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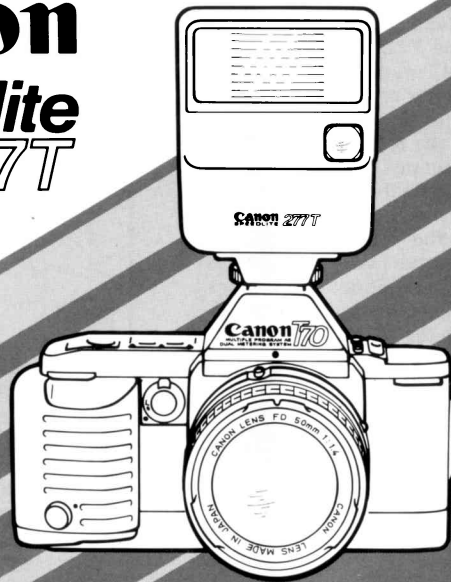
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Canon Speedlite 277T



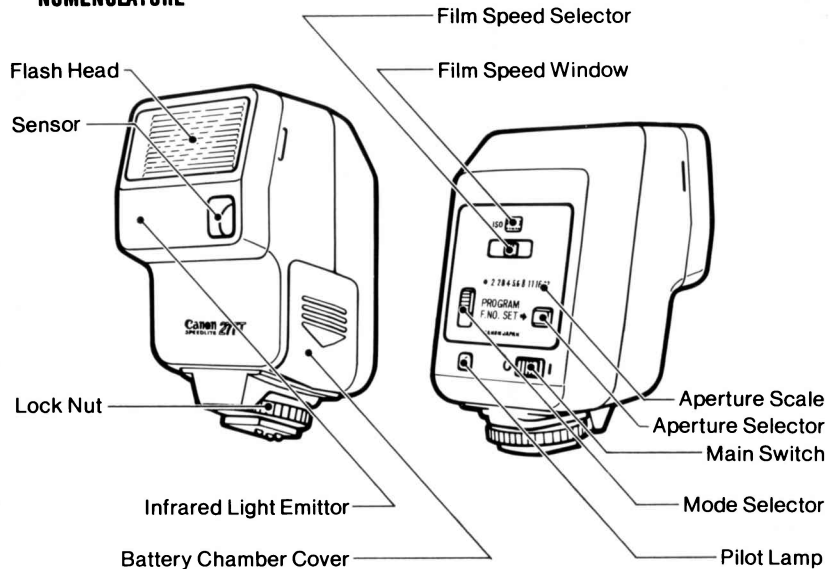
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NOMENCLATURE



The Speedlite 277T is an automatic, electronic flash unit* designed especially for the T70 and T50. In the "PROGRAM" mode, the 277T sets both the shutter speed and aperture automatically. Because it responds to a wide range of illuminations from dark surroundings to bright, you can even use this flash for supplemental lighting during the daytime. When mounted on the T70 or T50, you can confirm whether your subject is within auto flash shooting distance range by looking at the viewfinder information. In the "F. NO. SET" mode,

you can choose from a wide range of eight apertures between f/2 and f/22. This enables you to take flash recycling time and depth of field into consideration. In addition, the flash can be used with the New F-1 and A-series cameras.

* An automatic exposure flash has a sensor which measures the light reflected back from the subject and cuts off flash emission automatically when the subject has received the proper amount of light.

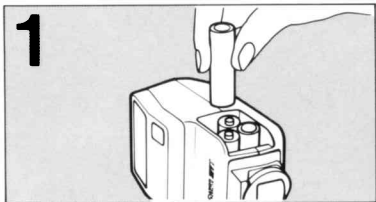


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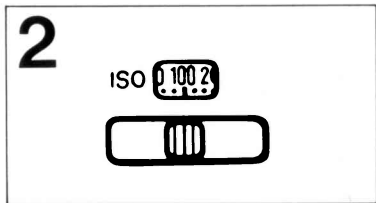
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Basic Operation with the T70 and T50

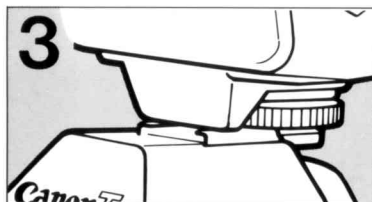
(See pp.24—33 on use with other Canon SLRs.)



