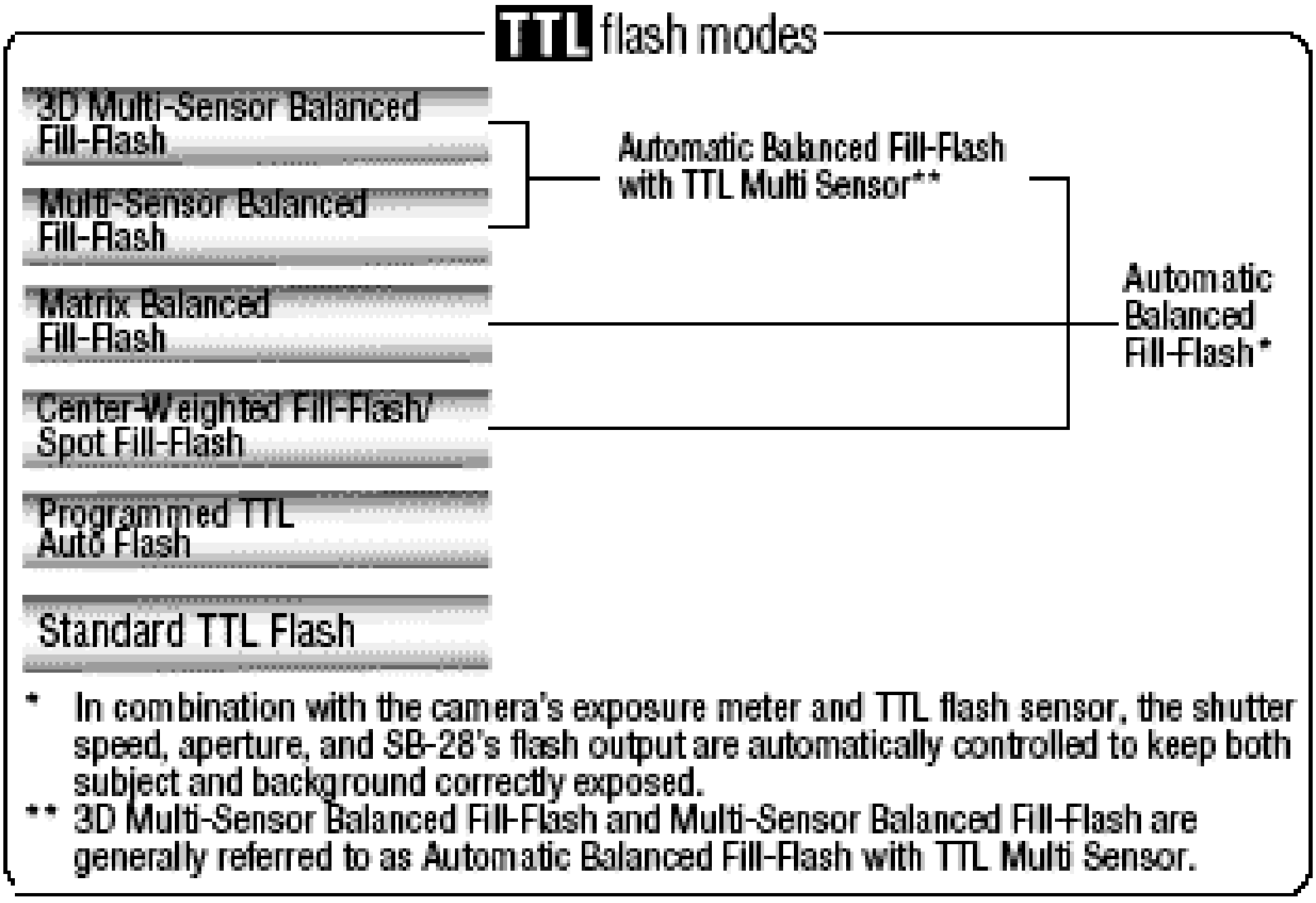
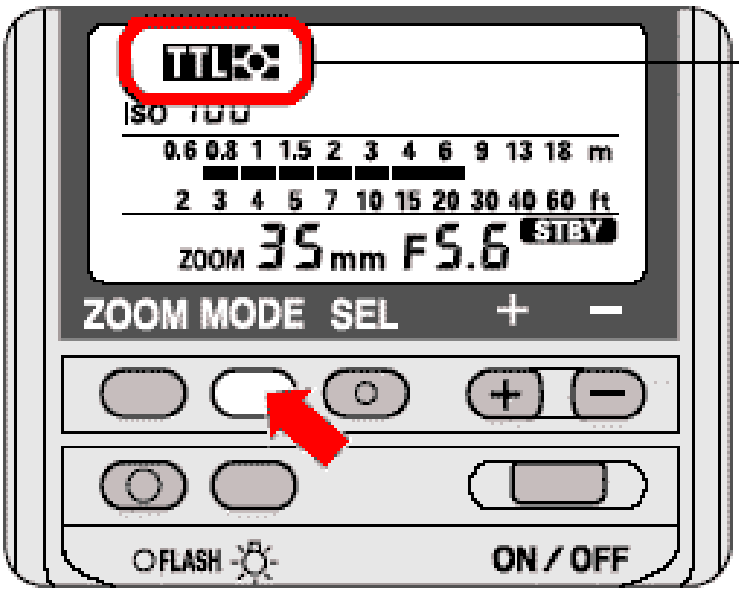

80 - 135mm
1:3.5



* In combination with the camera's exposure meter and TTL flash sensor, the shutter speed, aperture, and SB-28's flash output are automatically controlled to keep both subject and background correctly exposed.

** 3D Multi-Sensor Balanced Fill-Flash and Multi-Sensor Balanced Fill-Flash are generally referred to as Automatic Balanced Fill-Flash with TTL Multi Sensor.


Nikon
SPEEDLIGHT SB-26



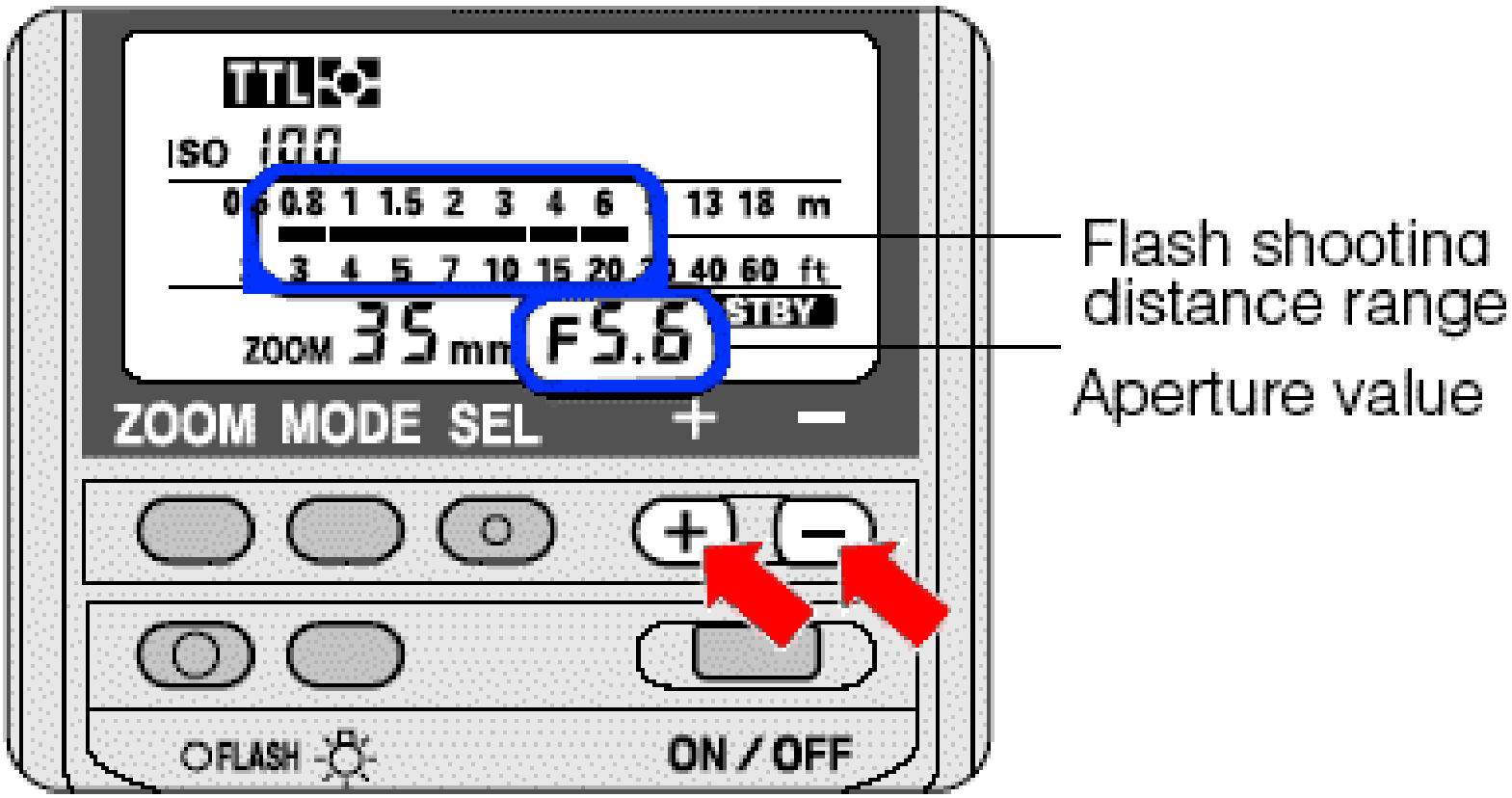
TTL Automatic Balanced Fill-Flash with TTL Multi Sensor

TTL Center-Weighted/Spot Fill-Flash

TTL Standard TTL Flash

Available flash operation in TTL Auto Flash TTL Mode

Lens in use	Available flash operation*1	Camera's exposure mode	Camera's metering system*2
D- or G-type*3 Nikkor lenses	3D Multi-Sensor Balanced Fill-Flash TTL	Desired mode	Desired metering system
Non-D/G-type AF Nikkor lenses/ AI-P lenses	Multi-Sensor Balanced Fill-Flash TTL	Desired mode	Desired metering system
Other Nikkor lenses*4	Center-Weighted Fill-Flash/Spot Fill-Flash TTL	Aperture-priority auto (A) Manual (M)	Center-Weighted Metering Spot Metering*2


TTL
ISO 100
0.6 0.8 1 1.5 2 3 4 6 13 18 m
3 4 5 7 10 15 20 40 60 ft
ZOOM 35 mm
F5.6
STBY
ZOOM MODE SEL
+
−
FLASH
ON / OFF
Flash shooting distance range
Aperture value

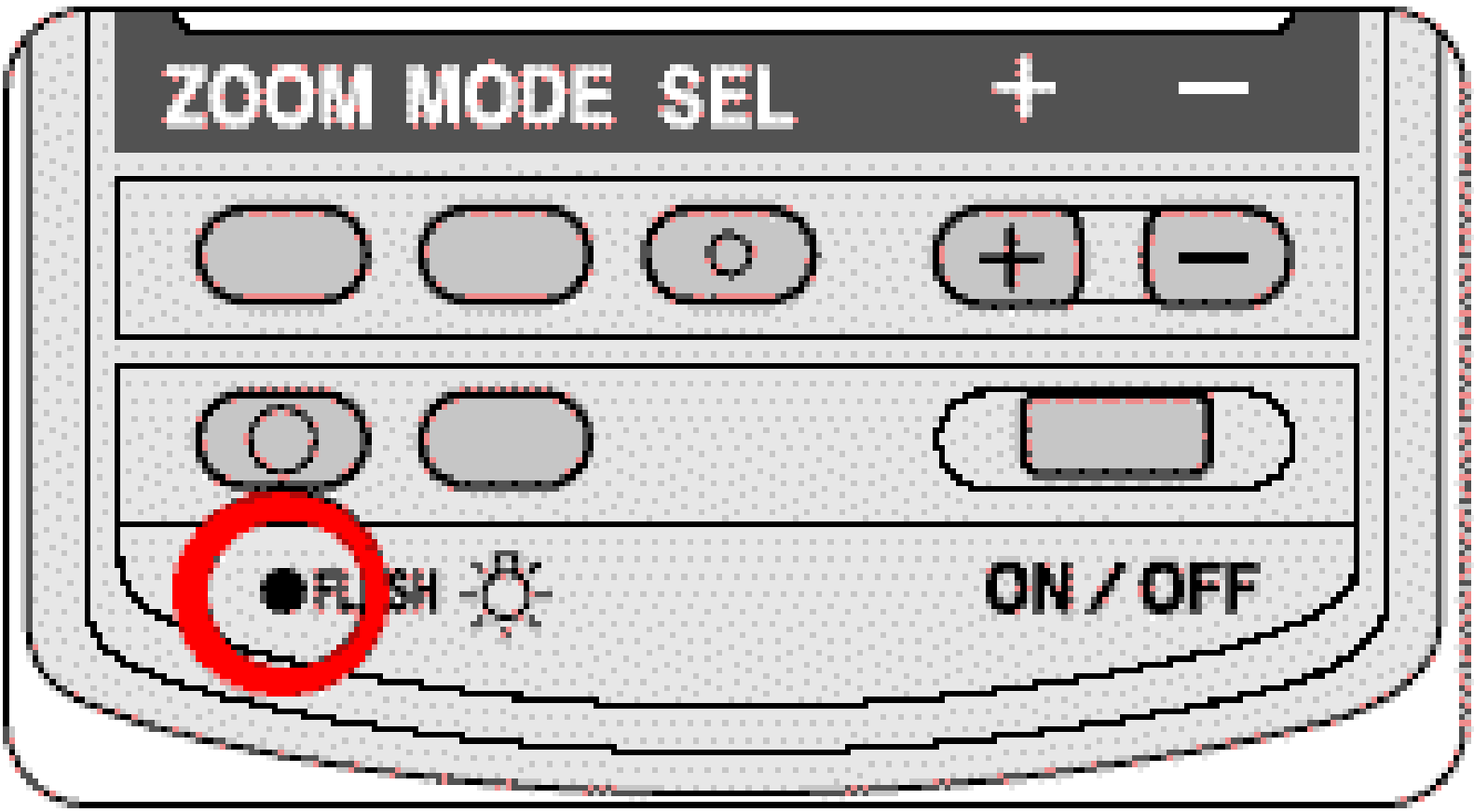
Guide number (at ISO 100 for m/ft)

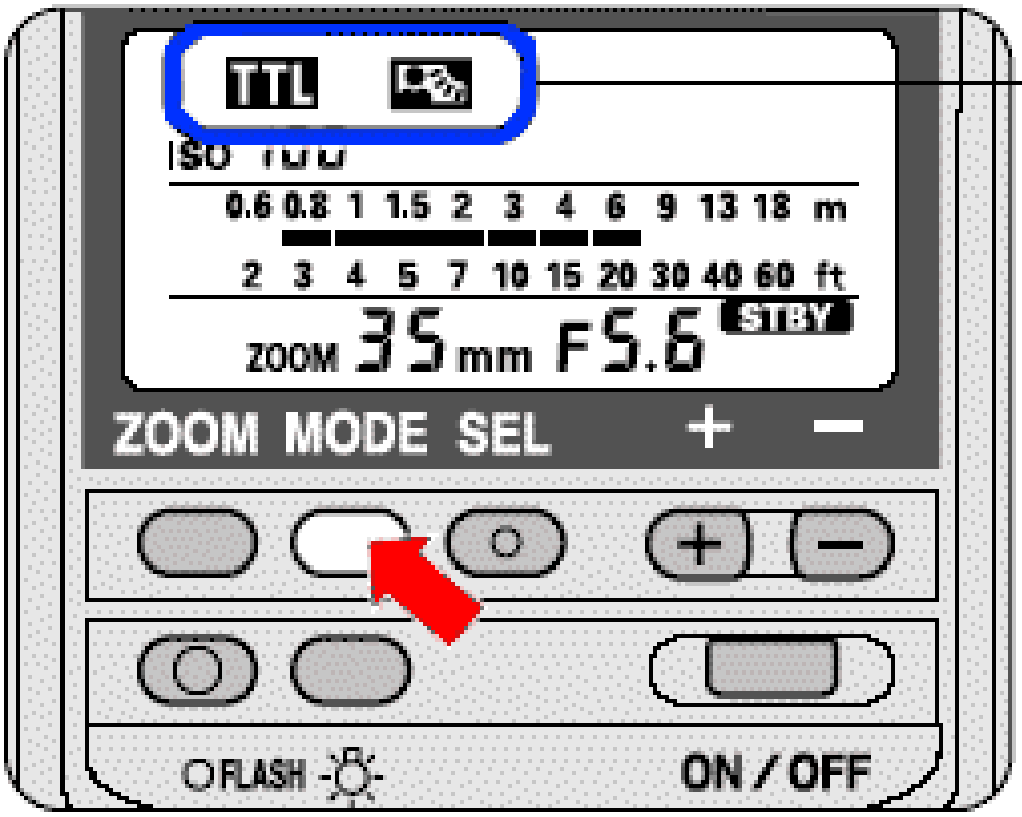
Zoom head position	18mm	20mm	24mm	28mm	35mm	50mm	70mm	85mm
Guide number	8/26	8/26	11/36	12/39	14/46	16/53	18/59	19/62

$$D \text{ (farthest flash shooting distance)} = \frac{\text{Guide number}}{\text{f/stop (aperture)}}$$

Available flash operation in TTL Auto Flash TTL Mode

Lens in use*1	Available flash operation*2	Camera's exposure mode	Camera's metering system*3
Nikkor lenses with a built-in CPU*4	Matrix Balanced Fill-Flash TTL	Desired mode*5	Matrix Metering
	Center-Weighted Fill-Flash/ Spot Fill-Flash*6 TTL	Desired mode	Center-Weighted Metering
			Spot Metering*9
Nikkor lenses without a built-in CPU*7	Center-Weighted Fill-Flash/Spot Fill-Flash*8 TTL	Aperture-priority auto (A)	Center-Weighted Metering
		Manual (M)	Spot Metering*9


ZOOM MODE SEL
+
−
+
−
FLASH
ON / OFF



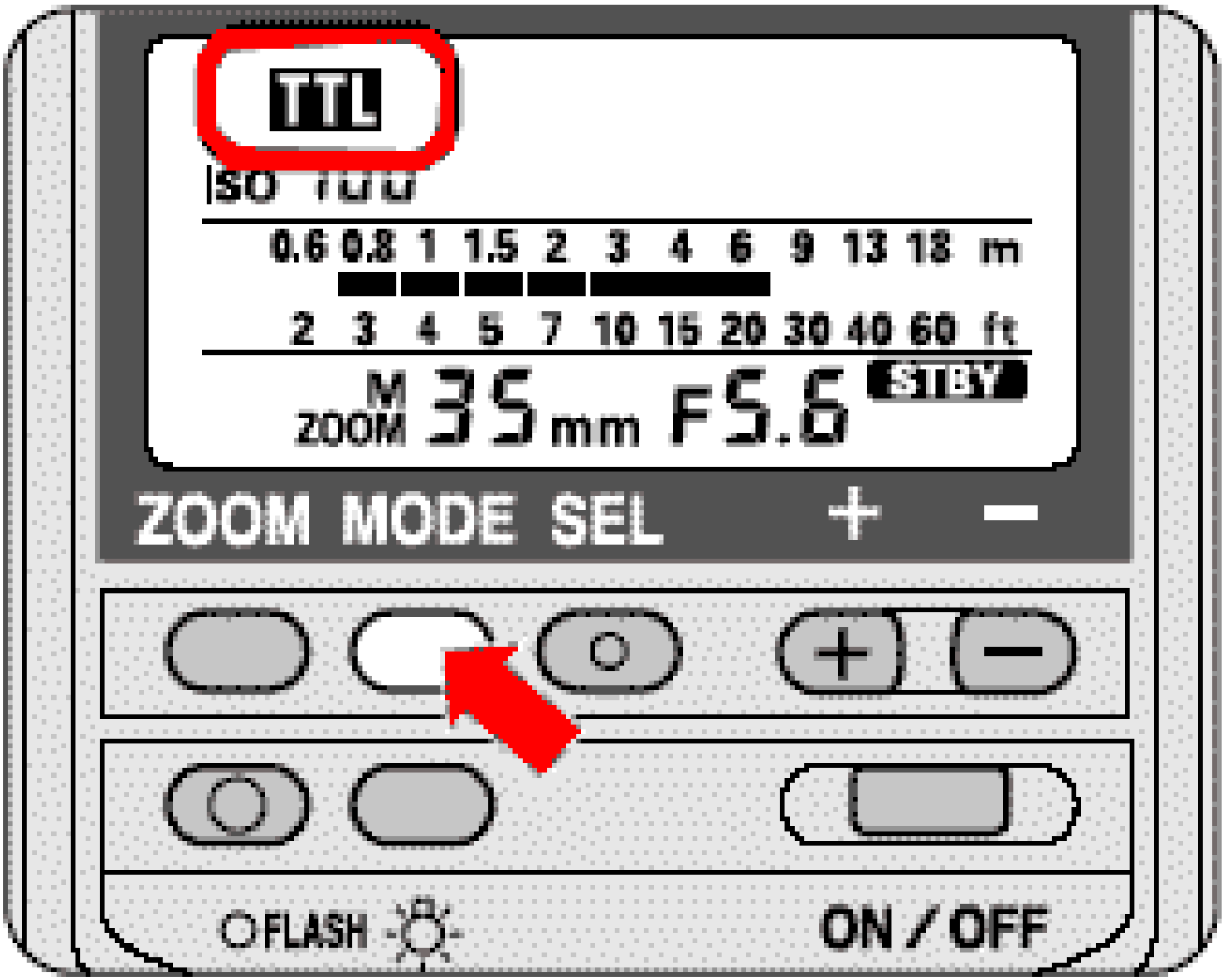
TTL

Matrix Balanced Fill Flash and Center-Weighted Fill Flash/Spot Fill-Flash

TTL

Standard TTL Flash

Lens in use	Available flash operation	Camera's exposure mode	Camera's metering system
Nikkor lenses with a built-in CPU*1	Matrix Balanced Fill-Flash	Desired mode	Matrix Metering
	Center-Weighted Fill-Flash/Spot Fill-Flash	Desired mode	Center-Weighted Metering,
			Spot Metering*2
Nikkor lenses without a built-in CPU	Center-Weighted Fill-Flash/Spot Fill-Flash	Aperture-priority auto (A), Manual (M)	Center-Weighted Metering,
			Spot Metering*2


TTL
ISO
0.6 0.8 1 1.5 2 3 4 6 9 13 18 m
2 3 4 5 7 10 15 20 30 40 60 ft
M
ZOOM 35 mm F5.6
STBY
ZOOM MODE SEL
+
−
FLASH
ON / OFF

Available flash operation in TTL Auto Flash [TTL] Mode

Lens in use	Available flash operation	Camera's exposure mode*
Nikkor lenses with a built-in CPU	Matrix Balanced Fill-Flash [TTL]	Programmed auto (P) Shutter-priority auto (S) Aperture-priority auto (A) Manual (M)*
Nikkor lenses without a built-in CPU	Center-Weighted Fill-Flash/Spot Fill-Flash [TTL]	Manual (M)

* Center-Weighted Fill-Flash/Spot Fill-Flash can only be performed when the camera's exposure mode is set to Manual (M).

For F-501/N2020 and F-301/N2000

Lens in use	Available flash operation	Camera's exposure mode
Nikkor lenses with a built-in CPU* Nikkor lenses for F3AF AI-S-type Nikkor lenses AI-type Nikkor lenses Nikon Series E lenses	Programmed TTL Auto Flash	Programmed auto (P)
	Standard TTL Flash	Aperture-priority auto (A)
		Manual (M)
Other Nikkor lenses	Standard TTL Flash	Aperture-priority auto (A)
		Manual (M)

*G-type Nikkor lenses cannot be used.

For F-401s/N4004s and F-401/N4004

Lens in use	Available flash operation	Camera's exposure mode
Nikkor lenses with a built-in CPU	Programmed TTL Auto Flash	Programmed auto (P)
		Shutter-priority auto (S)
	Standard TTL Flash	Aperture-priority auto (A)
		Manual (M)
Other Nikkor lenses	Standard TTL Flash	Manual (M)

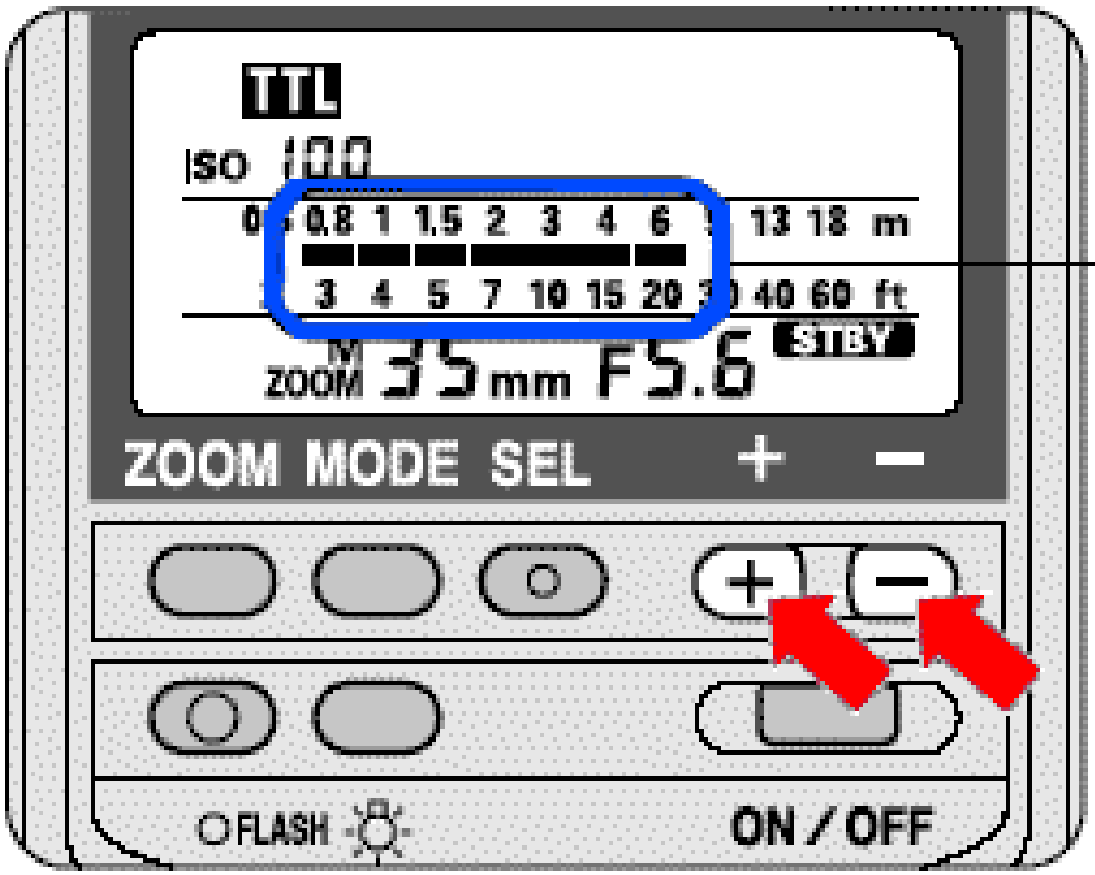
ISO film speed	25	50	100	200	400	800
Aperture setting on SB-28	f/2.8	f/4	f/5.6	f/8	f/11	f/16

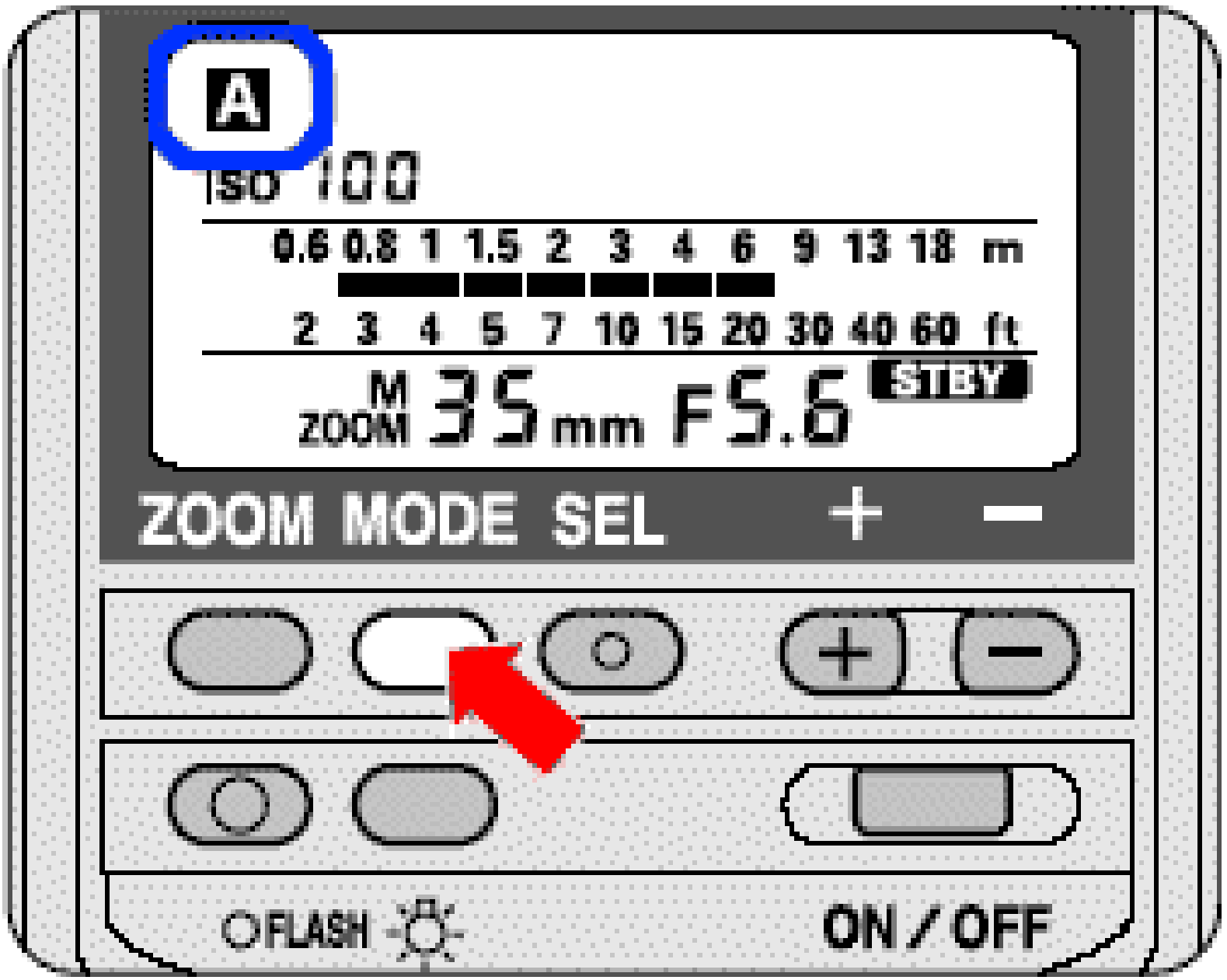
Subject conditions	Strong back-lighting	Sunny day	Cloudy day or in the shadows	Indoors
Aperture setting on SB-28	f/16	f/8	f/5.6	f/5.6
Usable shutter speed*	1/125 sec.			1/30 sec.

