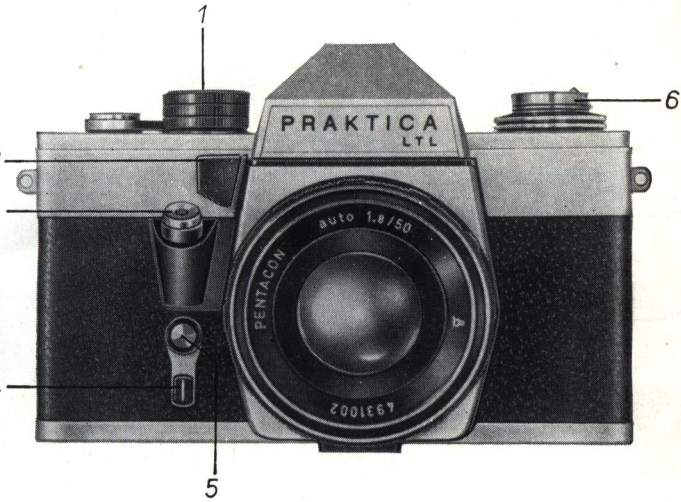
PENTACON

PENTACON PRAKTICA LTL

INSTRUCTIONS FOR USE

Control Parts of the PRAKTICA LTL

1 Knob for setting the shutter speeds
2 Metering key
3 Shutter release
4 Cocking lever for self-timer
5 Self-timer release button
6 Rewind knob
7 Rewind crank
8 Accessory shoe
9 Centre flash contact
10 Exposure speed mark
11 Cocking lever
12 Film speed scales
13 Film speed indicator
14 Exposure counter
15 Manual stop down key
16 Distance setting ring
17 Diaphragm setting ring
18 Depth-of-field scale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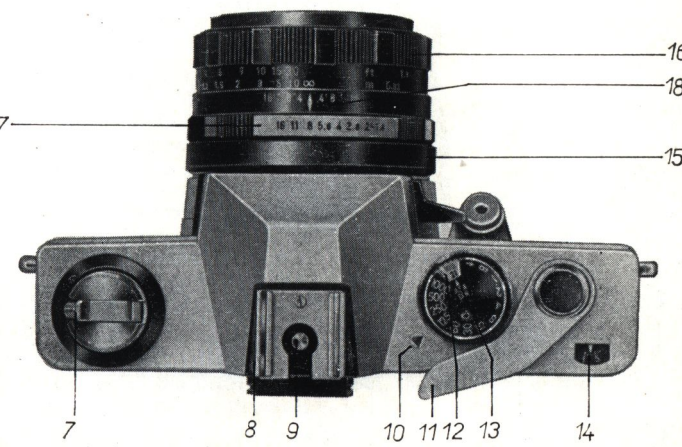
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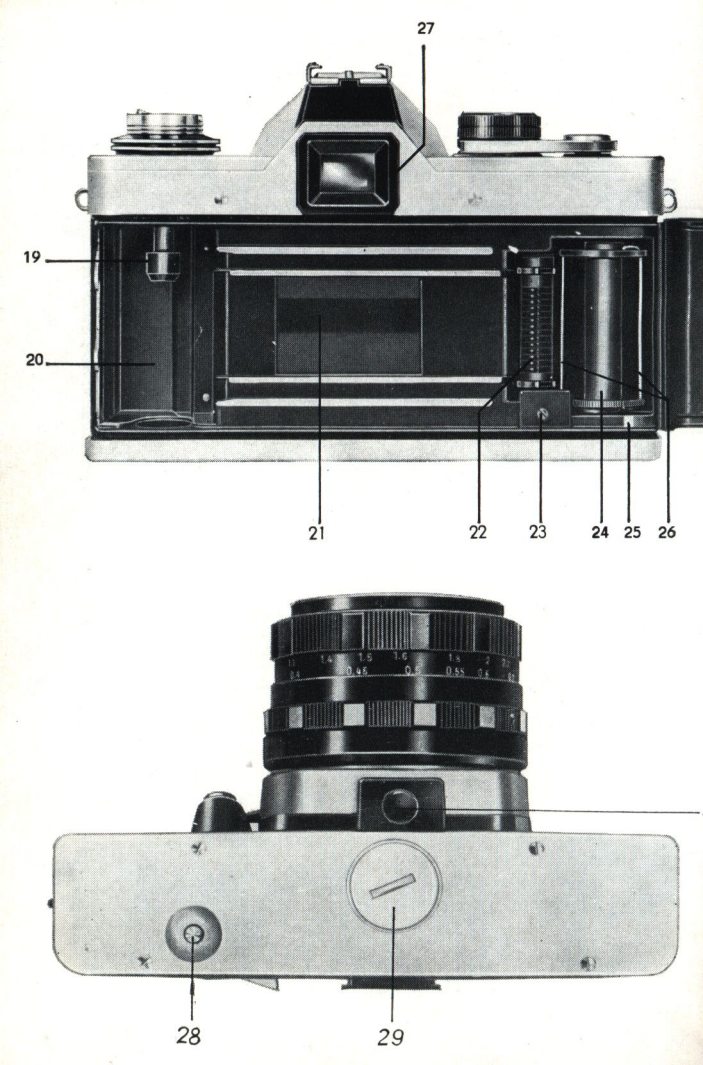
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Control Parts of the PRAKTICA LTL

