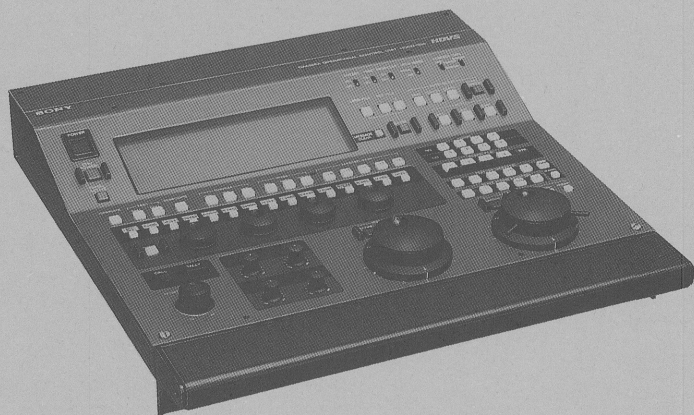


SONY[®]

HD CAMERA OPERATIONAL CONTROL UNIT

HDCO-300



HDVS

OPERATION MANUAL

1st Edition (Revised 1)

Serial No.10001 and Higher

Warning — This equipment generates, uses, and can radiate radio frequency energy and if not installed and used in accordance with the instructions manual, may cause interference to radio communications. It has been tested and found to comply with the limits for a Class A computing device pursuant to Subpart J of Part 15 of FCC Rules, which are designed to provide reasonable protection against such interference when operated in a commercial environment. Operation of this equipment in a residential area is likely to cause interference in which case the user at his own expense will be required to take whatever measures may be required to correct the interference.

Important—To insure that the complete system (including this peripheral) is capable of complying with the FCC requirements, it is recommended that the user make sure that the individual equipment of the complete system has a label with one of the following statements.

“This equipment has been tested with a Class A Computing Device and has been found to comply with Part 15 of FCC Rules.”

-or-

“This equipment complies with the requirements in Part 15 of FCC Rules for a Class A Computing Device.”

-or equivalent.

The shielded interface cable recommended in this manual must be used with this equipment in order to comply with the limits for a computing device pursuant to Subpart J of Part 15 of FCC rules.

For the customers in Canada

This apparatus complies with the Class A limits for radio noise emissions set out in Radio Interference Regulations.

Pour les utilisateurs au Canada

Cet appareil est conforme aux normes Classe A pour bruits radioélectriques, spécifiés dans le Règlement sur le brouillage radioélectrique.

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Table of Contents

Notes on Using This Manual	1
Refer Pages for Parts and Controls	2
Operation Panel	2
Front Panel	3
Rear Panel	3
EL (Electro Luminescent) Display	4
Connection to the Sony HDCS-300 Camera Control Unit	5
Supplying the Power	6
Turning on the System	6
Turning Off	7
Precautions	7
TALLY and INCOM (Intercom)	8
TALLY	8
Signal route	8
Cameraman call	8
BUZZER	9
INCOM (Intercom)	10
Setting the switches	10
Camera head switches	11
Communication line	12
Switching the Output	13
Screen Output	13
Picture Monitor Screen	13
Enhancing the contour of the picture monitor screen	14
Displaying the screen graticule on the picture monitor	14
Waveform Monitor	15
Remote Control of the Camera Head and Lens	16
Selecting a Camera Head Built-in Filter	16
Iris	17
Manual adjustment	17
Automatic adjustment	17
Capping	17
Focusing	18
Rough adjustment	18
Fine adjustment	19
Indicating the focus position	19
Marking the distance ring position	19
Adjustments	20
Setting the Control Data Switches	20
Adjustment Item List	21
Level Adjustment Buttons and Master Black Control Knob	22
GAMMA	22
KNEE	22
MASTER GAIN	23
MASTER BLACK level	23
Adjustment Dials	24
Outline	24
Selected adjustment items displayed	24
Contents displayed	24
Erasing the dial adjusted value	25
Registration	25
Size and centering	25
Digital registration correction (partial adjustment)	26
Screen level	28
Black balance and white balance	28
White level of G signal	28
GAMMA	29
KNEE	30
FLARE	30

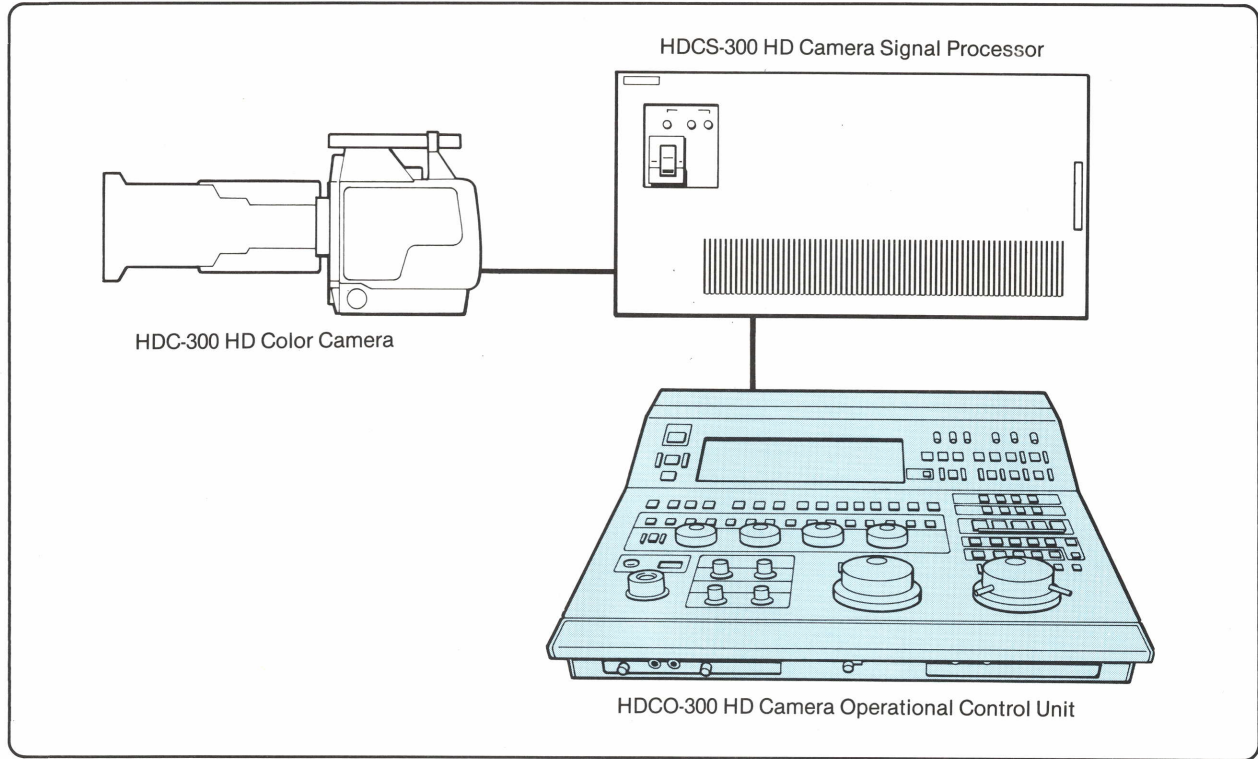
Contour	31
SHADING	32
WHITE SHADING	33
Screen distortion due to lens characteristics	34
Fine Adjustment Knobs	35
Setting the paint switch	35
Size, centering, black balance and white balance	35
AUTO SETUP	36
Setting the Registration Mode Switch	36
Operation	37
Adjustment failure	39
AUTO	40
Files	41
Reference File	41
Contents	41
Registration	41
Call	41
Scene Files	42
Contents	42
Registration	42
Call	42
Lens File	43
Contents	43
Registration	43
Call	46
Displaying the lens data	46
Erasing	47
Error Messages	48
Meaning	48
WARNING	48
ALARM	49
ERROR	51
Erasing an Error Message	52
Mounting	53
19" Rack Mount	53
Standard rack	53
Supplied parts	53
Procedure	54
Removing the panel from the rack	57
Temporary removal	58
Table mount	59
Specifications	60

Notes on Using This Manual

Names of switches and buttons

□ in the text shows the names of buttons and switches corresponding to the indications on the unit.

Component name



The following abbreviations may be used on switches and the EL (Electro Luminescent) Display as well as in operation manuals to indicate each component and part of the camera system.

Type	Switch/EL Display indication	Operation manual indication
HDC-300	CHU (camera head unit)	Camera head
HDCO-300	PANEL	Panel
HDCS-300	CCU (camera control unit)	CCU

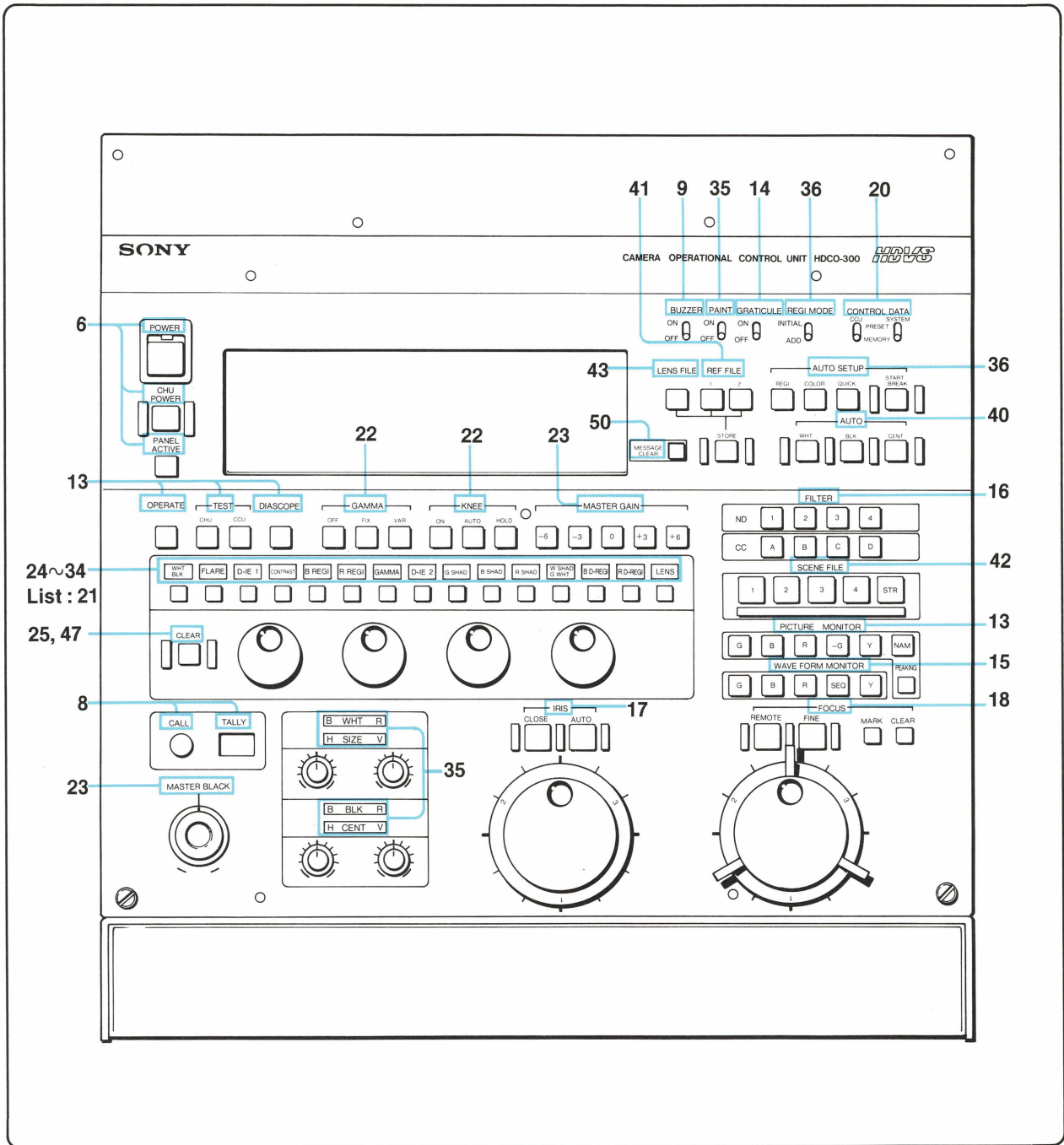
Abbreviations

The following abbreviations are mainly used for switch indication and the EL Display.	
WHT	white
BLK	black
CENT	centering

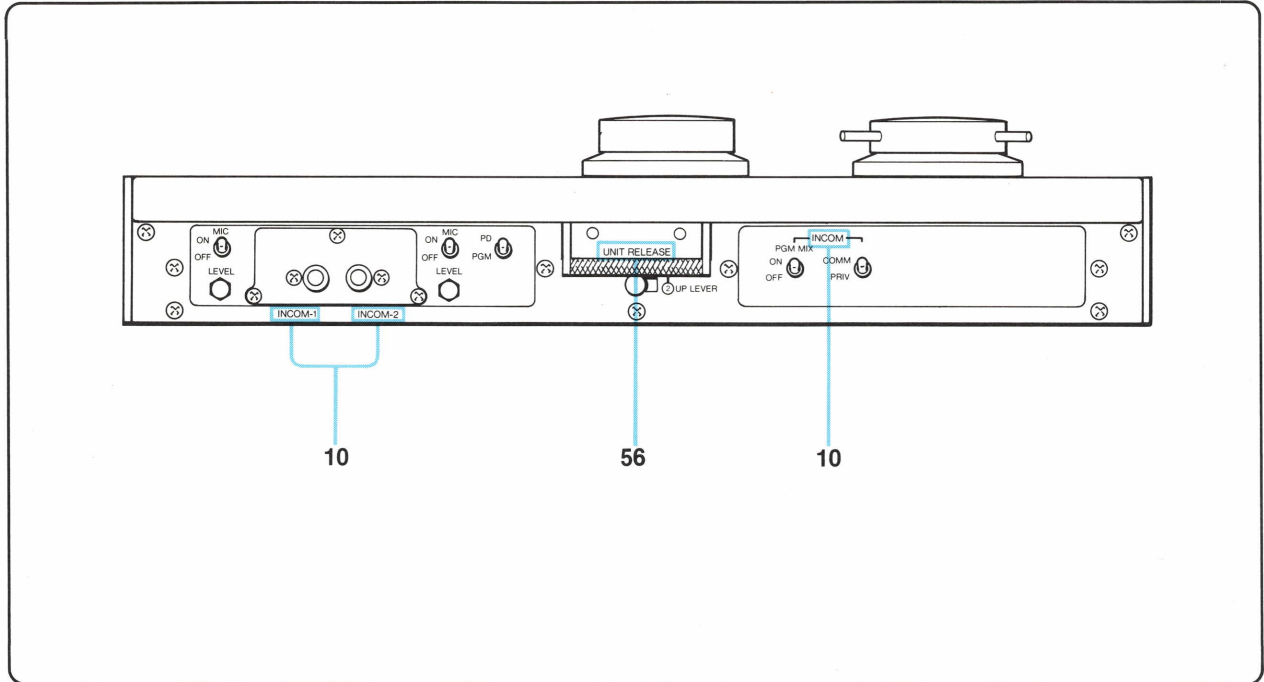
Any abbreviations other than the above are explained on the pages where they appear.

Refer Pages for Parts and Controls

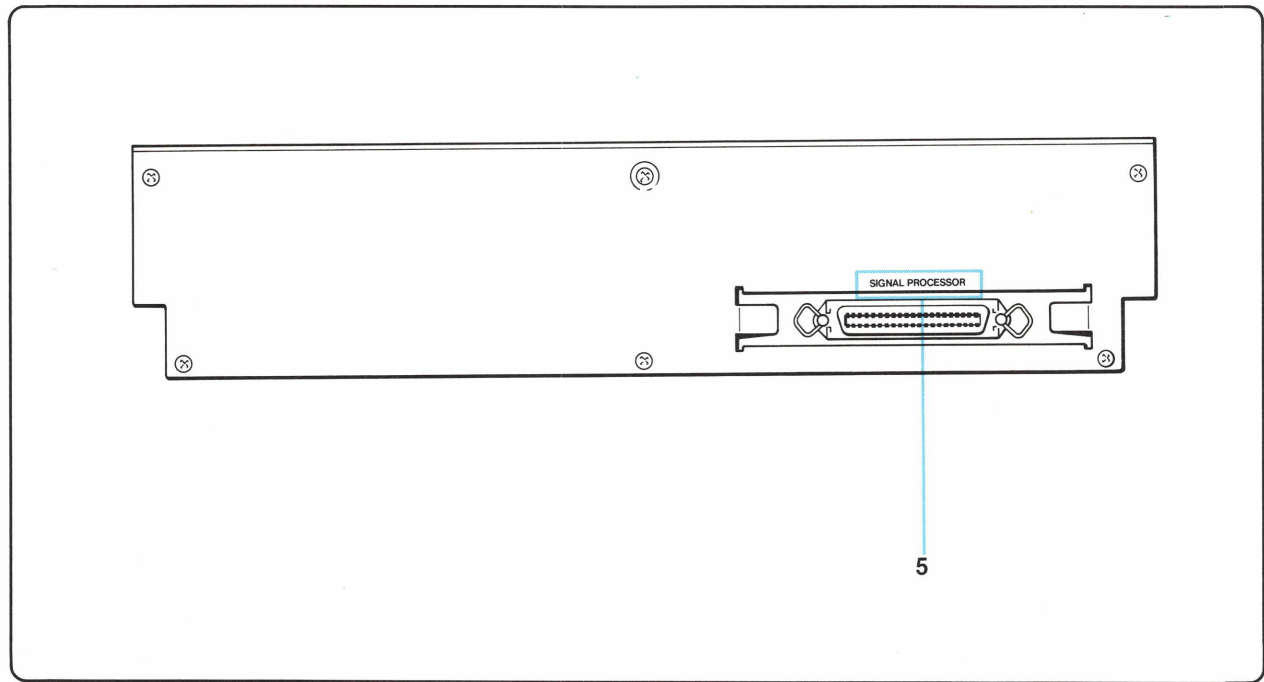
Operation Panel



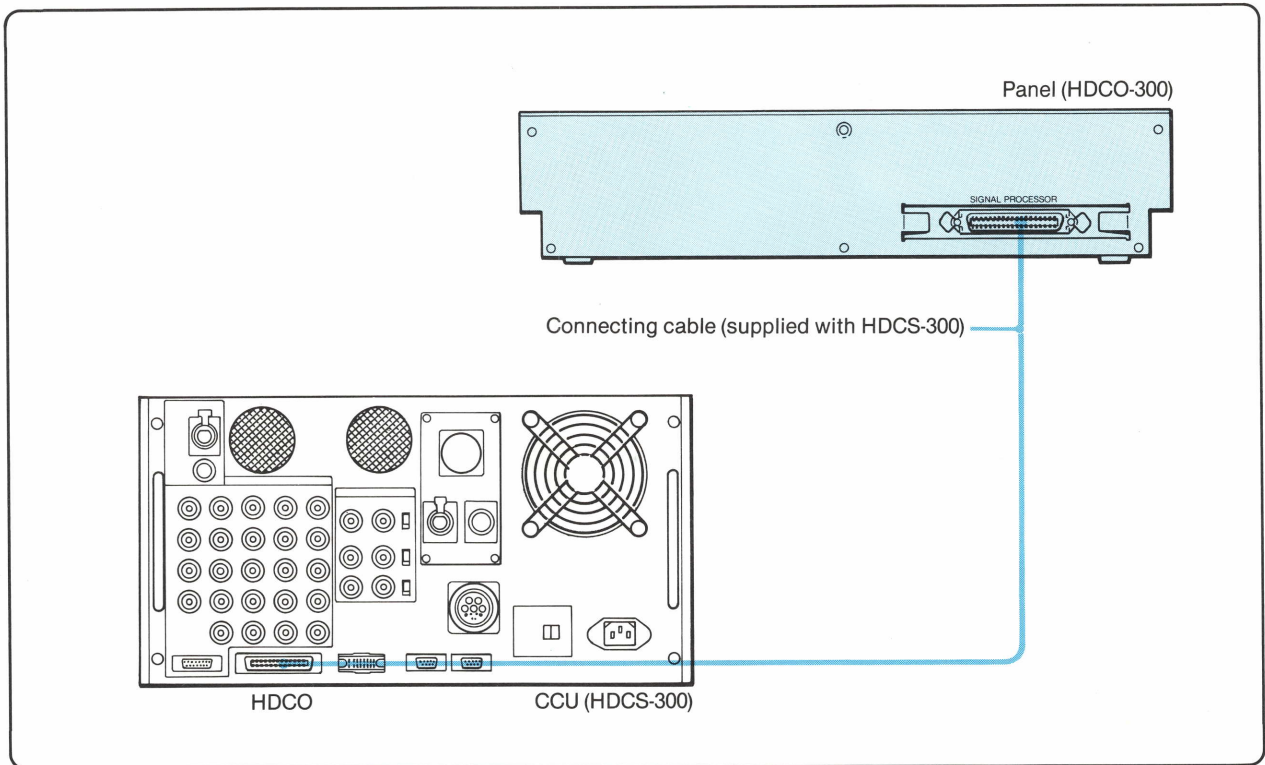
Front Panel



Rear Panel



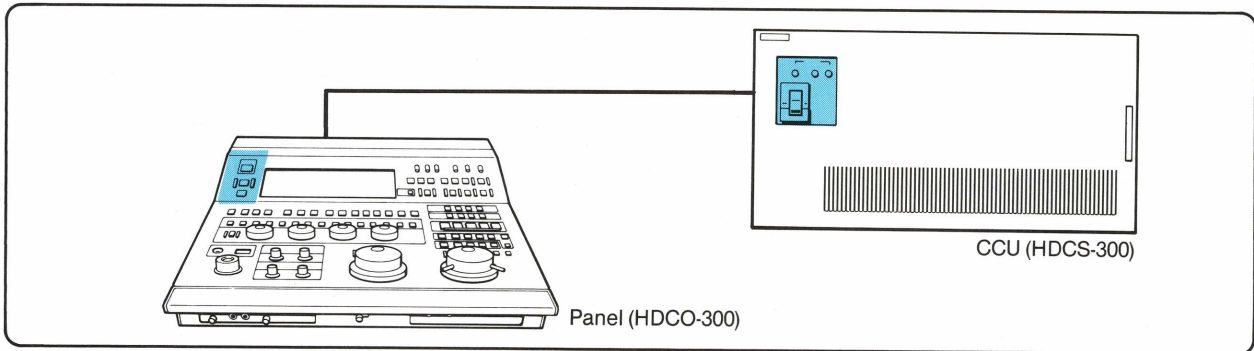
Connection to the Sony HDCS-300 Camera Control Unit



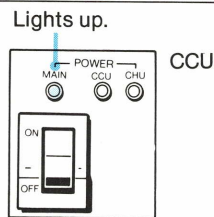
For details on connections including peripheral devices, refer to the HDCS-300 operation manual.

