FUJIFILM

FUJINON

FUJINON TV LENS
富士能电视镜头

UA46×13.5 BERD-U1
UA46×13.5 BERD-G1

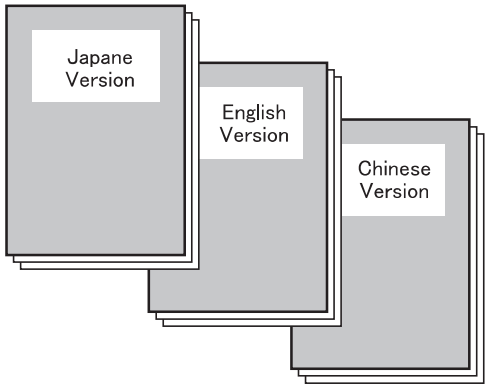
取扱説明書
Operation Manual
使用手册

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

BB00046471-300
LP771A-U1G1 3108

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-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.



consequences to the environment and human health, which could otherwise be caused by inappropriate waste handling of this product.

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.

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.

MEMO

CONTENTS

1 TABLE OF CONTENTS 1
2 GENERAL DESCRIPTION 2
3 INSTALLATION ONTO CAMERA 2
4 ADJUSTMENT OF FLANGE FOCAL LENGTH 3
5 IRIS OPERATION 5
6 FOCUS OPERATION 6
7 ZOOM OPERATION 7
7.1 MANUAL OPERATION 7
7.2 QUICKFRAME OPERATION (OPERATION BY ZOOM SEESAW CONTROL LEVER) 8
7.3 QUICKZOOM OPERATION 9
7.4 AUTO CRUISING ZOOM OPERATION 10
7.5 ZOOM LIMIT OPERATION 11
8 MACRO OPERATION 13
9 OPTICAL STABLIZER 14
10 OTHER FUNCTIONS 16
11 ABOUT FUNCTION & MODE SELECT SWITCHES 18
12 IRIS ADJUSTMENT 23
13 DETACHING/ATTACHING LENS HOOD 24
14 MAINTENANCE 25
15 PIN ASSIGNMENT OF CONNECTORS 26
16 OPTIONAL ACCESSORIES 28
16.1 FOCUS MANUAL SYSTEM 28
16.2 ALL SERVO SYSTEM 1 (Digital Focus , Digital zoom) 29
16.3 ALL SERVO SYSTEM 2 (Remote Control by Personal Computer) 30
17 SPECIFICATIONS 31

■ NAMES OF PARTS

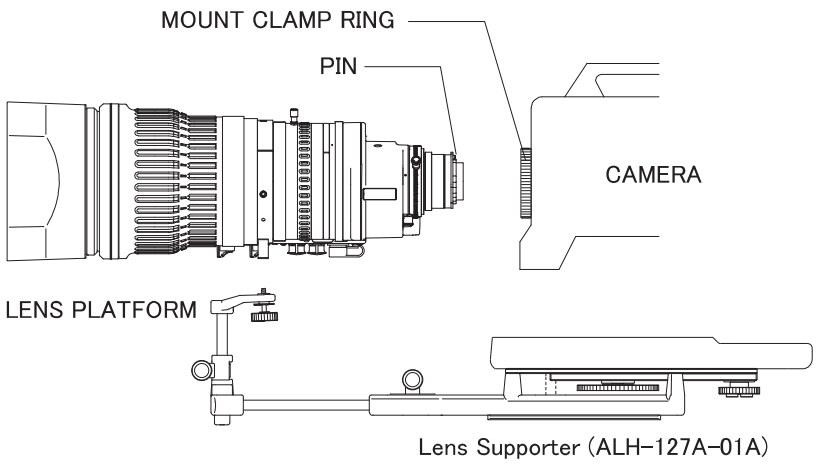
Fig.1 OUTLINE DRAWING UA46 × 13.5 BERD-U1
Fig.2 OUTLINE DRAWING UA46 × 13.5 BERD-G1
SIEMENS STAR CHART

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

2. GENERAL DESCRIPTION

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

3. INSTALLATION ONTO CAMERA



■ INSTALLATION ONTO CAMERA

To install this lens onto the camera, use the lens supporter (ALH-127A-01A).

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. Mount the lens supporter on a tripod.
b. Mount the camera on the lens supporter.
c. While holding the lens with your hand, align the camera mount with the lens mount and fix them with the mount clamping ring.
   In this step, lightly tighten the mount clamping ring (do not tighten it firmly yet).
d. While continuing to hold the lens with your hand, adjust the position of the lens platform of the lens supporter.
   Make sure to adjust the position of the lens platform without applying excessive force on the mount clamping ring.
e. After firmly fixing the lens platform, tighten the mount clamping ring.
f. Connect the cable of the lens to the connector, provided for the lens, on the camera.

For details about the attachment method, refer to the operation manual of your lens supporter.

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).

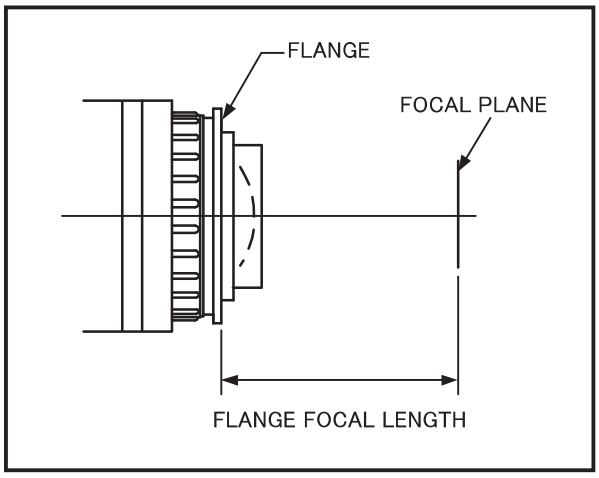
4. ADJUSTMENT OF FLANGE FOCAL LENGTH

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

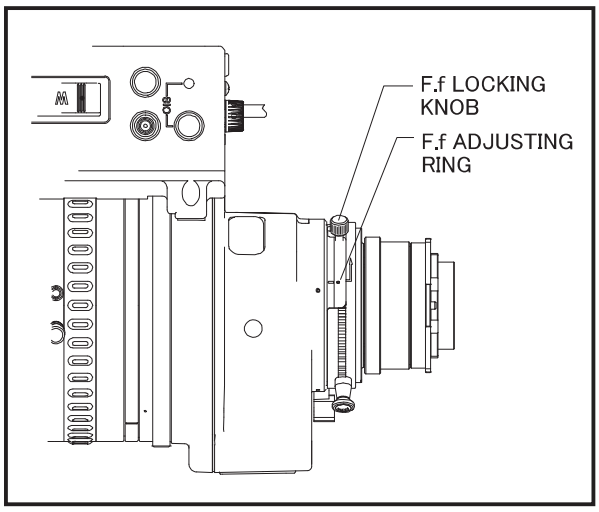
Object : Use the Siemens Star (the chart made up of radial black and white lines) at the end of this manual.
Distance of Object : About 10 meters
Diaphragm : Open or as near to open as possible.

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.



■ 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 6 to 8).



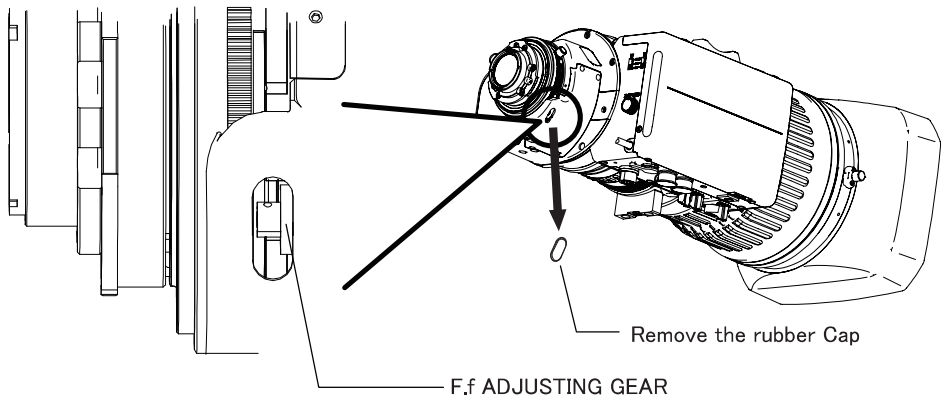
a. Loosen the F.f locking knob by rotating it counterclockwise.
b. Operate the zoom to set it to the wide end.
c. Rotate the F.f adjusting ring using the F.f locking knob to focus on the Siemens Star located approximately 10 meters away. The position where the radial black and white lines become sharpest 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.

4.3 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.

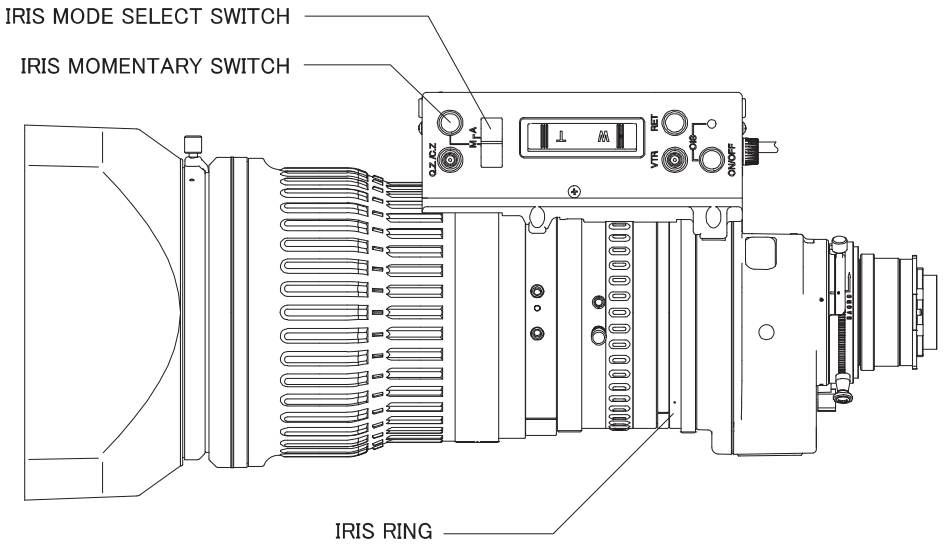
If this adjustment is to be performed, replace the operation in step [c.] above with the operation involved in rotating the gear used for the flange-back adjustment, and proceed by performing steps [b. - g.].

After performing the adjustments, install the cover securely.



MEMO

5. 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."

