

# FUJIFILM

## FUJINON

### FUJINON TV LENS

富士能电视镜头

**UA14x4.5BERD-S6B**

**UA18x5.5BERD-S6**

**UA24x7.8BERD-S6**

**取扱説明書**  
**Operation Manual**  
使用手册

富士フイルム株式会社  
FUJIFILM Corporation  
富士胶片株式会社

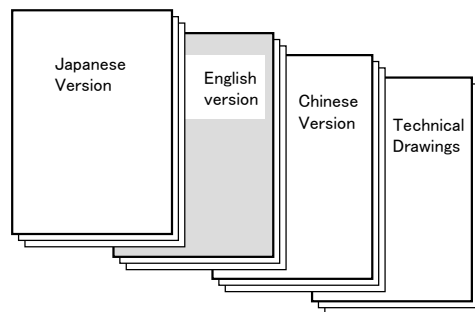
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LP731/761/765A-S6 2911

# ENGLISH VERSION

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- ◆ This operation manual is composed of the Japanese version, English version, Chinese version, and Technical Drawings.



日本語

ENGLISH

中文版

技術資料/Technical Drawings/技术资料

## FCC REGULATIONS

This device complies with part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

Note: This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

CAUTION : Changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

## Canadian Radio Interference Regulation

CAN-ICES 3(B) / NMB-3(B)

CAUTION : This Class B digital apparatus complies with Canadian ICES-003.

## Disposal of Electrical and Electronic Equipment in Private Households

In the European Union, Norway, Iceland and Liechtenstein:

This symbol on the product, or in the manual, and/or on its packaging indicates that this product shall not be treated as household waste. Instead it should be taken to an applicable collection point for the recycling of electrical and electronic equipment.




By ensuring this product is disposed of correctly, you will help prevent potential negative consequences to the environment and human health, which could otherwise be caused by inappropriate waste handling of this product.


## FOR YOUR SAFETY

### FOR YOUR SAFETY

This content explains important notices for all the users to use this product safely. Read the content carefully before using, and follow the instructions.

The following signs of  WARNING and  CAUTION show :

 **WARNING** Indicates the possibility of causing death or serious injury when misused.

 **CAUTION** Indicates the possibility of causing injury or substantial damage when misused.

#### **WARNING**

- ◆ Do not moisten inside of the appliances. It may cause fire or electric shock.  
If the incident occurs, shut off the power supplied to the lens immediately.
- ◆ Be sure to attach all the parts securely. Dropping any parts from a height may cause severe accidents.
- ◆ Do not look at any sorts of strong illuminant such as the sun through the lens. Eyes could be harmed.

#### **CAUTION**

- ◆ Take care when carrying the lens. Dropping the lens while carrying may cause injury.
- ◆ Be sure to confirm that the camera to be used with the lens system (lens and accessories) is able to supply sufficient electric power to the lens system. If not, the lens system may not work normally and the camera will be damaged.  
The values of the power consumption of the lens and the accessories are described in “Specifications” section of their operation manuals.
- ◆ Before supplying the power to the lens, make sure all the parts are connected correctly.
- ◆ In order to install or release a cable, be sure to hold the joint part. Do not damage the cable by gripping.  
It may cause fire or electric shock.
- ◆ If any sorts of incidents such as unusual smoke, noise, smell or obstacles are found, shut off the power supplied to the lens and detach the lens from the camera immediately. Please notify the sales agent from which you purchased the product.
- ◆ Do not remodel the instrument: it may impair the functions of product or cause electric shock.

## FOR YOUR SAFETY

### NOTICE

- ◆ Lens and its accessories are extremely precise instrument, then be sure not to apply the strong impacts to them. If the lens is of a type in which the rear lens protrudes from the flange surface of the lens mount, be sure not to apply impact to the lens part when installing or releasing.
- ◆ There may be a case that the glasses of the lens mist when the lens is carried from a cool place to a place of high temperature and high humidity. To avoid a mist on the glasses, before moving the lens, let the lens adjust to the ambient temperature of the place where the lens will be used.
- ◆ Be sure not to apply impact to the front part of the lens when operating the camera.
- ◆ Put the cap on the lens while the camera is not used.
- ◆ If an accessory to be attached to the lens is equipped with a mechanical drive relaying part, before attaching it, check the joint part and get rid of all obstacles. If there are any unusual conditions, please contact the sales agent from which you purchased the product.
- ◆ When the lens is used in the weather of fog, raining, or snowing, cover up the lens to prevent it from the water.
- ◆ To minimize the impact to the lens in transportation, set the zoom to the wide end and the focus to the infinity side end before releasing the lens from the camera.

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### ■ ILLUSTRATIONS

Outline drawing

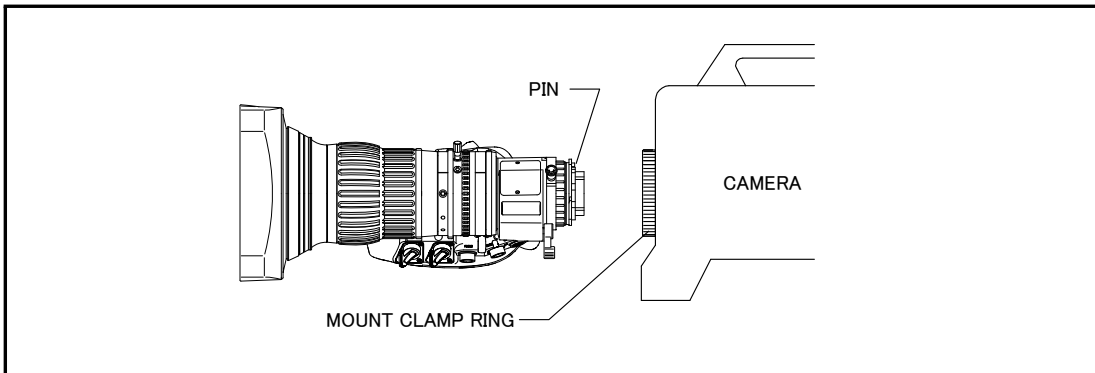
Simens star chart

Note. The products shown in the illustrations in this manual may differ from their actual shapes.

## GENERAL DESCRIPTION

This lens is a bayonet mount type zoom lens developed for a color TV Camera.

## INSTALLATION ONTO CAMERA



### ■ INSTALLATION ONTO CAMERA

Note. Prior to installation of the lens, turn off the power of the camera.

**⚠ WARNING** Be sure to attach all the parts securely.  
Dropping any parts from a height may cause severe accidents.

- a. Take the rear lens cap off.
- b. Rotate the mount clamp ring on the camera fully counterclockwise.
- c. Fit the mounting surface of the lens to that of the camera aligning the pin on the lens with the slot in the camera.
- d. Rotate the mount clamp ring fully clockwise.
- e. Connect the cable of the lens to the connector, provided for the lens, on the camera.

Note. Make sure to adjust the flange focal length when installing the lens on a camera for the first time or installing it on another camera (refer to the next page for details).

## ADJUSTMENT OF FLANGE FOCAL LENGTH

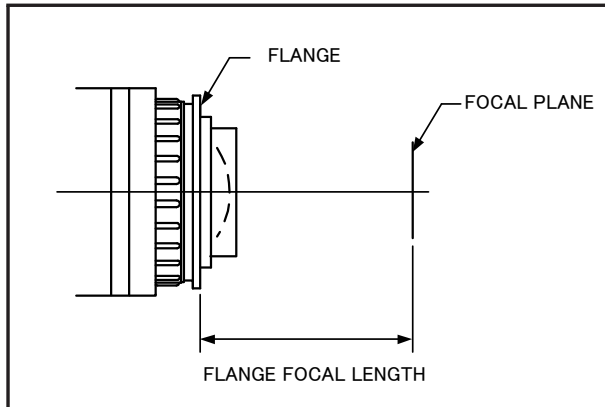
The flange focal length is the distance from the flange (mounting surface) of a lens to the focal plane.

