ZENZA BRONICA GS-1

SPEED-LIGHT G1

INSTRUCTIONS

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The Speed Light G1 has been specifically designed and developed as an integral accessory for the Zenza Bronica GS-1 single lens reflex camera, for use in combination with the optional Speed Grip G and provides auto-flash exposure at all shutter speeds with TTL (Through-the-lens) Direct Film Plane Flash Metering.

In addition to TTL auto-flash operations, however, the Speed Light G1 can also be used for non-TTL auto-flash operations with an external auto-flash sensor or for manual flash operations, as well as automatic bounce flash operations, and also has variable flash output adjustments in four steps.

And, because of the great angle of illumination of the Speed Light G1, it is also a very valuable accessory for other Zenza Bronica medium format single lens reflex cameras, as well as for other medium format cameras.

To get best results from the Speed Light G1, please read the instruction manual carefully before you even touch the accessory, as this will increase your pleasure in using it.

CONTNETS

Specifications of the Speed Light G1

Type:
Clip-on type with energy saving series control and TTL auto-flash contact for Direct Film Plane Flash Metering.

Guide numbers (ASA/ISO 100/meter):

Output setting	Normal Panel	Wide Panel
FULL	32	22
1/2	22	16
1/4	16	11
1/8	11	8

TTL auto-flash range (ASA/ISO 100/meter):

Aperture	Normal Panel	Wide Panel
F 4	0.7~8 m	0.7~5.6m
F 5.6	0.7~5.6m	0.7~4 m
F 8	0.7~4 m	0.7~2.8m
F11	0.7~2.8m	0.7~2 m
F16	0.7~2 m	0.7~1.4m
F22	0.7~1.4m	0.7~1 m

Non-TTL auto-flash range:

ASA/ISO	Orange Setting	Green Setting	Yellow Setting	Blue Setting
25	F 5.6	F 4	F 2.8	F 2
50	F 8	F 5.6	F 4	F 2.8
100	F11	F 8	F 5.6	F 4
200	F16	F11	F 8	F 5.6
400	F22	F16	F11	F 8
Normal	0.7~2.8m	0.7~4 m	1.0~5.6m	1.4~8 m
Wide	0.7~2 m	0.7~2.8m	1.0~4 m	1.4~5.6m

Flash duration:
AUTO 1/30,000 – 1/1,000 second
MANUAL 1/5,000 – 1/1,000 second

Non-TTL auto-flash sensor light acceptance angle:
Approximately 20°

Power source:
Four AA-size alkaline-manganese LR6 AM3 or four AA-size nickel-cadmium KR-AA batteries.

Number of flashes (approximate):

		Alkaline-manganese battery	Nickel-cadmium battery
TTL auto-flash		120~1,300	55~350
Non-TTL auto-flash		120~1,300	55~350
Manual	FULL	120	55
	1/2	350	150
	1/4	600	200
	1/8	800	300

Recycling time (approximate):

		Alkaline-manganese battery	Nickel-cadmium battery
TTL auto-flash		0.4~10sec.	0.4~7sec.
Non-TTL auto-flash		0.4~10sec.	0.4~7sec.
Manual	FULL	10 scc.	7 sec.
	1/2	4.5sec.	3.5sec.
	1/4	3.5sec.	2 sec.
	1/8	2 sec.	1.5sec.

Bounce angles:
Vertically — Click-stops at 0°, 45°, 60° 75° and 90°.
Horizontally — Click-stops at 0°, 45°, 60°, 75° and 90°.

Angles of illumination and suitable lenses:

	Vertically	Horizontally	35mm format	6X 4.5	6×6	6×7	6×9
Normal	53°	62°	35mm	55mm	65mm	65mm	80mm
Wide panel	65°	74°	28mm	45mm	50mm	50mm	60mm

Color temperature:
Suitable for daylight type color film.