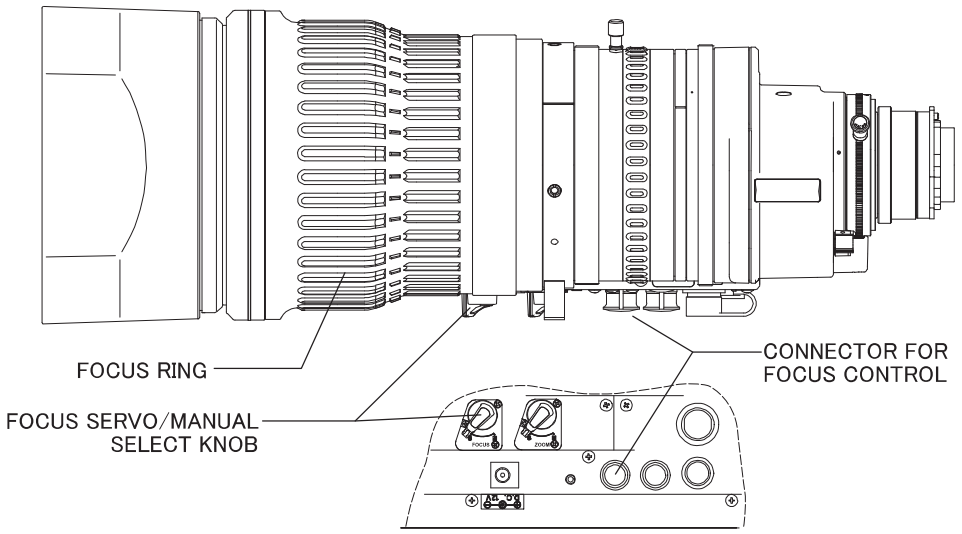
b. Rotate the iris ring by hand to adjust the iris. From the camera side, clockwise rotation of the ring causes the iris to move toward the closed side and counterclockwise rotation toward the open side.

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 19) 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 3. 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.

6. FOCUS OPERATION



6.1 Manual Operation Using the Focus Ring

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

6.2 Manual Operation Using the Focus Grip

When the focus manual module and focus grip are attached to the lens, you can perform the operation using the focus grip.
Connect the focus ring of the lens and focus grip using the required hardware via the focus manual module and then set the focus servo/manual select knob to "M."
When the focus grip is rotated clockwise, the lens focuses on an object on the near side. When rotated counter-clockwise, the lens focuses on an object on the infinity side.

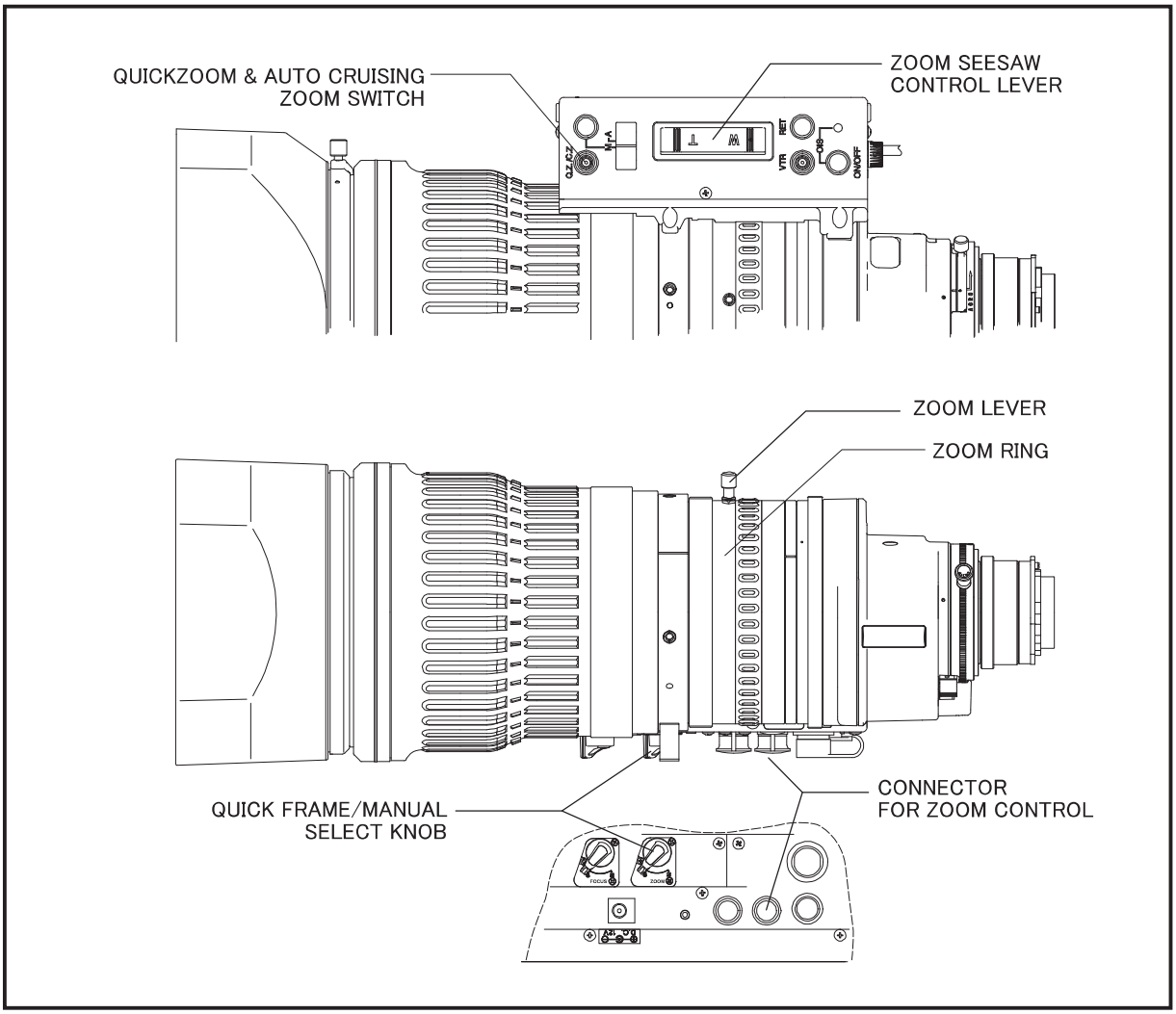
6.3 Operation Using the Focus Position Demand Unit

Remote control operation is also available if using optional servo accessories (e.g. a controller such as the focus position demand unit). Set the focus servo/manual select knob to "S," when using a servo control accessory.

Note. 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.

MEMO

7 ZOOM OPERATION



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

Page

7.1 Manual Operation 7
7.2 QuickFrame Function (Operation by Zoom Seesaw Control Lever) 8
7.3 QuikZoom Operation 9
7.4 Auto Cruising Zoom Operation 10
7.5 Zoom Limit Operation 11

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

7.1 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.)

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.

7.2 Operation by Zoom Seesaw Control Lever

Operation

a. Set the zoom servo/manual select knob to "S."

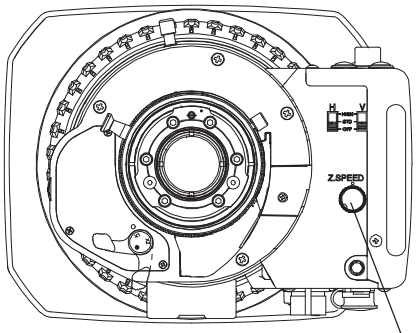
b. press T-side of the lever to zoom to the tele side, and the W-side to zoom to the wide side. For the speed control, adjust the strength to press the lever. Pressing the lever deeply makes the zoom speed faster, and shallowly makes slower.

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.

< Control of Zoom Maximum Speed >

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

Rear View



ZOOM MAXIMUM SPEED CONTROL KNOB

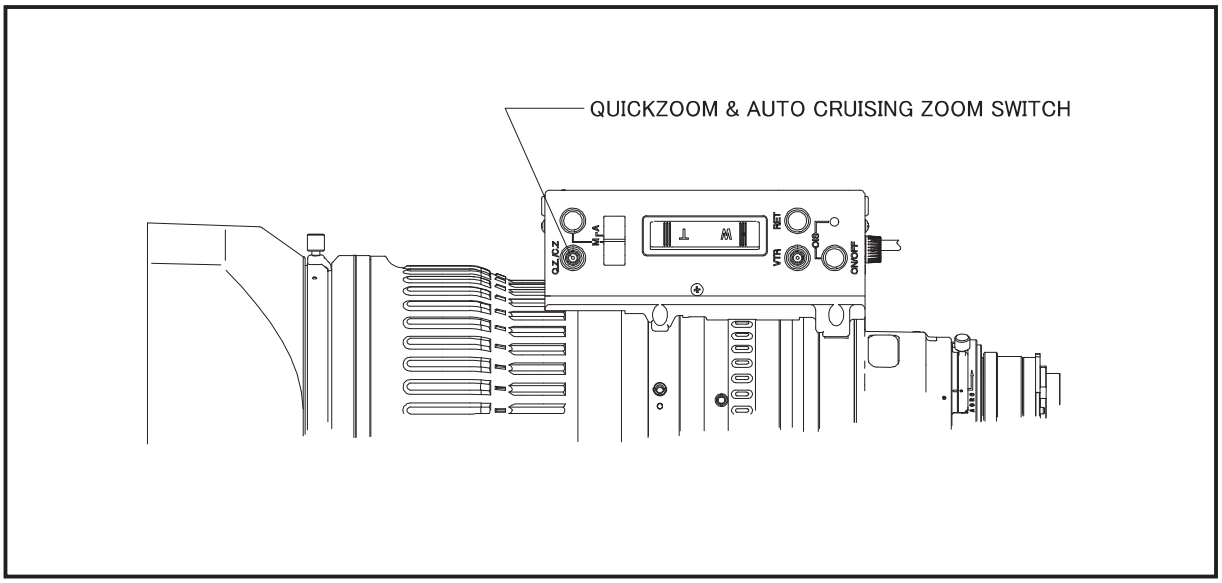
MEMO

7.3 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 position. In this case, the zoom may not reach the tele end.



