

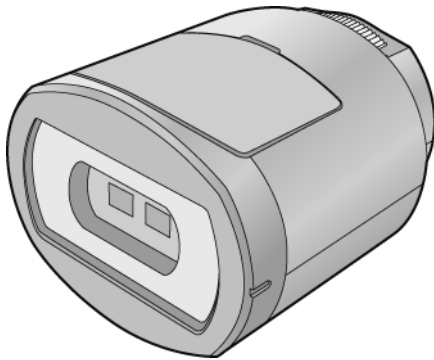
Service Manual

3D Conversion Lens



Model No. **VW-CLT1P**
VW-CLT1E
VW-CLT1GK

Colour
(H).....Gray Type



WARNING

This service information is designed for experienced repair technicians only and is not designed for use by the general public. It does not contain warnings or cautions to advise non-technical individuals of potential dangers in attempting to service a product. Products powered by electricity should be serviced or repaired only by experienced professional technicians. Any attempt to service or repair the product or products dealt with in this service information by anyone else could result in serious injury or death.

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1 Specifications

■ 3D Conversion Lens

Dimensions:

78 mm (W)×59 mm (H)×97 mm (D) [3.07 " (W)×2.32 " (H)×3.82 " (D)]
[Without Lens Cap (front/rear) and step up ring]

78 mm (W)×59 mm (H)×111 mm (D) [3.07 " (W)×2.32 " (H)×4.37 " (D)]
[With the step up ring, without Lens Cap (front/rear)]

Mass (Weight):

Approx. 195 g (Approx. 0.429 lbs.) [Without Lens Cap (front/rear) and step up ring]

Approx. 219 g (Approx. 0.482 lbs.) [With the step up ring, without Lens Cap (front/rear)]

Lens (when attached to the video camera):

HDC-SD800 / HDC-TM900 / **HDC-HS900**

F3.2 (f = 2.5 mm)

HDC-SD90 / HDC-TM90

F3.3 (f = 2.3 mm)

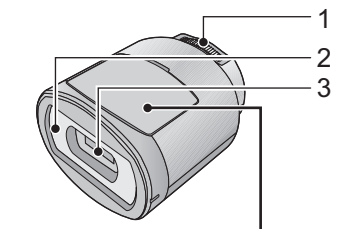
35 mm equivalent; 58 mm

Minimum recording distance; Approx. 1.2 m (3.9 feet)

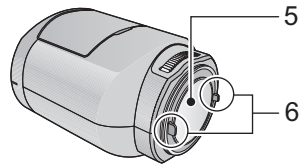
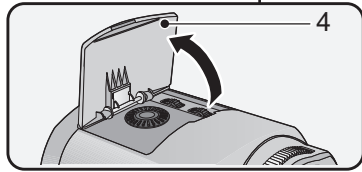
Stereo base:

12.4 mm (0.49 ")

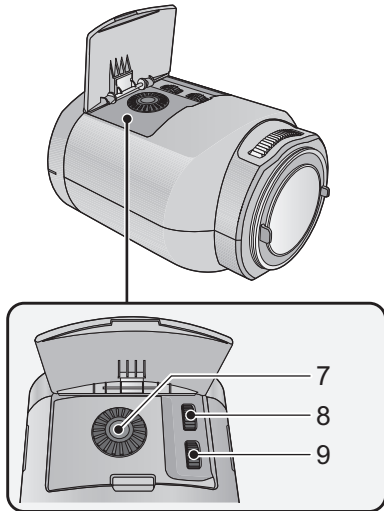
2 Location of Controls and Components



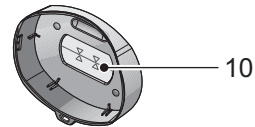
- 1 Attachment screw
- 2 Protective glass (front)
- 3 Lens
- 4 Adjustment dial cover
- 5 Protective glass (rear)
- 6 Camera body attachment part (convex)



- 7 Vertical position adjustment dial
- 8 Vertical alignment adjustment dial
- 9 Horizontal image position adjustment dial



Lens front cap



- 10 Horizontal line for adjustment

Adjust the attachment position and record

When using for the first time, be sure to adjust the 3D Conversion Lens attachment position.

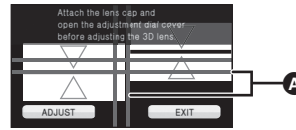
- Change the mode to  on the video camera.

1 Attach the 3D Conversion Lens to the video camera.

2 Turn on the video camera.

- Turn on with the video camera in a horizontal state.
- The 3D Conversion Lens adjustment mode screen will appear automatically after performing the initial setting.
- If the 3D Conversion Lens adjustment mode screen does not appear automatically, set from the menu on the video camera. ([SETUP] → [3D CONV. LENS SETUP])

3 Attach the lens front cap to the 3D Conversion Lens.

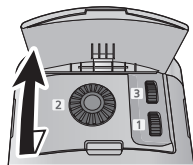


- 2 screens will appear.
- The horizontal line for adjustment on the lens front cap is displayed on the screen.

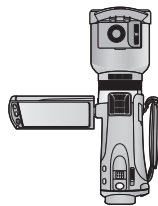
4 Touch [ADJUST].

- If the black vertical line and the black horizontal line are within the red guidelines **A** and adjustment is not required, touch [EXIT] and proceed to Step 11.
- Perform the adjustment in a bright location where the horizontal line for adjustment will be clearly visible.

