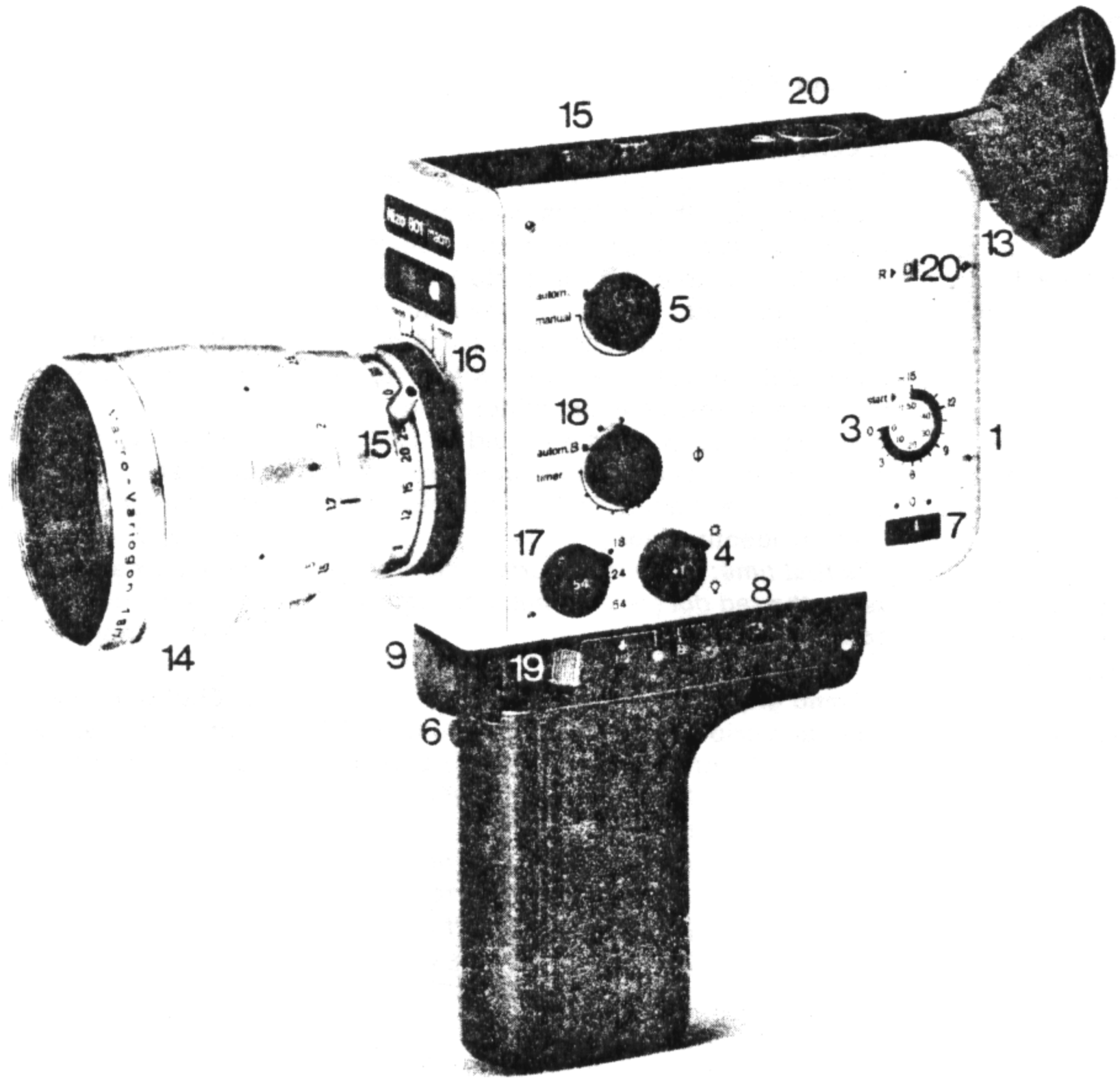
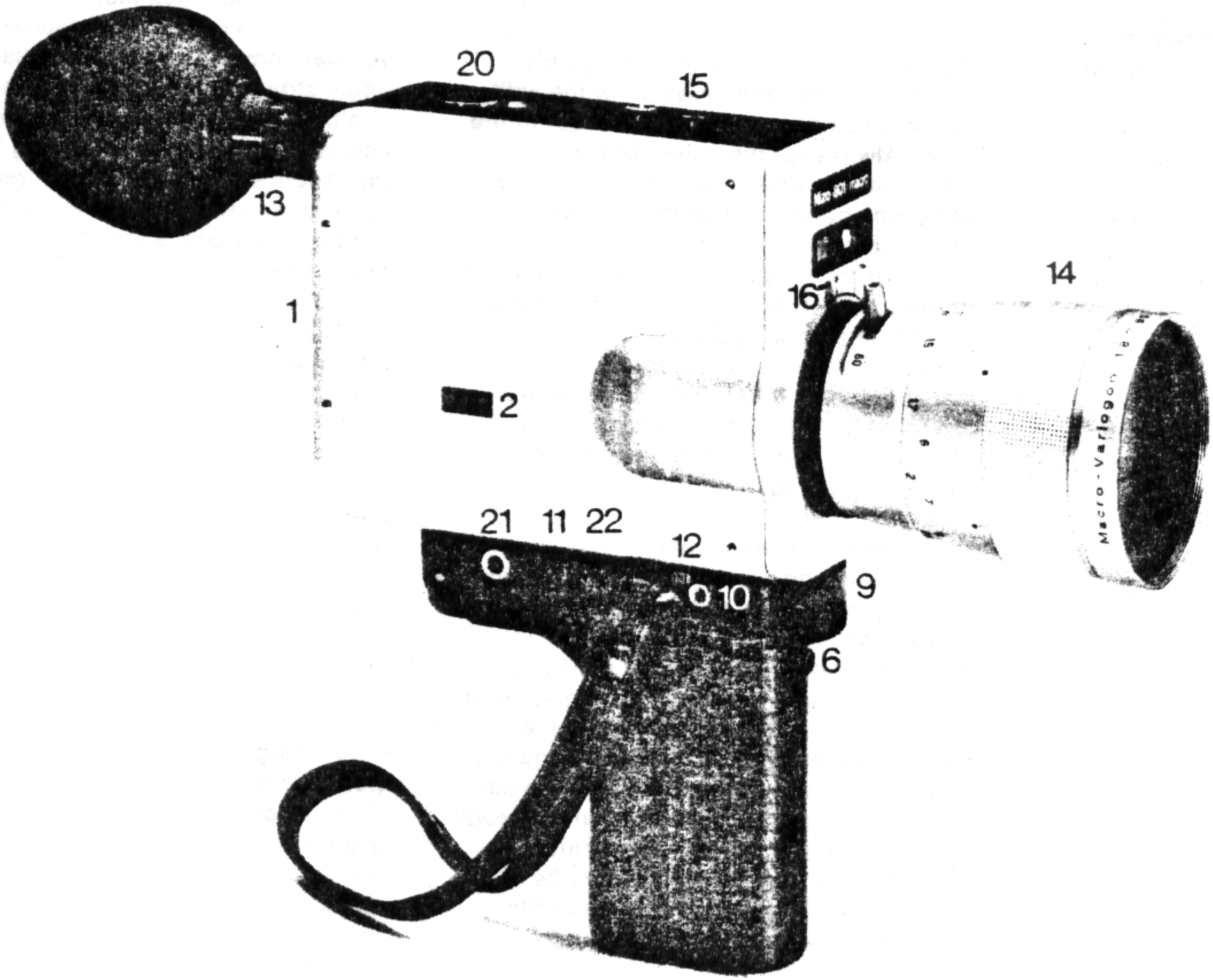
Nizo 801 macro

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Getting to know your Nizo camera

1. Cassette compartment
A flap secured by a catch will be found on the rear end of the camera. Press the catch down, open the flap and slide the cassette into the compartment.
The first time: do not use force if the flap will not shut. Remove the cassette and turn it round. The maker's label should be visible through the inspection window.

