

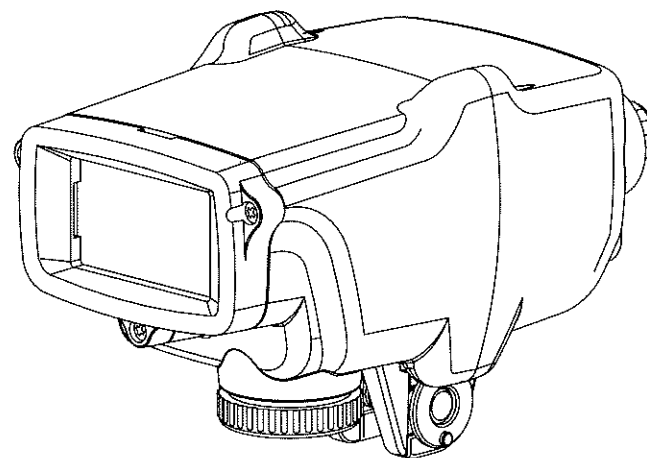
SEA&SEA

UNDERWATER STROBE

03104

YS-55 TTL/E

Instruction Manual



SEA&SEA

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0440-Z-01-1

Yellow Sub

YS-55 TTL/E

Thank you and congratulations on your purchase of Sea & Sea's YS-55TTL/E Strobe. For proficient operation of all strobe functions and to maximize performance, please read this manual thoroughly before use. Retain for future reference.




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Safety Precautions

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

* Misuses listed under the following precautions could lead to serious consequences. Please observe the precautions as they contain highly important information related to personal and product safety.

-  **DANGER !** : Situations that involve a high risk of serious injury or death.
-  **WARNING !** : Situations that could result in serious injury or death.
-  **CAUTION !** : Situations that could result in property damage or personal injury. Please read carefully since failure to heed these precautions could have serious consequences.

DANGER !

- Don't disassemble, structurally change (solder, for example), or heat the strobe. Don't put the strobe into a fire.
- Don't bring the battery terminals (+ and -) into contact with metal objects-necklaces or boddy pins, for example. The battery may leak, overheat, catch fire, or explode.
- If the battery leaks, get the battery away from fire or open flame immediately. The leaked fluid or its vapor may catch fire and explode.
- If the battery fluid leaks onto your skin or clothing, wash it well with water. If you get battery fluid in your eye, you may lose your eyesight. Do not rub your eye. Wash it thoroughly with clean and consult a doctor immediately.

WARNING !

- Use only manganese, alkaline, lithium, Ni-MH, oxyride or Ni-Cd batteries in this unit. Do not use any other type of battery. Doing so may generate a toxic gas.
- Do not fire this strobe with the reflector facing down on a table or the floor as that may cause overheating of the internal circuitry and/or fire.
- Heat from the batteries may cause pressure buildup inside the battery compartment. When opening the battery compartment, the battery cover may release with unexpected force. To avoid injury, open with extreme care.
- Don't use the product while driving a car or operating a vehicle. Inattention may lead to accidents.

- Don't disassemble or structurally change the product which can result in fire or electric shock. Disassembling the product is dangerous because it contains a high-voltage circuit. If you need to inspect or repair internal parts, please contact the dealer who sold you the product.
- Don't pour water or insert a foreign object into the product. Fire or electric shock may result. The product is waterproof, but if water gets inside it for any reason, immediately turn it off and stop using it.
- Remove the battery from the product when it's stored for long periods of time.
- Don't touch the flash immediately after firing it. It's hot and may burn you.
- Don't handle the battery with wet hands or you may be shocked.
- Use the product only when you have a firm footing so you don't fall and injure yourself.
- Don't place the product on a slope or an unstable surface. It may fall and break or injure someone below it.
- Keep the silicone grease, O-ring and battery away from children so they don't swallow them. If a child swallows any of these items, take the child immediately to a doctor.
- Don't fire the flash or use a light in a driver's eyes while driving. The driver may be startled and lose control of the car.
- Don't use the flash in any place with flammable or explosive gases. It may start a fire or trigger an explosion.

CAUTION !

