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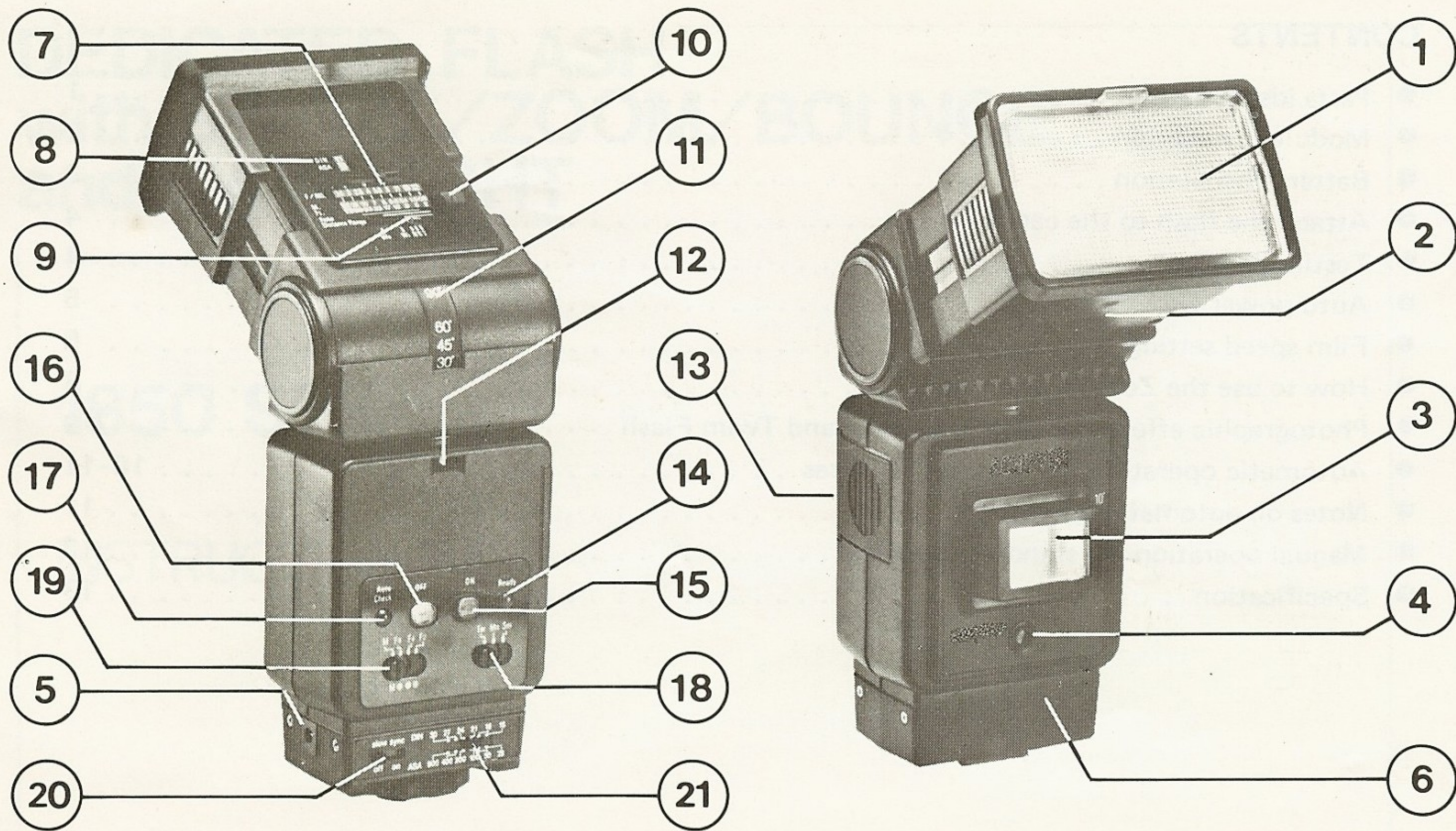
DEDICATED FLASH
with SWIVEL/ZOOM/BOUNCE
and TWIN LIGHT

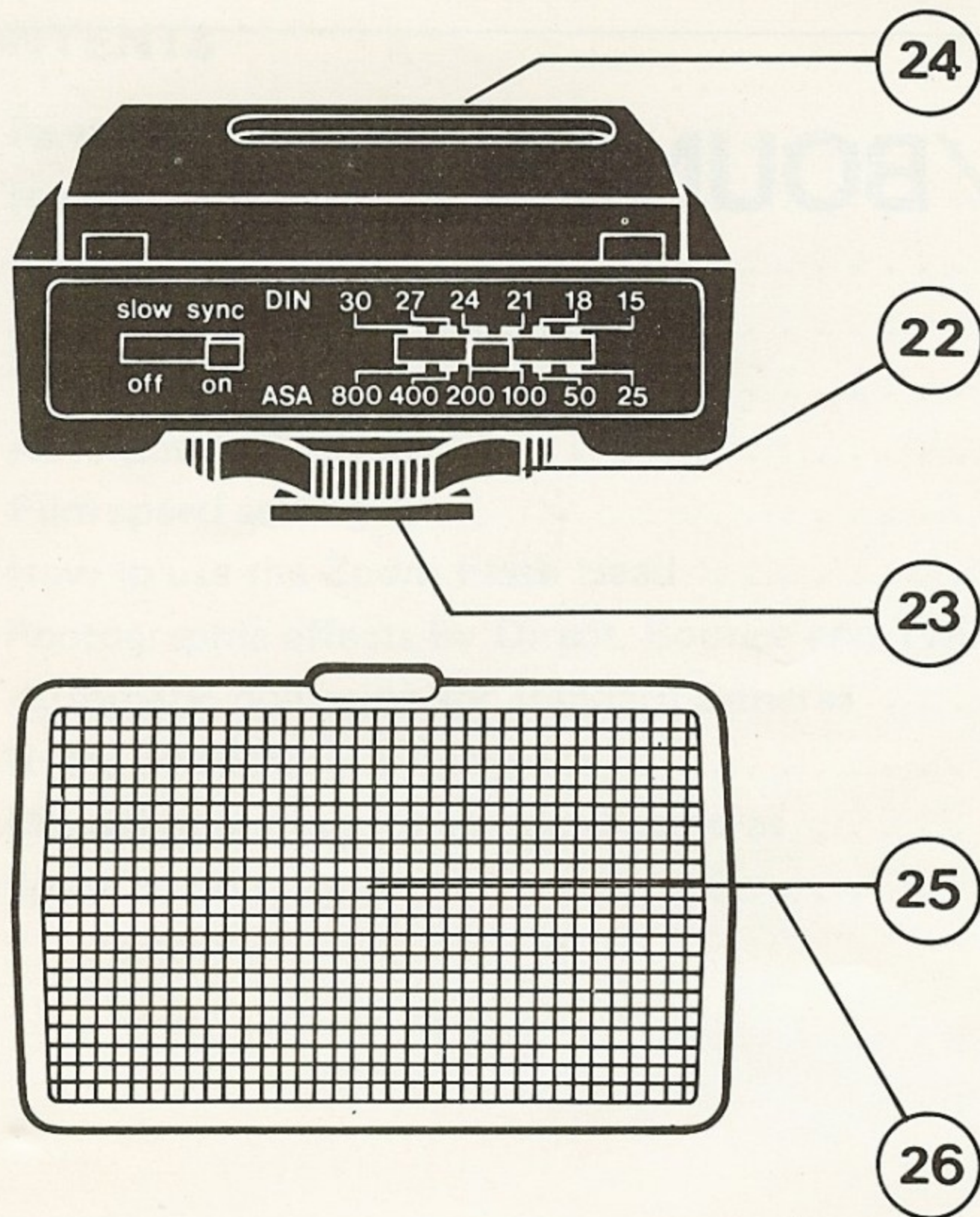
1850 STW

INSTRUCTION

CONTENTS

● Parts identification	1
● Module installation	2
● Battery installation	3
● Attach the flash to the camera	4
● Testing the flash	4
● Auto power OFF/ON	5
● Film speed setting	5
● How to use the Zoom Flash Head	6
● Photographic effects by Direct, Bounce and Twim Flash	7-9
● Automatic operation for standard cameras	10-11
● Notes on automatic operation	11
● Manual operation for standard cameras	12
● Specification	13