2. Inspection window
This enables you to check at any time if your camera is loaded and if so, with what type of film.

3. Film counter
The counter returns automatically to 0 when you open the cassette compartment flap.

4. Filter switch
Super-8 film stock is designed to match the color temperature of artificial light. Your camera has a built-in filter to adapt it for daylight filming.
When filming in daylight, turn the filter selector to the sun symbol, even if using black and white film. If you are filming in artificial light, turn the switch so that the mark on it is opposite the lamp symbol.

Warning: when the artificial light filter is out of action, a second signal will apear next to the film feed scale above the viewfinder image.

The center of the filter switch contains a springloaded button marked «+1». If you keep this button pressed in, the automatic exposure control will open up the aperture by one additional stop number (e.g. f/5.6 instead of f/8).

5. Lens iris control
Exposure control is achieved by varying the iris aperture, either automatically or by hand (the iris setting is shown on a scale under the image in the viewfinder). In the center: the meter battery voltage testing button (2 x 1.35 volt cells in the camera base). Set the master electric switch 7 to the red dot. Press the test button. The aperture indicator needle should move across to the figure 8 on the aperture scale under the viewfinder. The 8 is colored red for easy identification.
The first time: leave the aperture control set to the red dot (= automatic exposure control).

6. Hand grip lock
The hand grip can be swung back out of the way. The grip contains a safety box for the 6 x 1.5 volt AA penlight cells which drive the camera motor.
The first time: If the camera does not start, the batteries may have been inserted wrongly into the box. Please insert the batteries as shown by the symbols on the box.

7. Electric master switch
0 = all power circuits switched off. This setting preserves the batteries. Red dot = all power circuits switched on. Black dot = setting for checking voltage of drive batteries. The switch is spring loaded in this position. When pressed in firmly, the aperture indicator needle on the scale under the viewfinder should move as far as possible to the left of the test mark 8. If the pointer remains to the right of the 8, new batteries are required.
The first time: If the camera does not start, make sure that the master switch is set to the red dot position.

8. Connection for NC accumulator box charger
An storage battery is available as an accessory, and enables the camera to be driven with a greater reserve of energy or alternatively additionally direct from the mains power supply.

9. Shutter release
Can be comfortably operated with the index finger of the left or right hand. The drive mechanism is started electromagnetically.
The first time: Do not jerk the shutter release when operating. Do not film in short bursts (a good rule of thumb is to allow each shot to run for 5-6 seconds).

10. Connection for cable release
This connection is used if you wish to start the camera motor with a cable release, for instance if one is built into the control arm of your tripod. It can also be used for animation in conjunction with the manual single frame setting of the camera.

11. Connection for electric remote release
The Nizo remote release (available as an accessory) can be connected here, and the camera motor started by a built-in solenoid.

12. Continuous run switch
This switch is needed to operate the automatic single frame filming device. Disengage the switch from its catch, and swing over fully to the right. The camera will run until the switch is moved back.
The first time: Do not forget to set filming speed switch 2 to the automatic single frame (time lapse) position before operating the continuous run switch, or else valuable film stock may be run through the camera accidentally.

13. Adjustable viewfinder eyepiece
This adapts the optical system of your camera to suit your own eyesight, as on binoculars.
Turn the control until the line in the center of the split image rangefinder in the viewfinder appears sharp. This initial setting is important for correct through-the-lens rangefinding.

14. Lens focusing ring
To measure distance and focus the camera, turn this ring until the vertical outlines of the object being filmed pass smoothly (without a step) from one half of the split image range finder in the viewfinder to the other. Always set the zoom lens to the maximum possible focal length (48 or 56 or 80 mm, depending on camera type) before using the rangefinder.
If you set the lens focusing and focal length rings to the red figures (colored for ease of identification), you will be able to disregard the focusing problem for most normal shots. Ample depth of focus will be provided for action shots which would otherwise call for a rapid reaction on your part while filming.

15. Automatic power zoom
The lens can be zoomed with the built-in motor by pressing a button while filming, or alternatively set to the desired focal length by hand before filming starts. A word of warning: if you are filming at more than about 25 mm focal length (tele lens), you should rest or lean your hand against a solid object or surface, or stand the camera on its handgrip. For absolutely steady tele shots, a tripod is the best solution.
The first time: Zoom shots should be incorporated only sparingly into your film, and should be avoided in case of doubt.

16. Macroswitch
If you shift the index mark of this knurled ring from the red dot to «macro» position you can move the zoom ring past the wide angle stop for 7 or 8 mm into macro position for extreme close-ups. You then use the nipple on the zoom ring for focusing. Accurate focusing is ensured by the split-image rangefinder. Focusing is effected by means of the lens focusing ring again as soon as you move out of the macro range.
For Nizo 801 macro: on this camera you can change over from power zoom to manual zoom with the same knurled ring. If you set the index mark to 0 the entire focal length range is released for manual zooming with the screw-on lever. If you move the ring from 0 to «macro» you can take advantage of the unlimited manual focusing in the macro range. If, however, you want to use the power zoom buttons for controlling the unlimited focusing range, move the ring from the red dot to «macro».

17. Filming speed switch 1 (for slow-motion effects)
This switch enables you to vary the standard filming speed of 18 frames per second, and to film instead at a semi-slow motion speed of 24 frames per second, or at 1/3 of the normal speed, using 54 frames per second. By pressing the 54 button transition from 18 or 24 frames per second to 54

frames per second and back, for special slow motion effects.
The first time: The 54 frames per second running speed reduces exposure time. The iris therefore opens and the depth of focus is reduced. For this reason you must try to focus as accurately as possible.

18. Filming speed switch 2 (speeded-up action)
This switch operates the automatic single frame mechanism, which provides a continuously variable time-lapse filming facility between 6 frames per second and approx. 1 frame per minute.
Set the mark on the switch to the first black square on the semi-circular scale. Operate the continuous running switch 12, followed by the master switch 7. Adjust the setting until the desired filming rate is obtained.
The black square between the end of the scale and the red dot is the setting for manual single frame filming, with the shutter operated by a cable release or the electric remote release unit.
In the «autom. B» position, the filming speed (image frequency) is controlled automatically in accordance with the amount of light available (automatic extended exposure system).
The first time: For normal filming, leave the switch set to the red dot.

19. Variable shutter
If you pull back this spring loaded-lever as far as the stop while filming, you will gradually fade out the picture. If, on the other hand, you start to film with the lever moved fully to the rear, and allow it to slide forwards slowly while the camera is running, the scene you are filming will be faded in gradually.
The first time: Do not move the fade lever too rapidly.

