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F19S10091

SIGMA

ELECTRONIC FLASH

EF-610 DG ST SA-STTL

ENGLISH

Thank you very much for purchasing the Sigma EF-610 ST SA-STTL Electronic Flash. This product is specifically developed for the SIGMA SA / SD series SLR cameras. Depending on the camera model, functions and operation may vary. Please read this instruction booklet carefully. To add to your enjoyment of photography, the flash has a variety of features. To make the most of all these features, and to get the maximum performance and enjoyment from your flash, please read this instruction booklet, together with your camera's instruction manual, before using the flash, and also keep it handy for your future reference.

PRECAUTIONS ⚠ Symbol denotes the important points, where warning and caution are required.
⊘ Symbol contains information regarding the actions that must be avoided.

⚠ Warning !!
Using the product disregarding this warning sign might cause serious injury or other dangerous results.

⊘ This flash contains high voltage circuits. To avoid electric shock or burns, do not attempt to disassemble the flash. If the outside shell of the unit is broken or cracked, do not touch the mechanism inside.

⊘ Do not fire the flash close to eyes. Otherwise the bright light could damage the eyes. Keep at least 1m/3feet distance between face and the flash unit, when taking a picture with flash.

⊘ Do not touch the synchro terminal of your camera when the flash is attached to hot shoe. High voltage circuitry could cause electric shock.

⊘ Never use your camera in an environment where flammable, burnable, gas, liquids or chemicals, etc, exist. Otherwise, it might cause fire or explosion.

⚠ Caution!!
Using the product disregarding this caution sign might cause injury or damage.

⊘ Do not use this flash unit on any camera other than the SIGMA SA / SD series cameras; otherwise the flash may damage the circuitry of these cameras.

⚠ This flash unit is not waterproof. When using the flash and camera in the rain or snow or near water, keep it from getting wet. It is often impractical to repair internal electrical components damaged by water.

⊘ Never subject the flash and camera to shock, dust, high temperature or humidity. These factors might cause fire or malfunctioning of your equipment.

⚠ When the flash is subjected to sudden temperature change, as when the flash unit is brought from a cold exterior to warm interior, condensation might form inside. In such a case, place your equipment in a sealed plastic bag before such a change, and do not use the flash unit, until it reaches room temperature.

⊘ Do not store your flash in a drawer or cupboard etc., containing naphthalene, camphor or other insecticides. These chemicals will have negative effects on the flash unit.

⊘ Do not use a thinner, Benzene or other cleaning agents to remove dirt or finger prints from the component. Clean with a soft, moistened cloth.

⚠ For extended storage, choose a cool dry place, preferably with good ventilation. It is recommended that the flash be charged and fired several times a month, to maintain proper capacitor functioning.

DESCRIPTION OF THE PARTS (fig.1)

1.Flash Head 2.AF Auxiliary Light 3.Shoe Ring 4.Shoe 5.Bounce Angle; Up and Down
6.Swivel Lock and Release Button; Right and Left 7.Bounce Angle; Right and Left
8.Battery Cover 9.Flash Coverage Angle Indicator
10.Bounce Lock and Release Button; Up and Down 11.TEST Button 12.Ready Light
13.Power Switch 14.Catch Light Panel 15. Wide Panel

ABOUT THE BATTERY

This flash unit uses four "AA" type Alkaline dry cell batteries or Ni-Cad, Ni-MH, rechargeable batteries. Manganese batteries can also be used but as they have a shorter life than Alkaline batteries, we do not recommend using them. Please replace batteries if it takes more than 30seconds to light the Ready Lamp.

- To assure proper electrical contact, clean the battery terminals before installing the batteries
- NiCad batteries do not have standardized contacts. If you use NiCad batteries, please confirm that the battery contacts touch the battery compartment properly.
- To prevent battery explosion, leakage or overheating, use four new AA batteries of the same type and brand. Do not mix the type or new and used batteries.
- Do not disassemble or short-circuit batteries, or expose them fire or water; they may explode. Also, do not recharge the batteries other than Ni-Cd rechargeable batteries.
- When the flash will not be used for an extended period of time, remove the batteries from the flash, to avoid the possibility of damage from leakage.
- Battery performance decreases at low temperatures. Keep batteries insulated when using the flash in cold weather.
- As with any flash, it is recommended you carry spare batteries when on a long trip, or when photographing outdoors in cold weather.

BATTERY LOADING

1. Be sure to set the Power Switch to the off position then slide, the battery cover in the direction of the arrow to open (fig.2).
2. Insert four AA size batteries into the battery chamber. Be sure the + and – ends of the batteries are aligned according to the diagram in the chamber (fig.3).
3. Close the cover.
4. Slide the Power Switch to the ON position. After few seconds, the Ready Lamp will light, indicating that the flash unit can be fired.
5. Please press the "Test Button" to be sure that the flash is working properly.

- If the battery power is not sufficient, or if there is an electronic information error, the flash coverage angle indicator will blink to indicate the condition.

ATTACHING AND REMOVING THE FLASH TO AND FROM THE CAMERA

Be sure turn off the Power Switch. Then insert the Shoe Base into the hot shoe on the camera and turn the Shoe Locking Ring until it is tight (fig.4)(fig.5).

- When you attach or remove the flash, grasp the bottom of the flash to prevent damage to the shoe foot and camera's hot shoe.
- If the camera's built-in flash is set in up position, please close it before you attach the flash unit.
- To remove the flash, rotate the shoe-locking ring in the opposite direction of ◀LOCK mark, until it stops.

TTL AUTO FLASH

In the TTL AUTO Mode, the camera will control the amount of flash lighting to get the appropriate exposure for the subject.

1. Set the camera's exposure mode to **P** Mode. (In the case of SA-300, SA-300N and SA-5 set to " * " fully automatic mode)
2. Slide the Power Switch to the TTL Position.

- If the flash coverage angle indicator blinks when you turn on the power of your flash, please make sure that the flash head bounce angle is adjusted to the normal (0˚) position.

3. Focus onto the subject.
4. Press the shutter button after the flash is charged.

- After a picture is taken, and the film receives appropriate exposure, the Ready Lamp will blink. If the Ready Lamp does not blink, it indicates that the flash light was not sufficient for that particular situation. Please retake the picture at a distance closer to the subject.
- The AF Auxiliary Light will turn on automatically as you focus on a dark area.
  Note: Effective distance is up to about 0.7 to 9 meter (2.3-29.5 feet).
- When the flash is fully charged, the flash mark will appear in the finder. If the shutter is released before the flash is fully charged, the camera will take the picture at a slow shutter speed, with no flash.
- To conserve battery power, the flash unit automatically turns itself off when the flash is not used within approximately 300 seconds. To turn the flash on again, depress the "TEST" button or the camera shutter button, halfway.
- The flash will automatically set the Zoom Head position according to the focal length of your lens.
- Please refer to《chart.1》for the effective distance ranges.

USING FLASH IN OTHER CAMERA MODES

Shutter Speed Priority Setting

By selecting the **S** mode of the camera, you can set the shutter speed from 30sec. to 1/X sync speed. When you set the desired shutter speed, the camera will select the appropriate aperture value for the background. If the subject is too light or too dark, the aperture value indicator will blink and show the limit values (maximum or minimum aperture). In such as case, the camera proceeds to take flash photograph at the limit value. Thus, the main subject in the picture may be exposed correctly, but the background will become under or over exposed.

Aperture Priority Setting

By selecting the **A** mode of your camera, the camera will select the appropriate shutter speed for the background. If the subject is too bright or too dark, the shutter speed indicator will blink and show the limit highest or slowest shutter speed value. The highest shutter speed will be limited to the camera's normal flash synchronization speed. In such a case, the camera proceeds to take a flash photograph at the limit value. Thus, the main subject in a picture may be exposed correctly, but the background will become under or overexposed.

When used with M Mode

You can set the desired shutter speed and aperture value. The sync speed of camera is 30sec. If you adjust exposure according to the exposure meter indication, the camera will work as for Daylight synchronization flash or slow synchronization.

MANUAL FLASH OPERATION

This flash unit can be used in Manual Mode at full power and at 1/16 power.

1. Set the camera's exposure mode to Manual / M mode.
2. Slide the flash unit's Power Switch to MH (full flash power) or to ML (1/16 flash power).
3. Focus on the subject and set the camera's F-stop, using the exposure calculated by the formula shown below:
   F-stop = Guide Number (G.N.) ÷ Flash to Subject Distance (m)
4. After the flash is fully charged, press he Shutter Release button to take the picture.

Guide Number will change according to the Zoom Head position, (see《chart.2》). Guide Number will also change according to film speed (ISO),(see《chart.3》). In the case of non-ISO100 speed films, multiply the《chart.3》number by the《chart.2》number. For example, using ISO200 film, Zoom Head position for 24mm and the MH mode; multiply the《chart.3》number "1.4" by the《chart.2》number "34.0": 34.0×1.4=47.6. This will be the new effective Guide Number (G.N.) in meters. To determine the G.N. in feet, multiply the G.N. in meters by 3.3.

EX. If flash to subject distance is 8.5 meters:

F-stop = 47.6 ÷ 8.5 = 5.6 (5.6 is the F-stop to set on the camera.)

When repeatedly using the flash rapidly in the MH mode, it should be allowed to "rest" for about 10 minutes after each 20 flashes. If used under the same conditions in the ML mode, the flash should be allowed to "rest" after each 40 flashes.

WIDE PANEL

This flashgun is equipped with a built-in wide panel, which can provide an ultra wide 17mm angle of coverage. Slide out the wide panel and catch light panel and flip it down to cover the flash's head (fig.6-1). (Be careful to slide the panels out smoothly.) Then put the catch light panel back in its place (fig.6-2). The coverage angle setting of the flash will be set to 17mm automatically.

- The flash coverage angle indicator will show that the wide panel is in use by blinking the both end values (24mm and 105mm) slowly (1sec each time).
- If the built-in wide panel comes off accidentally, adjustment mechanism of flash coverage angle will not function. In this case please contact the store where you have purchased the flash, or a service station.

BOUNCE FLASH

When you take a photo with flash in a room, sometimes a strong shadow will appear behind the subject, if you point the flash head upwards or sideways to reflect the light off the ceiling, wall etc. the subject will be illuminated softly. Press the lock button and adjust the flash head to set the bounce angle (fig.7).

UP: 0°, 60°, 75°, 90° DOWN: 0°,7°
RIGHT: 0°, 60°, 75°, 90° LEFT: 0°, 60°, 75°,90°, 120°, 150°, 180°

- The picture will receive the color from the reflecting surface. Please choose a white surface for bouncing.

CLOSE-UP EXPOSURES

For bounce flash can be tilted 7° downward for close-ups. The Flash will be effective only for the subjects 0.5 meter to 2 meters.

- The Flash coverage angle display will blink (2 times / second), when you set the flash head tilted downward by 7°

CATCH LIGHT PANEL

This flash is equipped with a built-in catch light panel, which can create a catch light in the eyes of the subject when the bounce flash mode is activated. Slide out the wide panel and catch light panel (fig.8-1), and then put wide panel back in its place (fig.8-2). (Be careful to slide the panels out smoothly.)

- To create a catch light effectively, tilt the flash head upward 90 degrees and take pictures at a close distance (fig.9).

《表 1》《chart.1》《Tabelle 1》《Tableau 1》《tabel 1》《Tabla 1》

m
ft

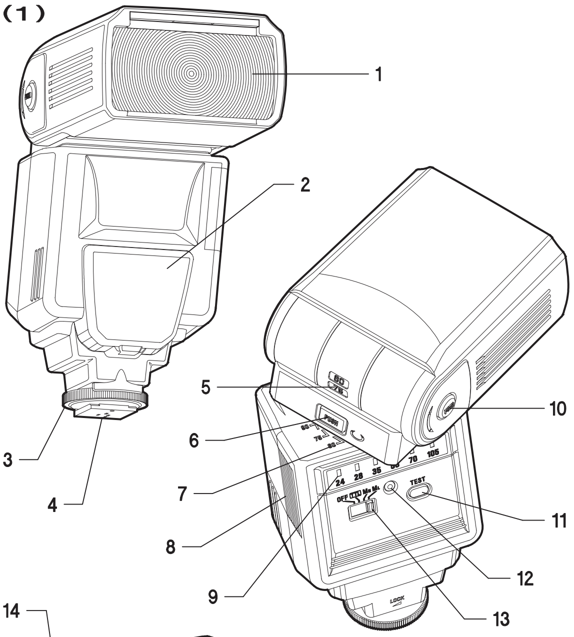
	17mm	24mm	28mm	35mm	50mm	70mm	105mm
1.4	1.5-16.4	2.1-24.3	2.2-25.0	2.3-25.7	2.9-32.9	3.3-37.1	3.9-43.6
	4.9-53.8	6.9-79.7	7.2-82.0	7.5-84.3	9.5-107.9	10.8-121.7	12.8-143.0
2.0	1.0-11.5	1.5-17.0	1.5-17.5	1.6-18.0	2.0-23.0	2.3-26.0	2.7-30.5
	3.3-37.7	4.9-55.8	4.9-57.4	5.2-59.1	6.6-75.5	7.5-85.3	8.9-100.1
2.8	0.7-8.2	1.1-12.1	1.1-12.5	1.1-12.9	1.5-16.4	1.6-18.6	1.9-21.8
	2.3-26.9	3.6-39.7	3.6-41.0	3.6-42.3	4.9-53.8	5.2-61.0	6.2-71.5
4.0	0.7-5.8	0.8-8.5	0.8-8.8	0.8-9.0	1.0-11.5	1.1-13.0	1.3-15.3
	2.3-19.0	2.6-27.9	2.6-28.9	2.6-29.5	3.3-37.7	3.6-42.7	4.3-50.2
5.6	0.7-4.1	0.7-6.1	0.7-6.3	0.7-6.4	0.7-8.2	0.8-9.3	1.0-10.9
	2.3-13.5	2.3-20.0	2.3-20.7	2.3-21.0	2.3-26.9	2.6-30.5	3.3-35.8
8.0	0.7-2.9	0.7-4.3	0.7-4.4	0.7-4.5	0.7-5.8	0.7-6.5	0.7-7.6
	2.3-9.5	2.3-14.1	2.3-14.4	2.3-14.6	2.3-19.0	2.3-21.3	2.3-24.9
11.0	0.7-2.1	0.7-3.1	0.7-3.2	0.7-3.3	0.7-4.2	0.7-4.7	0.7-5.5
	2.3-6.9	2.3-10.2	2.3-10.5	2.3-10.8	2.3-13.8	2.3-15.4	2.3-18.0
16.0	0.7-1.4	0.7-2.1	0.7-2.2	0.7-2.3	0.7-2.9	0.7-3.3	0.7-3.8
	2.3-4.6	2.3-6.9	2.3-7.2	2.3-7.5	2.3-9.5	2.3-10.8	2.3-12.5
22.0	0.7-1.0	0.7-1.5	0.7-1.6	0.7-1.6	0.7-2.1	0.7-2.4	0.7-2.8
	2.3-3.3	2.3-4.9	2.3-5.2	2.3-5.2	2.3-6.9	2.3-7.9	2.3-9.2
32.0		0.7-1.1	0.7-1.1	0.7-1.1	0.7-1.4	0.7-1.6	0.7-1.9
		2.3-3.6	2.3-3.6	2.3-3.6	2.3-4.6	2.3-5.2	2.3-6.2

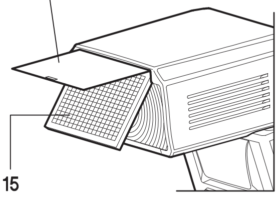
《表 2》《chart.2》《Tabelle 2》《Tableau 2》《tabel 2》《Tabla 2》

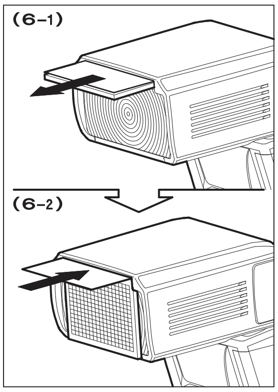
	17mm	24mm	28mm	35mm	50mm	70mm	105mm
MH	23.0	34.0	35.0	36.0	46.0	52.0	61.0
ML	5.8	8.5	8.8	9.0	11.5	13.0	15.3

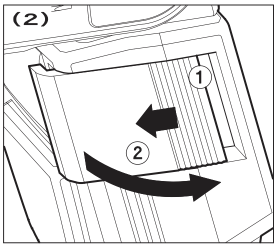
《表 3》《chart.3》《Tabelle 3》《Tableau 3》《tabel 3》《Tabla 3》

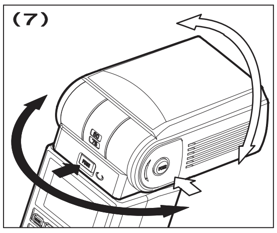
ISO25	ISO50	ISO200	ISO400	ISO800	ISO1600	ISO3200
X0.5	X0.71	X1.4	X2	X2.8	X4	X5.7

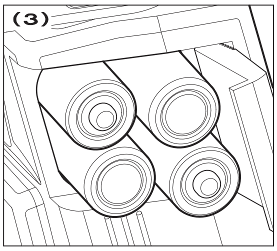


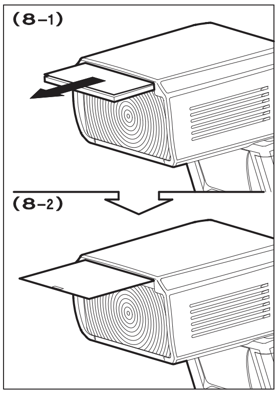


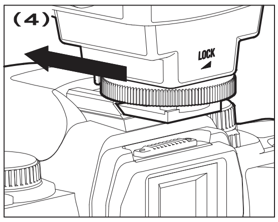


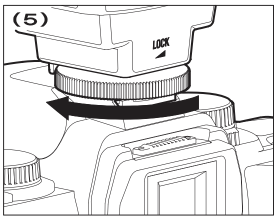


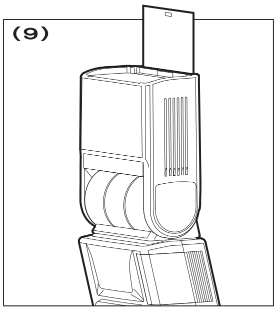












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⊘ Symbol contains information regarding the actions that must be avoided.

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⊘ Do not fire the flash close to eyes. Otherwise the bright light could damage the eyes. Keep at least 1m/3feet distance between face and the flash unit, when taking a picture with flash.

⊘ Do not touch the synchro terminal of your camera when the flash is attached to hot shoe. High voltage circuitry could cause electric shock.

⊘ Never use your camera in an environment where flammable, burnable, gas, liquids or chemicals, etc, exist. Otherwise, it might cause fire or explosion.

⚠ Caution!!

Using the product disregarding this caution sign might cause injury or damage.

⊘ Do not use this flash unit on any camera other than the Nikon series cameras; otherwise the flash may damage the circuitry of these cameras.

⚠ This flash unit is not waterproof. When using the flash and camera in the rain or snow or near water, keep it from getting wet. It is often impractical to repair internal electrical components damaged by water.

⊘ Never subject the flash and camera to shock, dust, high temperature or humidity. These factors might cause fire or malfunctioning of your equipment.

⚠ When the flash is subjected to sudden temperature change, as when the flash unit is brought from a cold exterior to warm interior, condensation might form inside. In such a case, place your equipment in a sealed plastic bag before such a change, and do not use the flash unit, until it reaches room temperature.

⊘ Do not store your flash in a drawer or cupboard etc., containing naphthalene, camphor or other insecticides. These chemicals will have negative effects on the flash unit.

⊘ Do not use a thinner, Benzene or other cleaning agents to remove dirt or finger prints from the component. Clean with a soft, moistened cloth.

⚠ For extended storage, choose a cool dry place, preferably with good ventilation. It is recommended that the flash be charged and fired several times a month, to maintain proper capacitor functioning.

DESCRIPTION OF THE PARTS (fig.1)

1.Flash Head 2.AF Auxiliary Light 3.Shoe Ring 4.Shoe 5.Bounce Angle; Up and Down 6.Swivel Lock and Release Button; Right and Left 7.Bounce Angle; Right and Left 8.Battery Cover 9.Flash Coverage Angle Indicator 10.Bounce Lock and Release Button; Up and Down 11.TEST Button 12.Ready Light 13.Power Switch 14.Catch Light Panel 15. Wide Panel

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- To assure proper electrical contact, clean the battery terminals before installing the batteries
- NiCad batteries do not have standardized contacts. If you use NiCad batteries, please confirm that the battery contacts touch the battery compartment properly.
- To prevent battery explosion, leakage or overheating, use four new AA batteries of the same type and brand. Do not mix the type or new and used batteries.
- Do not disassemble or short-circuit batteries, or expose them fire or water; they may explode. Also, do not recharge the batteries other than Ni-Cd rechargeable batteries.
- When the flash will not be used for an extended period of time, remove the batteries from the flash, to avoid the possibility of damage from leakage.
- Battery performance decreases at low temperatures. Keep batteries insulated when using the flash in cold weather.
- As with any flash, it is recommended you carry spare batteries when on a long trip, or when photographing outdoors in cold weather.

BATTERY LOADING

1. Be sure to set the Power Switch to the off position then slide, the battery cover in the direction of the arrow to open (fig.2).
2. Insert four AA size batteries into the battery chamber. Be sure the + and – ends of the batteries are aligned according to the diagram in the chamber (fig.3).
3. Close the cover.
4. Slide the Power Switch to the ON position. After few seconds, the Ready Lamp will light, indicating that the flash unit can be fired.
5. Please press the "Test Button" to be sure that the flash is working properly.

- If the battery power is not sufficient, or if there is an electronic information error, the flash coverage angle indicator will blink to indicate the condition.

ATTACHING AND REMOVING THE FLASH TO AND FROM THE CAMERA

Be sure turn off the Power Switch. Then insert the Shoe Base into the hot shoe on the camera and turn the Shoe Locking Ring until it is tight (fig.4)(fig.5).

- When you attach or remove the flash, grasp the bottom of the flash to prevent damage to the shoe foot and camera's hot shoe.
- If the camera's built-in flash is set in up position, please close it before you attach the flash unit.
- To remove the flash, rotate the shoe-locking ring in the opposite direction of ◀LOCK mark, until it stops.

TTL AUTO FLASH

In the TTL AUTO Mode, the camera will control the amount of flash lighting to get the appropriate exposure for the subject.

Depending on the combination of the camera, lens, exposure mode and metering mode, the TTL system may change. Please refer to Chart.

- When you use Digital SLR cameras, functions will vary depending on the lens type and combinations of exposure modes, same as F5 and F100 group. (However, all TTL exposure functions will be the D-TTL (i-TTL) system).

