SLV-E325EG/E475EG/E570EE/E570EG/E715B/E717VC/E720B/E720BZ/E720EE/E720EG/E720EX/E720NC/E720NP/E720UX/E720VC/E720VP/E725NC
RMT-V197/V197A/V197B/V198/V198A/V198K/V198J/V199/V199A

SERVICE MANUAL

East European Model
Greek Model
SLV-E325EG/E475EG/E570EE/E570EG/E720EE/E720EG
French Model
SLV-E715B/E720B/E720BZ
Irish Model
SLV-E720EX
North European Model
SLV-E720NC/E725NC
Spanish Model
SLV-E720NP
UK Model
SLV-E720UX
Germany Model
SLV-E717VC/E720VC
Austrian Model
Germany Model
SLV-E720VP

Photo : SLV-E720B

VHS

H MECHANISM

- **Refer to the SERVICE MANUAL of VHS MECHANICAL ADJUSTMENTS Ⅳ for MECHANICAL ADJUSTMENTS. (9-973-623-11)**

SPECIFICATIONS

System

Channel coverage
- PAL (B/G)
- VHF E2 to E12
- VHF Italian channels A to H
- UHF E21 to E69
- CATV S01 to S05, S1 to S20
- HYPER S21 to S41

RF output signal
- UHF channels 21 to 69

Aerial out
- 75-ohm asymmetrical aerial socket

Inputs and outputs

LINE-1 (TV)
- LIGNE-1 (TV)
- 21-pin
- Video input: pin 20
- Audio input: pins 2 and 6
- Video output: pin 19
- Audio output: pins 1 and 3

LINE-2 IN/ENTREE LIGNE-2 (SLV-E570EG/E720EX/E720NC/E720UX/E720VP)
DECODER/LINE-2 IN
DECODEUR/ENTREE LIGNE-2 (SLV-E715B/E717VC/E720B/E720BZ/E720NP/E720VC)
- 21-pin
- Video input: pin 20
- Audio input: pins 2 and 6
- Video output: (C+) pin 19 (SLV-E715B/E717VC/E720B/E720BZ/E720NP/E720VC)
- Audio output: (C+) pins 1 and 3 (SLV-E715B/E717VC/E720B/E720BZ/E720NP/E720VC)

AUDIO OUT
- Phono jack (2)
- Rated output level: 327 mVrms
- Load impedance: 47 kilohms
- Output impedance: less than 10 kilohms

General

Power requirements
- 220 – 240 V AC, 50 Hz

Power consumption
- 23 W

Operating temperature
- 5°C to 40°C

Storage temperature
- –20°C to 60°C

Dimensions
- Approx. 430 x 109 x 304 mm (w/h/d) including projecting parts and controls

Mass
- Approx. 4.8 kg

Supplied accessories

Remote commander (1)
R6 (size AA) batteries (2)
Aerial cable (1)

Design and specifications are subject to change without notice.

VIDEO CASSETTE RECORDER

MICROFILM

SONY®

[DIFFERENT SPECIFICATIONS]

SAFETY CHECK-OUT

After correcting the original service problem, perform the following safety checks before releasing the set to the customer.

1. Check the area of your repair for unsoldered or poorly-soldered connections. Check the entire board surface for solder splashes and bridges.
2. Check the interboard wiring to ensure that no wires are "pinched" or contact high-wattage resistors.
3. Look for unauthorized replacement parts, par-ticularly transistors, that were installed during a previous repair. Point them out to the customer and recommend their replacement.
4. Look for parts which, through functioning, show obvious signs of deterioration. Point them out to the customer and recommend their replace-ment.
5. Check the B+ voltage to see it is at the values specified.
6. Flexible Circuit Board Repairing
   - Keep the temperature of the soldering iron around 270˚C during repairing.
   - Do not touch the soldering iron on the same conductor of the circuit board (within 3 times).
   - Be careful not to apply force on the conductor when soldering

TABLE OF CONTENTS

SERVICE NOTE

1. HOW TO RETURN THE PINCH ROLLER, GUIDE ROLLER AND ELEVATOR CAM TO STOP MODE

1) Remove the VHS MD assembly from the machine. (Refer to section 2-4. Removal.)
2) Rotate the worm gear-1 of the cam motor beneath the MD assembly in the direction arrow Ⓐ using a screw driver tip.

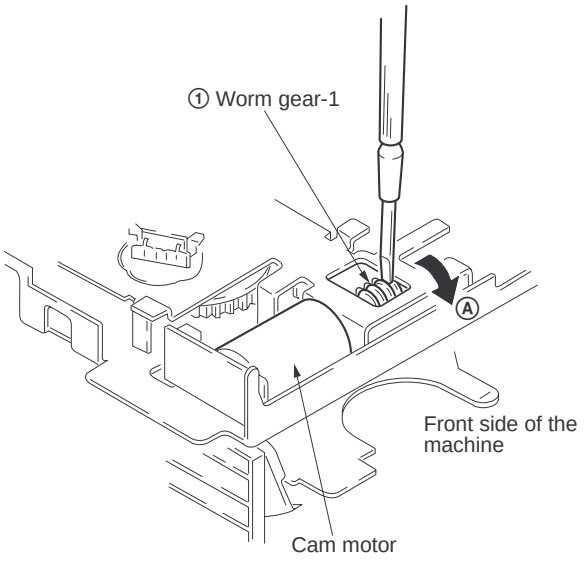


Fig. 1

2. HOW TO RETURN A TAPE INTO CASSETTE HALF

A tape can be rewound into a cassette half by rotating the flywheel-1 of the capstan motor in the direction of Ⓐ with hand.

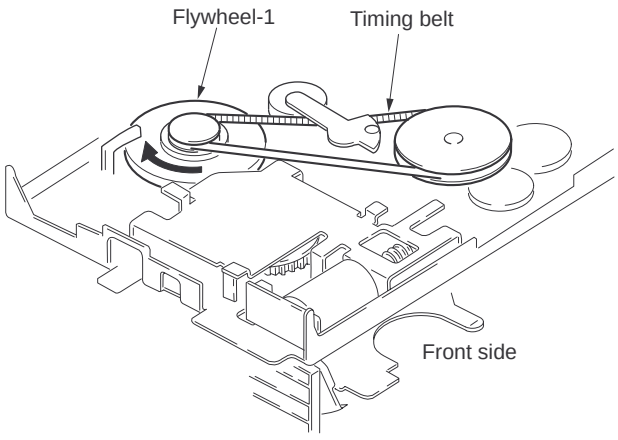


Fig. 2

3. HOW TO REMOVE A CASSETTE FROM A MACHINE IF A CASSETTE IS LEFT IN A MACHINE IN TROUBLE

Execute the section 2, and keep rotating the flywheel-1.

> When executing section 1 to 3, take care that a tape slack should not be caught by a mechanism or a tape should not be damaged.

4. HOW TO REMOVE DRUM ASSEMBLY

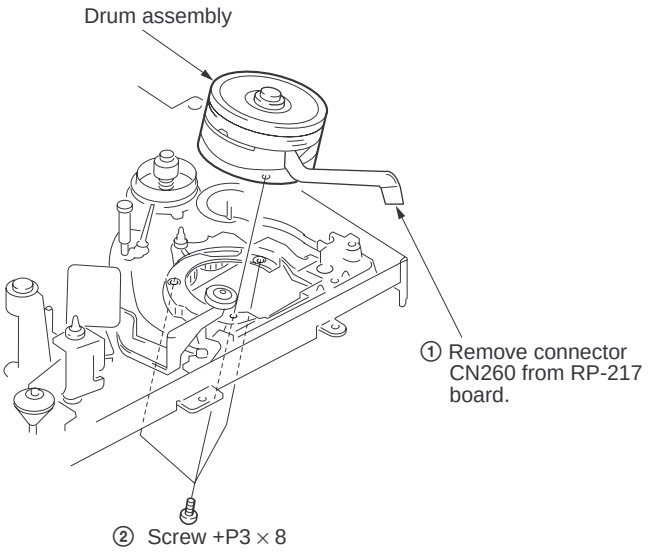


Fig. 3

SECTION 1
GENERAL

This section is extracted from instruction manual.

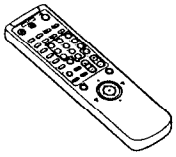
Getting Started

Step 1

Unpacking

Check that you have received the following items with the VCR:

- Remote commander



- Aerial cable

- R6 (size AA) batteries

Checking your model name

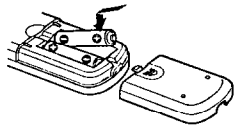
The instructions in this manual are for the 6 models : SLV-E720NC, E720NP, E720VC, E720VP, E725NP and E717VC. Check your model number by looking at the rear panel of your VCR. The SLV-E720NP is the model used for illustration purposes. Any difference in operation is clearly indicated in the text, for example, "SLV-E720VC only."

Step 2

Setting up the remote commander

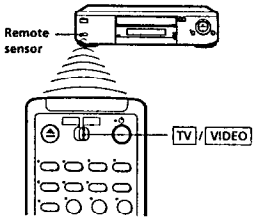
Inserting the batteries

Insert two R6 (size AA) batteries by matching the + and – on the batteries to the diagram inside the battery compartment.



Using the remote commander

You can use this remote commander to operate this VCR and a Sony TV. Buttons on the remote commander marked with a dot (•) can be used to operate your Sony TV.



To operate	Set TV/VIDEO to
the VCR	VIDEO and point at the remote sensor on the VCR
a Sony TV	TV and point at the remote sensor on the TV

Using the Joystick

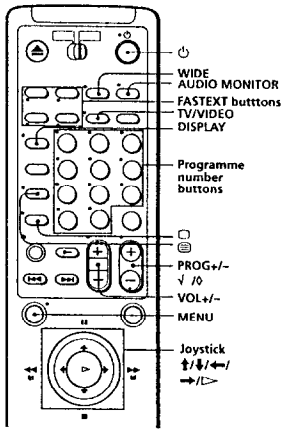
Mode	Operation	Action
Playback	Push up/down/left/right ↑/↓/←/→	PAUSE/STOP/FF/REW
	Press	PLAY
Menu	Push up/down/left/right ↑/↓/←/→	Select in menu
	Press	EXECUTE

Notes

- In normal use, the batteries should last about three to six months.
- If you do not use the remote commander for an extended period of time, remove the batteries to avoid possible damage from battery leakage.
- Do not use a new battery with an old one.
- Do not use together different types of batteries.

continued

Step 2 : Setting up the remote commander (continued)

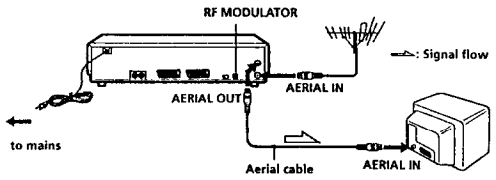


TV control buttons

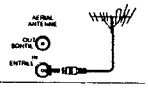
To	Press
Turn the TV into standby or active mode	⏻ (on/standby)
Select an input source of the TV either from aerial or from line in	TV/VIDEO
Select the programme position of the TV	Programme number buttons PROG +/-
Adjust the volume of the TV	VOL +/-
Switch to TV (Teletext off)	▭ (TV)
Switch to Teletext	▤ (Teletext)
Select the sound	AUDIO MONITOR
Use FASTEXT	FASTEXT buttons
Call up on-screen display	DISPLAY
Change the Teletext page	√ /◊
Operate TV menu options	MENU button / Joystick
Select screensize	WIDE

Step 3

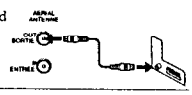
Connecting the VCR



1 Disconnect the aerial cable from your TV and connect it to AERIAL IN on the rear panel of the VCR.



2 Connect AERIAL OUT of the VCR and the aerial input of your TV using the supplied aerial cable.



3 RF MODULATOR OFF ON ARR NAR — Make sure RF MODULATOR is set to ON.

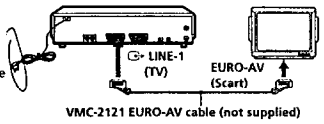
4 Connect the mains lead to the mains

continued

Additional connections

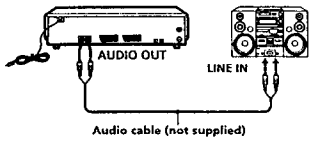
To a TV that has a EURO-AV (Scart) connector

This additional connection improves picture and sound quality. Connect the TV as shown on the right. Whenever you want to watch the VCR picture, press TV/VIDEO to display the VTR indicator in the display window.



To a stereo system

You can improve sound quality by connecting a stereo system as shown on the right.



Tip

- If the TV is connected to the LINE-1 (TV) connector, setting the RF MODULATOR switch to OFF is recommended. In the OFF position, only the signal from the aerial is output through the AERIAL OUT connector.

5 RF CHANNEL

Press RF CHANNEL.

You have now tuned your TV to the VCR. From now on, whenever you want to play a tape, set the TV to the video channel.

To check if the TV tuning is correct

If a number on the TV screen changes each time you press PROGRAM+/- on the VCR , the TV tuning is correct.

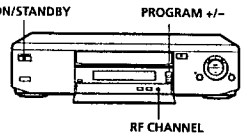
To obtain a clear picture from the VCR

If the picture does not appear clearly in step 4 above, press PROGRAM +/- in step 4, so that another RF channel appears. Then tune the TV to the new RF channel until a clear picture appears.

Step 4

Tuning your TV to the VCR

If you have connected your VCR to the TV using a EURO-AV cable, skip this step.



1 ON/STANDBY

Press ON/STANDBY to turn on the VCR.

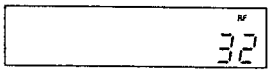
Make sure that the RF MODULATOR switch on the rear panel is set to ON.

2 RF CHANNEL

Press RF CHANNEL on the VCR.

The factory-preset RF channel appears in the display window.

The VCR signal is output through this channel to the TV.



3

Turn on your TV and select a programme position for the VCR picture.

This channel (32) will now be referred to as the video channel.

4

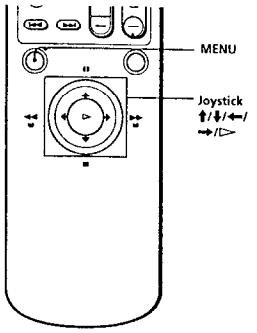
Tune the TV to the same channel as the one shown in the display window so that the picture on the right appears on the TV screen (background must be green).

Refer to your TV manual for tuning instructions.

If the picture does not appear clearly, see "To obtain a clear picture from the VCR" on the next page.

continued

Setups — Selecting a language



You can change the on-screen display language from the factory one .

Before you start...

- Turn on the VCR and the TV.
- Set the TV to the video channel.

1 MENU

Press MENU

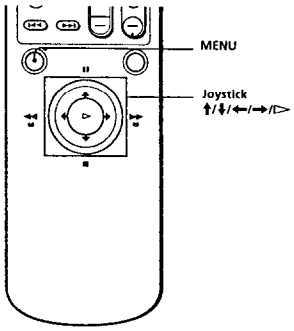
2

Push Joystick ↑ / ↓ to move the cursor (▶) to LANGUAGE and press Joystick.

3

Push Joystick ↑/↓ to select the desired language with the dot (●), then press Joystick.

Setups — Presetting channels automatically

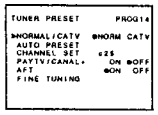


Before you start...

- Turn on the VCR and the TV.
- Set the TV to the video channel.

1 *MENU

Press MENU, then push Joystick ↑/↓ to move the cursor (▶) to TUNER PRESET and press Joystick.

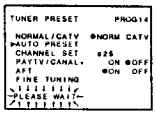


2

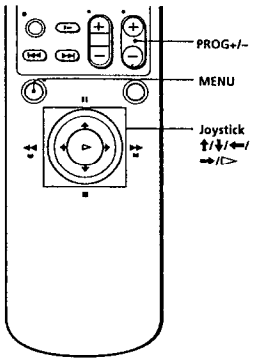
Push Joystick ↑/↓ to move the cursor (▶) to AUTO PRESET, then press Joystick.

The AUTO TUNING PRESET starts searching and allocates the first channels found at the first positions.

If you want to change the order or to disable some channels, you can do it in the SET UP CH AND SHOWVIEW menu (page 16)



Setups — Presetting channels manually



You can also preset one or several channels manually.

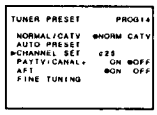
Before you start...

- Turn on the VCR and the TV.
- Set the TV to the video channel.

1 *MENU

Press MENU, then push Joystick ↑/↓ to move the cursor (▶) to TUNER PRESET and press Joystick.

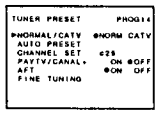
e.g. SLV-E720NP/E725NP/ E720VC/E717VC



2

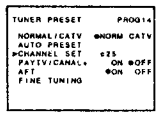
Push Joystick ↑/↓/←/→ to move the cursor (▶) to NORMAL/CATV, then select NORM.

To preset CATV channels, select CATV.



3

Push Joystick ↑/↓ to move the cursor (▶) to CHANNEL SET.



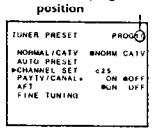
continued

Setups-Presetting channels manually (continued)

4 *PROG

Press PROG +/– to select the programme position you want to set up.

Selected programme position



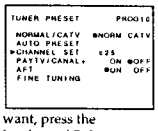
5

Push Joystick ➡ to start tuning.

The VCR starts searching for a channel and displays the first one it finds on the TV screen. Push Joystick ⬅/➡ repeatedly until the channel you want is displayed.

Channels are scanned in the following order:

- VHF E2 - E12
- VHF Italian channels A - H
- UHF E21 - E69
- CATV S1 - S20
- HYPER S21 - S41
- CATV S01 - S05



If you know the number of the channel you want, press the programme number buttons. For example, for channel 5, first press "0" and then press "5."

6

To allocate another channel to another programme position, repeat steps 4 and 5.

7

Press Joystick.

Disabling unwanted programme positions

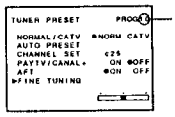
After tuning the TV channels, you can disable unused programme positions. The disabled positions will be skipped later when you press the PROG +/– buttons. You can also disable unwanted programme positions using the SET UP CH AND SHOWVIEW menu (page 22).

1. In step 5 above, press programme number button "0" twice to display the number "00" beside CHANNEL SET.
2. Press Joystick.

If the picture is not clear

Normally, the Auto Fine Tuning (AFT) function automatically tunes in channels clearly. However, if the picture is not clear, you may also use the manual tuning function.

1. Press PROG +/– to select the programme number for which you cannot obtain a clear picture.
2. Press MENU, then select TUNER PRESET and press Joystick.
3. Select FINE TUNING. The fine tuning meter appears.



Selected programme position

4. Push Joystick ⬅/➡ to get a clearer picture, then press Joystick.

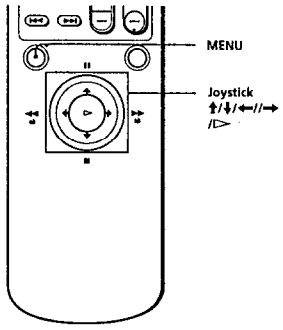
Note that the AFT (Auto Fine Tuning) setting switches to OFF.

Note

- The menu disappears automatically if you don't proceed for more than a few minutes.

Setups — Setting up ShowView

ShowView is a feature in Sony VCRs that simplifies timer recording setting. To use ShowView, each programme position needs to be matched with its ShowView guide channel. To get the guide channel numbers, look in the programme guide for your area that features ShowView numbers.



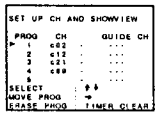
- If you want to record satellite broadcasts using ShowView, see page 18.

Before you start...

- Turn on the VCR and the TV.
- Set the TV to the video channel.

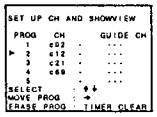
1 Press MENU, then push Joystick ↑/↓ to move the cursor (▶) to SET UP CH AND SHOWVIEW and press Joystick.

The preset channels are displayed on the screen. "---" in the GUIDE CH column means that the guide channel has not been preset.

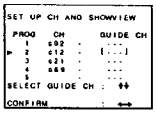


2 Push Joystick ↑/↓ to move the cursor (▶) to the row on which you want to set the guide channel.

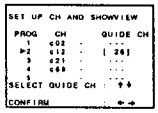
To display other pages for programme positions 6 to 60, push Joystick ↑/↓ repeatedly.



3 Push Joystick → twice to select the guide channel column(this is flashing).

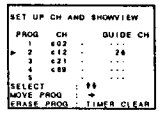


4 Push Joystick ↑/↓ to select the guide channel number assigned in the programme guide.



5 Push Joystick ←/→ to confirm the setting.

The cursor (▶) appears in the leftmost column.



6 To set the guide channel of another station, repeat steps 2 to 5.

If you want to change the programme positions of the stations, proceed to step 2 of "Setups —Changing/disabling programme positions" on page 20.

7 Press Joystick.

continued

Setups -Setting up ShowView (continued)

Setting up ShowView for satellite broadcasts

If your satellite tuner is connected via the AERIAL IN connector, first you have to set a programme position for each satellite channel using the TUNER PRESET menu. Then set the guide channel number for each satellite channel using the SET UP CH AND SHOWVIEW menu.

If your satellite tuner is connected via the LINE-2 (TV) connector, you don't have to set programme positions nor guide channel numbers for satellite channels. Skip the following operations.

1 Turn on the satellite tuner.

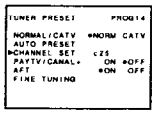
2 Press MENU, then select TUNER PRESET and press Joystick.

3 Press PROG +/– to select a programme position you want to use for recording or watching a satellite channel.

4 Select CHANNEL SET, then push Joystick → to tune the VCR to the satellite tuner.

The channel number displayed beside CHANNEL SET is used for receiving all satellite broadcasts from the satellite tuner.

Please remember this number for the following steps



5 Press PROG +/– to select another programme position for another satellite channel, and press the programme number buttons to enter the same channel number as the one displayed in step 4. Otherwise the setting will not be memorized.

Repeat this step for all satellite channels, then press Joystick.

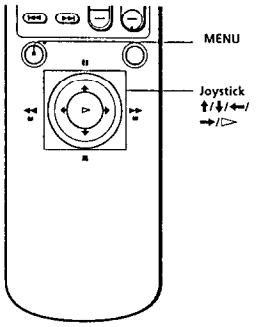
6 Set the guide channel number for each programme position assigned to the satellite channel, following the procedures in "Setups —Setting up ShowView" on page 16.

Notes

- The menu disappears automatically if you don't proceed for more than a few minutes.
- If you use a satellite tuner connected via the LINE-2 (TV) connector, you don't have to set up ShowView. Just record a satellite programme using ShowView, and the VCR automatically records the programme from the LINE-2 (TV) connector.
  For the SLV-E720NC/E720VP, use only the LINE-2 IN connector for recording with ShowView.

- If you inadvertently entered a guide channel number, push Joystick ↑/↓ repeatedly to reset the "GUIDE CH" column to "---." "---" appears between 1 and 255.
- The VCR does not allow entering the guide channel number, if the same number already has been set.
- When you record a satellite broadcast using ShowView, you need to select manually the desired channel on the satellite tuner.

Setups — Changing/ disabling programme positions



After setting programs and ShowView guide channels, you can change programme positions as you like. If any programme positions are unused or contain unwanted channels, you can disable them.

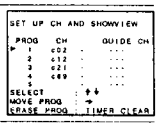
Before you start...

- Turn on the VCR and the TV.
- Set the TV to the video channel.

Changing programme positions

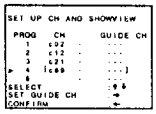
e.g. Moving the programme position from 4 to 2

1 Press MENU, then push Joystick ↑/↓ to move the cursor (▶) to SET UP CH AND SHOWVIEW and press Joystick



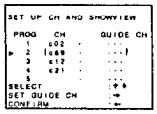
2 Push Joystick ↑/↓ to move the cursor (▶) to the row on which you want to change the programme position, then push Joystick →.

(To display other pages for programme positions 6 to 60, push Joystick ↑/↓ repeatedly).



3 Push Joystick ↑/↓ until the selected channel and guide channel row moves to the desired programme position.

The selected channel and guide channel are inserted at the new programme position and the intermediate channels are displaced to fill the gap.



4 Push Joystick ← to confirm the setting.

5 To change the programme position of another station, repeat steps 2 to 4.

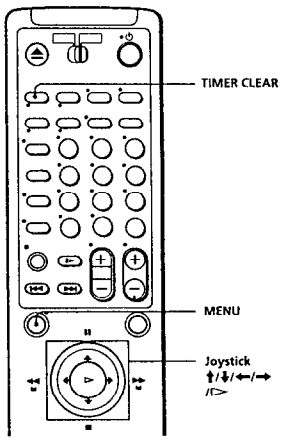
6 Press Joystick.

continued

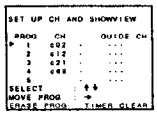
Disabling unused programme positions

Note

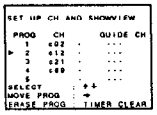
- Be sure to select correctly the programme position you want to disable. If you disable a programme position by mistake, you need to reset that channel manually.



1 Press MENU, then push Joystick ↑/↓ to move the cursor (▶) to SET UP CH AND SHOWVIEW and press Joystick.



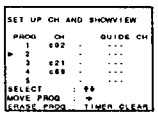
2 Push Joystick ↑/↓ to move the cursor (▶) to the row you want to disable.



3 TIMER CLEAR

Press TIMER CLEAR.

The selected row will be cleared as shown on the right.



4 Repeat steps 2 and 3 for any other programme positions you want to disable.

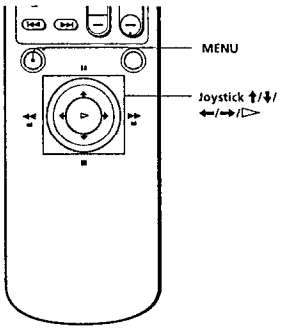
5 Press Joystick.

Setups — Setting the clock

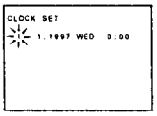
You must set the time and date properly on the VCR to be able to use the timer recording features.

Before you start...

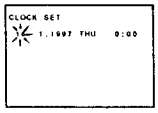
- Turn on the VCR and the TV.
- Set the TV to the video channel.



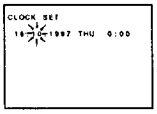
1 Press MENU, then push Joystick ↑/↓ to move the cursor (▶) to CLOCK SET and press Joystick.



2 Push Joystick ↑/↓ to set the date.
The day of the week is set automatically.



3 Push Joystick → to select the month and set the month using Joystick ↑/↓.



4 Set the year, hour and minutes in sequence, using Joystick → to select the item to be set, and push Joystick ↑/↓ to select the digits.

5 Press Joystick to confirm and start the clock.

Tip

- To change the digits during setting, push Joystick ← to return to the item to be changed, and select the digits using Joystick ↑/↓.

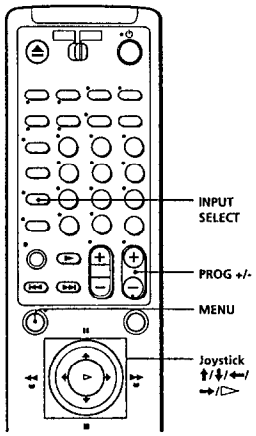
Note

- The menu disappears automatically if you don't proceed for more than a few minutes.

Setups — Setting the usage of 2nd Euroconnector

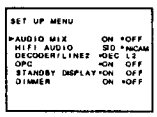
(SLV-E720NP/E725NP/ E720VC/E717VC only)

You can use the 2nd Euroconnector either as an Input (for ex. connect a satellite tuner) or to connect a decoder (Canal + / Pay -TV).

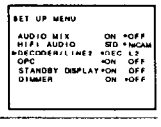


Selection

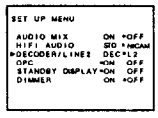
1 Press MENU, then push Joystick ↑/↓ to move the cursor (▶) to SET UP MENU and press Joystick.



2 Push Joystick ↑/↓ to move the cursor (▶) to DECODER/LINE 2.



3 Push Joystick ←/→ to select DEC or L2 with the dot (●), then press Joystick.



Operation

If you select L2:

When you press PROG +, the programme positions change as follows:

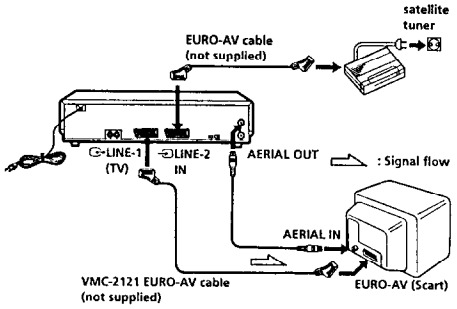
3→4→...-59→L1→L2→1→2

or when you press PROG - :

3→2→1→L2→L1→59.....

You may connect another VCR, satellite tuner or camcorder into LINE 2 connector

For ex:



For using this kind of connection, you have to press INPUT SELECT or PROG +/- so that "L2" lights in the display window.

Note

- "L2" disappears after a few seconds.
- If DEC has been selected in SET UP MENU,the VCR will not function if it is connected to L2.

If you select DEC:

When you press PROG +/-, the programme positions change as follows:

1→2→....59→L1→1→2

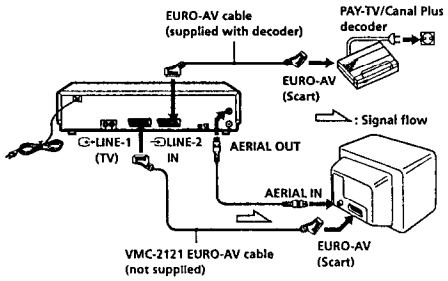
or: 2→1→L1→59....2→1

Setting the PAY-TV/Canal Plus decoder

(SLV-E720NP/E725NP/E720VC/E717VC only)

You can watch or record PAY-TV/Canal Plus programmes if you connect a decoder (not supplied) to the VCR.

Connecting a decoder

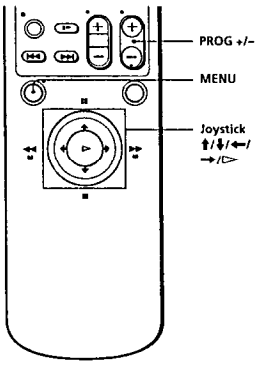


Setting PAY-TV/Canal Plus channels

To watch or record PAY-TV/Canal Plus programmes, proceed as follows:

Before you start...

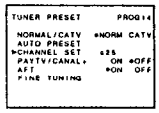
- Turn on the VCR and the TV.
- Set the TV to the video channel.



1 Turn on your decoder.

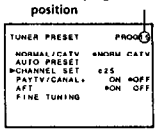
2 Press MENU, then push Joystick ↑/↓ to move the cursor (▶) to TUNER PRESET and press Joystick.

e.g. SLV-E720NP/E725NP

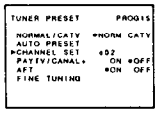


3 Press PROG +/– to select the desired programme position.

Selected programme position

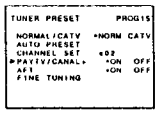


4 Push Joystick ↑/↓ to move the cursor (▶) to CHANNEL SET, then tune in the PAY-TV/Canal Plus channels.



5 Push Joystick ↑/↓/←/→ to move the cursor (▶) to PAY-TV/ CANAL PLUS (SLV-E720NP/E725NP/SLV-E720VC/ E717VC), then select ON.

