FUJIFILM

FUJINON

FUJINON LENS
富士能镜头

HZK24-300mm
HZK14-100mm

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

BB00058108-301
LP780A-S11 / LP781A-S11
0605

ご使用になる前に、この取扱説明書をよくお読みください。また、いつでも取り出してお読みいただけるよう、大切に保管してください。

Before using this product, please read this operation manual carefully, and keep the manual handy for future use.

在使用本产品前，请先详细阅读本产品使用说明书及妥善保管本使用说明书作为参考资料。

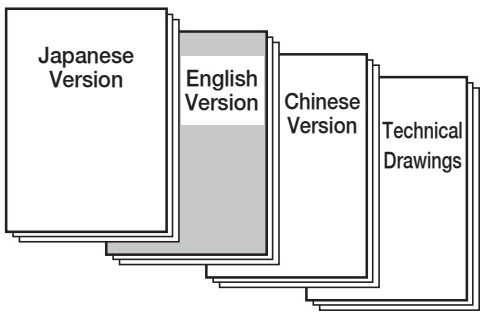
製品の仕様および外観は、改良のため予告なく変更することがあります。

Design and specifications are subject to change without notice.

产品规格及设计可能在未经通告情况下变更。

ENGLISH VERSION

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



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-003(B) / NMB-003(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 Customers in UK
UK Importer : FUJIFILM UK Ltd.
Fujifilm House, Whitbread Way, Bedford, Bedfordshire,
MK42 0ZE, United Kingdom

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.

MEMO

NOTICES

- 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.Od fac faciae re, condi tum aut patid ne in nos reo nos poerioris, serit

MEMO

CONTENTS

■ TECHNICAL DRAWINGS

- OUTLINE DRAWING
- SIEMENS STAR CHART

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

2. GENERAL DESCRIPTION

The HZK24−300mm / HZK14−100mm Fujinon lens is a PL mount type zoom lens developed for cameras equipped with a Super 35mm sensor (diagonalh ϕ 28.55mm) or 35mm full−size equivalent sensor (diagonal ϕ 41.3mm).

3. LIST OF COMPONENTS

QUANTITY

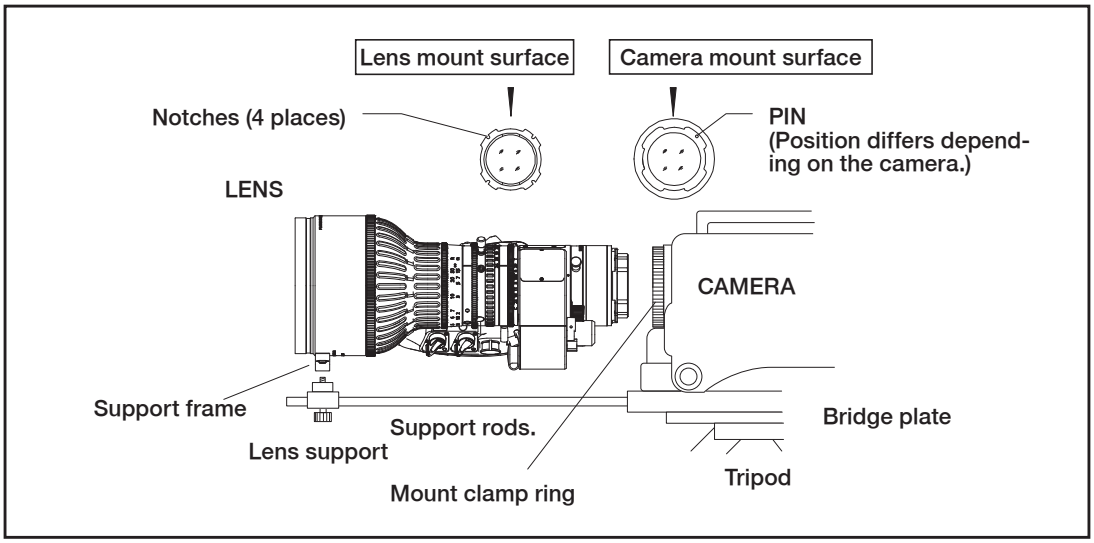
① Lens package	1
② Front lens cap	1
③ Rear lens cap *1	1
④ On hood *1	1
⑤ Hood cap *1	1
⑥ Zoom lever *1	1
⑦ IRIS mode indication label	1
⑧ Support frame *1	1
⑨ Support foot	1
⑩ Operation Manual	1

*1: Attached to the lens body when shipped from the factory.

4. INSTALLATION ONTO CAMERA

⚠CAUTION **To protect the lens and the camera mount, use the bridge plate and lens support to support the lens.**

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



◎ The installation procedure is as follows:

a. Attach the Camera and the Lens Support to the Bridge Plate.(The installation procedure varies depending on the Bridge Plate to be used.)

b. Fully turn the camera's mount clamp ring counterclockwise to loosen it.

c. While holding the Lens by hand, align the mounting surface of the Lens and that of the Camera.(Align the Camera with the Lens so that the pin on the mounting surface of the Camera is securely inserted in the slit on the mounting surface of the Lens.)

d. Temporarily fix the Camera and Lens by slightly turning the camera's mount clamp ring clockwise.

e. While holding the Lens by hand, adjust the position and height of the Lens Support.While holding the Lens by hand, adjust the position and height of the Lens Support.

f. Fully turn the camera's mount clamp ring clockwise and fix the Camera and Lens firmly.

g. Connect the lens cable to the lens connector of the camera.

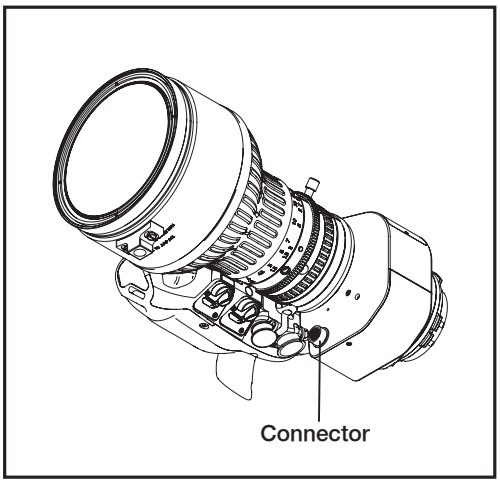
If the camera does not have a lens connector, connect the cable to the connector on the bottom of the lens.

If power cannot be supplied from the camera, connect the cable to a power supply device such as an external power supply.

Rated voltage: DC 12V/operating range: DC 10V to 17V

Using a voltage outside the operating range may cause a malfunction.
Also, the power supply input of the lens is polarized.
(Refer to 15. Connector Pin Assignments.)

When connecting to a power supply device, make sure to check the polarity of the power cable.
Making a connection with the wrong polarity may cause a malfunction.



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 page 5).

Note : For the installation method of the Bridge Plate and Lens Support, refer to the operation manual that came with each product.