Supplying the Power

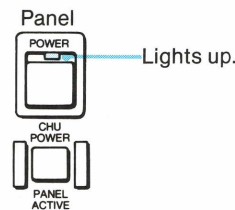
Turning on the System



1 Turn on the **POWER** switch of the CCU.

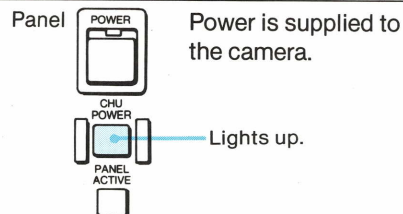


2 Depress the **POWER** button of the panel.

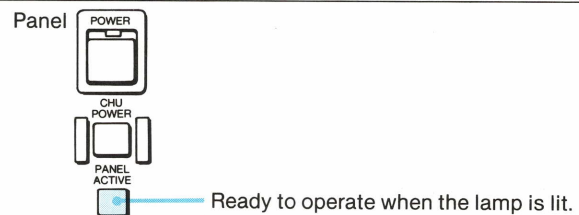
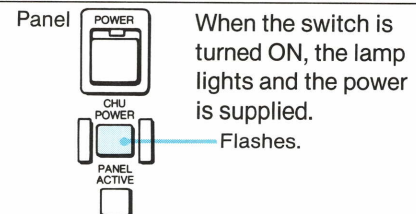


3 Press the **CHU POWER** button of the panel.

When the **POWER** switch of the camera head is ON




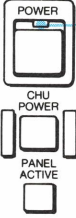
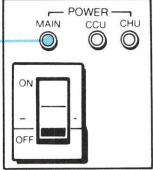
When the **POWER** switch of the camera head is OFF



Buttons other than the **PICTURE MONITOR** and **WF MONITOR** buttons do not operate while the lamp is off.

It is necessary to warm up the camera tube for about 30 minutes.

Turning Off

<p>1 Press the CHU POWER switch.</p>	<p>2 Press the POWER switch of the camera.</p>	<p>3 Turn off the POWER switch of the CCU.</p>
<p>(Panel)</p>  <p>The lamp flashes and then goes off.</p> <p>The camera head automatically enters a closing state (selecting an ND-4 filter for protection of the camera tube and closing the iris).</p>	<p>(Panel)</p>  <p>The lamp goes off.</p>	<p>(CCU)</p>  <p>The lamp goes off.</p>

You can turn off the camera head while maintaining the power supply to other components. To do so, simply turn off the **POWER** switch of the camera head.

Precautions

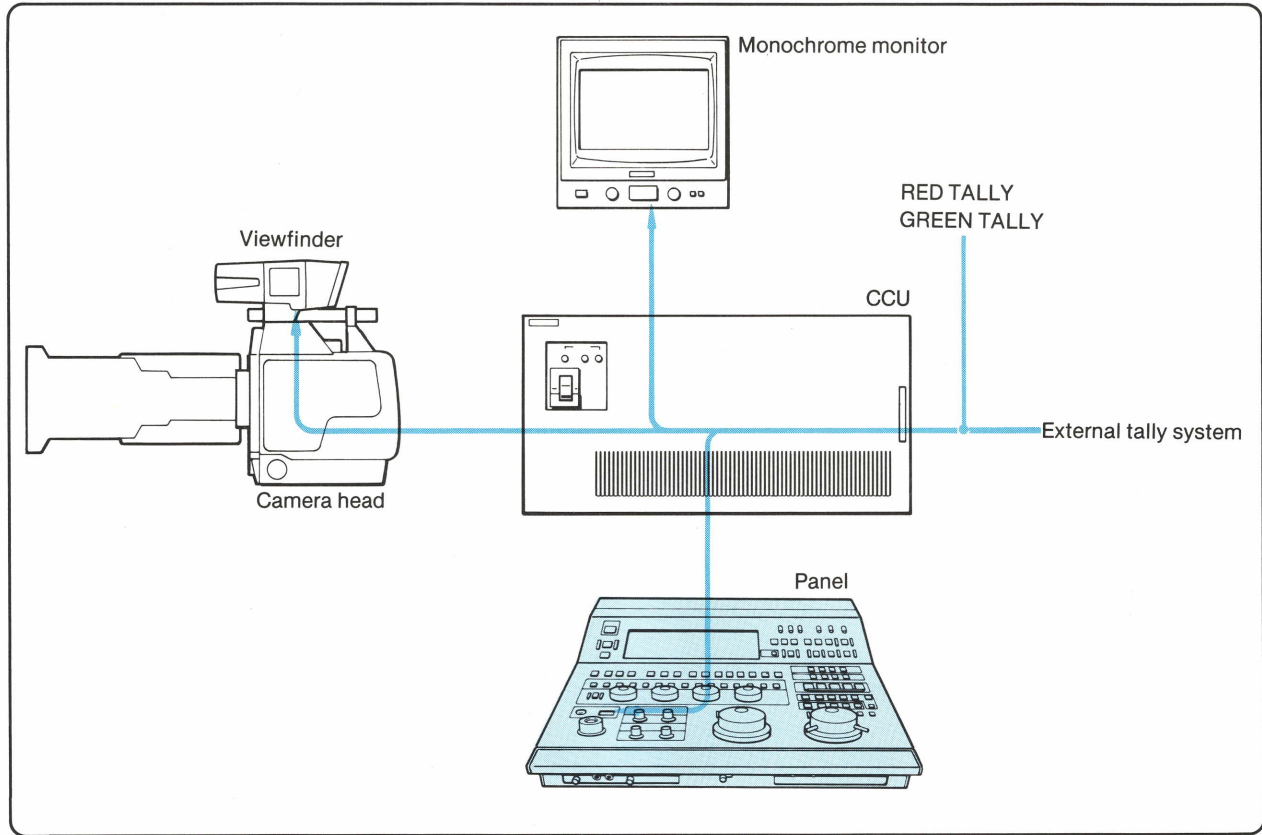
When making adjustments related to registration (**REGI** function for AUTO SETUP and the **B D-REGI** and **R D-REGI** functions for dial adjustments), it takes about several tens of seconds to internally hold the compensation values.

Wait at least 30 seconds before turning off the power after making these adjustments.

TALLY and INCOM (Intercom)

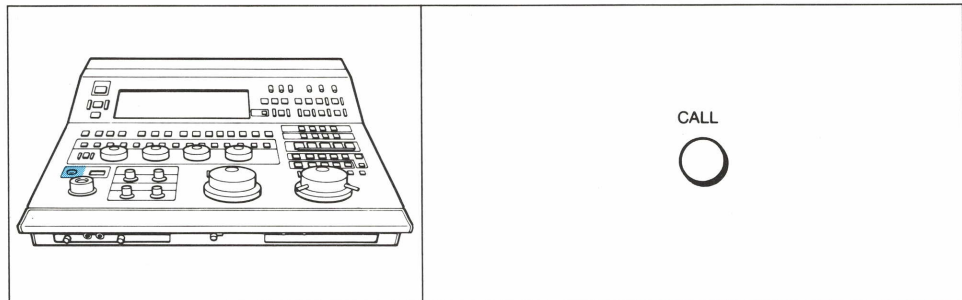
TALLY

Signal route



The RED TALLY of the panel lights up when the camera head's CALL button is pressed. (It goes off when overlapped with the red tally signal sent from the external tally system.)

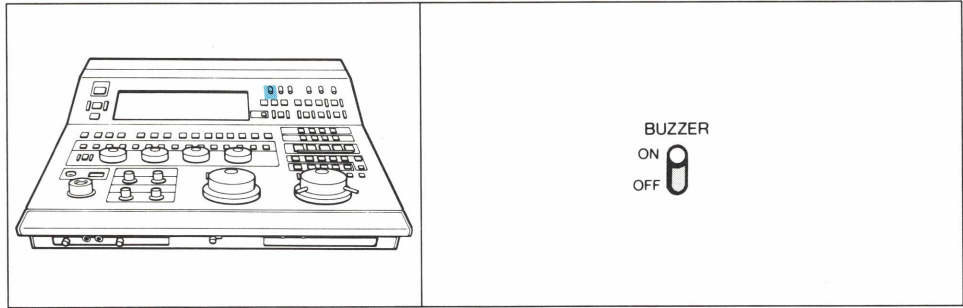
Camerman call



CALL

While this button is pressed, both the camera head's tally lamp and the viewfinder's red tally lamp remain lit.

BUZZER

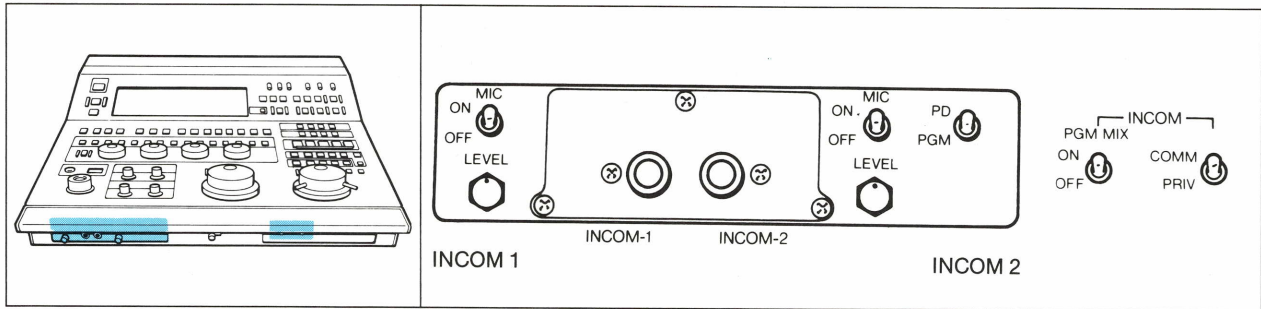


BUZZER

Turn this ON to sound a buzzer whenever the TALLY lamp lights up and an error message is displayed. (Refer to page 48 for error messages.)

INCOM (Intercom)

Setting the switches



MIC	
ON	Uses headset microphone.
OFF	Does not use headset microphone.

PD/PGM	
Switches the INCOM 2 circuit. (INCOM 1 is an engineering line.)	
PD	Producer line
PGM	Program Audio only

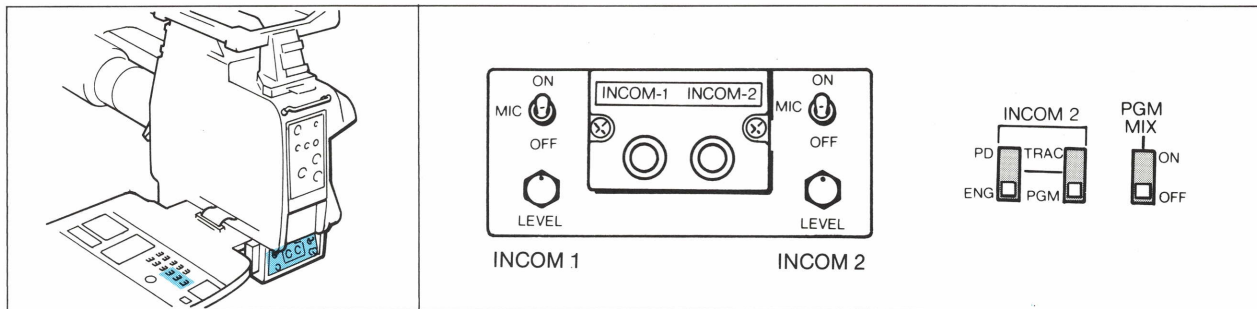
PGM MIX	
ON	Mixes Program Audio with INCOM 1 and 2.
OFF	Does not mix Program Audio.

COMM/PRIV	
COMM	Connects to external intercom lines.
PRIV	Disconnects to external intercom lines.

Abbreviations

PD	producer
PGM	program
COMM	common
PRIV	private

Camera head switches



MIC	
ON	Uses headset microphone.
OFF	Does not use headset microphone.

LEVEL	
Adjustment controls for voice received	

INCOM 2	
Switches the INCOM 2 circuit. (INCOM 1 is an engineering line.)	
<p>Set to either position.</p> <p>Producer line</p>	<p>Tracker</p>
<p>Set to either position.</p> <p>Engineering line</p>	<p>Program audio only</p>

Tracker function

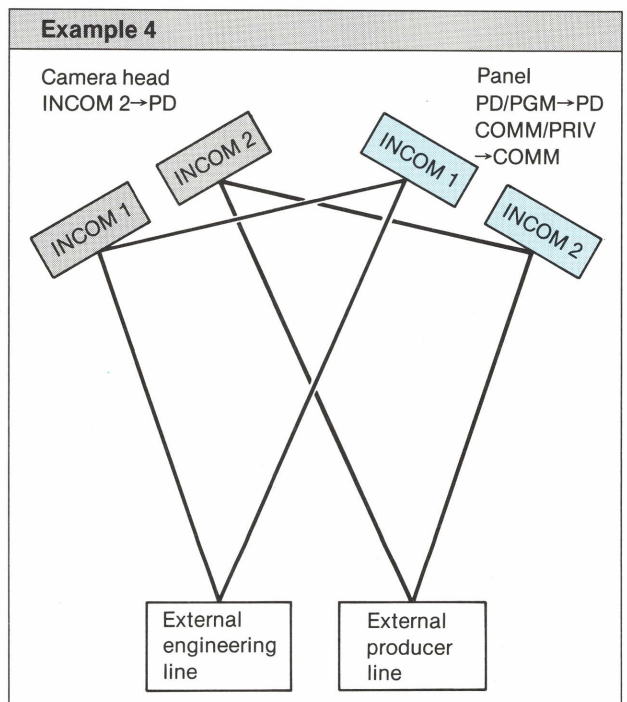
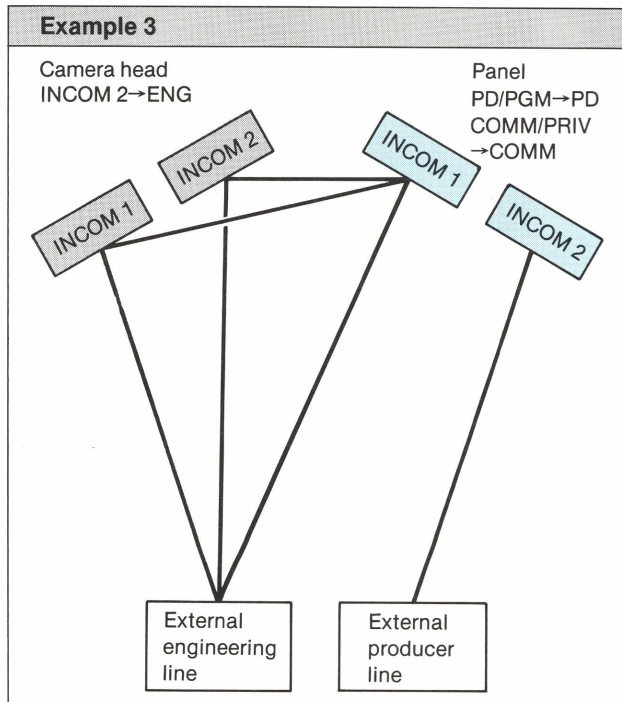
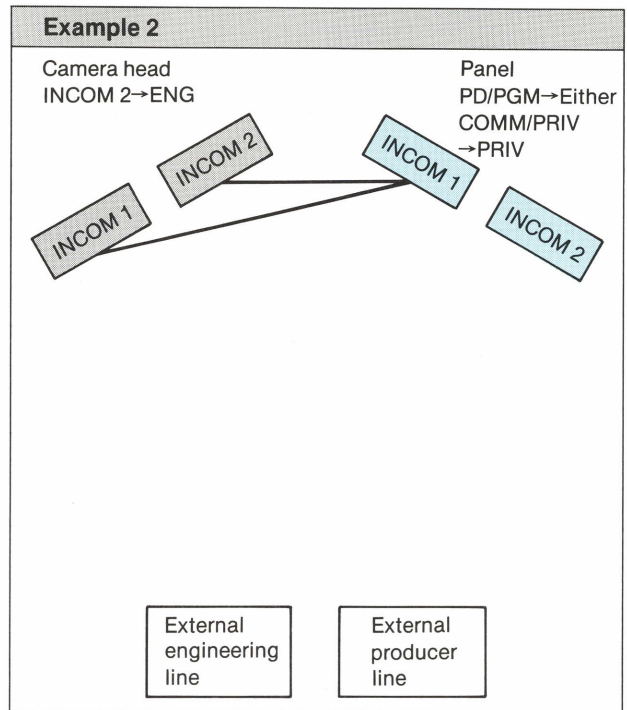
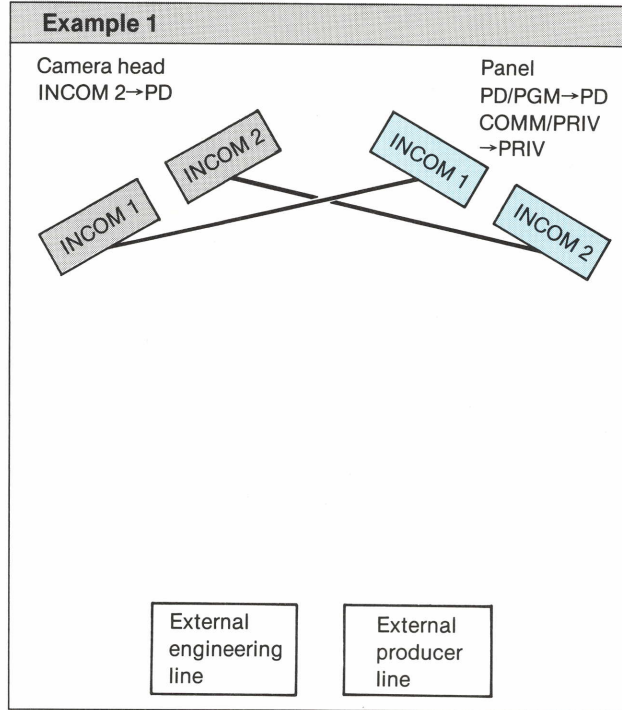
When the MIC switch of INCOM 2 is:	
ON	Can communicate with INCOM 1 of the camera head and panel.
OFF	Can receive only INCOM 1 of the camera head.

PGM MIX	
ON	Receives Program Audio on INCOM 1 and 2.
OFF	Does not receive Program Audio.

Abbreviations

ENG engineering
TRAC tracker

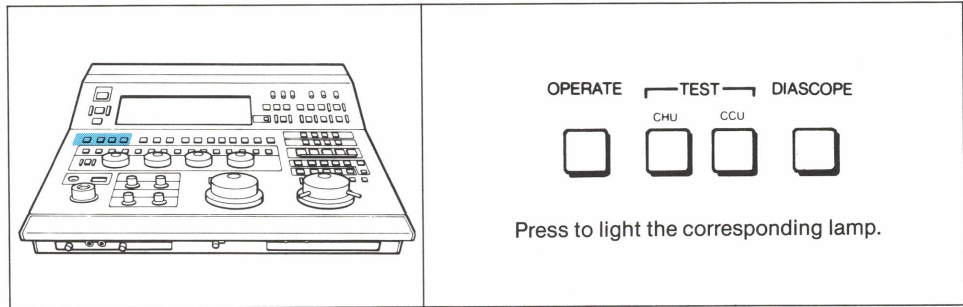
Communication line



External engineering line and external producer line
Connect to CCU (HDCS-300).

Switching the Output

Screen Output



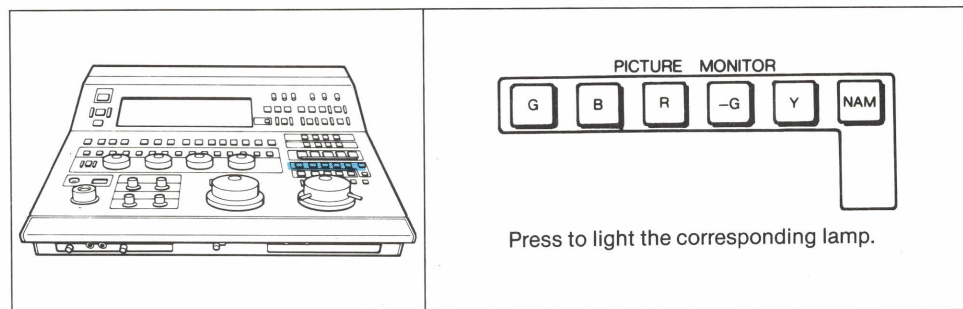
Press to light the corresponding lamp.

OPERATE	Camera screen
CHU	Sawtooth waveform test signals generated by the camera head
CCU	Test signals, such as a color bar, generated by the CCU
DIASCOPE	Test pattern built in the lens to be used at AUTO SETUP (See page 36.)

CHU and CCU

Both may be lit. Test signals generated by the CCU (color bar, etc.) will be output.

Picture Monitor Screen



Press to light the corresponding lamp.

-G	B-G signal by pressing the B and -G buttons R-G signal by pressing the R and -G buttons
NAM	Maximum value among G, B, and R signals

-G

- When the **Y** and **G** lamps are lit, pressing **-G** selects the R-G signal.
- To turn off the **-G** signal, press either the **Y** button (to select the Y signal) or the **-G** button again (to select the R or B signal).

Y

Press the Y button. The Y signal can be obtained from any state.

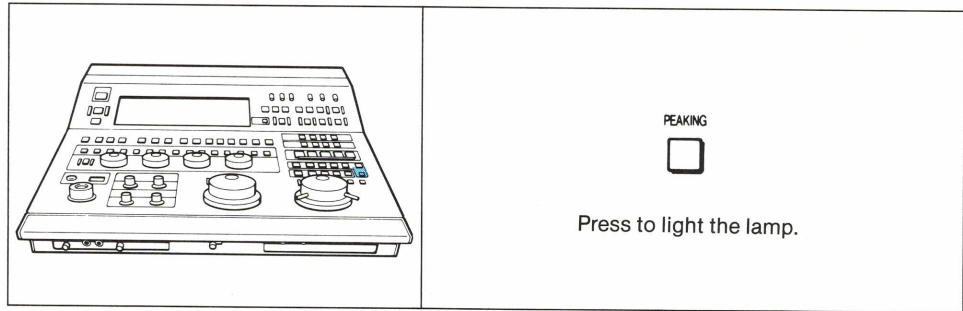
Monochrome step signal output

A monochrome step signal can be output in place of a color bar test signal by changing the switch built in the CCU. For details, refer to the HDCS-300 maintenance manual.

