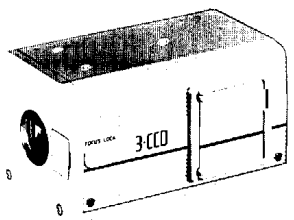
JVC Instructions

3-CCD COLOR VIDEO CAMERA KY-F55



For Customer Use:
Enter below the Serial No. which is located on the bottom of the body.
Retain this information for future reference.

Model No. KY-F55

Serial No.

CAUTION
RISK OF ELECTRIC SHOCK. DO NOT OPEN

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

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

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

POWER SYSTEM
This color video camera should be used with 12 V DC only.

CAUTION:
To prevent electric shocks and fire hazards, do NOT use other than specified power source.

Due to design modification, data given in this instruction book are subject to possible change without prior notice.

WARNING:
TO PREVENT FIRE OR SHOCK HAZARD, DO NOT EXPOSE THIS UNIT TO RAIN OR MOISTURE.

AVERTISSEMENT:
POUR EVITER LES RISQUES D'INCENDIE OU D'ELECTROCUTION, NE PAS EXPOSER L'APPAREIL A L'HUMIDITE OU A LA PLUIE.

Information for USA
This device complies with Part 15 of the FCC Rules.
Changes or modifications not approved by the original manufacturer could void the user's authority to operate the equipment.

Information for CANADA
This digital apparatus does not exceed the Class B limits for radio noise emissions from digital apparatus as set out in the interference causing equipment standard entitled "Digital Apparatus", ICES-003 of the Department of Communications.

Renseignement pour CANADA
Cet appareil numérique respecte les limites de bruits radioélectriques applicables aux appareils numériques de Classe B prescrites dans la norme sur le matériel brouilleur; "Appareils Numériques", NMB-003 édictée par le ministre des Communications.

Changes or modifications not approved by JVC could void the user's authority to operate the equipment.

Thank you for purchasing the JVC KY-F55 Color Video Camera.
To gain maximum benefit from the use of the KY-F55, it is suggested that you study this booklet carefully.

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FEATURES

- **Electronic shutter**
  Because the normal scanning speed of a TV camera is equivalent to a shutter speed of 1/60 sec. : for NTSC, 1/50 sec. : for PAL, pictures of fast-moving subjects shot at this speed will be blurred. To allow you to adjust shutter speed to suit the requirements of different shots, the optional remote control unit features a built-in electronic shutter function. Shutter speed can be switched in 7 steps: NORMAL, 1/100 : for NTSC, 1/120 : for PAL, 1/250, 1/500, 1/1000, 1/2000, EEI, and V. SCAN. This is especially effective for motion analysis or when shooting images displayed on a computer monitor.

- **Flicker-free shooting**
  [NTSC]
  By setting the electronic shutter to 1/100-sec., you can eliminate the flicker caused by shooting under a fluorescent lamp operating on a 50 Hz.

  [PAL]
  By setting the electronic shutter to 1/120-sec., you can eliminate the flicker caused by shooting under a fluorescent lamp operating on a 60 Hz.

- **Automatic internal sync/external sync switching**
  The KY-F55 incorporates an automatic internal sync/external sync switching system which is especially useful when switching camera images in multi-camera systems or when upgrading the system.

- **Built-in SMPTE-type color bars generator (for NTSC)**
  SMPTE-type color bars signal can be generated for easy and precise color adjustment on a monitor.

FEATURES

- **High-performance 3-CCD camera**
  Thanks to a newly developed 1/3-inch 380,000 : for NTSC, 440,000 : for PAL pixel CCD with on-chip lens, the KY-F55 delivers a superb, high-quality picture with an S/N ratio of 60 dB : for NTSC, 58 dB: for PAL and sensitivity as high as 2000 lux at F5.6. High-precision bonding technology and new circuitry incorporated in the CCD assure horizontal resolution of 750 lines.

- **Compact and lightweight**
  Incorporating a C-type lens mount, 1/3-inch optical system, and a newly developed IC chip with high-density mounting technology, the KY-F55's design is remarkably compact and lightweight.

- **Comprehensive functions**
  To simplify setup and operation, the KY-F55 incorporates a comprehensive range of automatic functions including automatic level control (ALC), continuously variable electronic shutter (EEI), and full-time auto white balance (FAW). For added convenience, the C-type lens mount features a back focus adjustment function. Two optional lenses are available — the HZ-610MD 10X power zoom lens and the HZ-G6350 variable focal lens. A remote control input connector is also provided (for the optional RM-LP55 remote control unit).

- **Comprehensive signal outputs**
  Outputs for composite video Y/C, R/G/B and composite sync signal are provided.

PRECAUTIONS

Safety Precautions

- Use the AC-C712 : for 120 V AC, AC-C722 : for 220 V AC Adapter.
- Do not modify the unit or operate it without cover panel to prevent danger.
- When there is any abnormality (abnormal noise, smell, smoke, etc.) with the unit, immediately turn the power off and contact your nearest JVC-authorized service agent.
- If the camera is not going to be used for an extended period of time, leave the power cord disconnected for reasons of safety.

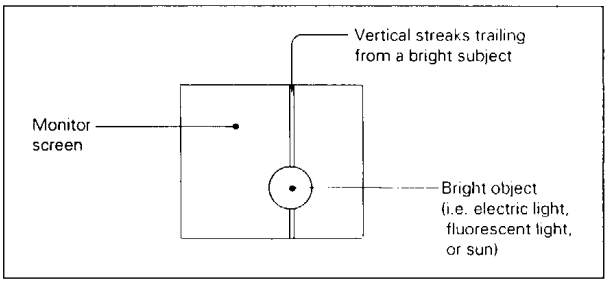
Handling Precautions

- **Supply voltage**
  Make sure that the power is between 10.5 V and 15 V DC. If the power voltage is too low, abnormal color and increased noise could occur. Do not exceed 15 V DC in any case, or the unit could be damaged.
- **Ambient temperature**
  Do not operate the camera outside a –5°C to +40°C (23°F to 104°F) temperature range.
- Where there are strong electromagnetic waves or magnetism, for example near a radio or TV transmitter, transformer, motor, etc., the picture may contain noise and the colors may be incorrect.
- When a wireless microphone or wireless microphone tuner is used near the camera, the tuner could pick up noise. In such a case, select another channel.
- **Cleaning the body**
  Wipe body with a dry, soft cloth (such as cheesecloth). When it is extremely dirty, soak the cloth in a solution of neutral detergent, wring it out and then wipe.
  To prevent deformation of the body, etc. and to avoid operation hazards, do not allow volatile liquids such as benzine and thinner to touch the body, and do not wipe it with a cloth soaked in such a liquid.
  If the quipment is soiled with water, oil, solvent, etc., wipe over with soft cloth or cotton first, then clean with gauze, etc. soaked in denatured alcohol.

