

INON

INON 45° Viewfinder Unit II for Nauticam

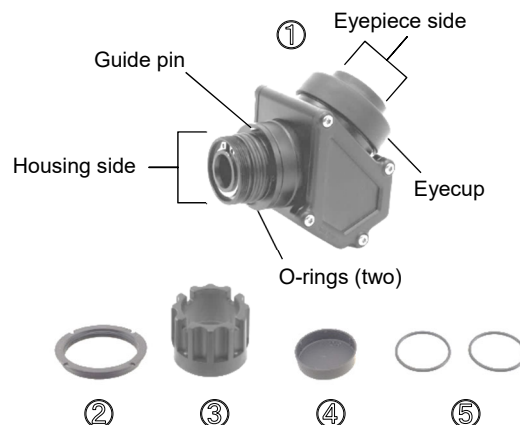
Thank you for purchasing INON product.

**Installing this product on Nauticam housing may void housing warranty.
Please check warranty condition of your housing before installing.**

Features

- A viewfinder to fit to compatible Nauticam housings.
- Enables to see all viewfinder image without vignetting even through a mask by extending eye point without changing finder image size (1.0x).
- The 45° angled eyepiece benefits you to shoot a low angle subject like a goby on sand area etc. Also the eyepiece rotates 360° supporting comfortable vertical low angle shot.
- Bright finder image by sufficient entrance pupil diameter, high refractive index and antireflection coating.
- Optional diopter correction lens to shift +1.5 diopter for those who are unable to adjust with camera's viewfinder diopter adjustment range due to long sight or presbyopia.

Package contents :	• 45° Viewfinder Unit	①	×1
	• Viewfinder Unit Lock Ring for Nauticam	②	×1*
	• Lock Ring Tool	③	×1
	• Lens Cap	④	×1
	• Spare O-ring	⑤	×2



Compatible Nauticam housings: (As of October 2020)

DSLR	Mirrorless	
All models	Sony	NA-A9, NA-A7RIII, NA-A7II, NA-A7
	Nikon	NA-Z7
	Canon	NA-R
	Fujifilm	NA-XT3, NA-GFX50S
	Panasonic	NA-S1R, NA-S1H
	Olympus	NA-EM1X

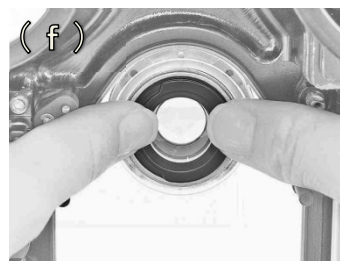
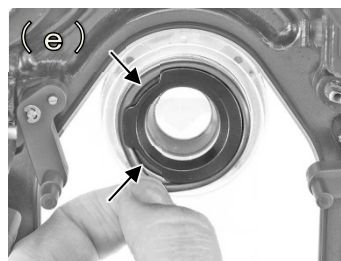
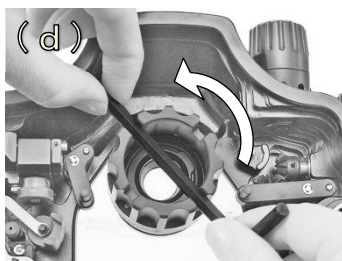
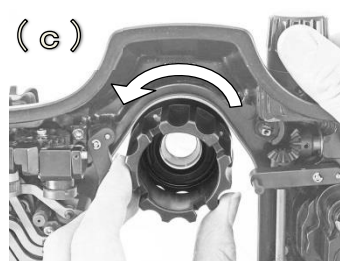
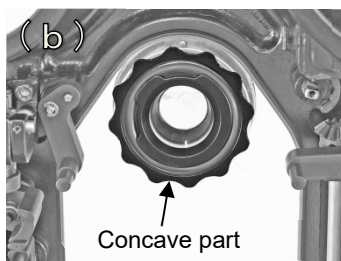
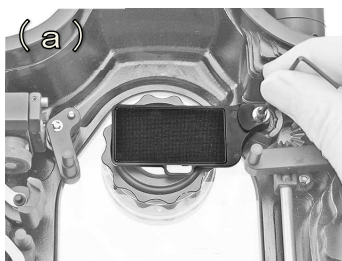
Installation:

Removing Nauticam Viewfinder

- Remove "VF/LCD switch lever screen*" (a). *Some housing doesn't have the screen.
- Remove finder retaining ring with bundled tool (**Lock Ring Tool**). Put pins of the tool in concave parts of the retaining ring outer edge and turn the tool counterclockwise (c). Use a hex key or steel bar to turn the tool if the retaining ring is hard to turn (d).
- Remove the O-ring. (You can pinch the O-ring from cutout part by fingers) (e)
- Slowly push the finder from inside of the housing (f).

