

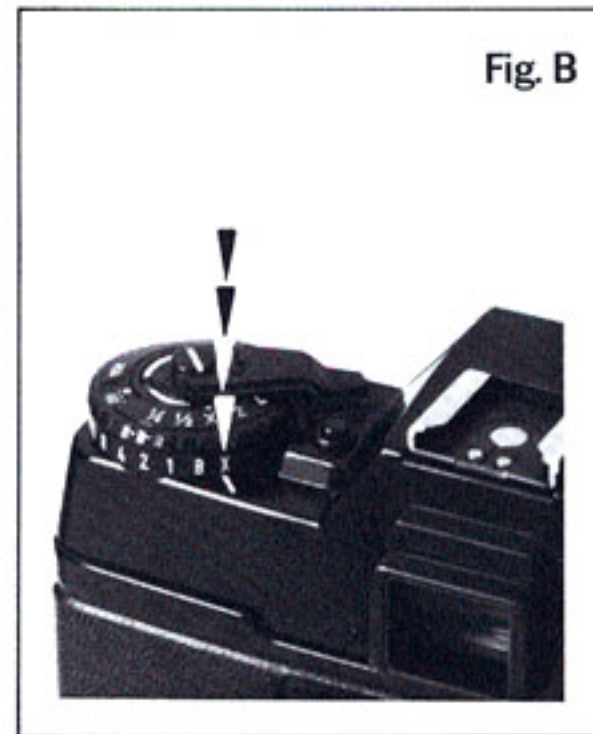
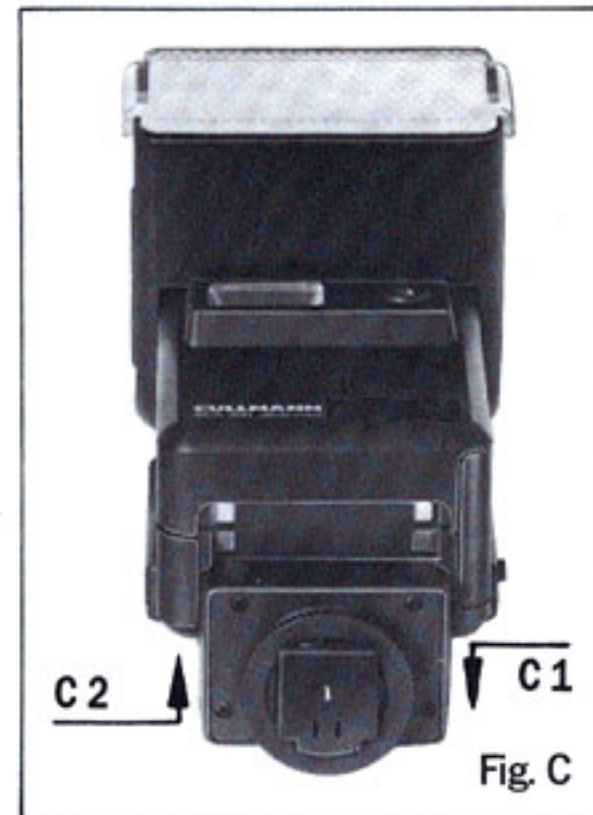
Getting acquainted