If the focal plane of the lens does not coincide with the image plane of the camera, the object will be out of focus during a zoom operation. To prevent this from happening, the adjustment of the flange focal length is required. Make sure to carry out the adjustment when installing the lens to a camera for the first time or installing it to another camera.

### ■ CONDITIONS OF OBJECT AND DIAPHRAGM

1. Object: Use the Siemens Star (the chart made up of radial black and white lines) at the end of this manual.
2. Distance of Object: About 3 meters
3. Diaphragm: Open or as near to open as possible.

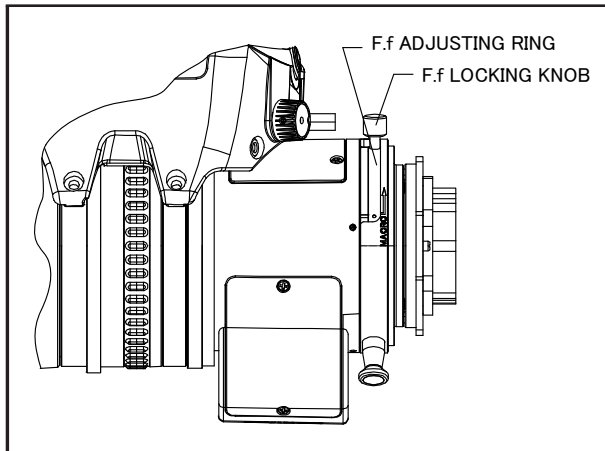
Note: The depth of field decreases by opening the aperture of the lens, and it becomes possible to focus on an object more precisely. To precisely adjust the flange focal length, carefully adjust the focus as much as possible.



### ■ ADJUSTMENT

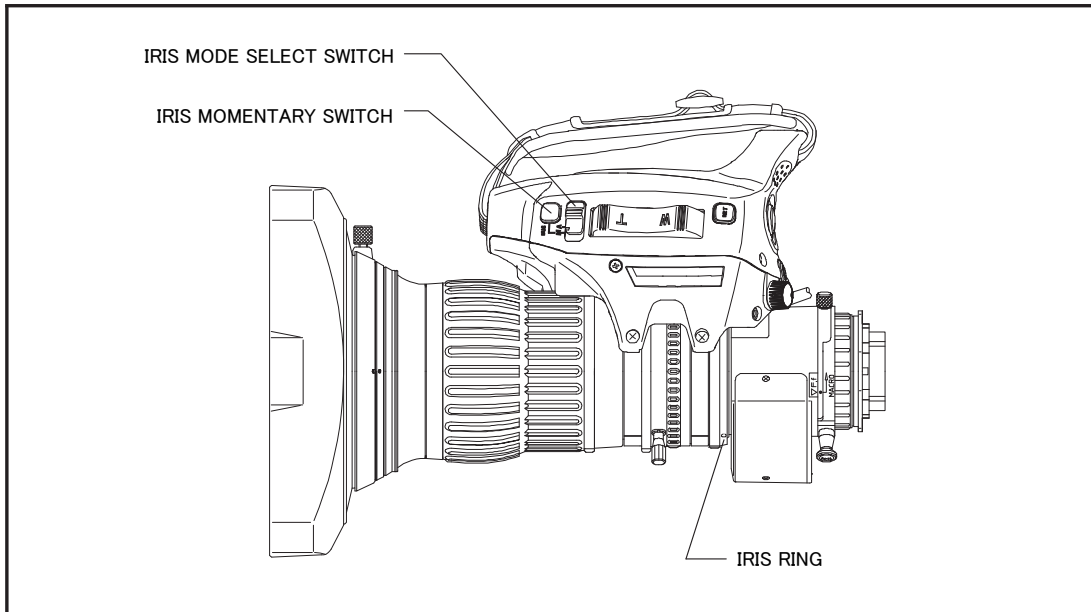
After installing the lens to the camera and turning it ON, perform adjustment by watching the monitor of the camera. At this time, connect the lens cable to the lens connector on the camera. For the operation of focusing and zooming, refer to "Focus Operation" and "Zoom Operation" (pages from 5 to 7).

- a. Loosen the F.f locking knob by rotating it counterclockwise.
- b. Operate the zoom to set it to the wide end.
- c. Rotate the F.f adjusting ring using the F.f locking knob to focus on the Siemens Star located approximately 3 meters away.  
The position where the radial black and white lines become sharpest is the optimum focus position.
- d. Operate the zoom to set it to the telephoto end.
- e. Operate the focus to bring the object into focus.
- f. Operate the zoom to set it to the wide end again, and check that the optimum focus position adjusted in step 'c' is kept.
- g. To adjust precisely, repeat the above steps 'b' through 'f' several times.  
(If the most optimum focus position usually holds in all zoom areas, the flange focal length is adjusted precisely. If it is not focused, the flange focal length is not adjusted sufficiently. In this case, start adjusting again from step 'b'.)
- h. Finally tighten the F.f locking knob firmly.





## IRIS OPERATION



There are two iris operation modes: auto iris mode and manual mode. For the operating instruction in each mode, refer to the description on each mode.

### ■ AUTO IRIS MODE

Set the iris mode select switch to “A.” The iris of the lens will automatically be adjusted responding to the object brightness.

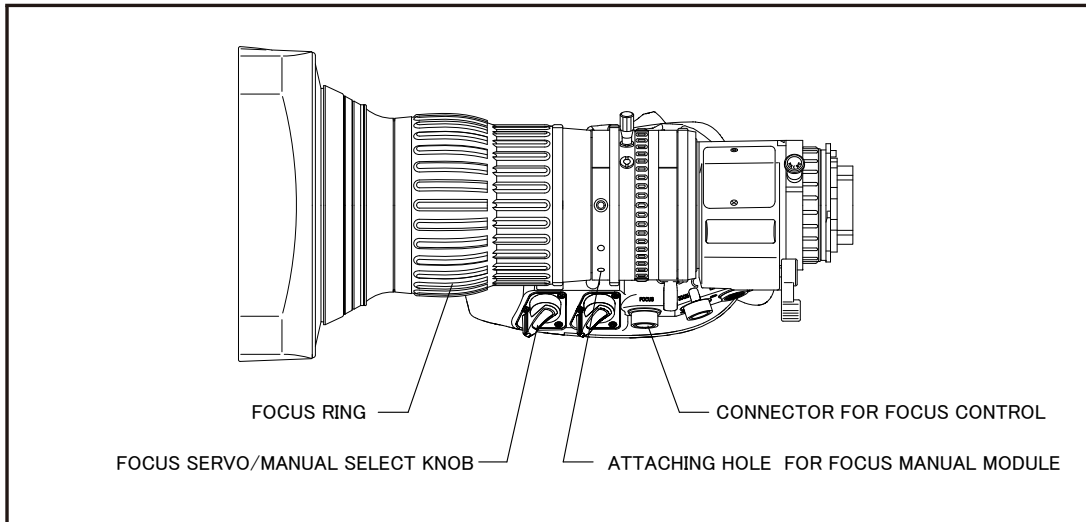
### ■ MANUAL MODE

- a. Set the iris mode select switch to “M.”
- b. Rotate the iris ring by hand to adjust the iris. From the camera side, clockwise rotation of the ring causes the iris to move toward the closed side and counterclockwise rotation toward the open side.

Note 1. Although the iris operation mode is in Manual, the iris is adjusted automatically while the iris momentary switch is being pressed.