Characteristics of CCDs

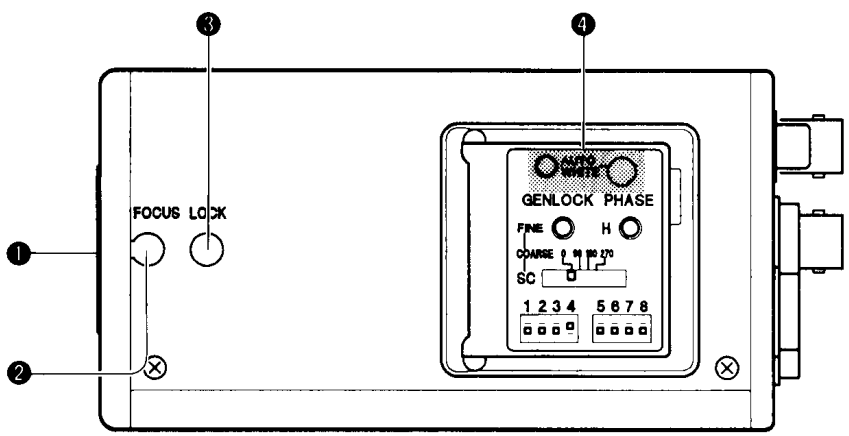
The appearance of the following phenomena on pictures is due to the characteristics of CCD image sensors. These are not malfunctions.

- **CCD Smear and blooming**
  Due to the physical structure of the CCDs in this camera it is possible to induce vertical streaking or smear when shooting an extremely bright light source.
  Another effect is the expansion of light around a bright light or object called Blooming.
  Just as you protect your image against lens flare (internal lens reflections); please be careful when shooting a bright light source.



- **Moire or Aliasing**
  Shooting stripes, checks, or other alternating patterns may cause jagged or banding in fine mesh patterns.
- **White dots**
  White dots may appear on the screen when the camera is operated in a high-temperature environment.

CONTROLS, CONNECTORS AND INDICATORS

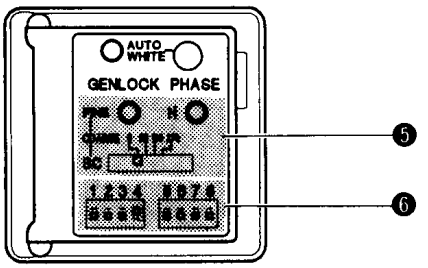


❶ Lens mount
Attach the C-mount lens here.

❷ [FOCUS] back focus adjustment screw
Preset at the factory to cover the widest range of applications. Readjust as necessary depending on the combination of lenses used.

❸ [LOCK] Back focus fixing screw
Turn this clockwise to fix back focus after completing back focus adjustment.

❹ [AUTO WHITE] Auto white button and operation indicator LED
Press this button to start the auto white balance adjustment. The LED illuminates during adjustment and goes out when the operation is completed. If adjustment cannot be completed, the LED will flash for 5 seconds, then go out.



❺ [GENLOCK PHASE] Genlock phase adjustment
If two or more cameras are used, the phase of the camera's video output signal can be adjusted with reference to the input external sync signal.

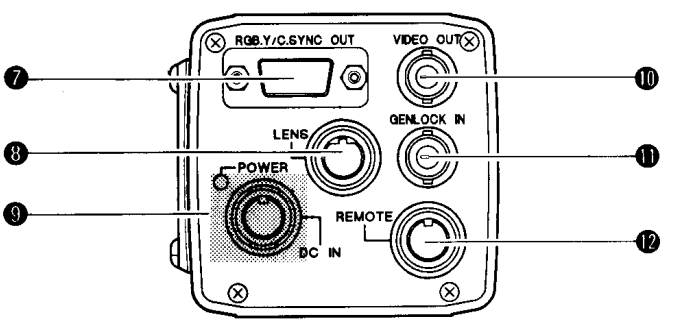
SC COARSE : Coarse adjustment switch for SC phase which allows approximate phase adjustment in 0°, 90°, 180°, and 270° steps.
SC FINE : Fine-adjustment of SC phase.
H : Control of horizontal sync phase.

❻ [1 to 8] Setting switches

No.	Name	Up	Down	Function
1	DATA	REMOTE	CAM	This switch is applicable only when the RM-LP55 is in use. Normally set to the CAM position. If set to REMOTE, the camera will enter the mode set by the remote control (even if the remote is disconnected).
2*	WHITE BALANCE	FAW	AUTO	Normally set to the AUTO position. In the AUTO position, white balance is automatically adjusted with the Auto White Button ❹. In the FAW position, color temperature is automatically maintained and white balance is automatically adjusted as necessary.
3	MODE	BARS	CAM	Set to BARS to output the color bars signal (NTSC: SMPTE-type, PAL: Full-type). Set to CAM to output the camera's video signal.
4	D-SUB OUT	RGB	Y/C	Output signal selector switch for the 9-pin D-SUB connector. Factory-preset to the R/G/B signal.
5*	SHUTTER (for NTSC)	1/100	NORMAL	Set to 1/100 to reduce flicker when shooting under a 50 Hz fluorescent lamp. Set to NORMAL for a shutter speed of 1/60 second. (Normally set to NORMAL)
5*	SHUTTER (for PAL)	1/100	NORMAL	Set to 1/120 to reduce flicker when shooting under a 60 Hz fluorescent lamp. Set to NORMAL for a shutter speed of 1/50 second. (Normally set to NORMAL)
6*	EEI	ON	OFF	Set to ON to automatically decrease sensitivity in excessively bright shooting conditions. (Normally set to OFF)
7*	ALC	ON	OFF	Set to ON to automatically increase sensitivity when there is insufficient light. (Normally set to OFF)
8	LENS	MANUAL	AUTO	When using the manual iris lens, set to MANUAL. (Normally set to AUTO)

Note: If the DATA switch [1] is set to "REMOTE", switches marked by an asterisk (*) become inoperative.