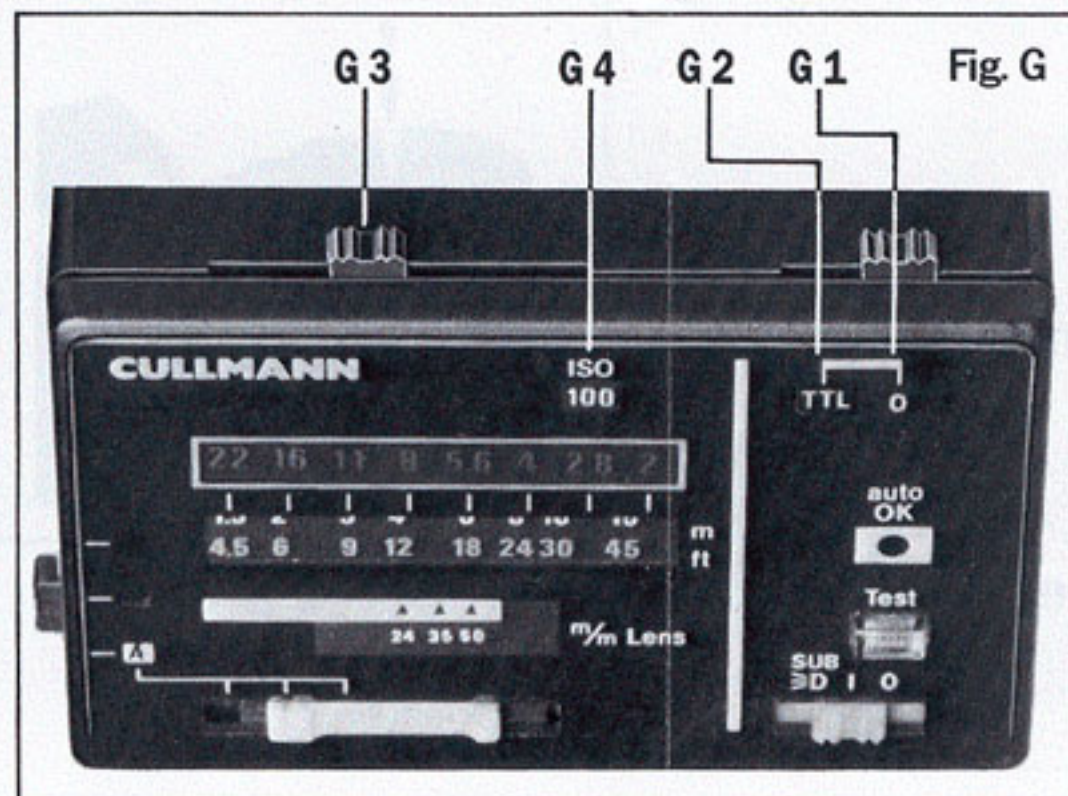
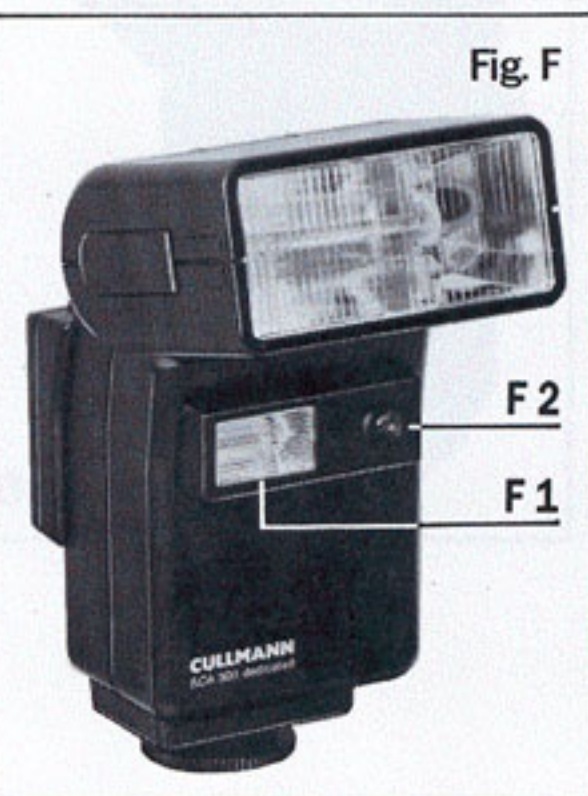
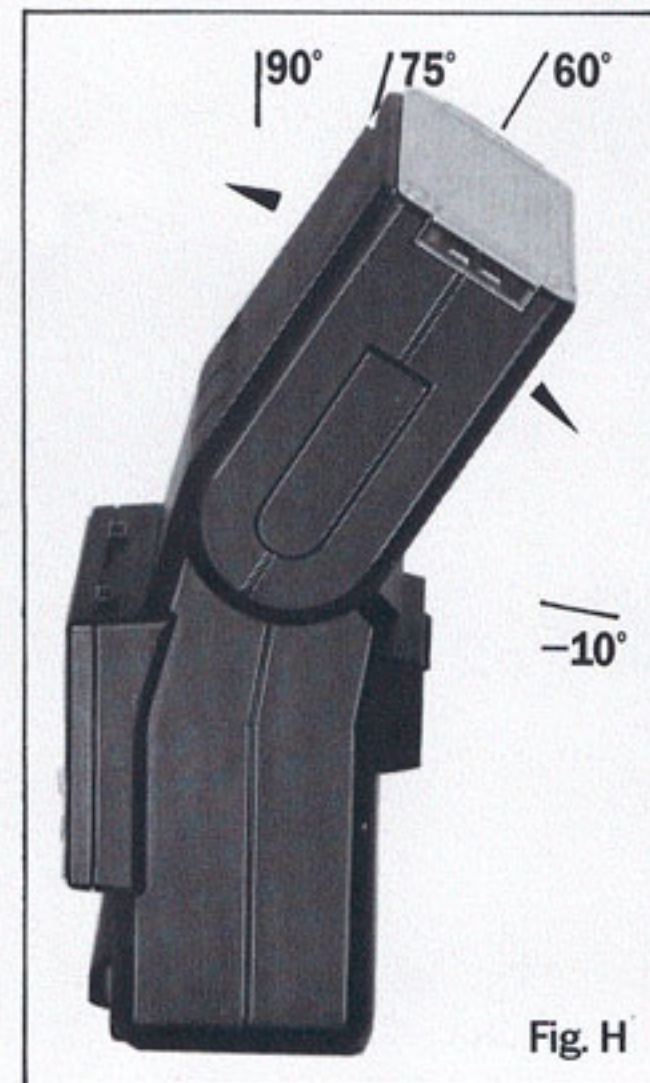
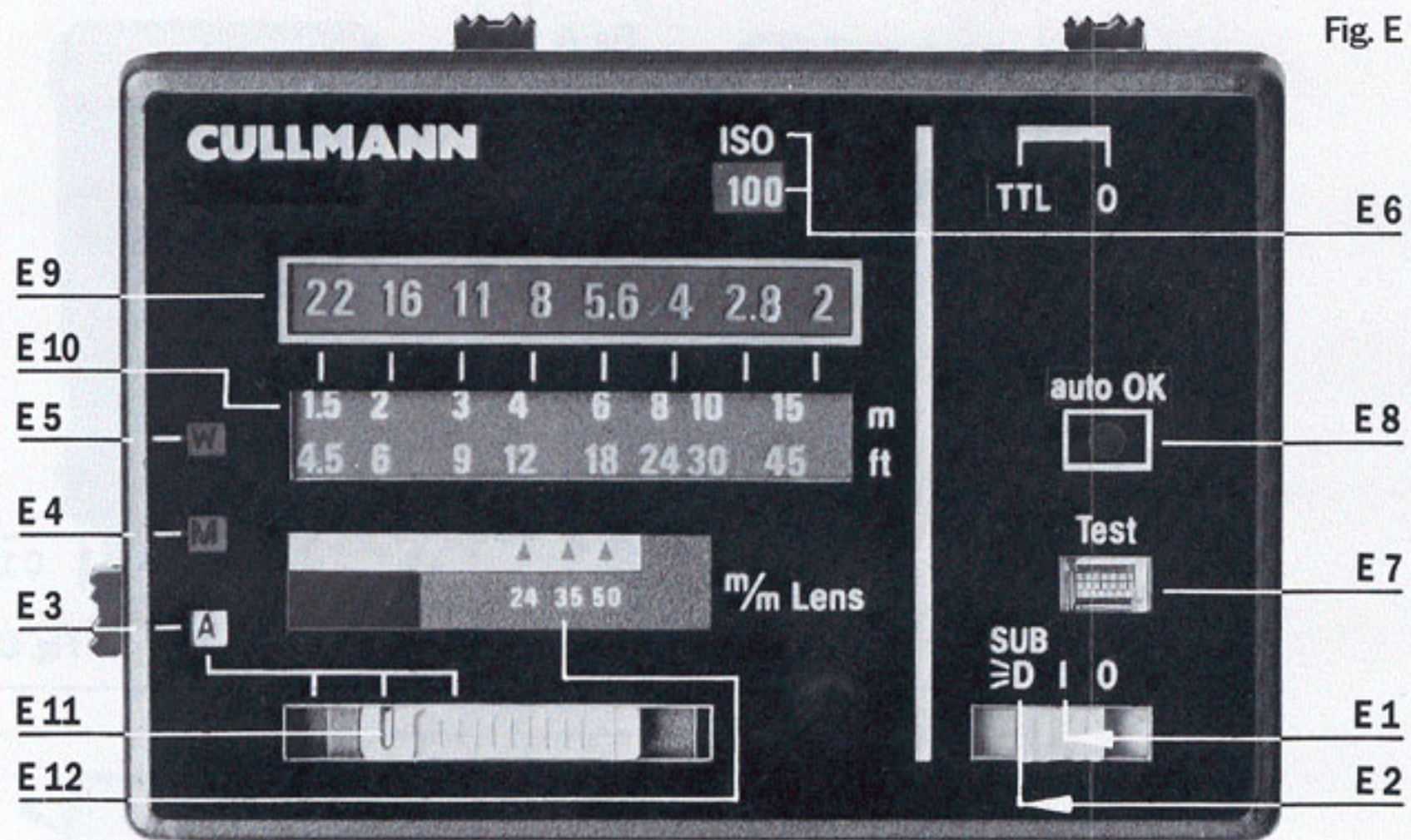
Welcome to CULLMANN. In keeping with the high quality standard of CULLMANN products, the DC 25 and DC 32 flash units incorporate the very latest in engineering.