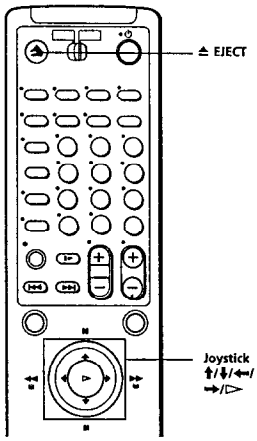
SLV-E720NP/E725NP/ E720VC/E717VC



6 Press Joystick.

continued

Playing a tape



1 Turn on your TV and set it to the video channel.

2 Insert a tape.

The VCR turns on and starts playing automatically if you insert a tape with its safety tab removed (page 34).

3 Press Joystick to ▷ PLAY.

When the tape reaches the end, it will rewind automatically.

continued

Playing a tape (continued)

Additional tasks

To	Operation
Stop play	Push Joystick ↓ to ■ STOP
Pause play	Push Joystick ↑ during playback to ❚❚ PAUSE
Resume play after pause	Press Joystick or push ↑ to ❚❚ PAUSE
Search forward	Push Joystick → to ⊖ during playback
Search backward	Push Joystick ← to ⊖ during playback
Fast-forward the tape	Push Joystick → to ▶▶ FF during stop
Rewind the tape	Push Joystick ← to ◀◀ REW during stop
Eject the tape	Press ≙ EJECT

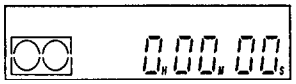
To play an NTSC-recorded tape

Set NTSC PB switch at the rear of the VCR according to the colour system of your TV.

When your TV is	Set NTSC PB to
PAL only	ON PAL TV
PAL and NTSC	NTSC 4.43

To use the time counter

At the point on the tape that you want to find later, press COUNTER RESET. The counter in the display window resets to "0H00M00S." Search for the point afterwards by referring to the counter.

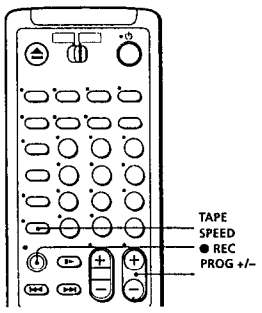


To display the counter on the TV screen, press DISPLAY.

Notes

- Depending on your TV, the following may occur while playing an NTSC-recorded tape:
  - The picture becomes black and white.
  - The picture shakes.
  - No picture appears on the TV screen.
  - Black streaks appear horizontally on the TV screen.
  - The colour density increases or decreases.
- If you play back a tape in LP or EP mode with NTSC system, the sound is heard in monaural.
- The counter resets to "0H00M00S" whenever a tape is reinserted.
- The counter stops counting when it comes to a portion with no recording.

Recording TV programmes



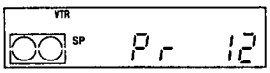
1 Turn on your TV and set it to the video channel.

To record from a decoder, turn it on (SLV-E720NP/E725NP/E720VC/E717VC only).

2 Insert a tape with its safety tab in place.

3 PROG

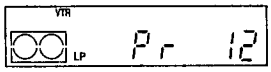
Press PROG +/– to select the programme position you want to record.



4 TAPE SPEED

Press TAPE SPEED to select the tape speed, SP or LP.

LP (Long Play) provides recording time twice as long as SP (Standard Play), however, SP produces better picture and audio quality.



5 ●REC

Press ● REC to start recording.

continued

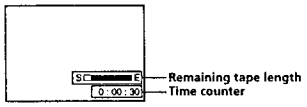
Recording TV programmes (continued)

To stop recording

Push Joystick to ■ STOP.

To check the remaining tape length

Press DISPLAY. 30 seconds after, the white bar indicates the approximate length of tape remaining.



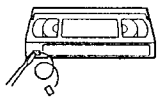
To watch another TV programme while recording

1 Press TV/VIDEO to turn off the VTR indicator in the display window.

2 Select another programme position on the TV.

To save a recording

To prevent accidental erasure, break off the safety tab as illustrated. To record on a tape again, cover the tab hole with adhesive tape.



Tips

- To select a programme position, you can use the programme number buttons on the remote commander. For two-digit numbers, press the -/– (ten's digit) button followed by the programme number buttons.
- You can select a video source from the LINE-1 (TV) connector or the LINE-2 IN connector using INPUT SELECT.
- The display appears on the TV screen indicating information about the tape, but the information won't be recorded on the tape.
- If you don't want to watch TV while recording, you can turn off the TV. When using a decoder, make sure to leave it on (SLV-E720NP/E725NP/E720VC /E717VC only).

Notes

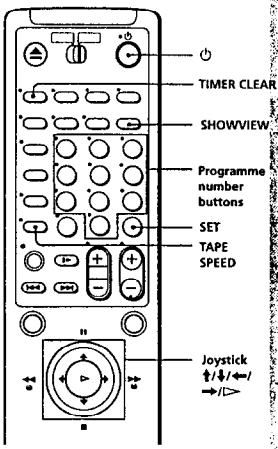
- The display does not appear during still (pause) mode or slow-motion playback.
- You cannot watch a PAY-TV/Canal Plus programme while recording another PAY-TV/Canal Plus programme (SLV-E720NP/E725NP/E720VC /E717VC only).

Recording TV programmes using ShowView

Just enter the programme's ShowView number listed in the TV programme guide. The date, times and programme position of that programme are set automatically. You can preset up to eight programmes at a time.

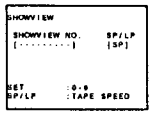
Before you start...

- Check that the VCR clock is set to the correct time.
- Insert a tape with its safety tab in place. Make sure the tape is longer than the total recording time.
- Turn on your TV and set it to the video channel.



1 SHOWVIEW

Press SHOWVIEW.



2 ① ② ③ ④ ⑤ ⑥ ⑦ ⑧ ⑨ ⓪

Press the programme number buttons to enter the programme's ShowView number.

If you make a mistake, press TIMER CLEAR and re-enter the correct number.

continued

Recording TV programmes using ShowView (continued)

3 TAPE SPEED

Press TAPE SPEED to select SP or LP.

4

Push the Joystick ←/→ to select ONCE, DAILY or WEEKLY:

To record	Select
Only once	ONCE
Everyday Monday to Friday	DAILY
Once a week	WEEKLY

5 SET

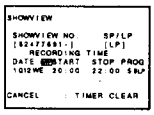
Press SET button

The date, start and stop times, programme position, and tape speed appear on the TV screen.

For SLV-E720 VC, " V/P" appears automatically.

If you want to turn on/off the VPS/PDC function, see page 44 and change the TIMER SET/CHECK menu.

If the information is not correct, press TIMER CLEAR to cancel the setting.



6 To enter another setting, repeat steps 1 to 5.

7 ⏻

Press ⏻ to turn off the VCR.

The TIMER indicator appears in the display window and the VCR stands by for recording.

To stop recording

To stop the VCR while recording, push Joystick to ■ STOP.

To record satellite broadcasts

If you connect the satellite tuner and the VCR, you can record satellite programmes.

1 Turn on the satellite tuner.

2 On the satellite tuner, select the satellite programme for which you wish to make a timer setting.

3 Repeat the steps described above.

4 Keep the satellite tuner turned on until the VCR finishes recording the satellite programme for which you have made a timer setting.

To use the VCR after setting the timer

To use the VCR before a timer recording begins, just press ⏻. The TIMER indicator turns off and the VCR switches on. Remember to press ⏻ to reset the VCR after using the VCR.

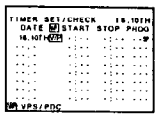
You can also do the following tasks while the VCR is recording:

- Reset the counter.
- Display tape information on the TV screen.
- Check the timer settings.
- Watch another TV programme.

Tip

- To cancel the Show View procedure, press SHOWVIEW before pressing SET.

2 Set the date, VPS/PDC function, start and stop times, programme position, and tape speed:



1 Push Joystick ➡ to select each item in turn. (flash)
2 Push Joystick ⬆/⬇ to set each item.
To correct a setting, push Joystick ⬅ to return to that setting and reset.

To record the same programme every day or the same day every week, push Joystick ⬇ while the date is selected. For details, see "Daily/weekly recording" on page 40.

If you don't want to use the VPS/PDC function, push Joystick ⬆/⬇ to turn off V/P in the "V/P" position. For details, see "Timer recording with VPS/PDC signals" on page 40.

To record from an other source connected to the LINE-1 (TV) connector (or the LINE-2 IN connector), press INPUT SELECT to display "L1" (or "L2") in the "PROG" position.

3 Push Joystick ➡ to confirm the setting.

The cursor (▶) appears at the top of the line. To enter another setting, move the cursor to the next line and repeat step 2.

4 Press Joystick.

5 Press ⏻ to turn off the VCR.

The TIMER indicator appears in the display window and the VCR stands by for recording.

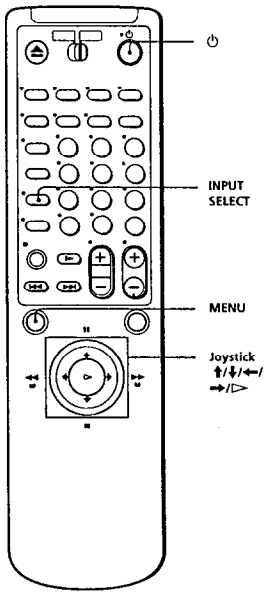
To record from an other source, leave the connected equipment switched on.

To stop recording

To stop the VCR while recording, push Joystick to ■ STOP.

continued

Setting the timer manually

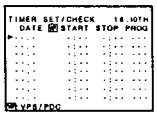


If ShowView is not available in your area, follow the instructions below to set the timer to record programmes.

Before you start...

- Check that the VCR clock is set to the correct time.
- Insert a tape with its safety tab in place. Make sure the tape is longer than the total recording time.
- Turn on your TV and set it to the video channel.
- To record from a decoder, turn it on (SLV-E720NP/E725NP/E720VC/E717VC only).

1 MENU Press MENU and select TIMER SET/CHECK, then press Joystick.



Setting the timer manually (continued)

Daily/weekly recording

In step 2 above, push Joystick ⬇ to select the recording pattern. Each time you push Joystick ⬇, the indication changes as shown below.

the current date → SU-SA → MO-SA → MO-FR → EVERY SA .....
→ EVERY MO → EVERY SU → 1 month later →(cycles backward)
→ the current date

Timer recording with VPS/PDC signals

Broadcast systems transmit VPS (Video Programme System) or PDC (Programme Delivery Control) signals with their TV programmes. These signals ensure that your timer recordings are made regardless of broadcast delay, early starts or broadcast interruptions.

In step 2 above, push Joystick ⬆/⬇ to turn on the V/P indicator after you set the recording date. If you do not want to set the VPS/PDC function, turn off the V/P indicator. You can also use the VPS/PDC function for a source connected to the LINE-1 (TV) connector (and LINE-2 IN connector).

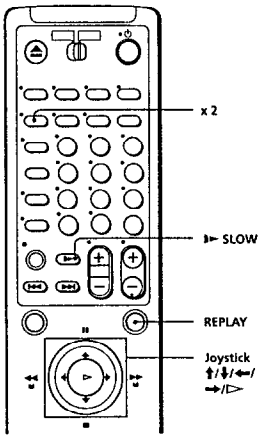
Tips

- To set the programme position, you can also use the PROG +/– or programme number buttons.
- To set the tape speed, you can also use TAPE SPEED.

Notes

- When setting the timer with VPS/PDC signals, enter the start and stop times exactly as indicated in the TV programme guide, otherwise the VPS/PDC function won't work.
- If the VPS/PDC signal is too weak or the broadcasting station failed to transmit VPS/PDC signals, the VCR will start recording at the set time without using the VPS/PDC function.
- "TIMER" and tape indicator flash in the display window if you press ⏻ with no tape inserted.

Playing/searching at various speeds



Playback options	Operation
Fast-forward/rewind	During stop, push Joystick to ▶▶ FF or ◀◀ REW and release.
View the picture during fast-forward or rewind	During fast-forward, push and hold down Joystick to ▶▶ FF. During rewind, push and hold down Joystick to ◀◀ REW.
Play at twice the normal speed	During playback, press x 2.
Play at non locked high speed	During playback, push Joystick to ⊖ or ⊖ for more than 1 sec.. Release Joystick to go back to playback mode.
Play at locked high speed	During playback, push Joystick to ⊖ or ⊖ for less than 1 sec..
Play in slow motion	During playback or pause, press SLOW .
Play frame by frame	During pause, push Joystick to ▶▶ FF or ◀◀ REW. To play one frame each second, hold the Joystick down to ▶▶ FF or ◀◀ REW.
Rewind and start play	During stop, while pressing ◀◀ REW on the VCR, press ▷ PLAY on the VCR, then release both.
Replay what you just saw	During playback, press REPLAY one, two,three or four times for a replay during 10, 20, 30 or 40 seconds.

continued

Playing/searching at various speeds (continued)

To resume normal playback

Press Joystick to ▷ PLAY.

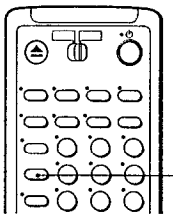
Tip

- Adjust the picture using PROGRAM +/- buttons on the VCR if:
  - Streaks appear while playing in slow motion.
  - Bands appear at the top or bottom while pausing.
  - The picture shakes while pausing.

Notes

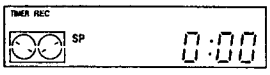
- The playback sound is muted during these operations.
- In the LP mode, noise may appear or there may be no colour.

Recording TV programmes using the quick timer



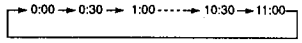
After starting recording in the normal way, you can have the VCR stop recording automatically after a specified duration.

1 While recording, press QUICK TIMER once.



2 Press QUICK TIMER repeatedly to set the duration.

Each press advances the time in increments of 30 minutes.



The duration decreases minute by minute to 0:00, then the VCR stops recording and turns off automatically.

To extend the duration

Press QUICK TIMER repeatedly to set to the new duration.

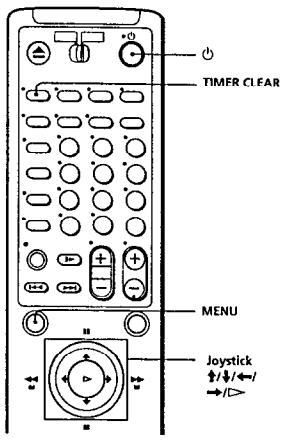
To stop recording

To stop the VCR while recording, push Joystick to ■ STOP.

Tip

- You can also set the quick timer and start recording during the stop mode.

Checking/ changing/ cancelling timer settings



Before you start...

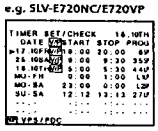
- Turn on your TV and set it to the video channel.

1 Press ⏻ to turn on the VCR.

2 Press MENU, then select TIMER SET/CHECK:

- If you want to change a setting, go on to the next step.
- If you do not need to change the settings, press Joystick, then turn off the VCR to return to recording standby.

e.g. SLV-E720NC/E720VP



3 Push Joystick ↑/↓ to select the setting you want to change or cancel:

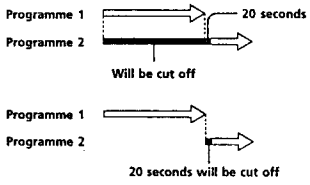
- To change the setting, push Joystick ←/→ to select the item you want to change, and push Joystick ↑/↓ to reset it. To cancel the VPS/PDC function, turn off the V/P indicator. Then, push Joystick → repeatedly until the cursor (▶) appears in the leftmost column.
- To cancel the setting, press TIMER CLEAR.

4 Press Joystick.

If any settings remain, turn off the VCR to return to recording standby.

When the timer settings overlap

The programme that starts first has priority and the second programme starts recording only after the first programme has finished. If the programmes start at the same time, the programme listed first in the menu has priority.



Recording stereo and bilingual programmes

In ZWEITON (German stereo) system

This VCR automatically receives and records stereo and bilingual programmes based on the ZWEITON system. When a stereo or bilingual programme is received, the STEREO indicator appears in the display window.

To select bilingual sound while recording

Press AUDIO MONITOR to select the sound you want.

To listen to	On-screen display	Display window
Main	MAIN	STEREO
Sub	SUB	STEREO
Main and sub	MAIN/SUB	STEREO

In NICAM system (SLV-E720NC/E720NP/E725NP only)

This VCR receives and records stereo and bilingual programmes based on NICAM system (the NICAM indicator appears). When a stereo or bilingual programme is received, the STEREO indicator appears in the display window.

To record a NICAM programme, HIFI AUDIO in the SET UP MENU should be set to NICAM (initial setting). To check the menu setting, see page 50 for details.

To select the sound while recording

Press AUDIO MONITOR to select the sound you want.

Stereo programme

To listen to	On-screen display	Display window
Stereo	STEREO	STEREO
Standard sound*	No indicator	No indicator

* Usually the mixed sound of left and right channels (monaural)

Bilingual programme

To listen to	On-screen display	Display window
Main	MAIN	STEREO
Sub	SUB	STEREO
Main and sub	MAIN/SUB	STEREO
Standard sound*	No indicator	No indicator

* Usually the main sound (monaural)

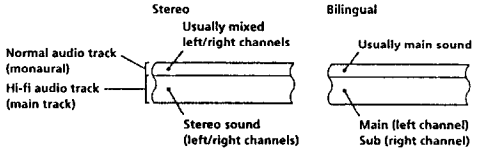
Selecting the sound during playback

Press AUDIO MONITOR to select the sound you want.

To listen to	On-screen display	Display window
Stereo/main and sub (left and right channels)	STEREO	STEREO
Left channel/main	LCH	STEREO
Right channel/sub	RCH	STEREO
Standard sound	No indicator	No indicator

How sound is recorded on a video tape

The VCR records sound onto two separate tracks. Hi-fi audio is recorded onto the main track along with the picture. Monaural sound is recorded onto the normal audio track along the edge of the tape.

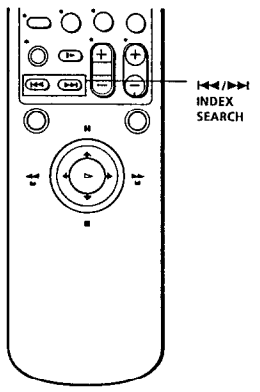


Notes

- To listen to playback sounds in stereo, you must use the EURO-AV or AUDIO OUT connections.
- When you play a tape recorded in monaural, the sound is heard in monaural regardless of the AUDIO MONITOR setting.
- If the AUDIO MONITOR button does not function, check that AUDIO MIX in the SET UP MENU is set to OFF.
- If HIFI AUDIO is set to STD, the standard sound will be recorded on both the hi-fi and normal audio tracks. Pressing AUDIO MONITOR will not change the sound (SLV-E720NC/E720NP/E725NP only).

Searching using the index function

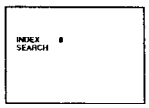
The VCR marks the tape with an index signal at the point where each recording begins. You can use these signals as references to find a specific recording. The VCR can search up to 99 index signals ahead of or behind the current position.



1 Insert an indexed tape into the VCR.

2 Press ⏮/⏭ INDEX SEARCH repeatedly to specify how many index signals ahead or backwards you want to search:

- To search ahead, press ⏭ INDEX SEARCH.
- To search backwards, press ⏮ INDEX SEARCH.



The VCR starts searching and the index number on the TV screen counts down to zero. Playback starts automatically from that point.

To stop searching

Push Joystick to ■ STOP.

Note

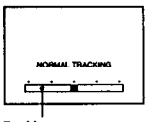
- No index signal will be added when recording starts from recording pause. However, an index signal will be marked if you change the channel during recording pause.

Adjusting the picture

Adjusting the tracking

Although the VCR automatically adjusts the tracking when playing a tape (the M indicator flashes in the display window, then lights off), distortion may occur if the tape was recorded in poor condition. If so, adjust the tracking manually.

During playback, press PROGRAM +/- buttons on the VCR to display the tracking meter (M lights up). Distortion should disappear as you press one of the two buttons. If you cannot get a clear picture with manual adjustment, eject and reinsert the tape or press the buttons PROGRAM + and PROG RAM- at the same time so that the trackingmeter comes back to the center.

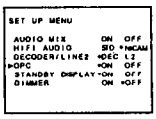


Tracking meter

About Optimum Picture Control (OPC)

Optimum Picture Control (OPC) automatically improves recording and playback quality by adjusting the VCR to the condition of the video heads and tape. To maintain better picture quality, we recommend that you set OPC to ON in the SET UP MENU (with the OPC indicator lit in the display window).

e.g. SLV-E720NP/E725NP



OPC playback

The OPC function automatically works on all types of tapes, including rental tapes and tapes that were not recorded with OPC.

OPC recording

Whenever you insert a tape and first start recording, the VCR adjusts to the tape using the OPC function (the OPC indicator flashes rapidly). This adjustment is retained until the tape is ejected.

To deactivate the OPC

Press MENU and select SET UP MENU, then set OPC to OFF. The OPC indicator in the display window goes off.

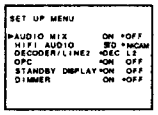
Note

- There is a delay of a few seconds before the VCR actually starts recording while the VCR analyses the tape. To avoid the delay, first set the VCR to recording pause (the OPC indicator flashes slowly) and press ● REC to have the VCR analyse the tape (the OPC indicator flashes rapidly). After the OPC indicator stops flashing, push Joystick to ❚❚ PAUSE to start recording immediately. If you want to start recording quickly without using the OPC function, first set the VCR to recording pause (the OPC indicator flashes slowly) and push Joystick to ❚❚ PAUSE to start recording.

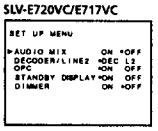
Changing menu options

1 Press MENU, then select SET UP MENU.

SLV-E720NP/E725NP

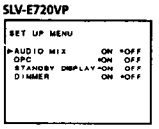


SLV-E720VC/E717VC



SLV-E720NC

SLV-E720VP



2 Push Joystick ↑/↓ to select the option to change, then push Joystick ←/→ to change the setting.

3 Press Joystick to return to the original screen.

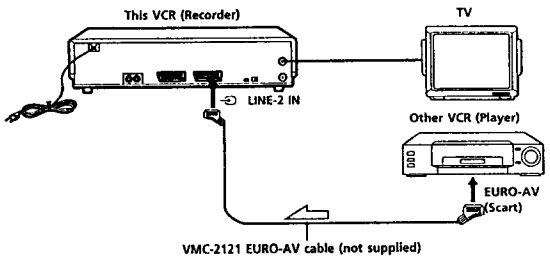
Menu choices

Initial settings are indicated in bold print.

Menu option	Set this option to
HIFI AUDIO (SLV-E720NC/E720NP /E725NP only)	STD to record standard sound on the hi-fi audio track. **NICAM** to record NICAM broadcasts on the hi-fi audio track. For details, see page 46.
AUDIO MIX	ON to listen to the hi-fi and normal audio tracks at the same time. The AUDIO MONITOR button will not function. **OFF** to listen to the hi-fi and normal audio tracks separately. Select the sound using the AUDIO MONITOR button.
DECODER/LINE 2 (SLV-E720NP/E725NP /E720VC/E717VC)	**DEC** select PAY-TV DECODER (Canal Plus) for 2nd Euroconnector L2 select LINE-2 IN for 2nd Euroconnector only)
OPC	**ON** to switch on the OPC (Optimum Picture Control) function and improve picture quality, OFF to switch OPC off.
STANDBY DISPLAY	**ON** to light up the indicators in the display window while the VCR is standing by. OFF to turn off the indicators in the display window to conserve the VCR power
DIMMER	ON to make the display window dim, **OFF** to make it brighter.

Editing with another VCR

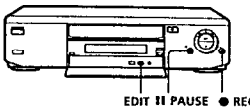
How to connect to record on this VCR



Tips

- If the other VCR doesn't have a EURO-AV (Scart) connector, use the VMC-2106 cable instead and connect the cable to the line out jacks of the other VCR.
- Be sure to select LINE-2 IN in 2nd EURO-AV in SET UP MENU (SLV-E720VC/E717VC/E720NP/E725NP only).

Operation (when recording on this VCR)



Before you start editing

- Turn on your TV and set it to the video channel.
- Press INPUT SELECT to display "L2" in the display window.
- Press TAPE SPEED to select the tape speed, SP or LP.
- On this VCR, press EDIT so that EDIT lights in the display. If the other VCR has a similar feature, set it to ON as well.

1 Insert a source tape with its safety tab removed into the other (playback) VCR. Search for the point to start playback and set it to playback pause.

2 Insert a tape with its safety tab in place into this (recording) VCR. Search for the point to start recording and press ❚❚ PAUSE.

3 Press ● REC on this VCR to set it to recording pause.

4 To start editing, press the ❚❚ PAUSE buttons on both VCRs at the same time.

To stop editing

Press the ■ STOP buttons on both VCRs.

Tips

- To edit more precisely, press the ❚❚ PAUSE buttons on the VCRs to release pause.
- To cut out unwanted scenes while editing, press ❚❚ PAUSE on this VCR when an unwanted scene begins. When it ends, press ❚❚ PAUSE again to resume recording (Assemble Editing).

Note

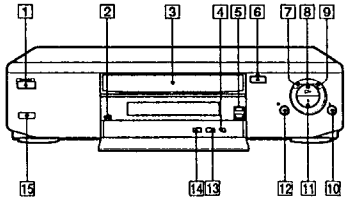
- If you start recording following the procedure above, the VCR won't start recording with the OPC function. To record a tape with the OPC function, press ● REC again during recording pause in step 3 so that the VCR analyses the tape. Then when you start recording in step 4, press ❚❚ PAUSE after the OPC indicator stops flashing. If you press ❚❚ PAUSE before the OPC indicator stops flashing, the OPC function is cancelled.

continued

Index to parts and controls

Refer to the pages indicated in parentheses ( ) for details.

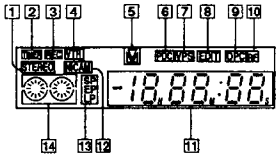
Front panel



1 ON/STANDBY switch/indicator (9)
2 TV/VTR button
3 Tape compartment
4 RF CHANNEL button (9)
5 PROGRAM +/– buttons (10)
Tracking buttons (49)
6 ⏏ EJECT button (32)
7 ◀◀ REW button (41)
8 ▷ PLAY button (41)
9 ▶▶ FF button
10 ● REC button (52)
11 ■ STOP button (52)
12 ❚❚ PAUSE button (52)
13 EDIT button (52)
14 TAPE SPEED button
15 Remote sensor

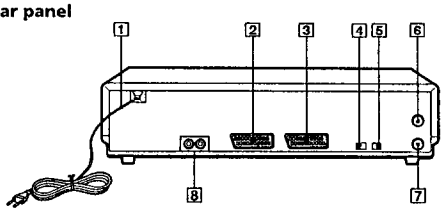
continued

Display window



1 STEREO indicator (46)
2 TIMER indicator (36, 39)
3 REC indicator
4 VTR indicator (8)
5 AUTO TRACKING indicator (49)
6 PDC indicator (40)
7 VPS indicator (40)
8 EDIT indicator (52)
9 OPC indicator (49)
10 RF indicator (9)
11 Line/programme position indicator (9, 33, 52)
Time counter/clock (32)
12 NICAM indicator (SLV-E720NC/E720NP/E725NP only) (46)
13 Tape speed indicator (33)
14 Tape indicator

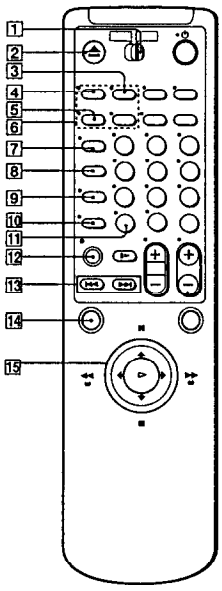
Rear panel



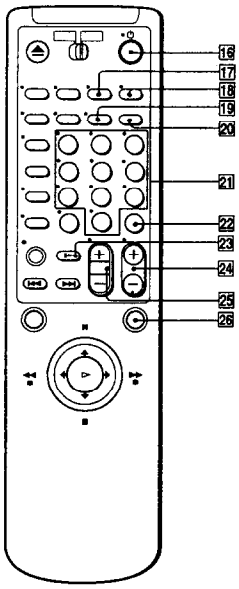
1 Mains lead (7)
2 LINE-1 TV/LIGNE -1 TV connector (8, 27, 28)
3 DECODER/DECODEUR/LINE-2 IN/ENTREE LIGNE-2 connector (27, 28, 51) (SLV-E720NP/E725NP/E720VC/E717VC only)
3 LINE-2 IN/ENTREE LIGNE-2 connector (27, 28, 51) (SLVE720NC/E720VP)
4 NTSC 4.43 switch (32)
5 RF MODULATOR switch (7)
6 AERIAL OUT/ANTENNE SORTIE connector (7)
7 AERIAL IN/ANTENNE ENTREE connector (7)
8 AUDIO OUT L/R/SORTIE AUDIO D/G jacks (8)

continued

Remote commander



1 TV/VIDEO remote control switch (5)
2 ⏏ EJECT button (32)
3 COUNTER RESET button (32)
4 TIMER CLEAR button (22, 36, 44)
5 x 2 button (41)
6 FASTEXT buttons (*for TV* (6)
7 DISPLAY button (34)
8 QUICK TIMER button (43)
9 INPUT SELECT button (34, 39, 52)
Teletext button (*for TV*) (6)
10 TAPE SPEED button (33)
TV power on/TV mode select button (*for TV*) (6)
11 -/-- (ten's digit) button (34)
12 ● REC button (33)
13 ⏮/⏭ INDEX SEARCH buttons (48)
14 MENU button (11)
15 Joy stick (11)

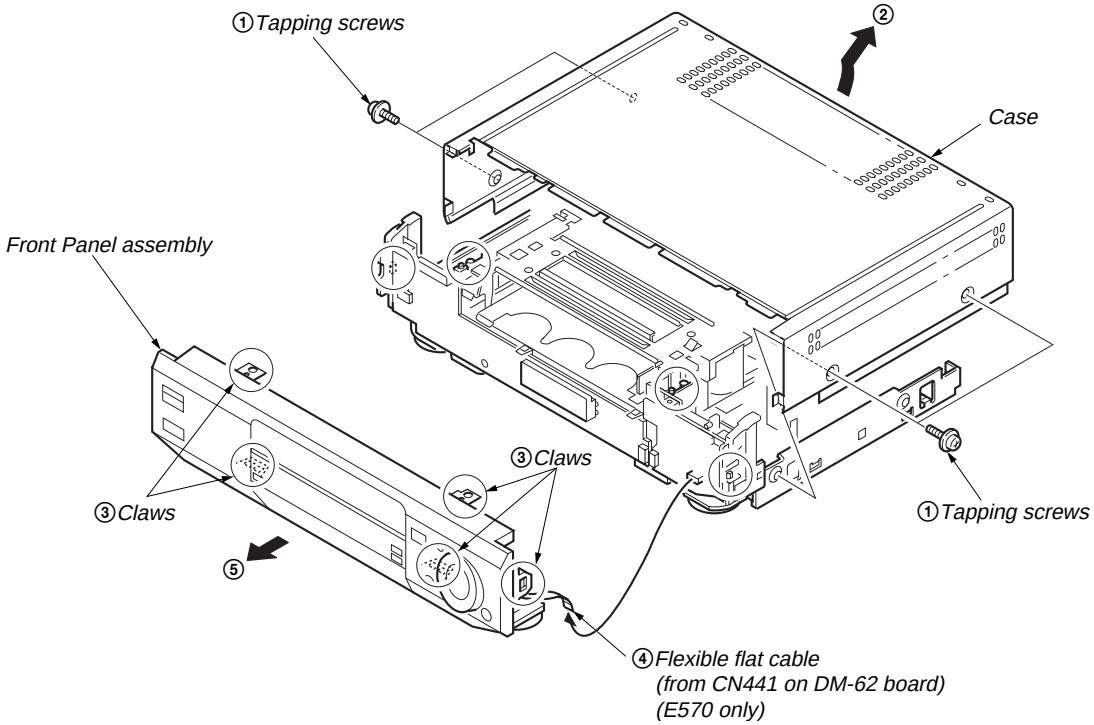


16 ⏻ (on/standby) switch (36)
17 WIDE button (*for TV* (6)
18 AUDIO MONITOR button (46)
19 TV/VIDEO button (8)
20 SHOWVIEW button (35)
21 Programme number buttons (14, 34, 35)
22 SET button (36)
23 ▮► SLOW button (41)
24 PROG +/– buttons (14, 29, 33)
√ /◊ Teletext page access buttons (*for TV*) (6)
25 VOL +/– buttons (*for TV*) (6)
26 REPLAY button (41)

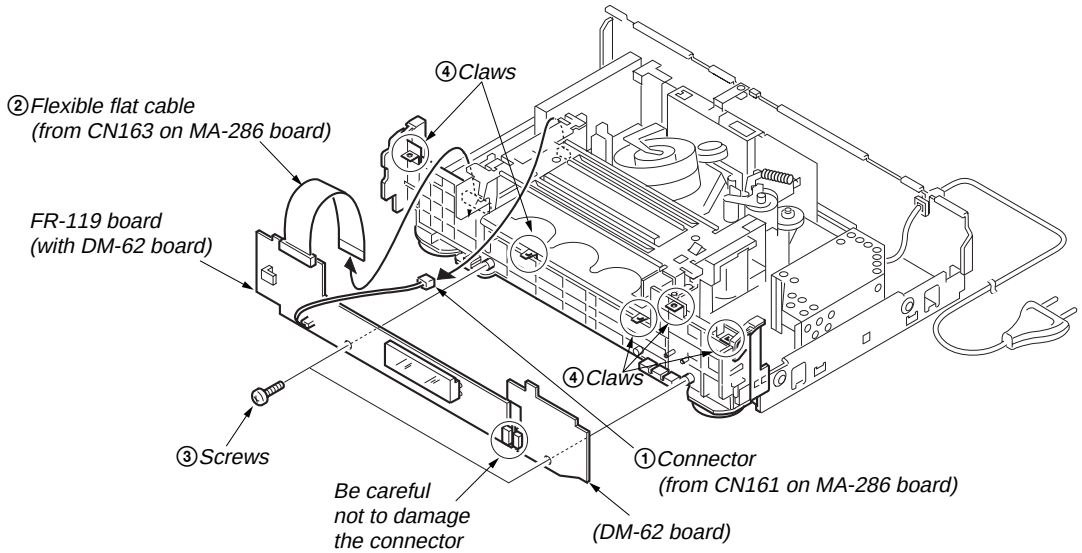
SECTION 2
DISASSEMBLY

NOTE : Follow the disassembly procedure in the numerical order given.