- Read this instruction manual carefully before you start using the product.
- If the product isn't used for a long period of time, remove the battery from it.
- Don't fire the flash too close to a subject's eyes, especially those of a baby. It may impair vision. When you capture an image of a subject using the flash, try to stay more than 3 feet (1 meter) away from the subject.
- Sea & Sea is not responsible for any loss of captured images or expenses caused by loss of images, even if you're unable to shoot due to a product defect.
- Don't open the battery cap in the vicinity of open flames.
- Make sure the product is tightly connected to a camera system so it doesn't fall off and get lost. Falling accessories can result in damage and injury.
- If you see smoke or sense an acrid smell coming from the product, immediately turn off the power and remove the battery from the product. Return the product to your dealer for repair.
- When using the product in a hospital or an airplane, inquire first about

restrictions. The product generates electromagnetic waves that may affect instrument operation.

- Don't rest heavy weights on the product. It might deform the outer casing, damage internal parts, make the waterproofing fail, or result in fire or electric shock.
- Don't leave the product in places with hot temperatures such as the inside of a car or in a car trunk in summer. The heat may deform plastic parts of the product, damaging internal parts of the product, 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.
- If the strobe housing leaks, interior pressure may build up. If so, please be careful when opening the product because water may spurt out or the cap may open explosively and cause injuries.
- Don't open the product anywhere where its interior will be subjected to sprays or drips of water, high humidity, or sand. These may cause failure, ruin the waterproofing, or promote internal mold growth.
- Don't block air circulation around the product when using it by putting a blanket over it, for example. It may block heat dispersion and deform the product's casing or cause a fire.
- Be careful when touching the product after firing it repeatedly. It may get hot enough to burn you.
- Don't apply petroleum solvents such as alcohol or paint thinner to the product. They may deform or damage the product.
- Don't store the product where naphthalene or camphor is present, or in locations such as a laboratory where chemicals are used. This environment can cause mold growth and malfunctions.
- Misusing the product voids the warranty.
- Don't drop or hit the product. It may break or damage it.
- The product may not work correctly in places where high intensity radio waves or electromagnetic waves are present.
- If you don't use the product for a long period of time, periodic maintenance will keep internal electronic parts from deteriorating. Once a month, install batteries and fire a test flash. Operate all other switches as you would in normal operation. Turn the power off, then remove the batteries while the ready light (red) is on.

Safety Precautions for Use of the battery

DANGER !

- When recharging nickel metal-hydride or nickel-cadmium batteries, use a charger designed specifically for them and follow the recharging instructions. Recharging in an inappropriate charger may cause battery leakage, overheating, and bursting.
- Never place batteries near heat or fire. Never discard in a fire
- Never short-circuit the terminals of a battery. Avoid contact with all metal objects.
- Never attempt to disassemble or modify a battery. There are no user serviceable parts. Tampering with battery may expose you to dangerous voltage, battery acid, electrical shock.
- Never solder the terminals of a battery.
- Battery has a specific polarity. Never force the battery into the charger or light. Always check the + and - polarity before installation. Incorrect orientation may cause permanent battery damage.
- Never connect a battery directly to a power outlet or car cigarette lighter.
- Battery acid poses a serious risk to eyesight. In the event of an accident, immediately flush the eye with cool, fresh water and consult a physician.

WARNING !

- Do not expose a battery to water. Avoid wet terminals. It may cause corrosion.
- Do not charge a rechargeable battery beyond the specified charging time; that may cause battery leakage, fire hazard or explosion.
- If battery acid gets on your skin or clothes, there is a risk of skin irritation or other injury. Immediately rinse the affected area with cool, fresh water.
- Do not remove or damage the case of battery. It may cause battery leakage, fire hazard or explosion.
- If you notice battery leakage, color change or warping, discontinue use immediately.
- Keep battery out of reach of children.
- Do not use or leave battery in direct sunlight, in the car on a hot day, or in proximity of a heater. Extreme heat may cause battery leakage, fire hazard, or reduced life of battery

CAUTION !

- Do not throw, drop or subject to violent impact.
- Use or discharge rechargeable battery only in environments with a temperature range of 32° to 122° F (0° to 50°C).
- Charge rechargeable battery only in environments with a temperature range of 32° to 104° F (0° to 40°C).
- For recharging, refer to the instruction manual of the dedicated charger.
- Always recharge rechargeable battery before use after an extended time in storage.
- The terminals of battery must be kept free from contamination. Always clean the terminals with a clean, dry cloth before use. Contaminated terminals may cause intermittent connection or recharging failure.
- When not in use, remove batteries from this product. Turn the power off when the strobe is not in use. Store in a dry area with temperatures ranging from -4° to 86° F (-20°C to 30°C) to prevent battery leakage or corrosion.
- Do not recharge battery in a cold environment (lower than 32° F/0°C). Severe cold may cause battery leakage, deterioration in performance, or shortened useful life.
- If you notice any abnormality with battery, discontinue use and bring or send it to your dealer.