Please read this guide carefully from cover to cover and follow the instructions so that you will get the best out of your flash unit.

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User's Guide
DC 25/DC 32





1.0 Please note:

The surface of the computer at the back of your flash is protected by an adhesive film which has to be pulled off before use.

1.1 Loading batteries or NC accumulators (see Fig. A)

Pull off battery compartment cover downwards and insert four 1.5 V alkaline manganese mignon cells or four chargeable 1.24 V NC accumulators into the battery compartment according to the +/– marks. Then push cover back up so that it latches.

2.0 Switching on and off (see Fig. E)

Slide green main switch to left to position I, **E 1**. The whistling sound indicates that the unit is charging. The pilot lamp **E 7** lights up as soon as charging is completed.

2.1 Replace the batteries or recharge the NC accumulators if the pilot lamp **E 7** takes too long to appear (about 30 seconds). For charging accumulators you will require the CULLMANN charger, Art. No. 4230.

2.2 IMPORTANT!

Take used batteries out of your flash because they might otherwise leak and cause damage. Replace all four batteries or NC accumulators together. We recommend you to take out the batteries if you leave your flash idle for any length of time.

2.3 OFF – ON – SUB position

SUB (subflash) on DC 32 (see Fig. F)
For use see item 11.2.

3.0 Connection to a camera with an accessory shoe contact

Slide the CULLMANN flash unit into the accessory shoe on the camera and tighten the locking screw. The flash is connected electrically now.

3.1 Camera shutter speed (see Fig. B)

Set the shutter speed given in your camera instruction guide.

3.2 On some reflex cameras, the flash ready signal is transmitted to the viewfinder through the  **SCA** dedicated adapter.

3.3 IMPORTANT!

On some reflex cameras, flash synchronization is obtained automatically by pushing the unit into the accessory shoe in conjunction with the matching  **SCA** adapter.