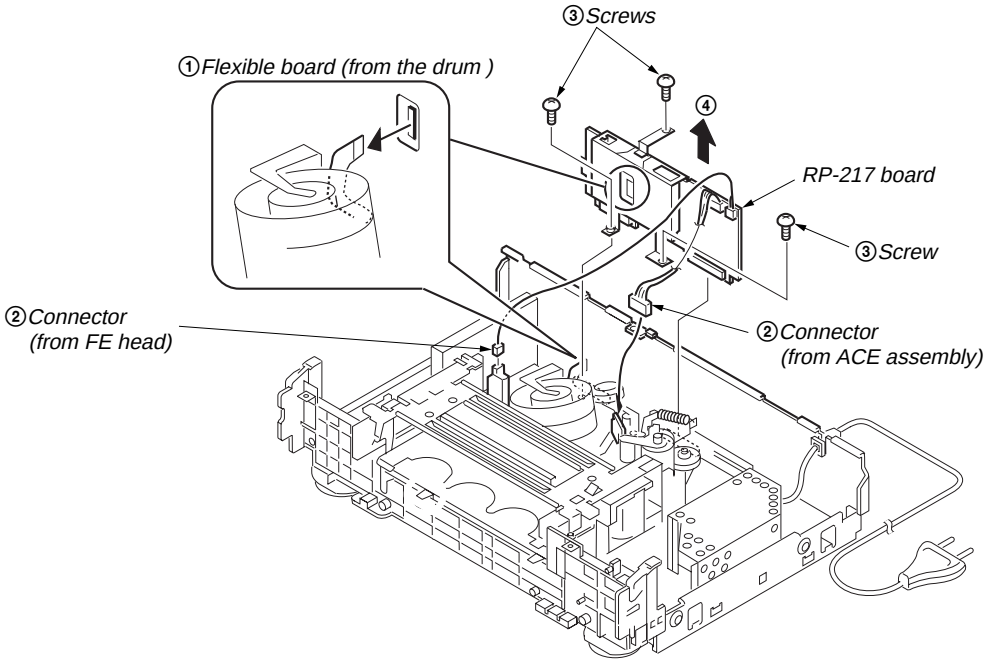
2-1. CASE AND FRONT ASSEMBLY



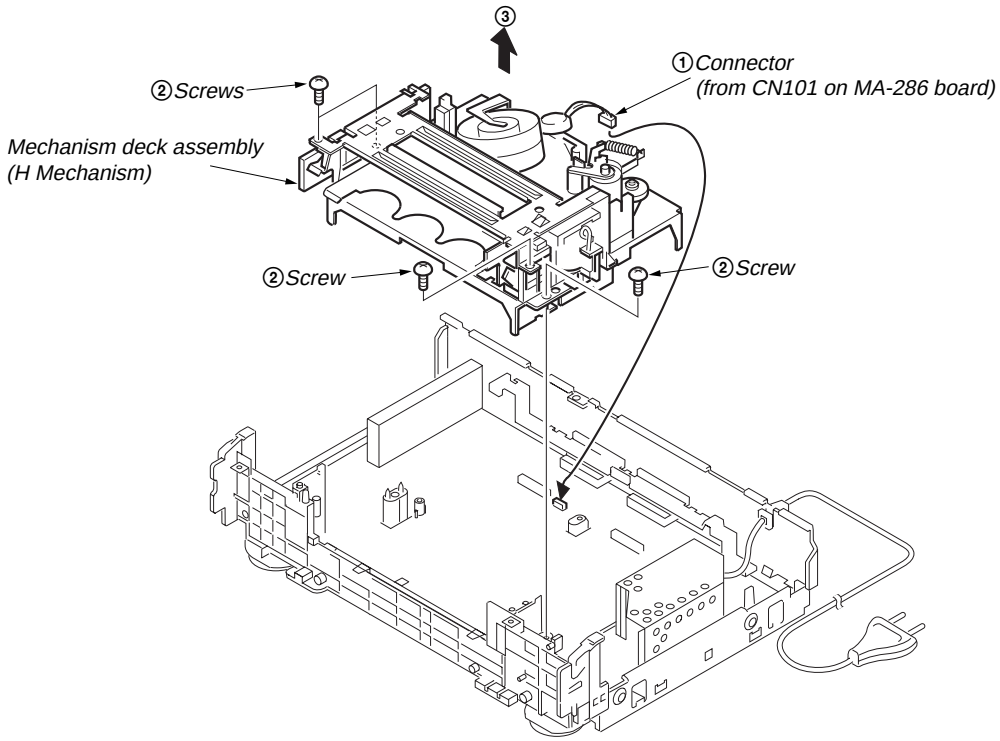
2-2. FR-119 BOARD (WITH DM-62 BOARD)



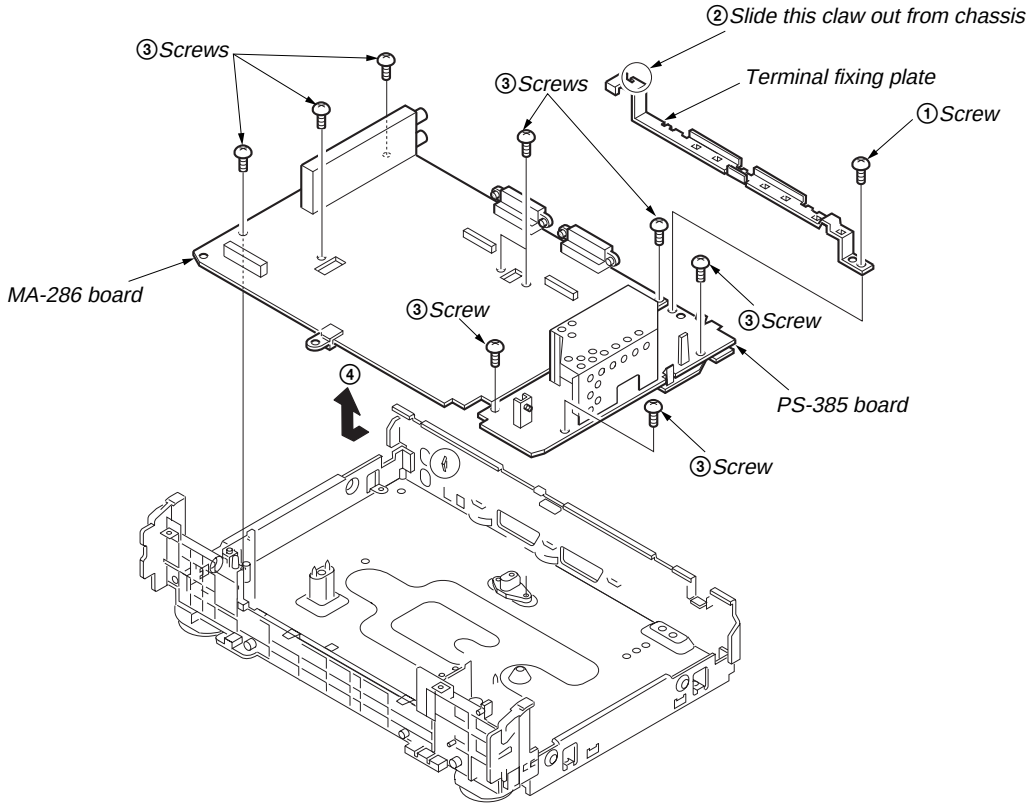
2-3. RP-217 BOARD



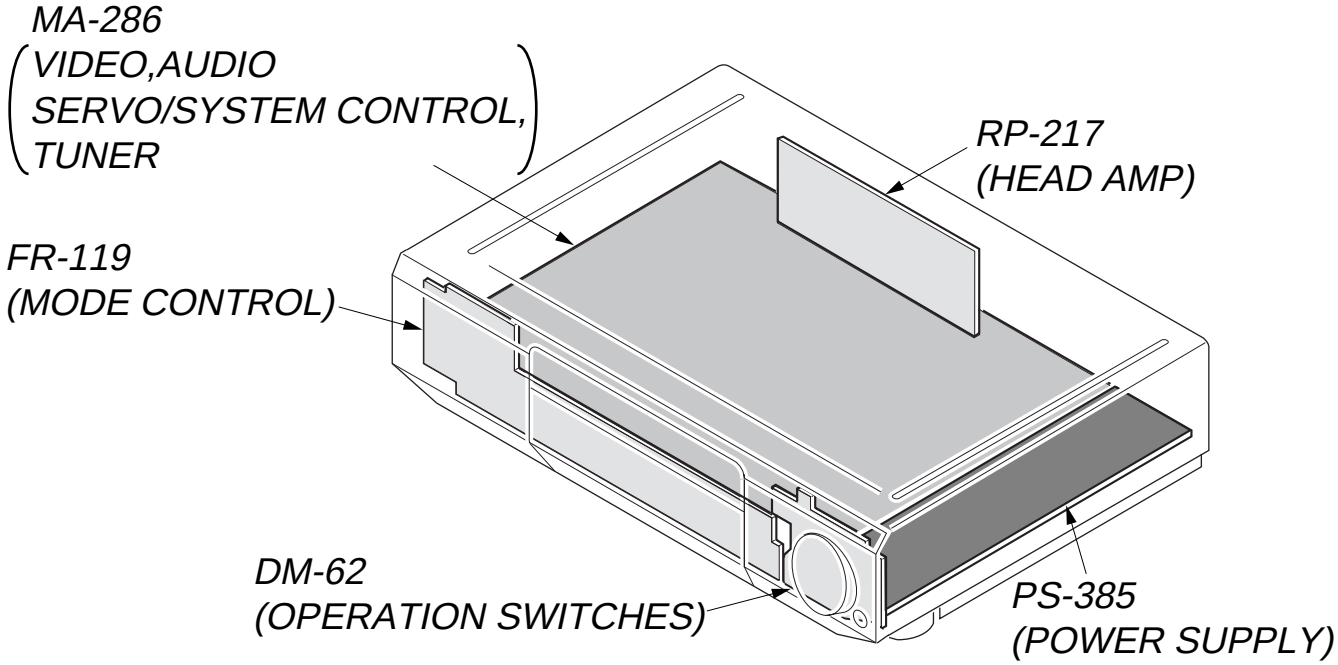
2-4. MECHANISM DECK ASSEMBLY (H MECHANISM)



2-5. MA-286 AND PS-385 BOARDS



2-6. CIRCUIT BOARDS LOCATION



SECTION 5
REPAIR PARTS LIST

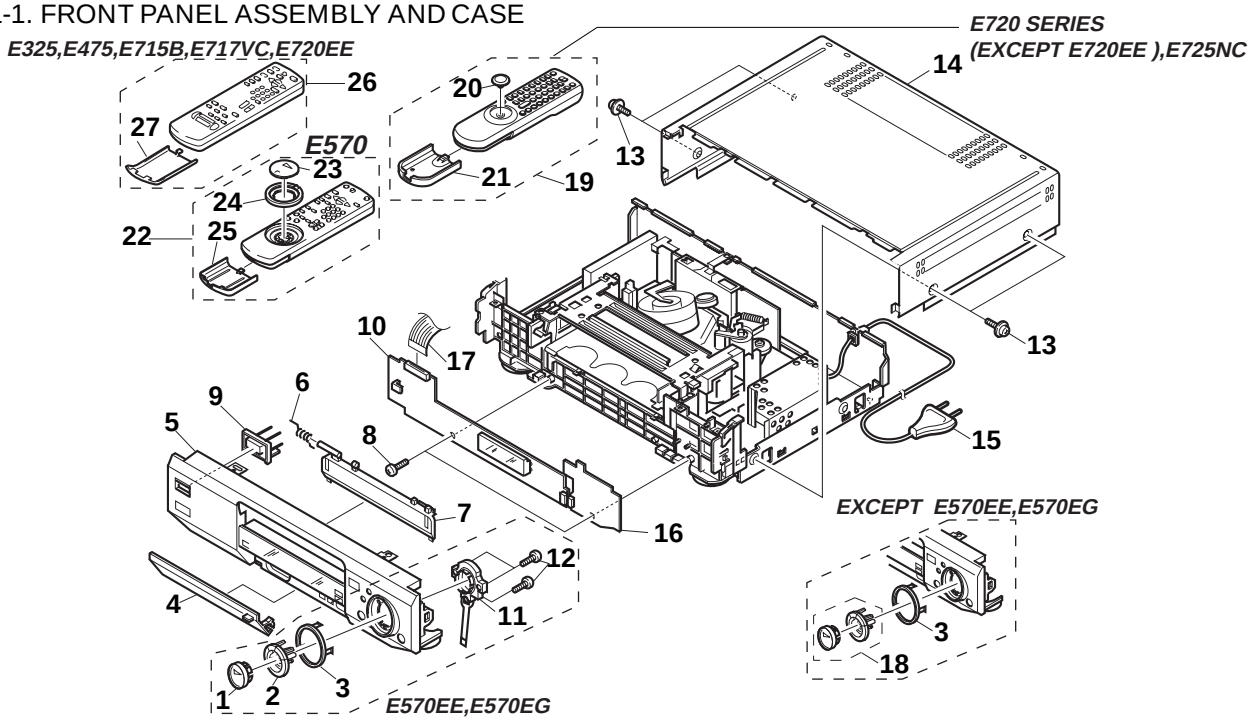
5-1. EXPLODED VIEWS

NOTE:

- -XX, -X mean standardized parts, so they may have some differences from the original one.
- Items marked "*" are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.
- The mechanical parts with no reference number in the exploded views are not supplied.

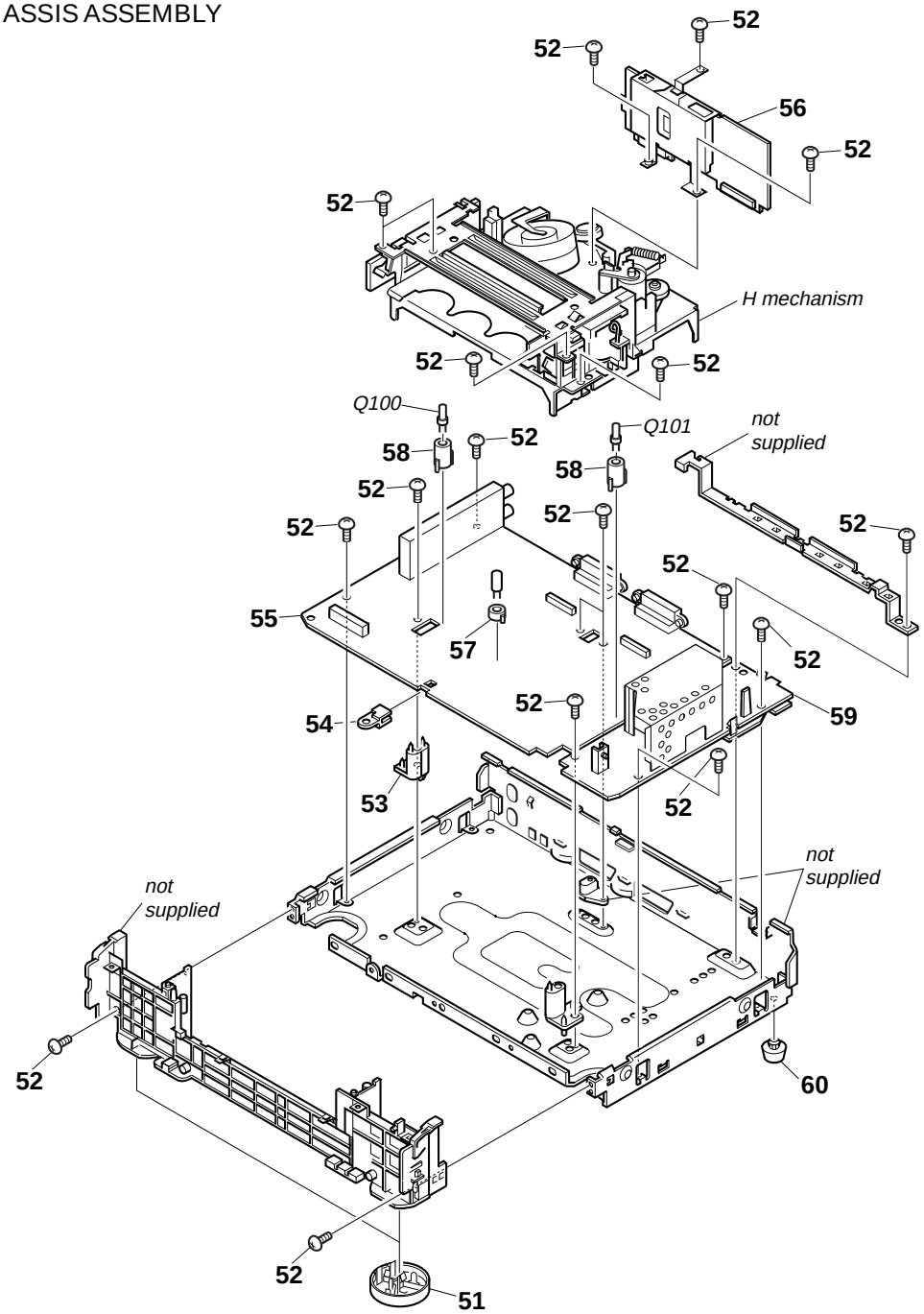
The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety. Replace only with part number specified.

5-1-1. FRONT PANEL ASSEMBLY AND CASE



Ref. No.	Part No.	Description	Remarks
1	3-972-782-11	BUTTON, CENTER(570)	
2	3-973-077-11	RING, CHANGE SPEED(570)	
* 3	3-972-781-21	PLATE, RING ORNAMENTAL(EXCEPT 570)	
3	3-974-511-01	PLATE, RING ORNAMENTAL(570)	
4	3-970-162-31	DOOR (A), JACK (EXCEPT 325,570,715B,717VC,720B,720BZ)	
4	3-970-162-91	DOOR (A), JACK(720B,720BZ)	
4	3-974-145-71	DOOR (A), JACK(570)	
4	3-974-145-81	DOOR (A), JACK(325)	
4	3-974-145-91	DOOR (A), JACK(717VC,725NC)	
4	3-975-692-01	DOOR (A), JACK(715B)	
5	X-3946-637-1	PANEL ASSY, FRONT(720VC,720VP)	
5	X-3946-993-1	PANEL ASSY, FRONT(720B,720BZ)	
5	X-3946-994-1	PANEL ASSY, FRONT(720NP)	
5	X-3946-995-1	PANEL ASSY, FRONT(720NC)	
5	X-3946-996-1	PANEL ASSY, FRONT(720EX,720UX)	
5	X-3946-997-1	PANEL ASSY, FRONT(720EG)	
5	X-3946-998-1	PANEL ASSY, FRONT(720EE)	
5	X-3946-999-1	PANEL ASSY, FRONT(570EG)	
5	X-3947-000-1	PANEL ASSY, FRONT(570EE)	
5	X-3947-001-1	PANEL ASSY, FRONT(475)	
5	X-3947-002-1	PANEL ASSY, FRONT(325)	
5	X-3947-233-1	PANEL ASSY, FRONT(717VC)	
5	X-3947-234-1	PANEL ASSY, FRONT(715B)	
5	X-3947-235-1	PANEL ASSY, FRONT(725)	
6	3-953-432-01	SPRING (GE), FL	
7	3-972-883-01	DOOR, CASSETTE	
8	3-970-608-21	SUMITITE (B3), +BV	
9	3-966-213-01	BUTTON, POWER	
* 10	A-6791-182-A	FR-119 BOARD, COMPLETE(720VP)	
* 10	A-6791-184-A	FR-119 BOARD, COMPLETE(720UX)	
* 10	A-6791-188-A	FR-119 BOARD, COMPLETE(717VC,720VC)	
* 10	A-6791-191-A	FR-119 BOARD, COMPLETE(715B,720B)	
* 10	A-6791-193-A	FR-119 BOARD, COMPLETE(720EE)	
* 10	A-6791-195-A	FR-119 BOARD, COMPLETE(720EX)	
* 10	A-6791-197-A	FR-119 BOARD, COMPLETE(720NP)	
* 10	A-6791-199-A	FR-119 BOARD, COMPLETE(720NC,725)	
* 10	A-6791-202-A	FR-119 BOARD, COMPLETE(570EG)	
* 10	A-6791-205-A	FR-119 BOARD, COMPLETE(570EE)	
* 10	A-6791-208-A	FR-119 BOARD, COMPLETE(720EG)	
* 10	A-6791-209-A	FR-119 BOARD, COMPLETE(720BZ)	
* 10	A-6791-213-A	FR-119 BOARD, COMPLETE(325)	
* 10	A-6791-216-A	FR-119 BOARD, COMPLETE(475)	
11	1-762-844-21	SWITCH, ROTARY (570)	
12	3-968-554-01	SCREW (WN1411 D2.5 EJOT K25)(570)	
13	3-363-099-01	SCREW (CASE 3 TP2)	
* 14	3-972-887-01	CASE (LS), UPPER (EXCEPT 715B,717VC,725)	
* 14	3-972-887-11	CASE (LS), UPPER (715B,717VC,725)	
⚠ 15	1-782-012-11	CORD, POWER	
* 16	A-6790-203-A	DM-62 BOARD, COMPLETE	
17	1-777-960-11	CABLE, FLAT (FFM-13) 29P	
18	X-3946-983-1	BUTTON ASSY, FUNCTION(720B,720BZ)	
18	X-3946-992-1	BUTTON ASSY, FUNCTION (EXCEPT 570,715B,717VC,720B,720BZ,725)	
18	X-3947-231-1	BUTTON ASSY, FUNCTION(717VC,725)	
18	X-3947-232-1	BUTTON ASSY, FUNCTION(715B)	
19	1-475-024-11	REMOTE COMMANDER (RMT-V197) (720EG,720NC,720NP,720VC,720VP,725)	
19	1-475-024-21	REMOTE COMMANDER (RMT-V197A) (720EX,720UX)	
19	1-475-024-31	REMOTE COMMANDER (RMT-V197B) (720B,720BZ)	
20	3-709-131-01	HEAD (ENGLISH), JOY STICK (720EG,720EX,720NC,720NP,720UX,720VC,720VP,725)	
20	3-709-132-01	HEAD (FRENCH), JOY STICK (720B,720BZ)	
21	3-709-129-01	COVER, BATTERY (720B,720BZ,720EG,720EX,720NC,720NP,720UX,720VC,720VP,725)	
22	1-475-030-11	REMOTE COMMANDER (RMT-V199) (570EE)	
22	1-475-030-21	REMOTE COMMANDER (RMT-V199A)(570EG)	
23	3-972-850-01	BUTTON, FUNCTION (570EG,570EE)	
24	3-973-077-31	RING, CHANGE SPEED(570EE,570EG)	
25	3-709-126-01	COVER, BATTERY(570EG,570EE)	
26	1-475-025-11	REMOTE COMMANDER (RMT-V198) (475,720EE)	
26	1-475-025-21	REMOTE COMMANDER (RMT-V198A)(325)	
26	1-475-067-21	REMOTE COMMANDER (RMT-V198K)(715B)	
26	1-475-067-11	REMOTE COMMANDER (RMT-V198J)(717VC)	
27	3-709-128-01	COVER, BATTERY(325,475,715B,717VC,720EE)	

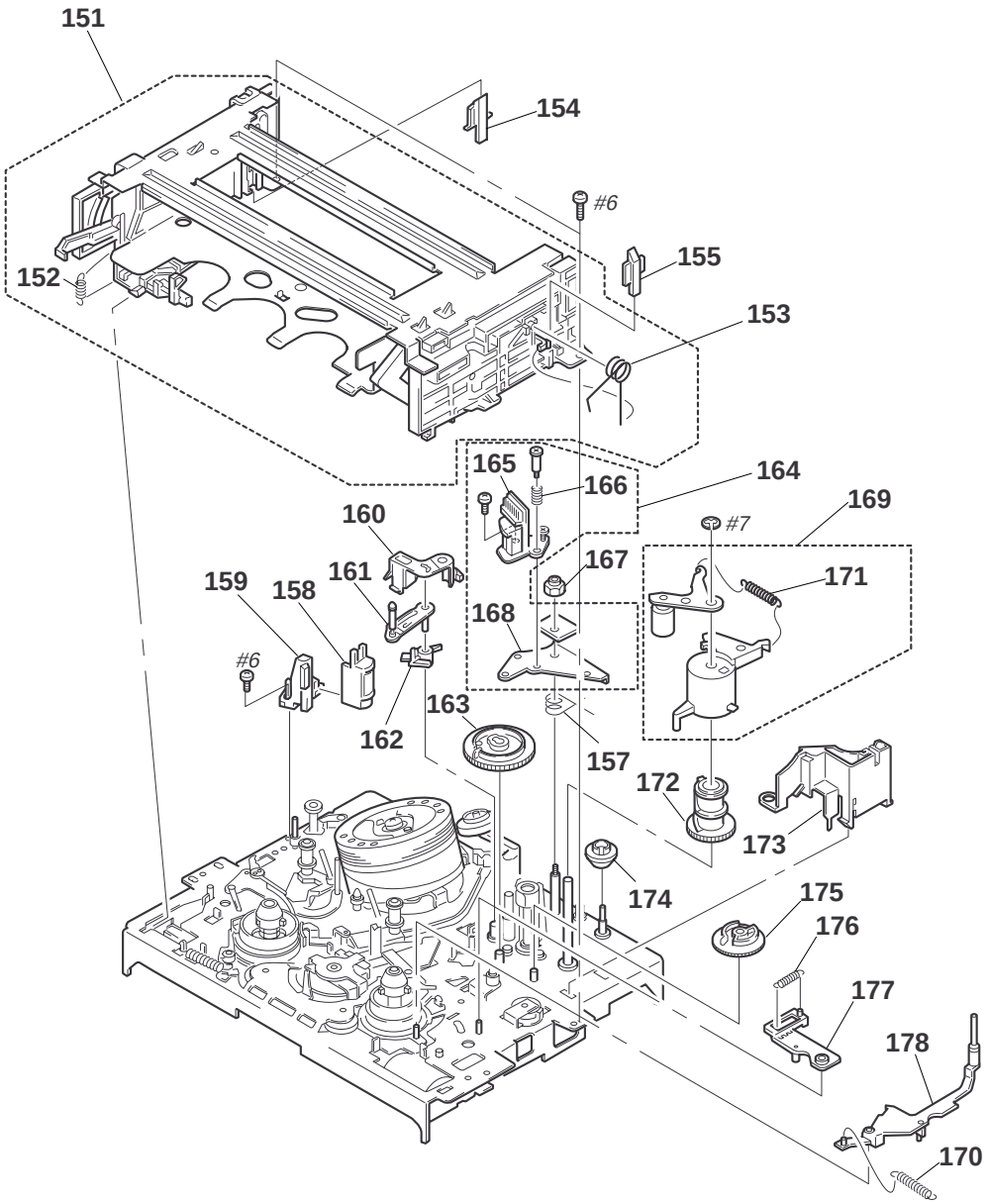
5-1-2. CHASSIS ASSEMBLY



Ref. No.	Part No.	Description	Remarks
51	3-966-229-01	INSULATOR (ST)	
52	3-970-608-21	SUMITITE (B3), +BV	
53	3-959-381-01	BASE (L), MD	
54	3-966-237-01	HOLDER (ST), MA	
* 55	A-6791-181-A	MA-286 BOARD, COMPLETE(720VP)	
* 55	A-6791-183-A	MA-286 BOARD, COMPLETE(720UX)	
* 55	A-6791-185-A	MA-286 BOARD, COMPLETE(717VC,720VC)	
* 55	A-6791-190-A	MA-286 BOARD, COMPLETE(715B,720B)	
* 55	A-6791-192-A	MA-286 BOARD, COMPLETE(720EE)	
* 55	A-6791-194-A	MA-286 BOARD, COMPLETE(720EX)	
* 55	A-6791-196-A	MA-286 BOARD, COMPLETE(720NP)	
* 55	A-6791-198-A	MA-286 BOARD, COMPLETE(720NC,725)	
* 55	A-6791-200-A	MA-286 BOARD, COMPLETE(570EG)	
* 55	A-6791-204-A	MA-286 BOARD, COMPLETE(570EE)	
* 55	A-6791-206-A	MA-286 BOARD, COMPLETE(720BZ)	
* 55	A-6791-207-A	MA-286 BOARD, COMPLETE(720EG)	
* 55	A-6791-211-A	MA-286 BOARD, COMPLETE(325)	
* 55	A-6791-214-A	MA-286 BOARD, COMPLETE(475)	

Ref. No.	Part No.	Description	Remarks
* 56	A-6791-187-A	RP-217 BOARD, COMPLETE (EXCEPT 325,475,570)	
* 56	A-6791-201-A	RP-217 BOARD, COMPLETE(570)	
* 56	A-6791-212-A	RP-217 BOARD, COMPLETE(325)	
* 56	A-6791-215-A	RP-217 BOARD, COMPLETE(475)	
57	3-960-274-01	SPACER, LED	
58	3-960-273-01	SPACER, TOP/END	
* 59	A-6791-186-A	PS-385 BOARD, COMPLETE	
60	3-957-819-01	FOOT	
D100	8-719-048-26	DIODE GL528V1	
Q100	8-729-025-92	PHOTOTRANSISTOR PT380F	
Q101	8-729-025-92	PHOTOTRANSISTOR PT380F	