Operation

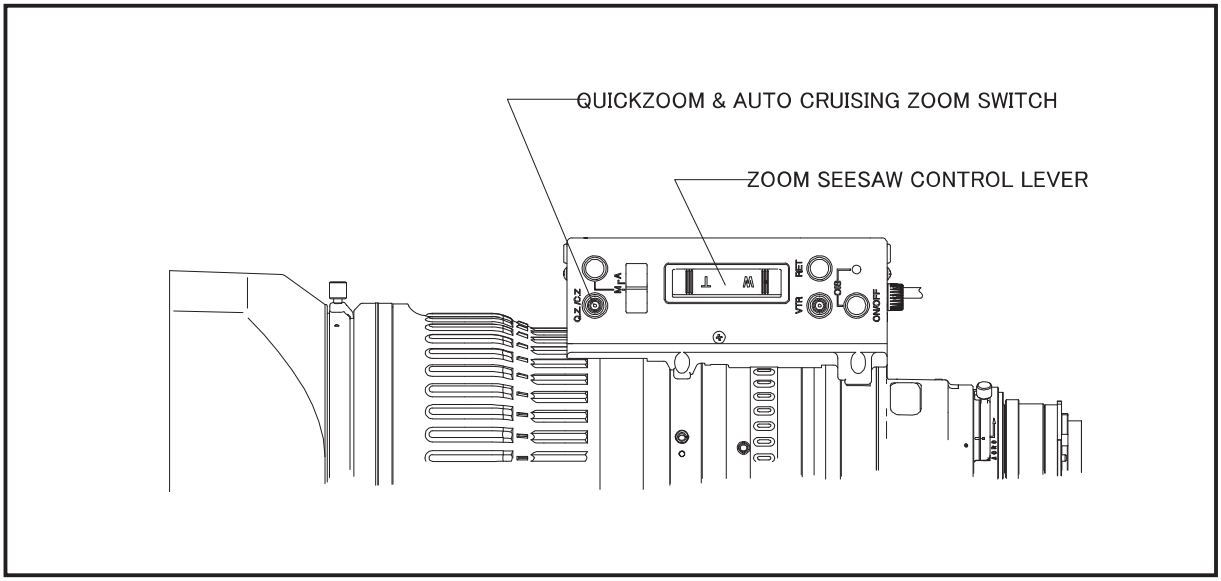
a. Set the zoom servo/manual select knob to "S."
b. Keep pressing the quickzoom & auto cruising zoom switch until the zoom reaches the tele end.
c. While pressing the quickzoom & auto cruising zoom switch, perform precise focusing or confirm the composition of the image in the extreme close-up shot.
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. By setting an appropriate switch in the area of "Function & Mode Select Switches" (see page 18), 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.

7.4 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 position. In this case, the zoom may not reach the tele end.



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 18), the return switch and the VTR switch can be used also as a quickzoom & auto cruising zoom switch.

Releasing

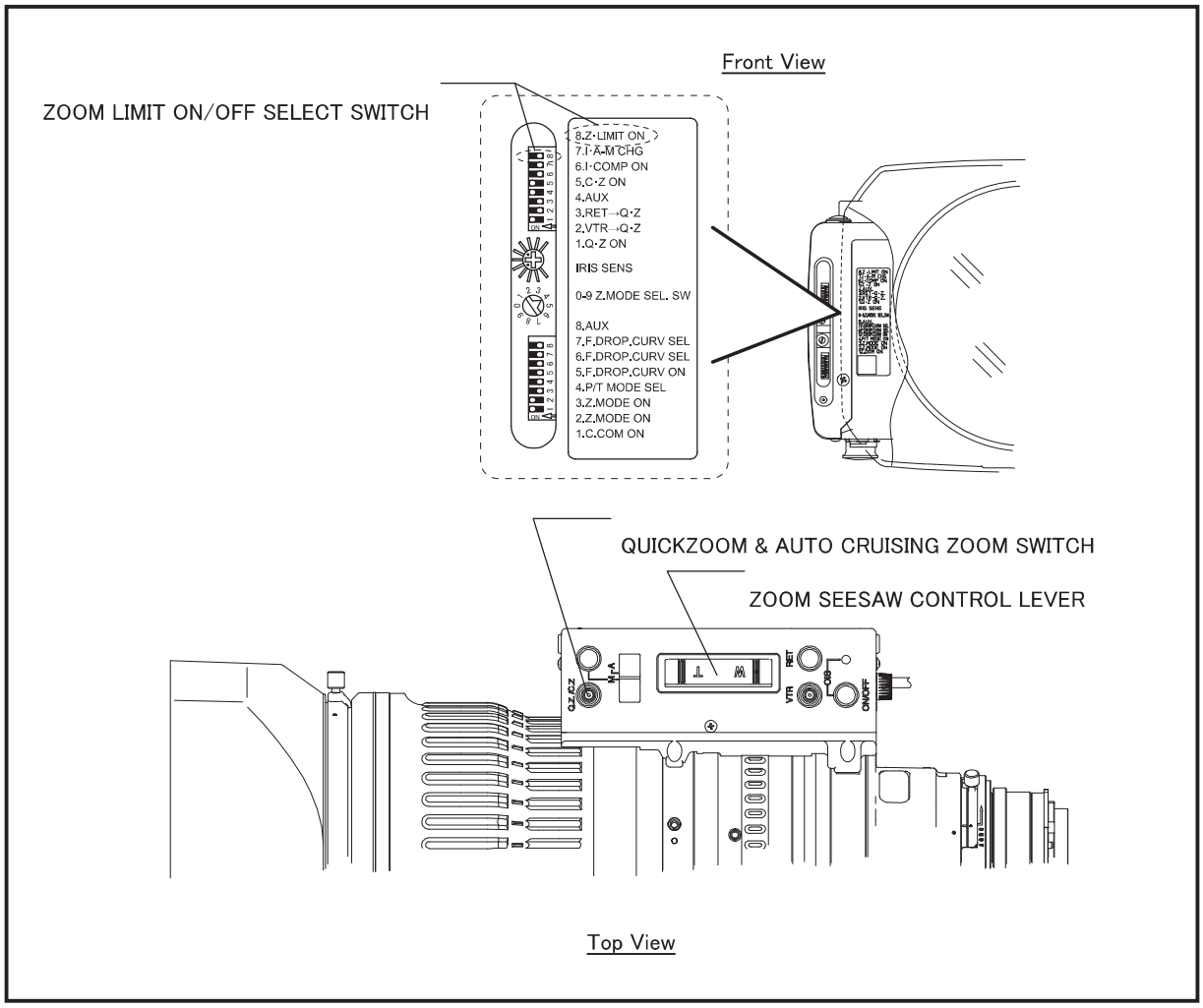
There are three ways to release the auto cruising zoom operation mode.

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.

7.5 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.

Note. While the zoom limit function is being used, the preset function cannot be used.



MEMO

7.5.1 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 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. (refer to Note 3)
d. Press "T" side of the zoom seesaw control lever and the quickzoom & auto cruising zoom switch simultaneously for more than 3 seconds.
   — 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. (refer to Note 3)
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.

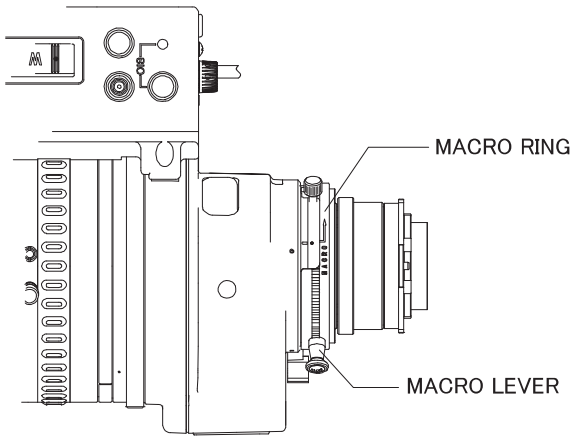
Note 1. Either side of the zoom limit positions can be set at first.
Note 2. The wide side zoom limit position cannot be set beyond the tele side zoom limit position toward the tele end. This is the same with the tele side.
However, the tele side and the wide side zoom limit positions can be set at the same position.
In this case, the zoom will not move even if the zoom seesaw control lever is operated.
Note 3. In re-setting the zoom limit positions, if it is required to set a limit position beyond the previously set zoom limit position, move the zoom by taking either way following.
・ Rotate the zoom ring in the manual operation.
・ Pressing the zoom limit switch on the side of the new zoom limit position to be set, operate the zoom in the servo operation.
Note 4. 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."

7.5.2 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 1. 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 2. 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.

8. MACRO OPERATION



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

8.1 Setting Method

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.

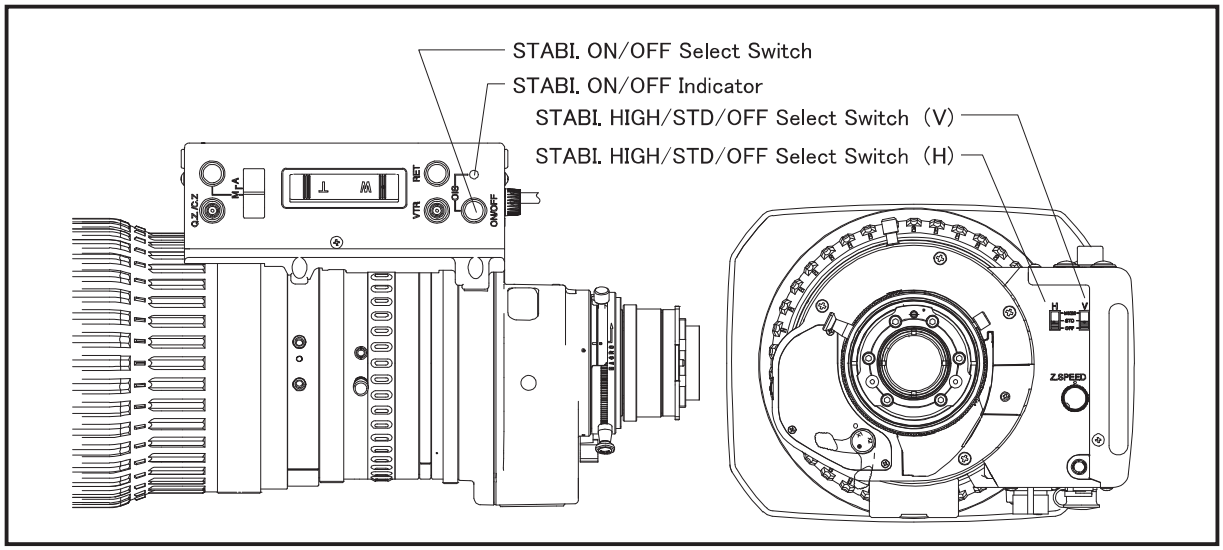
Note. It is also possible to shoot an object while the macro ring is in an intermediate position.
In this case, the values of the M.O.D. and the object area at M.O.D. are those of between a normal and a close-up shot.