Note 2. The positions of the auto iris mode and the manual mode in the iris mode select switch can be interchanged by setting the iris A-M position change switch (refer to page 14) to ON. When the positions are interchanged, apply the mode indication label, enclosed with the lens, onto the mode indication part of the lens so as not to cause confusion.

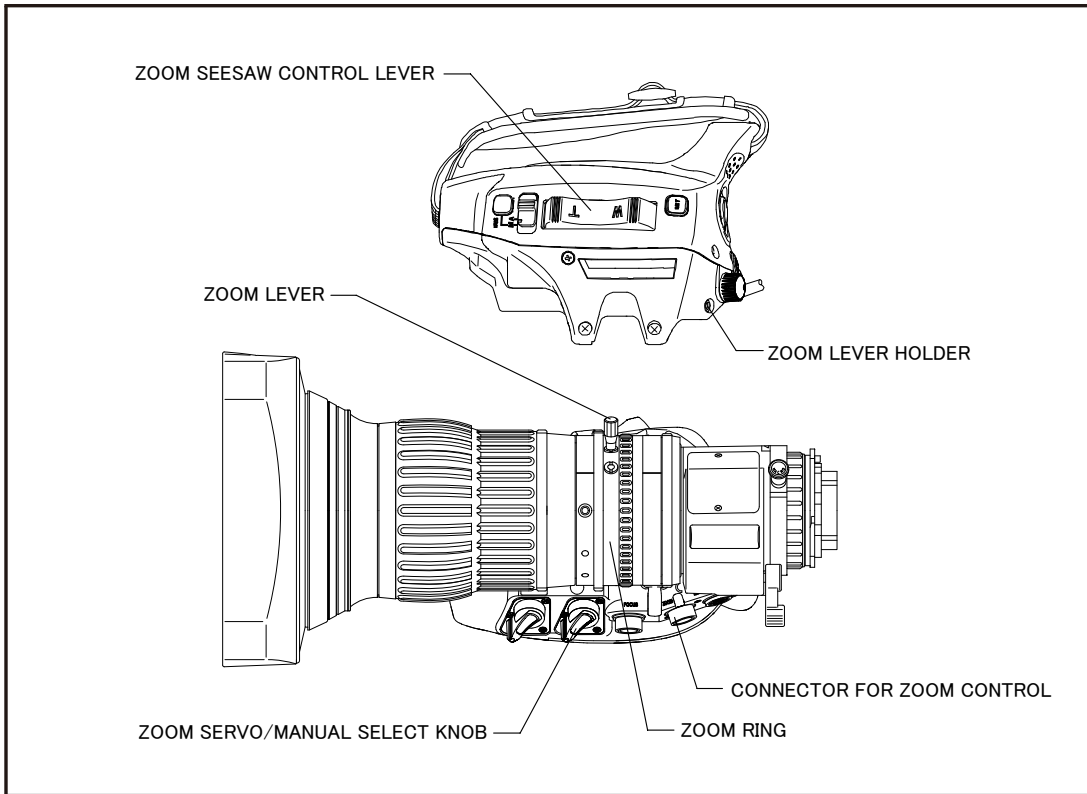
## FOCUS OPERATION



Focusing can be done by directly rotating the focus ring by hand. Rotate the focus ring clockwise from the camera side to focus on an object on the near side.

The remote control operation is also available with optional accessories. Set the focus servo/manual select knob to “S,” when using a servo control accessory.

## ZOOM OPERATION



The zoom can be operated in the following five operation modes.

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For the operating instruction in each mode, refer to the description on each mode.  
The remote control operation is also available with optional accessories.

### (1) Manual Operation

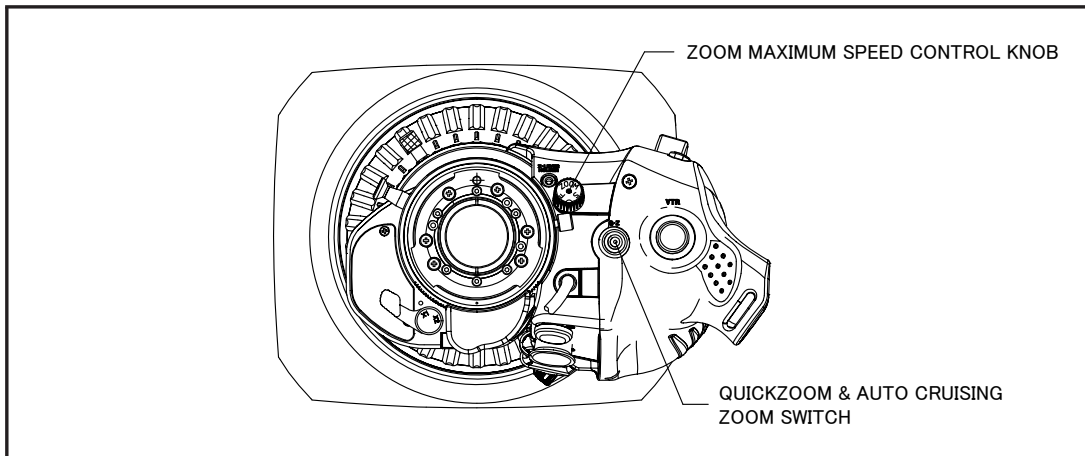
- a. Set the zoom servo/manual select knob to “M.”
- b. Rotate the zoom ring directly or using the zoom lever. Clockwise rotation of the zoom ring, viewed from the camera side, moves the zoom to the wide side, and counterclockwise rotation to the tele side. (When rotating the zoom ring directly, it is recommended to remove the zoom lever for smooth operation. If you removed the zoom lever, install it on the zoom lever holder so as not to lose it.)

## (2) Operation by Zoom Seesaw Control Lever

- a. Set the zoom servo/manual select knob to “S.”
- b. Press the zoom seesaw control lever.  
Press T-side of the lever to zoom to the tele side, and the W-side to zoom to the wide side. For the speed control, adjust the strength to press the lever. Pressing the lever deeply makes the zoom speed faster, and shallowly makes slower.

### <Control of Zoom Maximum Speed>

By means of the zoom maximum speed control knob (see the illustration below), the zoom maximum speed can be changed in seven steps. Rotate the knob clockwise to increase the speed.



## (3) QuickZoom Operation

In quickzoom operation, pressing a switch moves the zoom to the tele end quickly. The operator can use this function in such occasions listed below.

- When rapid zooming to the tele end is required to focus on the object precisely.
- To confirm, in a moment, the composition of the image in the extreme close-up shot.

### Operation

- a. Set the zoom servo/manual select knob to “S.”
- b. Keep pressing the quickzoom & auto cruising zoom switch until the zoom reaches the tele end.
- c. While pressing the quickzoom & auto cruising zoom switch, perform precise focusing or confirm the composition of the image in the extreme close-up shot.
- d. Release the quickzoom & auto cruising zoom switch.
  - The zoom will move to its former position quickly.  
(If you press the quickzoom & auto cruising zoom switch again before the zoom returns to its former position, the quickzoom movement restarts. After this operation, if the switch is released, the zoom will move to its former position quickly. )

Note 1. By setting an appropriate switch in the area of “Function & Mode Select Switches” (see page 13), the return switch and the VTR switch can be used also as a quickzoom & auto cruising zoom switch.

Note 2. In quickzoom operation, the zoom moves at the maximum speed irrespective of the setting position of the zoom maximum speed control knob.

Note 3. If you press the quickzoom & auto cruising zoom switch while pressing the zoom seesaw control lever, the zoom moves in auto cruising zoom operation, not in quickzoom operation.

#### (4) Auto Cruising Zoom Operation

In auto cruising zoom operation, the zoom moves to the tele end or the wide end at a constant speed. This function is effective when a constant slow zoom speed is required across the zooming range.