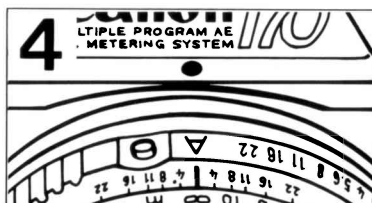
Load the batteries.



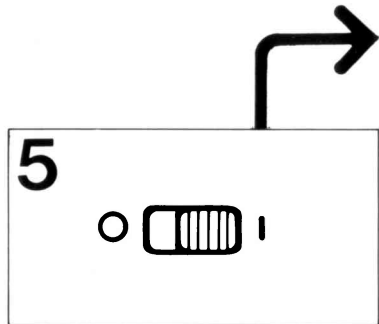
Set the film speed.



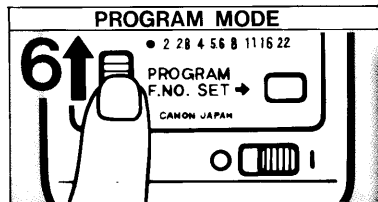
Mount the flash unit on the camera.



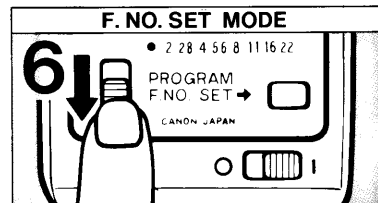
Confirm that the FD lens is set to the "A" mark.



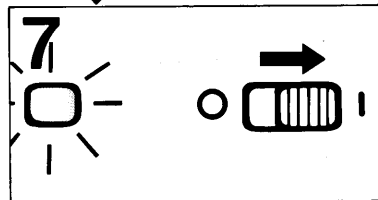
Turn the flash's main switch ON.



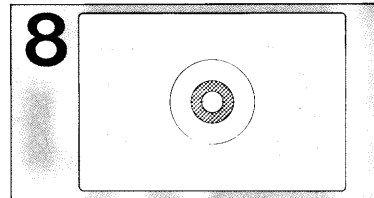
Set the mode selector to "PROGRAM".



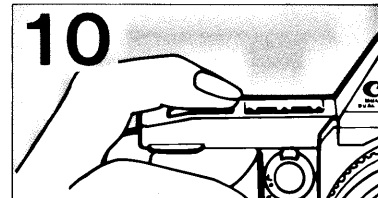
Set the mode selector to "F. NO. SET" and select the aperture you want with the aperture selector.



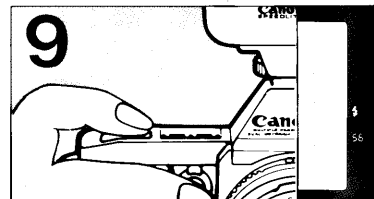
Make sure the pilot lamp lights up.



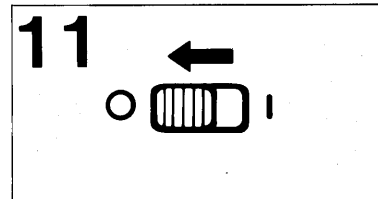
Compose the picture and focus the subject.



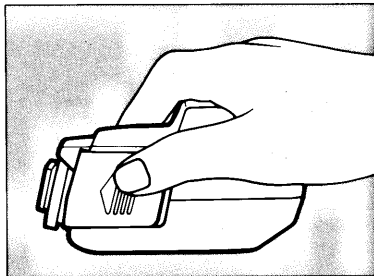
Press the shutter button all the way to take the picture.



Press the shutter button halfway to activate the viewfinder information display.



