

Thank you for purchasing SEA&SEA products. Please read this instruction manual carefully prior to using this product. Only with a thorough understanding of this manual's content will you be able to use this product correctly. After reading the manual, please be sure to keep it in a place where you can easily come back to it at any time.

## Safety Precautions

For safe handling of the product, please read the following precautions carefully before use.

Failure to heed the precautions listed below could result in serious consequences. To prevent injury or damage to yourself and/or others, please observe the precautions as they contain highly important information related to personal and product safety.

**⚠ DANGER** Situations that involve a high risk of severe injury or death.

**⚠ WARNING** Situations that could result in severe injury or death.

**⚠ CAUTION** Situations that could result in property damage or personal injury.

## ⚠ DANGER

● Never attempt to disassemble, repair or alter the product yourself to prevent significant electrical hazard due to the high-voltage circuitry in the product. Do not heat the product or put it into a fire, this could result in explosion or fire. Unauthorized disassembling and/or modification could result in malfunction or flooding, and avoid product warranty. Take the product to a SEA&SEA authorized service center for repair or inspection.

## ⚠ WARNING

● Use only batteries approved for use in this product. Do not mix old and new batteries or batteries of different types.

● Remove batteries before transport or storage, or when you are not going to use the product for an extended period of time, to prevent unexpected activation.

● Pay particular attention to opening the battery cap to avoid injury. Heat from the batteries may cause pressure buildup inside the battery compartment, and could result in cap explosion with unexpected force.

● Avoid water or foreign objects inside the product. Discontinue use and turn it off immediately should you notice flooding or leakage. Continuous use could result in complete damage to the product.

● Do not handle batteries wet hands to prevent shock hazards.

● Do not use the product in the presence of flammable gas, as this could result in explosion or fire.

● Keep out of reach of children to prevent accidental ingestion. If swallowed, seek medical advice immediately.

## ⚠ CAUTION

● Should you notice smoke or an unusual smell coming from the product, turn it off and remove the batteries immediately, taking care to avoid burns. Continued operation could result in injury. After removing the battery, take the product to a SEA&SEA authorized service center for inspection.

● Discontinue use and turn the product off immediately should you notice flooding or leakage.

● When the product is flooding, interior pressure may build up. Please be careful when opening the product as water may spurt out or the cap may open explosively and cause injuries.

● Do not open the battery cap in the vicinity of open flames.

● The product has been constructed with an airtight seal. When packing the product for airplane travel, do not seal-up the product to alleviate pressure build up due to atmospheric changes.

● Do not open the product in a wet or sandy environment. Protect the interior from moisture and debris in order to prevent malfunction or flooding.

● Keep away from strong magnetic fields. Do not use or store this product in the vicinity of equipment that generates strong electro-magnetic radiation or magnetic fields. Strong static charges or the magnetic fields could cause malfunction, or affect the product's internal circuitry.

● Avoid strong shocks/impacts or excess stress to prevent malfunction, damage or breakdown. Make sure that the product has been securely mounted to other products in order to prevent injury, fall or missing.

● Do not carry the camera or housing by holding the accessories such as arm, cable, strobe, etc. Heavy components may fall and cause damage or injury.

● Do not rest heavy weight on the product. It might deform the outer casing, damage internal parts, make the waterproofing fail, or result in fire or electric shock.

● Rinse the product with fresh water, after underwater use. Ensure that the product is waterproofed before rinsing. Refer to [Maintenance and Storage] for details.

● Make sure that the connectors have been secured with the connector caps before rinsing the product with fresh water, after removal from other products.

● Never use chemicals, cosmetics, any petroleum solvents such as paint thinner, or neutral detergent on the product. They may deform and damage the product.

● Do not leave the product in places with hot temperatures such as inside of a car or in a car trunk in summer. The heat may deform plastic parts of the product, damaging internal parts and resulting in potential fire or electric shock. If the product is sealed tight in hot conditions, heated air expanding inside the product may deform the casing and ruin the waterproofing.

● Do not store the product in wet or high humidity place, to avoid mold, rust, corrosion or malfunction.

● Do not store the product with naphthalene or camphor mothballs, or in locations such as a laboratory where chemicals are used. This environment can cause mold, rust, corrosion or malfunction.

● SEA&SEA SUNPAK Co., Ltd. assumes no liability for compensation of loss of captured images or expenses caused by loss of images, even if you are unable to shoot due to a product defect or malfunction.

● SEA&SEA SUNPAK Co., Ltd. will not be responsible for the replacement or compensation for cameras, lenses or those accessories damaged due to your invalid operation.