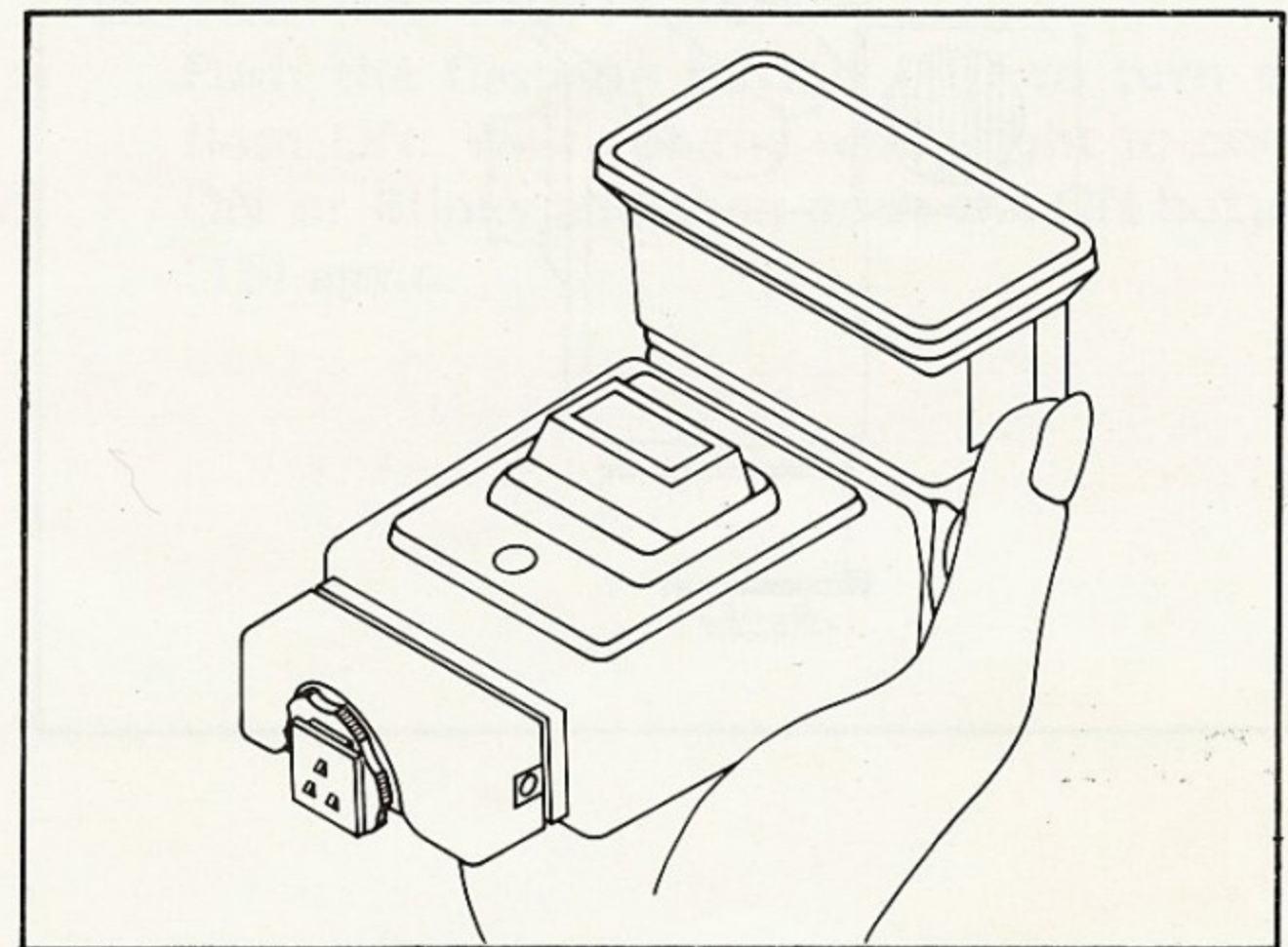
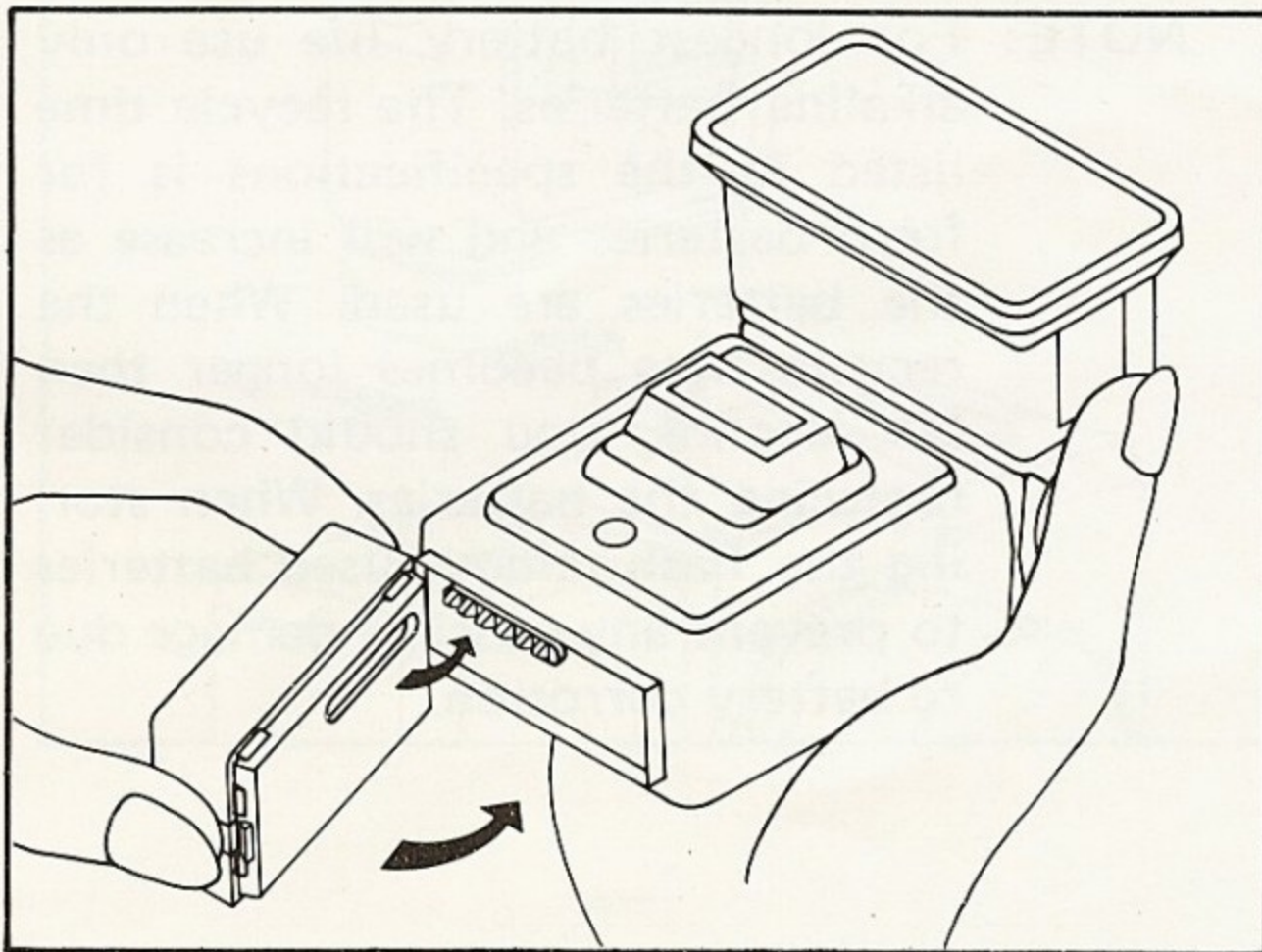
PARTS IDENTIFICATION

1. Main flash
2. Swivel / Bounce / Zoom head
3. Small flash
4. Sensor
5. Module release button
6. Changable dedicated module
7. Exposure chart
8. ASA / DIN Film speed selector
9. Distance sliding scale
10. Zoom head indicating window
11. Bounce angle scale
12. Swivel head scale
13. Battery compartment cover
14. Ready light (Blinks)
15. Flash Power on / Test button
16. Flash Power Off Button
17. Auto check indicator
18. Twin / Single flash selector
19. Auto range / Manual selector
20. Module auto / Manual switch
21. Module film speed switch
22. Locking wheel
23. Mounting foot
24. Dedicated / Hotshoe contact point
25. Wide-angle diffuser
26. Colored filters