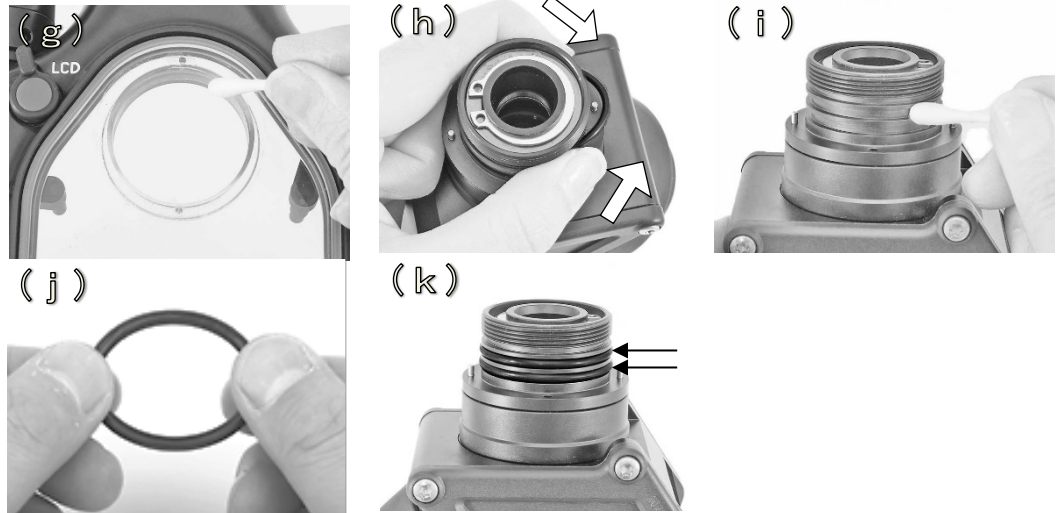


Installation guidance
on YouTube



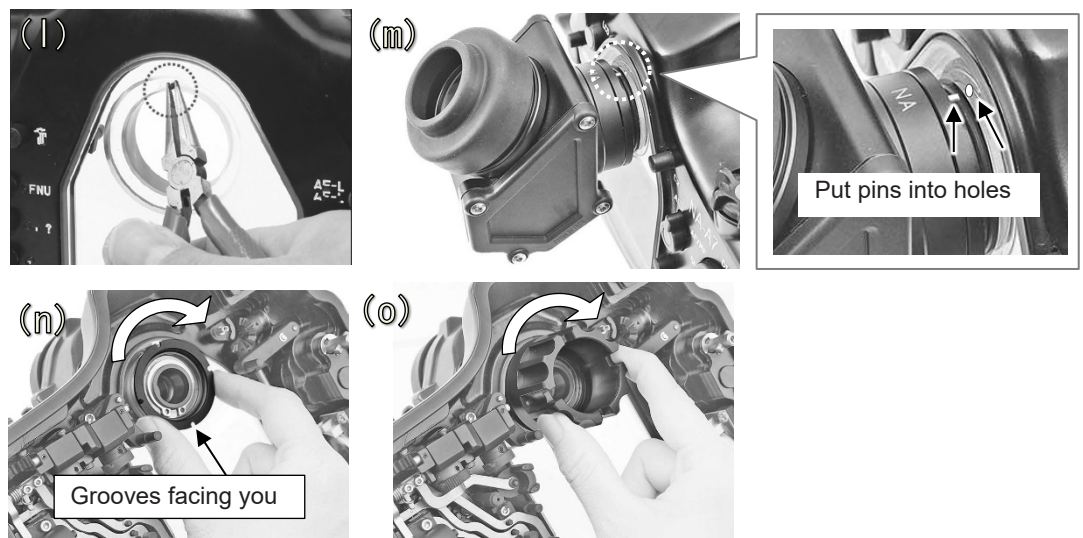
Preparation Before Installing Viewfinder

