

YS-350 TTL/PRO

Instruction Manual

Thank you and congratulations on your purchase of SEA & SEA's YS-350 TTL/PRO Strobe. For Proficient operation of all strobe functions and to maximize performance, please read this manual thoroughly before use. Retain for future reference.

Table of Contents

Safety Precautions	2
Handling and Maintenance of the O-ring	3
Identification of Parts	5
Before Taking Pictures	6
How to Install the Battery	6
The Sync Cord	6
How to Mate Sync Cord with Strobe	7
How to Mate with Camera	7
Replacing the Target Light Battery and Bulb	8
Operating the Controls	9
Taking Pictures	9
Power Switch	9
Power Mode Switch	11
Mounting the Diffuser	11
Strobe Test	12
Exposure Calculation Table	12
TTL Operating Range Table	12
Charging the Battery	13
Maintenance and Storage	14
Specifications	15

Safety Precautions

Please read the following precautions carefully as they contain highly important information related to personal and product safety. Precautions designated "WARNING!" refer to those situations which could result in serious injury or death. Precautions marked "CAUTION!" refer to those situations or conditions which could result in personal injury or property damage. Please observe all precautions.

Precautions for the Care and Operation of the Strobe

⚠ WARNING !

- Do not fire this strobe with the reflector placed on a table or the floor as that may cause overheating of the internal circuitry and/or fire.
- Do not trigger the flash near combustible materials. It may cause fire.

⚠ CAUTION!

- Always make sure that the strobe and accessories are securely mounted to the camera or housing to prevent them from falling off, getting lost, causing personal injury or equipment malfunction.
- Do not attempt to disassemble the strobe. Internal high voltage circuitry can cause personal injury.
- Do not alter or modify the strobe. User modifications can result in flooding or malfunction. User modifications will void the product warranty.
- If you detect smoke or an acrid odor, discontinue use immediately. Remove the batteries from the strobe. Bring or send to an authorized Sea & Sea dealer for evaluation and repair.
- In the event of flooding, turn off both the strobe and camera or housing and discontinue use.
 - Beware of increased pressure inside the strobe. Handle with extreme care when opening.
 - Bring the strobe to an authorized Sea & Sea dealer as soon as possible.
- Do not shortcircuit the connector pins. That may cause equipment malfunction.
- After use, always rinse the strobe thoroughly with fresh water.
 - Before rinsing, make sure the strobe is securely sealed with both locking latches. Make sure the bulkhead connector is sealed with the connector cap.

- During transportation or when not in use for an extended period of time, remove the batteries to avoid unwanted battery consumption due to accidental activation of the power switch.
- This product incorporates plastic parts. Do not subject this strobe to extreme heat, such as on a car dashboard, or to direct sunlight. Plastic parts are prone to warping.
- SEA & SEA Products Ltd. will not be responsible for unobtained pictures or costs incurred related to the shooting of such pictures due to malfunction of the YS-350 TTL/PRO strobe, housing, camera, strobe, or accessories.
- SEA & SEA Products Ltd. will not be responsible for any damages, repairs, or replacement of the camera lenses, or accessories used with this strobe due to flooding caused by user mishandling.

Precautions for Storage of the Strobe

⚠ CAUTION!

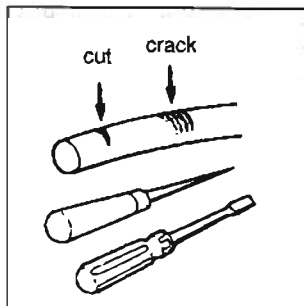
- When not in use for an extended period of time, remove the batteries; possible battery leakage will cause equipment malfunction.
- Do not store in a damp or humid environment.
- Do not store in a chemically-laden environment. Naphthalene, camphor or other strong chemicals can cause mildew, rust, corrosion and other damage to the metal and rubber components in this product.
- When not in use for a long period of time, periodically attach to the camera and trigger the shutter release (film is unnecessary). This will exercise the internal parts and keep the strobe in good working condition.