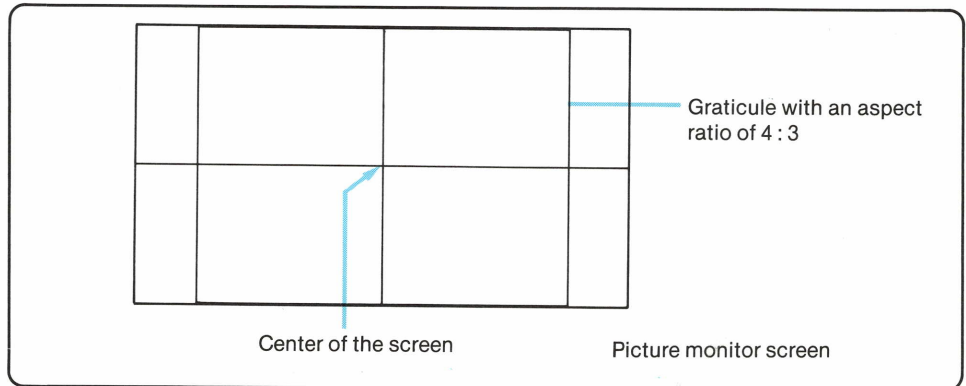
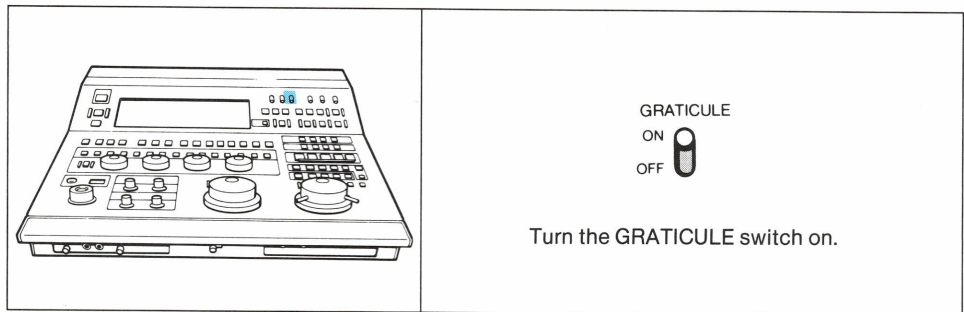
Abbreviation

NAM non-additive mixing

Enhancing the contour of the picture monitor screen



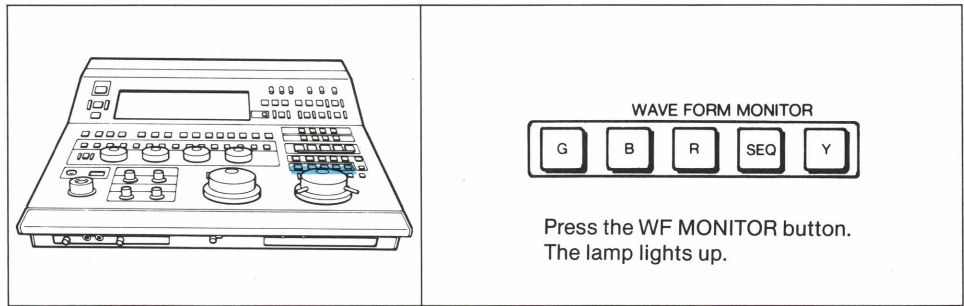
Displaying the screen graticule on the picture monitor



Indication of safety zone (effective screen)

Change the switch setting in the CCU. For details, refer to the HDCS-300 maintenance manual.

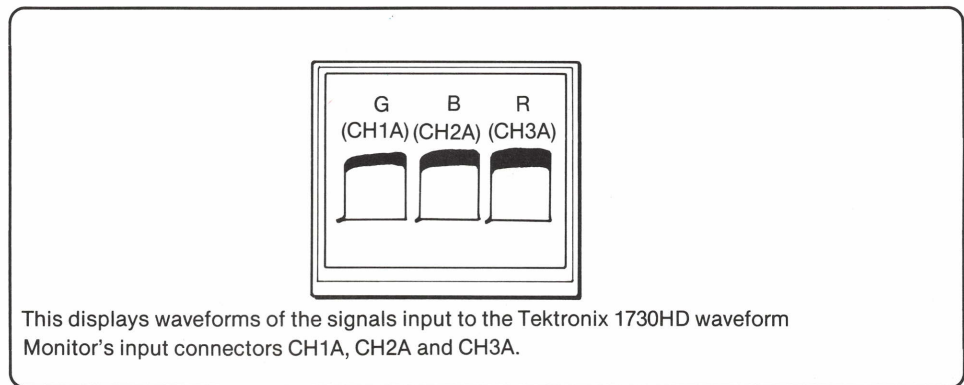
Waveform Monitor



The diagram shows the Tektronix 1730HD waveform monitor on the left and its control panel on the right. The control panel features five buttons labeled G, B, R, SEQ, and Y under the heading "WAVE FORM MONITOR".

Press the WF MONITOR button.
The lamp lights up.

SEQ Displays G, B, and R signals simultaneously.



The diagram shows the input connectors for the waveform monitor, labeled G (CH1A), B (CH2A), and R (CH3A). Each label is positioned above a corresponding input slot.

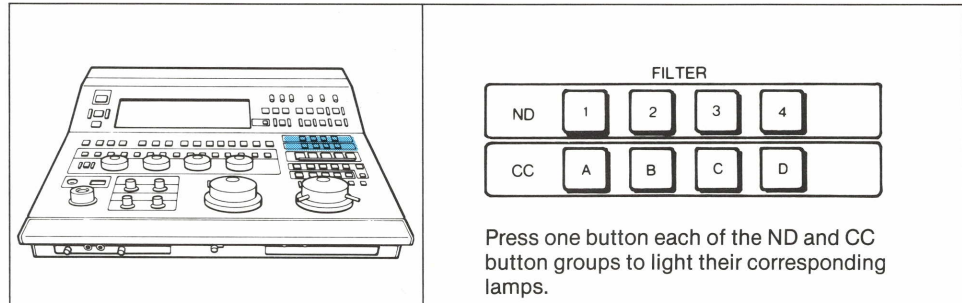
This displays waveforms of the signals input to the Tektronix 1730HD waveform Monitor's input connectors CH1A, CH2A and CH3A.

Press two or all of G, B and R switches simultaneously to monitor two or three waveforms layered together.

Abbreviation
SEQ sequential

Remote Control of the Camera Head and Lens

Selecting a Camera Head Built-in Filter



ND		
1	CLEAR	Completely transparent
2	1/4 ND	ND filter to reduce lighting to 1/4
3	1/16 ND	ND filter to reduce lighting to 1/16
4	CAP	Completely closed

CC		
A	3200K	Use when color temperature of lamp is 3200K
B	4300K	Use when color temperature of lamp is 4300K
C	6300K	Use when color temperature of lamp is 6300K
D	EFFECT	Cross filter for special effects

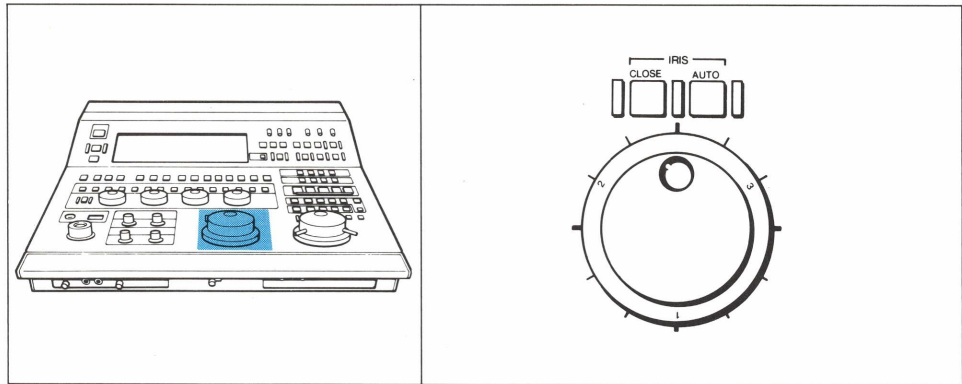
When turning the power on

Turning off the camera head automatically switches the filter to ND-4 (capping) to protect the camera tube. The camera head remains capped when the power is turned on again. Select a setting from ND-1 to ND-3 before starting to shoot.

Abbreviations

ND neutral density
CC color compensation

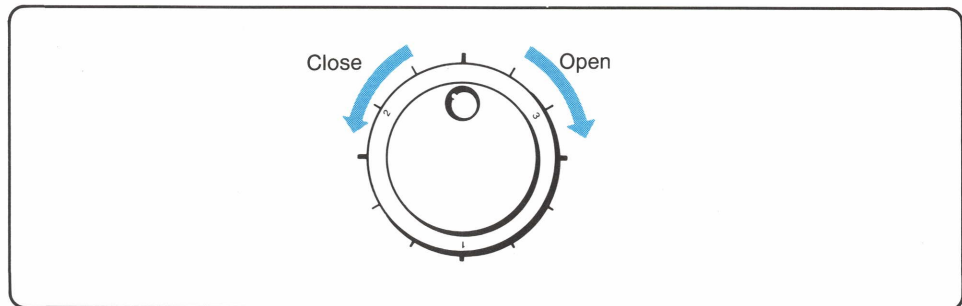
Iris



Set the IRIS control mode of the lens to any of those allowing control from the camera head (AUTO/MANUAL → AUTO, SERVO/MANUAL → SERVO, etc.).

Manual adjustment

Turn the dial.



Automatic adjustment

Press the **AUTO** button. The lamp lights up.
The iris is automatically set to the optimum value.
Fine adjustments can be made by turning the dial. (Range: Automatically adjusted value ± 0.5 iris)

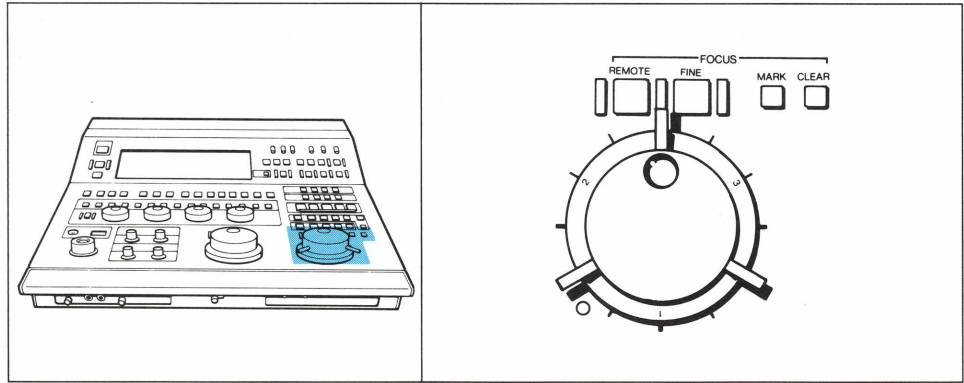
Capping

Press the **CLOSE** button. The lamp lights up.
The iris is closed.
Press it again to reset the iris to the setting prior to closing. The lamp goes off. In the manual adjustment mode, the iris is reset to the previously adjusted value.

Indication of iris value

The iris value can be displayed on the EL Display. For details, refer to page 43 to 46.

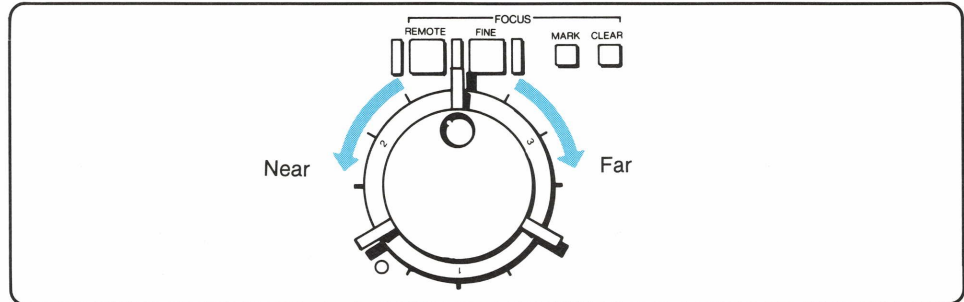
Focusing



Turn the focus mode change switch on the lens to “external adjustment”.

Rough adjustment

Press the **REMOTE** button. The lamp lights up. Turn the dial to adjust.

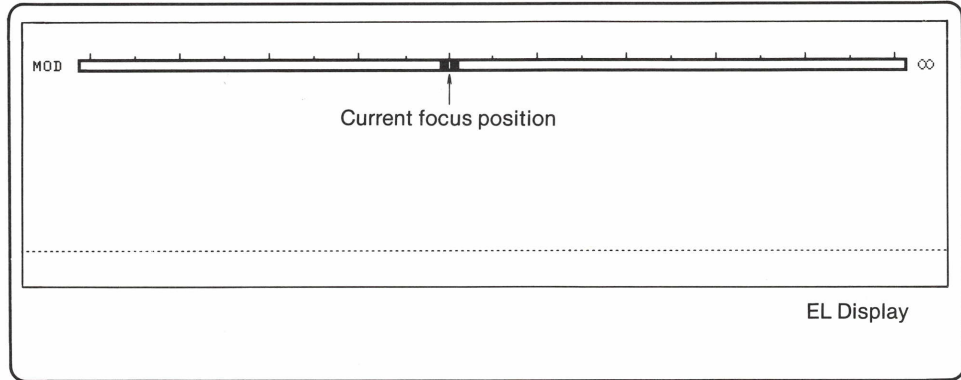


Fine adjustment

Press the **FINE** button. The lamp lights up. Turn the dial to adjust. Be sure to press it while the **REMOTE** lamp is lit.

Indicating the focus position

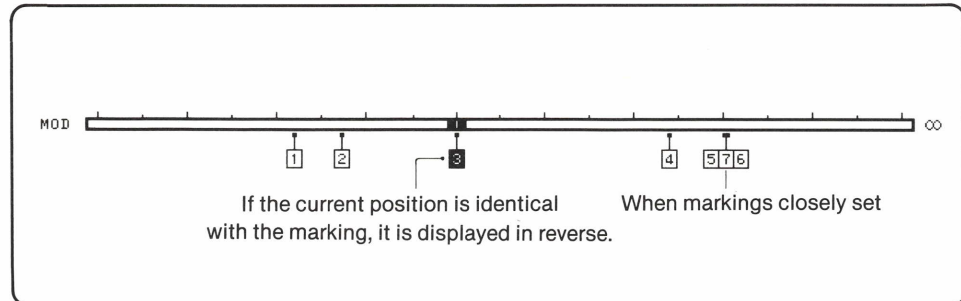
When the lens has a communication function for the focus position (distance ring position), the following indications are displayed.



These indications also appear when focusing on the camera head.

Marking the distance ring position

Every time the **MARK** button is pressed, up to 35 marks are set (1,2,3, ..., 9, A,B,C, ..., Z). Press the **CLEAR** button to delete all markings.

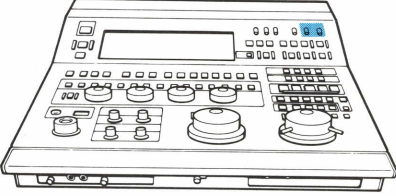


Abbreviation

MOD minimum object distance

Adjustments

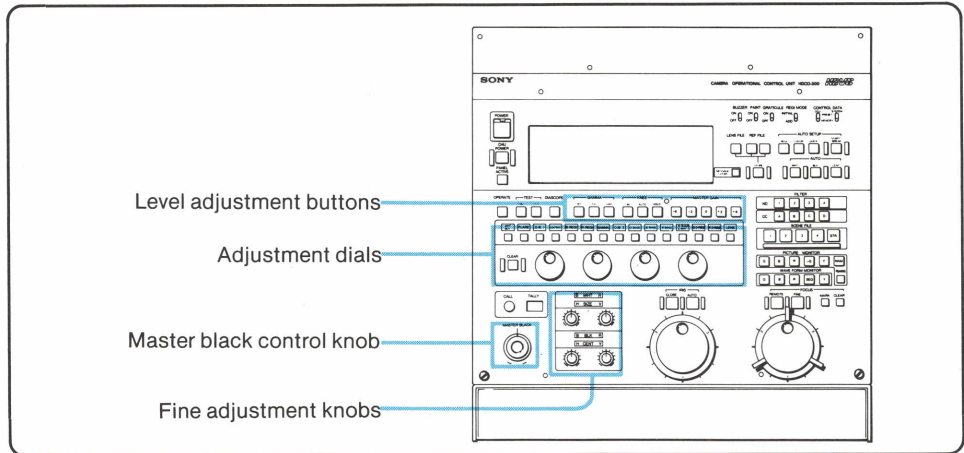
Setting the Control Data Switches

	<div style="text-align: center;"> <p>CONTROL DATA</p> <p>CCU SYSTEM</p> <p>PRESET</p> <p>MEMORY</p> </div> <p>Set the switch to MEMORY to adjust the screen level or registration on the panel. Set the switch to PRESET to carry out standard state settings using the internal adjustment volumes of the CCU or camera head.</p>
---	---

PRESET	The screen level and registration are determined by adjustments on the CCU or camera. Correction assumes the control range center value.
MEMORY	The screen level and registration take values corrected by the memory-retained data.

CCU	Only items adjustable on the CCU among screen level adjustment items
SYSTEM	All screen level and registration adjustment items

Adjustment Item List



Level adjustment buttons (pages 22 and 23)

- GAMMA
- KNEE
- MASTER GAIN

Master black control knob (page 23)

- MASTER BLACK

Adjustment dials

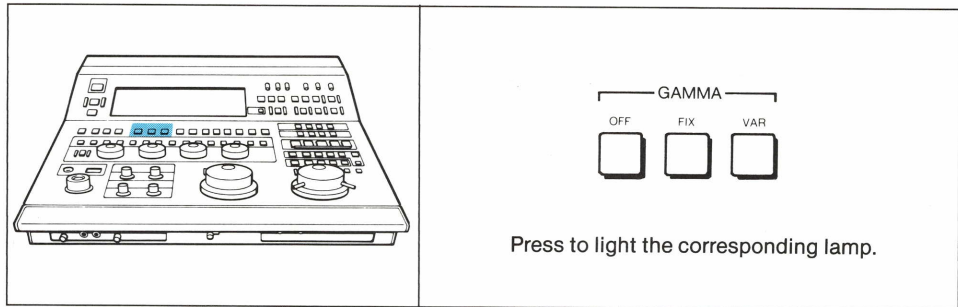
Selectors (from left)	Refer pages	Adjustment items			
		Dial 1 (leftmost)	Dial 2	Dial 3	Dial 4
WHT/BLACK	28	B BLK	R BLK	B WHT	R WHT
FLARE	30	G FLARE	B FLARE	R FLARE	—
D-IE 1	31	DETAIL GAIN	THRESHOLD	CRISP	FREQUENCY
CONTRAST	30	M GAMMA	KNEE	SLOPE	BLACK GAMMA
B REGI	25	H-CENT	H-SIZE	V-CENT	V-SIZE
R REGI	25	H-CENT	H-SIZE	V-CENT	V-SIZE
GAMMA	29	M GAMMA	B-GAMMA	R GAMMA	BLACK GAMMA
D-IE 2	31	LIMIT LEVEL	LIMIT CURVE	V RATIO	SOURCE
G SHAD	32	H-SAW	H-PARA	V-SAW	V-PARA
B SHAD	32	H-SAW	H-PARA	V-SAW	V-PARA
R SHAD	32	H-SAW	H-PARA	V-SAW	V-PARA
W SHAD/ G WHT	28 33	G-WHT SHADING	B WHT SHADING	R WHT SHADING	G WHITE
B D-REGI	26	H-POSITION	V-POSITION	H CORRECTION	V CORRECTION
R D-REGI	26	H-POSITION	V-POSITION	H CORRECTION	V CORRECTION
LENS	34 (43)	DISTORTION	F-NO MAX	F-NO MIN	LENS TYPE

Fine adjustment knobs (page 35)

- WHT, BLK (B, R)
- SIZE, CENT (H, V)

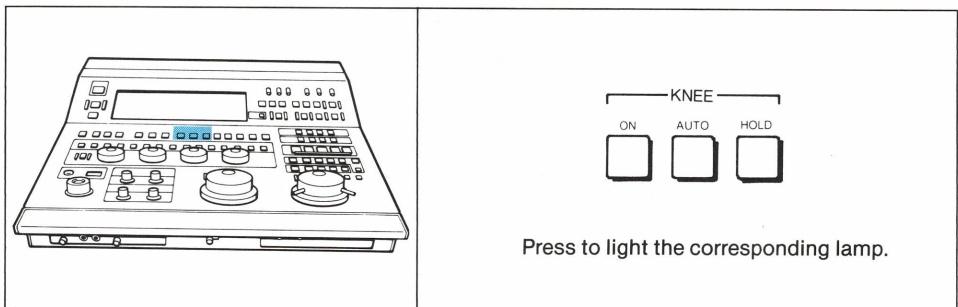
Level Adjustment Buttons and Master Black Control Knob

GAMMA



- | | |
|------------------------------|---|
| <input type="checkbox"/> OFF | No gamma correction |
| <input type="checkbox"/> FIX | Corrects the gamma ($\gamma = 0.45$) |
| <input type="checkbox"/> VAR | Corrects the gamma. The γ value is adjusted by turning the control. (See page 29.) |

KNEE



- | | |
|-------------------------------|---|
| <input type="checkbox"/> ON | Operates Knee.
When <input type="checkbox"/> AUTO is lit: The knee point is automatically adjusted by KNEE AUTO.
When <input type="checkbox"/> AUTO is not lit: The knee point is adjusted manually. (See page 30.) |
| <input type="checkbox"/> HOLD | When pressed to light the HOLD lamp while KNEE AUTO is in operation, the knee point at that moment is held. |

Abbreviation
VAR variable

MASTER GAIN

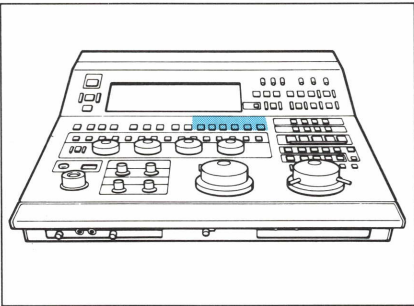


Diagram illustrating the MASTER GAIN control panel. The panel features five buttons labeled -6, -3, 0, +3, and +6, which are grouped under a bracket labeled MASTER GAIN. Below the buttons, the text reads: "Press to light the corresponding lamp. (Unit: dB)".