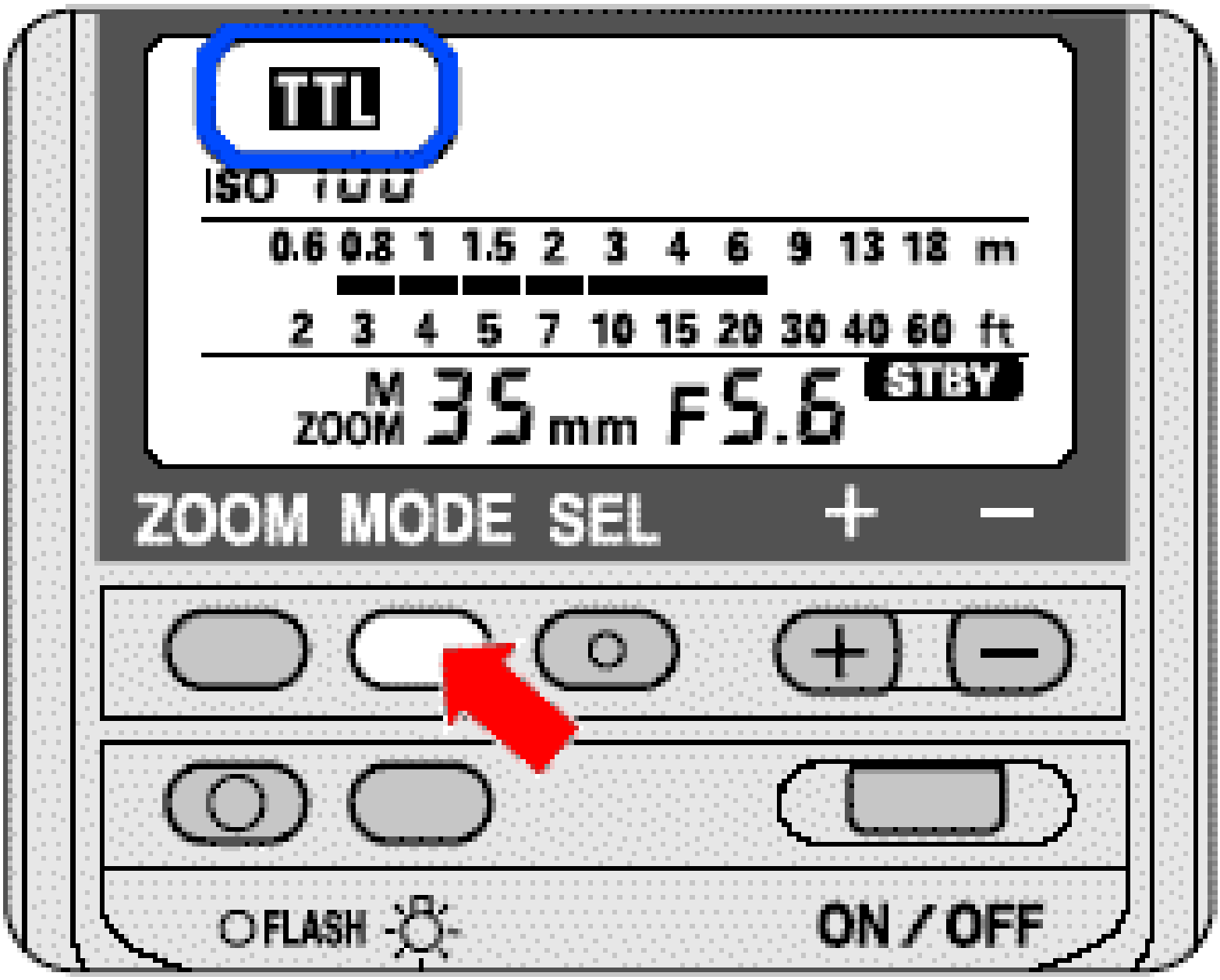
Available flash operation in TTL Auto Flash TTL Mode

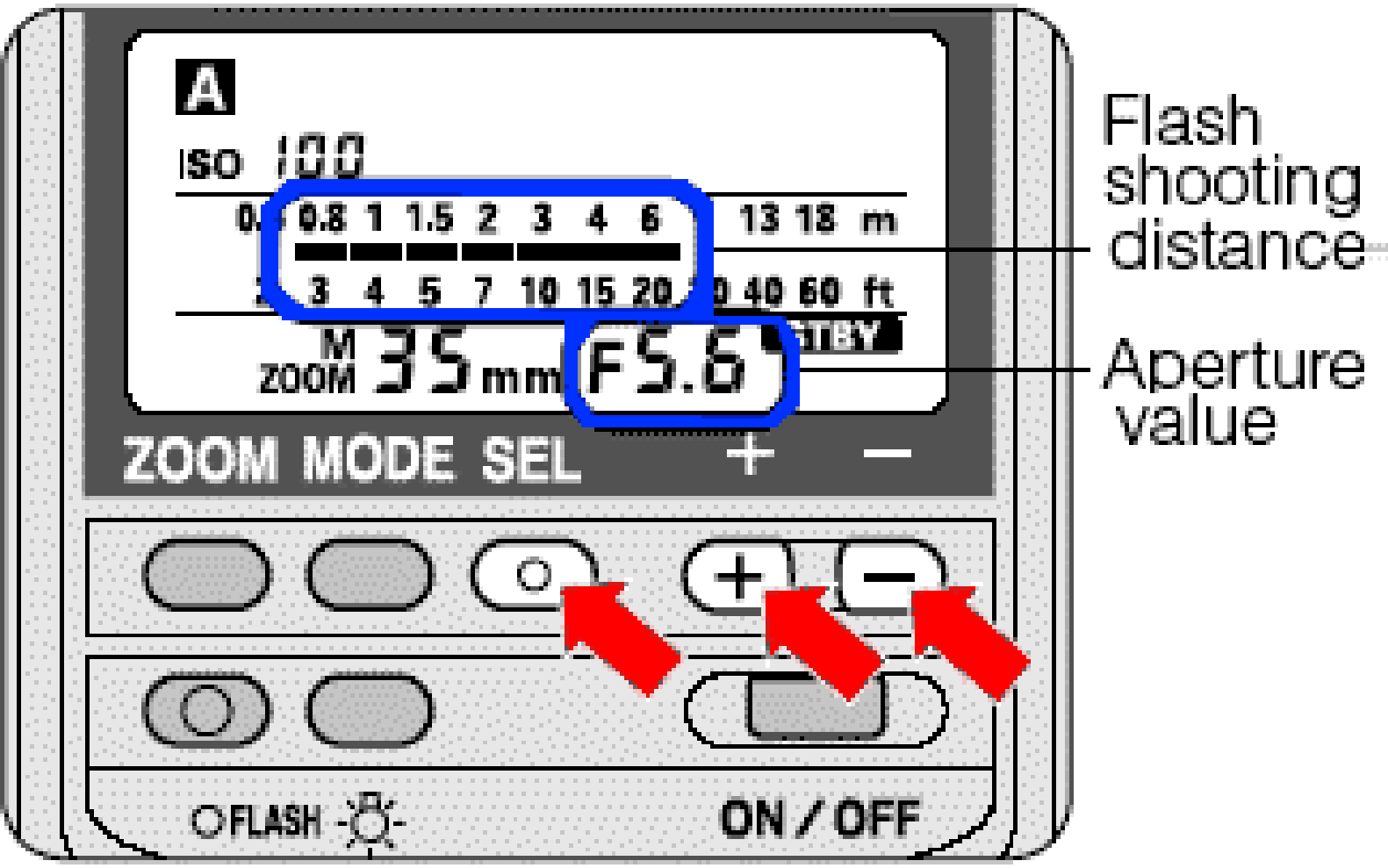
Lens in use	Available flash operation	Camera's exposure mode
Nikkor lenses with a built-in CPU* and Nikkor lenses without a built-in CPU	Standard TTL Flash TTL	Aperture-priority auto (A)
		Manual (M)

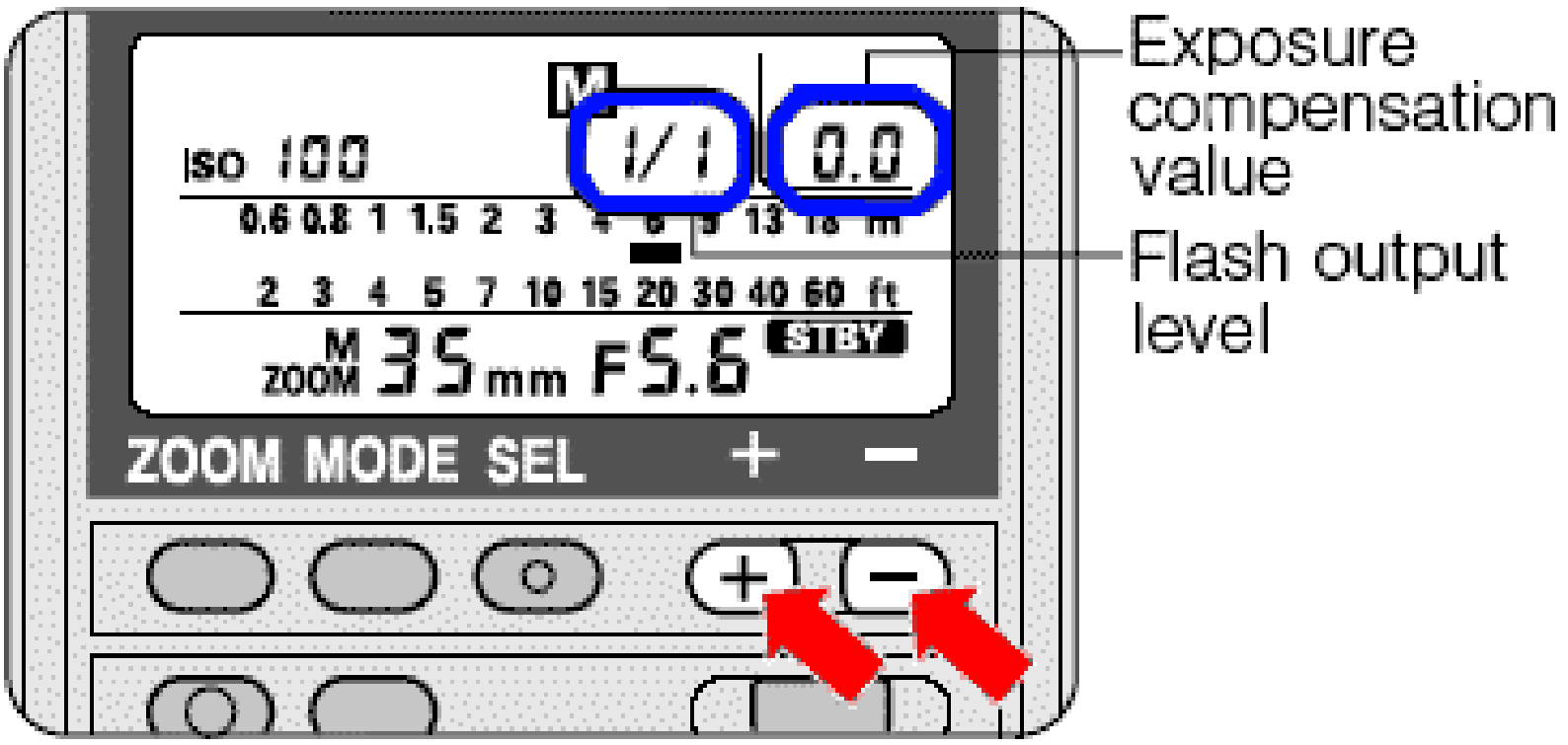
*G-type Nikkor lenses cannot be used.

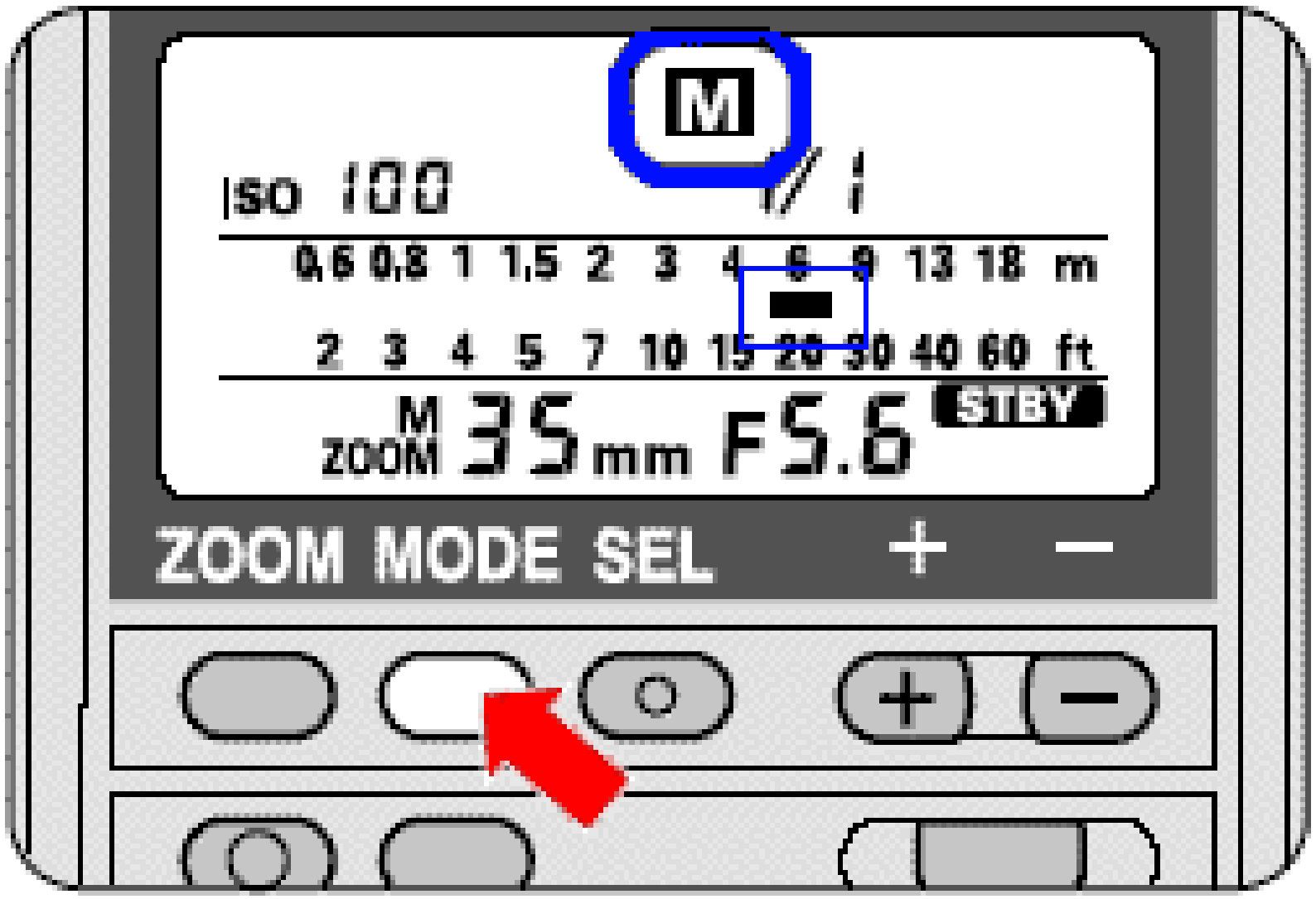

TTL
ISO 100
0.8 1 1.5 2 3 4 6 13 18 m
3 4 5 7 10 15 20 40 60 ft
STBY
ZOOM 35 mm F5.6
ZOOM MODE SEL
+
−
FLASH
ON / OFF
Flash shooting distance range


A
ISO 100
0.6 0.8 1 1.5 2 3 4 6 9 13 18 m
2 3 4 5 7 10 15 20 30 40 60 ft
M
ZOOM 35 mm F5.6
STBY
ZOOM MODE SEL
+
−
FLASH
ON / OFF


TTL
ISO
0.6 0.8 1 1.5 2 3 4 6 9 13 18 m
2 3 4 5 7 10 15 20 30 40 60 ft
M
ZOOM
35 mm F5.6
STBY
ZOOM MODE SEL
+
−
FLASH
ON / OFF


A
ISO 100
0.8 1 1.5 2 3 4 6
13 18 m
3 4 5 7 10 15 20
40 60 ft
M
ZOOM 35 mm
F5.6
ZOOM MODE SEL
+
−
FLASH
ON / OFF
Flash shooting distance
Aperture value


M
1/1
0.0
ISO 100
0.6 0.8 1 1.5 2 3 4 6 9 13 18 m
2 3 4 5 7 10 15 20 30 40 60 ft
M
ZOOM 35 mm F5.6
STBY
ZOOM MODE SEL
+
−
Exposure compensation value
Flash output level

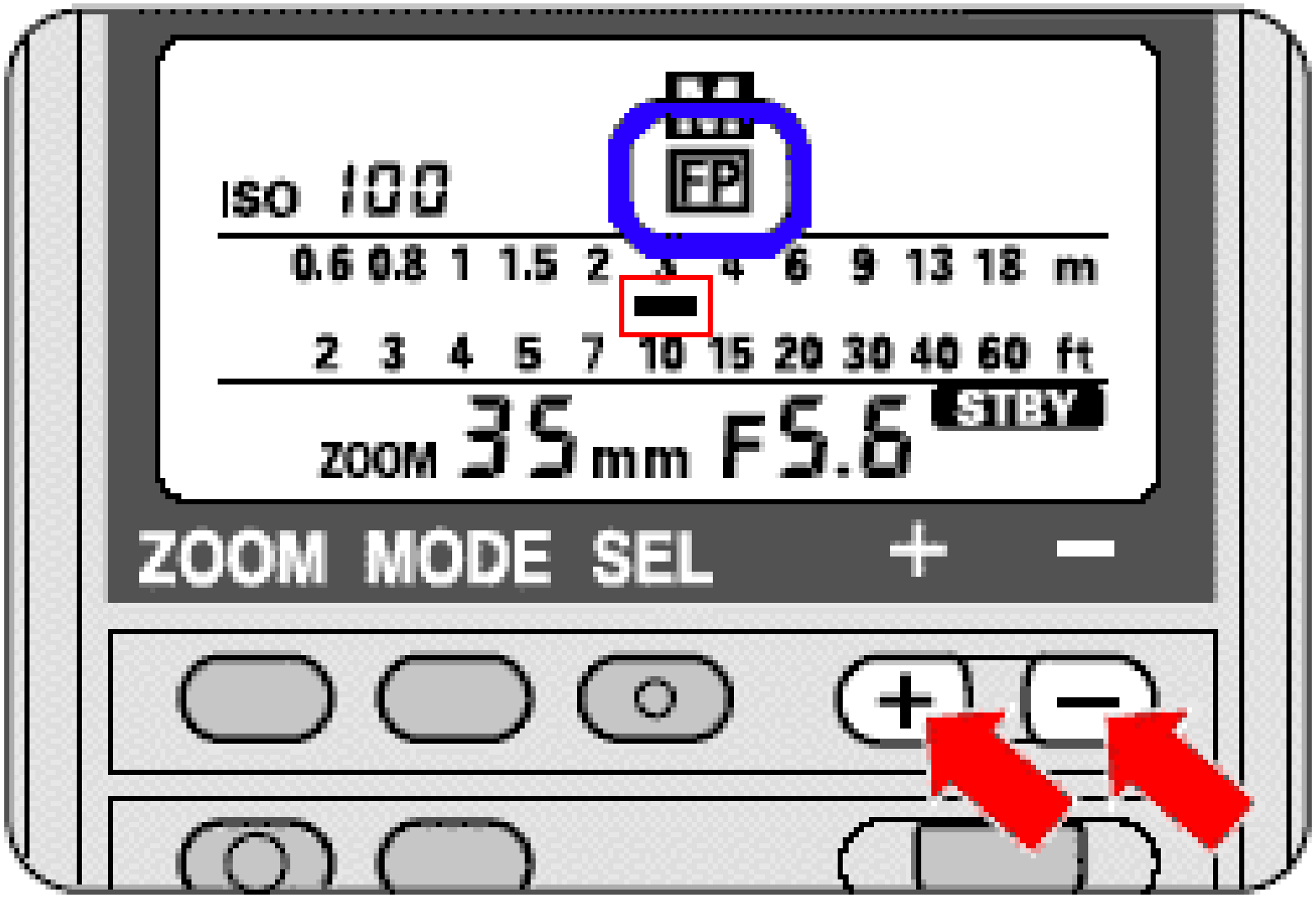

M
ISO 100
0,6 0,8 1 1,5 2 3 4 6 9 13 18 m
2 3 4 5 7 10 15 20 30 40 60 ft
M
ZOOM 35 mm F5.6
STBY
ZOOM MODE SEL
+
−


50
20
m
∞
15
7
5
22
22
16
11
9
5.4
3.5

Number of continuous flashes at six frames per sec.

Optional power source	Batteries Inside SB-28	Flash output			
		1/8	1/16	1/32	1/64
(SB-28 only)	All types	Up to 4	Up to 8	Up to 16	Up to 30
SD-7	AA-type alkaline-manganese	Up to 6	Up to 10	Up to 40	Up to 40
SD-8 SD-8A*	AA-type alkaline-manganese	Up to 5	Up to 10	Up to 20	
	AA-type NiCd			Up to 30	
	AA-type Ni-MH				
	Lithium				
SK-6 SK-6A*	AA-type alkaline-manganese	Up to 5	Up to 10	Up to 20	
	AA-type NiCd			Up to 30	
	AA-type Ni-MH				
	Lithium battery			Up to 20	

*Available in the European market only.