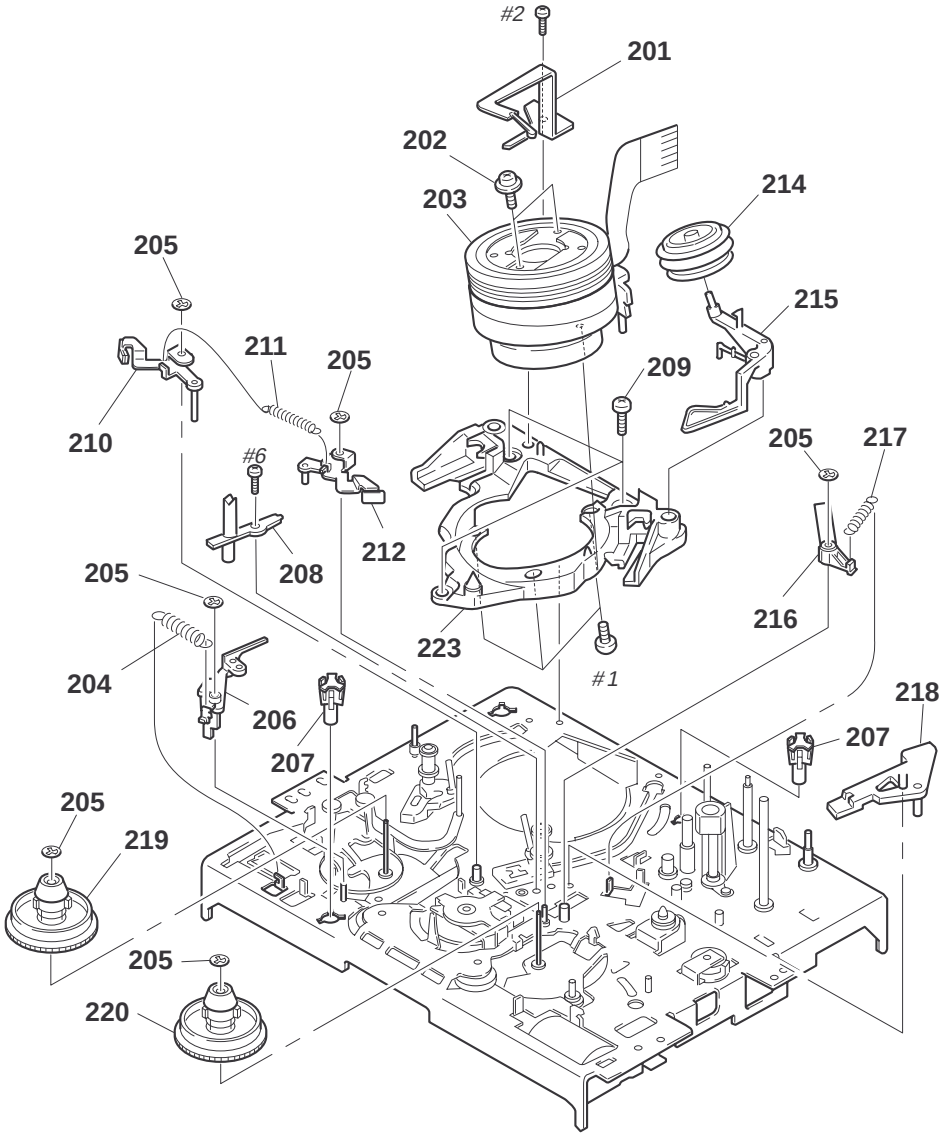
5-1-3. MECHANISM DECK ASSEMBLY-1



Ref. No.	Part No.	Description	Remarks
151	A-6759-603-A	FL BLOCK ASSY	
152	3-958-467-01	SPRING, TENSION COIL	
153	3-970-471-01	SPRING, TORSION	
154	3-958-488-03	PLATE, LIGHT GUIDE, END SENSOR	
155	3-970-473-01	PLATE, LIGHT GUIDE, TOP SENSOR	
157	3-958-487-01	SPRING, (ACE) TORSION COIL	
158	1-500-144-11	HEAD, FE	
159	X-3945-348-2	FEH ASSY	
160	3-962-298-01	BRACKET, TG7 TAPE	
161	X-3944-797-1	TG8 ASSY	
162	3-958-421-01	HOLDER, TG8	
163	3-958-152-01	GEAR, TG8	
164	A-6736-105-A	ACE BLOCK ASSY	

Ref. No.	Part No.	Description	Remarks
165	1-506-485-11	PIN, CONNECTOR 6P	
166	3-960-439-02	SPRING (ACE), COMPRESSION	
167	3-942-867-01	NUT, AC HEIGHT ADJUSTMENT	
168	3-958-491-01	BASE, ACE	
169	A-6746-072-A	PRESS BLOCK ASSY, PINCH	
170	3-958-505-01	SPRING (SOFT BRAKE T), TENSION	
171	3-958-455-01	SPRING (PINCH), TENSION	
172	3-958-151-01	GEAR, ELEVATOR	
173	3-958-454-01	OPNER, LID	
174	3-958-501-01	SCREW, ACE ADJUSTMENT	
175	3-958-153-01	GEAR, PRESS	
176	3-958-462-01	SPRING (RVS BRAKE), TENSION	
177	X-3943-885-1	ARM ASSY, RVS BRAKE	
178	X-3943-882-1	BRAKE (T) ASSY, SOFT	

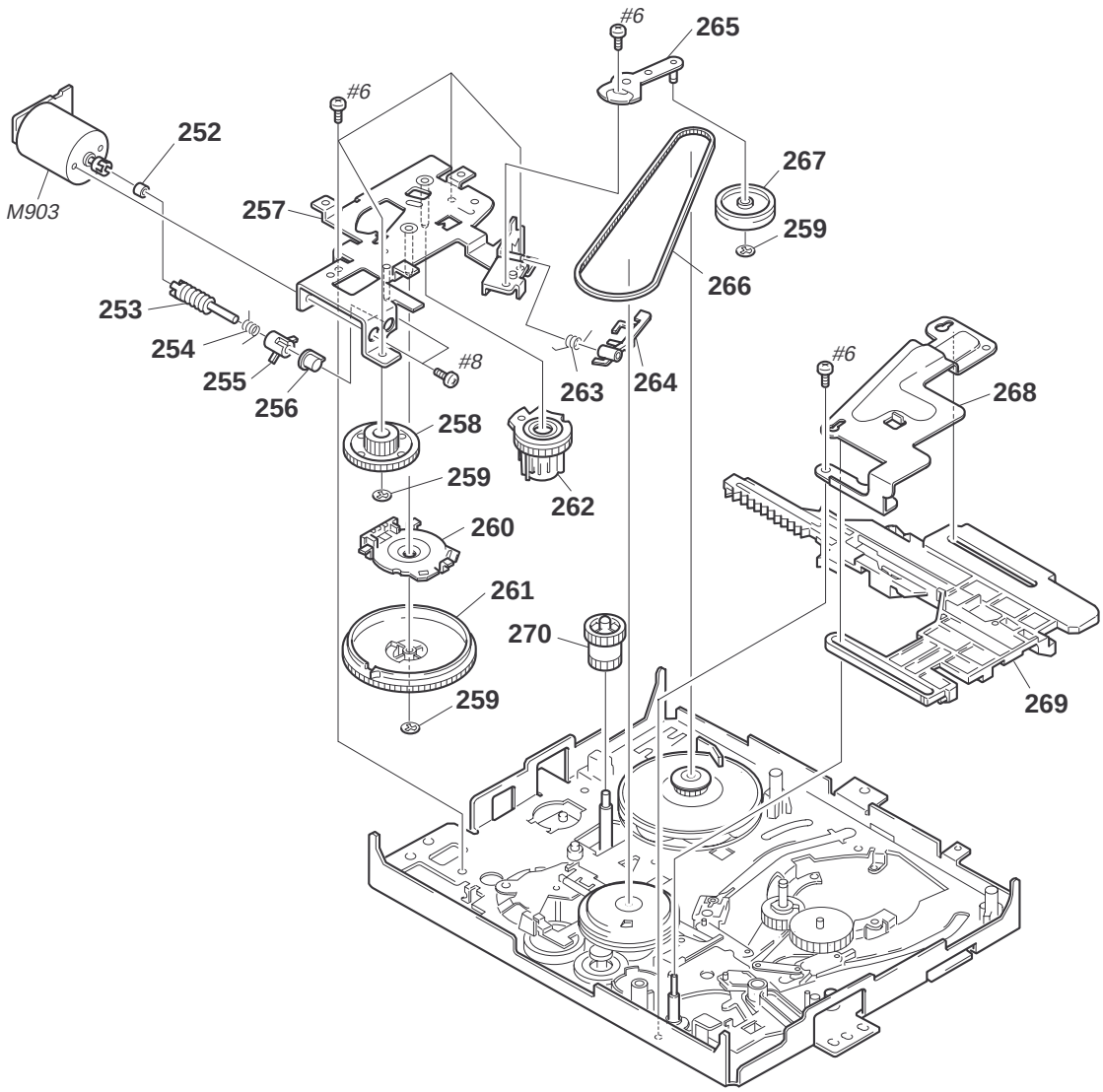
5-1-4. MECHANISM DECK ASSEMBLY-2



Ref. No.	Part No.	Description	Remarks
201	X-3943-899-8	GROUND ASSY, SHAFT	
202	2-643-205-01	SCREW	
203	1-759-183-11	DRUM ASSY DZH-78A-R (325)	
203	1-759-371-11	DRUM ASSY DZH-65A-R (475, 570)	
203	1-759-373-11	DRUM ASSY DZH-86A-R (EXCEPT 325, 475, 570)	
204	3-958-443-01	SPRING, STRETCH COIL SPRING	
205	3-669-595-00	WASHER (2), STOPPER	
206	3-958-450-01	BRAKE (S), SOFT	
207	3-958-390-01	SHAFT, PC BOARD	
208	3-958-391-01	PLATE, LIGHT GUIDE, LED	
209	3-961-441-01	SCREW (3x8)	
210	X-3945-443-1	BRAKE (S) ASSY, MAIN	

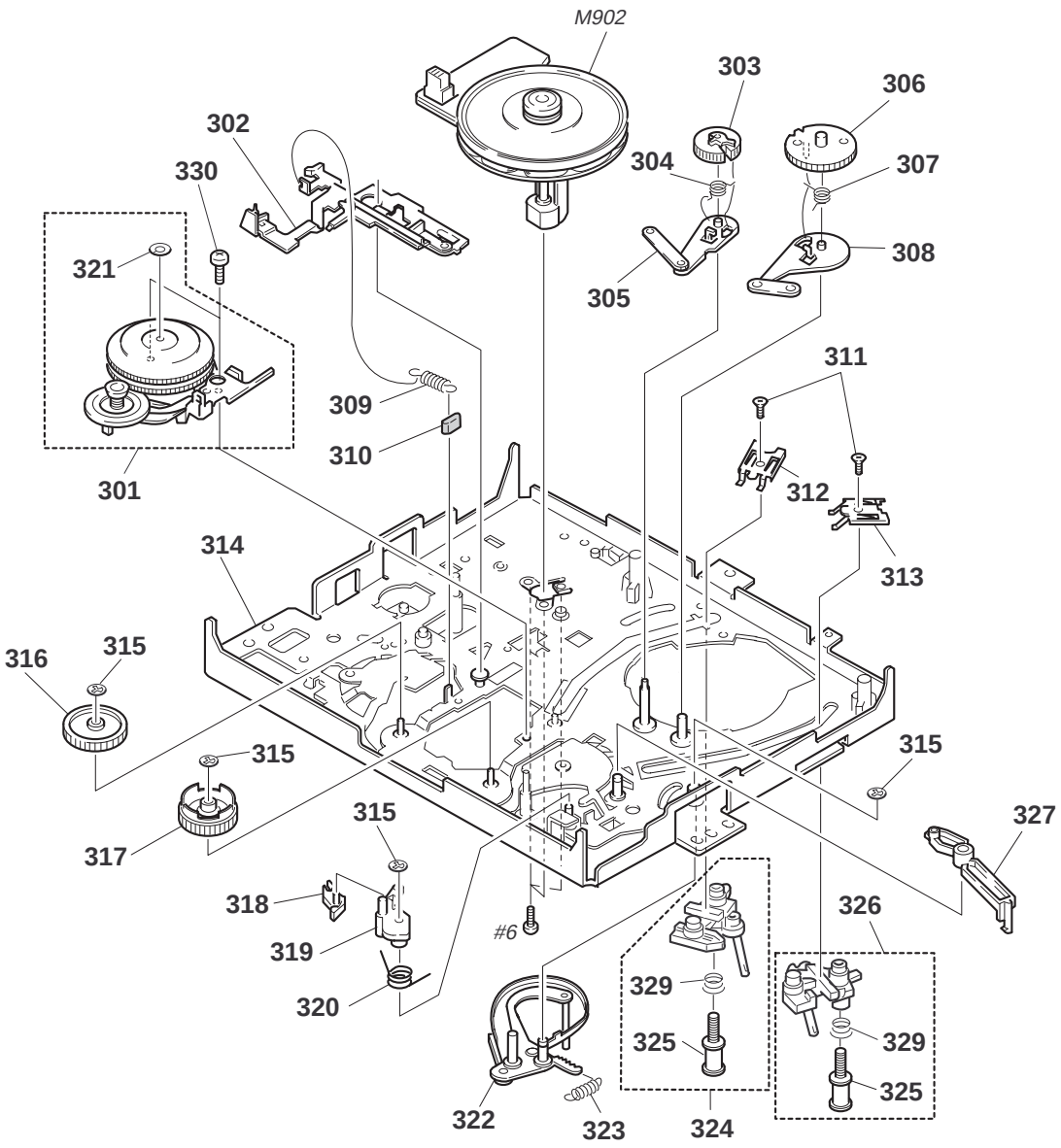
Ref. No.	Part No.	Description	Remarks
211	3-958-517-01	SPRING, TENSIONCOIL	
212	X-3945-444-1	ARM (T) ASSY, MAIN BRAKE	
214	X-3947-255-1	ROLLER ASSY, HC	
215	3-975-724-01	ARM, HC	
216	3-960-139-01	ARM, NEUTRALITY	
217	3-958-535-01	SPRING, TENSION	
218	3-960-138-01	ARM, PENDULUM COMPULSION	
219	X-3943-902-1	TABLE, REEL (S) ASSY	
220	X-3943-903-1	TABLE, REEL (T) ASSY	
223	3-969-629-01	DRUM BASE	

5-1-5. MECHANISM DECK ASSEMBLY-3



Ref. No.	Part No.	Description	Remarks
252	3-959-840-11	RUBBER, JOINT	
253	3-958-159-01	WORM	
254	3-958-460-01	SPRING, ONE-WAY	
255	3-958-160-01	PROPELLOR	
256	3-958-155-01	BEARING, CAM MOTOR	
* 257	X-3943-884-1	CHASSIS ASSY, CAM MOTOR	
258	3-958-157-02	WHEEL, WORM	
259	3-669-595-00	WASHER (2), STOPPER	
260	1-762-076-11	SWITCH, ROTARY	
261	3-958-161-07	GEAR, CAM	
262	3-958-156-03	GEAR, FL DRIVING	
263	3-958-445-01	SPRING,TORSIONCOIL(CAP BRAKE)	
264	X-3943-888-1	BRAKE ASSY, CAP	
265	X-3943-889-1	ARM ASSY, TENSION VEHICLE	
266	3-958-361-01	BELT, TIMING	
267	3-958-448-01	WHEEL, TENSION	
* 268	3-959-763-01	RETAINER	
269	3-958-163-04	SLIDER, MAIN	
270	3-958-162-02	GEAR,UPPER/LOWER COMMUNICATION	
M903	X-3943-883-1	MOTOR ASSY, CAM	

5-1-6. MECHANISM DECK ASSEMBLY-4



Ref. No.	Part No.	Description	Remarks
301	A-6739-102-A	RKB BLOCK ASSY	
302	X-3943-897-1	LEVER ASSY, TRIGGER	
303	3-958-485-02	GEAR (T), LOADING	
304	3-960-449-01	SPRING (T), TORSION COIL	
305	X-3943-891-3	LEVER (T) ASSY, LOADING	
306	3-958-476-01	GEAR (S), LOADING	
307	3-960-448-01	SPRING (S), TORSION COIL	
308	X-3943-890-2	LEVER (S) ASSY, LOADING	
309	3-958-529-01	SPRING (MOMENT), TENSION	
310	3-959-840-11	RUBBER, JOINT	
311	3-960-720-01	SCREW	
312	3-960-688-01	SPRING, LEAF (T), LOADING	
313	3-960-687-01	SPRING, LEAF (S), LOADING	
314	X-3945-485-4	CHASSIS ASSY, MECHANICAL	
315	3-669-595-00	WASHER (2), STOPPER	

Ref. No.	Part No.	Description	Remarks
316	3-962-960-01	GEAR (T-K), IDLER	
317	3-962-959-01	GEAR (S-K), IDLER	
318	3-958-533-01	CLAW, S WINDING	
319	3-958-532-01	ARM, S WINDING	
320	3-958-534-01	SPRING, TORSION	
321	3-966-092-01	RING, RETAINING, SLIT WASHER	
322	X-3943-886-1	TG1 ASSY	
323	3-958-492-01	SPRING (TG1), TENSION COIL	
324	A-6750-325-A	T BLOCK ASSY, SHUTTLE	
325	X-3944-378-1	ROLLER ASSY, GUIDE	
326	A-6750-316-A	SHUTTLE (S) BLOCK ASSY	
327	3-958-504-01	ARM, FIXED RELEASE	
329	3-965-178-01	SPRING	
M902	1-698-409-14	MOTOR, DC (CAPSTAN)	

5-2. ELECTRICAL PARTS LIST

NOTE:

When indicating parts by reference number, please include the board naame.

The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety. Replace only with part number specified.

- Due to standardization, replacements in the parts list may be different from the parts specified in the diagrams or the components used on the set.
- -XX, -X mean standardized parts, so they may have some difference from the original one.
- Items marked "*" are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.
- CAPACITORS:
  uF: µF
- RESISTORS
  All resistors are in ohms.
  METAL: metal-film resistor
  METAL OXIDE: Metal Oxide-film resistor
  F: nonflammable
- COILS
  uH: µH
- SEMICONDUCTORS
  In each case, u: µ, for example:
  uA...: µA... , uPA... , µPA... ,
  uPB... , µPB... , uPC... , µPC... ,
  uPD..., µPD...

Ref. No.	Part No.	Description			Remarks
*	A-6790-203-A	DM-62 BOARD, COMPLETE			
		**********			
		(Ref.No.: 3,000 Series)			
		< CONNECTOR >			
CN440	1-695-947-11	CONNECTOR, BOARD TO BOARD 10P			
CN441	1-774-471-41	CONNECTOR, FFC/FPC 5P(570)			
		< RESISTOR >			
R440	1-216-073-00	METAL GLAZE	10K	5%	1/10W
R455	1-216-057-00	METAL GLAZE	2.2K	5%	1/10W
R456	1-216-057-00	METAL GLAZE	2.2K	5%	1/10W
R458	1-216-057-00	METAL GLAZE	2.2K	5%	1/10W
R459	1-216-057-00	METAL GLAZE	2.2K	5%	1/10W
R461	1-216-061-00	METAL GLAZE	3.3K	5%	1/10W
R462	1-216-073-00	METAL GLAZE	10K	5%	1/10W
R463	1-216-073-00	METAL GLAZE	10K	5%	1/10W
		< SWITCH >			
S441	1-571-977-11	SWITCH, TACTIL(EJECT)			
S442	1-571-977-11	SWITCH, TACTIL(REW)(570)			
S443	1-571-977-11	SWITCH, TACTIL(FF)(570)			
S444	1-571-977-11	SWITCH, TACTIL(PAUSE)			
S445	1-571-977-11	SWITCH, TACTIL(REC)			
S447	1-571-977-11	SWITCH, TACTIL(REW)(EXCEPT 570)			
S448	1-571-977-11	SWITCH, TACTIL(FF)(EXCEPT 570)			
S449	1-571-977-11	SWITCH, TACTIL(STOP)(EXCEPT 570)			
S450	1-571-977-11	SWITCH, TACTIL(PLAY)(EXCEPT 570)			
*	A-6791-182-A	FR-119 BOARD, COMPLETE (720VP)			
		**********			
*	A-6791-184-A	FR-119 BOARD, COMPLETE (720UX)			
		**********			
*	A-6791-188-A	FR-119 BOARD, COMPLETE (717VC,720VC)			
		**********			
*	A-6791-191-A	FR-119 BOARD, COMPLETE (715B,720B)			
		**********			
*	A-6791-193-A	FR-119 BOARD, COMPLETE (720EE)			
		**********			
*	A-6791-195-A	FR-119 BOARD, COMPLETE (720EX)			
		**********			
*	A-6791-197-A	FR-119 BOARD, COMPLETE (720NP)			
		**********			
*	A-6791-199-A	FR-119 BOARD, COMPLETE (720NC,725NC)			
		**********			
*	A-6791-202-A	FR-119 BOARD, COMPLETE (570EG)			
		**********			
*	A-6791-205-A	FR-119 BOARD, COMPLETE (570EE)			
		**********			
*	A-6791-208-A	FR-119 BOARD, COMPLETE (720EG)			
		**********			

Ref. No.	Part No.	Description			Remarks
*	A-6791-209-A	FR-119 BOARD, COMPLETE (720BZ)			
		**********			
*	A-6791-213-A	FR-119 BOARD, COMPLETE (325)			
		**********			
*	A-6791-216-A	FR-119 BOARD, COMPLETE (475)			
		**********			
		(Ref.No.: 3,000 Series)			
*	3-972-888-01	HOLDER (85), FL			
		< CAPACITOR >			
C400	1-163-809-11	CERAMIC CHIP	0.047uF	10%	25V
C401	1-163-009-11	CERAMIC CHIP	0.001uF	10%	50V (570)
C403	1-163-009-11	CERAMIC CHIP	0.001uF	10%	50V (570)
C408	1-165-319-11	CERAMIC CHIP	0.1uF		50V
C471	1-126-924-11	ELECT	330uF	20%	10V
C472	1-126-916-11	ELECT	1000uF	20%	6.3V
C473	1-163-031-11	CERAMIC CHIP	0.01uF		50V
C474	1-125-705-11	CAPACITOR	0.22F	0	5.5V
C475	1-163-031-11	CERAMIC CHIP	0.01uF		50V
C476	1-163-038-91	CERAMIC CHIP	0.1uF		25V
C477	1-163-031-11	CERAMIC CHIP	0.01uF		50V
C478	1-164-159-21	CERAMIC	0.1uF		50V
C479	1-163-031-11	CERAMIC CHIP	0.01uF		50V
C480	1-163-099-00	CERAMIC CHIP	18PF	5%	50V
C481	1-163-231-11	CERAMIC CHIP	15PF	5%	50V
C482	1-163-038-91	CERAMIC CHIP	0.1uF		25V
C483	1-163-038-91	CERAMIC CHIP	0.1uF		25V
C485	1-163-038-91	CERAMIC CHIP	0.1uF		25V
C489	1-163-031-11	CERAMIC CHIP	0.01uF		50V
		< CONNECTOR >			
* CN401	1-691-407-11	CONNECTOR, BOARD TO BOARD 10P			
CN402	1-695-390-31	PIN, CONNECTOR (PC BOARD) 29P			
CN403	1-506-470-11	PIN, CONNECTOR 5P			(570)
		< DIODE >			
D401	8-719-108-12	DIODE RD9.1E-W			(570)
D403	8-719-108-12	DIODE RD9.1E-W			(570)
D405	8-719-056-07	DIODE SLR-342MC-A-47			
D408	8-719-110-08	DIODE RD8.2ES-B2			
D470	8-719-200-82	DIODE 11ES2			
D471	8-719-200-82	DIODE 11ES2			
		< TERMINAL BOARD >			
ET400	1-537-770-21	TERMINAL BOARD, GROUND			(570)

Ref. No.	Part No.	Description	Remarks
		< IC >	
IC400	8-749-011-05	IC GP1U28X	
IC470	8-752-880-60	IC CXP82948-014Q (325,475,570,720EE,720EG)	
IC470	8-752-880-61	IC CXP82948-015Q (715B,717VC,720B,720BZ,720NC,720NP,720VC,720VP,725NC)	
IC470	8-752-880-62	IC CXP82948-016Q(720EX,720UX)	
IC471	8-759-248-87	IC MM1256XF-BE	
IC472	8-759-518-23	IC X24C04S8	
		< JUMPER RESISTOR >	
JR401	1-216-295-91	CONDUCTOR, CHIP(2012)	
JR402	1-216-296-91	CONDUCTOR, CHIP(3216)	
JR403	1-216-296-91	CONDUCTOR, CHIP(3216)	
JR404	1-216-296-91	CONDUCTOR, CHIP(3216)	
JR406	1-216-295-91	CONDUCTOR, CHIP(2012)	
JR407	1-216-296-91	CONDUCTOR, CHIP(3216)	
JR408	1-216-296-91	CONDUCTOR, CHIP(3216)	
JR410	1-216-296-91	CONDUCTOR, CHIP(3216)	
JR411	1-216-296-91	CONDUCTOR, CHIP(3216)	
JR412	1-216-295-91	CONDUCTOR, CHIP(2012)	
JR414	1-216-296-91	CONDUCTOR, CHIP(3216)	
JR416	1-216-296-91	CONDUCTOR, CHIP(3216)	
JR417	1-216-295-91	CONDUCTOR, CHIP(2012)	
JR419	1-216-295-91	CONDUCTOR, CHIP(2012)	
JR420	1-216-296-91	CONDUCTOR, CHIP(3216)	
JR421	1-216-295-91	CONDUCTOR, CHIP(2012)	
JR422	1-216-296-91	CONDUCTOR, CHIP(3216)	
JR423	1-216-296-91	CONDUCTOR, CHIP(3216)	
JR425	1-216-295-91	CONDUCTOR, CHIP(2012)	
JR429	1-216-296-91	CONDUCTOR, CHIP(3216)	
JR430	1-216-296-91	CONDUCTOR, CHIP(3216)	
JR431	1-216-296-91	CONDUCTOR, CHIP(3216)	
		< JUMPER RESISTOR >	
JS400	1-216-295-91	CONDUCTOR, CHIP(2012) (570)	
JS408	1-216-295-91	CONDUCTOR, CHIP(2012) (570)	
		< COIL >	
L470	1-408-970-21	INDUCTOR 10uH	
		< FLUORESCENT INDICATOR >	
ND400	1-517-590-11	TUBE, FLUORESCENT INDICATOR (EXCEPT 715B,720B,720BZ)	
ND400	1-517-590-21	TUBE, FLUORESCENT INDICATOR (715B,720B,720BZ)	
		< JACK >	
PJ401	1-774-510-11	JACK, PIN 2P (LINE IN-2) (570)	
		< TRANSISTOR >	
Q400	8-729-421-19	TRANSISTOR UN2213	
		< RESISTOR >	
R400	1-216-089-91	METAL GLAZE 47K 5% 1/10W	
R401	1-216-022-00	METAL CHIP 75 5% 1/10W (570)	
R403	1-216-041-00	METAL CHIP 470 5% 1/10W (570)	
R405	1-216-029-00	METAL CHIP 150 5% 1/10W	
R410	1-216-295-91	CONDUCTOR, CHIP(2012) (570)	
R411	1-216-069-00	METAL CHIP 6.8K 5% 1/10W	
R412	1-216-075-00	METAL CHIP 12K 5% 1/10W	
R413	1-216-075-00	METAL CHIP 12K 5% 1/10W	
R414	1-216-057-00	METAL CHIP 2.2K 5% 1/10W	
R415	1-216-057-00	METAL CHIP 2.2K 5% 1/10W	
R416	1-216-061-00	METAL CHIP 3.3K 5% 1/10W	
R418	1-216-073-00	METAL CHIP 10K 5% 1/10W	
R419	1-216-073-00	METAL CHIP 10K 5% 1/10W	
R420	1-216-073-00	METAL CHIP 10K 5% 1/10W	
R421	1-216-073-00	METAL CHIP 10K 5% 1/10W	
R422	1-216-073-00	METAL CHIP 10K 5% 1/10W	
R423	1-216-073-00	METAL CHIP 10K 5% 1/10W	
R424	1-216-089-91	METAL GLAZE 47K 5% 1/10W	
R472	1-216-049-91	METAL GLAZE 1K 5% 1/10W	
R473	1-216-049-91	METAL GLAZE 1K 5% 1/10W	
R474	1-216-089-91	METAL GLAZE 47K 5% 1/10W	
R475	1-216-049-91	METAL GLAZE 1K 5% 1/10W	
R476	1-216-073-00	METAL CHIP 10K 5% 1/10W	
R477	1-216-073-00	METAL CHIP 10K 5% 1/10W	
R478	1-216-113-00	METAL CHIP 470K 5% 1/10W	
R479	1-216-049-91	METAL GLAZE 1K 5% 1/10W	
R480	1-216-113-00	METAL CHIP 470K 5% 1/10W	
R481	1-249-413-11	CARBON 470 5% 1/4W F	
R482	1-249-413-11	CARBON 470 5% 1/4W F	
R483	1-249-417-11	CARBON 1K 5% 1/4W F	
R486	1-216-095-00	METAL CHIP 82K 5% 1/10W	
R487	1-216-113-00	METAL CHIP 470K 5% 1/10W	
R488	1-216-295-91	CONDUCTOR, CHIP(2012)	
		< SWITCH >	
S403	1-571-977-11	SWITCH, TACTIL(STANDBY/POWER ON)	
S404	1-571-977-11	SWITCH, TACTIL(TV/VTR)	
S405	1-571-977-11	SWITCH, TACTIL(PROGRAM:+)	
S406	1-571-977-11	SWITCH, TACTIL(PROGRAM:-)	
S407	1-571-977-11	SWITCH, TACTIL(RF CHANNEL)	
S409	1-571-977-11	SWITCH, TACTIL(TAPE SPEED)(EXCEPT 325)	
S410	1-571-977-11	SWITCH, TACTIL(EDIT)	
		< VIBRATOR >	
X470	1-579-463-11	VIBRATOR, CRYSTAL 32.768kHz	
X471	1-579-930-12	VIBRATOR, CERAMIC	
*	A-6791-181-A	MA-286 BOARD, COMPLETE (720VP) **********	
*	A-6791-183-A	MA-286 BOARD, COMPLETE (720UX) **********	
*	A-6791-185-A	MA-286 BOARD, COMPLETE (717VC,720VC) **********	
*	A-6791-190-A	MA-286 BOARD, COMPLETE (715B,720B) **********	
*	A-6791-192-A	MA-286 BOARD, COMPLETE (720EE) **********	
*	A-6791-194-A	MA-286 BOARD, COMPLETE (720EX) **********	
*	A-6791-196-A	MA-286 BOARD, COMPLETE (720NP) **********	
*	A-6791-198-A	MA-286 BOARD, COMPLETE (720NC,725NC) **********	
*	A-6791-200-A	MA-286 BOARD, COMPLETE (570EG) **********	