MASTER BLACK level

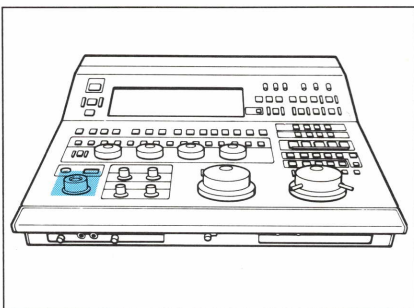
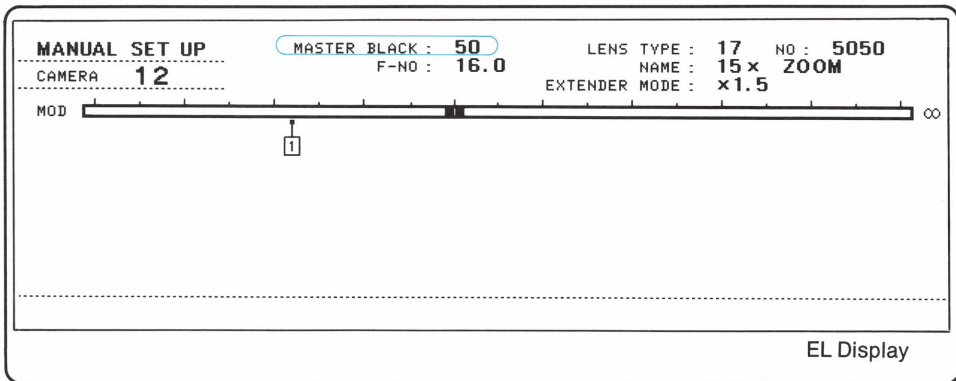


Diagram illustrating the MASTER BLACK control panel. The panel features a knob labeled MASTER BLACK, with arrows indicating the range from Small to Large.

Displaying the MASTER BLACK level



Screenshot of the camera's EL Display showing manual setup information. The display includes the following data:

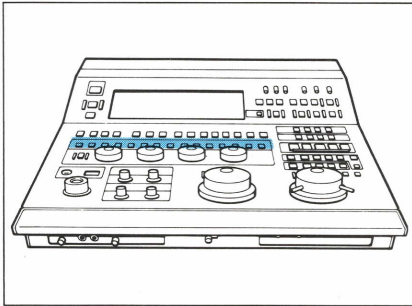
MANUAL SET UP	MASTER BLACK : 50	LENS TYPE : 17	NO : 5050
CAMERA 12	F-NO : 16.0	NAME : 15x ZOOM	
		EXTENDER MODE : x1.5	

Below the text, a horizontal scale labeled MOD is shown, ranging from 0 to ∞, with a vertical marker indicating the current setting at 50.

EL Display

Adjustment Dials

Outline

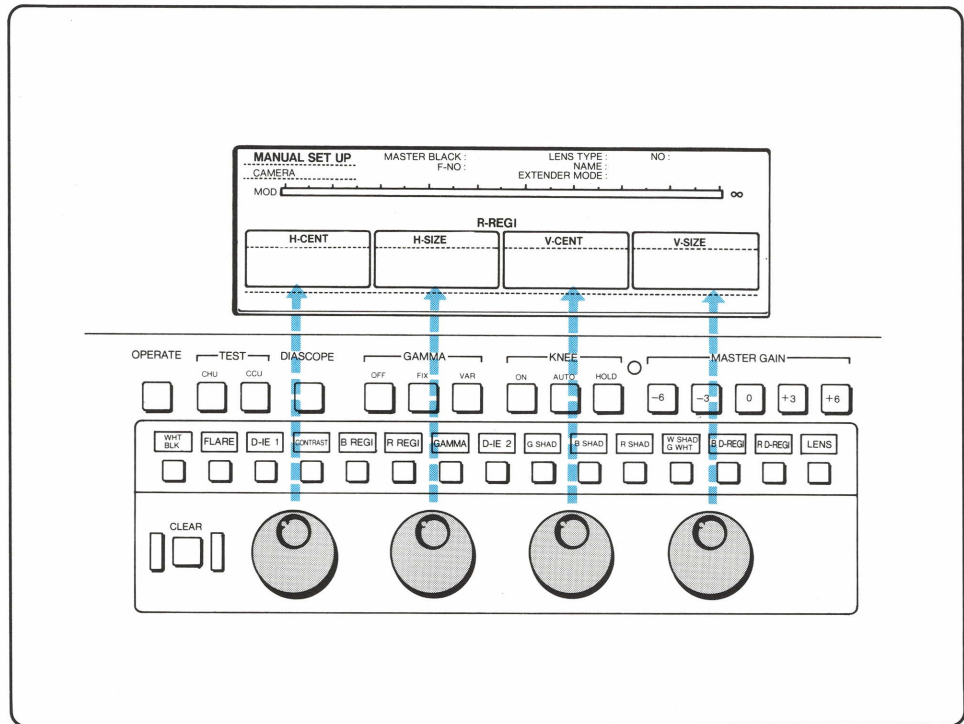


Adjustment item select buttons

WHT BLK	FLARE	D-IE 1	CONTRAST	B REGI	R REGI	GAMMA	D-IE 2	G SHAD	B SHAD	R SHAD	W SHAD G WHT	B-D-REGI	R-D-REGI	LENS
---------	-------	--------	----------	--------	--------	-------	--------	--------	--------	--------	--------------	----------	----------	------

Press to light the corresponding lamp.

Selected adjustment items displayed



MANUAL SET UP

MASTER BLACK: F-NO. LENS TYPE: NAME: NO:

CAMERA: EXTENDER MODE:

MOD: _____ ∞

R-REGI

H-CENT H-SIZE V-CENT V-SIZE

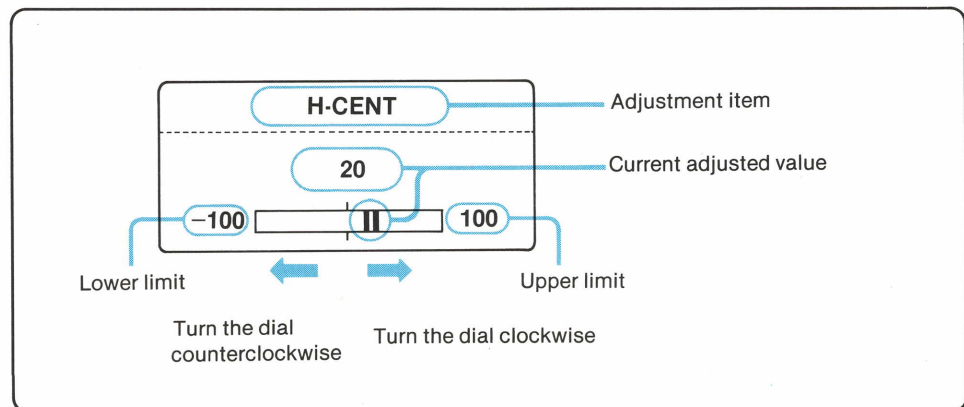
OPERATE TEST DIASCOPE GAMMA KNEE MASTER GAIN

CHU CCU OFF FIX VAR ON AUTO HOLD -6 -3 0 +3 +6

WHT BLK FLARE D-IE 1 CONTRAST B REGI R REGI GAMMA D-IE 2 G SHAD B SHAD R SHAD W SHAD G WHT B-D-REGI R-D-REGI LENS

CLEAR

Contents displayed



H-CENT

Adjustment item

20

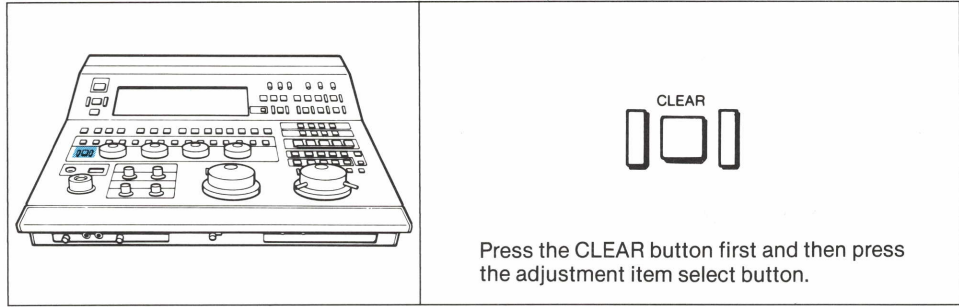
Current adjusted value

-100 100

Lower limit Upper limit

Turn the dial counterclockwise Turn the dial clockwise

Erasing the dial adjusted value



Press the CLEAR button first and then press the adjustment item select button.

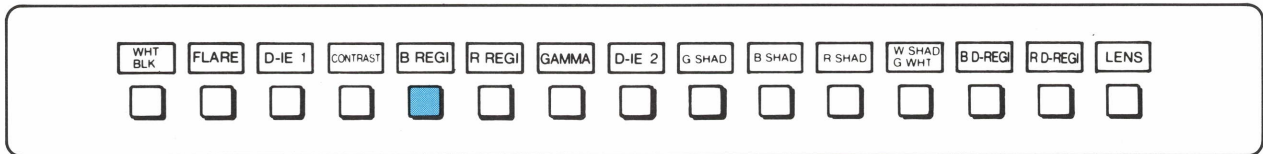
CLEAR

The selected item's adjusted value is erased, and the system is reset to the AUTO SETUP, automatic adjustment or power ON state.

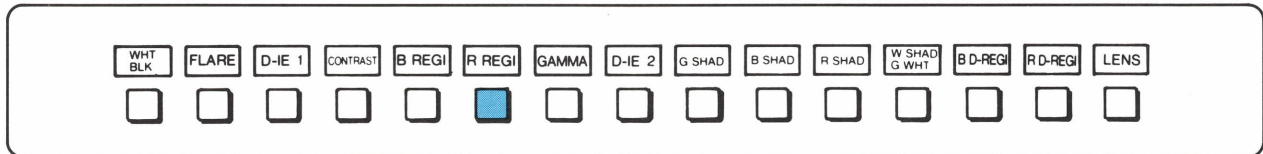
Registration

Size and centering

When adjusting the B signal



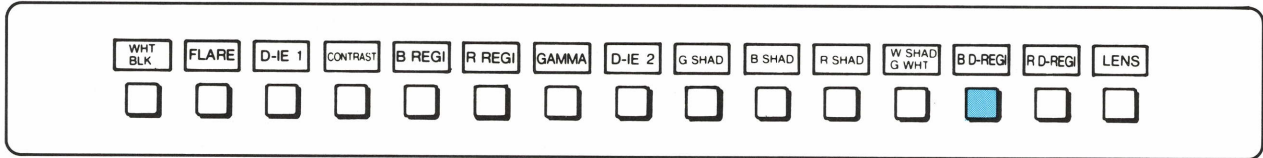
When adjusting the R signal



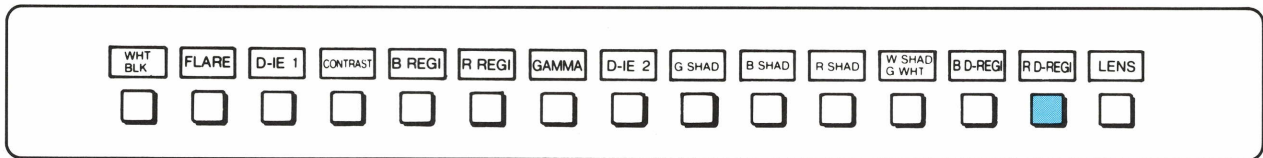
Items	H-CENT (H centering)	H-SIZE (H size)	V-CENT (V centering)	V-SIZE (V size)
Adjustable range	-100~100	-100~100	-100~100	-100~100
	Left Right 	Small Large 	Down Up 	Small Large

Digital registration correction (partial adjustment)

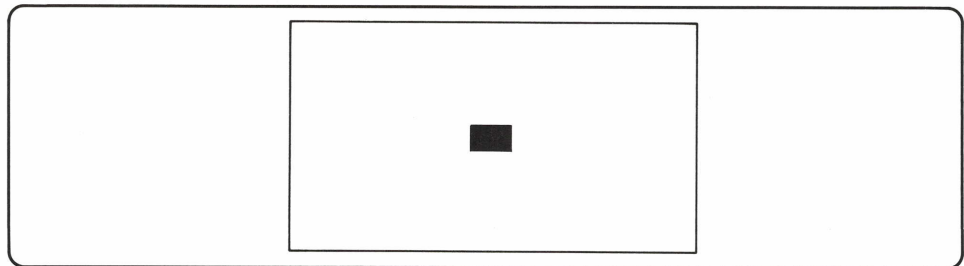
When adjusting the B signal



When adjusting the R signal

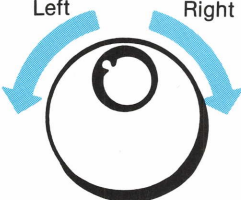
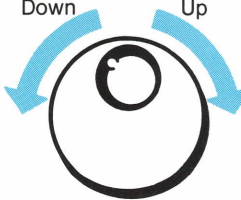
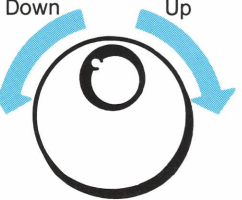
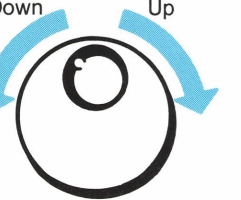
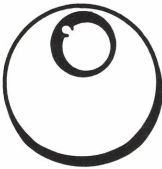
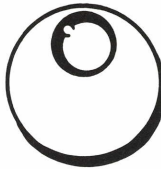


The cursor is displayed on the screen.



1 Shoot either the HD chart or the test pattern built in the lens. (See "DIASCOPE" on page 13.)



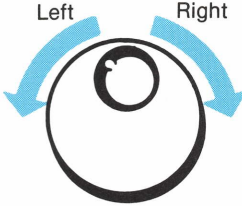
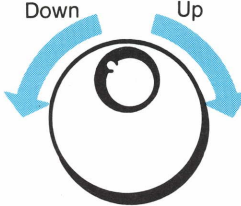
2 Turn the dial to move the cursor to the desired position.

Items	H-POSITION (H position)	V-POSITION (V position)	H-CORRECTION	V-CORRECTION
Adjustable range	1~15	1~15		
	Left  Right 	Down  Up 		

Abbreviation

D-REGI digital registration correction

3 Turn the dial to adjust.

Items	H-POSITION	V-POSITION	H-CORRECTION (H correction)	V-CORRECTION (V correction)
Adjustable range			-100~100	-100~100
				

Execute steps 2 to 3 for any positions requiring adjustment. Correction between two adjusted points is made by interpolation or extrapolation.

Screen level

Black balance and white balance

<div style="display: flex; justify-content: space-between; align-items: center;"> <div style="display: flex; gap: 5px;"> WHT BLK<input checked="" type="checkbox"/> FLARE<input type="checkbox"/> D-IE 1<input type="checkbox"/> CONTRAST<input type="checkbox"/> B REGI<input type="checkbox"/> R REGI<input type="checkbox"/> GAMMA<input type="checkbox"/> D-IE 2<input type="checkbox"/> G SHAD<input type="checkbox"/> B SHAD<input type="checkbox"/> R SHAD<input type="checkbox"/> W SHAD G WHT<input type="checkbox"/> B D-REGI<input type="checkbox"/> R D-REGI<input type="checkbox"/> LENS<input type="checkbox"/> </div> </div>				
Items	B BLK (Black level of B)	R BLK (Black level of R)	B WHT (White level of B)	R WHT (White level of R)
Adjustable range	-100~100	-100~100	-100~100	-100~100
	<div style="display: flex; justify-content: space-around; align-items: center;"> <div style="text-align: center;"> <p>Small Large</p> </div> <div style="text-align: center;"> <p>Small Large</p> </div> <div style="text-align: center;"> <p>Small Large</p> </div> <div style="text-align: center;"> <p>Small Large</p> </div> </div>			

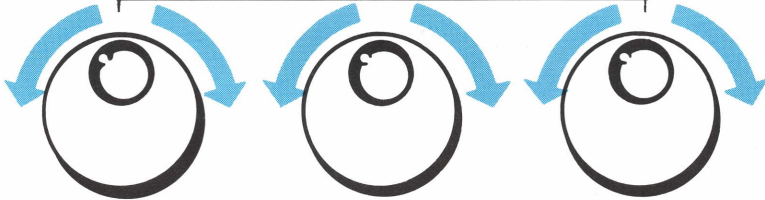
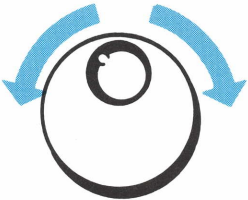
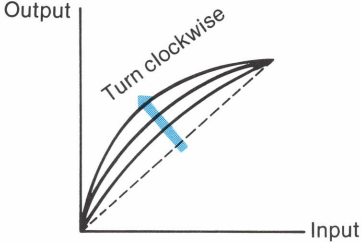
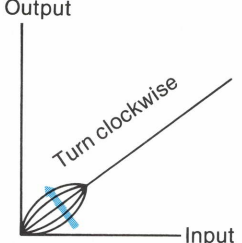
White level of G signal

<div style="display: flex; justify-content: space-between; align-items: center;"> <div style="display: flex; gap: 5px;"> WHT BLK<input type="checkbox"/> FLARE<input type="checkbox"/> D-IE 1<input type="checkbox"/> CONTRAST<input type="checkbox"/> B REGI<input type="checkbox"/> R REGI<input type="checkbox"/> GAMMA<input type="checkbox"/> D-IE 2<input type="checkbox"/> G SHAD<input type="checkbox"/> B SHAD<input type="checkbox"/> R SHAD<input type="checkbox"/> W SHAD G WHT<input checked="" type="checkbox"/> B D-REGI<input type="checkbox"/> R D-REGI<input type="checkbox"/> LENS<input type="checkbox"/> </div> </div>				
Items	G WHT SHADING	B WHT SHADING See page 33.	R WHT SHADING	G WHITE (White level of G)
Adjustable range				-100~100
	<div style="display: flex; justify-content: space-around; align-items: center;"> <div style="text-align: center;"></div> <div style="text-align: center;"></div> <div style="text-align: center;"></div> <div style="text-align: center;"> <p>Small Large</p> </div> </div>			

“◇ ◇” item display

This indicated the displayed item will be stored in the lens file (page 43). (Only when **LENS FILE** is lit.)

GAMMA

<div style="display: flex; justify-content: space-around; align-items: center;"> <div style="border: 1px solid black; padding: 2px; font-size: 8px;">WHT BLK</div> <div style="border: 1px solid black; padding: 2px; font-size: 8px;">FLARE</div> <div style="border: 1px solid black; padding: 2px; font-size: 8px;">D-IE 1</div> <div style="border: 1px solid black; padding: 2px; font-size: 8px;">CONTRAST</div> <div style="border: 1px solid black; padding: 2px; font-size: 8px;">B REGI</div> <div style="border: 1px solid black; padding: 2px; font-size: 8px;">R REGI</div> <div style="border: 1px solid black; padding: 2px; font-size: 8px; background-color: #0070C0; color: white;">GAMMA</div> <div style="border: 1px solid black; padding: 2px; font-size: 8px;">D-IE 2</div> <div style="border: 1px solid black; padding: 2px; font-size: 8px;">G SHAD</div> <div style="border: 1px solid black; padding: 2px; font-size: 8px;">B SHAD</div> <div style="border: 1px solid black; padding: 2px; font-size: 8px;">R SHAD</div> <div style="border: 1px solid black; padding: 2px; font-size: 8px;">W SHAD G WHT</div> <div style="border: 1px solid black; padding: 2px; font-size: 8px;">B D-REGI</div> <div style="border: 1px solid black; padding: 2px; font-size: 8px;">R D-REGI</div> <div style="border: 1px solid black; padding: 2px; font-size: 8px;">LENS</div> </div>				
Items	M(aster) GAMMA	B GAMMA	R GAMMA	BLACK GAMMA
	Adjustable only when the VAR lamp of the GAMMA button is lit.			
Adjustable range	-100~100	-100~100	-100~100	-4~4
	(See illustration below)		(See illustration below)	
				
				

M GAMMA and BLACK GAMMA are adjustable also with the **CONTRAST** button. (See page 30.)

BLACK GAMMA

Fine adjustment of gradation in the vicinity of the black level.

Abbreviation

M GAMMA master gamma

KNEE

<div style="display: flex; justify-content: space-around; align-items: center;"> <div style="text-align: center;"><input type="checkbox"/> WHT BLK</div> <div style="text-align: center;"><input type="checkbox"/> FLARE</div> <div style="text-align: center;"><input type="checkbox"/> D-IE 1</div> <div style="text-align: center;"><input checked="" type="checkbox"/> CONTRAST</div> <div style="text-align: center;"><input type="checkbox"/> B REGI</div> <div style="text-align: center;"><input type="checkbox"/> R REGI</div> <div style="text-align: center;"><input type="checkbox"/> GAMMA</div> <div style="text-align: center;"><input type="checkbox"/> D-IE 2</div> <div style="text-align: center;"><input type="checkbox"/> G SHAD</div> <div style="text-align: center;"><input type="checkbox"/> B SHAD</div> <div style="text-align: center;"><input type="checkbox"/> R SHAD</div> <div style="text-align: center;"><input type="checkbox"/> W SHAD G WHT</div> <div style="text-align: center;"><input type="checkbox"/> B D-REGI</div> <div style="text-align: center;"><input type="checkbox"/> R D-REGI</div> <div style="text-align: center;"><input type="checkbox"/> LENS</div> </div>				
Items	M GAMMA (Master gamma)	KNEE (Knee point)	SLOPE (Slope)	BLACK GAMMA (Black gamma)
Adjustable range	-100~100	-100~100	-100~100	-4~4
	Small Large 	Low High 	See illustration below 	Small Large

- M GAMMA is adjustable when the VAR or the GAMMA lamp is lit.
- KNEE is adjustable when the KNEE ON lamp is lit.
- SLOPE is adjustable when any of the KNEE lamps is lit.
- BLACK GAMMA is always adjustable irrespective of whether the GAMMA and KNEE lamps are lit or not.