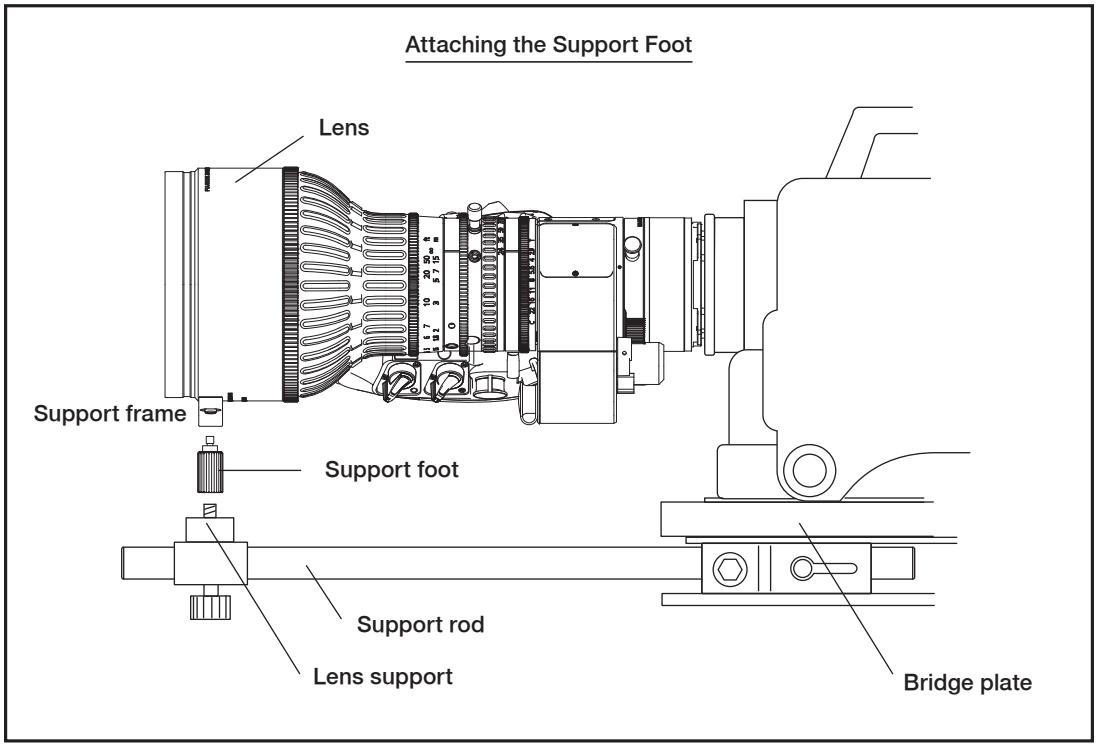
⚠CAUTION

Carefully adjust the installation position and height of the Lens Support.If excessive force is applied to the mounting portions of the Lens and Camera, this may damage the Lens or Camera mounts.

***About Bracket**

- Bracket is provided for fixing lens onto support rods.
- If the height of the Lens Support and Bracket are not the same when the Camera and Bridge Plate are installed, attach the Support Foot to the Bracket to adjust the height.

Note : Be sure the Lens Support and Bracket are in a fixed state when you use them.If the Lens is used when it is not in a fixed state, this may damage the Lens or Camera mounts.



5. 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.

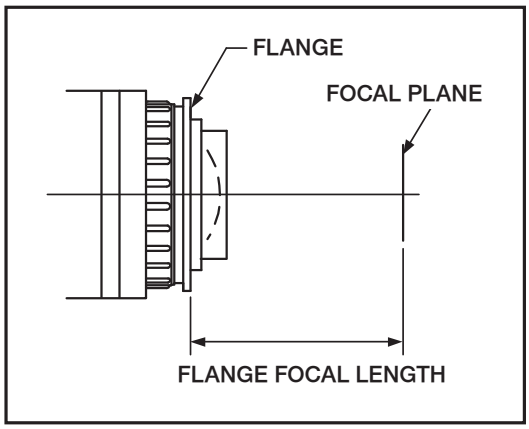
5.1 CONDITIONS OF OBJECT AND DIAPHRAGM

Object : Use the Siemens Star (the chart made up of radial black and white lines) at the end of this manual.

Distance of Object
: About 3 meters

Diaphragm : Open or as near to open as possible.

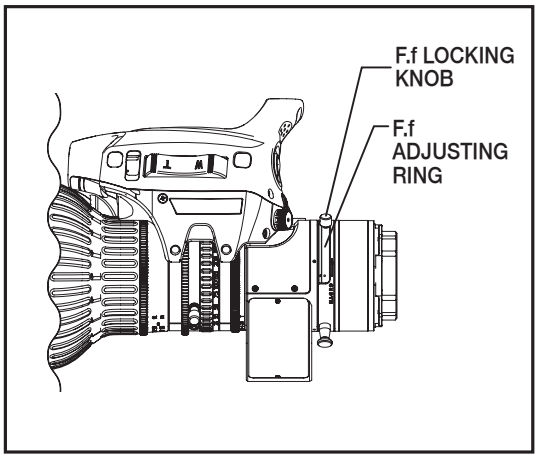
Note : The depth of field decreases by opening the aperture of the lens, and it becomes possible to focus on an object more precisely. To precisely adjust the flange focal length, carefully adjust the focus as much as possible.



5.2 ADJUSTMENT

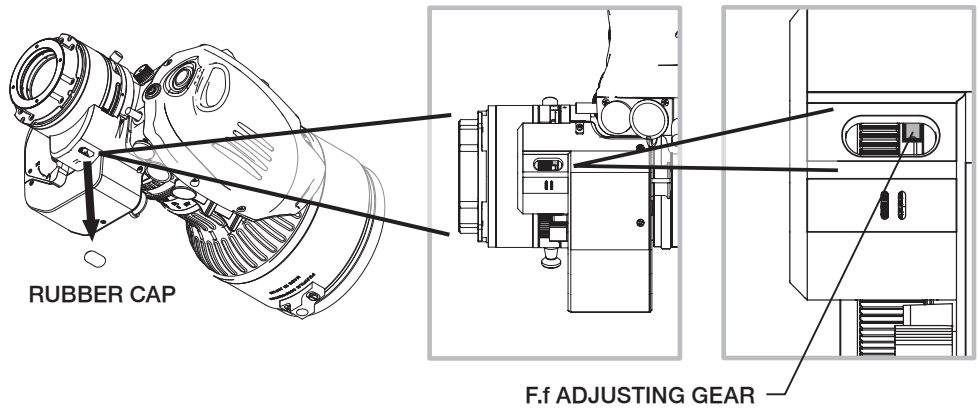
After installing the lens to the camera and turning it ON, perform adjustment by watching the monitor of the camera. At this time, connect the lens cable to the connector on the bottom of the lens or to the lens connector of the camera.
For the operation of focusing and zooming, refer to "Focus Operation" and "Zoom Operation" (pages 8 thru 14).

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.



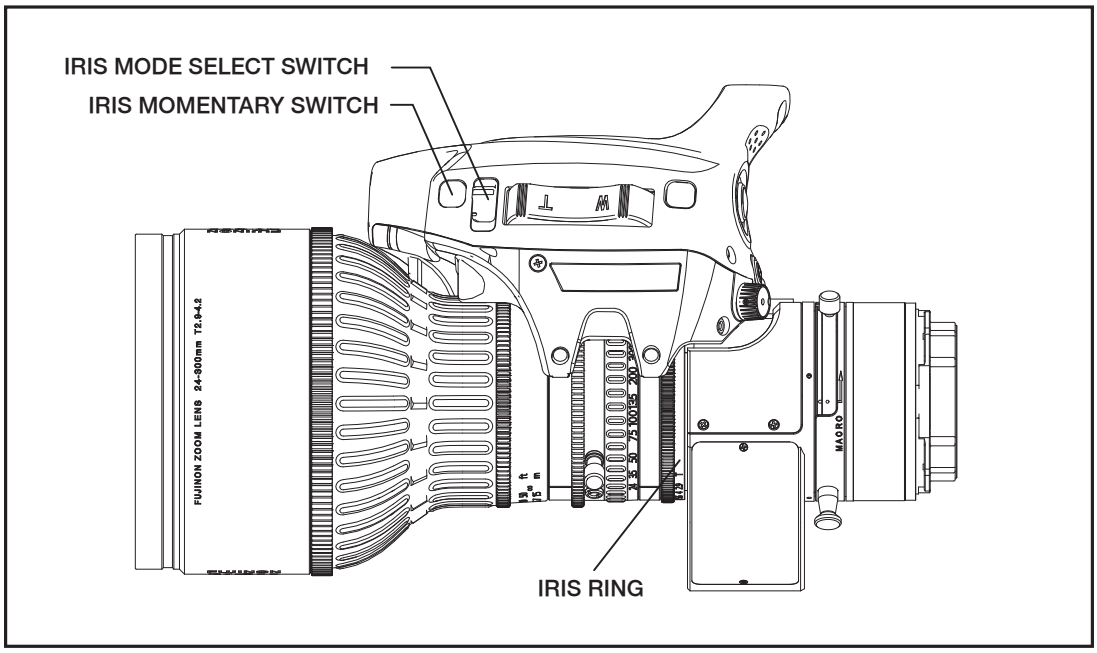
5.3 Adjustment without power

If power cannot be supplied from the lens connector on the camera to the lens for some unavoidable reason, rotate the F.f adjustment gear (located inside the cover) using a finely pointed tool, for example, and adjust. If this adjustment is to be performed, replace the operation in step [c.] above with the operation involved in rotating the gear used for the flange-back adjustment, and proceed by performing steps [b. - g.]. After performing the adjustments, install the cover securely.



