OPERATION MANUAL

IVS-200

Video Stabilizer

1st Edition – Rev. 3

Edition Revision History

Edit.	Rev.	Date	Description	Where
1	-	2010/10/24		
1	1	2012/02/23	Added rack mount brackets. Other text amendments.	
1	2	2013/11/29	Added description of DC cord retaining clip	
1	3	2015/05/27	Deleted [Grounding].	Precautions

Precautions

Important Safety Warnings

[Power]

⚠ Caution	Operate unit **only** at the specified supply voltage.
🔌	Disconnect the power cord via the power plug only. **Do not** pull on the cable portion.
🚫 Stop	**Do not** place or drop heavy or sharp-edged objects on the power cord. A damaged cord can cause fire or electrical shock hazards. Regularly check the power cord for excessive wear or damage to avoid possible fire / electrical hazards.
❗ Caution	**Ensure** the power cord is firmly plugged into the AC outlet.

[Operation]

⚠ Hazard	**Do not** operate the unit under hazardous or potentially explosive atmospheric conditions. Doing so could result in fire, explosion, or other hazardous results.
⚠ Hazard	**Do not** allow liquids, metal pieces, or other foreign materials to enter the unit. Doing so could result in fire, other hazards, or a unit malfunction.
🔌	If a foreign material does enter the unit, turn the power off and **immediately** disconnect the power cord. Remove the material and contact an authorized service representative if damage has occurred.

[Transportation]

❗ Caution	**Handle** with care to avoid impact shock during transit, which may cause malfunction. When you need to transport the unit, use the original or suitable alternative packing material.

[Circuitry Access]

	Do not remove covers, panels, casing, or access the circuitry with power applied to the unit. Turn the power off and disconnect the power cord prior to removal. Internal servicing / adjustment of unit should only be performed by qualified personnel.
 Stop	**Do not** touch any parts / circuitry with a high heat factor. Capacitors can retain enough electric charge to cause mild to serious shock, even after the power has been disconnected. Capacitors associated with the power supply are especially hazardous.
 Hazard	Unit **should not** be operated or stored with cover, panels, and / or casing removed. Operating the unit with circuitry exposed could result in electric shock / fire hazards or a unit malfunction.

[Potential Hazards]

 Caution	If abnormal odors or noises are noticed coming from the unit, immediately turn the power off and disconnect the power cord to avoid potentially hazardous conditions. If problems similar to the above occur, contact an authorized service representative **before** attempting to operate the unit again.

[Rack Mount Brackets and Rubber Feet]

 Caution	To rack mount or to install rubber feet, **do not** use screws or materials other than those supplied. Doing so may cause damage to the internal circuits or components of the unit. If you remove the rubber feet that are attached to the unit, **do not** reinsert the screws that secure the rubber feet.

[Consumables]

 Caution	Consumable items that are used in the unit must be periodically replaced. For further details on which parts are consumables and when they should be replaced, refer to the specifications at the end of the Operation Manual. Since the service life of the consumables varies greatly depending on the environment in which they are used, such items should be replaced at an early date. For details on replacing consumable items, contact your dealer.

Upon Receipt

Unpacking

IVS-200 units and their accessories are fully inspected and adjusted prior to shipment. Operation can be performed immediately upon completing all required connections and operational settings.

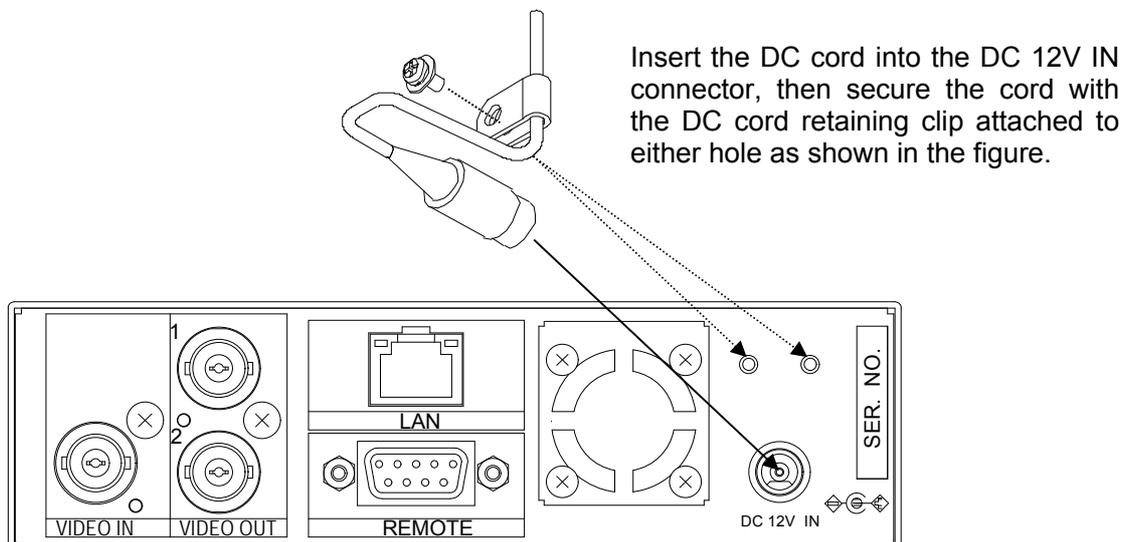Check your received items against the packing lists below.

ITEM	QTY	REMARKS
IVS-200	1	
AC Adaptor	1 set	For separate purchase (including AC cable and DC cord retaining clip)
Rack Mount Brackets	1 set	For separate purchase
CD-ROM	1	Operation Manual (PDF)
Packing List	1	

Check

Check to ensure no damage has occurred during shipment. If damage has occurred, or items are missing, inform your supplier immediately.

Installing the DC Cord Retaining Clip

When using the optional AC adaptor, secure the DC cord using the supplied retaining clip to prevent accidental removal from the IVS-200.

Insert the DC cord into the DC 12V IN connector, then secure the cord with the DC cord retaining clip attached to either hole as shown in the figure.

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1. Prior to Starting

1-1. Welcome

Congratulations! By purchasing IVS-200 Video Stabilizer you have entered the world of FOR-A and its many innovative products. Thank you for your patronage and we hope you will turn to FOR-A products again and again to satisfy your video and audio needs.
FOR-A provides a wide range of products, from basic support units to complex system controllers, which have been increasingly joined by products for computer video based systems. Whatever your needs, talk to your FOR-A representative. We will do our best to be of continuing service to you.

1-2. Features

- Easy addition to an existing system by directly connecting a CCD security camera
- Video stabilization in real time and for recorded VCR videos
- Shake correction in two demensions, including vertical, horizontal, diagonal and rotational
- Sub-pixel level correction precision
- Optimal correction of bright and dark spots in video signals to allow clear images to be output
- Date/Time display and Title display of up to 16 characters x 1 line
- Remote control via web browser

1-3. Notes on Using IVS-200

- Use the highest possible shutter speed for the shooting camera. Shooting moving objects with a low shutter speed will result in a blurred and low-resolution image. A shutter speed of 1/240 sec. or higher is recommended, although the result will depend on the shooting subjects, shaking speed and other conditions.

- IVS-200 may not properly detect shaking images with some video images as described below;

    1) Images with uniform luminance
       Example: A wall or floor where the luminance level is almost the same throughout the image

    2) Images with luminance changing in a single direction
       Example: Test signals such as Ramp and Color bar for which the luminance level changes only horizontally, not vertically.

    3) Images with alternating changes in luminance
       Example: Images with an object such as a blind where luminance level changes cyclically.

    4) Images with movements in multiple directions
       Example: Images with a large object crossing in front of other objects

- Scene cut or sudden change of input images may result as if there is panning or tilting. Usually the correction returns to a normal state after a while, though it may not return to normal depending on the Motion Filter setting.
  If a sudden change of images is expected in the input video, turn the STABILIZE menu off before the scene. Turn it back on after the input video returns to normal. (See section "" for details on the STABILIZE setting.)

- Please do not put other devices on or under this unit in order to ensure proper operation. In such case, note that the unit temperature must be kept 10°C lower than specified in the specifications given at the end of this manual.

2. Panel Descriptions

2-1. Front Panel
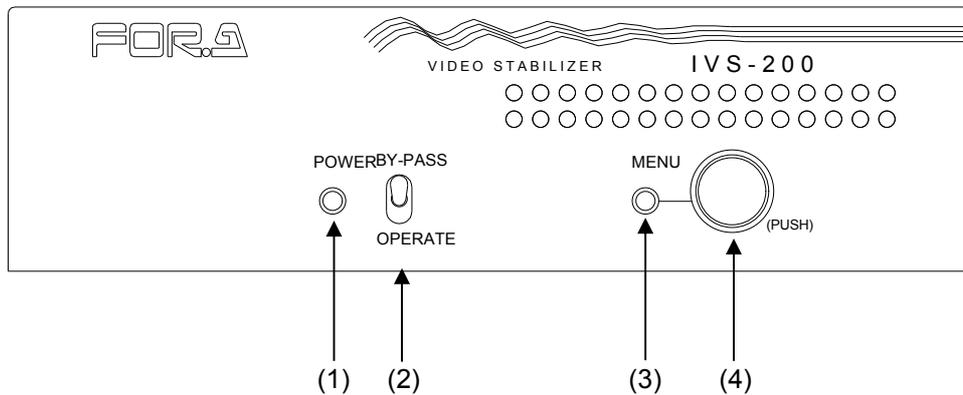
(1) Power LED
   Lights up green when the unit is turned on.
   Apply AC power to DC12V IN on the rear panel to turn on the unit.

(2) OPERATE / BY-PASS toggle switch
   OPERATE (down) : Corrects for shaking and outputs corrected signals.
   BY-PASS (up) : Does not correct for shaking. Input signals are output without correction.
   See section 6 "OPERATE / BY-PASS" for details

(3) Menu LED
   Lights up green when IVS-200 is in menu mode.

(4) Menu Control knob
   Used to enter menu mode or change parameters.
   Hold down the menu control knob at least 2 seconds to enter menu mode.
   Turn the knob to change parameters, and press it to confirm the change while watching the
   menu that is displayed on screen.

2-2. Rear Panel
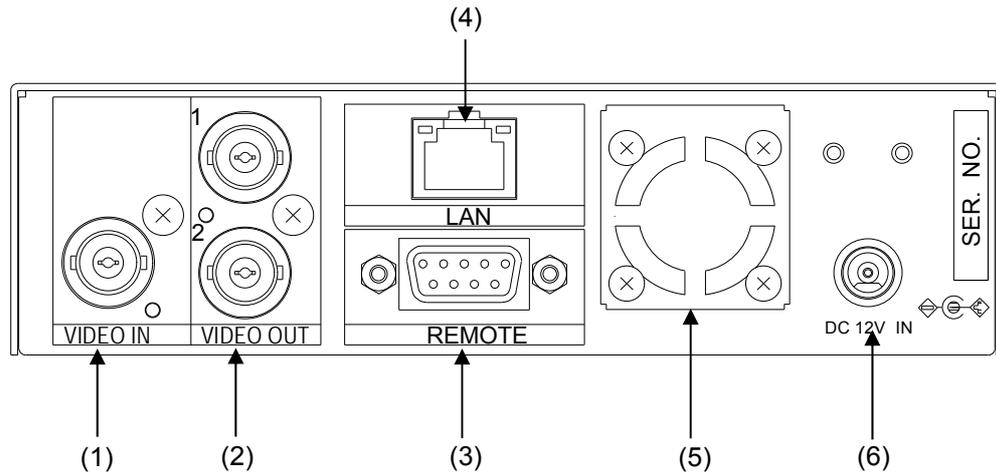
(1) VIDEO IN
   Used to input analog composite video signal.

(2) VIDEO OUT 1/2
   Used to output analog composite video signal. VIDEO OUT1 outputs the corrected signal of the input video in VIDEO IN if the OPERATE/BY-PASS switch is set to OPERATE (down).
   VIDEO OUT1 outputs the input video in VIDEO IN without correction if the OPERATE/BY-PASS switch is set to BY-PASS (up) or the unit is turned off.
   VIDEO OUT2 outputs the corrected signal of the input video regardless of the OPERATE/BY-PASS switch setting. It does not output any signal if the unit is turned off.

VIDEO OUT	Power ON/OFF	OPERATE / BY-PASS switch	Output video
1	ON	OPERATE	Corrected video
		BY-PASS	Input video (uncorrected)
	OFF	---	Input video (uncorrected)
2	ON	OPERATE／BY-PASS	Corrected video
	OFF	---	None

(3) REMOTE
   Used for remote control. 9-pin D-sub female. See section 7-1 "Remote Connector" for details.

(4) LAN
   Used for remote control via a LAN (Ethernet) interface.
   For details on control via a web browser, see section 8 "Remote Control via Web Browser".
   For details on control using LAN commands, see the separate IVS-200 LAN Command Operation Manual.

(5) Cooling fan
   Used to air cool the unit to prevent overheating. Do not block the air vents at the back of the unit with other equipment or objects.

(6) DC12V IN
   Used to connect the unit to an DC power source using a separately purchased AC adapter.

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3. Connection

3-1. Connection Example

◆ **Standard Connection Example**
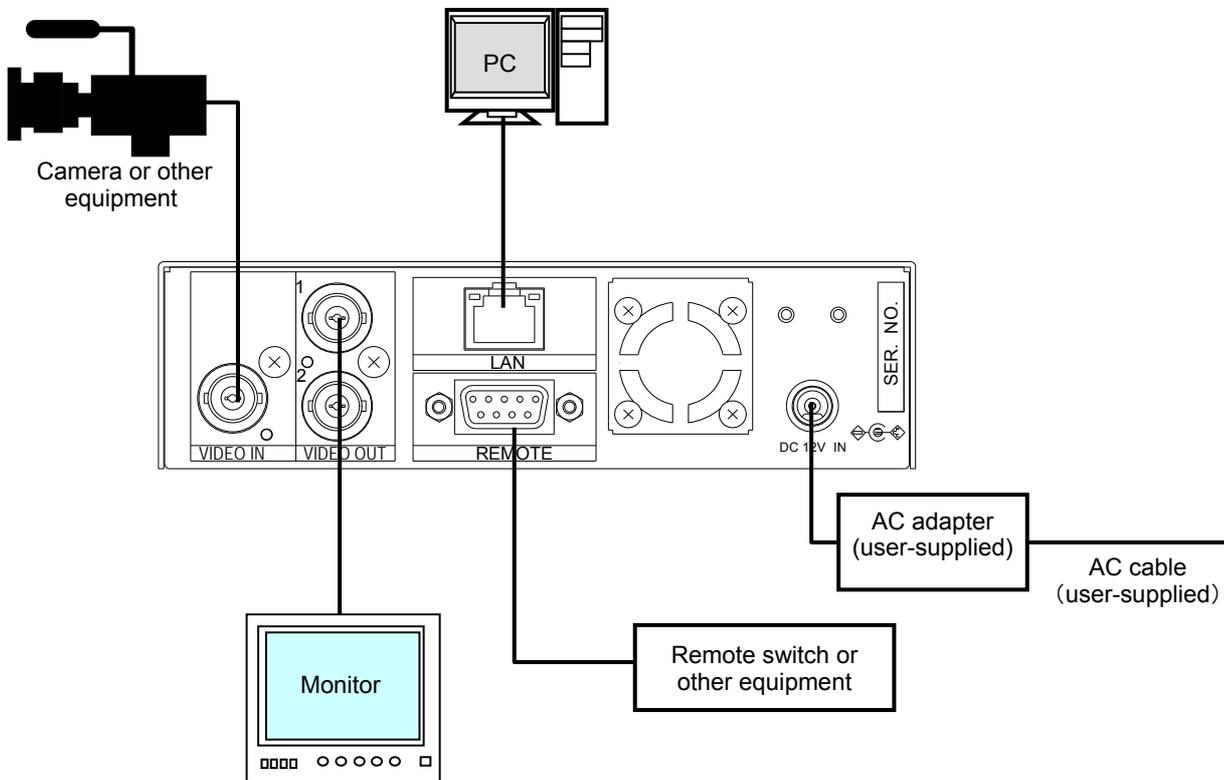
Be aware of the different cable and equipment requirements that depend on the type of computer connection used to control the IVS-200 via LAN interface. Use a crossover LAN cable to directly connect a computer to the IVS-200. Use a straight LAN cable for hub or router connections.

IMPORTANT
The OPERATE / BY-PASS setting determines whether to correct for shaking of the input video to be output from VIDEO OUT1. (See section 2-2. "Rear Panel" for details.)

3-2. PC Network Settings

To control the IVS-200 over a LAN interface, the PC network settings need to match those of the IVS-200. The procedure for setting network settings on the PC vary depending on the OS, so refer to the OS manual for details. This section describes an example set of settings for connection to an IVS-200 with its default settings.