ISO 100
FP
0.6 0.8 1 1.5 2 3 4 6 9 13 18 m
2 3 4 5 7 10 15 20 30 40 60 ft
ZOOM 35 mm F5.6
STBY
ZOOM MODE SEL
+
−

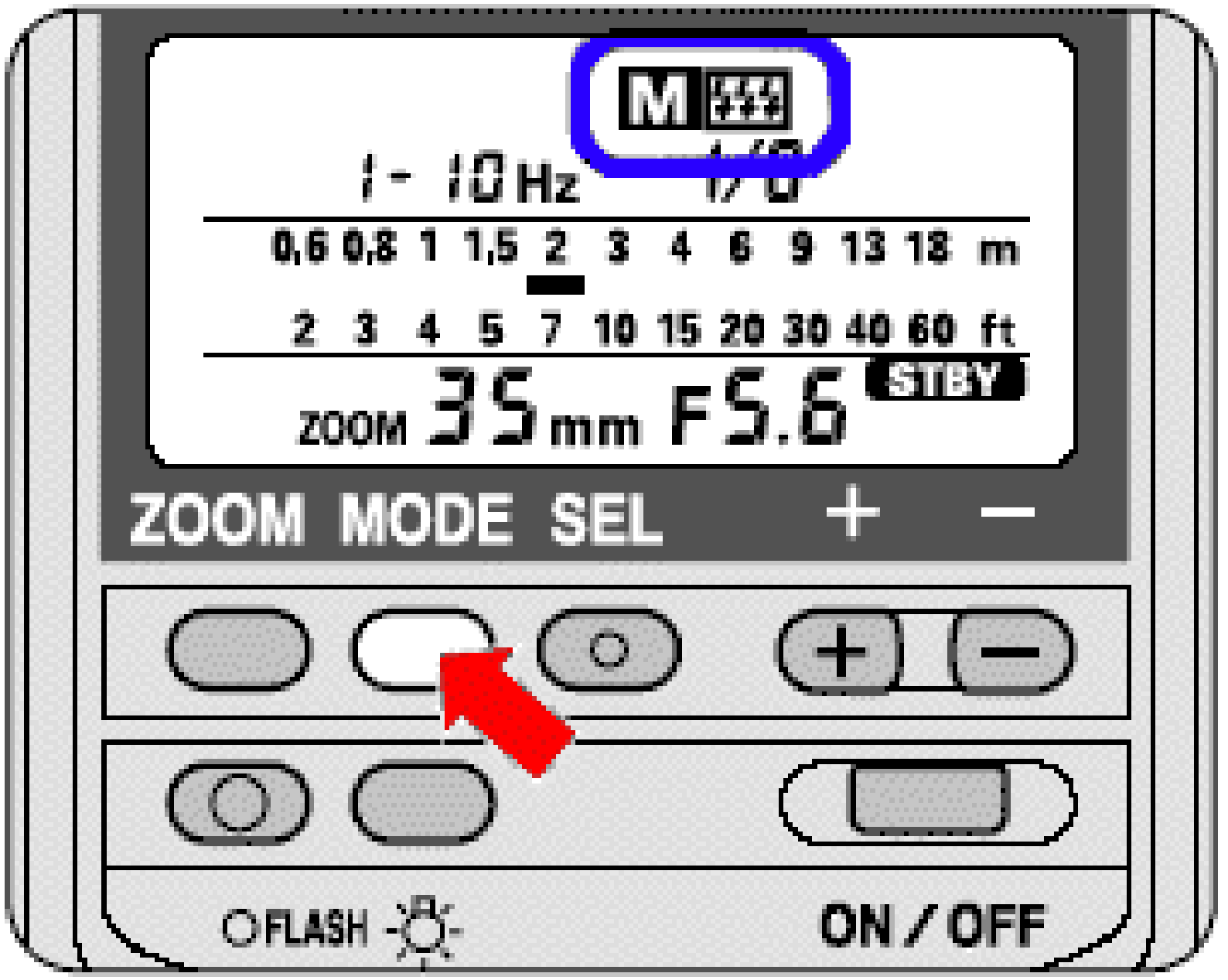
EE guide numbers (at ISO 100; for meters/feet)

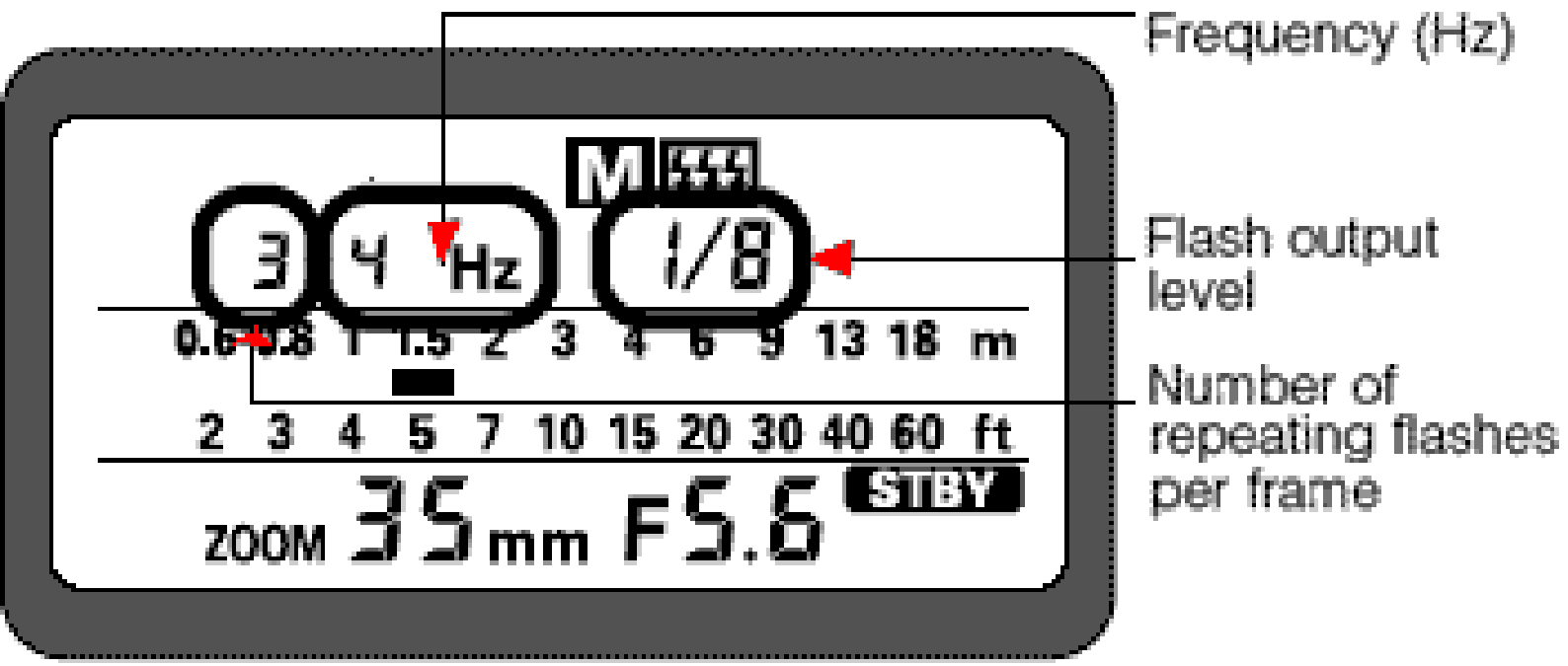
Shutter speed	Zoom-head position					
	24mm	28mm	35mm	50mm	70mm	85mm
1/250 sec.	14/46	15/50	17/56	20/65	23/74	24/77
1/500 sec.	10/33	11/36	12/39	14/46	16/52	17/56
1/1000 sec.	7/23	7.5/25	8.5/28	10/33	11/36	12/39
1/2000 sec.	5/16	5.3/17	6/20	7/23	8/26	8.5/28
1/4000 sec.	3.5/11	3.7/12	4.2/14	5/16	5.7/18	6/20

EE guide numbers vary with the ISO film speed, shutter speed, and zoom-head position.

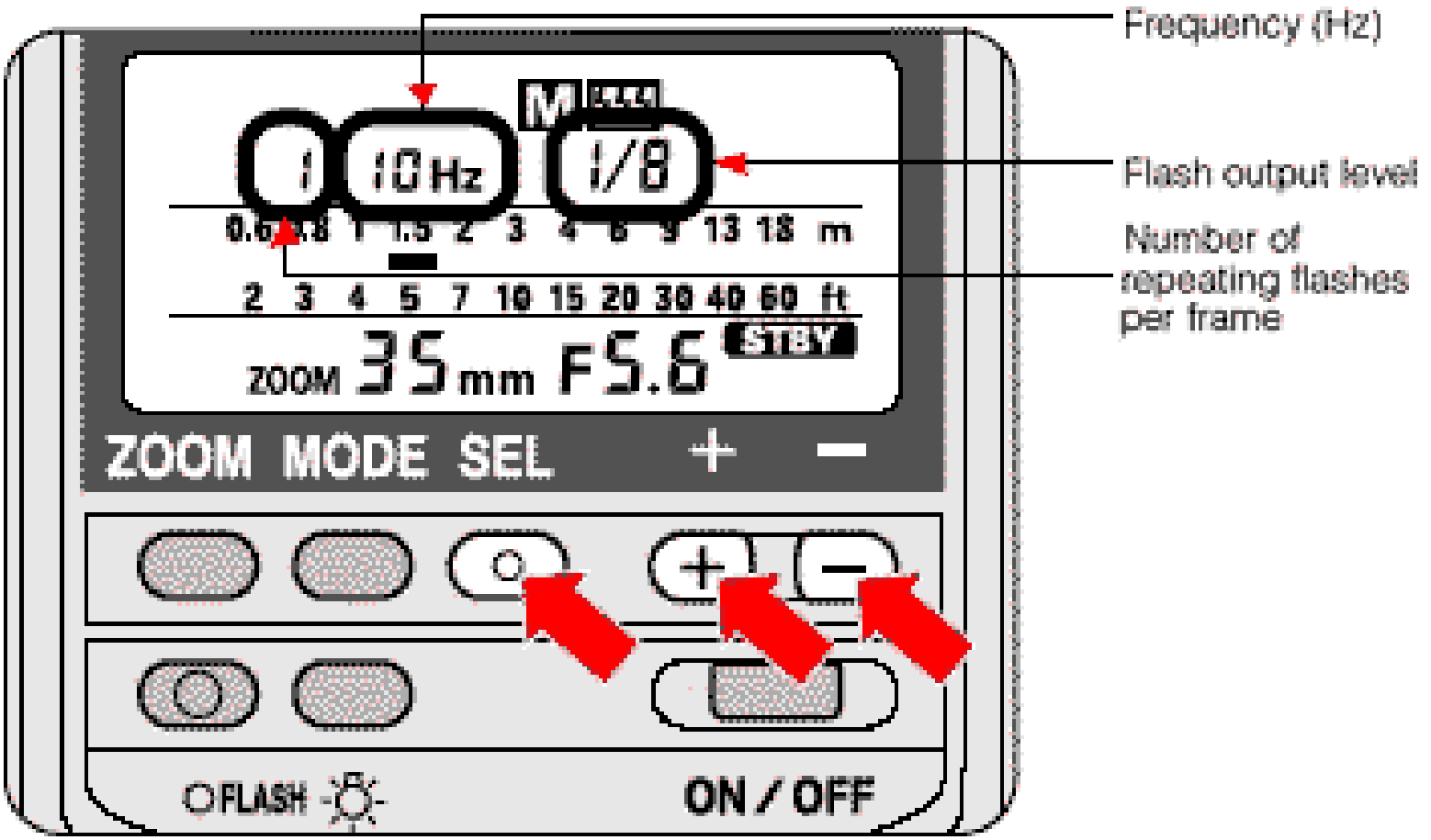
Adjustment factors for other ISO film speeds

ISO film speed	25	50	200	400	800
Factor	x 0.5	x 0.71	x 1.4	x 2	x 2.8


M
1 - 10 Hz
0,6 0,8 1 1,5 2 3 4 6 9 13 18 m
2 3 4 5 7 10 15 20 30 40 60 ft
ZOOM 35 mm F5.6
STBY
ZOOM MODE SEL
+
−
FLASH
ON / OFF


Frequency (Hz)
M
3
4 Hz
1/8
0.6 0.8 1 1.5 2 3 4 6 9 13 18 m
2 3 4 5 7 10 15 20 30 40 60 ft
ZOOM 35 mm F5.6
STBY
Flash output level
Number of repeating flashes per frame


32 22 16 11 8 5.6 3.5
32 22 16 11 8 5.6 3.5


Frequency (Hz)
Flash output level
Number of repeating flashes per frame
M
10 Hz
1/8
0.6 0.8 1 1.5 2 3 4 6 9 13 18 m
2 3 4 5 7 10 15 20 30 40 60 ft
ZOOM 35 mm F5.6
STBY
ZOOM MODE SEL
+
−
FLASH
ON / OFF

Maximum number of repeating flashes per frame

Frequency*	Flash output level			
	M1/8	M1/16	M1/32	M1/64
1–2 Hz	14	30	60	90
3 Hz	12	30	60	90
4 Hz	10	20	50	80
5 Hz	8	20	40	70
6 Hz	6	20	32	56
7 Hz	6	20	28	44
8 Hz	5	10	24	36
9 Hz	5	10	22	32
10 Hz	4	8	20	28
20–50 Hz	4	8	12	24

*Frequency (Hz) represents the number of flashes per second. The higher the number, the shorter the flash firing interval.

To calculate the correct aperture:

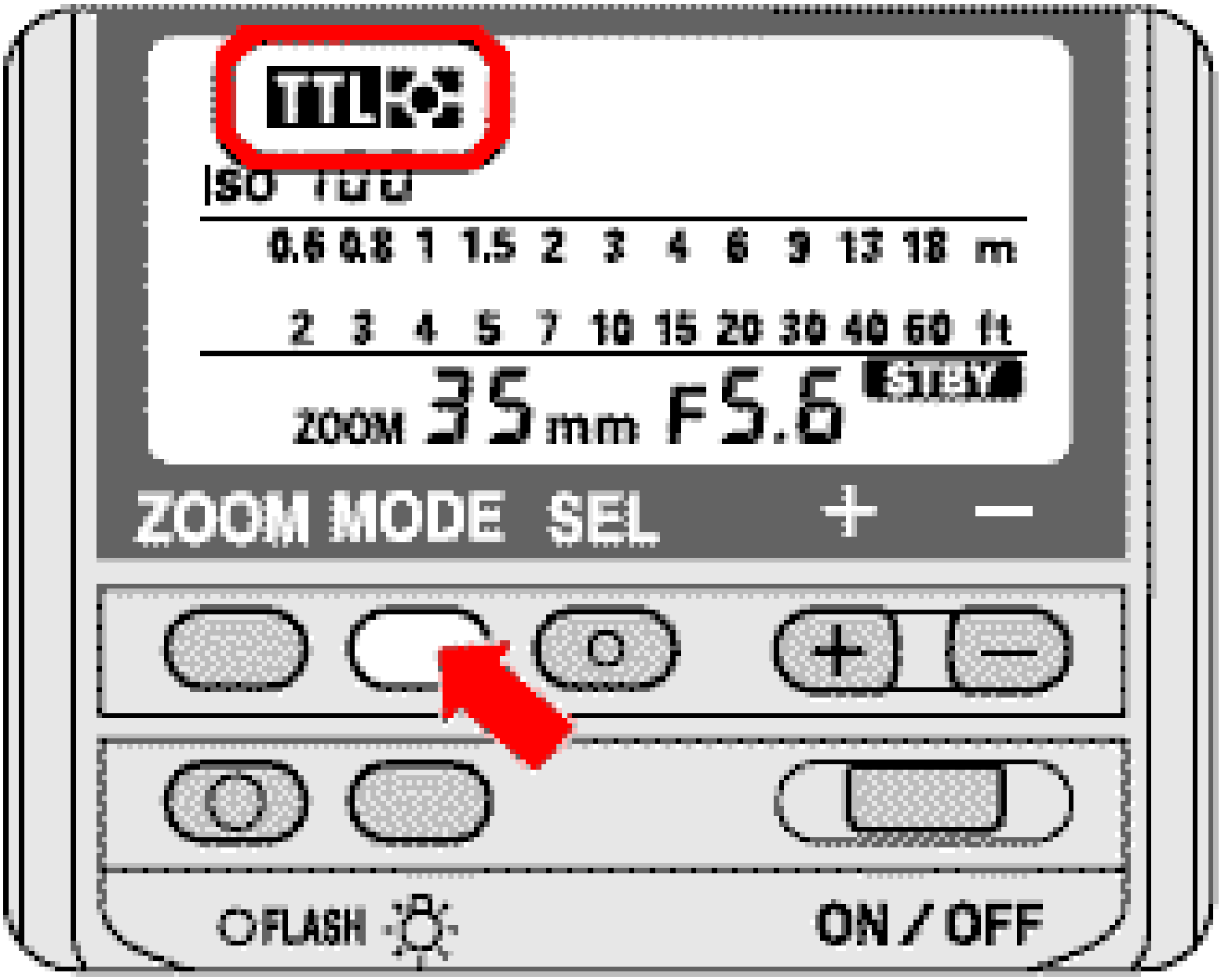
$$\text{f/stop (aperture)} = \frac{\text{Guide number (GN)}}{\text{Flash shooting distance (m/ft)}}$$

To calculate the shooting distance:

$$\text{Flash shooting distance (m/ft)} = \frac{\text{Guide number (GN)}}{\text{f/stop (aperture)}}$$

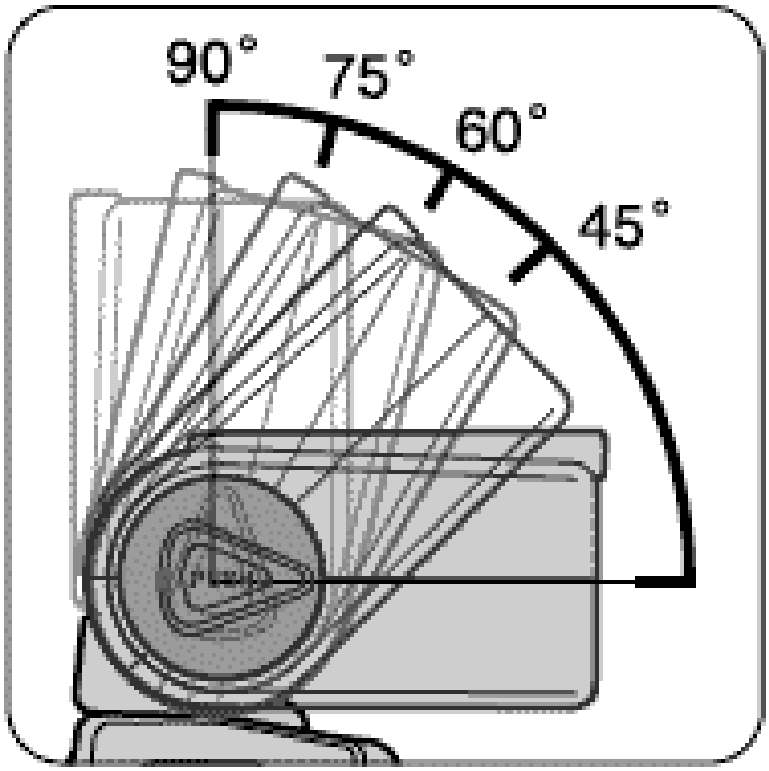
Guide numbers (at ISO 100: for m/ft at 20° C/68° F) in M and AUTO modes

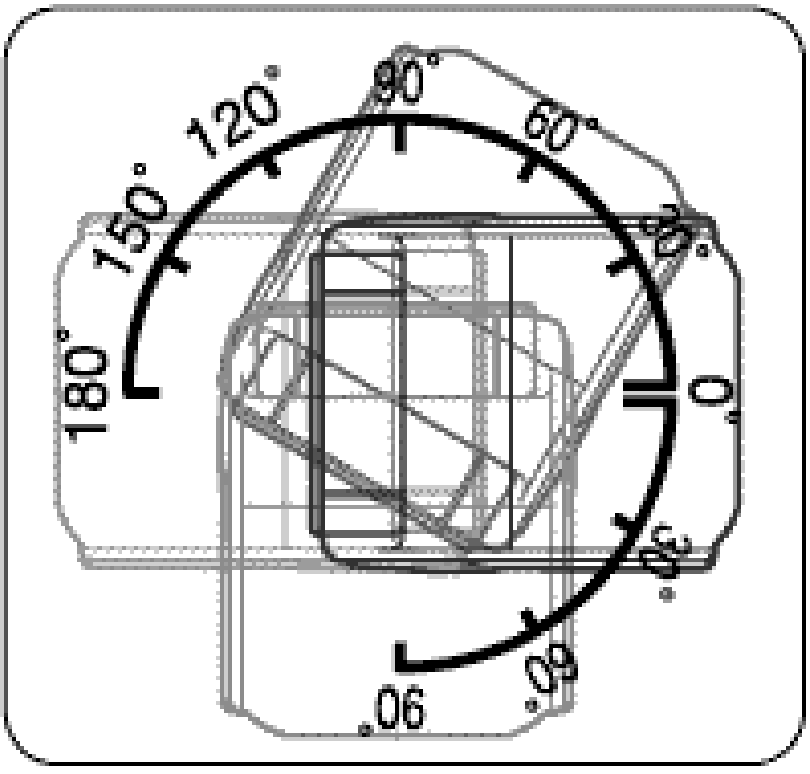
Flash output level	Zoom-head position							
	18mm	20mm	24mm	28mm	35mm	50mm	70mm	85mm
1/1 (full)	18/59	20/66	30/98	32/105	36/118	42/138	48/157	50/164
1/2	12.7/42	14/46	21/69	22.5/74	25.5/84	30/98	34/112	36/118
1/4	9/30	10/33	15/49	16/53	18/59	21/69	24/79	25/82
1/8	6.4/21	7/23	10.5/35	11.3/37	12.7/42	15/49	17/56	18/59
1/16	4.5/15	5/16	7.5/25	8/26	9/30	10.5/35	12/39	12.7/42
1/32	3.2/10	3.5/11	5.3/17	5.7/19	6.4/21	7.5/25	8.5/28	9/30
1/64	2.3/8	2.5/8	3.8/13	4/13	4.5/15	5.3/17	6.0/20	6.3/21

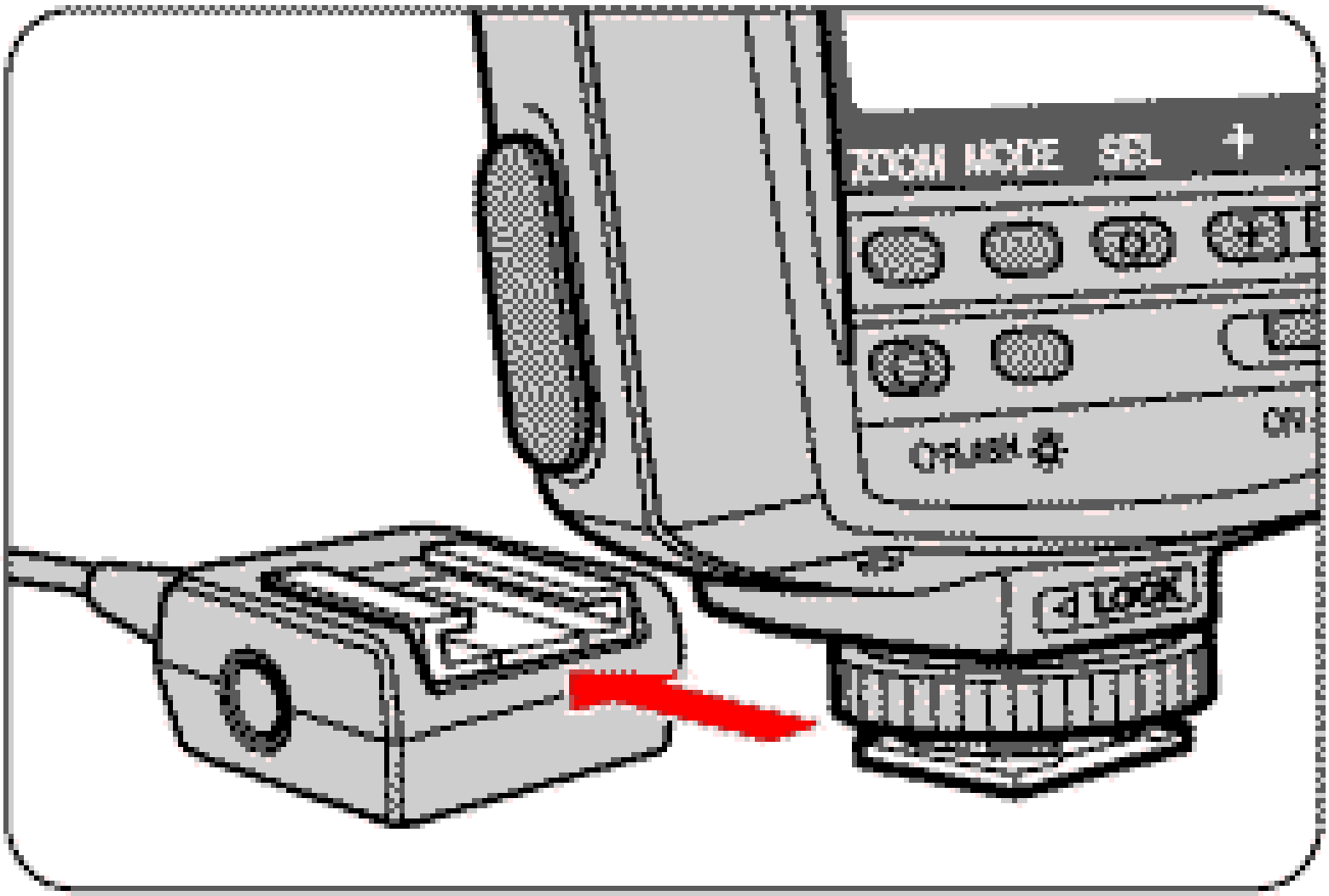

TTL
ISO 100
0.6 0.8 1 1.5 2 3 4 6 9 13 18 m
2 3 4 5 7 10 15 20 30 40 60 ft
ZOOM 35 mm F5.6
ZOOM MODE SEL
+
−
FLASH
ON / OFF

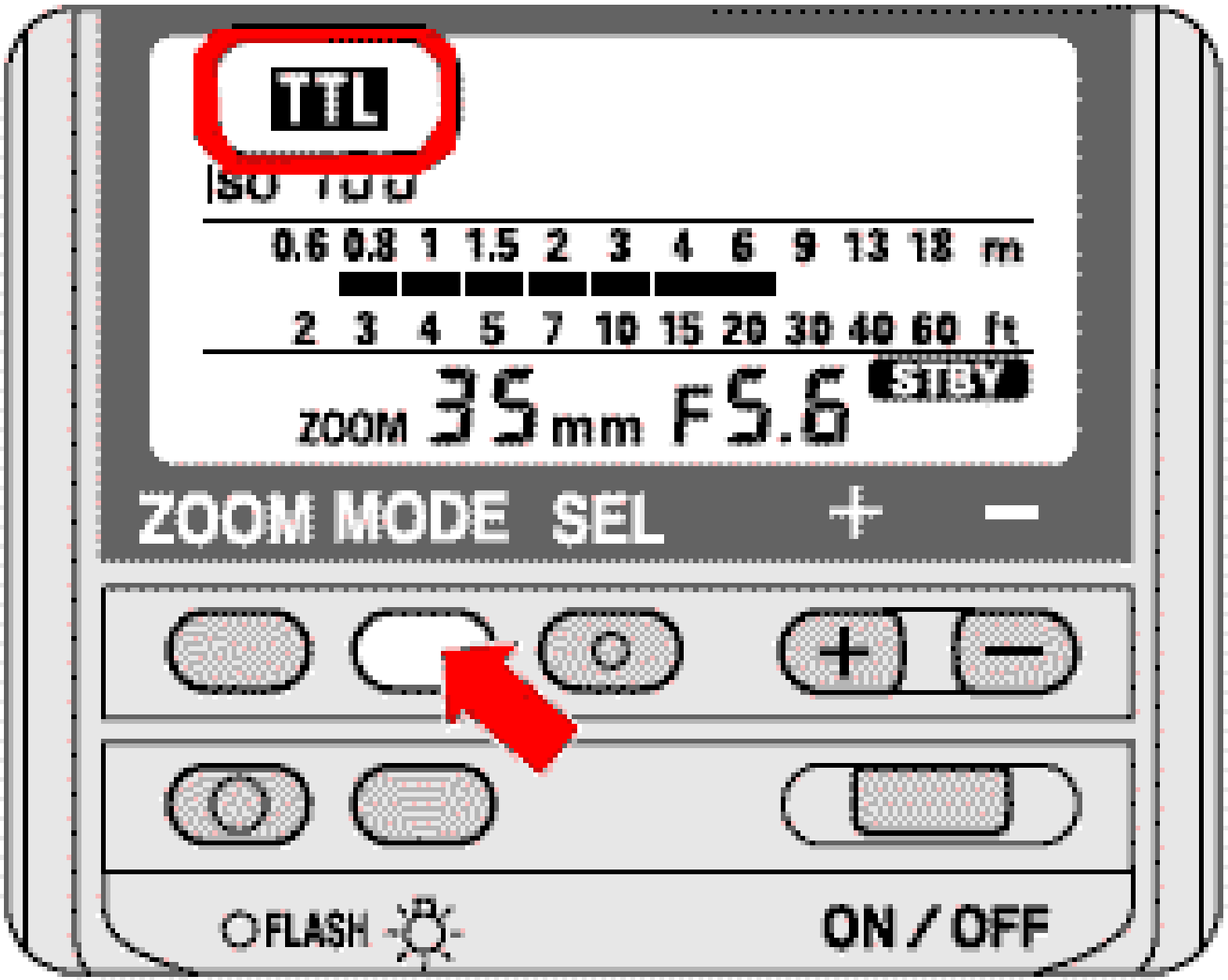
Bounce flash shooting using diffused light