5 Open the adjustment dial cover.

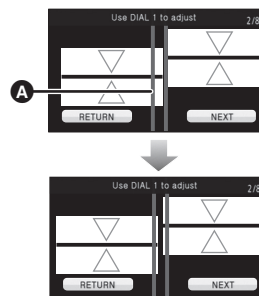


- When turning the adjustment dials, hold the video camera in the palm of your hand from the bottom and operate with the fingers of your other hand without applying too much force from above. When checking the adjustment, check with your fingers off the adjustment dials.



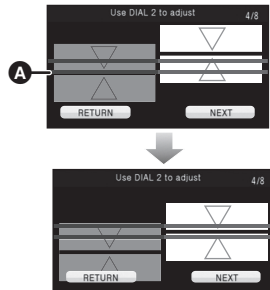
6 (After checking the operation description, touch [NEXT].)

Adjust the horizontal position by rotating the horizontal image position adjustment dial **1 to place the black vertical line between the images at right and left in between the red guidelines **A**.**



- The black vertical line may look thick or blurred, but adjust it so it goes in between the guidelines.
- Touch [NEXT].

- 7** (After checking the operation description, touch [NEXT].)
To adjust the vertical position, rotate the vertical position adjustment dial 2 so that the black horizontal line at the right of the screen is in the center of the red guidelines A.

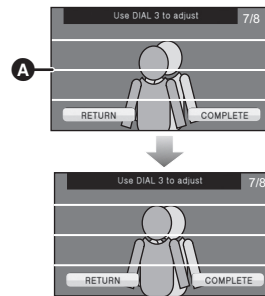


- Touch [NEXT].

8 Removing the lens front cap.

- Touch [NEXT].

- 9** (After checking the operation description, touch [NEXT].)
Adjust the vertical alignment adjustment dial 3 to align the vertical position of the subject shown duplicated.



- The vertical position of the 3D image can also be adjusted with [3D] in the Touch Menu. [3D] is displayed only when the 3D Conversion Lens is attached.
- Aim the video camera at a subject from a distance of approximately 1.2 m (3.9 feet) to 2 m (6.6 feet), and keep the image shown level by using the guidelines A.
- Difference in horizontal direction is characteristic of 3D video.

- It is recommended to stabilize the video camera using the lens front cap as a platform when performing the adjustment.
- Touch [COMPLETE].

10 Touch [EXIT] to end the adjustment.

- After adjustment, a single screen appears.
- **When re-attaching the 3D Conversion Lens or after an impact etc., it is recommended that you perform the adjustment again.**

11 Press the recording start/stop button to start recording.

- When the 3D Conversion Lens is attached, the zoom position is fixed, and the zoom operation is disabled.
- When recording in 3D, the image will appear with gray frame around it. The gray frame will be recorded in the video.

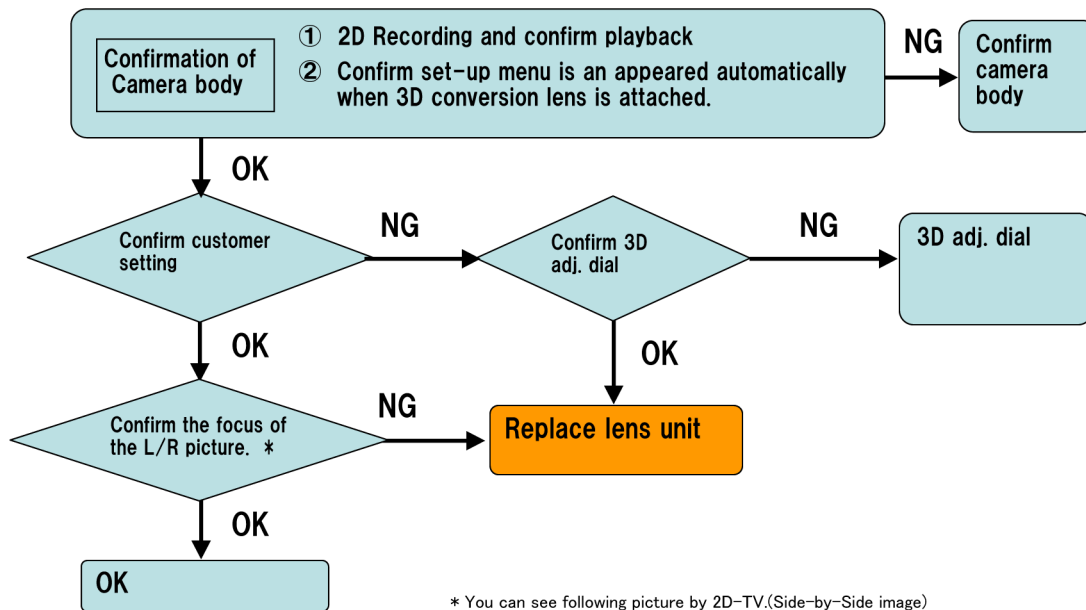
- Use of a tripod is recommended for recording with a stable picture.
- The reception range for the remote control might become narrow at the upper side of the video camera, so operate from the lower side.
- The LCD monitor of the video camera will not display in 3D.
- You will hear a sound when the video camera is moved rapidly with the 3D Conversion Lens attached, but this is not a malfunction.
- When the adjustment dial is rotated too much, you will hear a "clapping" sound and the adjustment screen will stop moving. In such a case, rotate the adjustment dial in the opposite direction until the adjustment screen starts moving.
- The functions that can be used are limited depending on the video camera that is being used. For details, refer to the operating instructions of the video camera.