[Safety Precautions for Disposal of the Ni-MH Battery]

- The used Ni-MH battery is also a precious resource. Seal the terminals or connections with insulation tape or material and bring the used battery to your dealer for recycling.

Handling the O-Ring

The O-rings on the battery case of your YS-55TTL/E provides an airtight waterproof seal. Improper handling and maintenance of the O-rings can cause flooding. Please observe the following precautions carefully.

⚠ CAUTION!

The O-rings for this product contain silicone oil that gradually exudes from the O-ring over time to keep it lubricated. When it requires external lubrication, it must be lubricated with Sea & Sea pure silicone grease designed for these O-rings. The grease comes in a tube with blue lettering and a blue cap.

Do not use silicone greases made by other manufacturers or use Sea & Sea silicone grease not designed for these O-rings. (Other Sea & Sea silicone grease is labeled in black text.) Other greases cause these O-rings to crack and age prematurely. Once this happens, the blue O-ring can't be restored and must be replaced with a new one.

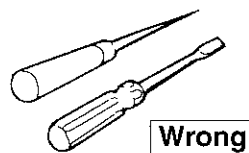
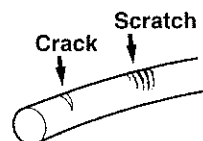
If you use a degraded O-ring, the O-ring may stick and make openable parts unopenable. The O-ring's seal may also fail and flood the product when underwater. Always replace an O-ring in this condition.

● Always inspect the O-ring for scratches, cracks or cuts.

If the O-ring is damaged, it must be replaced. Never remove the O-ring with a sharp tool. To avoid damaging the O-ring, use the O-ring Remover, a tool especially made for O-ring removal.

● Inspect for debris.

Make sure that there are no foreign particles, such as dust, sand, or hair, on the O-ring, O-ring groove, or O-ring contact surface. Such contamination will breach the seal and cause flooding.



● Lubricate with silicone grease.

Silicone grease protects the O-ring from drying and abrasion. Dab a small amount of grease onto your finger and draw the O-ring through your fingers until evenly coated. Use the silicone grease sparingly. Too much grease attracts debris.

● Do not crimp the O-ring.

Hold the O-ring straight and do not bend or twist it when fitting it into the O-ring groove.

● O-ring storage.

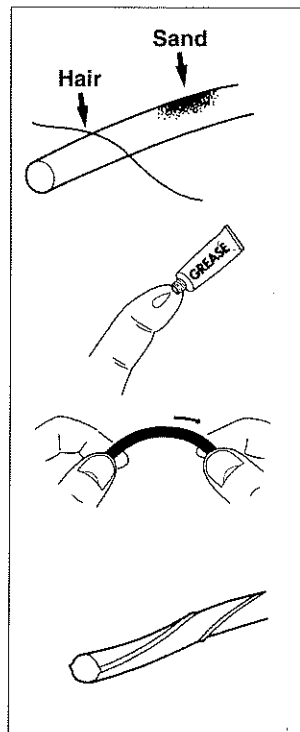
Always store your O-ring in an airtight container and in a cool environment. Keep out of direct sunlight. Take care that it is stored flat and not bent or twisted. Do not place any heavy objects on it; excessive weight will flatten it and impede its sealing capability.

● The O-ring's life is one year.