● Carefully observe the O-ring maintenance manual for the handling of O-rings before use.

● SEA&SEA SUNPAK Co., Ltd. assumes no liability for errors or discrepancies in this manual.

● Specifications and appearance are subject to change without notice.

## Safety Precautions for Use of Battery

## ⚠ DANGER

● Never expose the battery to flame or fire, or to excessive heat.

● Never attempt to disassemble, alter or directly solder the battery. There are no userserviceable parts. Tampering with battery may expose you to dangerous voltage, battery acid, or electrical shock.

● Never short-circuit the terminals of a battery, as it could result in battery leakage, heat generation, fire, or explosion. Avoid contact with all metal objects during transporting and storage.

● Never short-circuit the terminals of batteries installed in the product, as it could result in battery leakage, heat generation, fire, explosion, or product malfunction.

● Move leaking batteries away from fire or open flames immediately. The leaked fluid and its vapor are combustible.

● If the battery leakage contacts your skin or clothing, flush the affected area repeatedly with clean water. It may irritate your skin. Should it get into your eyes, immediately rinse them with plenty of water, avoid rubbing and seek medical advice.

● Never attempt to insert the battery upside down or backward, as it could result in battery leakage or explosion. Always confirm the direction of plus and minus before installation.

● Never connect a battery directly to a plug outlet or car cigarette lighter.

## ⚠ WARNING

● Keep dry. The battery is not waterproof, and may malfunction if immersed in water or exposed to high levels of humidity. Rusting of the internal mechanism can cause irreparable damage.

● Do not remove and/or damage the case of a battery. It may cause battery leakage, overheating or explosion.

● Never use batteries should you notice any changes such as leakage, discoloration or deformation. When you notice the situation as abnormal, discontinue use immediately and take the product to a SEA&SEA authorized service center for inspection.

● Keep out of reach of children to prevent accidental ingestion. If swallowed, seek medical advice immediately.

● Do not leave or use batteries in an extreme hot environment. This may cause battery leakage, overheating or battery performance deterioration.

## ⚠ CAUTION

● Avoid strong shocks/impacts or excess stress to batteries.

● Dirt on the battery terminals can prevent the product from functioning. Should the battery terminals become dirty, wipe them with a clean, dry cloth before use.

● Turn the equipment off after use. Remove batteries from the equipment when not in use. Store in dry area with temperatures ranging from -20°C to 30°C (-4°F to 86°F).

## Maintenance and Storage

● Never use chemicals, cosmetics, any petroleum solvents such as paint thinner, or neutral detergent on the product. They may deform and damage the product.

● After each use in salt water, make sure it's watertight, then soak it sufficiently in fresh water.

● Insufficient soaking causes damage by salt to the product. Salty residue may be left on the product where it will crystallize as it evaporates. Crystallized salt is hard to dissolve and difficult to be removed once formed, and it will result in water leakage.

● After rinsing, dry the product well with a soft dry cloth, then let the product dry in the shade, out of direct sunlight.

● Do not dry the product by heating (using a hair dryer, for example). Heating can deform and damage the product.

● If you will not use the product for an extended period of time, store it away from high temperatures, high humidity, direct sunlight, or extreme cold.

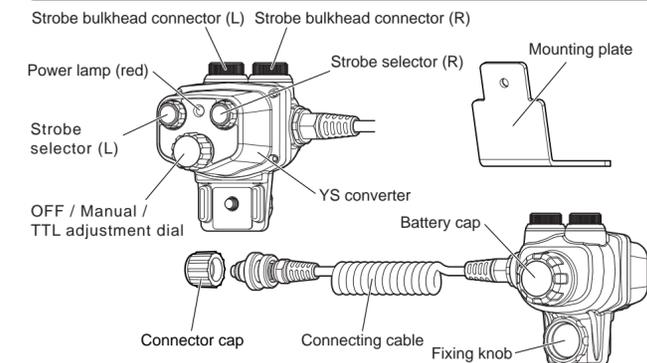
● Do not store the product with naphthalene or camphor mothballs, or in locations such as a laboratory where chemicals are used. This environment can cause mold, rust, corrosion or malfunction.

● Always remove batteries from the product after use.

● After using the product, maintain the O-rings before storing. Examine the O-rings before and after each dive. We recommend early exchange of the O-rings, at least once a year.

● Every two years we recommend a complete overhaul of O-rings regardless of the frequency in use, for the best performance of the product.

## Identification of Parts



## How to Use

### Battery installation

This product can only be used with CR2 lithium batteries. Never use other kinds of batteries.