Handling and Maintenance of the O-Ring

The O-ring on the front case of your YS-350 TTL/PRO strobe provides an airtight waterproof seal. Improper handling of the O-ring can cause flooding. Please observe the following instructions carefully.

● Remove the O-ring for Inspection.

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



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

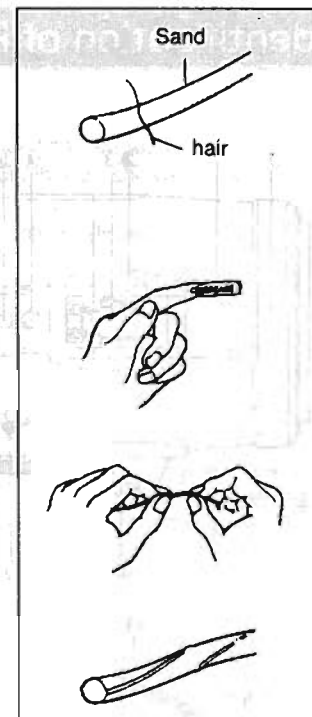
If the O-ring is damaged, it must be replaced. Never remove the O-ring with a sharp or pointed tool. To avoid damaging the O-ring, use the O-ring Remover, a Sea & Sea tool made specifically for O-ring removal.

● Inspect the O-ring for debris.

Make sure that there are no foreign particles, such as dust, sand or hair adhering to the O-ring, O-ring channel, or O-ring contact surface. Such contamination will breach the seal and cause flooding. If necessary, wash the O-ring thoroughly in fresh water and dry with a lint-free cloth. Use a moistened cotton swab to clean the O-ring channel and contact surface. Make sure there is no fiber residue.

● 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 the O-ring is evenly coated. Use the silicone grease sparingly. Too much grease attracts debris.



⚠ CAUTION!

Use only the Sea & Sea brand silicone grease in the tube with a BLUE cap. Never use the Sea & Sea silicone grease in a tube with a WHITE cap. Never use any other brands of silicone grease to lubricate the O-ring on your YS-350 TTL/PRO, as they may adversely affect the O-ring sealing capability.

● Do not crimp the O-ring.

Do not bend or twist the O-ring when fitting it into the O-ring channel.

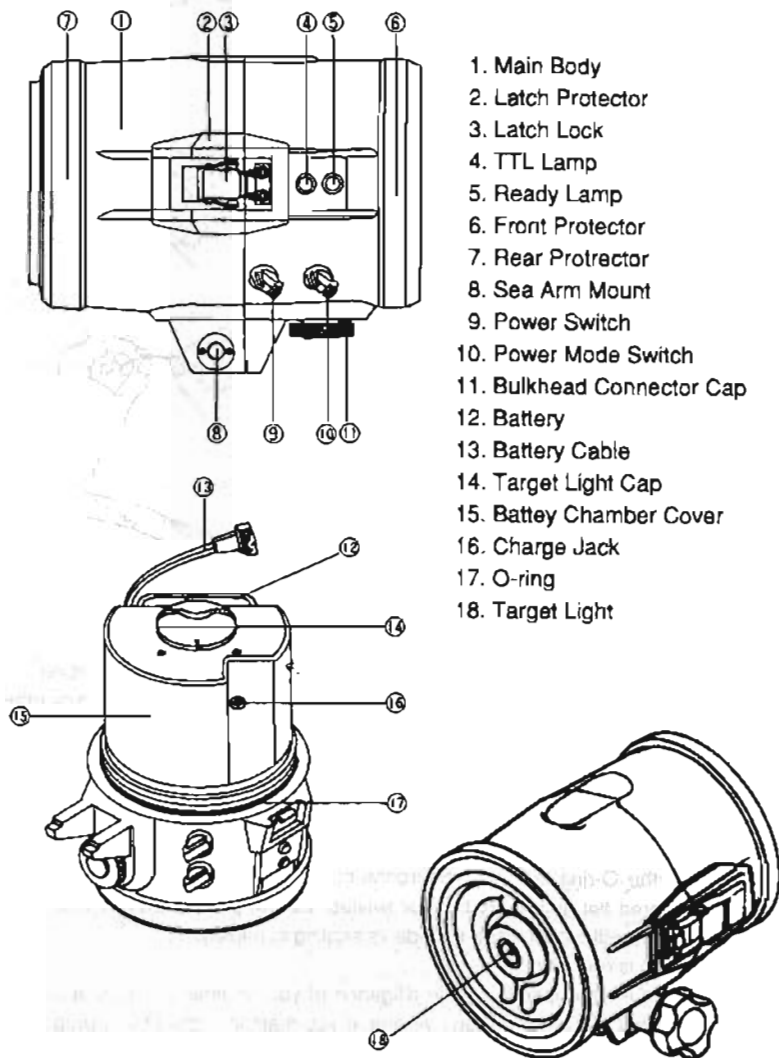
● O-ring storage.