IP address	192. 168. 0.20
Subnet mask length	24
Gateway	0.0.0.0

1) Setting in Windows2000
Click **Start** on the taskbar, select "**Settings**" → "**Network Connections**" and then right-click the "**Local Area Connection**" icon to open the [**Properties**] window. Double-clicking "**Internet Protocol (TCP/IP)**" under the [**General**] tab opens the [**Internet Protocol (TCP/IP) Properties**] window. Make the settings match those shown in the example below. Make a note of the settings before changing them in case you need to return the IP address to their original settings later.
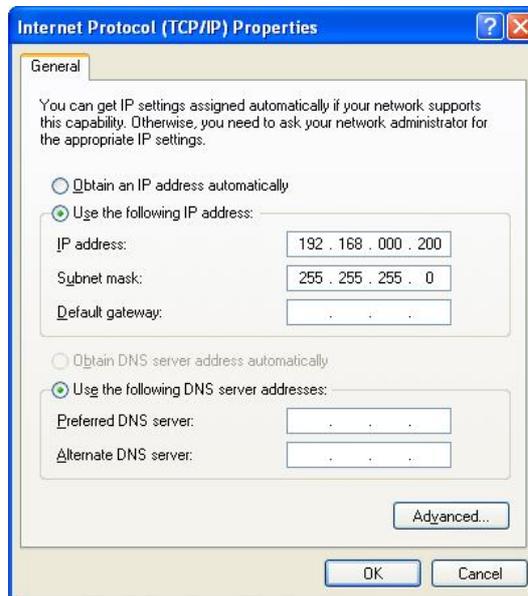
IP address for PC	192.168.0.yyy (yyy is any number from 1 to 254 except for the number set for the IVS-200 unit and the gateway number. In this example, yyy=200.)
Subnet mask	Set to 255.255.255.0

2) Setting in Windows XP with the default Start menu setting
Click **Start** on the taskbar, open [**Control Panel**], and double-click "**Network Connections**". Right-click the "**Local Area Connection**" icon to open the [**Properties**] window. Double-clicking "**Internet Protocol (TCP/IP)**" under the [**General**] tab opens the [**Internet Protocol (TCP/IP) Properties**] window. The settings are then made in the same way as 1) above.

3) Setting in Windows XP with the Start menu setting changed to Classic
Click **Start** on the taskbar, select "**Settings**" → "**Network Connections**" and then right-click the "**Local Area Connection**" icon to open the [**Properties**] window. Double-clicking "**Internet Protocol (TCP/IP)**" under the [**General**] tab opens the [**Internet Protocol (TCP/IP) Properties**] window. The settings are then made in the same way as 1) above.

When the settings are completed, click **OK**, and then close all setting windows.
For details on control via a web browser, see section 8 "Remote Control via Web Browser".
For details on control using LAN commands, see the separate IVS-200 LAN Command Operation Manual.

4. Powering On

The IVS-200 will turn on when the unit is connected to an DC power source though the DC12V IN connector on the rear panel.
The IVS-200 automatically recognizes the input video format (NTSC or PAL) when it is turned on. If there is no signal input at startup, it will start its performance based on the previously run format.

IMPORTANT
To effect automatic input signal format recognition, power ON the IVS-200 under stable input signal conditions.

◆ **Startup Screen**
When power is turned on, the screen resumes from the last display before the power was turned off. However, if the power is turned off while the unit is in menu mode, the screen resumes from the last display before menu mode.

◆ **Factory Data Reset**
The IVS-200 can be returned to the state of factory default in case a reset is needed such as after relocation, system change, or the data becomes out of use.
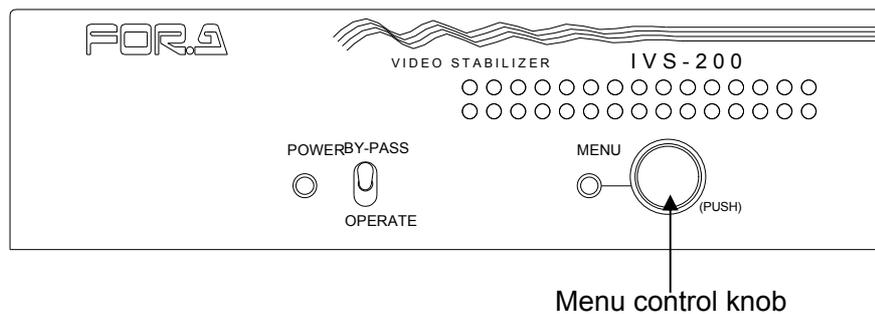
Menu control knob

Hold down the menu control knob, turn the power on, and keep holding down the knob until the message "INITIALIZE" appears. The IVS-200 returns to the factory default. See section 5 "Menu Operation" for the factory default settings.

◆ **Video Loss Indication**
The power indicator blinks to indicate signal input is lost if the cable connection to VIDEO IN is cut or there is no signal input.

◆ **To Enter Menu Mode**
Hold down the menu control knob for at least 2 seconds to enter Menu mode.

5. Menu Operation

5-1. Basic Operations

Menus are accessed and set by using the menu control knob.

(1) To access the main menu
Hold down the menu control knob at least 2 seconds. The unit enters to Menu mode, and the main menu is displayed on the output screen.

Hold down 2 seconds

(2) To move the cursor and to change settings
Turn the menu control knob clockwise or counterclockwise to move the cursor or change setting values.

Turn
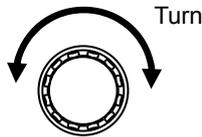
(3) To display submenus and confirm changes
Move the cursor over the desired submenu, and press the menu control knob. The selected submenu will be displayed on the output screen.
To change settings, move the cursor over the menu item which you want to change the value of, and press the menu control knob. Then, select a value by turning the knob, and press the knob to confirm the change.

Press

IMPORTANT
The settings are backed up when exiting from Menu mode. However, if the power is turned off while the unit is in Menu mode. the current settings are not backed up.
Menus will not be displayed on the VIDEO OUT1 output screen if OPERATE/BY-PASS is set to BY-PASS.

5-2. Main Menu

The main menu can be accessed by holding down the menu control knob for approximately 2 seconds.

<MAIN MENU>

```
                MAIN  MENU
    → 1  STABILIZE                          ←————— (1)
      2  AUTO  VIDEO  OPTIMIZER             ←————— (2)
      3  DATE/TIME                          ←————— (3)
      4  TITLE                              ←————— (4)
      5  LAN                                ←————— (5)
      6  SYSTEM                             ←————— (6)
                        EXIT               ←————— (7)
```
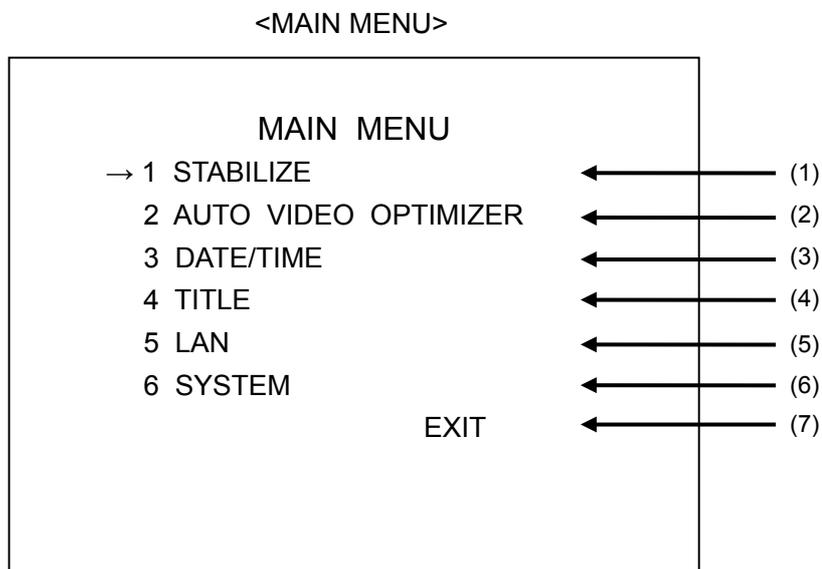
◆   **Setting Items**

Item	Setting Description	Reference
(1) STABILIZE	Allows you to access shake correction submenus.	5-3 5-4
(2) AUTO VIDEO OPTIMIZER	Allows you to access auto video optimizer submenus.	5-5
(3) DATE/TIME	Allows you to access date/time display submenus.	5-6
(4) TITLE	Allows you to access title display submenus.	5-7
(5) LAN	Allows you to access LAN submenus.	5-8
(6) SYSTEM	Allows you to access system submenus such as version information.	5-9
(7) EXIT	Exits menus.	—

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5-3. STABILIZE 1

Move the cursor over STABILIZE on the main menu, and press the menu control knob. The STABILIZE 1 menu as shown below opens.

IMPORTANT
Settings for stabilization are provided in STABILIZE 1 and 2.
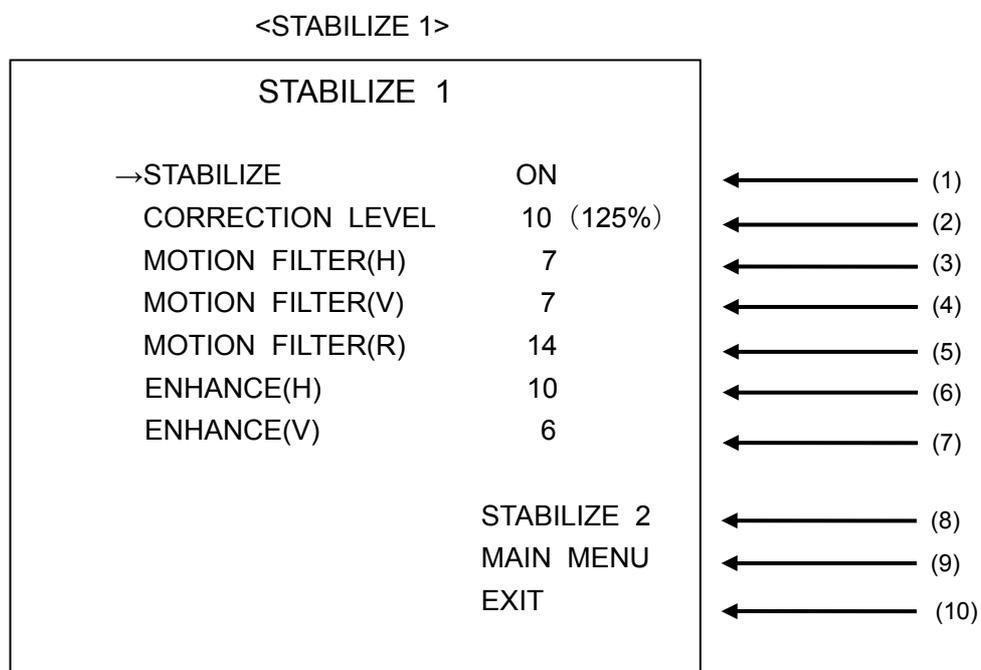
<STABILIZE 1>

```
                    STABILIZE  1

        →STABILIZE              ON                        ←──── (1)
         CORRECTION  LEVEL      10（125%）                 ←──── (2)
         MOTION  FILTER(H)       7                        ←──── (3)
         MOTION  FILTER(V)       7                        ←──── (4)
         MOTION  FILTER(R)      14                        ←──── (5)
         ENHANCE(H)             10                        ←──── (6)
         ENHANCE(V)              6                        ←──── (7)


                    STABILIZE  2                          ←──── (8)
                    MAIN  MENU                            ←──── (9)
                    EXIT                                  ←──── (10)
```

Item	Setting Description	Reference
(1) STABILIZE	Allows you to enable or disable shake correction. **[Setting range]** ON, OFF **[Default value]** ON	5-3-1
(2) CORRECTION LEVEL	Allows you to select correction level (magnification percentage). **[Setting range]** 0 (100%) to 15 (143%) **[Default value]** 10 (125%)	5-3-2
(3) MOTION FILTER (H)	Allows you to select strength of horizontal correction. **[Setting range]** 0 to 16 **[Default value]** 7	5-3-3
(4) MOTION FILTER (V)	Allows you to select strength of vertical correction. **[Setting range]** 0 to 16 **[Default value]** 7	5-3-3
(5) MOTION FILTER (R)	Allows you to select strength of rotational correction. **[Setting range]** 0 to 16 **[Default value]** 14	
(6) ENHANCE (H)	Allows you to select the horizontal edge enhancement level. **[Setting range]** 0 to 15 **[Default value]** 10	5-3-4
(7) ENHANCE (V)	Allows you to select the vertical edge enhancement level. **[Setting range]** 0 to 15 **[Default value]** 6	5-3-4
(8) STABILIZE 2	Opens the STABILIZE 2 menu.	5-4
(9) MAIN MENU	Returns to the main menu.	5-2
(10) EXIT	Exits menus.	－

5-3-1. Shake Correction ON/OFF (STABILIZE)

When STABILIZE is set to ON, shake correction is activated. When STABILIZE is set to OFF, shake correction is inactivated, however, images are magnified according to the set correction level. If the OPERATE/BY-PASS toggle switch on the front panel is set to BY-PASS, input signals are bypassed and output from the VIDEO OUT 1 connector without correction. See section 2-2. "Rear Panel"(2) VIDEO OUT 1/2 for details.

5-3-2. Correction Level (CORRECTION LEVEL)

The Correction Level menu allows you to select a correction level according to the shake amplitude. The magnification percentage is also displayed for the selected level. The IVS-200 crops images to output stable video when shaking is detected. The cropped images become smaller than the original size, so that they will be magnified. The high correction level allows you to correct for large amplitude shaking. However, the resulted image shows a small part of the original input image. (i.e., Magnified by a high percentage.) The low correction level cannot allow you to correct for large shaking. However, the larger part of the original input image can be displayed. (i.e., Magnified by a low percentage.) See appendix "Input Image and Correction Range" for the details on the relation between correction and magnification.

<For your reference>
Lower than 4:   effective for small vibrations caused by machines, wind, etc.
5 to 10:   effective for camera shake, wheel deflections, etc.
Higher than 10: effective for high zooming, for objects very close to the camera, or for images with significant rotational shaking.

Displayed area	Large		Small
Correction range	Small	Default	Large
	0 (100%)	10 (125%)	15 (143%)
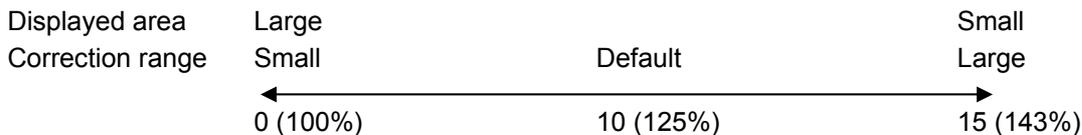
Correction level 0 (100%) can also correct for slight shaking.

5-3-3. Filter Level (MOTION FILTER)

The Motion Filter menu allows you to select a filtering level (shake correction strength) to achieve smooth shake correction. The level can be selected separately for horizontal, vertical and rotational correction in the range between 0 and 16.

Set the filter level high to give priority to video stabilization.
Set the filter level low to give priority to smoothness of images.
Filter levels between 14 and 16 are effective for fixed cameras for fixed-point observations.
Filter levels between 1 and 6 are effective for mobile cameras.
Filter level 0 disables shake correction.
To disable shake correction only for rotational shaking while enabling the correction for horizontal and vertical shaking, set MOTION FILTER (R) to 0.

Resulted image		Smooth		Jerky
Compensation level	OFF	Low		High
	0	1		16
		For mobile cameras		For fixed cameras
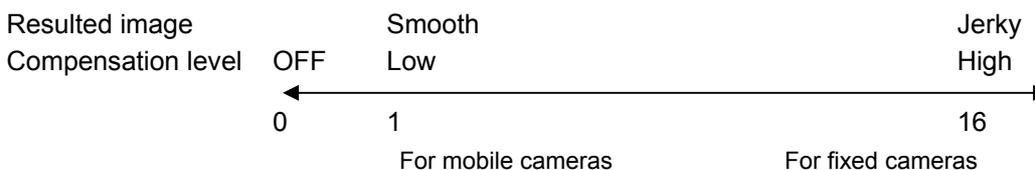
5-3-4. Edge Enhancement (ENHANCE)

The Enhance menu allows you to adjust the edge enhancement function. The enhancement level can be adjusted separately for horizontal and vertical edges in the range 0 to 15.

Enhance level   Low   High

$\longleftrightarrow$

0   15
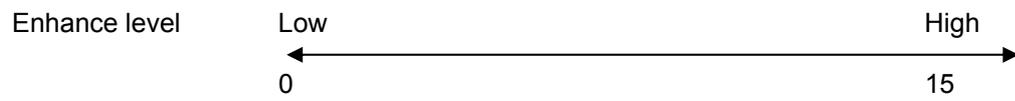
5-4. STABILIZE 2

Move the cursor over STABILIZE 2 on the STABILIZE 1 menu, and press the menu control knob. The STABILIZE 2 menu as shown below opens.

<STABILIZE 2>

```
                STABILIZE  2

      →DISTORTION                          ←———— (1)
       EFFECTIVE  AREA                     ←———— (2)
       CORRECTION  AREA      0             ←———— (3)
       MOTION  DETECT  AREA                ←———— (4)
       TITLE  PASTE                        ←———— (5)
       DIRECT  USE            OFF          ←———— (6)
       REMOTE  CONTROL      FRONT          ←———— (7)

                         STABILIZE  1      ←———— (8)
                         MAIN  MENU        ←———— (9)
                         EXIT              ←———— (10)
```

Item	Setting Description	Reference
(1) DISTORTION	Opens the DISTORTION menu that allows you to adjust the pixel aspect ratio.	5-4-1
(2) EFFECTIVE AREA	Opens the EFFECTIVE AREA menu that allows you to adjust the effective area.	5-4-2
(3) CORRECTION AREA	Allows you to select a display size of the shake-corrected image. **[Setting range]** 0 to 15 **[Default value]** 0	5-4-3
(4) MOTION DETECT AREA	Opens the MOTION DETECT AREA menu that allows you to adjust the motion detection area.	5-4-4
(5) TITLE PASTE	Opens the TITLE PASTE menu that allows you to set areas for titles to be excluded from the motion detection area.	5-4-5
(6) DIRECT USE	Allows you to select a parameter that can be directly controlled by the menu control knob. **[Setting range]** OFF, CORR LEVEL, FILTER H, FILTER V, FILTER R **[Default value]** OFF	5-4-6
(7) REMOTE CONTROL	Allows you to select how STABILIZE can be turned ON/OFF, and BYPASS/OPERATE can be switched from operations on the front panel, via a web browser, or via REMOTE interface. To use Command control via LAN, select SERIAL. **[Setting range]** FRONT, WEB, REMOTE, SERIAL **[Default value]** FRONT	5-4-7
(8) STABILIZE 1	Opens the STABIZIE 1 menu.	5-3
(9) MAIN MENU	Returns to the main menu.	5-2
(10) EXIT	Exits menus.	—

5-4-1. Pixel Aspect Ratio (DISTORTION)

Move the cursor over DISTORTION on the STABILIZE 2 menu, and press the menu control knob. The DISTORTION menu as shown below opens.