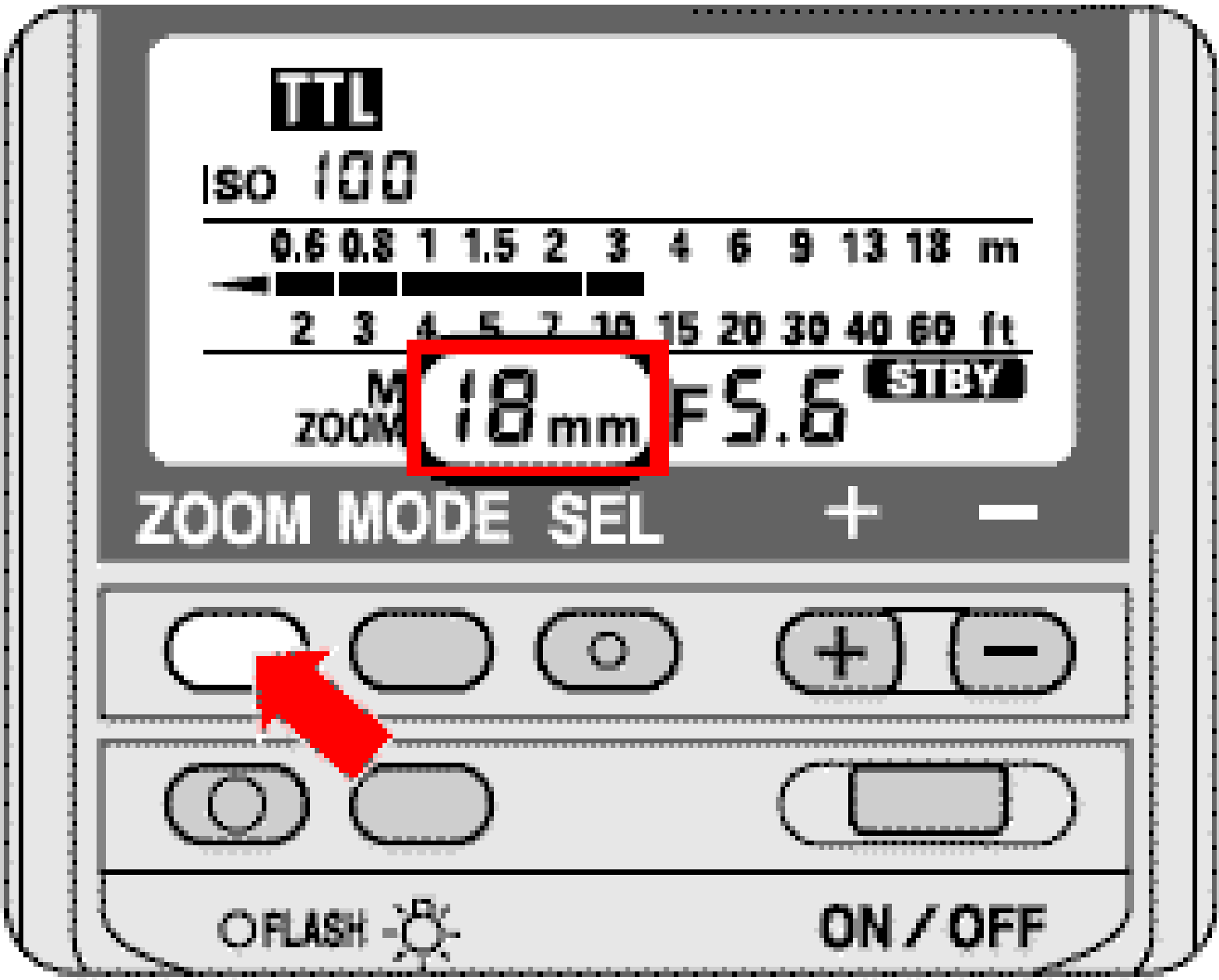
Normal flash shooting using direct flash


90°
75°
60°
45°

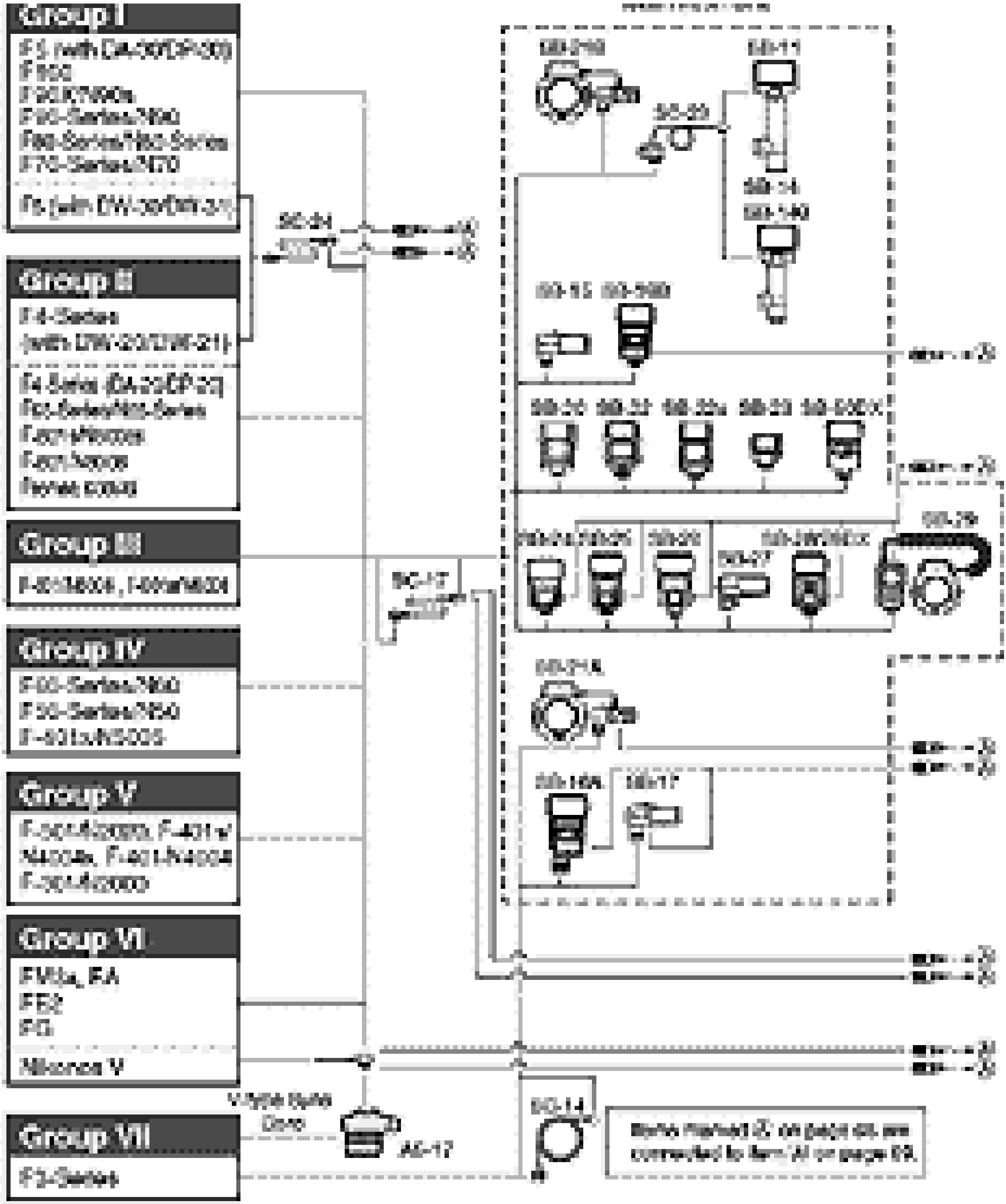

180°
150°
120°
90°
60°
30°
0°
30°
60°
90°
120°


ZOOM MODE SEL +
PUSH
OR
LOCK

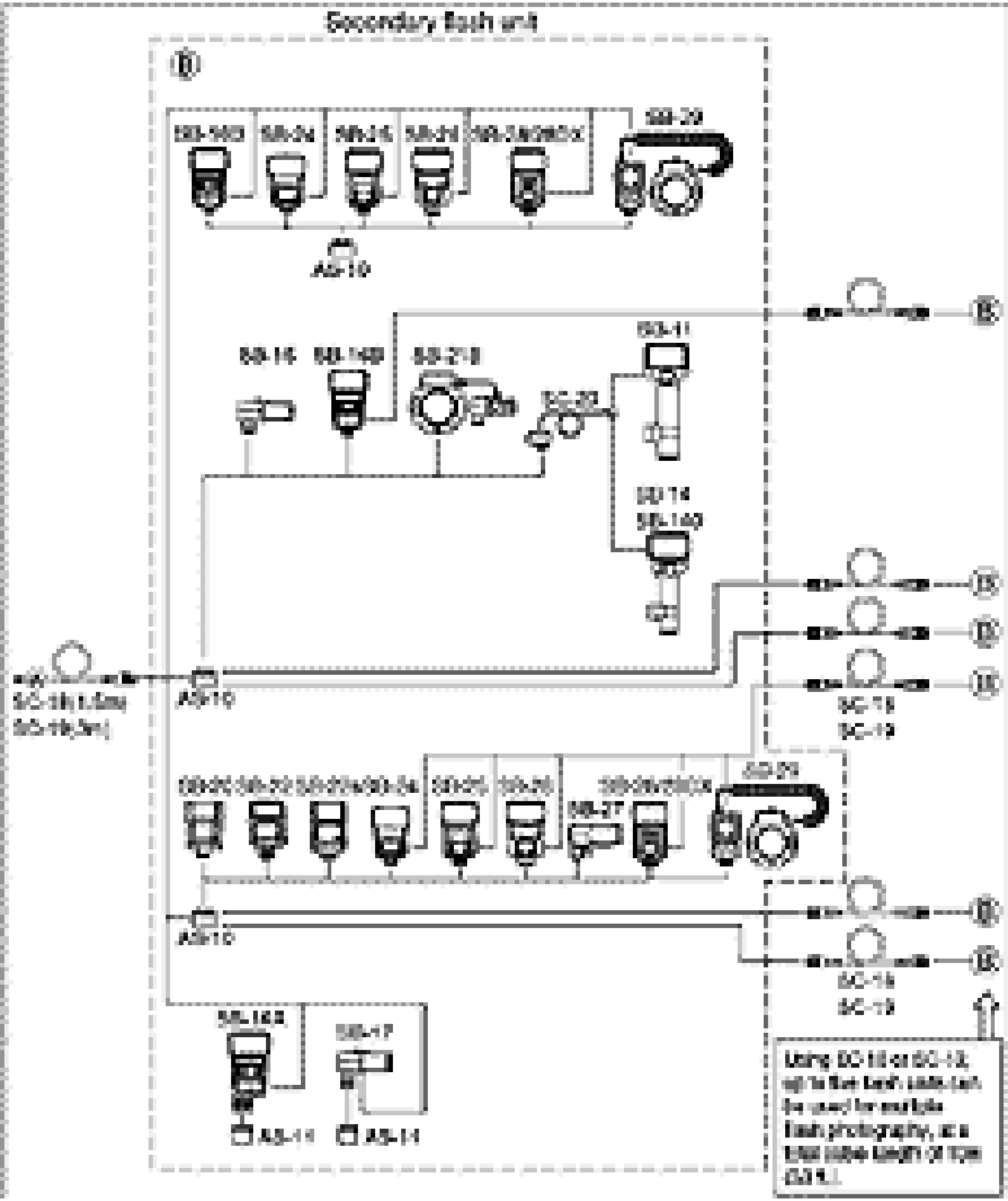

TTL
0.6 0.8 1 1.5 2 3 4 6 9 13 18 m
2 3 4 5 7 10 15 20 30 40 60 ft
ZOOM 35 mm F5.6
ZOOM MODE SEL
+
−
FLASH
ON / OFF

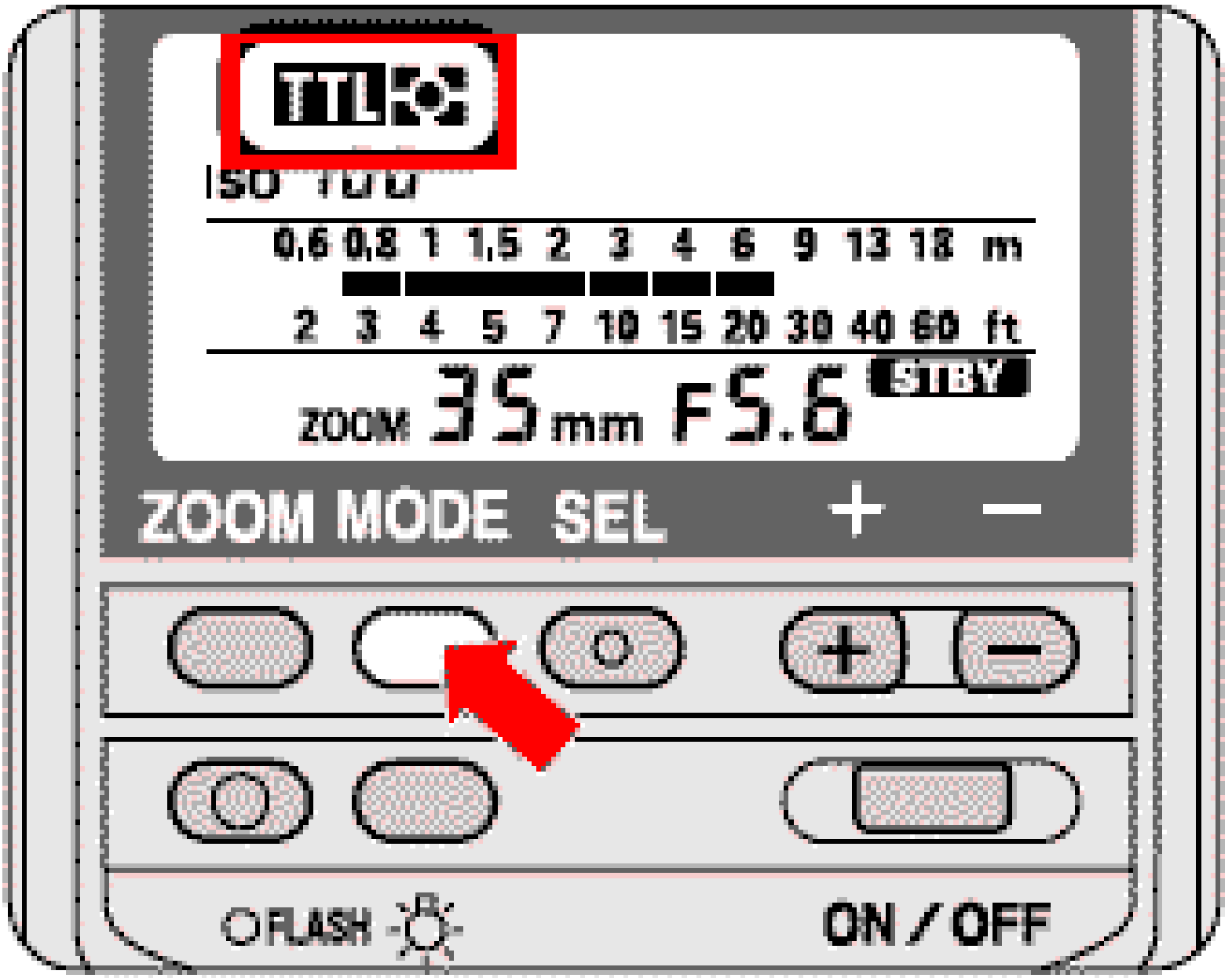

TTL
ISO 100
0.6 0.8 1 1.5 2 3 4 6 9 13 18 m
2 3 4 5 7 10 15 20 30 40 60 ft
M
ZOOM
18 mm
F5.6
STBY
ZOOM MODE SEL
+
−
FLASH
ON / OFF

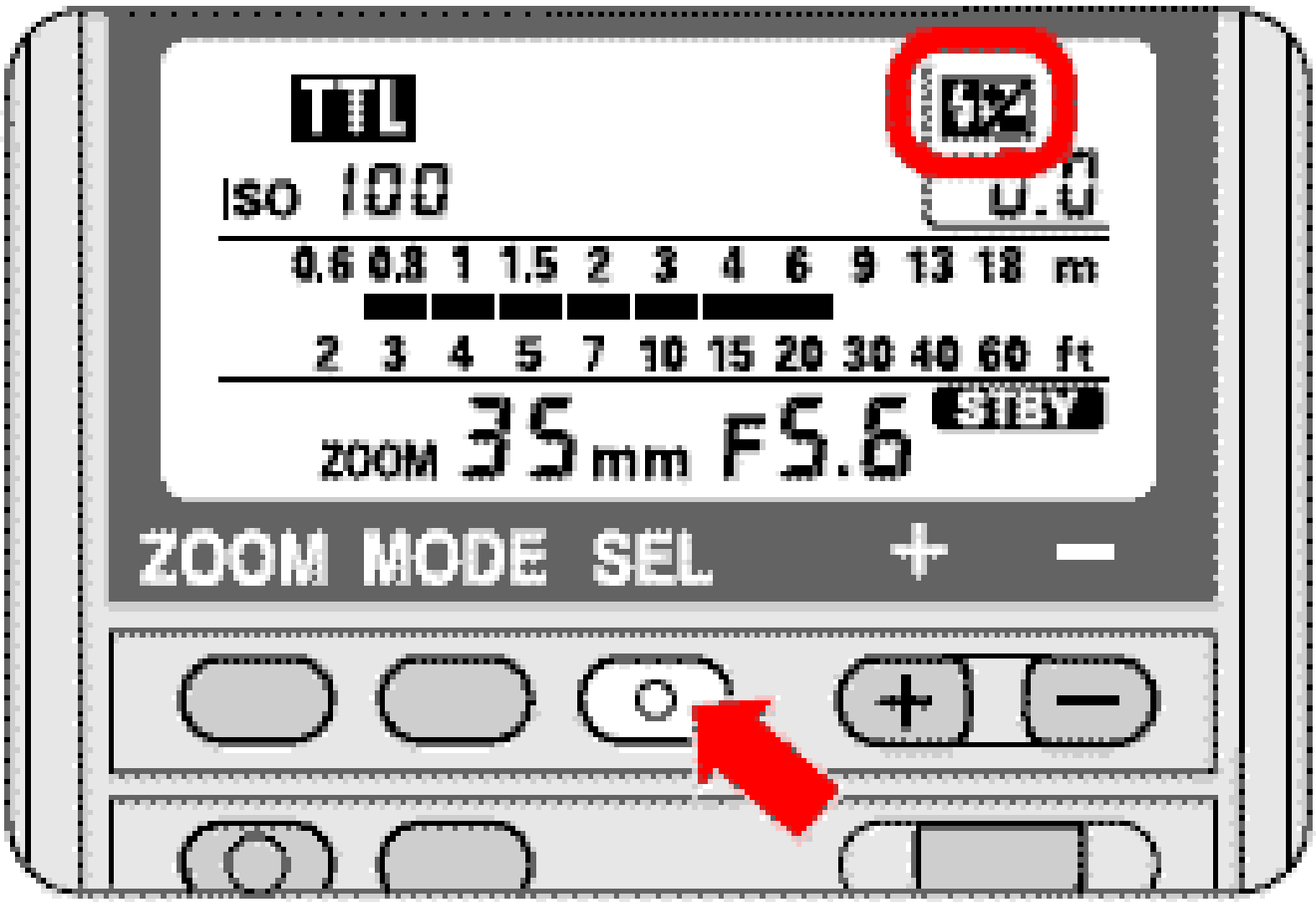

200-600mm f/9.5
85-250mm
f/4
50-300mm f/4.5
43-86mm f/3.5
80-200mm f/4.5

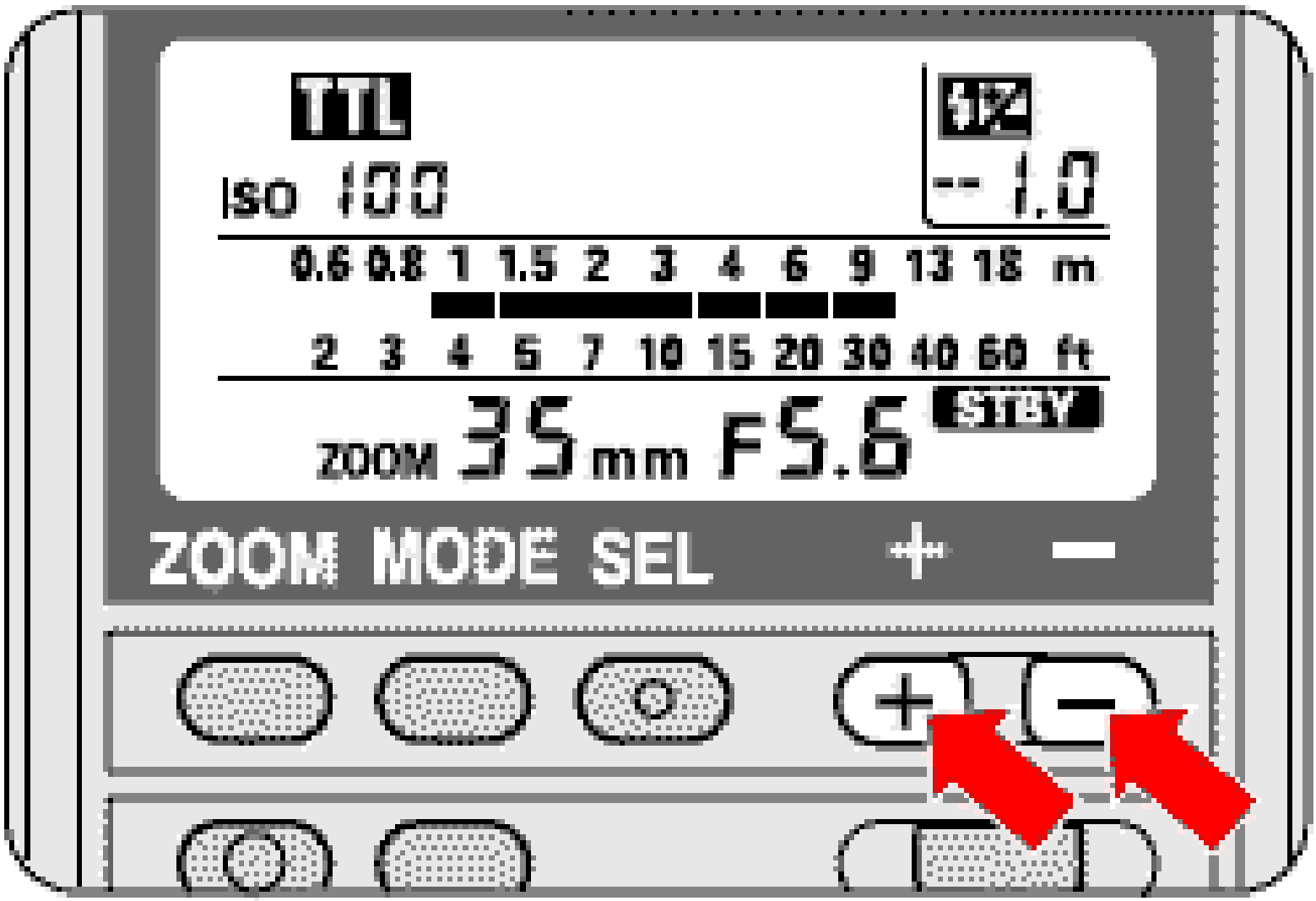


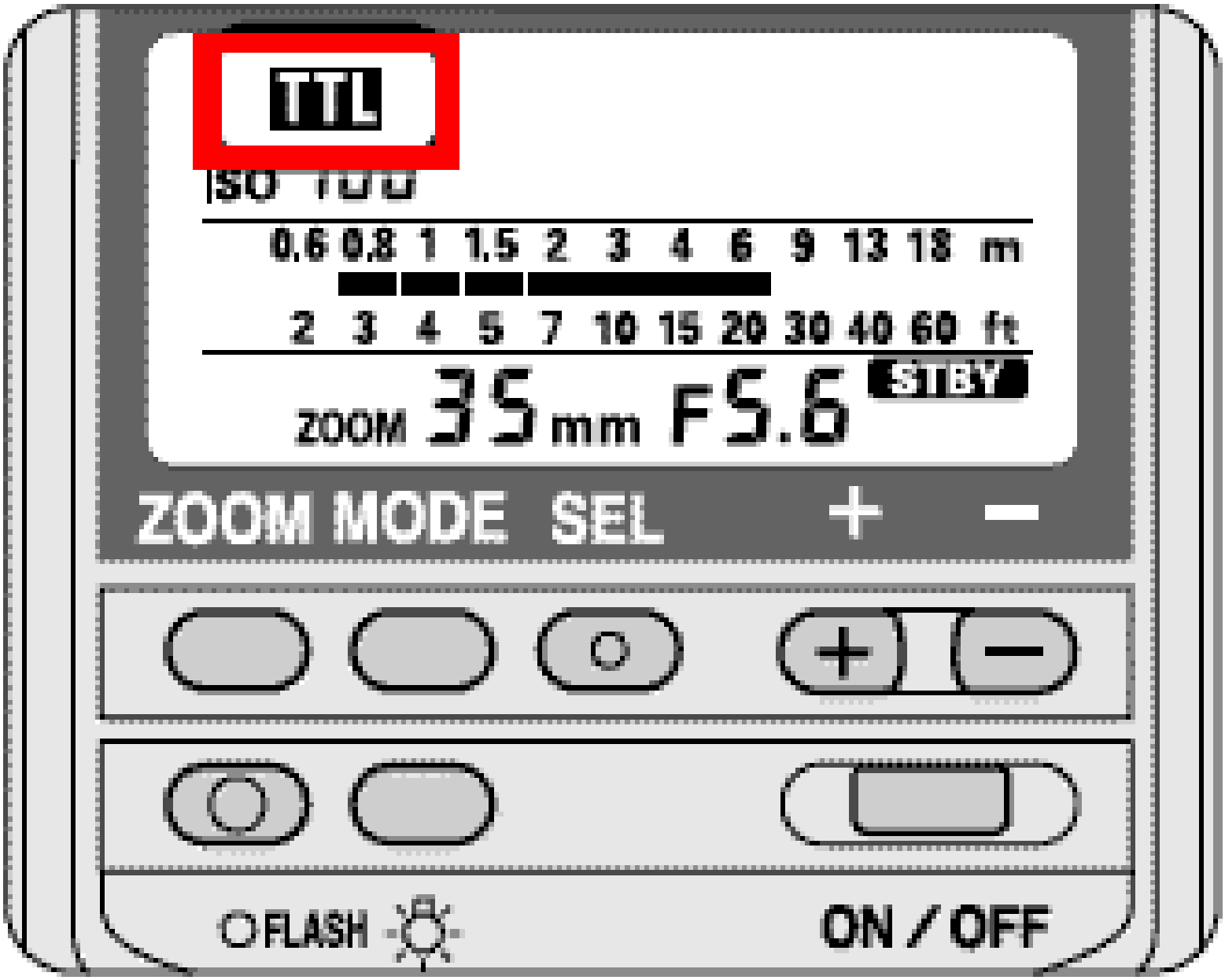
Group I
F5 (with DA-30/DP-30)
F100
F90X/N90s
F90-Series/N90
F80-Series/N80-Series
F70-Series/N70
F5 (with DW-30/DW-31)
Group II
F4-Series
(with DW-20/DW-21)
F4-Series (DA-20/DP-20)
F65-Series/N65-Series
F-601M/N6000
F-601/N6006
Pronea 600i
Group III
F-801s/N8008s, F-801/N8008
Group IV
F60-Series/N60
F50-Series/N50
F-401x/N5005
Group V
F-301/N2000, F-401s/
N4004s, F-401/N4004
F-301/N2000
Group VI
FM3a, FA
FE2
FG
Nikonos V
Group VII
F3-Series


Secondary flash unit
SB-16
SB-14B
SB-21B
SB-30
SB-11
SB-14
SB-14B
SC-18
SC-19
SB-25
SB-26
SB-27
SB-17
AS-11
AS-11
Using SC-18 or SC-19, up to five flash units can be used for multiple flash photography, at a total cable length of 10m (33ft).