CONTROLS, CONNECTORS AND INDICATORS



❼ [RGB. Y/C. SYNC OUT] D-SUB connector
Outputs the R/G/B or Y/C signal (selectable using D-SUB OUT switch ❻) and the video signal/sync signal.

❽ [LENS] lens connector
Lens cable connector for use with the 10X power zoom lens (optional: HZ-610MD) or variable focal lens (optional: HZ-G6350).

❾ [POWER, DC IN] Power indicator LED and DC power input socket
Input the 12 V DC power from the AC adapter (optional: AC-C712 for 120 V AC, AC-C722 for 220 V AC). When power is input, the power indicator LED will light.

❿ [VIDEO OUT] Composite video signal output connector
Outputs the composite video signal.

⓫ [GENLOCK IN] External sync signal input connector
The reference signal input connector for use in genlocking the KY-F55. Input either a composite video signal or black burst signal.

⓬ [REMOTE] Remote connector
Connector for the remote control unit (optional: RM-LP55).

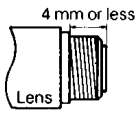
Note:
When the remote control unit is connected, priority is given to those functions selected via the remote control unit.

■ Mounting the lens

The KY-F55 is not provided with a lens. The optional HZ-610MD (10X power zoom lens) and HZ-G6350 (variable focal lens) can be used.

Cautions:

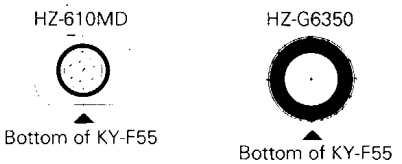
- Use a lens that is 4 mm or less from the lens mount; otherwise, the camera may be damaged.



- Keep in mind that auto functions of lenses other than those mentioned above cannot be controlled via the KY-F55's lens connector.
- The use of some lenses may lower the resolution.
- When using lenses other than those specified;
  - Picture angle may vary.
  - Resolution may be reduced.
  - Ghosting, flaring, or shading (color irregularities) may occur.
- Firmly secure the lens. If it is not properly mounted, back focus adjustment will not be accurate.

- **Installing the HZ-610MD or HZ-G6350**

1. Remove the cap from the lens mount. Make sure no dirt or dust enters the mount.
2. Screw the lens clockwise into the lens mount of the KY-F55 until it locks in place.
3. If the lens is turned beyond the point where it locks in position, the mount will slip and start rotating idly.
4. Turn the lens in this slipping idle state and re-adjust the lens position.

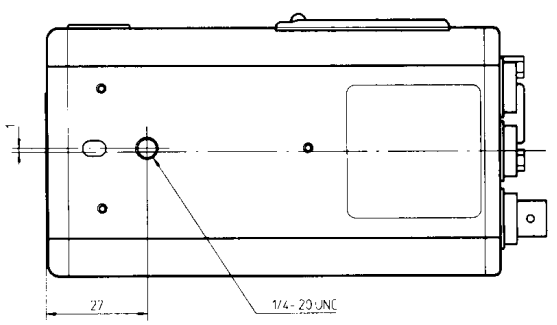


5. Connect the lens cable to the "LENS" connector on the back of the KY-F55.

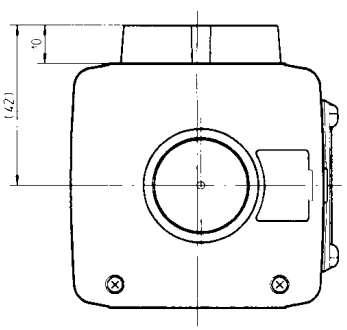
■ Mounting on a tripod stand, fixing unit or pan/tilt unit

- As shown below, a 1/4-inch fixing hole is provided on the bottom of the KY-F55.
- For ceiling installations and other setups requiring top of camera mounting, attach the provided camera mounting bracket to the top of the camera using three screws.
- If the fixing hole on the bottom of the camera cannot be used because an optional lens such as the HZ-610MD is being used, attach the camera mounting bracket to the bottom of the camera and then fix the camera to the tripod, fixing unit, or pan/tilt unit.

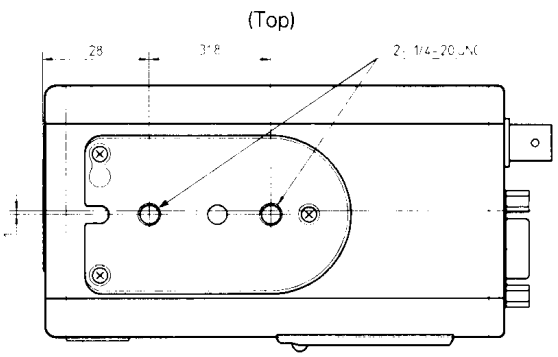
(Bottom)



- Mounting bracket installed on top of the camera.