<DISTORTION>

```
┌─────────────────────────────────────────┐
│                DISTORTION                 │
│                                           │
│   DISTORTION              4 : 3      ◄─────── (1)
│              0.91                          │
│                                           │
│                        STABILIZE  2  ◄─────── (2)
│                        MAIN  MENU    ◄─────── (3)
│                        EXIT          ◄─────── (4)
│                                           │
└─────────────────────────────────────────┘
```

Item	Setting Description	Reference
(1) DISTORTION	Allows you to select the pixel aspect ratio for input signals. **[Setting range]** 4 : 3, 16 : 9, ADJUST ADJUST allows you to adjust between 0.80 and 1.60 **[Default value]** 4 : 3	—
(2) STABILIZE 2	Opens the STABIZIE 2 menu.	5-4
(3) MAIN MENU	Returns to the main menu.	5-2
(4) EXIT	Exits menus.	—

Select a suitable pixel aspect ratio for input signals. If the pixel aspect ratio is not suitable, the resulting image after rotational shake correction may be distorted, or horizontal and vertical shake correction may be insufficient. Usually set to 4 : 3.
Set to 16 : 9 for the input of squeezed 16 : 9 signal.
To select another aspect ratio, select ADJUST that allows you to set the aspect ratio manually using the menu control knob.

5-4-2. Effective Area

Move the cursor over EFFECTIVE AREA on the STABILIZE 2 menu, and press the menu control knob. The EFFECTIVE AREA menu as shown below opens.

<EFFECTIVE AREA>

```
          EFFECTIVE  AREA

  EFFECTIVE  AREA       4 : 3 （+0）          ←——————  (1)

      START （H）            0               ←——————  (2)
      END （H）            720               ←——————  (3)
      START （V）            1               ←——————  (4)
      END （V）            241               ←——————  (5)


                    STABILIZE  2             ←——————  (6)
                    MAIN  MENU               ←——————  (7)
                    EXIT                     ←——————  (8)
```

Item	Setting Description	Reference
(1) EFFECTIVE AREA	Allows you to set an effective area. **[Setting range]** 4 : 3 (+0) to 4 : 3 (+7), 16 : 9 (-7) to 16 : 9 (+7), ADJUST **[Default value]** 4 : 3 (+0)	－
(2) START(H) (3) END(H)	Allows you to set the horizontal extent of the effective area if EFFECTIVE AREA is set to ADJUST. **[Setting range]** 0 to 720 **[Default value]** START(H) 0, END(H) 720	－
(4) START(V) (5) END(V)	Allows you to set the vertical extent of the effective area if EFFECTIVE AREA is set to ADJUST. **[Setting range]** 0 to 242(NTSC), 0 to 286(PAL) **[Default value]** START(V) 1, END(V) 242 (NTSC) / 286 (PAL)	－
(6) STABILIZE 2	Opens the STABILIZE 2 menu.	5-4
(7) MAIN MENU	Returns to the main menu.	5-2
(8) EXIT	Exits menus.	－

The effective area menu allows you to specify the effective area where images are present in a screen. This adjustment is useful in reducing edge noise, especially for the black bars (such as letterbox) produced by video conversions from 16 : 9 to 4 : 3.

◆ **How to set effective area**
1) Open the EFFECTIVE AREA menu.
2) Set the effective area while viewing the bounding box that is displayed on the output screen. Select **4 : 3** for normal use. The values in the parentheses allow you to change both the width and height at the same time retaining the ratio in 2-pixel steps. To use letterbox, select **16 : 9**. The size can be changed in the same manner.
3) Selecting **ADJUST** allows you to set the horizontal and vertical area separately using 4 parameters.

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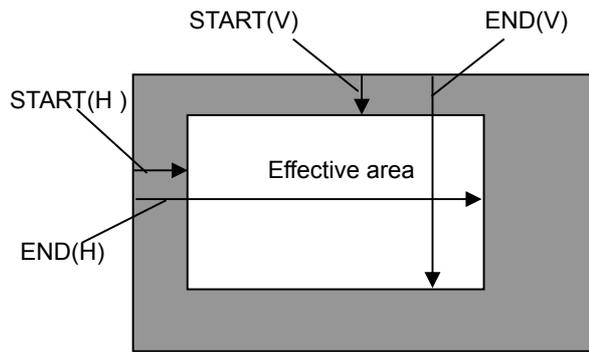
IMPORTANT
While setting the effective area, a bounding box that indicates the effective area is displayed on the VIDEO OUT output screen. When the settings are completed, the bounding box will disappear.

◆ **Effective use of Effective Area**

Images with black bars at the edges result in edge flicker after shake correction without effective area setting. Setting the effective area can reduce such noises.

Set the effective area as shown below.

1) When using the preset values (4 : 3 (+0 to +7), 16 : 9 (-7 to +7))
   The preset values are effective when input images constantly have black bars both at the top and bottom.

When the input image has constant black noise at the top and bottom.	Use the 16 : 9 preset value and adjust on a per-pixel basis to eliminate the black bars.
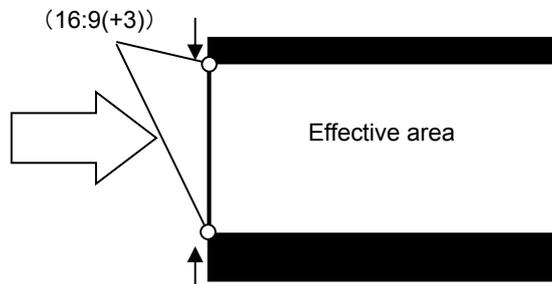
2) When using ADJUST settings
   The Adjust settings are effective when input images have black bars around the images.

When the input image has black bars at the top, bottom and on the left side.	Set the start and end points for the effective area to eliminate the black bars.

5-4-3. Correction Area

Video stabilization can be made without enlarging the input video by specifying the correction area (i.e., the area on the output screen where no image is to be displayed).

◆ **How to set the correction area**
1) Open the CORRECTION AREA menu.
2) Set the correction area while viewing the output screen by turning the menu control knob.

① If the correction area is set to "0" to display the whole effective area on the output screen, the image will be magnified in the ratio set under the Correction level menu and corrected. However, if the amplitude of shaking is greater than the correction level, the resulted images are insufficiently corrected.

② Usually sufficient shake correction is obtained by setting the Correction level high. However, sufficient shake correction can be obtained by setting a small Correction area (large set value), although the image will be displayed with black bars.
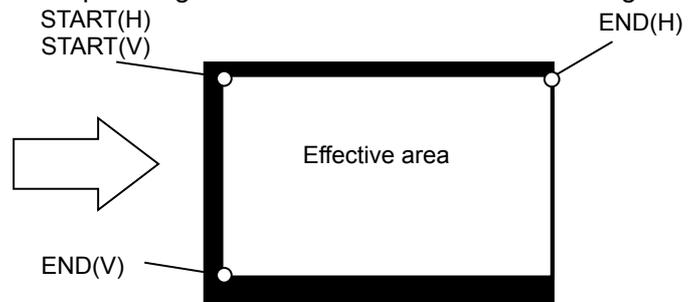
Larger shaking can be corrected by reducing the correction area (i.e., increasing the Correction Area value) even if the Correction Level is set the same (See the figures below).

③

Correction area

Effective area   Magnify

Input image   Correction area：0   Output image
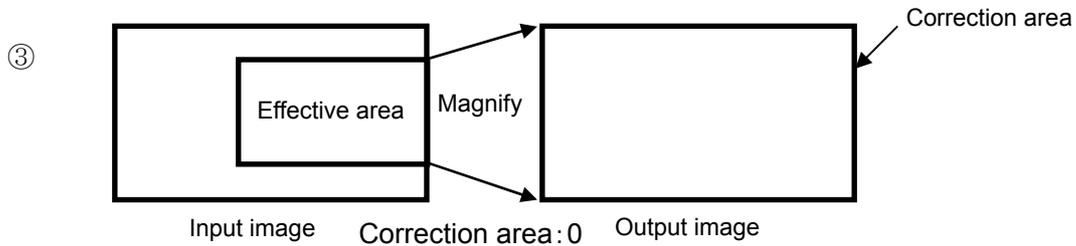
If the whole screen is set to CORRECTION AREA (set to "0") and the shake correction is insufficient.

Correction area   Black area

④

Effective area   Magnify

Input image   Output image

Correction area: between 1 and 15
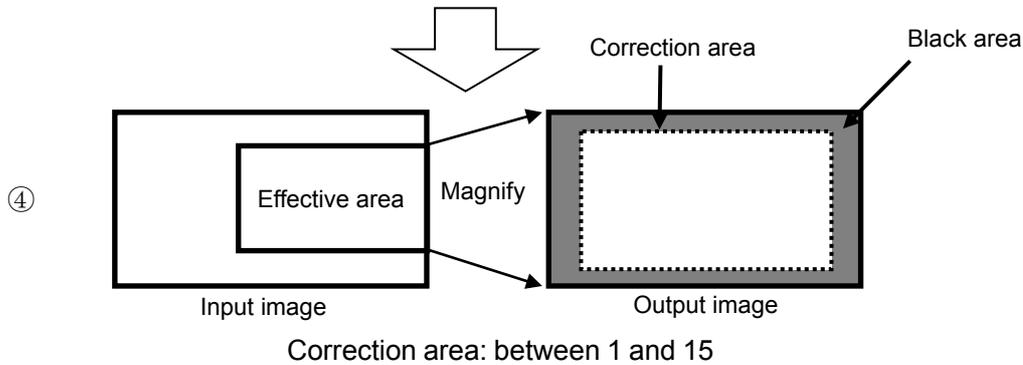
Larger shaking can be corrected using the same magnification rate by setting the CORRECTION AREA value larger (between 1 and 15).
* The larger the correction area, the larger the black area.

Effective area	Small	Large
Black area	Small	Large
Output image	Large	Small

CORRECTION AREA   0 ←————————————→ 15
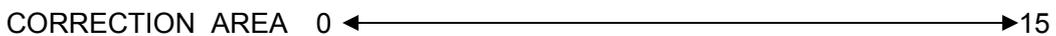
5-4-4. Motion Detection Area (MOTION DETECT AREA)

Move the cursor over MOTION DETECT AREA on the STABILIZE 2 menu, and press the menu control knob. The MOTION DETECT AREA menu as shown below opens.

<MOTION DETECT AREA>

```
        MOTION  DETECT  AREA


        START（H）           26          ←————————— (1)
        END（H）            334          ←————————— (2)
        START（V）           24          ←————————— (3)
        END（V）            216          ←————————— (4)


                      STABILIZE  2       ←————————— (5)
                      MAIN  MENU         ←————————— (6)
                      EXIT               ←————————— (7)
```
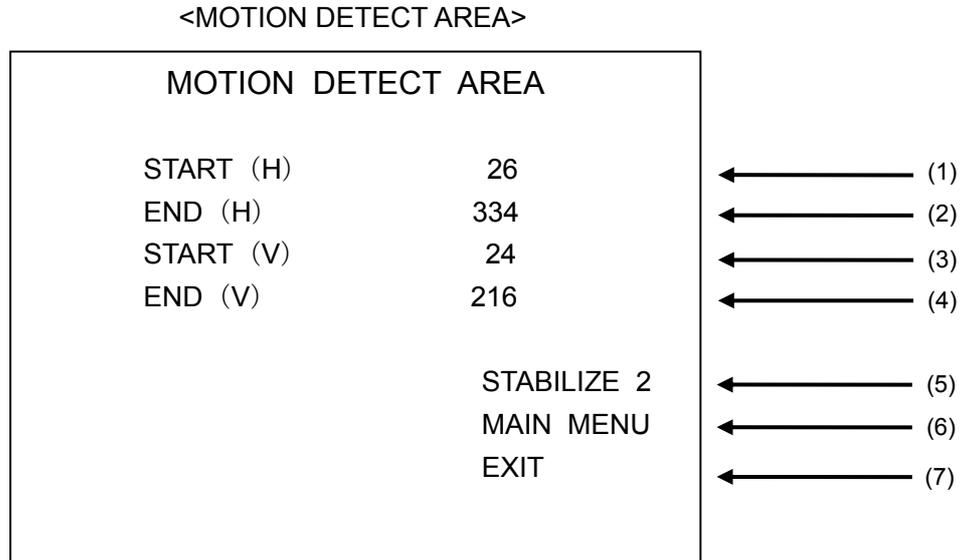
Item	Setting Description	Reference
(1) START(H) (2) END(H)	Allows you to set the horizontal extent of the motion detection area. **[Setting range]**　START(H): 18 to 310 　　　　　　　　　　END(H) : 50 to 342 **[Default value]**　START(H) : 26 　　　　　　　　　END(H) : 334	—
(3) START(V) (4) END(V)	Allows you to set the vertical extent of the motion detection area. **[Setting range]**　START(V) :　12 to 197(NTSC) 　　　　　　　　　　　　　　14 to 239(PAL) 　　　　　　　　　END(V) :　　44 to 229(NTSC) 　　　　　　　　　　　　　　46 to 271(PAL) **[Default value]**　START: 24 　　　　　　　　　END: 216 (NTSC) / 260 (PAL)	—
(5) STABILIZE 2	Opens the STABILIZE 2 menu.	5-4
(6) MAIN MENU	Returns to the main menu.	5-2
(7) EXIT	Exits menus.	—

The motion detection area menu allows you to specify an area on frames where motion detection to be performed.
This menu is used to exclude motions and still objects (such as title and date/time displays) that should be separated to correct shaky images.
By using this feature more accurate motion detection is enabled.

◆ **How to set the motion detection area**

1) Open the MOTION DETECT AREA menu.
2) Set the motion detection area while viewing the bounding box that is displayed on the output screen. (See the below figure.)
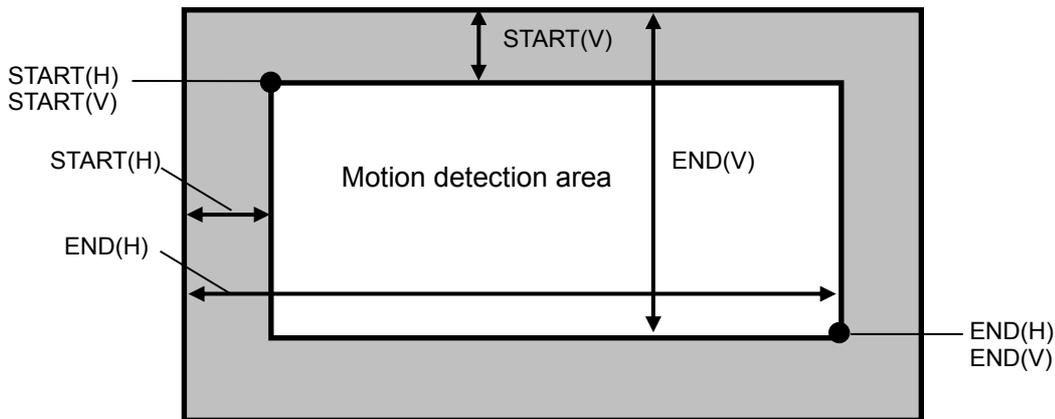
◆ **Effective use of Motion detection area**

2010-6-19   15:13

Detect motion in this area.

Set the motion detection area to exclude the title and date/time displays from the detection.

Detect motions in this area.

If there is an area that has a constantly moving object, exclude the area from the detection in order not to affect the shake correction.

IMPORTANT
The motion detection area may not be set smaller than 32(H) x 32(V).
The bounding box that is displayed on the VIDEO OUT output while setting the motion detection area will disappear when the setting is complete.

5-4-5. Title Separation (TITLE PASTE)

Move the cursor over TITLE PASTE on the STABILIZE 2 menu, and press the menu control knob. The TITLE PASTE menu as shown below opens.