8.2 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

9. OPTICAL STABILIZER



Using the optical stabilizer built in this lens, even in the strong wind or on an unsteady platform, stable images can be derived.

9.1 Operating Instruction

Press the stabi. ON/OFF select switch.

The ON and OFF states of the optical stabilizer alternate every time the switch is pressed.

When the optical stabilizer is in the ON state, the STABI. ON/OFF indicator will be lit and the optical stabilizer is activated.

When the optical stabilizer is in the OFF state, the STABI. ON/OFF indicator will go off and the lenses in the optical stabilizer mechanism will stop moving at the center of the optical axis.

If an optical stabilizer control unit (option) is linked to "connector for stabi. control," the ON/OFF select operation can be done remotely by a camera operator.

9.2 STABI. ON/OFF Select Switch

This switch turns the optical stabilizer ON or OFF.
The ON and OFF states of the optical stabilizer alternate every time the switch is pressed.

9.3 STABI. HIGH/STD/OFF Select Switch

The stabilizing characteristic of the optical stabilizer can be selected by means of this switch.
Set the stabilizing characteristic mode for horizontal (H) and vertical (V) directions separately.
The following stabilizing characteristic modes can be set for both H and V directions using this switch.

- STD In this mode, even in a panning operation, the image will be stabilized without an abnormal movement.
- HIGH In this mode, the image in a slower vibration will be stabilized more suitably than in the STD. mode.
- OFF The optical stabilizer will not work regardless of the setting of the STABI. ON/OFF select switch.

Note 1. When the optical stabilizer control unit is connected to the lens, the setting of the selection switch on the control unit has higher priority over the setting of the STABI. HIGH/STD/OFF select switch. Also, note that if the stabilizing characteristic select switch is not provided on the control unit connected to the lens, the stabilizing characteristic cannot be changed.

Note 2. Since the optical stabilizer of this product utilizes a large tilt-shift lens in order to maintain optical performance, the stabilizing performance may not be fully demonstrated due to mechanical vibrations of the stabilizer mechanism itself depending on the mounting condition of the lens. Be sure to use a tool or device such as a tripod with sufficient strength for attaching the lens.

Note 3. The STABI. ON/OFF indicator of this product will flash in the event of an error of the stabilizer mechanism. If the indicator flashes while the optical stabilizer is in use, operate the STABI. ON/OFF select switch or turn off the power supplied to the lens and turn it on again to restart the optical stabilizer. If the error recurs even after the optical stabilizer is restarted, re-examine the method used for installing the lens on the camera.

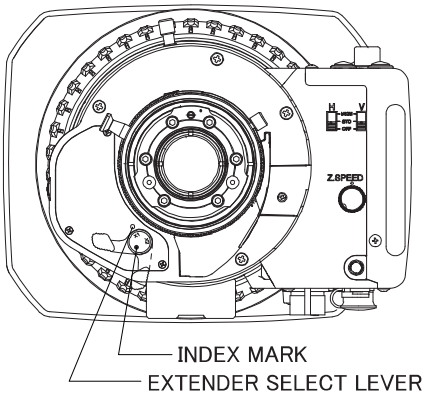
MEMO

10. OTHER FUNCTIONS

10.1 Extender Select Lever

(UA46x13.5BERD-U1)

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



10.2 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.

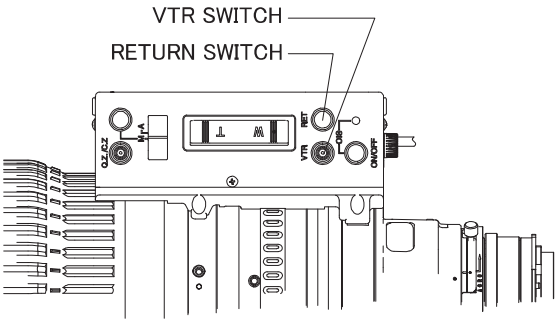
Note. If the setting of the function & mode select switches is properly arranged, this switch works as a quickzoom switch or a quickzoom & auto cruising zoom switch. (refer to page 18)

10.3 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 18)



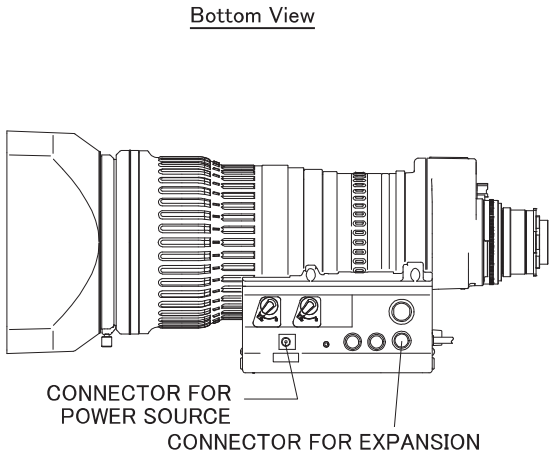
10.4 Connector for Expansion

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 of zoom and focus positions.)

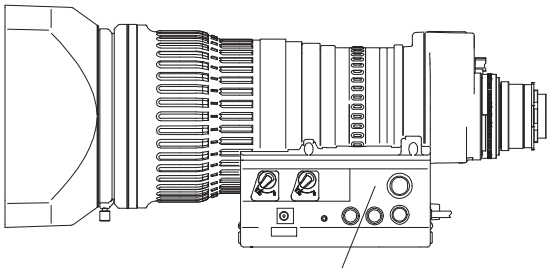
10.5 Connector for Power Source

This connector is used for supplying power to the lens.
If power supplied by the camera is insufficient, connect the external power source to this connector.



10.6 Connector for Exptender Control
(UA46x13.5BERD-G1)

To remotely operate the extender, connect the controller connector to this connector.

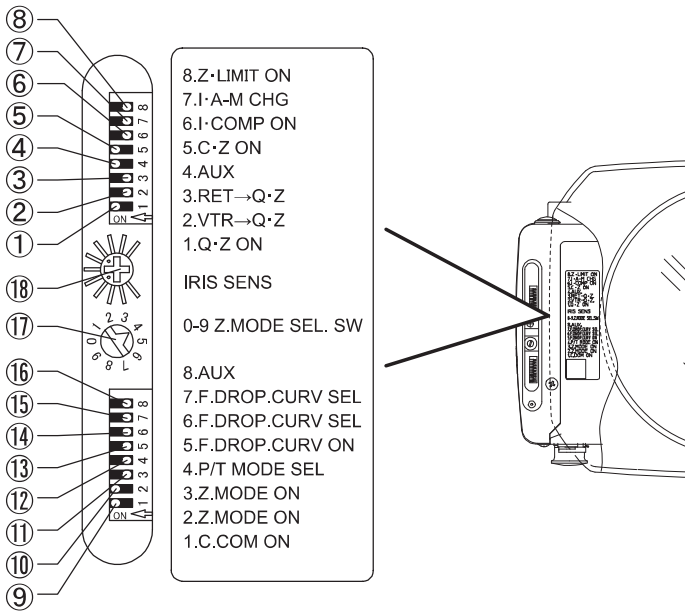


CONNECTOR FOR EXTENDER CONTROL
(UA46x13.5BERD-G1)

MEMO

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.



The illustration shows the positions set at the factory.

①	QUICKZOOM ON/OFF SWITCH	⑤	AUTO CRUISING ZOOM ON/OFF SWITCH
②	VTR → QUICKZOOM SELECT SWITCH	⑥	IRIS COMPENSATION ON/OFF SWITCH
③	RETURN → QUICKZOOM SELECT SWITCH	⑦	IRIS A-M POSITION CHANGE SWITCH
④	AUXILIARY SWITCH	⑧	ZOOM LIMIT ON/OFF SWITCH

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

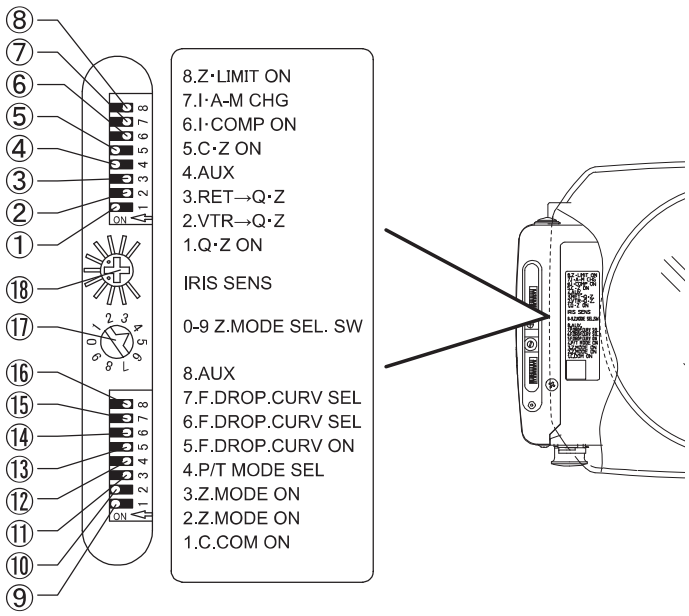
This switch changes the function of the VTR switch to that of the quickzoom switch.
(The function of the VTR switch incorporated in the zoom rate demand unit or the shot box linked to this lens is also changed to that of the quickzoom switch.)

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.



The illustration shows the positions set at the factory.

①	QUICKZOOM ON/OFF SWITCH		⑤	AUTO CRUISING ZOOM ON/OFF SWITCH
②	VTR → QUICKZOOM SELECT SWITCH		⑥	IRIS COMPENSATION ON/OFF SWITCH
③	RETURN → QUICKZOOM SELECT SWITCH		⑦	IRIS A-M POSITION CHANGE SWITCH
④	AUXILIARY 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 Compensation ON ／ OFF Switch

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

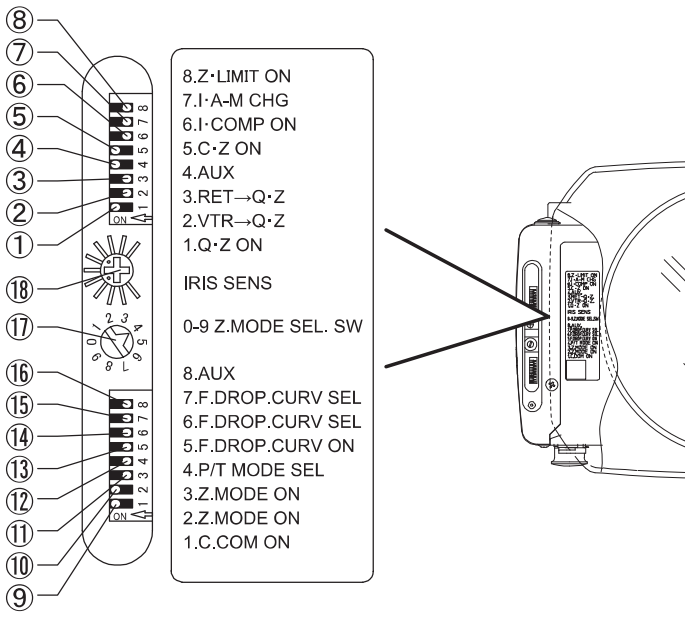
Note. In the iris remote mode, the image of the picture darkens when the extender is used.
The iris compensation function prevent this happening.