- Make sure to check the condition of O-rings of the 45° Viewfinder Unit and O-ring contact surface of the housing. They must be perfect condition without any damage or foreign substances **(g, k)**.
- Apply thin film of grease (grease for housing) on the O-ring surface uniformly **(k)**.
- When you re-install/replace O-rings, follow below procedure.
Lightly squeeze the O-ring from the sides so it bulges out then grasp and gently pull it off by fingers **(h)**. Next, check condition of the O-ring/O-ring groove and make sure that they do not have any damage or any foreign substances **(i)**. Use supplied spare O-ring if installed O-ring needs to be replaced. Using fingertips, apply thin uniform film of grease (grease for housing) on the O-ring **(j)**. Install the O-ring in the O-ring groove without twisting. Lastly check and make sure that the O-ring is seated completely and uniformly without being twisted **(k)**.



Installing 45° Viewfinder

- If your housing has pins, remove them by pliers. Holes are positioning holes for the viewfinder **(l)**.
- Slowly put cylindrical part of the viewfinder into the finder hole of the housing so that positioning pins of the viewfinder seat in positioning holes on the housing **(m)**. Make sure **not to damage** O-rings of the viewfinder, O-ring contact surface of the finder hole.
- Fasten the viewfinder unit with bundled “**Viewfinder Unit Lock Ring for Nauticam**” from inside of the housing (grooves on the ring facing you) **(n)**.
- Engage pins on the **Lock Ring Tool** with grooves of the **Viewfinder Unit Lock Ring for Nauticam** to tighten the ring completely **(o)**.
- Reinstall removed **VF/LCD switch lever screen** **(a)**.

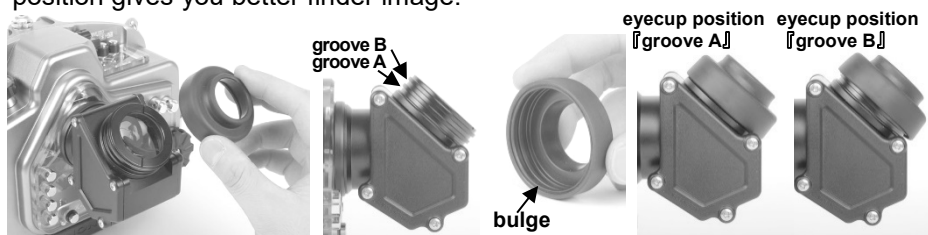


Pre-use check:

- Close the housing without a camera and immerse assembled housing/viewfinder in a bath tub with fresh water (below 30°C/86°F) to check waterproof property. **There must be no flooding inside of the assembled housing/viewfinder.** Improper installation may cause flooding or accidental damage.
- **Make sure to re-tighten the Viewfinder Unit Lock Ring fro Nauticam before every time you use your housing.**

Eyecup adjustment:

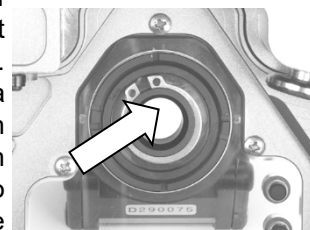
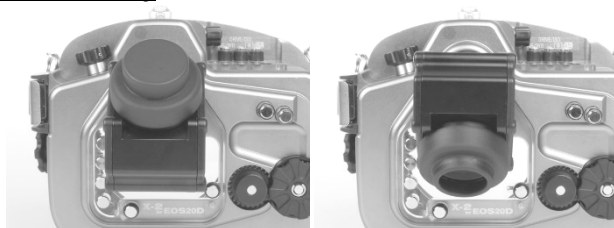
- **It is necessary to adjust the eyecup position** to suit to your mask to obtain best finder image.
- Remove the eyecup from the **45° Viewfinder Unit**.
- The eyecup can be installed either on “groove A” or “groove B” of the **45° Viewfinder Unit** to suit to different type of mask.
- Put your mask on and check the finder image through the viewfinder to determine which eyecup position gives you better finder image.



Generally eyecup position "groove A" gives better finder image. However, eyecup position "groove B" is recommended for some mask having closer lens surface relative to eyes.