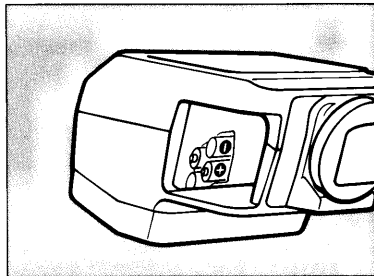
Turn the flash's main switch OFF when flash photography is finished.



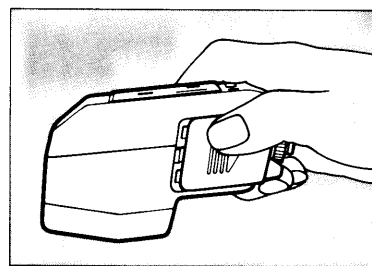
1. Loading the Batteries

Use four new size AA alkaline-manganese (LR6) or Ni-Cd batteries. Carbon-zinc batteries may also be used, but their life is shorter. In temperatures below 0°C (32°F), use fully charged Ni-Cd batteries for best results.

- 1) Wipe the battery terminals with a clean, dry cloth to ensure proper contact.
- 2) Slide the battery chamber cover off.

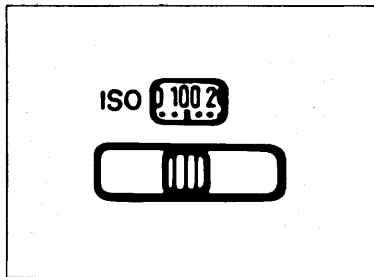


- 3) Load the batteries so that their terminals face in the directions indicated by the diagram inside the battery chamber.



- 4) Once the batteries are loaded, slide the battery chamber cover back on while pressing the batteries down. Make sure the cover's tab fits into the corresponding groove on the flash body.

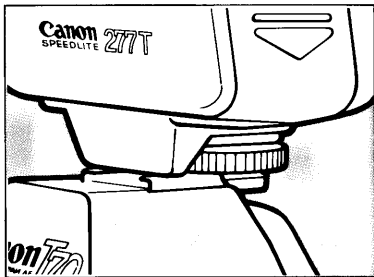
- * Remove the batteries if you do not expect to use the 277T for about three weeks or longer.
- * When using Ni-Cd batteries, please note that each brand has its own terminals system. Be sure to use a type which is suitable for this flash. Recharge Ni-Cd batteries according to the manufacturer's instructions.
- * When the batteries become exhausted, replace all four at the same time with four new ones of the same brand.



2. Setting the Film Speed

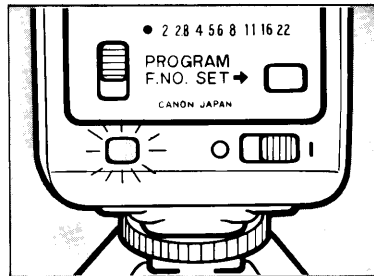
To set the film speed, slide the film speed selector until the ISO/ASA number of your film is aligned with the green index.

Make sure that the film speed is set correctly on the camera itself.



3. Mounting the 277T on the Camera

- 1) Loosen the lock nut and slide the Speedlite into the camera's accessory shoe. To insure correct electrical contact, make sure it is pushed in all the way.
- 2) Tighten the lock nut.

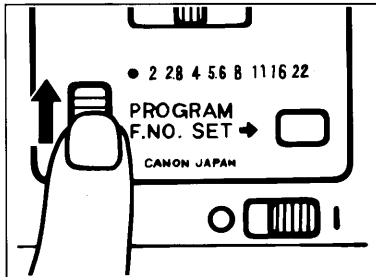


4. Test Firing

To test the functioning of the flash, press the pilot lamp after it has lighted up. If the flash fires, it is in proper working order.

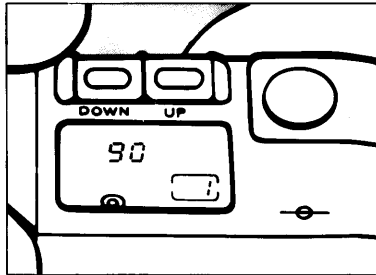
Depending on the output of the previous flash, the pilot lamp may remain lit after exposure, indicating that the flash is ready for the next exposure. When the pilot lamp does not glow after exposure (and AE camera is in AE mode), the

camera will go into normal AE mode operation until the pilot lamp lights up (except when the camera is set to "B"). When the pilot lamp glows, the camera will automatically switch back to flash photography.