<TITLE PASTE>

```
          TITLE  PASTE

    TITLE  PASTE      TITLE  PASTE  1      ←———— (1)
    TITLE  PASTE  1   OFF                  ←———— (2)

      START（H）        100               ←———— (3)
      END（H）          620               ←———— (4)
      START（V）         10               ←———— (5)
      END（V）           60               ←———— (6)


                      STABILIZE  2         ←———— (7)
                      MAIN  MENU           ←———— (8)
                      EXIT                 ←———— (9)
```

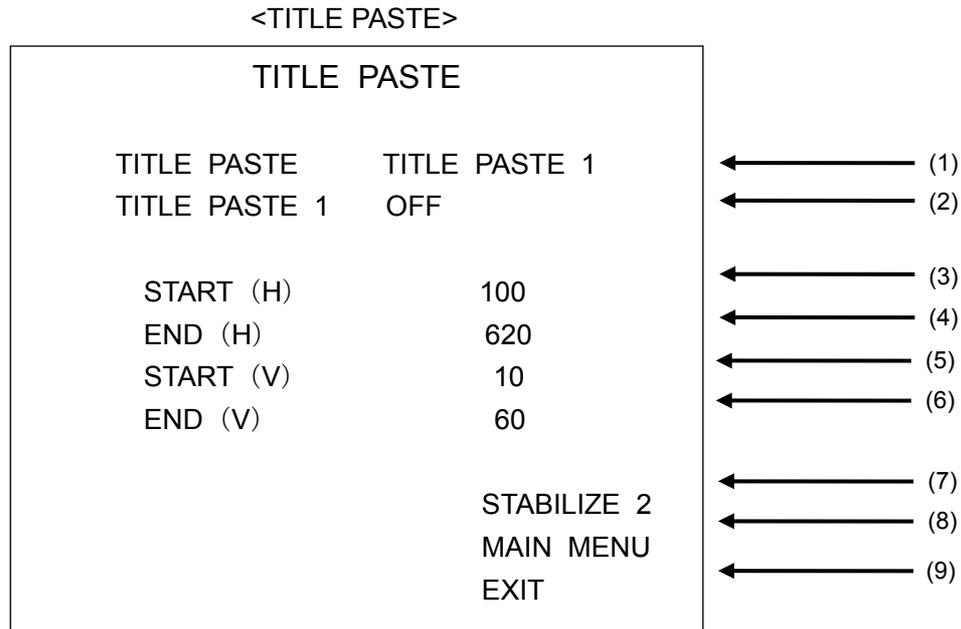| Item	Setting Description	Reference
(1) TITLE PASTE	Allows you to select which area of two to set by selecting the TITLE PASTE number. **[Setting range]** TITLE PASTE1, TITLE PASTE2 **[Default value]** TITLE PASTE1	—
(2) TITLE PASTE 1 or 2	Allows you to enable or disable the selected TITLE PASTE 1 or 2 feature. **[Setting range]** ON, OFF **[Default value]** OFF	—
(3) START(H) (4) END(H)	Allows you to set the horizontal extent of the TITLE PASTE area. **[Setting range]** 0 to 720 **[Default value]** TITLE PASTE1: START(H) 100, END(H) 620 　　　　　　　　　TITLE PASTE2: START(H) 100, END(H) 620	—
(5) START(V) (6) END(V)	Allows you to set the vertical extent of the TITLE PASTE area. **[Setting range]** 0 to 242 (NTSC) 　　　　　　　　0 to 286 (PAL) **[Default value]** 　　TITLE PASTE1: START(V) 10, END(V) 60 　　TITLE PASTE2: START(V) 182, END(V) 232 (NTSC) 　　　　　　　　　START(V) 226, END(V) 276 (PAL)	—
(7) STABILIZE 2	Opens the STABILIZE 2 menu.	5-4
(8) MAIN MENU	Returns to the main menu.	5-2
(9) EXIT	Exits menus.	—

The still characters on input images such as camera titles and date/time display also move their position when a shake correction occurs. The TITLE PASTE feature is used to prevent this unwelcomed change by the correction. The TITLE PASTE feature allows you to set 2 areas, by setting TITLE PASTE 1 and 2, so that the images in the area remain the same as before the correction.

◆ **How to set TITLE PASTE**
1) Open the TITLE PASTE menu.
2) Select TITLE PASTE1 or TITLE PASTE2.
3) Turn on the feature for the TITLE PASTE that is selected in step 2).

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4) Set the area you want to exclude from shake correction while viewing the area displayed on the output screen. (See the below figure.)

START(H) ——
START(V) 10:10:10 —— END(H)
 END(V)
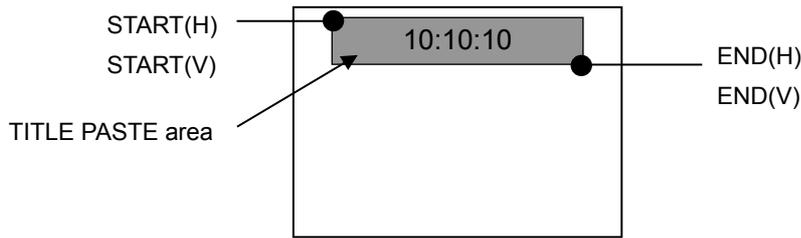
TITLE PASTE area

◆ **Effective use of the TITLE PASTE feature**
Use the feature when input images have characters displayed at a fixed position such as the camera title and date/time displays.

10:10:10

Before correction   After correction
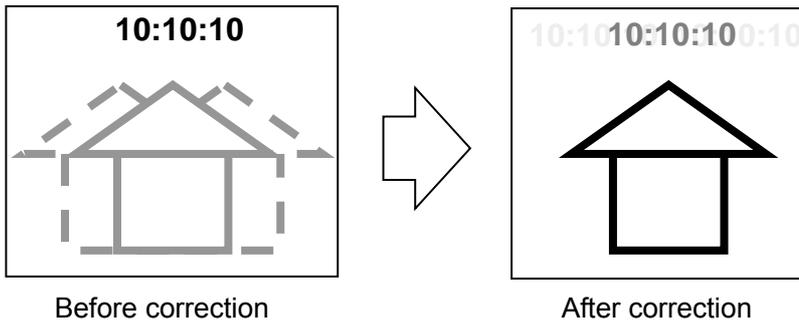
The shakiness of the video is corrected, however, the time display is blurred and hard to read.

The TITLE PASTE feature cuts out the time display from the input video and pastes it on the output video.

Highlight the time display to cut out   The highlighted image portion is pasted.

10:10:10

Before correction   After correction
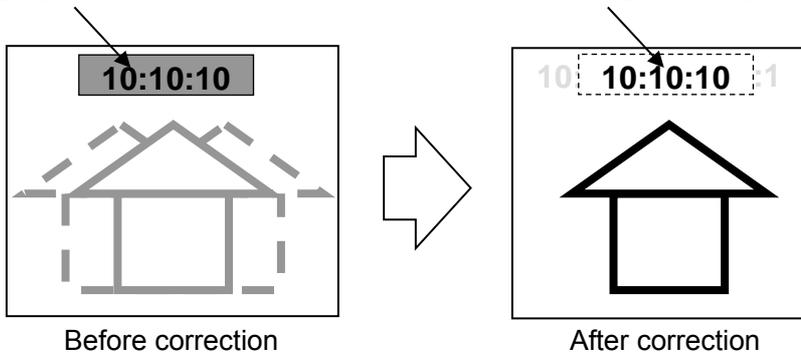
The highlighted time display is pasted onto a corrected video and becomes clear.

IMPORTANT

AVO processing will not be applied to the cut out area by TITLE PASTE.

It is recommended to set the effective area to mask the area to be cut out (See section 5-4-2 "Effective Area") before setting the TITLE PASTE area for the input images under the following conditions.

·When the title and date/time displays are large, or they are clear but the image around them is unclear. (The correction becomes inaccurate.)

·When a shaky title or date/time display appears around the pasted image.

The image portion selected by TITLE PASTE is pasted on a few frames behind the shake-corrected image due to the correction processing time.

5-4-6. Direct Operation (DIRECT USE)

The DIRECT USE feature allows you to change parameters directly by the menu control knob without opening menus.
One out of the following four parameters can be assigned to the DIRECT USE feature.
The default setting is OFF. (None)

◆ Selectable parameter

Parameter	Setting range	Default	Control knob function
CORRECTION LEVEL	0 - 15	10	Turn right: + Turn left: -
MOTION FILTER H	0 - 16	7	Turn right: + Turn left: -
MOTION FILTER V	0 - 16	7	Turn right: + Turn left: -
MOTION FILTER R	0 - 16	14	Turn right: + Turn left: -

IMPORTANT
To check the setting value that is changed by the direct operation, open the menu for the parameter and find the displayed value.
The parameter that is enabled for direct operation can also be changed on the menu as usual.

5-4-7. Remote Control

The remote control menu allows you to select how to change the OPERATE/BY-PASS setting and how to turn STABILIZE on/off.

<Setting options>
FRONT: Enables the OPERATE/BY-PASS switch on the front panel, and the STABILIZE function to be turned on or off by the menu setting.
REMOTE: Enables control via the remote connector of OPERATE/BY-PASS switching and turning STABILIZE on/off.
WEB: Enables control via the web browser of OPERATE/BY-PASS switching and turning STABILIZE on/off.
SERIAL: Enables control via LAN interface using serial commands. See the IVS-200 LAN Command Operation Manual for details.

IMPORTANT
The OPERATE/BY-PASS and STABILIZE ON/OFF controls are possible only by the method selected under the REMOTE CONTROL menu.

5-5. AUTO VIDEO OPTIMIZER

Move the cursor over AUTO VIDEO OPTIMIZER on the main menu, and press the menu control knob. The AUTO VIDEO OPTIMIZER menu as shown below opens.

<AUTO VIDEO OPTIMIZER>

```
AUTO VIDEO OPTIMIZER

→OPERATE              AUTO          ◄──────── (1)
 CORRECTION   LEVEL                 ◄──────── (2)
 SAMPLE   AREA                      ◄──────── (3)
 RESPONSE             3             ◄──────── (4)
 GAMMA   MODE         ON            ◄──────── (5)


                     MAIN MENU      ◄──────── (6)
                     EXIT           ◄──────── (7)
```

Item	Setting Description	Reference
(1) OPERATE	Allows you to enable or disable the AVO (Auto Video Optimizer) function. **[Setting range]** AUTO, HOLD, and OFF **[Default value]** AUTO	5-5-1
(2) CORRECTION LEVEL	Opens the AVO correction level setting menu.	5-5-2
(3) SAMPLE AREA	Opens the AVO sample area setting menu.	5-5-3
(4) RESPONSE	Allows you to set the AVO filtering level. **[Setting range]** 1 - 5 **[Default value]** 3	5-5-4
(5) GAMMA MODE	Allows you to enable or disable Gamma correction. **[Setting range]** ON, OFF **[Default value]** ON	5-5-5
(6) MAIN MENU	Returns to the main menu.	5-2
(7) EXIT	Exits menus.	－

5-5-1. OPERATE

Allows you to enable or disable the AVO function. AUTO enables the AVO function. HOLD disables the AVO function. Changing from AUTO to HOLD stops the AVO function retaining the current optimized signal level. OFF disables the AVO function.

5-5-2. CORRECTION LEVEL

Move the cursor over CORRECTION LEVEL on the AUTO VIDEO OPTIMIZER menu, and press the menu control knob. The CORRECTION LEVEL menu as shown below opens.

<CORRECTION LEVEL >

```
                    CORRECTION LEVEL

          →CORRECTION LEVEL      STANDARD              ←———————— (1)


             IN  WHITE  LEVEL        97                ←———————— (2)
             IN  BLACK  LEVEL         3                ←———————— (3)
             TARGET  WHITE  LEVEL  93                  ←———————— (4)
             TARGET  BLACK  LEVEL   7                  ←———————— (5)


                     AUTO VIDEO OPTIMIZER             ←———————— (6)
                     MAIN MENU                        ←———————— (7)
                     EXIT                             ←———————— (8)
```
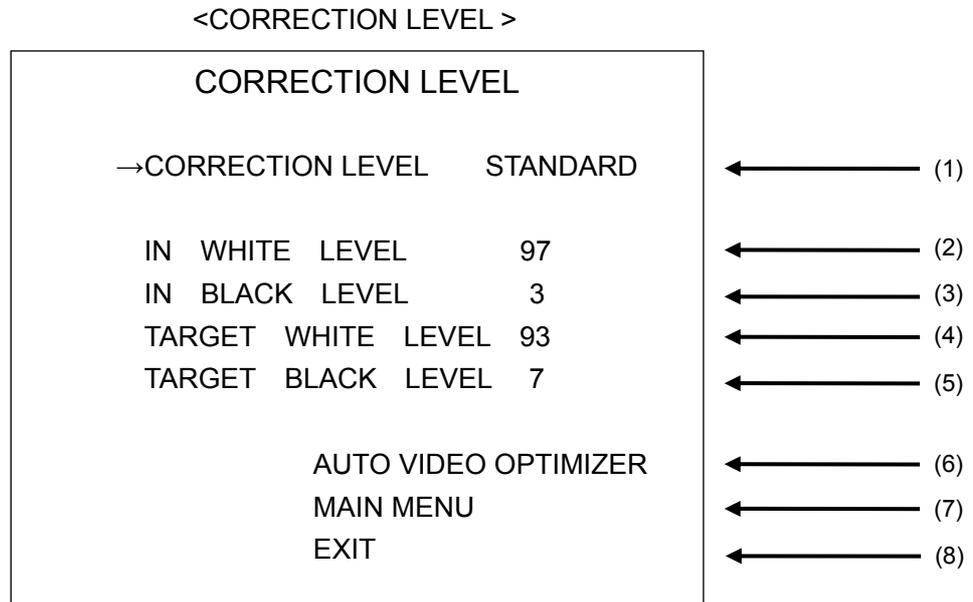
Item	Setting Description	Reference
(1) CORRECTION LEVEL	Allows you to select AVO correction level. **[Setting range]** DARKER, DARK, STANDARD, BRIGHT, BRIGHTER, ADJUST **[Default value]** STANDARD	—
(2) IN WHITE LEVEL	Allows you to set the maximum luminance in percentage for the ADJUST correction selected under CORRECTION LEVEL. **[Setting range]** 80 to 99 **[Default value]** 97	—
(3) IN BLACK LEVEL	Allows you to set the minimum luminance in percentage for the ADJUST correction selected under CORRECTION LEVEL. **[Setting range]** 1 to 20 **[Default value]** 3	—
(4) TARGET WHITE LEVEL	Allows you to set a target maximum luminance level in percentage for the ADJUST correction selected under CORRECTION LEVEL. **[Setting range]** 60 to 100 **[Default value]** 93	—
(5) TARGET BLACK LEVEL	Allows you to set a target minimum luminance level in percentage for the ADJUST correction selected under CORRECTION LEVEL. **[Setting range]** 0 to 40 **[Default value]** 7	—
(6) AUTO VIDEO OPTIMIZER	Returns to the AUTO VIDEO OPTIMIZER menu.	5-5
(7) MAIN MENU	Returns to the main menu.	5-2
(8) EXIT	Exits menus.	—

The CORRECTION LEVEL menu allows you to set the correction level for the AVO function. The five correction level options are as shown below in order from darkest to brightest.

DARKER < DARK < STANDARD < BRIGHT < BRIGHTER

If an insufficient correction is obtained using the given level options, set to ADJUST to enable customized corrections.
Details on setting parameters are as shown below.

<IN WHITE LEVEL>
The maximum value of luminance in the sample data is defined as 100%. Based on this reference value, this determines the highest level of luminance for level control.
If the value is too large, some noise may be picked up, causing the results to become unstable. If the value is too small, it increases contrast, but it may cause the images to be overexposed.

＜IN BLACK LEVEL＞
The minimum value of luminance in the sample data is defined as 0%. Based on this reference value, this determines the lowest level of luminance for level control.
If the value is too small, some noise may be picked up, causing the results to become unstable. If the value is too large, it increases contrast, but may cause the images to be underexposed.

The figures below are luminance histograms of input.
(X-axis: Luminance level, Y-axis: Number of pixels)

If the correction range is narrow.

If the correction range is wide.
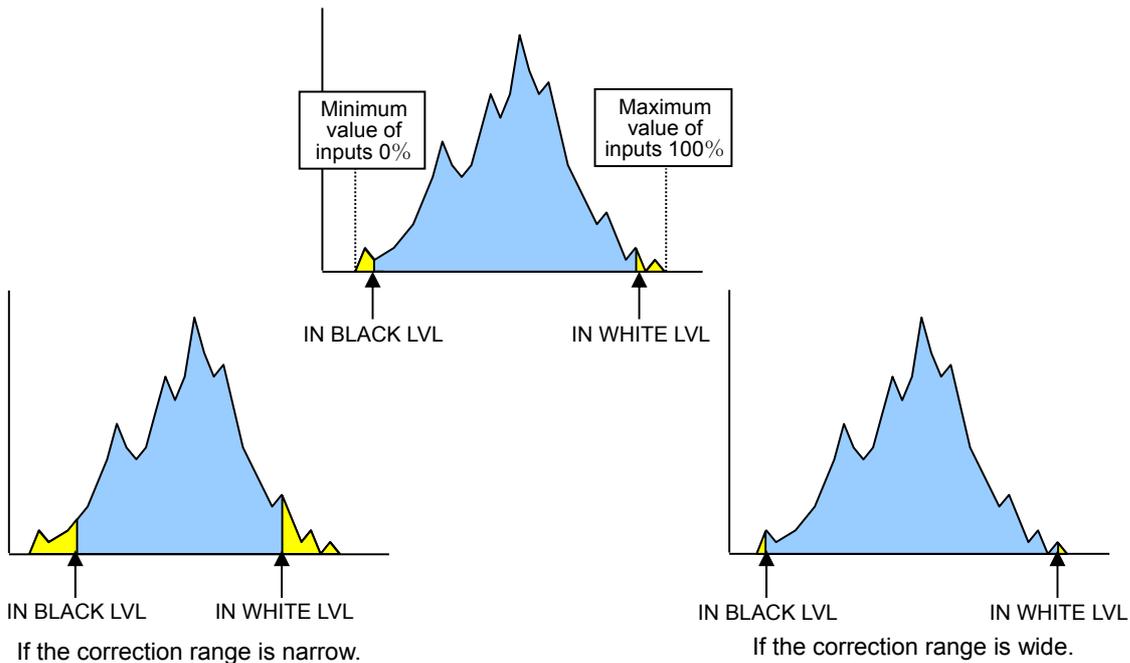
<TARGET WHITE LEVEL>
Determines the maximum value of luminance for outputs.
The maximum luminance value of the image after correction should approximate this value. The larger the value, the brighter the image, which may however cause the image to be overexposed. The smaller the value, all brightness characteristics will be retained, however, a darker image will result.

<TARGET BLACK LEVEL>
Determines the minimum value of luminance for outputs.
The minimum luminance value of the image after correction should approximate this value. The larger the value, dark areas in pictures will appear brighter, which may however lower the contrast and the noise will become apparent. The smaller the value, the higher the contrast, which may however cause the image to be underexposed.