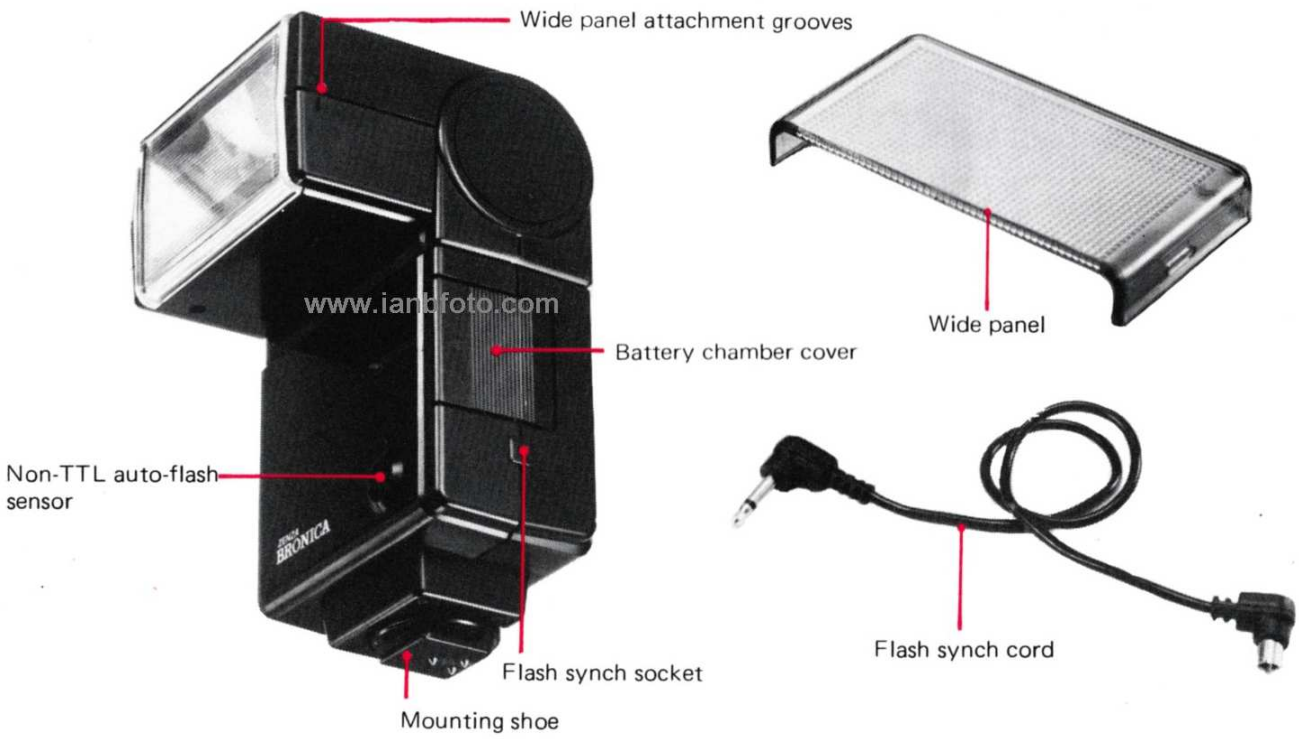
Other features:
Test button (doubles as pilot lamp); auto check lamp.

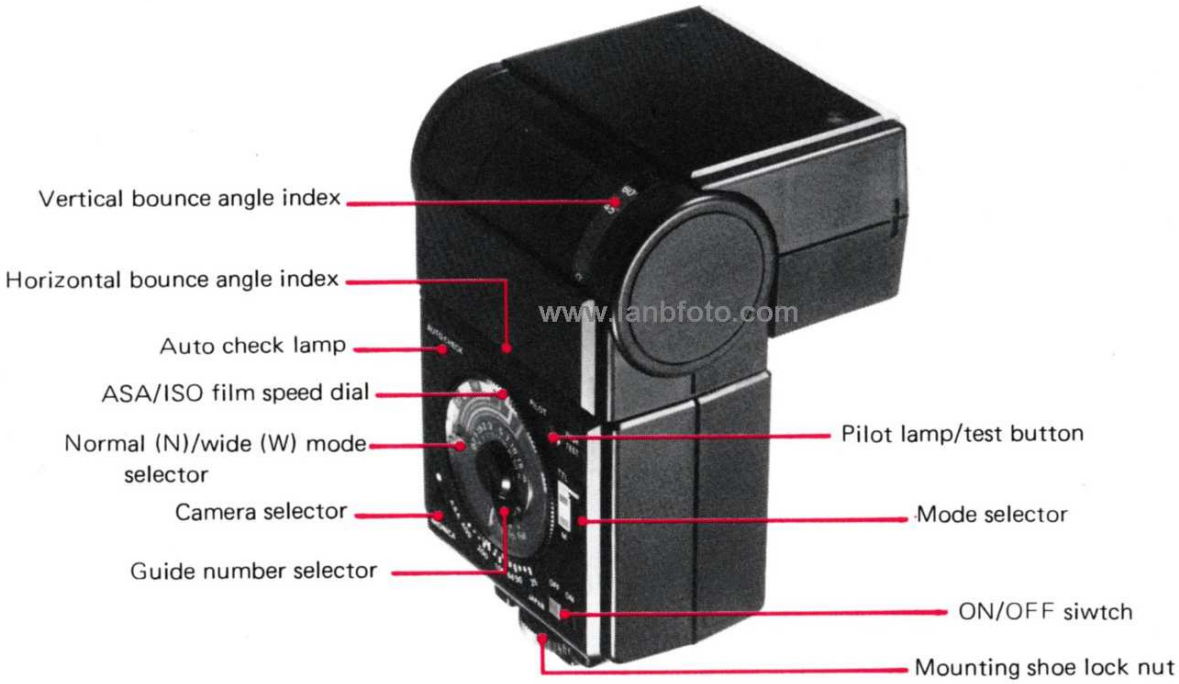
Dimensions:
76mm wide x 80mm long x 123mm high