⑦ IRIS Auto — Manual 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 “7.5 Zoom Limit Operation”.



The illustration shows the positions set at the factory.

⑨	CAMERA COMMUNICATION ON/OFF SWITCH		⑬	F-DROP COMP ON/OFF SWITCH
⑩	ANALOG ZOOM DEMAND ZOOM MODE FUNCTION ON/OFF SWITCH		⑭	F-DROP CURVE SELECT SWITCH
⑪			⑮	
⑫	ROBOTIC, P/T MODE SELECT SWITCH		⑯	AUXILIARY SWITCH

⑨ 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.

⑩⑪

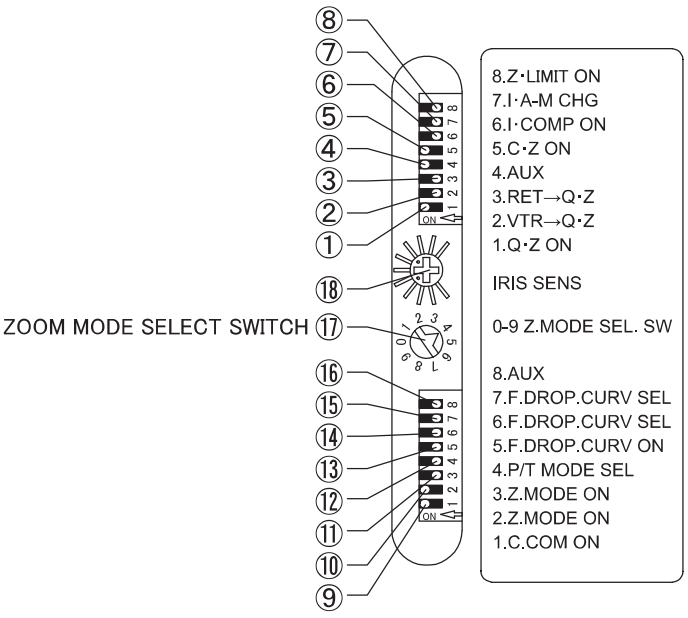
Analog Zoom Demand Zoom Mode Function ON/OFF Switch

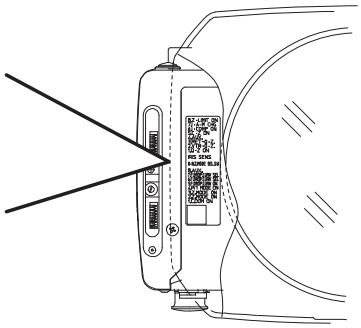
In a zoom operation with an analog zoom demand control unit, the zoom mode function (function of selecting the characteristics of "zoom speed vs zoom control signal") can be switched to ON and OFF.

Settings of Function & Mode Select Switches		Zoom Mode Function
⑩	⑪	
ON	ON	Valid (ON)
ON	OFF	Invalid (OFF)
OFF	ON	Valid (ON)
OFF	OFF	Invalid (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.

⑫ Robotic, P/T Mode Select Switch

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





The illustration shows the positions set at the factory.

⑨	CAMERA COMMUNICATION ON/OFF SWITCH		⑬	F-DROP COMP ON/OFF SWITCH
⑩	ANALOG ZOOM DEMAND ZOOM MODE FUNCTION ON/OFF SWITCH		⑭	F-DROP CURVE SELECT SWITCH
⑪			⑮	
⑫	ROBOTIC, P/T MODE SELECT SWITCH		⑯	AUXILIARY SWITCH

⑬ F-Drop compensation ON/OFF Switch

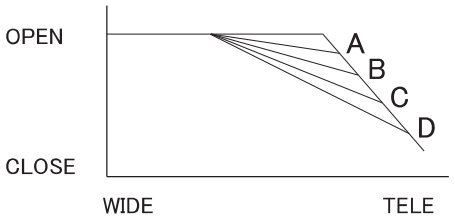
This switch changes the function for selecting the f-number's characteristics, which vary depending on the focal length, to enable (ON) or disable (OFF).

⑭⑮

F-Drop Curve Select Switch

This switch selects the f-number's characteristics, which vary depending on the focal length. You can select the characteristics from the four modes shown in the figure.

⑭	⑮	Characteristic
OFF	OFF	A
OFF	ON	B
ON	OFF	C
ON	ON	D

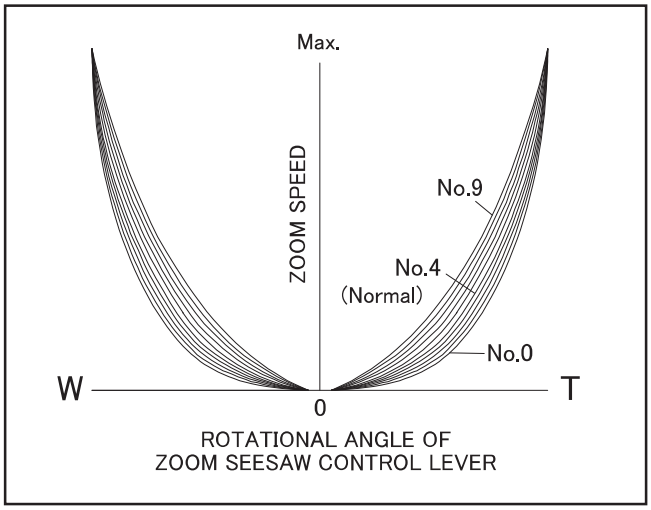


⑯ Auxiliary switch

An auxiliary switch.

⑰ 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 (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
③	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
②	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
①	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

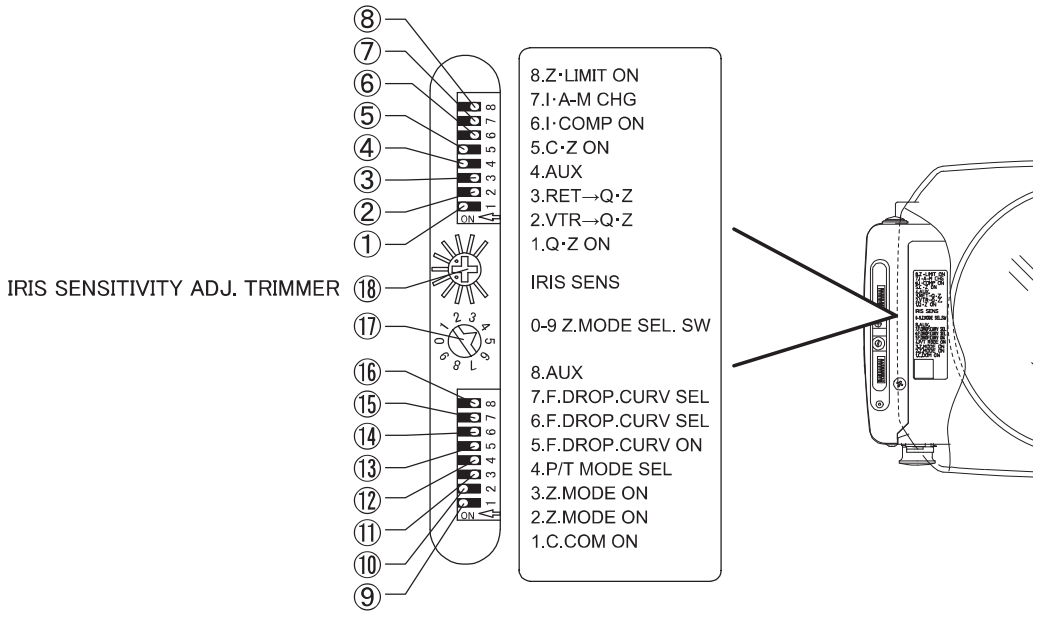
Settings of Function & Mode Select Switches	Function of Iris Mode Select Switch
⑦	
Iris A–M Position Change	
OFF	A (Auto) is hand side, M (Manual) is Lens Side. (Standard position set at the factory.)
ON	M (Manual) is hand side, A (Auto) is lens side. (Put the mode indication label enclosed with lens.)

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.

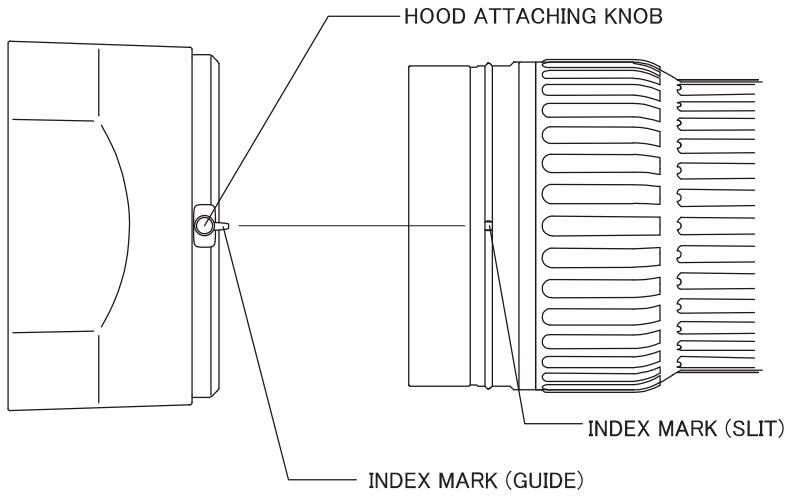
■ IRIS SENSITIVITY ADJUSTMENT

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. Align the guide on the hood with the slit on the lens.
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.