4.0 **SCA 300** dedicated system (see Fig. C)

 **SCA 300** system adapters are available for all common miniature reflex cameras.

The CULLMANN DC 25 and DC 32 flash units, combined with the  **SCA 300** dedicated system and system adapters, offer additional functions and a high degree of convenience in conjunction with modern system cameras. The standard adapter on the flash unit has to be pulled smartly off backwards **C 1**, and the matching  **SCA 300** dedicated adapter pushed home in its place **C 2**. Using the dedicated adapter matched to your particular camera, you obtain automatic transmission between flash unit and camera. Flash ready lamp, flash synchronization, exposure auto check, automatic aperture control, TTL flash control, triggering control.

5.0 Setting the film speed (see Fig. G)

The desired film speed is obtained by operating the left-hand slide switch above the computer **G 3**. The film speed setting appears then in ISO field **G 4**. (You must be able to feel the slide switch latching.)

5.1 Table of film speeds:

ISO/ASA	DIN
50	18
100	21
200	24
400	27
800	30
1600	33

6.0 Automatic (Item 7) – manual (Item 8) – winder operation (Item 9) (see Fig. E)

TTL mode illustrated in Fig. G. For operation see item 10.0

6.1 The function switch is located at the outer left-hand side of the computer. Position A for automatic operation **E 3**, position M for manual operation **E 4** and position W for winder operation **E 5**.

7.0 Flash pictures with automatic control (see Fig. E)

The thyristor-controlled computer circuit ensures automatically correct flashing at certain ranges. When the flash is triggered a photocell measures the amount of light reflected by subject and controls the flash output. The unneeded energy is saved and stored for the next flash, shortening the flash re-cycle time.

7.1 When the function switch is set to position A = automatic operation **E 3**, one of the three computer apertures lights up **E 10**, depending on which automatic range is selected at that moment.

CAUTION:

The TTL switch (top right) must be at position 0, **G 1**.

Depending on the desired flash range, select one of the 3 computer apertures by moving the grey switch **E 11** accordingly. (You must be able to feel the slide switch latching.)

Above the arrows on the m/m lens scale **E 12**, you will find on the distance scale **E 10** the maximum automatic flash range which corresponds to the focal length of the lens you are using. The aperture **E 9** which lights up here must be set on your camera now.

7.2 CAUTION:

Be sure not to cover the photocell (Fig. **F 2**) when taking flash pictures with automatic computer control.

7.3 How to set the system for automatic control

1. Film speed: 100 ISO
2. Slide automatic switch home to right.
3. Aperture f 2.8 lights up. This is then the aperture which needs transferring to the lens.
4. In conjunction with a standard lens of 50 mm focal length, the automatic range extends up to 9 m with the DC 25 and up to 11.2 m with the DC 32.

The automatic range for the other focal lengths can be found on the distance scale using the m/m lens scale above the arrows.

7.4 Automatic ranges without auxiliary flash (see the following table for 100 ISO)

Computer	Focal length of lens	CULLMANN DC 32	CULLMANN DC 25
Aperture f 2.8	50 mm	1.0 – 11.2 m	1.0 – 9.0 m
	35 mm*	1.0 – 9.6 m	1.0 – 7.1 m
	24/28 mm*	1.0 – 7.9 m ✓	1.0 – 5.7 m
Aperture f 4	50 mm	0.8 – 8.0 m	0.8 – 6.3 m
	35 mm*	0.8 – 6.7 m	0.8 – 5.0 m
	24/28 mm*	0.8 – 5.5 m	0.8 – 4.0 m
Aperture f 5.6	50 mm	0.7 – 5.7 m	0.7 – 4.5 m
	35 mm*	0.7 – 4.8 m	0.7 – 3.6 m
	24/28 mm*	0.7 – 3.9 m	0.7 – 2.9 m

* Attach the corresponding wide-angle diffuser for the focal length

8.0 Flash pictures with manual control (see Fig. E)

Flash pictures can also be taken with manual control. Move the function switch to position M, **E 4**. The necessary aperture depends now on the distance from the subject. The distance value determined by the camera for the subject has to be transferred to the distance scale **E 10** on the flash unit. Opposite this value you will find on the aperture scale **E 9** the aperture value needed for the lens. This procedure applies to the use of the unit without a wide-angle diffuser. When the 24/28 mm or 35 mm wide-angle diffuser **D** is attached, the necessary aperture must be calculated from the following table with reference to film speed.