Weight: 320 grams (without batteries)

The above specifications are subject to change, without prior notice, when necessary for the purpose of improving performance.

Name of Parts



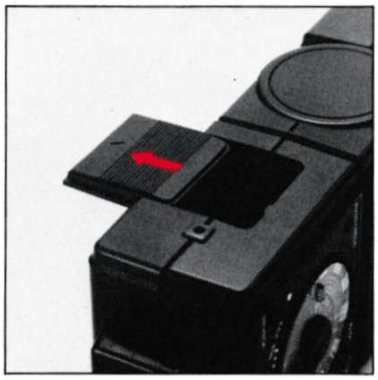


1 Loading the Batteries

Four 1.5V AA-size alkaline-manganese or NiCd batteries are required for the Speed Light G1.

* Both types of batteries are readily available at any photographic equipment or electrical appliance shop.

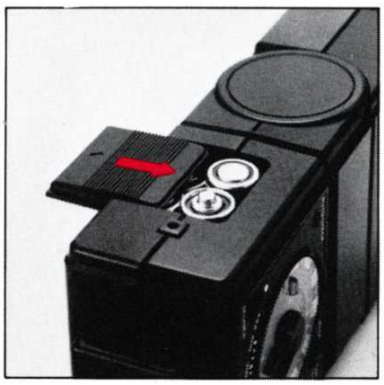
* The batteries should be exchanged with the ON/OFF switch set to OFF.



A. Simply slide the battery chamber cover in the arrow-indicated direction and it will come off.

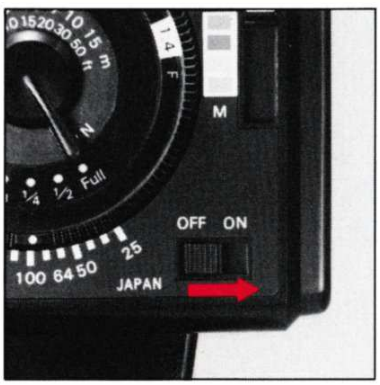
B. Coincide the plus (+) and minus (–) marks on the battery with similar polarity indications in the battery chamber, when inserting the batteries.

* The Speed Light G1 will not operate if the batteries are loaded with the polarity marks reversed.



C. To replace the battery chamber cover, simply slide it into grooves on the battery chamber and push in the arrow-indicated direction, as far as it will go.

2 Battery Checking



A. Slide the ON/OFF switch, on the rear surface, to ON.

B. Press the test button and check the time that it takes to flash. If less than 10 seconds (with alkaline-manganese batteries) or 7 seconds (with NiCd batteries), at the FULL output, the batteries are loaded in the proper manner and there is sufficient power for operations.

3 Attachment to the Camera (Zenza Bronica GS-1)

A. Insert the mounting shoe into the hot shoe of the Speed Grip G(for the Zenza Bronica GS-1), as far as it will go.

* The ON/OFF switch must always be set to OFF, when attaching or detaching the Speed Light G1.

B. Rotate the mounting shoe lock nut, in the direction indicated by the arrow, and fix the Speed Light G1 securely to the Speed Grip G.

C. Move the camera selector to "BRONICA".
* TTL auto-flash (with direct film plane flash metering) will not be possible, if the camera selector is set to ●.
* Recharging can be confirmed with the LED display in the finder, when used on the GS-1, whether in the TTL auto-flash, non-TTL auto-flash or manual mode.

(In the case of Other Bronica Models and Other Cameras)

A. Insert the mounting shoe into the accessory shoe of the speed grip or camera and fix securely with the mounting shoe lock nut.