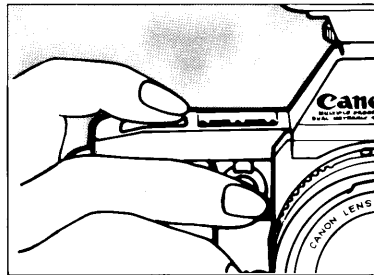


5. Flash Photography in the PROGRAM Mode

- 1) Make sure that the lens is set to the "A" mark.
- 2) Turn the flash's main switch ON and set the mode selector to "PROGRAM".
- 3) Make sure the pilot lamp lights up.
- 4) Compose the picture and focus the subject.



When the "⚡" mark lights up, the shutter speed automatically switches to X-sync speed (1/90 sec. with the T70 and 1/60 sec. with the T50).



- 5) Press the shutter button halfway to activate the viewfinder information display.

T70: When the "⚡" mark and the selected aperture value light up, you can take the picture.

T50: When the "⚡" and "P" marks light up, you can take the picture.

- 6) Press the shutter button all the way to take the picture.
- 7) Turn the main switch OFF when flash photography is finished.

* When the shutter button is pressed halfway, the 277T emits near infrared rays which are bounced off the subject and measured by the sensor. An aperture is then automatically selected according to the shooting distance and reflectivity of the subject.

Notes:

* If the subject is too far from the flash, the warning display is as noted below.

T70: The full aperture value of the lens you are using blinks rapidly.

T50: The "P" mark blinks rapidly.

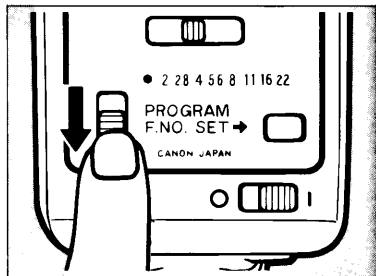
In this case, move closer to the subject until the full aperture value or the "P" stops blinking. Once you have found a suitable shooting position, be sure to remove your finger from the shutter button and re-focus the subject. Then you can take the picture. If you do not remove your finger from the shutter button after changing your position, exposure will be incorrect since exposure is set and held on each time the shutter button is pressed halfway.

* When the "●" mark on the left end of the aperture scale on the back of the flash glows, correct exposure is impossible because of lack of light.



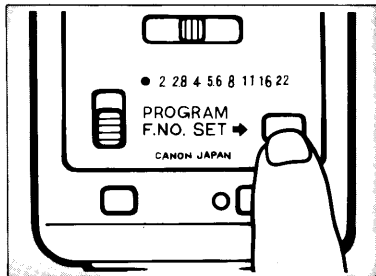
- * In the "PROGRAM" mode, flash photography during the daytime is possible under the following conditions:
- If the sun or a lamp is behind your subject.
 - If there is a bright window at your subject's back.
 - If your subject is in shadow.

In these cases, the 277T will prevent your subject from being underexposed. Follow the steps that you would for normal flash photography in the "PROGRAM" mode. When the illumination is more than EV16, however, the subject may be slightly overexposed.



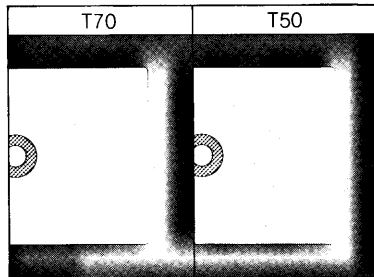
6. Flash Photography in the F. NO. SET Mode

- 1) Make sure that the lens is set to the "A" mark.
- 2) Turn the flash's main switch ON and set the mode selector to "F. NO. SET". At this point, the initial aperture setting is always f/5.6.