Reduced exposure (partially closed shutter): move the lever to the 1/2 position, then pull down. The lever will engage in this position.
Increased exposure position: move the lever fully back and press the lock button. Move the lever across into the shaded zone and release the lock button. Note that the film image will not be exposed until the automatic single frame mechanism advances the film to the next frame. This increased exposure device operates only in conjunction with the time lapse filming speeds made possible by the automatic single frame mechanism (filming speed switch 2).
The first time: After filming with the increased or reduced exposure time mechanisms, do not forget to release the variable shutter lever and move it back to the normal setting.

20. Automatic dissolves
As you near the end of a shot, press the R button on the camera. The automatic dissolve mechanism will fade out the scene you are filming, wind the film back by the amount used for the fade and halt the drive motor.
When you are ready to start the shot forming the second half of the scene containing the dissolve, press the R button on the camera *and* the shutter release. The camera will start to run and the shutter will automatically open.

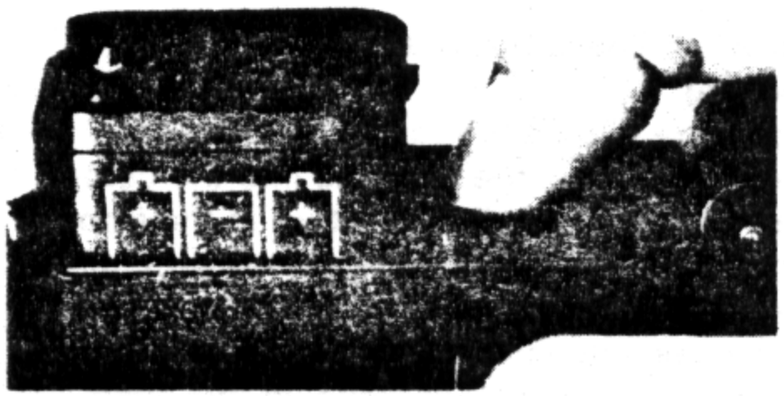
You can check the various phases of the dissolve in the window: 0 = ready for phase 1 of the dissolve (fade-out and rewind); R = ready for phase 2 of the dissolve (fade-in).
The first time: Do not forget that a dissolve is intended to provide a smooth transition between two scenes of your film, and time the shots accordingly.

21. Connection for electronic flash
You can connect a flash gun of adequate performance to this socket, and use it to illuminate ultra slow time lapse shots.

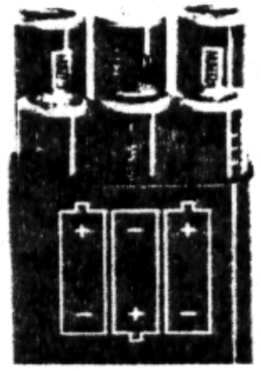
22. On Nizo 801 and 561 only: pilot tone cable connector
The Nizo 801 and 561 models incorporate an oscillator, which can be used to transmit a 1000 Hz control impulse for each single or every fourth frame of film, depending on the sound system and tape recorder cable in use.

Drive system

Drive batteries and battery safety box
The camera motor and the power zoom mechanism are electrically powered by six 1.5 volt AA penlight cell batteries. This type of battery is obtainable everywhere for use in transistor radios. We recommend the use of manganese-alkaline cells (for example, Mallory MN 1500, Everready E 91, Ucar E 91). The batteries are housed in a safety box in the camera handgrip.



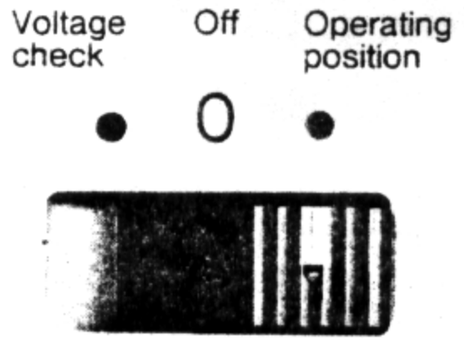
To obtain access to the batteries, press the button beneath the shutter release and swing down the handgrip. Pull back the knurled catch on the upper section of the handgrip. The battery box will be partly ejected. Loosen the knurled screws on the under side of the box until the cover can be removed. Insert the six 1.5 volt cells as indicated by the symbols. Replace the cover and tighten the knurled screws. The studs on the box lid are of differing lengths so that the cover can only be replaced in one position. Insert the battery box into the handgrip and press down gently until the knurled catch snaps into position over the projection on the box. If the batteries have been inserted incorrectly, the camera will not be damaged but the drive motor will not run.



The safety battery box protects the contacts in the camera against damage caused by electrolyte leaking from old batteries. It is a good idea to obtain a spare battery box (available as an accessory), especially when filming in extremely cold conditions. If the batteries in the camera are exhausted or too cold to drive the motor at full power, the complete battery box can be replaced by the spare unit, which should be kept in your pocket so that the batteries remain warm.

Braun NC accumulator box: an alternative accessory
This accumulator box contains 6 rechargeable NC (= nickel cadmium) cells. It is of exactly the same size as the safety box. The capacity of the cells is sufficient under normal circumstances (only occasional use of time lapse and slow-motion speeds) for transporting the film of approximately 10 Super-8 cassettes. For recharging the Braun charger is available as an accessory for the NC accumulator box which is otherwise used in exactly the same way as the standard battery safety box. All other information is contained in the operating instructions.

Master electric switch
When the master switch is set to 0, the circuits powered by the drive and meter batteries are disconnected. When set to the running position (red dot), the batteries supply a very small continuous current and will therefore slowly become exhausted even if the camera motor is not run. For this reason, the master switch should always be turned to 0 whenever the camera is not operated a prolonged period. This will also prevent the camera from running



if the shutter release is accidentally operated. Note, too, that if the handgrip is swung back but the master switch not set to 0, the meter battery will continue to operate at full power.
The black dot indicates the switch setting for checking the condition of the drive batteries.

Checking voltage of drive batteries
When moved to the black dot setting, the master electric switch is spring loaded so that it cannot accidentally be left in this position. To check battery voltage, push the master electric switch along as far as the black dot and hold it temporarily in this position. Examine the aperture scale at the bottom of the image in the viewfinder; the pointer should have moved as far as possible to the left (16, 22) and away from the red-colored 8, which acts as a test mark. If the pointer remains opposite the 8 or even to the right of it, all six battery cells should be removed from the battery box as soon as possible.

Holding the camera, operating the shutter release
All Nizo cameras can be operated with either the right or the left hand. Past the hand through the carrying loop before taking hold of the grip. The shutter release can easily be reached and operated with the index finger.
The large eyepiece rubber cup supplied with the camera will normally position the eye at the correct distance from the eyepiece lens. It also helps to prevent extraneous light from affecting the quality of the viewfinder image. However, no light can in any circumstances reach the film after penetrating the viewfinder. If you normally wear glasses, you may prefer to use the padded eyepiece rubber cup, which provides a flatter support when using the viewfinder. Either the cushion rubber cup or the standard eyepiece rubber cup can be removed and installed without difficulty if pushed over the projecting rim on the eyepiece.

The hand not holding the camera is used to operate the focusing ring or the power zoom. When actually filming, the free hand can also be used to press the camera gently but firmly down into the other hand.

Warning: *While filming, do not accidentally press the voltage check button in the lens iris control switch, or else incorrect exposures may result.*

Using a tripod and cable release
Filming with the camera mounted on the tripod always gives good results, since the picture on the projection screen is afterwards much steadier. In addition, a tripod greatly simplifies camera pans, zooming in and out, manually controlled stop-motion shots using the single frame mechanism and general filming at focal lengths above 40 mm.