**1 Make sure the OFF / Manual / TTL adjustment dial is in the [OFF] position**

**2 Turn the battery cap counterclockwise and remove (Fig.1)**

**3 Insert battery aligned to the + and - marks (Fig.2)**

● Take care to insert the battery in the correct direction.

**4 Apply silicon grease to the O-ring on the battery box**

● Check the O-ring and the battery cap to make sure there are no scratches or debris.

**5 After closing the battery cap completely, turn back the cap to align the marks (Fig.3)**

● Do not apply excessive force when closing the battery cap.

## ⚠ CAUTION

● When installing or removing batteries, thoroughly wipe water off this product and dry your hands. Pay particular attention not to allow water from your hair or wetsuit to drip into the battery compartment. This is in order to prevent an electrical hazard, mold, malfunction or flooding.

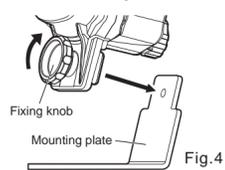
● Remove the battery from the product when not in use for a long period of time.

● The power lamp flashes when the remaining battery power is low. Replace the battery with a new one when the power lamp flashes.

### Mounting to housing grip

This product can be mounted to the grips for SEA&SEA SLR camera housings.

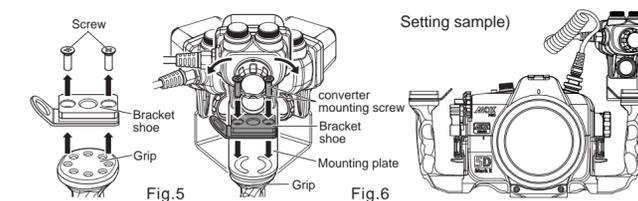
**1 Turn the fixing knob clockwise, and securely attach the mounting plate (Fig.4)**



**2 Remove the two screws from the grip, and then remove the bracket shoe (Fig.5)**

**3 Fit the mounting plate in between the grip and the bracket shoe, and then fasten it in place with the converter mounting screws included with this product (Fig.6)**

● Do not apply excessive force when fastening the screws.



## ⚠ CAUTION

● The SEA&SEA Grip-Stay L (option) is required when using an RDX series housing.

### Connection to other equipment

## ⚠ CAUTION

● Before connecting the product to other equipment, make sure to turn off all equipment.

● Plugging in/out the code while equipment is ON will cause damage or trouble.

● Be sure to connect the connecting cable to the converter connector on the camera housing.

● Connecting the cable to other connectors will cause damage on the connector.

● Camera may not recognize the strobe depending on the condition. In such situation, turn off all equipment, then turn on the power of the converter.

● Converter connector and strobe connector on the housing cannot be used at the same time. When used together, the YS converter will malfunction.

● This product is only compatible with certain SEA&SEA products. Use of other equipment will void the product warranty.

### How to connect with a camera housing

This product can be connected to a camera housing equipped with converter connector.

● Compatible housings are as follows:(Current as of Jun 2009)

● DX series housings : DX-350D·DX-5D

● RDX series housings : RDX-450D·RDX-500D(available in summer of 2009)

● MDX series housings : MDX-PRO MarkⅢ·MDX-40D·MDX-PRO 5D MarkⅡ

### Connecting cable connection

**1 Remove the connector caps from the converter connector on the camera housing and the connecting cable of this product**

**2 Make sure there are no scratches or debris on the O-ring of the connecting cable being connected**

**3 Align the circular marks on the connecting cable and converter connector on the housing, and then push the connecting cable straight in**

**4 Align the B part of the connecting cable with the screws of the converter connector, and then rotate it until it stops**

● Do not twist the A (cable) part.

**5 Rotate the C part of the connecting cable until it stops**

● Tighten it securely.

**6 When removing the connecting cable, loosen C first, then B, and then pull the connecting cable straight out holding onto A**

● Do not pull on the cable part.

### How to connect with strobes

This product is equipped with two strobe bulkhead connectors, and can be used with either one or two strobes by setting the strobe selector in accordance with the connected strobes.

### Sync cord connection

**1 Remove the strobe bulkhead connector cap from this product**

**2 Connect the sync cord to the strobe bulkhead connector on this product**

● Refer to the strobe's instruction manual for details.

### Handling the strobe bulkhead connector

## ⚠ CAUTION

● Do not touch the connector's contact pins with fingers or contaminate the pins with silicone grease. If contaminated accidentally, clean the pins by a soft cloth.

● When the sync cord is detached from the strobe or converter, be sure to cover both connectors ends with the plastic cap.

