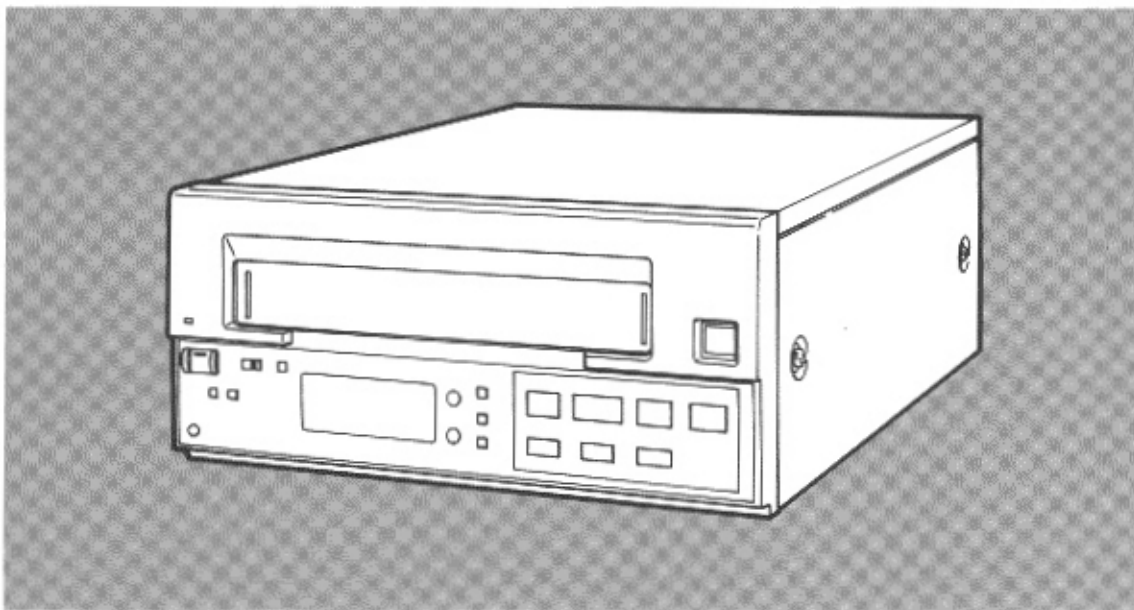


Operating Instructions

Panasonic **VHS**
Professional/Industrial Video

Model AG-**5210** P



Hi-Fi Video Cassette Recorder

Before attempting to connect, operate or adjust this product, please read these instructions completely.

Contents

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Inspection

Optional Accessory

Remote Controller AG-A11

WARNING: UNAUTHORIZED RECORDING OF COPYRIGHTED TELEVISION PROGRAMS, FILMS, VIDEO TAPES AND OTHER MATERIALS MAY INFRINGE ON THE RIGHTS OF COPYRIGHT OWNERS AND BE CONTRARY TO COPYRIGHT LAWS.

If the feet of this unit protrude and prevent the unit from being housed in the rack, remove them.

	CAUTION RISK OF ELECTRIC SHOCK DO NOT OPEN	
CAUTION: TO REDUCE THE RISK OF ELECTRIC SHOCK, DO NOT REMOVE COVER (OR BACK). NO USER-SERVICEABLE PARTS INSIDE. REFER SERVICING TO QUALIFIED SERVICE PERSONNEL.		



The lightning flash with arrowhead symbol, within an equilateral triangle, is intended to alert the user to the presence of uninsulated "dangerous voltage" within the product's enclosure that may be of sufficient magnitude to constitute a risk of electric shock to persons.



The exclamation point within an equilateral triangle is intended to alert the user to the presence of important operating and maintenance (servicing) instructions in the literature accompanying the appliance.


CAUTION:

To reduce the risk of fire or shock hazard and annoying interference, use the recommended accessories only.

WARNING:

To reduce the risk of fire or shock hazard, do not expose this equipment to rain or moisture.

FCC Note: This device complies with Part 15 of the FCC Rules. To assure continued compliance follow the attached installation instructions and do not make any unauthorized modifications. FCC's limits are designed to provide reasonable protection against harmful interference when operated in a residential environment. If this device does cause interference to radio or television reception, which can be determined by turning the device off and on, use this device in another location and/or utilize an electrical outlet different from that used by the receiver. If necessary, consult the dealer or an experienced radio/TV technician for help.

 is the safety information.

Features

Recording and playback up to 2 or 6 hours

Using a 1/2" inch VHS cassette tape, you can record and playback in both the SP (2-hour) and SLP (6-hour) mode.

- LP (4-hour) mode is available in playback mode only.

Hi-Fi Audio

Compact and light weight

Search playback

Locating any desired scene or position on the tape is made easy and fast by watching the tape being played back at about 9 times (SP or LP mode) or 11 times (SLP mode) normal speed in forward or reverse direction.

- Noise bars will be appeared in a fixed position to assure a highly viewable playback picture (in the LP mode, more noise may be noticeable, but this is normal).

Clear picture in still and slow-motion modes

Auto power ON

Power is turned ON automatically when the cassette tape is inserted in the VTR or the power cord is connected to the AC outlet.