Always store the O-ring in a cool environment. Keep out of direct sunlight. Make certain it is stored flat and is not bent or twisted. Do not place 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 storage conditions, but on average, if you maintain your O-ring properly, it will retain its watertight integrity for one year.

Identification of Parts

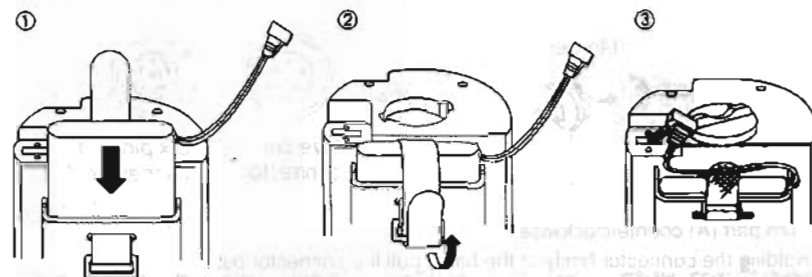


BEFORE TAKING PICTURES

[How to Install the Battery]

The battery has been removed from the main body and packed separately.

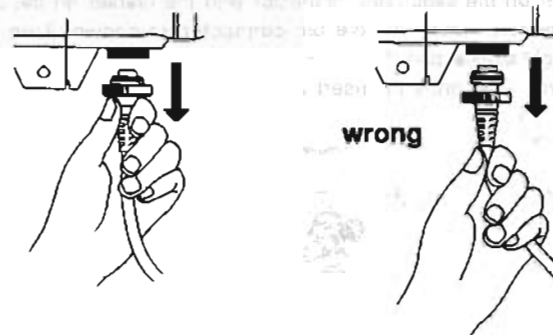
1. To install the battery, insert into the battery chamber as shown and secure into position with the velcro strap.(figure 1, figure 2)
2. Connect the battery cable into the battery jack, as shown.(figure 3)



[The Sync Cord]

The YS-350TTL/PRO strobe has a detachable sync cord. When detaching it from the strobe, be sure the bulkhead connector is facing downward to prevent any trapped water from penetrating.

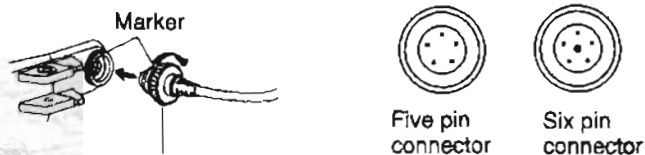
Note; When traveling, it is wise to have a spare sync cord in the event the cord is accidentally damaged.



How to Mate with Strobe

1. Inspect the O-ring on the sync cord connector for dust and debris. Clean or replace if necessary. Then lubricate the O-ring with a thin coating of silicone grease and replace to its channel.
2. Align the marker on the sync cord connector with the marker on the strobe bulkhead connector, then insert the five-pin connector as shown. Turn part (A) clockwise until tight.

Note: When using this strobe with optional accessory Guide Number Controller (product #18520), you must use the compatible six-pin Sync Cord/GN (product #18530).