* The ON/OFF switch must be set to OFF, when attaching or detaching the Speed Light G1.

B. Connect the flash synch socket and the X-synch socket on the camera, with the exclusive flash synch cord, when using on cameras without the hot shoe.

C. Move the camera selector to ● and use on non-TTL auto-flash or manual.

* Care must be exercised because the internal control circuit of the camera may be damaged, in some cases, if the camera selector is set to BRONICA.

4 Setting the Shutter Speed

A. All shutter speed settings can be used, in the case of the Zenza Bronica GS-1, SQ-A, SQ-Am, SQ and ETRS, because of the between-lens leaf shutter incorporated in the lenses.

* There may be over-exposure when the Speed Light G1 is used with Automatic Exposure operations, with the AE Prism Finder G.

B. Set the shutter speed dial to the X-setting, when using the Speed Light G1 with Zenza Bronica cameras incorporating the focal plane shutter, such as the EC, EC-TL, S2 and C2 models.

C. The shutter speed indicated in the instruction manual of the camera being used should be set, when the Speed Light G1 is used on cameras of other makes.

5 Exposure Calculator

A. Set the exposure calculator accurately, since it is coupled to the internal control circuit.
Align the dot ● mark on the ASA/ISO film speed dial to the ASA/ISO sensitivity of the film loaded in the camera.

B. The normal(N)/wide(W) mode selector should be set to expose N (normal) unless the wide panel is attached, in which case it should be set to expose W (wide).

C. When used on Manual, the guide number can be changed from FULL to 1/8, with the guide number selector which will also change the flash range display.

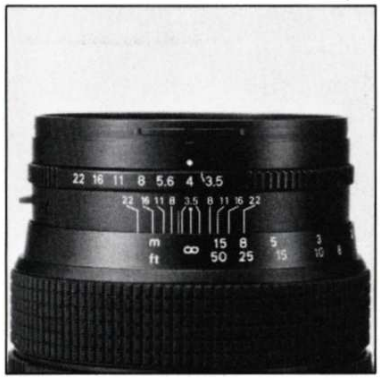
* Always use on FULL, when using the Speed Light G1 on TTL auto-flash and non-TTL auto-flash.

6 TTL Auto Film Plane Flash Metering

TTL Auto Film Plane Flash Metered photography is only possible when the Speed Light G1 is used with the Speed Grip G on the Zenza Bronica GS-1.

A green-colored LED will light up in the finder LED display, in this case, and show that the Speed Light G1 is recharged.

A. Set the mode selector to TTL.



B. Find the proper aperture setting for the shooting distance, from the exposure calculator, and set it to the aperture ring of the lens.

For example, when the film has a sensitivity of ASA/ISO 100, the auto-flash range will be 0.7 to 8 meters at F4 but will change to 0.7 to 2 meters when the aperture setting is changed to F16.

The auto-flash range for the film sensitivity (ASA/ISO) and the aperture set to the lens can be found, from the following table, in the case of TTL auto-flash operations.

At Normal(N)Mode——Meter

ASA/ISO \ Aperture	4	5.6	8	11	16	22	Min. Distance
25	4	2.8	2	1.4	1	——	0.7
50	5.6	4	2.8	2	1.4	1	0.7
100	8	5.6	4	2.8	2	1.4	0.7
200	11	8	5.6	4	2.8	2	1.0
400	16	11	8	5.6	4	2.8	1.5

At Wide(W)Mode——Meter

ASA/ISO \ Aperture	4	5.6	8	11	16	22	Min. Distance
25	2.8	2	1.4	1	——	——	0.7
50	4	2.8	2	1.4	1	——	0.7
100	5.6	4	2.8	2	1.4	1	0.7
200	8	5.6	4	2.8	2	1.4	1.0
400	11	8	5.6	4	2.8	2	1.5

7 Non-TTL Auto-Flash Operations

In the case of non-TTL auto-flash operations, if the shooting distance is within the auto-flash range, it will be possible to change the aperture in four steps, for taking advantage of the depth of field effect of the lens and thus taking pictures with different effects.

A. Set the mode selector to the setting having the same color as the auto-flash range band, depending on the shooting distance or the preferred aperture setting.

B. The auto-flash range for the non-TTL auto-flash range colored bands (i.e., orange, green , yellow and blue) is effective up to the distance indicated by the colored band of the exposure calculator, while the aperture is the value indicated by the bent tip of the band.