Automatic tracking function

Tracking can be automatically adjusted by pressing the Tracking "+" and "-" Buttons simultaneously.

Built-in VIDEO AGC (Automatic Gain Control) Circuit

The video level can be adjusted at optimum level, and can be recorded at minimal distortion even with sudden and excessively high input levels.

Cassette tape insertion/ejection in power OFF mode

Cassette tape insertion and ejection can be performed even when the power has been turned OFF.

Serial remote operation

Remote operation

Using an optional remote controller AG-A11, you can operate the unit about 5 meters away from the unit.

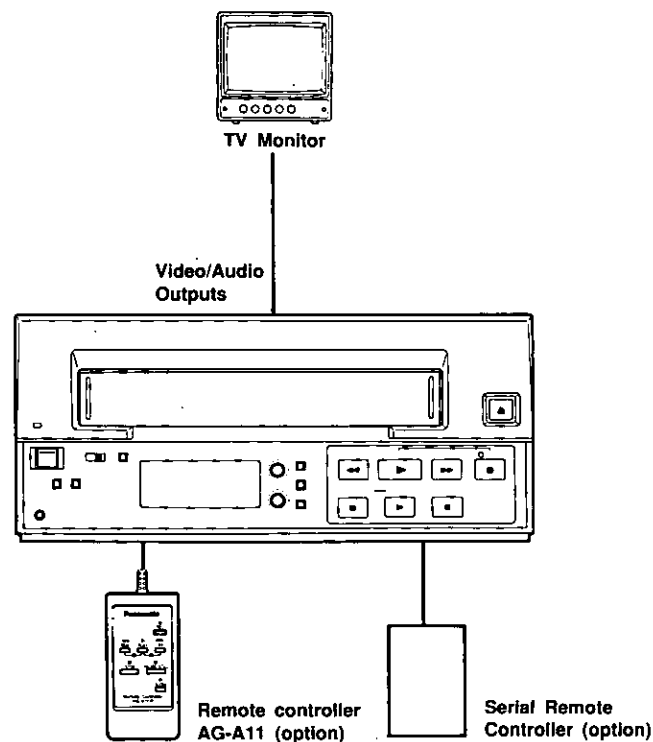
Optional function

The following optional recording function can also be adopted.

For details with the function, refer to your qualified service personnel.

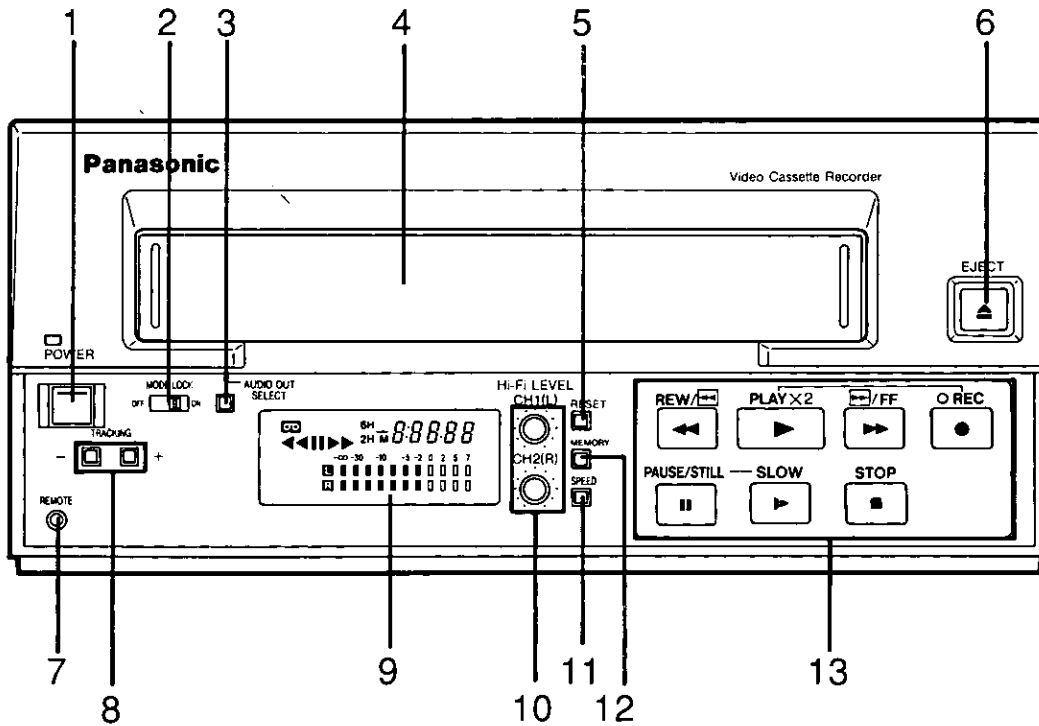
- 4-hour recording (normal audio only)