To ensure that the 3D video can be safely viewed, pay attention to the following points when recording.

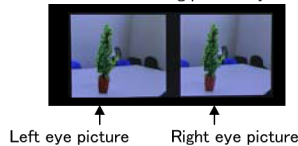
- Where possible, record with the video camera in a horizontal state.
- Do not get too close to the subject. (record from a distance of at least 1.2 m (3.9 feet).)
- When moving the video camera as you record, move it slowly.
- Try to hold the video camera as steady as possible when recording while riding in a vehicle or walking.

3 Troubleshooting Guide

Troubleshooting



* You can see following picture by 2D-TV.(Side-by-Side image)



Confirmation after repair

•Preparation : 3D chart, Tripod and 2D-TV

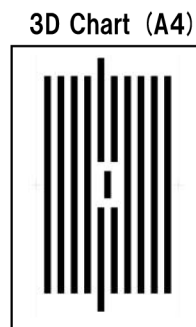
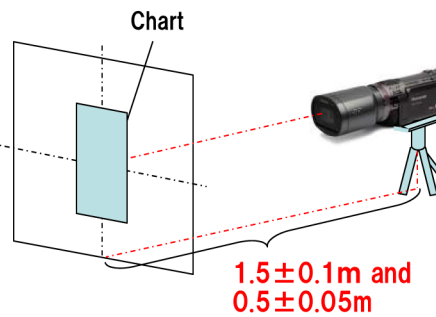
① Confirm the gap of a right and left image by using customer 3D adjusting method. (adjustment dial3 condition)

1.5m : There is no L/R picture gap (Match L/R picture)
0.5m : There is L/R picture gap

1.5m picture (LR match) 0.5m picture (LR gap)

② Confirm that there is no difference in the focus of a right and left each screen in 2DTV side-by-side image.

Repair OK



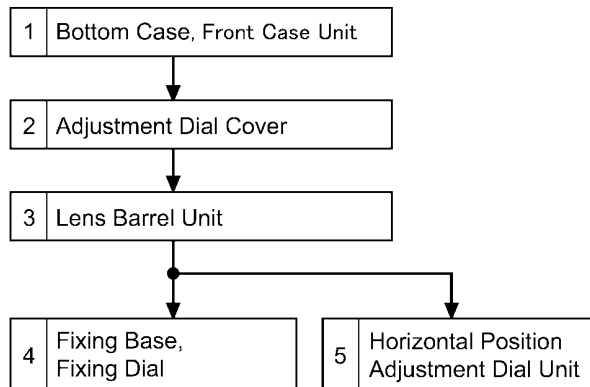
Download from TSN Web site.

4 Disassembly and Assembly Instructions

4.1. Disassembly Flow Chart

This is a disassembling chart.

When assembling, perform this chart conversely.



4.2. Disassembly Procedure

No.	Item	Fig	Removal
1	Bottom Case Front Case Unit	Fig. L1	5 Screws (A)
			Bottom Case
			Front Case Unit
2	Adjustment Dial Cover	Fig. L2	Cover Sheet
			1 Screw (B)
			2 Screws (C)
			Adjustment Dial Cover
3	Lens Barrel Unit	Fig. L3	3 Screws (D)
			2 Screws (E)
		Fig. L4	Lens Barrel Unit
4	Fixing Base Fixing Dial	Fig. L5	2 Screws (F)
			Fixing Base
			Fixing Dial
5	Horizontal Position Adjustment Dial Unit	Fig. L6	Horizontal Position Adjustment Dial Unit