The figure below is a luminance histogram of output.
(X-axis: Luminance level, Y-axis: Number of pixels)

Reference

0%   100%

TARGET BLACK LVL   TARGET WHITE LVL
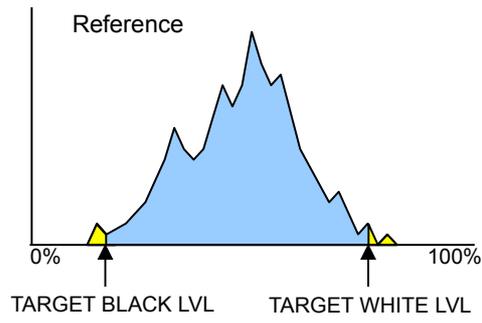
The figures below compare the reference values (dotted line) for output and the actual values after correction (full line).

0%   100%

TARGET BLACK LVL
If TARGET BLACK LVL is set to a large value.

0%   100%

TARGET BLACK LVL
If TARGET BLACK LVL is set to a small value.

0%   100%

TARGET WHITE LVL
If TARGET WHITE LVL is set to a large value.

0%   100%

TARGET WHITE LVL
If TARGET WHITE LVL is set to a small value.
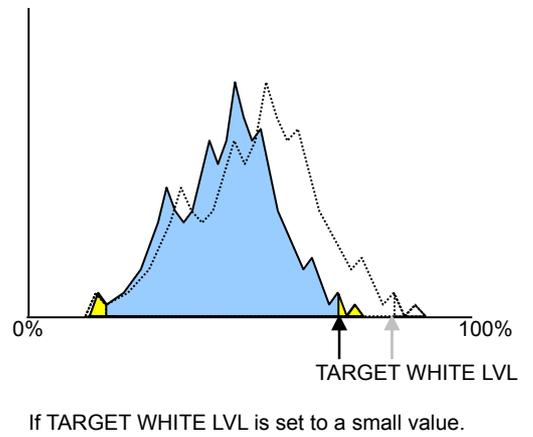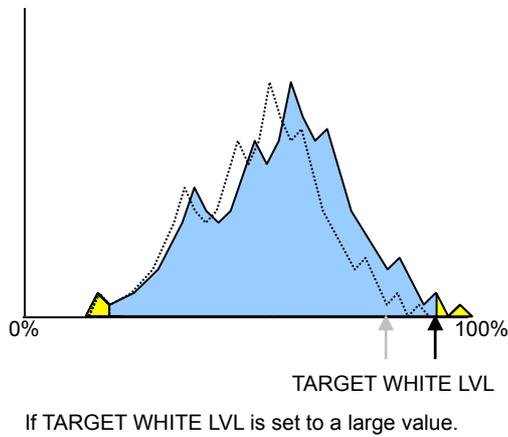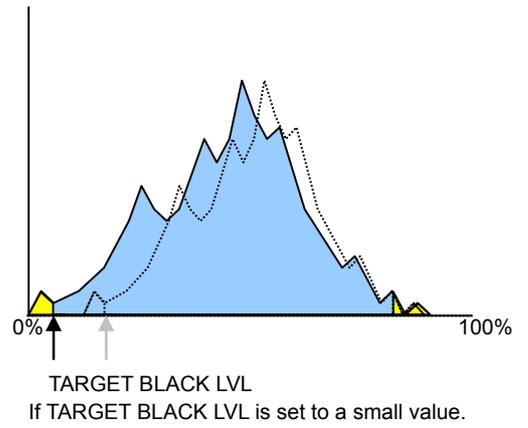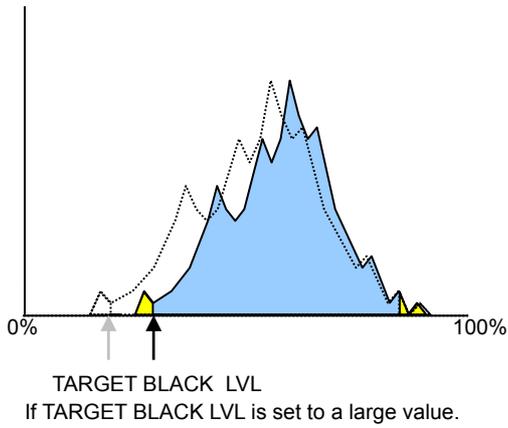
◆ **Relationship between IN BLACK LVL and IN WHITE LVL, and TARGET BLACK LVL and TARGET WHITE LVL.**

Input image

0%   100%

IN BLACK LVL   IN WHITE LVL

Output image

0%   100%

TARGET BLACK LVL   TARGET WHITE LVL

5-5-3. SAMPLE AREA

Move the cursor over SAMPLE AREA on the AUTO VIDEO OPTIMIZER menu, and press the menu control knob. The SAMPLE AREA menu as shown below opens.

<SAMPLE AREA>

```
                    SAMPLE AREA


        →SAMPLE  AREA    FULL  SCREEN      ←———————— (1)


           START（H）          0           ←———————— (2)
           END（H）           704          ←———————— (3)
           START（V）          0           ←———————— (4)
           END（V）           228          ←———————— (5)


                    AUTO VIDEO OPTIMIZER   ←———————— (6)
                    MAIN MENU              ←———————— (7)
                    EXIT                   ←———————— (8)
```

Item	Setting Description	Reference
(1) Sample AREA	Allows you to set the sample area for the AVO function. **[Setting range]** FULL SCREEN, CENTER, ADJUST **[Default value]** FULL SCREEN	—
(2) START(H) (3) END(H)	Allows you to set the horizontal size of the sample area if ADJUST is selected under SAMPLE AREA. **[Setting range]** 0 to 704 **[Default value]** START(H) 0, END(H) 704	—
(4) START(V) (5) END(V)	Allows you to set the vertical size of the sample area if ADJUST is selected under SAMPLE AREA. **[Setting range]** START: 0 to 227(NTSC)/0 to 267(PAL) END: 1 to 228(NTSC)/ 1 to 268(PAL) **[Default value]** START(V) 0, END(V) 228(NTSC)/268(PAL)	—
(6) AUTO VIDEO OPTIMIZER	Returns to AUTO VIDEO OPTIMIZER menu.	5-5
(7) MAIN MENU	Returns to the main menu.	5-2
(8) EXIT	Exits menus.	—

IMPORTANT

Sample Area determines the area in which data is sampled and the level adjustments are applied to whole images.

5-5-4. RESPONSE

The Response menu allows you to set the filtering strength for calculating the mean distances that are applied to histograms created using the sample data.
The larger the value, the more gradually filtering is performed, with a more stable image but slower response.
The smaller the value, the less stable the image, but with a faster response.

5-5-5. GAMMA MODE

Allows you to enable or disable Gamma mode. On enables gamma level correction. Off disables the correction.

5-6. DATE / TIME

Move the cursor over DATE/TIME on the main menu, and press the menu control knob. The DATE/TIME menu as shown below opens.

<DATE / TIME >

```
            DATE／TIME


     →DISPLAY            ON               ←──────── (1)
       EDGE              EDGE             ←──────── (2)
       POSITION（H）       134              ←──────── (3)
       POSITION（V）        40              ←──────── (4)
       SIZE               24              ←──────── (5)
       FORMAT            YMD              ←──────── (6)


            TIME  SET                     ←──────── (7)
       2010－06－19  17：26：38              ←──────── (8)
            SET          CANCEL           ←──────── (9)
                         MAIN MENU        ←──────── (10)
                         EXIT             ←──────── (11)
```
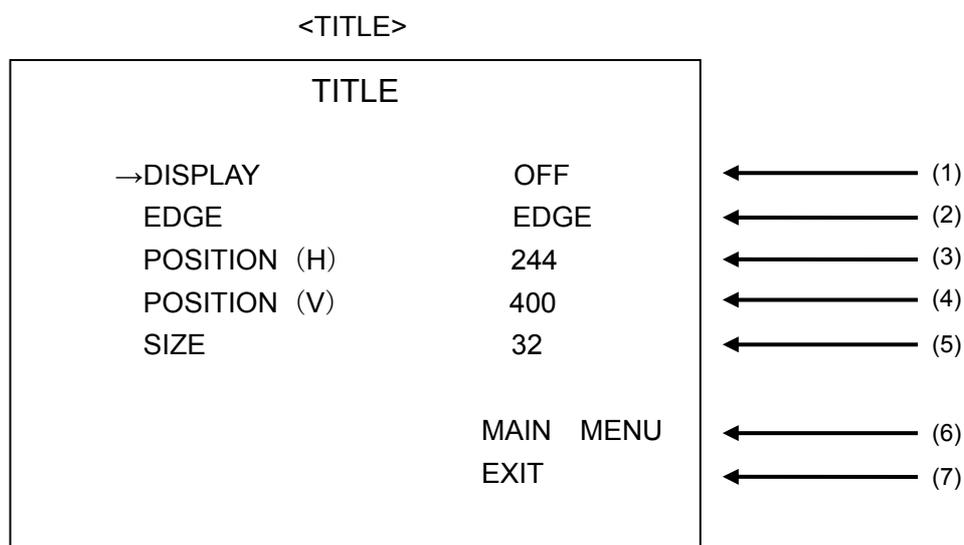
Item	Setting Description	Reference
(1) DISPLAY	Allows you to enable or disable the Date/Time display. **[Setting range]** ON, OFF **[Default value]** ON	－
(2) EDGE	Allows you to select the type of Date/Time display. EDGE allows you to display edged texts. MAT allows you to display texts on a matte background. **[Setting range]** EDGE, MAT, OFF **[Default value]** EDGE	－
(3) POSITION(H)	Allows you to set the horizontal position for the Date/Time display. **[Setting range]** 0 to 720 **[Default value]** 134	－
(4) POSITION(V)	Allows you to set the vertical position for the Date/Time display. **[Setting range]** 0 to 480(NTSC), 0 to 568(PAL) **[Default value]** 40	－
(5) SIZE	Allows you to set the size of the Date/Time display. **[Setting range]** 8 to 26 **[Default value]** 24	－
(6) FORMAT	Allows you to select a Date/Time display format. YMD appears as year-month-day, MDY appears as month-day-year, and DMY as Day-month-year. **[Setting range]** YMD, MDY, DMY **[Default value]** YMD	－
(7) TIME SET	Pressing the menu control knob allows you to enter the Date/Time setting mode.	－
(8) DATE / TIME	Allows you to adjust date and time in the Date/Time setting mode.	－
(9) SET, CANCEL	Move the cursor to SET and press the menu control knob to confirm the Date/Time settings. Move the cursor to CANCEL and press the menu control knob to exit the Date/Time setting mode without applying the changes.	－
(10) MAIN MENU	Returns to the Main menu.	5-2
(11) EXIT	Exits menus.	－

NOTE
Colors and transparency of the Date/Time display text, edge and background can be changed via a web browser.

5-7. TITLE

Move the cursor over TITLE on the main menu, and press the menu control knob. The TITLE menu as shown below opens.
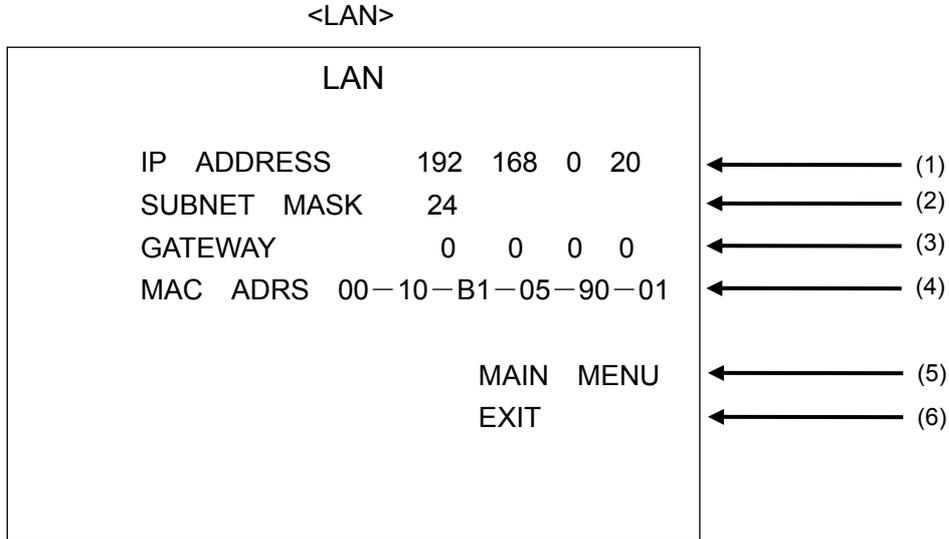
<TITLE>

```
                    TITLE


      →DISPLAY           OFF            ←——————— (1)
        EDGE             EDGE           ←——————— (2)
        POSITION（H）     244            ←——————— (3)
        POSITION（V）     400            ←——————— (4)
        SIZE             32             ←——————— (5)


                     MAIN   MENU        ←——————— (6)
                     EXIT               ←——————— (7)
```

Item	Setting Description	Reference
(1) DISPLAY	Allows you to enable or disable the Title display. **[Setting range]** ON, OFF **[Default value]** ON	－
(2) EDGE	Allows you to enable or disable the title edge or background color display. EDGE displays an edge around the title text. MAT displays a title background with matte color. **[Setting range]** EDGE, MAT, OFF **[Default value]** EDGE	－
(3) POSITION (H)	Allows you to set the horizontal position for titles. **[Setting range]** 0 to 720 **[Default value]** 244	－

(4) POSITION (V)	Allows you to set the vertical position for titles.
	  [Setting range] 0 to 480 (NTSC)
	                        0 to 568 (PAL)
	[Default value] 400 (NTSC/PAL)
		－

(5) SIZE	Allows you to set the size of titles. **[Setting range]** 8 to 32 **[Default value]** 32	－
(6) MAIN MENU	Returns to the Main menu.	「5-2」
(7) EXIT	Exits menus.	－

NOTE
Title texts can only be set via a web browser.
Color and transparency settings for the Title display text, edge and background can be changed via a web browser.

5-8. LAN

Move the cursor over LAN on the main menu, and press the menu control knob. The LAN menu as shown below opens.

<LAN>

```
                    LAN


      IP  ADDRESS      192  168  0  20    ◄────────── (1)
      SUBNET  MASK      24                ◄────────── (2)
      GATEWAY           0   0   0   0     ◄────────── (3)
      MAC  ADRS  00－10－B1－05－90－01    ◄────────── (4)



                       MAIN  MENU        ◄────────── (5)
                       EXIT              ◄────────── (6)
```

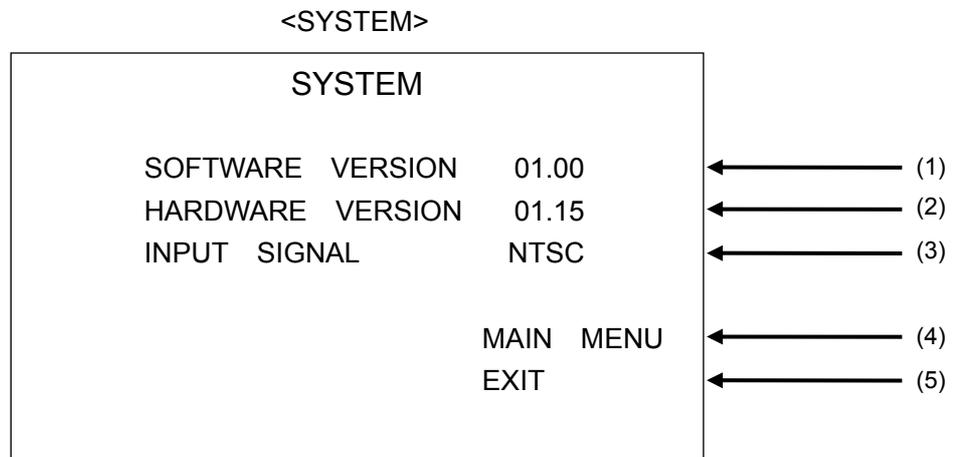| Item	Setting Description	Reference
(1) IP ADDRESS	Allows you to set the IP ADDRESS for the device. Be sure to set the IP address when using a LAN interface. Consult with your system administrator for details on using the device in your existing network. **[Setting range]** 0.0.0.0 to 255.255.255.255 Except 0.0.0.0 and 1.0.0.0. **[Default value]** 192.168.0.20	－
(2) SUBNET MASK	Allows you to set the subnet mask length for the device. **[Setting range]** 0 to 31 **[Default value]** 24	－
(3) GATEWAY	If your network does not have a gateway, this setting is not required. **[Setting range]** 0.0.0.0 to 255.255.255.255 **[Default value]** 0.0.0.0	－
(4) MAC ADRS	Displays the MAC address of the device. The value cannot be changed.	－
(5) MAIN MENU	Returns to the Main menu.	5-2
(6) EXIT	Exits the Main menu.	－

IMPORTANT
After changing any LAN settings, turn the power of the IVS-200 off, then on again, since changes will be applied when the IVS-200 is turned on.

5-9. SYSTEM

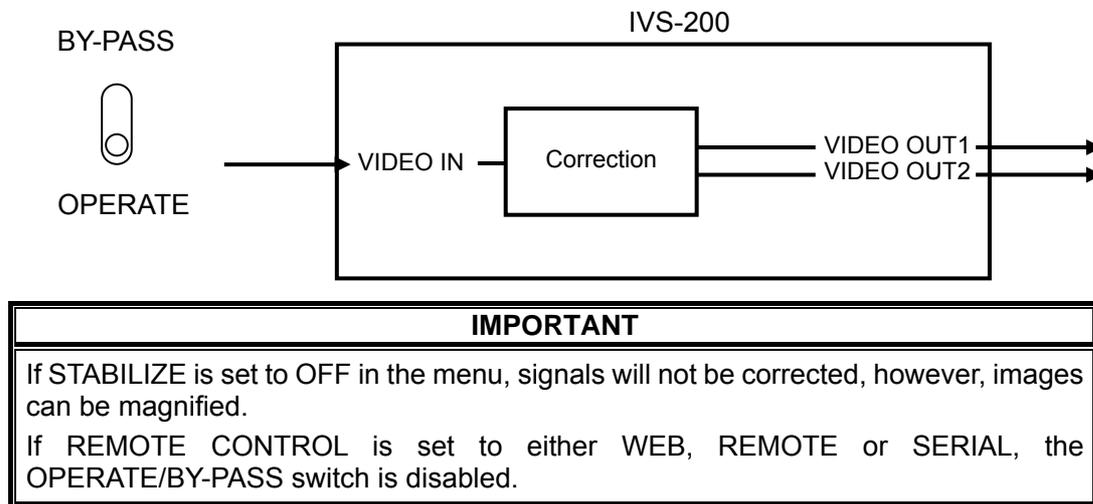Move the cursor over SYSTEM on the main menu, and press the menu control knob. The SYSTEM menu as shown below opens.