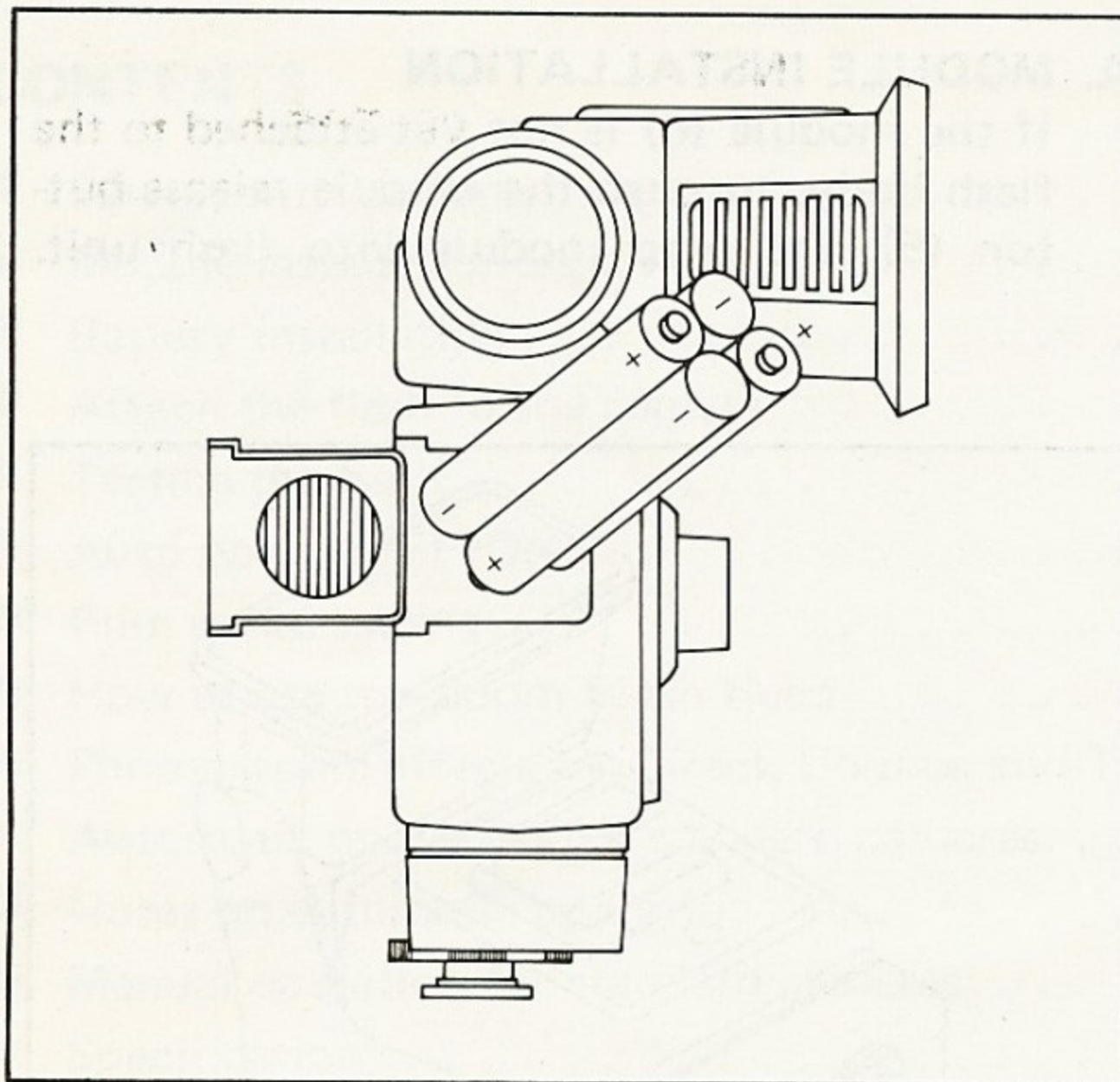
INSTRUCTIONS

A. MODULE INSTALLATION

If the module (6) is not yet attached to the flash body, to push the module release button (5) and snap module into flash unit.



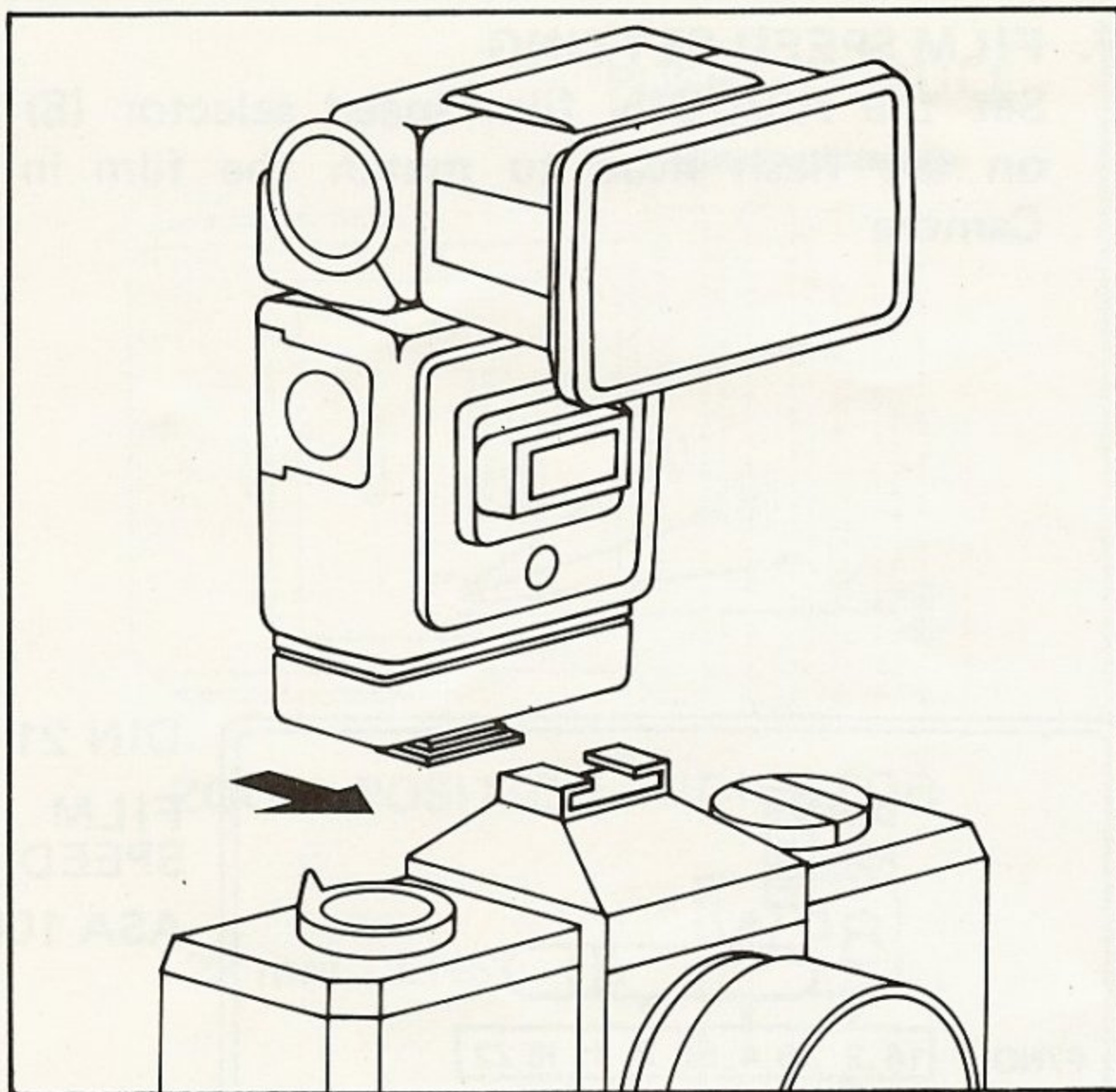
(SAVE THESE INSTRUCTIONS)



B. BATTERY INSTALLATION

Open the battery compartment cover (13) by sliding it toward the rear of the flash unit. Insert four AA alkaline batteries and replace the cover. Make sure the batteries are positioned same as the markings inside the battery compartment.

NOTE: For longest battery life use only alkaline batteries. The recycle time listed in the specifications is for fresh batteries and will increase as the batteries are used. When the recycle time becomes longer than 30 seconds, you should consider replacing the batteries. When storing the flash remove used batteries to prevent any possible damage due to battery corrosion.