MEMO

6. 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.

Note 1 : When the IRIS A−M (Auto Iris) ON/OFF switch is set to OFF (refer to page 17), the iris operation mode will be in Manual, regardless of the iris mode select switch setting.

■ 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.

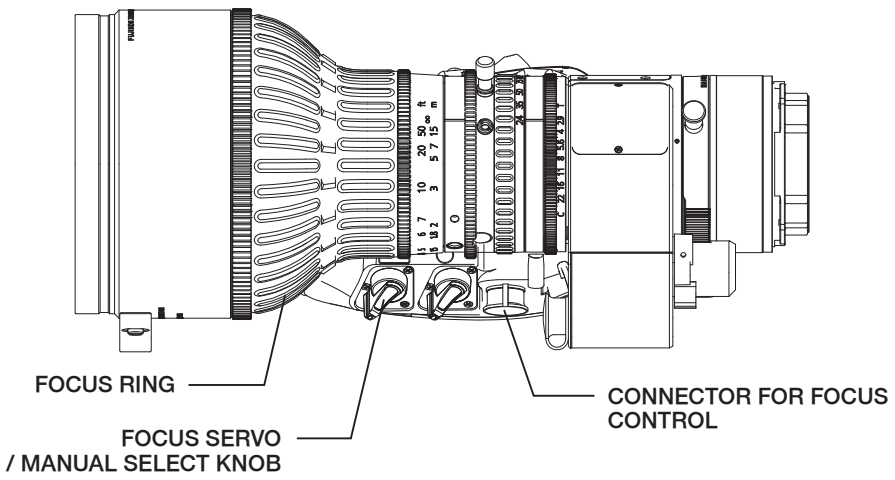
Note 2 : Although the iris operation mode is in Manual, the iris is adjusted automatically while the iris momentary switch is being pressed. Similarly, the iris auto mode is activated when the forced iris servo signal of a peripheral device connected to this product is set to ON.

Note 3 : 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 18) 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.

Note 4 : Do not operate the iris ring manually when the built−in motor is performing the servo operation to turn the iris. Applying excessive force to the iris ring while the iris mode select switch is set to "A" or the auto iris mode is activated by pressing the iris momentary switch may cause a malfunction.

Note 5 : Do not attach an external motor and use it to operate the iris.This may cause a malfunction.

7. FOCUS OPERATION



7.1 Manual Control

a. Set the focus servo/manual select knob to "M".

b. 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.

7.2 Servo Control

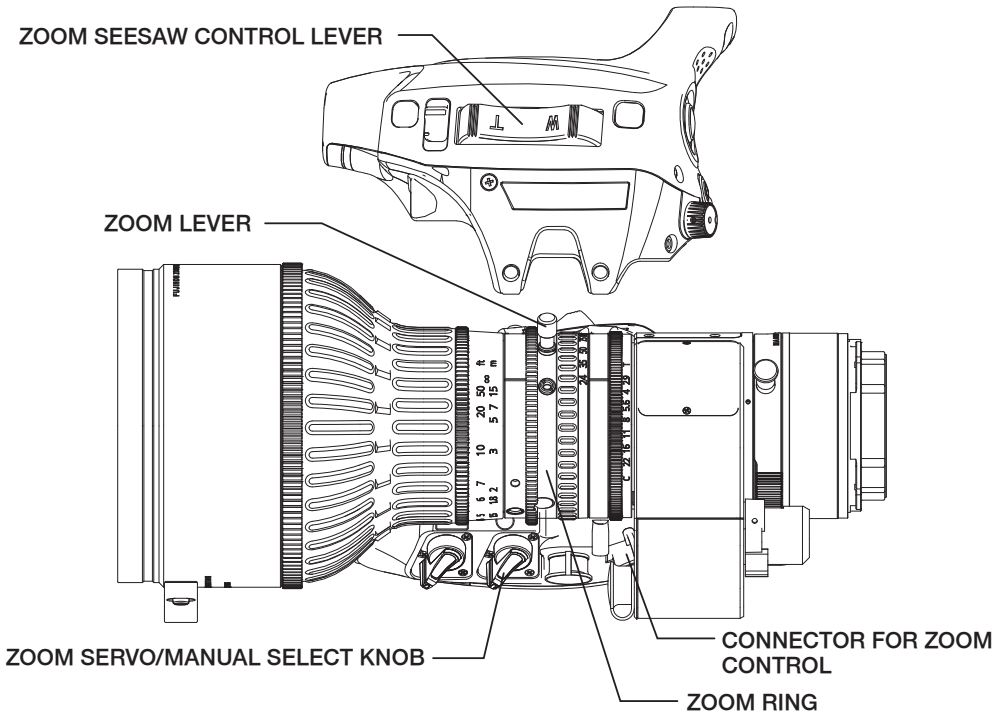
Remote control operation is available by using an optional servo accessory (focus demand controller). To use a servo accessory, set the focus servo/manual select knob to "S".

Note 1 : When the focus servo/manual select knob is set to "S," do not attempt to forcibly operate the focus ring or focus grip.Applying excessive force to the focus ring or focus grip while the servo operation is selected may cause a malfunction.

Note 2 : When attaching an external motor and using it to operate the focus, set the focus servo/manual select knob to MANUAL.This may cause a malfunction.

MEMO

8. ZOOM OPERATION



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

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

Note : When attaching an external motor and using it to operate the zoom, set the zoom servo/manual select knob to MANUAL.This may cause a malfunction.

8.1 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.)

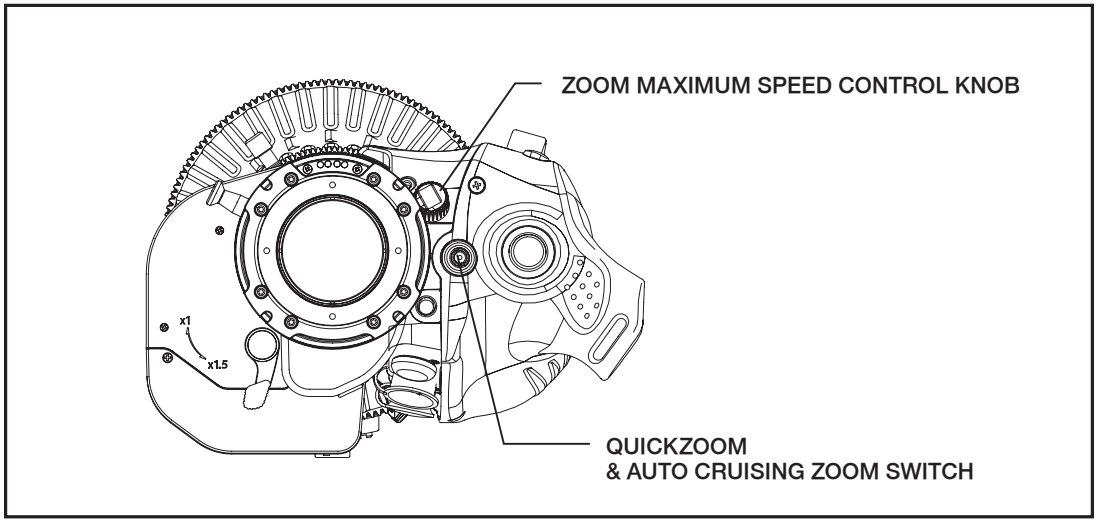
Note : When performing the zoom operation using the manual operation mode, be sure to set the zoom servo/ manual select knob to "M." Forcibly performing manual operation while the zoom servo / manual select knob is set to "S" may cause a malfunction.