- 3) Set the aperture you want with the aperture selector. You can select 8 apertures between f/2 and f/22.
- 4) Make sure the pilot lamp lights up.
- 5) Compose the picture and focus the subject.

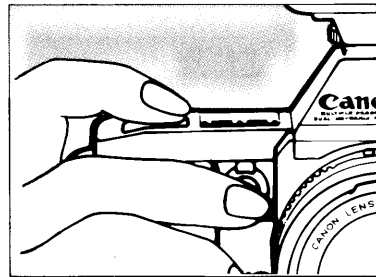
When the "f" mark lights up, the shutter speed automatically switches to X-sync speed (1/90 sec. with the T70 and 1/60 sec. with the T50).



- 6) Press the shutter button halfway to activate the viewfinder information display.

T70: When the "f" mark and the aperture value set on the flash light up, you can take the picture.

T50: When the "f" and "P" marks light up, you can take the picture.



- 7) Press the shutter button all the way to take the picture.
- 8) Turn the main switch OFF when flash photography is finished.

Notes:

* If the aperture selected on the flash is larger than the lens' maximum aperture, the picture will be underexposed.

The warning display is as listed below.

T70: The full aperture value of the lens you are using blinks rapidly.

T50: The "P" mark blinks rapidly.

Be sure that the aperture set on the flash is equal to or smaller than the maximum aperture of your lens.

* When the 277T is used in the F. NO. SET mode with the T50, the aperture value set on the flash will not be displayed in the viewfinder. Exposure will be correct, however, because the aperture is adjusted correctly by the aperture set on the flash.

Aperture Value

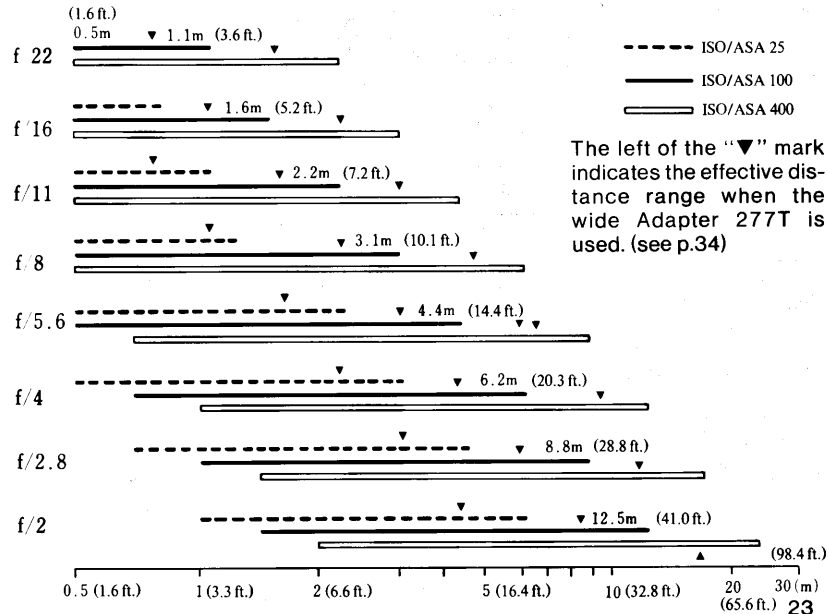
2	2.8	4	5.6	8	11	16	22
short	flash recycling time.....					long	
shallow.....	depth of field.....					deep	
wide.....	auto flash shooting distance range.....					narrow	

- When you want to make the flash recycling time short, choose a large aperture such as f/2.8.
- When you want to obtain a deep depth of field, choose a smaller aperture such as f/16.
- When you want to make the distance range wide, choose a large aperture such as f/2.8.

Auto Flash Shooting Distance Range

Auto flash shooting distance range varies according to the aperture value.

Be sure that the subject is within this range. Otherwise, exposure will be incorrect.



Use with Other SLRs

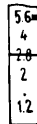
Camera	<ul style="list-style-type: none"> • New F-1 (shutter-priority AE mode) • A-1 • AE-1 PROGRAM • AE-1 	<ul style="list-style-type: none"> • New F-1 (aperture-priority AE or manual mode) • AL-1 • AV-1 • F-1 or other cameras
Flash Mode		
PROGRAM	OK	X
F. NO. SET	OK	*OK

* Turn the aperture ring of your lens to the same aperture you have selected on the flash.