System Configurations



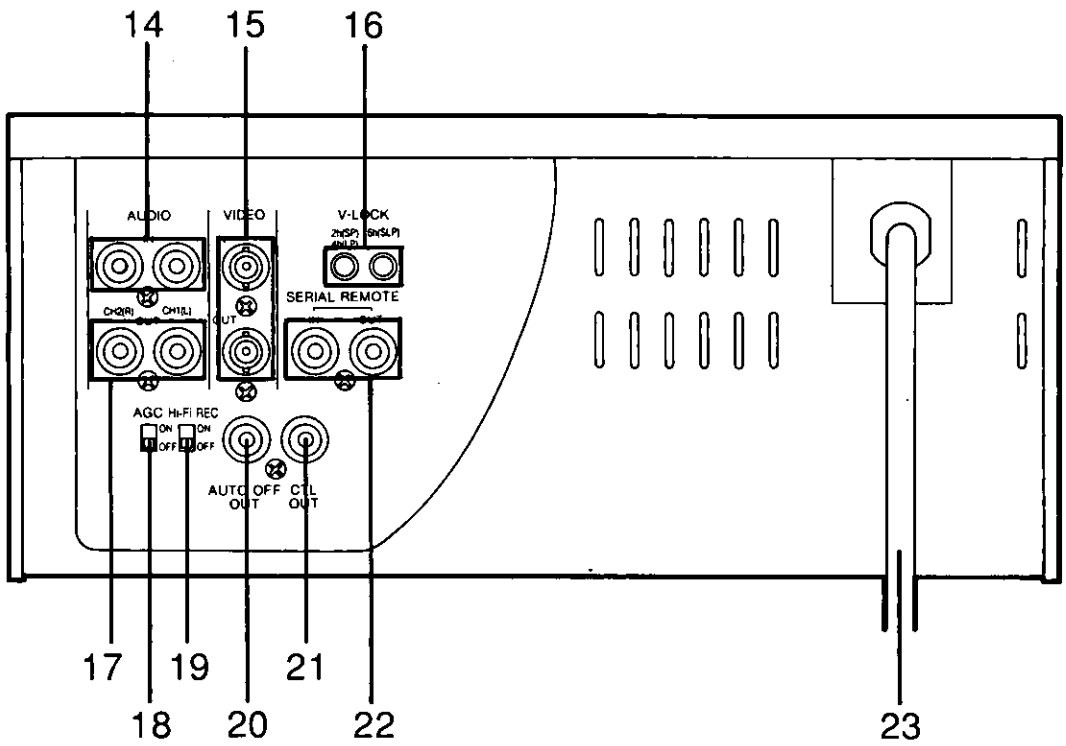
Controls

Front



No.	Name	Page	No.	Name	Page
1	Power Switch	—	9	Counter/Audio level Meters	7, 8, 10
2	Mode Lock Switch	7	10	Hi-Fi Audio CH1(L)/CH2(R) Level Controls	7
3	Audio Out Select Button	8			
4	Cassette Holder	—	11	Tape Speed Button	7
5	Reset Button	10	12	Memory Button	10
6	Eject Button	—	13	Operation Buttons REW, PLAY, FF, REC, PAUSE/STILL, SLOW, STOP	7~11
7	Remote Control Jack (Mini-Jack)	13			
8	Tracking Buttons	8~10			