TTL
ISO 100
0,6 0,8 1 1,5 2 3 4 6 9 13 18 m
2 3 4 5 7 10 15 20 30 40 60 ft
ZOOM 35 mm F5.6
STBY
ZOOM MODE SEL
+
−
FLASH
ON / OFF

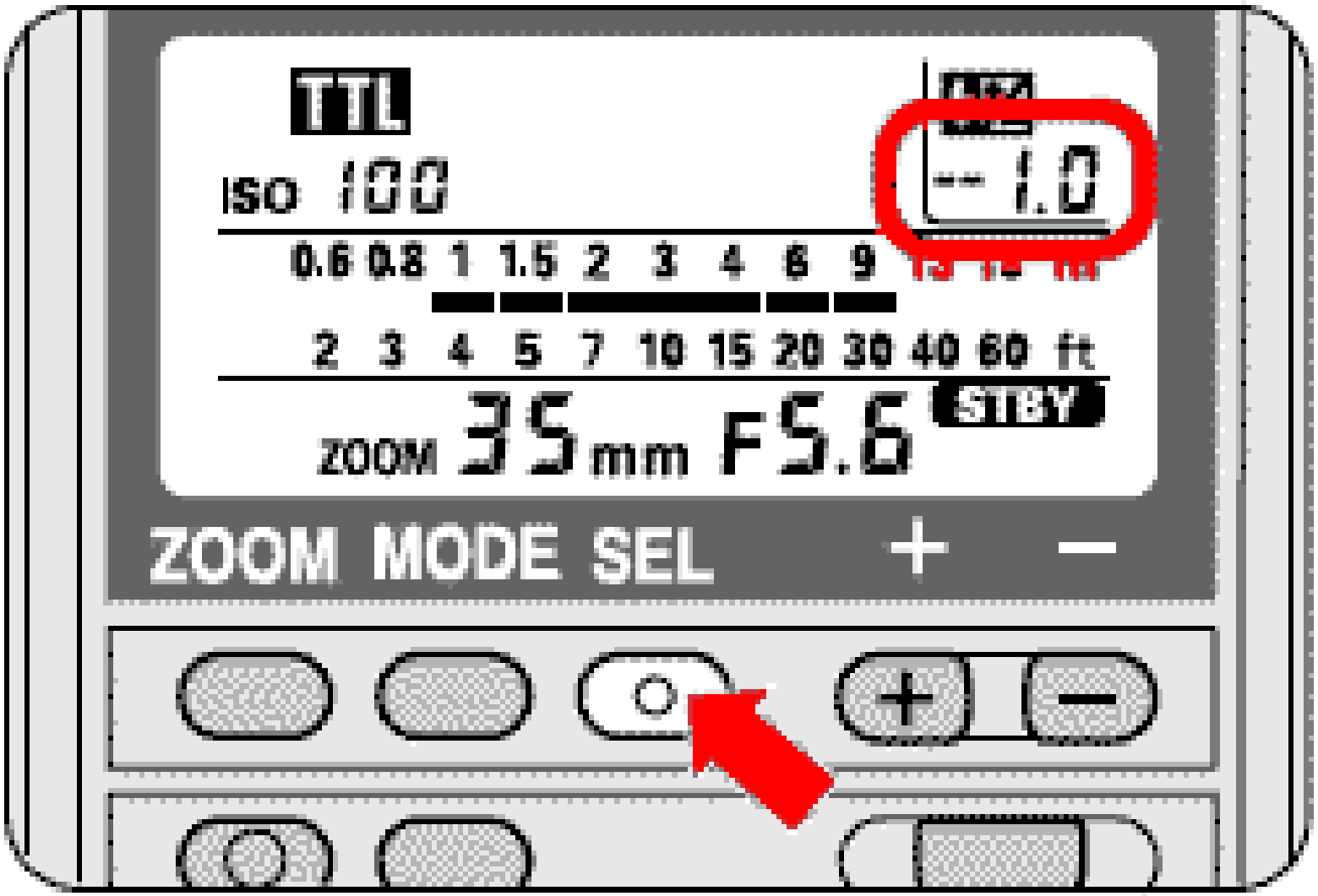

TTL
ISO 100
0.6 0.8 1 1.5 2 3 4 6 9 13 18 m
2 3 4 5 7 10 15 20 30 40 60 ft
ZOOM 35 mm F5.6
STBY
ZOOM MODE SEL
+
−

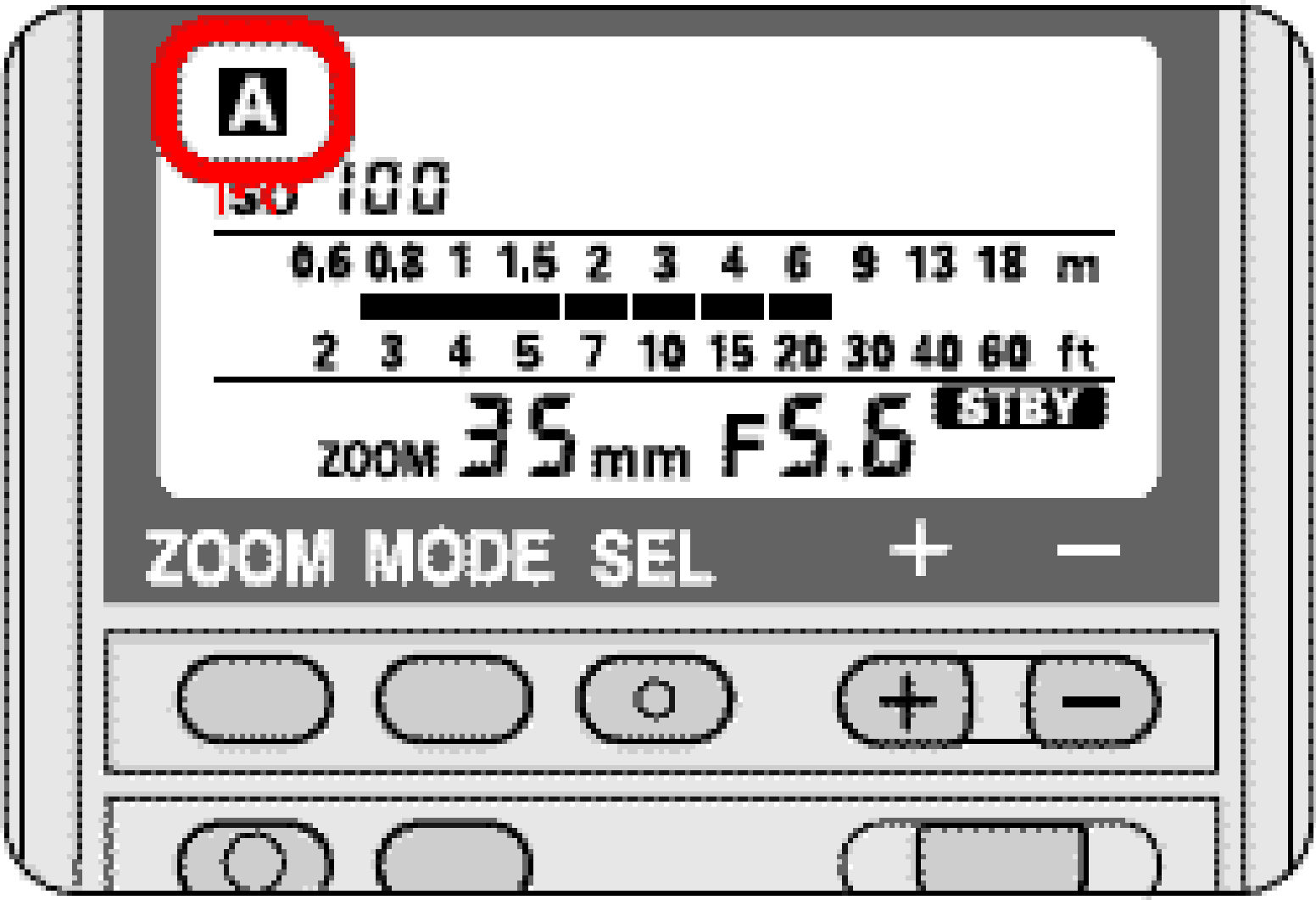

TTL
ISO 100
-- 1.0
0.6 0.8 1 1.5 2 3 4 6 9 13 18 m
2 3 4 5 7 10 15 20 30 40 60 ft
ZOOM 35 mm F5.6
ZOOM MODE SEL
+
−

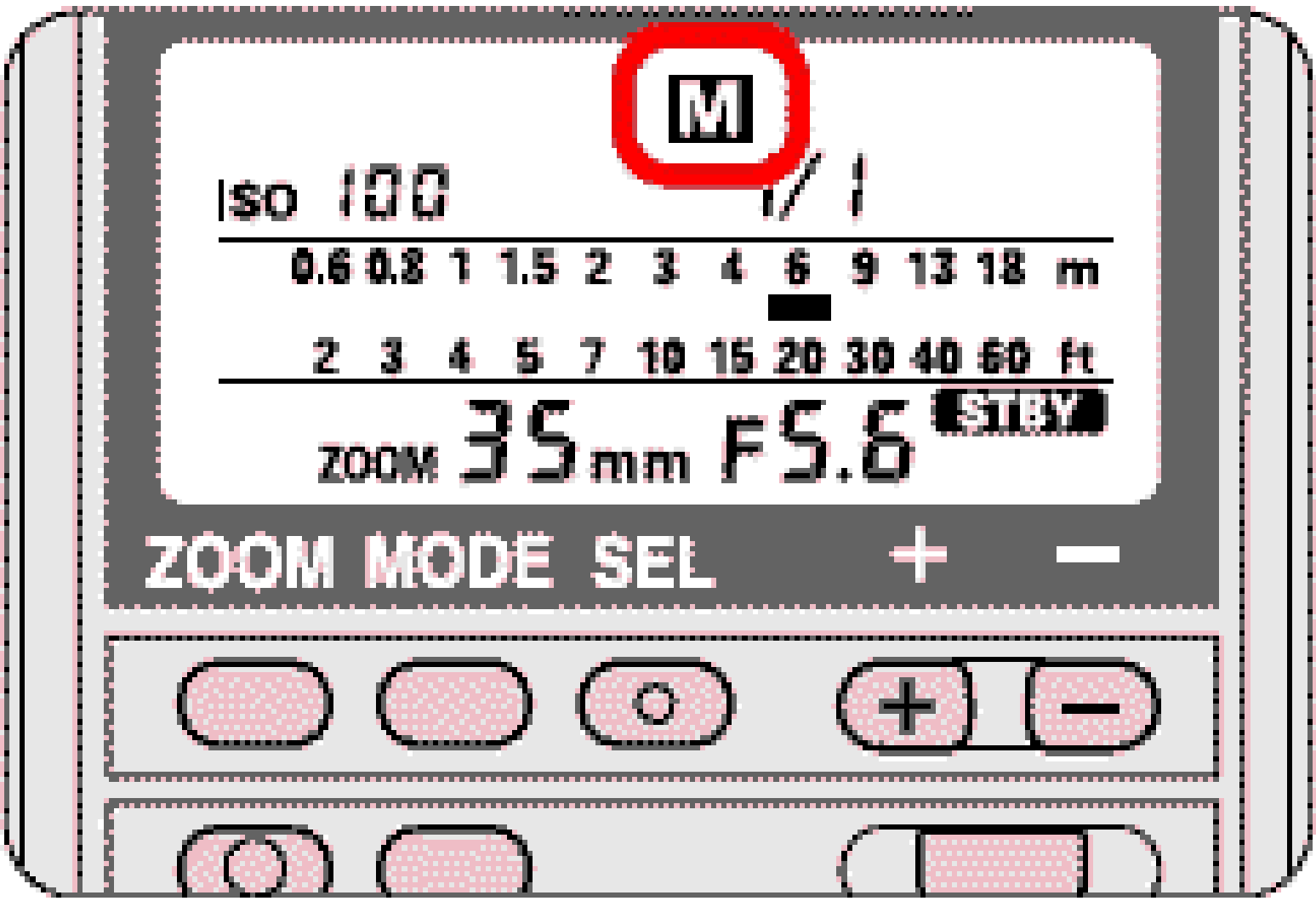

TTL
0,6 0,8 1 1,5 2 3 4 6 9 13 18 m
2 3 4 5 7 10 15 20 30 40 60 ft
ZOOM 35 mm F5.6
STBY
ZOOM MODE SEL
+
−
FLASH
ON / OFF

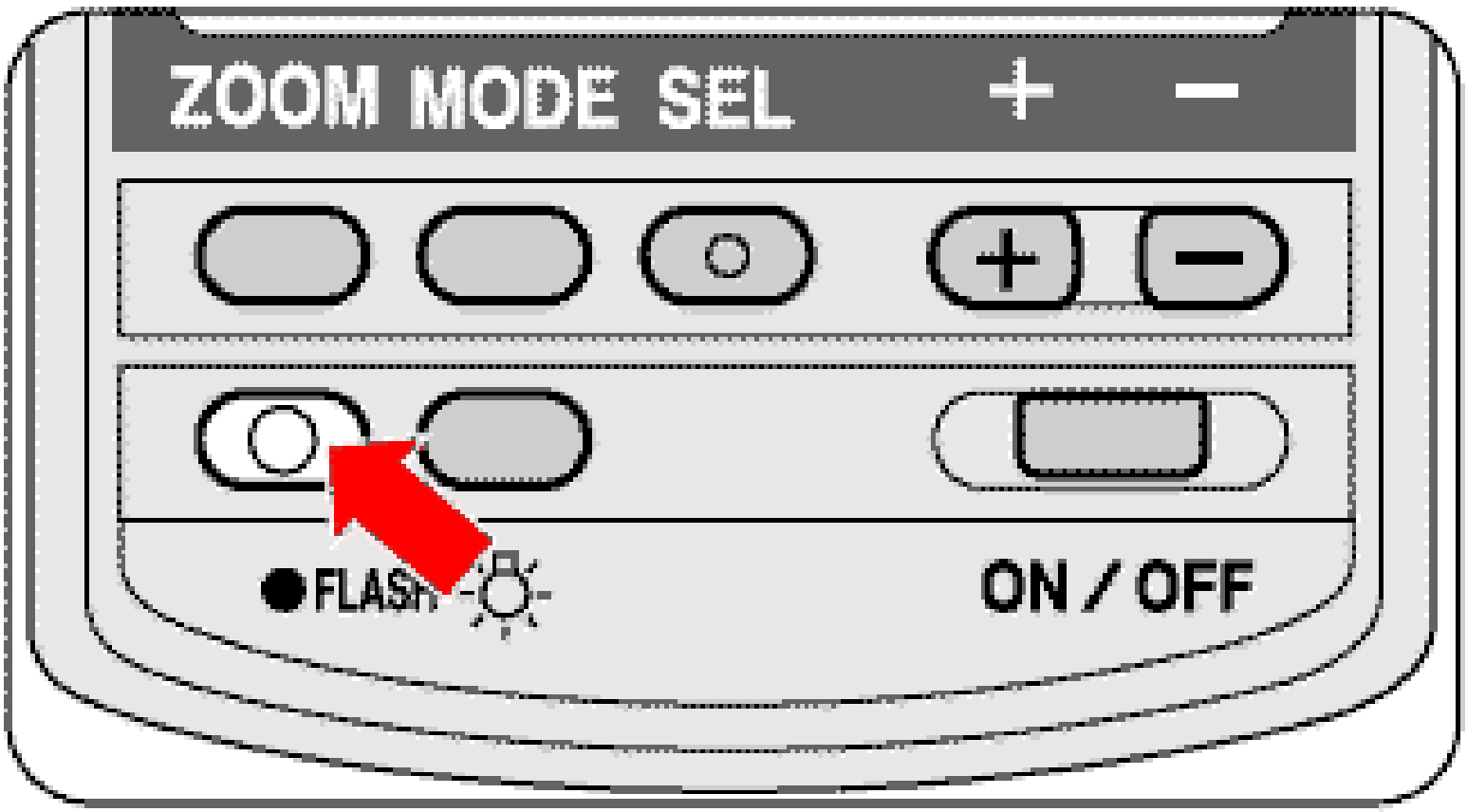
Exposure compensation values possible with various film speeds

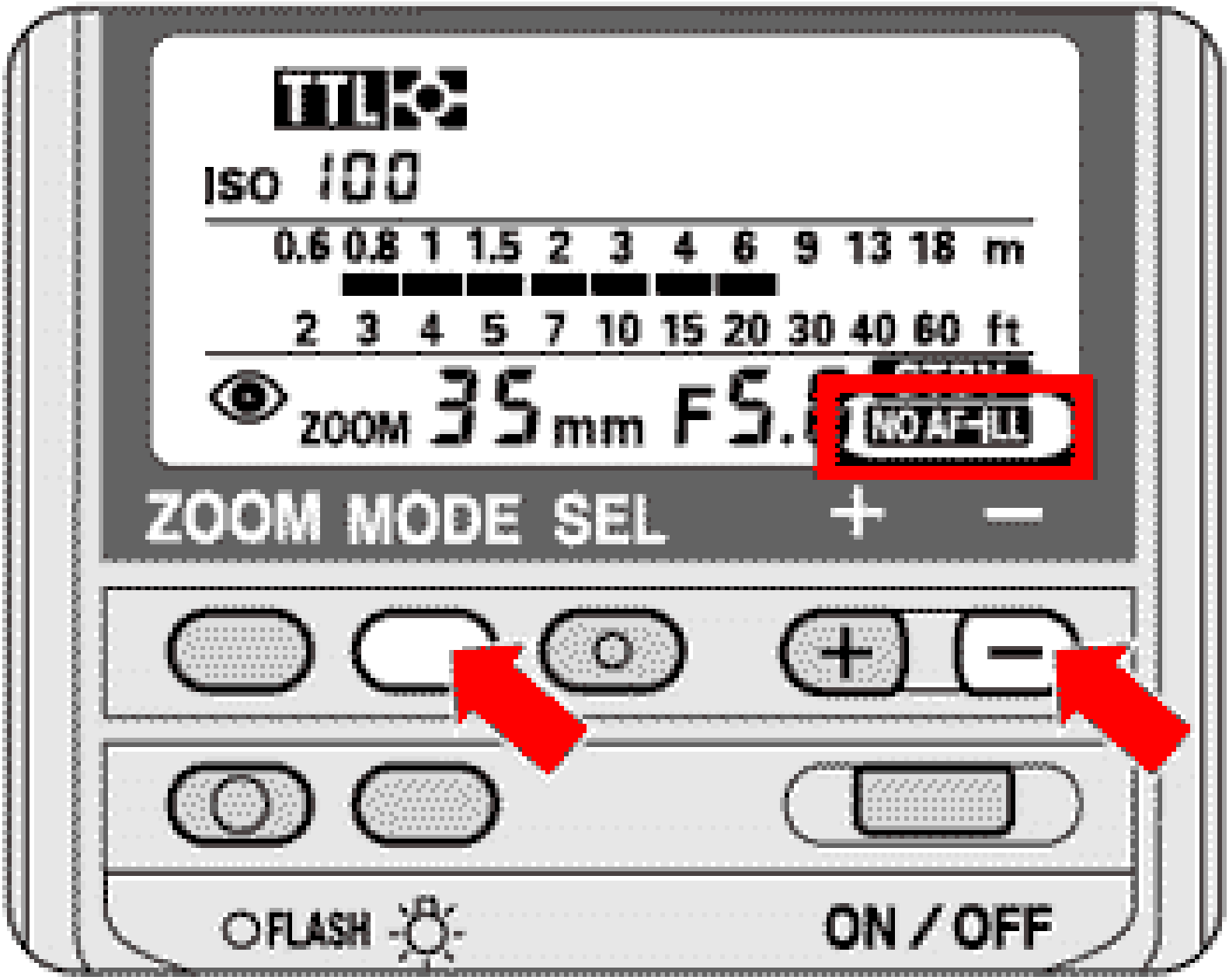
Film speed	Exposure compensation value				
	+2	+1	0	−1	−2
ISO 25	—	—	25	50	100
ISO 50	—	25	50	100	200
ISO 100	25	50	100	200	400
ISO 200	50	100	200	400	800
ISO 400	100	200	400	800	—
ISO 800/1000	200	400	800	—	—

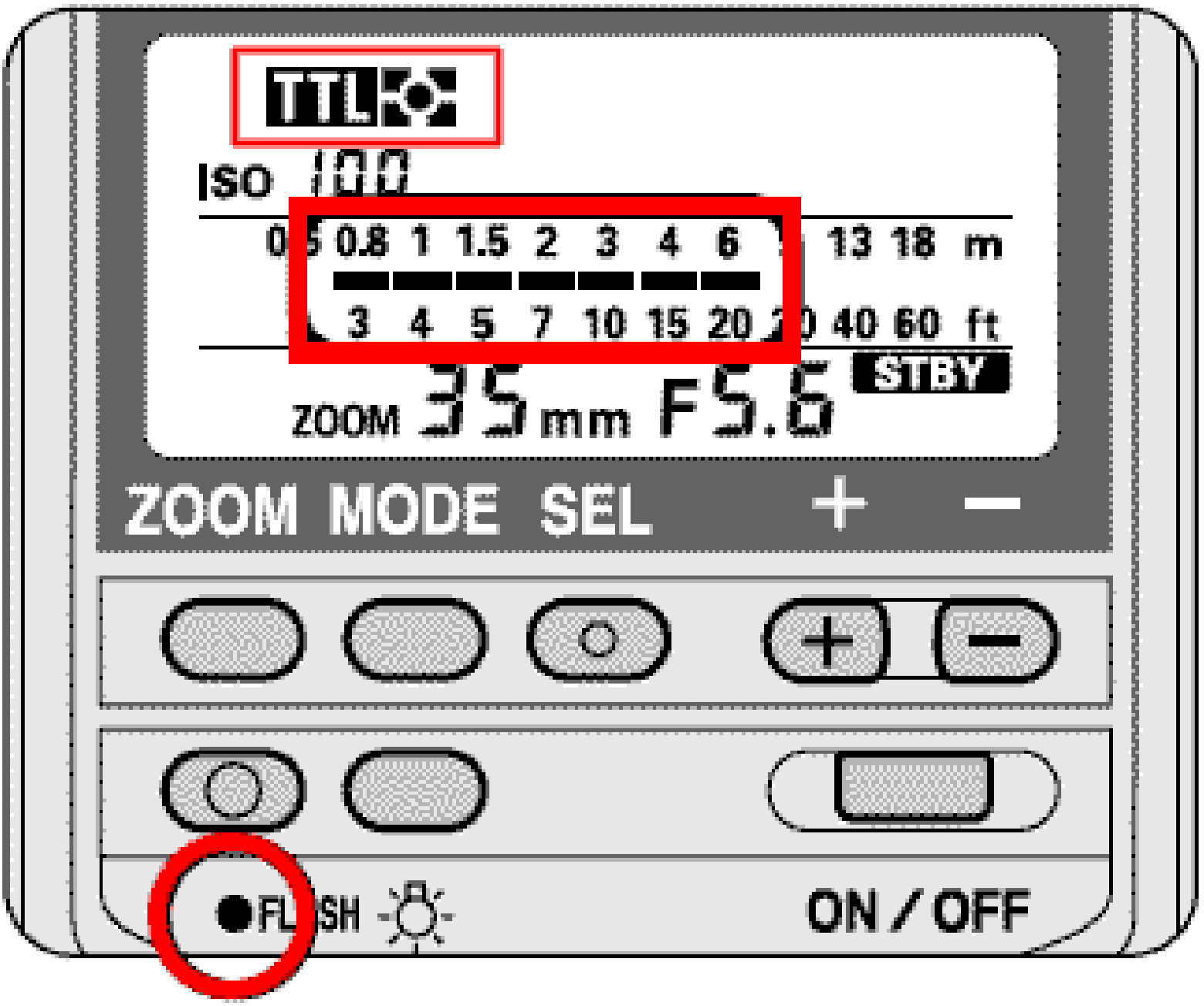

TTL
ISO 100
-- 1.0
0.6 0.8 1 1.5 2 3 4 6 9
2 3 4 5 7 10 15 20 30 40 60 ft
ZOOM 35 mm F5.6
STBY
ZOOM MODE SEL
+
−


A
ISO 100
0,6 0,8 1 1,5 2 3 4 6 9 13 18 m
2 3 4 5 7 10 15 20 30 40 60 ft
ZOOM 35 mm F5.6
STBY
ZOOM MODE SEL
+
—

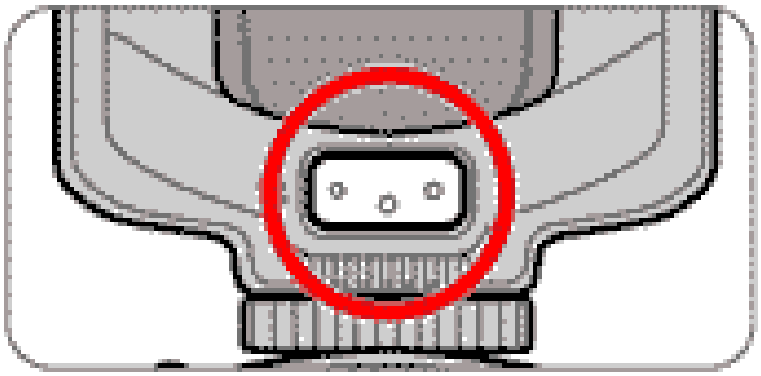

M
ISO 100
0.6 0.8 1 1.5 2 3 4 6 9 13 18 m
2 3 4 5 7 10 15 20 30 40 60 ft
ZOOM 35mm F5.6
ZOOM MODE SEL
+
−


ZOOM MODE SEL
+
−
+
−
FLASH
ON / OFF

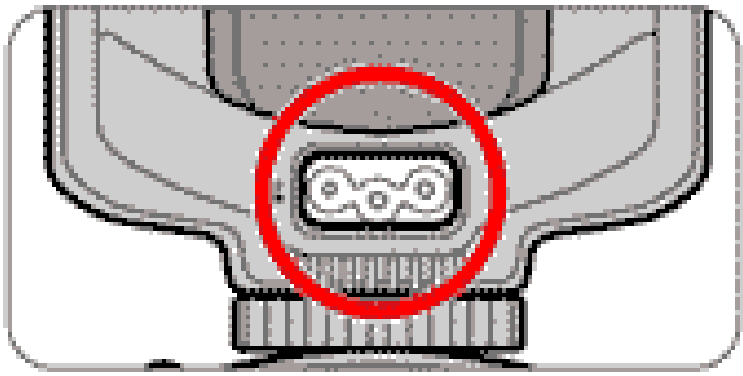

TTL
ISO 100
0.6 0.8 1 1.5 2 3 4 6 9 13 18 m
2 3 4 5 7 10 15 20 30 40 60 ft
ZOOM 35 mm
NO AF
ZOOM MODE SEL
+
−
FLASH
ON / OFF

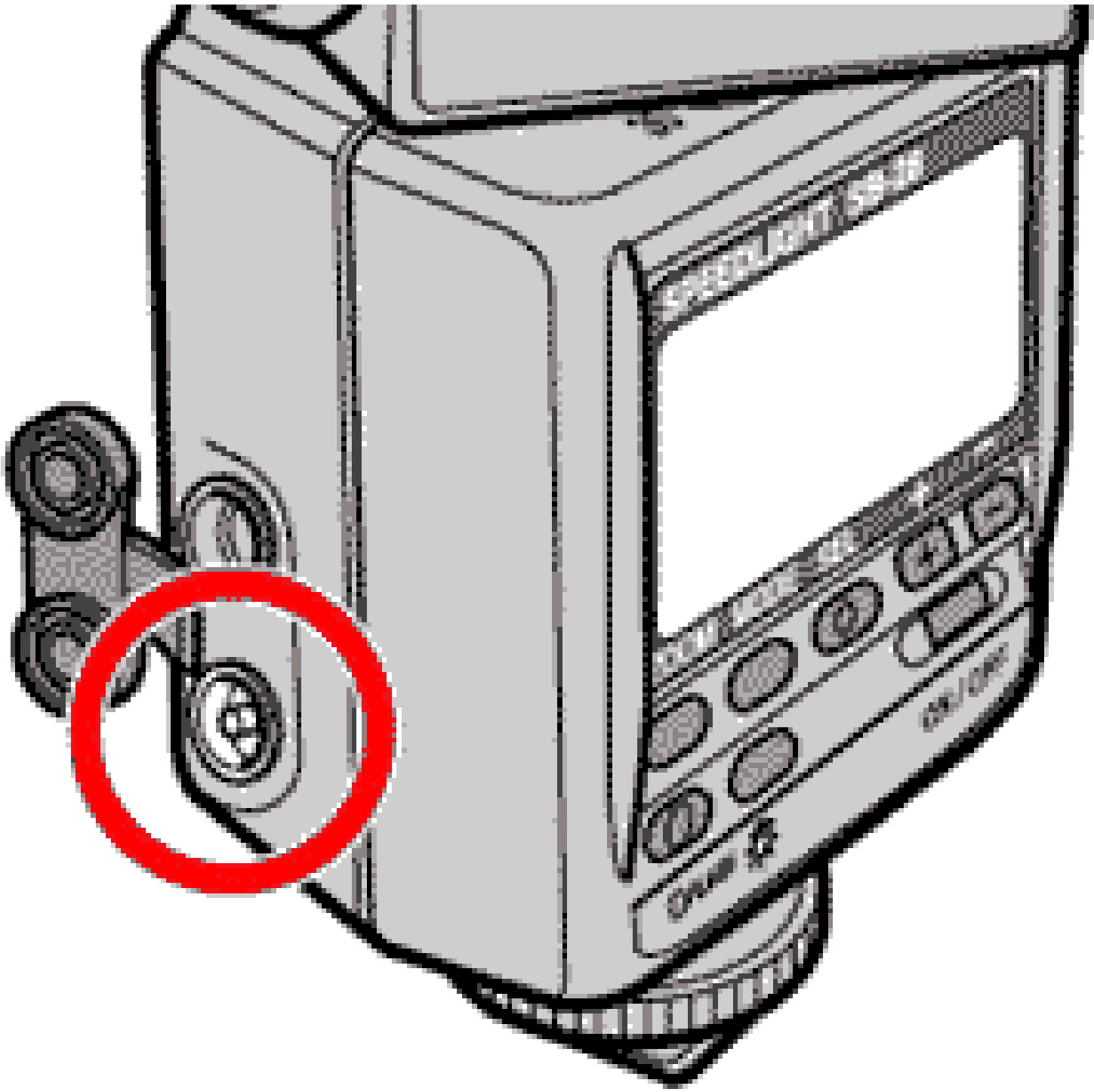

TTL
ISO 100
0.5 0.8 1 1.5 2 3 4 6 13 18 m
3 4 5 7 10 15 20 40 60 ft
STBY
ZOOM 35 mm F5.6
ZOOM MODE SEL
+
−
FLASH
ON / OFF

External power source terminal



External power source terminal
(for European market)






No. 751961

Troubleshooting

Camera Group	Warning indicator	Cause
All camera groups	No ⚡ indicator appears.	• Batteries are not correctly installed. • Battery power is weak. • Standby function is not cancelled.
	Ready-light blinks for approx. 3 sec. after shooting.	Flash fired at full output but light may have been insufficient.
	Power turns off.	Batteries are exhausted.
	No indicator lights up.	SB-27's flash head is tilted or rotated from the horizontal/vertical position.
	Indicator lights up in red.	Flash head is tilted down -7°.
	Zoomhead position indicator blinks.	The [illegible] and [illegible] zoom are pressed simultaneously to operate it manually.
	Small M above 200M blinks.	Zoomhead position is locked.
Group I	No [illegible] indicators light up.	• A Nikon lens other than one having built-in CPU is mounted. • Flash mode is set to [illegible]. • F5's or F100's Metering System is set to Spot Metering.
	Ready light and ◢ blink after picture is taken.	Light was insufficient for correct exposure.
	[illegible] indicators and small M above the 200M as well as 18 or 20 blink.	Out-of-range flash adapter is used in FP High-Speed Flash sync.
	[illegible] blinks.	SB-24 is removed with [illegible] setting.
Group II	No [illegible] indicators light up.	• A Nikon lens without a built-in CPU is mounted. • Flash mode is set to [illegible]. • F4's Metering System is not set to Spot Metering.