<SYSTEM>

```
                       SYSTEM


        SOFTWARE   VERSION      01.00          ◄─────── (1)
        HARDWARE   VERSION      01.15          ◄─────── (2)
        INPUT   SIGNAL          NTSC           ◄─────── (3)


                          MAIN   MENU          ◄─────── (4)
                          EXIT                 ◄─────── (5)
```

Item	Setting Description	Reference
(1) SOFTWARE VERSION	Displays the software version information.	—
(2) HARDWARE VERSION	Displays the hardware version information.	—
(3) INPUT SIGNAL	Displays the current input signal format.	—
(4) MAIN MENU	Returns to the Main menu.	5-2
(5) EXIT	Exits the Main menu.	—

6. OPERATE / BY-PASS

The OPERATE/BY-PASS toggle switch on the front panel allows you to switch between OPERATE and BY-PASS outputs.

◆ **OPERATE**
Press down the OPERATE/BY-PASS switch to select OPERATE. Signals will be corrected and output.

IVS-200

BY-PASS

OPERATE

VIDEO IN — Correction — VIDEO OUT1
VIDEO OUT2

IMPORTANT
If STABILIZE is set to OFF in the menu, signals will not be corrected, however, images can be magnified.
If REMOTE CONTROL is set to either WEB, REMOTE or SERIAL, the OPERATE/BY-PASS switch is disabled.

◆ **BY-PASS**
Push up the OPERATE/BY-PASS switch to select BY-PASS. Signal output from VIDEO OUT1 will be without correction, and signal output from VIDEO OUT2 will be corrected.

IVS-200

BY-PASS

OPERATE

VIDEO IN ——————— VIDEO OUT1
Correction — VIDEO OUT2
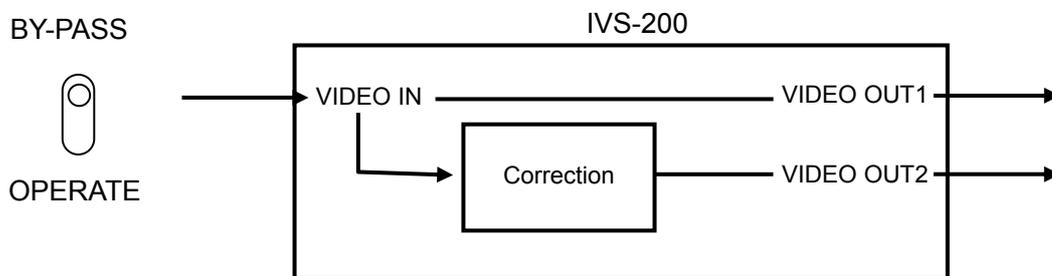
7. Remote Control

To control the unit remotely, change the menu setting to **Remote Control**. See section 5-4-7. "Remote Control" for details.

7-1. Remote Connector
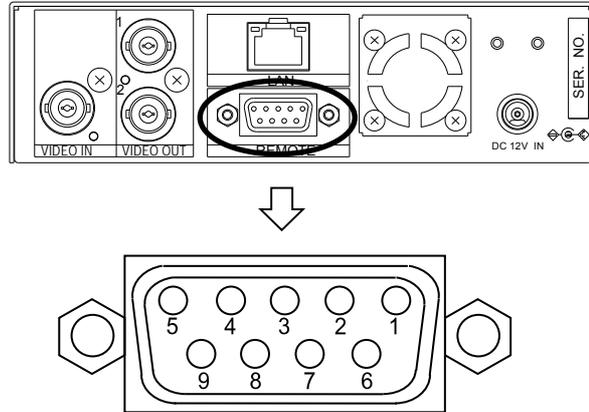


◆ **Remote Connector Pin Assignments (9-pin D-sub female)**

Pin No.	Item	I/O	Function	High	Low
1	VCC		+5V		
2	OPERATE / BY-PASS	Output	OPERATE/BY-PASS selection	BY-PASS	OPERATE
3	VIDEO IN	Output	Input signal presence	None	Yes
4	Unused	—	—		
5	STABILIZE	Output	STABILIZE setting	OFF	ON
6	OPERATE / BY-PASS	Input	OPERATE/BY-PASS selection	OPERATE	BY-PASS
7	STABILIZE	Input	STABILIZE setting	ON	OFF
8	Unused	—	—		
9	GND		GND		

| IMPORTANT |
|-----------|
| Do not connect to unused pins (pins 4 and 8). |

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7-1-1. Remote Terminal Equivalent Circuit

◆ **Example of connection with Remote output circuit**
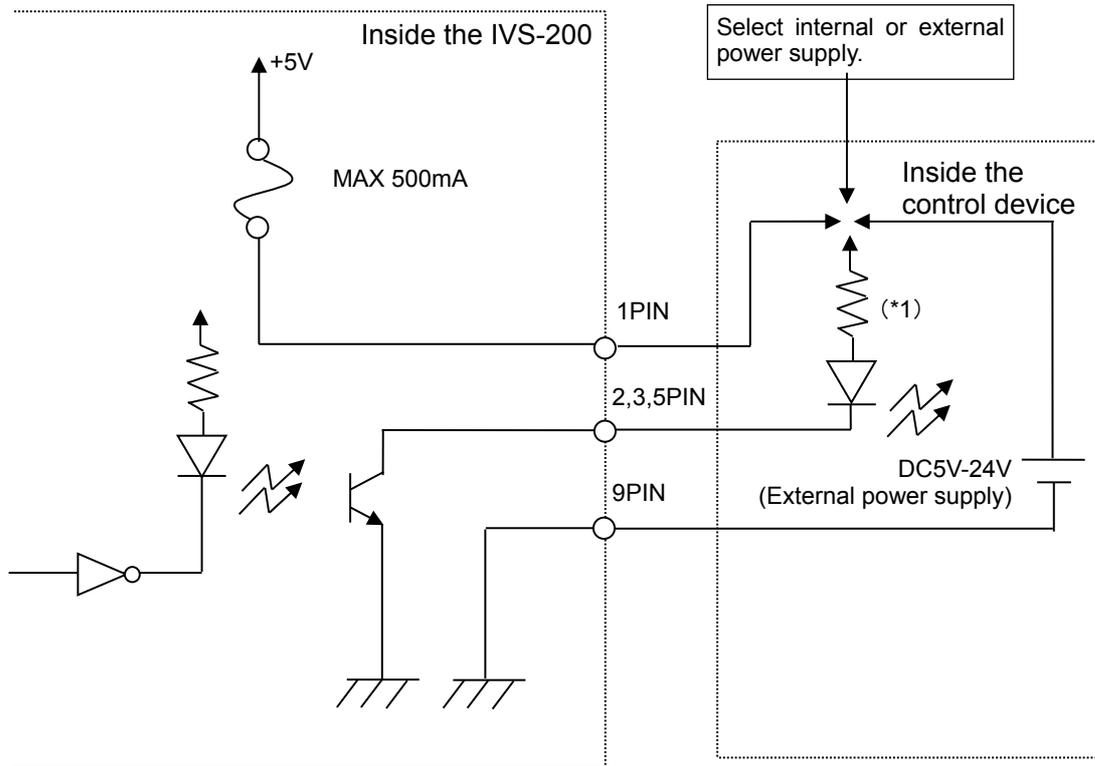
*1)Use protective resistance at the proper value according to the internal/external supply voltage and LED characteristics. The current for each circuit must be kept below 30mA.

◆ **Example of connection with Remote input circuit**
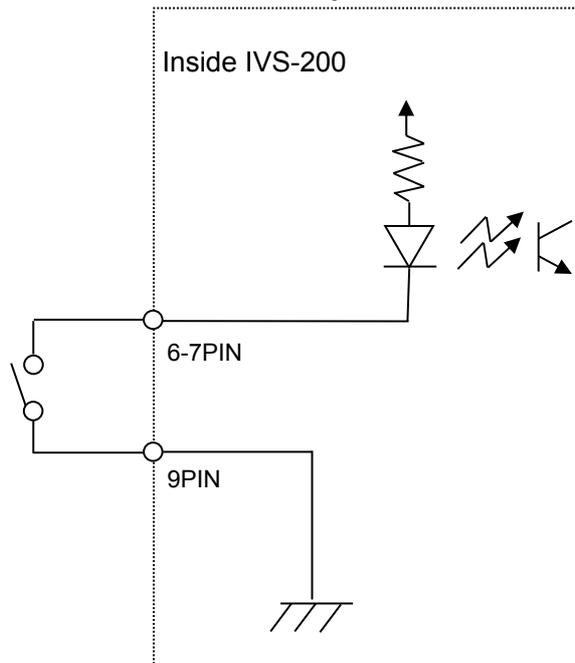
8. Remote Control via Web Browser

8-1. Connecting and Starting through Internet Explorer

On your PC, go to **Start > All Programs > Internet Explorer** to start Internet Explorer.
Enter the address as http:// XXX. XXX. XXX. XXX/ in the address bar, then press **Enter**.
(XXX. XXX. XXX. XXX is the IP address you have set for the IVS-200.) If the IP address of the IVS-200 has not been changed from factory default, enter as http://192.168.0.20/.
When connection is established, the Main Menu as shown below is displayed.

IMPORTANT
If the IVS-200 is restarted while connected to Internet Explorer, performance on a web browser after the restart may become unstable. Reconnect to Internet Explorer when restarting the IVS-200.
A PC may not be able to establish a connection with the IVS-200 through Internet Explorer due to its OS version. In such case, use a different PC or different web browser, such as FireFox.

8-2. Exiting Internet Explorer

To exit Internet Explorer, click the x button at the top-right corner of the window.

8-3. Menu Operation

8-3-1. MAIN MENU

Once the connection is established, MAIN MENU as shown below opens.
Click on each submenu to go to the corresponding submenus.

8-3-2. STABILIZE

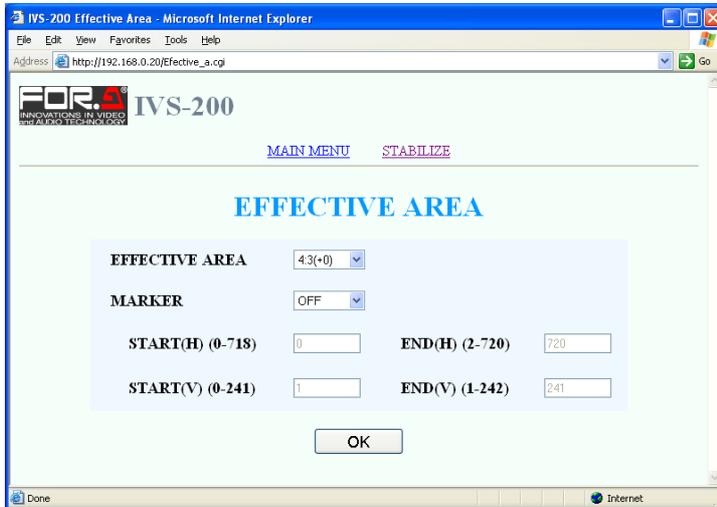Click STABILIZE in MAIN MENU to open the STABILIZE menu as shown below.

Item	Setting description	Reference
(1) STABILIZE	Allows you to enable or disable shake correction. **[Setting range]** ON, OFF **[Default value]** ON	5-3-1
(2) DISTORTION	Allows you to adjust the pixel aspect ratio. **[Setting range]** 4:3, 16:9, ADJUST ADJUST allows you to adjust between 0.80 and 1.60 **[Default value]** 4:3	5-4-1
(3) CORRECTION LEVEL	Allows you to select the correction level (magnification percentage). **[Setting range]** 0 to 15 **[Default value]** 10	5-3-2
(4) MOTION FILTER (H)	Allows you to select strength of horizontal correction. **[Setting range]** 0 to 16 **[Default value]** 7	5-3-3
(5) MOTION FILTER (V)	Allows you to select strength of vertical correction. **[Setting range]** 0 to 16 **[Default value]** 7	5-3-3
(6) MOTION FILTER (R)	Allows you to select strength of rotational correction. **[Setting range]** 0 to 16 **[Default value]** 14	5-3-3
(7) ENHANCE (H)	Allows you to select the horizontal edge enhancement level. **[Setting range]** 0 to 15 **[Default value]** 10	5-3-4
(8) ENHANCE (V)	Allows you to select the vertical edge enhancement level. **[Setting range]** 0 to 15 **[Default value]** 6	5-3-4
(9) EFFECTIVE AREA	Opens the EFFECTIVE AREA menu that allows you to adjust the effective area.	8-3-3

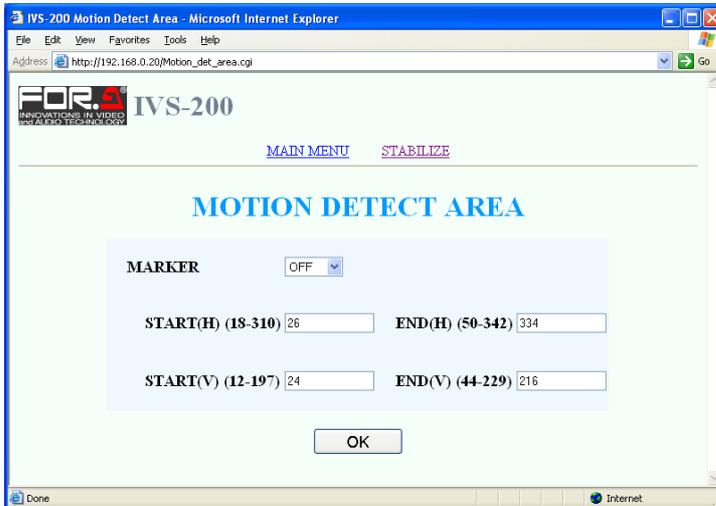|		
(10) CORRECTION AREA	Allows you to select a display size for the shake-corrected image. **[Setting range]** 0 to 15 **[Default value]** 0	5-4-3
(11) MOTION DETECT AREA	Opens the MOTION DETECT AREA menu that allows you to adjust the motion detection area.	8-3-4
(12) TITLE PASTE	Opens the TITLE PASTE menu that allows you to set areas for titles to be excluded from the motion detection area.	8-3-5
(13) DIRECT USE	Allows you to select a parameter that can be directly controlled by the menu control knob on the IVS-200 front panel. **[Setting range]** OFF, CORR LEVEL, FILTER H, FILTER V, FILTER R **[Default value]** OFF	5-4-6
(14) REMOTE CONTROL	Allows you to select how STABILIZE can be turned ON/OFF, and BYPASS/OPERATE can be switched from operations on the front panel, via a web browser, or via REMOTE interface. To use Command control via LAN, select SERIAL. **[Setting range]** FRONT, WEB, REMOTE, SERIAL **[Default value]** FRONT	5-4-7
(15) BYPASS/OPERATE	Allows you to switch between BYPASS and OPERATE if REMOTE CONTROL is set to WEB.	6
(16) OK	Applies the setting to the IVS-200.	—
(17) MAIN MENU	Returns to MAIN MENU.	8-3-1

8-3-3. EFFECTIVE AREA

Click EFFECTIVE AREA on the STABILIZE menu to open the EFFECTIVE AREA menu as shown below.

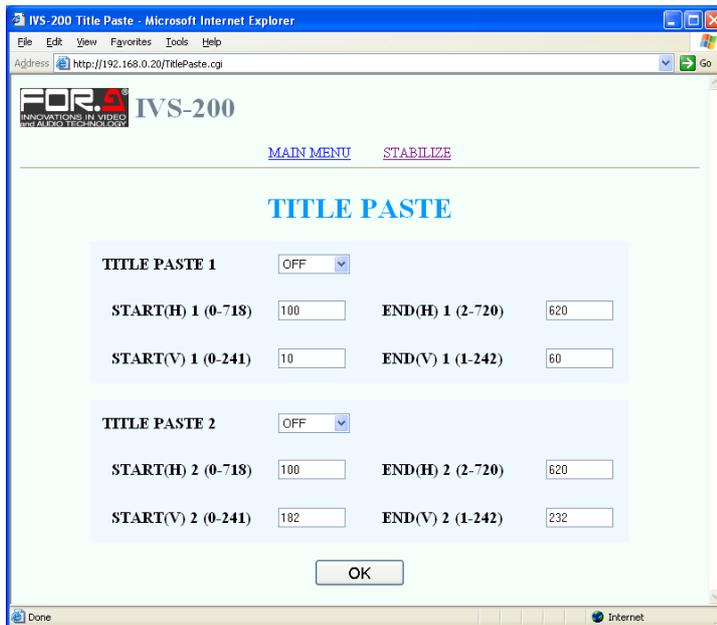| Item	Setting description	Reference

(1) EFFECTIVE AREA	Allows you to set an effective area.
	[Setting range] 4 : 3 (+0) to 4 : 3 (+7),
	                16 : 9 (-7) to 16 : 9 (+7),
	                ADJUST
	[Default value] 4 : 3 (+0)
		5-4-2

(2) MARKER	Allows you to select whether to display an EFFECTIVE AREA selection marker on video output. **[Setting range]** ON, OFF **[Default value]** OFF	
(3) START(H) (4) END(H)	Allows you to set the horizontal extent of the effective area if EFFECTIVE AREA is set to ADJUST. **[Setting range]** 0 to 720 * Odd values cannot be set. If an odd value is entered, the value will be adjusted to the entered value minus 1.	
(5) START(V) (6) END(V)	Allows you to set the vertical extent of the effective area if EFFECTIVE AREA is set to ADJUST. **[Setting range]** 0 to 242(NTSC), 0 to 286(PAL)	
(7) OK	Applies the settings to the IVS-200.	－
(8) MAIN MENU	Returns to the MAIN menu.	8-3-1
(9) STABILIZE	Returns to the STABILIZE menu.	8-3-2

8-3-4. MOTION DETECT AREA

Click MOTION DETECT AREA in the STABILIZE menu to open the MOTION DETECT AREA menu as shown below.