19 Rewind catch
20 Cartridge chamber
21 Steel-blade focal-plane shutter
22 Film transport sprocket
23 Supporting piece
24 Take-up spool
25 Marking point for film loading
26 Wire bracket
27 Ocular mount with fitting for accessories
28 Rewind release button
29 Lid of battery compartment
30 Tripod socket

In the text of the instruction booklet, the numbers of the control parts are printed in brackets ( ).

We are extremely pleased that you have chosen the high-quality PRAKTICA LTL, and we wish you every success in working with this modern reflex camera.

Before using your camera, however, we would request you to study these Instructions for Use carefully. This will help you to avoid trouble caused by wrong handling of the equipment.

The PRAKTICA LTL is a miniature single-lens reflex camera for the 24 mm x 36 mm picture formt, with automatic exposure control and internal light metering for which the shutter-speed, aperture and film-speed settings are coupled. The measuring system employed is partially integrated, the main measuring field, about 20 mm in diameter, being arranged in the centre of the view-finder. The result is perfectly accurate metering since, with the vast majority of subjects, the most important details of the image are located within this area. All the subordinate marginal sections are photometrically left aside and cannot influence the reading.

Metering is performed with the lens stopped down to taking aperture by adjusting the diaphragm ring on the lens mount while depressing the metering key. By means of this key the circuit is closed. All lenses having the international PRAKTICA fitting M 42 x 1 may be used. The automatic mechanism in the camera causes the pressure diaphragm in the lens (APD) to operate as a spring diaphragm. This means that only during the actual moment of exposure the diaphragm closes down to the value obtained by means of the light meter.

The novel type of steel-blade focal-plane shutter travels across the shorter side of the frame and has a range of speeds from 1 sec. to 1/1000 sec. It is synchronized for the use of flash bulbs and electronic flash units. As a result of the very rapidly moving steel curtains, the electronic flash can be synchronized at about 1/125 sec. The centre flash contact makes it possible to connect camera and flash unit without using a cable.

The PRAKTICA LTL can be supplied either with or without built-in self-timer.

The pentaprism is firmly built in, and the focusing system, owing to its Fresnel lens, reveals a finder image of maximum corner-to-corner brightness, in which also the meter needle and the readiness indicator are visible.

Microprism screen and groundglass circle ensure quick and perfect sharp focusing. In combination with its wide range of accessories, the PRAKTICA LTL may be employed for a great variety of special photographic activities.

Abridged Instructions

Detailed description

A **Opening the camera back** Page 10

Pull rewind knob (6) upwards as far as it will go.

B **Inserting the film** Page 10

Place film cartridge into chamber (20). Depress rewind knob (6). Push beginning of film from above as far as it will go underneath the supporting piece (23) located above the film transport sprocket (22). Place leading edge of the film on to core of take-up spool (24) and up to green marking point (25).
Wire bracket (26) on the take-up spool must not stand upwards.

C **Closing the camera back** Page 12

D **Preparing for the exposure** Page 12

Actuate cocking lever (11) and shutter release (3) until exposure counter (14) stands on number "1".

E **Setting the film speed** Page 14

Lift the milled ring of speed setting knob (1) and rotate it unit the speed value of the film in the camera stands opposite the film speed indicator (13).

F **Setting the exposure speed**

Rotate speed setting knob (1) until the desired speed numeral stands opposite the orange-coloured triangle (10) on the cover plate of the camera.

G

Setting the diaphragm

Page 16

Rotate diaphragm setting ring (17) on the lens mount to bring the desired diaphragm numeral against the relevant index mark.

H

Automatic exposure control

Page 18

Preselect either the exposure speed or the diaphragm numeral. Depress metering key (2) towards camera body **as far as it will go.** Rotate either the diaphragm setting ring (17) or the shutter-speed setting knob (1) till the meter needle is centered in the circular mark in the view-finder field.

I

Focusing

Page 23

Rotate distance setting ring (16) until the image in the microprism screen or in the groundglass circle appears perfectly sharp.

K

Releasing and cocking the shutter

Page 26

Depress shutter release (3) to beyond the pressure point. After the shutter has run down, a signal appears in the left-hand side of the view-finder area. Swing cocking lever (11) around as far as it will go and move it back again.

Detailed description

L **Self-Timer** Page 28

Swing cocking lever (4) for self-timer upwards either before or after cocking the shutter. Depress knob (5) to release the self-timer mechanism.