Camera	Lens Type	Exp. Mode	Metering	TTL System	Note	
F5 F100 F90X/N90ser. F80/N80ser. F70D/N70	D Type	All Modes	All Modes	3-D Multi-Sensor BL	Can switch to TTL Mode. With F5, F100, F80, series Cameras spot metering system is always TTL.	◎
	AF lens other than D type	All Modes	All Modes	Multi-Sensor BL		
	Without Built in CPU	A/M Modes	Center-weighted, Spot Metering	Center Weighted / Spot Fill-Flash		
F4 Series F-801S/N8008S F-801/N8008 F65/N65 Pronea 600i	With Built-in CPU	All Modes	Matrix Pattern	TTL BL	Can switch to TTL Mode. TTL BL can work with only F4 series, AF F3, Ai-S, Ai, Series E lens. Spot metering system of F4 is always TTL. Pronea 600i will be TTL, when exposure mode is "M". Center Weighted BL cannot work.	◎
			Center-weighted, Spot Metering	Center Weighted / Spot Fill-Flash		
	Without Built-in CPU	A/M Modes	Center-weighted, Spot Metering	Center Weighted/Spot Fill-Flash		
F601/N6006 F-601M	With Built-in CPU	All Modes	Matrix Pattern	TTL BL	Spot Metering cannot use with F-601M	
			Center-weighted, Spot Metering	Center Weighted / Spot Fill-Flash		
	Without Built-in CPU	A/M Modes	Center-weighted, Spot Metering	Center Weighted / Spot Fill-Flash		
F60D/N60 F50D/N50 F-401X/4004S	With Built-in CPU	P/S A/M		TTL BL	If exposure mode is "M", it will be Center Weighted / Spot Fill-Flash	
	Without Built-in CPU	M		Center Weighted / Spot Fill-Flash		
F501/N2020 F301/N2000	Built-in CPU lens, Ai-S, Ai, Series E, AF F3 Lens	P		TTL Programmed		
		A/M		TTL		
	Except above lenses	A/M		TTL		
F401S/N4004S F401/N4004	With Built-in CPU	P/S		TTL Programmed		
		A/M		TTL		
	Without Built-in CPU	M		TTL		
FA, FE2 FG, F3, FM3	With Built-in CPU; Without Built-in CPU	A/M		TTL		

1. Set the exposure mode of the camera. (However, depending on the camera, exposure setting may vary). Please refer to Camera's Instruction manual.
2. Slide the Power Switch to the TTL Position.

- If the flash coverage angle indicator blinks when you turn on the power of your flash, please make sure that the flash head bounce angle is adjusted to the normal (0˚) position.

3. Focus onto the subject.
4. Press the shutter button after the flash is charged.

- If the Ready Lamp blinks, the flash power is not sufficient for that situation. Please retake the picture at a distance closer to the subject.
- If you use the AF camera with AF lens, the AF Auxiliary Light will turn on automatically as you focus on a subject in a dark area. However the AF Auxiliary Light will not light up if central focus area is not selected. Note: Effective distance is up to about 0.7 to 9 meter (2.3-29.5 feet).
- When the flash is fully charged, the flash mark will appear in the finder. If the shutter is released before the flash is fully charged, the camera will take the picture at a slow shutter speed, with no flash.
- To conserve battery power, the flash unit automatically turns itself off when the flash is not used within approximately 80seconds. To turn the flash on again, depress the "TEST" button or the camera shutter button, halfway.
- In case of the combination with ◎ on the above chart, the flash coverage angle will be set automatically, according to focal length of the attached lens. In case of attaching the AF zoom lens, the flash coverage angle will be changed according to lens zoom setting. In case of other combinations, the flash coverage angle will be set to 24mm.
- Please refer to《chart.1》for the effective distance ranges (ISO100).

MANUAL FLASH OPERATION

This flash unit can be used in Manual Mode at full power and at 1/16 power.

1. Set the camera's exposure mode to Manual / M mode.
2. Slide the flash unit's Power Switch to MH (full flash power) or to ML (1/16 flash power).
3. Focus on the subject and set the camera's F-stop, using the exposure calculated by the formula shown below:
   F-stop = Guide Number (G.N.) ÷ Flash to Subject Distance (m)
4. After the flash is fully charged, press he Shutter Release button to take the picture.

Guide Number will change according to the Zoom Head position, (see《chart.2》). Guide Number will also change according to film speed (ISO),(see《chart.3》). In the case of non-ISO100 speed films, multiply the《chart.3》number by the《chart.2》number. For example, using ISO200 film, Zoom Head position for 24mm and the MH mode; multiply the《chart.3》number "1.4" by the《chart.2》number "34.0": 34.0×1.4=47.6. This will be the new effective Guide Number (G.N.) in meters. To determine the G.N. in feet, multiply the G.N. in meters by 3.3.

EX. If flash to subject distance is 8.5 meters:

F-stop = 47.6 ÷ 8.5 = 5.6 (5.6 is the F-stop to set on the camera.)

When repeatedly using the flash rapidly in the MH mode, it should be allowed to "rest" for about 10 minutes after each 20 flashes. If used under the same conditions in the ML mode, the flash should be allowed to "rest" after each 40 flashes.

WIDE PANEL

This flashgun is equipped with a built-in wide panel, which can provide an ultra wide 17mm angle of coverage. Slide out the wide panel and catch light panel and flip it down to cover the flash's head (fig.6-1). (Be careful to slide the panels out smoothly.) Then put the catch light panel back in its place (fig.6-2). The coverage angle setting of the flash will be set to 17mm automatically.

- The flash coverage angle indicator will show that the wide panel is in use by blinking the both end values (24mm and 105mm) slowly (1sec each time).
- If the built-in wide panel comes off accidentally, adjustment mechanism of flash coverage angle will not function. In this case please contact the store where you

have purchased the flash, or a service station.

BOUNCE FLASH

When you take a photo with flash in a room, sometimes a strong shadow will appear behind the subject, if you point the flash head upwards or sideways to reflect the light off the ceiling, wall etc. the subject will be illuminated softly. Press the lock button and adjust the flash head to set the bounce angle (fig.7).

UP: 0°, 60°, 75°, 90°   DOWN: 0°,7°
RIGHT: 0°, 60°, 75°, 90° LEFT: 0°, 60°, 75°,90°, 120°, 150°, 180°

- The picture will receive the color from the reflecting surface. Please choose a white surface for bouncing.

CLOSE-UP EXPOSURES

For bounce flash can be tilted 7° downward for close-ups. The Flash will be effective only for the subjects 0.5 meter to 2 meters.

- The Flash coverage angle display will blink (2 times / second), when you set the flash head tilted downward by 7°.

CATCH LIGHT PANEL

This flash is equipped with a built-in catch light panel, which can create a catch light in the eyes of the subject when the bounce flash mode is activated. Slide out the wide panel and catch light panel (fig.8-1), and then put wide panel back in its place (fig.8-2). (Be careful to slide the panels out smoothly.)

- To create a catch light effectively, tilt the flash head upward 90 degrees and take pictures at a close distance (fig.9).

《表 1》《chart.1》《Tabelle 1》《Tableau 1》《tabel 1》《Tabla 1》

m
ft

	17mm	24mm	28mm	35mm	50mm	70mm	105mm
1.4	1.5-16.4	2.1-24.3	2.2-25.0	2.3-25.7	2.9-32.9	3.3-37.1	3.9-43.6
	4.9-53.8	6.9-79.7	7.2-82.0	7.5-84.3	9.5-107.9	10.8-121.7	12.8-143.0
2.0	1.0-11.5	1.5-17.0	1.5-17.5	1.6-18.0	2.0-23.0	2.3-26.0	2.7-30.5
	3.3-37.7	4.9-55.8	4.9-57.4	5.2-59.1	6.6-75.5	7.5-85.3	8.9-100.1
2.8	0.7-8.2	1.1-12.1	1.1-12.5	1.1-12.9	1.5-16.4	1.6-18.6	1.9-21.8
	2.3-26.9	3.6-39.7	3.6-41.0	3.6-42.3	4.9-53.8	5.2-61.0	6.2-71.5
4.0	0.7-5.8	0.8-8.5	0.8-8.8	0.8-9.0	1.0-11.5	1.1-13.0	1.3-15.3
	2.3-19.0	2.6-27.9	2.6-28.9	2.6-29.5	3.3-37.7	3.6-42.7	4.3-50.2
5.6	0.7-4.1	0.7-6.1	0.7-6.3	0.7-6.4	0.7-8.2	0.8-9.3	1.0-10.9
	2.3-13.5	2.3-20.0	2.3-20.7	2.3-21.0	2.3-26.9	2.6-30.5	3.3-35.8
8.0	0.7-2.9	0.7-4.3	0.7-4.4	0.7-4.5	0.7-5.8	0.7-6.5	0.7-7.6
	2.3-9.5	2.3-14.1	2.3-14.4	2.3-14.6	2.3-19.0	2.3-21.3	2.3-24.9
11.0	0.7-2.1	0.7-3.1	0.7-3.2	0.7-3.3	0.7-4.2	0.7-4.7	0.7-5.5
	2.3-6.9	2.3-10.2	2.3-10.5	2.3-10.8	2.3-13.8	2.3-15.4	2.3-18.0
16.0	0.7-1.4	0.7-2.1	0.7-2.2	0.7-2.3	0.7-2.9	0.7-3.3	0.7-3.8
	2.3-4.6	2.3-6.9	2.3-7.2	2.3-7.5	2.3-9.5	2.3-10.8	2.3-12.5
22.0	0.7-1.0	0.7-1.5	0.7-1.6	0.7-1.6	0.7-2.1	0.7-2.4	0.7-2.8
	2.3-3.3	2.3-4.9	2.3-5.2	2.3-5.2	2.3-6.9	2.3-7.9	2.3-9.2
32.0		0.7-1.1	0.7-1.1	0.7-1.1	0.7-1.4	0.7-1.6	0.7-1.9
		2.3-3.6	2.3-3.6	2.3-3.6	2.3-4.6	2.3-5.2	2.3-6.2

《表 2》《chart.2》《Tabelle 2》《Tableau 2》《tabel 2》《Tabla 2》

	17mm	24mm	28mm	35mm	50mm	70mm	105mm
MH	23.0	34.0	35.0	36.0	46.0	52.0	61.0
ML	5.8	8.5	8.8	9.0	11.5	13.0	15.3

《表 3》《chart.3》《Tabelle 3》《Tableau 3》《tabel 3》《Tabla 3》

ISO25	ISO50	ISO200	ISO400	ISO800	ISO1600	ISO3200
X0.5	X0.71	X1.4	X2	X2.8	X4	X5.7

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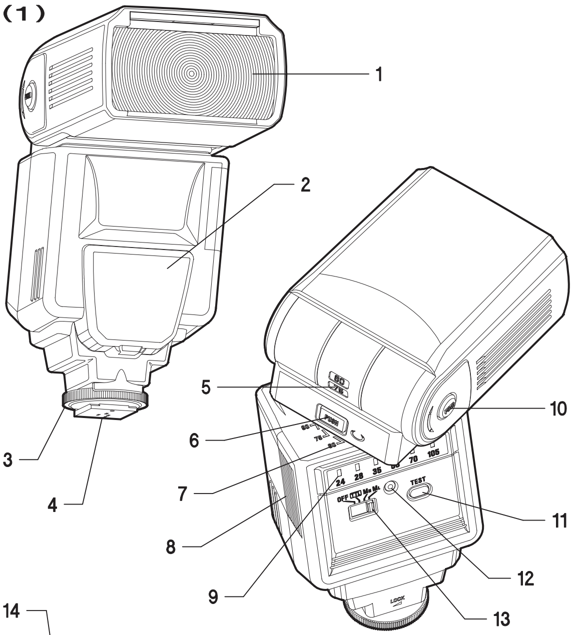

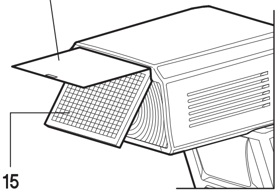

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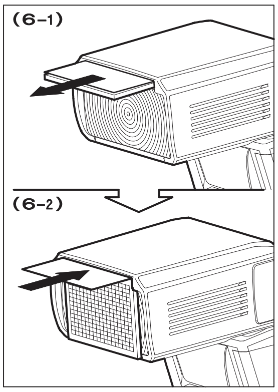

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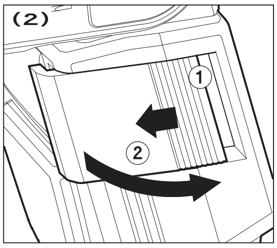

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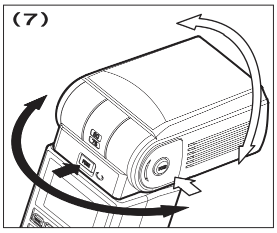

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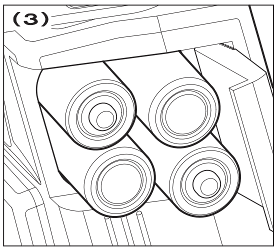

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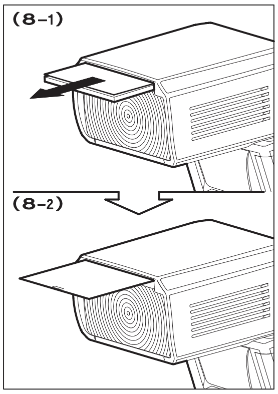

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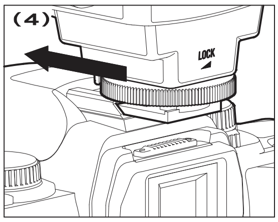

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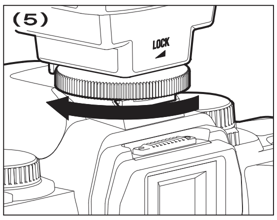

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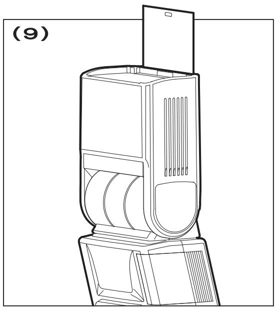


SIGMA

J E D F N Es I Dk C K R P

F19E10091

ELECTRONIC FLASH
EF-610 DG ST EO-ETTL II

ENGLISH

Thank you very much for purchasing the Sigma EF-610 ST EO-ETTL II Electronic Flash. This product is specifically developed for the Canon EOS series SLR cameras. Depending on the camera model, functions and operation may vary. Please read this instruction booklet carefully. To add to your enjoyment of photography, the flash has a variety of features. To make the most of all these features, and to get the maximum performance and enjoyment from your flash, please read this instruction booklet, together with your camera's instruction manual, before using the flash, and also keep it handy for your future reference.

PRECAUTIONS
⚠ Symbol denotes the important points, where warning and caution are required.
⊘ Symbol contains information regarding the actions that must be avoided.

⚠ Warning !!
Using the product disregarding this warning sign might cause serious injury or other dangerous results.

⊘ This flash contains high voltage circuits. To avoid electric shock or burns, do not attempt to disassemble the flash. If the outside shell of the unit is broken or cracked, do not touch the mechanism inside.

⊘ Do not fire the flash close to eyes. Otherwise the bright light could damage the eyes. Keep at least 1m/3feet distance between face and the flash unit, when taking a picture with flash.

⊘ Do not touch the synchro terminal of your camera when the flash is attached to hot shoe. High voltage circuitry could cause electric shock.

⊘ Never use your camera in an environment where flammable, burnable, gas, liquids or chemicals, etc, exist. Otherwise, it might cause fire or explosion.

⚠ Caution!!
Using the product disregarding this caution sign might cause injury or damage.

⊘ Do not use this flash unit on any camera other than the Canon EOS series cameras; otherwise the flash may damage the circuitry of these cameras.

⚠ This flash unit is not waterproof. When using the flash and camera in the rain or snow or near water, keep it from getting wet. It is often impractical to repair internal electrical components damaged by water.

⊘ Never subject the flash and camera to shock, dust, high temperature or humidity. These factors might cause fire or malfunctioning of your equipment.

⚠ When the flash is subjected to sudden temperature change, as when the flash unit is brought from a cold exterior to warm interior, condensation might form inside. In such a case, place your equipment in a sealed plastic bag before such a change, and do not use the flash unit, until it reaches room temperature.

⊘ Do not store your flash in a drawer or cupboard etc., containing naphthalene, camphor or other insecticides. These chemicals will have negative effects on the flash unit.

⊘ Do not use a thinner, Benzene or other cleaning agents to remove dirt or finger prints from the component. Clean with a soft, moistened cloth.

⚠ For extended storage, choose a cool dry place, preferably with good ventilation. It is recommended that the flash be charged and fired several times a month, to maintain proper capacitor functioning.

DESCRIPTION OF THE PARTS (fig.1)

1.Flash Head 2.AF Auxiliary Light 3.Shoe Ring 4.Shoe 5.Bounce Angle; Up and Down
6.Swivel Lock and Release Button; Right and Left 7.Bounce Angle; Right and Left
8.Battery Cover 9.Flash Coverage Angle Indicator
10.Bounce Lock and Release Button; Up and Down 11.TEST Button 12.Ready Light
13.Power Switch 14.Catch Light Panel 15. Wide Panel

ABOUT THE BATTERY

This flash unit uses four "AA" type Alkaline dry cell batteries or Ni-Cad, Ni-MH, rechargeable batteries. Manganese batteries can also be used but as they have a shorter life than Alkaline batteries, we do not recommend using them. Please replace batteries if it takes more than 30seconds to light the Ready Lamp.

- To assure proper electrical contact, clean the battery terminals before installing the batteries
- NiCad batteries do not have standardized contacts. If you use NiCad batteries, please confirm that the battery contacts touch the battery compartment properly.
- To prevent battery explosion, leakage or overheating, use four new AA batteries of the same type and brand. Do not mix the type or new and used batteries.
- Do not disassemble or short-circuit batteries, or expose them fire or water; they may explode. Also, do not recharge the batteries other than Ni-Cd rechargeable batteries.
- When the flash will not be used for an extended period of time, remove the batteries from the flash, to avoid the possibility of damage from leakage.
- Battery performance decreases at low temperatures. Keep batteries insulated when using the flash in cold weather.
- As with any flash, it is recommended you carry spare batteries when on a long trip, or when photographing outdoors in cold weather.

BATTERY LOADING

1. Be sure to set the Power Switch to the off position then slide, the battery cover in the direction of the arrow to open (fig.2).
2. Insert four AA size batteries into the battery chamber. Be sure the + and – ends of the batteries are aligned according to the diagram in the chamber (fig.3).
3. Close the cover.
4. Slide the Power Switch to the ON position. After few seconds, the Ready Lamp will light, indicating that the flash unit can be fired.
5. Please press the "Test Button" to be sure that the flash is working properly.

- If the battery power is not sufficient, or if there is an electronic information error, the flash coverage angle indicator will blink to indicate the condition.

ATTACHING AND REMOVING THE FLASH TO AND FROM THE CAMERA

Be sure turn off the Power Switch. Then insert the Shoe Base into the hot shoe on the camera and turn the Shoe Locking Ring until it is tight (fig.4)(fig.5).

- When you attach or remove the flash, grasp the bottom of the flash to prevent damage to the shoe foot and camera's hot shoe.
- If the camera's built-in flash is set in up position, please close it before you attach the flash unit.
- To remove the flash, rotate the shoe-locking ring in the opposite direction of ◀LOCK mark, until it stops.

ETTL(TTL) AUTO FLASH

In the TTL AUTO Mode, the camera will control the amount of flash lighting to get the appropriate exposure for the subject.

1. Set the camera's mode to Full-AUTO Mode. (Usually □ Mode. If the camera does not have □ Mode, set to P Mode.)
2. Slide the Power Switch to the TTL Position.
   - If the flash coverage angle indicator blinks when you turn on the power of your flash, please make sure that the flash head bounce angle is adjusted to the normal (0˚) position.
3. Focus onto the subject.
4. Press the shutter button after the flash is charged.

- After a picture is taken, and the film receives appropriate exposure, the Ready Lamp will blink. If the Ready Lamp does not blink, it indicates that the flash light was not sufficient for that particular situation. Please retake the picture at a distance closer to the subject.
- The AF Auxiliary Light will turn on automatically as you focus on a dark area. Note: Effective distance is up to about 0.7 to 9 meter (2.3-29.5 feet).
- When the flash is fully charged, the flash mark will appear in the finder. If the shutter is released before the flash is fully charged, the camera will take the picture at a slow shutter speed, with no flash.
- To conserve battery power, the flash unit automatically turns itself off when the flash is not used within approximately 90seconds. To turn the flash on again, depress the "TEST" button or the camera shutter button, halfway.
- The flash will automatically set the Zoom Head position according to the focal length of your lens.
- Please refer to《chart.1》for the effective distance ranges.

USING FLASH IN OTHER CAMERA MODES (Except EOS700, 750, 850)

Shutter Speed Priority Setting

By selecting the Tv mode of the camera, you can set the shutter speed from 30sec. to 1/X sync speed. When you set the desired shutter speed, the camera will select the appropriate aperture value for the background. If the subject is too light or too dark, the aperture value indicator will blink and show the limit values (maximum or minimum aperture). In such as case, the camera proceeds to take flash photograph at the limit value. Thus, the main subject in the picture may be exposed correctly, but the background will become under or over exposed.

Aperture Priority Setting

By selecting the Av mode of your camera, the camera will select the appropriate shutter speed for the background. If the subject is too bright or too dark, the shutter speed indicator will blink and show the limit highest or slowest shutter speed value. The highest shutter speed will be limited to the camera's normal flash synchronization speed. In such a case, the camera proceeds to take a flash photograph at the limit value. Thus, the main subject in a picture may be exposed correctly, but the background will become under or overexposed.

When used with M Mode

You can set the desired shutter speed and aperture value. The sync speed of camera is 30sec. If you adjust exposure according to the exposure meter indication, the camera will work as for Daylight synchronization flash or slow synchronization.

MANUAL FLASH OPERATION (Except EOS700, 750, 850)

This flash unit can be used in Manual Mode at full power and at 1/16 power.

1. Set the camera's exposure mode to Manual / M mode.
2. Slide the flash unit's Power Switch to MH (full flash power) or to ML (1/16 flash power).
3. Focus on the subject and set the camera's F-stop, using the exposure calculated by the formula shown below:
   F-stop = Guide Number (G.N.) ÷ Flash to Subject Distance (m)
4. After the flash is fully charged, press he Shutter Release button to take the picture.

Guide Number will change according to the Zoom Head position, (see《chart.2》). Guide Number will also change according to film speed (ISO),(see《chart.3》). In the case of non-ISO100 speed films, multiply the《chart.3》number by the《chart.2》number. For example, using ISO200 film, Zoom Head position for 24mm and the MH mode; multiply the《chart.3》number "1.4" by the《chart.2》number "34.0": 34.0×1.4=47.6. This will be the new effective Guide Number (G.N.) in meters. To determine the G.N. in feet, multiply the G.N. in meters by 3.3.

EX. If flash to subject distance is 8.5 meters:
F-stop = 47.6 ÷ 8.5 = 5.6 (5.6 is the F-stop to set on the camera.)

When repeatedly using the flash rapidly in the MH mode, it should be allowed to "rest" for about 10 minutes after each 20 flashes. If used under the same conditions in the ML mode, the flash should be allowed to "rest" after each 40 flashes.

WIDE PANEL

This flashgun is equipped with a built-in wide panel, which can provide an ultra wide 17mm angle of coverage. Slide out the wide panel and catch light panel and flip it down to cover the flash's head (fig.6-1). (Be careful to slide the panels out smoothly.) Then put the catch light panel back in its place (fig.6-2). The coverage angle setting of the flash will be set to 17mm automatically.

- The flash coverage angle indicator will show that the wide panel is in use by blinking the both end values (24mm and 105mm) slowly (1sec each time).
- If the built-in wide panel comes off accidentally, adjustment mechanism of flash coverage angle will not function. In this case please contact the store where you have purchased the flash, or a service station.

BOUNCE FLASH

When you take a photo with flash in a room, sometimes a strong shadow will appear behind the subject, if you point the flash head upwards or sideways to reflect the light off the ceiling, wall etc. the subject will be illuminated softly. Press the lock button and adjust the flash head to set the bounce angle (fig.7).