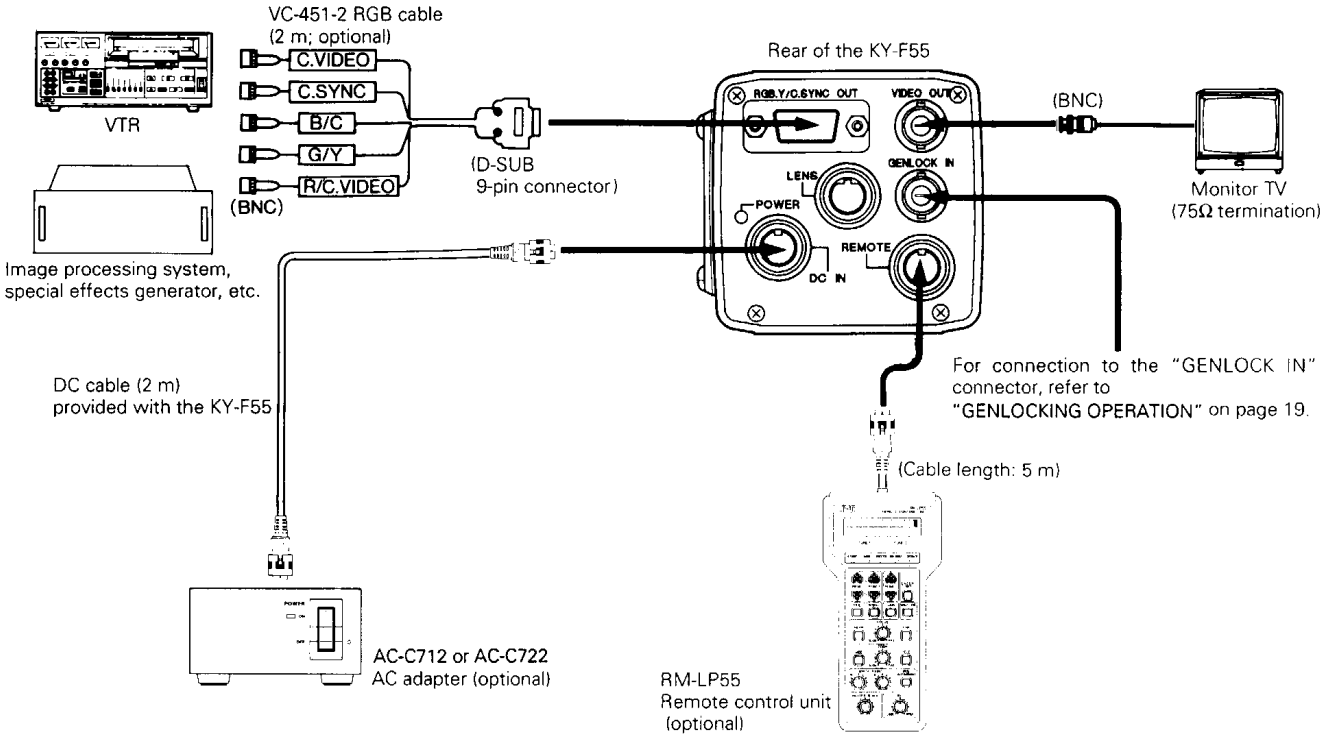


(Top)



CONNECTIONS

- Before making any connections, be sure that any equipment being connected is also OFF.

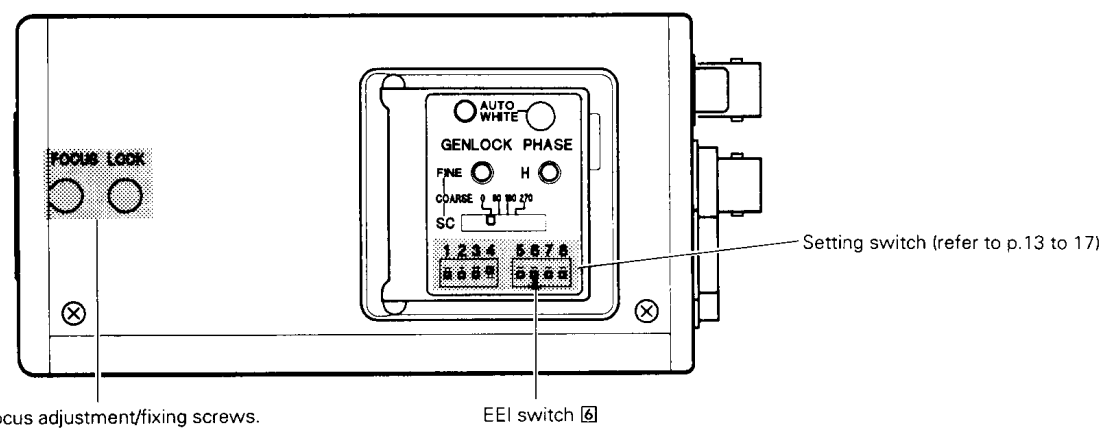


SETUP

To ensure that you get the clearest pictures and correct color tone when shooting, you must first adjust the back focus and white balance.

- Back focus adjustment normally needs to be performed only once — at the time you install the lens. As long as you don't change the lens, subsequent adjustment should not be necessary.
- The white balance must be adjusted each time you shoot.

1. Prior to adjustment, make all necessary connections (see "Connections", p.10), then set the switches and controls of the camera to the factory-preset positions as shown below.
2. Supply a DC 12V from the AC adapter, refer to "Supplying the power" on page 14.



3. Aim the camera at an appropriate subject, operate the lens focus and zoom, and confirm that the picture is satisfactory using a monitor TV.

■ Back focus adjustment

Perform this adjustment while referring to a monitor TV.

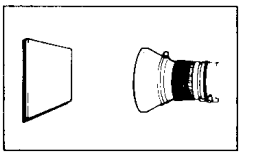
- For more accurate adjustment. the subject and camera should be at least 3 meters apart.
- When using the HZ-610MD or HZ-G6350
  For the adjustment, it is necessary optional RM-LP55.

1. Loosen the back focus fixing screw (LOCK) by turning it counterclockwise with a screwdriver.
2. Open the lens iris.
3. If the illumination is too strong, flip up the EEI switch [6] to ON.
4. Set the lens' zoom to the maximum telephoto position.
5. Adjust lens focus.
6. Set the lens' zoom to maximum wide angle.
7. Turn the back focus adjust screw (FOCUS) to the optimum focus.
8. Repeat steps 4 to 7.
9. Turn the back focus fixing screw (LOCK) clockwise to secure it.