Rear

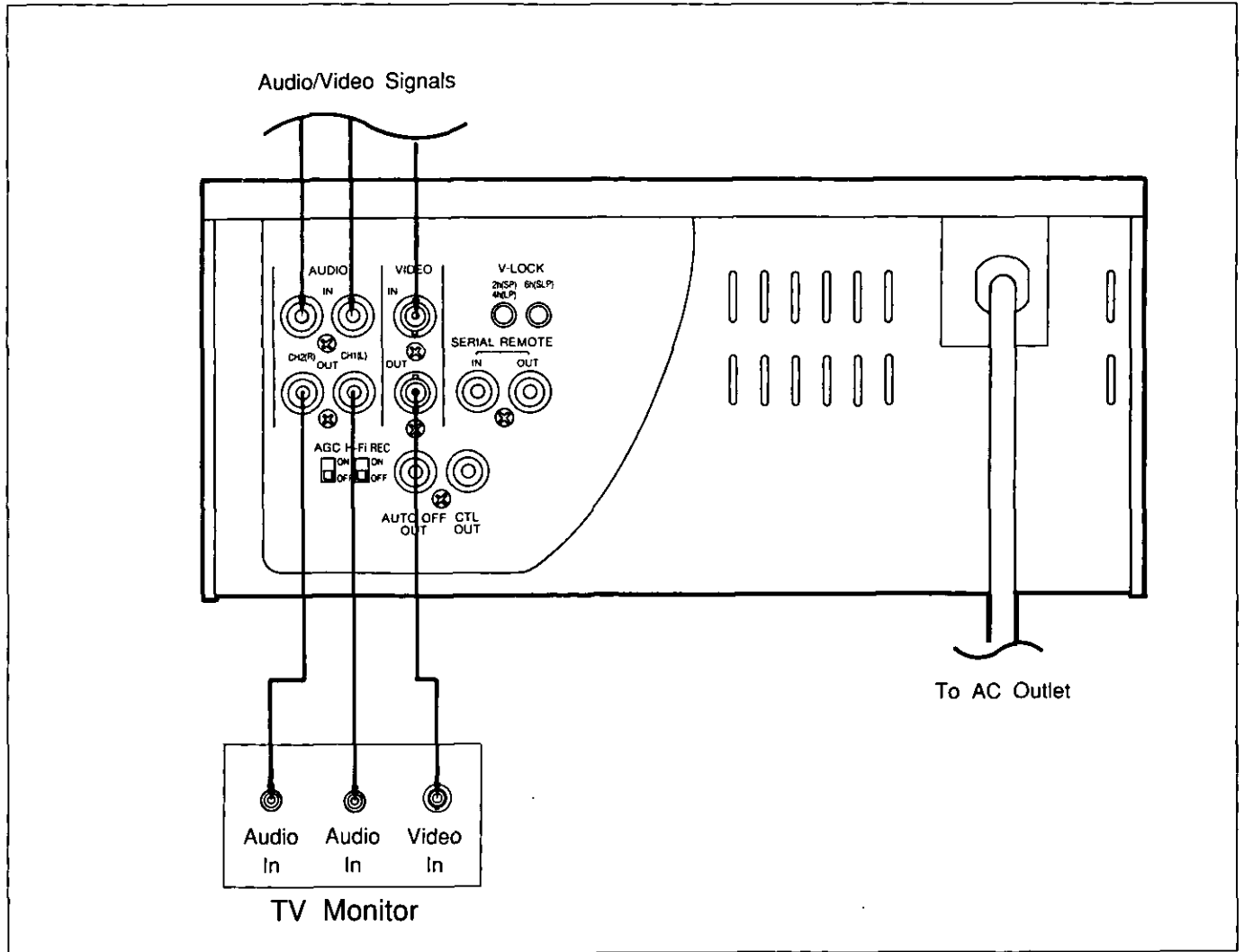


No.	Name	Page	No.	Name	Page
14	Audio CH1(L)/CH2(R) IN Connectors (PHONO)	6, 7, 11, 12	19	Hi-Fi REC Switch	7, 11
15	Video IN/OUT Connectors (BNC)	6, 7, 11, 12	20	AUTO OFF OUT Connector (PHONO)	11
16	V-Lock (2h•4h/6h) Controls	9	21	CTL OUT Connector (PHONO)	11
17	Audio CH1(L)/CH2(R) OUT Connectors (PHONO)	6, 8, 11	22	Serial Remote IN/OUT Connectors	12
18	AGC Switch*	—	23	Power Cord	—

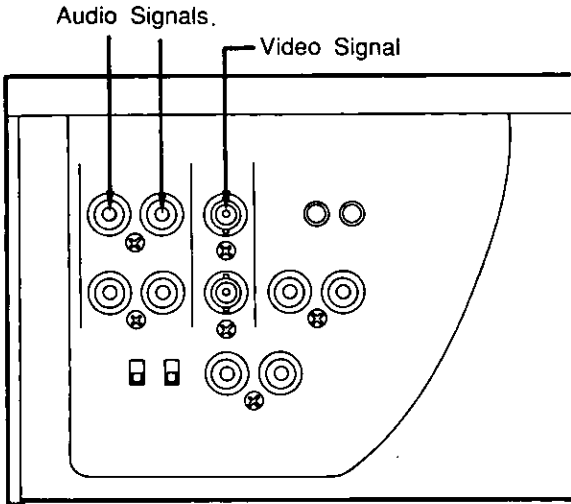
* When this switch is set to ON, the recording level is adjusted automatically.

Connections with TV Monitor (Audio/Video)

When the connection is to be made to a TV Monitor that does not have an 8-pin terminal (a monitor television which has only normal audio and video connection terminals), separate audio (phono) and video (BNC) cables are used to make the connection.



Recording



Audio Signals. Video Signal

Audio Signals are recorded as described on the table.

Audio Input \ CH	Hi-Fi	Normal
CH1 (L)	CH1	CH1
CH2 (R)	CH2	CH2
CH1 (L) & CH2 (R)	Stereo (CH1 & CH2)	Mixed Audio (CH1 & CH2)

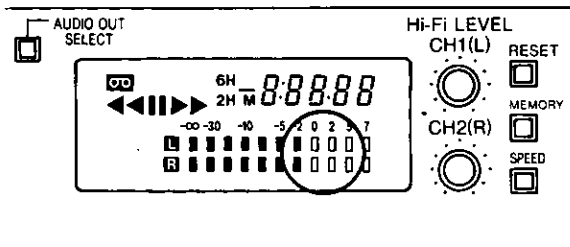
• When Hi-Fi REC Switch is set to ON, Hi-Fi audio recording is available.

Preparations

- Set the Memory Button to OFF.
- Load the pre-recorded cassette tape.

Audio Level Adjustment (Hi-Fi sound only)

The audio level can be adjusted only for Hi-Fi audio. Adjust the Hi-Fi Audio CH1(L)/CH2(R) Level Controls so that the audio level meter indication is set to 0 (so that the 0 level is exceeded).



Tape Speed Selection

Press the Tape Speed Button to select the desired tape speed. 2-hour (2H) or 6-hour (6H) indication will appear on the Counter each time the Tape Speed Button is pressed.



- 2H (SP): Standard mode (recording for approx. 120 minutes using an NV-T120 tape)
- 6H (SLP): Super long play mode (recording for approx. 360 minutes using an NV-T120 tape)

Operation

Recording starts when the REC and PLAY Buttons are pressed simultaneously.