UP: 0°, 60°, 75°, 90° DOWN: 0°,7°
RIGHT: 0°, 60°, 75°, 90° LEFT: 0°, 60°, 75°,90°, 120°, 150°, 180°

- Please refer to the following chart.

	Bounce Flash (exclusive downward by 7°)	Downward by 7°
Without Wide Panel	Zoom coverage angle will be set to the 50mm position. The flash coverage angle display will show 50mm.	Zoom coverage angle will change depend on the zoom length of lens. At that time, the display of zoom coverage angle will blink (2 times / second).
With Wide Panel	The zoom coverage angle will be set to 17mm and both extremes of the zoom coverage angle display (24mm & 105mm), will blink (1 time / second)	Zoom coverage angle will be set to 17mm position and both extreme values of the zoom coverage angle display (24mm & 105mm) will be blink (2 times / second).

- The picture will receive the color from the reflecting surface. Please choose a white surface for bouncing.

CLOSE-UP EXPOSURES

For bounce flash can be tilted 7° downward for close-ups. The Flash will be effective only for the subjects 0.5 meter to 2 meters.

CATCH LIGHT PANEL

This flash is equipped with a built-in catch light panel, which can create a catch light in the eyes of the subject when the bounce flash mode is activated. Slide out the wide panel and catch light panel (fig.8-1), and then put wide panel back in its place (fig.8-2). (Be careful to slide the panels out smoothly.)

- To create a catch light effectively, tilt the flash head upward 90 degrees and take pictures at a close distance (fig.9).

《表 1》《chart.1》《Tabelle 1》《Tableau 1》《tabel 1》《Tabla 1》

m
ft

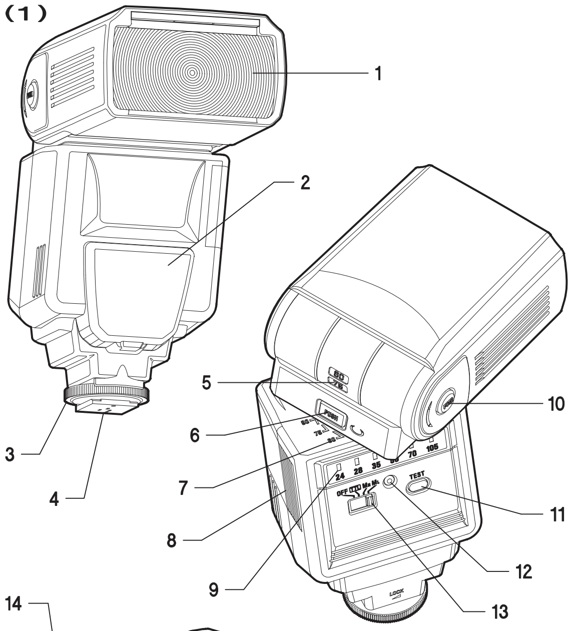
	17mm	24mm	28mm	35mm	50mm	70mm	105mm
1.4	1.5-16.4	2.1-24.3	2.2-25.0	2.3-25.7	2.9-32.9	3.3-37.1	3.9-43.6
	4.9-53.8	6.9-79.7	7.2-82.0	7.5-84.3	9.5-107.9	10.8-121.7	12.8-143.0
2.0	1.0-11.5	1.5-17.0	1.5-17.5	1.6-18.0	2.0-23.0	2.3-26.0	2.7-30.5
	3.3-37.7	4.9-55.8	4.9-57.4	5.2-59.1	6.6-75.5	7.5-85.3	8.9-100.1
2.8	0.7-8.2	1.1-12.1	1.1-12.5	1.1-12.9	1.5-16.4	1.6-18.6	1.9-21.8
	2.3-26.9	3.6-39.7	3.6-41.0	3.6-42.3	4.9-53.8	5.2-61.0	6.2-71.5
4.0	0.7-5.8	0.8-8.5	0.8-8.8	0.8-9.0	1.0-11.5	1.1-13.0	1.3-15.3
	2.3-19.0	2.6-27.9	2.6-28.9	2.6-29.5	3.3-37.7	3.6-42.7	4.3-50.2
5.6	0.7-4.1	0.7-6.1	0.7-6.3	0.7-6.4	0.7-8.2	0.8-9.3	1.0-10.9
	2.3-13.5	2.3-20.0	2.3-20.7	2.3-21.0	2.3-26.9	2.6-30.5	3.3-35.8
8.0	0.7-2.9	0.7-4.3	0.7-4.4	0.7-4.5	0.7-5.8	0.7-6.5	0.7-7.6
	2.3-9.5	2.3-14.1	2.3-14.4	2.3-14.6	2.3-19.0	2.3-21.3	2.3-24.9
11.0	0.7-2.1	0.7-3.1	0.7-3.2	0.7-3.3	0.7-4.2	0.7-4.7	0.7-5.5
	2.3-6.9	2.3-10.2	2.3-10.5	2.3-10.8	2.3-13.8	2.3-15.4	2.3-18.0
16.0	0.7-1.4	0.7-2.1	0.7-2.2	0.7-2.3	0.7-2.9	0.7-3.3	0.7-3.8
	2.3-4.6	2.3-6.9	2.3-7.2	2.3-7.5	2.3-9.5	2.3-10.8	2.3-12.5
22.0	0.7-1.0	0.7-1.5	0.7-1.6	0.7-1.6	0.7-2.1	0.7-2.4	0.7-2.8
	2.3-3.3	2.3-4.9	2.3-5.2	2.3-5.2	2.3-6.9	2.3-7.9	2.3-9.2
32.0		0.7-1.1	0.7-1.1	0.7-1.1	0.7-1.4	0.7-1.6	0.7-1.9
		2.3-3.6	2.3-3.6	2.3-3.6	2.3-4.6	2.3-5.2	2.3-6.2

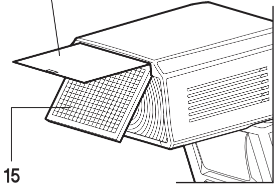
《表 2》《chart.2》《Tabelle 2》《Tableau 2》《tabel 2》《Tabla 2》

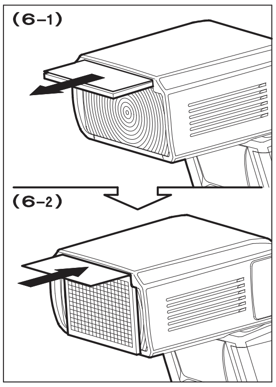
	17mm	24mm	28mm	35mm	50mm	70mm	105mm
MH	23.0	34.0	35.0	36.0	46.0	52.0	61.0
ML	5.8	8.5	8.8	9.0	11.5	13.0	15.3

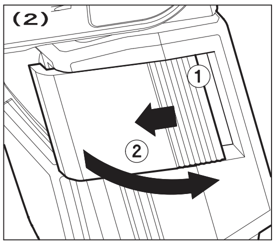
《表 3》《chart.3》《Tabelle 3》《Tableau 3》《tabel 3》《Tabla 3》

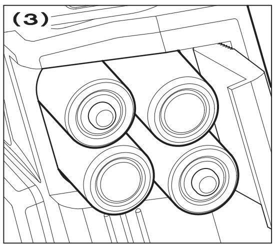
ISO25	ISO50	ISO200	ISO400	ISO800	ISO1600	ISO3200
X0.5	X0.71	X1.4	X2	X2.8	X4	X5.7

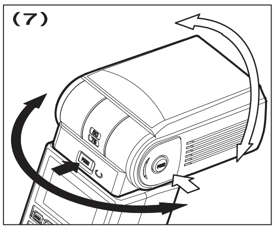


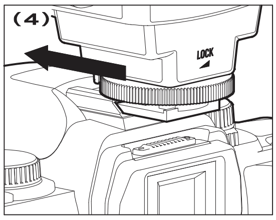


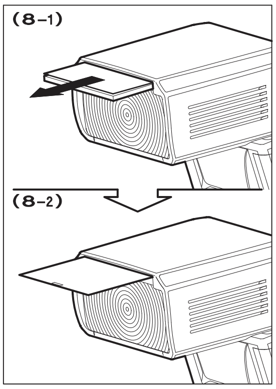


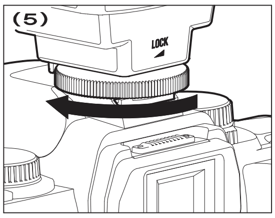


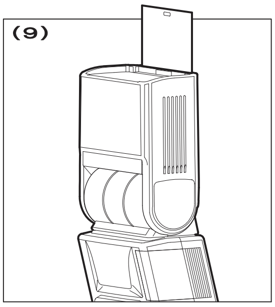












J E D F N Es I Dk C K R P

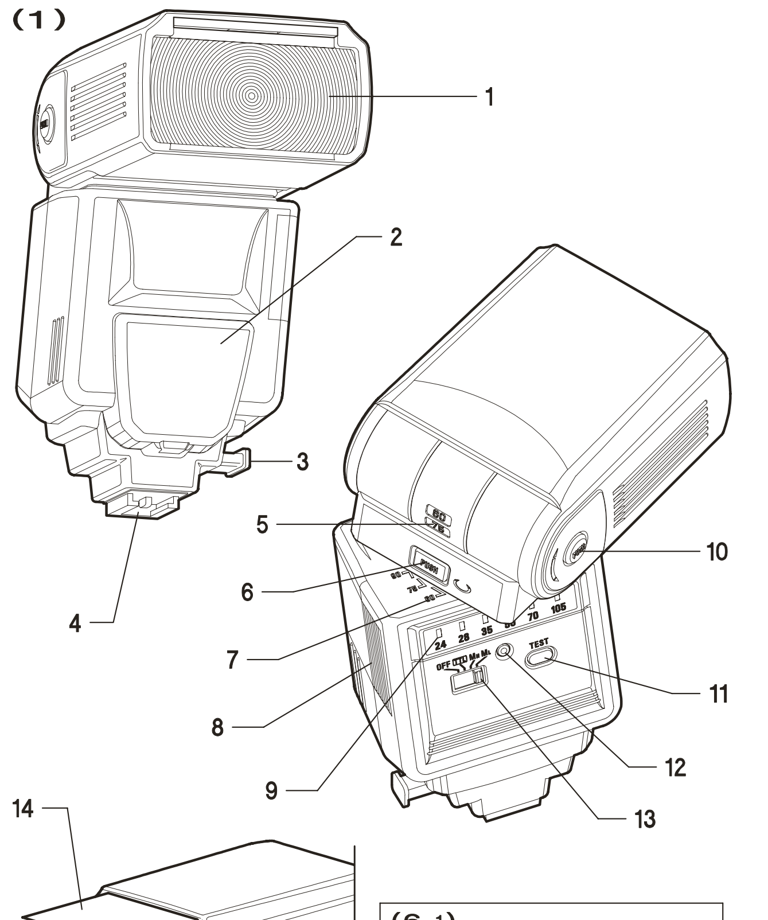
F19A10091

SIGMA

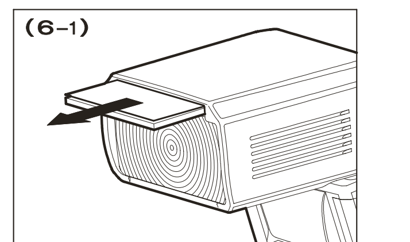
ELECTRONIC FLASH
EF-610 DG ST SO-ADI

使用説明書
INSTRUCTIONS
BEDIENUNGSANLEITUNG
MODE D'EMPLOI
GEBRUIKSAANWIJZING
INSTRUCCIONES
ISTRUZIONI PER L'USO
BRUGSANVISNING
用戶手冊
사용자 설명서
РУКОВОДСТВО ПО ЭКСПЛУАТАЦИИ
MANUAL DE INSTRUÇÕES

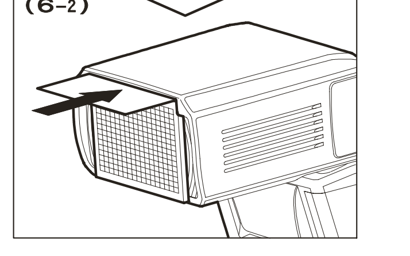
(1)



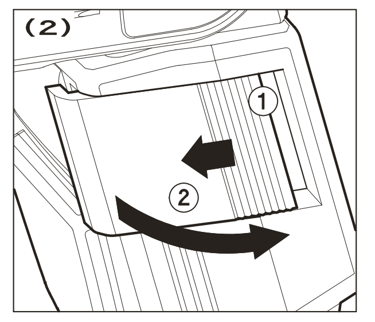
(6-1)



(6-2)



(2)



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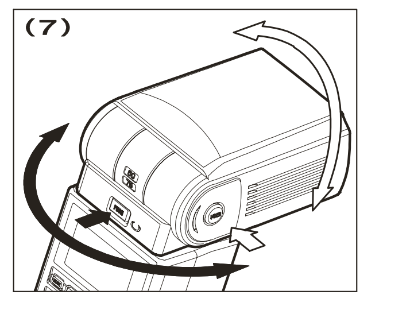
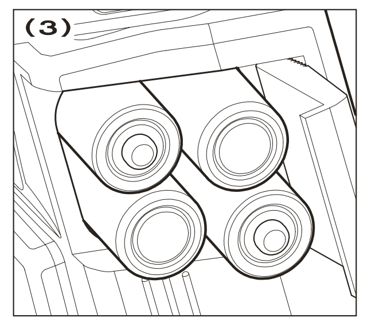
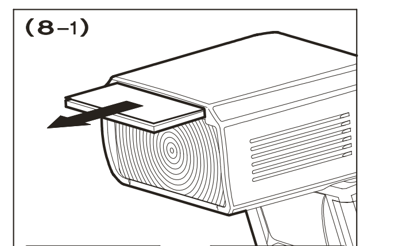


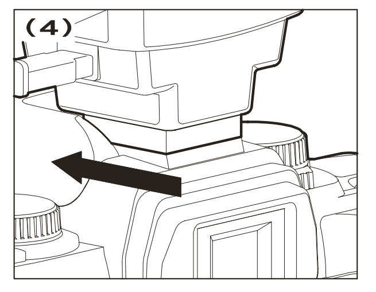
(3)



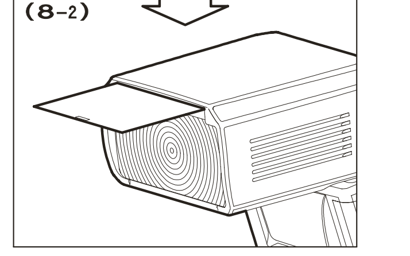
(8-1)



(4)



(8-2)



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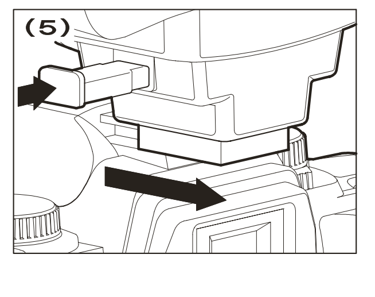
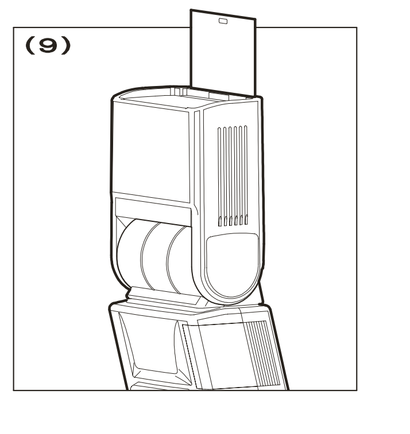


(9)



《表 1》《chart.1》《Tabelle 1》《Tableau 1》《tabel 1》《Tabla 1》

m / ft

	17mm	24mm	28mm	35mm	50mm	70mm	105mm
1.4	1.5-16.4	2.1-24.3	2.2-25.0	2.3-25.7	2.9-32.9	3.3-37.1	3.9-43.6
	4.9-53.8	6.9-79.7	7.2-82.0	7.5-84.3	9.5-107.9	10.8-121.7	12.8-143.0
2.0	1.0-11.5	1.5-17.0	1.5-17.5	1.6-18.0	2.0-23.0	2.3-26.0	2.7-30.5
	3.3-37.7	4.9-55.8	4.9-57.4	5.2-59.1	6.6-75.5	7.5-85.3	8.9-100.1
2.8	0.7-8.2	1.1-12.1	1.1-12.5	1.1-12.9	1.5-16.4	1.6-18.6	1.9-21.8
	2.3-26.9	3.6-39.7	3.6-41.0	3.6-42.3	4.9-53.8	5.2-61.0	6.2-71.5
4.0	0.7-5.8	0.8-8.5	0.8-8.8	0.8-9.0	1.0-11.5	1.1-13.0	1.3-15.3
	2.3-19.0	2.6-27.9	2.6-28.9	2.6-29.5	3.3-37.7	3.6-42.7	4.3-50.2
5.6	0.7-4.1	0.7-6.1	0.7-6.3	0.7-6.4	0.7-8.2	0.8-9.3	1.0-10.9
	2.3-13.5	2.3-20.0	2.3-20.7	2.3-21.0	2.3-26.9	2.6-30.5	3.3-35.8
8.0	0.7-2.9	0.7-4.3	0.7-4.4	0.7-4.5	0.7-5.8	0.7-6.5	0.7-7.6
	2.3-9.5	2.3-14.1	2.3-14.4	2.3-14.6	2.3-19.0	2.3-21.3	2.3-24.9
11.0	0.7-2.1	0.7-3.1	0.7-3.2	0.7-3.3	0.7-4.2	0.7-4.7	0.7-5.5
	2.3-6.9	2.3-10.2	2.3-10.5	2.3-10.8	2.3-13.8	2.3-15.4	2.3-18.0
16.0	0.7-1.4	0.7-2.1	0.7-2.2	0.7-2.3	0.7-2.9	0.7-3.3	0.7-3.8
	2.3-4.6	2.3-6.9	2.3-7.2	2.3-7.5	2.3-9.5	2.3-10.8	2.3-12.5
22.0	0.7-1.0	0.7-1.5	0.7-1.6	0.7-1.6	0.7-2.1	0.7-2.4	0.7-2.8
	2.3-3.3	2.3-4.9	2.3-5.2	2.3-5.2	2.3-6.9	2.3-7.9	2.3-9.2
32.0		0.7-1.1	0.7-1.1	0.7-1.1	0.7-1.4	0.7-1.6	0.7-1.9
		2.3-3.6	2.3-3.6	2.3-3.6	2.3-4.6	2.3-5.2	2.3-6.2

《表 2》《chart.2》《Tabelle 2》《Tableau 2》《tabel 2》《Tabla 2》

	17mm	24mm	28mm	35mm	50mm	70mm	105mm
MH	23.0	34.0	35.0	36.0	46.0	52.0	61.0
ML	5.8	8.5	8.8	9.0	11.5	13.0	15.3

《表 3》《chart.3》《Tabelle 3》《Tableau 3》《tabel 3》《Tabla 3》

ISO25	ISO50	ISO200	ISO400	ISO800	ISO1600	ISO3200
X0.5	X0.71	X1.4	X2	X2.8	X4	X5.7

ENGLISH

Thank you very much for purchasing the Sigma EF-610 DG ST SO-ADI Electronic Flash. This product is specifically developed for the SONY (Konica Minolta, Minolta) AF SLR cameras. Depending on the camera model, functions and operation may vary. Please read this instruction booklet carefully. To add to your enjoyment of photography, the flash has a variety of features. To make the most of all these features, and to get the maximum performance and enjoyment from your flash, please read this instruction booklet, together with your camera's instruction manual, before using the flash, and also keep it handy for your future reference.

PRECAUTIONS
⚠ Symbol denotes the important points, where warning and caution are required.
⃠ Symbol contains information regarding the actions that must be avoided.

⚠ Warning !!
Using the product disregarding this warning sign might cause serious injury or other dangerous results.

- ⃠ This flash contains high voltage circuits. To avoid electric shock or burns, do not attempt to disassemble the flash. If the outside shell of the unit is broken or cracked, do not touch the mechanism inside.
- ⃠ Do not fire the flash close to eyes. Otherwise the bright light could damage the eyes. Keep at least 1m/3feet distance between face and the flash unit, when taking a picture with flash.
- ⃠ Do not touch the synchro terminal of your camera when the flash is attached to hot shoe. High voltage circuitry could cause electric shock.
- ⃠ Never use your camera in an environment where flammable, burnable, gas, liquids or chemicals, etc, exist. Otherwise, it might cause fire or explosion.

⚠ Caution!!
Using the product disregarding this caution sign might cause injury or damage.

- ⃠ Do not use this flash unit on any camera other than the SONY (Minolta) AF SLR cameras; otherwise the flash may damage the circuitry of these cameras. Also it is also not possible to use this flash unit directly with Maxxum / DYNAX 9000, 7000, 5000, 3000i cameras.
- ⚠ This flash unit is not waterproof. When using the flash and camera in the rain or snow or near water, keep it from getting wet. It is often impractical to repair internal electrical components damaged by water.
- ⃠ Never subject the flash and camera to shock, dust, high temperature or humidity. These factors might cause fire or malfunctioning of your equipment.
- ⚠ When the flash is subjected to sudden temperature change, as when the flash unit is brought from a cold exterior to warm interior, condensation might form inside. In such a case, place your equipment in a sealed plastic bag before such a change, and do not use the flash unit, until it reaches room temperature.
- ⃠ Do not store your flash in a drawer or cupboard etc., containing naphthalene, camphor or other insecticides. These chemicals will have negative effects on the flash unit.
- ⃠ Do not use a thinner, Benzene or other cleaning agents to remove dirt or finger prints from the component. Clean with a soft, moistened cloth.
- ⚠ For extended storage, choose a cool dry place, preferably with good ventilation. It is recommended that the flash be charged and fired several times a month, to maintain proper capacitor functioning.

DESCRIPTION OF THE PARTS (fig.1)

1.Flash Head 2.AF Auxiliary Light 3. Release Button 4.Shoe
5.Bounce Angle; Up and Down 6.Swivel Lock and Release Button; Right and Left
7.Bounce Angle; Right and Left 8.Battery Cover 9.Flash Coverage Angle Indicator
10.Bounce Lock and Release Button; Up and Down 11.TEST Button
12.Ready Light 13.Power Switch 14.Catch Light Panel 15. Wide Panel

ABOUT THE BATTERY

This flash unit uses four "AA" type Alkaline dry cell batteries or Ni-Cad, Ni-MH, rechargeable batteries. Manganese batteries can also be used but as they have a shorter life than Alkaline batteries, we do not recommend using them. Please replace batteries if it takes more than 30seconds to light the Ready Lamp.

- ■ To assure proper electrical contact, clean the battery terminals before installing the batteries
- ■ NiCad batteries do not have standardized contacts. If you use NiCad batteries, please confirm that the battery contacts touch the battery compartment properly.
- ■ To prevent battery explosion, leakage or overheating, use four new AA batteries of the same type and brand. Do not mix the type or new and used batteries.
- ■ Do not disassemble or short-circuit batteries, or expose them fire or water; they may explode. Also, do not recharge the batteries other than Ni-Cd rechargeable batteries.
- ■ When the flash will not be used for an extended period of time, remove the batteries from the flash, to avoid the possibility of damage from leakage.
- ■ Battery performance decreases at low temperatures. Keep batteries insulated when using the flash in cold weather.
- ■ As with any flash, it is recommended you carry spare batteries when on a long trip, or when photographing outdoors in cold weather.