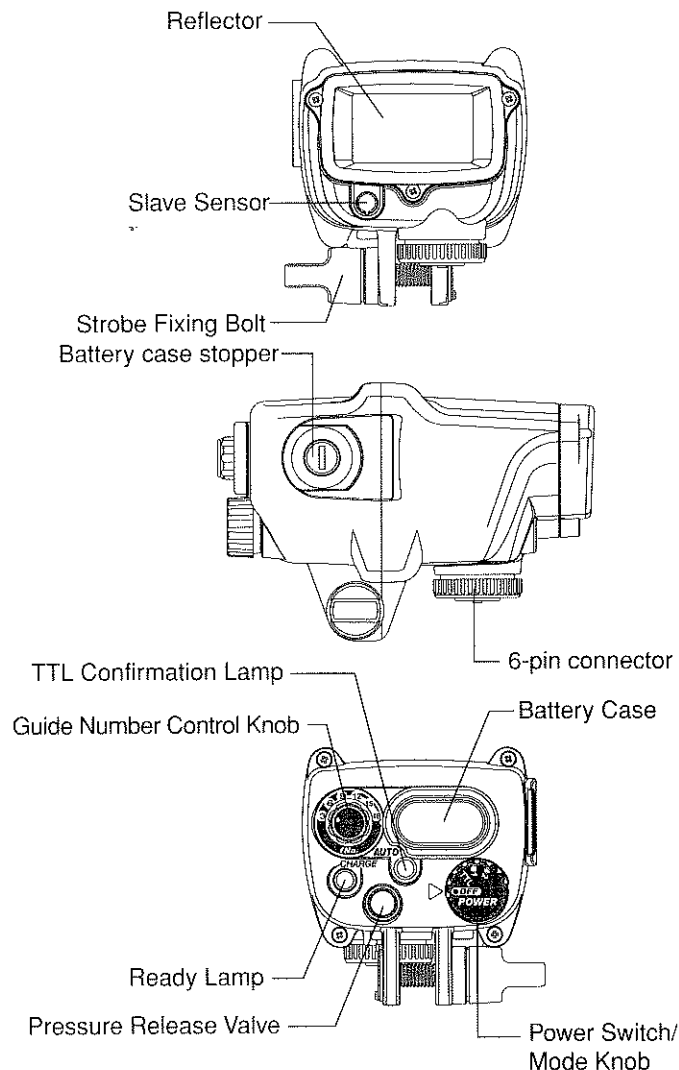
The life of the O-ring depends on the diligence of your maintenance, frequency of use, and storing conditions, but on average, if you maintain your O-ring properly, it will retain its watertight integrity for one year.

● Remove the O-ring for inspection.

Before use, remove the O-ring from its groove and carefully check the O-ring, the O-ring groove, and the O-ring contact surface. A thorough examination of the O-ring and O-ring groove is not possible unless the O-ring has been removed.



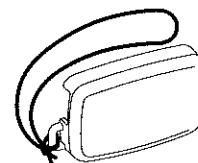
Identification of Parts



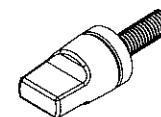
Checking the Accessories

Before using this product, check to make sure that all accessories are present.

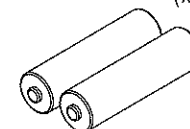
● Diffuser



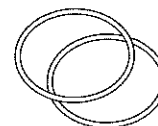
● Strobe Fixing Bolt



● Size AA Batteries (x2)



● O-Ring (x2)



● Silicone Grease



● O-ring Remover



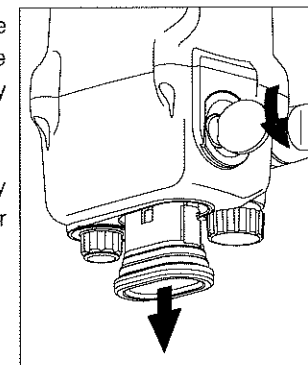
Installing the Batteries

《How to Install the Batteries》

The YS-55TTL/E is powered by two AA alkaline, manganese, Ni-MH, lithium, oxyride or Ni-Cd batteries.

1. Using a coin, turn the battery holder release counterclockwise by 90° (1/4 turn). Pull out the released battery holder from the battery chamber.

※ After use, hold the strobe with the battery chamber facing down in order to prevent water from penetrating the interior.

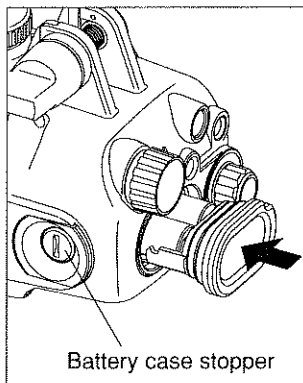
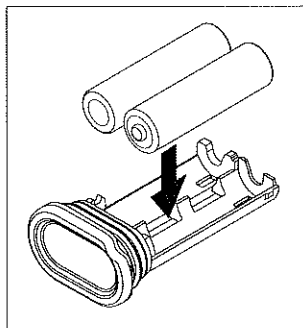


2. Install the batteries according to the polarity shown on the battery holder.

※ Make sure that there are no foreign particles, such as dust, sand or hair, in the battery chamber, on the O-ring, and on the O-ring channel. Make sure that the O-ring is not crimped, twisted, scratched, and is securely in its channel.