1. FLASH PHOTOGRAPHY IN THE "PROGRAM" MODE

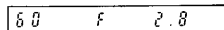
1. New F-1 (Shutter-priority AE mode)

- FD lens set on "A" mark.
- The shutter speed dial may be on any setting except for "B" or "A".
- When the pilot lamp glows, the camera switches automatically to X-sync (1/90 sec.) and the meter needle points to the aperture selected automatically by the flash.
- If the meter needle points to the underexposure warning zone, move closer to the subject. (see p.16)



2. A-1

- FD lens set on "A" mark.
- The mode selector may be on any mode except for "B".
- When the pilot lamp glows, the camera switches automatically to X-sync (1/60 sec.) and the digital readout in the viewfinder will be 60, F, and the aperture selected by the flash.

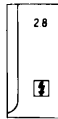


- If the full aperture of your lens blinks, move closer to the subject. (see p.16)
- If all the readouts blink, correct exposure is impossible.
- If the full aperture of your lens happens to be the same as the aperture selected automatically by the flash, the full aperture may blink in the viewfinder but exposure will be correct.

- Though the aperture displayed in the viewfinder may be a half f/stop larger or smaller than the aperture selected automatically by the flash, exposure will be correct since the latter is the effective aperture. Be sure to check the aperture set on the flash if this happens.

3. AE-1 PROGRAM

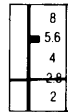
- FD lens set on "A" mark.
- The shutter speed dial may be on any setting except for "B".
- When the pilot lamp glows, the camera switches automatically to X-sync (1/60 sec.). The "⚡" mark and the aperture selected automatically by the flash will be displayed in the viewfinder.
- If the aperture value starts to blink in the viewfinder, move closer to the subject. (see p.16)
- If the full aperture of your lens happens to be the same as the aperture selected automatically by the flash, the full aperture may blink in the viewfinder but exposure will be correct.
- After the shutter is released, the "⚡" mark may flash on and off.



This does not indicate exposure confirmation, however, unlike when the Speedlite 188A or 166A is mounted on the AE-1 PROGRAM.

4. AE-1

- FD lens set on "A" mark.
- The shutter speed dial may be on any setting except for "B".
- When the pilot lamp glows, the camera switches automatically to X-sync (1/60 sec.) and the meter needle points to the aperture automatically selected by the flash.
- If the meter needle points to the underexposure warning zone, move closer to the subject. (see p. 16)

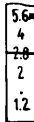


2. FLASH PHOTOGRAPHY IN THE "F. NO. SET" MODE

Do not set f/22 on the flash when you are using lenses such as the FD 50 mm f/1.2 which has a minimum aperture of f/16. If you do, the picture will be overexposed.

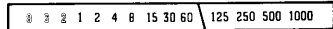
1. New F-1 (Shutter-priority AE mode)

- FD lens set on "A" mark.
- The shutter speed dial may be set on any setting except for "B" or "A".
- When the pilot lamp glows, the camera switches automatically to X-sync (1/90 sec.) and the meter needle points to the aperture you have set on the flash.
- If you have set the aperture on the flash larger than the maximum aperture of your lens, the meter needle will point to the underexposure warning zone indicating that exposure will be incorrect. Be sure that the aperture you set on the flash is equal to or smaller than the maximum aperture of your lens.



2. New F-1 (Aperture-priority AE mode)

- The shutter speed dial set on "A" mark.
- When the pilot lamp glows, the camera switches automatically to X-sync (1/90 sec.) and the meter needle points to the position between 60 and 125 in the viewfinder.



- Turn the aperture ring of your lens to the same aperture you have selected on the flash.
- If you have set the aperture on the flash larger than the maximum aperture of your lens, your picture will be underexposed. Be sure that the aperture you set on the flash is equal to or smaller than the maximum aperture of

your lens. (There is no warning in this case.)