When the PAUSE/STILL Button is used, the sequence of operation is as follows.

- 1 Playback the tape and find the location which is to be recorded. Then press the PAUSE/STILL Button. The " || " indication will appear on the Counter and VTR is set to the playback pause mode.
- 2 Press the REC and PLAY Buttons simultaneously. The REC lamp now comes on and the VTR is set to the recording pause mode.
- 3 When the PAUSE/STILL Button is pressed again, the VTR is released from the pause mode and recording begins.

Stopping Recording

Press the STOP Button.

Mode Lock Switch

This switch makes it impossible to switch from one VTR operation to another.

When it is set to ON, the Power Switch and Operation Buttons (except the Eject Button) do not function. However, operations from the remote controller are available.

Playback

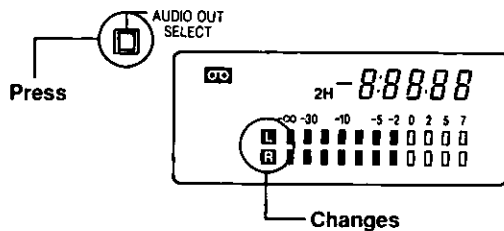
Preparations

- Press the Power Switch to ON.
- Be sure that the Mode Lock Switch is OFF.
- Insert a recorded tape.
- Turn the TV Monitor ON.

Audio Out Select Button

Set the Audio Out Select Button to the desired position. This is to select the audio signal through Audio CH1(L)/CH2(R) OUT Connectors. Each time the Audio Out Select Button is pressed, the audio output mode will change as follows:

Hi-Fi → L CH → R CH → No indication (Linear)



Tape Speed

There is no need to set the tape speed since setting is automatically made to the speed which the tape was recorded.

Normal Playback

Press the Play Button. "▶" indication will appear on the Counter and playback will start.

- Press the Tracking Buttons simultaneously if the image is partially obscured by bands of noise to move the noise out of the picture. If the noise persists, use the "-" or "+" Button for adjustment.



Double-speed Playback

Press the PLAY Button during normal playback. The playback picture can be viewed at about twice normal playback speed. To return to normal playback, press the PLAY Button.

- No sound is heard during double-speed playback.

Slow Motion Playback

Press the SLOW Button during playback. The playback picture can be viewed at a lower speed. Each time the SLOW Button is pressed, the VTR will run at one of the slow motion speeds shown below. To return to normal playback, press the PLAY Button.

Normal speed → 1/30 → 1/20 → 1/15 → 1/10 → 1/6

- If slow motion playback continues for over 10 minutes, the VTR will go into the stop mode automatically.
- No sound is heard during slow motion playback.

Rewind and Fast Forward the tape

When the VTR is in stop mode:

- Press the REW Button to rewind the tape.
- Press the FF Button to move the tape forward rapidly.

Search Playback

- When the FF Button is held down while the VTR is in the playback, slow motion playback or still, the tape will be played back in the forward direction at about 9 times normal speed in SP or LP mode, and at about 11 times normal speed in SLP mode.
- When the REW Button is held down while the VTR is in the playback, slow motion playback or still, the tape will be played back in the reverse direction at about 9 times normal speed in SP or LP mode, and at about 11 times normal speed in SLP mode.
- No sound is heard during search playback.

Use tapes complying with the VHS standard with this unit. The rewind time differs depending on the hub diameter (tape take-up volume).

- Use of Panasonic video tapes is recommended for recording and playback.

- NV-T120
- NV-T60
- NV-T90
- NV-T30

Still Playback

Press the PAUSE/STILL Button during normal playback or during slow motion playback. Still playback will only return to normal playback mode by pressing the PAUSE/STILL Button once again.

- If noise appears during still playback, set for slow motion mode and adjust with the Tracking Control Buttons to minimize the bands of noise as shown below, then press the PAUSE/STILL Button.



- If still playback continues for more than 5 minutes, the VTR will go into the stop mode automatically.
- A distortion may occur on the picture during still mode, but this is not a malfunction.
- No sound is heard during still mode.
- Color program may be played back in black and white or playback image may be dark during still mode, but this is not a malfunction.

After Finishing Playback

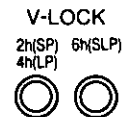
Press the Stop Button to stop the playback.

For playback of tapes recorded in SP mode, exchangeability is guaranteed by the VHS standard, but a stable playback picture may not be obtained for tapes recorded in LP or SLP mode.

Vertical Lock Adjustment

If picture jitters vertically in STILL, adjust the V-Lock Controls on the rear panel, but a one time adjustment should be necessary.

If the TV Monitor has a vertical hold control, adjust this together with the V-Lock Controls.



Counter

Memory Button
When the Memory Button is pressed, display will be changed.

Memory Button OFF

Memory Stop Display

Hi-Fi LEVEL
CH1(L) RESET
CH2(R) MEMORY **← Press**
SPEED

Memory Stop

When the Memory Button is pressed and the "M" display lights on the Counter, the tape can be stopped near counter digit "00000" during FF or REW modes.

Press until "M" will appear.