M **Changing the film** Page 30

After the last exposure, depress rewind release button (28), swing out rewind crank (7) and turn it in direction of arrow to rewind the film. Open the camera back and remove the cartridge.

N **Exchanging lenses** Page 32

O **Flash exposures** Page 34

P **Exchanging the power source** Page 36

Q **Maintenance of the camera** Page 38

R **Accessories** Page 39

The Abridged Instructions are a short summary of the most important items. A detailed description is given in the main section on the following pages.

A Opening the camera back

Pull rewind knob (6) upward until you feel hard resistance. The camera back is unlocked and can be opened. The exposure counter (14) will automatically jump to zero position.

B Inserting the film

Any type of 35 mm film in commercially available standard cartridges may be used. The cartridges contain film lengths for 36, 20 or 12 exposures in the 24 x 36 mm picture format. To assure that no light enters the slit of the cartridge the film should not be loaded in direct sunlight. The shade provided by your own body will suffice.

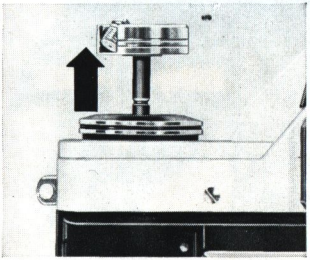
By having pulled out the rewind knob (6) to open the camera back you have withdrawn the rewind catch (19) from the cartridge chamber (20), so that you can now place the cartridge into the cartridge chamber.

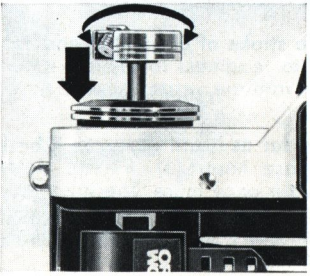
Push the rewind knob, with slight backward and forward movements, right back into the camera. The rewind catch will engage in the core of the cartridge.

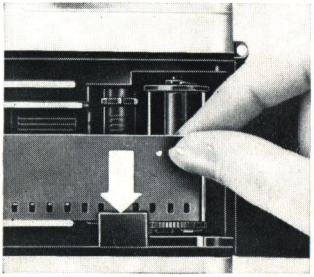
Push the beginning of the film projecting from the cartridge from above underneath the supporting piece (23) over the transport sprocket (22), so that the beginning of the film rests on the core of take-up spool (24) as far as the green marking point (25).

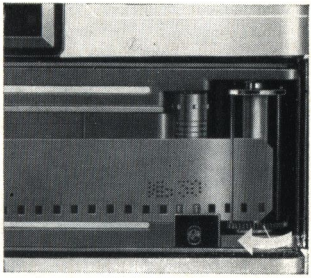
The wire bracket of the take-up spool (24) must not be directing upwards. If this, however, should be the case turn the spool at its knurled flange into a lateral position.

If the film tends to bend heavily, we additionally recommend to turn the flange to the left until one of the wire brackets (26) comes into contact with the threading piece of the film.









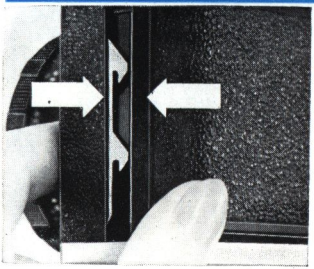
C Closing the camera back

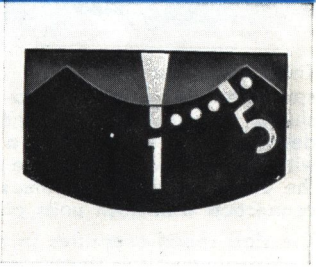
Take hold of the latch side of the camera back and press it firmly to the camera body. It will lock automatically.

D Preparing for the exposure

The cocking lever (11) has an idle stroke of about 15^0 and can be moved from its rest position into readiness for action. It can be easily grasped – a great advantage, especially in serial shots.

Swing the cocking lever around **as far as it will go,** move it back again, and depress shutter release knob (3). Repeat these **operations and then cock the shutter** once more. The automatic exposure counter (14) now stands on number "1". Special setting of the exposure counter is not necessary since it starts working automatically when the camera back is closed.

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E Setting the film speed

For the use of the automatic exposure control the film speed value has to be set. This is done by lifting the milled ring of shutter-speed setting knob (1) and rotating it until the speed value of the film in the camera (DIN or ASA) on scale (12) stands opposite the white indicator (13). When lowered, the milled ring clicks in next to the selected film speed numeral.

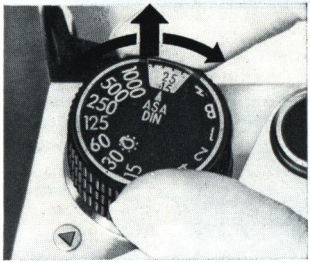
F Setting the exposure speed

The steel-blade focal-plane shutter can be set for exposure speeds ranging from 1 sec. to 1/1000 sec. When set on "B", the shutter remains open as long as the shutter release (3) is being depressed. For exposures of a longer duration a cable release with locking device should be used, which can be screwed into the thread in the body release knob. For exposure speeds in connection with flash units please refer to Section 0.