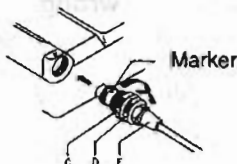
To remove:

1. Turn part (A) counterclockwise.
2. Holding the connector firmly at the base, pull the connector out.

Caution: Never twist or pull the sync cord. You can damage the internal wiring.

How to Mate with Camera

1. Inspect the O-ring on the sync cord connector for dust and debris. Clean or replace if necessary. Then lubricate the O-ring with a thin coating of silicone grease and replace to its channel.
2. Align the marker on the sync cord connector with the marker on the camera's bulkhead connector. Insert the five-pin connector as shown. Turn part (D) clockwise until tight against part (C).
3. When mating with a Nikonos III, insert a stay in-between and tighten (C) until secure.



To remove:

1. Reverse the procedure and pull part (E) straight out.

[Points to Observe]

- Do not touch the connector's contact pins with fingers or contaminate pins with silicone grease. If contaminated, clean with alcohol.
- When the sync cord is detached from the strobe or camera, be sure to cover both connector ends with the appropriate sync cord connector caps. **Note:** There are two caps; one is exclusively for the connector end that mates with the strobe and the other is exclusively for the connector end that mates with the camera.
- When rinsing the sync cord after use, if the sync cord has been detached from the strobe and/or camera, be sure both ends of the connector are protected with their plastic caps.

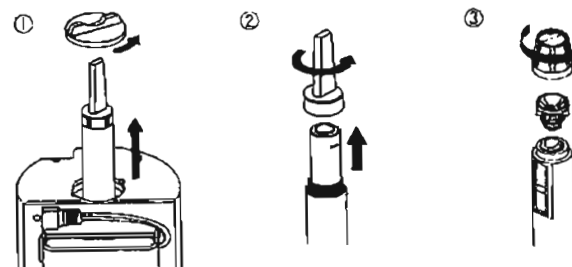


Replacing the Target Light Battery and Bulb

1. Remove the cap from the target light chamber and pull out the target light.

Figure 1.

2. Remove the battery cap and insert two fresh AA alkaline batteries. Figure 2.
3. Remove the transparent cover from the target light, unscrew the bulb, and replace the bulb with Sea & Sea's Target Light Bulb (product #01731), sold separately. Figure 3.
4. To replace the target light into the target light chamber, insert the target light into the chamber and push it gently down the length of the chamber until it stops. Then secure the chamber cover by turning until it clicks in the locked position.

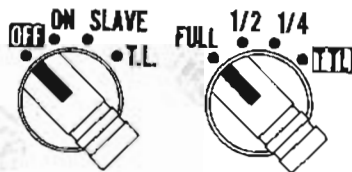


Operating the Controls

The YS-350TTL/PRO is equipped with two controls: the power switch and the power mode switch.

The power switch has three positions: [ON] for manual flash mode, [SLAVE] for slave flashing mode, and [T.L.] for target light operation.

The power mode switch has four positions: [FULL] for full power mode, [1/2] for 1/2 power mode, [1/4] for 1/4 power mode, and [TTL] for TTL automatic flash mode.



Taking Pictures

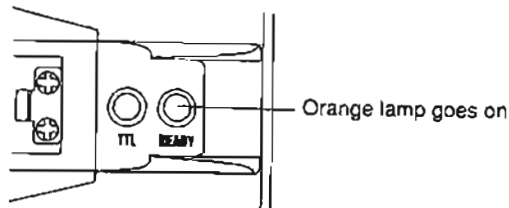
[Power switch]

[OFF] Use this position when the equipment is not in use or when the battery is being charged.

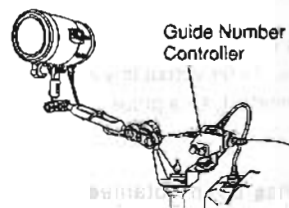
[ON] This is manual flash mode. The strobe delivers a constant light quantity of either FULL, 1/2, or 1/4 power, depending upon which power mode has been selected. When using a diffuser in manual mode, light output is softened, particularly effective in macro and close-up photography.

A neon light and an audible beep will signal simultaneously when the strobe has recycled and is ready to be fired.