8.2 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.



8.3 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.

Note : If the zoom limit function is used, the zoom will stop at the zoom limit positions.In this case, the zoom may not reach the tele end or the wide end.

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

Note 2 : 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.

8.4 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.

Note： If the zoom limit function is used, the zoom will stop at the zoom limit positions.In this case, the zoom may not reach the tele end or the wide end.

8.4.1 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.

8.4.2 Releasing

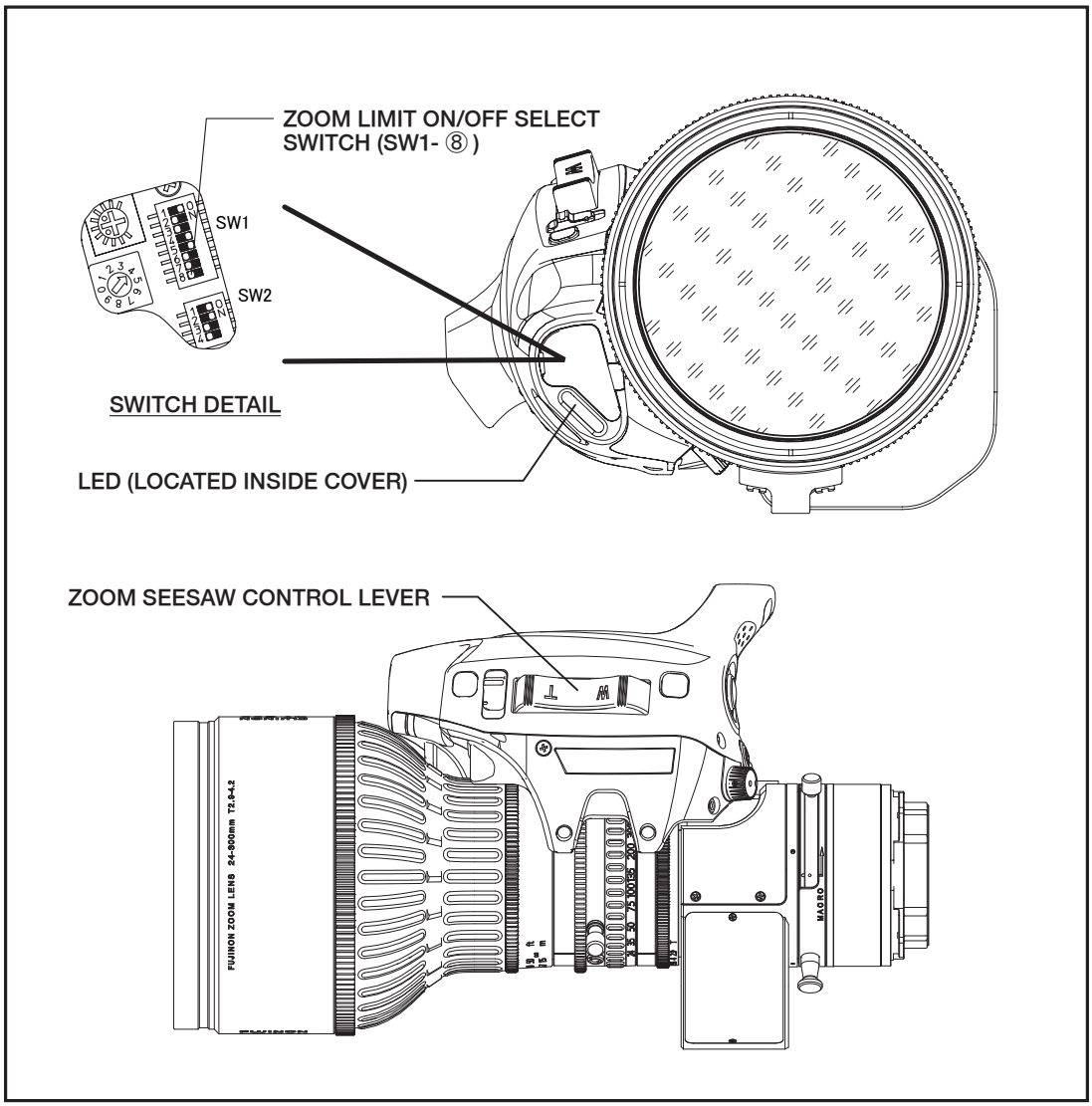
There are three ways to release the auto cruising zoom operation mode.

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 move-ment.)
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.

MEMO

8.5 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.

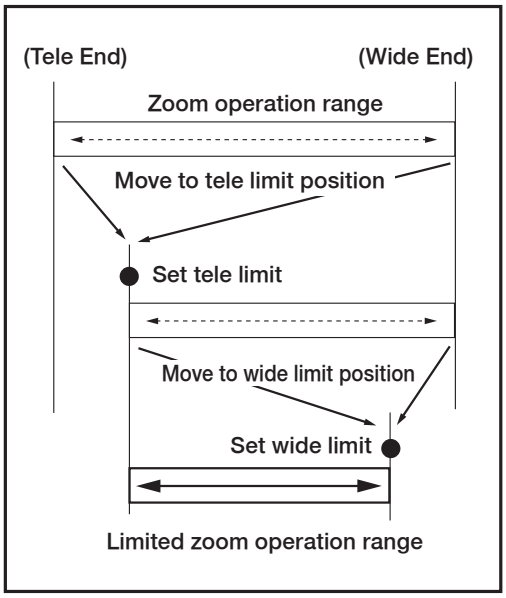


MEMO

8.5.1 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.



Note 1 : Either side of the zoom limit positions can be set at first.

Note 2 : The wide side zoom limit position cannot be set beyond the tele side zoom limit position toward the tele end. This is the same with the tele side.However, the tele side and the wide side zoom limit positions can be set at the same position.In this case, the zoom will not move even if the zoom seesaw control lever is operated.

Note 3 : 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."

Note 4 : When the zoom limit position is set, the LED located inside the cover will be lit. The LED will goes out when the zoom seesaw control lever or the quickzoom & auto cruising zoom switches released.

MEMO

8.5.2 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.

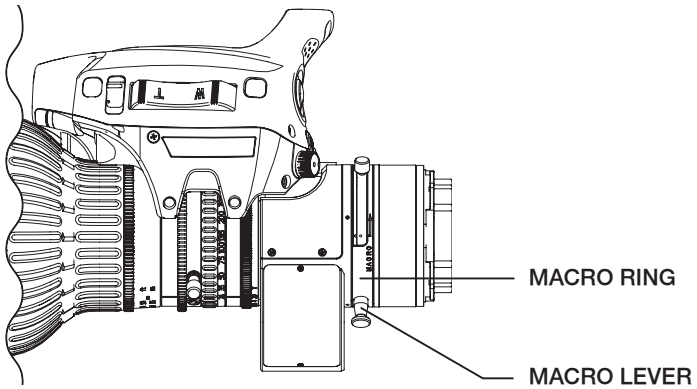
Note 5 : Before performing a zoom limit operation, if the zoom position is not within the range of the tele side and the wide side zoom limit positions, when the seesaw control lever is operated, the zoom will move only toward the zoom limit positions, not toward the opposite side of them.

Note 6 : If a zoom rate demand unitthat 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.