##### Operation

- a. Set the zoom servo/manual select knob to "S."
- b. Press the zoom seesaw control lever and adjust the zoom speed.
- c. While pressing the zoom seesaw control lever, press the quickzoom & auto cruising zoom switch.
  - The auto cruising zoom function will work.
- d. Release your hand from the zoom seesaw control lever.
  - The zoom will move to the tele end or the wide end at a constant speed that is determined when the quickzoom & auto cruising zoom switch is pressed.

Note. By setting an appropriate switch in the area of "Function & Mode Select Switches" (see page 13), the return switch and the VTR switch can be used also as a quickzoom & auto cruising zoom switch.

##### Releasing

There are three ways to release the auto cruising zoom operation mode.

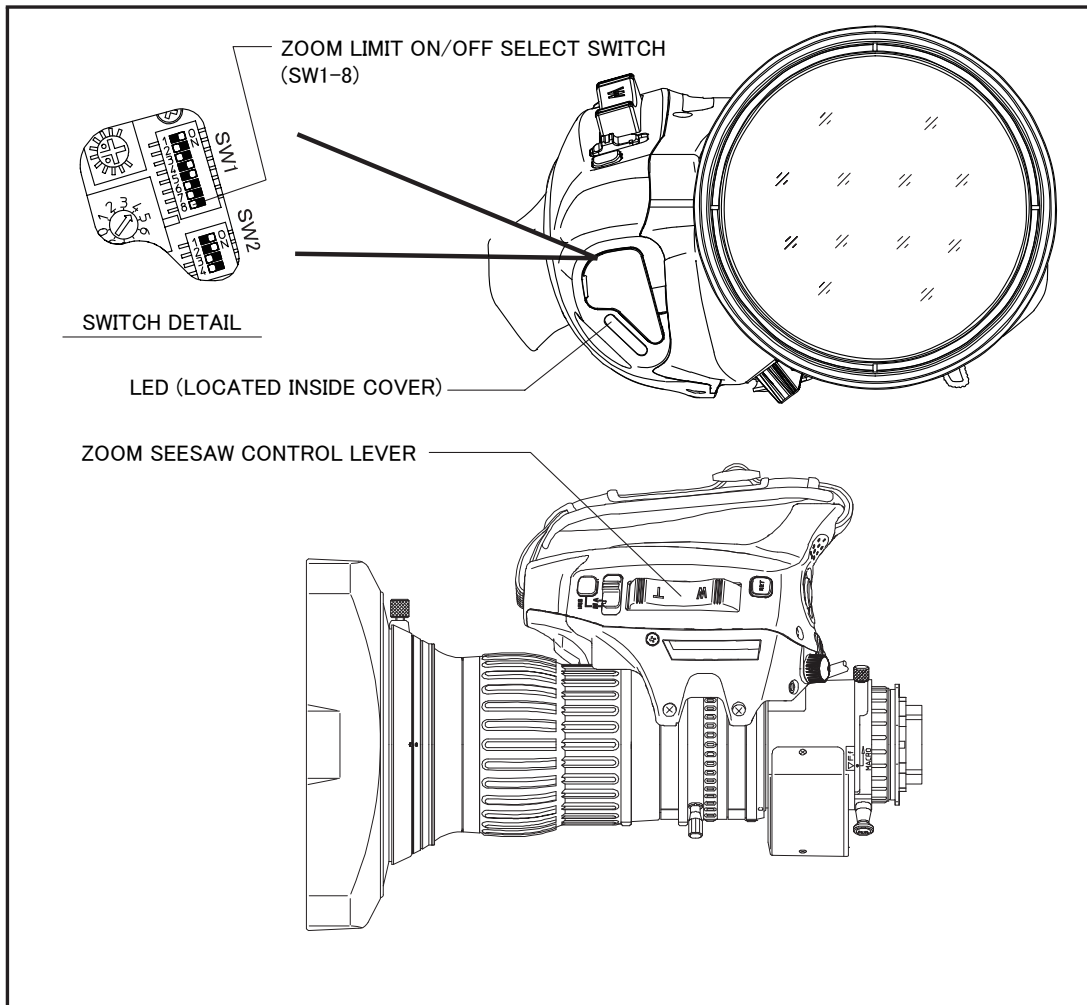
1. Press the zoom seesaw control lever on the side of the direction of the zoom movement.
  - When the amount of displacement of the zoom seesaw control lever exceeds that determined when the auto cruising zoom operation is set, the auto cruising zoom operation mode will be released. After released, the zoom will move continuously toward the same direction as moved before releasing. (In this way, the auto cruising zoom operation mode can be released maintaining the smooth zoom movement.)
2. Press the zoom seesaw control lever on the reverse side of the direction of the zoom movement.
  - The auto cruising zoom operation mode will be released immediately, and the zoom will move toward the reverse direction.
3. Press the quickzoom & auto cruising zoom switch.
  - The auto cruising zoom operation mode will be released immediately, and the zoom will stop.

(5) Zoom Limit Operation

The zoom limit function can be used in the servo operation mode.

(The setting of the zoom limit positions can be done in the manual operation mode.)

By using this function, the zoom movement toward both the tele side and the wide side can be confined; therefore, zooming can be done within the desired shot angles.



## ■ Setting of Zoom Limit Positions

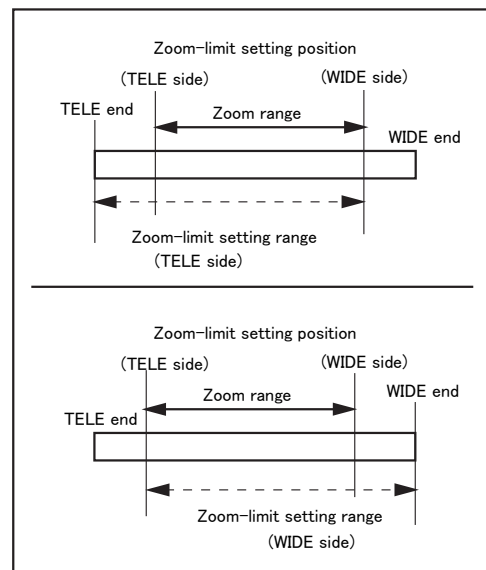
- Before shipment at the factory, the zoom limit positions were set at the tele end and the wide end respectively.
- a. If the zoom limit ON/OFF switch (SW1-8) is set to “OFF,” change it to “ON” position.
- b. Set the zoom servo/manual select knob to “M.”
- c. Move the zoom manually, and stop it at the position desired as a tele side zoom limit position.
- d. Press “T” side of the zoom seesaw control lever and the quickzoom & auto cruising zoom switch simultaneously for more than 3 seconds (refer to Note 4).
  - The tele side zoom limit position will be set.
- e. Move the zoom manually, and stop it at the position desired as a wide side zoom limit position.
- f. Press “W” side of the zoom seesaw control lever and the quickzoom & auto cruising zoom switch simultaneously for more than 3 seconds (refer to Note 4).
  - The wide side zoom limit position will be set.

**Note1.** Either side of the zoom limit positions can be set at first.

**Note2.** The wide side zoom-limit position cannot be set to the same position as the tele side zoom-limit position, or further toward the tele end than the tele side zoom-limit position. This is the same with the tele side.

**Note3.** The zoom limit positions will be held even if the zoom limit ON/OFF select switch is set to “OFF” or the power to the lens is turned “OFF.”

**Note4.** When the zoom limit position is set, the LED located inside the cover will be lit. The LED will go out when the zoom seesaw control lever or the quickzoom & auto cruising zoom switches released.