The slow speed exposures from 1 sec. to 1/15 lec .are marked on the scale of the shutter-speed setting knob (1) by orange-coloured numerals. For exposures to be made at these speeds, a tripod is required. The values for instantaneous shots from 1/30 sec. to 1/1000 sec. are marked in white.

The exposure speeds are set by rotating knob (1) until the desired numeral coincides with the orange-coloured triangle on the cover plate of the camera. Please note that, when setting the exposure speeds, the milled ring of the setting knob must not be lifted since this would alter the film speed setting and cause the automatic exposure system in the PRAKTICA LTL to give incorrect results.

The exposure speeds be set either before or after the shutter has been cocked. The setting knob clicks in at every numeral. Intermediate values are **not** adjustable.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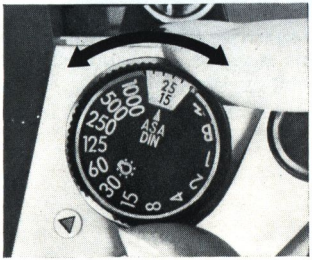
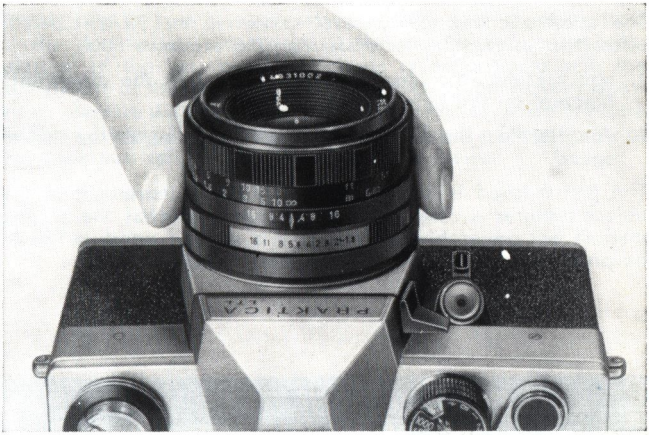

ASA
DIN

G Setting the diaphragm

When using lenses with automatic pressure diaphragm (APD), the desired aperture numeral on the diaphragm setting ring (17) simply hat to be brought to meet the revelant index mark on the lens mount. The diaphragm remains fully open, only when releasing the shutter it closes down to the preselected value. The automatic diaphragm mechanism in the PRAKTICA LTL causes the pressure diaphragm to function as an automatic spring diaphragm. Regardless of the speed with which the shutter release (3) is depressed, the diaphragm will spring to the preselected value and then open again immediately after the shutter has run down.

For checking the depth of field already in the view-finder image, most lenses can be stopped down, before the exposure is made, to the preselected value or to the value determined by the light meter, by actuation of a manually operable key (15) on the lens mount. In the PRAKTICA LTL, this may be very conveniently achieved also by means of the metering key (2).


PRAKTICA

H Automatic exposure control

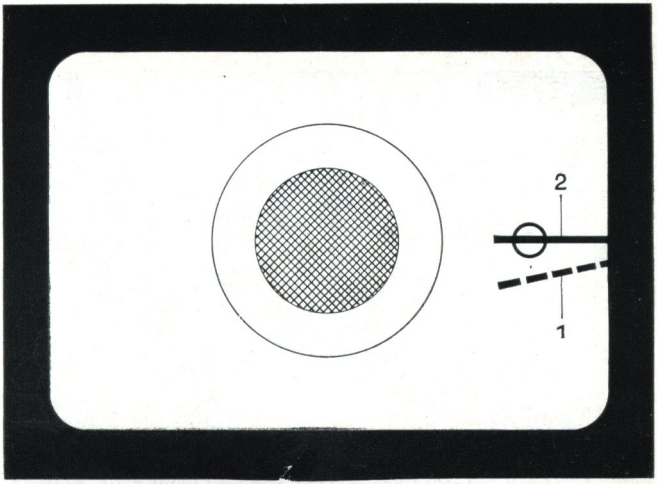
The automatic exposure control system in the PRAKTICA LTL offers two possibilities for measuring the exposure time:

1. you preselect the shutter speed and adjust the diaphragm numeral on the lens mount,
2. you preselect the diaphragm numeral and adjust the shutter speed.

The first method is applied if, for instance, movement of the object requires a certain exposure speed, whereas the second method will preferably be applied if a specific aperture has to be preselected to achieve the necessary depth of field.