The SB-28 incorporates a microcomputer to control flash operations. In rare cases, the SB-28 may not work properly even after fresh batteries are properly installed. If this happens, replace the batteries with the SB-28's power turned on.

Flash head in horizontal/front position

Zoom-head position	Angle of coverage	
	Vertical	Horizontal
18mm (with built-in wide flash adapter in place)	90°	102°
20mm (with built-in wide flash adapter in place)	85°	98°
24mm	60°	78°
28mm	53°	70°
35mm	45°	60°
50mm	34°	46°
70mm	26°	36°
85mm	23°	31°

(ISO 100, m/ft)

Flash output level	Zoom-head position							
	18mm	20mm	24mm	28mm	35mm	50mm	70mm	85mm
1/1 (full)	18/59	20/66	30/98	32/105	36/118	42/138	48/157	50/164
1/2	12.7/42	14/46	21/69	22.5/74	25.5/84	30/98	34/112	36/118
1/4	9/30	10/33	15/49	16/53	18/59	21/69	24/79	25/82
1/8	6.4/21	7/23	10.5/35	11.3/37	12.7/42	15/49	17/56	18/59
1/16	4.5/15	5/16	7.5/25	8/26	9/30	10.5/35	12/39	12.7/42
1/32	3.2/10	3.5/11	5.3/17	5.7/19	6.4/21	7.5/25	8.5/28	9/30
1/64	2.3/8	2.5/8	3.8/13	4/13	4.5/15	5.3/17	6.0/20	6.3/21

	Battery type required	Min.recycling time* (approx.)	Min. number of flashes/ recycling time (approx.)
External power source SD-7**	C-type alkaline-manganese (x6)	2.5 sec.	200 times/6 sec. 400 times/6-10 sec. 450 times/6-30 sec.
External power source SD-6/ 8A***	AA-type alkaline-manganese (x6)	3.5 sec.	100 times/3.5-5 sec. 200 times/3.5-9 sec. 350 times/6-30 sec.
	AA-type NiCd (700 mAh) (x6)	2 sec.	150 times/2-30 sec.
	AA-type NiCd (1000 mAh) (x6)		200 times/2-30 sec.
	AA-type Ni-MH (x6)	2.5 sec.	200 times/2.5-30 sec
	AA-type lithium (x6)	3.5 sec.	350 times/3.5-30 sec.
Power Bracket SK-6/ 6A***	AA-type Alkaline-manganese (x4)	4 sec.	250 times/4-30 sec.
	AA-type NiCd (700mAh) (x4)	2.5 sec.	100 times/2.5-30 sec.
	AA-type NiCd (1000mAh) (x4)		140 times/2.5-30 sec.
	AA-type Ni-MH(x4)	3.0 sec.	140 times/3.0-30 sec.
	AA-type lithium (x4)	4.5 sec.	300 times/4.5-30 sec.

Batteries	Min. recycling time (approx.)	Min. number of flashes/ recycling time (approx.)
4 AA-type alkaline-manganese	6.5 sec.	150/6.5-30 sec.
4 AA-type NiCd (700 mAh)	4 sec.	60/4-30 sec.
4 AA-type NiCd (1000 mAh)		90/4-30 sec.
4 AA-type Ni-MH		100/4-30 sec.
4 AA-type lithium	7.5 sec.	200/8-30 sec.

Note: Data measured with fresh batteries, but without using AF assist LED, zoom-head position adjustment, or LCD panel illumination.

Usable aperture/flash shooting distance ranges in TTL Auto TTL and Non-TTL Auto A flash modes

ISO film speed							Shooting distance range (in meters)							
1600*1	800*2	400	200	100	50	25	18mm	20mm	24mm	28mm	35mm	50mm	70mm	85mm
2.8	2	1.4					2.3–20	2.5–20	3.8–20	4.0–20	4.5–20	5.3–20	6.0–20	6.3–20
4	2.8	2	1.4				1.6–18	1.8–20	2.7–20	2.9–20	3.2–20	3.8–20	4.3–20	4.5–20
5.6	4	2.8	2	1.4			1.2–12	1.3–14	1.9–20	2.0–20	2.3–20	2.7–20	3.0–20	3.2–20
8	5.6	4	2.8	2	1.4		0.8–9.0	0.9–10	1.4–15	1.5–16	1.6–18	1.9–20	2.2–20	2.2–20
11	8	5.6	4	2.8	2	1.4	0.6–6.3	0.7–7.0	1.0–10	1.0–11	1.2–12	1.4–14	1.5–16	1.6–17
16	11	8	5.6	4	2.8	2	0.6–4.5	0.6–5.0	0.7–7.5	0.7–8.0	0.8–9.0	1.0–10	1.1–12	1.1–12
22	16	11	8	5.6	4	2.8	0.6–3.1	0.6–3.5	0.6–5.3	0.6–5.6	0.7–6.3	0.7–7.4	0.8–8.4	0.8–8.8
32	22	16	11	8	5.6	4	0.6–2.2	0.6–2.5	0.6–3.7	0.6–4.0	0.6–4.5	0.6–5.2	0.6–6.0	0.6–6.2
	32	22	16	11	8	5.6	0.6–1.5	0.6–1.7	0.6–2.6	0.6–2.8	0.6–3.1	0.6–3.7	0.6–4.2	0.6–4.4
		32	22	16	11	8	0.6–1.1	0.6–1.2	0.6–1.8	0.6–2.0	0.6–2.2	0.6–2.6	0.6–3.0	0.6–3.1
			32	22	16	11	0.6–0.7	0.6–0.8	0.6–1.3	0.6–1.4	0.6–1.5	0.6–1.8	0.6–2.1	0.6–2.2
				32	22	16		0.6	0.6–0.9	0.6–1.0	0.6–1.1	0.6–1.3	0.6–1.5	0.6–1.5

: Programmed TTL Auto Flash with Nikon F-501/N2020, F-401s/N4004s, F-401/N4004 and F-301/N2000. (ISO 25 to ISO 400 for F-401s/N4004s, F-401/N4004)

: Non-TTL Auto Flash mode

**1: TTL Auto Flash TTL operation is not possible at this film speed.*

**2: TTL Auto Flash TTL is possible for cameras in Groups I to IV and F-501/N2020 and F-301/N2000. For ISO 1000, use an aperture 1/3 of an f/stop smaller than the aperture for ISO 1600.*

- *Usable apertures in the TTL Auto Flash TTL mode are f/1.4 to f/32, and the usable shooting distance range is 0.6 to 20m.*

ISO film speed							Shooting distance range (in feet)							
1600*1	800*2	400	200	100	50	25	18mm	20mm	24mm	28mm	35mm	50mm	70mm	85mm
2.8	2	1.4					7.4–66	8.2–66	13–66	14–66	15–66	18–66	20–66	21–66
4	2.8	2	1.4				5.3–59	5.8–65	8.7–66	9.3–66	11–66	13–66	14–66	15–66
5.6	4	2.8	2	1.4			3.7–41	4.1–46	6.2–66	6.6–66	7.4–66	8.7–66	9.9–66	11–66
8	5.6	4	2.8	2	1.4		2.6–29	2.9–32	4.4–49	4.7–52	5.2–59	6.1–66	7.0–66	7.2–66
11	8	5.6	4	2.8	2	1.4	2.0-20	2.1–23	3.1–34	3.3–37	3.7–41	4.3–48	4.9–55	5.1–57
16	11	8	5.6	4	2.8	2	2.0–14	2.0–16	2.2–24	2.4–26	2.6–29	3.0–34	3.5–39	3.6–41
22	16	11	8	5.6	4	2.8	2.0–10	2.0–11	2.0–17	2.0–18	2.0–20	2.2–24	2.5–27	2.6–28
32	22	16	11	8	5.6	4	2.0–7.3	2.0–8.2	2.0–12	2.0–13	2.0–14	2.0–17	2.0–19	2.0–20
	32	22	16	11	8	5.6	2.0–5.2	2.0–5.7	2.0–8.6	2.0–9.2	2.0–10	2.0–12	2.0–13	2.0–14
		32	22	16	11	8	2.0–3.6	2.0–4.1	2.0–6.1	2.0–6.5	2.0–7.3	2.0–8.6	2.0–9.8	2.0–10
			32	22	16	11	2.0–2.6	2.0–2.8	2.0–4.3	2.0–4.6	2.0–5.2	2.0–6.0	2.0–6.9	2.0–7.2
				32	22	16	2.0	2.0–2.0	2.0–3.0	2.0–3.2	2.0–3.6	2.0–4.3	2.0–4.9	2.0–5.1

: Programmed TTL Auto Flash with Nikon F-501/N2020, F-401s/N4004s, F-401/N4004 and F-301/N2000. (ISO 25 to ISO 400 for F-401s/N4004s, F-401/N4004)

: Non-TTL Auto Flash mode

**1: TTL Auto Flash TTL operation is not possible at this film speed.*

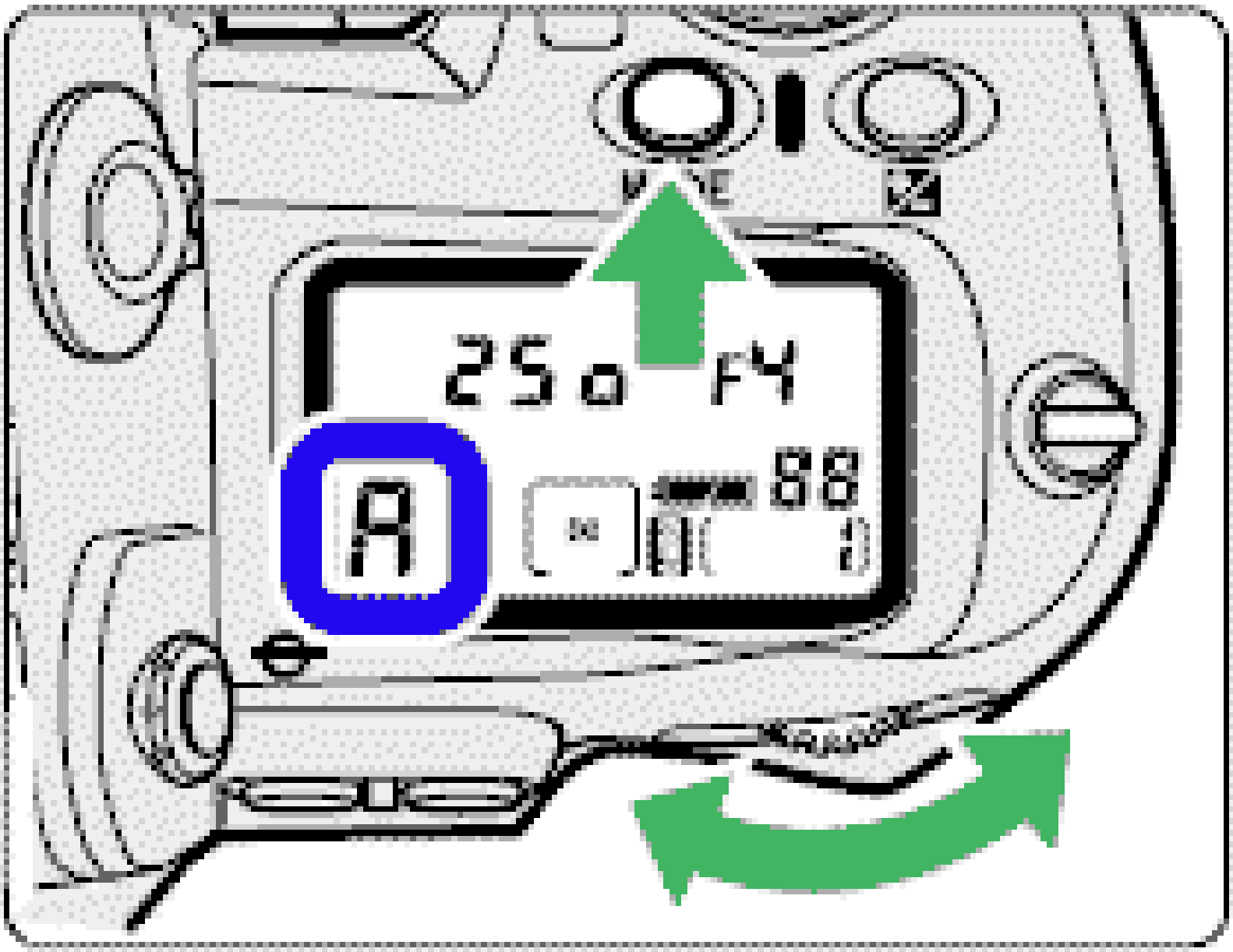
**2: TTL Auto Flash TTL is possible for cameras in Groups I to IV and F-501/N2020 and F-301/N2000. For ISO 1000, use an aperture 1/3 of an f/stop smaller than the aperture for ISO 1600.*

- *Usable apertures in the TTL Auto Flash TTL mode are f/1.4 to f/32, and the usable shooting distance range is 2.0 to 66 ft.*


SB-28
Nikon
SB-28
Nikon
Nikon
Nikon
Auxiliary Speedlight
SB-28
Instruction Manual

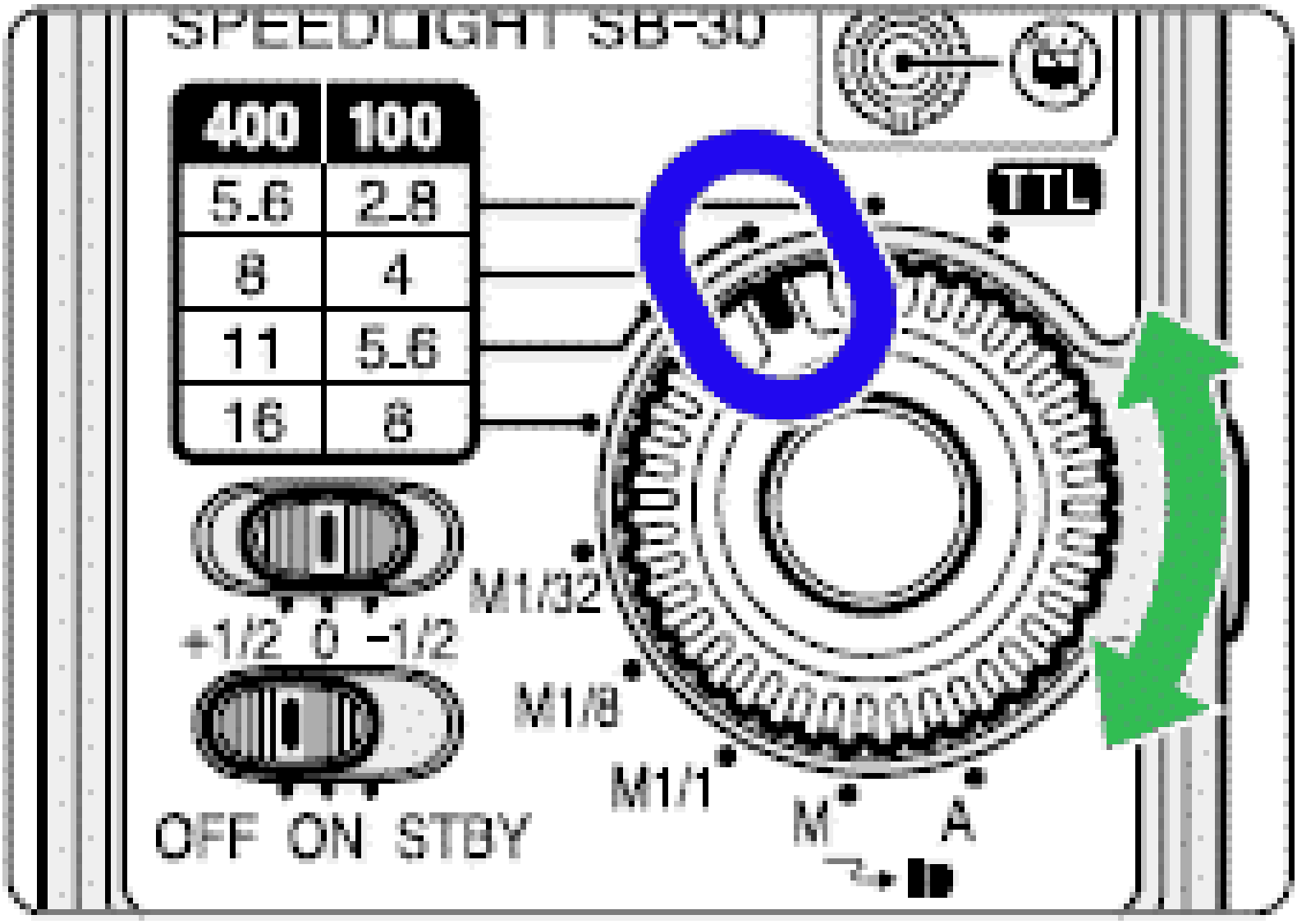
	ISO number (f/number)					Distance range according to zoom settings (Upper figures are in meters, lower figures are in feet.)							
	1600	800	400	200	100/80	18mm	20mm	24mm	28mm	35mm	50mm	70mm	85mm
A	8	5.6	4	2.8	2	0.8-9 2.6-29	0.9-10 2.9-32	1.4-15 4.4-49	1.5-16 4.7-52	1.6-18 5.2-59	1.9-20 6.1-66	2.2-20 7.0-66	2.2-20 7.2-66
B	11	8	5.6	4	2.8	0.6-6.3 2.2-20	0.7-7.0 2.1-23	1.0-10 3.1-34	1.0-11 3.3-37	1.2-12 3.7-41	1.4-14 4.3-48	1.5-16 4.9-55	1.6-17 5.1-57
C	16	11	8	5.6	4	0.6-4.5 2.0-14	0.6-5.0 2.0-16	0.7-7.5 2.2-24	0.7-8.0 2.4-26	0.8-9.0 2.6-29	1.0-10 3.0-34	1.1-12 3.5-39	1.1-12 3.6-41
	22	16	11	8	5.6	0.6-3.1 2.0-10	0.6-3.5 2.0-11	0.6-5.3 2.0-17	0.6-5.6 2.0-18	0.7-6.3 2.0-20	0.7-7.4 2.2-24	0.8-8.4 2.5-27	0.8-8.8 2.6-28
	32	22	16	11	8	0.6-2.2 2.0-7.3	0.6-2.5 2.0-8.2	0.6-3.7 2.2-12	0.6-4.0 2.0-13	0.6-4.5 2.0-14	0.6-5.2 2.0-17	0.6-6.0 2.0-19	0.6-6.2 2.0-20
	45	32	22	16	11	0.6-1.5 2.0-5.2	0.6-1.7 2.0-5.7	0.6-2.6 2.0-8.6	0.6-2.8 2.0-9.2	0.6-3.1 2.0-10	0.6-3.7 2.0-12	0.6-4.2 2.0-13	0.6-4.4 2.0-14
	64	45	32	22	16	0.6-1.1 2.0-3.6	0.6-1.2 2.0-4.1	0.6-1.8 2.0-6.1	0.6-2.0 2.0-6.5	0.6-2.2 2.0-7.3	0.6-2.6 2.0-8.6	0.6-3.0 2.0-9.8	0.6-3.1 2.0-10
		64	45	32	22	0.6-0.7 2.0-2.6	0.6-0.8 2.0-2.8	0.6-1.3 2.0-4.3	0.6-1.4 2.0-4.6	0.6-1.5 2.0-5.2	0.6-1.8 2.0-6.0	0.6-2.1 2.0-6.9	0.6-2.2 2.0-7.2
D			64	45	32		0.6 2.0	0.6-0.9 2.0-3.0	0.6-1.0 2.0-3.2	0.6-1.1 2.0-3.6	0.6-1.3 2.0-4.3	0.6-1.5 2.0-4.9	0.6-1.5 2.0-5.1

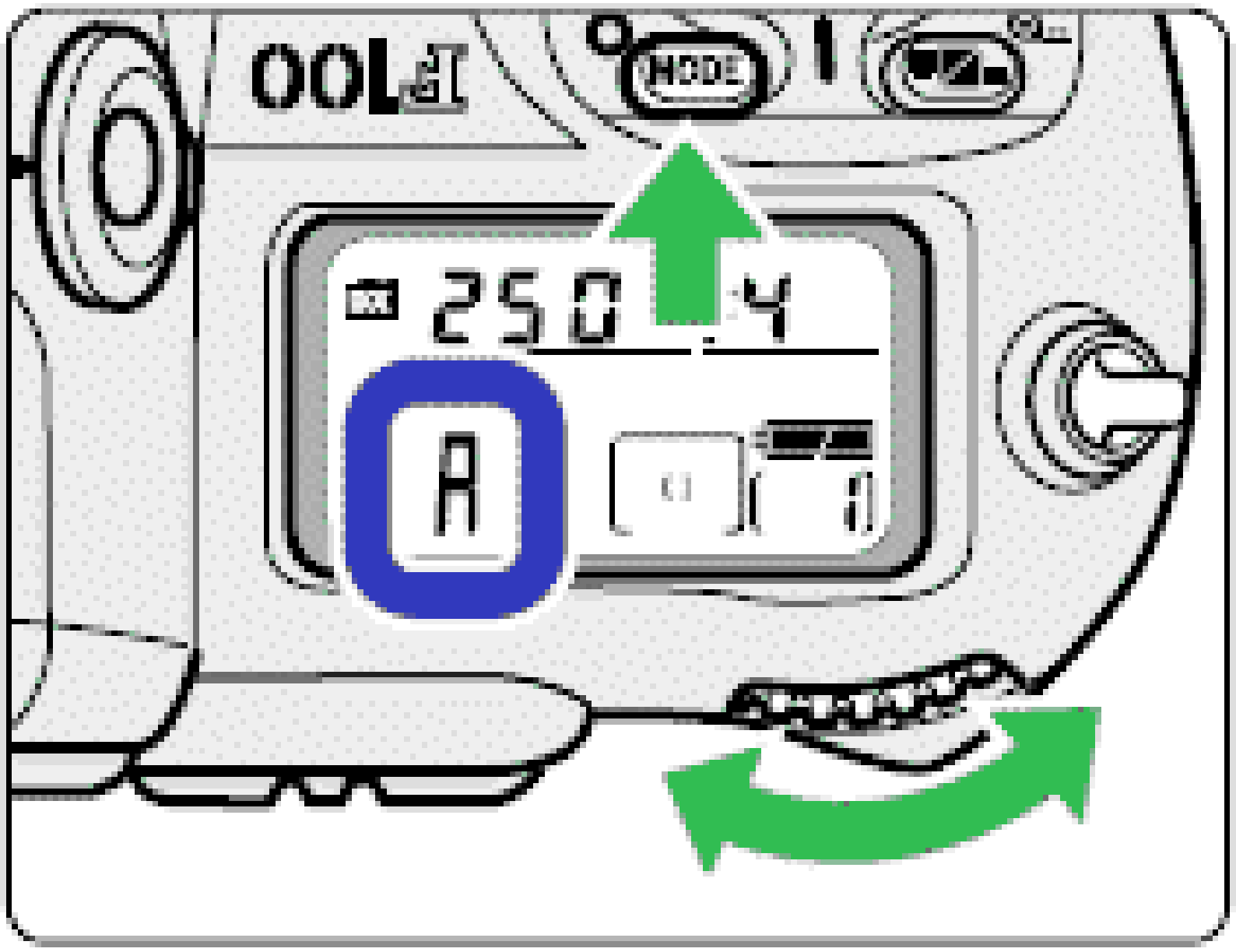
Flash output level	Zoomp-head position							
	18mm	20mm	24mm	28mm	35mm	50mm	70mm	85mm
1/1 (Full)	25/84	28/93	42/139	45/148	51/167	59/195	68/223	71/232
1/2	18/59	20/66	30/98	32/105	36/118	42/138	48/157	50/164
1/4	12.7/42	14/46	21/69	22.5/74	25.5/84	30/98	34/112	36/118
1/8	9/30	10/33	15/49	16/53	18/59	21/69	24/79	25/82
1/16	6.4/21	7/23	10.5/35	11.3/37	12.7/42	15/49	17/56	18/59
1/32	4.5/15	5/16	7.5/25	8/26	9/30	10.5/35	12/39	12.7/42
1/64	3.2/10	3.5/11	5.3/17	5.7/19	6.4/21	7.5/25	8.5/28	9/30