C. ATTACH THE FLASH TO THE CAMERA

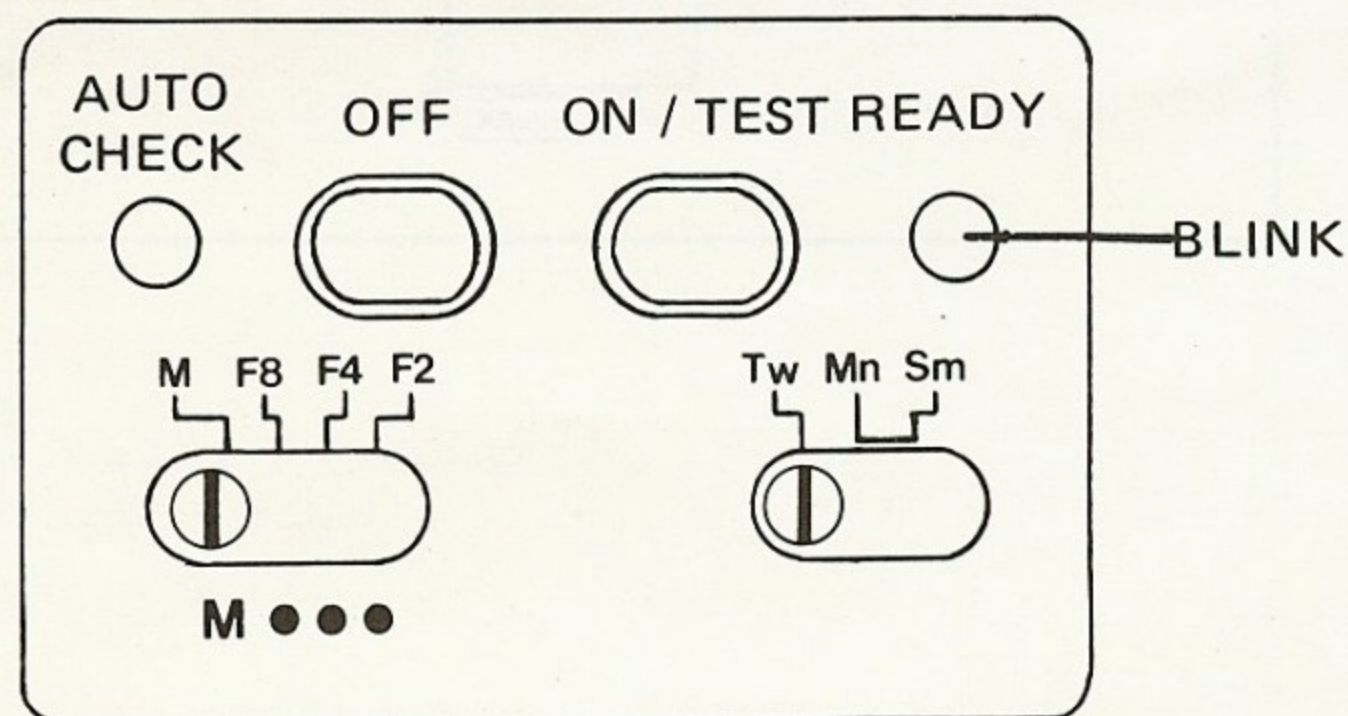
Slide the flash unit's mounting foot (23) into the accessory shoe on your camera. Turn the locking wheel (22) on the mounting foot to lock the flash securely to the camera.

D. TESTING THE FLASH

Push the flash on button (15) to turn the flash ON. Wait for the ready light to come ON or Blinks and then push the ON button (15) again.

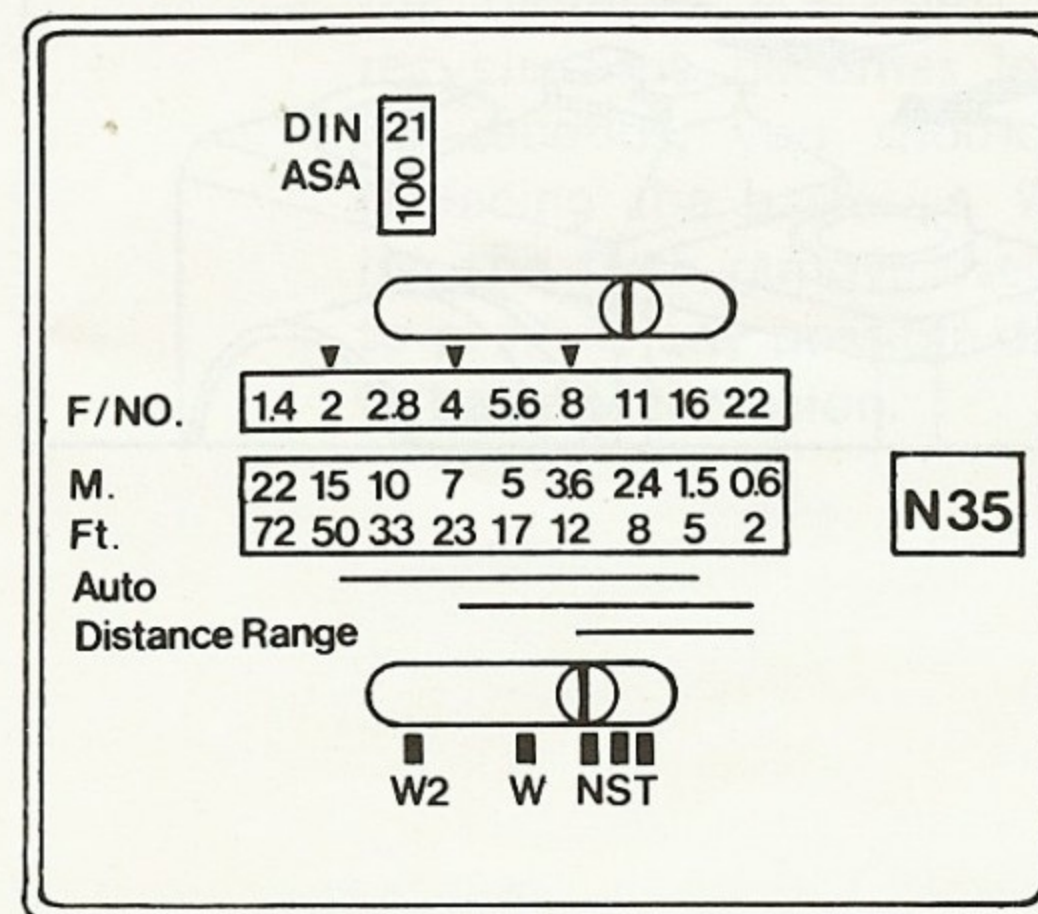
E. AUTO POWER OFF/ON

One of the main features is an energy saving circuitry which provided to have longer battery life. While the power is ON and the unit is charging, the power circuit will automatically shut off. The current flow from the battery to the capacitor is cut if no pictures are taken within a predetermined period of time. The unit will remain ready to fire even after the circuitry is cut off as long as the ready light ON. To re-set just push the on button (15). This auto power OFF/ON system works on automatic and manual operations.

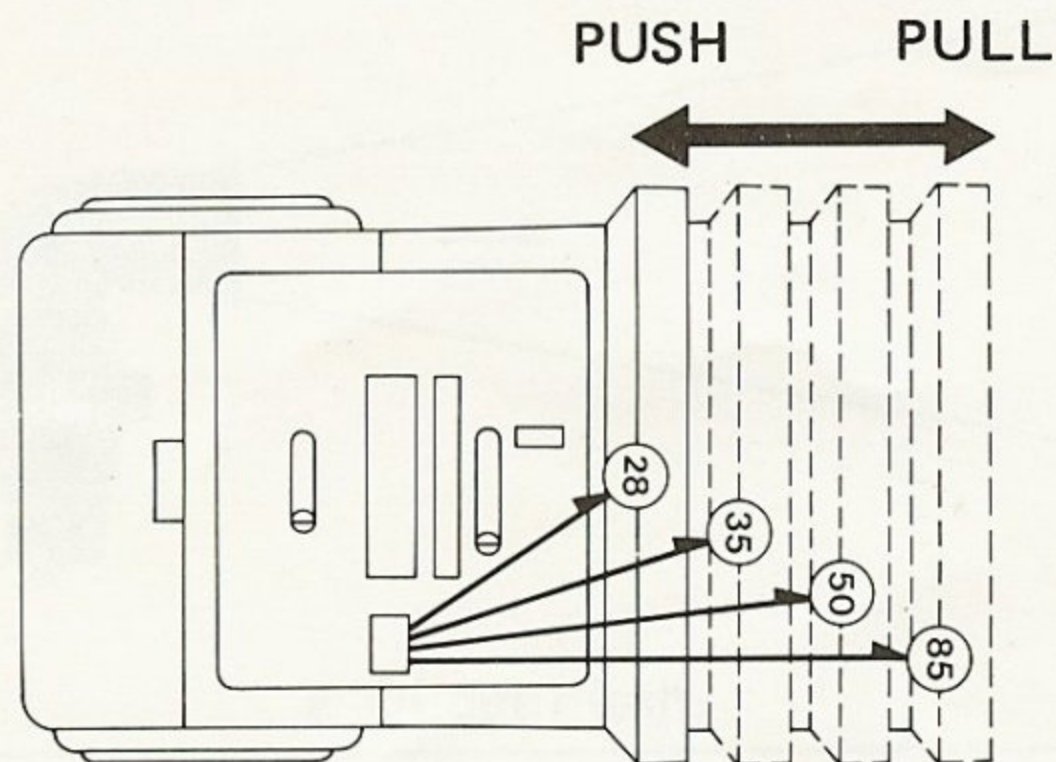


F. FILM SPEED SETTING

Set the ASA/DIN film speed selector (8) on the flash head to match the film in Camera