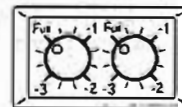
To determine the correct f-stop, use the exposure calculation table on page 12 or the guide number formula on page 12.



With use of optional accessory, Guide Number Controller, light output can be adjusted in 1/3 EV increments. The Guide Number Controller can be used with a single strobe or with dual strobes. When using with dual strobes, each strobe's output can be controlled individually and independent of one another. Please refer to the instruction manual for the Guide Number Controller for more details.



Each strobe can be controlled in 1/3 step EV increments.



Example of Guide Number Controller set up.

[SLAVE] This position activates slave mode. In slave mode, the strobe will flash when light from another strobe is detected, without using a cord. The power mode switch enables you to select from FULL, 1/2 and 1/4 power.

When set at the slave mode position, it is possible to use two, three or any number of strobes in order to create any lighting effect desired. The guide number (GN) for multiple strobe photography is determined by using the following formula:

$$\text{Multiple GN} = \sqrt{\text{GN}^2 + \text{GN}^2 + \dots}$$

[Points to Observe]

Slave mode is activated when the strobe's slave sensor detects light from another strobe.

- The slave mode will not function when water conditions restrict the main light source or when ambient light conditions overpower the primary strobe's light.
- The slave can be triggered by light from another strobe in close proximity.

[T.L.] Target light mode. A 3-watt spotlight is incorporated into the center of the strobe head. The target light is intended to help you accurately direct the strobe's light beam onto your subject. The target light is also effective for night and macro photography. Proper exposure will not be affected when the target light is in use.

- The target light will emit a continuous light for 90 minutes using two AA alkaline batteries.
- The spot from the target light may be difficult to discern in extremely well-lighted environments.
- The target light is not effective if the subject is too far away.
- The slave mode does not operate in target light mode.

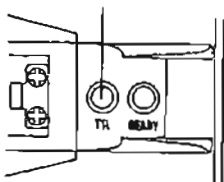
[Power Mode Switch]

- [FULL] Full power flash mode. (GN 32/105 [m/ft]; ISO 100, land).
- [1/2] 1/2 power flash mode. Half the full power light output is obtained. (GN 16/53 [m/ft]; ISO 100, land).
- [1/4] 1/4 power flash mode. 1/4 of the light output is obtained. (GN 8/26 [m/ft]; ISO 100, land).
- [TTL] This is TTL automatic mode. In this mode, the camera's sensor measures the light reflecting off the subject and quenches the strobe output to yield a proper exposure. The light output is automatically controlled, so a proper exposure is easily obtained.

In TTL mode, when a proper exposure has been obtained, the TTL confirmation lamp (green) will illuminate and the electronic beep will sound for approximately 2.5 seconds. **Note:** The subject must be within the strobe's TTL operating range. See table on page 12.

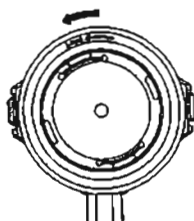
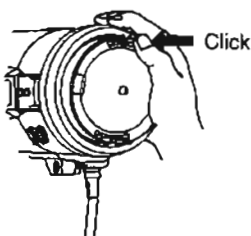
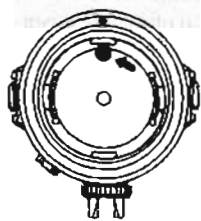
- In the Nikonos V, the lamp in the viewfinder blinks for about two seconds to warn that the strobe has delivered a full power flash instead of a TTL flash.

Green lamp goes on



[Mounting the Diffuser]

Insert one of the plastic tips into the groove in the glass dome. Push the other tip in toward the center of the diffuser. Press down until the diffuser clicks into place. When the diffuser is not in use, fit in into the slot on the back side of the strobe. Turn counterclockwise in the direction of the arrow to the LOCK position as shown.



[Strobe Test]

Attach the strobe to the camera (without film). Turn the strobe on to full power manual and fire. The neon light and electronic beep should indicate strobe readiness within four seconds on a fully charged battery.