※ See "Handling the O-ring" on page 7.

3. Insert the battery holder back into the chamber and push until the battery holder clicks into the "locked" position, with the coin groove vertical, as shown.



⚠ CAUTION !

- Never replace batteries with wet hands.
- Use extreme care not to allow water from your hair or wetsuit to drip into the battery compartment.
- Always replace with fresh batteries of the same kind, Never mix manufacturer's brands.

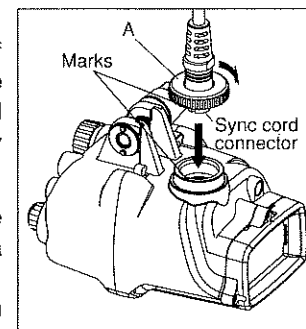
E-TTL Mode

The strobe's E-TTL mode works with a Canon EOS (digital) camera equipped with E-TTL circuitry.

《The connector connection on the strobe》

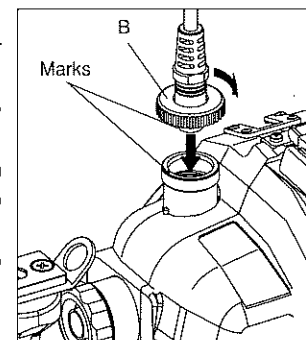
Make sure to turn the strobe power switch off when you connect the YS-55 TTL/E to the camera (in a housing). If the strobe is connected or removed while the power switch is on, it may hurt the camera.

1. Check the O-ring on the connector to make sure it has no flaws or dirt on it, then apply a light sheen of silicone grease to the O-ring.
2. Face the connector plug into the connection socket on the strobe, then plug it straight into the socket. Turn the thread ring (A) to start screwing it to the connection socket (don't cross-thread it) and turn it firmly until it stops.



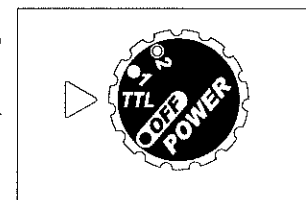
《The connector connection on the housing》

1. Remove the cap from the GN strobe connector (6 pin).
2. Make sure there are no flaws or dirt on the sync code connector.
3. Face the connector plug into the connection socket on the housing, then plug it straight into the socket.
4. Turn the thread ring (B) to start screwing it to the connection socket (don't cross-thread it) and turn it firmly until it stops.



《The mode setting》

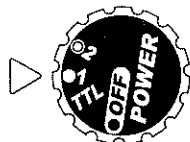
1. Set the strobe mode knob to the "TTL" position.
2. Press the shutter button on the camera halfway.



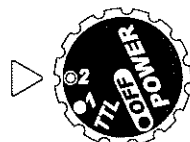
Manual mode

◁○1> ... Set the strobe mode knob to this position when you shoot in manual mode with a digital camera that does not pre-flash.

(The strobe flashes on the first flash from the camera.)



◁○2> ... Set the power switch to this position when you shoot in manual mode with a digital camera that pre-flashes. If your digital camera's built-in flash fires twice when shooting in the forced-flash mode, the strobe's power switch should be in this position.



* Remember to set the built-in strobe of your digital camera to forced flashing mode before use.

《Guide Number Control dial》

You can set the strength of the strobe's flash to any of 6 levels by turning the guide number control knob.

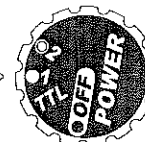
* The guide number shown are the reference value on indicated aperture values are references based on use on land. Actual GN may vary depending on water conditions, visibility, subject reflectivity, time of day, etc.



Checking Synchronization

The YS-55 TTL/E's flash is triggered by sensing the light from the built-in flash on your camera. The number of pre-flashes of a built-in flash differs among models and manufacturers, so check settings before shooting by conducting test flashes. Use the following procedures to check the synchronization:

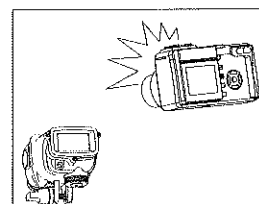
1. Set your camera's built-in flash to forced flash mode.
2. Set the power switch on the YS-55TTL/E to 「○1」.