FLARE

<div style="display: flex; justify-content: space-around; align-items: center;"> <div style="text-align: center;"><input type="checkbox"/> WHT BLK</div> <div style="text-align: center;"><input checked="" type="checkbox"/> FLARE</div> <div style="text-align: center;"><input type="checkbox"/> D-IE 1</div> <div style="text-align: center;"><input type="checkbox"/> CONTRAST</div> <div style="text-align: center;"><input type="checkbox"/> B REGI</div> <div style="text-align: center;"><input type="checkbox"/> R REGI</div> <div style="text-align: center;"><input type="checkbox"/> GAMMA</div> <div style="text-align: center;"><input type="checkbox"/> D-IE 2</div> <div style="text-align: center;"><input type="checkbox"/> G SHAD</div> <div style="text-align: center;"><input type="checkbox"/> B SHAD</div> <div style="text-align: center;"><input type="checkbox"/> R SHAD</div> <div style="text-align: center;"><input type="checkbox"/> W SHAD G WHT</div> <div style="text-align: center;"><input type="checkbox"/> B D-REGI</div> <div style="text-align: center;"><input type="checkbox"/> R D-REGI</div> <div style="text-align: center;"><input type="checkbox"/> LENS</div> </div>				
Items	◇ G FLARE ◇ (Flare correction of G)	◇ B FLARE ◇ (Flare correction of B)	◇ R FLARE ◇ (Flare correction of R)	
Adjustable range	-100~100	-100~100	-100~100	
	Small Large 	Small Large 	Small Large 	

Contour

<div style="display: flex; justify-content: space-between; align-items: center;"> <div style="display: flex; gap: 5px;"> WHT BLK<input type="checkbox"/></div> <div style="display: flex; gap: 5px;"> FLARE<input type="checkbox"/></div> <div style="display: flex; gap: 5px;"> D-IE 1<input checked="" type="checkbox"/></div> <div style="display: flex; gap: 5px;"> CONTRAST<input type="checkbox"/></div> <div style="display: flex; gap: 5px;"> B REGI<input type="checkbox"/></div> <div style="display: flex; gap: 5px;"> R REGI<input type="checkbox"/></div> <div style="display: flex; gap: 5px;"> GAMMA<input type="checkbox"/></div> <div style="display: flex; gap: 5px;"> D-IE 2<input type="checkbox"/></div> <div style="display: flex; gap: 5px;"> G SHAD<input type="checkbox"/></div> <div style="display: flex; gap: 5px;"> B SHAD<input type="checkbox"/></div> <div style="display: flex; gap: 5px;"> R SHAD<input type="checkbox"/></div> <div style="display: flex; gap: 5px;"> W SHAD G WHT<input type="checkbox"/></div> <div style="display: flex; gap: 5px;"> B D-REGI<input type="checkbox"/></div> <div style="display: flex; gap: 5px;"> R D-REGI<input type="checkbox"/></div> <div style="display: flex; gap: 5px;"> LENS<input type="checkbox"/></div> </div>				
Items	DETAIL GAIN (Contour correction amount)	THRESHOLD (Changes the correction amount by screen brightness. The correction amount is adjustable.)	CRISP (Detects the minimum contour component. Any component less than the minimum is considered a noise and is not subject to contour correction.)	FREQUENCY (Thickness of contour correction in the horizontal direction.)
Adjustable range	0~63	0~7	0~16	0~15
	Small Large 	Small Large 	Small Large 	Thin Thick

<div style="display: flex; justify-content: space-between; align-items: center;"> <div style="display: flex; gap: 5px;"> WHT BLK<input type="checkbox"/></div> <div style="display: flex; gap: 5px;"> FLARE<input type="checkbox"/></div> <div style="display: flex; gap: 5px;"> D-IE 1<input type="checkbox"/></div> <div style="display: flex; gap: 5px;"> CONTRAST<input type="checkbox"/></div> <div style="display: flex; gap: 5px;"> B REGI<input type="checkbox"/></div> <div style="display: flex; gap: 5px;"> R REGI<input type="checkbox"/></div> <div style="display: flex; gap: 5px;"> GAMMA<input type="checkbox"/></div> <div style="display: flex; gap: 5px;"> D-IE 2<input checked="" type="checkbox"/></div> <div style="display: flex; gap: 5px;"> G SHAD<input type="checkbox"/></div> <div style="display: flex; gap: 5px;"> B SHAD<input type="checkbox"/></div> <div style="display: flex; gap: 5px;"> R SHAD<input type="checkbox"/></div> <div style="display: flex; gap: 5px;"> W SHAD G WHT<input type="checkbox"/></div> <div style="display: flex; gap: 5px;"> B D-REGI<input type="checkbox"/></div> <div style="display: flex; gap: 5px;"> R D-REGI<input type="checkbox"/></div> <div style="display: flex; gap: 5px;"> LENS<input type="checkbox"/></div> </div>														
Items	LIMIT LEVEL (Upper limit after contour correction)	LIMIT CURVE (Shape number of contour correction)	V RATIO (Ratio of vertical correction to horizontal correction)	SOURCE (Original signal for extracting the contour component)										
Adjustable range	8~127	0, 1, 2, 3	0~8 (same amount at 4)	G, G+R, G+B, G+R+B, B, R										
	Small Large 	Small Large 	Small Large 	G+R G+B G+R+B G B R 										
	<table border="1" style="margin-left: auto; margin-right: auto;"> <thead> <tr> <th>Slope</th> <th>LIMIT CURVE</th> </tr> </thead> <tbody> <tr> <td>0.5</td> <td>0</td> </tr> <tr> <td>1</td> <td>1</td> </tr> <tr> <td>1.5</td> <td>2</td> </tr> <tr> <td>2</td> <td>3</td> </tr> </tbody> </table>		Slope	LIMIT CURVE	0.5	0	1	1	1.5	2	2	3		
Slope	LIMIT CURVE													
0.5	0													
1	1													
1.5	2													
2	3													

Abbreviation

D-IE digital image enhancer
CRISP crispening

SHADING

When correcting the shading of the G signal

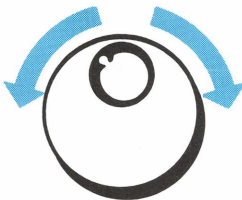
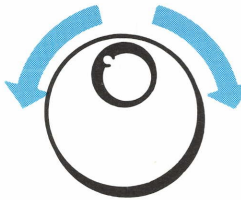
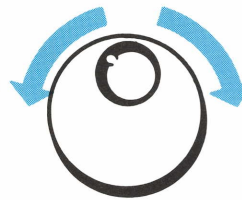
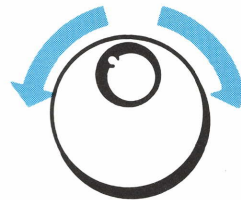
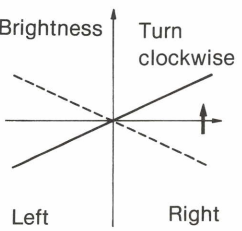
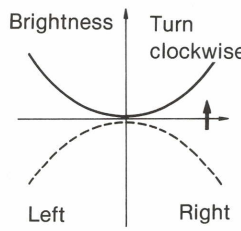
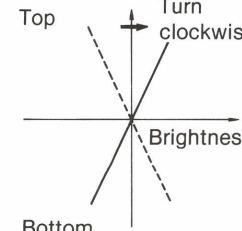
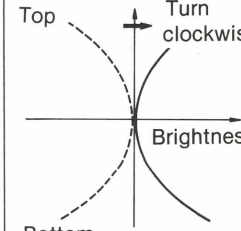
WHT BLK	FLARE	D-IE 1	CONTRAST	B REGI	R REGI	GAMMA	D-IE 2	G SHAD	B SHAD	R SHAD	W SHAD G WHT	B D-REGI	R D-REGI	LENS
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

When correcting the shading of the B signal

WHT BLK	FLARE	D-IE 1	CONTRAST	B REGI	R REGI	GAMMA	D-IE 2	G SHAD	B SHAD	R SHAD	W SHAD G WHT	B D-REGI	R D-REGI	LENS
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

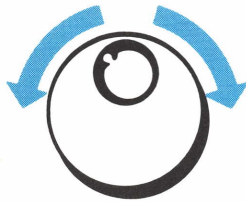
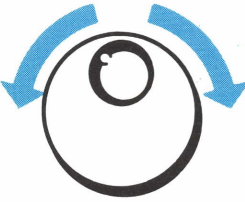
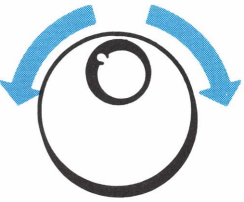

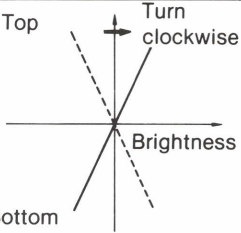
When correcting the shading of the R signal

WHT BLK	FLARE	D-IE 1	CONTRAST	B REGI	R REGI	GAMMA	D-IE 2	G SHAD	B SHAD	R SHAD	W SHAD G WHT	B D-REGI	R D-REGI	LENS
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Items	H-SAW (Saw correction in the horizontal direction)	H-PARA (Parabola correction in the horizontal direction)	V-SAW (Saw correction in the vertical direction)	V-PARA (Parabola correction in the vertical direction)
Adjustable range	-100~100 (See illustration below.)	-100~100 (See illustration below.)	-100~100 (See illustration below.)	-100~100 (See illustration below.)
	See illustration below. 	See illustration below. 	See illustration below. 	See illustration below. 
				

E086ST **Abbreviation**
PARA parabola

WHITE SHADING

<div style="display: flex; justify-content: space-around; align-items: center;"> <div style="border: 1px solid black; padding: 2px; font-size: 8px;">WHT BLK</div> <div style="border: 1px solid black; padding: 2px; font-size: 8px;">FLARE</div> <div style="border: 1px solid black; padding: 2px; font-size: 8px;">D-IE 1</div> <div style="border: 1px solid black; padding: 2px; font-size: 8px;">CONTRAST</div> <div style="border: 1px solid black; padding: 2px; font-size: 8px;">B REGI</div> <div style="border: 1px solid black; padding: 2px; font-size: 8px;">R REGI</div> <div style="border: 1px solid black; padding: 2px; font-size: 8px;">GAMMA</div> <div style="border: 1px solid black; padding: 2px; font-size: 8px;">D-IE 2</div> <div style="border: 1px solid black; padding: 2px; font-size: 8px;">G SHAD</div> <div style="border: 1px solid black; padding: 2px; font-size: 8px;">B SHAD</div> <div style="border: 1px solid black; padding: 2px; font-size: 8px;">R SHAD</div> <div style="border: 1px solid black; padding: 2px; font-size: 8px;">W SHAD G WHT</div> <div style="border: 1px solid black; padding: 2px; font-size: 8px;">B D-REGI</div> <div style="border: 1px solid black; padding: 2px; font-size: 8px;">R D-REGI</div> <div style="border: 1px solid black; padding: 2px; font-size: 8px;">LENS</div> </div>				
Items	◇ G WHT SHADING ◇ (White shading correction of the G signal)	◇ B WHT SHADING ◇ (White shading correction of the B signal)	◇ R WHT SHADING ◇ (White shading correction of the R signal)	◇ G WHITE ◇ See page 28.
Adjustable range	-100~100 (See illustration below.)	-100~100 (See illustration below.)	-100~100 (See illustration below.)	
	See illustration below. 	See illustration below. 	See illustration below. 	
	 <p>Brightness at in the right and left part of the screen increases.</p>			

“◇ ◇” item display

This indicated the displayed item will be stored in the lens file (page 43). (Only when LENS FILE is lit.)

Screen distortion due to lens characteristics

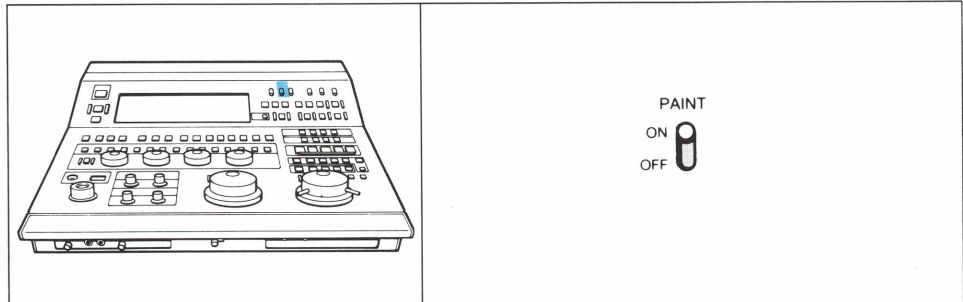
<div style="display: flex; justify-content: space-around; align-items: center;"> <div style="border: 1px solid black; padding: 2px; font-size: 8px;">WHT BLK</div> <div style="border: 1px solid black; padding: 2px; font-size: 8px;">FLARE</div> <div style="border: 1px solid black; padding: 2px; font-size: 8px;">D-IE 1</div> <div style="border: 1px solid black; padding: 2px; font-size: 8px;">CONTRAST</div> <div style="border: 1px solid black; padding: 2px; font-size: 8px;">B REGI</div> <div style="border: 1px solid black; padding: 2px; font-size: 8px;">R REGI</div> <div style="border: 1px solid black; padding: 2px; font-size: 8px;">GAMMA</div> <div style="border: 1px solid black; padding: 2px; font-size: 8px;">D-IE 2</div> <div style="border: 1px solid black; padding: 2px; font-size: 8px;">G SHAD</div> <div style="border: 1px solid black; padding: 2px; font-size: 8px;">B SHAD</div> <div style="border: 1px solid black; padding: 2px; font-size: 8px;">R SHAD</div> <div style="border: 1px solid black; padding: 2px; font-size: 8px;">W SHAD G WHT</div> <div style="border: 1px solid black; padding: 2px; font-size: 8px;">B D-REGI</div> <div style="border: 1px solid black; padding: 2px; font-size: 8px;">R D-REGI</div> <div style="border: 1px solid black; padding: 2px; font-size: 8px;">LENS</div> </div>				
Items	DISTORTION (Screen distortion)	F-NO MAX	F-NO MIN	LENS TYPE
Adjustable range	-100~100 (See illustration below.)		(See page 45.)	
	Turn clockwise 			

For details on the correction of screen distortions caused by lens characteristics, refer to "Lens File" on page 43 to 46).

Fine Adjustment Knobs

Used for temporary coloring or fine adjustment after dial adjustment.

Setting the paint switch

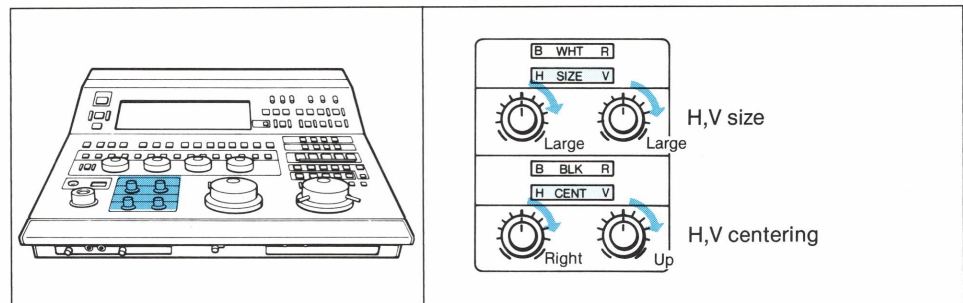


ON	Fine adjustment knob functions.
OFF	Fine adjustment knob does not function.

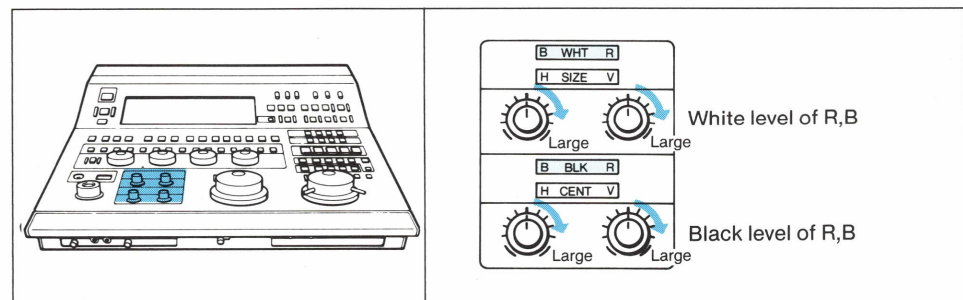
Size, centering, black balance and white balance

The functions of controls vary depending on the picture monitor screen.

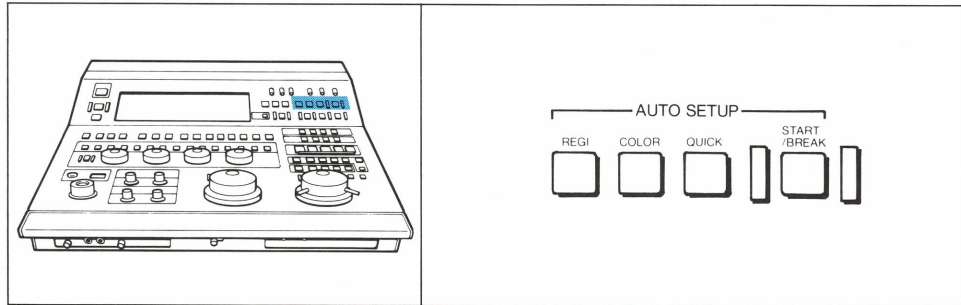
When the PICTURE MONITOR switch is set to either B-G or R-G	
B-G	Size B, centering
R-G	Size R, centering



When the PICTURE MONITOR switch is set to other than B-G or R-G	
Black balance, white balance	

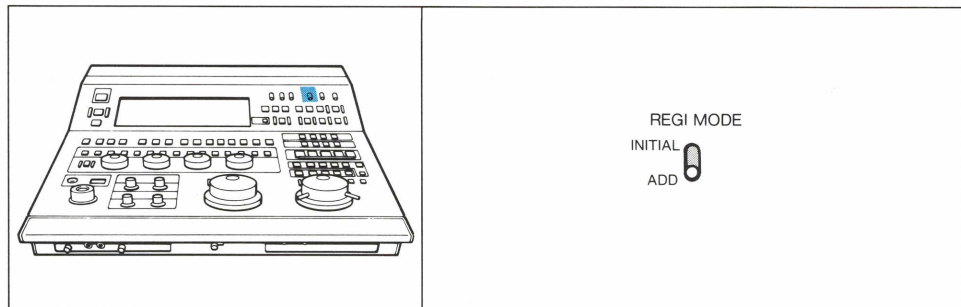


AUTO SETUP



REGI	AUTO SETUP for registration Error detection: 13 × 13 points Correction: 15 × 15 points
COLOR	AUTO SETUP for screen level Automatic adjustment of black set, black balance and white balance
QUICK	Quick AUTO SETUP for registration Error detection: 4 points Post-correction error detection is carried out. AUTO SETUP is completed when the number of detect errors is less than the specified value. QUICK requires less operation time than REGI .

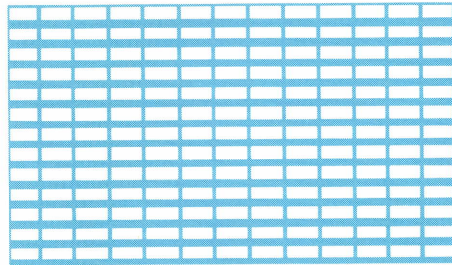
Setting the Registration Mode Switch




Changes the REGI function's auto-setup initial values and computation method.	
INITIAL	Begins adjustment from the initial value, ignoring the previous registration correction data. When adjustment is completed, B D-REGI and R D-REGI data are cleared.
ADD	Begins adjustment after adding the previously set registration auto-setup correction data. When adjustment is completed, B D-REGI and R D-REGI correction data are added.

Operation

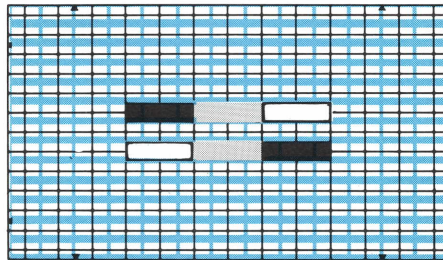
- 1** Press the **REGI** , **COLOR** or **QUICK** button to light the lamp.
A pattern appears on the picture monitor screen and the viewfinder.



 : Measuring area

Press both **REGI** and **COLOR** , or both **QUICK** and **COLOR** to execute AUTO SETUP with two functions continuously.

- 2** Either the HD chart or the test pattern built in the lens is displayed. (See "DIASCOPE" on page 13.)




Shoot so that all intersections are within the measuring area.

- 3** Press **ST/BREAK** to light the ST/BREAK lamp.
AUTO SETUP starts.
A cursor is displayed on the picture monitor screen and the viewfinder when either **REGI** or **QUICK** is selected.


Abbreviation
ST/BREAK start/break

Display during adjustment


REGI

AUTO SET UP		MASTER BLACK : 50		LENS TYPE : 17 NO : 5050	
CAMERA 12		F-NO : CLOSE		NAME : 15 x ZOOM	
				EXTENDER MODE : x1.5	
MOD  ∞					
REGI 1 2					
▶ WHITE	IRIS/M	V CENT	B	V MEASURE	B
	B		R		R
	R	H CENT	B	H MEASURE	B
			R		R

COLOR

AUTO SET UP		MASTER BLACK : 50		LENS TYPE : 17 NO : 5050	
CAMERA 12		F-NO : CLOSE		NAME : 15 x ZOOM	
				EXTENDER MODE : x1.5	
MOD  ∞					
COLOR 1 2					
▶ IRIS CLOSE	IRIS	BLACK	M	BLACK	B
BLACK SET	G	WHITE	IRIS/M		R
	B	FLARE	G	WHITE	M
	R	GAMMA	M		B
		CHECK			R
				FLARE	B
				GAMMA	B

QUICK

AUTO SET UP		MASTER BLACK : 50		LENS TYPE : 17 NO : 5050	
CAMERA 12		F-NO : CLOSE		NAME : 15 x ZOOM	
				EXTENDER MODE : x1.5	
MOD  ∞					
QUICK 1 2					
▶ V CENT	B	V MEASURE	B		
	R		R		
▶ H CENT	B	H MEASURE	B		
	R		R		

▶: Under adjustment

Buttons on the panel do not function.

When adjustment is completed, the button(s) pressed at 1 and ST/BREAK go off.

Adjustment failure

When adjustment ends in failure, the corresponding **REGI** , **COLOR** or **QUICK** button flashes while the **ST/BREAK** lamp is lit.

Proceed as follows.

1 Stop the flashing by pressing the **ST/BREAK** button.
Buttons on the panel become active.

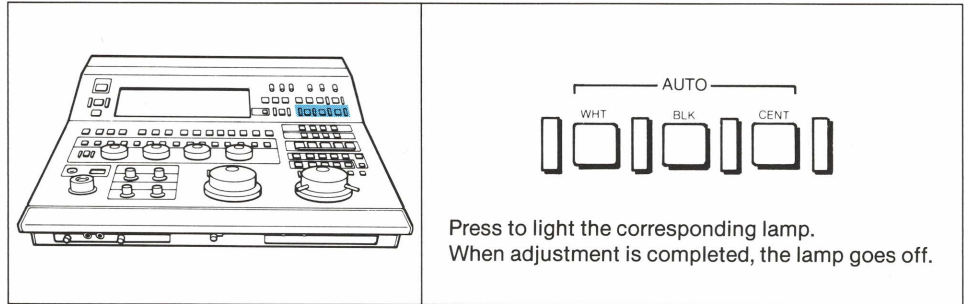
2 Check whether:

- The HD chart is properly located in the screen graticule.
- Iris and focus adjustments are proper.
- Registration error is within the correction range (approx. $\pm 0.4\%$). If beyond the range, adjust the camera head independently.
- The lighting conditions (maximum level for the G signal = approx. 85~105%) for automatic registration adjustment are correct.