4.2.1. Removal of the Bottom Case and Front Case Unit

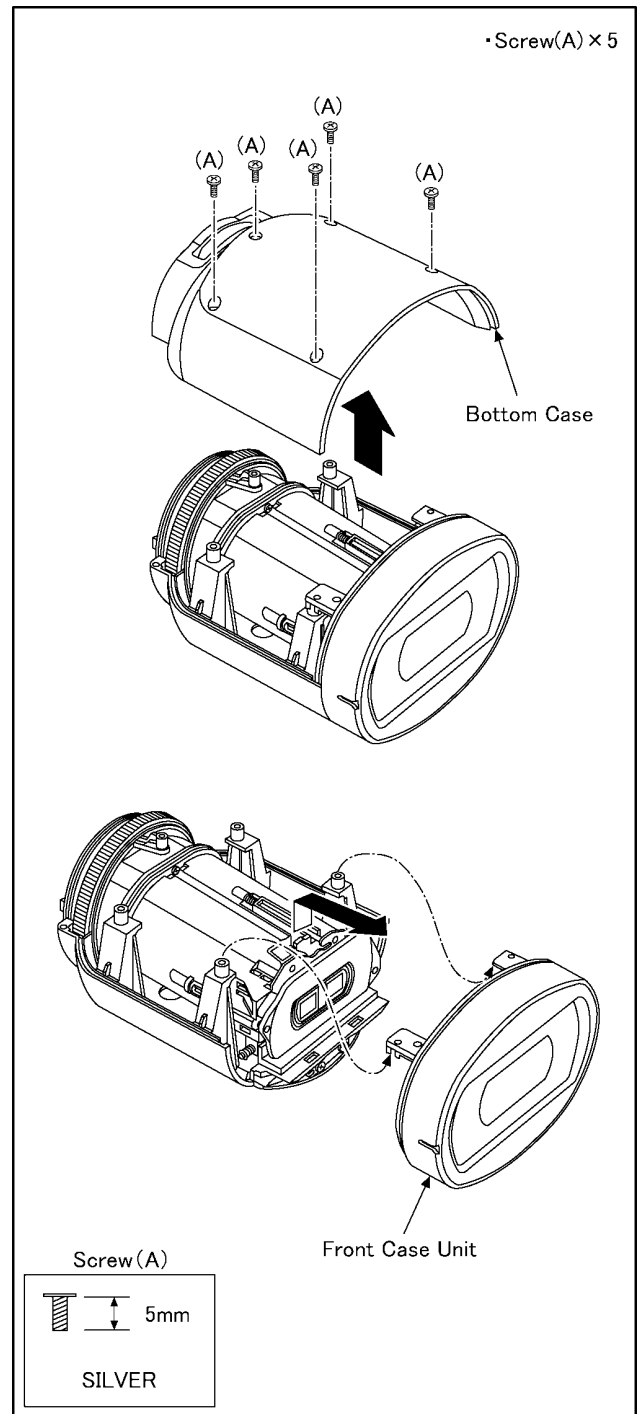


Fig. L1

4.2.2. Removal of the Adjustment Dial Cover