8.1 Table for calculating the aperture for manual flash control

Basis: Film speed = 100 ISO

Focal length	Guide number for CULLMANN flash	
	DC 32	DC 25
50 mm	32	25
35 mm*	27	20
24/28 mm*	22	16

* With the respective wide-angle diffuser

8.2 How to calculate the aperture:

Focal length of lens: 35 mm

Film speed: 100 ISO

Shooting distance: 5 m

The aperture is calculated from the formula

$$\text{aperture} = \frac{\text{guide number}}{\text{distance}}$$

For the model DC 25 this is worked out as follows:

$$\frac{20 \text{ (guide number for 35 mm focal length)}}{5 \text{ (distance in metres)}} = 4.0$$

$$\text{Aperture} = f 4.0$$

If you have a film speed above or below 100 ISO you will have to correct the aperture accordingly upwards or downwards.

200 ISO film = aperture f 5.6

400 ISO film = aperture f 8.0

or

50 ISO film = aperture f 2.8

9.0 Taking flash pictures with winder (see Fig. E)

The TTL switch must be on the right at position 0, **G 1**. Set the function switch to winder operation, **E 5**. The flash unit is now set for series exposures with the motor winder (maximum of 2 shots per second). The aperture (when using the standard lens) is calculated by referring to the distance; check the aperture scale **E 9** against the m/m lens scale **E 12** and set the necessary aperture at the lens.

10.0 Automatic TTL mode (see Fig. G)

When the flash is set to TTL the automatic function is entirely deactivated because flash control is performed by camera TTL measurement (see camera User's Guide).

10.1 TTL circuit (see Fig. G)

CULLMANN flash units are equipped with a TTL circuit for cameras featuring TTL flashlight measurement. For such cameras, the TTL switch on the flash unit has to be moved to the left to position TTL, **G 2**.

Equipped with the matching  **SCA** system adapter, the camera assumes the function of measuring the flash output (see camera User's Guide).

11.0 Flash pictures with indirect light (for reflector positioning see Fig. H)

CULLMANN flash units incorporate a vertically swivelling reflector for indirect flashing. Vertical swivel: up to 90° The swivel reflector can be tilted by 10° for close-ups below 2 m.

11.1 Flash pictures with indirect light and computer control

Soft lighting can be produced by swivelling the reflector for indirect light. Reflecting surfaces (e.g. ceiling, walls) must be white to avoid falsified colours. For indirect flash with computer control, you should set the maximum possible working aperture (move grey switch to outermost right-hand position), e.g. film speed 100 ISO — aperture f 2.8. To check whether light output is sufficient, first trigger a test flash **E 7**. Light output is adequate if the "auto OK" lamp is lit **E 8**.

11.2 The CULLMANN DC 32 flash unit has a subflash which gives a more even degree of illumination with indirect flash.

Slide the green main switch to the left to position SUB (**E 2**) and turn the swivel reflector to the desired position. Here again, it is advisable to trigger a

test flash by hand to see whether the light output is sufficient (when this is the case, the "auto OK" lamp lights up **E 8**). Release the shutter as soon as the pilot lamp **E 7** lights up.

11.3 Flash pictures with indirect light and manual control

Find the camera aperture for direct flash. Experience has shown that the camera aperture should be set to a figure which is two numbers lower (e.g. f 2.8 instead of the aperture reading f 5.6).

12.0 Specifications: DC 25

Model: Electronic flash unit with thyristor control

Guide number for metres: GN 25 with 100 ISO

Flash re-cycle time with computer with alkaline manganese batteries approx. 0.5 - 6 sec.

with NC accumulators

approx. 0.3 - 3.5 sec.