Metering with preselected shutter speed

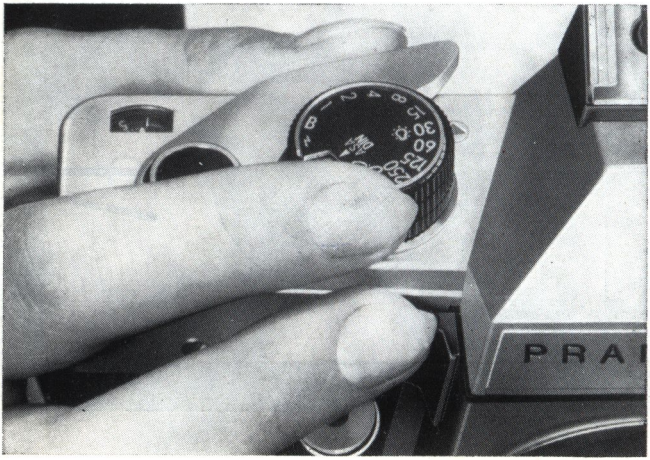
Preselect shutter speed by means of knob (1). Press metering key (2) above the shutter release towards the camera body **as far as it will go,** while at the same time rotating diaphragm setting ring (17) on the lens mount till the meter needle visible in the view-finder is centered in the circular mark. The diaphragm of the lens opens or closes in accordance with the adjustment of the diaphragm setting ring. In lenses with automatic pressure diaphragm it opens after metering, when pressure on the metering key relaxes, and closes down automatically to the measured value when the exposure is made.



1 Resting position of the needle
2 Needle centered in circular mark

Metering with preselected diaphragm stop

Preselect diaphragm numeral in accordance with exposure conditions by rotating diaphragm setting ring (17) on lens mount. Depress metering key as described above, while at the same time adjusting shutter-speed setting knob (1) till the meter needle is centered. The shutter speeds must be set to the click stops. Intermediate values cannot be set. Should the meter needle not be accurately centered, fine adjustment has to be made by means of the diaphragm setting ring on the lens mount. The diaphragm ring can be set to intermediate values between the click stops.



Using lenses without automatic diaphragm control

In case lenses without automatic pressure diaphragm are being used, the lens will remain stopped down till the shutter is released. To achieve precise definition it is, therefore, advisable to focus with lens wide open **before** taking the meter reading.

Working range of the automatic exposure control system

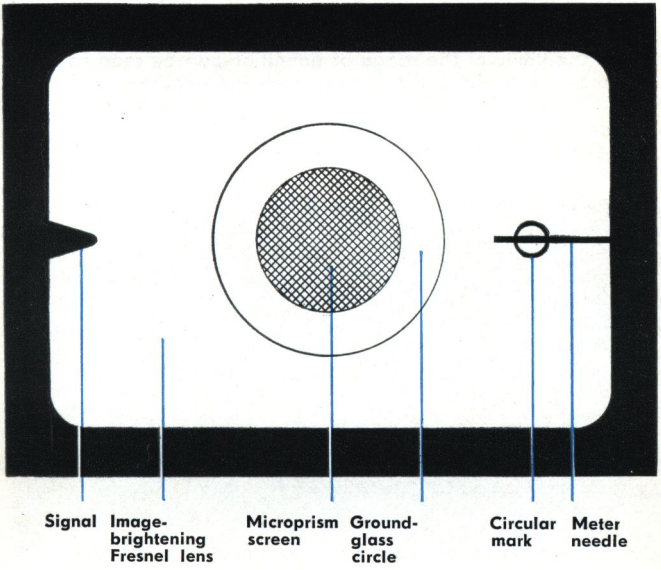
The following table shows within which range of shutter speeds the automatic system works in connection with the various film speed settings. Outside of this range the metering system is disconnected. The meter needle then moves to its resting position below the circular mark.

On B and ⚡ don't measure.

Film speed DIN	ASA	Exposure speed
12	12	1 sec. to 1/125 sec.
15	25	1 sec. to 1/250 sec.
18	50	1 sec. to 1/500 sec.
21	100	1 sec. to 1/1000 sec.
24	200	1/2 sec. to 1/1000 sec.
27	400	1/4 sec. to 1/1000 sec.
30	800	1/8 sec. to 1/1000 sec.
33	1600	1/15 sec. to 1/1000 sec.

I Focusing

The prism view-finder of the PRAKTICA LTL is fitted with a Fresnel lens, in the centre of which are arranged two focusing systems:
– the microprism screen right in the middle and
– the circular ground-glass area surrounding it.
To achieve utmost definition, focusing is preferably performed with the lens at full aperture. In lenses with automatic pressure diaphragm (APD) this takes place in any case if the metering key is not being depressed.
If lenses without automatic diaphragm are being employed, focusing is performed, as already stated in Section H, with the lens standing on the smallest diaphragm numeral (at full aperture) **before** the meter reading is taken.



Focusing on the microprism screen

The image in the microprism screen is in correct focus as soon as it appears clear and free from fuzziness. It is out of focus if it looks fuzzy and shows screen elements. The microprism screen is preferred for focusing if the subject to be photographed is quite still or only slightly moving.