3 Activate AUTO SETUP again.

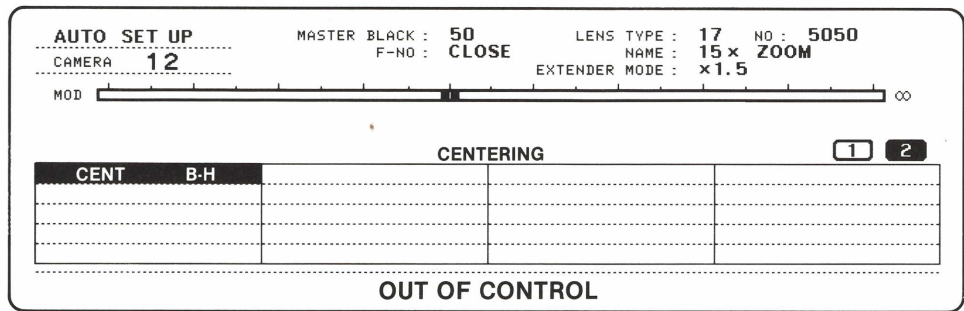
AUTO

Automatic adjustment of white balance, black balance and centering is possible without using the HD chart.



- WHT White balance
Adjusts the white balance referring to a high luminance portion on the screen.
- BLK Black balance
Automatically closes the iris during adjustment.
- CENT Centering
Executes registration through the parallel movement of the B and R signals in both the horizontal and vertical directions.

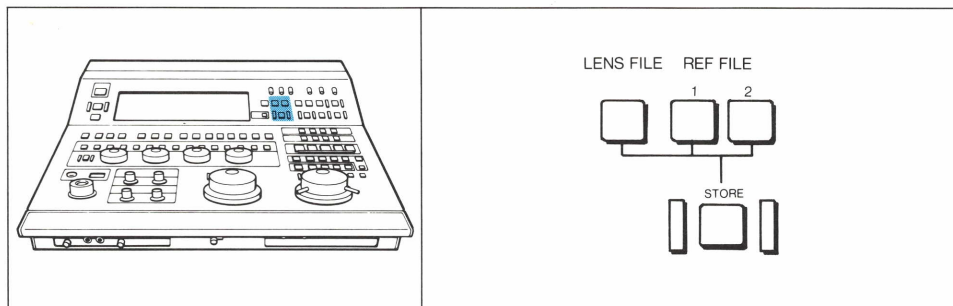
Items which cannot be adjusted



Displayed in reverse.

Files

Reference File



Registers target values for the automatic adjustment of screen levels ([COLOR] in AUTO SET UP).

Two sets of target values can be registered.

Contents

BLACK LEVEL	Master, B, R
GAMMA	Master, B, R
BLACK GAMMA	
FLARE CORRECTION	G, B, R
WHITE LEVEL	G, B, R

Registration

Both files 1 and 2 are shipped with identical contents. To renew registration, proceed as follows.

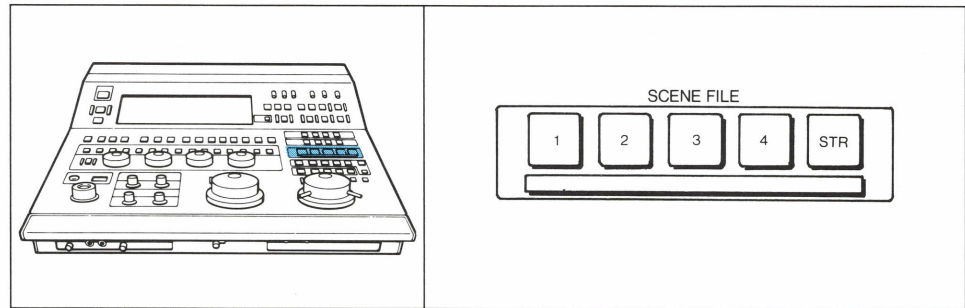
1 Press either the [REF FILE 1] or [REF FILE 2] button to light the lamp.

2 Press the [STORE] button.
Current settings are registered in the file.

Call

Press the [REF FILE 1] or [REF FILE 2] button to light the lamp.
When neither of the REF FILE lamps are lit, FILE 1 is called.

Scene Files



Settings made on the panel can be stored in this file and called up whenever necessary.

Contents

Level

BLACK LEVEL	Master, B, R
FLARE CORRECTION	G, B, R
BLACK GAMMA	
KNEE	
WHITE LEVEL	G, B, R
GAMMA	Master, B, R
PULSE CANCELLER	G, B, R
SLOPE	

SELECT button

GAMMA selection
FILTER selection
GAIN selection

Contour

Adjusted values for items referred to in "CONTOUR 1" and "CONTOUR 2". (See page 31.)

Registration

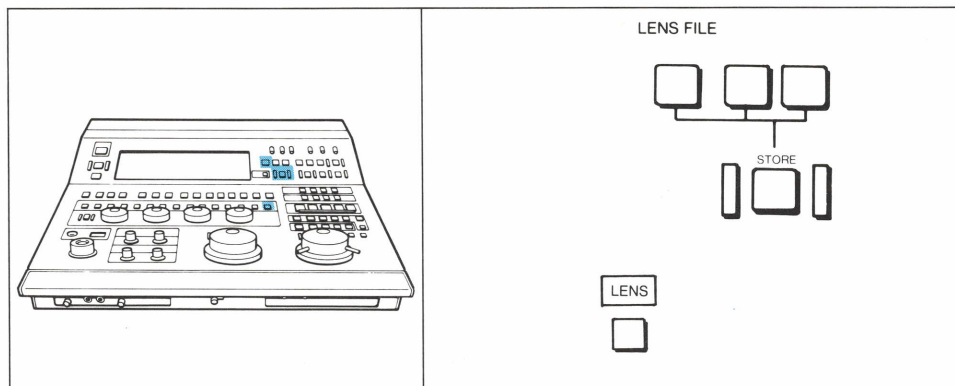
1 Press the **STR** button. The lamp lights up.

2 Press the desired file button (either one of **1** ~ **4**).

Call

Press the desired file button to light the lamp.
The contents of the called file are set on the panel.
The position of adjustment controls has no influence on the display.

Lens File



The lens file performs the following functions.

- Repetitive setup operations required at every lens change are eliminated by registering lens specific information such as screen level and geometric distortion.
- Individual lens data such as name, number and F value can be registered in this file. When registered, information of the installed lens and the current iris value are shown on the EL Display.

Contents

Level

White level	G, B, R
White shading correction	G, B, R
Flare correction	G, B, R

Geometric distortion

Centering—Difference with the standard lens is registered.

Size—Difference with the standard lens is registered.

Screen distortion (DISTORTION)

Lens data indication

Lens number

Lens name

Maximum and minimum F values

Registration

(1) Level, geometric distortion, lens number, lens name

Be sure to execute the registration in a stable environment such as a studio.

Creating a standard lens file

1 Select one of the lens in stock as the standard lens and install it to the camera head.

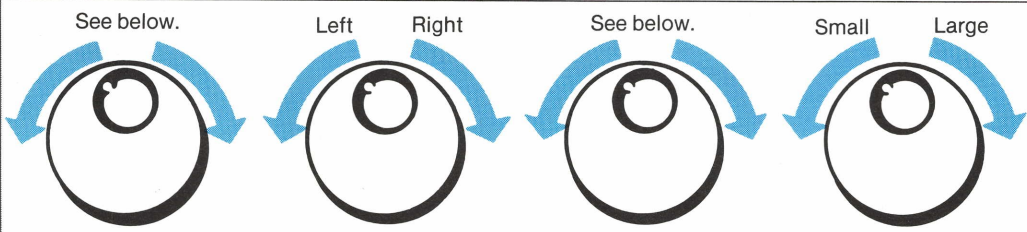
2 Press **LENS** (a control adjustment item selection button) to light the corresponding lamp. Set LENS TYPE to "0" using the rightmost dial.

3 Shoot the HD chart and execute the **[REGI]** AUTO SETUP operations.

Registering each lens

4 Install the lens to be registered and shoot the HD chart.

5 Press the **[LENS FILE]** button to light the lamp.
Make necessary adjustments and settings.

Items	◇ DISTORTION ◇ (Screen distortion)	LENS NO (Lens number) NAME (Lens name)		LENS TYPE
		CURSOR (Move cursor)	CHARACTER (Character setting)	
Adjustable range	-100~100	LENS NO: 4 digits NAME: 16 characters	(See below.)	0~63
	See below.	Left Right	See below.	Small Large
			Turn clockwise ┌ A B C ... Z ! " # \$ % & ' () * + , - . / : ; < = > ? @ 1 2 3 9	(Automatically set when the lens being used is capable of transmitting lens type information.)

6 Adjust G, B and R's white level, white shading and flare (items indicated with "◇ ◇" mark).

7 Press the **[STORE]** button.
The lamp remains lit during registration and goes off when completed.

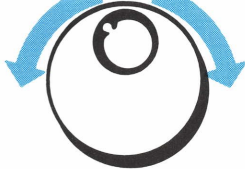
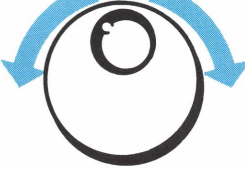
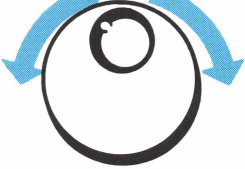

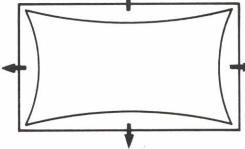
8 Execute **[REGI]** AUTO SETUP if necessary.

Repeat steps 4 through 8 for all lens to be registered.

(2) F value data for indicating the iris value
 No standard lens is required.

1 Press the **LENS** button to light the corresponding lamp. (Do not light the **LENS FILE** lamp.)

2 Make necessary adjustments and settings.

Items	DISTORTION (Screen distortion correction)	F-NO MAX (Maximum F value)	F-NO MIN (Minimum F value)	LENS TYPE (Lens type)
Adjustable range	-100~100	8~22 (0.1 step)	1.2~8 (0.1 step)	0~63
	See below. 	Large Small 	Large Small 	Small Large 
	Turn clockwise 	Set both MAX and MIN to 00 for a lens equipped with the F value communication function. If a variability is found in the input value, a converted value is displayed.		

3 Press the **LENS** button so that the corresponding lamp goes off.

DISTORTION

Distortion correction values adjusted in (2) above are not input to the lens file. However, the output screen signal reflects corrections made in (1) (input to the lens file) and (2) above.

LENS TYPE

Generally, the same lens type data is transmitted from identical lenses. However, if multiple lens files are registered on the same LENS TYPE, subcodes, like 1-1, 1-2, 1-3, ..., are automatically added to help distinguish them.

Call

When installing a lens equipped with the LENS TYPE communication function

The file corresponding to the lens type data transmitted from the lens is automatically called up.

If a subcode is added to the LENS TYPE, turn the dial to change the subcode.

When installing a lens without the LENS TYPE communication function

Press the **LENS** button and input again the same lens type data entered at registration. The file corresponding to the LENS TYPE is automatically called up.

Displaying the lens data

The screenshot shows the 'MANUAL SET UP' screen on the EL Display. The data is organized as follows:

Field	Value
MASTER BLACK	50
F-NO	16.0
LENS TYPE	17
NO	5050
NAME	15x ZOOM
EXTENDER MODE	x1.5

Labels with arrows point to the 'F-NO' field (labeled 'Iris') and the 'LENS TYPE' field (labeled 'Lens type', 'Lens name', and 'Indication of extender mode'). A slider bar is at the bottom with 'MOD' on the left and '∞' on the right.

EL Display

Iris value

Lens that transmits the iris value (iris position)

The iris value is sent from the lens. (When MAX and MIN F values are input by the dial, the conversion takes place based on these values.)

Others

The F value is calculated using IRIS CONT signal which controls lens iris from the camera head.

Erasing

If "NO ROOM FOR LENS" appears on registration, a new lens file cannot be registered because the EEPROM is full. Erase the last file on EEPROM area, the thirteenth that is displayed automatically, or any other unnecessary file as follows:

- 1 Make sure the displayed file is the correct one to be erased.
- 2 Press LENS FILE.
- 3 Press CLEAR.
- 4 Press LENS.

Erasing is completed. The display and setting change corresponding to the LENS TYPE of the erased file:

If no other file is registered on the same LENS TYPE

(ex. When erasing a file of the LENS TYPE 1)

LENS TYPE 1 remains and the setting changes to the preset value. (No compensation by the LENS FILE is given.) The message "NEW LENS FILE" appears.

If two or more files are registered on the same LENS TYPE

(ex. When erasing the file of the LENS TYPE 1-2 among files 1-1 to 1-3)

The display "LENS TYPE" changes to 1-1, and the setting changes to the contents of corresponding file.

Note

A subcode is numbered in the reference order of the EEPROM, and not of the file's own. Therefore, the subcode may change when the lens file is erased/registered as in the following example:
ex.

Before erasing

LENS TYPE	1-1	1-2	1-3	2	
value	A	B	C		

Reference order →

B is erased

LENS TYPE	1-1		1-2	2	
value	A		C	D	

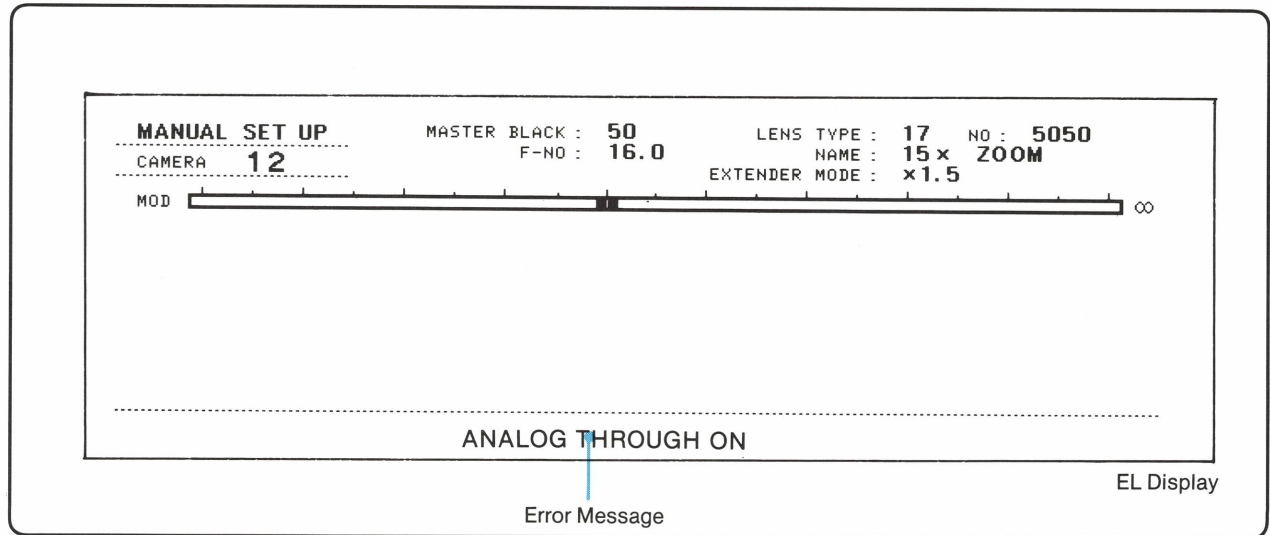
E is registered

LENS TYPE	1-1	1-2	1-3	2	
value	A	E	C	D	

If another file is already registered in the erased area

LENS TYPE	1-1	8	1-2	2	1-3
value	A	H	C	D	E

Error Messages



There are three types of error message:

WARNING	Displayed with the highest priority
ALARM	Displayed only in the absence of WARNING
ERROR	Displayed only in the absence of WARNING and ALARM

Meaning

WARNING

(In alphabetical order)

ANALOG THROUGH ON	Analog signal directly output, bypassing the digital process circuit.
BIAS LIGHT OFF	Bias light is off.
CABLE DISCONNECTED	Camera cable is disconnected.
CCU-CHU LINK ERROR	Communication failure between CCU and camera head.
CCU FAN OFF	Cooling fan has stopped.
CCU-PANEL LINK ERROR	Communication failure between CCU and panel.
CHU OVER HEAT	Camera has overheated.
D-IE POWER OFF	Digital image enhancer has been turned off due to high CCU internal temperature (continuously monitored).
MARKER LOCAL	Marker indications by such functions as GRATICULE are set so as to disable their operations on the panel. (SG board)
MS BOARD LOCAL	CCU's MS board cannot be controlled by software.
PR BOARD LOCAL	CCU's PR board cannot be controlled by software.
SG BOARD ERROR	An error has been detected at CCU's SG board test.
WINDOW LOCAL	Windows accessed by the COLOR or REGI operation are set so that they cannot be controlled by software. (SG board)

ALARM

 CONDITION ERROR (Some adjustment conditions are not satisfied.)

AUTO BLACK BALANCE	AUTO REGISTRATION CORRECTION
AUTO CENTERING	AUTO WHITE BALANCE
AUTO COLOR	REFERENCE
AUTO QUICK REGI	

Press the **MESSAGE** button to alternately display details of the present condition.

CC FILTER SELECT	PANEL GREEN TALLY/CALL
CCU PRESET	PANEL RED TALLY/CALL
ENCODER CLEAR	REGI PRESET
GAIN SELECT	SCENE
GAMMA SELECT	SCENE STORE
IRIS CLOSE	SYSTEM PRESET
ND FILTER SELECT	VIDEO PRESET
OPERATE/TEST CHU/TEST CCU	WAITING, TRY AGAIN

 EEPROM WRITE ERROR (Data writing to EEPROM failure.)

AUTO REGI SETUP FILE	MANUAL REGI FILE
COLOR FILE SETUP FILE	QUICK SETUP FILE
DELTA FILE	REFERENCE FILE
F. NO	SCENE FILE
LENS FILE	SHADING FILE

CCU  MEMORY ERROR (CCU memory lost.)

COLOR SETUP FILE
REFERENCE FILE
SCENE FILE

CHU  MEMORY ERROR (Camera head memory lost.)

AUTO REGI SETUP FILE
DELTA FILE
LENS FILE
MANUAL REGI FILE
QUICK SETUP FILE

Others (in alphabetical order)

BLACK LEVEL ERROR	Black level is incorrect.
CHU (or CCU) COLD START	Power has been turned on with RAM data (backed up by a condenser) of camera head or CCU lost. Auto-setup data stored in the EERROM will be read.
ENCODER RANGE OVER	Beyond range adjustable with controls
NEW LENS FILE	Lens file has not been registered.
NOT PERMITTED TO CONTROL	In the control protected mode.
NO ROOM FOR LENS	The EEPROM is full. (See page 47.)
EXCESSIVE ERROR	Exceeding normal range
OUT OF RANGE	Unable to control.

ERROR

PANEL-CCU ERROR: 

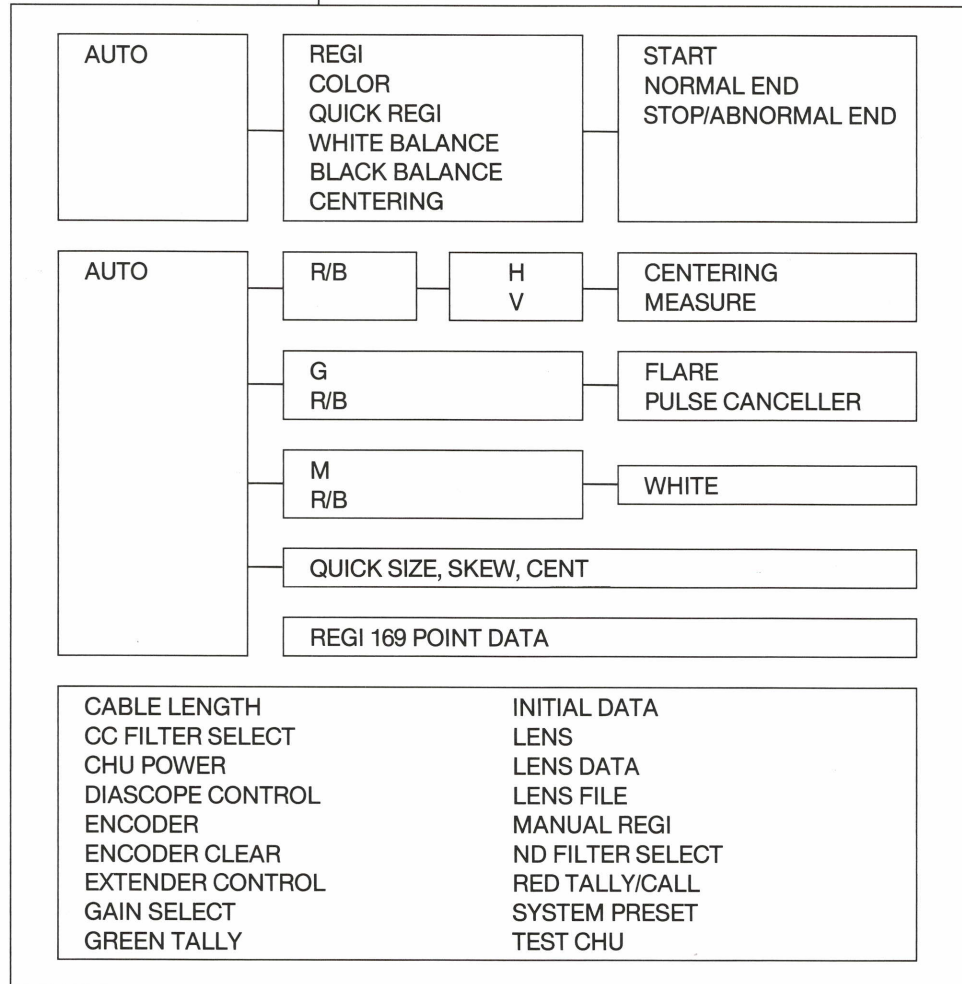
Communication failure between panel and CCU.