Ref. No.	Part No.	Description			Remarks
*	A-6791-204-A	MA-286 BOARD, COMPLETE (570EE)			
		**********			
*	A-6791-206-A	MA-286 BOARD, COMPLETE (720BZ)			
		**********			
*	A-6791-207-A	MA-286 BOARD, COMPLETE (720EG)			
		**********			
*	A-6791-211-A	MA-286 BOARD, COMPLETE (325)			
		**********			
*	A-6791-214-A	MA-286 BOARD, COMPLETE (475)			
		**********			
					(Ref.No.: 2,000 Series)
	1-555-110-00	CABLE, PIN			
*	3-960-273-01	SPACER, TOP END			
*	3-960-274-01	SPACER, LED			
	A-8312-814-A	PIN, LEAD, COATING			
		< CAPACITOR >			
C100	1-124-635-00	ELECT	220uF	20%	6.3V
C101	1-163-009-11	CERAMIC CHIP	0.001uF	10%	50V
C102	1-163-009-11	CERAMIC CHIP	0.001uF	10%	50V
C103	1-163-009-11	CERAMIC CHIP	0.001uF	10%	50V
C104	1-163-009-11	CERAMIC CHIP	0.001uF	10%	50V
C105	1-164-232-11	CERAMIC CHIP	0.01uF		50V
C107	1-130-489-00	MYLAR	0.033uF	5%	50V
C108	1-137-441-11	FILM	0.027uF	5%	50V
C109	1-126-157-11	ELECT	10uF	20%	16V
C130	1-163-031-11	CERAMIC CHIP	0.01uF		50V
C131	1-163-031-11	CERAMIC CHIP	0.01uF		50V
C132	1-124-589-11	ELECT	47uF	20%	16V
C134	1-124-463-00	ELECT	0.1uF	20%	50V
C160	1-163-038-91	CERAMIC CHIP	0.1uF		25V
C161	1-124-589-11	ELECT	47uF	20%	16V
C162	1-163-251-11	CERAMIC CHIP	100PF	5%	50V
C164	1-163-229-11	CERAMIC CHIP	12PF	5%	50V
C165	1-163-229-11	CERAMIC CHIP	12PF	5%	50V
C166	1-163-038-91	CERAMIC CHIP	0.1uF		25V
C167	1-124-589-11	ELECT	47uF	20%	16V
C201	1-109-982-11	CERAMIC CHIP	1uF	10%	10V
C202	1-163-809-11	CERAMIC CHIP	0.047uF	10%	25V
C204	1-163-031-11	CERAMIC CHIP	0.01uF		50V
C205	1-163-037-11	CERAMIC CHIP	0.022uF	10%	25V
C206	1-163-031-11	CERAMIC CHIP	0.01uF		50V
C207	1-163-031-11	CERAMIC CHIP	0.01uF		50V
C208	1-163-241-11	CERAMIC CHIP	39PF	5%	50V
C209	1-128-131-11	ELECT	22uF	20%	50V
C210	1-163-131-00	CERAMIC CHIP	390PF	5%	50V
C211	1-163-239-11	CERAMIC CHIP	33PF	5%	50V
C212	1-163-275-11	CERAMIC CHIP	0.001uF	5%	50V
C213	1-163-125-00	CERAMIC CHIP	220PF	5%	50V
C214	1-163-227-11	CERAMIC CHIP	10PF	0.5PF	50V
C215	1-163-031-11	CERAMIC CHIP	0.01uF		50V
					(EXCEPT 325)
C215	1-163-227-11	CERAMIC CHIP	10PF	0.5PF	50V
					(325)
C217	1-109-982-11	CERAMIC CHIP	1uF	10%	10V
C218	1-163-251-11	CERAMIC CHIP	100PF	5%	50V
C219	1-163-038-91	CERAMIC CHIP	0.1uF		25V
C220	1-109-982-11	CERAMIC CHIP	1uF	10%	10V

Ref. No.	Part No.	Description			Remarks
C221	1-163-251-11	CERAMIC CHIP	100PF	5%	50V
					(EXCEPT 325,475,720EE,720EG)
C222	1-163-038-91	CERAMIC CHIP	0.1uF		25V
					(EXCEPT 325,475,720EE,720EG)
C223	1-126-154-11	ELECT	47uF	20%	6.3V
C224	1-162-306-11	CERAMIC	0.01uF	30%	16V
C225	1-163-235-11	CERAMIC CHIP	22PF	5%	50V
C226	1-163-038-91	CERAMIC CHIP	0.1uF		25V
C228	1-126-157-11	ELECT	10uF	20%	16V
C229	1-162-306-11	CERAMIC	0.01uF	30%	16V
C230	1-124-584-00	ELECT	100uF	20%	10V
C231	1-126-157-11	ELECT	10uF	20%	16V
C232	1-109-982-11	CERAMIC CHIP	1uF	10%	10V
C233	1-109-982-11	CERAMIC CHIP	1uF	10%	10V
C234	1-163-031-11	CERAMIC CHIP	0.01uF		50V
C235	1-163-031-11	CERAMIC CHIP	0.01uF		50V
C236	1-126-160-11	ELECT	1uF	20%	50V
C237	1-163-031-11	CERAMIC CHIP	0.01uF		50V
C238	1-163-038-91	CERAMIC CHIP	0.1uF		25V
C239	1-124-584-00	ELECT	100uF	20%	10V
C240	1-109-982-11	CERAMIC CHIP	1uF	10%	10V
C241	1-163-037-11	CERAMIC CHIP	0.022uF	10%	25V
C242	1-109-982-11	CERAMIC CHIP	1uF	10%	10V
C243	1-163-031-11	CERAMIC CHIP	0.01uF		50V
C244	1-164-004-11	CERAMIC CHIP	0.1uF	10%	25V
C245	1-163-809-11	CERAMIC CHIP	0.047uF	10%	25V
C246	1-109-982-11	CERAMIC CHIP	1uF	10%	10V
C247	1-163-809-11	CERAMIC CHIP	0.047uF	10%	25V
C248	1-163-031-11	CERAMIC CHIP	0.01uF		50V
C249	1-126-154-11	ELECT	47uF	20%	6.3V
C250	1-163-038-91	CERAMIC CHIP	0.1uF		25V
C251	1-163-038-91	CERAMIC CHIP	0.1uF		25V
C252	1-164-232-11	CERAMIC CHIP	0.01uF		50V
C253	1-164-004-11	CERAMIC CHIP	0.1uF	10%	25V
C254	1-163-038-91	CERAMIC CHIP	0.1uF		25V
C255	1-163-038-91	CERAMIC CHIP	0.1uF		25V
C291	1-126-157-11	ELECT	10uF	20%	16V
					(715B,720B,720BZ)
C302	1-126-154-11	ELECT	47uF	20%	6.3V
C303	1-126-160-11	ELECT	1uF	20%	50V
					(325,475,570)
C304	1-126-160-11	ELECT	1uF	20%	50V
					(570)
C305	1-126-160-11	ELECT	1uF	20%	50V
C306	1-126-160-11	ELECT	1uF	20%	50V
C307	1-126-157-11	ELECT	10uF	20%	16V
C308	1-124-229-00	ELECT	33uF	20%	10V
C309	1-126-163-11	ELECT	4.7uF	20%	50V
C310	1-163-011-11	CERAMIC CHIP	0.0015uF	10%	50V
C311	1-163-011-11	CERAMIC CHIP	0.0015uF	10%	50V
C312	1-137-370-11	FILM	0.01uF	5%	50V
C313	1-126-157-11	ELECT	10uF	20%	16V
C314	1-164-232-11	CERAMIC CHIP	0.01uF		50V
C315	1-126-160-11	ELECT	1uF	20%	50V
C317	1-126-163-11	ELECT	4.7uF	20%	50V
C318	1-124-589-11	ELECT	47uF	20%	16V
C361	1-126-960-11	ELECT	1uF	20%	50V
					(715B,717VC,720,725)
C362	1-126-960-11	ELECT	1uF	20%	50V
					(715B,717VC,720,725)
C363	1-126-960-11	ELECT	1uF	20%	50V
					(715B,717VC,720,725)
C364	1-126-960-11	ELECT	1uF	20%	50V
					(715B,717VC,720,725)

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Ref. No.	Part No.	Description				Remarks
C367	1-126-960-11	ELECT	1uF	20%	50V	(EXCEPT 325,475,570,720EE,720EG)
C368	1-126-960-11	ELECT	1uF	20%	50V	(EXCEPT 325,475,570,720EE,720EG)
C369	1-126-964-11	ELECT	10uF	20%	50V	(715B,717VC,720,725)
C370	1-126-964-11	ELECT	10uF	20%	50V	(715B,717VC,720,725)
C371	1-126-964-11	ELECT	10uF	20%	50V	(715B,717VC,720,725)
C372	1-126-964-11	ELECT	10uF	20%	50V	(715B,717VC,720,725)
C373	1-126-964-11	ELECT	10uF	20%	50V	(715B,717VC,720,725)
C374	1-126-960-11	ELECT	1uF	20%	50V	(715B,717VC,720,725)
C375	1-137-378-11	FILM	0.22uF	5%	50V	(715B,717VC,720,725)
C376	1-137-437-11	FILM	0.0056uF	5%	50V	(715B,717VC,720,725)
C377	1-126-967-11	ELECT	47uF	20%	50V	(715B,717VC,720,725)
C378	1-126-964-11	ELECT	10uF	20%	50V	(715B,717VC,720,725)
C379	1-126-961-11	ELECT	2.2uF	20%	50V	(715B,717VC,720,725)
C380	1-126-964-11	ELECT	10uF	20%	50V	(715B,717VC,720,725)
C381	1-126-967-11	ELECT	47uF	20%	50V	(715B,717VC,720,725)
C382	1-137-437-11	FILM	0.0056uF	5%	50V	(715B,717VC,720,725)
C383	1-137-378-11	FILM	0.22uF	5%	50V	(715B,717VC,720,725)
C384	1-163-037-11	CERAMIC CHIP	0.022uF	10%	25V	(715B,717VC,720,725)
C385	1-126-933-11	ELECT	100uF	20%	16V	(715B,717VC,720,725)
C386	1-163-037-11	CERAMIC CHIP	0.022uF	10%	25V	(715B,717VC,720,725)
C387	1-126-933-11	ELECT	100uF	20%	16V	(715B,717VC,720,725)
C389	1-163-809-11	CERAMIC CHIP	0.047uF	10%	25V	(715B,717VC,720,725)
C390	1-126-160-11	ELECT	1uF	20%	50V	(715B,717VC,720,725)
C391	1-163-037-11	CERAMIC CHIP	0.022uF	10%	25V	(715B,717VC,720,725)
C500	1-163-031-11	CERAMIC CHIP	0.01uF		50V	
C501	1-124-584-00	ELECT	100uF	20%	10V	
C502	1-163-245-11	CERAMIC CHIP	56PF	5%	50V	(325,475,570,715B,720B,720BZ,720EE,720EG)
C503	1-126-160-11	ELECT	1uF	20%	50V	
C504	1-163-253-11	CERAMIC CHIP	120PF	5%	50V	
C505	1-163-245-11	CERAMIC CHIP	56PF	5%	50V	(325,475,570,715B,720B,720BZ,720EE,720EG)
C506	1-130-481-00	MYLAR	0.0068uF	5%	50V	
C507	1-124-499-11	ELECT,NONPOLAR	1uF	20%	50V	
C508	1-137-372-11	FILM	0.022uF	5%	50V	
C509	1-163-235-11	CERAMIC CHIP	22PF	5%	50V	
C510	1-163-231-11	CERAMIC CHIP	15PF	5%	50V	
C511	1-163-031-11	CERAMIC CHIP	0.01uF		50V	

Ref. No.	Part No.	Description				Remarks
C512	1-124-584-00	ELECT	100uF	20%	10V	
C513	1-163-234-11	CERAMIC CHIP	20PF	5%	50V	
C514	1-163-234-11	CERAMIC CHIP	20PF	5%	50V	
C518	1-124-465-00	ELECT	0.47uF	20%	50V	
C519	1-164-489-11	CERAMIC CHIP	0.22uF	10%	16V	
C520	1-163-038-91	CERAMIC CHIP	0.1uF		25V	(325,475,570,715B,720B,720BZ,720EE,720EG)
C540	1-163-031-11	CERAMIC CHIP	0.01uF		50V	
C541	1-126-967-11	ELECT	47uF	20%	16V	
C542	1-126-967-11	ELECT	47uF	20%	16V	
C544	1-126-935-11	ELECT	470uF	20%	6.3V	
C574	1-126-964-11	ELECT	10uF	20%	50V	(570EG,715B,717VC,720,725)
C575	1-164-004-11	CERAMIC CHIP	0.1uF	10%	25V	(715B,717VC,720,725)
C576	1-126-964-11	ELECT	10uF	20%	50V	(715B,717VC,720,725)
C577	1-126-964-11	ELECT	10uF	20%	50V	(715B,717VC,720,725)
C578	1-126-157-11	ELECT	10uF	20%	16V	(715B,717VC,720,725)
C579	1-126-157-11	ELECT	10uF	20%	16V	(715B,717VC,720,725)
C702	1-126-964-11	ELECT	10uF	20%	50V	
C704	1-163-009-11	CERAMIC CHIP	0.001uF	10%	50V	
C705	1-126-964-11	ELECT	10uF	20%	50V	
C706	1-163-031-11	CERAMIC CHIP	0.01uF		50V	
C707	1-126-933-11	ELECT	100uF	20%	16V	
C708	1-163-031-11	CERAMIC CHIP	0.01uF		50V	
C709	1-126-933-11	ELECT	100uF	20%	16V	
C710	1-163-031-11	CERAMIC CHIP	0.01uF		50V	
C711	1-126-967-11	ELECT	47uF	20%	16V	
C712	1-163-031-11	CERAMIC CHIP	0.01uF		50V	
C713	1-126-933-11	ELECT	100uF	20%	16V	
C714	1-164-004-11	CERAMIC CHIP	0.1uF	10%	25V	
C715	1-126-965-11	ELECT	22uF	20%	50V	
C730	1-126-964-11	ELECT	10uF	20%	50V	(715B,717VC,720,725)
C731	1-126-964-11	ELECT	10uF	20%	50V	(715B,717VC,720,725)
C850	1-163-038-91	CERAMIC CHIP	0.1uF		25V	(EXCEPT 570EE,720EE)
C851	1-126-157-11	ELECT	10uF	20%	16V	(EXCEPT 570EE,720EE)
C852	1-164-161-11	CERAMIC CHIP	0.0022uF	10%	100V	(EXCEPT 570EE,720EE)
C853	1-163-989-11	CERAMIC CHIP	0.033uF	10%	25V	(EXCEPT 570EE,720EE)
C855	1-164-489-11	CERAMIC CHIP	0.22uF	10%	16V	(EXCEPT 570EE,720EE)
C856	1-163-038-91	CERAMIC CHIP	0.1uF		25V	(EXCEPT 570EE,720EE)
C922	1-124-584-00	ELECT	100uF	20%	10V	(570EG,715B,717VC,720B,720BZ,720NP,720VC)
C923	1-164-004-11	CERAMIC CHIP	0.1uF	10%	25V	(570EG,715B,717VC,720B,720BZ,720NP,720VC)
C924	1-164-004-11	CERAMIC CHIP	0.1uF	10%	25V	(570EG,715B,717VC,720B,720BZ,720NP,720VC)

Ref. No.	Part No.	Description	Remarks
C925	1-164-004-11	CERAMIC CHIP 0.1uF 10% 25V	(715B,717VC,720B,720BZ,720NP,720VC)
C926	1-164-004-11	CERAMIC CHIP 0.1uF 10% 25V	(570EG,715B,717VC,720B,720BZ,720NP,720VC)
C927	1-164-004-11	CERAMIC CHIP 0.1uF 10% 25V	(570EG,715B,717VC,720B,720BZ,720NP,720VC)
C928	1-164-004-11	CERAMIC CHIP 0.1uF 10% 25V	(570EG,715B,717VC,720B,720BZ,720NP,720VC)
C930	1-126-967-11	ELECT 47uF 20% 16V	(715B,717VC,720B,720BZ,720NP,720VC)
C931	1-164-004-11	CERAMIC CHIP 0.1uF 10% 25V	(715B,717VC,720B,720BZ,720NP,720VC)
C932	1-126-933-11	ELECT 100uF 20% 16V	(715B,717VC,720B,720BZ,720NP,720VC)
C933	1-126-964-11	ELECT 10uF 20% 50V	(570EG,715B,717VC,720B,720BZ,720NP,720VC)
C934	1-126-964-11	ELECT 10uF 20% 50V	(570EG,715B,717VC,720B,720BZ,720NP,720VC)
C935	1-126-964-11	ELECT 10uF 20% 50V	(570EG,715B,717VC,720B,720BZ,720NP,720VC)
C936	1-126-964-11	ELECT 10uF 20% 50V	(715B,717VC,720B,720BZ,720NP,720VC)
C937	1-164-004-11	CERAMIC CHIP 0.1uF 10% 25V	(715B,717VC,720B,720BZ,720NP,720VC)
C938	1-164-004-11	CERAMIC CHIP 0.1uF 10% 25V	(715B,717VC,720B,720BZ,720NP,720VC)
C951	1-163-017-00	CERAMIC CHIP 0.0047uF 5% 50V	(EXCEPT 325,475,570EE,720EG,720EE)
		< CONNECTOR >	
CN101	1-506-470-11	PIN, CONNECTOR 5P	
* CN102	1-766-538-11	CONNECTOR, BOARD TO BOARD 8P	
* CN103	1-766-537-11	CONNECTOR (HMD) 5P	
* CN104	1-766-716-11	CONNECTOR, BOARD TO BOARD 3P	
CN161	1-506-470-11	PIN, CONNECTOR 5P (570)	
CN163	1-695-352-11	PIN, CONNECTOR (PC BOARD) 29P	
CN164	1-506-469-11	PIN, CONNECTOR 4P	
CN305	1-573-852-11	CONNECTOR, BOARD TO BOARD 20P	
CN306	1-766-718-11	CONNECTOR, BOARD TO BOARD 17P	
CN540	1-568-016-21	SOCKET, PIN 21P(LINE-1(TV))	
CN600	1-569-338-11	CONNECTOR, BOARD TO BOARD 19P	
CN930	1-568-016-21	SOCKET, PIN 21P(DECODER/LINE-2 IN)	(EXCEPT 325,475,570EE,720EE,720EG)
		< TRIMMER >	
CT500	1-141-334-11	CAP, TRIMMER 30PF	
		< DIODE >	
D100	8-719-048-26	DIODE GL528V1	
D107	8-719-911-19	DIODE 1SS119	
D108	8-719-200-82	DIODE 11ES2	
D131	8-719-200-82	DIODE 11ES2	
D160	8-719-200-82	DIODE 11ES2	
D301	8-719-911-19	DIODE 1SS119 (325,475,570)	
D361	8-719-911-19	DIODE 1SS119	
D501	8-719-911-19	DIODE 1SS119	
D502	8-719-911-19	DIODE 1SS119	
D503	8-719-911-19	DIODE 1SS119	
D540	8-719-109-97	DIODE RD6.8ES-B2	
D541	8-719-109-97	DIODE RD6.8ES-B2	
D542	8-719-109-97	DIODE RD6.8ES-B2 (715B,717VC,720,725)	
D543	8-719-109-97	DIODE RD6.8ES-B2	
D544	8-719-109-97	DIODE RD6.8ES-B2 (715B,717VC,720,725)	
D545	8-719-109-97	DIODE RD6.8ES-B2	
D546	8-719-109-97	DIODE RD6.8ES-B2 (715B,717VC,720,725)	
D547	8-719-109-97	DIODE RD6.8ES-B2 (715B,717VC,720,725)	
D548	8-719-109-97	DIODE RD6.8ES-B2	
D549	8-719-109-97	DIODE RD6.8ES-B2	
D551	8-719-109-97	DIODE RD6.8ES-B2	(715B,717VC,720B,720BZ,720NP,720VC)
D552	8-719-921-86	DIODE MTZJ-13	
D553	8-719-109-97	DIODE RD6.8ES-B2	
D554	8-719-109-97	DIODE RD6.8ES-B2	
D700	8-719-911-19	DIODE 1SS119	
D701	8-719-800-76	DIODE 1SS226	
D702	8-719-982-26	DIODE MTZJ-33B	
D703	8-719-109-85	DIODE RD5.1ES-B2	
D704	8-719-911-19	DIODE 1SS119	
D930	8-719-200-82	DIODE 11ES2	(715B,717VC,720B,720BZ,720NP,720VC)
D932	8-719-109-97	DIODE RD6.8ES-B2	(EXCEPT 325,475,570EE,720EE,720EG)
D933	8-719-109-97	DIODE RD6.8ES-B2	(EXCEPT 325,475,570EE,720EE,720EG)
D934	8-719-109-97	DIODE RD6.8ES-B2	(715B,717VC,720B,720BZ,720NP,720VC)
D935	8-719-109-97	DIODE RD6.8ES-B2	(EXCEPT 325,475,570EE,720EE,720EG)
D936	8-719-109-97	DIODE RD6.8ES-B2	(EXCEPT 325,475,570EE,720EE,720EG)
D937	8-719-109-97	DIODE RD6.8ES-B2	(715B,717VC,720B,720BZ,720NP,720VC)
D938	8-719-109-97	DIODE RD6.8ES-B2	(715B,717VC,720B,720BZ,720NP,720VC)
D939	8-719-109-97	DIODE RD6.8ES-B2	(715B,717VC,720B,720BZ,720NP,720VC)
D940	8-719-109-97	DIODE RD6.8ES-B2	(EXCEPT 325,475,570EE,720EE,720EG)
D941	8-719-109-97	DIODE RD6.8ES-B2	(EXCEPT 325,475,570EE,720EE,720EG)
D942	8-719-109-97	DIODE RD6.8ES-B2	(EXCEPT 325,475,570EE,720EE,720EG)
D943	8-719-109-97	DIODE RD6.8ES-B2	(EXCEPT 325,475,570EE,720EE,720EG)
D944	8-719-109-97	DIODE RD6.8ES-B2	
D945	8-719-982-09	DIODE MTZJ-T-77-4.3	(EXCEPT 325,475,570EE,720EE,720EG)
		< FILTER >	
FL540	1-236-163-11	ENCAPSULATED COMPONENT	(715B,717VC,720,725)
FL541	1-236-163-11	ENCAPSULATED COMPONENT	(715B,717VC,720,725)
FL542	1-236-163-11	ENCAPSULATED COMPONENT	(715B,717VC,720,725)
FL543	1-236-163-11	ENCAPSULATED COMPONENT	
FL544	1-236-163-11	ENCAPSULATED COMPONENT	
FL545	1-236-163-11	ENCAPSULATED COMPONENT	(715B,717VC,720,725)
FL930	1-236-163-11	ENCAPSULATED COMPONENT	(EXCEPT 325,475,570EE,720EE,720EG)
FL931	1-236-163-11	ENCAPSULATED COMPONENT	(EXCEPT 325,475,570EE,720EE,720EG)
FL932	1-236-163-11	ENCAPSULATED COMPONENT	(715B,717VC,720B,720BZ,720NP,720VC)
FL933	1-236-163-11	ENCAPSULATED COMPONENT	(715B,717VC,720B,720BZ,720NP,720VC)

Ref. No.	Part No.	Description	Remarks
		< IC >	
IC100	8-759-702-02	IC NJM062M	
IC130	8-759-353-59	IC LB1643	
IC160	8-752-880-93	IC CXP87852-008Q (325)	
IC160	8-752-880-94	IC CXP87852-009Q (475EG,570EE,720EE)	
IC160	8-752-880-95	IC CXP87852-010Q (EXCEPT 325,475,570EE,720EE)	
IC201	8-759-439-48	IC LA71511M	
IC202	8-759-439-50	IC LC89977M-TE-L	
IC291	1-801-655-11	IC SECAM MODULE (715B,720B,720BZ)	
IC360	8-759-445-21	IC TDA9603H/N2,518 (715B,717VC,720,725)	
IC361	8-759-708-05	IC NJM78L05A (715B,717VC,720,725)	
IC500	8-752-433-84	IC LC74790M-VSX8903-TLM (EXCEPT 325,475,570,720EE,720EG)	
IC500	8-759-433-86	IC LC74761M-9624-TLM (325,475,570,720EE,720EG)	
IC570	8-759-909-71	IC BA4558F (715B,717VC,720,725)	
IC850	8-759-289-73	IC SDA5649X-GEG (EXCEPT 570EE,720EE)	
IC920	8-759-438-16	IC STV6400D (570EG,715B,717VC,720B,720BZ,720NP,720VC)	
IC930	8-759-296-72	IC PQ12SZ5U (715B,717VC,720B,720BZ,720NP,720VC)	
IC931	8-759-932-64	IC BU4052BF (570EG,715B,717VC,720B,720BZ,720NP,720VC)	
		< JACK >	
J540	1-565-319-71	JACK, PIN 2P(AUDIO OUT) (715B,717VC,720,725)	
		< JUMPER RESISTOR >	
JR001	1-216-296-91	CONDUCTOR, CHIP(3216)	
JR002	1-216-296-91	CONDUCTOR, CHIP(3216)	
JR003	1-216-296-91	CONDUCTOR, CHIP(3216)	
JR004	1-216-296-91	CONDUCTOR, CHIP(3216)	
JR005	1-216-295-91	CONDUCTOR, CHIP(2012)	
JR006	1-216-296-91	CONDUCTOR, CHIP(3216)	
JR007	1-216-295-91	CONDUCTOR, CHIP(2012)	
JR008	1-216-295-91	CONDUCTOR, CHIP(2012)	
JR009	1-216-295-91	CONDUCTOR, CHIP(2012)	
JR010	1-216-295-91	CONDUCTOR, CHIP(2012)	
JR011	1-216-295-91	CONDUCTOR, CHIP(2012)	
JR012	1-216-295-91	CONDUCTOR, CHIP(2012)	
JR013	1-216-295-91	CONDUCTOR, CHIP(2012)	
JR014	1-216-295-91	CONDUCTOR, CHIP(2012)	
JR015	1-216-295-91	CONDUCTOR, CHIP(2012)	
JR016	1-216-295-91	CONDUCTOR, CHIP(2012)	
JR017	1-216-296-91	CONDUCTOR, CHIP(3216)	
JR018	1-216-295-91	CONDUCTOR, CHIP(2012)	
JR019	1-216-296-91	CONDUCTOR, CHIP(3216)	
JR020	1-216-296-91	CONDUCTOR, CHIP(3216)	
JR021	1-216-295-91	CONDUCTOR, CHIP(2012)	
JR022	1-216-295-91	CONDUCTOR, CHIP(2012)	
JR023	1-216-295-91	CONDUCTOR, CHIP(2012)	
JR024	1-216-295-91	CONDUCTOR, CHIP(2012)	
JR025	1-216-295-91	CONDUCTOR, CHIP(2012)	
JR026	1-216-296-91	CONDUCTOR, CHIP(3216)	
JR027	1-216-295-91	CONDUCTOR, CHIP(2012)	
JR028	1-216-296-91	CONDUCTOR, CHIP(3216)	
JR029	1-216-295-91	CONDUCTOR, CHIP(2012)	
JR030	1-216-296-91	CONDUCTOR, CHIP(3216)	
JR031	1-216-296-91	CONDUCTOR, CHIP(3216)	
JR032	1-216-295-91	CONDUCTOR, CHIP(2012)	
JR033	1-216-296-91	CONDUCTOR, CHIP(3216)	
JR034	1-216-295-91	CONDUCTOR, CHIP(2012)	
JR035	1-216-296-91	CONDUCTOR, CHIP(3216)	
JR036	1-216-295-91	CONDUCTOR, CHIP(2012)	
JR037	1-216-296-91	CONDUCTOR, CHIP(3216)	
JR038	1-216-296-91	CONDUCTOR, CHIP(3216)	
JR039	1-216-296-91	CONDUCTOR, CHIP(3216)	
JR040	1-216-295-91	CONDUCTOR, CHIP(2012)	
JR041	1-216-296-91	CONDUCTOR, CHIP(3216)	
JR042	1-216-296-91	CONDUCTOR, CHIP(3216)	
JR043	1-216-295-91	CONDUCTOR, CHIP(2012)	
JR044	1-216-295-91	CONDUCTOR, CHIP(2012)	
JR045	1-216-296-91	CONDUCTOR, CHIP(3216)	
JR046	1-216-296-91	CONDUCTOR, CHIP(3216)	
JR047	1-216-295-91	CONDUCTOR, CHIP(2012)	
JR048	1-216-296-91	CONDUCTOR, CHIP(3216)	
JR049	1-216-296-91	CONDUCTOR, CHIP(3216)	
JR050	1-216-295-91	CONDUCTOR, CHIP(2012)	
JR051	1-216-296-91	CONDUCTOR, CHIP(3216)	
JR052	1-216-296-91	CONDUCTOR, CHIP(3216)	
JR053	1-216-296-91	CONDUCTOR, CHIP(3216)	
JR054	1-216-296-91	CONDUCTOR, CHIP(3216)	
JR055	1-216-296-91	CONDUCTOR, CHIP(3216)	
JR056	1-216-296-91	CONDUCTOR, CHIP(3216)	
JR057	1-216-295-91	CONDUCTOR, CHIP(2012)	
JR058	1-216-296-91	CONDUCTOR, CHIP(3216)	
JR059	1-216-296-91	CONDUCTOR, CHIP(3216)	
JR060	1-216-296-91	CONDUCTOR, CHIP(3216)	
JR061	1-216-296-91	CONDUCTOR, CHIP(3216)	
JR062	1-216-296-91	CONDUCTOR, CHIP(3216)	
JR063	1-216-296-91	CONDUCTOR, CHIP(3216)	
JR064	1-216-296-91	CONDUCTOR, CHIP(3216)	
JR065	1-216-296-91	CONDUCTOR, CHIP(3216)	
JR066	1-216-296-91	CONDUCTOR, CHIP(3216)	
JR067	1-216-296-91	CONDUCTOR, CHIP(3216)	
JR068	1-216-296-91	CONDUCTOR, CHIP(3216)	
JR069	1-216-296-91	CONDUCTOR, CHIP(3216)	
JR070	1-216-296-91	CONDUCTOR, CHIP(3216)	
JR071	1-216-296-91	CONDUCTOR, CHIP(3216)	
JR072	1-216-295-91	CONDUCTOR, CHIP(2012)	
JR073	1-216-296-91	CONDUCTOR, CHIP(3216)	
JR074	1-216-296-91	CONDUCTOR, CHIP(3216)	
JR075	1-216-296-91	CONDUCTOR, CHIP(3216)	
JR076	1-216-296-91	CONDUCTOR, CHIP(3216)	
JR077	1-216-296-91	CONDUCTOR, CHIP(3216)	
JR078	1-216-296-91	CONDUCTOR, CHIP(3216)	
JR079	1-216-296-91	CONDUCTOR, CHIP(3216)	
JR080	1-216-295-91	CONDUCTOR, CHIP(2012)	
JR084	1-216-295-91	CONDUCTOR, CHIP(2012)	
		< JUMPER RESISTOR >	
JS201	1-216-295-91	CONDUCTOR, CHIP(2012)	
JS291	1-216-295-91	CONDUCTOR, CHIP(2012)(715B,720B,720BZ)	
JS292	1-216-295-91	CONDUCTOR, CHIP(2012) (EXCEPT 715B,720B,720BZ)	
JS380	1-216-295-91	CONDUCTOR, CHIP(2012) (715B,717VC,720,725)	
JS381	1-216-295-91	CONDUCTOR, CHIP(2012)(325,475,570)	