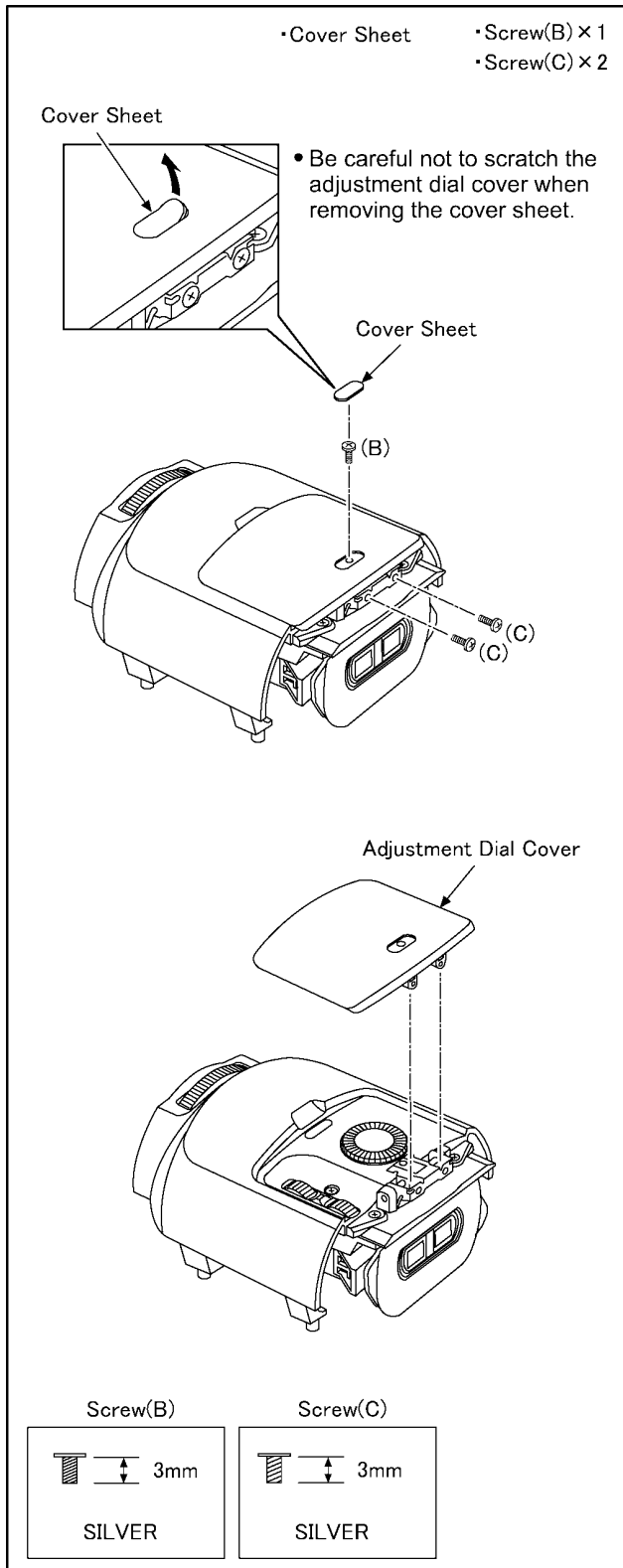


Fig. L2

4.2.3. Removal of the Lens Barrel Unit

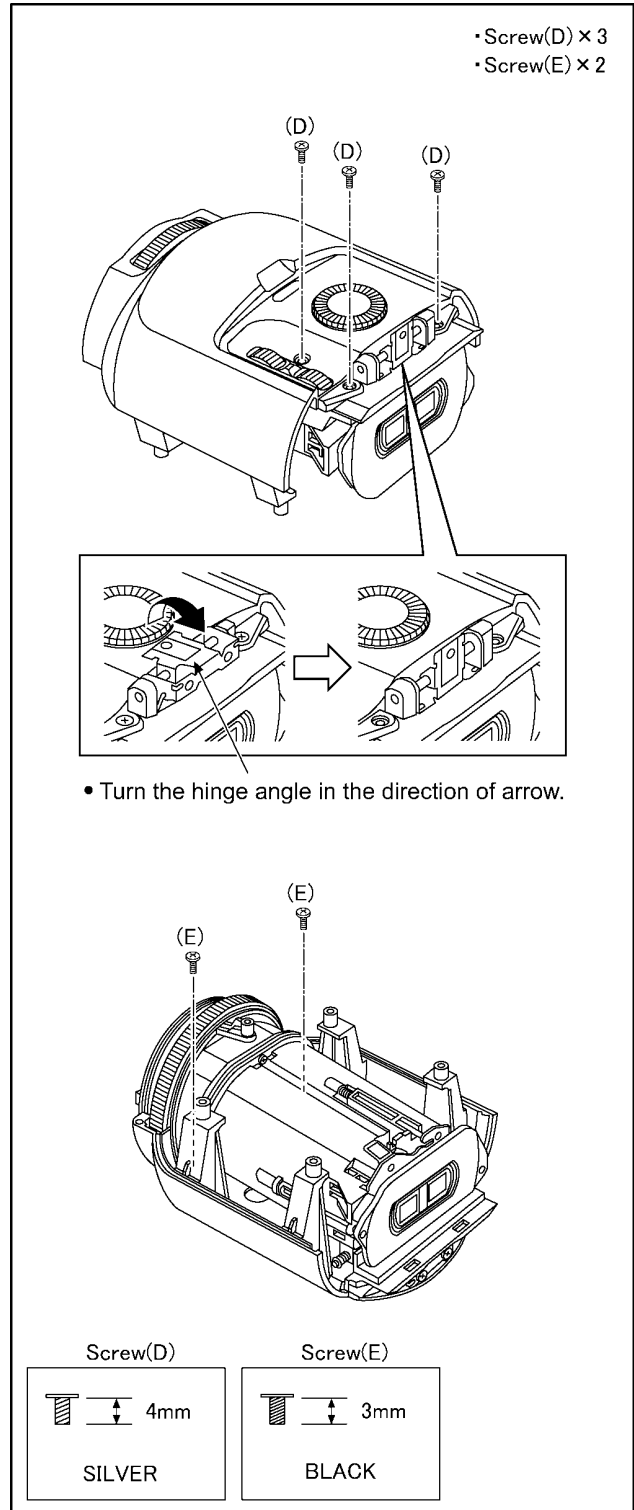


Fig. L3