AUTO REGI START	INCOM PRIVATE/COMMON
AUTO REGI STOP	INITIAL DATA
AUTO COLOR START	KNEE MODE CONTROL
AUTO COLOR STOP	LENS
AUTO QUICK REGI START	LENS DATA
AUTO QUICK REGI STOP	LENS FILE
AUTO WHITE BALANCE START	LENS SWITCH
AUTO WHITE BALANCE STOP	MANUAL REGI
AUTO BLACK BALANCE START	MASTER BLACK
AUTO BLACK BALANCE STOP	ND FILTER SELECT
AUTO CENTERING START	OPERATE/TEST CHU/TEST CCU
AUTO CENTERING STOP	PANEL ACTIVE
	PANEL RED TALLY/CALL
ALL WINDOW	PAINTING
B-REGI FINE	PAINTING MODE
CC FILTER SELECT	PAINTING ABSOLUTE MODE
CCU PRESET	PICTURE MONITOR PEAKING
CHU POWER	PICTURE MONITOR
CHU RED TALLY/CALL	SCENE
DIASCOPE	SCENE ABSOLUTE MODE
ENCODER	SHADING
ENCODER CLEAR	SYSTEM PRESET
GAIN SELECT	REFERENCE FILE 1/2
GAMMA SELECT	REFERENCE FILE GENERATION START
GRATICULE	REFERENCE FILE GENERATION STOP
INCOM PANEL MIC 1	REGISTRATION MODE
INCOM PANEL MIC 2	R-REGI FINE
INCOME PANEL MIX	WAVEFORM MONITOR
INCOM PGM/PRODUCER	

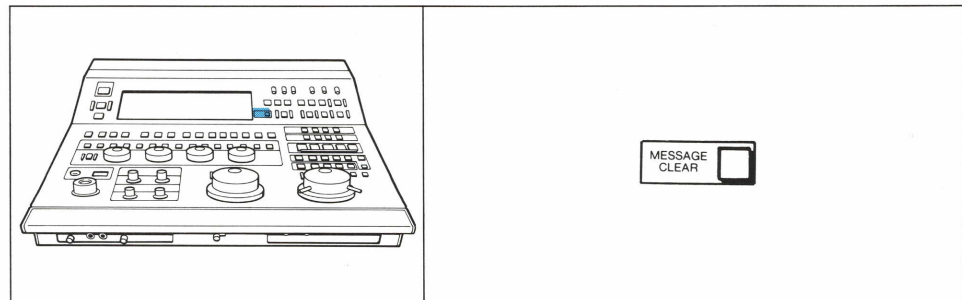
CHU-CCU ERROR:



Communication failure between camera head and CCU.



Erasing an Error Message



Press the **MESSAGE CLEAR** button.

Mounting

Three types of mounting are possible.

19" rack mount

The panel is taken out when it is used. It can be removed from the rack temporarily.

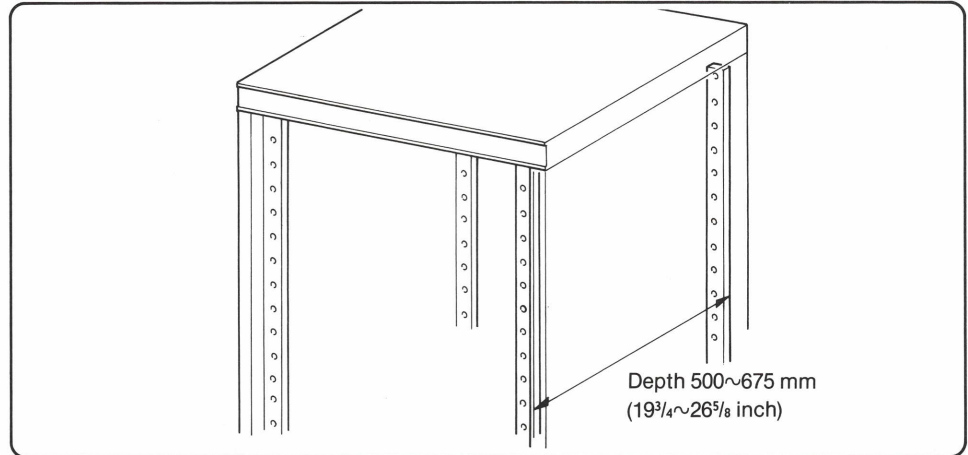
Table mount

Desktop use

19" Rack Mount

Standard rack

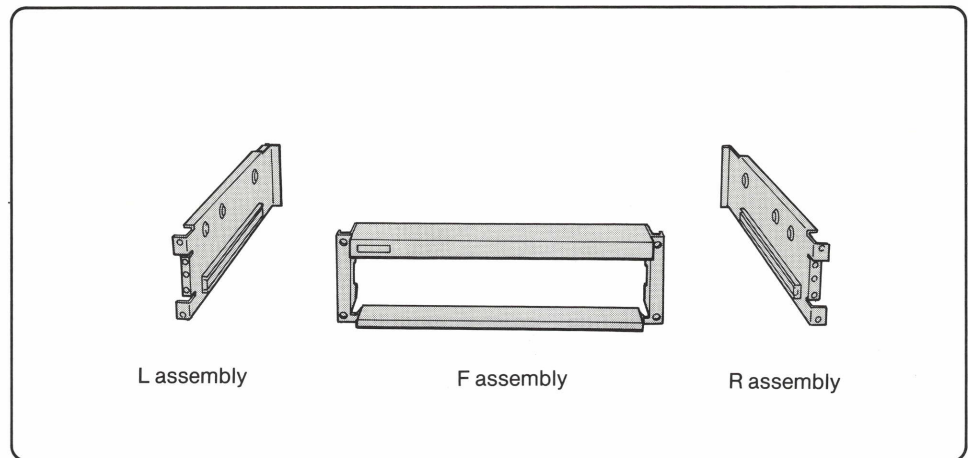
19" rack (EIA standard, universal spanning — M5 type)



Recommended rack: Sony SU-860 series

Supplied parts

Rack mount assembly



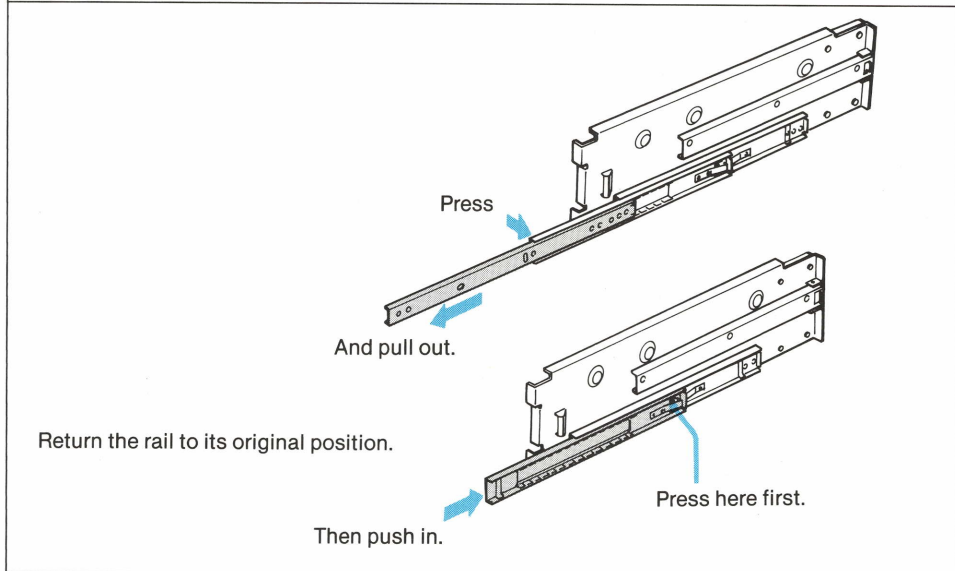
Screws

+ B5 × 8

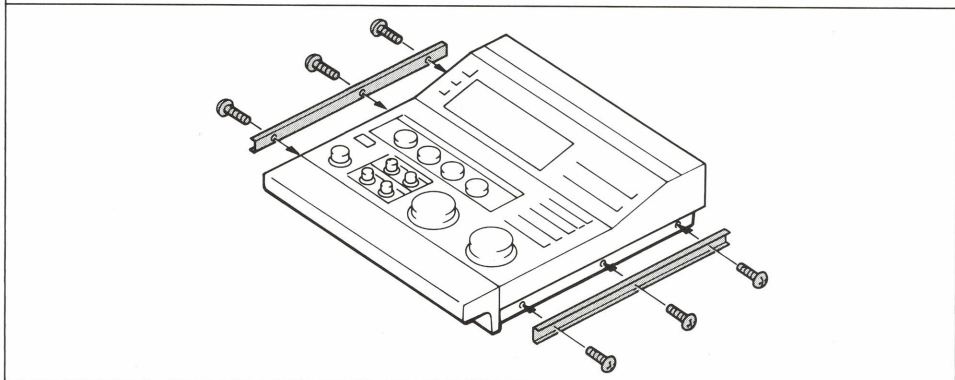
+ RK5 × 8

Decorative washers

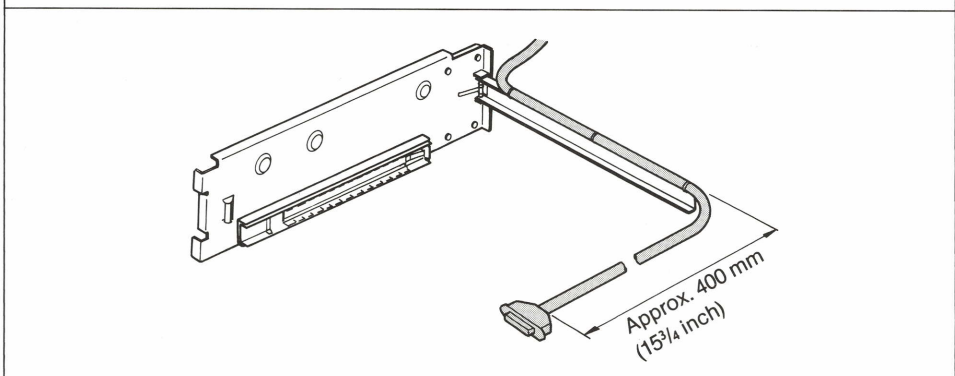
1 Remove the inner members from the L and R assemblies.



2 Mount the inner members to the panel.

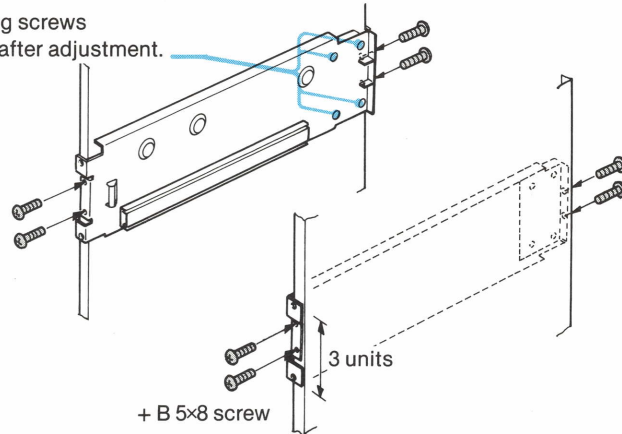


3 Attach the connector cable (supplied with HDCS-300) to the cable clamp of the L assembly.

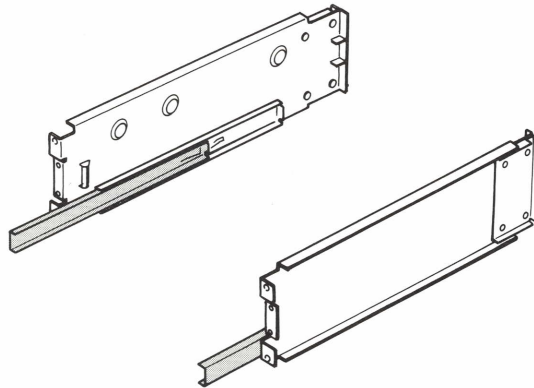


4 Fix both L and R assemblies temporarily.

Adjusting screws
Tighten after adjustment.

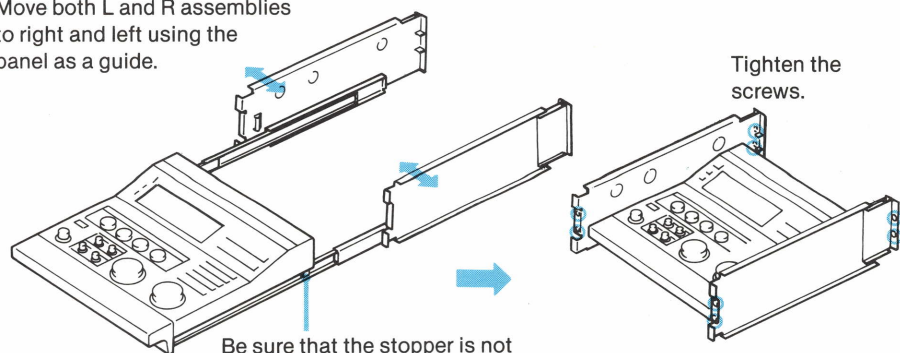


5 Pull the rail out all the way.

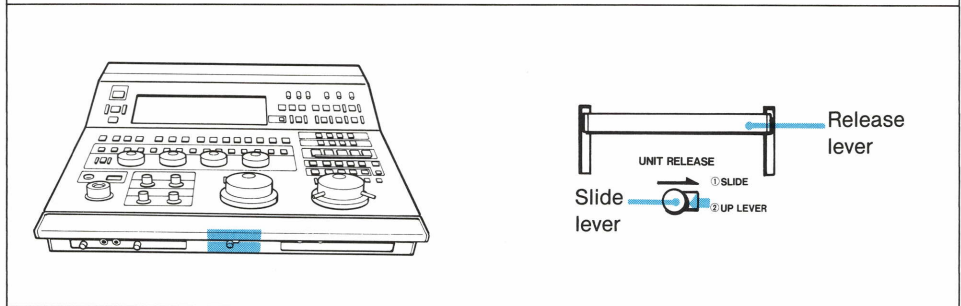


6 Mount the panel unit temporarily.

Move both L and R assemblies
to right and left using the
panel as a guide.



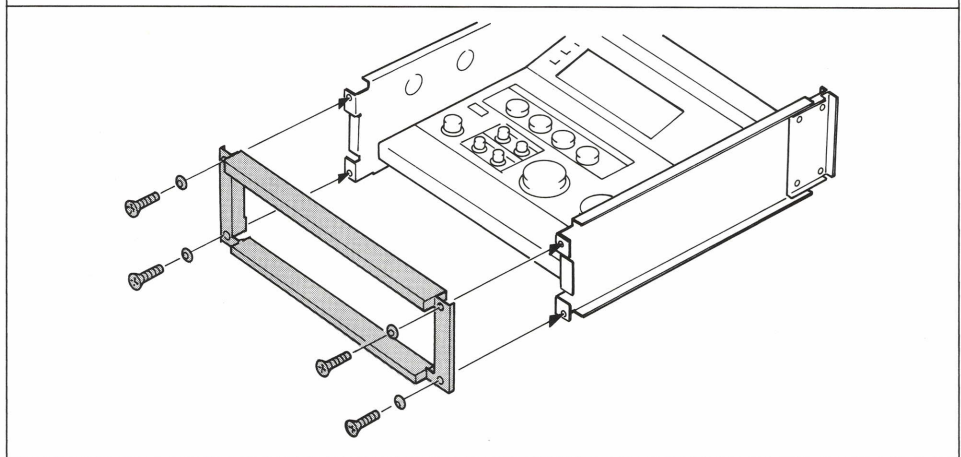
7 Move the slide lever to the left.



The release lever lowers. **Check whether the panel can be locked.** Also check whether the panel moves forward and backward smoothly using the handle. (See “Removing the panel from the rack.”)

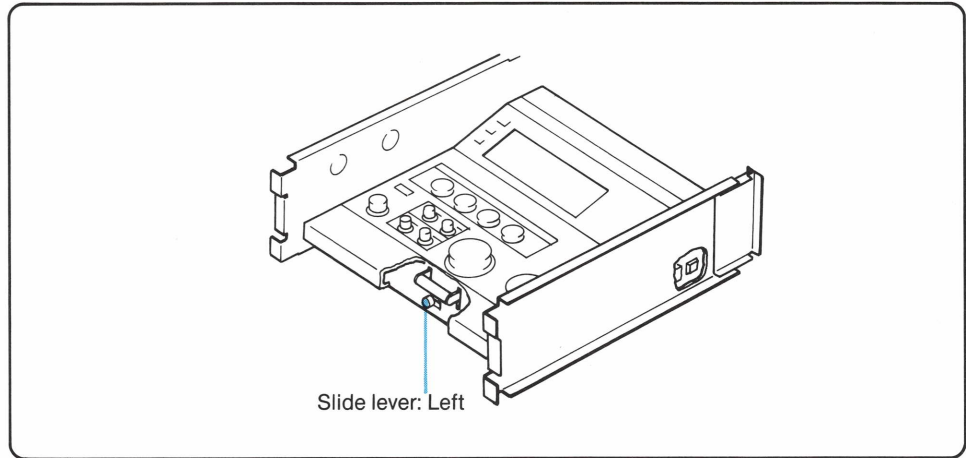
If the panel does not move smoothly, undo the screws and re-adjust the L and R assembly positions.

8 Mount the F assembly using the +RK and trapezoidal shaped decorative washers, and fix to the L and R assemblies.

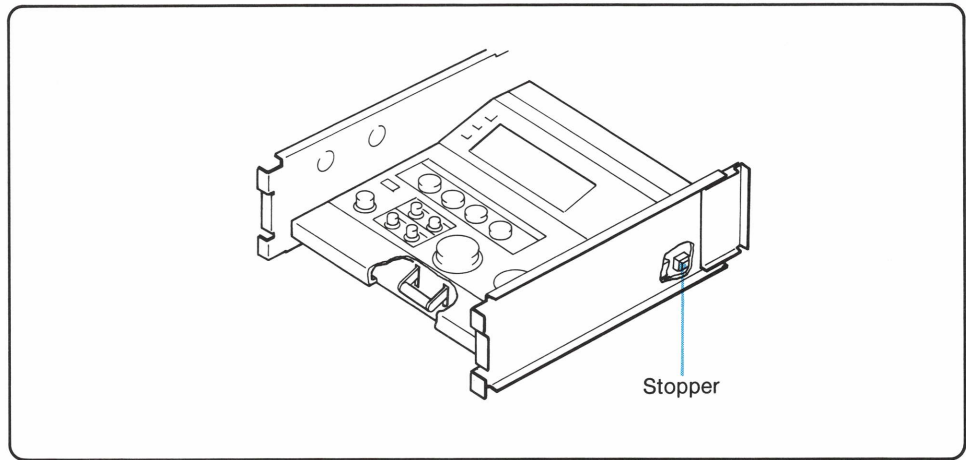


Removing the panel from the rack

Lift the release lever and pull the panel.
 (When the release lever is lifted, the stopper releases the panel lock.)



With the release lever lowered, the stopper protrudes when the panel reaches one of the specified three positions and the panel is locked.

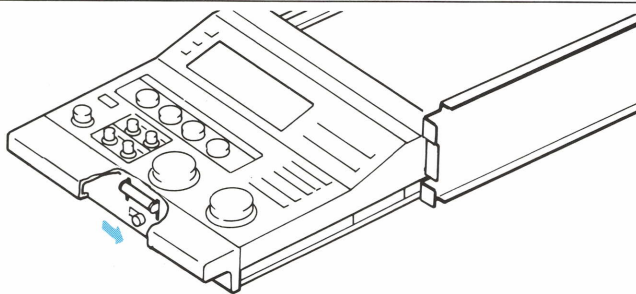


To operate entirely	To operate only the front part	To put in the mounting rack
<p>A perspective line drawing of the control panel with a rectangular top cover or rack plate mounted over its top surface.</p>	<p>A perspective line drawing of the control panel with a rectangular top cover mounted over its top surface and a rectangular bottom cover mounted over its bottom surface.</p>	<p>A perspective line drawing of the control panel with a rectangular top cover mounted over its top surface, a rectangular bottom cover mounted over its bottom surface, and a rectangular rack plate mounted over its front face.</p>

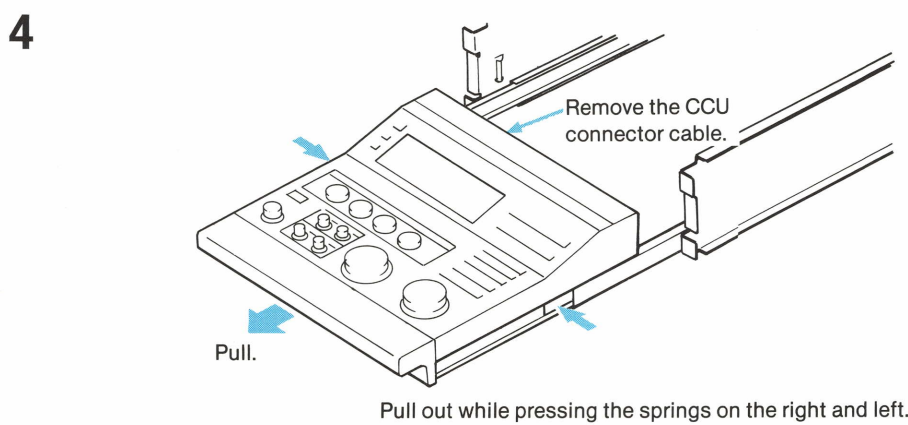
Temporary removal

1 Pull out the panel fully.

2 Move the slide lever to the right while lifting the release lever. When the slide lever is released, the release lever stays up and the stopper remains withdrawn.