BATTERY LOADING

1. Be sure to set the Power Switch to the off position then slide, the battery cover in the direction of the arrow to open (fig.2).
2. Insert four AA size batteries into the battery chamber. Be sure the + and – ends of the batteries are aligned according to the diagram in the chamber (fig.3).
3. Close the cover.
4. Slide the Power Switch to the ON position. After few seconds, the Ready Lamp will light, indicating that the flash unit can be fired.
5. Please press the "Test Button" to be sure that the flash is working properly.

- ■ If the battery power is not sufficient, or if there is an electronic information error, the flash coverage angle indicator will blink to indicate the condition.

ATTACHING AND REMOVING THE FLASH TO AND FROM THE CAMERA

Be sure turn off the Power Switch. Then insert the Shoe Base into the hot shoe of the camera until it clicks and locks (fig.4).

- ■ If the camera's built-in flash is set in up position, please close it before you attach the flash unit.

When you remove the flash, slide the flash unit out of the camera's hot shoe, while pressing the release button (fig.5).

TTL AUTO FLASH

In the TTL AUTO Mode, the camera will control the amount of flash lighting to get the appropriate exposure for the subject.

1. Set the camera's exposure mode to **P** Mode.
2. Slide the Power Switch to the TTL Position.

- ■ If the flash coverage angle indicator blinks when you turn on the power of your flash, please make sure that the flash head bounce angle is adjusted to the normal (0˚) position.

3. Focus onto the subject.
4. Press the shutter button after the flash is charged.

- ■ After a picture is taken, and the film receives appropriate exposure, the Ready Lamp will blink. If the Ready Lamp does not blink, it indicates that the flash light was not sufficient for that particular situation. Please retake the picture at a distance closer to the subject.
- ■ The AF Auxiliary Light will turn on automatically as you focus on a dark area.
- ■ Note: Effective distance is up to about 0.7 to 9 meter (2.3-29.5 feet).
- ■ When the flash is fully charged, the flash mark will appear in the finder. If the shutter is released before the flash is fully charged, the camera will take the picture at a slow shutter speed, with no flash.
- ■ To conserve battery power, the flash unit automatically turns itself off when the flash is not used within approximately 240 seconds. To turn the flash on again, depress the "TEST" button or the camera shutter button, halfway.
- ■ The flash will automatically set the Zoom Head position according to the focal length of your lens.
- ■ Please refer to《chart.1》for the effective distance ranges.

USING FLASH IN OTHER CAMERA MODES

Shutter Speed Priority Setting
When you set the desired shutter speed, the camera will select the appropriate aperture value.

Aperture Priority Setting
By selecting the A mode, after you select the desired aperture the camera will set the appropriate shutter speed for the background exposure.

When used with M Mode
You can set the desired shutter speed and aperture value.

MANUAL FLASH OPERATION

This flash unit can be used in Manual Mode at full power and at 1/16 power.

1. Set the camera's exposure mode to Manual / M mode.
2. Slide the flash unit's Power Switch to MH (full flash power) or to ML (1/16 flash power).
3. Focus on the subject and set the camera's F-stop, using the exposure calculated by the formula shown below:
   F-stop = Guide Number (G.N.) ÷ Flash to Subject Distance (m)
4. After the flash is fully charged, press he Shutter Release button to take the picture.

Guide Number will change according to the Zoom Head position, (see《chart.2》). Guide Number will also change according to film speed (ISO),(see《chart.3》). In the case of non-ISO100 speed films, multiply the《chart.3》number by the《chart.2》number. For example, using ISO200 film, Zoom Head position for 24mm and the MH mode; multiply the《chart.3》number "1.4" by the《chart.2》number "34.0": 34.0×1.4=47.6. This will be the new effective Guide Number (G.N.) in meters. To determine the G.N. in feet, multiply the G.N. in meters by 3.3.

EX. If flash to subject distance is 8.5 meters:

F-stop = 47.6 ÷ 8.5 = 5.6 (5.6 is the F-stop to set on the camera.)

When repeatedly using the flash rapidly in the MH mode, it should be allowed to "rest" for about 10 minutes after each 20 flashes. If used under the same conditions in the ML mode, the flash should be allowed to "rest" after each 40 flashes.

WIDE PANEL

This flashgun is equipped with a built-in wide panel, which can provide an ultra wide 17mm angle of coverage. Slide out the wide panel and catch light panel and flip it down to cover the flash's head (fig.6-1). (Be careful to slide the panels out smoothly.) Then put the catch light panel back in its place (fig.6-2). The coverage angle setting of the flash will be set to 17mm automatically.

- ■ The flash coverage angle indicator will show that the wide panel is in use by blinking the both end values (24mm and 105mm) slowly (1sec each time).
- ■ If the built-in wide panel comes off accidentally, adjustment mechanism of flash coverage angle will not function. In this case please contact the store where you have purchased the flash, or a service station.

BOUNCE FLASH

When you take a photo with flash in a room, sometimes a strong shadow will appear behind the subject, if you point the flash head upwards or sideways to reflect the light off the ceiling, wall etc. the subject will be illuminated softly. Press the lock button and adjust the flash head to set the bounce angle (fig.7).

UP: 0°, 60°, 75°, 90° DOWN: 0°,7°
RIGHT: 0°, 60°, 75°, 90˚ LEFT: 0°, 60°, 75°,90°, 120°, 150°, 180°

- ■ The picture will receive the color from the reflecting surface. Please choose a white surface for bouncing.

CLOSE-UP EXPOSURES

For bounce flash can be tilted 7° downward for close-ups. The Flash will be effective only for the subjects 0.5 meter to 2 meters.

- ■ The Flash coverage angle display will blink (2 times / second), when you set the flash head tilted downward by 7˚

CATCH LIGHT PANEL

This flash is equipped with a built-in catch light panel, which can create a catch light in the eyes of the subject when the bounce flash mode is activated. Slide out the wide panel and catch light panel (fig.8-1), and then put wide panel back in its place (fig.8-2). (Be careful to slide the panels out smoothly.)

- ■ To create a catch light effectively, tilt the flash head upward 90 degrees and take pictures at a close distance (fig.9).

電話でのお問い合わせ
シグマ カスタマーサービス部　フリーコール：**0120-9977-88**
（携帯電話・PHS をご利用の方は 044-989-7436 にご連絡ください）
受付時間：月～金 9:00-18:00
（土日祝日および年末年始弊社休業日はお休みさせていただきます）

株式会社シグマ
本　社　〒215-8530 神奈川県川崎市麻生区栗木 2 丁目 4 番 16 号
☎(044) 989 - 7430 (代)　FAX: (044) 989 - 7451
工　場　〒969-3395 福島県耶麻郡磐梯町大字大谷字日知坂 6594
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大阪営業所　〒541-0059 大阪市中央区博労町 1-7-2　堺筋トラストビル 8F
☎(06) 6271 - 1548　FAX: (06) 6271 - 1549

弊社事業所の営業時間：月～金 9:00-17:00
（土日祝日および年末年始弊社休業日はお休みさせていただきます）

インターネットホームページアドレス　**http://www.sigma-photo.co.jp**

主要諸元

日本語

形　　式	クリップオン式直列制御 TTL オートズームフラッシュ
ガイドナンバー	61（ISO 100／m、105mm 位置）
使用電源	単三形アルカリ乾電池 4 本、単三形ニッカド電池 4 本、 単三形ニッケル水素電池 4 本
充電時間	約 7 秒（アルカリ乾電池使用） 約 5 秒（ニッカド電池又は、ニッケル水素電池使用）
発光回数	約 120 回（アルカリ乾電池使用） 約 160 回（ニッカド電池、ニッケル水素電池使用）
閃光時間	約 1／700 秒（フル発光時）
照射角度	24mm～105mm の使用レンズに合わせて自動セット 内蔵ワイドパネル使用で 17mm レンズの画角をカバー
オートパワーオフ／オートパワーオン	内蔵
質　　量	320g
寸　　法	（幅×高×長）：77×139×117

SPECIFICATIONS

ENGLISH

TYPE	Clip-on type serial-controlled TTL auto zoom electric flash
GUIDE NUMBER	61 (ISO 100/m, 105mm head position)
POWER SOURCE	Four AA type alkaline batteries or, Four AA type Ni-Cd batteries or, Four AA type Ni-MH Nickel-Metal Hydride
RECYCLING TIME	about 7.0 sec. (Alkaline batteries) about 5.0 sec. (Ni-Cd, Ni-MH Nickel-Metal Hydride)
NUMBER OF FLASHES	about 120 flashes (Alkaline batteries) about 160 flashes (Ni-Cd, Ni-MH Nickel-Metal Hydride)
FLASH DURATION	about 1 / 700 sec. (full power firing)
FLASH ILLUMINATE ANGLE	24mm -105mm motor powered control (17mm with Built-in Wide Panel)
AUTO POWER OFF	Available
WEIGHT	320 g/11.3oz.
DIMENSIONS	77mm(W)/3.0in. x 139mm(H)/5.5in. x 117mm(L)/4.6in.

TECHNISCHE DATEN

DEUTSCH

Type	Systemblitzgerät, Aufsteck-Type, serienmäßige TTL-Messung, mit Auto-Zoomreflektor
Leitzahl	61 (ISO 100/m, 105mm Blitzkopfeinstellung)
Energieversorgung	4 AA Type Alkaline Batterien oder / 4 AA Type Ni-Cd Akkus oder / 4 AA Type Ni-MH Nickel-Metall Hydrid Akkus
Aufladezeit	ca. 7,0 s mit Alkaline Batterien / ca. 5,0 s mit Ni-Cd oder Ni-MH Akkus
Blitzanzahl	ca. 120 mit Alkaline Batterien / ca. 160 mit Ni-Cd oder Ni-MH Akkus
Blitzdauer	ca. 1/700 s bei voller Leistung
Ausleuchtwinkel	24mm-105mm motorgesteuert / 17mm mit eingebauter Weitwinkelstreuscheibe
Automatische Abschaltung	Vorhanden
Gewicht	320 Gramm
Abmessungen	77mm (B) x 139mm (H) x 117mm (T)

CARACTERISTIQUES TECHNIQUES

FRANÇAIS

TYPE	Flash électronique à tête zoom automatique et orientable à contrôle TTL
NOMBRE GUIDE	61 (100 ISO/m, avec réflecteur en position 105mm)
ALIMENTATION	Quatre piles alcalines de type AA ou / Quatre accumulateurs Ni-Cd de type AA ou / Quatre accumulateurs Ni-Mh de type AA
TEMPS DE RECYCLAGE	environ 7,0 sec. (avec piles alcalines) / environ 5,0 sec. (accus Ni-Cd et Ni-Mh)
NOMBRE D'ECLAIRS	environ 120 éclairs (piles alcalines) / environ about 160 éclairs (accus Ni-Cd et Ni-Mh)
DUREE DE L'ECLAIR	environ 1 / 700 sec. (à pleine puissance)
ANGLE D'ECLAIRAGE	24~105mm avec motorisation automatique / 17mm avec l'élargisseur d'angle intégré.
MISE EN VEILLE AUTOMATIQUE	Oui
POIDS	320 g
DIMENSIONS	77mm(l) x 139mm(H) x 117mm(L)

TECHNISCHE GEGEVENS

NEDERLANDS

Type	Opschuifbare DDL Autozoom Electronenflitser
Richtgetal	61 (ISO 100 / op 105mm zoompositie)
Stroombron	4 AA alkaline of 4 oplaadbare Ni-Cd, of Ni-MH batterijen
Oplaadtijd	Ca. 7 sec. (met alkaline batterijen) / 5 sec. (met oplaadbare batterijen)
Aantal flitsen	Ca. 120 met alkaline batterijen / 160 met oplaadbare batterijen
Flitsduur	Ca. 1/700 sec. bij vol vermogen
Verlichtingshoek	24mm–105mm motorisch gestuurd (17mm met ingebouwde groothoekdiffusor)
Automatische uitschakeling	Ja
Gewicht	320 gram
Afmetingen	77mmX139mmX117mm

ESPECIFICACIONES

ESPAÑOL

TIPO	Flash electrónico automático zoom TTL tipo Clip-on con controlador de serie
NUMERO GUIA	61 (100 ISO/m, posición del cabezal 105 mm)
ALIMENTACION	Cuatro pilas alcalinas de tipo AA / cuatro pilas Ni-Cd de tipo AA / cuatro pilas Niquel-hidrógeno de tipo AA.
TIEMPO DE RECICLAJE	acerca de 7.0 seg. (pilas alcalinas) / acerca de 5.0 seg. (con pilas Ni-Cd o Niquel-hidrógeno)
NÚMERO DE DISPAROS	acerca de 120 disparos (pilas alcalinas) / acerca 160 disparos (con pilas Ni-Cd o Niquel-hidrógeno)
DURACIÓN DEL DISPARO	acerca de 1/ 700 seg.(disparo a máxima potencia)
ANGULO DE ILUMINACION DEL FLASH	24mm a 105mm controlador de motor de potencia 17mm con la pantalla angular incorporada.
AUTODESCONECTABLE	disponible
PESO	320 g
DIMENSIONES	77mm x 139mm x 117mm

Disposal of Electric and Electronic Equipment in Private Households **ENGLISH**
Disposal of used Electrical & Electronic Equipment (Applicable in the European Union and other European countries with separate collection systems)
This symbol on the product, in the manual/warranty, and/or on the packaging indicates that this product must not be treated as household waste. Instead it should be handed over to the appropriate collection point for the recycling of electrical and electronic equipment. If your equipment contains easy removable batteries, please dispose of these separately according to your local legislation. It is your responsibility to ensure that this product is recycled correctly. In doing so you will help conserve natural resources, protect the environment and human health. For more detailed information about recycling this product, please contact your local city office, your household waste disposal service or the shop where you purchased the product.

Entsorgung von Elektro- und Elektronikgeräten aus privaten Haushalten **DEUTSCH**
Entsorgung von Elektro- und Elektronikgeräten (Anzuwenden in der Europäischen Union und anderen europäischen Ländern mit entsprechend geregeltem Abfall-Sammelsystem)
SIGMA unterstützt den Umweltschutz. Diese Produkt und die enthaltenen Zubehörteile erfüllen die Anforderungen der WEEE-Richtlinie. Bitte bewahren Sie diese Information auf. Dieses Symbol weist auf die getrennte Rücknahme elektrischer und elektronischer Geräte in EU-Ländern hin. Bitte werfen Sie das Gerät nicht in den Hausmüll. Informieren Sie sich über das in Ihrem Land gültige Rücknahmesystem und nutzen Sie dieses zur Entsorgung. Batterien und Akkus sollten separat entsorgt werden.

Elimination des Déchets d'Equipements Electriques et Electroniques ménagers **FRANÇAIS**
(Applicable dans l'Union Européenne selon les dispositions particulières de chaque Etat membre)
Ce symbole inscrit sur le produit ou sur l'emballage, le mode d'emploi et la carte de garantie indique que le produit ne odit pas être éliminé avec les autres déchets ménagers. Il doit être remis à un point de collecte agréé des Déchets d'Equipements Electrique et Electroniques en fin de vie. En vous assurant que ce produit sera éliminé correctement, vous aiderez à lutter contre l'impact négatif pour l'environnement et la santé humaine qui résulterait d'un mode d'élimination inapproprié. Si votre produit contient des accumulateurs ou piles aisément amovibles, éliminez-les séparément selon les dispositions locales en vigueur.

Inzamelen van electronische apparatuur voor huishoudelijk gebruik. **NEDERLANDS**
Inzamelen van electronische apparatuur (van de toepassing in de EU en andere Europese landen met een gescheiden afval systeem).
Dit symbool geeft aan dat dit product niet als huishoudelijk afval verwerkt mag worden. Het dient derhalve ingeleverd te worden bij het afval scheidingsstation als KCA voor eventueel hergebruik. U helpt hierbij schade aan het milieu te voorkomen. Indien er in het apparaat makkelijk te verwijderen batterijen of accu's zitten dient u deze appart in te leveren als KCA bij het scheidingsstation. Het hergebruiken van materialen spaart het milieu. Voor meer informatie voor hergebruiken van dit product kunt u contact opnemen met uw locale afval scheidingsstation of bij de winkel waar u het apparaat gekocht heeft.

Reciclaje de Equipos Eléctricos y Electrónicos de Uso Privado **ESPAÑOL**
Reciclaje de Equipos Eléctricos y Electrónicos Usados (Aplicable en la Unión Europea y en otros países con sistema de reciclaje por separado)
Este símbolo indica que este producto no debería tratarse como los demás materiales residuales de uso general. Estos productos deben reciclarse en el contenedor específico para los equipos eléctricos y electrónicos. Depositando estos productos correctamente, UD. ayuda al tratamiento adecuado de los productos reciclables y previene los efectos potencialmente negativos para el medioambiente y la salud, que podrían verse afectados por un incorrecto reciclado del producto. Si su equipo contiene baterías o acumuladores de fácil extracción, por favor depositélos en el contenedor adecuado según las normativas locales. El reciclaje de los materiales ayuda a la conservación de los recursos naturales. Para más información acerca del reciclaje de estos productos, contacte con la autoridad local, el servicio de reciclaje o el establecimiento donde adquirió el producto.

CE

ENGLISH
The CE Mark is a Directive conformity mark of the European Community (EC).

DEUTSCH
Die CE-Kennzeichnung ist eine Konformitätserklärung des Herstellers, die dokumentiert, daß das betreffende Produkt die Anforderungen von EG-Richtlinien einhält.

FRANÇAIS
Le label CE garantit la conformité aux normes établies par la Communauté Européenne.

NEDERLANDS
Het CE teken is een aanduiding voor de Europese Gemeenschap (EC).

ESPAÑOL
El logotipo CE es una directiva de conformidad con la Comunidad Europea (CE).

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J E D F N Es I Dk C K R P

F19A10091

SIGMA

ELECTRONIC FLASH
EF-610 DG ST SO-ADI

使用説明書	ISTRUZIONI PER L'USO
INSTRUCTIONS	BRUGSANVISNING
BEDIENUNGSANLEITUNG	用戶手冊
MODE D'EMPLOI	사용자 설명서
GEBRUIKSAANWIJZING	РУКОВОДСТВО ПО ЭКСПЛУАТАЦИИ
INSTRUCCIONES	MANUAL DE INSTRUÇÕES

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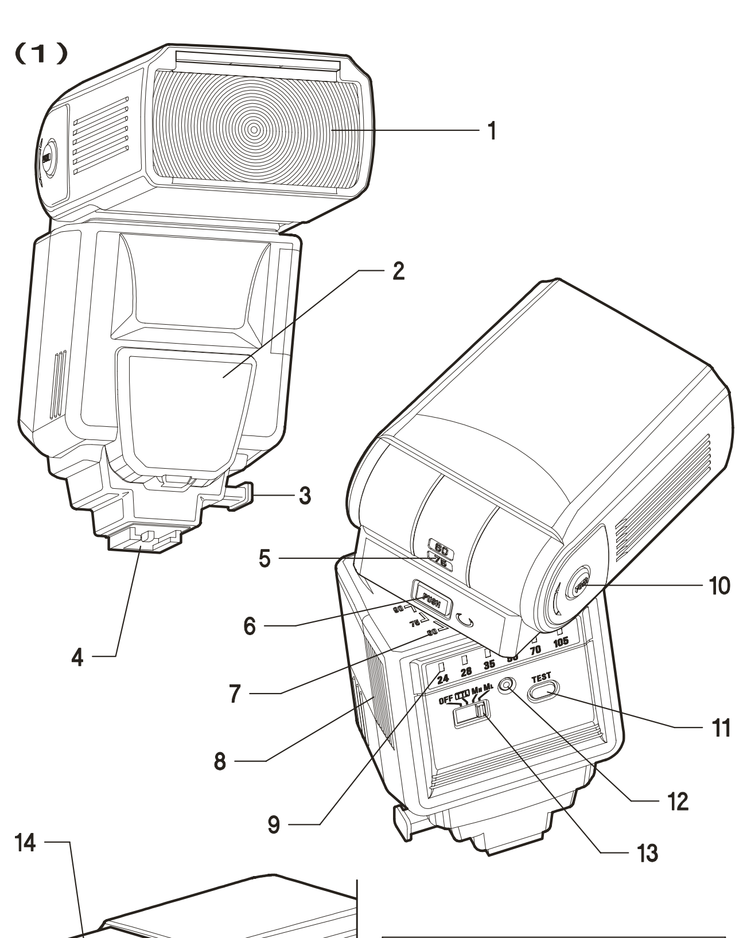

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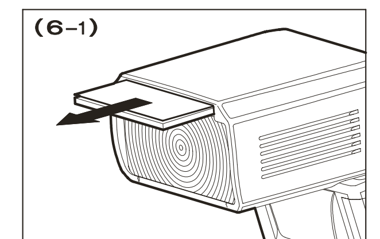

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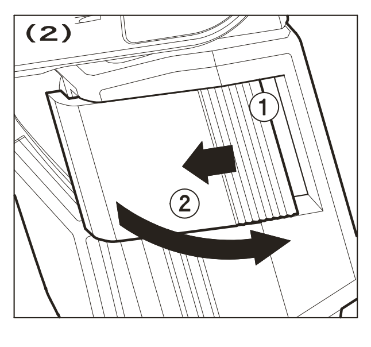

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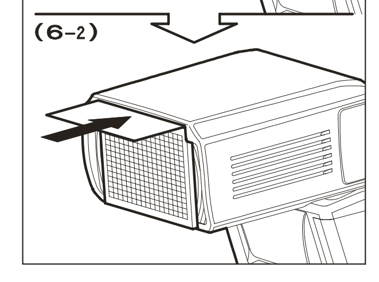

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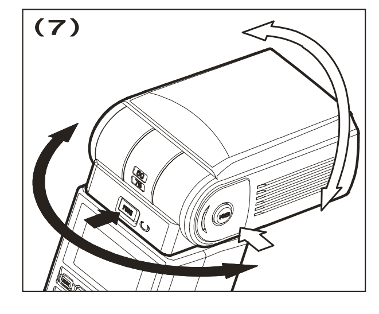

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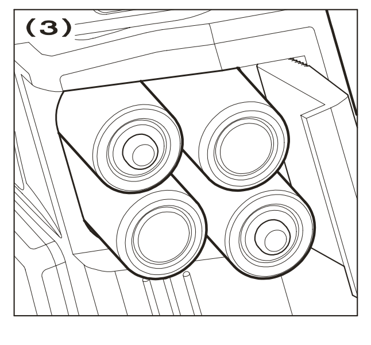

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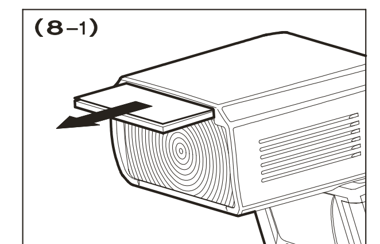

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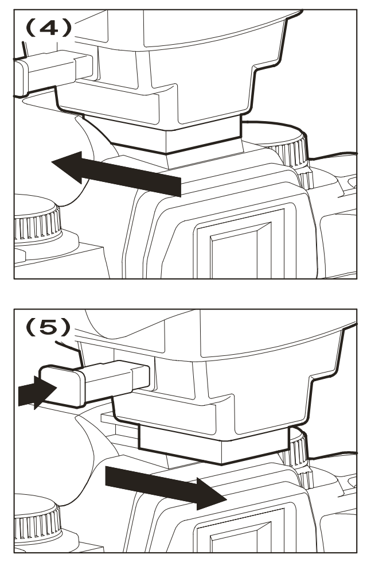