## ■ Zoom Limit Operation

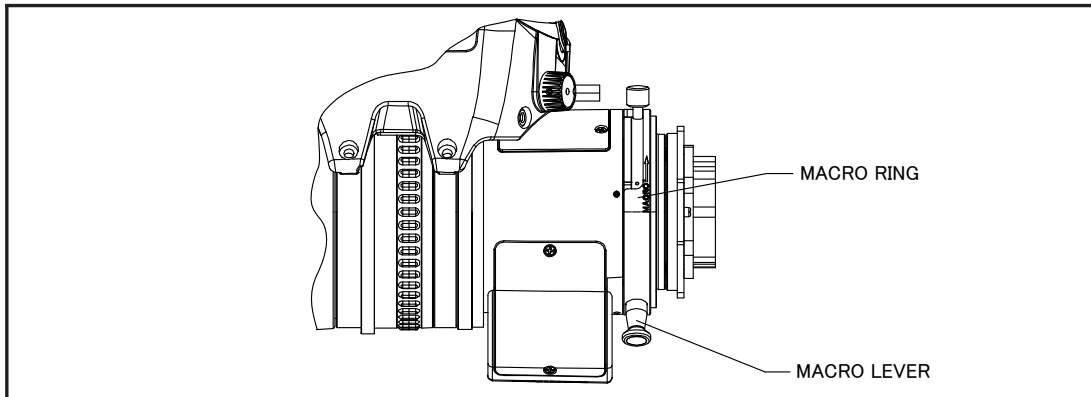
- a. If the zoom servo/manual select knob is set to “M,” change it to “S.”
- b. If the zoom limit ON/OFF select switch is set to “OFF,” change it to “ON.”
- c. By means of the zoom seesaw control lever, operate the zoom.
  - Keep pressing the “T” side of the lever so that the zoom reaches the tele side zoom limit position and stops.
  - Keep pressing the “W” side of the lever so that the zoom reaches the wide side zoom limit position and stops.

**Note1.** Before performing a zoom limit operation, if the zoom position is not within the range of the tele side and the wide side zoom limit positions, when the seesaw control lever is operated, the zoom will move only toward the zoom limit positions, not toward the opposite side of them.

**Note2.** If a zoom rate demand unit that has the zoom limit function is connected to the lens, the validity of the zoom limit function differs depending on the type (digital or analog) of the zoom rate demand unit.

- With a digital zoom rate demand unit, the zoom limit function of the zoom rate demand unit will be valid. The zoom limit function of the lens will not work.
- With an analog zoom rate demand unit, the zoom limit functions of both the zoom rate demand unit and the lens will be valid. To avoid a confusion of the zoom limit positions, turn off the zoom limit function of one of them.

## MACRO OPERATION



Carry out the following steps for the macro operation (taking a close-up shot).

- a. Rotate the focus ring fully toward the infinity side.
- b. While pulling the macro lever toward the mount, rotate the macro ring toward the arrow as far as it goes.
- c. Focus the lens by controlling the zoom.

Note. It is also possible to shoot an object while the macro ring is in an intermediate position.

In this case, the values of the M.O.D. and the object area at M.O.D. are those of between a normal and a close-up shot.

### ■ PROCEDURE TO CANCEL

Rotate the macro ring in the opposite direction of the arrow until the macro lever automatically returns to its original position.



## OTHER FUNCTIONS

### ■ Extender Select Lever

To use the built-in extender, rotate the extender select lever to align the letters “×2 ” with the index mark.

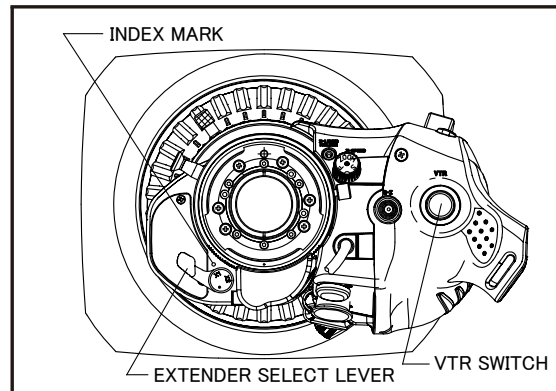
### ■ VTR Switch

Operation of this switch starts or stops the VTR linked to the camera.

Press the switch to toggle start/stop.

**Note.** The VTR switch can be used if it supports the VTR switch function of the camera.

**Note.** If the setting of the function & mode select switches is properly arranged, this switch works as a quickzoom switch or a quickzoom & auto cruising zoom switch. (refer to page 13)

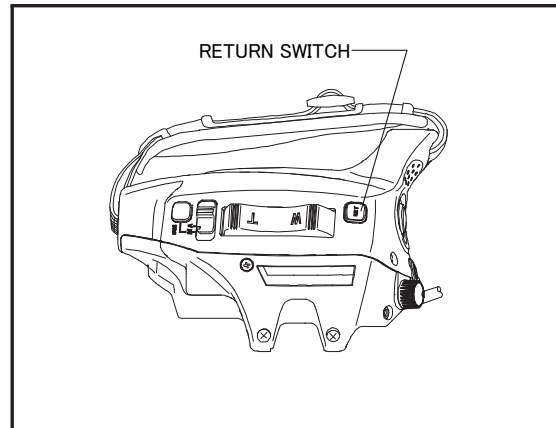


### ■ Return Switch

Operation of this switch starts or stops the VTR linked to the camera.

**Note.** The return switch can be used if it supports the return switch function of the camera.

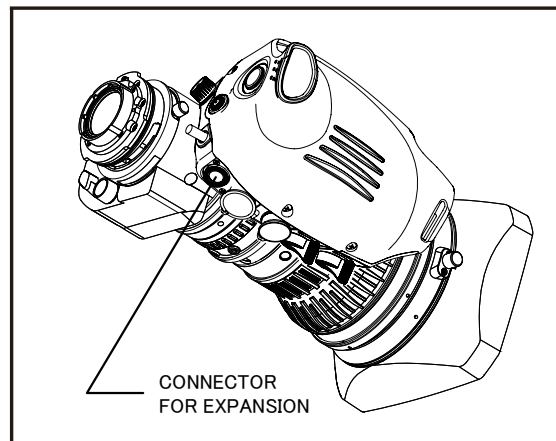
**Note.** If the setting of the function & mode select switches is properly arranged, this switch works as a quickzoom switch or a quickzoom & auto cruising zoom switch. (refer to page 13)



### ■ Connector for Expansion

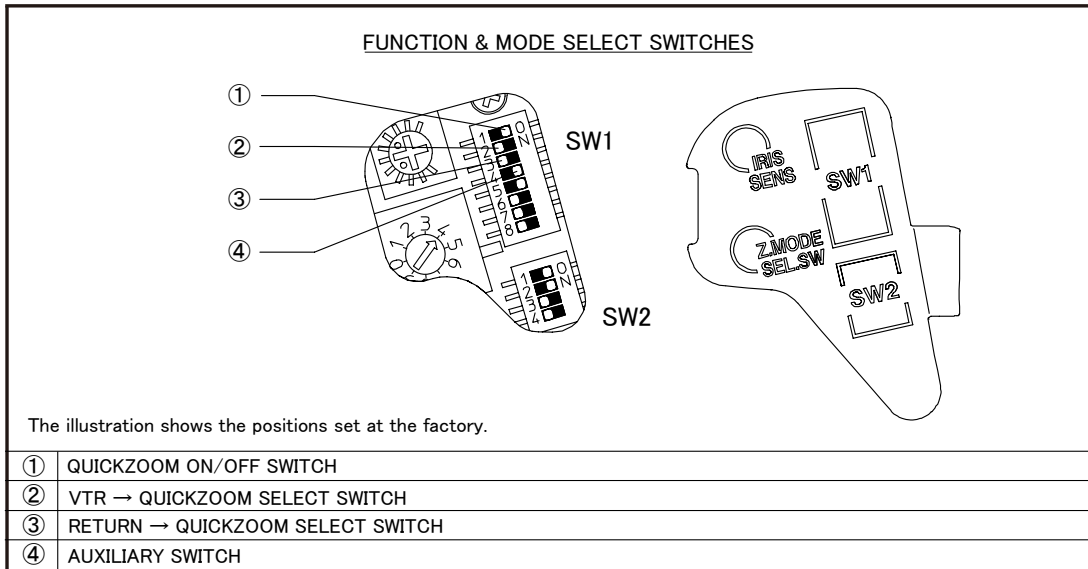
This connector can be used in two applications listed below.