DIN 21
FILM
SPEED
ASA 100



ZOOM POSITION INDICATOR

28 mm LENS

W28

35 mm LENS

N35

50 mm LENS

S50

85 mm LENS

T85

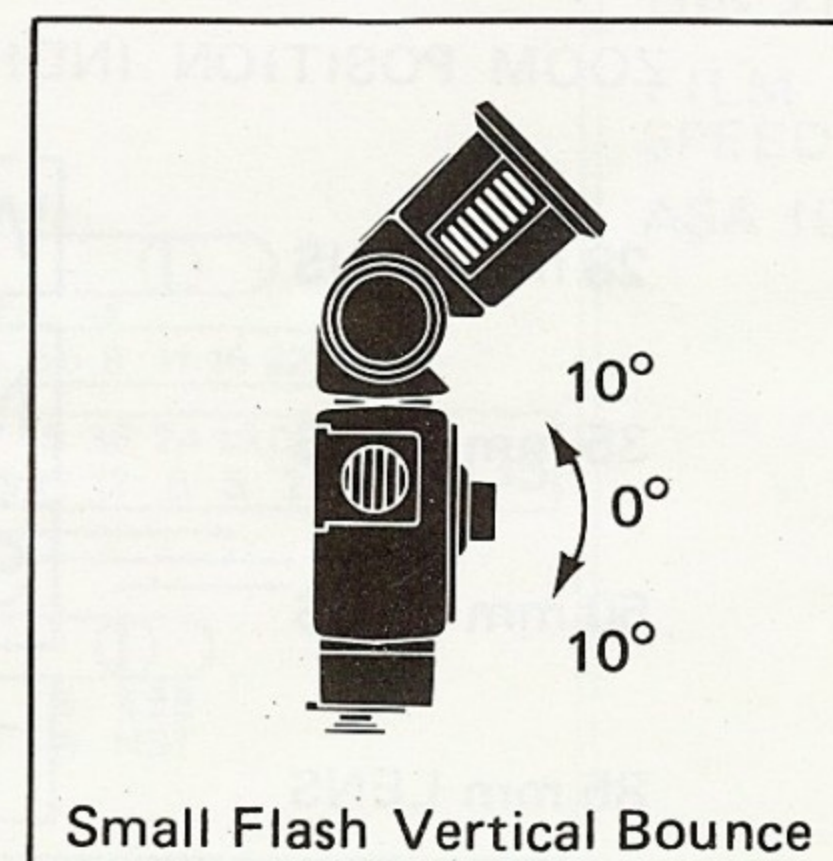
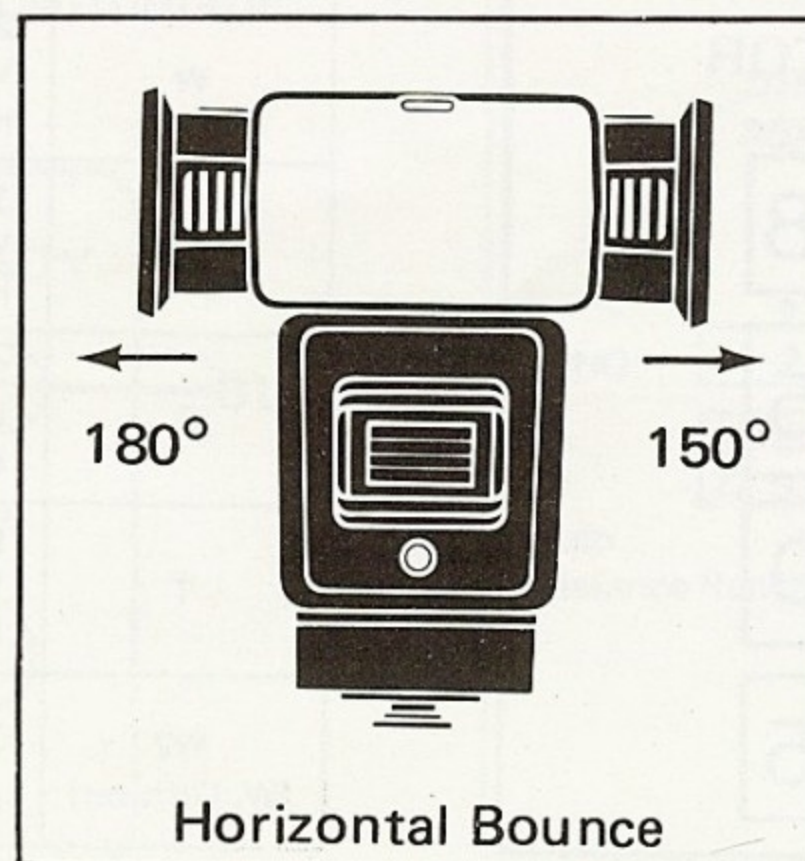
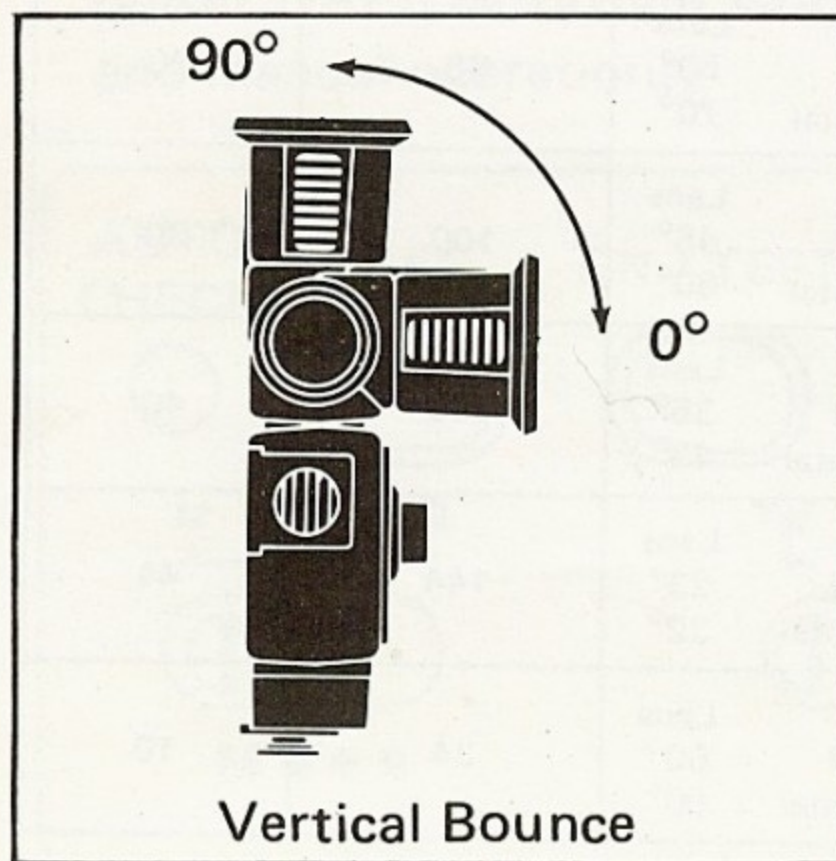
G. HOW TO USE THE ZOOM FLASH HEAD