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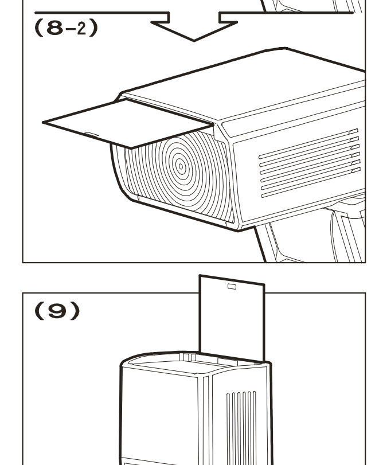

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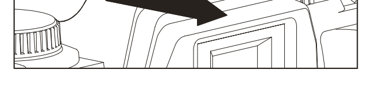

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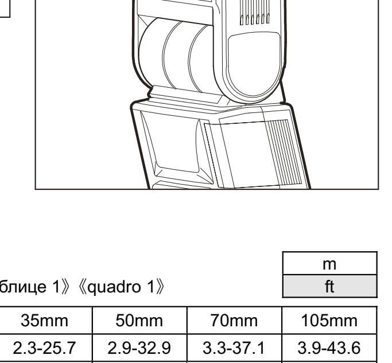

《tabella 1》《chart.1》《表 1》《차트.1》《Таблице 1》《quadro 1》

m
ft

	17mm	24mm	28mm	35mm	50mm	70mm	105mm
1.4	1.5-16.4	2.1-24.3	2.2-25.0	2.3-25.7	2.9-32.9	3.3-37.1	3.9-43.6
	4.9-53.8	6.9-79.7	7.2-82.0	7.5-84.3	9.5-107.9	10.8-121.7	12.8-143.0
2.0	1.0-11.5	1.5-17.0	1.5-17.5	1.6-18.0	2.0-23.0	2.3-26.0	2.7-30.5
	3.3-37.7	4.9-55.8	4.9-57.4	5.2-59.1	6.6-75.5	7.5-85.3	8.9-100.1
2.8	0.7-8.2	1.1-12.1	1.1-12.5	1.1-12.9	1.5-16.4	1.6-18.6	1.9-21.8
	2.3-26.9	3.6-39.7	3.6-41.0	3.6-42.3	4.9-53.8	5.2-61.0	6.2-71.5
4.0	0.7-5.8	0.8-8.5	0.8-8.8	0.8-9.0	1.0-11.5	1.1-13.0	1.3-15.3
	2.3-19.0	2.6-27.9	2.6-28.9	2.6-29.5	3.3-37.7	3.6-42.7	4.3-50.2
5.6	0.7-4.1	0.7-6.1	0.7-6.3	0.7-6.4	0.7-8.2	0.8-9.3	1.0-10.9
	2.3-13.5	2.3-20.0	2.3-20.7	2.3-21.0	2.3-26.9	2.6-30.5	3.3-35.8
8.0	0.7-2.9	0.7-4.3	0.7-4.4	0.7-4.5	0.7-5.8	0.7-6.5	0.7-7.6
	2.3-9.5	2.3-14.1	2.3-14.4	2.3-14.6	2.3-19.0	2.3-21.3	2.3-24.9
11.0	0.7-2.1	0.7-3.1	0.7-3.2	0.7-3.3	0.7-4.2	0.7-4.7	0.7-5.5
	2.3-6.9	2.3-10.2	2.3-10.5	2.3-10.8	2.3-13.8	2.3-15.4	2.3-18.0
16.0	0.7-1.4	0.7-2.1	0.7-2.2	0.7-2.3	0.7-2.9	0.7-3.3	0.7-3.8
	2.3-4.6	2.3-6.9	2.3-7.2	2.3-7.5	2.3-9.5	2.3-10.8	2.3-12.5
22.0	0.7-1.0	0.7-1.5	0.7-1.6	0.7-1.6	0.7-2.1	0.7-2.4	0.7-2.8
	2.3-3.3	2.3-4.9	2.3-5.2	2.3-5.2	2.3-6.9	2.3-7.9	2.3-9.2
32.0		0.7-1.1	0.7-1.1	0.7-1.1	0.7-1.4	0.7-1.6	0.7-1.9
		2.3-3.6	2.3-3.6	2.3-3.6	2.3-4.6	2.3-5.2	2.3-6.2

《tabella 2》《chart.2》《表 2》《차트.2》《Таблице 2》《quadro 2》

	17mm	24mm	28mm	35mm	50mm	70mm	105mm
MH	23.0	34.0	35.0	36.0	46.0	52.0	61.0
ML	5.8	8.5	8.8	9.0	11.5	13.0	15.3

《tabella 3》《chart.3》《表 3》《차트.3》《Таблице 3》《quadro 3》

ISO25	ISO50	ISO200	ISO400	ISO800	ISO1600	ISO3200
X0.5	X0.71	X1.4	X2	X2.8	X4	X5.7

ITALIANO

Grazie per la preferenza accordata al Flash elettronico Sigma EF-610 ST DG SO-ADI. Questo prodotto è stato studiato specificatamente per le reflex SONY (Konica Minolta, Minolta) AF. A seconda del modello della macchina, funzioni e operatività possono variare. Leggete attentamente questo manuale quando usate il flash con la vostra macchina. Il flash dispone di molte funzioni per ottimizzare la vostre riprese. Per avere ottime fotografie e ottenere il massimo dal flash, prima di iniziare a usarlo, leggete questo manuale e quello della vostra macchina. Tenetelo poi a portata di mano per poterlo consultare in caso di dubbio.

ATTENZIONE

⚠ Questo denota punti rilevanti, per i quali attenzione e cautela sono particolarmente richiesti

⊘ Il simbolo contiene informazioni su ciò che non si deve fare

⚠ Attenzione!! Usare questo prodotto nell'inosservanza del presente segnale di pericolo può causare serie ferite o mettervi in serio pericolo

- ⊘ Il flash contiene circuiti ad alto voltaggio. Per evitare di prendere la corrente o di bruciarsi, non cercate di smontare il flash. Se la carrozzeria è rotta o incrinata, non toccate le parti interne.
- ⊘ Non scattate flash vicino agli occhi. La luce molto intensa può provocare danni alla vista. Tenete almeno 1 metro di distanza tra il flash e il viso quando fotografate.
- ⊘ Non toccate il terminale syncro della macchina quando il flash è collegato. Il circuito ad alto voltaggio può causare scosse elettriche.
- ⊘ Non usate la macchina in ambienti con materiali infiammabili, gas, agenti chimici o infiammabili liquidi. C'è il rischio di causare un'esplosione.

⚠ Attenzione!! Usare questo prodotto nell'inosservanza del presente segnale di pericolo può causare serie ferite o danni.

- ⊘ Non usate questo flash con fotocamere che non siano reflex SONY (Konica Minolta, Minolta) AF; potreste danneggiarne i circuiti elettrici. Non è nemmeno possibile usare questo flash con i modelli Minolta 9000, 7000, 5000, 3700i.
- ⚠ Questo flash teme l'acqua. Se usato sotto pioggia, neve o vicino all'acqua va protetto. Spesso non è possibile riparare componenti interni danneggiati dall'acqua.
- ⊘ Flash e apparecchio fotografico non vanno esposti a urti, polvere, alte temperature e umidità. Questi fattori possono causare malfunzionamento o incendio dell'apparecchiatura.
- ⚠ Quando il flash è sottoposto a sbalzi improvvisi di temperatura (es. dal freddo di un esterno al caldo di un ambiente interno) può formarsi della condensa. In questi casi, riponete l'attrezzatura in un sacchetto di plastica e non usatela fino a quando non è a temperatura ambiente.
- ⊘ Non riponete il flash in un cassetto o armadietto con naftalina, canfora o altro insetticida. Possono avere un effetto negativo sul suo funzionamento.
- ⊘ Non utilizzate un lucidante, Benzene o altro agente di pulizia per rimuovere sporco o impronte. Pulite solamente con un panno morbido appena inumidito.
- ⚠ Se non intendete usare il flash per un lungo periodo, cercate un luogo asciutto e fresco dove riporlo, preferibilmente con una buona ventilazione. Fate scattare il flash più volte nell'arco di un mese, affinché mantenga adeguate capacità di funzionamento.

DESCRIZIONE DELLE PARTI (fig.1)

1.testa del flash 2.Luce ausiliaria AF 3.Pulsante di scatto 4.Staffa 5.Angolo di rotazione per flash indiretto; su e giù 6.Blocco swivel e pulsante di sblocco: destra e sinistra 7.Angolo di rotazione per flash indiretto; destra e sinistra 8.Coperchio delle batterie 9.Indicatore di posizione dello zoom 10.Blocco della rotazione e pulsante di sblocco: su e giù 11.pulsante TEST 12.spia di pronto lampo 13.interruttore accensione 14.Pannello riflettente 15.Diffusore grandangolare

BATTERIA

Questo flash usa quattro pile AA di tipo alcalino o batterie ricaricabili Ni-Cad e Ni-MH. Anche le batterie al Manganese possono essere usate ma hanno una durata più ridotta rispetto alle alcaline. Se la spia di pronto lampo impiega più di 30 secondi ad illuminarsi, le pile vanno sostituite

- ■ Per assicurare contatti elettrici ottimali, pulite i terminali delle batterie prima di installarle
- ■ Le batterie NiCad non hanno contatti standard. Se le utilizzate, verificate che i contatti delle batterie siano correttamente allocati
- ■ Per evitare esplosioni delle batterie, perdite o surriscaldamento, usate quattro batterie nuove della stessa marca. Non mischiate batterie di marche diverse, vecchie e nuove insieme
- ■ Non mandate in corto le batterie, non smontatele, non esponetele a fonti di calore o d'energia: potrebbero esplodere. Non ricaricate altre batterie se non quelle ricaricabili al Ni-Cd
- ■ Se non si utilizza il flash per un periodo prolungato, togliere le batterie per evitare danni o perdite
- ■ La funzionalità delle batterie decresce alle basse temperature. Tenete quindi le batterie protette quando utilizzate il flash al freddo.

CARICAMENTO DELLE BATTERIE

1. Accertatevi che il pulsante d'accensione sia su off, quindi facendolo scivolare nel verso indicato dalla freccia, aprite il coperchio del vano batterie (fig.2).
2. Inserite quattro batterie AA nel vano apposito. Accertatevi che i poli + e – sulle batterie corrispondano a quelli segnati all'interno del vano . (fig.3)
3. Chiudete il coperchio
4. Spostate il pulsante d'accensione su ON. Dopo qualche secondo la spia di pronto lampo si illuminerà, indicando che il flash è pronto.
5. Per essere sicuri del corretto funzionamento del flash, premere il pulsante test

- ■ Se l'energia residua della batteria non basta più o è stato rilevato un errore nel sistema elettronico d'informazione, l'indicatore di posizione dello zoom si accenderà a luce pulsante per segnalarvi che qualcosa non va.

COLLEGARE E SEPARARE IL FLASH DALLA MACCHINA

Controllare che il flash sia spento. Poi infilare lo zoccolo del flash nella slitta portaccessori della fotocamera, fino a che si blocca. (fig.4)

- ■ Se il flash incorporato della macchina è estratto, chiudetelo prima di attaccare l'unità flash esterna

Per disinserirlo premere il pulsante di sblocco e spingere il flash fuori dalla slitta portaccessori. (fig.5)

TTL AUTO FLASH

In modalità TTL AUTO, la macchina emette la quantità di luce necessaria per una esposizione corretta del soggetto.

1. Impostare il modo di esposizione su **P**.
2. Portate il cursore che fa da interruttore d'accensione sulla posizione <TTL>.
   - ■ Se l'indicatore dell'angolo di campo del flash lampeggia, quando accendete il flash, assicuratevi che l'inclinazione della testa del flash sia sulla posizione normale (0°)
3. Puntate sul soggetto.
4. Non appena completata l'autocarica del flash, quando cioè vedete apparire nel mirino della fotocamera la spia luminosa con il simbolo corrispondente, potete premere a fondo il pulsante di scatto.

- ■ Dopo che aver scattato una fotografia, qualora questa sia stata esposta correttamente la spia di disponibilità diventa intermittente. Se così non fosse, vuol dire che la potenza luminosa utiizzata dal flash no era sufficiente per le condizioni di ripresa del momento. In questo caso non avete che da fotografare di nuovo dopo esservi avvicinati di più al soggetto.
- ■ La luce ausiliaria AF si accende automaticamente se la luce a disposizione non è sufficiente. La sua distanza utile va da 7 a 9 metri circa.
- ■ Quando il flash è completamente carico, compare un segnale lampeggiante. Se si scatta prima che il flash sia totalmente carico, la macchina esporrà con un tempo lungo
- ■ Per risparmiare l'energia delle batterie, il flash si spegne automaticamente quando non viene usato per oltre 240 secondi. Per ripristinare il funzionamento, premete il pulsante test oppure quello di scatto della macchina fino a metà.
- ■ Nel modo "AUTO", il flash predisporrà automaticamente il comando per effetto zoom secondo la focale effettiva dell'obiettivo applicato.
- ■ Consultate la《tabella 1》per conoscere le distanze utili ai fini delle riprese.

UTILIZZO DEL FLASH CON ALTRI MODI DI FUNZIONAMENTO DELLA FOTOCAMERA

A priorità di esposizione

Quando impostate la velocità di scatto, la fotocamera automaticamente imposta il diaframma più adatto.

A priorità di diaframma

Impostando il modo A, dopo aver scelto il valore di diaframma desiderato, la fotocamera imposta automaticamente il tempo di scatto, in modo da avere una corretta esposizione dello sfondo.

Modo M, manuale

Potete impostare manualmente sia il valore di diaframma che il tempo di scatto.

FLASH MANUALE

Questo flash può essere usato manualmente a potenza piena, oppure con un livello di potenza luminosa ridotto a 1/16.

1. Regolate la macchina in modalità A oppure M
2. Portate l'interruttore d'accensione del flash su **MH** (potenza piena) oppure su **ML** (Potenza ridotta).
3. In previsione della regolazione manuale, potete calcolare la corretta esposizione applicando questa formuletta:
4. Numero guida GN ("NG" secondo l'acronimo italiano) diviso per la distanza di ripresa in metri = valore di diaframma da regolare.
5. Non appena la spia di disponibilità al lampeggio si accende a lude verde, significa che il flash è pronto all'uso.

Il numero guida cambierà secondo la posizione fatta assumere alla testa zoom《v. tabella 2》o secondo la sensibilità ISO della pellicola in uso《v. tabella 3》. Se quest'ultima non è indicata per un valore ISO 100, moltiplicate il fattore della《tabella 3》per l'indice di luminosità della《tabella 2》. Ci spieghiamo meglio con un esempio: con pellicola ISO 200, testa zoom in posizione **24** e selezione di potenza luminosa **MH**, moltiplicate il numero 1.4 della《tabella 3》per il numero 34.0 della《tabella 2》: 34.0×1.4=47.6. Sarà questo il nuovo numero guida al quale dovrete fare riferimento.

Esempio: Se in flash per distanza del soggetto è di 8,5 metri:
diaframma = 47.6 : 8.5m = 5.6 (sarà quindi su 5.6 che dovrete diaframmare l'obiettivo della vostra fotocamera).

Se vi servite ripetutamente del flash nel modo **MH** (potenza piena), fate una pausa di circa 10 minuti dopo ogni serie di 20 lampeggi. Nelle stesse condizioni, ma con il modo **ML** (potenza ridotta), basterà una pausa della medesima durata dopo ogni serie di 40 lampeggi.

DIFFUSORE GRANDANGOLARE

Il flash incorpora un filtro diffusore grandangolare che assicura la copertura fino alla focale del supergrandangolare da 17mm. Estrarre il pannello diffusore assieme al pannello riflettente dalla testa del flash (fig.6-1). (Estrarre i pannelli lentamente, con delicatezza.) Poi spingere il pannello riflettente nel suo alloggiamento (fig.6-2). L'angolo di copertura del flash diventa automaticamente pari alla focale da 17mm.

- ■ Quando si usa il pannello diffusore, l'indicatore dell'angolo di campo lampeggia lentamente, una volta al secondo, indicando contemporaneamente la focale massima e quella minima. (24mm e 105mm)
- ■ Se il pannello diffusore esce dal suo alloggiamento, il meccanismo che regola automaticamente l'angolo di campo del flash, a seconda della lunghezza focale dell'obiettivo, non funzionerà. Per risolvere il caso contattare il fotonegoziante di fiducia.

FLASH INDIRETTO

Quando, in una stanza, si scatta una foto con il flash, a volte una pesante ombra appare dietro al soggetto. Se si punta la parabola del flash verso l'alto, facendo riflettere la luce dal soffitto o dalle pareti, il soggetto avrà un'illuminazione più morbida. Premete il pulsante di blocco e ruotate la testa del flash in modo da regolare il suo angolo d'inclinazione nelle varie direzioni.

In alto: 0, 60, 75, 90 In basso; 0,7
Destra: 0, 60, 75, 90 Sinistra: 0, 60, 75,90, 120, 150, 180 (fig.7)

- ■ L'immagine sarà influenzata dal colore dalla superficie riflettente. Meglio se pareti e soffitto sono bianchi.

ESPOZIZIONE CLOSE-UP

Per il flash indiretto può essere acceso al 7° per close-up. Il Flash sarà operativo solo per soggetti da 0,5 a 2 m.

- ■ 1 L'indicatore dell'angolo di campo del flash lampeggia (2 volte al secondo) quando si inclina verso il basso la testa del flash di 7°

PANNELLO RIFLETTENTE

Il flash incorpora un pannello riflettente che contribuisce a creare il punto di luce di luce negli occhi del soggetto quando si usa il flash nella modalità di lampo riflesso. Estrarre il pannello diffusore e quello riflettente (fig.8-1) e riposizionare il diffusore nel suo alloggiamento (fig.8-2). (Estrarre diffusore e pannello con la massima delicatezza.)

- ■ Per utilizzare nel modo migliore il pannello diffusore, ribaltare di 90° gradi in alto la testa del flash e riprendere il soggetto da breve distanza (fig.9).

DANSK

Tillykke med dit valg af Sigma EF-610 DG ST SO-ADI Flash. Denne flash er udviklet specielt til SONY (Konica Minolta, Minolta) AF modellerne. Afhængig af kameramodel kan funktioner og betjening variere. For at få det fulde udbytte af flashen anbefaler vi, at du læser denne vejledning. Brugsanvisningen til kameraet indeholder også informationer om flashfotografering. Vi anbefaler, at du også læser disse informationer

BEMÆRK ⚠ Symbol der markerer vigtige punkter hvor forsigtighed er påkrævet.
⊘ Symbol der markerer information om handlinger der bør undgås.

⚠ Advarsel !!
Brug af produktet i modstrid med disse advarsler kan medføre alvorlig personskade eller anden skade

- ⊘ Denne flash indeholder højspændingskomponenter. Adskil ikke flashen, da det kan medføre elektrisk stød eller forbrændinger. Hvis flashens kabinet går i stykker så de indvendige komponenter blotlægges, må de ikke berøres.
- ⊘ Affyr ikke flashen tæt på en persons øjne. I så fald kan flashens kraftige lys give øjenskader. Hold mindst 1 meters afstand mellem flashen og en persons øjne når flashen anvendes.
- ⊘ Berør ikke kameraets synkrostik mens flashen er påmonteret kameraets flashsko, da der er risiko for elektrisk stød.
- ⊘ Anvend aldrig flashen i omgivelser med brændbare gasser eller kemikalier etc. Da det kan medføre brand eller eksplosion.

⚠ Bemærk!!
Brug af produktet i modstrid med disse advarsler kan medføre personskade.

- ⊘ Anvend ikke denne flash med andre kameraer end SONY (Konica Minolta, Minolta) AF spejlreflekskameraer. I modsat fald kan flashen beskadige kameraets elektronik. Bemærk at denne flash ikke kan anvendes direkte på kameramodellerne α-9000, 7000, 5000 og 3700i.
- ⚠ Denne flash er ikke vandtæt. Hvis flashen anvendes i regn, sne eller fugtige omgivelser skal den beskyttes mod fugt. Det er ofte umuligt at reparere elektriske komponenter der er beskadigede af fugt.
- ⊘ Udsæt ikke flashen for stød eller slag, høj temperatur, støv eller fugtighed. Det kan medføre at flashen ikke fungerer.
- ⚠ Hvis flashen udsættes for pludselige temperaturudsving, f.eks. hvis flashen bringes fra en lav udendørs temperatur til en høj indendørs temperatur, kan der dannes kondens indvendig i flashen. For at modvirke dette bør flashen anbringes i en taske eller pose og den bør ikke anvendes før den har opnået rumtemperatur.
- ⊘ Flashen bør ikke opbevares på steder hvor den udsættes for dampe fra kemikalier f.eks. fra møbler fremstillet af spånplader.
- ⊘ Anvend ikke benzin eller andet der indeholder opløsningsmidler til rengøring af flashen. Anvend en blød klud til at aftørre flashen.
- ⚠ Hvis flashen skal opbevares i længere tid bør det ske på et køligt sted med god ventilation. Batterierne bør tages ud af flashen – og flashen bør afprøves et par gange hver måned, for at sikre optimal funktion.

BESKRIVELSE AF FLASHENS DELE

1.Flashhoved 2.AF-hjælpelys 3. Låseknap 4.Monteringsfod
5.Vinkel; Op og ned 6.Lås; Højre og venstre 7.Vinkel; Højre og venstre
8.Batteridæksel 9.Zoom-indikator 10.Lås; Op og ned 11.TEST knap
12.Klar-lampe 13.Tænd/sluk 14. Reflektorpanel 15. Vidvinkelforsats

VEDR: BATTERIER

Denne flash anvender fire type "AA" Alkaline eller genopladelige Ni-Cad og Ni-MH batterier. Manganese batterier kan også anvendes, men da de har en kortere levetid end Alkaline batterier kan de ikke anbefales. Udskift batterierne hvis flashen er mere end 30 sekunder om at lade op.

- ■ For at sikre ordentlig elektrisk kontakt, bør batteripolerne aftørres inden batterierne sættes i.
- ■ Ni-Cad og Ni-MHbatterier har ikke standardiserede kontaktpunkter. Hvis du anvender Ni-Cad eller Ni-MH batterier bør du kontrollere at batteriets poler har kontakt med kontaktpunkterne i batterikammeret.
- ■ Anvend altid 4 batterier af samme fabrikat og type. Bland ikke nye og brugte batterier.
- ■ Forsøg ikke at adskille eller kortslutte batterierne, eller at kaste dem i åben ild eller vand, da det kan få dem til at eksplodere. Forsøg ikke at oplade batterier der ikke er konstrueret til genopladning.
- ■ Hvis flashen ikke skal anvendes i en længere periode, bør batterierne fjernes for at undgå beskadigelse eller lækage.
- ■ Batteriernes ydeevne nedsættes ved lave temperaturer. Hold batterierne varme hvis flashen skal bruges i koldt vejr.
- ■ Det anbefales at medbringe ekstra batterier på rejser eller ved fotografering ved lave temperaturer.