- (1) To control the lens from a personal computer.
- (2) To use the lens in a virtual studio system.  
(This connector outputs encoder signals.)



## ABOUT FUNCTION & MODE SELECT SWITCHES

The function of some switches incorporated in this lens can be changed to other functions. The function can be changed by setting switches in the function & mode select switches. The function & mode select switches are accessible by removing the round rectangular rubber cap on the front of the drive unit.



① **QuickZoom ON/OFF Switch**

This switch changes the function of the quickzoom & auto cruising zoom switch to ON and OFF.

② **VTR → QuickZoom Select Switch**

This switch changes the function of the VTR switch to that of the quickzoom switch.

(The function of the VTR switch incorporated in the zoom rate demand unit or the shot box linked to this lens is also changed to that of the quickzoom switch.)

③ **Return → QuickZoom Select Switch**

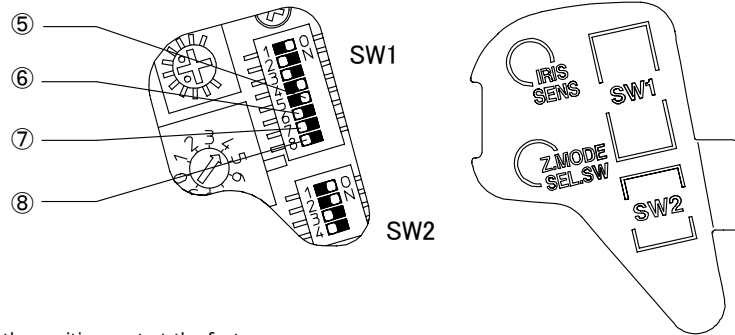
This switch changes the function of the return switch to that of the quickzoom switch.

(The function of the return switch incorporated in the zoom rate demand unit or the shot box linked to this lens is also changed to that of the quickzoom switch.)

④ **Auxiliary Switch**

An auxiliary switch.

### FUNCTION & MODE SELECT SWITCHES



The illustration shows the positions set at the factory.

⑤	AUTO CRUISING ZOOM ON/OFF SWITCH
⑥	IRIS COMP ON/OFF SWITCH
⑦	IRIS A-M POSITION CHANGE SWITCH
⑧	ZOOM LIMIT ON/OFF SWITCH

#### ⑤ Auto Cruising Zoom ON/OFF Switch

This switch changes the auto cruising zoom function to ON and OFF. If this switch is set to OFF, an auto cruising zoom operation cannot be performed from all the switches that are set as an auto cruising zoom switch.

#### ⑥ Iris Comp ON/OFF Switch

This switch changes the iris compensation function to ON and OFF.

Note. In the iris remote mode, the image of the picture darkens when the extender is used.  
The iris compensation function prevent this happening.

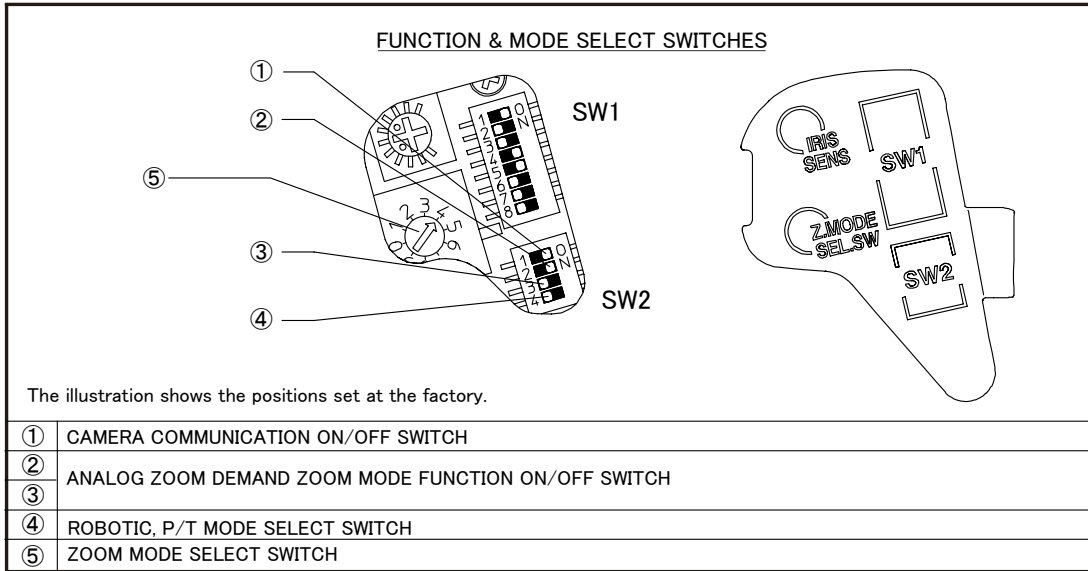
#### ⑦ Iris A-M Position Change Switch

The positions of the auto iris mode and the manual mode set in the iris mode select knob can be interchanged by setting this switch.

#### ⑧ Zoom Limit ON/OFF Switch

This switch changes the zoom limit function to ON and OFF.

For the zoom limit function, refer to section "Zoom Limit Operation" (pages 9 thru 10).



**① Camera Communication ON/OFF SWITCH**

This switch changes the function of serial communication with a camera to ON and OFF.

**Note.** Set this switch to OFF when a malfunction occurs and it is assumed that the malfunction is caused by a serial communication failure.

**② ③ Analog Zoom Demand Zoom Mode Function ON/OFF Switch**

In a zoom operation with an analog zoom demand control unit, the zoom mode function (function of selecting the characteristics of “zoom speed vs zoom control signal”) can be switched to ON and OFF.

**④ Robotic, P/T Mode Select Switch**

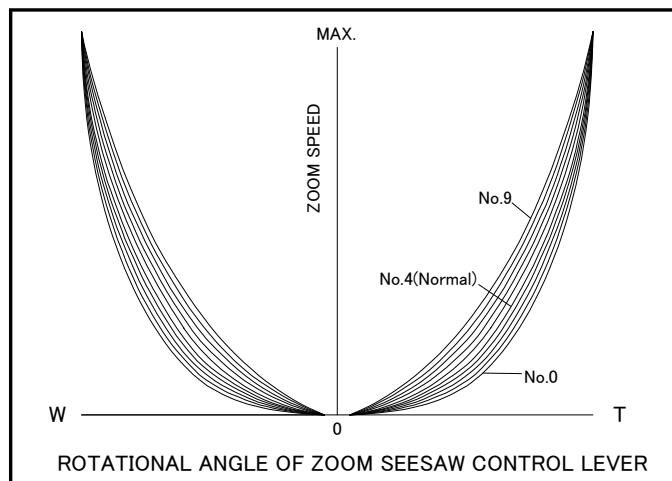
To control the lens via serial communication by mounting the camera to the Robot System or the pan-tilt head, turn this switch ON.