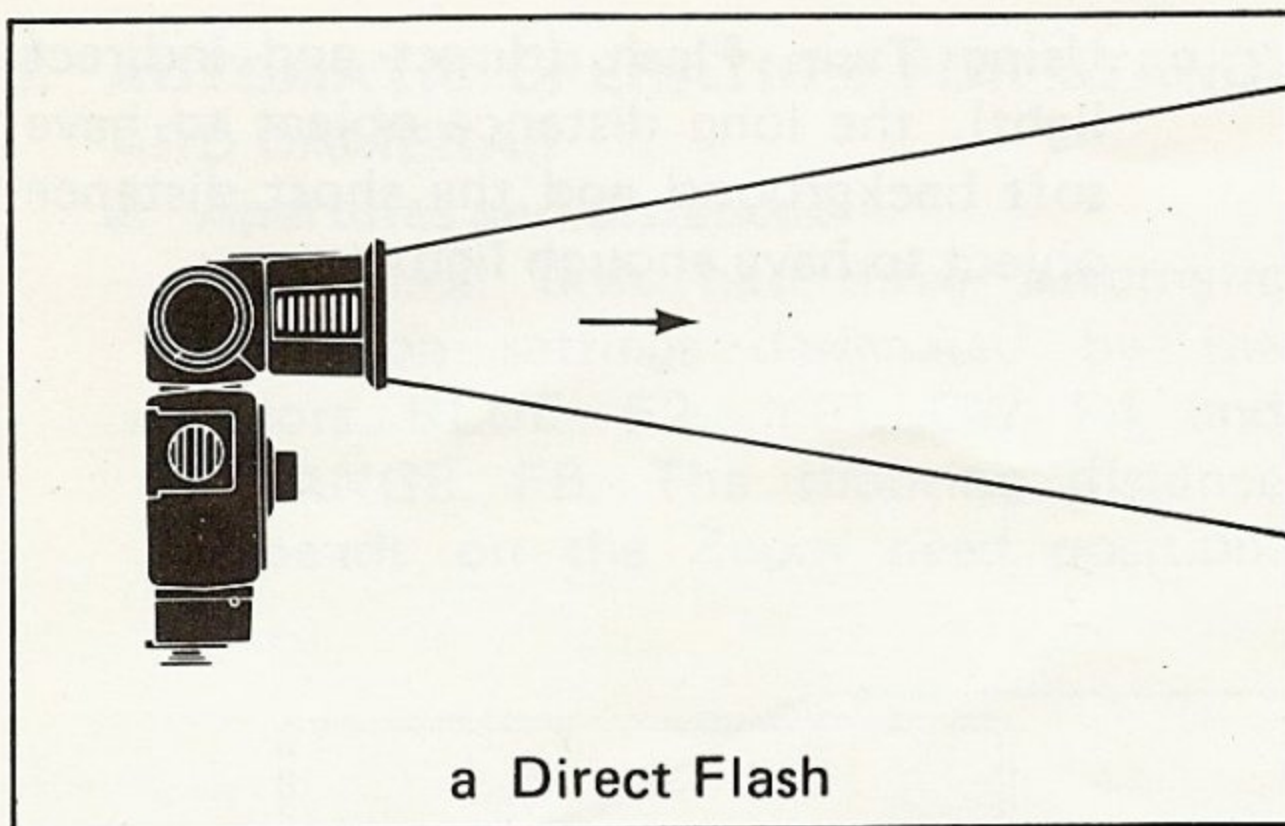
The lighting angle mechanism built into this flash unit allows selection of 4 preset lighting angles by just pulling out the flash Zoom head. The guide number changes in relation to the position.

Determine the Zoom head position with reference to lens focal length.

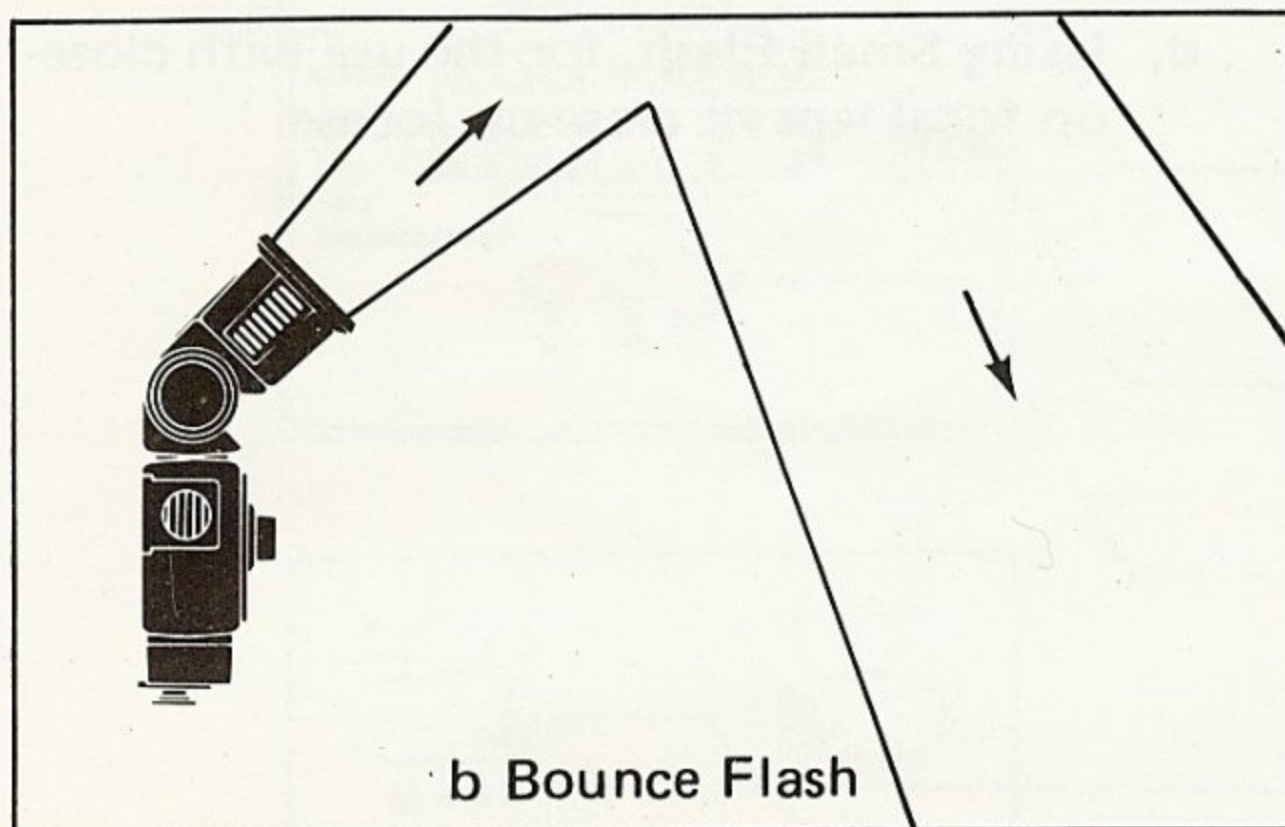
Zoomhead Indicator Index	Lens Focal Length (Light Angles)	Guide Number	
		ASA 100 FT	DIN 21M
W	28mm Vertical 50° Horizontal 70°	66	20
N	35mm Vertical 45° Horizontal 60°	100	30
S	50mm Vertical 35° Horizontal 45°	130	40
T	85mm Vertical 23° Horizontal 32°	144	44
W2 (W. Diffuser)	25mm Vertical 60° Horizontal 80°	34	10