ISÆTNING AF BATTERIER

1. Sæt tænd/sluk-knappen på OFF og skub batteridækslet op (fig.2).
2. Læg fire stk. AA batterier i batterikammeret. Vær opmærksom på at vende batterier korrekt, med +/– polerne som angivet i batterikammeret (fig.3).
3. Luk batteridækslet.
4. Sæt tænd/sluk-knappen på TTL-indstillingen. Efter nogle få sekunder vil Klar-lampen lyse som tegn på at flashen er klar til brug.
5. Tryk på Test-knappen for at afprøve flashen.

- ■ Zoom-reflektoren vil automatisk stille sig på 24mm indstillingen når flashen ikke er monteret på et kamera.
- ■ Hvis batterispændingen ikke er tilstrækkelig, eller der en elektronisk fejl, vil Zoom-indikatoren blinke for at advare mod dette.

MONTERING OG AFMONTERING AF FLASHEN

Sluk for flashen. Skub flashfoden ind i kameraets flashsko indtil den låser med et klik (fig.4).

- ■ Hvis kameraets indbyggede flash er vippet op, bør den skubbes ned inden EF-610 flashen monteres.

Flashen afmonteres ved at skubbe den ud af kameraets flashsko, mens låseknappen trykkes ind (fig. 5).

TTL AUTO FLASH

Ved TTL AUTO funktionen regulerer kameraet flashens lysstyrke for at opnå korrekt eksponering.

1. Sæt kameraets eksponeringsfunktion på **P**.
2. Stil tænd/sluk-knappen på TTL indstillingen.
   - ■ Hvis advarslen for flashens udlysningsvinkel blinker når du tænder for flashen, må du kontrollere at flashhovedets vinkel er indstillet på den almindelige indstilling (0˚).
3. Fokuser på motivet.
4. Tag billedet, når flashen er fuldt opladet.

- ■ Når et billede er optaget og korrekt eksponeret, blinker Klar-lampen. Hvis Klar-lampen ikke blinker betyder det, at flashlyset ikke var tilstrækkeligt i den pågældende situation. Tag et nyt billede på kortere afstand.
- ■ AF-hjælpelyset tændes automatisk når der fokuseres på et mørkt motiv. Hjælpelysets rækkevidde er ca. 9 meter.
- ■ For at spare batterierne, slukker flashen automatisk hvis den ikke bruges i ca. 4 minut. For at tænde flashen igen trykkes på Test-knappen eller kameraets udløserknap trykkes halvt ned.
- ■ Flashens Zoom-reflektor justeres automatisk i forhold til den anvendte brændvidde.
- ■ Se venligst den effektive rækkevidde i skemaet (chart.1).

BRUG AF FLASHEN MED ANDRE KAMERAFUNKTIONER

Lukkertidsprioriteret indstilling

Når du vælger den ønskede lukkertid vil kameraet indstille den korrekte blændeværdi.

Blændeprioriteret indstilling

Ved at vælge A-funktionen kan du vælge den ønskede blænde og kameraet indstiller den korrekte lukkertid efter baggrundens belysning.

Anvendelse med M-funktion

Du kan indstille den ønskede blænde og lukkertid.

MANUEL FLASH

Flashen kan anvendes med manuel indstilling på fuld lysstyrke eller 1/16 lysstyrke.

1. Stil kameraet på Manuel/M-indstilling.
2. Sæt flashens tænd/sluk-knap på MH (fuld lysstyrke) eller ML (1/16 lysstyrke).
3. Fokuser på motivet og indstil kameraets blænde på den værdi der udregnes efter følgende formel: Blænde = Ledetal (G.N.) divideret med afstanden til motivet i meter.
4. Tag billedet, når flashen er fuldt opladet.

Ledetallet (G.N.) varierer i forhold til Zoom-reflektorens stilling (se skemaet chart. 2). Ledetallet afhænger også af filmens følsomhed (se skemaet chart. 3). Hvis der anvendes film med en anden følsomhed end 100 ISO skal værdierne i skema 2 ganges med værdien i skema 3.
Eksempel: Der anvendes en film med ISO 200, Zoom-reflektoren er indstillet på 24mm og der er valgt fuld lysstyrke (MH); Skema 3 giver værdien x1.4, skema 2 giver værdien 34.0: 1.4x34.0 = 47.6. Dette er det aktuelle ledetal (G.N.). Hvis afstanden til motivet er f.eks. 8.5 meter, vil det betyde at kameraet skal indstilles på blænde 5.6 (47.6 divideret med 8.5).

Når flashen bruges gentagne gange på MH indstillingen, bør den "hvile" i ca. 10 minutter for hver 20 optagelser. Når flashen bruges gentagne gange på ML indstillingen bør den "hvile" for hver 40 optagelser.

VIDVINKELFORSATS

Denne flash er forsynet med en indbygget vidvinkelforsats, der giver en udlysningsvinkel svarende til et 17mm vidvinkelobjektiv. Træk vidvinkelforsatsen og reflektorpanelet ud og vip forsatsen ned så den dækker flashhovedet (fig.6-1). (Vær forsigtig når du trækker panelerne ud.) Skub derefter reflektorpanelet tilbage på plads (fig.6-2). Flashens udlysningsvinkel vil automatisk blive indstillet på 17mm.

- ■ Indikatoren for flashens udlysningsvinkel vil vise, at vidvinkelforsatsen er i brug ved at værdierne 24mm og 105mm begge blinker langsomt (hvert sekund).
- ■ Hvis den indbyggede vidvinkelforsats ved et uheld knækkes af, vil flashens mekanisme til justering af zoomreflektoren ikke længere fungere korrekt, og flashen må indsendes til reparation.

BOUNCE FLASH (indirekte flash)

På flashbilleder vil der ofte optræde kraftige skygger fra motivet. Hvis du drejer flashhovedet og anvender indirekte flashlys fra loftet eller væggene vil lyset blive blødere.
Tryk på låseknappen og drej flashhovedet for at indstille vinkelen.

OP: 0, 60, 75, 90 NED: 0,7
HØJRE: 0, 60, 75, 90 VENSTRE: 0, 60, 75,90, 120, 150, 180 (fig.7)

- ■ Når du anvender TTL-indstillingen vil kameraets lysmålingssystem beregne den korrekte eksponering.
- ■ Billedet vil få samme farvetone som den flade der reflekterer lyset. Brug kun indirekte flash hvor lyset reflekteres fra en hvid flade.

NÆROPTAGELSER

Til brug ved næroptagelser kan flashhovedet vippes 7º nedad. Flashen kan kun anvendes på afstande mellem 0,5 og 2 meter.

- ■ Indikatoren for udlysningvinklen vil blinke (2 gange hvert sekund), når du vipper flashhovedet 7˚ nedad.

REFLEKTORPANEL

Denne flash er forsynet med et indbygget reflektorpanel, der kan give en lysrefleks i motivets øjne (catch light) når flashen anvendes som indirekte lyskilde. Træk reflektorpanelet ud (fig.8-1). Hvis vidvinkelforsatsen følger med ud, skubbes den tilbage på plads (fig.8-2). (Vær forsigtig når du trækker panelerne ud.)

- ■ For at opnå effekten med lysrefleks i øjnene, skal flashhovedet vippes op i en vinkel på 90 grader og billederne skal tages på kort afstand (fig.9).

中文說明書

多謝閣下購買適馬 EF-610 DG ST SO-ADI 電子閃光燈。本產品是特別爲 SONY (KonicaMinolta，Minolta) 自動對焦單鏡反光相機系列而開發的。功能及操作方式會因應相機型號而有所差別。請詳細閱讀本說明書。本產品多樣化的功能會爲閣下帶來更多的攝影樂趣。爲要把本產品各功能發揮得淋漓盡致及增加攝影之樂趣，請將本說明書跟相機說明書一起閱讀，並妥爲保存以便將來查閱。

注 意 ⚠ 標誌代表警告及注意等的重要事項。
⊘ 標誌含有需要避免的動作。

⚠警告!!：如忽略此警告標誌所述的情況下使用本產品可能構成嚴重受傷或其他危險結果。

- ⊘ 本閃光燈內藏高壓電路。爲避免觸電或消傷，請不要嘗試拆開本閃光燈。如本閃光燈外殼爆裂或損毀，請不要觸摸內部的元件。
- ⊘ 不要靠近眼睛觸發閃光燈，否則其強光可能對眼睛做成傷害。拍攝時，請保持閃光燈與臉部至少 1 米／3 呎的距離。
- ⊘ 不要在易燃的氣體、液體及化學物品附近使用相機，否則可能引起爆炸。

⚠注意!!：如忽略此注意標誌所述的情況下使用本產品可能構成受傷或損毀。

- ⊘ 不要把本閃光燈使用在非 SONY (Konica Minolta, Minolta)自動對焦單鏡反光相機上，否則閃光燈可能對相機的電路構成損害。
- ⚠ 本閃光燈並不防水。當在下雨、降雪或近水的地方使用相機及閃光燈時，請避免弄濕。因弄濕而損毀的電子元件一般都較難維修。
- ⊘ 不要把閃光燈曝露在震盪、滿佈塵埃、高溫或高濕度的環境底下。在這些情況下可引致火警或令器材不正常工作。
- ⚠ 當閃光燈遇到溫度驟變的環境，例如把閃光燈從寒冷的室外帶到溫暖的室內時，閃燈內部及外部會有積聚水氣。預防方法爲先把閃光燈放入密封膠袋內才把它帶到溫度驟變的另一地方，直到閃光燈達到該地方之溫度方可使用。
- ⊘ 不要把閃光燈存放在抽屜或廚櫃內，因其可能含有樟腦或其他殺蟲劑會對閃光燈做成不良影響。
- ⊘ 不要使用天拿水、苯或其他清潔劑來抹掉閃光燈表面的塵埃或指紋。應使用微濕及柔軟的布。
- ⚠ 如需要長時間存放，請選擇乾爽清涼的地方，最好有良好的通風系統。建議每個月都使用閃光燈來作數次閃光，以維持電容正常工作。

各部位名稱（圖 1）

1.閃光燈燈頭 2.自動對焦輔助光束發射口 3.釋放鈕 4.熱靴座
5.上左右反射角 6.左右活動釋放按鈕 7.左右反射角 8.電池室蓋掩
9.閃燈覆蓋焦距提示 10.上下活動釋放按鈕 11.“閃光測試”按鈕“
12.充電完成及提示燈 13.電源開關鈕（TTL，全光，半光） 14.反射片
15.廣角閃光擴散片

關於電池

本產品使用四枚 AA 型鹼性電池或 Ni-Cd/Ni-MH 充電池。雖然錳電池可被用使於本產品上，但因其電量遠不及鹼性電池，所以並不建議使用。如電池組須要 30 秒以上方能充電完成（提示燈亮起），請更換新電池。

- ◆爲確保妥善的電力接觸，可清潔電池接點後才安裝電池。
- ◆Ni-Cd 電池的兩端接點因沒有標準，如使用該種電池的話，請確定電池室接點與電池接點妥善地接觸。
- ◆爲防止電池發生爆炸、洩漏或過熱，請使用相同品種及品牌之電池，不要把品種不同或新舊不一之電池混合使用。
- ◆不要把電池拆開、短路或暴露於水火當中，否則可能引起爆炸。此外，不要把非充電性質之電池拿來充電。
- ◆如需長時間閒置此閃光燈，請把電池取出，以防電池洩漏可能帶來的損毀。
- ◆低溫能影響電池的效能，如需於寒冷天氣下使用此閃光燈，請盡量縮短閃光燈暴露於空氣的時間及適時關閉電源。
- ◆建議於長途旅程或於寒冷的戶外進行拍攝工作前攜帶足夠後備電池。

安裝電池

1. 確定已把電源關閉後（推至 OFF 位），依附圖箭咀方向所示把電池室蓋掩推出並揭開。(圖 2)
2. 按照附圖所示之正負極方向放入四枚 AA 型電池到電池室內(圖 3)。
3. 把電池室蓋掩關上。
4. 把電源開關掣推至 ON，數秒後充電完成提示燈將會亮起，表示閃光燈已就緒等待引發。
5. 請按下“閃光測試”按鈕以確定閃光燈能正常運作。

- ◆如電量不足、電子訊號錯誤或內部故障，閃燈覆蓋焦距提示燈號將會不停閃爍提示。

安裝閃光燈到相機及其解除

請確定已把電源關閉，把閃光燈的熱靴座插到相機的熱靴上，然後鎖緊(圖 4)。

- ◆如相機的內置閃光燈被開啓彈出，請把其按回成收藏狀態後方可安裝本閃光燈。

將閃燈解除時，請按著燈腳下部的釋放鈕，然後將燈拉出便可(圖 5)。

TTL 自動閃燈功能

於 TTL 自動模式時，相機會控制閃光燈輸出的光量從而令主體得到正確曝光。

1. 把相機曝光模式設爲 P 模式。
2. 開啓電源開關掣並設定在 TTL 位置。
   - ◆如閃燈覆蓋焦距提示燈號不停閃爍，請確定閃燈上下反射角度是否處正常 0 度位置。
3. 向主體進行對焦。
4. 當確定閃光燈充電完成後便可按下快門釋放掣進行拍攝。

- ◆在拍攝完畢後，充電完成提示燈即閃爍提示，如指示沒有出現的話，即表示
- ◆閃光燈所能輸出的光量可能並不足夠應付該環境，請移近主體再進行拍攝。
- ◆在比較黑暗的環境進行對焦的話，自動對焦輔助光束會自動開啓。(注意：有效距離爲 0.7 米／2.3 呎到 9 米／29.5 呎)。
- ◆當閃光燈充電完成後，閃光燈標記會顯示在相機的觀景器內。當閃光燈充電尚未完成前按下快門釋放掣的話，閃光燈並不會被觸發而相機會以一個較慢的快門來進行該次拍攝。
- ◆約在 240 秒後閃燈爲節省電能即自行關閉，如欲重新啓動，輕按相機快門鈕一半或按閃燈(TEST)鈕便可。
- ◆閃燈可因應鏡頭變動焦距，而自行相應配合適當的閃燈覆蓋範圍。
- ◆請詳閱《表 1》，有效閃光覆蓋表。

在相機其他模式下使用閃光燈

快門先決設定

當選擇了快門後，相機會因應現場環境的光源自動選擇適當光圈配合。

光圈先決設定

於相機上選擇 A 模式，光圈先決自動曝光模式後，在自行選擇所欲光圈後，相機會因應現場環境的光源自動選擇適當快門配合。

手動曝光設定

光圈及快門在手動曝光模式下都能個別地被設定。

手動閃光操作

閃光燈可以作手動操控設定輸出光量，可選 MH 全光或 ML1/16 光量輸出

1. 設定相機的曝光模式爲全手動模式 M。
2. 將按下閃燈開關鈕撥往 MH 全光或 ML1/16 光量輸出位置。
3. 在相機上設定 F 光圈值和對焦；可用以下曝光計算公式設定曝光值。
   F 光圈值 = 閃燈輸出數值 GN ÷閃燈與被攝主體距離 m
4. 在閃燈充電完滿後，便可按下快門釋放鈕拍照。

閃燈的燈頭變動(變焦)，其光量輸出數值 GN 將會有所變動，請參閱《表 2》。光量輸出數值 GN 亦菲林 ISO 感光度亦會有所變動，請參閱《表 3》。若使用菲林感光度不是 ISO100 度，應將《表 3 數值》×《表 2 數值》。例如，使用 ISO200 度菲林，閃燈燈頭設定於 24mm，光量設定爲 MH 全光輸出，計算公式:表 3 的"1.4"乘表 2 的"34.0" : 34.0×1.4=47.6，47.6 便是光量輸出數值 GN-m 米，如 GN-m 米 乘 3.3 便=GN-尺。

例；閃燈和被攝體距離爲 8.5 米
F 光圈值 = 47.6 ÷ 8.5 = 5.6 (5.6 便是在相機上應設定的 F 值)

- ◆如閃燈長時間以 MH 全光輸出作拍攝，請在連續輸出 20 次或 ML 連續輸出 40 次，應讓閃燈休息 10 分鐘。

廣角閃光擴散片

閃光燈內附置能覆蓋達 17mm 的超廣角閃光擴散片。設置；先將廣角閃光擴散片及反射片從閃燈頂部拉出，繼將其反下覆蓋閃燈發射表面 (圖 6-1) (拉出光片請小心)，再將(14)反射片退回閃燈內 (圖 6-2)；閃燈將自動設定閃光覆蓋角度爲 17mm。

- ◆閃燈在使用廣角擴散片時，閃燈覆蓋焦距提示(24㎜ 和 105㎜ 燈號)將會一起緩慢閃動
- ◆如廣角擴散片意外地脫落，“Zoom”按鈕將不能運作。若遇到此情況請聯絡銷售本產品之店舖或維修中心

反射閃光

當在室內房間中使用閃光燈正面向主體進行拍攝時，很多時在主體背後會出現強烈的投影。如把閃光燈燈頭向上或向側利用天花板或牆壁作反射，主體所受到的照明會比較均勻柔和。按下上下活動釋放按鈕或左右活動釋放按鈕來調節反射角度。

向上：0 度，60 度，75 度，90 度 **向下**：0 度，7 度
向右：0 度，60 度，75 度，90 度 **向左**：0 度，60 度，75 度，90 度，120 度，150 度，180 度 (圖 7)

- ◆請選擇白色作反射面，其他顏色的表面會令所反射回來的光帶有非日光色溫。因應不同之反射表面、主體距離等因素，其原本所顯示的有效閃光距離將有所改變。

近攝曝光

把閃光燈頭向下調 7 度可作近攝閃光之用。在此情況下閃光燈的有效距離爲 0.5 米至 2 米。

- ◆當閃光燈被調節往 向下 7 度時，閃燈覆蓋焦距提示將閃動以作提示。

反射片

閃光燈內附置反射片，在進行燈光反射攝影模式時，它能將閃光燈所發出的光線反射至被攝主體表面、同時在主体的眼睛上造出高光的效果。設置：首將廣角閃光擴散片及反射片從閃燈頂部拉出 (圖 8-1)，(拉出光片請小心)，再將(15) 擴散片退回閃燈內(圖 8-1)

- ◆創立燈光反射攝影模式，適在近距進行，並將閃燈發射部翹起至 90 度° (圖 9)。

한국어

시그마 EF-610 DG ST SO-ADI 플래시를 구입해 주셔서 감사합니다. 이 플래시는 소니(미놀타, 코니카 미놀타) AF SLR 카메라용으로 개발한 플래시입니다. 카메라 모델에 따라 기능 및 작동은 다를 수 있습니다. 본 설명서를 정독한 다음, 플래시의 기능, 조작, 취급상 주의점을 바르게 이해하고 사진촬영을 즐기십시오. 플래시의 활용도를 높이고 최대의 성능을 이끌어 내기 위해서는 플래시를 사용하기 전에 플래시 사용 설명서와 카메라 사용 설명서를 함께 숙지해 주시기 바랍니다. 다 읽으신 후에는 반드시 사용자가 언제라도 볼 수 있는 곳에 보관해 주십시오.

사용상의 주의점 ⚠ 이 기호는 경고와 주의를 표시해주는 중요한 사항들을 알려줍니다.
⊘ 이 기호는 금지하는 사항들을 알려줍니다.

⚠경고!! 이 기호를 무시하고 잘못 취급하면 심각한 손상이나 위험한 결과를 초래할 수 있습니다.

- ⊘ 플래시 내부에는 고전압 회로가 내장되어 있습니다. 감전이나 화상의 우려가 있으므로, 분해, 개조등은 절대 금합니다. 만일 낙하 등으로 손상된 경우에는 내부 부품에 손을 대지 않도록 주의하여 주십시오.
- ⊘ 플래시를 사람 눈 가까이에 대고 촬영하지 마십시오. 눈 가까이에서 플래시를 발광하면 시력 장애를 일으킬 위험성이 있습니다. 특히 유아를 촬영할 때에는 1m 이상 떨어져서 촬영하십시오.
- ⊘ 카메라의 핫 슈에 플래시를 접속하여 사용할 때에는 카메라의 싱크로 터미널에 손을 대지 마십시오. 고전압으로 인하여 감전될 수 있습니다.
- ⊘ 화재 및 기타 위험이 있는 장소에서는 사용하지 마십시오. 그렇지 않을 경우, 화재나 폭발의 원인이 될 수 있습니다.

⚠주의!! 이 기호를 무시하고 잘못 취급하면 손상을 입을 수 있습니다.

- ⊘ 이 플래시는 소니(미놀타, 코니카 미놀타) AF SLR 카메라 이외의 카메라에는 사용하지 마십시오. 그렇지 않을 경우, 카메라의 전자회로에 손상을 줄 수 있습니다.
- ⚠ 이 플래시는 방수 구조로 되어 있지 않습니다. 우천시나 물가에서 사용할 때에는 젖지 않도록 주의하여 주십시오. 물이 내부에 들어가면 고장의 원인이 됩니다.
- ⊘ 플래시와 카메라에 충격을 주지마십시오. 먼지가 많은 장소나 고온다습한 장소에 방치해 두지 마십시오. 고장이나 화재의 원인이 될 수 있습니다.
- ⚠ 급격한 온도 변화에 의해 플래시 내부에 결로가 발생할 수 있습니다. 추운 실외에서 따뜻한 실내로 들어올 때와 같은 경우에는 케이스나 비닐봉지에 넣어 주위 온도에 익숙해진 후에 사용하여 주십시오.
- ⊘ 방충제는 플래시에 나쁜영향을 미칠 수 있습니다. 서랍장이나 장농에 보관하지 마십시오.
- ⊘ 신나, 벤젠 등의 유기용제로 닦지 마십시오. 변색, 변형등의 원인이 됩니다. 부드러운 천으로 닦아주십시오.
- ⚠ 플래시를 장기간 보관할 때에는 통풍이 잘 되는 서늘하고 건조한 곳에 보관하십시오. 플래시의 성능을 유지시키기 위해서는 매달 플래시 발광 테스트를 수회 실시해 주시기 바랍니다.

각부의 명칭 (그림.1)

1.발광부 2.AF 보조광 발광부 3.릴리즈 버튼 4.슈 5.상하 바운스 각도 표시
6.좌우 회전 락 해제 버튼 7.좌우 바운스 앵글 8.배터리 커버
9.플래시 커버 앵글 표시 10.상하 바운스 락 해제 버튼 11.테스트 버튼
12.준비완료 표시등 13.전원 스위치 14.캐치 라이트 패널 15.와이드 패널

배터리

이 플래시에는 4 개의 " AA" 타입 알카라인 배터리 또는 니켈카드늄 배터리(Ni-Cad), 니켈수소 배터리(Ni-MH) 가 사용됩니다. 망간 배터리도 사용할 수 있지만 알카라인 배터리에 비해 수명이 짧아 권장해 드리지 않습니다. 레디 램프의 점등까지 30 초 이상 걸릴경우 새 배터리로 교체해 주십시오.

- ■ 전지나 전지실 커버의 접점은 항상 깨끗한 상태를 유지해 주십시오.
- ■ 니켈카드늄(Ni-Cad) 배터리를 사용할 경우에는 전지측 접점의 형태가 규격으로 통일되어 있지 않으므로 사용할 수 있는지 확인하고 나서 구입하시기 바랍니다.
- ■ 배터리의 폭발, 전지액 누설, 과열등을 방지하기 위해 동일한 브랜드, 동일한 타입의 AA 배터리 4 개를 사용해 주십시오. 배터리 브랜드나 타입을 혼합해 사용하지 마십시오.
- ■ 전지를 분해하거나 불속, 물속에 던지거나 단락등은 파열의 우려가 있으므로 절대 금합니다. 또한 니켈카드늄(Ni-Cd) 배터리 이외에는 충전하지 마십시오.
- ■ 플래시를 장기간 사용하지 않을때는, 배터리 액이 누설되지 않도록 배터리를 꺼내어 보관해 주십시오.
- ■ 저온의 상태에서는 배터리 성능이 저하될 수 있습니다. 추운곳에서 촬영을 할때에는 예비 배터리를 준비해 두십시오.
- ■ 오랜 여행이나 추운 지역에서 촬영을 할때에는 여분의 배터리를 준비해 두십시오.