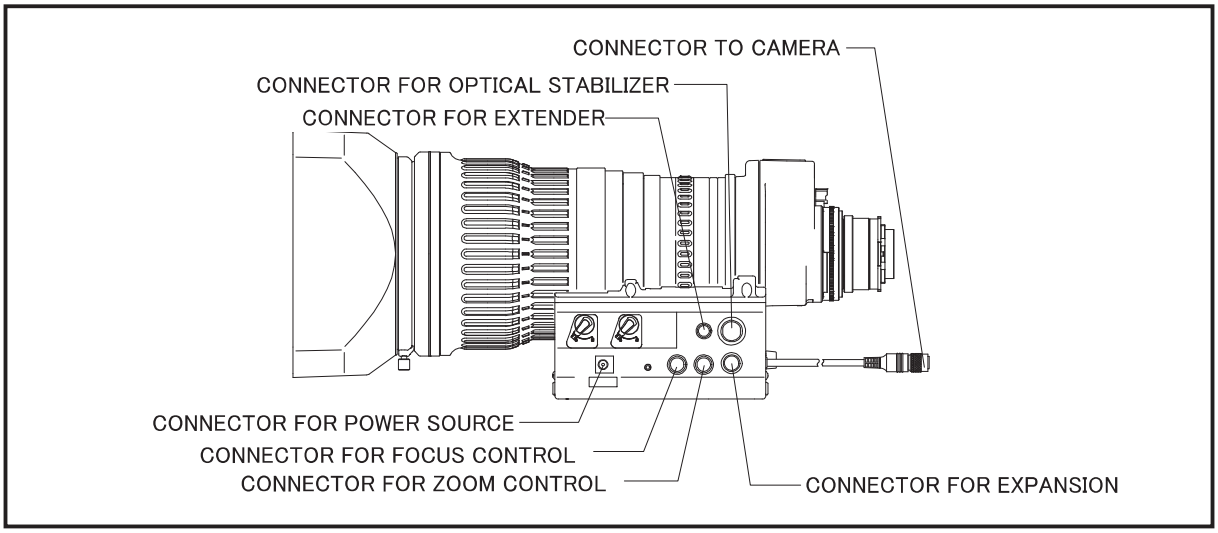
14.5 INSPECTION

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



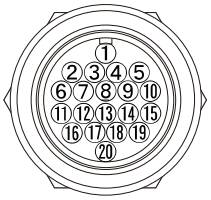
■ CONNECTOR FOR ZOOM CONTROL
HR10G-10R-12S (HIROSE)

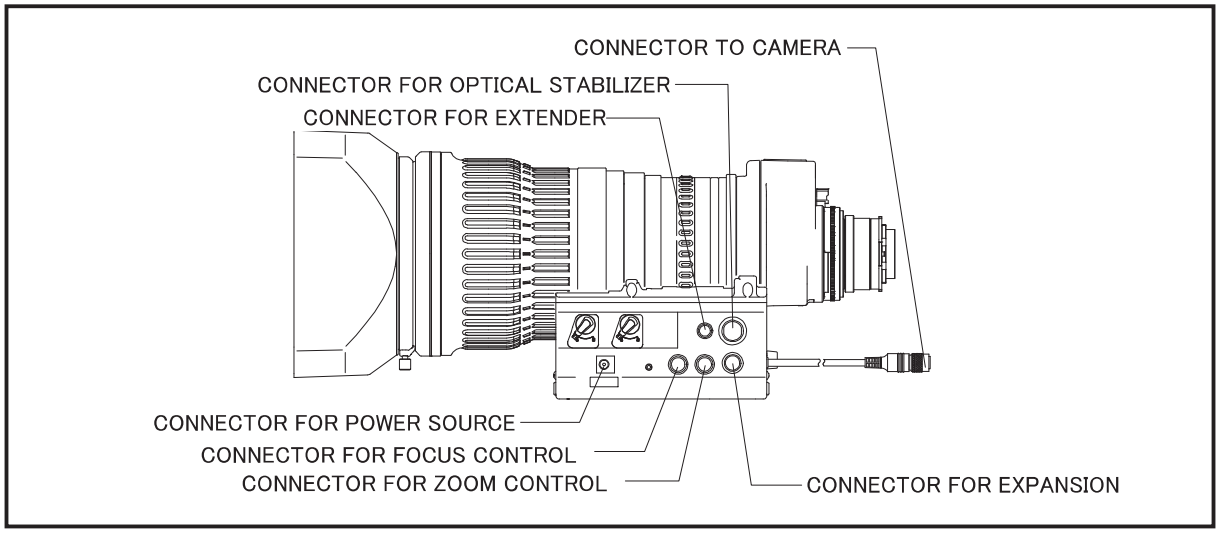
	SIGNAL
①	+V (+12VDC)
②	GND
③	COM+V(7.5V DC)
④	COM(5.0V DC)
⑤	COM-V(2.5V DC)
⑥	ZOOM DEMAND DETECT
⑦	ZOOM CONTROL
⑧	ZOOM POSITION
⑨	VTR SW
⑩	VTR SW COM
⑪	RET SW
⑫	RET SW COM



■ CONNECTOR FOR EXPANSION
HR25-9R-20S (HIROSE)

	SIGNAL
①	N.C.
②	GND
③	TxD
④	+5V
⑤	DTR
⑥	DSR
⑦	RxD
⑧	N.C.
⑨	N.C.
⑩	N.C.
⑪	N.C.
⑫	N.C.
⑬	N.C.
⑭	EXTENDER ANSWER
⑮	N.C.
⑯	ZOOM(A).
⑰	ZOOM(B)
⑱	FOCUS(A)
⑲	FOCUS(B)
⑳	N.C.





■ CONNECTOR TO CAMERA
HR10A-10P-12P (HIROSE)

	SIGNAL
①	RET SW
②	VTR SW
③	GND (0V)
④	IRIS ENF AUTO
⑤	IRIS CONT SIG
⑥	+V (+12VDC)
⑦	IRIS POSITION
⑧	IRIS A/R
⑨	EXT SIG
⑩	ZOOM POSITION
⑪	TxD
⑫	RxD



■ CONNECTOR FOR EXTENDER (for UA46**-G1)
HR10A-7R-5S (HIROSE)

	SIGNAL
①	+V (+12VDC)
②	GND
③	EXTENDER CONTROL *
④	N.C.
⑤	N.C.



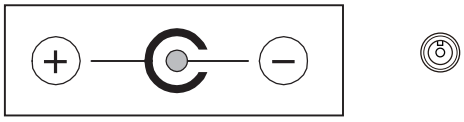
* ON(×2)=+2.5V~+V / OFF(×1)=0V or Open

■ CONNECTOR FOR OPTICAL STABILIZER
R03-R8F3 (TAJIMI)

	SIGNAL
A	CONTROLLER CHECK
B	MODE SELECT
C	N.C.
D	V+H/V
E	ON/OFF
F	GND
G	INDICATOR (ON)
H	+V (+12VDC)



■ CONNECTOR FOR POWER SOURCE
01J0126 (WAKA)



16. OPTIONAL ACCESSORIES

Use FUJINON original accessories, otherwise inherent performance of the lens may not be derived.

Note1. The accessories shown in the following tables are of standard type. The ones with special specifications are not included.

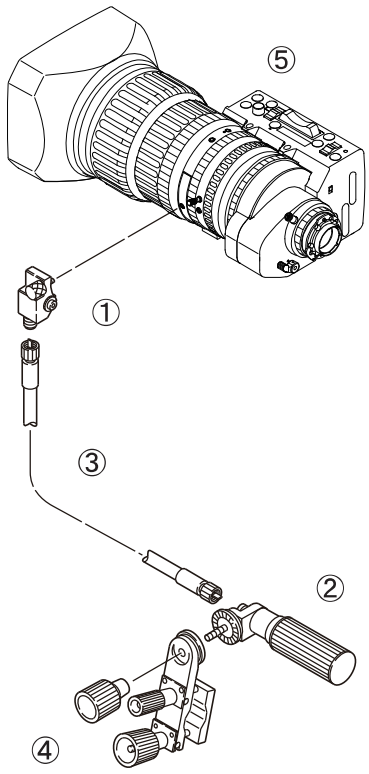
Note2. The lens shown in the illustrations in this manual may differ from their actual shapes.

16.1 Focus Manual System

	ACCESSORY NAME	MODEL	REMARKS
①	Focus Manual Module	FMM-3D	Manual module for driving focus.
②	Focus Grip	CFH-11	Grip for focus manual operation.
③	Flexible Cable	CFC-12-990	For mechanical connection either between FMM and CFH.
④	Mounting Clamp	MCA-7	Used with CFH for its installation.
⑤	Lens		

Note. The focus manual module FMM-3C cannot be used for this product. Forcibly attaching the focus manual module to the lens may damage the lens.