Ref. No.	Part No.	Description	Remarks
JS385	1-216-295-91	CONDUCTOR, CHIP(2012)(325,475,570)	
JS389	1-216-295-91	CONDUCTOR, CHIP(2012)	(715B,717VC,720,725)
JS390	1-216-295-91	CONDUCTOR, CHIP(2012)(325,475,570)	
JS392	1-216-295-91	CONDUCTOR, CHIP(2012)(570EG)	
JS393	1-216-296-91	CONDUCTOR, CHIP(3216)(570EG)	
JS540	1-216-296-91	CONDUCTOR, CHIP(3216)(325,475,570)	
JS541	1-216-295-91	CONDUCTOR, CHIP(2012)(325,475,570)	
JS700	1-216-296-91	CONDUCTOR, CHIP(3216)(720EE)	
JS701	1-216-295-91	CONDUCTOR, CHIP(2012)(720EE)	
JS805	1-216-295-91	CONDUCTOR, CHIP(2012)	
JS924	1-216-055-00	METAL CHIP 1.8K 5% 1/10W (570EG)	
JS925	1-216-295-91	CONDUCTOR, CHIP(2012)(570EG)	
JS930	1-216-295-91	CONDUCTOR, CHIP(2012)(570EG)	
JS931	1-216-295-91	CONDUCTOR, CHIP(2012)	(715B,720B,720BZ,720NP,720VC)
JS932	1-216-296-91	CONDUCTOR, CHIP(3216)(570EG)	
		< COIL >	
L101	1-408-982-11	INDUCTOR 100uH	
L161	1-408-970-21	INDUCTOR 10uH	
L201	1-408-977-21	INDUCTOR 39uH	
L202	1-408-982-11	INDUCTOR 100uH	
L203	1-410-330-31	INDUCTOR 22uH (715B,720B,720BZ)	
L204	1-408-970-21	INDUCTOR 10uH	
L205	1-408-982-11	INDUCTOR 100uH	
L206	1-408-970-21	INDUCTOR 10uH	
L207	1-408-970-21	INDUCTOR 10uH	
L291	1-408-982-11	INDUCTOR 100uH (715B,720B,720BZ)	
L292	1-410-328-31	INDUCTOR 10uH (715B,720B,720BZ)	
L301	1-408-982-11	INDUCTOR 100uH	
L361	1-408-982-11	INDUCTOR 100uH (715B,717VC,720,725)	
L500	1-408-982-11	INDUCTOR 100uH	
L501	1-408-982-11	INDUCTOR 100uH	
L502	1-410-506-11	INDUCTOR 5.6uH	
L503	1-410-513-11	INDUCTOR 22uH	(325,475,570,715B,720B,720BZ,720EE,720EG)
L540	1-408-982-11	INDUCTOR 100uH	
L700	1-408-982-11	INDUCTOR 100uH	
L701	1-408-962-21	INDUCTOR 2.2uH	
L702	1-408-962-21	INDUCTOR 2.2uH	
L703	1-408-962-21	INDUCTOR 2.2uH	
L930	1-408-982-11	INDUCTOR 100uH	(715B,717VC,720B,720BZ,720NP,720VC)
L931	1-408-982-11	INDUCTOR 100uH	(570EG,715B,717VC,720,725)
		< PHOTO INTERRUPTER >	
PH100	8-749-010-19	PHOTO INTERRUPTER GP3S113	
PH101	8-749-010-20	PHOTO INTERRUPTER GP3S114	
		< IC LINK >	
⚠PS130	1-533-586-31	LINK, IC 0.315A	
		< TRANSISTOR >	
Q100	8-729-025-92	PHOTO TRANSISTOR PT380F	
Q101	8-729-025-92	PHOTO TRANSISTOR PT380F	
Q102	8-729-281-53	TRANSISTOR 2SC1815-GR	
Q201	8-729-230-49	TRANSISTOR 2SC2712-YG	
Q202	8-729-230-49	TRANSISTOR 2SC2712-YG	

Ref. No.	Part No.	Description	Remarks
Q203	8-729-421-19	TRANSISTOR UN2213 (EXCEPT 325)	
Q205	8-729-421-19	TRANSISTOR UN2213 (715B,720B,720BZ)	
Q208	8-729-422-27	TRANSISTOR 2SD601A-Q	
Q209	8-729-216-22	TRANSISTOR 2SA1162-G	
Q210	8-729-422-27	TRANSISTOR 2SD601A-Q	
Q211	8-729-422-27	TRANSISTOR 2SD601A-Q	
Q291	8-729-421-19	TRANSISTOR UN2213 (715B,720B,720BZ)	
Q292	8-729-901-06	TRANSISTOR DTA144EK (715B,720B,720BZ)	
Q293	8-729-421-19	TRANSISTOR UN2213 (715B,720B,720BZ)	
Q301	8-729-422-27	TRANSISTOR 2SD601A-Q	
Q361	8-729-422-27	TRANSISTOR 2SD601A-Q	(715B,717VC,720,725)
Q362	8-729-422-27	TRANSISTOR 2SD601A-Q	(715B,717VC,720,725)
Q362	8-729-424-67	TRANSISTOR UN2216 (325,475,570)	
Q363	8-729-422-27	TRANSISTOR 2SD601A-Q	(715B,717VC,720,725)
Q364	8-729-216-22	TRANSISTOR 2SA1162-G	(715B,717VC,720,725)
Q500	8-729-216-22	TRANSISTOR 2SA1162-G	
Q501	8-729-216-22	TRANSISTOR 2SA1162-G	
Q502	8-729-216-22	TRANSISTOR 2SA1162-G	
Q505	8-729-216-22	TRANSISTOR 2SA1162-G	(325,475,570,715B,720B,720BZ,720EE,720EG)
Q506	8-729-422-27	TRANSISTOR 2SD601A-Q	(325,475,570,715B,720B,720BZ,720EE,720EG)
Q540	8-729-421-19	TRANSISTOR UN2213	
Q541	8-729-901-06	TRANSISTOR DTA144EK	
Q542	8-729-216-22	TRANSISTOR 2SA1162-G	
Q571	8-729-422-27	TRANSISTOR 2SD601A-Q	(570EG,715B,717VC,720,725)
Q702	8-729-027-56	TRANSISTOR DTC143TKA-T146	
Q703	8-729-216-22	TRANSISTOR 2SA1162-G	
Q704	8-729-421-19	TRANSISTOR UN2213	
Q705	8-729-216-22	TRANSISTOR 2SA1162-G	
Q707	8-729-173-38	TRANSISTOR 2SA733-K	
Q708	8-729-012-31	TRANSISTOR 2SC4040-TL2-Q	
Q709	8-729-421-19	TRANSISTOR UN2213	
Q710	8-729-216-22	TRANSISTOR 2SA1162-G	
Q730	8-729-027-56	TRANSISTOR DTC143TKA-T146	(715B,717VC,720,725)
Q731	8-729-027-56	TRANSISTOR DTC143TKA-T146	(715B,717VC,720,725)
Q850	8-729-216-22	TRANSISTOR 2SA1162-G	(EXCEPT 570EE,720EE)
Q930	8-729-421-19	TRANSISTOR UN2213	(570EG,715B,717VC,720B,720BZ,720NP,720VC)
Q931	8-729-421-19	TRANSISTOR UN2213	(570EG,715B,717VC,720B,720BZ,720NP,720VC)
Q932	8-729-216-22	TRANSISTOR 2SA1162-G	(715B,717VC,720B,720BZ,720NP,720VC)
		< RESISTOR >	
R100	1-249-400-11	CARBON 39 5% 1/4W F	
R101	1-249-400-11	CARBON 39 5% 1/4W F	
R102	1-249-421-11	CARBON 2.2K 5% 1/4W F	
R103	1-216-107-00	METAL CHIP 270K 5% 1/10W	
R104	1-247-889-00	CARBON 270K 5% 1/4W	

Note : The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety.
Replace only with part number specified.

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Ref. No.	Part No.	Description			Remarks
R105	1-249-413-11	CARBON	470	5%	1/4W F
R106	1-216-089-91	METAL GLAZE	47K	5%	1/10W
R107	1-216-089-91	METAL GLAZE	47K	5%	1/10W
R108	1-216-295-91	CONDUCTOR, CHIP(2012)			
R109	1-249-421-11	CARBON	2.2K	5%	1/4W F
R110	1-249-421-11	CARBON	2.2K	5%	1/4W F
R111	1-216-103-00	METAL CHIP	180K	5%	1/10W
R112	1-249-436-11	CARBON	39K	5%	1/4W
R113	1-216-073-00	METAL CHIP	10K	5%	1/10W
R114	1-216-073-00	METAL CHIP	10K	5%	1/10W
R115	1-216-089-91	METAL GLAZE	47K	5%	1/10W
R116	1-216-089-91	METAL GLAZE	47K	5%	1/10W
R117	1-216-089-91	METAL GLAZE	47K	5%	1/10W
R118	1-216-089-91	METAL GLAZE	47K	5%	1/10W
R130	1-216-089-91	METAL GLAZE	47K	5%	1/10W
R131	1-216-081-00	METAL CHIP	22K	5%	1/10W
R132	1-216-065-00	METAL CHIP	4.7K	5%	1/10W
R133	1-216-073-00	METAL CHIP	10K	5%	1/10W
R160	1-216-065-00	METAL CHIP	4.7K	5%	1/10W
R161	1-216-065-00	METAL CHIP	4.7K	5%	1/10W
R162	1-216-089-91	METAL GLAZE	47K	5%	1/10W
R163	1-216-073-00	METAL CHIP	10K	5%	1/10W
R164	1-216-089-91	METAL GLAZE	47K	5%	1/10W
R165	1-216-041-00	METAL CHIP	470	5%	1/10W
R166	1-216-041-00	METAL CHIP	470	5%	1/10W
R167	1-216-049-91	METAL GLAZE	1K	5%	1/10W
R168	1-216-025-91	METAL GLAZE	100	5%	1/10W
R169	1-216-025-91	METAL GLAZE	100	5%	1/10W
R170	1-216-025-91	METAL GLAZE	100	5%	1/10W
R171	1-216-025-91	METAL GLAZE	100	5%	1/10W
R172	1-216-073-00	METAL CHIP	10K	5%	1/10W
R173	1-216-073-00	METAL CHIP	10K	5%	1/10W
R174	1-216-041-00	METAL CHIP	470	5%	1/10W
R175	1-216-041-00	METAL CHIP	470	5%	1/10W
R176	1-216-073-00	METAL CHIP	10K	5%	1/10W
R177	1-216-057-00	METAL CHIP	2.2K	5%	1/10W
R179	1-216-073-00	METAL CHIP	10K	5%	1/10W
R180	1-216-089-91	METAL GLAZE	47K	5%	1/10W
R181	1-216-097-91	METAL GLAZE	100K	5%	1/10W
R182	1-249-417-11	CARBON	1K	5%	1/4W F
R183	1-249-388-11	CARBON	3.9	5%	1/6W F
R184	1-249-388-11	CARBON	3.9	5%	1/6W F
R185	1-249-388-11	CARBON	3.9	5%	1/6W F
R186	1-249-413-11	CARBON	470	5%	1/4W F
R187	1-249-413-11	CARBON	470	5%	1/4W F
R201	1-216-041-00	METAL CHIP	470	5%	1/10W
R202	1-216-069-00	METAL CHIP	6.8K	5%	1/10W
R203	1-216-049-91	METAL GLAZE	1K	5%	1/10W
R204	1-216-047-91	METAL GLAZE	820	5%	1/10W
R205	1-216-037-00	METAL CHIP	330	5%	1/10W
R206	1-216-037-00	METAL CHIP	330	5%	1/10W
R207	1-216-073-00	METAL CHIP	10K	5%	1/10W
R208	1-216-069-00	METAL CHIP	6.8K	5%	1/10W
R210	1-216-295-91	CONDUCTOR, CHIP(2012)			
R218	1-216-065-00	METAL CHIP	4.7K	5%	1/10W
R219	1-216-053-00	METAL CHIP	1.5K	5%	1/10W
R220	1-216-039-00	METAL CHIP	390	5%	1/10W
					(325)
R222	1-216-051-00	METAL CHIP	1.2K	5%	1/10W
R223	1-249-401-11	CARBON	47	5%	1/4W F
R224	1-249-401-11	CARBON	47	5%	1/4W F
			(EXCEPT 325,475,720EE,720EG)		

Ref. No.	Part No.	Description			Remarks
R225	1-216-017-91	METAL GLAZE	47	5%	1/10W
R228	1-216-057-00	METAL CHIP	2.2K	5%	1/10W
R229	1-216-055-00	METAL CHIP	1.8K	5%	1/10W
R230	1-216-045-00	METAL CHIP	680	5%	1/10W
R231	1-216-071-00	METAL CHIP	8.2K	5%	1/10W
R233	1-216-055-00	METAL CHIP	1.8K	5%	1/10W
R235	1-216-073-00	METAL CHIP	10K	5%	1/10W
R236	1-216-049-91	METAL GLAZE	1K	5%	1/10W
R239	1-216-057-00	METAL CHIP	2.2K	5%	1/10W
R240	1-216-049-91	METAL GLAZE	1K	5%	1/10W
R243	1-216-061-00	METAL CHIP	3.3K	5%	1/10W
					(EXCEPT 325)
R291	1-216-073-00	METAL CHIP	10K	5%	1/10W
					(715B,720B,720BZ)
R292	1-216-073-00	METAL CHIP	10K	5%	1/10W
					(715B,720B,720BZ)
R293	1-216-073-00	METAL CHIP	10K	5%	1/10W
					(715B,720B,720BZ)
R301	1-216-065-00	METAL CHIP	4.7K	5%	1/10W
					(325,475,570EE)
R301	1-216-295-91	CONDUCTOR, CHIP(2012)			
					(EXCEPT 325,475,570EE)
R302	1-216-067-00	METAL CHIP	5.6K	5%	1/10W
R303	1-216-079-00	METAL CHIP	18K	5%	1/10W
					(325,475,570)
R304	1-216-069-00	METAL CHIP	6.8K	5%	1/10W
					(570)
R305	1-216-069-00	METAL CHIP	6.8K	5%	1/10W
					(325,475,570)
R306	1-216-073-00	METAL CHIP	10K	5%	1/10W
R307	1-216-061-00	METAL CHIP	3.3K	5%	1/10W
R308	1-216-067-00	METAL CHIP	5.6K	5%	1/10W
					(570)
R309	1-216-067-00	METAL CHIP	5.6K	5%	1/10W
R310	1-216-129-00	METAL CHIP	2.2M	5%	1/10W
R311	1-216-051-00	METAL CHIP	1.2K	5%	1/10W
R312	1-216-079-00	METAL CHIP	18K	5%	1/10W
R313	1-216-109-00	METAL CHIP	330K	5%	1/10W
R314	1-216-035-00	METAL CHIP	270	5%	1/10W
R315	1-216-069-00	METAL CHIP	6.8K	5%	1/10W
R316	1-216-073-00	METAL CHIP	10K	5%	1/10W
R318	1-216-075-00	METAL CHIP	12K	5%	1/10W
R320	1-216-047-91	METAL GLAZE	820	5%	1/10W
R330	1-249-438-11	CARBON	56K	5%	1/4W
					(325,475,570)
R330	1-249-439-11	CARBON	68K	5%	1/4W
					(715B,717VC,720,725)
R331	1-249-438-11	CARBON	56K	5%	1/4W
					(570)
R332	1-249-439-11	CARBON	68K	5%	1/4W
					(325,475,570)
R361	1-216-033-00	METAL CHIP	220	5%	1/10W
R362	1-216-033-00	METAL CHIP	220	5%	1/10W
					(715B,717VC,720,725)
R363	1-216-033-00	METAL CHIP	220	5%	1/10W
					(715B,717VC,720,725)
R364	1-216-049-91	METAL GLAZE	1K	5%	1/10W
					(715B,717VC,720,725)
R365	1-216-049-91	METAL GLAZE	1K	5%	1/10W
					(715B,717VC,720,725)
R366	1-216-049-91	METAL GLAZE	1K	5%	1/10W
					(715B,717VC,720,725)
R367	1-216-049-91	METAL GLAZE	1K	5%	1/10W
					(715B,717VC,720,725)
R368	1-216-133-00	METAL CHIP	3.3M	5%	1/10W
					(715B,717VC,720,725)

Ref. No.	Part No.	Description				Remarks
R369	1-216-689-11	METAL CHIP	39K	0.5%	1/10W	
						(715B,717VC,720,725)
R370	1-216-061-00	METAL CHIP	3.3K	5%	1/10W	
						(715B,717VC,720,725)
R371	1-208-820-11	METAL GLAZE	39K	0.50%	1/10W	
						(715B,717VC,720,725)
R372	1-216-061-00	METAL CHIP	3.3K	5%	1/10W	
						(715B,717VC,720,725)
R373	1-216-689-11	METAL CHIP	39K	0.5%	1/10W	
						(715B,717VC,720,725)
R374	1-216-295-91	CONDUCTOR, CHIP(2012)				
						(715B,717VC,720,725)
R375	1-216-049-91	METAL GLAZE	1K	5%	1/10W	
						(715B,717VC,720,725)
R376	1-216-097-91	METAL GLAZE	100K	5%	1/10W	
						(715B,717VC,720,725)
R377	1-216-097-91	METAL GLAZE	100K	5%	1/10W	
						(715B,717VC,720,725)
R378	1-216-083-00	METAL CHIP	27K	5%	1/10W	
						(715B,717VC,720,725)
R379	1-216-073-00	METAL CHIP	10K	5%	1/10W	
						(715B,717VC,720,725)
R382	1-216-081-00	METAL CHIP	22K	5%	1/10W	
						(715B,717VC,720,725)
R383	1-216-081-00	METAL CHIP	22K	5%	1/10W	
						(715B,717VC,720,725)
R384	1-216-081-00	METAL CHIP	22K	5%	1/10W	
						(EXCEPT 325,475,570,720EE,720EG)
R385	1-216-081-00	METAL CHIP	22K	5%	1/10W	
						(EXCEPT 325,475,570,720EE,720EG)
R386	1-216-295-91	CONDUCTOR, CHIP(2012)				
						(715B,717VC,720,725)
R387	1-216-295-91	CONDUCTOR, CHIP(2012)				
						(715B,717VC,720,725)
R388	1-216-295-91	CONDUCTOR, CHIP(2012)				
						(715B,717VC,720,725)
R389	1-216-049-91	METAL GLAZE	1K	5%	1/10W	
						(715B,717VC,720,725)
R399	1-216-049-91	METAL GLAZE	1K	5%	1/10W	
						(715B,717VC,720,725)
R500	1-216-041-00	METAL CHIP	470	5%	1/10W	
						(570EG,715B,717VC,720B,720BZ,720NP,720VC)
R500	1-216-049-91	METAL GLAZE	1K	5%	1/10W	
						(325,475,570EE,720EE,720EG,720EX,720NC,720UX,720VP,725NC)
R501	1-216-057-00	METAL CHIP	2.2K	5%	1/10W	
R502	1-216-057-00	METAL CHIP	2.2K	5%	1/10W	
R504	1-216-049-91	METAL GLAZE	1K	5%	1/10W	
						(325,475,570,715B,720B,720BZ,720EE,720EG)
R505	1-216-053-00	METAL CHIP	1.5K	5%	1/10W	
R506	1-216-069-00	METAL CHIP	6.8K	5%	1/10W	
R507	1-216-049-91	METAL GLAZE	1K	5%	1/10W	
R508	1-216-049-91	METAL GLAZE	1K	5%	1/10W	
R509	1-249-437-11	CARBON	47K	5%	1/4W	
R510	1-249-425-11	CARBON	4.7K	5%	1/4W	F
R511	1-216-089-91	METAL GLAZE	47K	5%	1/10W	
R512	1-216-089-91	METAL GLAZE	47K	5%	1/10W	
R513	1-216-089-91	METAL GLAZE	47K	5%	1/10W	
R514	1-216-295-91	CONDUCTOR, CHIP(2012)				
R516	1-216-041-00	METAL CHIP	470	5%	1/10W	
						(570EG,715B,717VC,720B,720BZ,720NP,720VC)
R516	1-216-295-91	CONDUCTOR, CHIP(2012)				
						(325,475,570EE,720EE,720EG,720EX,720NC,720UX,720VP,725NC)
R517	1-247-863-91	CARBON	22K	5%	1/4W	
R518	1-216-097-91	METAL GLAZE	100K	5%	1/10W	
R520	1-216-049-91	METAL GLAZE	1K	5%	1/10W	
						(325,475,570,715B,720B,720BZ,720EE,720EG)

Ref. No.	Part No.	Description				Remarks
R521	1-216-025-91	METAL GLAZE	100	5%	1/10W	
						(325,475,570,715B,720B,720BZ,720EE,720EG)
R522	1-216-049-91	METAL GLAZE	1K	5%	1/10W	
						(325,475,570,715B,720B,720BZ,720EE,720EG)
R540	1-249-403-11	CARBON	68	5%	1/4W	F
R541	1-216-065-00	METAL CHIP	4.7K	5%	1/10W	
R542	1-216-037-00	METAL CHIP	330	5%	1/10W	
R544	1-249-408-11	CARBON	180	5%	1/4W	F
R545	1-216-295-91	CONDUCTOR, CHIP(2012)				
R547	1-249-407-11	CARBON	150	5%	1/4W	F
R548	1-216-049-91	METAL GLAZE	1K	5%	1/10W	
R549	1-216-022-00	METAL CHIP	75	5%	1/10W	
R550	1-216-041-00	METAL CHIP	470	5%	1/10W	
R551	1-216-041-00	METAL CHIP	470	5%	1/10W	
						(715B,717VC,720,725)
R552	1-216-041-00	METAL CHIP	470	5%	1/10W	
R553	1-216-041-00	METAL CHIP	470	5%	1/10W	
R555	1-216-065-00	METAL CHIP	4.7K	5%	1/10W	
						(715B,717VC,720,725)
R559	1-216-065-00	METAL CHIP	4.7K	5%	1/10W	
						(715B,717VC,720,725)
R571	1-216-075-00	METAL CHIP	12K	5%	1/10W	
						(570EG,715B,717VC,720,725)
R572	1-216-079-00	METAL CHIP	18K	5%	1/10W	
						(570EG,715B,717VC,720,725)
R573	1-249-438-11	CARBON	56K	5%	1/4W	
						(715B,717VC,720,725)
R574	1-216-091-00	METAL CHIP	56K	5%	1/10W	
						(715B,717VC,720,725)
R575	1-216-055-00	METAL CHIP	1.8K	5%	1/10W	
						(570EG,715B,717VC,720,725)
R700	1-216-057-00	METAL CHIP	2.2K	5%	1/10W	
R701	1-216-049-91	METAL GLAZE	1K	5%	1/10W	
R702	1-216-073-00	METAL CHIP	10K	5%	1/10W	
R704	1-216-025-91	METAL GLAZE	100	5%	1/10W	
R707	1-216-083-00	METAL CHIP	27K	5%	1/10W	
						(EXCEPT 715B,720B,720BZ)
R707	1-216-105-91	METAL GLAZE	220K	5%	1/10W	
						(715B,720B,720BZ)
R708	1-216-021-00	METAL CHIP	68	5%	1/10W	
R710	1-216-295-91	CONDUCTOR, CHIP(2012)				
R711	1-216-089-91	METAL GLAZE	47K	5%	1/10W	
R712	1-216-025-91	METAL GLAZE	100	5%	1/10W	
R717	1-216-081-00	METAL CHIP	22K	5%	1/10W	
R718	1-249-417-11	CARBON	1K	5%	1/4W	F
R720	1-216-049-91	METAL GLAZE	1K	5%	1/10W	
R721	1-216-025-91	METAL GLAZE	100	5%	1/10W	
R722	1-216-025-91	METAL GLAZE	100	5%	1/10W	
R723	1-216-049-91	METAL GLAZE	1K	5%	1/10W	
R724	1-216-049-91	METAL GLAZE	1K	5%	1/10W	
R725	1-216-037-00	METAL CHIP	330	5%	1/10W	
R726	1-216-073-00	METAL CHIP	10K	5%	1/10W	
R727	1-249-417-11	CARBON	1K	5%	1/4W	F
R731	1-249-413-11	CARBON	470	5%	1/4W	F
						(715B,717VC,720,725)
R732	1-216-049-91	METAL GLAZE	1K	5%	1/10W	
						(715B,720B,720BZ)
R733	1-249-413-11	CARBON	470	5%	1/4W	F
						(715B,717VC,720,725)

Ref. No.	Part No.	Description	Remarks
R734	1-216-049-91	METAL GLAZE 1K 5% 1/10W	(715B,720B,720BZ,720EE,720EG)
R850	1-216-025-91	METAL GLAZE 100 5% 1/10W	(EXCEPT 570EE,720EE)
R851	1-216-079-00	METAL CHIP 18K 5% 1/10W	(EXCEPT 570EE,720EE)
R852	1-216-083-00	METAL CHIP 27K 5% 1/10W	(EXCEPT 570EE,720EE)
R853	1-216-049-91	METAL GLAZE 1K 5% 1/10W	(EXCEPT 570EE,720EE)
R856	1-216-097-91	METAL GLAZE 100K 5% 1/10W	(EXCEPT 570EE,720EE)
R857	1-216-069-00	METAL CHIP 6.8K 5% 1/10W	(EXCEPT 570EE,720EE)
R858	1-216-069-00	METAL CHIP 6.8K 5% 1/10W	(EXCEPT 570EE,720EE)
R859	1-216-123-11	METAL CHIP 1.2M 5% 1/10W	(EXCEPT 570EE,720EE)
R860	1-216-123-11	METAL CHIP 1.2M 5% 1/10W	(EXCEPT 570EE,720EE)
R861	1-216-117-00	METAL CHIP 680K 5% 1/10W	(EXCEPT 570EE,720EE)
R862	1-216-057-00	METAL CHIP 2.2K 5% 1/10W	(EXCEPT 570EE,720EE)
R930	1-216-073-00	METAL CHIP 10K 5% 1/10W	(570EG,715B,717VC,720B,720BZ,720NP,720VC)
R931	1-216-097-91	METAL GLAZE 100K 5% 1/10W	(715B,717VC,720B,720BZ,720NP,720VC)
R932	1-216-097-91	METAL GLAZE 100K 5% 1/10W	(715B,717VC,720B,720BZ,720NP,720VC)
R933	1-216-073-00	METAL CHIP 10K 5% 1/10W	(570EG,715B,717VC,720B,720BZ,720NP,720VC)
R934	1-216-073-00	METAL CHIP 10K 5% 1/10W	(570EG,715B,717VC,720B,720BZ,720NP,720VC)
R936	1-216-025-91	METAL GLAZE 100 5% 1/10W	(570EG,715B,717VC,720B,720BZ,720NP,720VC)
R938	1-216-053-00	METAL CHIP 1.5K 5% 1/10W	(715B,717VC,720B,720BZ,720NP,720VC)
R939	1-216-022-00	METAL CHIP 75 5% 1/10W	(EXCEPT 325,475,570EE,720EE,720EG)
R940	1-216-049-91	METAL GLAZE 1K 5% 1/10W	(715B,717VC,720B,720BZ,720NP,720VC)
R941	1-216-022-00	METAL CHIP 75 5% 1/10W	(715B,717VC,720B,720BZ,720NP,720VC)
R943	1-216-085-00	METAL CHIP 33K 5% 1/10W	(715B,717VC,720B,720BZ,720NP,720VC)
R944	1-216-089-91	METAL GLAZE 47K 5% 1/10W	(715B,717VC,720B,720BZ,720NP,720VC)
R945	1-216-041-00	METAL CHIP 470 5% 1/10W	(EXCEPT 325,475,570EE,720EE,720EG)
R946	1-216-041-00	METAL CHIP 470 5% 1/10W	(EXCEPT 325,475,570EE,720EE,720EG)
R947	1-216-041-00	METAL CHIP 470 5% 1/10W	(715B,717VC,720B,720BZ,720NP,720VC)
R948	1-216-041-00	METAL CHIP 470 5% 1/10W	(715B,717VC,720B,720BZ,720NP,720VC)
R949	1-216-073-00	METAL CHIP 10K 5% 1/10W	(715B,717VC,720B,720BZ,720NP,720VC)
R950	1-216-073-00	METAL CHIP 10K 5% 1/10W	(570EG,715B,717VC,720B,720BZ,720NP,720VC)
R951	1-216-295-91	CONDUCTOR, CHIP(2012)	(EXCEPT 325,475,570EE,720EE,720EG)

Ref. No.	Part No.	Description	Remarks
		< MODULATOR >	
RFU700	1-475-058-11	MODULATOR, RF(RFU-2110)	(715B,720B,720BZ)
RFU700	1-475-059-11	MODULATOR, RF(RFU-2101)	(717VC,720EG,720EX,720NC,720NP,720UX,720VC,720VP,725NC)
		< SWITCH >	
S100	1-570-953-11	SWITCH, PUSH (1 KEY)	(CASSETTE IN/REC PROOF)
S160	1-571-588-11	SWITCH, SLIDE(NTSC PB)	
S700	1-571-588-11	SWITCH, SLIDE(RF MODULATOR ON/OFF)	
		< TUNER >	
TU701	1-693-359-11	TUNER, MODULATOR IF (570EE,720EE)	
TU701	1-693-360-11	TUNER, MODULATOR IF (325,475,570EG)	
TU703	1-693-361-11	TUNER, IF(BTF-3WC425)(720EG)	
TU703	1-693-362-11	TUNER, IF(BTF-3WC443)(720BZ)	
TU703	1-693-364-11	TUNER, IF(BTF-3WC444)(715B,720B)	
TU703	1-693-365-11	TUNER, IF(BTF-3WC433)(720EX)	
TU703	1-693-366-11	TUNER, IF(BTF-3WU602)(720UX)	
TU703	1-693-367-11	TUNER, IF(BTF-3WC412)(720NC,720NP,725NC)	
TU703	1-693-368-11	TUNER, IF(BTF-3WC402)(717VC,720VC,720VP)	
		< VIBRATOR >	
X160	1-760-494-11	VIBRATOR, CRYSTAL 16MHz	
X201	1-579-608-11	VIBRATOR, CRYSTAL 4.43MHz	
X500	1-577-289-11	VIBRATOR, CRYSTAL 17.734475MHz	
*	A-6791-186-A	PS-385 BOARD, COMPLETE	
		**********	(Ref.No.: 5,000 Series)
	3-970-608-21	SUMITITE (B3), +BV	
		< CAPACITOR >	
⚠C600	1-117-617-11	FILM 0.22uF 20% 275V	
⚠C601	1-117-616-11	FILM 0.1uF 20% 275V	
⚠C602	1-113-915-11	CERAMIC 0.001uF 20% 250V	
⚠C603	1-113-915-11	CERAMIC 0.001uF 20% 250V	
⚠C604	1-113-915-11	CERAMIC 0.001uF 20% 250V	
⚠C605	1-113-915-11	CERAMIC 0.001uF 20% 250V	
⚠C606	1-113-915-11	CERAMIC 0.001uF 20% 250V	
C607	1-117-615-11	ELECT 68uF 20% 400V	
C608	1-126-963-11	ELECT 4.7uF 20% 50V	
C609	1-130-491-00	MYLAR 0.047uF 5% 50V	
C612	1-130-491-00	MYLAR 0.047uF 5% 50V	
C613	1-115-741-11	ELECT 0.0022F 20% 10V	
C615	1-111-042-11	ELECT 0.0012F 20% 16V	
C616	1-136-165-00	MYLAR 0.1uF 10% 50V	
C617	1-126-935-11	ELECT 470uF 20% 16V	
C618	1-126-926-11	ELECT 1000uF 20% 10V	
C619	1-126-934-11	ELECT 220uF 20% 16V	
C621	1-126-967-11	ELECT 47uF 20% 16V	
C624	1-126-934-11	ELECT 220uF 20% 16V	
C625	1-128-551-11	ELECT 22uF 20% 25V	

Note : The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety. Replace only with part number specified.