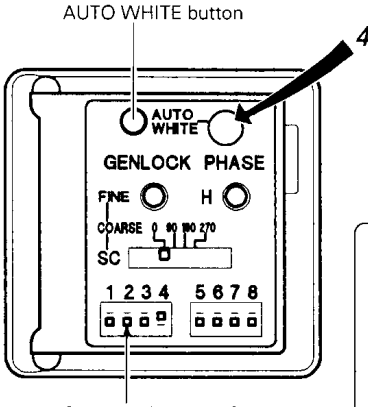
■ White balance adjustment

- If the color temperature of the light source (natural light, for example) changes during shooting, the white balance must be readjusted.

1. Flip down the WHITE BALANCE switch [2] to AUTO.
2. Shoot a white subject (white paper, white wall, etc.) so that it fills the whole screen.
3. Press the AUTO WHITE button.



Note:
The preset white paint data will be reset if it was set with the remote control.



4. This LED lights while the auto white balance is adjusting. When the LED goes out, white balance adjustment is complete.

Note:
When the operation indicator LED goes out after flashing, it means that white balance adjustment is incomplete. To fully adjust white balance, insert a color temperature conversion filter in front of the lens.

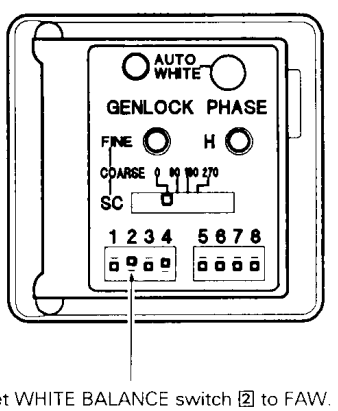
SETUP

■ Full-time auto white balance (automatic color temperature maintenance)

- Full-time auto white balance automatically adjusts white balance if lighting conditions change to maintain optimum balance at all times. (See "Full-time auto white balance", p.23)

1. Flip up the WHITE BALANCE switch [2] to FAW.

Note:
If the overall screen has a mono color tone or a vividly colored subject is shot, white balance may drift. This is not a malfunction. If this happens, adjust white balance again as described in "White balance adjustment", p. 12.

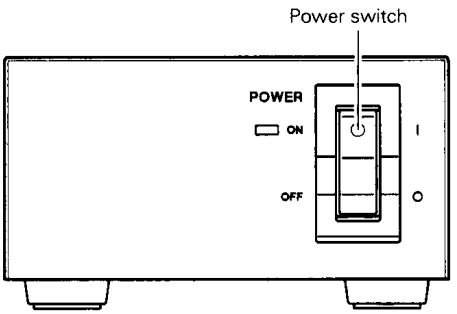


OPERATION

■ Supplying the power

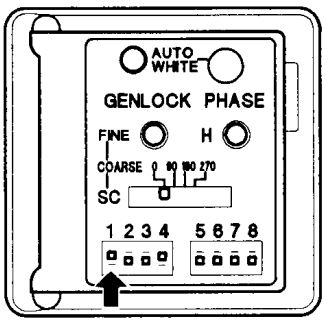
- Use the AC adapter (optional: AC-C712 or AC-C722).

1. After connecting the KY-F55 to the AC adapter, connect the adapter's power plug to a power outlet.
2. Set the AC adapter's power switch to ON.
3. The power indicator LED on both the camera and the AC adapter will light.



Attention:
To protect internal electric circuitry, the KY-F55 incorporates an excessive current detection circuit. If this circuit is activated by a power surge, video signal output will stop. To recover normal status, turn the AC adapter OFF and then turn it ON again.

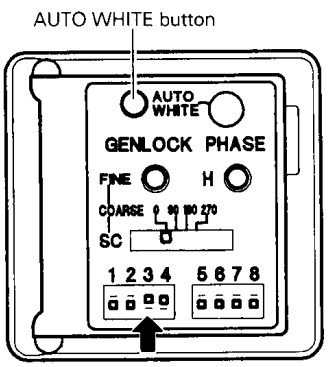
■ Setting up using the remote control unit (only when using the RM-LP55)



1. Flip up the DATA switch [1] to REMOTE.
2. Set the camera operation mode as desired using the remote control and transfer the data to the camera. The set data will be stored in the camera.
   (For details, refer to the RM-LP55's Instructions.)
3. The transferred data remains in the camera's memory even if the remote control is disconnected.

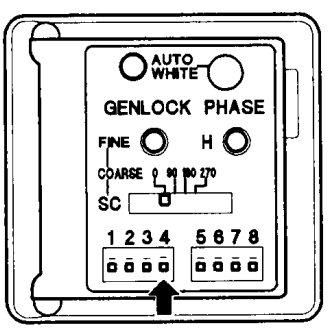
OPERATION

■ Setting the color bars mode/Setup data display



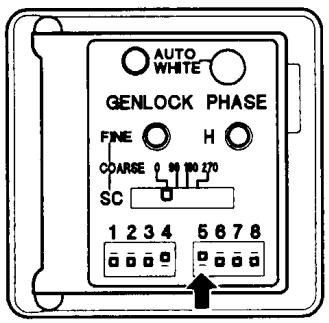
1. Flip up the MODE switch [3] to BARS to output the color bars signal from the video signal output.
2. Press the AUTO WHITE button to display setup data on the monitor.
3. Press it again to turn the display off.

■ Selecting the signal output from the D-SUB connector



1. To output the Y/C signal, flip down the D-SUB OUT switch [4] to Y/C.
   • This switch is factory-preset to the R/G/B signal output.
2. To output the R/G/B signal, flip up the D-SUB OUT switch [4] to RGB.
   (For D-SUB connector specifications, refer to "Connectors" on page 21.)

■ Setting the shutter mode



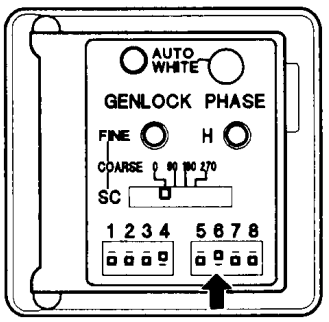
1. To engage the flicker-free mode, flip up the SHUTTER switch [5] to 1/100 (50 Hz regions) for NTSC, or 1/120 (60 Hz regions) for PAL.