배터리 장착

1. 전원 스위치가 OFF 로 되어 있는 것을 확인하고, 배터리 커버를 화살표 방향으로 밀어 엽니다. (그림.2)
2. AA 배터리 4 개를 배터리 덮개 안쪽에 있는 표시에 따라 +, - 방향에 맞추어 넣습니다. (그림.3)
3. 덮개를 닫습니다.
4. 전원 스위치를 ON 으로 하면 몇초 후에 레디 램프가 켜져 플래시를 발광시킬 준비가 되었음을 표시해 줍니다.
5. " Test 버튼" 을 누르고 발광하는지 확인합니다.

- ■ 배터리 파워가 충분하지 못한 경우나 에러 메시지가 나타나는 경우에는, 플래시 액정 패널이 깜빡거릴 것입니다.

플래시 장착과 탈착

전원 스위치가 OFF 로 되어 있는지 확인한 후 카메라 핫슈에 플래시를 넣고 딱 맞을때까지 끼워넣습니다. (그림.4)(그림.5)

- ■ 플래시를 장착하거나 분리할 때는 카메라의 핫슈 부분과 플래시의 슈 부분에 손상을 입지 않도록 플래시의 아래부분을 잡아주시기 바랍니다.
- ■ 카메라의 내장 플래시가 올려져 있을때는 플래시를 장착하기전에 내려주십시오.
- ■ 플래시를 탈착하기 위해서는 슈 락킹 링이 멈출때까지 ◀LOCK 표시 반대쪽으로 돌립니다.

TTL 오토 플래시

TTL AUTO 모드에서는 피사체가 적정 노출이 되도록 플래시의 발광량을 카메라가 제어합니다.

1. 카메라를 **P** 모드로 설정합니다.
2. 전원 스위치를 TTL 위치로 밀어 넣습니다.
   - ■ 플래시의 전원을 켰을 때 플래시 액정 패널이 깜빡이는 경우, 플래시 헤드 바운스 앵글이 (0˚) 으로 되어 있는지 확인합니다.
3. 피사체에 초점을 맞춥니다.
4. 플래시가 충전된 후 셔터를 누릅니다.

- ■ 촬영후 필름은 적정 노출을 받게되며 레디 램프가 깜빡일것입니다. 레디 램프가 깜빡이지 않는 경우 플래시 조명이 특정 상황에서 충분하지 않다는 것입니다. 피사체에 좀더 접근해 다시 촬영을 해보시기 바랍니다.
- ■ 어두운 부분에 초점을 맞출경우 AF 보조광은 자동으로 켜집니다. 효과적인 거리는 약 0.7 에서 9 미터입니다.
- ■ 플래시가 완전히 충전되었을 때, 플래시 표시가 파인더에 나타납니다. 플래시가 완전히 충전되기전에 셔터를 누르면 카메라는 플래시가 터지지 않으면서 슬로우 셔터스피드로 촬영이 될 것입니다.
- ■ 배터리 전원을 유지하기 위해, 약 240 초간 사용하지 않을경우 플래시는 자동으로 전원이 꺼집니다. 플래시를 다시 켤때에는 " TEST" 버튼이나 카메라 셔터버튼을 반만 누릅니다.
- ■ 렌즈의 초점거리에 따라 플래느는 자동으로 Zoom Head 위치에 놓이게 됩니다.
- ■ 《차트. 1》을 참조하시면 효과적인 촬영 거리 범위를 확인하실 수 있습니다.

다른 카메라 모드에서 플래시 사용

셔터스피드 우선 모드
원하시는 셔터스피드를 설정하면, 카메라는 적정 노출값을 선택해 줍니다.

조리개 우선 모드
A 모드를 선택하고 원하시는 조리개 값을 선택하면 카메라는 배경 노출에 맞는 적정 셔터스피드를 확보하게 됩니다.

M 모드 사용
원하시는 셔터스피드와 조리개 값을 선택하실 수 있습니다.

매뉴얼 플래시 작동

매뉴얼 보드에서 플래시는 풀 파워와 1/16 파워에서 작동이 가능합니다.

1. 카메라의 노출 모드를 매뉴얼 M 모드로 설정하십시오.
2. 플래시의 파워 스위치를 MH (풀 플래시 파워) 또는 ML (1/16 플래시 파워)로 밀어 넣습니다.
3. 피사체에 초점을 맞추고 아래의 노출 공식에 맞추어 카메라의 F-stop 값을 설정합니다.
   F-stop = 가이드 넘버 (G.N.) ÷ 피사체까지의 거리 (m)
4. 플래시가 완전 충전된 경우, 셔터를 누릅니다.

가이드 넘버는 Zoom Head 위치에 따라 변합니다. (《차트.2》참조). 가이드 넘버는 필름 스피드 (ISO) 에 따라서도 변하게 됩니다. (《차트.3》참조). ISO100 이 아닌 필름의 경우에는, 《차트.3》값을 《차트.2》값과 곱합니다. 예를 들면, ISO200 필름의 경우, 24mm Zoom Head 위치와 MH 모드에서 《차트.3》 값 " 1.4"와 《차트.2》값 " 34.0"을 곱하면 34.0×1.4=47.6 이 됩니다. 이것은 효율적인 가이드 번호를 측정할 수 있는 계산법입니다. 가이드 번호를 피트로 결정하고 싶은 경우에는 3.3 을 곱해 주시면 됩니다.

예. 플래시와 피사체의 거리가 8.5 미터인 경우
F-stop = 47.6 ÷ 8.5 = 5.6 (5.6 은 카메라의 F-stop 설정 값)

MH 모드에서 플래시를 급하게 반복적으로 사용할 경우 20 회 플래시를 사용한 후 약 10 분 휴식이 필요합니다. ML 모드에서 동일하게 사용된 경우 플래시는 40 회를 사용한 후 휴식이 필요합니다.

와이드 패널

플래시에는 17mm 의 초 광각 조사 각을 제공하는 내장 와이드 패널이 장착되었습니다. 와이드 패널과 캐치 라이트 패널을 꺼내 플래시 발광 부를 덮어 줍니다 (그림.6-1). (패널들을 부드럽게 꺼낼 수 있도록 주의합니다.) 그 다음 캐치 라이트 패널을 원래 위치로 넣습니다 (그림.6-2). 플래시의 조사 각은 17mm 에 자동으로 설정될 것입니다..

- ■ 플래시 액정 패널은 와이드 판넬이 사용된 경우 사용중인 최소, 최대 값(24mm 와 105mm)이 느리게 (1 초 간격) 깜빡거립니다.
- ■ 내장된 와이드 판넬이 떨어져 버린 경우에는 플래시 액정에 커버되는 앵글이 표시되는 기능이 작동되지 않을 것입니다. 이러한 경우에는 구입처나 서비스 센터로 연락하십시오.

바운스 플래시

방에서 촬영할 때에는 때때로 강한 섀도우가 피사체 뒤쪽에 나타날 수 있습니다. 빛을 천정이나 벽면에 반사시키기 위해 플래시를 위쪽으로 향하거나 옆쪽으로 향하게 하면 조명은 좀더 소프트하게 비출것입니다. 락 버튼을 누르고 플래시 헤드를 바운스 앵글로 조절해 보십시오.

상 : 0°, 60°, 75°, 90° 하 : 0°,7°
우 : 0°, 60°, 75°, 90° 좌 : 0°, 60°, 75°,90°, 120°, 150°, 180° (그림.7)

- ■ 이미지는 반사되는 표면으로부터 컬러를 받아들일 것입니다. 반사되는 표면은 흰색을 선택하시기 바랍니다.

접사 노출

바운스를 하기 위해 플래시는 접사용으로 하향 7° 도로 꺽을 수 있습니다. 플래시는 0.5m 에서 2m 사이에서만 효과적으로 사용할 수 있습니다.

- ■ 플래시 헤드를 하향 래시 액정 패널은 7°도로 꺽을 때 플래시 액정이 깜빡일 것입니다. (초당 2 회)

캐치 라이트 패널

플래시에는 바운스 플래시 모드가 작동 중일 때 피사체의 눈에 캐치 라이트를 만들어 주는 내장 캐치 라이트 패널이 장착되었습니다. 와이드 패널과 캐치 라이트 패널을 꺼낸 후 와이드 패널을 원래 위치로 넣습니다 (그림.8-1) (그림.8-2). (패널들을 부드럽게 꺼낼 수 있도록 주의합니다.)

- ■ 캐치 라이트를 효과적으로 만들기 위해서는, 플래시 헤드를 90 도로 세운 후 가까운 거리에서 촬영하십시오 (그림.9).

РУССКИЙ

Благодарим Вас за приобретение электронной вспышки Sigma EF-610 ST SO-ADI. Вспышка специально разработана для камер SONY (Konica Minolta, Minolta) AF серии SLR. В зависимости от модели камеры функциональные возможности и работа вспышки может различаться. Пожалуйста, внимательно прочитайте это руководство. Для того чтобы повысить Вашу заинтересованность фотографированием вспышка имеет большое количество возможностей. Перед использованием вспышки для реализации всех ее возможностей и получения максимальной отдачи от вспышки, пожалуйста, прочитайте это руководство одновременно с руководством для камеры и в дальнейшем держите их под руками.

ПРЕДОСТОРОЖНОСТИ

⚠ Символ обозначает место, где требуется предупреждение или предостережение.
⊘ Под этим символом дана информация о действиях, которые нужно избегать.

⚠ Предупреждение!! Использование вспышки без учета этого предупреждающего знака может быть причиной серьезной травмы или привести к другому опасному результату.

- ⊘ Вспышка имеет цепи высокого напряжения. Для того чтобы избежать электрического удара или ожога, не предпринимайте усилий по разборке вспышки. Если наружный корпус вспышки сломался или треснул, не касайтесь деталей внутреннего устройства.
- ⊘ Не подносите вспышку близко к глазам, так как яркий свет может повредить глаза. При съемке с вспышкой держите ее на расстоянии, по крайней мере, 1 м от лица.
- ⊘ Не касайтесь синхроклемм камеры при установке вспышки в полозья камеры. Высокое напряжение в цепи может быть причиной электрического удара.
- ⊘ Никогда не используйте камеру в присутствии дыма, горючего газа, жидкостей и химикатов. Использование вспышки может быть причиной пожара или взрыва.

⚠ Предостережение!! Использование вспышки без учета этого предупреждающего знака может быть причиной серьезной травмы или повреждения.

- ⊘ Не используйте вспышку на камерах отличных от Sony (Konica Minolta, Minolta) AF SLR. Использование на других камерах может повредить электрические цепи этих камер. Также нельзя использовать эту вспышку с камерами Maxxum Dynax 9000, 7000, 5000, 3000i.
- ⚠ Эта вспышка не водостойка. При использовании вспышки и камеры в условиях дождя, снега или около воды старайтесь держать их сухими. Частым явлением является ремонт внутренних электрических цепей поврежденных водой.
- ⊘ Никогда не подвергайте вспышку и камеру ударам, воздействию пыли, высокой температуры или влажности. Эти факторы могут приводить к возгоранию и отказам в работе оборудования.
- ⚠ Когда вспышка подвергается внезапному воздействию изменения температуры, например, при внесении ее из холодного места в теплую комнату, внутри может образоваться конденсат. В этом случае перед таким изменением, положите оборудование в закрытую пластиковую емкость и не используйте вспышку, пока она не достигнет комнатной температуры.
- ⊘ Не храните вспышку в шкафу или гардеробе, поскольку там может быть нафталин, камфора и другие инсектициды. Эти химикаты отрицательно влияют на вспышку.
- ⊘ Не используйте растворители, бензол или другие чистящие вещества для удаления грязи или отпечатков пальцев. Чистку производите мягкой увлажненной тканью.
- ⚠ Для длительного хранения используйте прохладное сухое место предпочтительно с хорошей вентиляцией. Рекомендуется, чтобы вспышка была заряжена и для проверки правильного функционирования несколько раз в месяц проверялась на срабатывание.

ОПИСАНИЕ СОСТАВНЫХ ЧАСТЕЙ (рис.1) ВНЕШНИЕ СОСТАВНЫЕ ЧАСТИ

1.Головка вспышки 2.Дополнительный источник для AF (автофокусировки)
3.Фиксирующая кнопка 4.Полозья 5.Указатель углов поворота вверх и вниз
6.Шарнирная блокировка и кнопка освобождения поворота направо и налево
7.Указатель углов поворота направо и налево 8.Крышка отсека батарей
9.Индикатор угла охвата вспышки 10.Блокировка поворота и кнопка освобождения для поворота вверх и вниз 11.Кнопка TEST (тест) 12.Лампочка готовности
13.Выключатель питания 14.Отражающая панель 15.Рассеивающая панель

БАТАРЕИ ПИТАНИЯ

В вспышке используется четыре щелочных батареи типа «АА» или Ni-Cd, Ni-MH аккумуляторы. Также могут быть использованы марганцевые батареи, но они имеют меньший ресурс, чем щелочные и мы не рекомендуем использовать их. Пожалуйста, замените батареи, если более 30 секунд горит лампочка готовности.

- ■ Для уверенности в хорошем электрическом контакте почистите клеммы батарей перед их установкой.
- ■ Ni-Cd батареи не имеют стандартизированных контактов. Если Вы используете Ni-Cd батареи, пожалуйста, убедитесь, что в отсеке батарей есть контакт с батареями.
- ■ Для предотвращения разрыва батареи, течи или перегрева используйте четыре новых батареи типа АА одной марки. Не смешивайте марки или новые и использованные батареи.
- ■ Не разбирайте и не замыкайте накоротко батареи. Не подвергайте их воздействию огня или воды, поскольку они могут взорваться. Также не перезаряжайте батареи, если они не относятся к Ni-Cd батареям.
- ■ Когда вспышка не используется длительный период времени, выньте батареи из вспышки для того, чтобы избежать возможности повреждения от течи.
- ■ Характеристики батареи ухудшаются при снижении температуры. Держите батареи отдельно при использовании вспышки при низкой температуре.
- ■ Как для любой вспышки рекомендуется соблюдать осторожность в обращении с батареями, особенно при длительном путешествии или при съемках в холодную погоду.

УСТАНОВКА БАТАРЕЙ

1. Удостоверьтесь что питание выключено. Затем сдвиньте крышку отсека батарей в направлении стрелки (рис.2).
2. Установите четыре батареи типа АА в отсек батарей. Проверьте, что контакты + и – стоят в соответствии с указаниями в отсеке (рис.3).
3. Закройте крышку.
4. Сместите выключатель в положение ON (вкл). Через несколько секунд загорится лампочка готовности, что указывает на то, что вспышка готова к работе.
5. Нажмите кнопку "Test Button" (тестовая кнопка) для проверки правильности работы вспышки.

- ■ Если емкости батареи недостаточно или если электроника работает с ошибкой, чтобы показать это состояние, будет мигать индикатор угла охвата вспышки.

УСТАНОВКА И УДАЛЕНИЕ ВСПЫШКИ С КАМЕРЫ

Убедитесь что питание отключено. Вставьте вспышку полозьями в горячий башмак камеры до щелчка. (рис. 4)

- ■ В случае если встроенная вспышка камеры находится в поднятом положении, закройте ее перед тем как устанавливать внешнюю вспышку.

Для отсоединения вспышки выдвиньте полозья из основания горячего башмака камеры одновременно удерживая фиксирующую кнопку в нажатом состоянии. (рис.5)

АВТОВСПЫШКА TTL

В режиме TTL AUTO (авто TTL) камера будет контролировать мощность вспышки для получения соответствующей экспозиции для съемки объекта.

1. Установите камеру в режим **P**.
2. Включите питание вспышки, переведя выключатель в положение TTL.
   - ■ Если индикатор угла охвата вспышки мигает, когда Вы включили питание вспышки, пожалуйста, удостоверьтесь, что угол поворота головки вспышки стоит в нормальном положении (0°).
3. Сфокусируйтесь на объект.
4. Нажмите кнопку спуска после полной зарядки вспышки.

- ■ После съемки кадра пленка будет соответствующим образом экспонирована и лампочка готовности будет мигать. Если лампочка готовности не мигает, это указывает на то, что света вспышки было недостаточно для данного объекта съемки. Пожалуйста, снимите кадр, приблизившись к объекту съемки.
- ■ Дополнительный источник для AF будет включаться автоматически, когда Вы фокусируетесь в темном месте. Замечание: Эффективное расстояние его работы от 0,7 до 9 метров.
- ■ Когда вспышка полностью заряжена, в окуляре появляется значок вспышки. Если затвор срабатывает перед тем, как вспышка полностью зарядится, камера будет снимать кадр с большой выдержкой как без вспышки.
- ■ Для сохранения емкости батарей вспышка сама автоматически выключается, когда она не используется примерно 240 секунд. Для включения вспышки нажмите кнопку "TEST" (тест) или наполовину нажмите кнопку спуска камеры.
- ■ Вспышка будет автоматически устанавливаться на положение зуммирования головки в соответствии с фокусным расстоянием объектива камеры.
- ■ Эффективный диапазон расстояний вспышки смотрите в Таблице 1.

ИСПОЛЬЗОВАНИЕ ВСПЫШКИ В ДРУГИХ РЕЖИМАХ КАМЕРЫ

Настройка с приоритетом выдержки

Когда Вы установите желаемую выдержку, камера выберет соответствующее значение диафрагмы.

Настройка с приоритетом диафрагмы

Выбирая на камере режим А, камера выберет соответствующую выдержку для фона.

Использование вспышки в режиме М

Вы можете установить желаемую выдержку и диафрагму.

РАБОТА ВСПЫШКИ В РУЧНОМ РЕЖИМЕ

В ручном режиме вспышки можно установить полный уровень мощность вспышки и 1/16 мощности.

1. Установите режим экспозиции камеры на M.
2. Поверните переключатель мощности на MH (полная мощность вспышки) или на ML (1/16 мощности вспышки).
3. Сфокусируйтесь на объект и установите диафрагму на камере, используя формулу для вычисления экспозиции приведенную ниже:
   Диафрагма = Ведущее число (G.N.) / Расстояние от вспышки до объекта (м)
4. После полной зарядки вспышки нажмите кнопку спуска и снимите кадр.

Ведущее число будет изменяться в соответствии с положением зума головки (смотрите Таблицу 2). Ведущее число также изменяется в зависимости от чувствительности пленки (ISO) (смотрите Таблицу 3). В случае использования чувствительности пленки отличной от ISO 200 положение зума головки для 24 мм и режима МН, умножьте число 1.4 из Таблицы 3 на число 34.0 из Таблицы 2. 34.0 x 1.4 = 47.6. Это будет новым эффективным ведущим числом (G.N.) в метрах. Для определения ведущего числа в футах умножьте G.N. в метрах на 3,3.
ПРИМЕР: Если расстояние до объекта 10 метров,
Диафрагма = **47.6 / 8.5 = 5.6** (**5.6** – диафрагма на вашей камере).
Когда вспышка используется быстро повторно в режиме МН, необходимо сделать перерыв в работе примерно на 10 минут после каждых 20 вспышек. Если в таких же условиях вспышка используется в режиме ML, она должна прерываться на «отдых» через каждые 40 вспышек.

РАССЕИВАЮЩАЯ ПАНЕЛЬ

Вспышка оснащена встроенной рассеивающей панелью, позволяющей увеличивать угол рассеивания до угла поля зрения объектива 17мм. Выдвиньте из корпуса рассеивающую и отражающую панели и поверните рассеивающую панель вниз (рис.6-1). (Будьте осторожны при выдвигании панелей.) Затем сдвиньте отражающую панель обратно внутрь корпуса (рис.6-2). Электроника автоматически переключит угол рассеивания вспышки на значение 17 мм..

- ■ С помощью замедленного мигания двух конечных значений (24 мм и 105 мм) (1 раз в секунду) индикатор угла охвата вспышки будет показывать, что используется широкоугольная панель.
- ■ Если широкоугольная панель случайно выпала, не будет функционировать механизм настройки угла охвата вспышки. В этом случае обратитесь в магазин, где была приобретена вспышка или в центр по обслуживанию.

НАПРАВЛЕННОСТЬ ВСПЫШКИ

Когда Вы фотографируете с вспышкой в комнате, иногда за объектом появляется сильная тень. Если Вы направляете головку вспышки вверх или в сторону , чтобы отразить свет от потолка, стен и т.п., объект будет освещаться равномерно. Нажмите блокирующую кнопку и настройте головку вспышки для установки направления.

ВВЕРХ: 0°, 60°, 75°, 90° ВНИЗ: 0°, 7°
НАПРАВО: 0°, 60°, 75°, 90° НАЛЕВО: 0°, 60°, 75°, 90°, 120°, 150°, 180° (рис.7)

- ■ При отражении света от поверхности кадр получается более сочным по цвету. Для отражения выбирайте белую поверхность.

ЭКСПОЗИЦИИ ДЛЯ КРУПНОГО ПЛАНА

Для крупного плана вспышка может быть повернута на 7° вниз. Вспышка будет активироваться только для объектов на расстоянии от 0,7 м до 2 м.

- ■ Дисплей угла направления вспышки будет мигать (2 раза в секунду), когда Вы устанавливаете головку вспышки на угол 7° вниз.

ОТРАЖАЮЩАЯ ПАНЕЛЬ

Вспышка оснащена встроенной отражающей панелью, позволяющей создавать маленький блик в глазах модели при съёмке портрета с «заполняющей» вспышкой. Выдвиньте из корпуса рассеивающую и отражающую панели (рис.8-1) и сдвиньте рассеивающую панель обратно (рис.8-2). (Будьте осторожны при выдвигании панелей.)

- ■ Для создания эффективного блика в глазах модели, поверните голову вспышки вверх на 90° и снимайте с близких дистанций (рис.9).

PORTUGUÊS

Obrigado pela aquisição do Flash electrónico Sigma EF-610 DG ST SO-ADI. Este produto foi desenvolvido especificamente para as câmaras SONY (Konica Minolta, Minolta) SLR. As suas funções e operação podem variar conforme o modelo da câmara. Leia este manual de instruções cuidadosamente. O flash tem uma variedade de características que justificarão o seu prazer pela fotografia. Leia o manual em conjunto com o da sua câmara antes de usar o flash.

PRECAUÇÕES

⚠ Este símbolo assinala pontos importantes, onde a atenção e o cuidado são exigidos.
⊘ Este símbolo contém informação relativa a acções a evitar.

⚠ Aviso !! O uso deste produto, sem dar atenção a este símbolo, pode causar sérios danos ou originar outros resultados perigosos.

- ⊘ Este flash contém circuitos de alta voltagem. Para evitar choques eléctricos ou queimaduras, não tente desmanchar o flash. Se a cobertura exterior do flash estiver quebrada ou rachada, não tente tocar no mecanismo interior.
- ⊘ Não dispare o flash perto dos olhos. Caso contrário, a luz pode causar danos à visão. Mantenha, pelo menos, um metro de distância entre o rosto e a unidade de flash quando tirar uma fotografia.
- ⊘ Não toque no terminal de sincronismo da câmara quando o flash estiver preso na sapata. O circuito de alta voltagem pode provocar um choque eléctico.
- ⊘ Nunca use a sua câmara em ambientes onde existam produtos inflamáveis, combustíveis, gases, líquidos ou químicos, etc. Caso contrário, pode causar fogo ou explosão.

