areas

JA-S8	Line Voltage	Power Consumption
U. S. A.	AC 120V 50/60 Hz	190W
CANADA	AC 120V 50/60 Hz	190W
PACEX/NEX	AC 100V/220V 50/60 Hz	113W
AUSTRALIA	AC 240V/50 Hz	310W
OTHER AREAS	AC 100V/120V/220V/240V 50/60 Hz	310W

This integrated amplifier is preset to the line voltage in the area where it is to be sold, as shown in the above table.

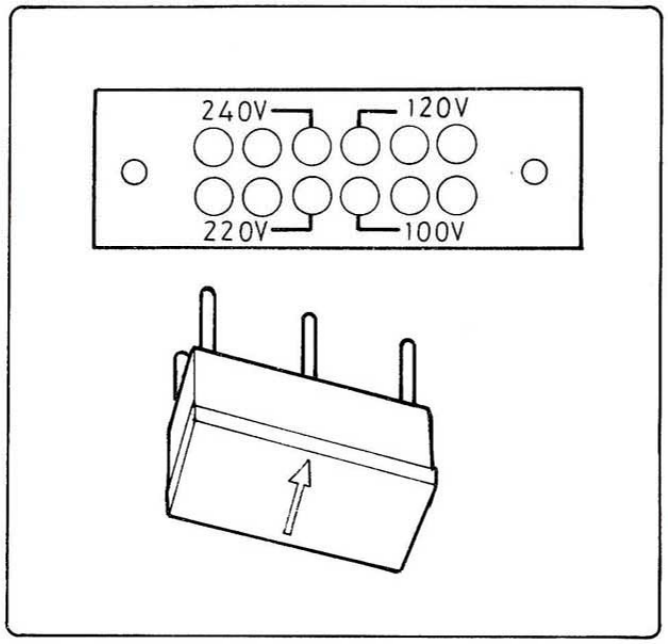
IMPORTANT

The Voltage Selection and Fuse Replacement of this set.

(Note the indication of primary fuse(s))

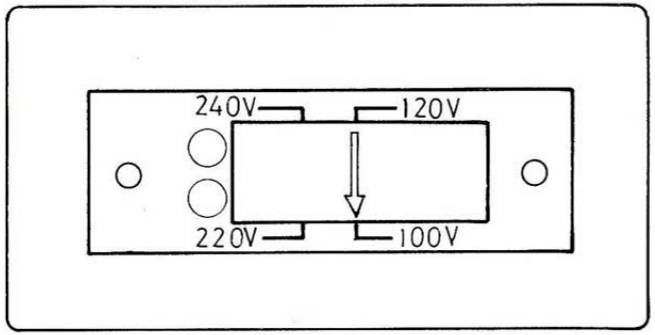
Although this set is pre-set for the use on your area's AC line voltage without any re-adjustment, it can be used on all AC voltages in the world through following adjustments.

To change the voltage, remove a voltage selector cover located on the rear panel near the power cord or on the chassis base inside the enclosure, and replace the plug so that its arrow coincides with the required voltage marked on the selector socket. Do not forget to replace the fuse as well with one of appropriate capacity.



The AC line voltage

	100V – 120V	200V – 240V
Use a	0.25A fuse	0.2A fuse
	0.5A fuse	0.2A fuse
	0.8A fuse	0.5A fuse
	1 A fuse	0.5A fuse
	1.2A fuse	0.8A fuse
	2.3A fuse	1.2A fuse
	3.3A fuse	1.8A fuse
	4.0A fuse	2.3A fuse
	5.0A fuse	2.3A fuse
	6.0A fuse	3.3A fuse



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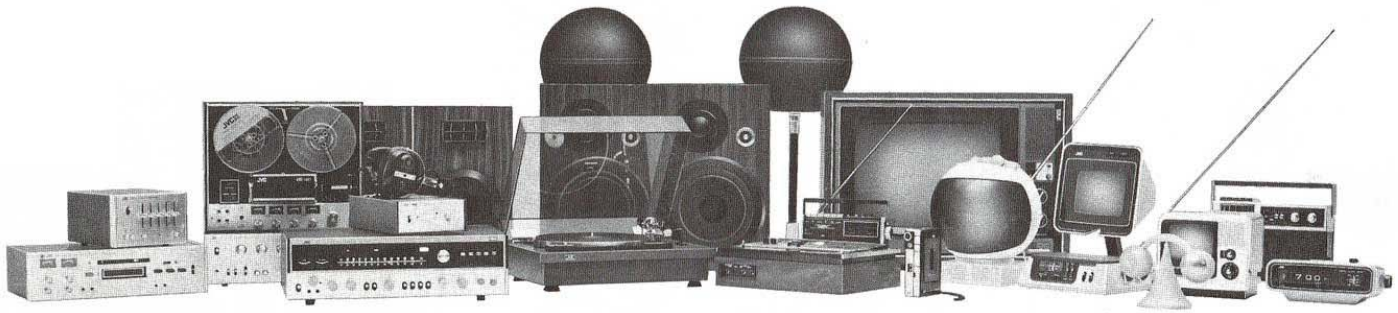

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