Handling precautions: Together with precautions in housing user manual, please follow handling precautions below.

- **Always slowly turn the 45°Viewfinder Unit**
Rotation movement of the 45°Viewfinder Unit must be at minimal speed. Turning too fast could cause twist or damage of the pre-installed O-rings resulting in possible flooding. Please contact your purchasing dealer for check and possible repair if rotation becomes tight or sands are trapped in moving part.
- **DO NOT let sunlight get into the viewfinder unit directly**
to avoid possible damage on camera itself. When not in use, cover the eyepiece with supplied lens cap or turn the viewfinder so that its eyepiece facing down as in the right images. *Always make sure that the viewfinder is completely dry including lens surface before using lens cap.
- **DO NOT let water/foreign substances get inside of the viewfinder unit**
Camera side of the 45°Viewfinder unit is not waterproof/dustproof structure. Always clean inside of the housing and make sure not to let water/dust get inside whenever you open/close housing rear body. Avoid opening/closing housing rear body at splashed or humid area as much as possible. If you have to open housing rear body in such areas by necessity, rinse assembled housing/viewfinder well with fresh water and thoroughly swab them, then open carefully not to allow water/dust getting inside of the housing/viewfinder. Please contact purchasing dealer for possible repair if you observe any water/foreign substances inside of the viewfinder unit.
- **DO NOT disassemble**
The 45° viewfinder is precisely assembled. Never attempt to disassemble the 45° viewfinder unit to avoid malfunction/flooding. Contact your purchasing dealer for repair/check if you observe malfunction/irregularity. Repair/disassemble/modification not by INON will void warranty and INON will not compensate any damage caused by such acts.



After Use:
Maintenance

After use, first remove the eyecup and rinse together with the housing to dissolve any salt build-up. Then blow off remaining water on the eyepiece of the 45° viewfinder unit and make sure that no water/moisture remains on the eyepiece lens surface. Place in shaded and well ventilated area to dry (it may take several days to completely dry). Put back the eyecup on the 45° viewfinder unit after both of them are completely dried.

Storage method :

After maintenance, put the lens cap on and store it under recommended storage condition as same as housing.

**Option/servicing :
parts**

- **Diopter Correction Lens [+1.5D] for 45VF-II/STVF-II**
Add-on correction lens to shift +1.5 diopter for those who are unable to adjust with camera's viewfinder diopter adjustment angle due to long sight or presbyopia. The **Diopter Correction Lens** has to be installed before diving by drop it inside of the viewfinder from housing side and tighten it by packaged tool (not removable underwater).
- **Viewfinder Unit Lock Ring for Nauticam**
② in the product image.
- **Lock Ring Tool for Finder Unit**
③ in the product image.
- **Lens Cap**
④ in the product image.
- **Replacement O-ring (for 45VF-II/STVF-II for Nauticam)**
⑤ in the product image, package of two.



INON 45° Viewfinder Unit II for Nauticam Specifications*

Model	45° Viewfinder Unit II for Nauticam
Length/width/height **	91.5 mm/3.6 in. 57.5 mm/2.3 in. 81.0 mm/3.2 in.
Weight (*2) [air]	332 g/10.7oz
Material/finishing	Corrosion-resisting aluminum alloy/black rigid alumite, ABS etc.
Lens material/finishing	Optical glass/antireflection coating
Lens construction	5 elements in 3 groups (plus high refractive total reflection prism x 1
Magnification	1.0x
Depth rating	100 m/328 ft

* Subject to change without prior notice.

** Including the eyecup without the lens cap.

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October 2020

INON

X-2

User Manual / 45°Viewfinder

Thank you for purchasing INON housing.

Your X-2 is 「45°Viewfinder」 model. This section explains preparation of the viewfinder and handling precautions. Please make sure to read through and understand together with X-2 User Manual.