MEMO

9. MACRO OPERATION



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

9.1 Operation

a. Turn the focus ring all the way to the minimum object distance 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 1 : Before macro operation, set the zoom limit ON/OFF select switch to "OFF."(refer to page 18)

Note 2 : 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.

9.2 Procedure to cancel

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

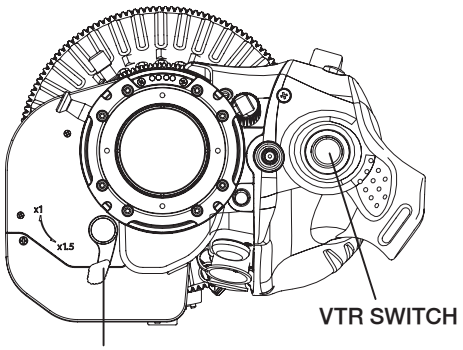
MEMO

10. OTHER FUNCTIONS

■ Extender/ Expander Select Lever

To use the built−in extender/expander, rotate the extender/expander select lever to align "×1.5".

Note : The expander expands the image circle and shifts the focal length to the tele side, providing compatibility with 35mm full−size equivalent sensors (diagonal ϕ 41.3mm).



■ VTR Switch

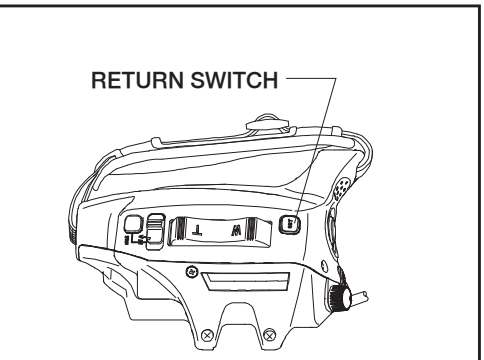
Operation of this switch starts or stops the VTR linked to the camera.
Press the switch to toggle start/stop.

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

■ 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.

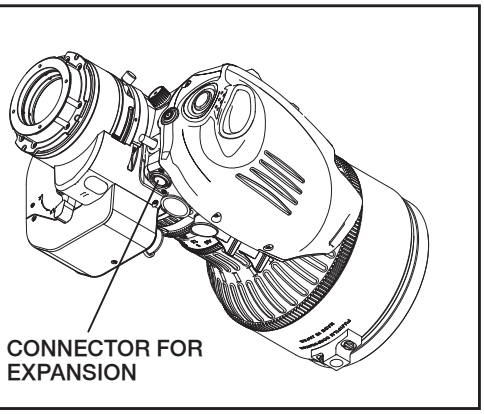


■ Connector for Expansion

This connector can be used in two applications listed below.

(1) To control the lens from a personal computer.

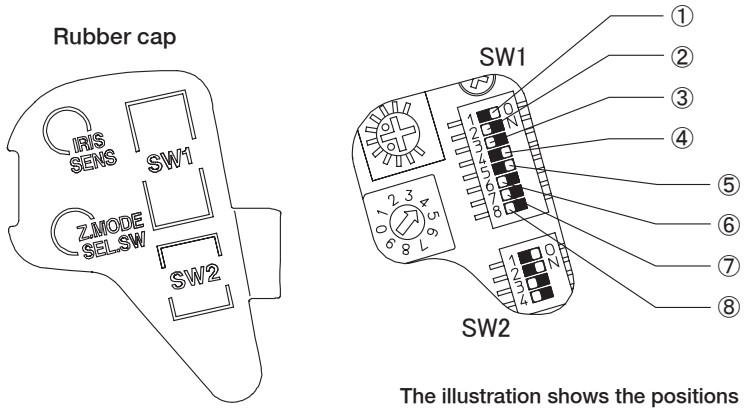
(2) To use the lens in a virtual studio system.
(This connector outputs encoder signals.)



11. 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.

FUNCTION & MODE SELECT SWITCHES



The illustration shows the positions set at the factory.

①	QUICKZOOM ON/OFF SWITCH	⑤	AUTO CRUISING ZOOM ON/OFF SWITCH
②	BREATHING COMPENSATION TECHNOLOGY (BCT) ON/OFF SWITCH	⑥	IRIS COMP ON/OFF SWITCH
③	CAMERA COMMAND SIGNAL SELECTION SWITCH	⑦	IRIS A-M POSITION CHANGE SWITCH
④	IRIS A-M (Autofocus) ON-OFF SWITCH	⑧	ZOOM LIMIT ON/OFF SWITCH

① QuickZoom ON/OFF Switch

This switch changes the function of the quickzoom switch to ON and OFF.

② Berathing Compensation Technology (BCT) function ON/OFF Switch

This switch is used to enable (ON) and disable (OFF) the use of breathing compensation technology.
Breathing Compensation Technology (BCT) is a function that compensates for the change of the field angle caused by focusing.

③ CAMERA COMMAND SIGNAL SELECTION Switch

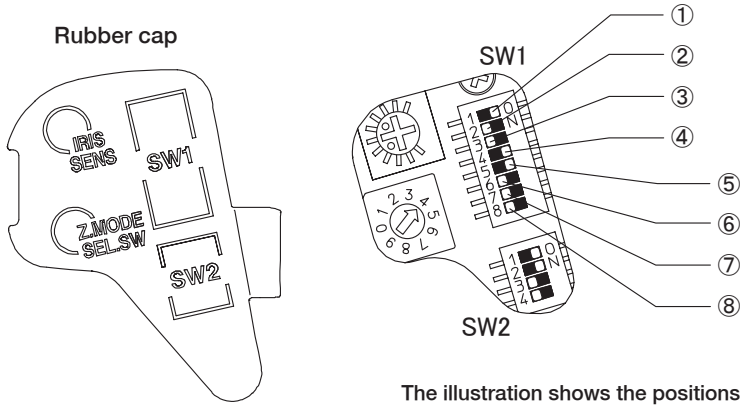
This switch changes the input path of command signals from the camera between via mount (ON) and via 12−pin cable (OFF).The command signal path selected by this switch is given priority.There are two input paths for command signals from the camera: via mount and via 12−pin cable.Via 12−pin cable (OFF) is the default set at the factory, and in this setting the lens prioritizes command signals input via the 12−pin cable.However, if there is no command signal input via the 12−pin cable, command signals input via the mount take effect.

Note : If you change the switch setting while power is being supplied to the lens, turn the power off and then on again.

④ Iris A-M (Autofocus) ON/OFF Switch

This switch changes the iris mode select switch to ON and OFF.
When this switch is set to OFF, the iris operation will be in Manual, regardless of the iris mode select switch setting.
Note, however, that the auto iris mode is activated automatically while either the iris momentary switch is being pressed or the forced iris servo signal of a peripheral device is set to ON.

FUNCTION & MODE SELECT SWITCHES



The illustration shows the positions set at the factory.

①	QUICKZOOM ON/OFF SWITCH	⑤	AUTO CRUISING ZOOM ON/OFF SWITCH
②	BREATHING COMPENSATION TECHNOLOGY (BCT) ON/OFF SWITCH	⑥	IRIS COMP ON/OFF SWITCH
③	CAMERA COMMAND SIGNAL SELECTION SWITCH	⑦	IRIS A-M POSITION CHANGE SWITCH
④	IRIS A-M (Autofocus) ON-OFF 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

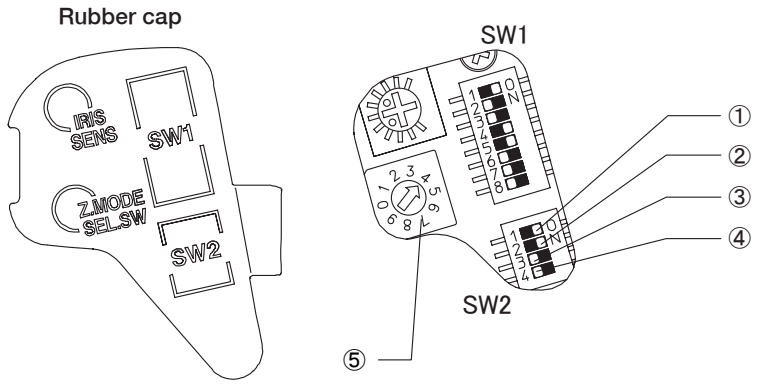
The positions of the auto iris mode and the manual mode set in the iris mode select knob can be interchanged by setting this switch.