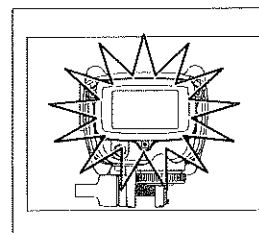
3. Set the Guide Number Control Knob on the YS-55TTL/E to 「18」.



4. Hold the camera away from and facing the strobe as shown and release the shutter. (Appropriate distance between the YS-55TTL/E and the camera should be 1m/40 inches or more.)



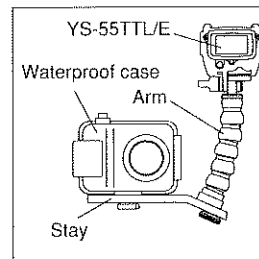
5. Review the image on the camera's LCD display. If the strobe is synchronizing properly, the image should be washed out from the flash. In this case, your camera will properly synchronize when the power switch is set to 「○1」. If the image is not washed out, then the strobe has not synchronized with the camera. Set the power switch at the 「○2」 and repeat the above steps "3" and "4".



Synchronization has been achieved when the image on the LCD is washed out.

Once you determine the correct number setting for synchronization, set the power switch to that number every time you use the camera.

6. Confirm the synchronization setting by repeating the test after you have assembled your underwater system, including the camera, housing, stay, arm and strobe.



- The slave sensor senses and synchronizes to the light reflected from the subject, but YS-55TTL/E does not synchronize in places where the reflected light is weak.
- For distances where the light of the built-in strobe is sufficient, over-exposure will occur when using the YS-55TTL/E. Use the YS-55TTL/E only when the built-in strobe light is insufficient.
- The slave function of YS-55TTL/E set ready with your camera may be triggered by a flash of any other strobe used nearby.

Automatic shut-down

In order to battery life, the YS-55TTL/E automatically switches to the Power Saving Standby Model after about 7 minutes. The flash ready light will turn off.

- When using CANON EOS series cameras, lightly depress the camera's shutter release , or simply turn the switch to the "OFF" position and then back to the "TTL" position.
- When using cameras other than CANON EOS series, simply slide the switch to the "OFF" position and then back to the "1" or "2" position.

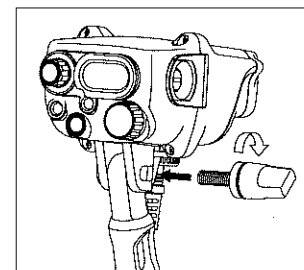
Pressure Release Valve

- When using the strobe underwater, you may notice bubbles on the strobe. These bubbles may present because the batteries sometimes generate gas inside the strobe. The strobe is designed to let the gas out through a pressure release valve. If you notice bubbles on the release valve that might be the result of gas generation, take these actions:

1. Turn off the power switch and discontinue use.
2. Ascend to the surface at a safe rate of ascent.
* Water will not flood into the product even if bubbles are coming out.
3. Contact a Sea & Sea authorized dealer for checkup.

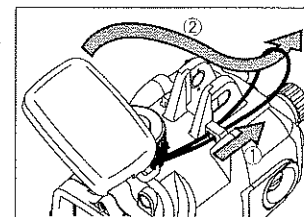
Attaching the Strobe Fixing Bolt

To mount the YS-55TTL/E to an arm, use the fixing bolt (included in this product package). Insert the bolt through the non-threaded side, as shown.



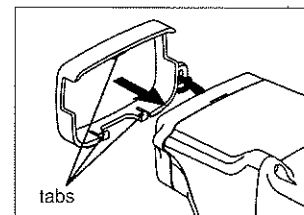
Diffuser

Insert the diffuser tether through the tether hole on the strobe housing, then pass the diffuser through the loop in the tether.



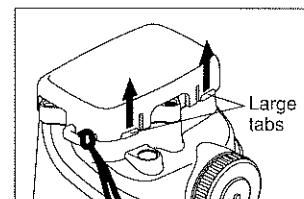
《Attaching》

To attach the diffuser (included in the product package) to the YS-55TTL/E, fit and press it to the front of the strobe so that the tabs on the diffuser snap into the grooves on the strobe, as shown.



《Detaching》

To detach the diffuser, push the large tabs on the bottom forward, as shown.