Focusing on the circular ground-glass area

The ground-glass area is used for focusing if there is more movement in the scene. Also, it is often most appropriate in ultra-close-ups and photomicrography as well as on lenses with a small relative aperture (diaphragm numeral higher than 4).

The Fresnel section of the view-finder is not meant to be used in focusing.

The depth of field is determined by means of the depth-of-field scale (18) arranged on the right and left of the indicator on the lens mount.

While the camera-to-subject distance figure stands oppisite the mark, the limits of the range of definition can be read from the distance scale above the numerals on the depth-of-field scale, which latter are equivalent to the diaphragm numerals. As an example, the illustration shows a zone of sharpness from 2 to 5 m (7 ft. to 16 ft.) for a distance setting of 3 m (10 ft.) and an f/8 aperture.

Depress the metering key (2), or the manual stop down key (15) provided on most of the lenses, and you will also be able to judge the depth of definition in the finder image.

Persons with defective eyesight may work without their spectacles on by having a corrective lens corresponding to their long-distance glassed fitted into the eye cup which is then attached to the ocular mount.

For infra-red exposures the focusing point has to be slightly modified. By rotation of distance setting ring (16) the distance reading which, after focusing, stands next to the indicator, has to be moved to meet the red dot (infra-red mark). Thus, the image produced by the infra-red rays is brought into correct position in relation to the film.

Microprism screen is fuzzy
= unsharp

Microprism screen not fuzzy
= sharp

K Releasing and cocking the shutter

Before releasing the shutter please note the following:

1 – If the signal is visible in the left side of the view-finder, the camera is not ready for exposing.

The shutter hat to be cocked!

2 – For exposure speeds of 1/15 sec. and slower, a tripod and a cable release have to be used.

Your PRAKTICA LTL should be held so that it lies firmly in both hands, and you are able to actuate the shutter release comfortably.

Depress the shutter release steadily – never with a jerk – to beyond the soft-running range until the shutter runs down.

The convenient arrangement of the measuring key adjacent to the shutter release allows to release the shutter immediately after having taken the meter reading with the metering key still in depressed position and the lens remaining at taking aperture. But the shutter release can also be actuated alone, in which case APD lenses are fully open up to the moment of the exposure.

After the exposure, the signal on the left side of the view-finder image becomes visible again, a sign that the shutter has to be cocked.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L Self-Timer

The self-timer mechanism is cocked by moving lever (4) upwards as far as it will go. By means of pressure on button (5) it will start running the delayed-action device, and after about 8 seconds the shutter is released. The self-timer mechanism may be tensioned either before or after the shutter is cocked. The shutter can be released in the usual manner by means of release button (3) even if the self-timer is tensioned. When, however the self-timer mechanism is running down, don't cock the shutter relase!

M Changing the film

When the exposure counter (14) indicate the number of frames obtainable with the film loaded in the camera (12, 20 or 36 exposures), the film has to be rewound into the cartridge which is then taken out of the camera.

Depress rewind release button (28) in the bottom of the camera. It will remain locked in this position.

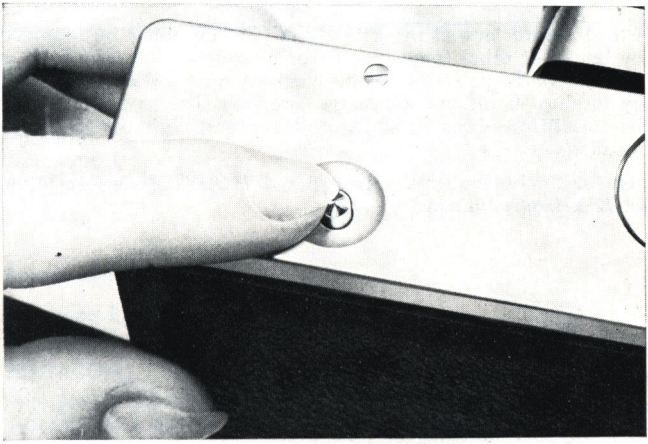
Unfold rewind crank (7) out of rewind knob (6) and rotate it, not too quickly, in the direction of the arrow (mark on crank 7). Rewinding at too great a speed may cause electrostatic charge and statics on the film.

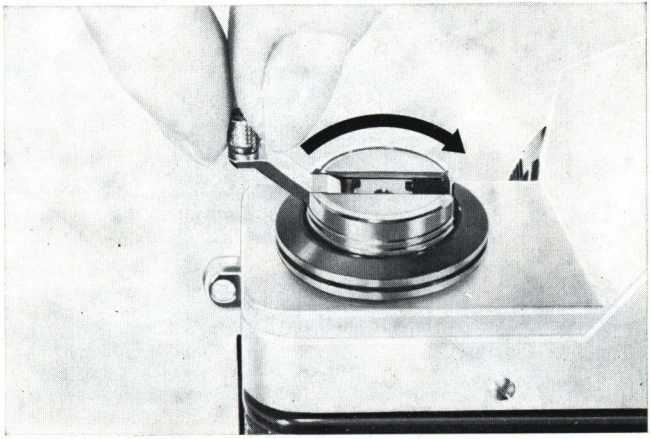
Just before rewinding is completed, greater resistance becomes noticable until the film is disengaged from the take-up spool. After this, the crank turns quite easily.