2. If the optional RM-LP55 is used, setting is possible up to a maximum of 1/2000 second.

   (Refer to "Operation principle of the electronic shutter" on p.24.)

Note:
If both EEI and SHUTTER are set to ON, EEI has priority.

■ To set to EEI (shutter iris) mode

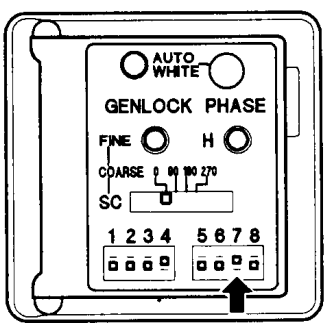


- Flip up the EEI switch [6] to ON.
  (For the detail of EEI, refer to "ALC and EEI operations" on page 23.)

Note:
If the EEI mode is used under a fluorescent lamp, flicker may be generated. In this case, set the EEI switch to OFF.

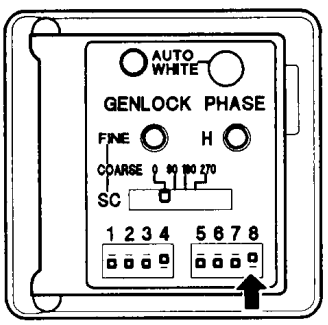
OPERATION

■ To set to the ALC (automatic level control) mode



- Flip up the ALC switch [7] to ON.
  (For the detail of ALC, refer to "ALC and EEI operations" on page 23.)

■ Setting the LENS mode



1. To engage the manual iris mode, flip up the LENS switch [8] to MANUAL. When using a manual iris lens, set to MANUAL.

2. When using an auto iris lens, flip down the switch to AUTO.

■ Optional remote control functions

Function	Operable from KY-F55	Operable from RM-LP55
BARS	ON / OFF	ON / OFF
CONTOUR	X	ON (LEVEL) / OFF
GAMMA	X	ON / OFF
MASTER BLACK	X	○
IRIS	AUTO / MANUAL	AUTO (LEVEL) / MANU
IRIS DETECT	X	NORMAL / PEAK / AVG
WHITE BALANCE	AUTO / FAW	PRESET/MANUAL/AUTO1/AUTO2/FAW
WHITE PAINT	X	○
GAIN	0dB / ALC	0dB / +6dB / +9dB / +12dB / +18dB / ALC / ALC+EEI
SHUTTER (for NTSC)	NORMAL , 1/100 , EEI	NORMAL , 1/100 , 1/250 , 1/500 , 1/1000 , 1/2000 , V. SCAN , EEI
SHUTTER (for PAL)	NORMAL , 1/120 , EEI	NORMAL , 1/120 , 1/250 , 1/500 , 1/1000 , 1/2000 , V. SCAN , EEI
TITLE INDICATION	X	ON / OFF
TITLE INDICATION LOCATION	X	○
TITLE SETTING	X	○
DATA	REMOTE / CAM	X
SAVE (MEMORY)	X	SAVE
D-SUB OUT	Y/C, RGB	X
H. PHASE	○	○
SC COARSE	0° / 90° / 180° / 270°	0° / 90° / 180° / 270°
SC FINE	○	○
ZOOM	X	○
FOCUS	X	○

○ : Function available
X : Function not available

GENLOCKING OPERATION

When pictures from more than one camera are to be processed (fade in, fade out, and mix wipe), by a special effects generator (SEG), genlocking is used to synchronize the various camera pictures with the SEG. In the example below, a simplified method which does not require the use of measuring instruments is described. Here, an SEG is genlocked to the KY-F55 which acts as the main signal source.

- H and SC phase can be adjusted from optional RM-LP55 (remote control unit).

1. Set the MODE switch [3] to BARS, and output the color bars signal.

2. Set the SEG's built-in color bars signal to the SEG's program output. (Refer to the SEG's Instructions.)

■ Adjusting horizontal sync phase

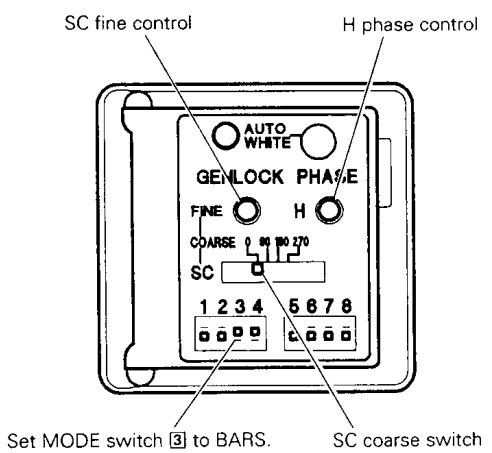
3. While monitoring the SEG's program output on the underscan monitor TV, alternately switch between the SEG's built in color bars and the KY-F55's color bars on the program bus, then turn and adjust the horizontal phase adjustment control so that the horizontal phase of the two color bars does not drift.

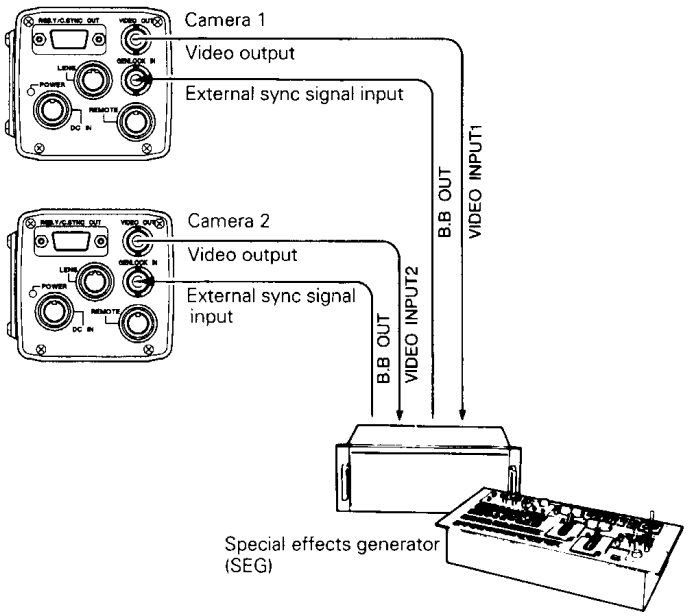
■ Adjusting the SC phase

- In the same way as in horizontal sync phase, perform adjustment so that the color phase of the SEG's built- in color bars and that of the KY-F55's color bars match each other.