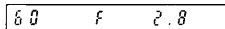
3. New F-1 (Manual mode)

- The shutter speed dial may be on any setting except for "B" or "A".
- When the pilot lamp glows, the camera switches automatically to X-sync (1/90 sec.) and the meter needle points to the aperture you have selected on the flash.
- Turn the aperture ring of your lens to the same aperture you have selected on the flash.
- If you have set the aperture on the flash larger than the maximum aperture of your lens, the meter needle will point to the underexposure warning zone indicating that the picture will be underexposed. Be sure that the aperture you set on the flash is equal to or smaller than the maximum aperture of your lens.



4. A-1

- FD lens set on "A" mark.
- The mode selector may be on any mode except for "B".
- When the pilot lamp glows, the camera switches automatically to X-sync (1/60 sec.) and the digital readout in the viewfinder will be 60, F, and the aperture you have selected on the flash.



- If you have set the aperture on the flash larger than the maximum aperture of your lens, the full aperture of your lens will blink, warning that the picture will be underexposed. Be sure that the aperture you set on the flash is equal to or smaller than the maximum aperture of your lens.
- Though the aperture displayed in the viewfinder may be a half

f/stop larger or smaller than the aperture you have selected on the flash, exposure will be correct since the latter is the effective aperture. Be sure to check the aperture you have set on the flash.

- When you are using lenses with a minimum aperture of f/22 or f/32, if you have set f/22 on the flash, the aperture may blink in the viewfinder but exposure will be correct.

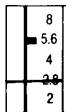
5. AE-1 PROGRAM

- FD lens set on "A" mark.
- The shutter speed dial may be on any setting except for "B".
- When the pilot lamp glows, the camera switches automatically to X-sync (1/60 sec.). The "f" mark and the aperture you have set on the flash will be displayed in the viewfinder.
- If you have set the aperture on the flash larger than the maximum aperture of your lens, the aperture you set on the flash will blink, warning that the picture will be underexposed.
- After the shutter is released, the "f" mark may flash on and off. This does not indicate exposure confirmation, however, unlike when the Speedlite 188A or 166A is mounted on the AE-1 PROGRAM.



6. AE-1

- FD lens set on "A" mark.
- The shutter speed dial may be on any setting except for "B".
- When the pilot lamp glows, the camera switches automatically to X-sync (1/60 sec.) and the meter needle points to the aperture you have set on the flash.
- If you have set a larger aperture on the flash than the maximum aperture of your lens, the underexposure warning lamp will blink, indicating that exposure will be incorrect. Be sure that the aperture you set on the flash is equal to or smaller than the maximum aperture of your lens.



7. AL-1, AV-1

- The selector dial may be on any setting except for "B".
- When the pilot lamp glows, the camera switches automatically to X-sync (1/60 sec.) and the meter needle points to the 1/60 sec. shutter speed.
- Turn the aperture ring of your lens to the same aperture you have set on the flash.
- If you have set a larger aperture on the flash than the maximum aperture of your lens, the picture will be underexposed. Be sure that the aperture you set on the flash is equal to or smaller than the maximum aperture of your lens. (There is no warning in this case.)



8. F-1, EF and FTb

- The shutter dial set on X-sync.
- When the pilot lamp glows, you are ready to shoot.
- If you have set a larger aperture on the flash than the maximum aperture of your lens, the picture will be underexposed. Be sure that the aperture you set on the flash is equal to or smaller than the maximum aperture of your lens. (There is no viewfinder information or warning indicator in this case.)

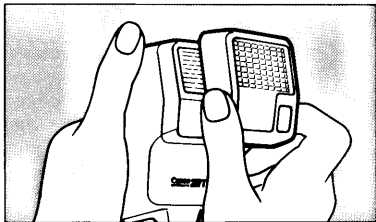
HANDLING PRECAUTIONS

1. Since a high-voltage circuit is built into the flash, it would be dangerous to take it apart by yourself. If repair is necessary, take it to the nearest Canon service facility.
2. Do not let the flash get wet. If it is exposed to rain or snow, immediately wipe it off with a dry cloth.
3. Do not fire the flash too close to your subject's eyes or while holding it against clothing.
4. NEVER use the Speedlite 277T with cameras of a make other than Canon since this flash is especially designed for use with Canon SLRs.
5. The Speedlite 277T cannot be used as a multiple flash.
6. Slave units cannot be used with the 277T.