Aperture Setting and the non-TTL auto-flash range

	Colored Bands	Aperture Setting			
		Orange	Green	Yellow	Blue
ASA/ISO	25	5.6	4	2.8	2
	50	8	5.6	4	2.8
	100	11	8	5.6	4
	200	16	11	8	5.6
	400	22	16	11	8
Range (m)	Normal(N)	0.7~2.8	0.7~4	1.0~5.6	1.4~8
	Wide(W)	0.7~2	0.7~2.8	1.0~4	1.4~5.6

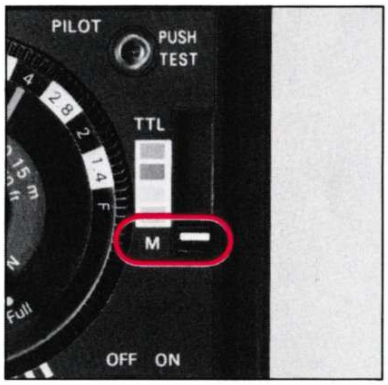
For example, when ASA/ISO 100 film is loaded, the auto-flash range is 0.7 to 2.8 meters, when the mode selector is set to the orange setting and the aperture is F11, or 1.4 to 8 meters, when set to the blue setting and F4 is used.

C. When used in the non-TTL auto-flash mode, the aperture setting and auto-flash range will differ depending on the color setting. And, although the aperture will change when the ASA/ISO film speed is changed, the auto-flash range will not change.

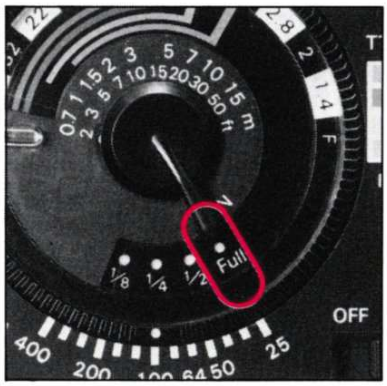
D. The auto-flash range can be checked with the auto check lamp. If the auto check lamp lights up, when the test button is depressed with the Speed Light G1 pointed at the subject, the subject is within the auto-flash range.

If the auto check lamp does not light up, move the mode selector to the green setting, if it is on the organge setting, or to the yellow, if it is on the green setting, or to the blue setting, if on the yellow, and recheck the auto-flash range once more.
If the auto check lamp does not light up, in spite of the above adjustments, move in closer to the subject.

8 Manual Flash Operations (at FULL Output)



A. Align the mode slector to M.



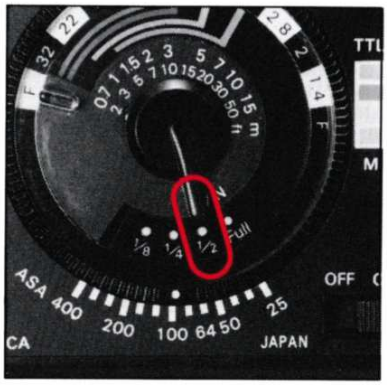
B. Set the guide number selector to FULL.

C. Focus the lens on the subject and find the aperture for the focused distance from the exposure calculator and set it to the lens. For example, the aperture will be F8, when the focused distance is 4 meters with ASA/ISO 100 film.

(at Adjusted Output)

If the depth of field effect is very pronounced because of a very small lens opening at the FULL output, which does not match the photographic expression required, and the focused distance is constant, the output can be decreased in order to open up the lens opening.

A. Set the mode selector to M and find the distance to the subject.



B. Rotate the guide number selector and set it to the position at which the aperture required will match the focus distance. For example, if the focus distance is 4 meters, with ASA/ISO 100 film, the aperture can be set between F8 to F2.8. Therefore, if it is preferred to shoot at F5.6, in this case, the guide number selector should be set to 1/2 output. If F4 is preferred, in this case, set to 1/4.

Table of Guide Number

G.N Selector \ ASA/ISO	25	32	40	50	64	80	100	125	160	200	250	320	400
	Guide Number												
Full	16	18	20	22	25	28	32	35	40	45	50	56	64
½	11	13	14	16	18	20	22	25	28	32	35	40	45
¼	8	9	10	11	13	14	16	18	20	22	25	28	32
⅛	5.6	6.4	7	8	9	10	11	13	14	16	18	20	22

The relationship between the guide number, aperture and focus distance is:—

The aperture can be found by the following formula, when the guide number for the ASA/ISO film speed of the film being used is known.

$$\text{Aperture} = \frac{\text{Guide Number}}{\text{Focus Distance}}$$

9 Daylight Fill-in Flash

The Zenza Bronica GS-1 (as well as SQ, SQ-A, SQ-Am and ETRS) will synchronize at all shutter speed settings because of the leaf-shutter incorporated in the lens. This means that daylight fill-in flash shots can be undertaken at all shutter speed and aperture combinations.
Dalylight fill-in flash shots are recommended when the subject will be darker than the surrounding brightness, as when shooting against the sun, or in the shadow of the tree, etc.