Press **REW** or **FF**

Auto Stop near counter digit "00000"

Audio Output

Each time the power is turned ON, Hi-Fi mode is automatically selected for audio output (L and R indications both appear on the Counter). Use the Audio Out Select Button to select for the desired audio output.

AUDIO OUT SELECT

Press

Counter Reset

Pressing the Reset Button clears the counter indication to "00000".

Press

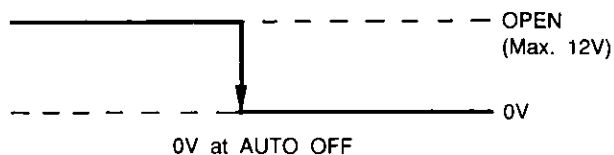
Hour Meter

When the Tracking Buttons are pressed simultaneously in modes besides playback, the total number of hours that the VTR has been used (the cylinder has turned) is indicated on the Counter.

TRACKING - +

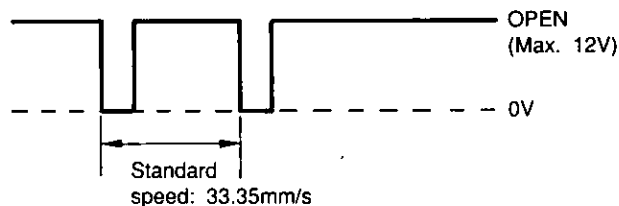
AUTO OFF Output

If any trouble should occur, this unit is set to AUTO OFF. At such a time, the unit stops automatically, and the REC Lamp flashes. At the same time, signals are output from the AUTO OFF OUT Connector on the rear panel. When the Power Switch is set off, AUTO OFF is released.



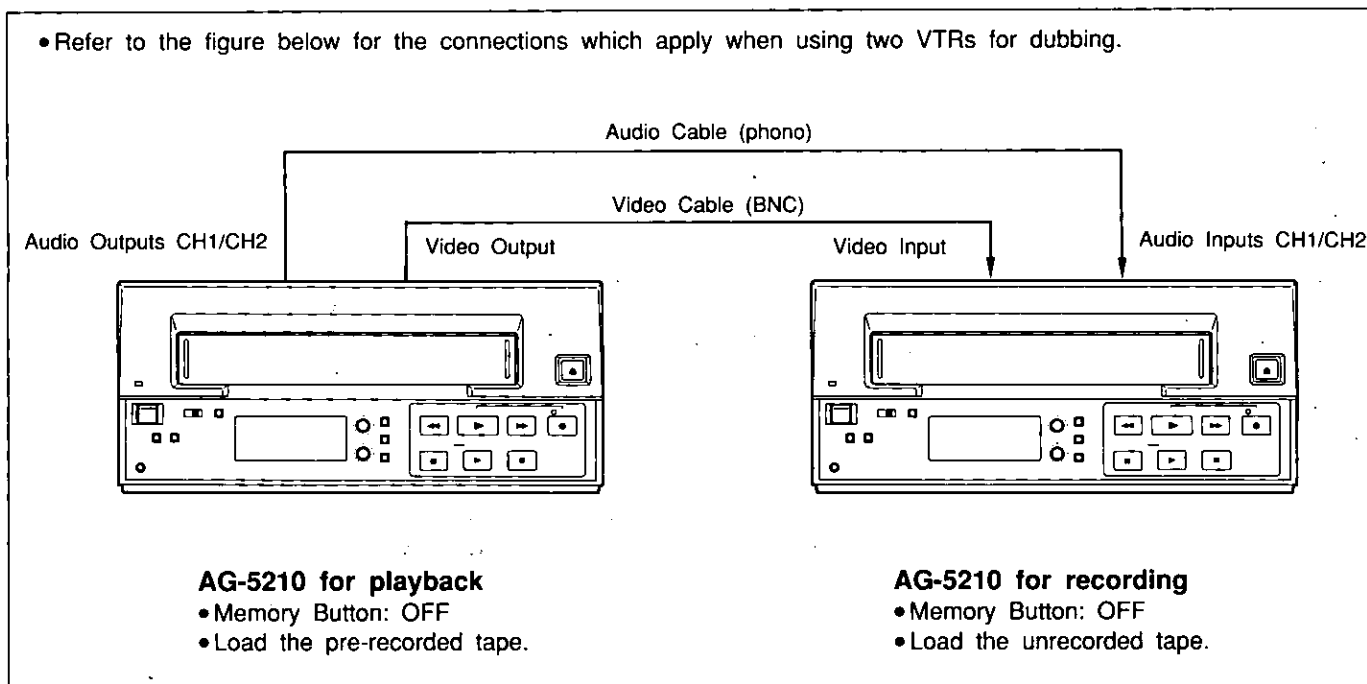
CTL Output

The CTL signal to be recorded on the tape is output in the form shown in the figure below. It can be used for the tape travel count, etc.



Dubbing

• Refer to the figure below for the connections which apply when using two VTRs for dubbing.