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 12 thru 14).

MEMO

FUNCTION & MODE SELECT SWITCHES



①	CAMERA COMMUNICATION ON/OFF SWITCH
②	AUXILIARY SWITCH
③	ANALOG ZOOM DEMAND ZOOM MODE FUNCTION ON/OFF SWITCH

The illustration shows the positions set at the factory.

④	FOCUS MODE ON/OFF SWITCH
⑤	ZOOM MODE SELECT SWITCH

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 Auxiliary Switch

An auxiliary switch.

③ Analog Zoom Demand Zoom Mode Function ON/OFF Switch

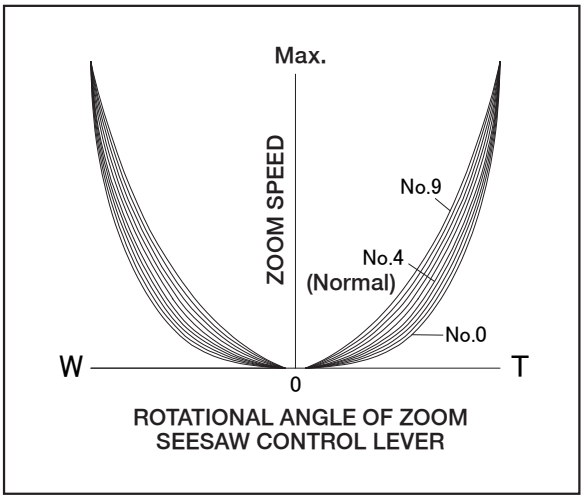
In a zoom operation with an analog zoom demand control unit, the zoom mode function (function of selecting the characteristics of "zoom speed vs zoom control signal") can be switched to ON and OFF.

④ Focus Mode ON/OFF Switch

When using a digital focus demand control unit to operate the focus, this switch is used to perform fine adjustment in the intermediate focus area.Turning this switch ON enables fine adjustment in the intermediate focus area, regardless of the setting of the focus mode select switch of the digital focus demand control unit.
When it is turned OFF, the setting of the focus mode select switch of the digital focus demand control unit is used.

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.



■ TABLE OF SWITCH FUNCTIONS

The functions of switches (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.

◎ 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

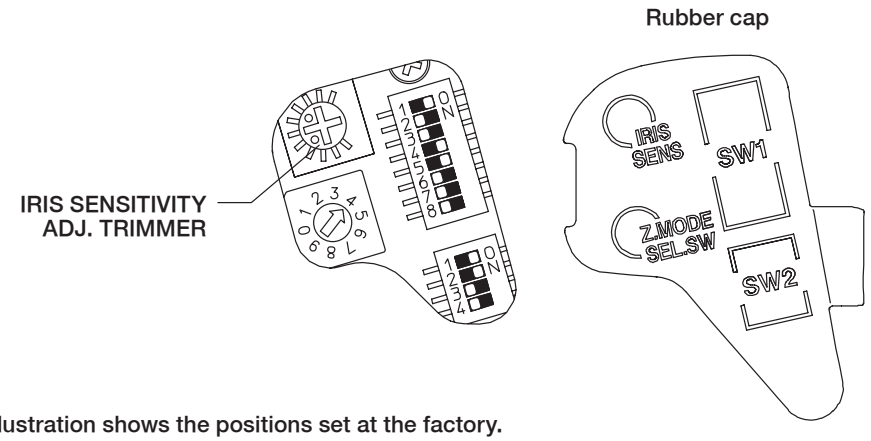
Settings of Function & Mode Select Switches	Function of Iris Mode Select Switch
SW1- ⑦	
Iris A-M Position Change	
OFF	A（Auto）is hand side, M（Manual）is Lens Side. （Standard position set at the factory.）
ON	M（Manual）is hand side, A（Auto）is lens side. （Put the mode indication label enclosed with lens.）

MEMO

12. 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.



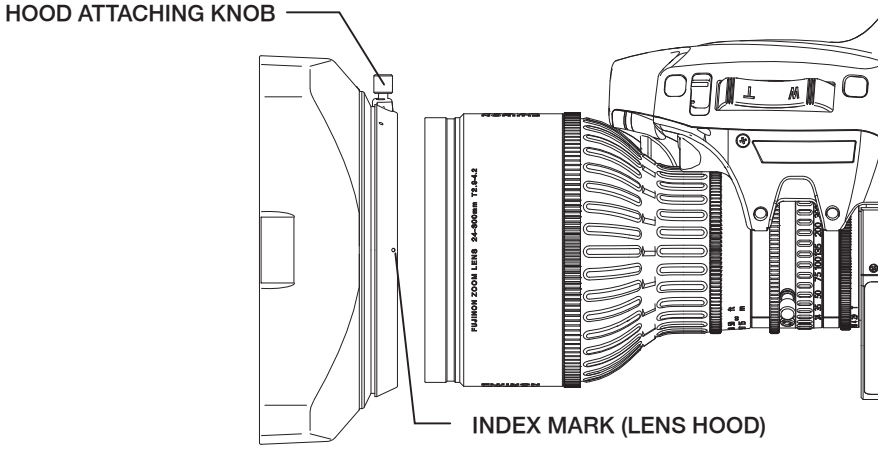
The illustration shows the positions set at the factory.

■ 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.

MEMO

13.DETACHING/ATTACHING LENS HOOD



13.1 DETACHING

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

13.2 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. Tighten the hood attaching knob to secure the lens hood.

MEMO

14. MAINTENANCE

14.1 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.

14.2 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.

14.3 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.

14.4 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.

14.5 INSPECTION

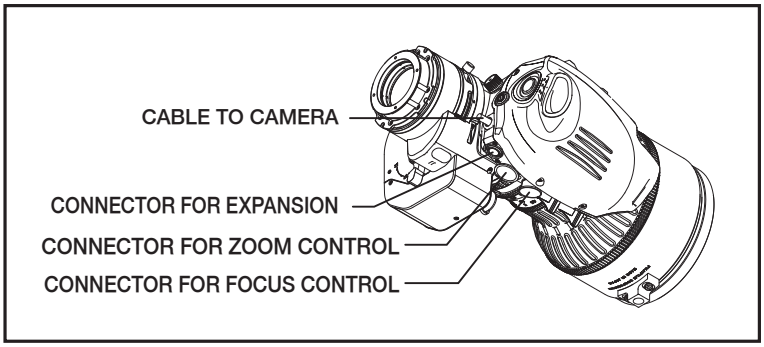
If an abnormality occurs on the lens, contact the sales agent from which you purchased the lens.
To maintain the high performance for a long term for use, we recommend that a periodic inspection is conducted at least once a year.

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

MEMO

15. 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	0V
3	COM+V	(7.5V DC)
4	COM	(5.0V DC)
5	COM-V	(2.5V DC)
6	FOCUS DEMAND DETECT	(ANALOG DEMAND=+12V, 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	0V
3	COM+V	(7.5V DC)
4	COM	(5.0V DC)
5	COM-V	(2.5V DC)
6	ZOOM DEMAND DETECT	(ANALOG DEMAND=OPEN, 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)

*1 Don't connect anything.