Fold the rewind crank back into the knob and pull the knob upwards as far as it will go. The camera back is unlocked and can be opened. Remove the cartridge with the exposed film from the camera.

Loading a new film, and subsequent cocking of the shutter, cause the rewind release button (28) to spring back automatically to its initial position.

Sholud you have attempted to expose more frames than the number marked on your film packet, the cocking lever might, at the end of the film, be swung around completely. **Never use force** in such a case as this might tear the perforation of the film, or the end of the film might slip off the spool inside the cartridge. In both cases, rewinding would be impossible. If the cocking lever – as described above – could not be fully tensioned, this must be completed, and the shutter released, after the usual rewinding procedure and before a new film is loaded.

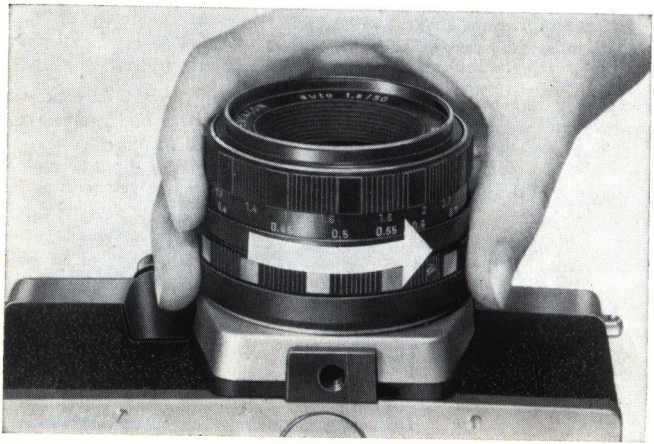




N Exchanging lenses

The standard lens of the PRAKTICA LTL can easily be replaced by lenses of other focal lengths or apertures. You take hold of the lens body, as shown in the illustration below, and remove it by turning in an anti-clockwise direction. The interchangeable lens is inserted accordingly and screwed tight by clockwise rotation.

All lenses having the international PRAKTICA screw fitting M 42 x 1 may be used.



Standard lenses:

Domiplan	50 mm f/2.8	(APD)
from Jena T	50 mm f/2.8	(APD)
from Jena PANCOLAR	50 mm f/1.8	(APD)
PENTACON auto	50 mm f/1.8	(APD)

Supplementary lenses:

from Jena FLEKTOGON	20 mm f/4	(APD)
PENTACON auto	29 mm f/2.8	(APD)
PENTACON	30 mm f/3.5	(PD)
from Jena FLEKTOGON	35 mm f/2.8	(APD)
PENTACON auto	100 mm f/2.8	(APD)
PENTACON auto	135 mm f/2.8	(APD)
PENTACON	135 mm f/2.8	(PD)
from Jena S	135 mm f/3.5	(APD)
from Jena S	180 mm f/2.8	(SD)
PENTACON	200 mm f/4	(PD)
from Jena S	300 mm f/4	(SD)
PENTACON	300 mm f/4	(PD)
PENTACON	500 mm f/5.6	(PD)
from Jena Mirror Lens	1000 mm f/5.6	(no diaphr.)

PD = pre-set diaphragm
APD = automatic pressure diaphragm
SD = spring diaphragm

Flash exposures

The shutter of the PRAKTICA LTL is designed for sychronization with flash bulbs and electronic flash units.
When the flash unit is attached to the camera, the electric connection between camera and unit is automatically effected by means of the centre flash contact (9) in accessory shoe (8). No synchronization cord is required. For this purpose modern flash bulb and electronic units are equipped with a suitable accessory shoe fitting.
For the use of flash units fitted with a synchronization cord, an adapter piece with flash socket to accept the plug of the cord has to be pushed into the accessory shoe of the PRAKTICA LTL.

Flash bulb exposures

In connection with bulbs for short flash duration, the shutter has to be set for a speed of 1/30 sec. – marked by the lamp symbol – or slower. The ignition circuit is closed only as long as the shutter runs down. No contact is made after the shutter has run down and during the tensioning procedure, so that flash bulbs can be exchanged also before the shutter is cocked.

Electronic flash exposures

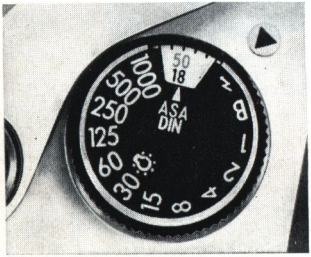
Owing to the extremely rapid travel of the curtains in the metal blade focal-plane shutter, synchronization is possible up to a shutter speed of 1/125 sec. The knob for setting the shutter speeds has to be moved to the flash symbol setting next to "B".