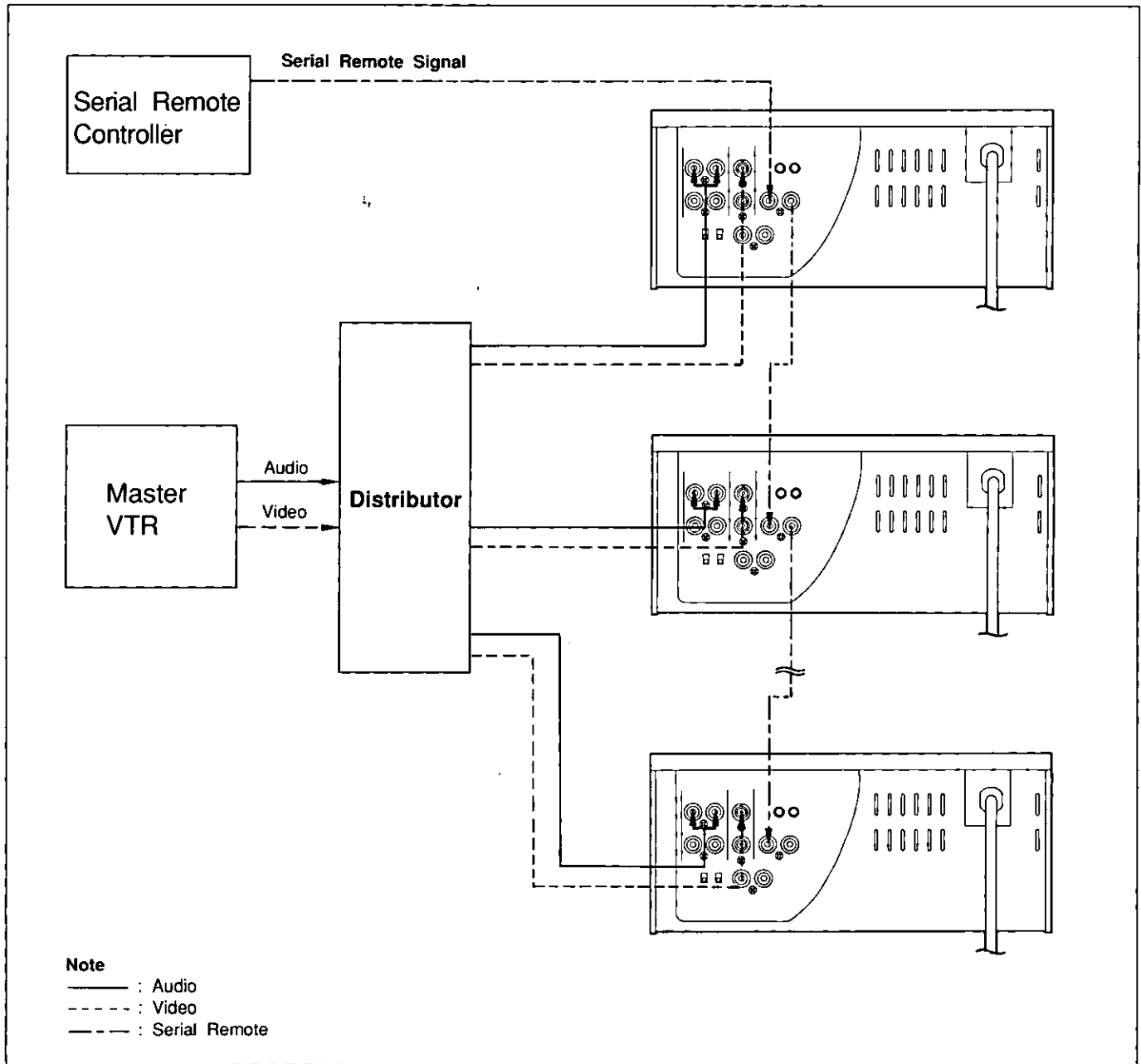


Operation

- 1 Press the PLAY Button on the playback VTR to start playback.
 - 2 Press both the REC and PLAY Buttons on the recording VTR at the location where the dubbing is to begin, and proceed with dubbing.
 - 3 To stop the dubbing, first press the STOP Button on the recording VTR and then press the STOP Button on the playback VTR.
- With 6-hour recording for dubbing purposes, use the unit with the Hi-Fi REC Switch at the OFF position.

Serial Remote Control

The use of the optional serial remote controller makes it possible to conduct recording, playback and other operations from a distance, as shown in the figure. For details, consult with your authorized local dealer.

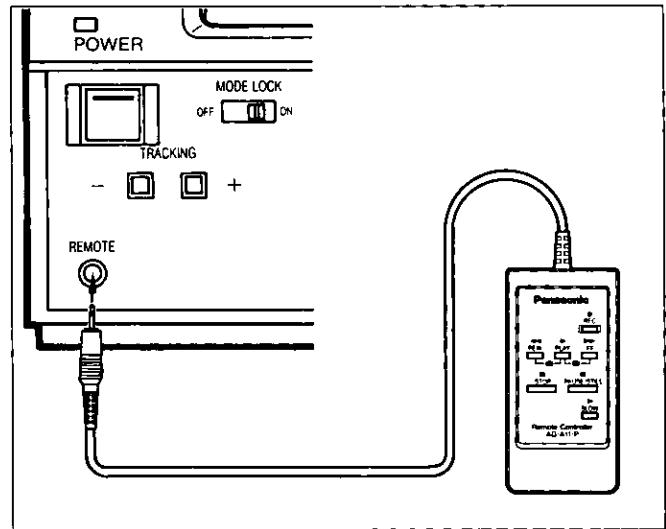


Note

- Do not use the Remote Input/Output Connectors for any purpose except for serial remote control since a breakdown or failure may otherwise occur.