(with fresh batteries or fully charged NC accumulators)

Flash re-cycle time with manual control: with alkaline manganese batteries approx. 6.0 sec.

with NC accumulators

approx. 3.5 sec.

(with fresh batteries or fully charged NC accumulators)

Number of flashes:

with alkaline manganese batteries approx. 240 - 2.500 (depending on distance) with NC accumulators approx. 120 - 1.200 (depending on distance)

(with fresh batteries or fully charged NC accumulators)

Approximate Illumination

Focal length of lens	Horizontal	Vertical
50 mm	64°	36°
35 mm	64°	45°
24 mm	85°	66°

Computer apertures (100 ISO/21 DIN) with 50 mm focal length lens

Aperture 2.8	Flash range 1.0 - 9.0 m
Aperture 4	Flash range 0.8 - 6.3 m
Aperture 5.6	Flash range 0.7 - 4.5 m

Flash duration:

Without computer: 1/1000 sec. fixed
with computer: between 1/1000 and 1/30000 sec.

Power supply:

Four 1.5 V alkaline manganese batteries (e.g. Mallory MN 1500, Varta V 1500 PX, UCAR E 91, Daimon LR 6) or four 1.24 V NC accumulators (e.g. Varta 501 RS, Furukawa S 101, Sanyo N-3, Saft RC).
With chargeable NC accumulators, flash capacity and re-cycle time vary according to type.

Dimensions: 73 mm wide/140 mm high/90 mm long

Weight: 330 g without batteries, with standard adapter

Article number: 4425

Scope of delivery:

DC 25 flash unit
Wide-angle diffuser 24/28 mm
Wide-angle diffuser 35 mm

 **SCA 300** standard adapter

Sync cord can be supplied as required.
User's guide DC 25

13.0 Specifications: DC 32

Model: Electronic flash unit with thyristor control

Guide number for metres: GN 32 with 100 ISO

Flash re-cycle time with computer

with alkaline manganese batteries approx. 0.5 - 7 sec.

with NC accumulators

approx. 0.3 - 4 sec.

(with fresh batteries or fully charged NC accumulators)

Flash re-cycle time with manual control

Flash re-cycle time with manual control

with alkaline manganese batteries approx. 7 sec.

with NC accumulators

approx. 4 sec.

(with fresh batteries or fully charged NC accumulators)

Number of flashes

with alkaline manganese batteries approx. 220 - 2.000 (depending on distance) with accumulators

approx. 110 - 1.000 (depending on distance) (with fresh batteries or fully charged NC accumulators)

Approximate illumination

Focal length of lens	Horizontal	Vertical
50 mm	64°	36°
35 mm	64°	45°
24 mm	85°	66°

Computer apertures (100 ISO/21 DIN) with 50 mm focal length lens

Aperture 2.8	Flash range 1.0 - 11.2 m
Aperture 4	Flash range 0.8 - 8.0 m
Aperture 5.6	Flash range 0.7 - 5.7 m

Flash duration:

without computer: 1/1000 sec. fixed
with computer: between 1/1000 and 1/30000 sec.

Power supply:

Four 1.5 V alkaline manganese batteries (e.g. Mallory MN 1500, Varta V 1500 PX, UCAR E 91, Daimon LR 6) or four 1.24 V NC accumulators (e.g. Varta 501 RS, Furukawa S 101, Sanyo N-3, Saft RC).

With chargeable NC accumulators, flash capacity and re-cycle time vary according to type.