**⑤ Zoom Mode Select Switch**

The characteristics of “Zoom Speed vs Rotational Angle of Zoom Seesaw Control Lever” can be selected from ten modes. Refer to the following figure.

Settings of Function & Mode Select Switches		Zoom Mode Function
SW2-②	SW2-③	
ON	ON	ON
ON	OFF	OFF
OFF	ON	ON
OFF	OFF	OFF

• To operate the zoom with the lens mounted on a pan-tilt head, use these settings.  
 • When the camera is powered ON with these settings while the zoom servo/manual select knob is being set to “S,” initial zoom operation is performed immediately after power ON.



■ TABLE OF SWITCH FUNCTIONS

The functions of switches (return switch, VTR switch, quickzoom & auto cruising zoom switch, and iris mode select switch) can be changed to other functions by combination of the settings of the function & mode select switches.

Refer to the following tables.

◎ Return Switch

Settings of Function & Mode Select Switches		Function of Return Switch
SW1-③	SW1-⑤	
Return → QuickZoom	Auto Cruising Zoom	
OFF	—	Return switch
ON	ON	Quickzoom & auto cruising zoom switch
ON	OFF	Quickzoom switch

◎ VTR Switch

Settings of Function & Mode Select Switches		Function of VTR Switch
SW1-②	SW1-⑤	
VTR → QuickZoom	Auto Cruising Zoom	
OFF	—	VTR Switch
ON	ON	Quickzoom & auto cruising zoom switch
ON	OFF	Quickzoom switch

◎ QuickZoom & Auto Cruising Zoom Switch

Settings of Function & Mode Select Switches		Function of QuickZoom & Auto Cruising Zoom Switch
SW1-①	SW1-⑤	
QuickZoom	Auto Cruising Zoom	
ON	ON	Quickzoom & auto cruising zoom switch
OFF	OFF	Does not function
ON	OFF	Quickzoom Switch
OFF	ON	Auto cruising zoom switch

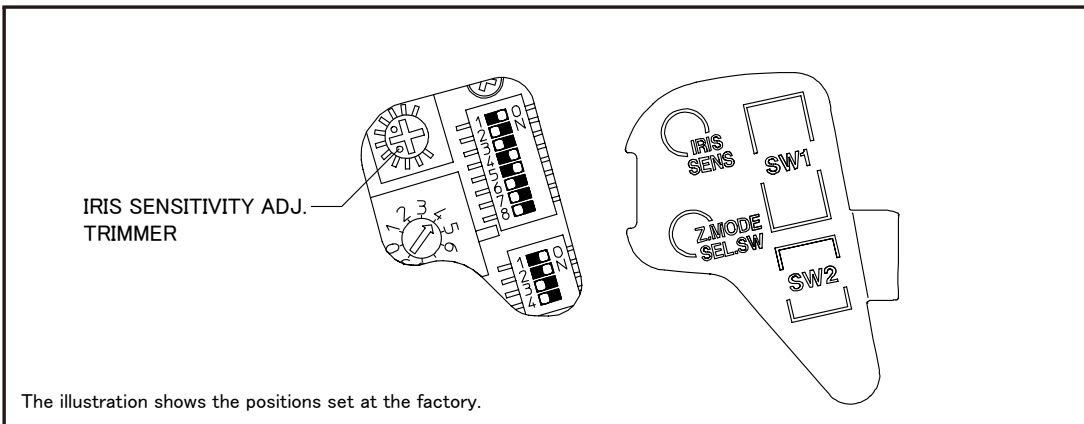
◎ Iris Mode Select Switch

Settings of Function & Mode Select Switches		Function of Iris Mode Select Switch
SW1-⑦		
Iris A-M Position Change		
OFF		A (Auto) is hand side, M (Manual) is Lens Side.(Standard position set at the factory.)
ON		M (Manual) is hand side, A (Auto) is lens side. (Put the mode indication label enclosed with lens.)

## IRIS ADJUSTMENT

Since the iris is precisely adjusted at the factory before shipment, normally the readjustment is not required. However, if readjustment is required for some reason, readjustment can be performed as described below.

The adjusting trimmer becomes visible inside the drive unit by removing the cap at the front of the drive unit. Use a small screwdriver or similar implement to rotate the trimmer.

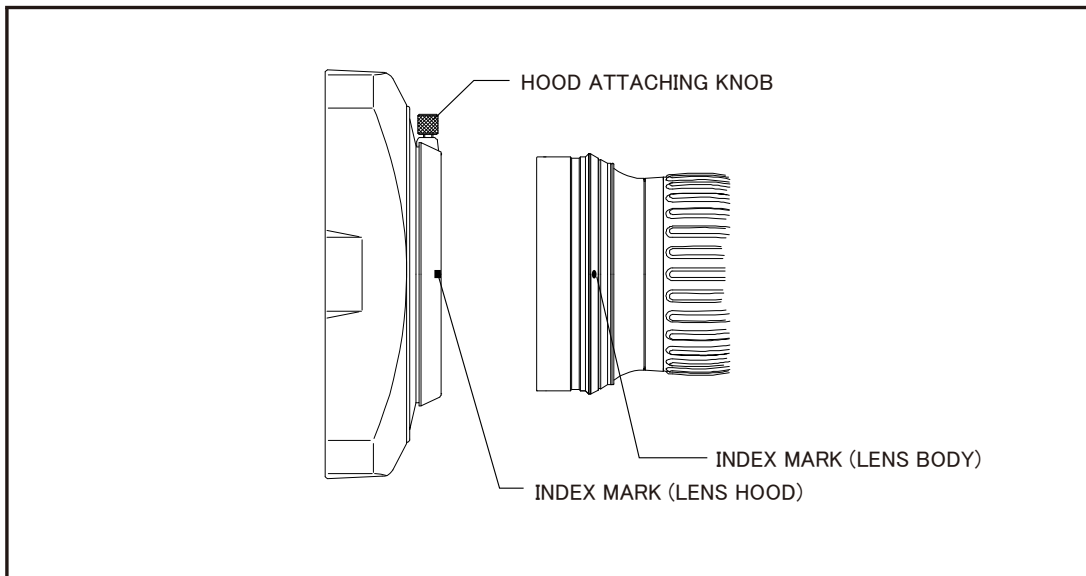


### ■ IRIS SENSITIVITY ADJUSTMENT

Rotate the iris sensitivity adjusting trimmer clockwise for higher sensitivity and counterclockwise for lower sensitivity.

When obtaining higher sensitivity, be careful not to cause hunting.

## DETACHING/ATTACHING LENS HOOD



### ■ DETACHING

- a. Rotate the hood attaching knob counterclockwise to loosen it.
- b. Pull the lens hood straight toward the front to detach it.

### ■ ATTACHING

- a. Rotate the hood attaching knob counterclockwise to loosen it.
- b. Insert the lens hood until the mating surfaces of the lens hood and the lens body contact with each other.
- c. Rotate the lens hood so that the index mark on the lens hood aligns with the index mark on the lens body.
- d. Tighten the hood attaching knob to secure the lens hood.

## MAINTENANCE

### ■ CLEANING THE LENS

Prepare lens cleaning liquid and lens cleaning paper on the market.

- a. First use a soft brush or blower brush to brush dust off the surface of the lens.
- b. Fold the cleaning paper to an adequate size, and dip a part of it into the liquid.  
Lightly wipe the lens from the center to the periphery while drawing a spiral with the wet paper part.  
Repeat this operation using new paper until the lens is thoroughly cleaned.

### ■ REMOVING THE MOISTURE

When the lens main body is wet, first wipe the water on the external part with dry cloth immediately.  
Then put it together with desiccant into a vinyl bag for sealing to remove the moisture inside.