Remote Controller

When the optional accessory remote controller AG-A11 is connected to the Remote Control Jack on the front panel of this unit, the unit can be controlled from a distance instead of by using the buttons on the unit itself.



Troubleshooting

...Check the following points once again.

Trouble	Corrections
No power	• Check that the Power Cord is connected to the AC Outlet.
No operation starts when operation buttons are pressed.	• Check that the Power Switch is ON. • Check that the cassette tape is inserted. • Check the "d" mark. When the "d" mark lights: Take out the cassette tape and leave the VTR on and let it remain at room temperature until "d" mark disappears. Depending on the surrounding conditions, this may take several hours.
The playback picture is noisy or contains streaks.	• Adjust by pressing the Tracking Control Buttons.

Refer servicing to qualified service personnel.

Cautions for Use

- Do not insert fingers or any other objects into the Cassette Holder.
- Avoid operating or leaving the VTR near strong magnetic fields. Be especially careful of large audio speakers.
- Avoid operating or storing the VTR in an excessively hot, cold, or damp environment as this may result in damage both to the VTR and to the tape.
- This unit is supplied with a 3-prong grounded AC plug—do not try to defeat its purpose.
- If the VTR is not going to be used for a length of time, turn the power OFF and disconnect the power plug from the AC outlet.
- Do not leave a cassette tape in the VTR when not in use.
- Do not block the ventilation slots on the top of the VTR.
- Use this VTR horizontally and do not place anything on the top panel.
- Cassette tape can be used only for one-side, one direction recording. Two-way or two-track recordings cannot be made.
- Cassette tape can be used for either color or black & white recording.
- Keep the VTR away from flower vases, tubs, sinks, etc. CAUTION: If liquids should be spilled into the VTR, serious damage could occur. If you spill any liquid into the VTR, remove power and consult qualified service personnel.
- Wipe the VTR with a clean, dry cloth. Never use cleaning fluids, chemicals or wax.
- Do not attempt to disassemble the VTR. There are no user serviceable parts inside.
- Refer any needed servicing to qualified service personnel.

Cleaning care for video heads

The video heads are the means by which the VTR places pictures on the tape during recording, and reads pictures from the tape during playback.

In the unlikely event that they become dirty enough to be clogged, no picture will be recorded or played back. This can easily be determined if, during playback of a known good tape, there is good sound, but no picture (picture is extremely snowy). If this is the case, have the VTR checked by qualified service personnel.

Note: We do not recommend that you attempt to clean the video heads yourself.

Dew Indication

In case of dew detection, the safety device of this VTR will operate in order to protect the cassette tape and video heads. In case of dew detection, the "d" mark in the Counter lights. Take out the cassette tape and wait until "d" mark goes out with Power Switch turned ON.

"d" mark lights.



Specifications

Power Source:	120V AC, 50-60Hz
Power Consumption:	Approx. 17 watts

Television System:	EIA Standard (525 lines, 60 fields) NTSC color signal
Video Recording System:	2 rotary heads, Helical scanning system Luminance; FM azimuth recording Color signal; Converted subcarrier phase shift recording
Tape Format:	Tape width 1/2 inch (12.7 mm), high density VHS tape
Tape Speed:	SP; 1-5/16 i.p.s. (33.35 mm/s) LP; 21/32 i.p.s. (16.67 mm/s) SLP; 7/16 i.p.s. (11.12 mm/s)
Recording/Playback Time:	360 min. with NV-T120 used in SLP mode
FF/REW Time:	Approx. 3 min. with NV-T120
Operating Temperature:	41°F to 104°F (5°C to 40°C)
Operating Humidity:	35% to 80%
Weight:	Approx. 11.2lbs. (5.1kg)
Dimensions:	10-3/4"(W) × 13-9/16"(D) × 4-3/4"(H) 270 × 344.5 × 120 mm

Video

Input Level:	VIDEO IN (BNC), 1.0Vp-p, 75Ω unbalanced
Output Level:	VIDEO OUT (BNC), 1.0Vp-p, 75Ω unbalanced
Video Horizontal Resolution:	240 lines (color mode)
Signal-to-Noise Ratio:	45dB (color, SP mode)

Audio

Input Level:	AUDIO IN (PHONO), -8dBv, 47kΩ unbalanced
Output Level:	AUDIO OUT (PHONO), -8dBv, 1kΩ unbalanced (1Vrms=0dB)
Channels:	3 Channels (Hi-Fi; 2ch, normal; 1ch)
Hi-Fi Audio:	Frequency Response; 20Hz to 20kHz Dynamic Range; 90dB
Normal Audio:	Frequency Response; 50Hz to 10kHz (SP mode) Signal-Noise Ratio; 43dB (SP mode)
Remote:	Mini (Front)/Phono (Rear) Jacks

Weight and dimensions shown are approximate.
Specifications are subject to change without notice.

Panasonic

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