	SIGNAL	
1	RESERVED	*1
2	GND	0V
3	TxD	(RS-232C)
4	+5V	(1kΩ)
5	DTR	(RS-232C)
6	DSR	(RS-232C)
7	RxD	(RS-232C)
8	IRIS(A)	
9	IRIS(B)	
10 ～ 13	RESERVED	*1
14	EXTENDER ANSWER	× 2=L (<0.5V)
15	RESERVED	*1
16	ZOOM(A)	
17	ZOOM(B)	
18	FOCUS(A)	
19	FOCUS(B)	
20	RESERVED	*1

■ CABLE TO CAMERA
SN-10-12P（SAM WOO）

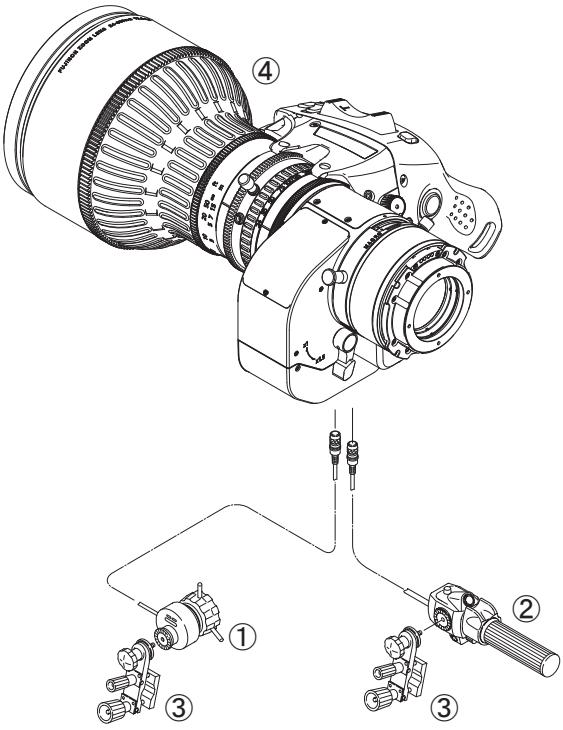
	SIGNAL	
1	RESERVED	
2	RESERVED	
3	GND	0V
4	RESERVED	
5	RESERVED	
6	+V	+10V～+17V DC
7	RESERVED	
8	RESERVED	
9	RESERVED	
10	RESERVED	
11	RESERVED	
12	RESERVED	

16. OPTIONAL ACCESSORIES

16.1 All Servo System–1 (Digital Focus,Digital Zoom)

	ACCESSORY NAME	MODEL	REMARKS	
①	Focus Position Demand Unit	EPD-41A-D01	Control unit for focus operation.	(Operation angle of the knob is one turn.)
		EPD-41A-D02		(Operation angle of the knob is two turns.)
②	Zoom Rate Demand Unit	ERD-40A-D01	Control unit for zoom operation and preset operation.	
③	Mounting Clamp	MCA-37	Used with ERD,EPD for their installation.	
④	Lens			

Configuration All Servo System – 1

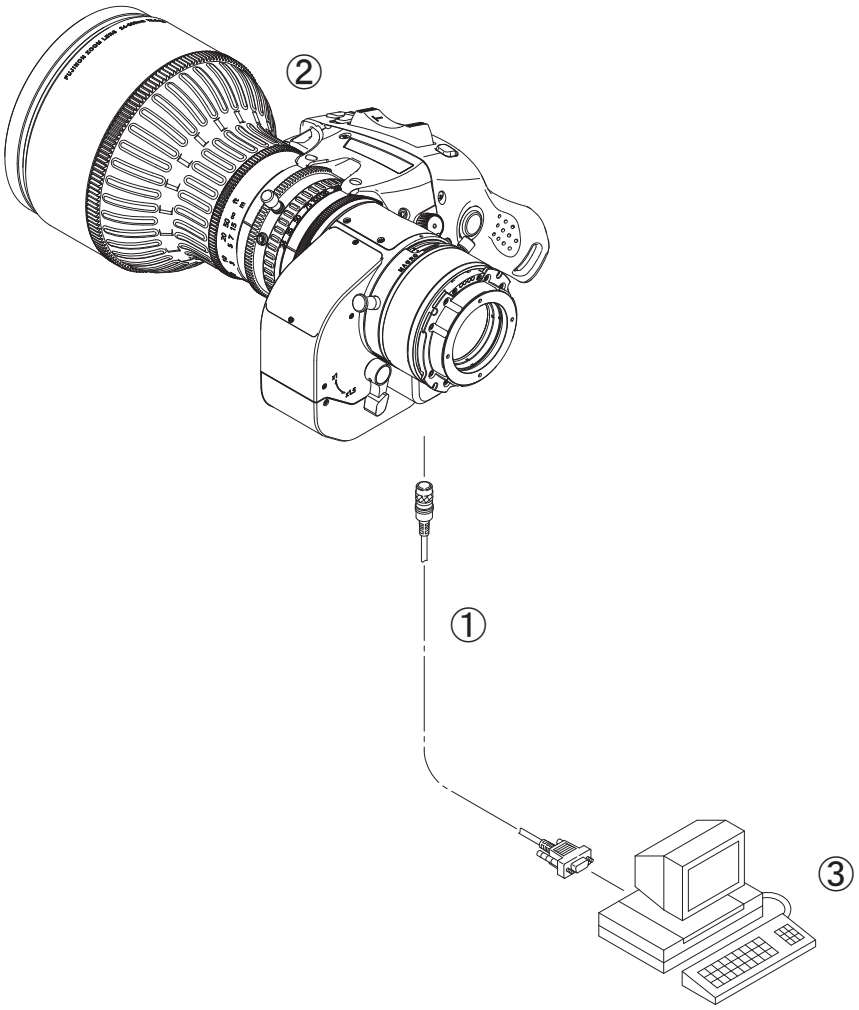


Note : The speed of the zoom achieved by operating the ZOOM RATE DEMAND UNIT is the speed that reflects both the setting established for the zoom maximum speed control knob of the drive unit and the setting established for the Speed Control Knob of the ZOOM RATE DEMAND UNIT.Depending on the setting established for the zoom maximum speed control knob, the operation time of the servo may be longer than the value given in the specifications.For further details concerning the speed control knob of the ZOOM RATE DEMAND UNIT, refer to the operation manual of the ZOOM RATE DEMAND UNIT.

16.2 All Servo System—2 (Control by Personal Computer)

	ACCESSORY NAME	MODEL	REMARKS
①	EXTENSION CABLE	SA-206D-005	Required when a personal computer is used to control the iris, focus and zoom of the lens.
②	Lens		
③	Personal Computer		