CARE OF THE FLASH

1. Remove the batteries if you do not expect to use the flash for a long time.
2. Do not store the flash in hot or humid areas. Keep it out of direct sunlight.
3. If the flash is not used for about three weeks or longer, it is necessary to test fire it from time to time to maintain proper function of the capacitor.

Wide Adaptor 277T



This flash covers the angle of view of a 35 mm lens. When the Wide Adaptor 277T is attached, the 277T's flash angle is widened to cover the angle of view of a 28 mm lens.

Keep in mind that the use of the Wide Adaptor 277T shortens the auto flash shooting distance range.

Specifications

Type: Energy-saving flash unit with series control circuit. Clip-on type with direct contact and lock.

Guide Number: 25 (ISO 100/21°, ASA 100·m) or 41 (ISO 25/15°, ASA 25·ft.) without Wide Adaptor 277T. 16 (ISO 100/21°, ASA 100·m) or 26 (ISO 25/15°, ASA 25·ft) with Wide Adaptor 277T. At full charge, i.e. 30 secs. after pilot lamp glows with new or fully-charged batteries.

Flash Coverage Angle: Covers a 35 mm lens (28 mm lens with Wide Adaptor 277T) on the 35 mm format.

Recycling Time: Approx. 0.5—8 secs. with new alkaline batteries. Approx. 0.5—6 secs. with fully-charged Ni-Cd batteries. (Interval between firing of the flash and relighting of pilot lamp with new or fully-charged batteries.)

Number of Flashes: Approx. 200—1700 flashes with new alkaline batteries.

Approx. 65—500 flashes with fully-charged Ni-Cd batteries. (Counted when flash is fired in 30 sec. intervals with new or fully-charged batteries.)

Color Temperature: Same as daylight. Adjusted with use of special colored screen.

Flash Duration: 1/700—1/50,000 sec.

Flash Control System: The sensor measures light reflected back from subject and automatically cuts flash output when subject has received proper amount of light. Series control system saves unused energy for next firing.

Metering Sensitivity Pattern: Even distribution over entire area for average measurement.

Automatic Flash System: In PROGRAM mode, flash automatically sets aperture at first stroke of shutter button. (Automatic Apertures — f/2, 2.8, 4, 5.6, 8, 11, 16, 22) In F. NO. SET mode, aperture is set manually. (Apertures — f/2, 2.8, 4, 5.6, 8, 11, 16, 22) Aperture value is indicated by red LED on back panel of flash unit.

Automatic Shooting Distance Range (at ISO 100/21°, ASA 100): 0.5 — 12.5 m (1.6—41 ft.) in PROGRAM mode.

0.5—12.5 m (1.6—41 ft.) in F. NO. SET mode. Varies according to the aperture selected.

Outside of Automatic Flash Shooting Distance Range: In PROGRAM mode, when subject is too far away, warning is displayed at first stroke of shutter button. (Warning varies according to camera in use.) No warning is displayed when illumination is more than EV 8, when subject is too close, or when using F. NO. SET mode.

Film Speed Scale: ISO 25/15°, ASA 25 — ISO 400/27°, ASA 400.

Pilot Lamp: Glows when flash is sufficiently charged. As soon as it glows, the camera automatically switches to flash circuit.

Test Firing: By pressing pilot lamp after it has lighted up.

Power Source: Four size AA (LR6) alkaline or four size AA Ni-Cd batteries.

Dimensions: 66 (W) × 97 (H) × 64.5 (D) mm (2-5/8" × 3-13/16" × 2-9/16")

Weight: 180 g (6-3/8 oz.) without batteries.

Subject to change without notice.