H. PHOTOGRAPHIC EFFECTS BY DIRECT, BOUNCE AND TWIN FLASH

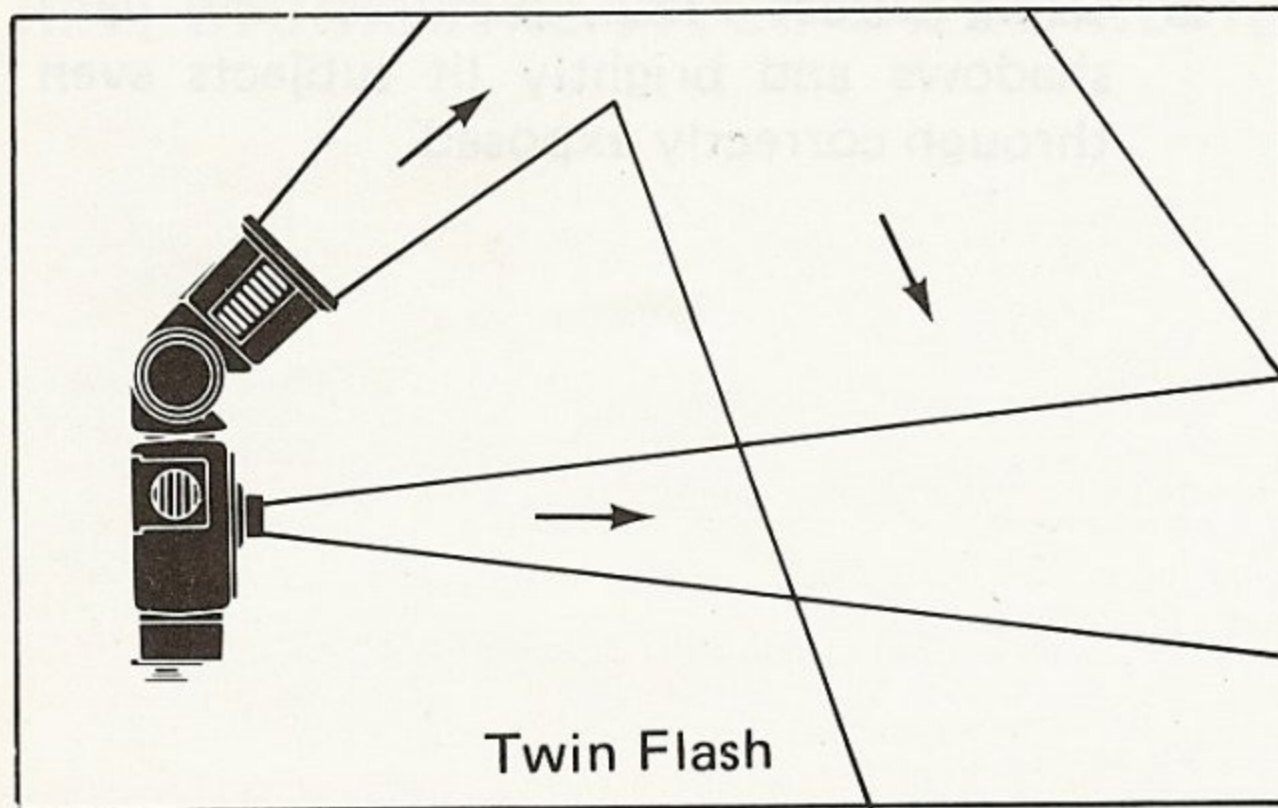




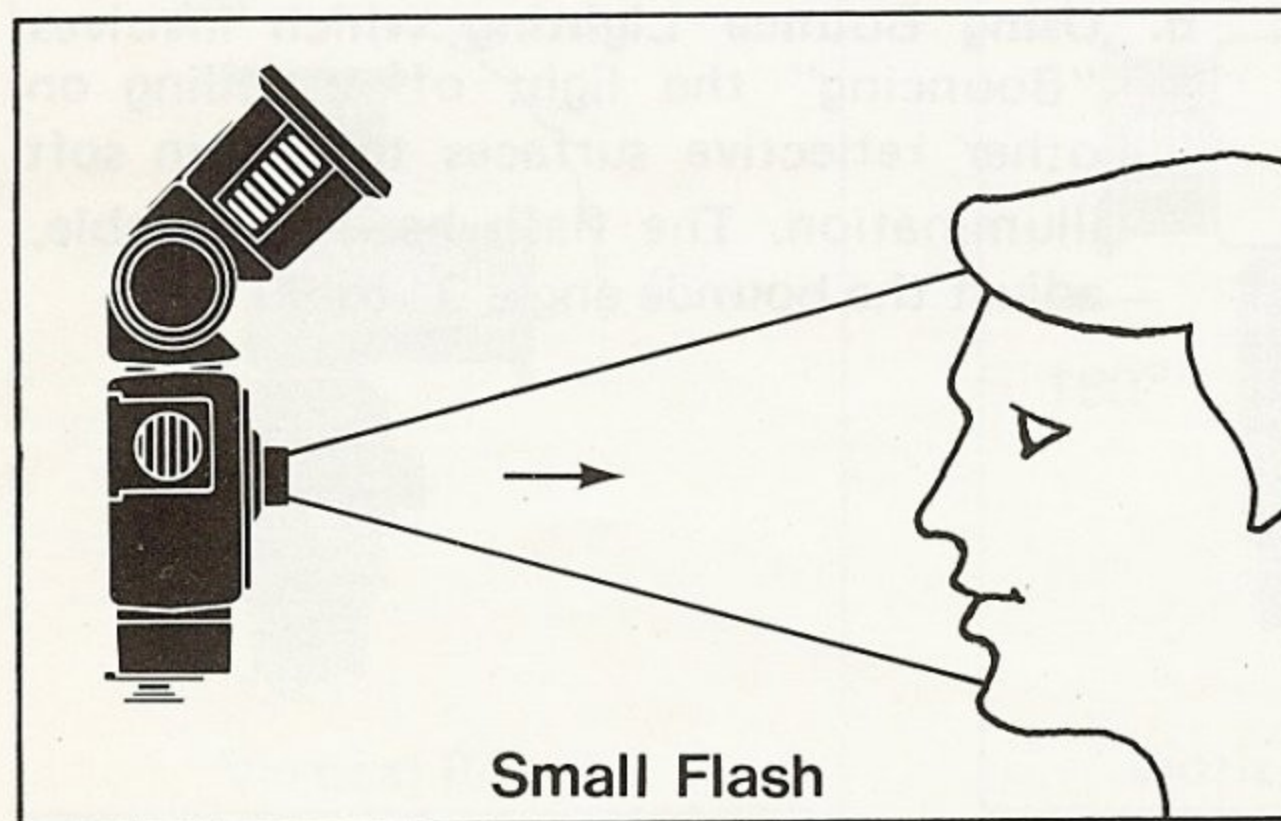
- a. **Using Direct Flash**, pictures have hard shadows and brightly lit subjects even through correctly exposed.



- b. **Using Bounce Lighting** which involves "Bouncing" the light off a ceiling on other reflective surfaces to obtain soft illumination. The flash head is variable, adjust the bounce angle 0° to 90° .



- c. **Using Twin Flash** (direct and indirect light), the long distance object to have soft background and the short distance object to have enough lighting.



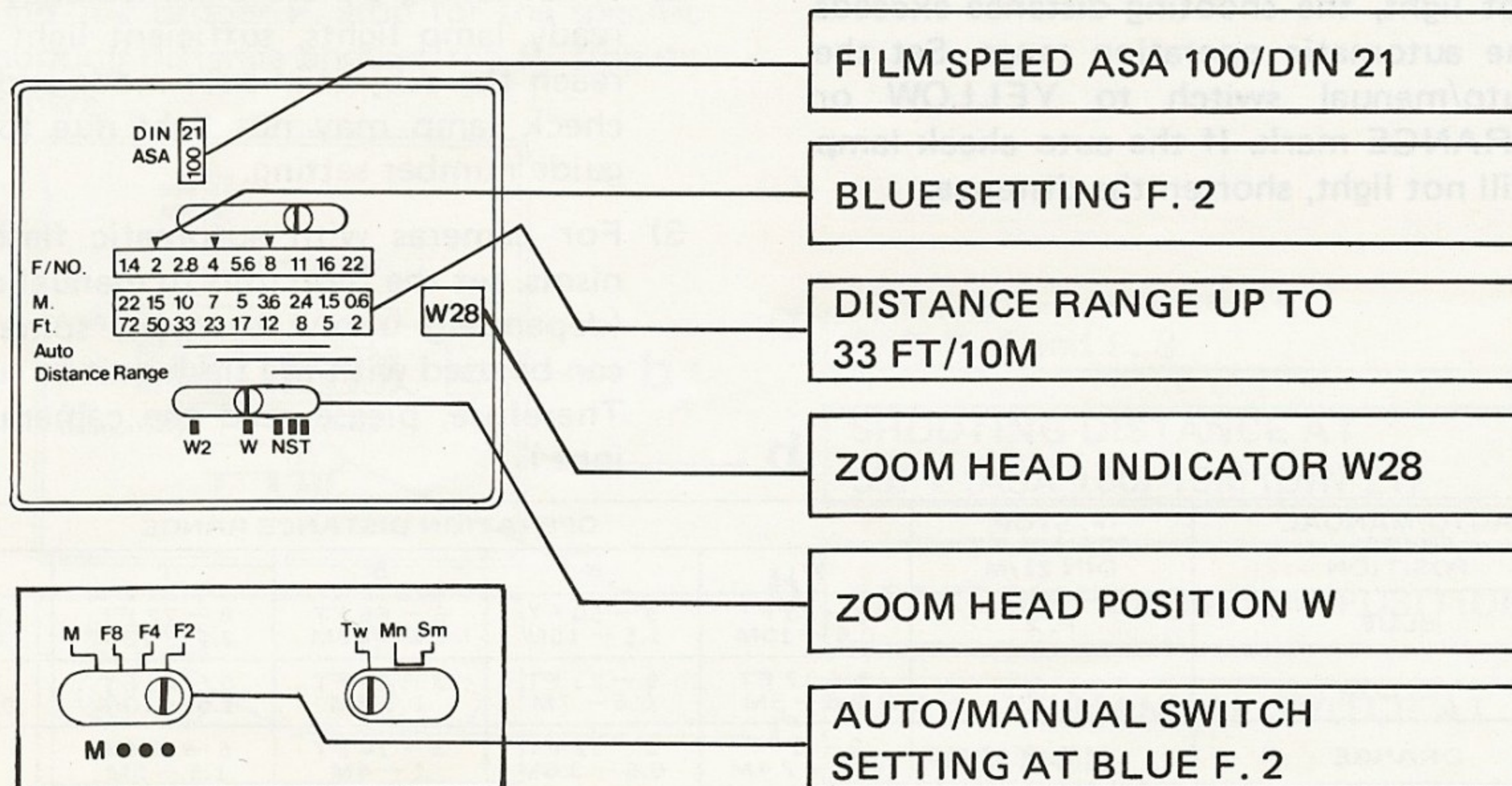
- d. **Using Small Flash**, for the use with close-up focal lens or close-up focase.