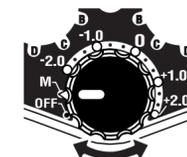
● When rinsing the sync cord after use, if the sync cord has been detached from the strobe and/or converter, be sure both ends of the connector are protected with their plastic caps.

● When detaching the sync cord from the converter, always hold the converter with the bulkhead connector facing downward to prevent any water trapped between the sync cord and bulkhead connector from penetrating the bulkhead connector.

### Operating Instructions

#### OFF / Manual / TTL adjustment dial

The dial is used to turn the power OFF, switch between modes (Manual or TTL), and adjust the strobe's intensity during TTL mode. When the dial is set to [M] or TTL adjustment range (-2.0 to +2.0)\*, the power lamp lights up in red and the converter is activated.



\* The TTL adjustment range value (-2.0 to +2.0) is designated by SEA&SEA, and it is different from the EV value. The strobe's intensity can be adjusted in 1/3 increments. Setting the dial in the plus (+) range increases the intensity and setting it in the minus (-) range decreases the intensity.

### Strobe selector (L/R)

Refer to the following list to set the strobe selector in accordance with the connected strobe. (Current as of Jun 2009)

A:YS-110 α·YS-120

B:YS-250PRO

C:YS-60·YS-90DX·YS-90AUTO·YS-90Du0

D:YS-110 (Cannot be used with MDX-PRO MarkⅢ)



### Setting Precautions

## ⚠ CAUTION

● The camera's battery consumption rate will increase when this product is connected to the camera and the camera is turned ON (in standby mode). Make sure to turn the camera OFF or terminate the connection between the camera and this product by removing the sync connector within the housing from the camera when not in use.

### TTL photography

**1 Set the strobe selector in accordance with the connected strobe**

**2 Set the adjustment dial within the TTL range (-2.0 to +2.0)**

● For normal use, keep it at " 0 ".

● This product supports various camera models, and the shot images might be over or under exposed depending on the camera's characteristics. Please adjust the strobe intensity with the TTL adjustment dial according to the situation or your preference.

● The intensity of only one strobe cannot be adjusted with this product when two strobes are connected to it.

**3 Set the switches of the strobe for TTL photography**

● Turn OFF the slave function of the strobe if it is available.

● Refer to the strobe's instruction manual for details.

## ⚠ CAUTION

● Be sure to set the camera as below for TTL photography.

● Set the ISO speed to less than ISO 200.

● Set the exposure compensation to ±0EV.

● Set the shutter curtain sync timing to 1st curtain sync.

● Select "1: Average" in custom functions menu "E-TTL II" when using with Canon cameras supporting E-TTL II.

● Refer to the camera's instruction manual for the setting.

● The pre-flash(es) is fired when the converter is set in the TTL mode.

● The YS-90 series strobes and the YS-60 strobe cannot emit weak light due to their functional characteristics.

The following procedure is recommended for shooting at short distances or with the minimum aperture setting, as the YS-90 series strobes and the YS-60 strobe have a tendency to emit excess light.

● Use the diffuser supplied with the strobe.

● Move the strobe away from the subject.

● Set the camera's shutter speed faster.

### Manual photography

**1 Set the strobe selector in accordance with the connected strobe**

**2 Set the adjustment dial to the M (Manual) position**

**3 Set the switches of the strobe for manual photography**

**4 Adjust the amount of light for each strobe**

### Note:



Pressure-resistance inspection sticker



Products bearing this sticker are those that have passed SEA&SEA's criteria-based inspection for pressure resistance.

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, (2) this device must accept any interference received, including interference that cause undesired operation.



The product conforms to WEEE standards. This symbol indicates separate collection of waste electrical and electronic equipment in the EU countries. Please do not throw the equipment into the domestic refuse. Please contact your local authorities for recycling program information.

## Specifications

Power	Lithium battery CR-2
Continuous operation time	Approx. 24 hours (based on normal room temperature 25°C, until the power lamp flashes)
Depth rating	60m / 200ft
Construction	Body: Polycarbonate resin
Weight	Approx. 400g / 14oz (Approx. 140g / 4.9oz underwater)
Dimensions	Approx. 68 × 93 × 104mm / 2.7 × 3.7 × 4.2inch (WxHxD)
Accessories	Mounting plate, Silicone grease, Lithium battery CR-2 *2, O-ring maintenance manual, Converter mounting screw × 2, Instruction Manual (this manual)

\*1 Specifications and appearance are subject to change without notice.

\*2 The supplied CR2 lithium battery is for testing purposes only. Replace it with a new battery if product performance is inadequate.