### ■ STORAGE

If it is assumed that the lens will not be used for a long term, store it in a place where high temperature, much moisture or corrosive gas is absent.

### ■ CAUTION

This lens is composed of the optical unit and drive unit. Never remove the screws that fasten these two units.  
It may impair the functions of product or cause electric shock.

### ■ INSPECTION

If an abnormality occurs on the lens, contact the sales agent from which you purchased the lens.

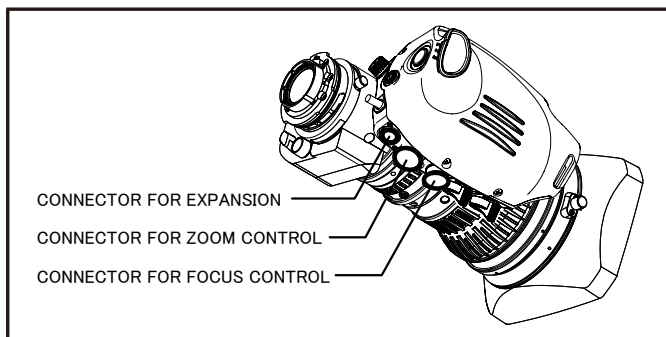
To maintain the high performance for a long term for use, we recommend that a periodic inspection is conducted at least once a year.

Note that we may not be able to inspect and repair our products which have been remodeled on the user's end.



## PIN ASSIGNMENT OF CONNECTORS

The pin assignment and functions of the connectors of this product are as follows.



### ■ CONNECTOR FOR FOCUS CONTROL



HR10G-10R-12S (HIROSE)

	SIGNAL	
1	+V	(+12V DC)
2	GND	GND
3	COM+V	(7.5V DC)
4	COM (5.0V DC)	(5.0V DC)
5	COM-V	(2.5V DC)
6	FOCUS DEMAND	(ANALOG DEMAND= +12V , DETECT DIGITAL DEMAND = 5V)
7	FOCUS CONTROL	(Far = 7.5V , Near = 2.5V)
8	FOCUS POSITION	(Far = 2.5V , Near = 7.5V)
9	ECU CONTROL	SIGNAL
10	N.C.	
11	N.C.	
12	N.C.	

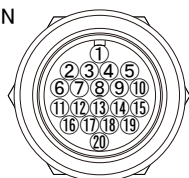
### ■ CONNECTOR FOR ZOOM CONTROL



HR10G-10R-12S (HIROSE)

	SIGNAL	
1	+V	(+12V DC)
2	GND	GND
3	COM+V	(7.5V DC)
4	COM	(5.0V DC)
5	COM-V	(2.5V DC)
6	ZOOM DEMAND	(ANALOG DEMAND= OPEN , DETECT DIGITAL DEMAND = 5V)
7	ZOOM CONTROL	(WIDE = 7.5V , TELE = 2.5V)
8	ZOOM POSITION	(WIDE = 2.5V , TELE = 7.5V)
9	VTR SW	
10	VTR SW COM	
11	RET SW	
12	RET SW COM	

### ■ CONNECTOR FOR EXPANSION



HR25-9R-20S (HIROSE)

	SIGNAL	
1	N.C.	
2	GND	
3	TxD	(RS-232C)
4	+5V	(1kΩ)
5	DTR	(RS-232C)
6	DSR	(RS-232C)
7	RxD	(RS-232C)
8~13	N.C.	
14	EXTENDER ANSWER	× 2=L ( < 0.5V )
15	N.C.	
16	ZOOM(A)	
17	ZOOM(B)	
18	FOCUS(A)	
19	FOCUS(B)	
20	N.C.	

## SPECIFICATIONS

ITEM \ LENS	UA14x4.5BERD-S6B	UA18x5.5BERD-S6
Application	2/3" Format Color Camera (Prism Optical System)	
Focal Length	4.5 ~ 63 mm [9 ~ 126 mm] *	5.5 ~ 100 mm [11 ~ 200 mm] *
Zoom Ratio	14 ×	18 ×
Extender Magnification	2 ×	
Maximum Relative Aperture (F No.)	F1.8 (4.5 ~ 41 mm) ~ F2.8 (63 mm) [F3.6 ~ F5.6] *	F1.8 (5.5 ~ 62 mm) ~ F2.9 (100 mm) [F3.6 ~ F5.8] *
Iris Range	F1.8 ~ F16, closed	
Image Format	9.59 × 5.39 mm (φ 11.0 mm) Aspect ratio 16 : 9	
Flange Focal Length (in Air)	48 mm (Adjustable Range : ±0.2 mm)	
Back Focal Length (in Air)	39.57 mm	39.59 mm
Minimum Object Distance (from Front of Lens)	0.3 m (0.05 m in Macro Operation)	0.4 m (0.05 m in Macro Operation)
Field Angle (H × V)	Tele 93.6° × 61.8° [ 56.1° × 33.3° ] *	82.2° × 52.2° [ 47.1° × 27.5° ] *
	Wide 8.7° × 4.9° [ 4.4° × 2.5° ] *	5.5° × 3.1° [ 2.8° × 1.6° ] *
Object Area at M.O.D. (H × V)	Tele 744 mm × 418 mm [365 mm × 205mm] *	800 mm × 450 mm [395 mm × 222mm] *
	Wide 51 mm × 29 mm [ 27 mm × 15mm] *	44 mm × 25 mm [ 22 mm × 12mm] *
Front Diameter	φ 95 mm	
Full Length	238.5 mm	240.5 mm
Filter Screw	M127 × 0.75 (Attached to the Lens Hood)	
Zoom Control	Servo (Operation time : Approx. 0.7 ~ 70 sec) or Manual	
Focus Control	Manual (Including Motor for Servo Control)	
Mount	Bayonet Mount	
Current Consumption (at 12V DC)	Quiescent	Approx. 75mA
	Maximum	625mA
Mass (No Lens Hood)	Approx. 2.21 kg	Approx. 2.04 kg

\* The values in the brackets are given when the extender is used.

## SPECIFICATIONS

ITEM \ LENS	UA24x7.8BERD-S6
Application	2/3" Format Color Camera (Prism Optical System)
Focal Length	7.8 ~ 187 mm [15.6 ~ 374 mm] *
Zoom Ratio	24 ×
Extender Magnification	2 ×
Maximum Relative Aperture (F No.)	F1.8 (7.8 ~ 118 mm) ~ F2.85 (187 mm) [F3.6 ~ F5.7] *
Iris Range	F1.8 ~ F16, closed
Image Format	9.59 × 5.39 mm (φ 11.0 mm) Aspect ratio 16 : 9
Flange Focal Length (in Air)	48 mm (Adjustable Range : ±0.2 mm)
Back Focal Length (in Air)	39.73 mm
Minimum Object Distance (from Front of Lens)	0.8 m (0.04 m in Macro Operation)
Field Angle (H × V)	Tele 63.2° × 38.1° [ 34.2° × 19.6° ] *
	Wide 2.9° × 1.7° [ 1.5° × 0.8° ] *
Object Area at M.O.D. (H × V)	Tele 883 mm × 496 mm [ 459 mm × 258mm ] *
	Wide 38 mm × 21 mm [ 20 mm × 11mm ] *
Front Diameter	φ 100 mm
Full Length	220.5 mm
Filter Screw	M107 × 1 (Attached to the Lens Hood)
Zoom Control	Servo (Operation time : Approx. 0.7 ~ 70 sec) or Manual
Focus Control	Manual (Including Motor for Servo Control)
Mount	Bayonet Mount
Current Consumption (at 12V DC)	Quiescent Approx. 75mA
	Maximum 625mA
Mass (No Lens Hood)	Approx. 1.98 kg

\* The values in the brackets are given when the extender is used.

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