Ref. No.	Part No.	Description			Remarks
C626	1-126-933-11	ELECT	100uF	20%	16V
C627	1-126-967-11	ELECT	47uF	20%	50V
C628	1-128-551-11	ELECT	22uF	20%	25V
C629	1-126-924-11	ELECT	330uF	20%	10V
C630	1-126-924-11	ELECT	330uF	20%	10V
C633	1-111-084-11	ELECT	220uF	20%	35V
C634	1-126-949-11	ELECT	220uF	20%	35V
C636	1-126-968-11	ELECT	100uF	20%	50V
C637	1-162-134-11	CERAMIC	470PF	10%	2KV
		< CONNECTOR >			
CN600	1-580-230-11	PIN, CONNECTOR (PC BOARD) 2P			
CN601	1-569-341-11	CONNECTOR, BOARD TO BOARD 19P			
		< DIODE >			
D600	8-719-051-93	DIODE DF06M-6031			
D602	8-719-975-89	DIODE ERA15-02TP3			
D603	8-719-981-97	DIODE MTZJ-3.0A			
D604	8-719-991-33	DIODE 1SS133T-77			
D605	8-719-043-76	DIODE AK04V0			
D606	1-809-649-11	DIODE RK44LF-L1			
D607	8-719-313-17	DIODE AU02A-V0			
D608	8-719-510-73	DIODE S3L20UF4			
D609	8-719-313-17	DIODE AU02A-V0			
D610	8-719-059-64	DIODE RD16F-T8B2			
D612	8-719-911-19	DIODE 1SS119			
D613	8-719-109-85	DIODE RD5.1ES-B2			
D614	8-719-911-19	DIODE 1SS119			
		< TERMINAL BOARD >			
ET600	1-537-770-21	TERMINAL BOARD, GROUND			
		< FUSE >			
⚠F600	1-533-827-11	FUSE (HOLDER TO) T2A 250V			
		< IC >			
IC601	8-759-438-18	IC PQ12RD08			
IC602	8-759-035-35	IC TL431CLPRA			
		< JUMPER RESISTOR >			
JS612	1-216-295-91	CONDUCTOR, CHIP (2012)			
		< COIL >			
L600	1-403-588-11	CIL, CHOKE	22uH		
L601	1-403-588-11	CIL, CHOKE	22uH		
L602	1-408-397-00	INDUCTOR	1uH		
L603	1-408-397-00	INDUCTOR	1uH		
L604	1-414-792-11	INDUCTOR	0uH		
		< LINE FILTER >			
LF600	1-424-485-11	FILTER, LINE			
LF601	1-409-977-11	FILTER, LINE			
LF602	1-409-977-11	FILTER, LINE			
		< PHOTOCOUPLER >			
⚠PH600	8-749-013-04	PHOTOCOUPLER MOC8104TV			

Ref. No.	Part No.	Description			Remarks
		< IC LINK >			
⚠PS600	1-532-841-21	LINK, IC 1.6A			
⚠PS601	1-532-841-21	LINK, IC 1.6A			
⚠PS602	1-533-593-11	LINK, IC 2A			
⚠PS603	1-532-841-21	LINK, IC 1.6A			
		< TRANSISTOR >			
Q600	8-729-024-00	TRANSISTOR 2SC3377-T93Q			
Q601	8-729-032-85	TRANSISTOR 2SC4231LM			
Q602	8-729-140-93	TRANSISTOR 2SB733-34			
Q603	8-729-421-22	TRANSISTOR UN2211			
Q604	8-729-018-99	TRANSISTOR 2SD2394-F			
Q605	8-729-119-77	TRANSISTOR 2SA1175-FEK			
Q607	8-729-140-96	TRANSISTOR KSC1008			
Q608	8-729-901-06	TRANSISTOR DTA144EK			
Q610	8-729-140-96	TRANSISTOR KSC1008			
Q611	8-729-901-06	TRANSISTOR DTA144EK			
Q612	8-729-421-19	TRANSISTOR UN2213			
Q613	8-729-119-79	TRANSISTOR 2SC2785-FEK			
Q614	8-729-119-77	TRANSISTOR 2SA1175-FEK			
		< RESISTOR >			
⚠R600	1-214-947-00	METAL	2.7M	1%	1/2W
R601	1-247-887-00	CARBON	220K	5%	1/4W
R602	1-247-887-00	CARBON	220K	5%	1/4W
R603	1-249-429-11	CARBON	10K	5%	1/4W
R604	1-215-885-00	METAL OXIDE	68	5%	2W F
R606	1-215-416-00	METAL	620	1%	1/6W
R607	1-247-807-31	CARBON	100	5%	1/4W
R608	1-249-404-00	CARBON	82	5%	1/4W F
R609	1-215-428-00	METAL	2K	1%	1/6W
R610	1-249-406-11	CARBON	120	5%	1/4W F
R611	1-215-425-00	METAL	1.5K	1%	1/6W
R612	1-249-421-11	CARBON	2.2K	5%	1/4W F
R613	1-249-421-11	CARBON	2.2K	5%	1/4W F
R614	1-216-089-91	METAL GLAZE	47K	5%	1/10W
R615	1-216-061-00	METAL CHIP	3.3K	5%	1/10W
R616	1-216-061-00	METAL CHIP	3.3K	5%	1/10W
R617	1-249-417-11	CARBON	1K	5%	1/4W F
R618	1-247-815-91	CARBON	220	5%	1/4W
R620	1-249-417-11	CARBON	1K	5%	1/4W F
R621	1-216-363-00	METAL OXIDE	0.33	5%	2W F
R622	1-216-089-91	METAL GLAZE	47K	5%	1/10W
R623	1-216-073-00	METAL CHIP	10K	5%	1/10W
R624	1-216-089-91	METAL GLAZE	47K	5%	1/10W
R625	1-216-089-91	METAL GLAZE	47K	5%	1/10W
R626	1-247-815-91	CARBON	220	5%	1/4W
R627	1-249-421-11	CARBON	2.2K	5%	1/4W F
		< TRANSFORMER >			
T600	1-431-167-11	TRANSFORMER, RCC CONVERTER			

Note : The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety.
Replace only with part number specified.

RP-217

Ref. No.	Part No.	Description			Remarks
*	A-6791-187-A	RP-217 BOARD, COMPLETE			(715B,717VC,720,725)
		**********			
*	A-6791-201-A	RP-217 BOARD, COMPLETE(570)			
		**********			
*	A-6791-212-A	RP-217 BOARD, COMPLETE(325)			
		**********			
*	A-6791-215-A	RP-217 BOARD, COMPLETE(475)			
		**********			
					(Ref.No.: 1,000 Series)
		< CAPACITOR >			
C140	1-126-960-11	ELECT	1uF	20%	50V
C141	1-163-263-11	CERAMIC CHIP	330PF	5%	50V
					(570,715B,717VC,720,725)
C141	1-163-275-11	CERAMIC CHIP	0.001uF	5%	50V
					(325,475)
C142	1-126-960-11	ELECT	1uF	20%	50V
C143	1-126-967-11	ELECT	47uF	20%	16V
C144	1-163-031-11	CERAMIC CHIP	0.01uF		50V
C145	1-163-018-00	CERAMIC CHIP	0.0056uF	5%	50V
C146	1-126-933-11	ELECT	100uF	20%	16V
C147	1-126-960-11	ELECT	1uF	20%	50V
C260	1-163-231-11	CERAMIC CHIP	15PF	5%	50V
					(EXCEPT 325)
C260	1-163-235-11	CERAMIC CHIP	22PF	5%	50V
					(325)
C261	1-163-231-11	CERAMIC CHIP	15PF	5%	50V
					(EXCEPT 325)
C264	1-163-037-11	CERAMIC CHIP	0.022uF	10%	25V
C265	1-163-037-11	CERAMIC CHIP	0.022uF	10%	25V
					(EXCEPT 325)
C266	1-163-031-11	CERAMIC CHIP	0.01uF		50V
C267	1-163-037-11	CERAMIC CHIP	0.022uF	10%	25V
C268	1-163-241-11	CERAMIC CHIP	39PF	5%	50V
					(325)
C268	1-163-243-11	CERAMIC CHIP	47PF	5%	50V
					(EXCEPT 325)
C269	1-163-241-11	CERAMIC CHIP	39PF	5%	50V
					(325)
C269	1-163-243-11	CERAMIC CHIP	47PF	5%	50V
					(EXCEPT 325)
C270	1-163-037-11	CERAMIC CHIP	0.022uF	10%	25V
C271	1-163-037-11	CERAMIC CHIP	0.022uF	10%	25V
C272	1-163-031-11	CERAMIC CHIP	0.01uF	50V	
					(325)
C272	1-163-243-11	CERAMIC CHIP	47PF	5%	50V
					(EXCEPT 325)
C273	1-163-009-11	CERAMIC CHIP	0.001uF	10%	50V(325)
C273	1-163-243-11	CERAMIC CHIP	47PF	5%	50V
					(EXCEPT 325)
C274	1-163-037-11	CERAMIC CHIP	0.022uF	10%	25V
					(EXCEPT 325)
C275	1-164-346-11	CERAMIC CHIP	1uF		16V
C276	1-163-037-11	CERAMIC CHIP	0.022uF	10%	25V
C277	1-163-037-11	CERAMIC CHIP	0.022uF	10%	25V
C278	1-163-037-11	CERAMIC CHIP	0.022uF	10%	25V
					(EXCEPT 325)
C279	1-163-037-11	CERAMIC CHIP	0.022uF	10%	25V
					(EXCEPT 325)

Ref. No.	Part No.	Description			Remarks
C280	1-124-584-00	ELECT	100uF	20%	10V
C282	1-164-232-11	CERAMIC CHIP	0.01uF		50V
C283	1-163-038-91	CERAMIC CHIP	0.1uF		25V
C284	1-163-038-91	CERAMIC CHIP	0.1uF		25V
C286	1-124-584-00	ELECT	100uF	20%	10V
C287	1-163-239-11	CERAMIC CHIP	33PF	5%	50V
C288	1-163-239-11	CERAMIC CHIP	33PF	5%	50V
C289	1-163-038-91	CERAMIC CHIP	0.1uF		25V
C290	1-164-346-11	CERAMIC CHIP	1uF		16V
C321	1-126-967-11	ELECT	47uF	20%	16V
C322	1-164-232-11	CERAMIC CHIP	0.01uF		50V
C323	1-164-232-11	CERAMIC CHIP	0.01uF		50V
C324	1-104-697-11	FILM	0.047uF	5%	100V
					(EXCEPT 570)
C324	1-137-462-11	FILM	0.018uF	5%	100V
					(570)
C331	1-126-933-11	ELECT	100uF	20%	16V
					(570)
C332	1-164-232-11	CERAMIC CHIP	0.01uF	50V	
					(570)
C334	1-163-011-11	CERAMIC CHIP	0.0015uF	10%	50V
					(570)
C335	1-104-697-11	FILM	0.047uF		100V
					(570)
C341	1-163-031-11	CERAMIC CHIP	0.01uF		50V
					(715B,717VC,720,725)
C342	1-163-031-11	CERAMIC CHIP	0.01uF		50V
					(715B,717VC,720,725)
C343	1-124-257-00	ELECT	2.2uF	20%	50V
					(715B,717VC,720,725)
C344	1-163-031-11	CERAMIC CHIP	0.01uF		50V
					(715B,717VC,720,725)
C345	1-126-160-11	ELECT	1uF	20%	50V
					(715B,717VC,720,725)
C346	1-124-584-00	ELECT	100uF	20%	10V
					(715B,717VC,720,725)
C347	1-163-031-11	CERAMIC CHIP	0.01uF		50V
					(715B,717VC,720,725)
C350	1-163-038-91	CERAMIC CHIP	0.1uF		25V
					(715B,717VC,720,725)
C351	1-163-139-00	CERAMIC CHIP	820PF	5%	50V
					(715B,717VC,720,725)
C352	1-163-031-11	CERAMIC CHIP	0.01uF		50V
					(715B,717VC,720,725)
C353	1-163-038-91	CERAMIC CHIP	0.1uF		25V
					(715B,717VC,720,725)
C356	1-163-139-00	CERAMIC CHIP	820PF	5%	50V
					(715B,717VC,720,725)
C357	1-163-031-11	CERAMIC CHIP	0.01uF		50V
					(715B,717VC,720,725)
C358	1-163-038-91	CERAMIC CHIP	0.1uF		25V
					(715B,717VC,720,725)
		< CONNECTOR >			
CN260	1-563-585-11	CONNECTOR, FLEXIBLE 8P			(325,475,570)
CN260	1-766-986-11	CONNECTOR, FFC/FPC 13P			
					(715B,717VC,720,725)
* CN261	1-564-030-00	PIN, CONNECTOR 5P			
CN271	1-573-834-11	CONNECTOR, BOARD TO BOARD 20P			
CN272	1-766-720-11	CONNECTOR, BOARD TO BOARD 17P			
CN301	1-506-481-11	PIN, CONNECTOR 2P			
CN302	1-506-485-11	PIN, CONNECTOR 6P			
* CN341	1-564-027-00	PIN, CONNECTOR 2P (715B,717VC,720,725)			

Ref. No.	Part No.	Description	Remarks
		< IC >	
IC140	8-759-438-83	IC BA6305F	
IC141	8-759-510-73	IC BA10393F-E2	
IC260	8-759-352-17	IC HA118195NT	(EXCEPT 325)
IC260	8-759-357-84	IC HA118295NT	(325)
IC301	8-759-089-84	IC BA7755AF-T1	
IC340	8-759-055-49	IC AN3327K	(715B,717VC,720,725)
		< JUMPER RESISTOR >	
JR501	1-216-296-91	CONDUCTOR, CHIP(3216)	
JR502	1-216-295-91	CONDUCTOR, CHIP(2012)	
		< JUMPER RESISTOR >	
JS331	1-216-295-91	CONDUCTOR, CHIP(2012)	(325,475,715B,717VC,720,725)
		< COIL >	
L140	1-408-982-11	INDUCTOR 100uH	
L262	1-408-970-21	INDUCTOR 10uH	
L263	1-408-982-11	INDUCTOR 100uH	
L321	1-408-982-11	INDUCTOR 100uH	
L331	1-410-687-11	INDUCTOR 1.2mH	(570)
L341	1-408-982-11	INDUCTOR 100uH	(715B,717VC,720,725)
		< IC LINK >	
⚠PS331	1-533-586-31	LINK, IC 0.315A	(570)
		< TRANSISTOR >	
Q141	8-729-901-06	TRANSISTOR DTA144EK	
Q260	8-729-230-49	TRANSISTOR 2SC2712-YG	
Q321	8-729-802-91	TRANSISTOR 2SD879	
Q331	8-729-012-31	TRANSISTOR 2SC4040-TL2-Q	(570)
Q332	8-729-900-51	TRANSISTOR DTA114TK	(570)
		< RESISTOR >	
R140	1-216-117-00	METAL CHIP 680K 5% 1/10W	
R141	1-216-037-00	METAL CHIP 330 5% 1/10W	
R142	1-216-049-91	METAL GLAZE 1K 5% 1/10W	
R143	1-216-065-00	METAL CHIP 4.7K 5% 1/10W	
R144	1-216-043-91	METAL GLAZE 560 5% 1/10W	
R145	1-216-105-91	METAL GLAZE 220K 5% 1/10W	
R147	1-208-830-11	METAL GLAZE 100K 0.50% 1/10W	
R148	1-208-830-11	METAL GLAZE 100K 0.50% 1/10W	
R149	1-208-830-11	METAL GLAZE 100K 0.50% 1/10W	
R150	1-216-065-00	METAL CHIP 4.7K 5% 1/10W	
R151	1-208-830-11	METAL GLAZE 100K 0.50% 1/10W	
R152	1-216-111-91	METAL GLAZE 390K 5% 1/10W	
R153	1-216-057-00	METAL CHIP 2.2K 5% 1/10W	
R155	1-216-065-00	METAL CHIP 4.7K 5% 1/10W	
R157	1-216-081-00	METAL CHIP 22K 5% 1/10W	
R260	1-216-041-00	METAL CHIP 470 5% 1/10W	(EXCEPT 325)
R260	1-216-045-00	METAL CHIP 680 5% 1/10W	(325)
R261	1-216-041-00	METAL CHIP 470 5% 1/10W	(EXCEPT 325)
R262	1-216-295-91	CONDUCTOR, CHIP(2012)	
R263	1-216-295-91	CONDUCTOR, CHIP(2012)	
R264	1-216-295-91	CONDUCTOR, CHIP(2012)	
R265	1-216-295-91	CONDUCTOR, CHIP(2012)	(EXCEPT 325)
R266	1-216-053-00	METAL CHIP 1.5K 5% 1/10W	(325)
R266	1-216-055-00	METAL CHIP 1.8K 5% 1/10W	(EXCEPT 325)
R267	1-216-071-00	METAL CHIP 8.2K 5% 1/10W	(EXCEPT 325)
R267	1-216-073-00	METAL CHIP 10K 5% 1/10W	(325)
R268	1-216-081-00	METAL CHIP 22K 5% 1/10W	
R269	1-216-059-00	METAL CHIP 2.7K 5% 1/10W	(EXCEPT 325)
R269	1-216-061-00	METAL CHIP 3.3K 5% 1/10W	(325)
R270	1-216-081-00	METAL CHIP 22K 5% 1/10W	
R271	1-216-049-91	METAL GLAZE 1K 5% 1/10W	
R272	1-216-081-00	METAL CHIP 22K 5% 1/10W	
R273	1-216-081-00	METAL CHIP 22K 5% 1/10W	
R274	1-216-075-00	METAL CHIP 12K 5% 1/10W	
R275	1-216-075-00	METAL CHIP 12K 5% 1/10W	
R276	1-216-049-91	METAL GLAZE 1K 5% 1/10W	
R278	1-216-025-91	METAL GLAZE 100 5% 1/10W	(325)
R317	1-216-079-00	METAL CHIP 18K 5% 1/10W	
R321	1-249-401-11	CARBON 47 5% 1/4W F	
R322	1-216-059-00	METAL CHIP 2.7K 5% 1/10W	(EXCEPT 325,570)
R322	1-216-063-91	METAL GLAZE 3.9K 5% 1/10W	(325)
R322	1-216-067-00	METAL CHIP 5.6K 5% 1/10W	(570)
R323	1-217-671-11	METAL CHIP 1 5% 1/10W	
R324	1-249-408-11	CARBON 180 5% 1/4W F	
R331	1-216-295-91	CONDUCTOR, CHIP(2012)	(570)
R332	1-216-083-00	METAL CHIP 27K 5% 1/10W	(570)
R333	1-249-394-11	CARBON 12 5% 1/4W F	(570)
R335	1-126-735-11	ELECT 10MF 20% 100V	(570)
R341	1-216-067-00	METAL CHIP 5.6K 5% 1/10W	(715B,717VC,720,725)
R342	1-216-051-00	METAL CHIP 1.2K 5% 1/10W	(715B,717VC,720,725)
R343	1-216-073-00	METAL CHIP 10K 5% 1/10W	(715B,717VC,720,725)
R344	1-216-079-00	METAL CHIP 18K 5% 1/10W	(715B,717VC,720,725)
R345	1-216-097-91	METAL GLAZE 100K 5% 1/10W	(715B,717VC,720,725)
R346	1-216-065-00	METAL CHIP 4.7K 5% 1/10W	(715B,717VC,720,725)
R347	1-216-065-00	METAL CHIP 4.7K 5% 1/10W	(715B,717VC,720,725)
R348	1-216-097-91	METAL GLAZE 100K 5% 1/10W	(715B,717VC,720,725)
R350	1-216-033-00	METAL CHIP 220 5% 1/10W	(715B,717VC,720,725)
R351	1-216-035-00	METAL CHIP 270 5% 1/10W	(715B,717VC,720,725)
R356	1-216-035-00	METAL CHIP 270 5% 1/10W	(715B,717VC,720,725)

Note : The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety.
Replace only with part number specified.

Ref. No.	Part No.	Description	Remarks
		< TRANSFORMER >	
T321	1-431-097-11	TRANSFORMER, BIAS OSCILLATION	(EXCEPT 570)
T321	1-431-100-11	TRANSFORMER, BIAS OSCILLATION	(570)
T331	1-423-415-11	TRANSFORMER, BIAS OSCILLATION	(570)
		MISCELLANEOUS	
		**********	
11	1-762-844-21	SWITCH, ROTARY	(570)
⚠15	1-782-012-11	CORD, POWER	
17	1-777-960-11	CABLE, FLAT (FFM-13) 29P	
158	1-500-144-11	HEAD, FE	
164	A-6736-105-A	ACE BLOCK ASSY	
165	1-506-485-11	PIN, CONNECTOR 6P	
203	1-759-183-11	DRUM ASSY, DZH-78A-R(M901)	(325)
203	1-759-371-11	DRUM ASSY, DZH-65A-R(M901)	(475,570)
203	1-759-373-11	DRUM ASSY, DZH-86A-R(M901)	(715B,717VC,720,725)
260	1-762-076-11	SWITCH, ROTARY	
M902	1-698-409-14	MOTOR, DC(CAPSTAN)	
M903	X-3943-883-1	MOTOR ASSY, CAM	
		ACCESSORIES & PACKING MATERIALS	
		**********	
	1-696-593-11	CORD, CONNECTION (PAL)(FOR RF)1.5m	
	1-770-019-11	ADAPTOR, CONVERSION PLUG 3P	(720EX,720UX)
	1-770-321-11	ADAPTOR, CONVERSION 6P	(720EE)
	1-770-321-21	ADAPTOR, CONVERSION 4P	(570EE)
	3-858-881-11	MANUAL, INSTRUCTION (ENGLISH)	(720EX,720UX)
	3-858-881-21	MANUAL, INSTRUCTION (FRENCH)	(720NC,720VP,725NC)
	3-858-881-31	MANUAL, INSTRUCTION (GERMAN)	(717VC,720NC,720VC,720VP,725NC)
	3-858-881-41	MANUAL, INSTRUCTION (FRENCH)	(720B,720BZ)
	3-858-881-51	MANUAL, INSTRUCTION (DUTCH)	(720NC,720VP,725NC)
	3-858-881-61	MANUAL, INSTRUCTION (ITALIAN)(720VP)	
	3-858-881-71	MANUAL, INSTRUCTION (SPANISH)(720NP)	
	3-858-881-81	MANUAL, INSTRUCTION (PORTUGUESE)	(720NP)
	3-858-882-11	MANUAL, INSTRUCTION (SWEDISH)	(720NC,725NC)
	3-858-882-21	MANUAL, INSTRUCTION (FINISH)	(720NC,725NC)
	3-858-882-31	MANUAL, INSTRUCTION (DANISH)	(720NC,725NC)
	3-858-883-11	MANUAL, INSTRUCTION (ENGLISH)(720EG)	
	3-858-883-21	MANUAL, INSTRUCTION (CZECH)(720EG)	
	3-858-883-31	MANUAL, INSTRUCTION (POLISH)(720EG)	
	3-858-883-41	MANUAL, INSTRUCTION (HUNGARIAN)(720EG)	
	3-858-883-51	MANUAL, INSTRUCTION (ENGLISH)(720EE)	
	3-858-883-61	MANUAL, INSTRUCTION (RUSSIAN)(720EE)	
	3-858-884-11	MANUAL, INSTRUCTION (ENGLISH)(570EG)	
	3-858-884-21	MANUAL, INSTRUCTION (CZECH)(570EG)	
	3-858-884-31	MANUAL, INSTRUCTION (POLISH)(570EG)	
	3-858-884-41	MANUAL, INSTRUCTION (HUNGARIAN)(570EG)	
	3-858-884-51	MANUAL, INSTRUCTION (ENGLISH)(570EE)	
	3-858-884-61	MANUAL, INSTRUCTION (RUSSIAN)(570EE)	
	3-858-885-11	MANUAL, INSTRUCTION (CZECH)(475)	
	3-858-885-21	MANUAL, INSTRUCTION (ENGLISH)(325)	
	3-858-885-31	MANUAL, INSTRUCTION (CZECH)(325)	
	3-858-885-41	MANUAL, INSTRUCTION (POLISH)(325)	
	3-858-885-51	MANUAL, INSTRUCTION (HUNGARIAN)(325)	
	3-859-420-21	MANUAL, INSTRUCTION (FRENCH)(715B)	
*	3-972-892-01	INDIVIDUAL CARTON	(720NC,720NP,720VC,720VP)
*	3-972-892-11	INDIVIDUAL CARTON(720B,720BZ)	
*	3-972-892-21	INDIVIDUAL CARTON(720EX,720UX)	
*	3-972-892-31	INDIVIDUAL CARTON(717VC)	
*	3-972-892-41	INDIVIDUAL CARTON(725NC)	
*	3-972-892-51	INDIVIDUAL CARTON(715B)	
*	3-972-893-01	CUSHION	
*	3-974-278-01	INDIVIDUAL CARTON(720EG)	
*	3-974-278-11	INDIVIDUAL CARTON(720EE)	
*	3-974-278-21	INDIVIDUAL CARTON(570EG)	
*	3-974-278-31	INDIVIDUAL CARTON(570EE)	
*	3-974-278-41	INDIVIDUAL CARTON(475)	
*	3-974-278-51	INDIVIDUAL CARTON(325)	
*	3-974-583-01	SPACER	
		**********	
		HARDWARE LIST	
		**********	
#1	7-682-547-04	SCREW +P 3X6	
#2	7-685-646-79	SCREW (3X8)	
#5	7-624-190-61	STOP RING 2.4,TYPE-CS	
#6	7-628-254-10	SCREW +PS 2.6X6	
#7	7-624-106-04	STOP RING 3.0,TYPE-E	
#8	7-682-645-01	SCREW +PS 3X4	

Note : The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety. Replace only with part number specified.

6-1. SYSTEM CONTROL — SERVO PERIPHERAL CIRCUIT INTERFACE (MA-286 BOARD IC160)

Signal	Pin No.	I/O	STOP	FF	REW	TAPE THREADING	TAPE UNTHREADING	PB	PB PAUSE	SLOW	CUE	x 2	REVIEW	REC	REC PAUSE	PB INDEX WRITING
REC CTL	MA-286 IC160 ⑦	O	*1	*1	*1	*1	*1	*1	*1	*1	*1	*1	*1	*1	*1	
CAP STOP	MA-286 IC160 ㉟	O (O.D)	L	Hi-Z (O.D)	Hi-Z (O.D)	Hi-Z (O.D)	Hi-Z (O.D)	Hi-Z (O.D)	L	*3	Hi-Z (O.D)	Hi-Z (O.D)	Hi-Z (O.D)	Hi-Z (O.D)	Hi-Z (O.D)	
STEP PLS	MA-286 IC160 ㊾	O	L	L	L	L	L	L	L	*2	L	L	L	L	L	
CTL REC	MA-286 IC160 ㉕	O	L	L	L	L	L	L	L	L	L	L	L	H	L	H
CTL INDEX	MA-286 IC160 ㊳	O	L	L	L	L	L	L	L	L	L	L	L	L	L	H
$\overline{\text{PB CTL}}$	MA-286 IC160 ㊼	I	H	*8	*8			*1	H/L	*2	*5	*6	*6	*1	H	
DRM PG	MA-286 IC160 ㊽	I	*1	*1	*1	*5	*5	*1	*1	*1	*1	*1	*1	*1	*1	
DRM FG	MA-286 IC160 ㊾	I	*1	*7	*7	*5	*5	*7	*7	*7	*7	*7	*7	*7	*7	
CAP FG	MA-286 IC160 ㊿	I	H/L	*6	*6	*5	*5	*8	H/L	*2	*6	*6	*6	*6	H/L	
CAP DA	MA-286 IC160 ⑬	O	*8	*8	*8	*8	*8	*9	*8	*8	*9	*9	*9	*9	*8	
DRM DA	MA-286 IC160 ⑭	O	*10	*10	*10	*10	*10	*10	*10	*10	*10	*10	*10	*10	*10	
CTL STEP	MA-286 IC160 ⑯	O	L	L	L	L	L	L	L	*11	L	L	L	L	L	
CTL GAIN	MA-286 IC160 ㉒	O	H	H	H	H	H	H	*12	*12	H	H	H	H	L	L
CTL RESET	MA-286 IC160 ⑧	I/O	Hi-Z	Hi-Z	Hi-Z	Hi-Z	Hi-Z	Hi-Z	Hi-Z	Hi-Z	Hi-Z	Hi-Z	*13	Hi-Z	Hi-Z	Hi-Z
REC COUNT	MA-286 IC160 ⑰	I	Hi-Z	Hi-Z	Hi-Z	Hi-Z	Hi-Z	Hi-Z	Hi-Z	Hi-Z	Hi-Z	Hi-Z	Hi-Z	Hi-Z	Hi-Z	Hi-Z

*1. 25Hz pulse.
*2. Pulse at tape running.
*3. Reverse logic pulse of STEP PLS.
*4. “L” when drum rotation stop.
*5. Unstable period pulse.
*6. Pulse of period in proportion to tape speed.
*7. 300Hz pulse.
*8. Approx. 2 msec period “H” or “L” pulse.
*9. Approx. 1.5 msec period “H” or “L” pulse.
*10. Approx. 3 msec period “H” or “L” pulse.
*11. “H” when FWD directions STEP drive.

6-2. SYSTEM CONTROL — MECHANISM INTERFACE (MA-286 BOARD IC160)

Signal	Pin No.	I/O	EJECTED	CASSETTE LOADING	CASSETTE UNLOADING	TAPE THREADING	TAPE UNTHREADING	STOP	FF	REW	PB	PB PAUSE	SLOW	x 2	CUE	REVIEW	REC	REC PAUSE
CAM2 CW	MA-286 IC160 ⑨	I/O	Hi-Z	H	L	H	L	Hi-Z	Hi-Z	Hi-Z	Hi-Z	Hi-Z	Hi-Z	Hi-Z	Hi-Z	Hi-Z	Hi-Z	Hi-Z
CAM1 V	MA-286 IC160 ⑩	I/O	Hi-Z	H	H	Hi-Z	Hi-Z	Hi-Z	Hi-Z	Hi-Z	Hi-Z	Hi-Z	Hi-Z	Hi-Z	Hi-Z	Hi-Z	Hi-Z	Hi-Z
MODE 1	MA-286 IC160 ㉒	I	H	L	L	*1	*1	H	H	H	H	H	H	H	H	L	H	H
MODE 2	MA-286 IC160 ㉑	I	L	L	L	*1	*1	L	L	L	H	H	H	H	H	H	H	H
MODE 3	MA-286 IC160 ⑳	I	L	L	L	*1	*1	H	H	H	L	H	H	L	L	H	L	H
MODE 4	MA-286 IC160 ⑲	I	L	H	H	*1	*1	H	L	L	L	L	L	L	L	L	L	L
REC PRF	MA-286 IC160 ⑮	I	L	*2	*2	*2	*2	*2	*2	*2	*2	*2	*2	*2	*2	*2	*2	*2
T REEL FG	MA-286 IC160 ⑭	I	H/L	H/L	H/L	H/L	H/L	H/L	*3	*3	*3	H/L	*3	*3	*3	*3	*3	H/L
S REEL FG	MA-286 IC160 ⑬	I	H/L	H/L	H/L	*3	*3	H/L	*3	*3	*3	H/L	*3	*3	*3	*3	*3	H/L
T/E LED	MA-286 IC160 ㉜	O (O.D)	*4	*4	*4	*4	*4	*4	*4	*4	*4	*4	*4	*4	*4	*4	*4	*4
CAP PWM	MA-286 IC160 ⑭	O (O.D)	*8	*8	*8	*8	*8	*8	*9	*9	*8	*10	*11	*8	*9	*9	*8	*10
$\overline{\text{CAP STOP}}$	MA-286 IC160 ㉟	O (O.D)	L	L	L	H	H	L	H	H	H	L	*5	H	H	H	H	L
CAP RVS	MA-286 IC160 ⑫	O	H			L	H	H/L	L	H	L	L	L/*5	L	L	H	L	L
CAP DA	MA-286 IC160 ⑬	O																
T SENS	MA-286 IC160 ⑪	I	*4	*4	*4	*7	*7	*7	*7	*7	*7	*7	*7	*7	*7	*7	*7	*7
S SENS	MA-286 IC160 ⑫	I	*4	*4	*4	*7	*7	*7	*7	*7	*7	*7	*7	*7	*7	*7	*7	*7

*1. Uncertainly.
*2. "L" when erasing protection tab is bent. "H" when not bent.
*3. Pause of period in proportion to real rotating speed.
*4. Approx. 2 msec period "H" pulse.
*5. Pulse at tape running.
*6. "L" when tape running and CAP RVS is "H".
*7. Normally "L". 2 msec period "H" pulse when tape top or tape end is detected.
*8. Captra Normal Duty pulse becomes 1.6V by LPF.
*9. Captra FR Duty pulse becomes 3.189V by LPF.
*10. Captra Denji Duty pulse becomes 0.31V by LPF.
*11. Captra Mid Duty pulse becomes 1.426V by LPF.
Captra Low Duty pulse becomes 0.684V by LPF.