4. Perform coarse adjustment using the SC coarse switch (0°, 90°, 180° and 270°).

5. Perform fine adjustment by turning the SC fine control.





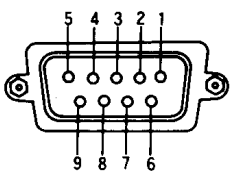
Notes:

- If a vector scope and a waveform monitor are available, these adjustments can be performed accurately.
- A VTR playback signal cannot be used as a sync signal. Be sure to use a TBC (time base corrector).
- Be sure to use an underscan monitor as a monitor.

CONNECTORS

■ D-SUB connector

(9-pin, female)

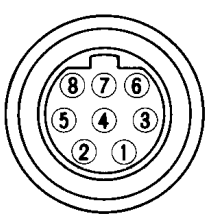


(Viewed from front)

Pin No.	Signal (R/G/B signal selected)	Signal (Y/C signal selected)
1	Ground	Ground
2	Ground	Ground
3	R (RED) signal output	Composite video signal output
4	G (GREEN) signal output	Y signal output
5	B (BLUE) signal output	C signal output
6	Composite video signal output	Composite video signal output
7	Composite sync signal output	Composite sync signal output
8	Ground	Ground
9	Ground	Ground

■ Lens connector

(8-pin, female)

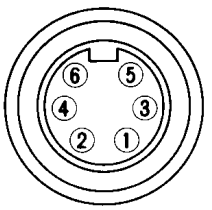


(Viewed from front)

Pin No.	Signal
1	IRIS mode select
2	Ground
3	IRIS control
4	+12 V DC output
5	—
6	ZOOM control
7	FOCUS control
8	Y signal output

■ Remote connector

(6-pin, female)

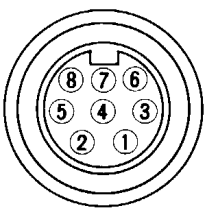


(Viewed from front)

Pin No.	Signal
1	Ground
2	OPERATE
3	Ground
4	+9 V DC output
5	SID2
6	SID1

■ DC input connector

(8-pin, female)



(Viewed from front)

Pin No.	Signal
1	—
2	Ground
3	—
4	—
5	Ground
6	+12 V DC input
7	—
8	+12 V DC input

TECHNICAL INFORMATION

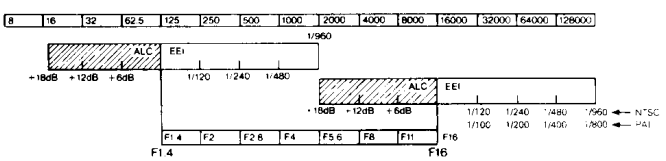
■ ALC and EEI operations

ALC refers to automatic level control and EEI to shutter iris control. The video circuit of the KY-F55 employs a system that maintains the video level at a constant level through a combination of the lens's auto iris, continuously variable electronic shutter (EEI), and automatic level (sensitivity) control circuit (ALC).

In low-light conditions, the automatic level control circuit is activated while, in brighter light, the electronic shutter operates. Moreover, if the iris is set to auto, the sensitivity, iris, and electronic shutter will all vary continuously to automatically ensure the optimum signal level at all times.

In the ALC mode, sensitivity (gain) is increased between 0 dB and +18 dB. In the EEI mode, the electronic shutter automatically operates at a range from 1/60 to 1/960 second : for NTSC, 1/50 to 1/800 second : for PAL depending on the strength of the lighting. This means that in dark conditions, the signal level will be adjusted by 3 stops of the iris whereas in bright situations, it will be adjusted by a range of 4 stops. If the iris is manually set, the sensitivity and electronic shutter will vary continuously while the iris setting remains the same. The advantage of this is that it allows you to shoot in situations where illumination changes without changing the depth of field.

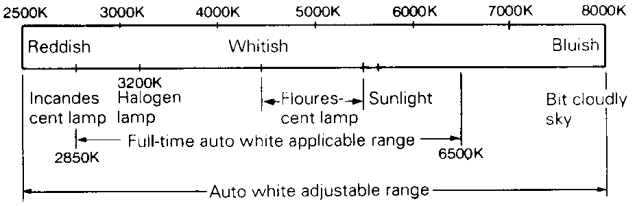
Illumination: lux



■ Full-time auto white balance

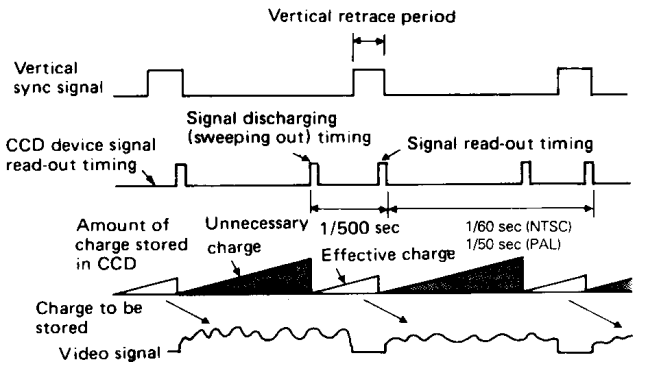
Full-time auto white balance is a function which automatically and continuously adjusts white balance as necessary. In some cases — such as when there is a single color on the screen, when the subject is wearing a vivid color, or when the color temperature of the light source changes — correct white balance may not be obtained. If this occurs, we recommend you adjust the white balance by referring to "White balance adjustment" on p.12.