The guide number

The diaphragm numeral to be set on the lens mount for flash exposures can be found with the aid of the "guide number". Manufacturers of bulbs and electronic flash units give these guide numbers on the wrappings or in the instructions for use as required for the various sensitivity grades of the films. The correct aperture is determined by dividing the guide number for the flash in use by the flash-to-subject distance (in meters). Formula for the flash unit attached to the accessory shoe of the camera:

$$\text{Diaphragm numeral} = \frac{\text{guide number}}{\text{flash-to-subject distance}}$$


minitron
PRAKTICA
LTL
PENTACON
auto 1.8/50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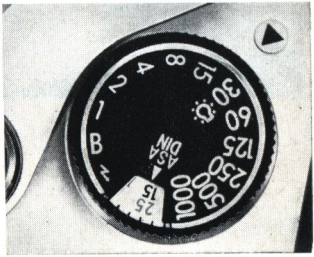
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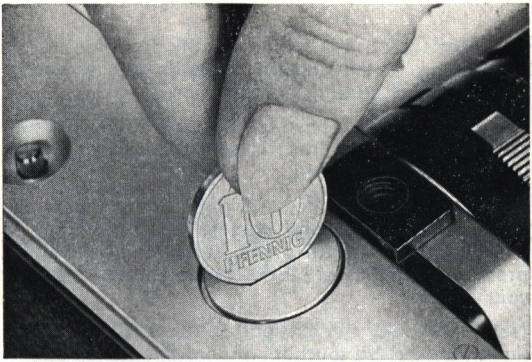
P Exchanging the power source

The automatic exposure system is powered by a PX 625 mercury oxide battery or any other corresponding type having a nominal voltage of 1.35 V.

The battery compartment is one the underside of the camera. The lid (29) is screwed out with the aid of a coin and the new battery placed into the compartment with its positive pole (marked +) facing the lid. The lid is then screwed on and fastened with the aid of a coin.

Since the battery is used only for the short period of light measuring it will have a life of about 2 years. Please note that the used-up battery (primary cell) must n o t be charged or thrown into the fire. Both might cause explosion!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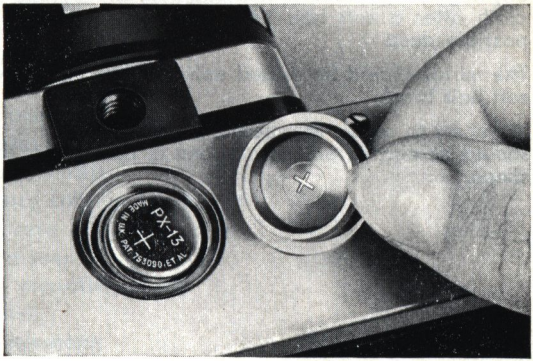
PX-13
made in japan

Q Maintenance of the camera

The PRAKTICA LTL is a high-quality precision instrument. Perfect functioning of the camera depends very largely on its proper handling and careful maintenance.

The camera must, above all, be protected against shock, impact, dust and moisture. That is why the everready case should be used wherever possible.

From time to time the cartridge chamber and spool chamber, also the film track and camera back with film pressure plate must be cleaned with a soft brush. But be careful not to exert pressure on the steel blades of the shutter or to touch them with your fingers.

Neither should the optical surfaces (lens, eyepiece of viewfinder, mirror) be touched. Should this have happened, however, any fingerprints must be removed immediately with a soft cotton cloth after a soft hair brush has been used to remove any possible dust.

The mirror should be dusted only in urgent cases with a clean, soft hair brush.

Never try to repair the mechanism of the camera. Repair work should be carried out only by one of our special Repair Workshops.

R Accessories

- Filters
- Lens hood
- Reversing ring M 49 x 0.75
- Repro arm M 49 x 0.75
- Adapterring M 49/M 58
- Plain intermediate rings
- Intermediate rings with plunger
- Spezial intermediate ring with cable release socket
- Miniatur close-up bellows attachment
- Bellows attachment
- Focusing slide
- Microscope attachment piece
- Telescope adapter for astrophotography
- Cable release
- Double cable release
- Universal tripod
- Extension pieces
- Reproduction stand
- Lighting equipment
- Transparency copying equipment
- Everready case
- Rubber eye cup
- Mount for correcting lenses
- Angle finder
- Focusing telescope

We will be pleased to send you on request special literature on the PRAKTICA LTL-Accessories which are mentioned here only briefly.

We request you kindly to follow these Instructions for Use carefully. We can accept no liability for any damage which may be caused by improper handling of the equipment.

Kombinat

VEB PENTACON DRESDEN

Further development of the PRAKTICA LTL and its accessories may lead to slight modification of the details given in this booklet.

Jt 1111/74 III 27 28 474 10 000 1396 USA

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Kombinat VEB PENTACON DRESDEN
DEUTSCHE DEMOKRATISCHE REPUBLIK