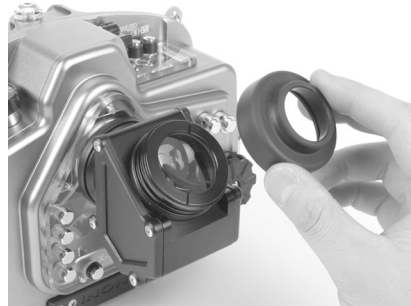
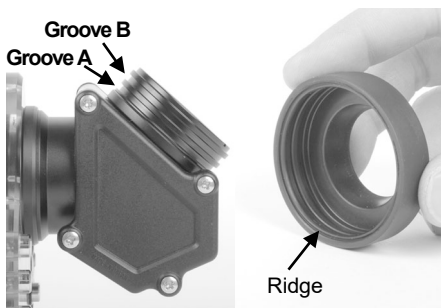
Preparation

INON 『45° Viewfinder』 (hereinafter refer to 「viewfinder」) extends eye-point of camera's viewfinder to see viewfinder image as it is through a mask without vignetting.

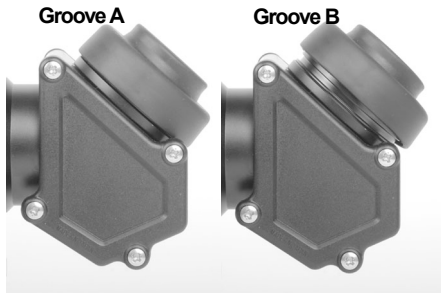
It is necessary to adjust the eyecup position to suit to your mask before using.

How to adjust eyecup position

- ① Remove the eyecup from the 「viewfinder」.



- ② By changing position of the 『ridge』 of the eyecup on 『groove A』 or 『groove B』 of the viewfinder, you can have two different position of the eyecup.



- ③ Like you use underwater, put on your mask and attach the mask lens on the eyecup to see the viewfinder image and determine which position will be good to see clear viewfinder image.

Taking 『Groove A』 will give you better viewfinder image for normal mask. But some particular mask has lens surface more close to user's face and in the case, 『Groove B』 would be better.

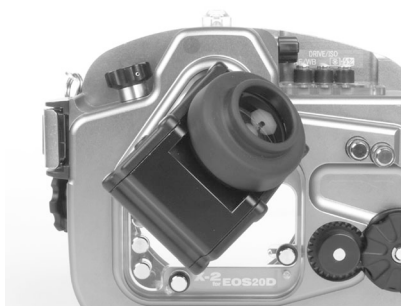
Handling Precautions

Please read and follow handling precautions described below together with handling precautions in X-2 user manual.

Handling

- Slowly operate the eyepiece of the「Viewfinder」

When you turn the eyepiece of the「viewfinder」, make sure to operate slowly and gently. Quick action may cause damage on O-ring resulting to flooding. When you feel a little hard to turn the eyepiece or find any other problem like having sands in moving part, please contact your purchasing dealer for inspection/repair.



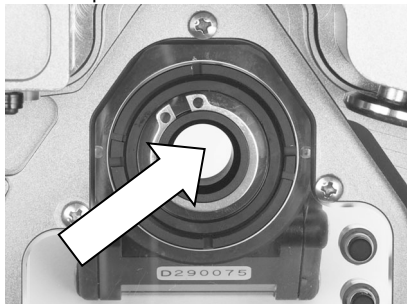
- Prevent sunlight from directly entering to the viewfinder

To avoid damage on a camera, prevent sunlight from directly entering to the viewfinder. As shown in images below, cover the eyecup by supplied lens cap (only when the 「viewfinder」 is dry) or face down the eyecup of the viewfinder.



● DO NOT let water/foreign substances get into inside of the viewfinder unit

Camera side of the 45° Viewfinder is not waterproof/dustproof structure. Always clean inside of the X-2 housing and take enough care when you open/close X-2 rear body. Avoid opening/closing X-2 rear body in where could be splashed with water or humid area as much as possible. If you have to open X-2 rear body in such areas by necessity, first well rinse assembled housing/viewfinder with fresh water and thoroughly swab them, then open it carefully not to allow water/dust getting inside of the housing/viewfinder. Please contact purchasing dealer for possible repair if you observe any water/foreign substances inside of the viewfinder unit.



● DO NOT disassemble

The 45° Viewfinder is precisely calibrated and assembled. Never attempt to disassemble the 45° Viewfinder to avoid malfunction/flooding. Contact your purchasing dealer for repair/check if you observe malfunction. Repair/disassemble/modification at non INON service facility will void warranty and INON will not compensate any damage caused by such acts.