25o F4
A
88

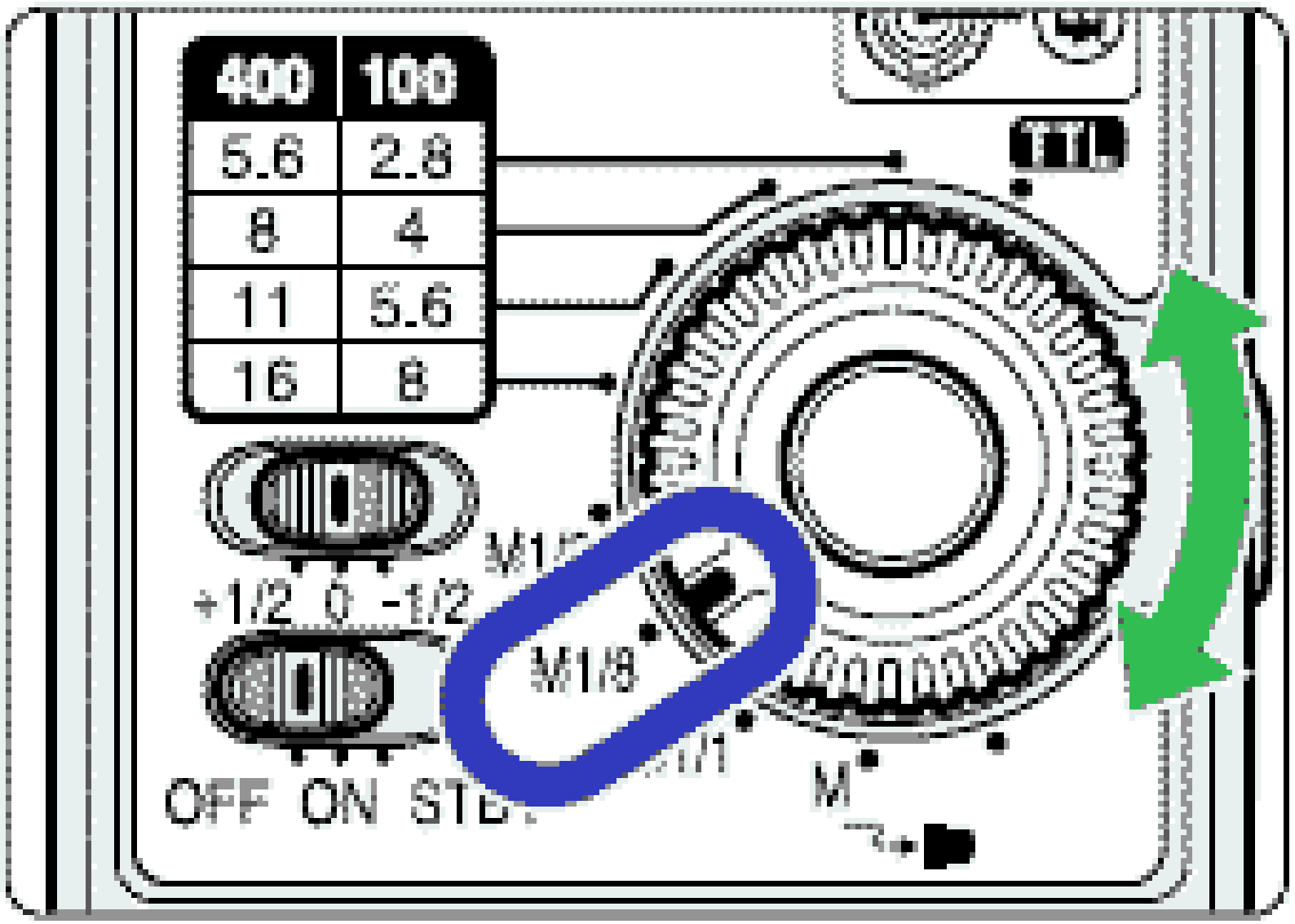
	ISO sensitivity						Flash shooting distance range (m/ft.)	
	25	50	100	200	400	800	No wide-flash adapter in place	With wide-flash adapter in place
	—	f/1.4	f/2	f/2.8	f/4	f/5.6	1–8/3.3–26	0.7–5/2.3–16
Non-TTL auto flash	f/1.4	f/2	f/2.8	f/4	f/5.6	f/8	0.7–5.6/2.3–18	0.5–3.5/1.6–11
	f/2	f/2.8	f/4	f/5.6	f/8	f/11	0.6–4/2–13	0.3–2.5/1–8.2
	f/2.8	f/4	f/5.6	f/8	f/11	f/16	0.6–2.8/2–9.1	0.3–1.7/1–5.5
	f/4	f/5.6	f/8	f/11	f/16	f/22	0.6–2/2–6.5	0.3–1.2/1–3.9
	f/5.6	f/8	f/11	f/16	f/22	f/32	0.6–1.4/2–4.5	0.3–0.8/1–2.6
	f/8	f/11	f/16	f/22	f/32	—	0.6–1/2–3.2	0.3–0.6/1–1.9

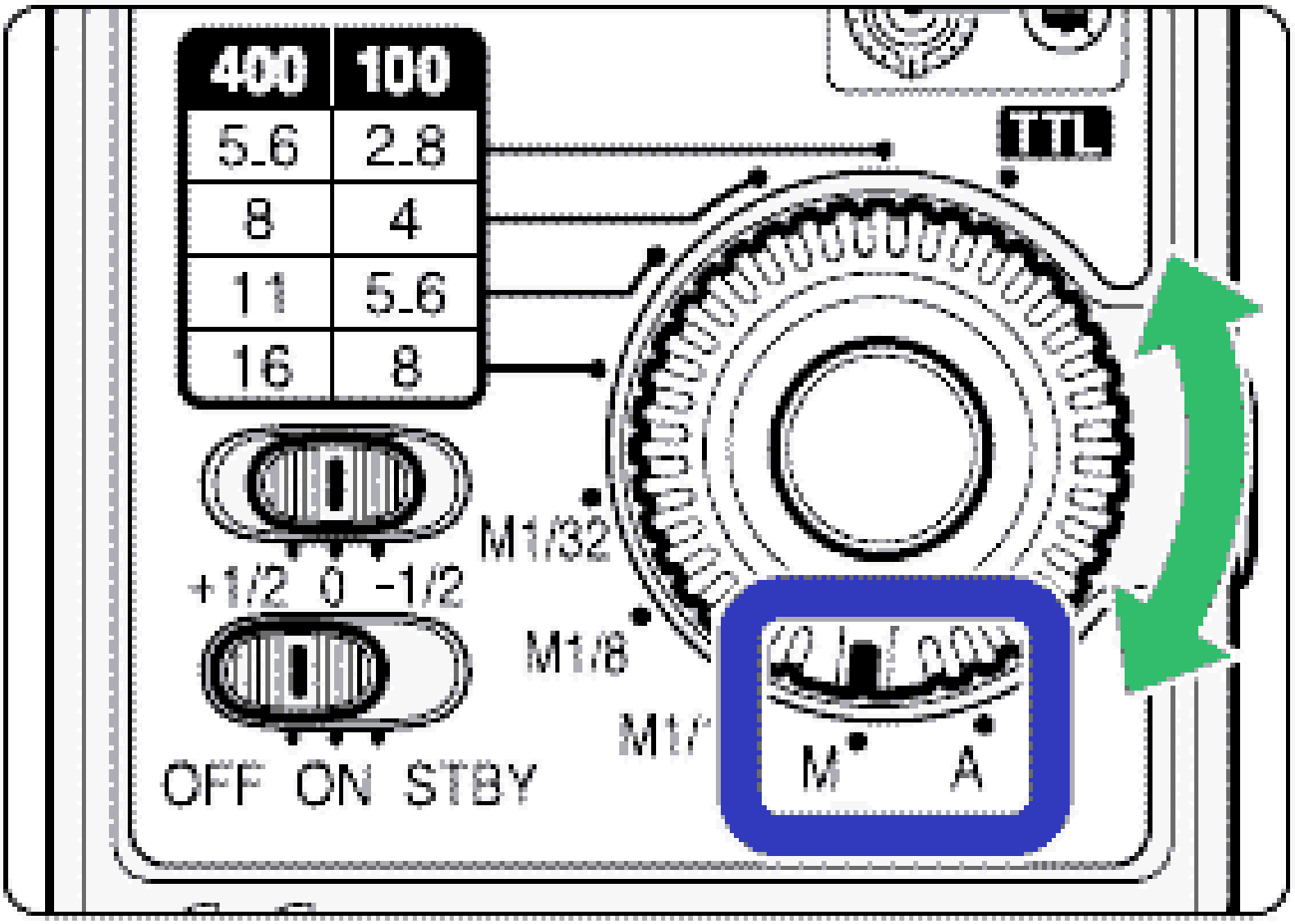
TTL auto flash

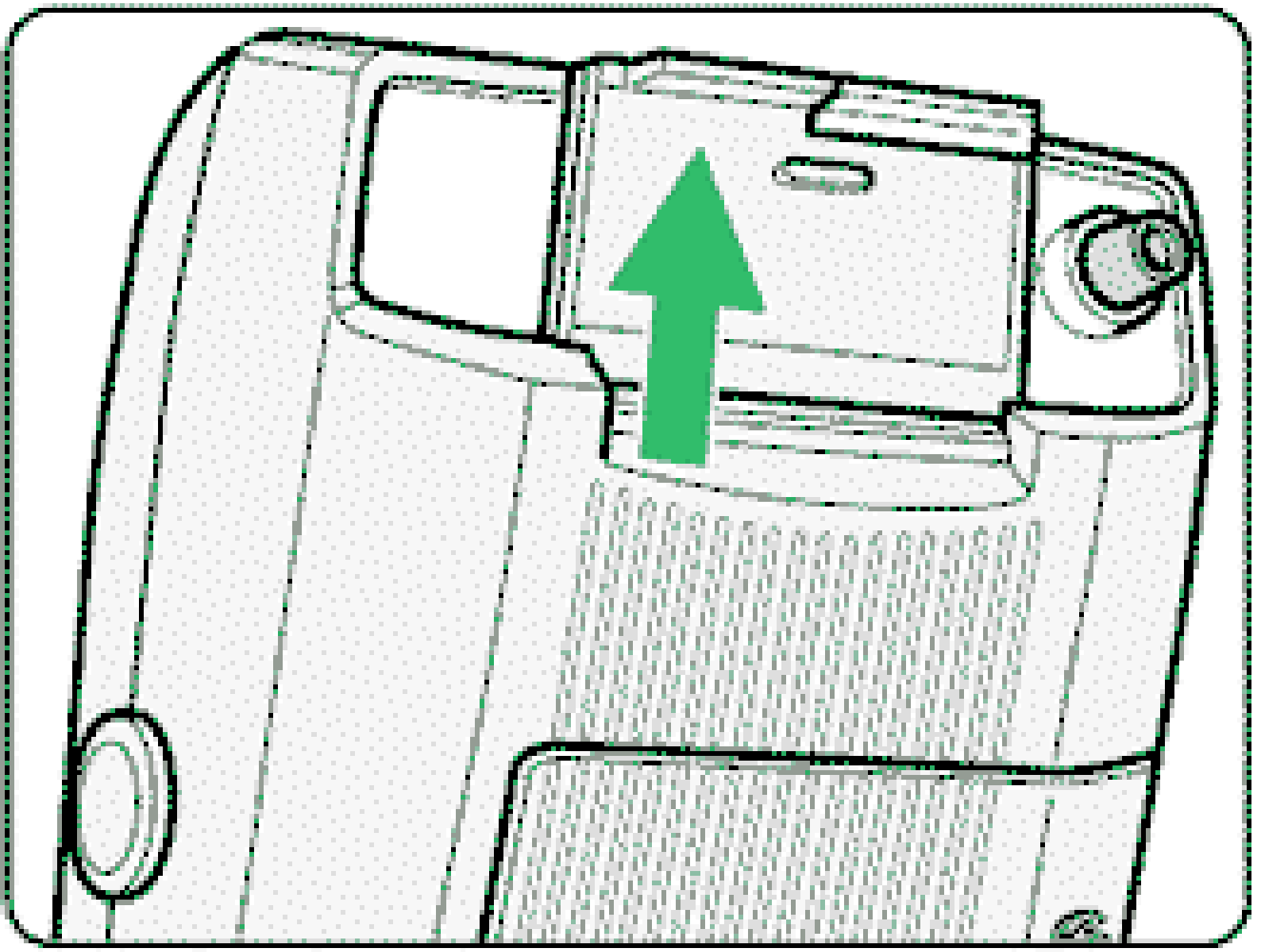

SPEEDLIGHT SB-30
400
100
5.6
2.8
8
4
11
5.6
16
8
TTL
M1/32
M1/8
M1/1
M
A
+1/2 0 -1/2
OFF ON STBY

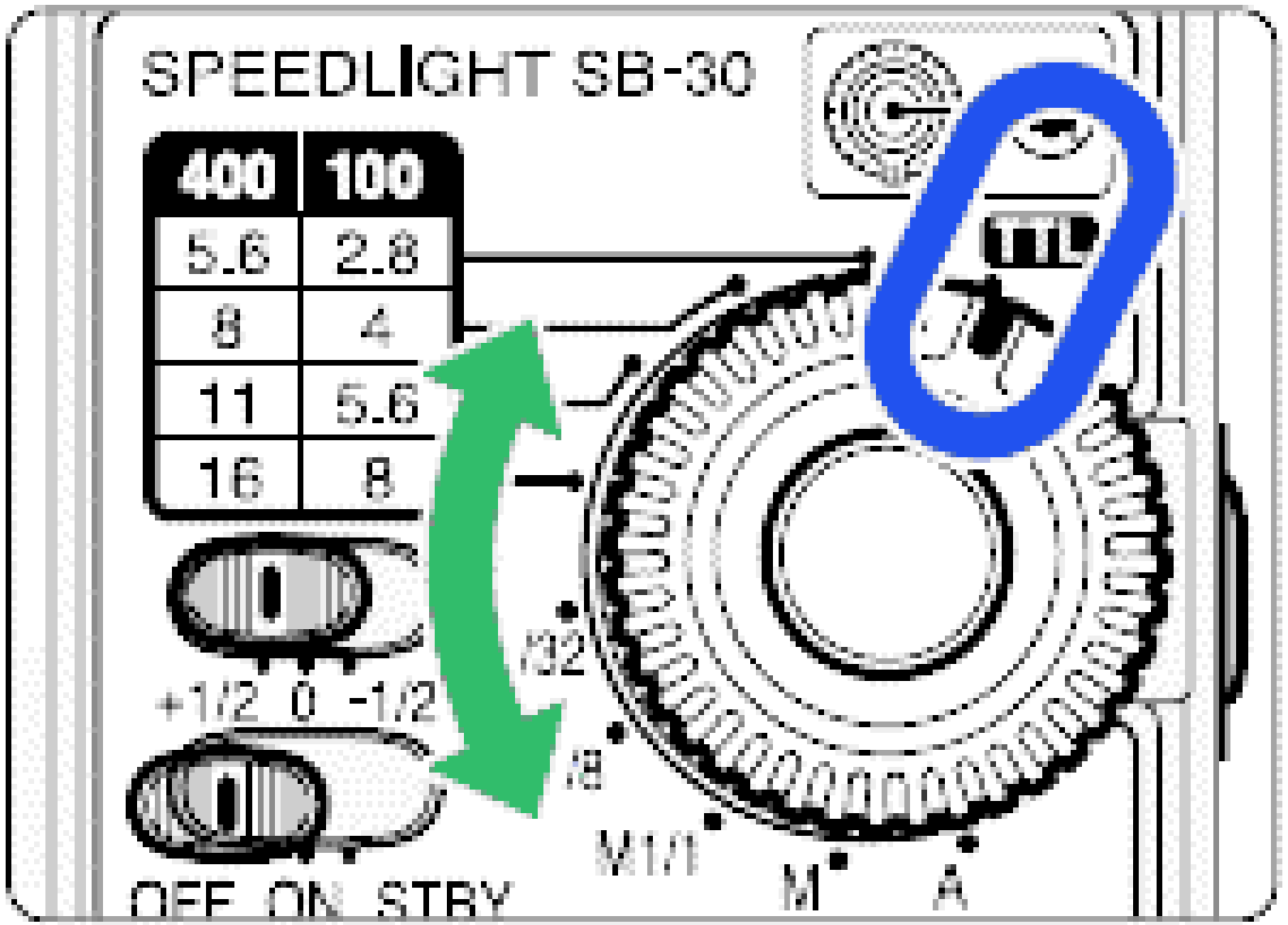

MODE
250
A

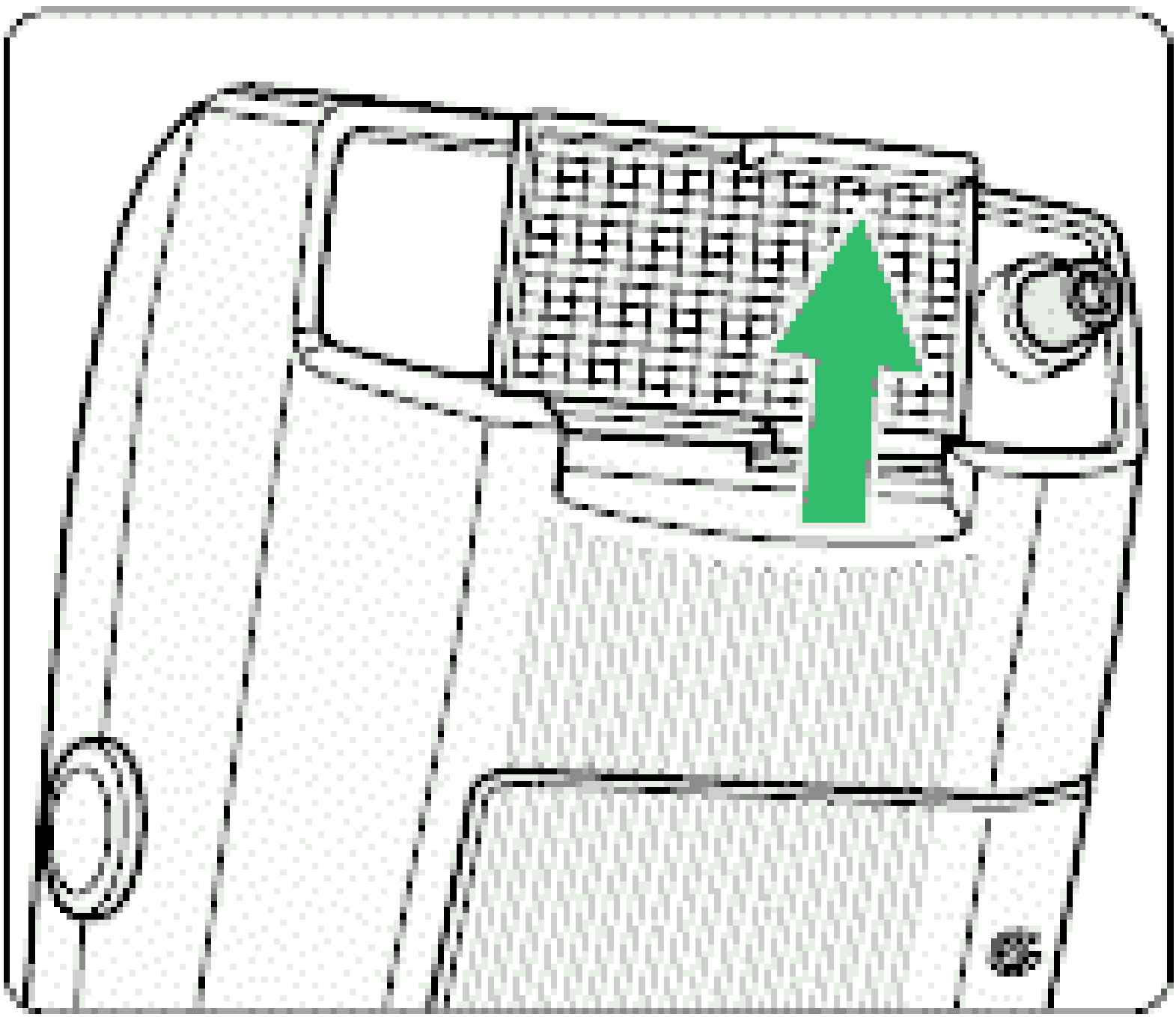
ISO sensitivity		25	50	100	200	400	800	1600
Flash output level	M1/1	8/26	11/36	16/52	22/72	32/105	45/148	64/210
	M1/8	2.8/9	4/13	5.6/18	8/26	11/36	16/52	22/72
	M1/32	1.4/4.6	2/6.6	2.8/9.2	4/13	5.6/18	8/26	11/36
Flash output level (with wide-flash adapter in place)	M1/1	5/16	7.1/23	10/33	14/46	20/66	28/92	40/131
	M1/8	1.8/5.9	2.5/8.2	3.5/11	5/16	7.1/23	10/33	14/46
	M1/32	0.9/3	1.3/4.3	1.8/5.9	2.5/8.2	3.5/11	5/16	7.1/23