Item	Setting Description	Reference
(1) MARKER	Allows you to select whether to display an MOTION DETECT AREA selection marker on video output. **[Setting range]** ON, OFF **[Default value]** OFF	5-4-4

(2) START(H)
(3) END(H)
	Allows you to set the horizontal extent of the motion detection area.
	[Setting range] START(H): 18 to 310
	                      END(H): 50 to 342
	[Default value] START(H): 26
	                      END(H): 334
	* Odd values cannot be set. If an odd value is entered, the value will be adjusted to the entered value minus 1.	

(4) START(V)
(5) END(V)
	Allows you to set the vertical extent of the motion detection area.
	[Setting range] START(V): 12 to 197(NTSC)
	                                    14 to 239(PAL)
	                      END(V): 44 to 229(NTSC)
	                                    46 to 271(PAL)
	[Default value] START: 24
	                      END: 216 (NTSC) / 260 (PAL)	

(6) OK	Applies the settings to the IVS-200.	―
(7) MAIN MENU	Returns to the MAIN menu.	8-3-1
(8) STABILIZE	Returns to the STABILIZE menu.	8-3-2

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8-3-5. TITLE PASTE

Click TITLE PASTE in the STABILIZE menu to open the TITLE PASTE menu.

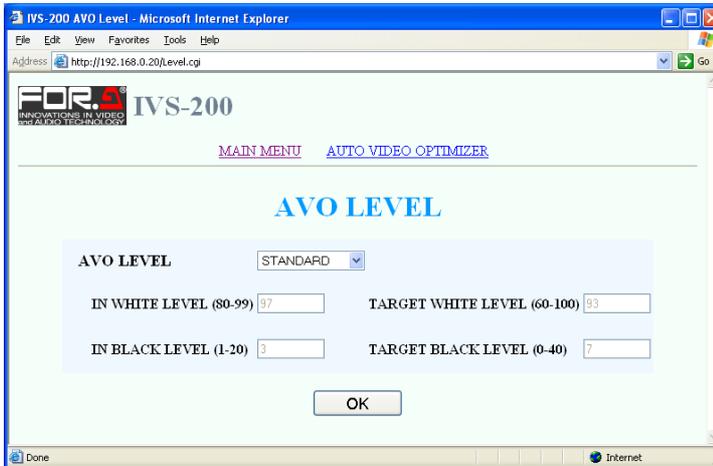| Item	Setting Description	Reference
(1) TITLE PASTE 1	Allows you to enable or disable TITLE PASTE1. **[Setting range]** ON, OFF **[Default value]** OFF	5-4-5
(2) START(H)1 (3) END(H)1	Allows you to set the horizontal extent of the TITLE PASTE 1 area. **[Setting range]** 0 to 720 **[Default value]** START: 100, END: 620 * Odd values cannot be set. If an odd value is entered, the value will be adjusted to the entered value minus 1.	
(4) START(V)1 (5) END(V)1	Allows you to set the vertical extent of the TITLE PASTE 1 area. **[Setting range]** 0 to 242 (NTSC) 0 to 286 (PAL) **[Default value]** START: 10, END: 60	
(6) TITLE PASTE 2	Allows you to enable or disable TITLE PASTE2. **[Setting range]** ON, OFF **[Default value]** OFF	
(7) START(H)2 (8) END(H)2	Allows you to set the horizontal extent of the TITLE PASTE 2 area. **[Setting range]** 0 to 720 **[Default value]** START: 100, END: 620 * Odd values cannot be set. If an odd value is entered, the value will be adjusted to the entered value minus 1.	
(9) START(V)2 (10) END(V)2	Allows you to set the vertical extent of the TITLE PASTE 2 area. **[Setting range]** 0 to 242 (NTSC) 0 to 286 (PAL) **[Default value]** START: 182, END: 232 (NTSC) START: 226, END: 276 (PAL)	
(11) OK	Applies the settings to the IVS-200.	—
(12) MAIN MENU	Returns to the MAIN menu.	8-3-1
(13) STABILIZE	Returns to the STABILIZE menu.	8-3-2

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8-3-6. AUTO VIDEO OPTIMIZER

Click **AUTO VIDEO OPTIMIZER** in the MAIN MENU to open the AUTO VIDEO OPTIMIZER menu.

Item	Setting Description	Reference
(1) OPERATE	Allows you to enable or disable the AVO (Auto Video Optimizer) function. **[Setting range]** AUTO, HOLD, and OFF **[Default value]** AUTO	5-5-1
(2) CORRECTION LEVEL	Opens the AVO correction level setting menu.	8-3-7
(3) SAMPLE AREA	Opens the AVO sample area setting menu.	8-3-8
(4) RESPONSE	Allows you to set the AVO filtering level. **[Setting range]** 1 to 5 **[Default value]** 3	5-5-4
(5) GAMMA MODE	Allows you to enable or disable Gamma correction. **[Setting range]** ON, OFF **[Default value]** ON	5-5-5
(6) OK	Applies the settings to the IVS-200.	―
(7) MAIN MENU	Returns to the MAIN menu.	8-3-1

8-3-7. AVO LEVEL

Click AVO LEVEL in the AUTO VIDEO OPTIMIZER menu to open the AVO LEVEL menu as shown below.
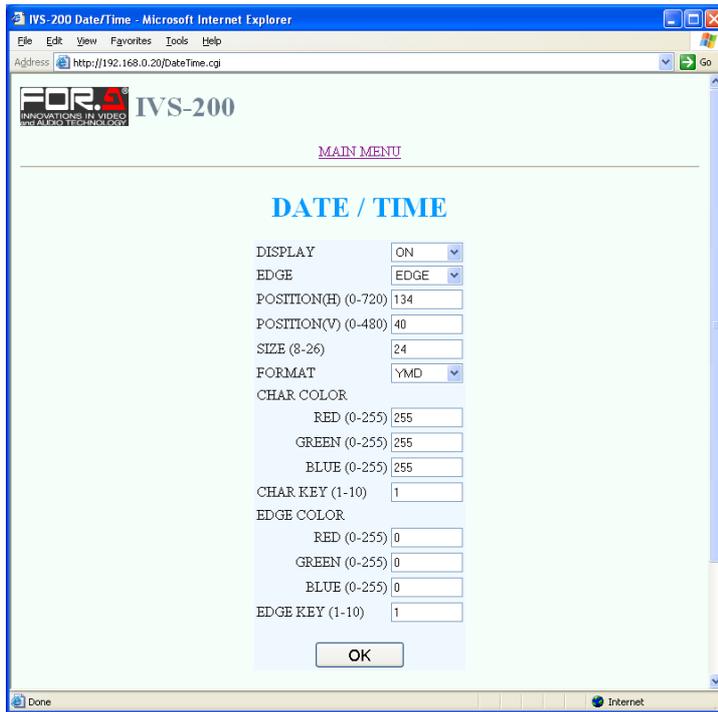

Item	Setting Description	Reference
(1) AVO LEVEL	Allows you to select the AVO correction level. **[Setting range]** DARKER, DARK, STANDARD, BRIGHT, BRIGHTER, ADJUST **[Default value]** STANDARD	5-5-2
(2) IN WHITE LEVEL	Allows you to set the maximum luminance in percentage for the ADJUST correction selected under AVO LEVEL. **[Setting range]** 80 to 99 **[Default value]** 97	
(3) IN BLACK LEVEL	Allows you to set the minimum luminance in percentage for the ADJUST correction selected under AVO LEVEL. **[Setting range]** 1 to 20 **[Default value]** 3	
(4) TARGET WHITE LEVEL	Allows you to set a target maximum luminance level in percentage for the ADJUST correction selected under AVO LEVEL. **[Setting range]** 60 to 100 **[Default value]** 93	
(5) TARGET BLACK LEVEL	Allows you to set a target minimum luminance level in percentage for the ADJUST correction selected under AVO LEVEL. **[Setting range]** 0 to 40 **[Default value]** 7	
(6) OK	Applies the settings to the IVS-200.	―
(7) MAIN MENU	Returns to the MAIN menu.	8-3-1
(8) AUTO VIDEO OPTIMIZER	Returns to the AUTO VIDEO OPTIMIZER menu.	8-3-6

8-3-8. SAMPLE AREA

Click SAMPLE AREA in the AUTO VIDEO OPTIMIZER menu to open the SAMPLE AREA menu as shown below.

Item	Setting Description	Reference
(1) SAMPLE AREA	Allows you to set the sample area for the AVO function. **[Setting range]** FULL SCREEN, CENTER, ADJUST **[Default value]** FULL SCREEN	
(2) AREA DISPLAY	Allows you to select whether to display SAMPLE AREA selection marker on video output. **[Setting range]** ON, OFF **[Default value]** OFF	
(3) START (H) (4) END (H)	Allows you to set the horizontal size of the sample area if ADJUST is selected under SAMPLE AREA. **[Setting range]** 0 to 704 **[Default value]** START (H): 0, END (H): 704 * Odd values cannot be set. If an odd value is entered, the value will be adjusted to the entered value minus 1.	5-5-3
(5) START (V) (6) END (V)	Allows you to set the vertical size of the sample area if ADJUST is selected under SAMPLE AREA. **[Setting range]** START: 0 to 227(NTSC) 0 to 267(PAL) END: 1 to 228(NTSC) 1 to 268(PAL) **[Default value]** START(V) 0 END(V) 228(NTSC)/268(PAL)	
(7) OK	Applies the settings to the IVS-200.	—
(8) MAIN MENU	Returns to the MAIN menu.	8-3-1
(9) AUTO VIDEO OPTIMIZER	Returns to the AUTO VIDEO OPTIMIZER menu.	8-3-6

8-3-9. DATE / TIME

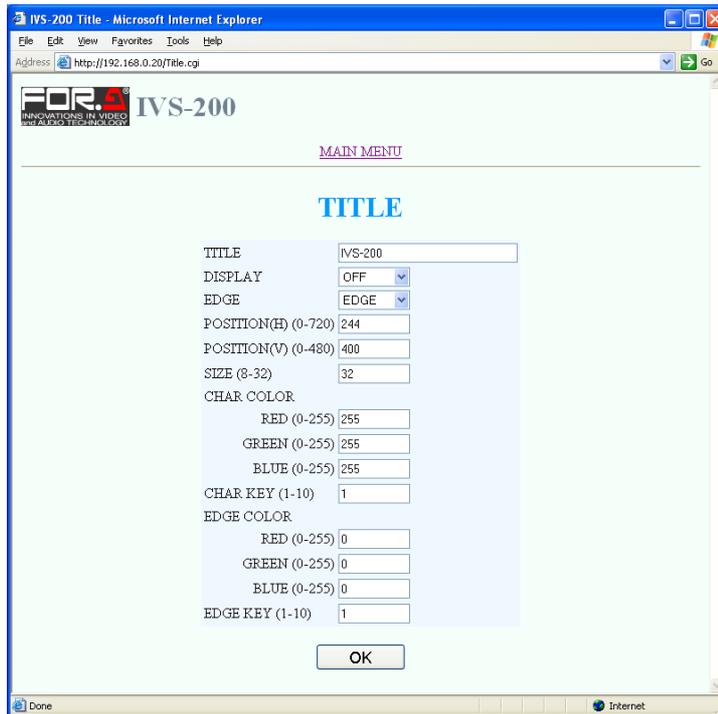Click DATE / TIME in the MAIN MENU to open the DATE / TIME menu.

Item	Setting Description	Reference
(1) DISPLAY	Allows you to enable or disable the Date/Time display. **[Setting range]** ON, OFF **[Default value]** ON	—
(2) EDGE	Allows you to select the type of Date/Time display. EDGE allows you to display edged texts. MAT allows you to display texts on a matte background. **[Setting range]** EDGE, MAT, OFF **[Default value]** EDGE	—
(3) POSITION (H)	Allows you to set the horizontal position for the Date/Time display. **[Setting range]** 0 to 720 **[Default value]** 134 * Odd values cannot be set. If an odd value is entered, the value will be adjusted to the entered value minus 1.	—
(4) POSITION (V)	Allows you to set the vertical position for the Date/Time display. **[Setting range]** 0 to 480(NTSC), 0 to 568(PAL) **[Default value]** 40 * Odd values cannot be set. If an odd value is entered, the value will be adjusted to the entered value minus 1.	—
(5) SIZE	Allows you to set the size of the Date/Time display. **[Setting range]** 8 to 26 **[Default value]** 24	—
(6) FORMAT	Allows you to select a Date/Time display format. YMD appears as year-month-day, MDY appears as month-day-year, and DMY as Day-month-year. **[Setting range]** YMD, MDY, DMY **[Default value]** YMD	—
(7) CHAR COLOR RED, GREEN, BLUE	Allows you to set the font color for the Date/Time display. **[Setting range]** 0 to 255 **[Default value]** 255	—

(8) CHAR KEY	Allows you to set character transparency for the Date/Time display. The larger the value, the more transparent. **[Setting range]** 1 to 10 **[Default value]** 1	ー
(9) EDGE COLOR RED, GREEN, BLUE	Allows you to set the edge or matte color for the Date/Time display. **[Setting range]** 0 to 255 **[Default value]** 0	ー
(10) EDGE KEY	Allows you to set edge and matte background transparency for the Date/Time display. The larger the value, the more transparent. **[Setting range]** 1 to 10 **[Default value]** 1	ー
(11) OK	Applies the settings to the IVS-200.	ー
(12) DATE/TIME	Allows you to adjust date and time for the IVS-200.	ー
(13)TIME SET	Applies the Date/Time settings to the IVS-200.	ー
(14) MAIN MENU	Returns to the MAIN menu.	8-3-1

8-3-10. TITLE

Click TITLE in the MAIN MENU to open the TITLE menu as shown below.

Item	Setting Description	Reference
(1) TITLE	Allows you to set title texts. Title length can be up to 16 characters. Alphanumeric characters and symbols are available.	—
(2) DISPLAY	Allows you to enable or disable the Title display. **[Setting range]** ON, OFF **[Default value]** OFF	—
(3) EDGE	Allows you to enable or disable the title edge or background color display. EDGE displays an edge around the title text. MAT displays a title background with matte color. **[Setting range]** EDGE, MAT, OFF **[Default value]** EDGE	—
(4) POSITION (H)	Allows you to set the horizontal position for titles. **[Setting range]** 0 to 720 **[Default value]** 244 * Odd values cannot be set. If an odd value is entered, the value will be adjusted to the entered value minus 1.	—
(5) POSITION (V)	Allows you to set the vertical position for titles. **[Setting range]** 0 to 480 (NTSC) 0 to 568 (PAL) **[Default value]** 400 (NTSC/PAL) * Odd values cannot be set. If an odd value is entered, the value will be adjusted to the entered value minus 1.	—
(6) SIZE	Allows you to set the size of titles. **[Setting range]** 8 to 32 **[Default value]** 32	—
(7) CHAR COLOR RED, GREEN, BLUE	Allows you to set font color for the Title display. **[Setting range]** 0 to 255 **[Default value]** 255	

(8) CHAR KEY	Allows you to set transparency for title texts. The larger the value, the more transparent. **[Setting range]** 1 to 10 **[Default value]** 1	
(9) EDGE COLOR RED, GREEN, BLUE	Allows you to set edge and matte colors for titles. **[Setting range]** 0 to 255 **[Default value]** 0	
(10) EDGE KEY	Allows you to set transparency for title edge and matte colors. The larger the value, the more transparent. **[Setting range]** 1 to 10 **[Default value]** 1	
(11) OK	Applies the settings to the IVS-200.	
(12) MAIN MENU	Returns to the MAIN menu.	8-3-1

8-3-11. LAN

Click LAN in the MAIN MENU to open the LAN menu as shown below.
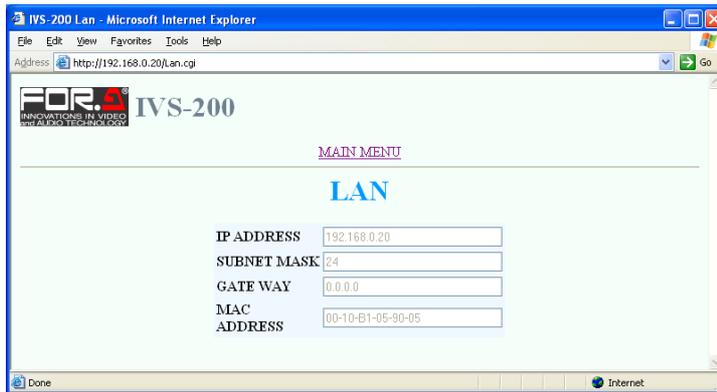
Item	Setting Description	Reference
(1) IP ADDRESS	Displays the IVS-200's IP ADDRESS.	—
(2) SUBNET MASK	Displays the IVS-200's subnet mask length.	—
(3) GATEWAY	Displays the IVS-200's gateway.	—
(4) MAC ADDRESS	Displays the IVS-200's MAC ADDRESS.	
(5) MAIN MENU	Returns to the MAIN menu.	8-3-1

8-3-12. SYSTEM

Click SYSTEM in the MAIN MENU to open the SYSTEM menu as shown below.