After Use Maintenance

Always remove the eyecup after using the viewfinder and soak in fresh water together with X-2 housing for several hours, to dissolve any salt build-up. The water temperature should be no higher than ambient temperature. Do not immerse the housing into hot water. After soaking, blow off water on the viewfinder by blower etc. and make sure there is no water drop on the lens surface. Then place in shaded, well ventilated area. Never apply flame or direct heat to the viewfinder or damage may result. It may take several days for moisture in the small gaps and recesses of the viewfinder to completely dry. After completely dry, put back the eyecup on the viewfinder.



Storage

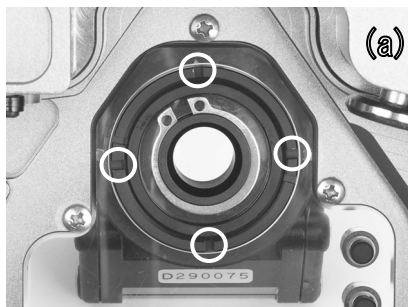
After conducting above maintenance, put the lens cap and store under same condition as described in X-2 user manual.

Appendix : Removal/installation of 「Viewfinder」

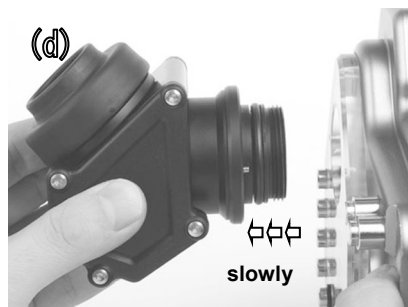
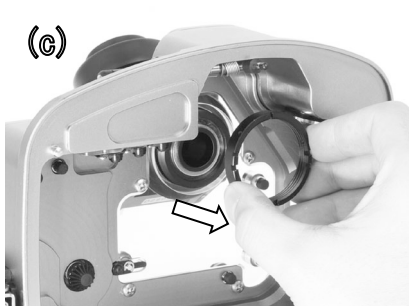
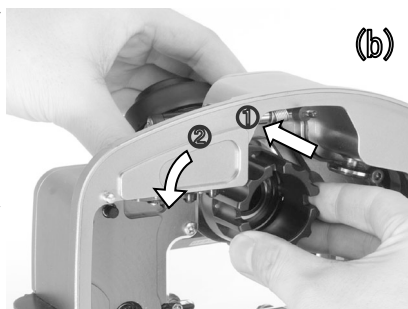
INON offers interchangeable 「Viewfinder」 system enabling a user to replace original viewfinder with another viewfinder. When conducting viewfinder replacement, make sure to follow procedure below to avoid accidental flooding etc.

Removing 「Viewfinder」

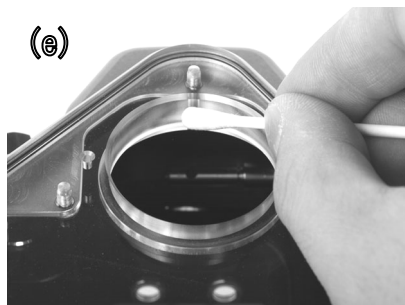
- ① Check four 『slots』 [(a)] of “finder unit retaining ring” which fastens the 45°Viewfinder on X-2 rear body.



- ② Put the “Lock Ring Tool for X-2 Finder Unit” on the retaining ring so that 『pins』 of the Lock Ring Tool seat in the slots [(b ①)] and slowly turn it counterclockwise to remove the retaining ring [(b ②)][(c)]. Then pull the pre-installed 45°Viewfinder out carefully not to damage “O-ring contact surface” of the X-2 rear body[(d)].

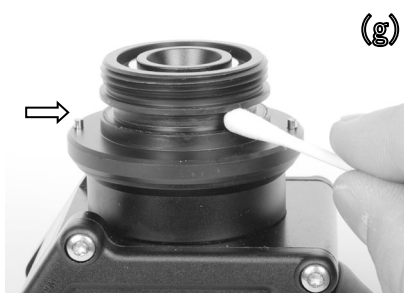


- ③ Check "O-ring contact surface" of the X-2 rear body. The O-ring contact surface must not have any damage or any foreign substances [(e)].