⚠ Cuidado !! O uso deste produto, sem dar atenção a este símbolo, pode causar danos ou avarias.

- ⊘ Não use esta unidade de flash em qualquer câmera que não seja o (Minolta) SONY câmeras SLR AF, caso contrário, o flash pode danificar os circuitos destas câmaras. Além disso, também não é possível utilizar esta unidade flash diretamente com Maxxum / DYNAX 9000, 7000, 5000, 3000i câmeras.
- ⚠ Esta unidade de flash não é à prova de água. Quando usar o flash e a câmara à chuva, a nevar, ou perto de água, evite que se molhem. É, muitas vezes, impossível reparar componentes internos eléctricos danificados pela água.
- ⊘ Nunca submeta o flash e a câmara a choques, poeiras, temperaturas altas ou humidade. Estes factores podem causar incêndio ou o mau funcionamento do seu equipamento.
- ⚠ Quando o flash for submetido a mudanças bruscas de temperatura, ou quando o flash é transportado dum exterior frio para um interior quente, pode-se formar condensação no seu interior. Neste caso, coloque o seu equipamento num saco de plástico fechado antes de o mudar de lugar e não o use até ele estar à temperatura da sala.
- ⊘ Não guarde o seu flash numa gaveta, num armário, ou noutros locais, que contenham naftalina, cânfora ou outros insecticidas. Estes químicos terão efeitos negativos na unidade de flash.
- ⊘ Não use dissolventes, benzina ou outro produto de limpeza para remover a sujidade ou as dedadas. Limpe-o com um pano húmido macio.
- ⚠ Para guardar o flash durante muito tempo, escolha um lugar fresco e seco, de preferência bem ventilado. Recomenda-se que o flash seja carregado e disparado várias vezes por mês, para manter o seu correcto funcionamento.

DESCRIÇÃO DOS COMPONENTES (fig.1)

1.Cabeça do Flash 2.Luz Auxiliar AF 3.Botão de Bloqueio 4.Pé do flash 5.Ângulo de inclinação vertical 6.Botão de bloqueio/desbloqueio da rotação horizontal 7.Ângulo de rotação horizontal 8.Tampa do compartimento das baterias 9.Indicador de ângulo de cobertura do flash 10.Botão de bloqueio/desbloqueio de inclinação vertical 11.Botão de TESTE 12.Luz de sinalização de carga 13.Botão de potencia 14.Painel Difusor 15.Painel Grande Angular

SOBRE AS BATERIAS (OU PILHAS)

Esta unidade de flash usa quatro pilhas secas do tipo alcalino "AA" ou recarregáveis Ni-Cad, Ni-MH. Também podem ser usadas pilhas de manganês, mas como a sua duração é menor que a das pilhas alcalinas, não recomendamos o seu uso. Substitua as pilhas se a luz indicadora de Flash "Carregado" (Ready Light) levar mais de 30 segundos a acender-se.

- ■ Para assegurar um contacto eléctrico adequado, limpe os terminais das pilhas antes de as instalar.
- ■ As pilhas Ni-Cad ou Ni-MH não têm contactos padronizados. Se usar pilhas Ni-Cad ou Ni-MH, assegure-se de que os contactos das pilhas tocam correctamente os contactos do respectivo compartimento
- ■ Para evitar a explosão das pilhas, o seu vazamento ou sobreaquecimento, use quatro pilhas novas AA do mesmo tipo e da mesma marca. Não misture tipos nem pilhas novas com usadas.
- ■ Não desmanche ou provoque curto-circuitos. Não as exponha ao lume ou à água, pois podem explodir. Não recarregue pilhas que não sejam Ni-Cad ou Ni-MH recarregáveis.
- ■ Quando não usar o flash por um período prolongado, remova as pilhas do flash, para evitar a possibilidade de vazarem.
- ■ O desempenho das pilhas diminui a baixas temperaturas. Mantenha-as protegidas quando usar o flash a baixas temperaturas.
- ■ Como com qualquer flash, recomenda-se que leve pilhas de reserva quando fizer uma viagem grande ou quando fotografar no exterior a baixas temperaturas.

COMO CARREGAR AS BATERIAS

1. Certifique-se que o Interruptor de Energia está na posição OFF, depois faça deslizar a tampa do compartimento das pilhas na direcção da seta para o abrir (fig.2).
2. Insira quatro pilhas do tamanho AA no compartimento das baterias. Assegure-se de que as extremidades + e – das pilhas estão alinhadas de acordo com o diagrama existente no interior do compartimento (fig.3).
3. Feche a tampa.
4. Ponha o Interruptor de Energia na posição ON. Após poucos segundos, a lâmpada de Flash "Carregado" acender-se-á, indicando que este está pronto a ser disparado.
5. Carregue no botão TEST (Teste) para certificar-se de que o flash está a trabalhar correctamente.

- ■ Se a carga da bateria não for a suficiente, ou se houver indicação electrónica de erro, o indicador da correcção de ângulo, piscará como aviso.

COMO PRENDER O FLASH A UMA CÂMARA E REMOVÊ-LO

Certifique-se que o flash está desligado. Depois insira a sapata do flash na calha de acessórios da máquina até prender. (fig.4)

- ■ Se o flash incorporado da câmara estiver levantado, feche-o antes de prender a unidade de flash externa.

Quando remover o flash, retire a unidade de flash da sapata da máquina, enquanto pressiona o botão de bloqueio. (fig.5)

MODO DE FLASH AUTOMÁTICO TTL

No modo automático TTL, a câmara controla a quantidade de luz emitida pelo flash para obter uma correcta exposição do tema.

1. Defina o modo de exposição da câmara para Modo **P**.
2. Coloque o interruptor de potência na posição TTL
   - ■ Se ao ligar o seu flash, o indicador de cobertura de ângulo piscar, certifique-se que a cabeça de flash está ajustada á posição normal (0º) .
3. Foque o tema a fotografar.
4. Pressione o botão de disparo, depois do flash estar totalmente carregado.

- ■ Depois de ser captada uma imagem e a exposição ter sido correcta, a lâmpada indicadora piscará. Se a lâmpada não piscar significa que a quantidade de luz de flash não foi suficiente para uma exposição correcta. Volte a captar a imagem a uma distancia mais curta ao objecto.
- ■ A Luz Auxiliar AF liga-se automaticamente quando estiver a focar em áreas de iluminação muito reduzida. Nota: A precisão de funcionamento deste sistema encontra-se no intervalo de 0.7 a 9m a partir da câmara.
- ■ Quando o flash estiver totalmente carregado, o símbolo do flash aparecerá no visor da câmara. Se premir o botão de disparo antes do flash estar completamente carregado, a câmara tirará a fotografia a uma velocidade de obturação menor, sem que o flash dispare.
- ■ Para conservar a carga da bateria, o flash desliga-se automaticamente quanto estiver inactivo á mais de 240 segundos. Para voltar a ligar o flash, prima o botão "TEST", ou o botão de disparo da câmara.
- ■ O flash coloca a cabeça zoom automaticamente na posição equivalente á distância focal da objectiva.
- ■ Consulte a《quadro 1》, para ver as distancias efectivas.

USO DO FLASH COM OUTROS MODOS DE EXPOSIÇÃO

Prioridade à Velocidade de Obturação

Quando você define a velocidade pretendida, a câmara irá seleccionar o valor adequado.

Prioridade à Abertura

Ao selecionar o modo A, depois de seleccionar a abertura pretendida a câmera irá configurar a velocidade apropriada do obturador para a exposição do fundo.

Quando é usado o modo M

Você pode ajustar a velocidade pretendida eo valor de abertura.

OPERAÇÃO MANUAL DO FLASH

Esta unidade de flash pode ser utilizado em Modo Manual á potencia máxima e a 1/16 de potencia.

1. Defina o modo de exposição da câmara como M.
2. Coloque o botão de potencia do flash na posição MH (Máxima potencia), ou na posição ML (1/16 de potencia).
3. Foque o objecto, e acerta a abertura diafragma, utilizando a exposição calculada com base na fórmula seguinte:
   Abertura f:/ = Número guia (G.N.) / Distancia flash ao objecto (mts)
4. Pressione o botão de disparo, depois do flash estar totalmente carregado.

O Número Guia varia de acordo com a posição da cabeça zoom de flash, (ver《quadro.2》). O Número Guia também varia de acordo com a sensibilidade (ISO), (ver《quadro 3》). No caso de sensibilidades diferentes de (ISO 100), multiplique o número《quadro 3》, pelo número《quadro 2》. Por exemplo, no caso de uma sensibilidade de 200 ISO, com a cabeça na posição de 24mm, e no modo MH; multiplique o número "1.4" (no《quadro 3》) pelo número "34.0"(no《quadro 2》): 34.0×1.4=47.6. Este será o novo Número Guia efectivo em metros. Para determinar esse número em pés, multiplique o número em mts por 3,3.

EX. Se a distância do flash ao objecto for de 8.5 metros:
Abertura f-stop = 47.6 / 8.5 = 5.6 (**5.6** é a abertura a colocar na câmara.)

Quando forem feitos disparos consecutivos de flash no modo MH, deve ser feita uma pausa de cerca de 10 minutos depois de cada sequência de 20 disparos. Do mesmo modo em ML, deve ser feita a mesma pausa depois de 40 disparos consecutivos.

PAINEL DE GRANDE ANGULAR

Este flash está equipado com um painel de grande angular, que pode proporcionar um ângulo de cobertura para uma objectiva de 17mm. Puxe o painel grande angular para fora e o painel difusor para baixo para cobrir a cabeça do flash (fig.6-1). (Deslize os painéis suavemente) Em seguida coloque o painel difusor novamente no seu lugar (fig.6-2). O ângulo de cobertura do flash será então definido automaticamente para uma focal de 17mm.

- ■ O indicador de ângulo de cobertura do flash pisca com intermitência de 1 seg, nos valores 24 e 105mm, quando estiver colocado o difusor grande angular.
- ■ Se o difusor embutido sair acidentalmente, o mecanismo de ajuste do ângulo de cobertura não funcionará. Neste caso contacte de imediato a loja os serviços de assistência técnica.

FLASH INDIRECTO

Quando fotografa com flash numa sala, por vezes aparece uma grande sombra por trás do tema. Se apontar a cabeça do flash para cima ou para os lados para reflectir a luz no tecto, nas paredes, etc. o tema será iluminado de uma forma mais suave. Pressione o botão de bloqueio e ajuste a cabeça do flash para os ângulos de inclinação ou de rotação desejados.

Para Cima: 0°, 60°, 75°, 90° Para Baixo: 0°,7°
Para a Direita: 0°,60°,75°,90° Para a Esquerda: 0°,60°,75°,90°,120°,150°,180° (fig.7)

- ■ A côr da imagem será afectada pela côr da superfície aonde reflectir a luz do flash. Escolha uma superfície branca quando usar o flash de forma indirecta.

EXPOSIÇÕES A CURTA DISTÂNCIA

O flash pode ser inclinado para baixo 7° para este tipo de fotografias. O flash só será eficaz para temas a distâncias entre 0,5 e 2 m.

PAINEL DIFUSOR

Este flash está equipado com um painel difusor, que pode criar um reflexo nos olhos da pessoa que esta a fotografar quando o modo de inclinação do flash estiver activado. Puxe para fora o painel grande angular e o painel difusor (fig.8-1), e de seguida volte a colocar o painel grande angular no lugar (fig.8-2). (Deslize os painéis suavemente).

- ■ Para criar um efeito de iluminação eficaz, incline a cabeça do flash para cima até 90 graus e tire fotografias a uma distância mais próxima (fig.9).

SPECIFICHE

ITALIANO

MODELLO	Flash con slitta a contatto caldo, auto zoom, TTL
NUMERO GUIDA	61 (ISO 100, posizione parabola su focale 105mm)
ALIMENTAZIONE	Quattro batterie alcaline AA, oppure quattro batterie AA Ni-Cd, oppure quattro batterie Nickel-Metal Hydride
TEMPO DI CARICA	circa 7.0 secondi (batterie alcaline), circa 5.0 secondi con batterie Ni-Cd e Nickel-Metal Hydride)
NUMERO LAMPI	circa 120 (con batterie alcaline), circa 160 (con batterie Ni-Cd e Nickel-Metal Hydride)
DURATA DEL LAMPO	circa 1/700 (a piena potenza)
COPERTURA FOCALI	24-105mm, con spostamento motorizzato della parabola; 17mm con diffusore incorporato
SPEGNIMENTO AUTOMATICO	Sì
PESO	320 gr
DIMENSIONI	77x139x117mm

SPECIFIKATIONER

DANSK

TYPE	Kompakt seriekontrolleret TTL flash med auto-zoom.
LEDETAL	61 (ISO 100/m ved 105mm zoom-indstilling)
STRØMFORSYNING	Fire type AA alkaline batterier eller Fire type AA Ni-Cd batterier eller, :Fire type AA Ni-MH batterier
GENOPLADNINGSTID	Ca. 7 sekunder med Alkaline batterier Ca. 5 sekunder med Ni-Cd eller Ni-MH batterier
ANTAL FLASHGLIMT	Ca. 120 flashglimt med Alkaline batterier Ca. 160 flashglimt med Ni-Cd eller Ni-MH batterier
FLASHGLIMTETS VARIGHED	Ca. 1/700 sek. ved fuld styrke.
UDLYSNINGSVINKEL	Dækker synsvinkelen for 24mm ~ 105mm automatisk zoom Dækker synsvinkelen for 17mm med indbygget vidvinkelforsats
AUTOMATISK SLUK	Mulig
VÆGT	320 g
MÅL	77X139X117mm

規 格

中 文

類 型	套入式專用 TTL 自動變焦電子閃光燈
閃燈指數	61（ISO 100/M，設置在 105mm。）
電 源	四枚 AA 型鹼性或，四枚 AA 型 Ni-Cd 或 四枚 AA 型 Ni-MH
回電時間	大約 7 秒（鹼性電）或大約 5 秒（Ni-Cd 及 Ni-MH）
閃光次數	約 120（鹼性電） 約 160（Ni-Cd 及 Ni-MH）
閃光時間	約 1/700 秒（全光輸出）
閃光燈覆蓋角度	24mm – 105mm 自動馬達控制 （內置廣角擴散片可令覆蓋角度達至 17mm）
自動關閉電源	可以
重 量	320g
尺 寸	77mm（闊）X139mm（高）X117mm（長）

제품 사양

한 국 어

타 입	Clip-on 타입 시리얼 제어 방식의 TTL 오토 줌 플래시
가이드 넘버	61(ISO 100/m, 105mm 헤드 포지션)
전원 공급	4 개의 AA 타입 알카라인 배터리 또는 4 개의 AA 타입 니켈카드뮴(Ni-Cd)배터리 또는 니켈 수소(Ni-MH) 배터리 니켈 메탈 하이브리드(Nickel-Metal Hydride)
재충전 시간	약 7 초. (알카라인 배터리), 약 5 초. (Ni-Cd, Ni-MH Nickel-Metal Hydride)
발광 회수	약 120 회 (알카라인 배터리), 약 160 회 (Ni-Cd, Ni-MH Nickel-Metal Hydride)
플래시 지속시간	약 1 / 700 초. (풀 파워 발광시)
플래시 조도	24mm-105mm (와이드 판넬 사용시 17mm)
AUTO POWER OFF	가능
무 게	320g
크 기	77mm(W) x 139mm(H) x 117mm(L)

ХАРАКТЕРИСТИКИ

РУССКИЙ

ТИП	Автоматическая зуммируемая электронная вспышка с TTL управлением и креплением на камере
ВЕДУЩЕЕ ЧИСЛО	61 (ISO 100/м при положении головки 105 мм)
ИСТОЧНИК ПИТАНИЯ	Четыре щелочных батареи типа АА или четыре Ni-Cd аккумулятора типа АА или четыре Ni-металл-гидридных (МН) аккумулятора типа АА
ВРЕМЯ ВОССТАНОВЛЕНИЯ	Около 7,0 сек (щелочные батареи), Около 5,0 сек (Ni-Cd, Ni-металл-гидридные аккумуляторы)
ЧИСЛО ВСПЫШЕК	Около 120 вспышек (щелочные батареи), около 160 вспышек (Ni-Cd, Ni-металл-гидридные аккумуляторы)
ДЛИТЕЛЬНОСТЬ ВСПЫШКИ	Около 1/700 сек (при полной мощности вспышки)
УГОЛ ОХВАТА ВСПЫШКИ	24–105мм с управлением мотором (17мм для встроенной широкоугольной панели)
АВТОМАТИЧЕСКОЕ ВЫКЛЮЧЕНИЕ ПИТАНИЯ	Есть выключение питания
ВЕС	320 г
ГАБАРИТЫ	77 мм (Ш) x 139 мм (В) x 117 мм (Д)

ESPECIFICAÇÕES

PORTUGUÊS

TIPO	Flash eléctrico com zoom automático com medição TTL.
NÚMERO GUIA	61 (ISO 100/m, para uma posição de cabeça a 105mm)
FONTE DE ENERGIA	Quatro pilhas do tipo alcalinas AA ou quatro pilhas do tipo Ni-Cd AA ou quatro pilhas do tipo Níquel-Metal-Hidreto Ni-MH AA
TEMPO DE RECARGA	cerca de 7 seg. (alcalinas) cerca de 5 seg. (Ni-Cd, Ni-MH Níquel-Metal Hidreto)
NÚMERO DE FLASHES	cerca de 120 flashes (pilhas alcalinas) cerca de 160 flashes (Ni-Cd, Ni-MH Níquel-Metal Hidreto)
DURAÇÃO DO FLASH	cerca de 1/700 seg.(disparo com potência total)
ÂNGULO DE ILUMINAÇÃO DO FLASH	24mm～105mm com controlo motorizado (17mm com Painel Largo Incorporado)
DESLIGAMENTO AUTOMÁTICO	Disponível
Peso	320 g
DIMENSÕES	77mm(Largura) x 139mm(Altura) x 117mm(Comprimento).

Smaltimento privato di apparecchiature elettriche ed elettroniche ITALIANO

Norme europee per lo smaltimento di apparecchiature elettriche ed elettroniche nei Paesi con raccolta differenziata.

Il simbolo informa che il prodotto non può essere considerato un normale rifiuto domestico. Deve essere smaltito negli speciali contenitori previsti per apparecchiature elettriche ed elettroniche. Assicuratevi che questo prodotto sia smaltito correttamente, aiuterete ad evitare negative conseguenze, per l'ambiente e la salute umana, che potrebbero verificarsi a causa di un suo inappropriato smaltimento. Se possibile togliete eventuali batterie elettriche o accumulatori e smaltiteli separatamente, secondo le disposizioni locali. Il riciclaggio dei materiali aiuta a conservare le risorse naturali. Per maggiori informazioni sul riciclaggio di questo prodotto informatevi presso la vostra locale azienda di smaltimento rifiuti o presso il negozio dove l'avete comperato.

Hantering av elektriskt och elektroniskt hushållsavfall SVENSKA

Hantering av förbrukad elektrisk och elektronisk utrustning, gällande EU och övriga europeiska länder med separata uppsamlingssystem.

Denna symbol betyder att denna produkt ej skall hanteras som vanligt hushållsavfall. Istället skall den lämna till närmaste återvinningsstation. Genom att lämna in denna produkt på korrekt sätt, hjälper du till att förhindra skador på människa och miljö, som annars kunnat uppstå vid normal sophantering. Om din utrustning har lätt urtagbara batterier eller accumulatorer, var vänlig lämna in dem enligt lokala föreskrifter. Återvinning hjälper till att spara våra naturtillgångar. För mer detaljerad information om återvinning av denna produkt, vänd Dig till ortens miljökontor eller till din handlare.

Bortskaffelse af elektrisk / elektronisk udstyr i private husholdninger DANSK

Bortskaffelse af kasseret elektrisk & elektronisk udstyr (Gældende for lande indenfor EU og andre europæiske lande med separat indsamlingsordning).

Dette symbol betyder, at udstyret ikke bør behandles som almindeligt husholdningsaffald. I stedet skal det afleveres på et godkendt indsamlingssted for behandling og genanvendelse af elektronisk udstyr. Ved at bortskaffe dette produkt på korrekt måde, sikrer du at affaldet behandles korrekt og genbruges i størst muligt omfang. Herved forhindres en evt. negativ miljømæssig og sundhedsmæssig effekt der kunne opstå ved forkert behandling af affaldet. Hvis udstyret indeholder batterier eller akkumulatorer der nemt kan tages ud, bør disse behandles separat i henhold til de lokale regler. Genbrug af materialer hjælper med at bevare de naturlige ressourcer. Hvis du ønsker mere detaljerede oplysninger om genbrug af dette produkt, kan du kontakte de lokale myndigheder, den lokale renovationsvirksomhed eller den forretning hvor du har købt produktet.

Eliminação doméstica dos equipamentos eléctricos e electrónicos PORTUGUÊS

Eliminação de equipamento eléctrico e electrónico usado (aplicável na União Europeia e noutros países da Europa com sistemas de recolha de lixo separados)

O símbolo acima indica que o produto não deve ser tratado como lixo doméstico. Em vez disso, deve ser separado para reciclagem de equipamento eléctrico e electrónico. Se adquirir novos produtos, esta câmara deve ser entregue ao distribuidor ou a um sistema especializado de recolha de lixo. Assegurando a correcta eliminação destes equipamentos, ajudará a prevenir consequências negativas para o ambiente e para a saúde humana causadas por uma inapropriada manipulação dos componentes deste produto. Se a eliminação for feita de forma ilegal, poderá dar lugar a eventuais penalizações. Para informação mais detalhada acerca da reciclagem deste produto, contacte os serviços camarários ou a loja onde adquiriu o mesmo.

CE

ITALIANO
Questo è il marchio di conformità alle direttive della comunità Europea (CE).

SVENSKA
CE-märket betyder att varan blivit godkänd av EU:s gemensamma kvalitetsnorm.

DANSK
CE-mærket er i overensstemmelse med de gældende regler i EU.

PORTUGUÊS
A marca CE garante a conformidade com as normas estabelecidas pela Comunidade Europeia.

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只适用于中国 产品手册 ：六种危险物质的名称以及存在与否

		有毒有害物质或元素					
	部件名称	铅 (Pb)	汞 (Hg)	镉 (Cd)	六价铬 (Cr6+)	多溴联苯 (PBB)	多溴二苯醚 (PBDE)
⑩	外壳（金属部件）	×	○	○	○	○	○
	外壳（树脂部件）	○	○	○	○	○	○
	基板部件	×	○	○	○	○	○
	光学部件	○	○	○	○	○	○
	机械部件	×	○	○	○	○	○

备注	只适用于中国 ○:表示该有毒有害物质在该部件所有物均质材料中的含量均在 SJ/T11363-2006 标准规定的限量要求以下。 ×:表示该有毒有害物质到在该部件的某一均质材料中的含量超出 SJ/T11363-2006 标准规定的限量要求。
⑩ ⑤	10 或 5 图形含义：此标识是适用于在中国境内销售的电子讯息产品的环保使用期限。此产品使用者只要遵守安全和使用上的注意事项，从生产之日起的十年或五年期间不会对环境污染，也不会对人身和财产造成重大影响。

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