A threaded hole is provided in the base of the handgrip for the tripod screw. In other words, the camera is attached to the tripod head with the handgrip swung down into the normal filming position. If the camera drive is to be operated by a cable release attached to the tripod arm, the release should be screwed into the first socket

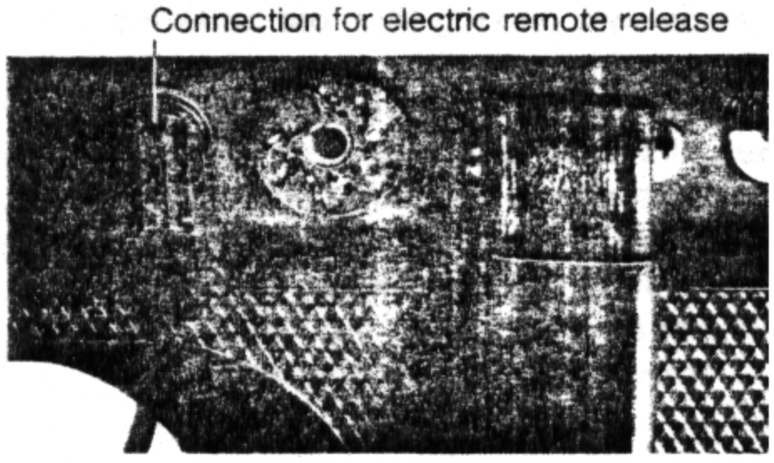
from the right on the camera base. If you wish to film single frames without using the automatic single frame mechanism,

you can shoot each frame by operating the cable release once. In this case, the red triangle mark on filming speed switch 2 must be turned to coincide with the first black square next to the red dot.

Electric remote release
Instead of a wire cable release, the camera drive mechanism can also be operated by means of a Nizo remote release cable (available as an accessory). This actuates

an electromagnet installed inside the camera body, and can also be used for manually controlled single frame filming. The master switch must first be moved to the red dot position. The electric remote release comprises a 10 m (33 ft) reel of cable, only 1.2 mm (0.05 in) thick, a push button release and a connection for attaching another 10 m (33 ft) of extension cable. If necessary, several reels of cable can be connected together so that the camera can be operated from a maximum distance of 100 m (330 ft) away.

The electric remote release permits filming with a concealed camera, or shots in which the cameraman himself appears on the screen. The camera should be set up rigidly – preferably on a tripod – in front of the scene to be filmed, the scene should be correctly framed by operating the zoom lens, and the exposure control set to «automatic». The electric remote release plug should be inserted in the second socket to the left of the carrying loop. The connection for further reels of extension cable is located on the remote release reel next to the push button release.



The film cassette

Suitable films for your camera
The Nizo 801, 561 and 481 models are designed to accept Super-8 film cassettes. When the camera is loaded, the automatic exposure control is set to the film speed of the film stock inside the cassette. The following film speed ranges are available:

Artificial light color film	*from 13 to 23 DIN* (= 16 to 160 ASA)
Daylight color film	*from 11 to 21 DIN* (= 10 to 100 ASA)
Black-and-white film	*from 11 to 21 DIN* (= 10 to 100 ASA)

Inserting cassettes, checking camera loading
Open the flap on the rear end of the camera and insert the cassette into the compartment with the film aperture at the front. The circular recess on the cassette should be on the control knob side of the camera. If the cassette is inserted the wrong way round, the flap will not close. In this case, do not use force, but remove the cassette and insert it the other way round as described.

The cassette itself automatically adjusts the exposure control to suit the type of film stock being used. The film counter returns to the start position when the cassette compartment flap is openeed. The counter also runs when there is no cassette in the camera. The outer scale indicates the

length of film still available in meters, the inner scale in feet. The smooth side of the camera (opposite to the side incorporating the controls) includes a window which enables you to check whether the camera is loaded and what film stock is being used.

If film is passing out of the cassette, through the camera and being returned to the cassette correctly, a red illuminated signal will appear at intervals above the viewfinder image. As the length of available film is reduced, the intervals between the light signals will become longer. When the end of the film is reached, the indicator lamp above the viewfinder image will remain on continously. You can check that the film has been run completely through the camera by looking for the word «Exposed» in the film aperture of the cassette after removal.

The Built-in Filter
Super eight colour films are matched to artificial light with its low colour temperatures. A built-in conversion filter (red) corrects the film for daylight shots when the mark on the filter switch points to the sun symbol. When filming in artificial light the mark should be opposite the lamp symbol.

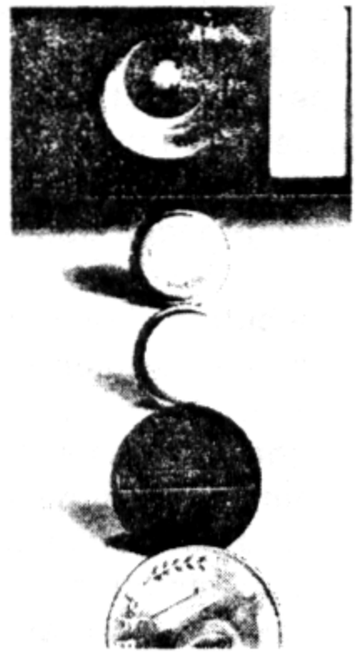
The special setting is indicated by a red lamp symbol on the right, above the viewfinder image, when the camera is running.

Note this symbol if you film in daylight, to prevent a heavy blue tinge on your films when developed.

For all black-and-white film and daylight color films, the filter switch mark should always be left against the sun symbol.

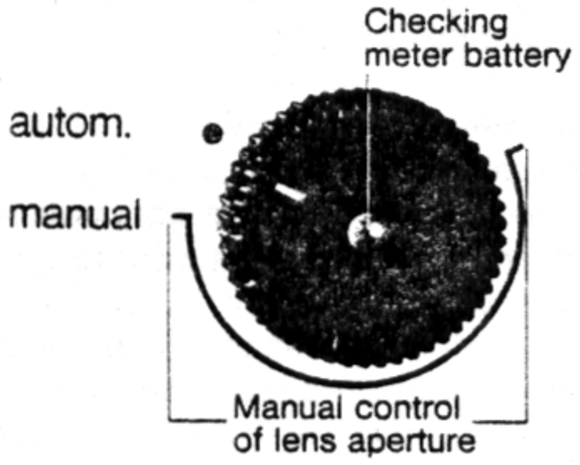
Exposure control

Meter battery
The CdS automatic exposure control is powered by two 1.35 volt Mallory PX 625 cells. The battery compartment is in the camera base and can be reached by swinging back the handgrip. The compartment catch can be opened by using a coin in the screw slot. The plus (+) symbol on the first battery to be inserted should face towards the base of the battery compartment,



the + symbol on the second cell should be touching the end of the first battery; if the cells are incorrectly inserted, the automatic lens iris mechanism will not operate. Symbols are provided in the battery compartment to show how the batteries should be inserted correctly.

Checking voltage of meter batteries
First set the master electric switch to the red dot, then press the button in the center of the exposure control knob. The pointer on the scale below the viewfinder image should move across as far as the figure 8 (colored red for ease of identification). If the pointer remains more than its own width to the right of the 8, two new meter battery



cells should be inserted. If the pointer comes to rest to the left of the figure 8, unsuitable (e.g. 1.5 volt) cells must have been inserted. In each case, incorrect film exposures will result.