4.2.4. Removal of the Fixing Base and Fixing Dial

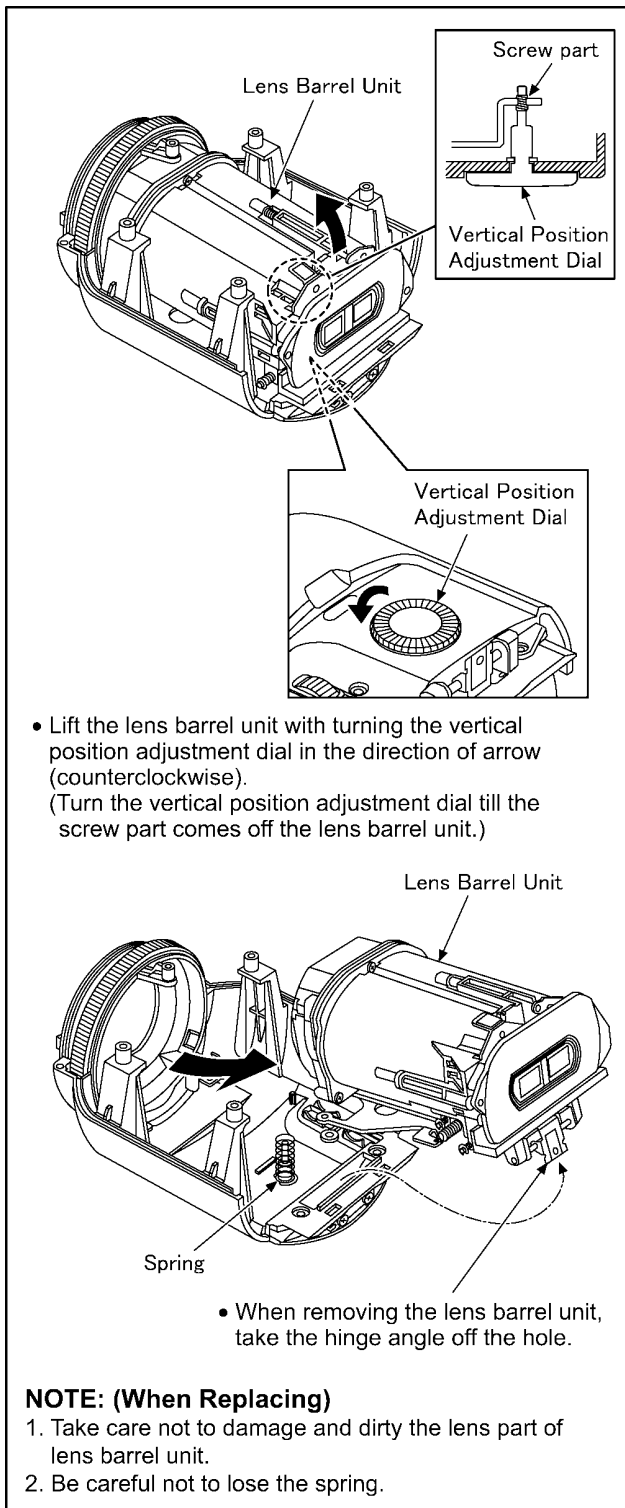


Fig. L4

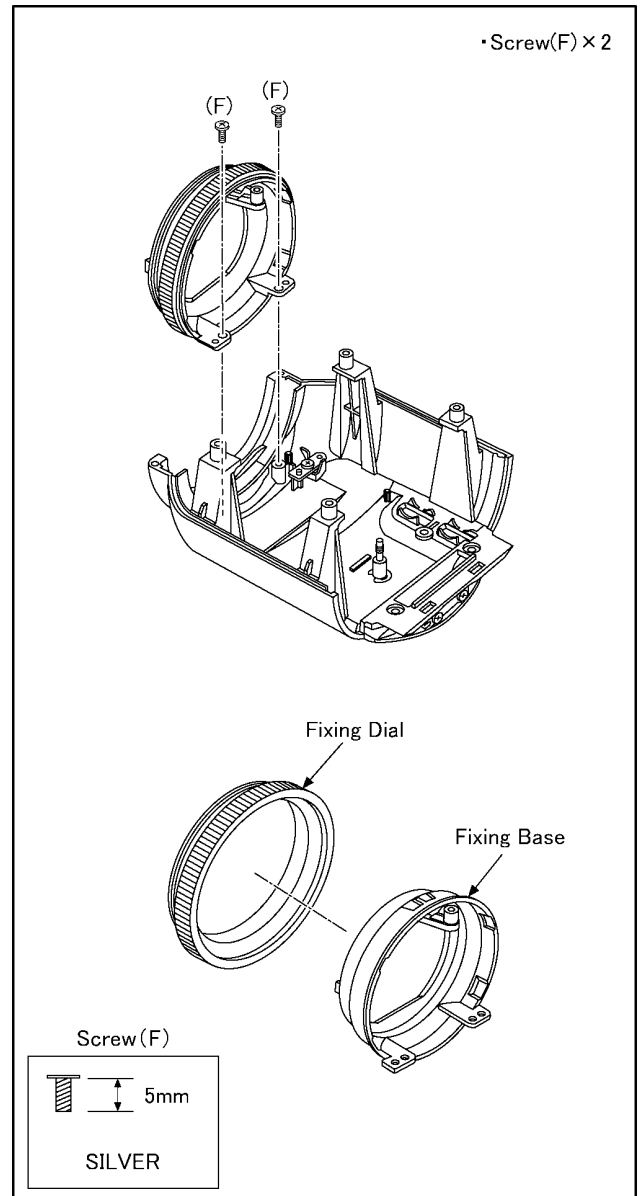


Fig. L5