Configuration All Servo System – 2



17. SPECIFICATIONS

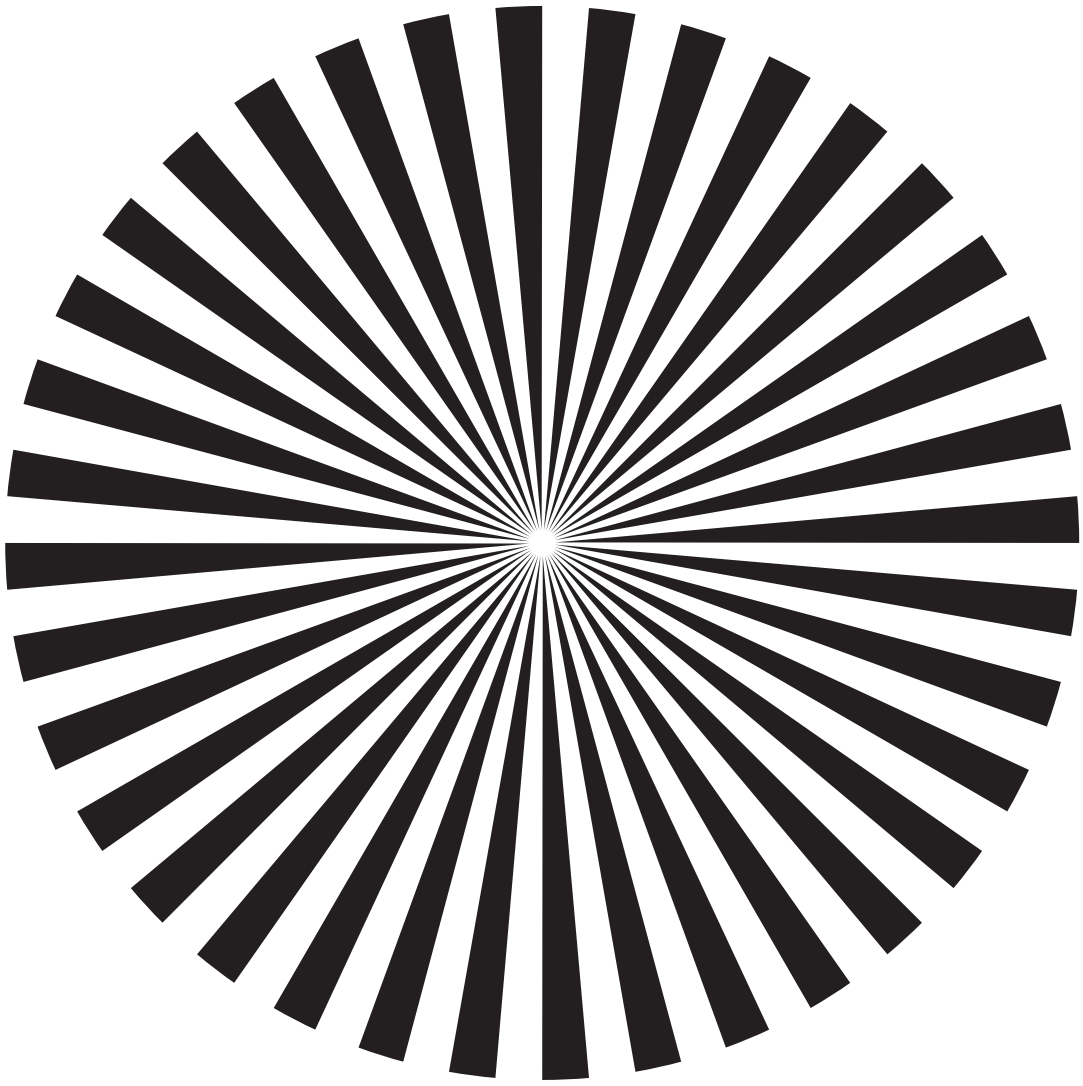
TIEM \ MODEL		HZK24-300mm			
Application		Camera with super 35mm sensor		Camera with 35mm full-size equivalent sensor	
Image Format		Diagonal φ28.55mm		Diagonal φ41.3mm	
Focal Length		24～300mm [36～450mm]*1		＜36～450mm＞*2	
Zoom Ratio		12.5×			
Extender / expander magnification ratio		1.5×			
Maximum Photometric Aperture (T No.)		T2.9 (24～207mm) ～ T4.2 (300mm) [T4.35 (36～310mm) ～T6.3 (450mm)]*1		＜T4.35 (36～310mm) ～ T6.3 (450mm) ＞*2	
Maximum Relative Aperture (F No.)		F2.72 (24～207mm) ～F3.94 (300mm) [F4.09 (36～310mm) ～F5.92 (450mm)]*1		＜F4.09 (36～310mm) ～ F5.92 (450mm) ＞*2	
Iris Range		T2.9～T22,close		<T4.35～T33,close>*2	
Flange Focal Length (IN AIR)		52mm			
Minimum Object Distance (from Focal Plane)		1.2m (0.57m in Macro Operation)		＜1.2m＞*2 ＜0.74m in Macro Operation＞*2	
Field Angle (H×V)	WIDE	24.88 ×14.00mm	54.8° ×32.5° [38.1° ×22.0°]*1	36.00 ×20.25mm	＜53.1° ×31.4°＞*2
	TELE		4.7° ×2.7° [3.2° ×1.8°]*1		＜4.6° ×2.6°＞*2
Object Area at Minimum Object Distance (H×V)	WIDE		823×463mm [570×321mm]*1		＜821×462mm＞*2
	TELE		69×39mm [47×26mm]*1		＜68×38mm＞*2
Lens front diameter		φ114mm			
Filter Diameter		M111×0.75 (Lens package) M127 × 0.75 (hood attached)			
Iris Control		Servo or Manual (OPERATION ANGLE: 72.2°)			
Zoom Control		Servo(Approx. 0.7～70 sec/Full travel) or Manual (OPERATION ANGLE: 90°)			
Focus Control		Manual (Including Motor for Servo Control) (OPERATION ANGLE: 144.5°)			
Mount		PL Mount (/ i Technology compatible *3)			
Input Voltage	Mount	DC5V～25V			
	12-Pin Cable	DC10～17V			
Current Consumption (Approx.) (at 12V DC)	Quiescent	180mA or less			
	Maximum	920mA or less			
Mass (Approx. , without Lens Hood)		2.95kg			

*1 The values in the brackets ([ ]) are given when the 1.5× range extender is used.
*2 The values in the brackets (< >) are given when the 1.5× range expander is used.
*3 / i is a trademark or registered trademark of Cooke Optics Limited.

MODEL / TIEM		HZK14-100mm			
Application		Camera with super 35mm sensor		Camera with 35mm full-size equivalent sensor	
Image Format		Diagonal φ28.55mm		Diagonal φ41.3mm	
Focal Length		14～100mm [21～150mm]*1		＜21～150mm＞*2	
Zoom Ratio		7.1×			
Extender / expander magnification ratio		1.5×			
Maximum Photometric Aperture (T No.)		T2.9 (14～75mm) ～ T3.9 (100mm) [T4.35 (21～111mm) ～T5.85 (150mm)]*1		＜T4.35 (21～111mm) ～T5.85 (150mm) ＞*2	
Maximum Relative Aperture (F No.)		F2.71 (14～75mm) ～F3.64 (100mm) [F4.06 (21～111mm) ～F5.47 (150mm)]*1		＜F4.06 (21～111mm) ～F5.47 (150mm) ＞*2	
Iris Range		T2.9～T22,close		<T4.35～T33,close>*2	
Flange Focal Length (IN AIR)		52mm			
Minimum Object Distance (from Focal Plane)		0.6m (0.39m in Macro Operation)		＜0.6m＞*2 ＜0.39m in Macro Operation＞*2	
Field Angle (H×V)	WIDE	24.88 ×14.00mm	83.2° ×53.1° [61.3° ×36.9°]*1	36.00 ×20.25mm	＜81.2° ×51.5° ＞*2
	TELE		14.2° ×8.0° [9.5° ×5.3°]*1		＜13.7° ×7.7° ＞*2
Object Area at Minimum Object Distance (H×V)	WIDE		595×323mm [395×217mm]*1		＜583×318mm＞*2
	TELE		79×45mm [54×31mm]*1		＜78×45mm＞*2
Lens front diameter		φ114mm			
Filter Diameter		M111×0.75 (Lens package) M127 × 0.75 (hood attached)			
Iris Control		Servo or Manual (OPERATION ANGLE: 72.2°)			
Zoom Control		Servo(Approx. 0.7～70 sec/Full travel) or Manual (OPERATION ANGLE: 90°)			
Focus Control		Manual (Including Motor for Servo Control) (OPERATION ANGLE: 144.5°)			
Mount		PL Mount (/ i Technology compatible *3)			
Input Voltage	Mount	DC5V～25V			
	12-Pin Cable	DC10～17V			
Current Consumption (Approx.) (at 12V DC)	Quiescent	180mA or less			
	Maximum	920mA or less			
Mass (Approx. , without Lens Hood)		2.54kg			

*1 The values in the brackets ([ ]) are given when the 1.5× range extender is used.
*2 The values in the brackets (< >) are given when the 1.5× range expander is used.
*3 / i is a trademark or registered trademark of Cooke Optics Limited.

切取線 CUT LINE 切开线



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