Automatic exposure control

The CdS automatic exposure system of the Nizo camera measures light passing through the lens. The meter readings can be seen on the scale beneath the viewfinder image. Note that the automatic exposure control system only operates accurately when the camera is loaded with a film cassette. Furthermore, it is impossible to compare the reading shown on the built-in scale with those obtained using a separate exposure meter (even a good quality unit from the same manufacturer, Gossen). This is because the Nizo exposure meter takes into account the varying focal lengths of the zoom lens, the light absorbed by the numerous elements in the zoom lens and the camera viewfinder prism. In other words, the built-in exposure control system has been accurately matched to record the light actually falling on the film in the Nizo camera.

If the pointer is opposite the left or right warning marks at either end of the scale, the filmed results may still be satisfactory, but correct exposure cannot be guaranteed. If the light is too strong, remember that your camera has a reduced exposure time facility; if very little light is available, the corresponding extended exposure device can be used (both of these systems are described in the section covering use of the variable shutter). Alternatively, more sensitive stock such as Ektachrome 160 may be used or the scene illuminated with halogen floodlights.

Manual control of lens aperture

The automatic system can be switched off and any desired aperture setting selected by hand. The exposure control knob must first be turned from «automatic» to «manual». The pointer on the exposure scale in the viewfinder will now respond to rotary movement of the control knob.

In this way the exposure values calculated by the automatic system can be corrected, for example if the most important part of the scene is considerably lighter or darker than the surroundings. The light emitted by the object to be filmed should then be measured with the automatic exposure system by bringing the camera much closer, or else by zooming in on the object before taking a reading, so that the surroundings are eliminated. The iris setting recorded by the exposure meter in the viewfinder should then be selected by hand.

Example: The automatic exposure system indicates figure 16 when filming a subject in the middle of an area covered with snow and in bright sunlight. If the scene is actually filmed at this exposure setting, the subject will be far too dark, as the camera will expose the surrounding snow area correctly. In other words, the exposure requires correction for best results.
Another example: When filming subjects against the light, they will normally appear as silhouettes; if you wish to bring out the full details of your subject on the screen, turn round before starting to film and measure exposure 'with the light'. Select this exposure value manually and then film your scene against the light.

Always remember to return the exposure control knob from «manual» to «automatic» after you have completed a specially exposed shot of this kind.

In most cases requiring additional exposure, the «plus 1» control will normally enable the desired results to be obtained.

Selecting focal length

They should only be used singly and may not be used in combination for shooting. The rangefinder permits focusing of the lens and the automatic exposure control ensures trouble-free aperture setting. If, in spite of this, the subject distance should be checked with a tape measure this must be done for close-ups *without* supplementary lenses from the film plane mark. The latter is the circle with the vertical line through it beside the filming speed switch (2). For shots *with* supplementary lenses measure from the edge of the lens.

General description of zoom lens
The zoom lens (actually a «variable focal length lens») enables you to film entire sequences incorporating general wide-angle shots, semi-closeups and extreme closeups if required, without changing the position of the camera. The zoom lens uses special individual lens clusters to provide a variety of focal lengths and filming angles. On the Nizo 801 macro zoom lens, the acceptance angle of the lens varies between 42° and 3°50'. The longer the focal length at which you are filming, the more important it becomes to hold the camera absolutely steady. At focal lengths above approximately 40 mm, you must support the camera or your hand absolutely firmly if you are not using a tripod. In addition, the automatic power zoom enables you to imitate tracking shots, for which the camera is normally mounted on a mobile dolly.

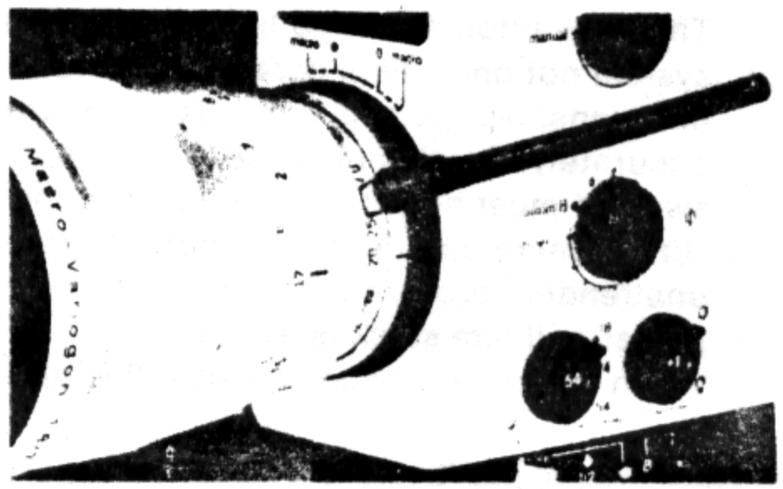
Varying the focal length
You can select the desired focal length before starting to film by moving the small handle of the focal length scale. This enables you to start your shot at the desired focal length without wasting film.

The control buttons for the automatic power zoom are located on the housing of the Nizo camera. The black knob nearer the lens reduces the focal length (wide angle), the green knob on the eyepiece side increases the focal length (telephoto).

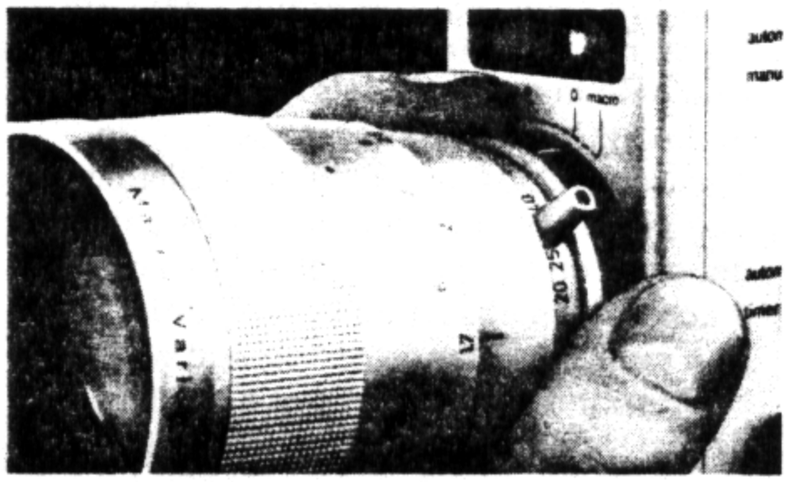
There are two power zooming speeds. If either of the power zoom control knobs is pressed only lightly, the focal length will change slower than if the knob is pressed more firmly. Tracking and zooming appears still smoother on the screen if you film these shots as 24 frames per second.

Manual Zoom on the Nizo 801 macro
With the same knurled ring which releases the macro range catch you can also switch off the power zoom. For this purpose the index mark is set to 0. Screw the long lever supplied into the bush of the nipple on the zoom ring which now moves freely. With manual zooming you can determine the speed of variation of zoom shots and very rapid changes in focal length will, for example, be possible while shooting by swinging the lever round quickly.

Note: *When the power zoom is switched off the zoom mechanism moves so freely*



Camera running speeds



that for example the focal length may move out of adjustment of its own accord when the camera is mounted pointing vertically downwards.

Slow motion facilities (filming speed switch 1)
The normal running speed of the camera is 18 frames per second, each frame being exposed for 1/43rd of a second. Any filming speed above 18 frames per second setting, will result in a slow motion effect, and all filming speeds below 18 frames per second will produce a speeded-up effect if projected at the normal setting.