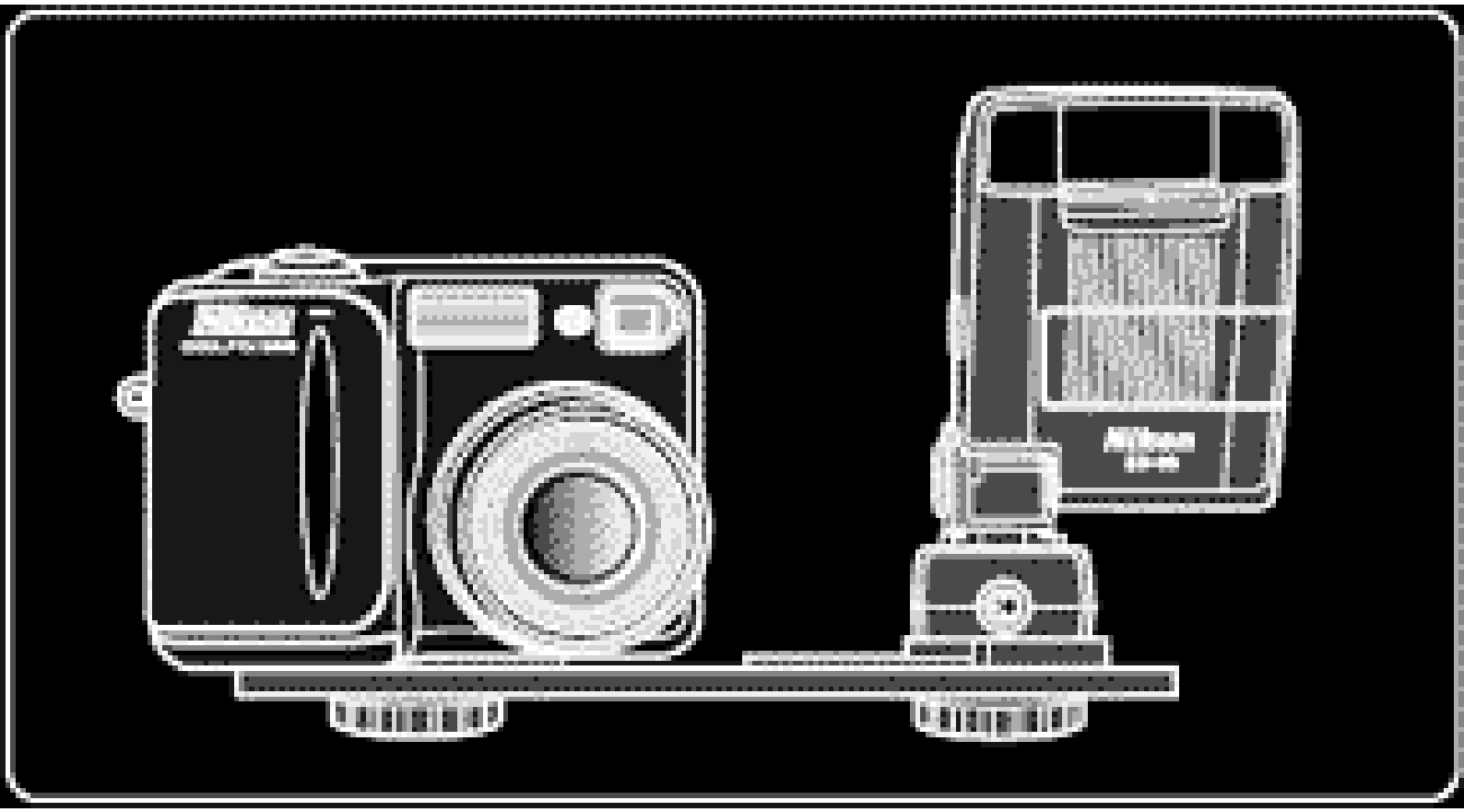

400
100
5.6
2.8
8
4
11
5.6
16
8
+1/2 0 -1/2
W18
OFF ON STB

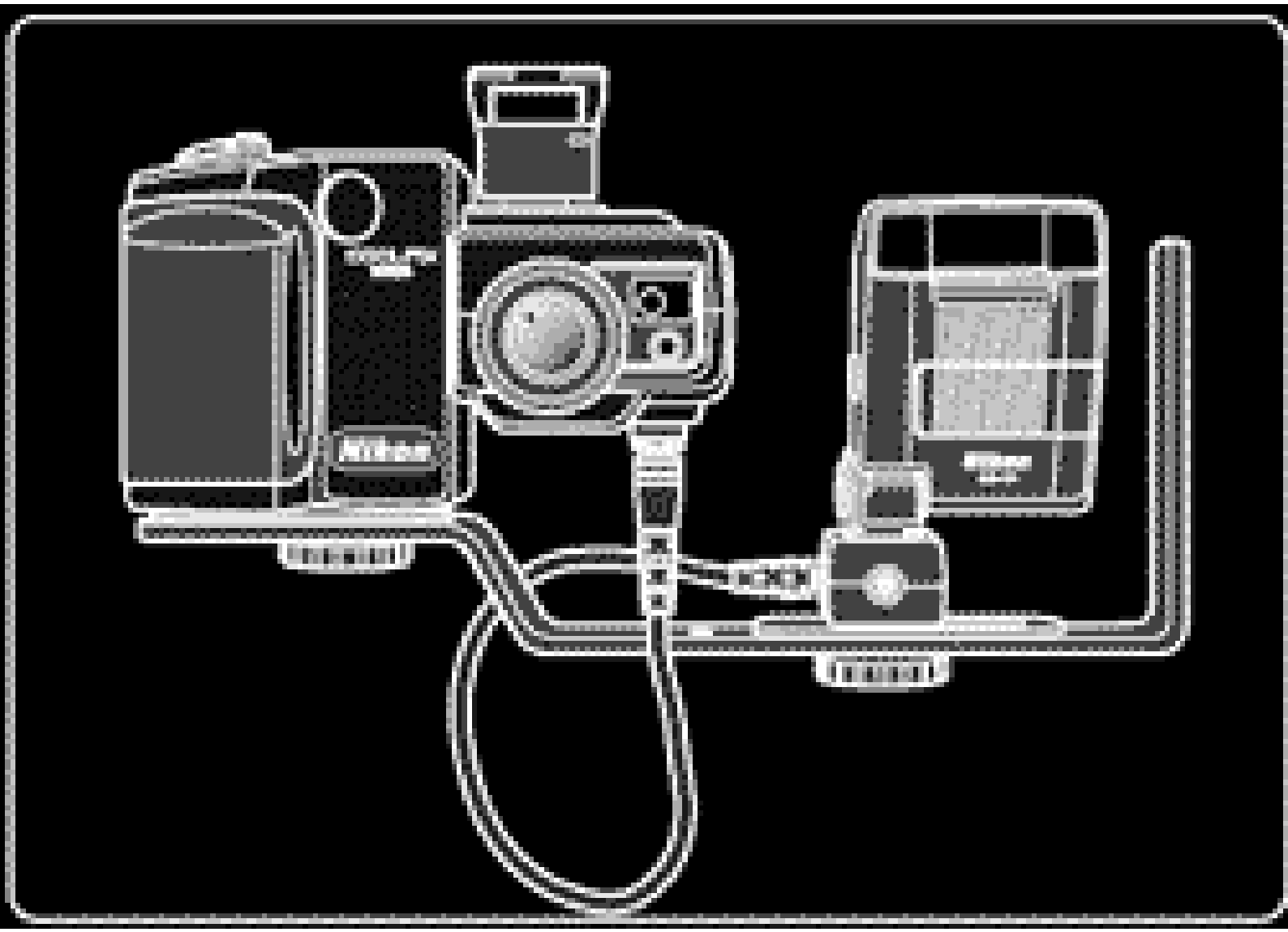

400
100
5_6
2_8
8
4
11
5_6
16
8
TTL
+1/2 0 -1/2
M1/32
M1/8
M1/
OFF ON STBY
M
A



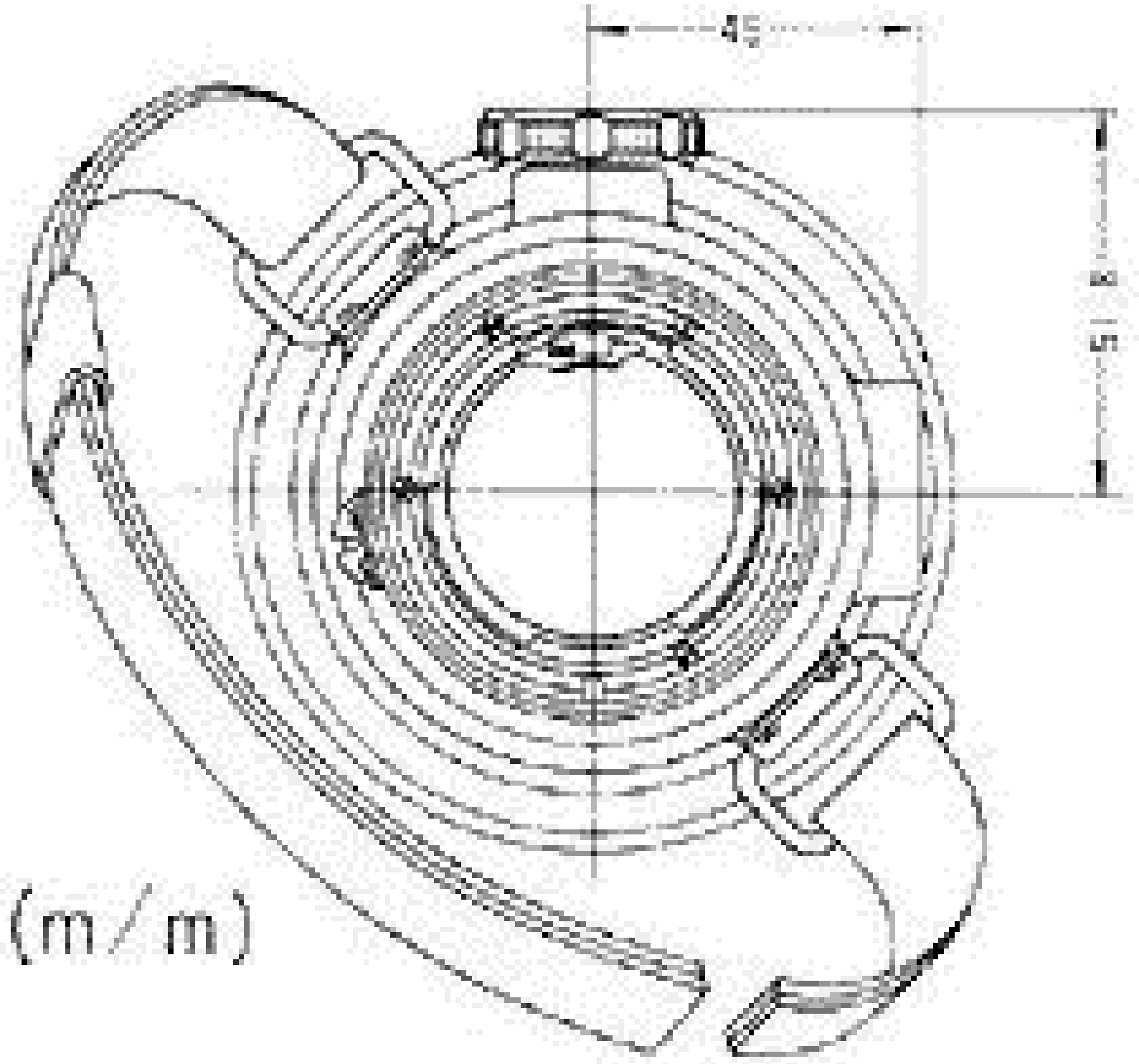

SPEEDLIGHT SB-30
400
100
5.6
2.8
8
4
11
5.6
16
8
+1/2 0 -1/2
/32
/8
M1/1
M
A
OFF ON STBY

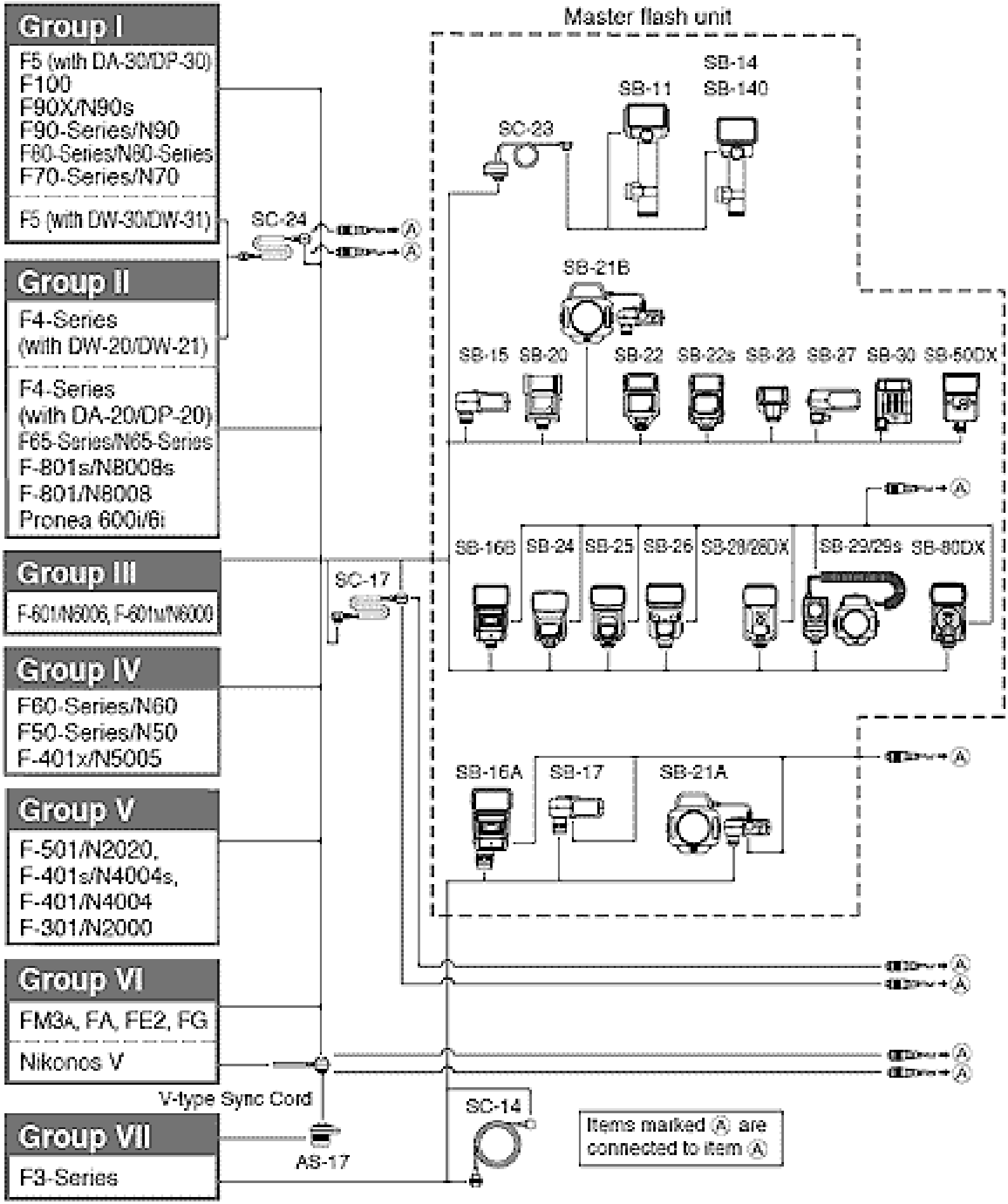


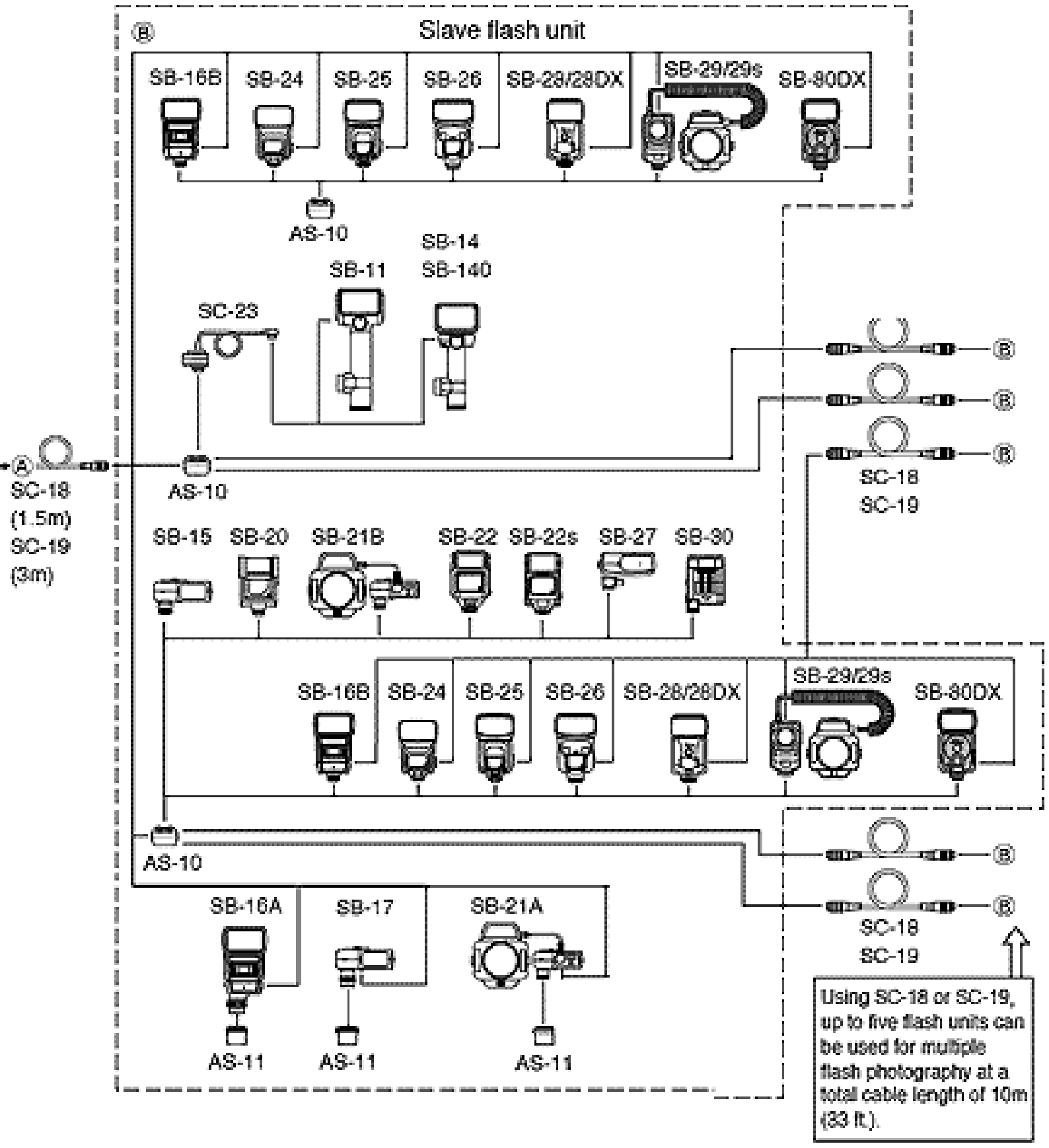


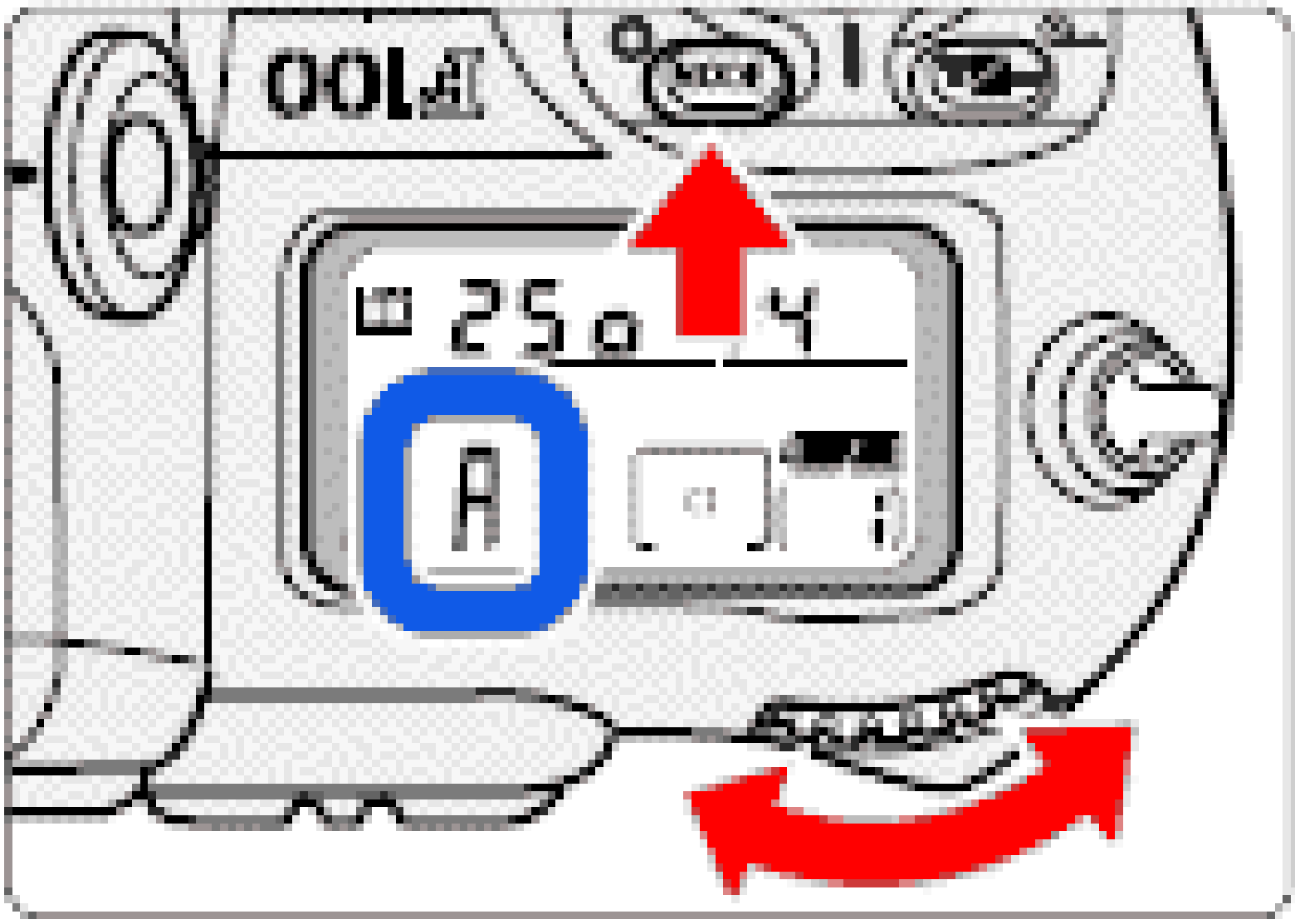



Nikon
SB-30


45
(m / m)


Group I
F5 (with DA-30/DP-30)
F100
F90X/N90s
F90-Series/N90
F60-Series/N60-Series
F70-Series/N70
F5 (with DW-30/DW-31)
Group II
F4-Series
(with DW-20/DW-21)
F4-Series
(with DA-20/DP-20)
F65-Series/N65-Series
F-801s/N8008s
F-801/N8008
Pronea 600i/6i
Group III
F-601/N6006, F-601M/N6000
Group IV
F60-Series/N60
F50-Series/N50
F-401x/N5005
Group V
F-501/N2020,
F-401s/N4004s,
F-401/N4004
F-301/N2000
Group VI
FM3A, FA, FE2, FG
Nikonos V
V-type Sync Cord
Group VII
F3-Series
SC-24
SC-17
AS-17
SC-14
Master flash unit
SC-23
SB-11
SB-14
SB-140
SB-21B
SB-15
SB-20
SB-22
SB-22s
SB-23
SB-27
SB-30
SB-50DX
SB-16B
SB-24
SB-25
SB-26
SB-28/28DX
SB-29/29s
SB-80DX
SB-16A
SB-17
SB-21A
Items marked Ⓐ are connected to item Ⓐ


Ⓑ Slave flash unit
SB-16B
SB-24
SB-25
SB-26
SB-28/28DX
SB-29/29s
SB-80DX
AS-10
SB-14
SB-11
SB-140
SC-23
Ⓐ
SC-18
(1.5m)
SC-19
(3m)
AS-10
Ⓑ
Ⓑ
Ⓑ
SC-18
SC-19
SB-15
SB-20
SB-21B
SB-22
SB-22s
SB-27
SB-30
SB-16B
SB-24
SB-25
SB-26
SB-28/28DX
SB-29/29s
SB-80DX
AS-10
Ⓑ
Ⓑ
SC-18
SC-19
SB-16A
SB-17
SB-21A
AS-11
AS-11
AS-11
Using SC-18 or SC-19, up to five flash units can be used for multiple flash photography at a total cable length of 10m (33 ft.).


A

70
85
105
135
200


16
15
4.5
14
13
4
12
3.7
3.5
11
10.5
3.2
10
3
9.5
2.8
9

External power source	Battery type required	Min. recycling time (approx.)	Min. number of flashes/recycling time (approx.)
DC Unit SD-7*1	C-type alkaline-manganese (x 6)	2.5 sec.	430 times/2.5-30 sec.
High-Performance Battery Pack SD-8A*2	AA-type alkaline-manganese (x 6)	2.5 sec.	400 times/2.5-30 sec.
	AA-type NiCd (1000mAh) (x 6)	2 sec.	190 times/2-30 sec.
	AA-type Ni-MH (x 6)	2 sec.	300 times/2-30 sec.
	AA-type lithium (x 6)*3	2 sec.	300 times/2-30 sec.
Power Bracket Unit SK-6A*1	AA-type alkaline-manganese (x 4)	3 sec.	300 times/3-30 sec.
	AA-type NiCd (1000mAh) (x 4)	2.5 sec.	150 times/2.5-30 sec.
	AA-type Ni-MH (x 4)	2.5 sec.	250 times/2.5-30 sec.
	AA-type lithium (x 4)*3	3.5 sec.	330 times/3.5-30 sec.

Master flash unit	Slave flash unit		Speedlight condition
Ready-light	**Ready-light**	**Beeping sound**	
Lights up	Lights up	One beep	Ready to fire
Lights up or does not come on (not blinking)	Lights up or does not come on (not blinking)	Two beeps	Fired properly
Blinks for approx. 3 sec.	Blinks for approx. 3 sec.	Beeps for approx. 3 sec.	Both the master and slave flash units have fired at full output and light may have been insufficient for correct exposure. Use a wider aperture and reshoot.
Lights up or does not come on (not blinking)	Blinks for approx. 3 sec.	Beeps for approx. 3 sec.	The slave flash unit has fired at full output and light may have been insufficient for correct exposure. The light sensor could not detect when to stop firing in sync with the master flash unit, because a strong reflection from the slave flash unit itself or light from another slave flash unit may have entered the light sensor window. Change the direction or position of the slave flash unit and reshoot.

Problem	Cause
Cameras in Groups I (except for F70-Series/N70) to VI and Digital SLRs cameras	
The ready-light blinks when pressing the shutter release button slightly in the TTL auto flash mode.	The SB-80DX is not correctly attached to the camera.
Cameras in Groups V and VI	
The ready-light blinks when the power is turned on in TTL auto flash mode.	The ISO sensitivity set on the camera is higher than the available range of the Speedlight. The ISO sensitivity set on the camera is higher or lower than the available range for the FA camera.
Cameras in Group VI	
The ready-light blinks in the TTL auto flash mode.	The shutter speed is set to M90, M250, or B (bulb).
FM3A, New FM2 cameras	
The ready-light blinks.	The shutter speed set is faster than the flash sync speed.
New FM2, F55/N55 cameras.	
The ready-light blinks when the flash mode is set to TTL auto flash.	The SB-80DX's flash mode is set to TTL auto flash.

Indicator	Available flash operation
TTL + 3D	3D Multi-Sensor Balanced Fill-Flash/ Multi-Sensor Balanced Fill-Flash
D + TTL + 3D	3D Multi-Sensor Balanced Fill-Flash/Multi-Sensor Balanced Fill-Flash for Digital SLRs
TTL + CW	Matrix Balanced Fill-Flash or Center-Weighted Fill-Flash/Spot Fill-Flash
D + TTL + CW	Center-Weighted Fill-Flash for Digital SLRs
TTL	Standard TTL Flash, Matrix Balanced Fill-Flash, Center-Weighted Fill-Flash/Spot Fill-Flash
D + TTL	Standard TTL Flash for Digital SLRs
A	Non-TTL Auto Flash
AA	Auto Aperture Flash
M	Manual Flash
M + REPEAT	Repeating Flash
M + FP	FP High-Speed Flash sync

Settings on camera

Indicator	Available flash operation
*	Red-eye reduction
REAR	Rear-curtain sync
SLOW	Slow-sync
RED SLOW	Red-eye reduction in slow-sync

* Appears on the SB-80DX's LCD panel


f=300mm

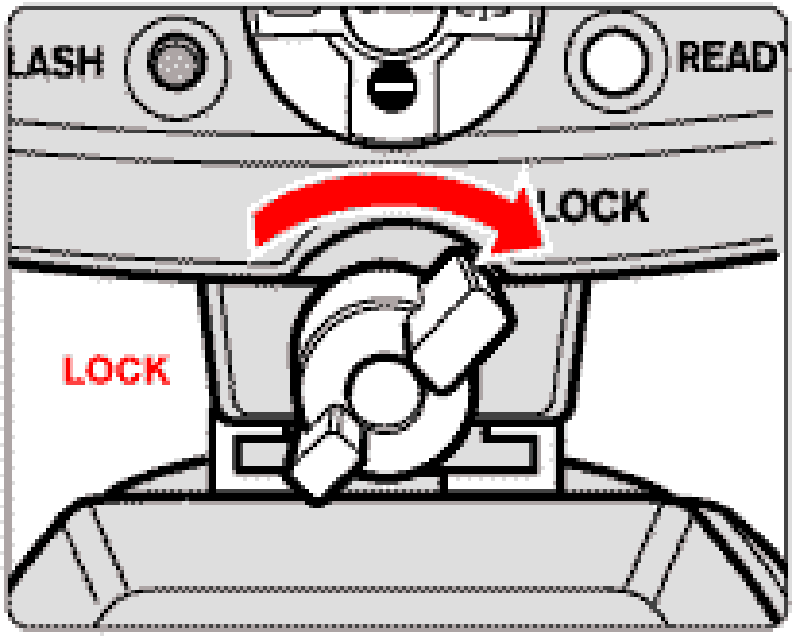

SPEEDLIGHT SB-800X
FLASH
READY

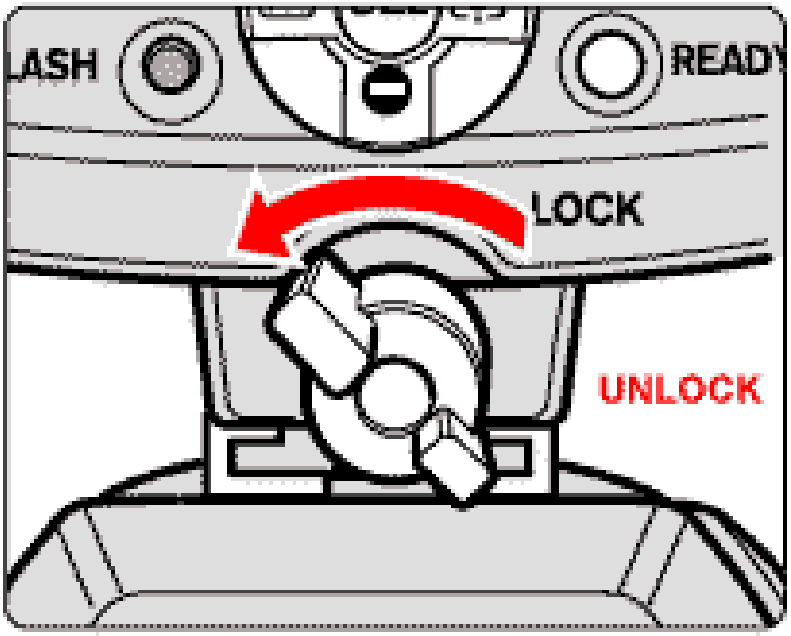
Problems with the SB-80DX

Problem	Cause
The power cannot be turned on.	The batteries are not correctly installed.
The ready-light does not light up.	• Battery power is weak. • The standby function is activated and operating.
The power turns off automatically.	The batteries are extremely exhausted.
A strange sound can be heard caused by the flash head zooming back and forth even when the SB-80DX is turned off.	The batteries are extremely exhausted.
The flash shooting distance range does not appear.	The flash head is adjusted to other than the horizontal position or down -7° position.
No **i-TTL**, **i-TTL BL**, or **i-TTL CL** indicator appears in TTL auto flash mode.	The camera's exposure mode or metering system is not correctly set or a non-CPU lens is mounted.
The zoom-head position cannot be adjusted to other than 14mm or 17mm.	The built-in wide-flash adapter is in use or the Nikon Diffusion Dome is attached.

Warning Indicators in the SB-80DX

Problem	Cause
The ready-light blinks for 3 sec. after firing. The underexposure indicator blinks and the amount of underexposure is displayed, depending on the camera in use.	Underexposure may have occurred.
The underbar blinks.	The flash head is tilted down -7°.
The zoom-head position indication blinks.	"Emergency mode" is set to ON.
A small **M** above the "ZOOM" indication blinks.	"Canceling the power zoom function" is set to ON.
The **FP** indication and the zoom-head position blink.	The built-in wide-flash adapter is used in the FP High-Speed Flash sync mode.
FP blinks.	The SB-80DX is removed from the camera while the **FP** setting is ON.
The aperture indicator displays "FEE" and the shutter cannot be released.	The aperture on the lens is not set to its minimum.
In the Auto Aperture **AA** flash mode, the aperture and the flash output level compensation value blink and the flash shooting distance range disappears.	The aperture or flash output level compensation value set is out of the usable flash shooting distance range.
The zoom-head position displays "- - mm" and blinks.	In rare cases, this happens but is not a malfunction. Turn off the power and then turn it back on.
Three beeps sound during wireless multiple flash shooting.	The flash has fired at its maximum output and underexposure may have occurred.


LASH
READY
LOCK
LOCK


LASH
READY
LOCK
UNLOCK


f=50mm ~ f=300mm