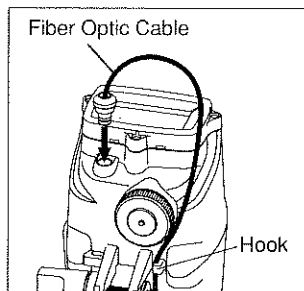
Fiber Optic Cable

The YS-55TTL/E can be dedicated to various digital camera housing by means of the Sea & Sea fiber optic cable (sold separately).

* Some housing are not compatible.

* Use Sea & Sea's Fiber Optic Cable for the YS-25 (sold separately) when the YS-55TTL/E cannot make cordless synchronization with the camera's built-in flash.

1. Insert one end of the fiber optic cable into the slave sensor socket of the YS-55TTL/E, as shown.
2. Secure the cable by the hook, as shown.
Connect the other end of the cable to the housing. Refer to the instruction manual for the fiber optic cable for instructions.



CAUTION !

- Read the instruction manual for the fiber optic cable before use.

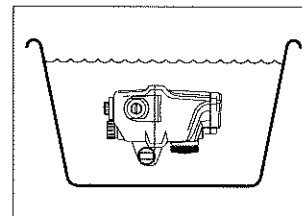
About the PASSED Label



The Pressure Test Passed label on a product indicates that the product has passed the Sea & Sea pressure test and is waterproof at depth.

Maintenance and Storage

1. After using the strobe underwater, rinse it in fresh water. Make sure that the strobe is watertight before rinsing.
2. After using the strobe in salt water, make sure it's watertight, then soak it sufficiently in fresh water as shown.



After soaking, rinse it in running fresh water.

○ If you don't soak the strobe for a sufficient period of time in fresh water or you rinse the strobe in running water without soaking, salty residue may be left on the strobe where it will crystallize as it dries up.

Crystallized salt is hard to dissolve; it's difficult to remove salt crystals on this product once they're formed. Salt crystals can cause water leakage into the housing, so it's important to soak the strobe in fresh water for a sufficient period of time.

3. After rinsing in water, dry the strobe well with a soft dry cloth, then let the strobe dry in shade, out of direct sunlight.
○ Don't dry the strobe by heating (using a hair dryer, for example). Heating can deform and damage the strobe.
4. After using the strobe, apply a thin coating of silicone grease the O-ring before storing. Replace the O-ring once a year with a new O-ring.
5. If you won't use the strobe for a long period of time, store it carefully away from high temperatures, high humidity, direct sunlight, or extreme cold.
6. Never use alcohol, paint thinner, or any other petroleum solvents on the strobe. They may deform and damage the strobe.
7. Remove the batteries before storing the strobe.
8. Have the strobe overhauled two years after purchase.

Specifications

Controls and Functions:	Power Switch: OFF/TTL/○1/●2
Guide Number Control Knob:	6 steps (3/6/9/12/15/18)
Indicators:	Ready lamp (Red LED light up when charging is complete) TTL confirmation lamp (Green LED light up for approximately 4 seconds to confirm a correct automatic expose)
Guide Number:	18 (land, at full flash)
Beam Angle:	95° ~ 64° (land, at full flash)
Color temperature:	5300K (full power) 4700K (with Diffuser/full power)
Battery life:	2 AA alkaline batteries: Approximately 135 flashes 2 AA Ni-MH batteries (2400mAh): Approximately 185 flashes 2 AA oxyride batteries: Approximately 145 flashes
Recycle time:	2 AA alkaline batteries: Approximately 4 seconds 2 AA Ni-MH batteries (2400mAh): Approximately 3 seconds 2 AA oxyride batteries: Approximately 4 seconds
Battery Requirements:	2 AA alkaline batteries: 1.5V x 2 = 3V 2 AA Ni-MH batteries : 1.2V x 2 = 2.4V 2 AA oxyride batteries: 1.5V x 2 = 3V
Depth Rating:	60m (200feet)
Dimention:	88 x 81 x 131mm (H x W x D)
Weight:	420g
Weight underwater:	0g (including batteries)
Operating temperature:	0°C~40°C
Body material:	acrylic resin
Accessories:	Instruction manual, diffuser, strobe fixing bolt, 2 AA alkaline batteries, silicone grease, o-ring, o-ring remover

※The price, specifications, and appearance of this product may change without notice.

※The performance values above may change depending on variables such as frequency of use, battery consumption, recharge level, and so on.

※The above specifications are based on normal room temperature (25°C).

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