A. Take an exposure reading of the surrounding brightness, with the AE Prism Finder G on Manual Mode or an exposure meter, and determine the exposure setting.
At the same time, find the focus distance.

B. Rotate the guide number selector so that the aperture and focus distance, at this time, will correspond. For example, if the aperture is F11 and the distance 2 meters, with ASA/ISO 100 film used, the corresponding guide number is 22 and the guide number selector should be set to 1/2 from the table on page 19.

10 Bounce Flash Illumination

In bounce flash-illuminated pictures, the flash illumination from the Speed Light G1 is not used for directly illuminating the subject but is reflected off the ceiling or walls for obtaining a soft facial or skin effect in portraits or for eliminating harsh shadows caused by direct flash illumination.
The flash head section of the Speed Light G1 can be revolved upwards or sideways, up to 90 degrees of the arc, with click-stops at 45, 60 and 75 degrees, with bounce auto-flash operations possible in both the TTL auto-flash or non-TTL auto-flash modes.

A. Set the mode selector to TTL or the blue setting for non-TTL auto-flash.

B. Point the flash head in the required direction.

* The flash head angle must be determined so that there is not direct flash illumination in the picture area.

C. Operations are same as for TTL and non-TTL auto-flash operations.

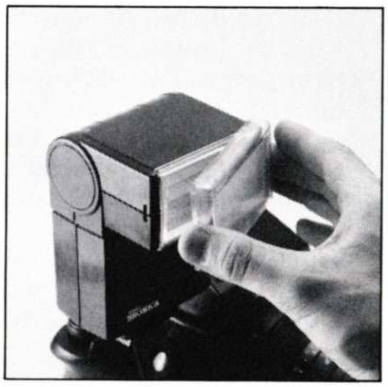
* Since there are differences in the bounce illumination, depending on the reflective surfaces, check the auto-flash range with the auto check lamp before actual operations.

11 Use of the Wide Panel

The Speed light G1 covers the angle of view lenses 65mm and longer, in the 6x7 format, without the wide panel. When the wide panel is attached, the angle of view of the 50mm lens can also be covered.

* For use with cameras in other format sizes, check the angles of illumination and suitable focal lengths in other formats, with and without the wide panel, in the specifications.

A. To attach the wide panel, simply push the wide panel on to the front of the flash head.



B. To detach the wide panel, pull up one end of the wide panel and detach it.

C. When the wide panel is attached, the exposure calculator should be set to expose W for finding the aperture setting and auto-flash range combination.

D. Operations thereafter, with the wide panel attached, are same as operations without the wide panel for TTL or non-TTL auto-flash and manual operations.

12 Pointers on Flash Operations

- Always turn the ON/OFF switch OFF, when attaching or detaching the Speed Light G1.
- If it takes more than 30 seconds for the pilot lamp to light up, then exchange the batteries.
- All four batteries should be replaced with fresh batteries of the same brand, at the same time.
- When the Speed Light G1 is not used for a long time, test the flash illumination once or twice a month and, then, turn OFF the ON/OFF switch while the auto check lamp is still illuminated. Then, store, with the batteries taken out.
- Do not use at temperatures above 40°C or below −10°C, as the internal mechanism will be poorly influenced.
- Care must be exercised, when used at the FULL output, with the maximum, aperture and 1/500 sec. shutter speed, because there may be insufficient illumination due to the characteristics of the lens shutter.
- Do not leave the Speed Light G1 in a location of high temperature (such as the summer seashore, inside a parked car under direct sunlight, etc.) for a long time, as the mechanisms will be effected and may lead to troubles. If the equipment should become heated , let the temperature drop to the ambient level before using it.
- Should the equipment become dirty, wipe with a cloth dipped in neutral detergent. Do not use benzine, thinner, etc.
- Do not disassemble the Speed Light G1 because high voltage parts are included.
- When used on camera hot shoes which have exclusive contacts, besides the usual flash contacts, there are dangers of damage to the camera control circuit for which we cannot be responsible.