4.2.5. Removal of the Horizontal Position Adjustment Dial Unit

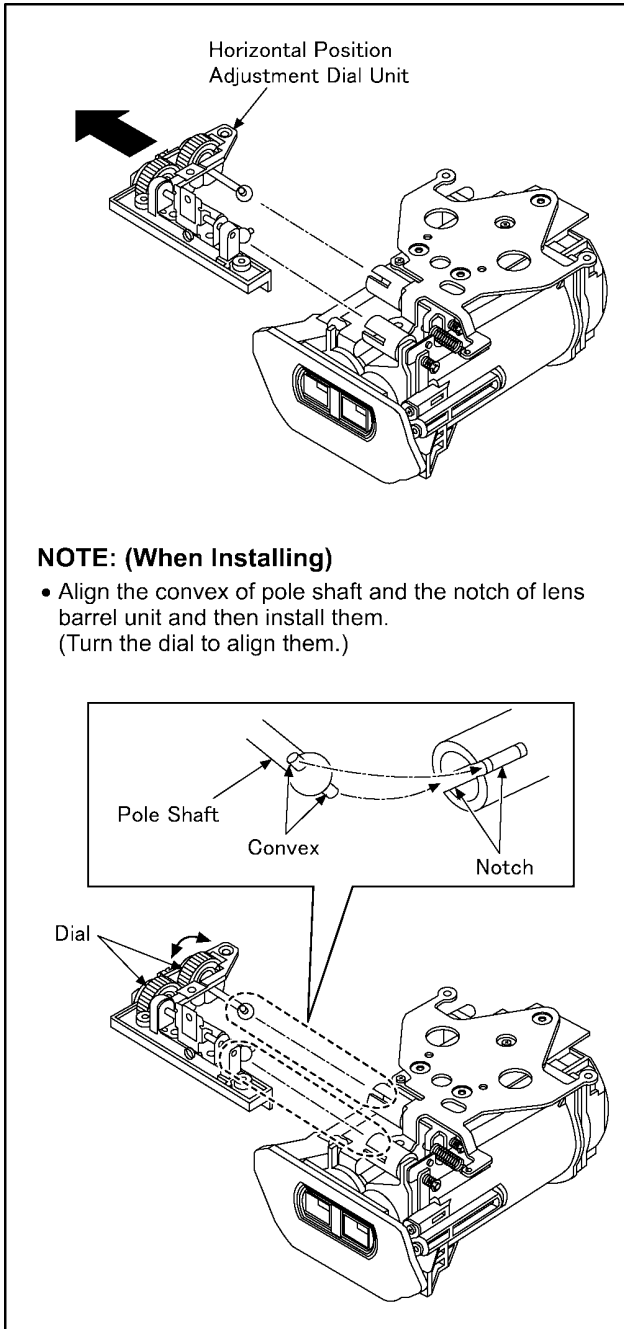
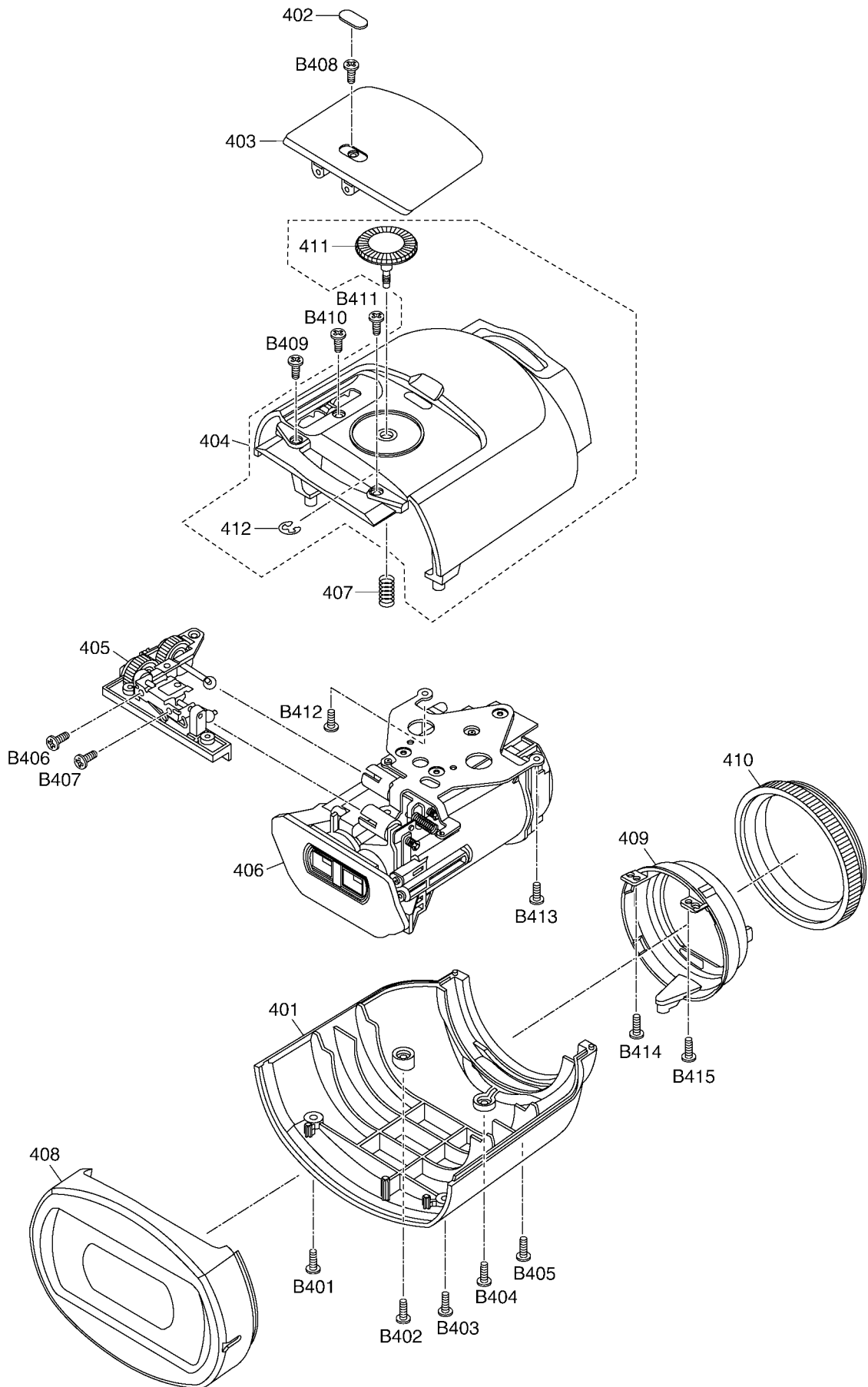