Item	Setting Description	Reference
(1) SOFTWARE VERSION	Displays the software version information.	—
(2) HARDWARE VERSION	Displays the hardware version information.	—
(3) INPUT SIGNAL	Displays the current input signal format.	—
(4) MAIN MENU	Returns to the MAIN menu.	8-3-1

9. Troubleshooting

If any of the following problems occur while operating the IVS-200, before assuming a unit malfunction has occurred, follow the troubleshooting procedures below to see if the problem can be corrected.

IMPORTANT
If the problem cannot be corrected by performing the procedures below, turn the unit off and then on again. If this still does not correct the problem, contact your dealer.

| Problem	Check	Remedy
The STABILIZE OPERATE / BY-PASS setting cannot be changed by the front panel toggle switch.	Is REMOTE CONTROL set to REMOTE, WEB or SERIAL?	Set REMOTE CONTROL to FRONT.
Video input signals are not bypassed when the unit power is turned off.	Which VIDEO OUT connector on the rear panel is being used to output video signals?	The bypass function is provided only on VIDEO OUT 1. To bypass through video signals, connect a monitor to the VIDEO OUT 1 connector.
How can I reset to factory default?		Turn the power of the IVS-200 on while holding down the menu control knob on the front panel. All backed up data will be initialized.

# 10. Specifications & Dimensions

10-1. Specifications

Video Formats	NTSC or PAL (Auto-detection at startup)
Video Input	Analog Composite: 1.0 Vp-p, 75Ω, BNC x 1
Video Output	Analog Composite: 1.0 Vp-p±0.1V, 75Ω, BNC x 2 (VIDEO OUT1 with bypass output support)
I/O Delay	Max. 4 frames
Jitter Correction	Correction range: Horizontally and vertically up to 40% of images
Frequency Response	Detects camera shakes of 1 Hz to half of field frequency (theoretical value)
Motion Type	Vertical, horizontal, diagonal, and rotational (two-dimensional)
AVO Correction	Automatic luminance level adjustment for white and black levels.
Correction Mode	AUTO, HOLD (retains current settings), OFF (Menu selectable)
Correction Level	Preset: 5 steps, manually adjustable
Title Display	Number of characters: 16 characters x 1 line Characters: Alphanumeric charactors and symbols
Time Display	Display format: Year-Month-Day, HH: MM: SS (24-hour display) Time accuracy: within ±10 seconds per month (25ºC)
Interfaces	
REMOTE	9-pin D-sub (female) x 1 Input: TTL negative logic level signal or Make contact Output: 5 VDC to 24 VDC, max. 40 mA
LAN	10 Base-T/100 Base-TX, RJ-45 (category 5) x 1
Temperature	0 to 40ºC
Humidity	30 to 90% (no condensation)
Power	+12 to +24 VDC
Power Consumption	14 W (at +12 VDC)
Dimensions	145 (W)×162 (D)×40 (H) mm
Weight	0.93kg
Consumables	Cooling fan: P-1288 (rear) (within 5 years, at room temperature)
<AC Adaptor>	Purchased separately
Power	100 to 240 VAC (±10%) 50Hz/60Hz
Power Consumption	27 VA (15 W) (at 100 VAC) 31 VA (15 W) (at 200 VAC)
Dimensions	62 (W)×99 (D)×26 (H) mm

10-2. External Dimensions

(All dimensions in mm)
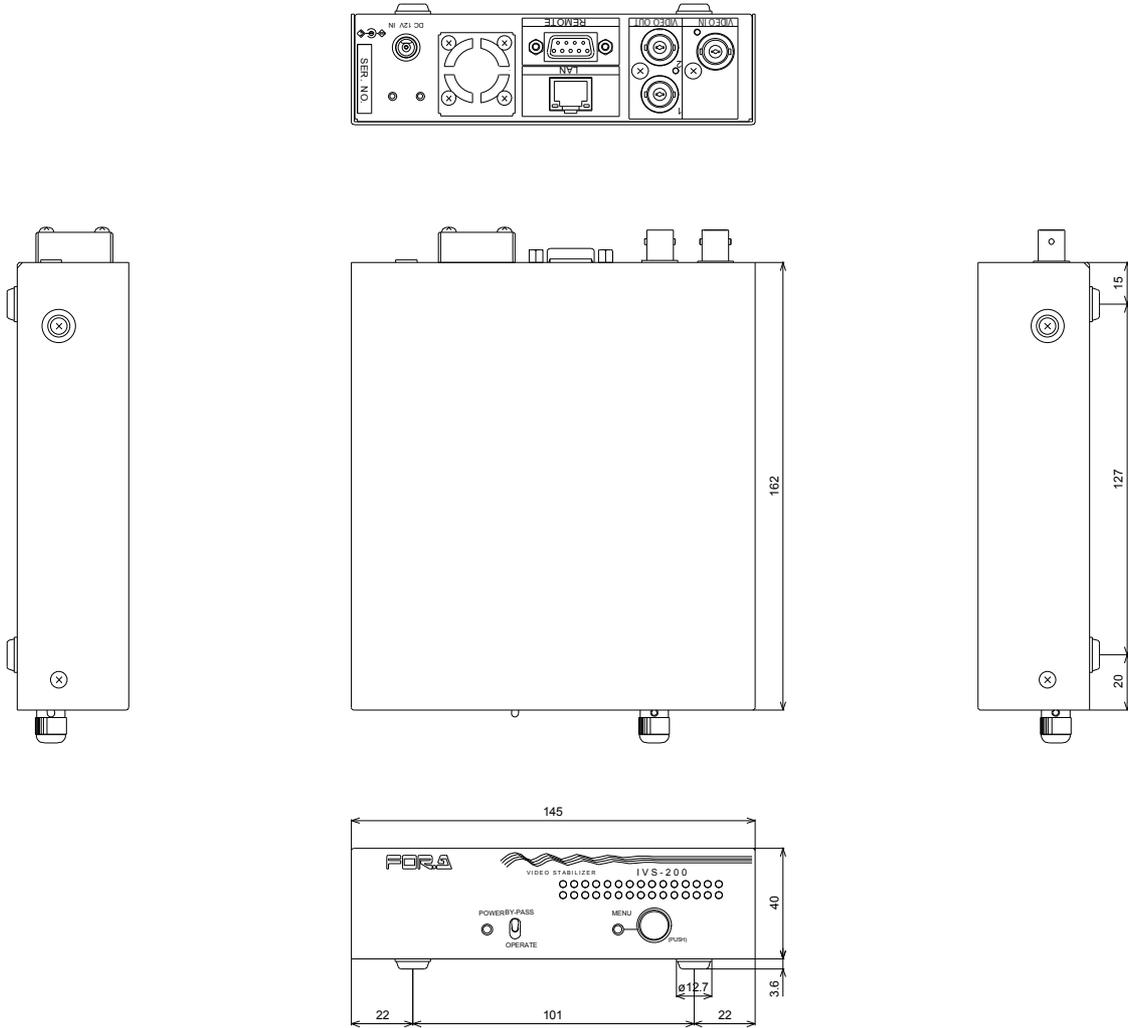
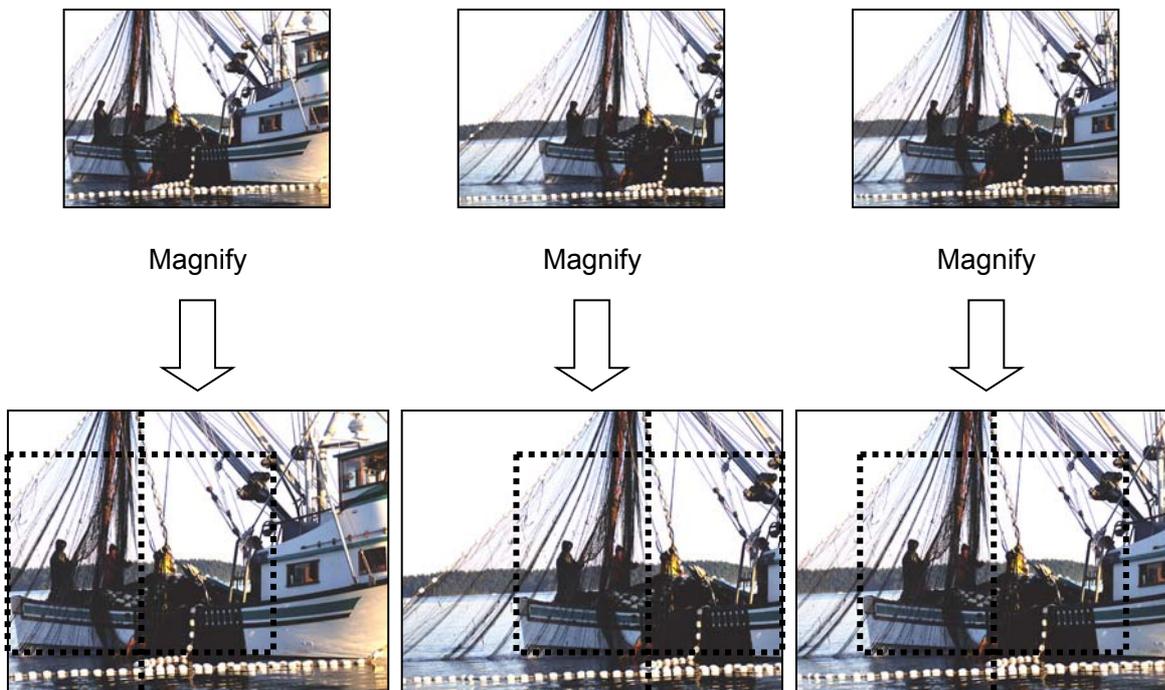## 10-2-1. 3 Rack-installed Units
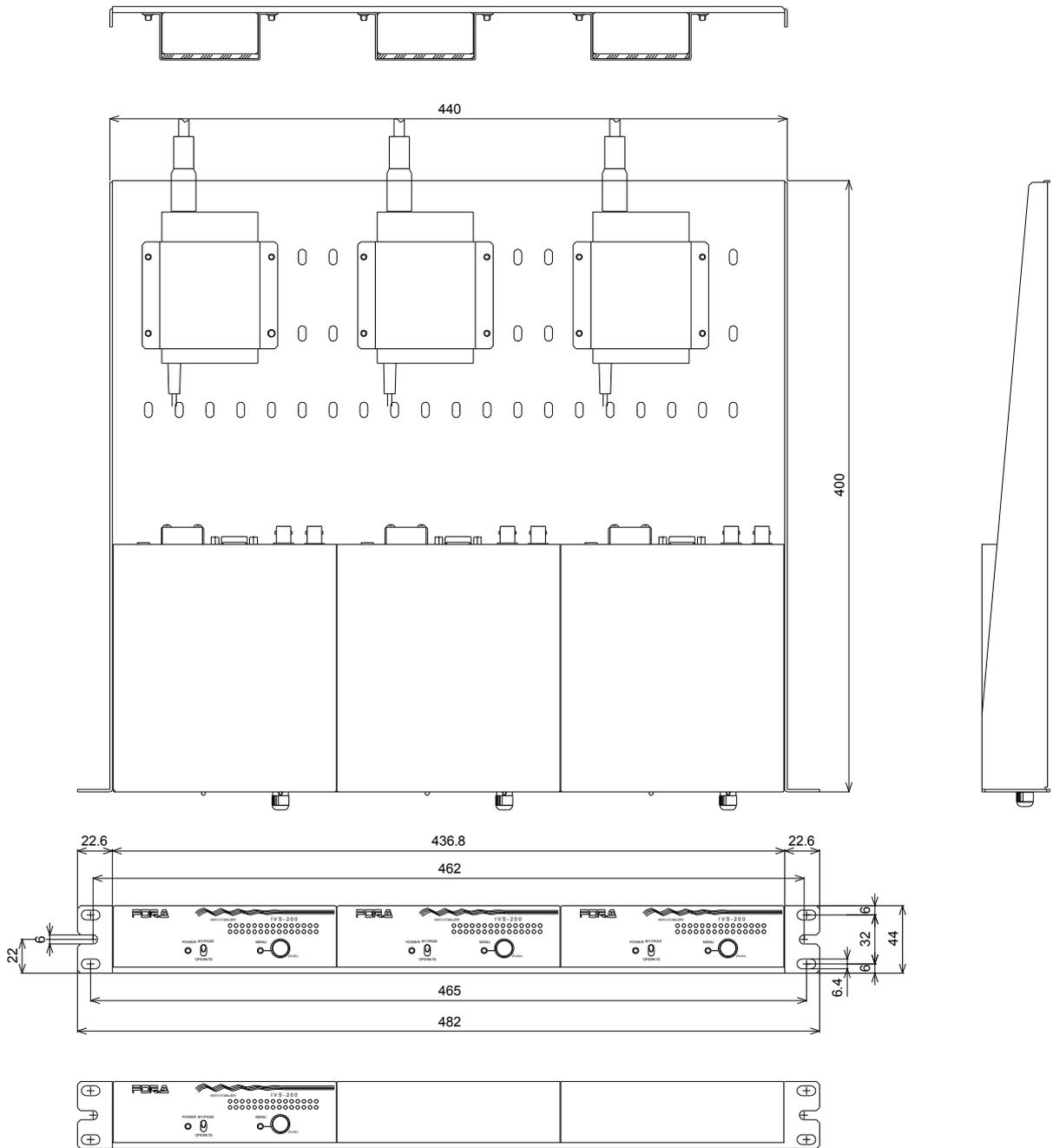
Appendix. About Correction Range
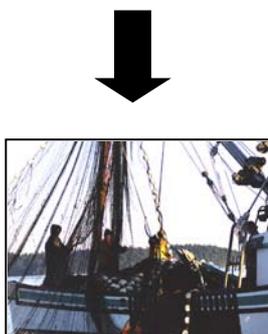
1. Input Image and Correction Range

The IVS-200 outputs stable images by magnifying the input image then stabilizing unwanted shakes and jitters. The basic processing is as described below.

◆ **Input video image**

When input video images are horizontally shaking as shown below.


Magnify　　　　　　　　　　Magnify　　　　　　　　　　Magnify


◆ **Output video image**

The shaky input video images as shown above are magnified, then clipped according to the detected movement, to produce stable images without shakes and jitters.

You can see that the corrected video is magnified according to the Correction Level setting by comparing the uncorrected bypass video image with the corrected video image on a monitor by toggling the OPERATE/BY-PASS switch on the front panel. In the examples shown below, the image area enclosed by bold lines is displayed in the monitor. A steady video is output by tracking the enclosed image according to the detected motion within the correction range.

◆ **Inut video image**

Magnified
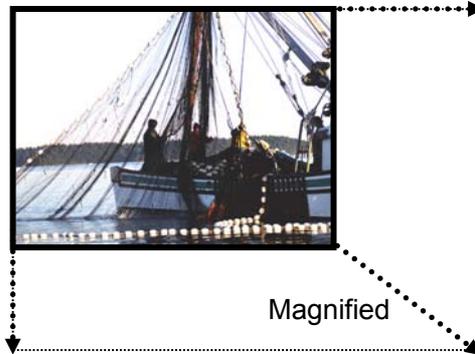
◆ **Output video image**

If CORRECTION LEVEL set to15(143%)
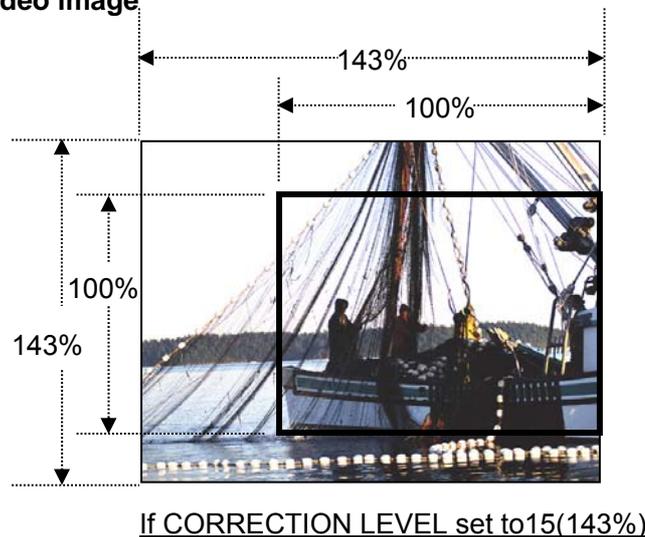
If CORRECTION LEVEL is set to 15 (143%), the percentage of the correction range in the input image is;

43 / 143 ≈ 30%

Refer to Appendix sec. '3. Correction Range Chart' for more information about the relationship between Correction Level settings and the percentage of the correction range in an input image.

2. Detection Range

Horizontal direction: Max. ±62 pixels
Vertical direction: Max. ±62 lines

* The IVS-200 detects the amount of motion between fields.

3. Correction Range Chart

	Percentage of correction range in input image (approx.)			
	NTSC		PAL	
Correction Level	Horizontal (%)	Vertical (%)	Horizontal (%)	Vertical (%)
0 (100%)	1	1	1	1
1 (102%)	3	2	3	3
2 (104%)	2	4	3	5
3 (106%)	4	6	5	6
4 (108%)	5	8	7	8
5 (111%)	8	10	9	10
6 (114%)	9	12	11	12
7 (116%)	11	14	13	14
8 (119%)	13	16	15	17
9 (122%)	15	18	17	18
10 (125%)	17	20	19	20
11 (128%)	19	22	21	23
12 (131%)	21	24	23	25
13 (135%)	23	26	25	27
14 (139%)	25	28	27	28
15 (143%)	27	30	29	31

Correction accuracy Horizontal direction: 0.02 pixel
                     Vertical direction: 0.02 line (frame based)