F-Stop = $\frac{\text{GN}}{\text{Strobe-to-subject distance}}$

*With ISO 100 film speed

NOTE
Due to the absorption of light underwater, the underwater guide number is 1/2 to 1/3 the land value.

Exposure Calculation Table

DISTANCE (m)			ISO					DISTANCE (ft)		
FULL	1/2	1/4	25	50	100	200	400	FULL	1/2	1/4
0.2			22					0.8		
0.3	0.2		16	22				1	0.6	
0.7	0.3	0.2	11	16	22			2.4	1	0.6
1	0.5	0.3	8	11	16	22		3.3	1.6	0.8
1.5	0.7	0.3	5.36	8	11	16	22	4.8	2.4	1
2	1	0.5	4	5.6	8	11	16	6.6	3.3	1.6
2.9	1.4	0.7	2.8	4	5.6	8	11	9.4	4.7	2.3
4	2	1		2.8	4	5.6	8	13.1	6.6	3.3
5.7	2.9	1.4			2.8	4	5.6	18.8	9.4	4.7
			Aperture							

*Use the f-stops on the above table as reference only. The f-stop will vary depending upon surface and water conditions, time of day, depth, and the amount of particulate in the water.

The relationship between film speed, f-stop, and distance in TTL mode are shown in the following table.

TTL Operating Range Table

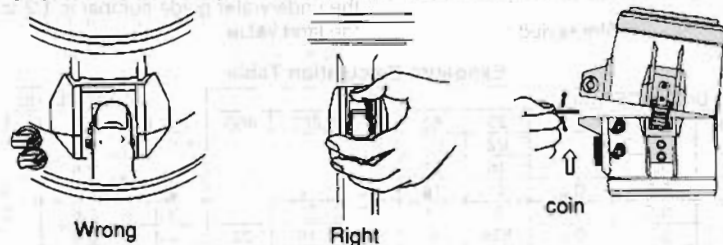
Aperture	ISO					DISTANCE (測光距離)	
	400	200	100	50	25	m	ft
	5.6	4	2.8			1 ~ 5.7	3.3 ~ 18.8
	8	5.36	4	2.8		0.7 ~ 4	2.3 ~ 13.1
	11	8	5.6	4	2.8	0.5 ~ 2.9	1.6 ~ 9.4
	16	11	8	5.6	4	0.3 ~ 2	1 ~ 6.6
	22	18	1	8	5.6	0.3 ~ 1.5	1 ~ 4.8
		22	16	11	8	0.3 ~ 1	1 ~ 3.3
			22	16	11	0.3 ~ 0.7	1 ~ 2.4

*Use the TTL operating range table as reference only. The proper combination of f-stop and strobe-to-subject distance will vary depending upon water clarity, the amount of particulate in the water, subject reflectivity, etc.

*When the TTL operating range is exceeded, the strobe will emit a full power flash and the TTL confirmation lamp will not illuminate. Confirm the relationship between shooting distance and f-stop and reset f-stop.

Charging the Battery

1. Dry strobe carefully. Be sure your hands are dry before opening the strobe.
2. Do not use fingernails to release the latch. Use the fleshy part of your finger and release as shown. The two cases are securely sealed to assure their waterproof integrity. Use a coin to separate the two cases.



3. The battery has not been charged by the manufacturer. Charge the battery for approximately 12 hours with the exclusive-use battery charger included with this product.
4. Turn the power switch to [OFF] when charging.
5. After charging, turn the power switch to ON and confirm that the ready lamp goes on in three to four seconds. Turn the power switch to OFF and the ready lamp will go off.