6-3. SYSTEM CONTROL — SYSTEM CONTROL PERIPHERAL CIRCUIT INTERFACE (MA-286 BOARD IC160)

Signal	Pin No.	I/O	I/O Level
$\overline{\text{ASURA RESET}}$	MA-286 IC160 ㊵	I	Normally "H", "L" when service interruption is detected or restored.
$\overline{\text{ASURA CS}}$	MA-286 IC160 ㊹	I	Chip select signal from timer microprocessor. V period "L" pulse.
S IN 0	MA-286 IC160 ㊺	I	Serial communication data from timer microprocessor. V period " L" pulse.
S OUT 0	MA-286 IC160 ㊻	O	Serial communication data to timer microprocessor. V period "L" pulse.
S CLK	MA-286 IC160 ㊼	I	Serial communication clock from timer microprocessor. V period "L" pulse.

6-4. SYSTEM CONTROL — Hi-Fi AUDIO BLOCK INTERFACE (MA-286 BOARD IC160)

Signal	Pin No.	I/O	TOP/FF/REW	TAPE LOADING	TAPE UNLOADING	PB	PB PAUSE	SLOW	x 2	CUE	REVIEW	REC	REC PAUSE
AF ENV	MA-286 IC160 ㊾	I	AF RF envelope signal input terminal for automatic tracking.										
A MUTEN	MA-286 IC160 ㉛	O (O.D)	L	L	L	*1	H	H	H	H	H	L	L
AF REC $\overline{\text{P}}$	MA-286 IC160 ②	O	L	L	L	L	L	L	L	L	L	H	L
AF SWP	MA-286 IC160 ⑱	O	*1	*1	*1	*1	*1	*1	*1	*1	*1	*1	*1
FULL ERS	MA-286 IC160 ㊱	O (O.D)	H	H	H	H	H	H	H	H	H	L	H

*1. 25 Hz 50 % duty pulse approx. 5 msec delayed from RF SW P.

6-5. SERVO/SYSTEM CONTROL MICROPROCESSOR PIN FUNCTIONS (MA-286 BOARD IC160)

Pin No.	Pin Name	I/O	Function
1	RF SWP	O	RF switching pulse output.
2	AF REC $\overline{P}$	O	"H" when HiFi audio REC.
3		—	Not used.
4	QVD	O	Quasi VD pulse output.
5	AUTO PRESET	O	"H" during auto preset.
6	FE ON	O	Not used.
7	REC CTL	O	REC CTL signal output.
8	CTL RESET	O	Capstan current control. "H" during slow mode.
9	CAM 2	O	Cam motor control.
10	CAM 1	O	Cam motor 9V, 12V switch.
11	TA MUTE	O	Tuner audio mute. H: Mute
12	SECAM DET	I	"H" when the SECAM signal is detected.
13	NT JUDGE	I	4.43/3.58 judge input.
14	MESECAM	I	"H" when the MESECAM signal is detected.
15	CIN (REC PRF)	I	Erasing protection tab, cassette in detection signal input.
16	AV CONT	O	On/Off control.
17	N. C.	—	Not used.
18	SW1	O	
19	MODE 4	I	Cam encoder signal input.
20	MODE 3	I	Cam encoder signal input.
21	MODE 2	I	Cam encoder signal input.
22	MODE 1	I	Cam encoder signal input.
23	N. C.	—	Not used.
24	PAL PLUS CONT	O	
25	N. C.	—	Not used.
26	N. C.	—	Not used.
27	N. C.	—	Not used.
28	SDA 0	I/O	IIC data.
29	N. C.	—	Not used.
30	SCL 0	I/O	IIC clock.
31	A MUTE	O	"H" when audio mute.
32	T/E LED	O	Tape top/end sensors driver .
33	N. C.	—	Not used.
34	N. C.	—	Not used.
35	$\overline{\text{CAP STOP}}$	O	Capstan stop signal output.
36	$\overline{\text{FULL ERS}}$	O	Full erase control.
37	N. C.	O	Not used.
38	N. C.	O	Not used.
39	MP	I	Fixed to "L".
40	$\overline{\text{ASURA RESET}}$	I	System reset signal.
41	VSS	—	Ground.
42	XTAL	—	System clock 16MHz.
43	EXTAL	—	System clock 16MHz.
44	$\overline{\text{ASURA CS}}$	I	Servo/system control microcomputer chip select signal.
45	S IN 0	I	Serial communication signal.
46	S OUT 0	O	Serial communication signal.
47	SCLK	O	Serial communication signal.
48	N. C.	—	Not used.
49	N. C.	—	Not used.
50	N. C.	—	Not used.

Pin No.	Pin Name	I/O	Function
51	SW2	O	Tuner select switch.
52	AVSS	—	Unswitched ground.
53	AVREF	—	AD port reference input UNSW 5V.
54	AVDD	—	UNSW 5V.
55	NTPB SW	I	NTSC playback switch.
56	AV ADJ	I	Adjustment mode.
57	N. C.	—	Not used.
58	N. C.	—	Not used.
59	AF ENV	I	HiFi audio playback signal envelope.
60	RF ENV	I	Video playback signal envelope.
61	T SENS	I	Take-up end sensor.
62	S SENS	I	Supply end sensor.
63	S REEL FG	I	Supply reel FG input.
64	T REEL FG	I	Take-up reel FG input.
65		—	Not used.
66	VSYNC	I	Composite sync. signal input.
67	$\overline{\text{PB CTL}}$	I	Playback CTL input.
68	DRM PG	I	Drum PG input.
69	DRM FG	I	Drum FG input.
70	CAP FG	I	Capstan FG input.
71		—	Not used.
72	CAP RVS	O	Capstan reverse control "H" when reverse.
73	CAP DA	O	Capstan error D/A output.
74	DRM DA	O	Drum PG input.
75	CTL REC	O	"H" : CTL is recorded.
76	CTL STEP	O	CTL amp, STEP operation control.
77	REC COUNT	I	Counter signal input when recording.
78	N. C.	—	Not used.
79	N. C.	—	Not used.
80	DATA (SSB)	I/O	Serial communication data.
81	CLOCK (SSB)	I/O	Serial communication clock.
82	N.C.	—	Not used.
83	N. C.	—	Not used.
84	CAP TRQ PWM	O	PWM output for capstan torque control.
85	N. C.	I	Not used.
86	N. C.	—	Not used.
87	N. C.	—	Not used.
88	VSS	—	Ground.
89	VDD	—	5V.
90	5V	—	5V.
91	N. C.	—	Not used.
92	CTL GAIN	O	CTL amp gain control.
93	$\overline{\text{SP}}$	O	Normal audio tape speed select.
94	N. C.	—	Not used.
95	N. C.	—	Not used.
96	REC	O	"H" output when recording.
97	N. C.	—	Not used.
98	N. C.	—	Not used.
99	STEP PLS	O	Step pulse "H" when capstan stops.
100	AF SWP	O	AF switching pulse output.

6-6. TUNER/TIMER MODE CONTROL PIN FUNCTION (FR-119 BOARD IC470)

Pin No.	Pin Name	I/O	Function
1	$\overline{\text{PDC DAV}}$	I	Line 21H output pulse.
2	DMS1	I	DMS A/D input.
3	DMS2	I	DMS A/D input.
4	SIRCS IN	I	SIRCS signal input.
5	N.C.	—	Not used.
6	N.C.	—	Not used.
7	BUZZER	O	Buzzer output.
8	POWER SAVE	I	
9	LED CS	O	LED chip select. L : Active.
10	SCLK	O	Clock for serial communication.
11	SI	I	Serial data input.
12	SO	O	Serial data output.
13	H DET	O	
14	LANC IN	I	LANC input.
15	LANC OUT	O	LANC output.
16	A/D0	I	Key reading A/D input.
17	A/D1	I	Key reading A/D input.
18	A/D2	I	Key reading A/D input.
19	A/D3	I	Key reading A/D input.
20	A/D4	I	Key reading A/D input.
21	A/D5	I	Key reading A/D input.
22	A/D6	I	Key reading A/D input.
23	AFT	I	
24	AVDD	—	UNSWD 5V.
25	AV REF	—	A/D port reference input UNSW5V.
26	SCL	O	I2C bus (clock).
27	CG $\overline{\text{CS}}$	O	Character generator chip select signal.
28	SDA	O	I2C bus (data).
29	CME $\overline{\text{CS}}$	O	AV link microcomputer chip select.
30	AVSS	—	Unswitched ground.
31	EXTAL	—	System clock.
32	XTAL	—	System clock.
33	VSS	—	Ground.
34	$\overline{\text{RST}}$	I	Reset signal in.
35	PLL CLK	O	Tuner clock signal.
36	PLL DATA	O	Tuner data signal.
37	PLL ENABLE	O	Tuner enable signal.
38	N.C.	—	Not used.
39	C+ DET	I	Canal + detection.
40	N.C.	—	Not used.
41	N.C.	—	Not used.
42	POWER FAIL	O	Power failure detect sigal input.
43	VFDP	—	-30V
44	SEG16	O	LCD segment output.
45	SEG15		LCD segment output.
46	SEG14		LCD segment output.
47	SEG13		LCD segment output.
48	SEG12		LCD segment output.
49	SEG11		LCD segment output.
50	SEG10		LCD segment output.

Pin No.	Pin Name	I/O	Function
51	SEG9		LCD segment output.
52	SEG8		LCD segment output.
53	SEG7		LCD segment output.
54	SEG6		LCD segment output.
55	SEG5		LCD segment output.
56	SEG4		LCD segment output.
57	SEG3		LCD segment output.
58	SEG2		LCD segment output.
59	SEG1		LCD segment output.
60	SEG19		LCD segment output.
61	SEG18		LCD segment output.
62	SEG17		LCD segment output.
63	N.C.	—	Not used.
64	N.C.	—	Not used.
65	N.C.	—	Not used.
66	GRID6	O	LCD grid signal.
67	GRID5		LCD grid signal.
68	GRID4		LCD grid signal.
69	GRID3		LCD grid signal.
70	GRID2		LCD grid signal.
71	GRID1		LCD grid signal.
72	TDD		UNSWD 5V.
73	TX	—	Connected to oscillator for clock.
74	TEX	—	Connected to oscillator for clock.
75	NC/VPP	—	Connected to +5V.
76	ASURA $\overline{\text{CS}}$	O	Servo/System control microcomputer chip select.
77	$\overline{\text{ASURA RESET}}$	O	System reset signal output.
78	POWER CONT 1	O	Power supply control signal output.
79	POWER CONT 2	O	Power supply control signal output to EDS.
80	CG V	I	Vertical sync. signal input.

SECTION 7
ADJUSTMENTS

7-1 MECHANICAL ADJUSTMENTS

For the mechanical adjustments, please refer to the "VHS MECHANICAL ADJUSTMENT MANUAL Ⅳ (H MECHANISM)" (9-973-623-11).

7-2. ELECTRICAL ADJUSTMENTS

See the adjusting part location diagram from on page 7-6 for the adjustment.

2-1. PREPARATION BEFORE ADJUSTMENT

2-1-1. Equipment Required

The measuring instruments used for this alignment include:

1) Monitor TV
2) Oscilloscope, dual-trace, bandwidth of 30MHz or more, with delay mode (A probe 10:1 should be used unless otherwise specified.)
3) Frequency counter
4) Pattern generator
5) Digital voltmeter
6) Audio generator
7) Audio level meter
8) Audio distortion meter
9) Audio attenuator
10) Alignment tapes
    KRV-51P Part No. : 8-192-605-36

2-1-2. Equipment Connection

Unless otherwise specified, connect and adjust the measuring instruments as shown in the following diagram.

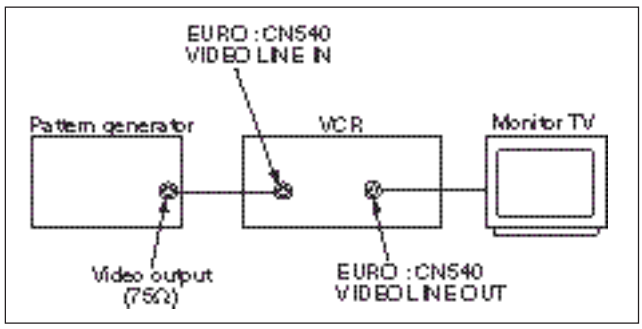


Fig. 7-2-1.

2-1-3. Input Signal Check

Video signal produced by a pattern generator is used as an adjustment signal to perform electrical alignment for this unit. This video signal must satisfy the specification.

Unless otherwise specified, place the switches and controls of this unit in the following positions:

• CHANNEL switch ..... LINE 1

Connect an oscilloscope to the Video Input terminal. Check that the synchronizing signal of the Y signal has an amplitude of approximately 0.7V and that the burst signal has an amplitude of approximately 0.3V and its waveform is flat. And check that the level ratio of burst signal to "red" signal is 0.30 : 0.66. The video signal (color bar) used for electrical aligning this unit is shown in Fig. 7-2-2.

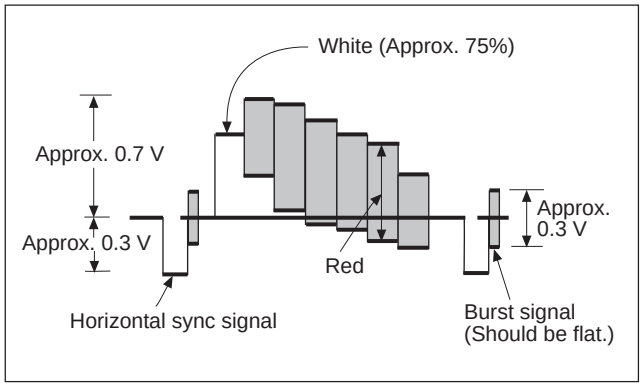


Fig. 7-2-2. Color Bar Signals of Pattern Generator

2-1-4. Alignment Tape

• Contents of KRV-51P

	Mode	Period	Video signal	Audio signal	
				Hi-Fi	Normal
1	SP	7 minutes	Color bar	400Hz (L/R)	400Hz
2		3 minutes	Monoscope		
3	LP	7 minutes	Color bar		
4		3 minutes	Monoscope		

2-1-5. Input/Output Levels and Impedance

Video input: LINE IN
EURO
Input signal: 1Vp-p, 75ohms, unbalanced, sync negative

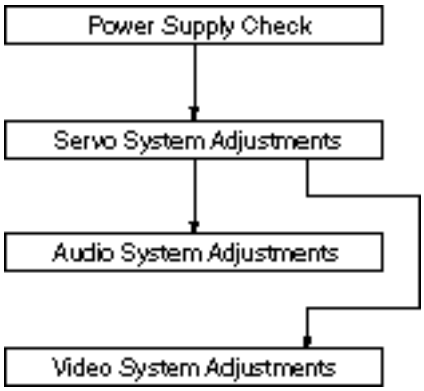
Video output: LINE OUT
EURO
Output signal: 1Vp-p, 75ohms, unbalanced, sync negative

Audio input: LINE IN
EURO
Input level: –7.5 dBs
(0dBs= 0.775Vrms)
Input impedance: more than 47 kilohms

Audio output: LINE OUT
EURO
Standard level: –7.5dBs at load impedance 47 kilohms
Output impedance: less than 10 kilohms

2-1-6. Adjustment Sequence

The adjustments should be performed in the following sequence.



2-2. POWER SUPPLY CHECK

2-2-1. Output Voltage Check (MA-286 Board)

Mode	E-E
Measuring Instrument	Digital voltmeter
SW 12V Check	
Measurement point	IC930 pin ②
Specified value	12.0 ± 0.3V
MTR12V Check	
Measurement point	CN600 Pin ⑫⑬
Specified value	12.4 ± 0.5V
SW5V Check	
Measurement point	CN600 Pin ⑰⑱
Specified value	5.0 ± 0.5V

[Check Method]

1) Each of these supply voltages must meet its specified value.

2-3. SERVO SYSTEM CHECK

Unless otherwise specified, set the switches to the following positions.

- CHANNEL switch ..... LINE
- TAPE SPEED switch ..... SP

2-3-1. RF Switching Position Adjustment (MA-286, RP-217 Boards)

[Adjustment Purpose]

To adjust the link of the A-ch and B-ch of the tape playback outputs. To make the unit compatible with other tapes and units. If this specification is not satisfied, the link will appear on the screen and the screen will be disrupted, etc.

Mode	Playback
Signal	Alignment tape: SP color bar portion
Measurement point	CH1: Video LINE OUT (EURO) CH2: CN261 pin ② (RF SWP)
Measuring instrument	Oscilloscope
Specified value	6.5 ± 0.5H (416 ± 32 µsec)

[Adjustment Method]

1) Short-circuit between CN261 pin ⑤ and pin ③ on RP-217 board for about 1 second to activate the RF switching position adjustment mode.
2) Check that "ADJ-RF" is indicated on FL display.
3) Using the channel + and – buttons, adjust to 416 ± 32µsec (6.5 ± 0.5H).
4) Press the PAUSE button.
5) Press the EJECT button.

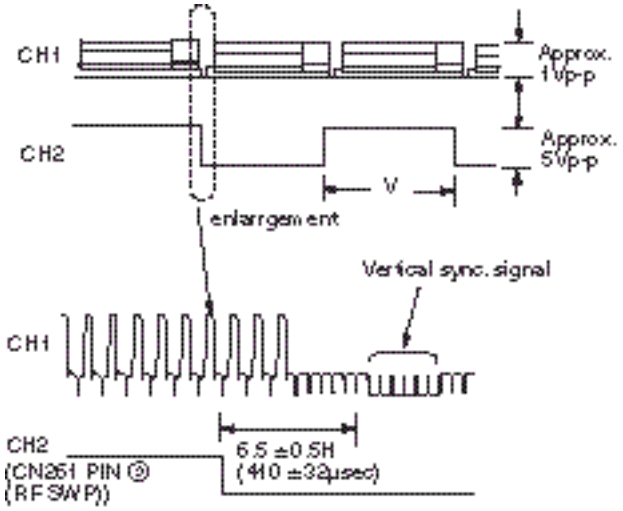


Fig. 7-2-3.

2-4. VIDEO SYSTEM CHECKS AND ADJUSTMENT

For the video system checks, follow the checking procedures given below as a rule. The color bar video signal supplied from the pattern generator is used as the video input signal for the video system adjustment of the recording mode. Check that the signal satisfies the specified value designated in the "Check of input signal" (Fig. 7-2-2)

Unless otherwise specified, set the switches to the following positions.

- CHANNEL switch ..... LINE 1
- TAPE SPEED switch ..... SP

[Checking Sequence]

1) X'tal OSC Check
2) SYNC AGC Check
3) White clip/Dark clip Check
4) Recording Y Level Check
5) Recording Chroma Level Check
6) Playback Level Check
7) VCO frequency adjustment

2-4-1. X'tal OSC Check (MA-286 Board)

Mode	Playback
Signal	Alignment tape: SP Color bar portion
Measurement point	IC201 pin ㊽
Measuring instrument	Oscilloscope and Frequency counter
Specified value	4,433,619 ± 96Hz

Note: A frequency counter should be connected through a buffer amplifier (oscilloscope, etc.) having a high impedance and a low capacitance.

[Check Method]

1) Check that the oscillation frequency satisfies the specified value and that the oscillation voltage is 500 ± 200mVp-p.

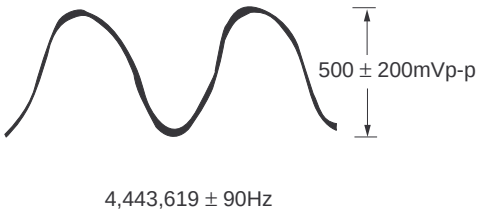


Fig. 7-2-4.

2-4-2. SYNC AGC Check (MA-286 Board)

Mode	E-E
Signal	Color bar
Measurement point	IC201 pin ㊳
Measuring instrument	Oscilloscope
Specified value	A=2.10 ± 0.14Vp-p

[Check Method]

1) Check that the Video signal level (A) satisfies the specified value.

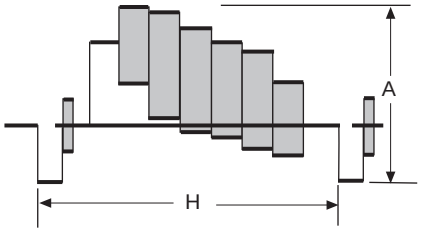


Fig. 7-2-5.

2-4-3. White Clip/Dark Clip Check (MA-286 Board)

Mode	E-E
Signal	Color bar
Measurement point	IC201 pin ㊲
Measuring instrument	Oscilloscope
Specified value	White clip : 190 ± 15% Dark clip : 52.5 ± 5%

Connect a resistor of 3.3Ω between IC201 pin ㊷ and GND.

[Check Method]

1) Check that the white clip level is 190 ± 15% to the white (100%) level.
2) Check that the dark chip level is 52.5 ± 5% to the white (100%) level.

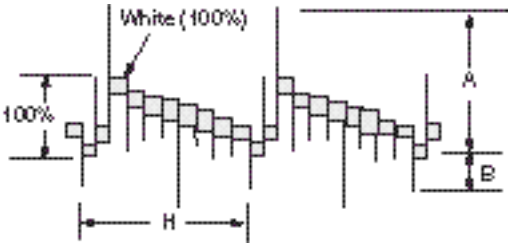


Fig. 7-2-6.

2-4-4. Recording Y Level Check (MA-286 Board)

Mode	E-E
Signal	No-signal
Measurement point	IC201 pin ⑱
Measuring instrument	Oscilloscope
Specified value	A=250 ± 50mVp-p

[Check Method]

1) Check that the recording RF signal satisfies the specified value.

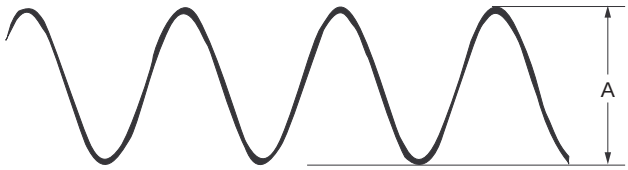


Fig. 7-2-7.

2-4-5. Recording Chroma Level Check (MA-286 Board)

Mode	Recording
Signal	Color bar
Measurement point	IC201 pin ⑭
Measuring instrument	Oscilloscope
Specified value	A=380 ± 40mV

[Check Method]

1) Confirm the amplitude of recording chroma level becomes the specified value.

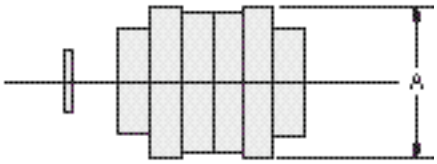


Fig. 7-2-8.

2-4-6. Playback Level Check (MA-286 Board)

Mode	Playback
Signal Alignment	Alignment tape : SP mode color bar portion
Measurement point	Video LINE OUT terminal
Measuring instrument	Oscilloscope
Specified value	A=1.00 ± 0.02Vp-p

[Check Method]

1) Check that the playback level satisfies the specified value.

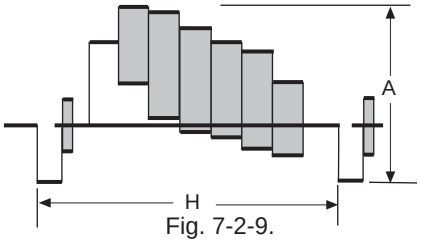


Fig. 7-2-9.

2-4-7. VCO Frequency Adjustment (MA-286 Board)

Mode	Playback
Signal	Alignment tape : SP mode color bar portion
Measurement point	IC500 pin ㉖
Measuring instrument	Digital voltmeter
Adjustment element	CT500
Specified value	A=2.4 ± 2.5Vdc

[Check Method]

1) Adjust CT500 until DC output level at IC 500 pin ㉖ (F. C) satifies the specification.

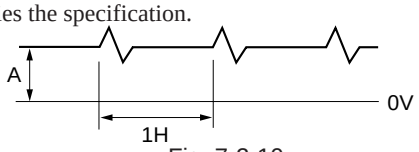


Fig. 7-2-10

2-5. AUDIO SYSTEM ADJUSTMENT

- For the adjustment of the audio system, perform in the SP mode if there is no special notes. Use the alignment tape.

[Connecting Instruments]

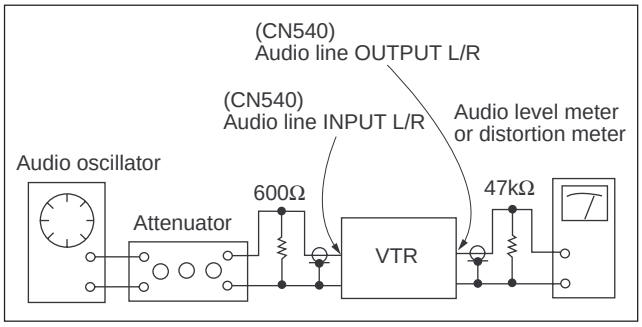


Fig. 7-2-10.

- Adjust in the SP mode if there is no special indications.
- Perform the adjustment setting the switch on the following positions.
- CHANNEL switch ..... LINE 1

[Adjustment Method]

1. ACE head adjustment.....Refer to the VHS mechanical adjustment manual Ⅳ.
2. E-E output level check
3. Overall Output level and distortion factor check
4. Overall noise level check.

2-5-1. ACE Head Adjustment

Refer to the "VHS mechanical adjustment manual Ⅳ" (9-973-623-11).

2-5-2. E-E Output Level Check

Mode	E-E
Signal	400Hz, –7.5dBs : IC540 pin ⑤ (②)
Measurement point	CJ540 L/R
Measuring instrument	Audio level meter
Specified value	–7.5 ± 2dBs

( ) : R-ch

[Check Method]

1) Input signal of 400Hz and –7.5dBs to the CN540 pin ⑤ (②).
2) Check that the audio output level is –7.5 ± 3dBs.

2-5-3. Overall Output Level and Distortion Factor Check

Mode	Self-record playback
Signal	400Hz, –7.5dBs : IC540 pin ⑤ (②)
Measurement point	IC540 pin ③ (①)
Measuring instrument	Audio level meter and Distortion meter
Specified value	Playback Level: –6.3 ± 3dBs Distortion: 4.0% or less

( ) : R-ch

[Check Method]

1) Input signal of 400Hz and –7.5dBs to the audio input.
2) Record signal.
3) Playback the recorded portion.
4) Check that the output level is –6.3 ± 3dBs.
5) Check that the distortion factor is 4.0% or less.

2-5-4. Overall Noise Level Check

Mode	Self-record playback
Signal	No signal (Insert a shorting plug into the Audio LINE IN terminal)
Measurement point	IC540 pin ③ (①)
Measuring instrument	Audio level meter (IHF-A weighing filter is used)
Specified value	– 45.5dBs or less

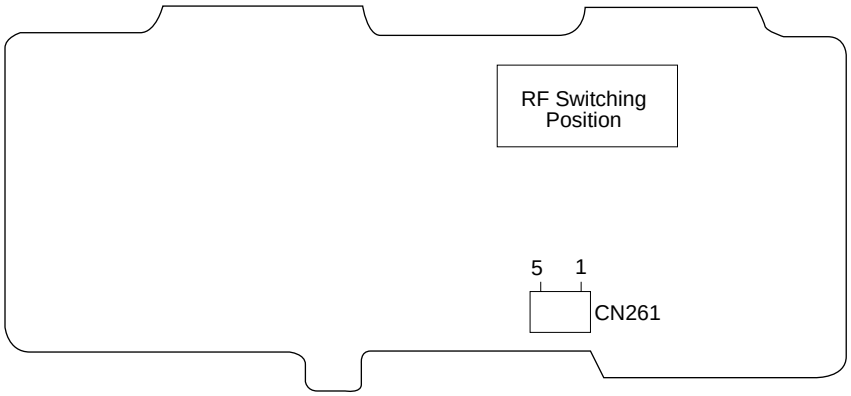
( ) : R-ch

[Check Method]

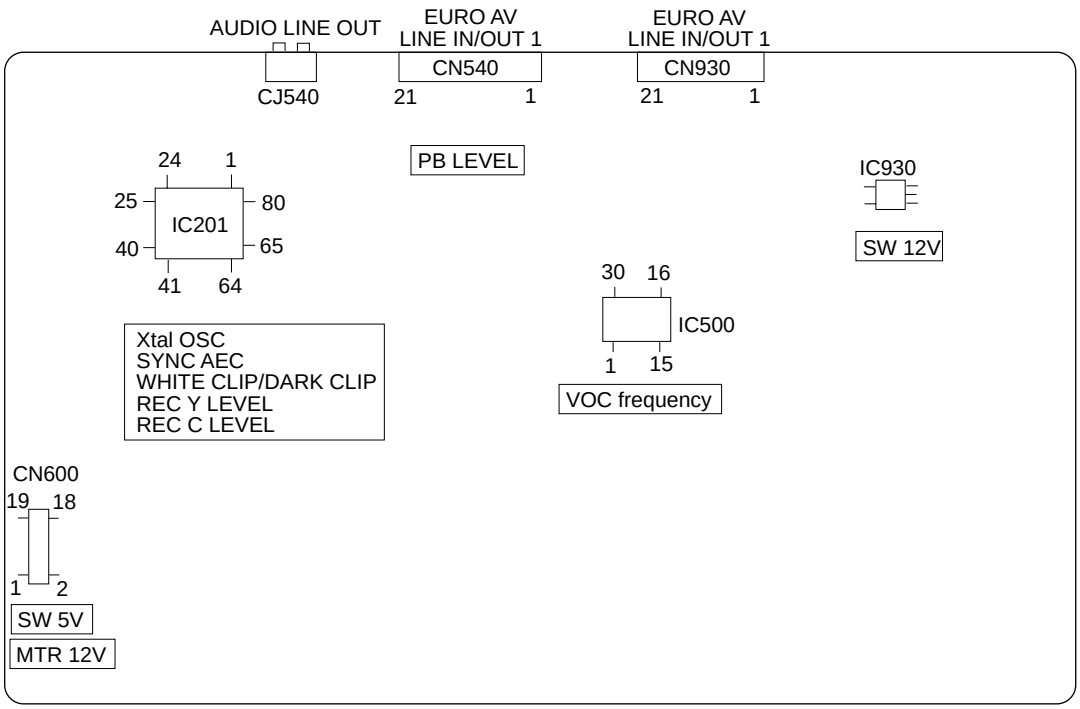
1) Record.
2) Playback recorded portion.
3) Check that noise level is – 45.5dBs or less.

2-6. ADJUSTMENT PARTS LOCATION DIAGRAM

RP-217 BOARD (Comductor side)



MA-286 BOARD (Comductor side)



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