Dimensions: 73 mm wide/140 mm high/90 mm long

Weight: 340 g without batteries, with standard adapter

Article number: 4432

Scope of delivery:

DC 32 flash unit

Wide-angle diffuser 24/28 mm

Wide-angle diffuser 35 mm

☒ **SCA 300** standard adapter

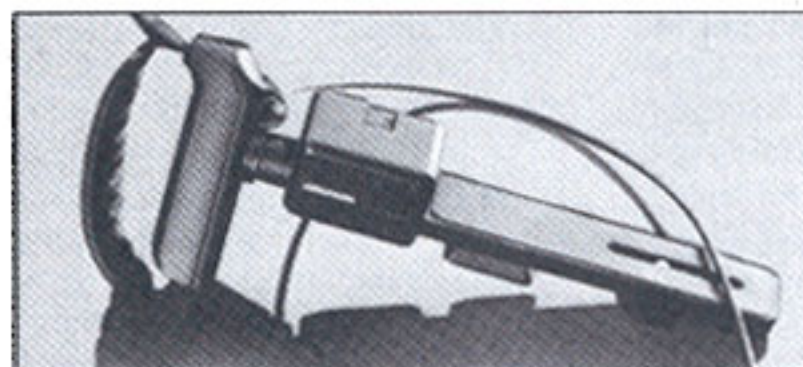
Sync cord can be supplied as required.

User's guide DC 32

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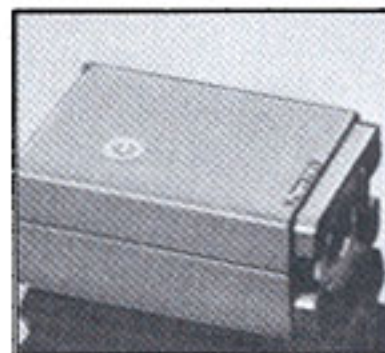
CULLMANN GmbH
90575 Langenzenn · Germany

The flash principle



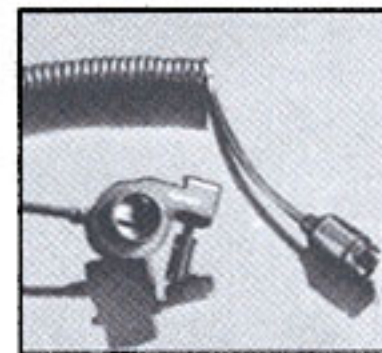
CULLMANN professional handgrip

- Adjustable for left- and right-handers
- Vertically adjustable by 360° in both directions



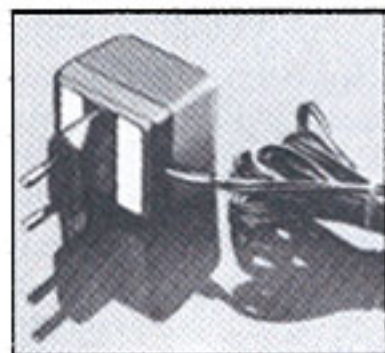
CULLMANN power pack

- For CULLMANN DC 36 and DC 42 only
- Added flash capacity, accelerated flash re-cycle time



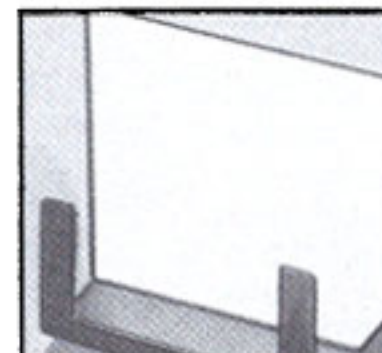
CULLMANN external sensor cable clip

- For macro, telephoto or side light shots
- Central light measurement straight from the camera lens



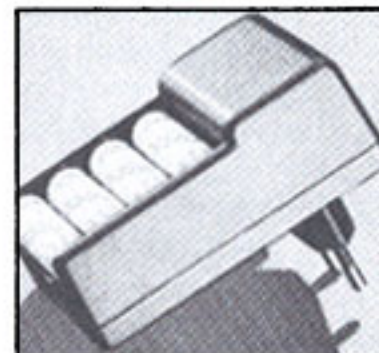
CULLMANN charging cord

- Charging cord for CULLMANN power pack
- Charging time 12-16 hours



CULLMANN soft light reflector

- For soft diffuse light
- Suitable for DC 36 and DC 42



CULLMANN charger

- For 4 NC accumulators
- Charging time 14 hours