Configuration	Focus Manual System

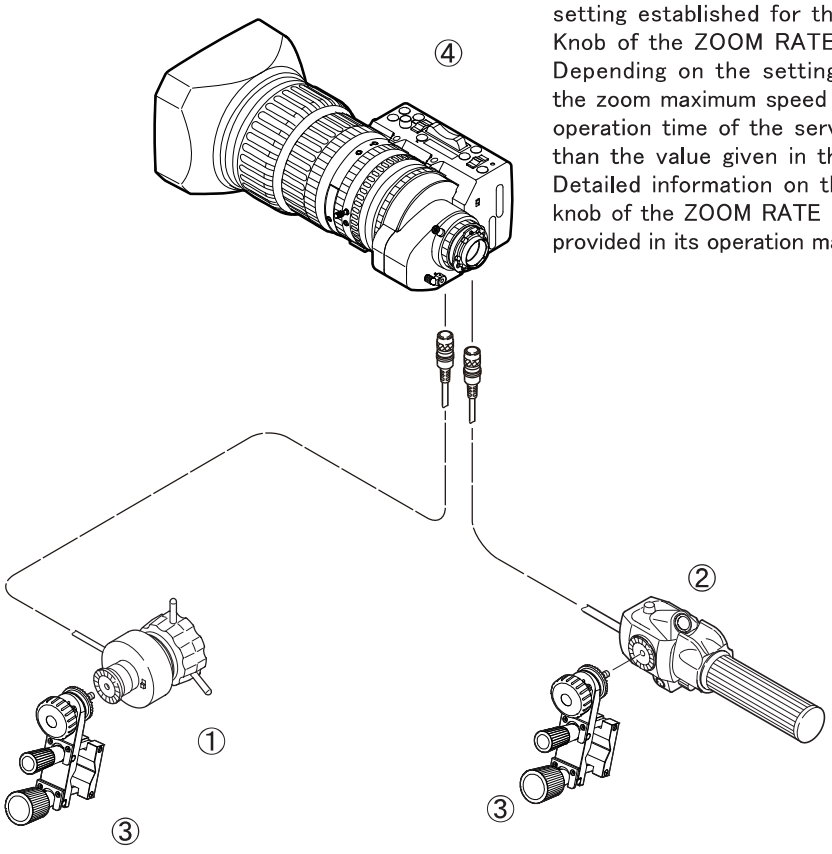


16.2 All Servo System – 1

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

Configuration — All Servo System – 1

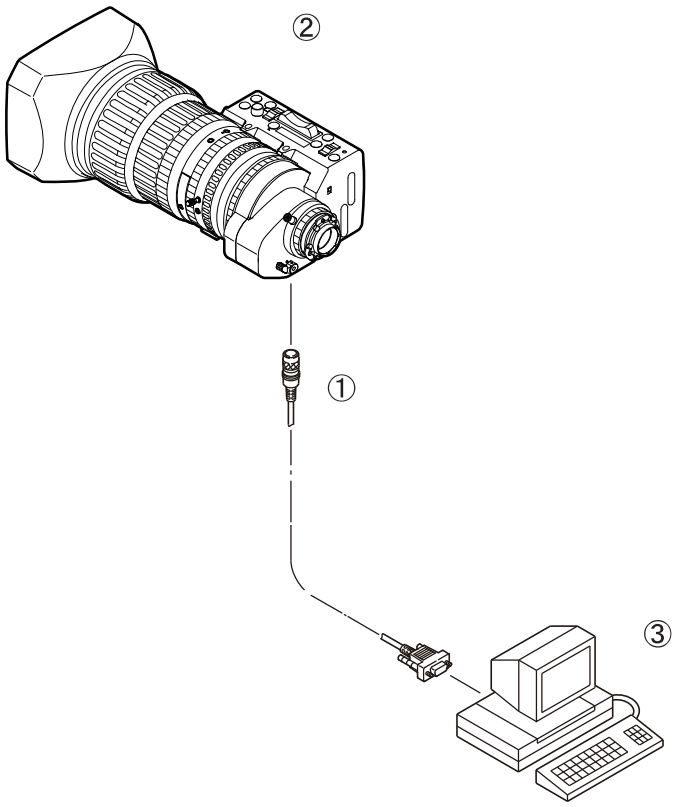
Note. The speed of the zoom achieved by operating the ZOOM RATE DEMAND UNIT is the speed that reflects both the setting established for the zoom maximum speed control knob of the drive unit and the setting established for the Speed Control Knob of the ZOOM RATE DEMAND UNIT. Depending on the setting established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



16.3 All Servo System – 2 (Control by Personal Computer)

	ACCESSORY NAME	MODEL	REMARKS
①	Connection 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

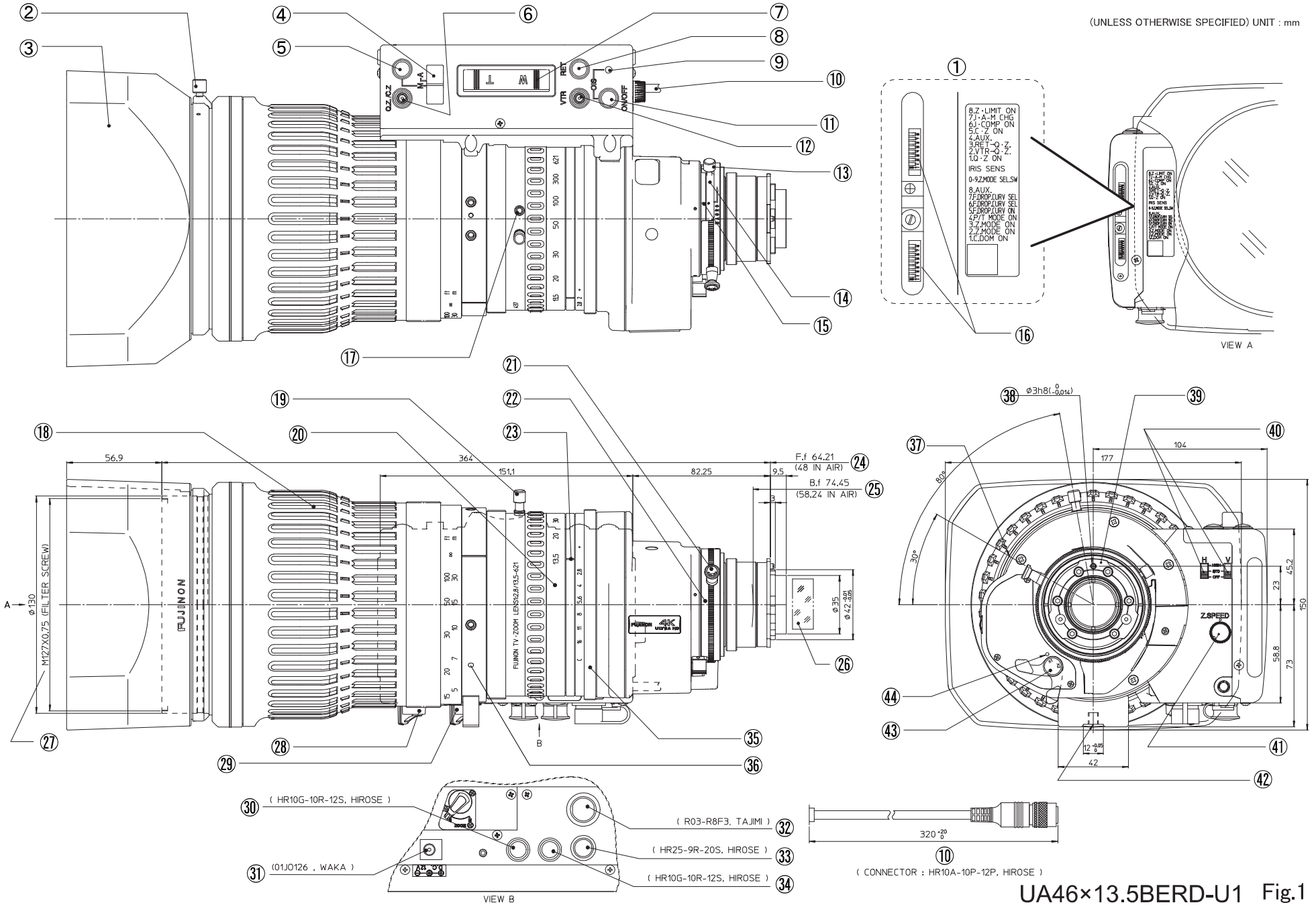
ITEM \ LENS		UA46x13.5BERD-U1	UA46x13.5BERD-G1
Application		2/3" Format Color Camera (Prism Optical System)	
Focal Length		13.5 ～ 621 mm [27 ～ 1242 mm] *1	
Zoom Ratio		46 ×	
Extender Magnification		2 ×	
Extender Magnification		F2.8 13.5 ～ 316 mm) ～ F5.5 (621 mm) [F5.6 (27 ～ 632 mm) ～ F11 (1242 mm)] *1	
Iris Range		F2.8 ～ F16, closed	
Image Format (H × V)		9.59 × 5.39 mm (ϕ 11.0 mm) Aspect ratio 16 : 9	
Flange Focal Length (in Air)		48 mm (Adjustable Range : ± 0.4 mm)	
Back Focal Length (in Air)		58.24 mm	
Minimum Object Distance (from Front of Lens)		2.8 m (0.06 m in Macro Operation)	
Field Angle (H × V)	Tele	39.1° × 22.6° [20.1° × 11.4°] *1	
	Wide	0.9° × 0.5° [0.4° × 0.2°] *1	
Object Area at M.O.D. (H × V)	Tele	1886 mm × 1060 mm [936 mm × 526 mm] *1	
	Wide	42 mm × 24 mm [21 mm × 12 mm] *1	
Clear Aperture of Lens	Front	108.7 mm	
	Rear	23.2 mm	
Front Diameter		ϕ 130 mm	
Full Length		364 mm	
Filter Screw		M127 × 0.75 (Attached to the Lens Hood)	
Iris Control		AutoIris or Manual (Operation Angle : 76°)	
Zoom Control		Servo (Operation time : Approx. 1.0 ～ 32 sec) or Manual (Operation Angle : 100°)	
Focus Control		Manual (Operation Angle : 180°) (Including Motor for Servo Control)	
Extender Control		Manual	Servo (Remote Control)
Mount		Bayonet Mount	
Current Consumption (at 12V DC, Approx.)	Quiescent	350 mA	
	Maximum	1100 mA	1200 mA
Mass (No Lens Hood, Approx.)		5.8 kg	5.8 kg

*1. The values in the brackets are given when the extender 2x is used.

①	スイッチ詳細図	SWITCH DETAIL	选择开关 详细图
②	レンズフード取付つまみ	LENS HOOD ATTACHING KNOB	镜头遮光罩安装旋钮
③	レンズフード	LENS HOOD	镜头遮光罩
④	アイリスモード切替スイッチ	IRIS MODE SELECT SWITCH	光圈模式选择开关
⑤	アイリスモーメンタリスイッチ	IRIS MOMENTARY SWITCH	光圈手动 / 自动切换开关
⑥	クイックズーム＆オートクルージングズームスイッチ	QUICKZOOM & AUTO CRUISING ZOOM SWITCH	快速变焦和自动导航变焦开关
⑦	ズームシーソーコントロールレバー	ZOOM SEESAW CONTROL LEVER	压板式变焦控制杆
⑧	リターンスイッチ	RETURN SWITCH	回放开关
⑨	防振 ON/OFF インジケータ	STABI. ON/OFF INDICATOR	减振 ON/OFF 显示灯
⑩	カメラ用ケーブル	CABLE TO CAMERA	摄像机连线
⑪	防振 ON/OFF 切替スイッチ	STABI. ON/OFF SELECT SWITCH	减振 ON/OFF 切换开关
⑫	VTR スイッチ	VTR SWITCH	VTR 开关
⑬	F.f 固定つまみ	F.f LOCKING KNOB	镜座距锁定旋钮
⑭	F.f 調整リング	F.f ADJ. RING	镜座距调节环
⑮	F.f 指標	F.f BASE MARK	镜座距指标
⑯	機能＆モード切替スイッチ	FUNCTION & MODE SELECT SWITCHES	功能和模式选择开关
⑰	ズームレバー取付ねじ（2 ヵ所）	THREADED HOLES FOR ZOOM LEVER （2 PLACES）	变焦控制杆螺孔（2 个）
⑱	フォーカスリング	FOCUS RING	聚焦环
⑲	ズームレバー	ZOOM LEVER	变焦控制杆
⑳	ズームリング	ZOOM RING	变焦环
㉑	マクロレバー	MACRO LEVER	微距拍摄控制杆
㉒	マクロリング	MACRO RING	微距拍摄控制环
㉓	指標線	INDEX LINE	指标线
㉔	フランジバック（F.f）	FLANGE FOCAL LENGTH (F.f)	镜座距 （F.f）
㉕	バックフォーカス（B.f）	BACK FOCAL LENGTH (B.f)	后焦距 （B.f）
㉖	光学ガラス	GLASS ELEMENTS	镜玻璃镜片
㉗	フィルタ取付ねじ	FILTER SCREW	滤镜螺丝