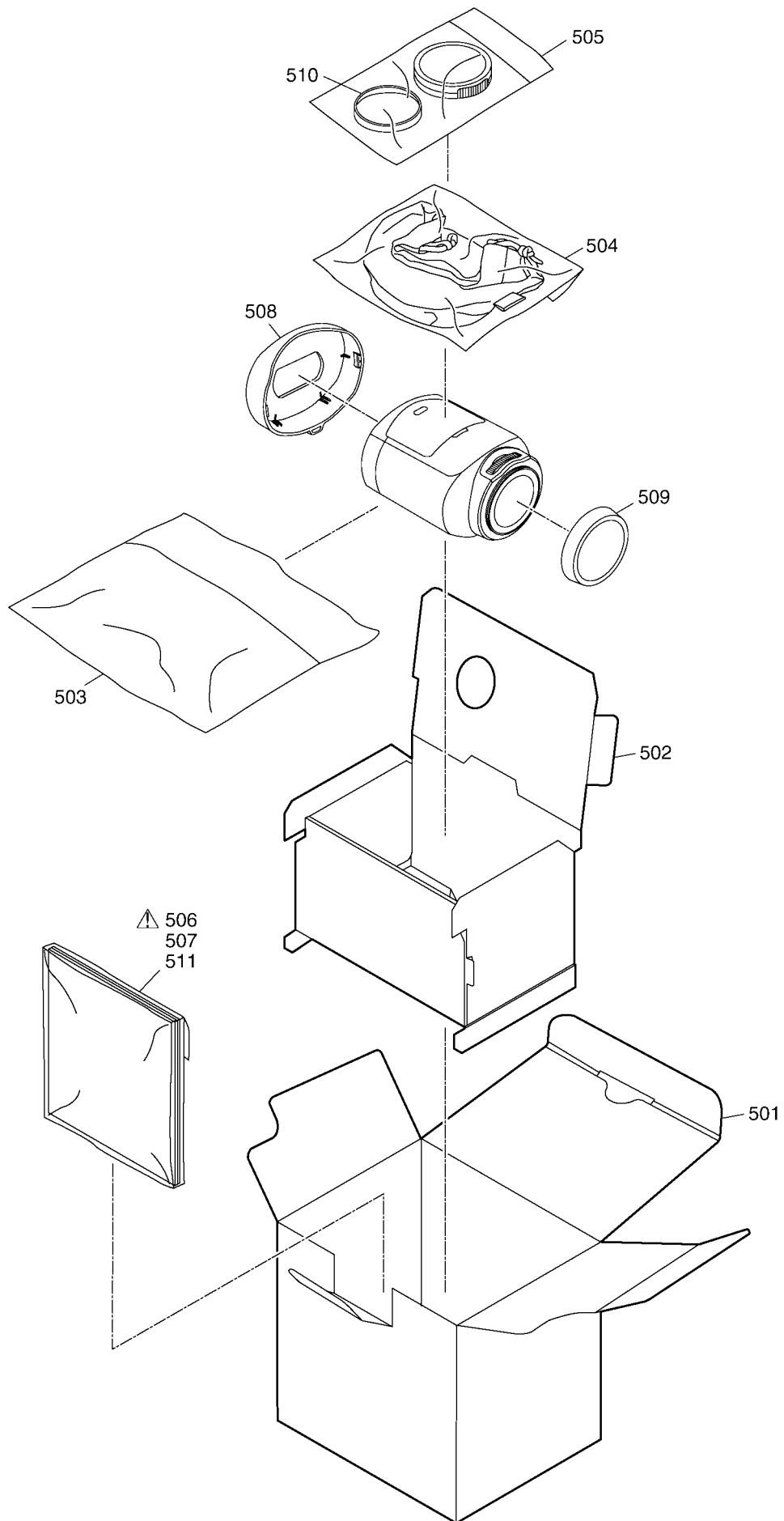
Fig. L6

5 Exploded View and Replacement Parts List

5.1. Casing Parts Section



5.2. Packing & Accessories Section



5.3. Replacement Parts List

Notes:

*Important safety notice:

Components identified by \triangle mark have special characteristics important for safety.

When replacing any of components, be sure to use only manufacturer's specified parts shown in the parts list.

Safety	Ref. No.	Part No.	Part Name & Description	Pcs	Remarks
	510	VGQ0U39	REAR CAP	1	For the step up ring
	511	VQL2G87	OPERATION SHEET	1	E
	511	VQL2G86	OPERATION SHEET	1	P

Safety	Ref. No.	Part No.	Part Name & Description	Pcs	Remarks
	401	VKM8866	BOTTOM CASE	1	
	402	VGQ0R05	COVER SHEET	1	
	403	VKF4775	ADJUSTMENT DIAL COVER	1	
	404	VYK4K03	TOP CASE UNIT	1	
	405	VYK4K17	HORIZONTAL POSITION ADJUSTMENT DIAL UNIT	1	
	406	VXW1189	LENS UNIT	1	
	407	VMB4431	SPRING	1	
	408	VYK4K01	FRONT CASE UNIT	1	
	409	VYK4K04	FIXING BASE	1	
	410	VDW2165	FIXING DIAL	1	
	411	VXU1694	VERTICAL POSITION ADJUSTMENT DIAL	1	
	412	XUC25Z	E-RING	1	
	B401	XQN2+BJ5FJK	SCREW	1	
	B402	XQN2+BJ5FJK	SCREW	1	
	B403	XQN2+BJ5FJK	SCREW	1	
	B404	XQN2+BJ5FJK	SCREW	1	
	B405	XQN2+BJ5FJK	SCREW	1	
	B406	XQN2+BJ3FN	SCREW	1	
	B407	XQN2+BJ3FN	SCREW	1	
	B408	XQN16+B3FN	SCREW	1	
	B409	XQN2+BJ4FJK	SCREW	1	
	B410	XQN2+BJ4FJK	SCREW	1	
	B411	XQN2+BJ4FJK	SCREW	1	
	B412	VHD1776	SCREW	1	
	B413	VHD1776	SCREW	1	
	B414	XQN2+BJ5FJK	SCREW	1	
	B415	XQN2+BJ5FJK	SCREW	1	
	501	VPK4622	PACKING CASE	1	E/P
	501	VYQ5864	PACKING CASE UNIT	1	GK
	502	VPN7127	PAD	1	
	503	VPF1388	PROTECT BAG	1	
	504	VFC4619	SOFT CASE	1	
	505	VYK4V31	STEP UP RING UNIT	1	W/REAR CAP [Ref. No. 510]
\triangle	506	VQT3A68	OPERATING INSTRUCTIONS (ENGLISH/CANADIAN FRENCH/SPANISH)	1	P
\triangle	506	VQT3A69	OPERATING INSTRUCTIONS (ENGLISH/GERMAN/FRENCH/ITALIAN/SPANISH)	1	E
\triangle	506	VQT3A70	OPERATING INSTRUCTIONS (RUSSIAN/UKRAINIAN/CHINESE (TRADITIONAL) / ARABIC/PERSIAN)	1	E
\triangle	506	VQT3A71	OPERATING INSTRUCTIONS CHINESE (SIMPLIFIED)	1	GK
	507	VPF1230	PROTECT BAG	1	
	508	VYK4K64	FRONT CAP UNIT	1	
	509	VGQ0M57	REAR CAP	1	For the 3D Conversion Lens.