I. AUTOMATIC OPERATION FOR STANDARD CAMERAS

a. Apertures and distances

The Flash unit has three automatic operation settings designated by the colors BLUE F2, YELLOW F4 and ORANGE F8. The shooting distance depends on the Zoom head position.

NOTE: The shooting distance changes when lighting/Bounce angle is changed.



b. Automatic Operation range

The range of automatic operation does not vary with film speed. You need only change the ASA/DIN film speed selector (8). If the auto check lamp (17) lights at the same moment as the unit flashing, this indicates that the auto circuit is working. If the auto check lamp does not light, the shooting distance exceeds the automatic operation range. Set the auto/manual switch to YELLOW or BLUE mark. If the auto check lamp still not light, shorten the distance.

NOTES ON AUTOMATIC OPERATION

- 1) When shooting outdoors in daytime, intense illumination may cause the auto-circuit to malfunction, and the auto check lamp may indicate an inaccurate calculation. Therefore set the auto/manual switch at "M" for daylight shooting.
- 2) When taking a picture immediately after the ready lamp lights, sufficient light may not reach the subject in auto mode and the auto check lamp may not light due to the low guide number setting.
- 3) For cameras with automatic flash mechanisms, set the flash unit to manual operation (depending upon the type, some cameras can be used with the flash unit in automatic. Therefore, please read the camera instructions.)

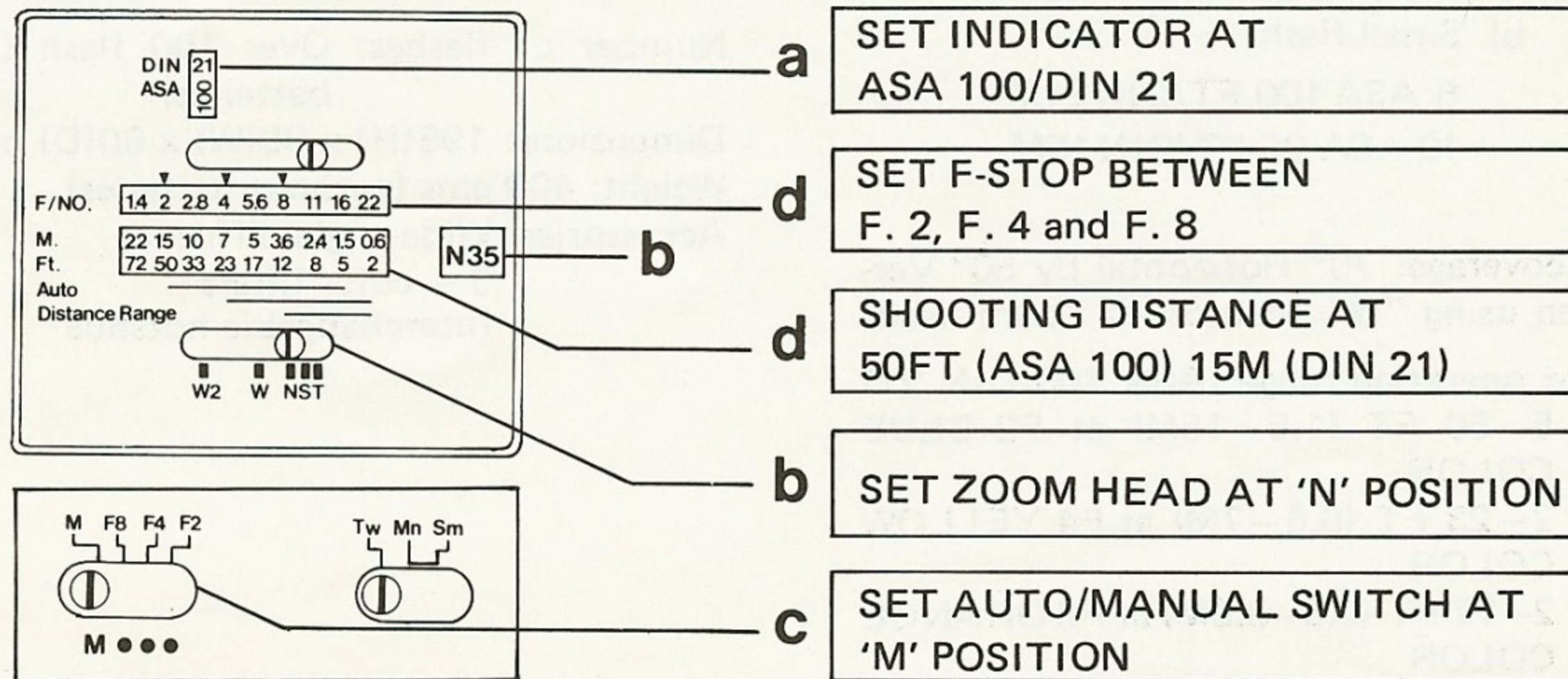
AUTO/MANUAL SWITCH POSITION	F. STOP ASA 100/FT DIN 21/M	OPERATION DISTANCE RANGE				
		W ₁	N	S	T	W ₂
BLUE	F. 2	2 — 23 FT 0.6 — 10M	5 — 50 FT 1.5 — 15M	6 — 65 FT 1.8 — 20M	8 — 72 FT 2.4 — 22M	2 — 17 FT 0.6 — 5M
YELLOW	F. 4	2 — 17 FT 0.6 — 5M	5 — 23 FT 0.6 — 7M	3 — 28 FT 1 — 8M	5 — 23 FT 1.5 — 10M	3 — 8 FT 0.6 — 2.4M
ORANGE	F. 8	2 — 8 FT 0.6 — 2.4M	2 — 12 FT 0.6 — 3.6M	3 — 14 FT 1 — 4M	5 — 17 FT 1.5 — 5M	2 FT 0.6M

J. MANUAL OPERATION FOR STANDARD CAMERAS

- Set the film speed (ASA/DIN) on the flash head scale.
- Set the Zoom head position same as the Zoom head sliding scale.
- Set the auto/manual switch to "M" position.
- Find the proper F. stop for the specific shooting distance and set the F. stop on camera.

(EXAMPLE)

If shooting at distance of 50FT with
35mm Lens
Film speed ASA 100 (DIN 21)



SPECIFICATION

Guide No. Main flash only.
30—40 DIN 21/M
50—70 ASA 25/FT
100—144 ASA 100/FT
(Depends on Zoom Head Position)
Twim flash (Main & Small)
a) Main flash
25 ASA 100 FT/DIN 21M
40 ASA 25 FT/DIN 15M
b) Small flash
6 ASA 100 FT/DIN 21M
10 ASA 25 FT/DIN 15M

Angle of coverage: 70° Horizontal by 50° Vertical (when using "W" position of Zoom head)

Automatic operating range (ASA 100/DIN 21)
Approx. 5—50 FT (1.5—15M) at F2 BLUE
COLOR
2—23 FT (0.6—7M) at F4 YELLOW
COLOR
2—12 FT (0.6—3.6M) at F8 ORANGE
COLOR

Flash Duration: 1/1000 sec. on manual
1/15000 sec. on Auto

Bounce angle: 0° — 90°

Swivel angle: Left to Right 330°

Sensor angle: Approx. 20°

Power Source: 4 x 1.5V AA size alkaline
batteries

Recycling time: 0.2—10 sec. (Auto)
10—12 sec. (Manual)

Number of flashes: Over 100 flash (Alkaline
batteries)

Dimensions: 195(H) x 90(W) x 60(D) mm

Weight: 400 gms (without batteries)

Accessories: Wide-angle diffuser

3 — color filters

Interchangeable hotshoe