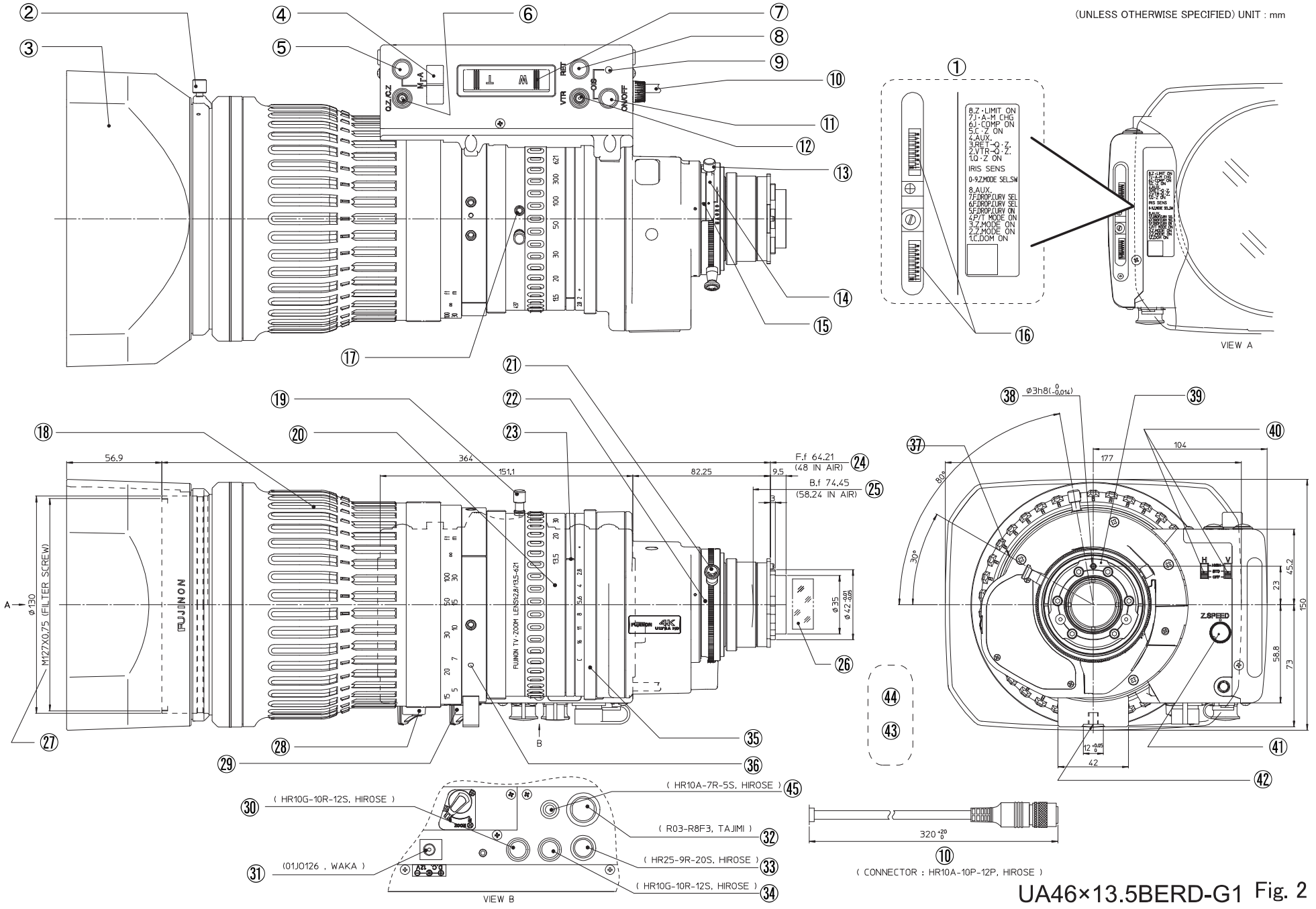
㉘	フォーカス サーボ / マニュアル切替つまみ	FOCUS SERVO/MANUAL SELECT KNOB	聚焦伺服 / 手动切换旋钮
㉙	ズーム サーボ / マニュアル切替つまみ	ZOOM SERVO / MANUAL SELECT KNOB	变焦伺服 / 手动选择旋钮
㉚	フォーカスコントロール用コネクタ	CONNECTOR FOR FOCUS CONTROL	聚焦控制连接器
㉛	パワーソース用コネクタ	CONNECTOR FOR POWER SOURCE	电源连接器
㉜	防振コントロール用コネクタ	CONNECTOR FOR STABI. CONTROL	减振控制器用插头
㉝	拡張用コネクタ	CONNECTOR FOR EXPANSION	扩展插口
㉞	ズームコントロール用コネクタ	CONNECTOR FOR ZOOM CONTROL	变焦控制连接器
㉟	アイリスリング	IRIS RING	光圈环
㊱	モジュール取付穴（2 ヵ所）	MODULE ATTACHING HOLE (2 PLACES)	模块连接孔 （2 个）
㊲	指標点	INDEX MARK	指标点
㊳	位置決めピン	POSITIONING PIN	定位锁栓
㊴	マウント	MOUNT	支座
㊵	防振 HIGH/STD/OFF 切替スイッチ	STABI. HIGH/STD/OFF SELECT SWITCH	减振 HIGH/STD/OFF 切换开关
㊶	ズーム最大スピード調節つまみ	ZOOM MAXIMUM SPEED CONTROL KNOB	最大变焦速度控制旋钮
㊷	レンズサポータ取付ねじ	THREADED HOLE FOR LENS SUPPORTER	镜头支持框安装螺钉
㊸	エクステンダ切替レバー	EXTENDER SELECT LEVER	倍率镜选择杆
㊹	指標点	INDEX MARK	指标点
㊺	エクステンダコントロール用コネクタ	CONNECTOR FOR EXTRNDER CONTROL	倍率镜控制连接器

(UNLESS OTHERWISE SPECIFIED) UNIT : mm



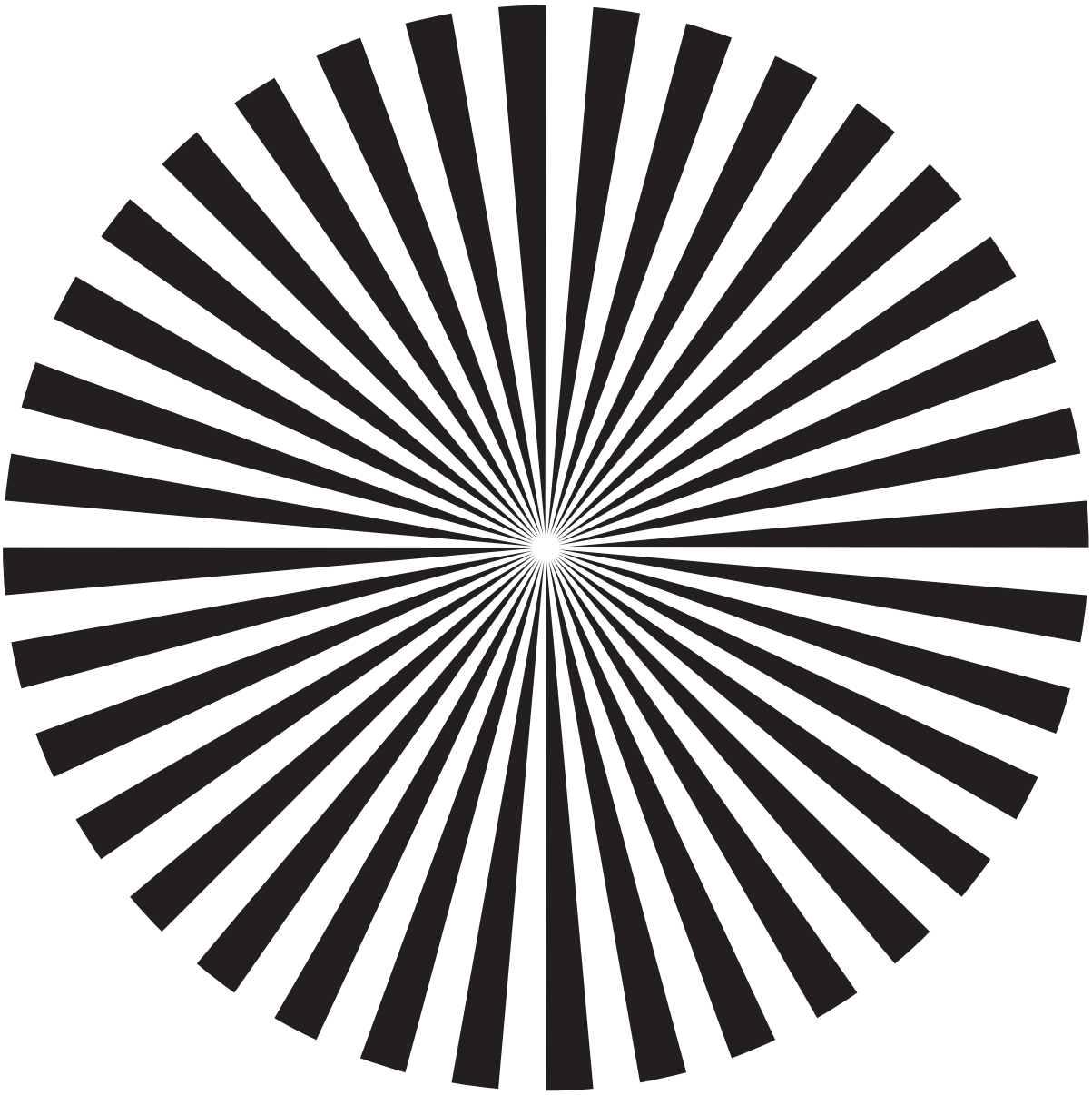
UA46×13.5BERD-U1 Fig.1

(UNLESS OTHERWISE SPECIFIED) UNIT : mm



UA46×13.5BERD-G1 Fig. 2

切取線 CUT LINE 切开线



ジーメンススター / SIEMENS STAR / 西门子星标

FUJINON
FUJIFILM

MEMO