Color temperature



■ Operation principle of the electronic shutter (Example: 1/500 sec)

Electric charge is stored in a CCD image device for only 1/500 second before the signal is read out from the CCD device and the electric charges stored prior to that are discharged (swept out) in order to achieve a shutter speed of 1/500 second.



Cautions in the use of the electronic shutter mode

- The motion of the subject will be seen as strobescopic motion on the monitor TV screen as a 1/500 second picture is extracted every 1/60 second : for NTSC, 1/50 second : for PAL.
- As the storage time of the CCD device is decreased to approximately 1/8, the drop in the amount of light will be by a factor of 1/8 of that in the normal mode. In shooting, it is necessary to increase the illumination by 8 times or increase light intensity by opening the lens aperture by 3 stops if there is sufficient light.
- As flicker results under a periodic lighting such as a fluorescent lamp, it is necessary to use lighting which is free from excessive periodic changes such as an incandescent lamp.

SPECIFICATIONS

Pickup device	: 1/3-inch interline CCD × 3
Effective number of pixels	: 380,000 pixels (for NTSC) 440,000 pixels (for PAL)
Color separation optical system	: F1.4, RGB 3-color separation prism
Lens mount	: C-mount
Color system	: wideband R-Y, B-Y encoder
Sync system	: Internal/external
Sensitivity	: F5.6, 2000 lux
S/N ratio	: NTSC : 60 dB (typical), PAL : 58 dB (typical)
Horizontal resolution	: 750 TV lines (Y signal) 580 TV lines (R/G/B signal)
Registration	: 0.05 % (excluding lens characteristics)
Contour correction	: Horizontal; dual-edged Vertical; single-edged
Electric gain	: +18 dB (ALC)
Electronic shutter speed	: NTSC : Normal (1/60 sec), 1/100 sec PAL : Normal (1/50 sec), 1/120 sec
External sync signal input	: Composite video signal 1 V(p-p), 75 ohm or black burst signal 0.43 V(p-p), 75 ohm
Color bars	: Built-in SMPTE-type color bars signal (NTSC) Built-in full-type color bars signal (PAL)

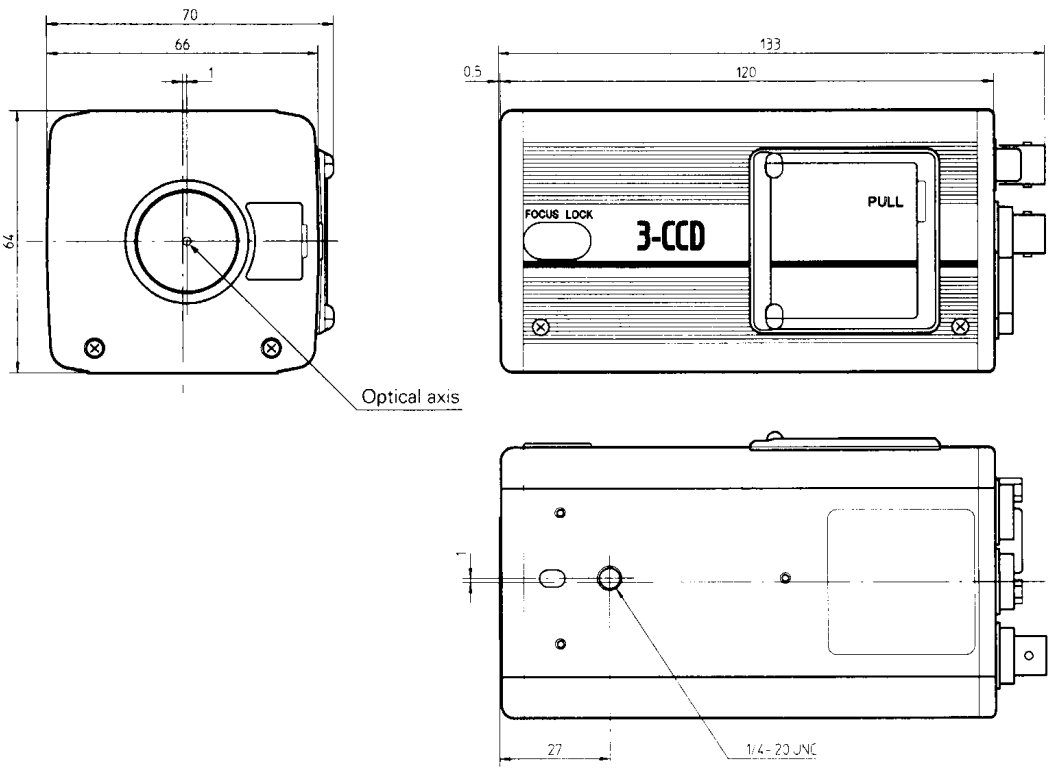
Cautions on installation

Although the calculative intensity of illumination is 15 lux, at least 40 to 50 lux is required as practical illumination. Make sure to secure 40 to 50 lux on installation.

Output signals	
• Composite video signal	: 1 Vp-p, 75 ohm BNC connector one channel, D-SUB 9-pin connector one channel
• Y/C signal	Y : 1 Vp-p, 75 ohm (including sync) C : 0.286 Vp-p, 75 ohm (burst) : for NTSC 0.3 Vp-p, 75 ohm (burst) : for PAL D-SUB 9-pin connector one channel (switchable between R/G/B signal)
• R/G/B signal	: 0.7 Vp-p, 75 ohm (without sync) each D-SUB 9-pin connector one channel (switchable between Y/C signal)
• Composite sync signal	: 2 Vp-p, 75 ohm D-SUB 9-pin connector one channel
Lens connector	: Applicable to the HZ-610MD, HZ-G6350
Remote connector	: Applicable to the RM-LP55
Power supply	: 12 V DC (10.5 to 15 V)
Power consumption	: 7.1 W
Ambient temperature range	: –5°C to 40°C (23°F to 104°F)
Weight	: 490 g
Accessories	: DC cable VC462-2 (2 m) x 1 Camera mounting bracket × 1 Screw (CM46969-00B) × 3

Design and specifications are subject to change without prior notice.

■ Dimensions (unit: mm)



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