With the aid of filming speed switch 1, you can change from the standard running speed of 18 frames per second to the slow motion speeds of 24 or 54 frames per second. If film shot at 24 frames per second is projected at normal speed, all movements will appear 1/3rd slower. This is not the same as genuine slow motion, but is useful if the camera is moved over a long distance, for example during a long pan or when filming from a car being driven along a rough road.

54 frames per second is a genuine slow motion speed. When projected at 18 frames per second, scenes will be prolonged to three times their original length. Fast movements filmed in this way can be studied at leisure during projection. Since one second's filming time yields three seconds on the screen, filming at the slow motion speed is sometimes a way to gain a better impression of sudden or very brief events. The automatic slow motion device on your

Nizo camera means that you can select the slow motion filming speed without the slightest delay when you need it. The black button in the center of filming speed switch 1 enables you to pass smoothly from 18 or 24 frames per second to 54 frames per second and back.

At 54 frames per second, the individual frames are exposed for only 1/129th of a second. To compensate for this, the iris opens by approximately 1.5 numbers. Under difficult exposure conditions this could mean that inadequate depth of focus is available. If you have sufficient time available, it is therefore best to take a quick rangefinding reading at the maximum focal length you intend to use.

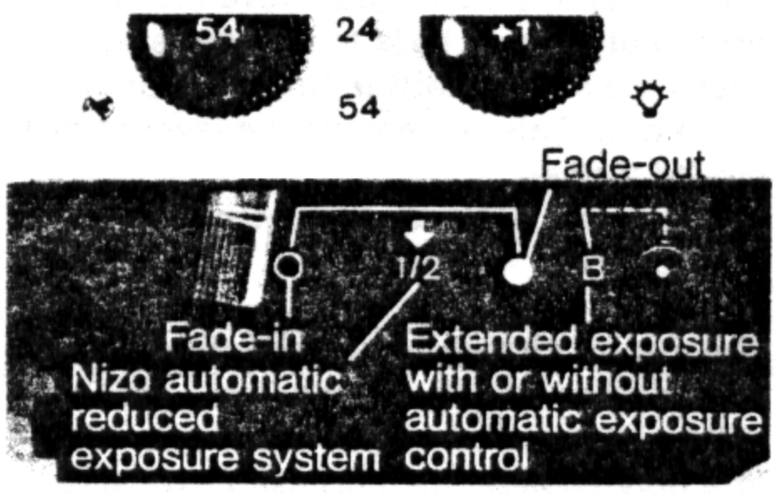
Speeded-up filming (filming speed switch 2)
With the aid of filming speed switch 2 (an automatic single frame filming device) your Nizo camera provides facilities for time

The variable shutter

The flash intervals must be shorter than the time lapse interval selected at filming speed switch 2.

The lens iris on your camera must be opened by one stop more than the exposure calculator on the flash unit states, since the light splitting prism in the Nizo camera and the exceptionally large number of elements in the zoom lens must be taken into account (see «manual control of lens aperture»).

General description of variable shutter mechanism
The variable shutter is the «light trap» of your film camera. It is a disc rotating in front of the film gate. While the disc is covering the gate, the film is advanced by one frame. When the cutout in the disc is opposite the gate, light can strike the surface of the film. On the Nizo cameras the cutout on the shutter disc can be continuously varied in size while the shutter is operating, so



that fade-in and fade-out effects can be produced. In addition, deliberate reduction of the shutter area (size of cutout) reduces the exposure time if this proves necessary, or alternatively the exposure time can be prolonged by stopping the shutter in the open position in front of the film gate.

Fade-in and fade-out effects
To fade out a scene, hold the camera handle in the right hand. With the other hand, move the variable shutter lever (at left of camera base, next to shutter release) smoothly and slowly back as far as the rear stop, while the camera is still running. After this, stop the camera motor by removing your finger from the shutter release. Only then should the variable shutter control lever be allowed to return to its original position.

To produce a fade-in effect, the variable shutter lever should be pulled fully to the rear before the camera motor is started. Next, press the shutter release and allow the variable shutter lever to move fully forwards at much the same slow, smooth rate as used for the fade-out. In most cases, the fade-out of one scene will be followed by the fade-in of the next scene.

Automatic dissolves
A smooth transition between two scenes can be obtained by fading out, rewinding the length of film used for the fade and fading in the new scene over the top of the last few frames of the previous scene. The automatic dissolve mechanism on your Nizo camera ensures that the fade-out and fade-in sections of the dissolve coincide exactly, and is thus capable of producing reliable and smooth dissolves entirely automatically.

- *Dissolves should be performed only at 18 or 24 frames per second running speed.*

You must operate two controls to produce a dissolve. To start the process, press the R button on the camera for at least 1 second at the end of a scene. Then release this rewind button and also the shutter release. The next stage in the process is automatic: the scene is faded out in 3.5 seconds (63 frames) and this precise length of film rewound into the camera. Finally, the motor stops automatically.

The camera will not restart unless the R button is pressed in addition to the shutter release.

In other words, the next scene must begin with a fade-in, and this should be taken into account when determining the length of the shot.
You will appreciate that after a fade-out has been filmed and the film rewound, the necessary fade-in to complete the dissolve must follow or else the film will be overexposed and spoiled. The automatic mechanism on the Nizo camera ensures that you do not forget to complete the dissolve. A further indication is provided in the window above the film counter: if a R is visible on black background, the film has been rewound, and is ready for the fade-in forming the second part of the dissolve.
0 on a white background indicates normal camera operation. A dissolve can then be produced at any time by the fade-out and rewound process described above.

Instead of the control button, a camera release can be used; this is screwed into the socket next to the button.

- **Warning:** *Always avoid starting a dissolve at the end of the film run, as it cannot be guaranteed that the complete dissolve will take place correctly.*

This is explained by the fact that for each dissolve the camera rewinds a section of film approx. 27 cm (10.6 in) long into the Super-8 cassette. However, at the end of each film there is insufficient room in the cassette for the rewound film to be inserted.
The film rewound into the cassette is then bent back upon itself several times. If the film stock does not slide smoothly, the cassette may jam or damage be caused to the film.
If this occurs, interrupt the power supply to the camera motor *immediately* by swinging back the handgrip, or setting the master electric switch to figure 0. Open the cassette compartment and loosen the cassette slightly, preferably, by pulling it out by about 1 cm (approx. $^1/_2$ in). Reconnect the power supply or switch on the camera motor again so that the dissolve cycle can be completed. Then re-insert the cassette and close the cover. Do not attempt any further dissolves using this cassette. If a particular film stock regularly gives trouble when dissolves are attempted, they should be avoided when this type of film is used in the camera.

Nizo automatic exposure time reduction system
About midway between the front and rear stops on the variable shutter mechanism at the $^1/_2$ marking, the lever can be retained by a detent if the lever knob is pulled down slightly and released.
In this position the exposure time per frame is reduced by half, from the normal $^1/_{43}$rd second at 18 frames per second to approximately $^1/_{86}$th second. In the same way, each frame at the 24 frames per second speed is exposed for only $^1/_{115}$th second instead of $^1/_{57}$th second.

Do not use the automatic exposure time reduction system when filming at 54 frames per second, since the lens aperture control cannot accommodate the resulting high shutter speed.