[Points to Observe]

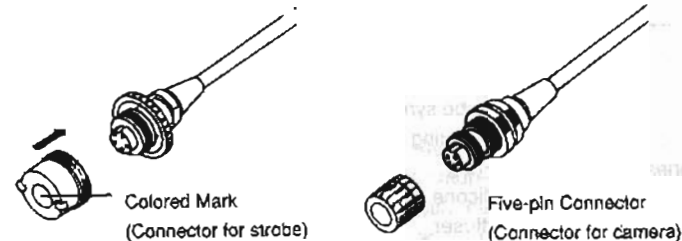
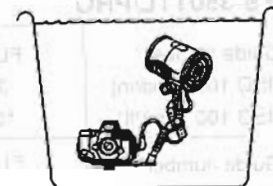
- The performance of a nickel-cadmium battery is apt to be impaired by extremely low or high temperatures and extreme humidity.
- If the battery has not been used for longer than three months, the battery function can decrease due to its spontaneous discharge and performance will be impaired.
- The battery's inherent power can be maintained for a longer period of time when the battery is charged.
- Store the battery in a room where there is no direct sunlight.
- Be sure to charge it fully before use.

Maintenance and Storage

1. Rinse this product well with fresh water after use with all the waterproofing covers and caps on.
2. After rinsing, wipe off the water and keep the strobe in a cool and dry place.

Note: Do not use heater or drier to rapidly dry the strobe.

3. Remove battery after use. Wipe off the water completely and be careful not to let water drip into the battery compartment. If the battery compartment gets wet, dry immediately.
4. After use, apply some silicone grease on the connector O-ring and close the connector cap.
5. When storing the strobe for a long period of time, take care not to expose the strobe to high temperature, high humidity, direct sunlight or extremely low temperature.
6. Disconnect the sync cord from the camera, remove the waterproof connector O-ring, apply some grease on the O-ring and put it back in position.
7. Clean the connector at both ends of sync cord, apply some silicone grease on the O-ring and seal with the connector caps. Remember to use the appropriate strobe cap and camera connector cap.



Specifications

YS-350TTL/PRO			
Guide number (ISO 100 Land/m)	FULL 32	1/2 16	1/4 8
(ISO 100 Land/ft)	105	53	26
Guide number with GN Controller (ISO 100/land)	FULL 32 (12 steps in 1/3 EV increments)		8.5
Beam angle	Approx. 105° X105°, covering 15mm wide lenses.		
No. of flashes	120 (fullpower)		
Recycle time	4 seconds (full power)		
Power source	7.2-volt nickel-cadmium battery		
Color temperature	5500° K/5200° K with Diffuser		
Power Modes	Manual, TTL, Slave		
Depth	60m (220 ft.)		
Size	192X150X145 mm (7.6X5.9X5.7 inches)		
Weight	1,980g (on land), -300g (u/w)		
Accessories	Ni-cad battery for YS-350 Battery charger for YS-350 Strobe sync cord/N (detachable) Arm fixing bolt O-ring Silicone grease Diffuser TTL operating range decal Exposure calculation decal		

All the performance capabilities listed in the above specifications are based on normal environmental temperature (25°C).

Data re nickel-cadmium batteries are based on a fully charged battery with a capacity of 2300mA.

Specifications are subject to change without notice.

Optional

Guide number controller	(18520)
Ni-cad battery for YS-350	(16700)
Strobe sync cord / GN	(18530)
O-ring set for YS-350	(17130)
Battery charger for YS-350	(16500)



WARNING !

1. Because of the airtight nature of this product, gases generated by battery and circuitry, may cause explosion which could result in bodily injury in the following cases :

* Stop using this product immediately if the battery compartment or internal circuitry gets wet. If water should leak into the strobe remove the battery right away and leave the strobe open until the water has dried out completely. If the circuitry gets wet do not use the strobe. Contact an authorized Sea & Sea dealer or repair facility for instructions.

* When the strobe is stored with battery inside. Always remove battery when storing this equipment. Because of the airtight nature of this product, combustible gas generated in the event of a battery leak could cause explosion. If any battery leak is found, do not use the product. Contact and authorized Sea & Sea dealer or repair facility for instructions.

2. Do not disassemble this product. This strobe contains high-voltage circuitry, which can cause serious electric shock if handled improperly.

3. Have this equipment maintained regularly. A strobe that appears to have no external damage may have internal problems, which may not be obvious. An authorized Sea & Sea service facility should service this strobe, at least once a year. (Inspections and annual maintenance are subject to reasonable fees.)