3 Pull the panel out further.



Re-mounting

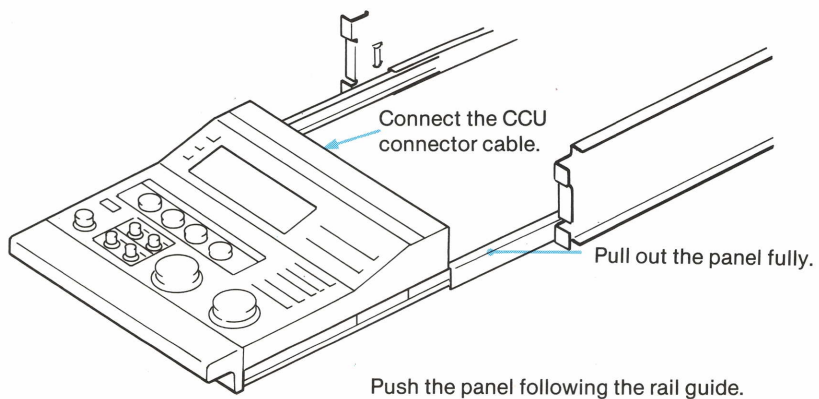
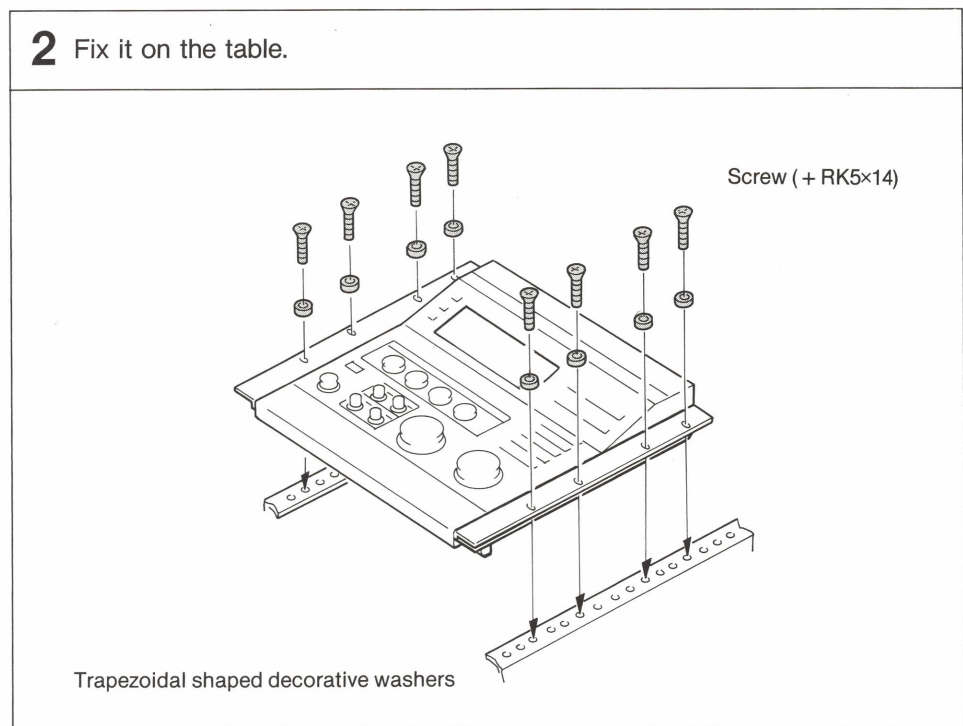
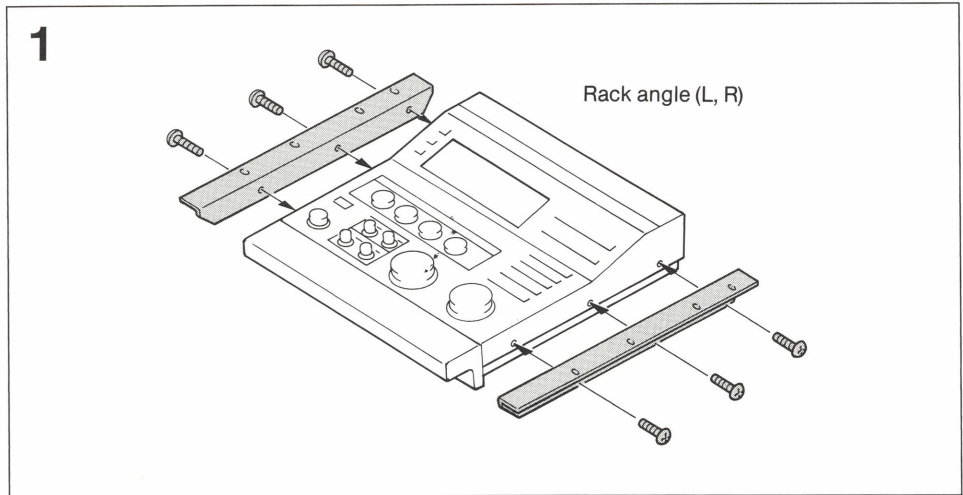


Table mount



Specifications

Operating conditions

Temperature: 0°C~40°C (32°F~104°F)

Humidity: 0%~40%

Dimensions 424 × 100 × 440 mm (w/h/d)
(16³/₄ × 4 × 17³/₈ inch)

Weight Approx. 9.5 kg (20lb 15oz)

Accessories supplied	Rack angles (L), (R)	1 set
	Rack mount assemblies (F), (L), (R)	1 set
	Intercom panel assembly	1
	Operation manual	1
	Maintenance manual	1

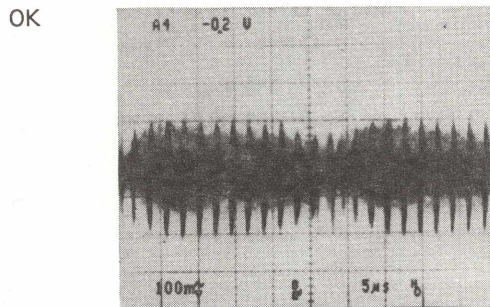
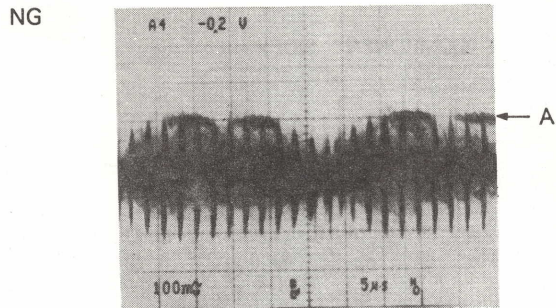
Design and specifications are subject to change without notice.

HDCO-300 (W.W.英)
3-734-206-02 (1)

Sony Corporation
© 1988

Printed in Japan
1989. 04 08

7. Adjust \odot RV15 (BAL) so that the portion A of the waveform at TP15 becomes flat.



8. Perform procedures from 4 to 7 for R and B channels respectively.

[ABO Adjustment]

Adjusting point/Test point : AB-13 board						
ch	SLOPE	KNEE	PEAK CLIP	ABO GAIN	DETAIL LEVEL	Test point
G	\odot RV12	\odot RV13	\odot RV14	\odot RV18	\odot RV17	TP11
R	\odot RV2	\odot RV3	\odot RV4	\odot RV8	\odot RV7	TP1
B	\odot RV22	\odot RV23	\odot RV24	\odot RV28	\odot RV27	TP21

1. Set the switch S1 (ABO)/AB-13 board to ON and set the following controls as follows.

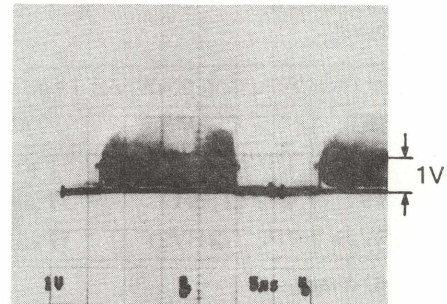
- \odot (SLOPE) → Mechanical center
- \odot (DETAIL LEVEL) → Mechanical center
- \odot (KNEE) → Fully clockwise \bigcirc
- \odot (PEAK CLIP) → Fully clockwise \bigcirc

- ** \odot (ABO GAIN) → Fully clockwise \bigcirc

When performing the following adjustments minimize the ABO and detail gains to meet the specification.

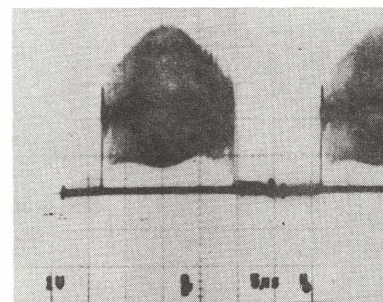
2. Shoot the high-luminance pattern box PTB-500, from which the filter unit was removed, with the zoom control set to telephoto end. Keep the lens focus out of focus.
3. Open the lens iris until the level at TP11 is 1V. If there are oscillations on the waveform, adjust \odot RV13 (KNEE) to stop oscillations.

NG

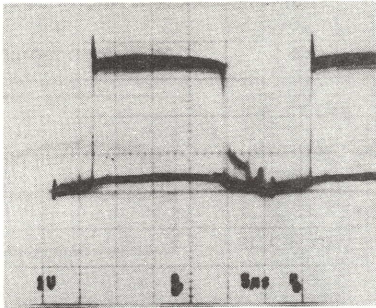


4. Adjust \odot RV18 (ABO GAIN) so that the beam over 2.1V appears while stopping oscillations on TP11 waveform by adjusting \odot RV12 (SLOPE).

NG

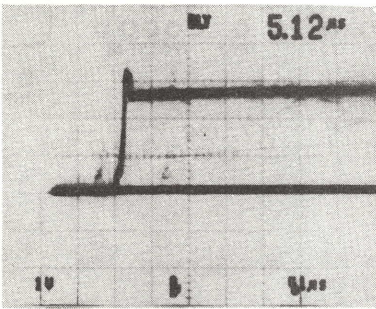


* *5. Adjust \odot RV14 (PEAK CLIP)/AB-13 board so that the signal is more than 2.1 through 3.5V.

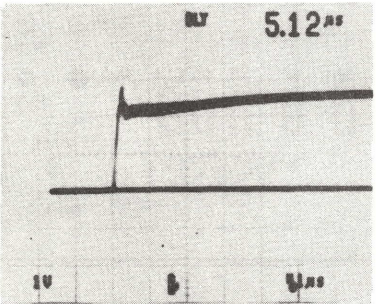


6. Adjust \odot RV17 (DETAIL LEVEL)/AB-13 board so that there is no luck of beam at the leading edge of the picture.

Luck of beam



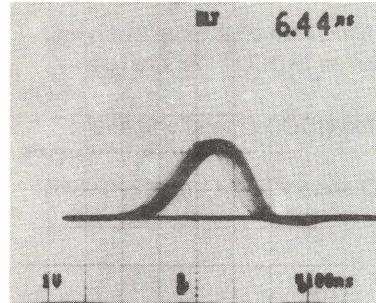
OK



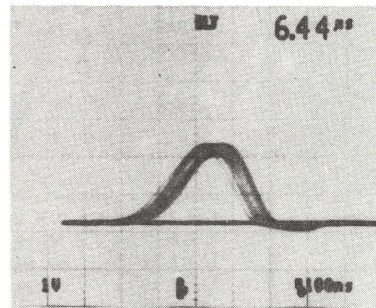
7. Perform procedures from 3 to 6 for R and B channels respectively.

8. Adjust \odot CV1 (FREQ ADJ)/AB-13 board so that the waveform jitter at TP-15/AB-13 board is minimized.

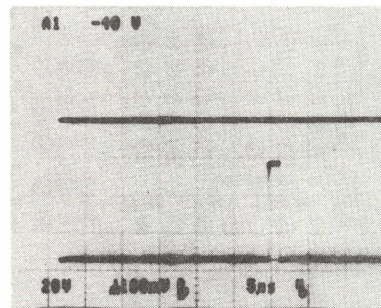
NG



OK



9. Confirm that the following waveforms at TP31, TP32 and TP33 are output.



* *10. Prepare the white window chart with a regular triangle hole of 5cm in length one side in the middle of the black paper. Open the lens iris and shoot the chart. Turn the zoom control and stops where the blur shown below just appears.



Perform procedure 5 again until there is no color on blur.

Note: After this adjustment is completed, set the following buttons as follows.

- MASTER GAIN button \rightarrow 0 dB (lights up)
- WHT BLANKING button \rightarrow OFF (goes off)
- W SHAD G WHT button \rightarrow OFF (goes off)

1. The first part of the document is a list of names and addresses of the members of the committee.

2. The second part of the document is a list of names and addresses of the members of the committee.

3. The third part of the document is a list of names and addresses of the members of the committee.

4. The fourth part of the document is a list of names and addresses of the members of the committee.

5. The fifth part of the document is a list of names and addresses of the members of the committee.

6. The sixth part of the document is a list of names and addresses of the members of the committee.

7. The seventh part of the document is a list of names and addresses of the members of the committee.

8. The eighth part of the document is a list of names and addresses of the members of the committee.

9. The ninth part of the document is a list of names and addresses of the members of the committee.

10. The tenth part of the document is a list of names and addresses of the members of the committee.

11. The eleventh part of the document is a list of names and addresses of the members of the committee.

12. The twelfth part of the document is a list of names and addresses of the members of the committee.

5-12. DYNAMIC FOCUS ADJUSTMENT (HDC)

(1/2)

Equipment: Waveform monitor

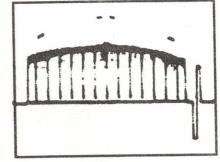
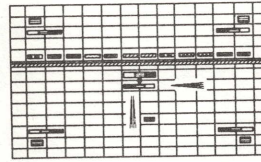
Object: Reference chart in reference lens

Preparation

- Set the reference lens on the camera head.
- * * • Set S100/PR-114 board to ON.

Monitor screen

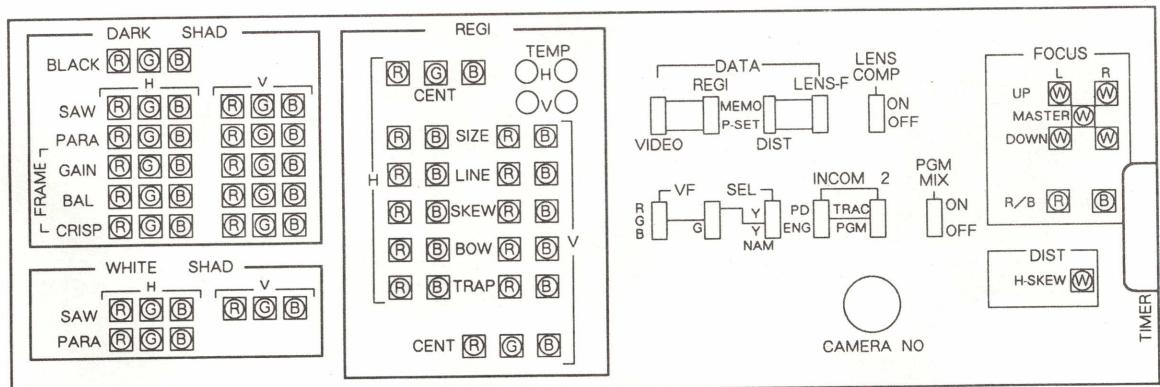
Waveform monitor



Lens iris: Set the white level to 0.7 Vp-p.



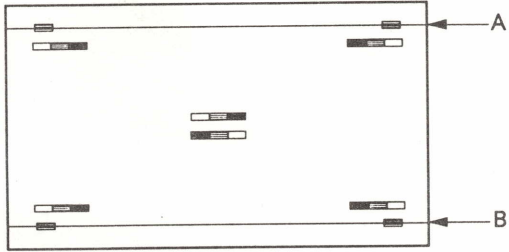
SH-34 BOARD (COMPONENT SIDE)



SH-34 COVER

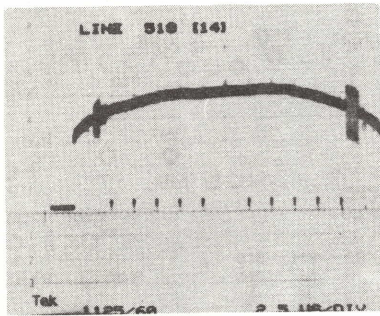
Adjustment procedures

1. Line-select the position A shown in the figure. Use 14 LINE MODE of Tektronix 1730HD.

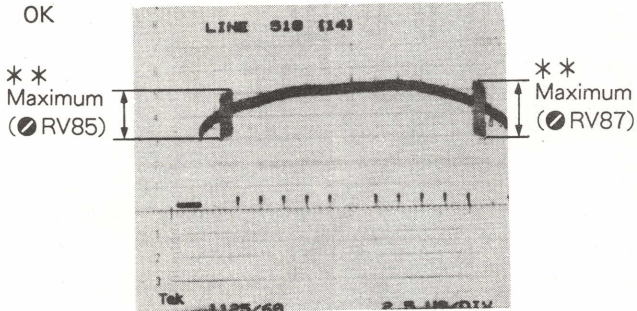


2. Adjust \odot RV85 (UP-L) and \odot RV87 (UP-R)/SH-34 board so that right and left chevron amplitudes are the same on each side.

NG

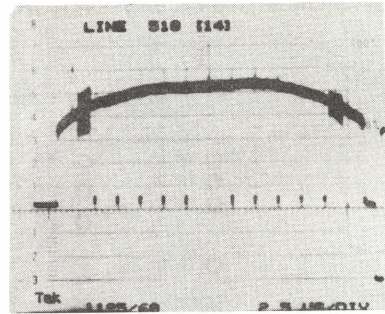


OK

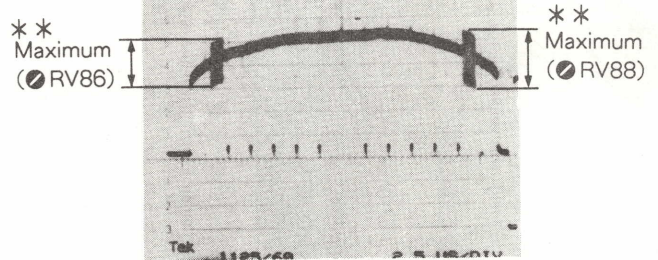


3. Line-select the position B shown in the figure. Use 14 LINE MODE of Tektronix 1730HD.
4. Adjust \odot RV86 (DOWN-L) and \odot RV88 (DOWN-R) /SH-34 board so that right and left chevron amplitudes are the same on each side.

NG



OK



Note: After this adjustment is completed, set S100/PR-114 board to OFF.

Faint, illegible text at the top left of the page.

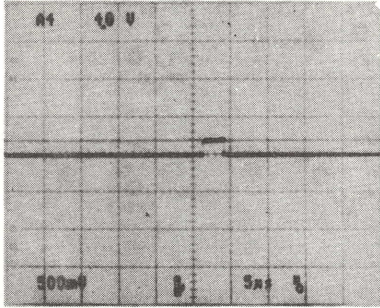
Faint, illegible text at the top right of the page.



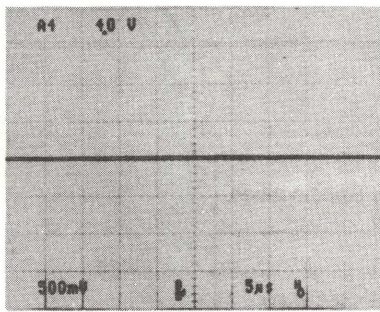
[R-CH]

- **1. Close the lens iris and turn the adjustment dial (R FLARE)/HDCO Operation Panel to set the flare value to -100.
- 2. Adjust RV4 (R FLARE BAL) so that the waveform at TP1 is flat.

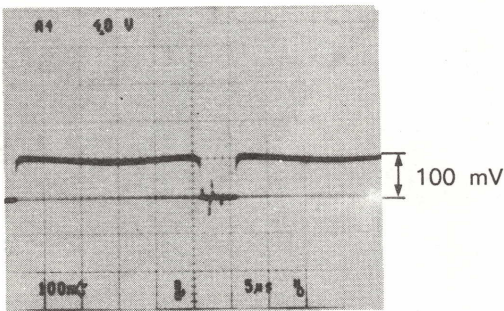
NG



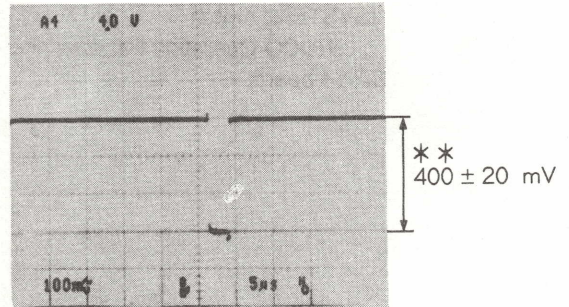
OK



- **3. Turn the adjustment dial (R FLARE)/HDCO Operation Panel to set the flare value to 0. Adjust the iris control so that the level at TP1 is 100 mV.



- 4. Turn the adjustment dial (R FLARE) 3/HDCO Operation Panel to set the flare value to 100.
- 5. Adjust RV1 (FLARE LEVEL) so that the level at TP5 is 400 ± 20 mVp-p.



- 6. Adjust G-ch/B-ch in the same manner.

Note: After this adjustment is completed, set the following switches as follows.

- FLARE button/HDCO Operation Panel → OFF (goes off)
- CONTROL DATA (SYSTEM) switch/HDCO Operation Panel → PRESET
- DATA VIDEO switch/SH-34 board → P-SET
- DATA LENS-F switch/SH-34 board → MEMO

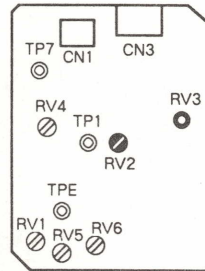
6-15. PA HIGH FREQUENCY RESPONSE ADJUSTMENT (HDC)

(1/2)

Equipment: Oscilloscope

Preparation

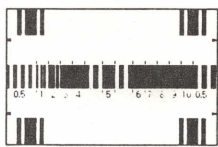
- OPERATE button/HDCO Operation Panel → ON (lights up)
- ND FILTER button/HDCO Operation Panel → 1 (lights up)
- CC FILTER button/HDCO Operation Panel → A (lights up)
- GAMMA OFF button/HDCO Operation Panel → ON (lights up)
- KNEE ON button/HDCO Operation Panel → OFF (goes off)



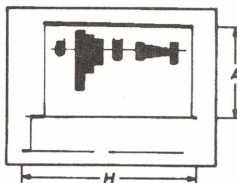
PA-80 BOARD
(COMPONENT SIDE)

Object: Burst chart

Monitor screen



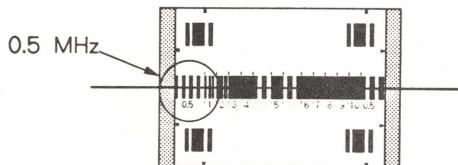
Waveform monitor



Lens iris: Set the white level to 0.7 Vp-p

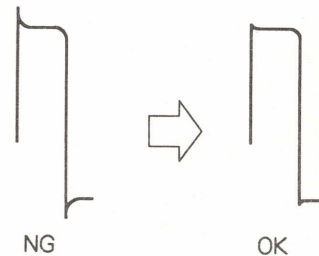
Adjustment procedures

1. Set the D-IE1 button/HDCO operation panel to ON and adjust the detail gain dial to 0.
2. Set the best focus.
3. Set the select line of the waveform monitor at the center of chart.



4. Press the **G** WAVEFORM MONITOR button/HDCO operation panel.

5. Turn **RV3** (fH GAIN 2)/PA-80 board fully counter-clockwise.
6. Observing the waveform monitor, adjust **RV2** (fH GAIN 1)/PA-80 board so that no spike appears around 0.5 MHz.



**

Note: Be sure to set the waveform monitor to X1 mode.