At the two slower filming speeds, the exposure control will automatically respond to the reduction in exposure time of one half by opening the lens iris by one complete stop. Automatic exposure correction then continues normally. This provides you with the following additional filming facilities:
1. You can continue filming when the available light is so bright that the exposure meter needle in the viewfinder has already reached the warning symbol (grey filters

need not be fitted to the lens). 2. A deliberate reduction in depth of focus by halving shutter speed and opening the lens iris by one shot enables you to film objects against an indistinct, partly out-of-focus background. 3. Moving objects are more sharply outlined at the increased shutter speed. However, it is then particularly important to film fast moving objects at an acute angle, or else their movement will appear jerky.

After filming with the Nizo automatically reduced exposure time system in use, do not forget to disengage the variable shutter lever and allow it to return to its normal position.

Increased exposure times
If you are filming single frames (time lapse filming), the periods of time between the exposure and transport of the individual frames are, of course, much larger than at the normal 18 frames per second filming speed. You can make use of the increased intervals by increasing the exposure time of the single frame. This combination of automatic time lapse filming and increased exposure time enables a satisfactory film to be made of objects in extremely poor light conditions. For example, shots taken inside museums, churches or other poorly-lit buildings can be carried out successfully without recourse to filming still photographs, slides or other material.

Depending on the single frame filming rate chosen, the exposure time will vary between $^1/_8$th second (at 6 frames per second) and 1 minute (at 1 frame per minute). As soon as you move the variable shutter lever past the safety catch into the shaded area marked on the camera base (by pushing down the lever knob), the cutout in the shutter disc will remain stationary in front of the film gate. The film will be exposed until the automatic mechanism controlled by filming speed switch 2 transports the next frame of the film into position in front of the gate, whereupon the shutter will rotate once to prevent light from striking the film as it is advanced. Move the variable shutter lever back to the rear stop. Press the safety catch in (marked with a white dot). This will enable the lever to be moved further into the shaded area on the camera base. Release the catch. The lever is then locked into position.

- **Warning:** *With the variable shutter lever in this position, the film frame in the gate will be exposed at once. You should therefore only engage the increased exposure mechanism after the camera and the scene to be filmed have been fully prepared.*

As for all filming at extreme time-lapse speeds, the Nizo camera should be screwed firmly to the tripod or rested on the handgrip on a surface free from vibration. The time-lapse intervals should then be adjusted – longer or shorter – to suit light conditions. As in still photography, an approximate estimate of exposure is usually sufficient, since long exposures are employed in light conditions which rule out the possibility of an accidental overexposure and indeed in which any extra light can only help to improve picture quality. The automatic exposure control on the Nizo camera can therefore be allowed to remain in operation.

- *After filming at increased exposure, do not forget to return the variable shutter lever to its normal condition, or else the first frames of all succeeding shots filmed under normal light conditions will be so severely overexposed as to appear white on the screen.*

Automatic extended exposure system
If you none the less wish to employ the automatic exposure control, place the marking on filming speed switch 2 against the setting «autom. B», and remove the lens hood from the front of the lens barrel.

In these light conditions the lens hood is not required in any case. Next, pull the variable shutter lever past the detent button into the shaded area, as described in the preceding section of this manual.

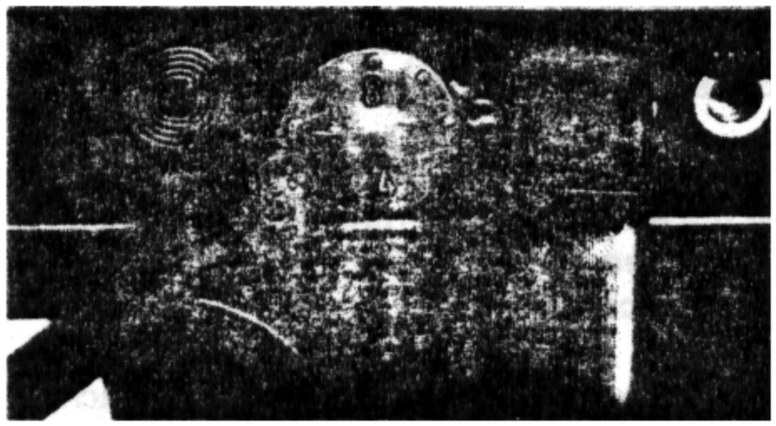
If you now move the continuous-run release (on the camera base on the opposite side

of the camera) into operating position and then move the electrical master switch to the red dot, the special automatic exposure control will determine the (time lapse) frame speed. It goes without saying that the automatic extended exposure control can only be used to advantage in adverse lighting conditions.

- **Note:** *Ensure that the window under the name plate on the front of the camera is not masked.* Behind it is located the meter cell of the special automatic exposure control. Here your Nizo provides external measurement with an angle of acceptance of 90° (in contrast to the usual TTL measurement so that small individual light sources in the picture such as for example lanterns or candles cannot affect measurement excessively.

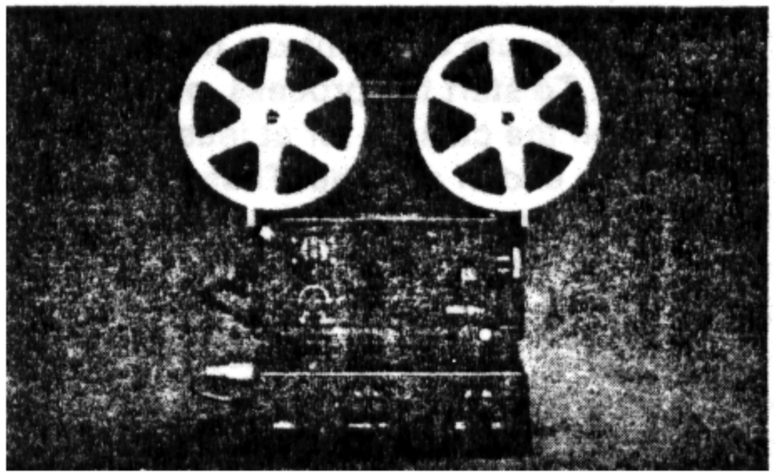
Do not forget to move the variable shutter lever back to normal position (full left) after extended exposure.

Synchronized sound recording and filming



To the left of the carrying loop attachment on the base of the Nizo cameras will be found a connecting socket for the pilot-tone lead to a tape recorder. These Nizo camera models incorporate oscillators (impulse transmitters) which transmit a 1000 Hz impulse for every fourth frame passing the gate. These are recorded by way of the connecting lead on one track of the tape. The remaining tracks of the tape are available for the actual sound recordings.

The impulses control (in accordance with the standardized sound system) the running speed of the projector when the film is screened, and thus keep the film images and the sound on tape synchronized. The Synton FP tape coupler, supplied by the Braun AG company, should be inserted between the tape recorder and the Braun FP 7 projector or FP 8 projector, which is provided with the necessary connections.



The summary chart on the adjacent page shows the range of sound leads available as accessories for various tape recorders. If your tape recorder is not shown in the list, use the Nizo N cable and have a plug attached to suit the connection on the tape recorder. The operating instructions supplied with each Nizo sound lead include hence on assembly. For synchronized sound recording in conjunction with a hand-held camera, a compact cassette tape recorder is the most suitable for the purpose.

The booklet «Sound Filming with Braun Equipment» provides detailed information on synchronized sound filming and the preparation of a sound track for existing films. It is one of the photographic booklets published by the Braun AG company (see list of publications in the Appendix in this manual).