Installing「Viewfinder」【Preparation】

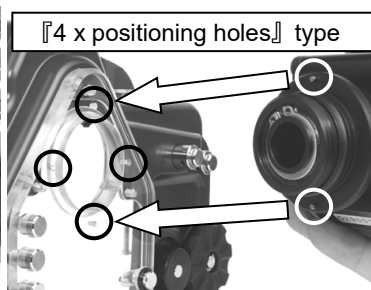
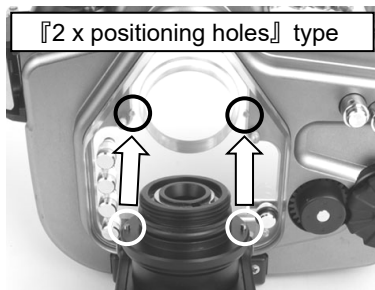
- ① Make sure to check the condition of O-ring/O-ring groove of the 45° Viewfinder before installing on an X-2 housing. Please refer to 「Measures to Prevent Accidental Flooding」 section of X-2 user manual for detail and first check without removing the O-ring. If necessary, apply thin film of Inon grease (supplied with X-2 housing) on the O-ring surface uniformly.
- ② If you need to re-install/replace the O-ring, follow procedures described below. Lightly squeeze the O-ring from the sides so it bulges out then grasp and gently pull it off by fingers (f). Next check condition of the O-ring/O-ring groove and make sure that they do not have any damage or any foreign substances (g)(h). Use optional O-ring if pre-installed O-ring is damaged. Using fingertips, apply thin uniform film of Inon grease (supplied with X-2 housing) on the O-ring (h). Install the O-ring in the O-ring groove without twisting. Finally check and make sure that the O-ring is seated uniformly and not twisted (i).





Installing「Viewfinder」【Installation】

- ① Attach the 45° Viewfinder Unit on X-2 rear body in reverse procedure of previous 「Dismount pre-installed viewfinder unit」.As in the right images, “positioning pins” on the 45° Viewfinder Unit have to be properly seated in “positioning holes” of X-2 rear body.
- ② There are two different types of X-2 rear body having 「2 x positioning holes」 or 「4 x positioning holes」. If yours is「2 x positioning holes」type, then put「positioning pins」into them. If 「4 x positioning holes」 type, make sure to put 「positioning pins」 in 「positioning holes」 on 6/12 o'clock position.



When installing, make sure to attach the viewfinder unit gently and straightly not to damage the O-ring contact surface of X-2 rear body and the O-ring. Do not tighten the Lock Ring too much to avoid accidental damage of the X-2 rear body or anchoring of the finder unit.

Pre-use Check

Immerse assembled housing/viewfinder in a bath tub with fresh water (below 30°C /86°F) to check waterproof property. There must be no flooding inside of the assembled housing / viewfinder.

While X-2 viewfinder system gives you unique self-interchangeable option, you are responsible to check if the viewfinder is properly installed. Improper installation may cause flooding or accidental damage. Make sure to re-tighten the lock ring before every time you use your X-2 housing.

Option / servicing parts

- Replacement O-ring (for 45° Viewfinder Unit/Straight Viewfinder Unit for X-2)
Replacement O-ring for 45°Viewfinder Unit and Straight Viewfinder Unit
NOT usable for the Pick-up Finder Unit / Finder Window Unit.
- Lens Cap(for 45° Viewfinder Unit/Straight Viewfinder Unit for X-2)
Protective cap to prevent damage on the lens surface or unnecessary ambient light coming in when the viewfinder is not in use.

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July 2015

Tips on Diopter Adjustment

Under bright circumstance on land, human eye's pupil shrinks making diopter adjustment easy as depth of field is deep while the adjusted viewfinder may not provide perfect focus when the pupil opens in dark underwater as the depth of field gets shallow and it becomes hard to see viewfinder image especially with presbyopic eye due to deteriorated focusing function.

Though it varies among different individuals or ages, it takes about 15 minutes to open pupils by dark adaptation. So it would be recommended to **conduct diopter adjustment in a dark room (darker than underwater) after staying there for 15 minutes when pupils open** as like being underwater to get perfect focus of viewfinder image even underwater where pupils will open.

As long as proper diopter adjustment simulating dark underwater as explained above is performed, expensive diopter adjustment function on a viewfinder is not required anymore.