Accessory range of pilot tone recording leads

Article number	Brief reference	To suit tape recorder	Remarks
7 690 958	UC 4	Uher CR 210 stereo	
7 690 958	UC 4	Uher compact stereo 124	If necessary, use adaptor plug K 938 as supplied by the Uher Co.
7 690 954	US 4	Uher report stereo	Uher report stereo tape recorders can be used for pilot tone recording without modification. One stereo channel is used for the sound recording, the other for the pilot tone. Each stereo channel has an input amplifier, so that the pilot tone connecting lead should be provided with an impulse attenuator.
7 690 956	UV 4	Uher report 4000, 4200, 4400 (including stereo version)	In conjunction with subsequently installed impulse head and SV 4000 cable supplied by the Volland Co.
7 690 950	Ph 4	Philips 2209 AV	
7 690 957	N	For other suitable tape recorders (preferably with remote control)	«N» indicates that the lead is «neutral» and can be used for any suitable tape recorder. A plug suitable for your tape recorder socket should be attached to the free end of the cable.

All of these sound leads are intended for pilot tone impulses corresponding to each fourth frame of the film. Cables for pilot tone transmission on every frame of the film are available on demand. All cables are approx. 3 m (9 ft 10 in) long.

Lens filters

In all normal filming conditions, your Nizo camera will give excellent results without the use of additional lens filters. For this reason, no filters are included in the standard range of accessories. However, if you feel that color film shots taken in bright daylight under a blue sky or showing large area of water appear excessively blue on the screen, we recommend you to install a KR 1.5 filter (also known as a «skylight» filter) on your camera lens. In this event, ask your photographic dealer for a reputable make of filter with the thread dimensions 49/50 for the Nizo 481, 49/58 for the Nizo 561 or 62/67 for the Nizo 801 macro camera. This filter restricts the passage of blue tones, blocks a proportion of the ultraviolet light striking the film and helps to dissipate the haze effect sometimes seen on hot days. Special ultraviolet filters are unnecessary, since the lens cluster used in your zoom lens already restricts the passage of ultraviolet light.

Only use special circular polarizing filters with your camera, e.g. B+W 49 ES. Polarizing filters increase colour saturation and reduce reflections on all nonmetallic surfaces.

Your Nizo operates (as most super eight cameras of this type) with a beam splitting prism which itself has a polarizing effect. This effect can combine with that of a *normal* linear polarizing filter. You are warned that incorrect exposure may result.

The carrying case

A carrying case is available for your Nizo camera, to provide adequate protection while ensuring that the camera can be easily reached when needed. The case has been thoroughly tested in practice. For this reason, you should ensure that you are offered only a genuine Braun carrying case for your camera.

The camera is placed into the case with the handgrip folded back and the lens at the front. If you prefer, you can leave the handgrip projecting out of the case and can close the zip fastener until only the handgrip protrudes.

The upper side pocket accepts two spare film cassettes. You can save space by removing the outer pack beforehand. The lower pocket is intended for a remote release, filters or other small items. A loop is formed on the zip fastener seam to hold a cable release (or alternatively the manual focal length adjusting lever for the Nizo 801 macro).

Minor faults and their remedies

A breakdown on your Nizo camera is a very rare thing. However, there are certain minor defects which can be caused by accidental errors in operation; even the most careful design cannot always avoid these. For example, the batteries can give rise to apparent or genuine defects. In such an event you will be able to trace and rectify the fault quickly and without outside help if you follow this trouble-shooting chart.

Camera will not start

Possible cause:	*Remedy:*
Main switch not turned on	Here the remedy is obvious: switch on!
Drive batteries defective or exhausted	Check voltage on built-in meter. Check that batteries are correctly located in their box and the right way round. Check that battery poles are not dirty.
Oxidation of battery poles	Clean and polish with a coarse cloth.
«R» button was not pressed after film rewind	If «R» is visible in the indicating window, the «R» button *and* the shutter release must be pressed, to complete the dissolve cycle.
Automatic single-frame device (filming speed switch 2) is switched on	Set switch to red dot.

Camera starts jerkily

Possible cause:	*Remedy:*
Drive batteries too weak	Check battery voltage. If too low, replace entire set of batteries.

Current consumption too high

Possible cause:	*Remedy:*
Main switch was not turned off during a prolonged non-filming period	Only turn on the main switch when about to use the camera.
«Tired» or run-down batteries were inserted	Use only factory-fresh batteries.

Batteries of the wrong type were inserted	Good results will be obtained if alkali-manganese batteries are used.
Four or five Super-8 cassettes have been exposed in quick succession. This will cause quite severe voltage drop. The batteries are not exhausted, but need a period of recovery time.	Give the batteries an opportunity to recover with the camera turned off temporarily.
Filming has taken place at very low temperatures.	Batteries do not deliver their full output when very cold. Obtain a spare battery box and keep warm at body temperature.

Aperture indicator is not working

Possible cause:	*Remedy:*
Main switch not turned on	Switch on.
Exposure meter cells (PX 625) are exhausted	Check voltage, and renew cells if necessary.
Meter cells incorrectly inserted	Note symbols marked on batteries and on cells.
Oxidation at meter cells	Remove and examine cells. If there are crystalline deposits on the insulating sleeve, or if the cells are distorted or misshapen, renew.
Battery compartment lid is oxidized	Remove closing screw for battery compartment, examine for corrosion and deposits, clean if necessary.
Automatic exposure control is turned off	Exposure control knob is not set to «autom.».

Films are underexposed

Possible cause: Incorrect meter cells (too high voltage) inserted. Check voltage. Pointer should move over to beyond the «8» mark on the scale under the viewfinder image.	*Remedy:* Use only silver PX 625 cells with green insulating ring.
Scenes were shot against the light.	Use the «+1» button.
Underexposure, and also a totally overexposed frame at the beginning and/or the end of the scene, with corona-pattern rings on the two adjacent frames. Shots made with extended exposure and at a normal running speed.	Check camera settings carefully before filming. Use the «extended exposure» position of the variable shutter only in conjunction with the automatic single frame device (filming speed switch 2).
Available light was inadequate for switching to 54 frames per second filming speed	Note exposure control telltale in viewfinder. Remember that this filming speed causes the camera lens aperture to open up by 1½ stops.

Films are overexposed

Possible cause: Meter cells are exhausted	*Remedy:* Check voltage, install new cells if necessary.
Too high contrast in subjects filmed	Next time: control exposure manually at the lens aperture.

During filming, the left hand was used to support the camera by resting on the top of the body at the front. The ball of the thumb may have pressed the meter battery test button in slightly and interrupted the current circuit to the exposure control system. In this case the lens will open up to full aperture.	Check your method of holding the camera and modify grip if necessary.

Camera runs continuously

Possible cause: Continuous run switch next to shutter release has been locked in the position needed for the automatic single-frame device.	*Remedy:* Return switch to normal position.
Drive batteries are too weak	Check voltage.

Pictures are not sharp, out of focus

Possible cause: Eyepiece adjustment not in accordance with cameraman's eyesight	*Remedy:* Correct by reference to the section on eyepiece adjustment in this manual.
Before filming, the distance was not examined and focused at maximum lens focal length	Use the tele position of the zoom lens for all focusing. This is particularly important in tracking shots, where camera-to-subject distance may vary.

Automatic power zoom mechanism out of action

Possible cause:
Batteries too weak

Remedy:
Check voltage.

On Nizo 801 macro only: adjusting ring at rear of zoom lens is set to 0, thus disconnecting the power zoom drive mechanism.

Set to power zoom by turning ring to red dot.