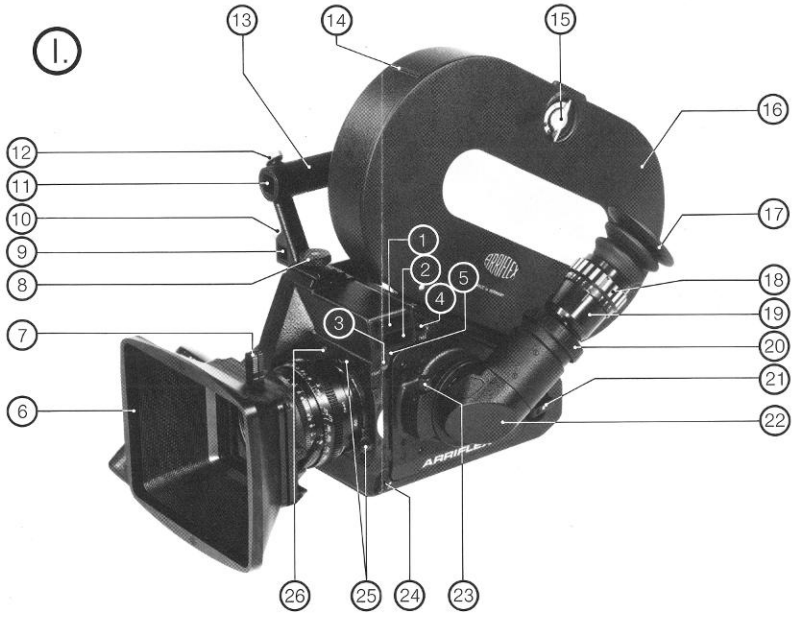
ARRIFLEX

Instruction manual



ARRIFLEX 35 III

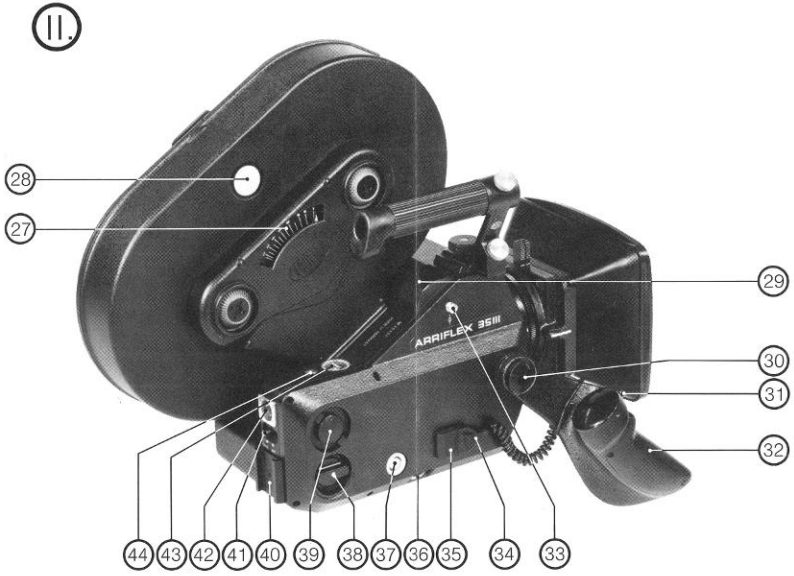
1 January 1984



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Working with the taking lenses

The following lenses can be used with the ARRIFLEX 35 III camera: the new 35 mm ARRIFLEX/Zeiss Super Speed lenses with 54 mm dia. PL mount; all earlier 35 mm zoom and fixed focal length lenses with 41 mm dia. standard or steel bayonet mount. The latter lenses can only be used when fitted with an ARRIFLEX PL adapter.

A support must be used with heavy zoom or telephoto lenses (see Bridge Plate). If a support is not used uneven pressure on the lens carrier can lead to a change in the flange focal distance.

To ascertain which accessories are needed with which lenses and how to fit them onto the bridge plate, refer to the following technical information sheets: »The lens accessory system for ARRIFLEX 35 BL III and ARRIFLEX 35 III cameras with bridge plate« »The light-weight support« »The light-weight matte box«

CARE To avoid damage to the camera's mirror shutter, the slightly flattened lens guard must be removed from the following 1st series Zeiss lenses with 41 mm dia. ARRIFLEX mount:

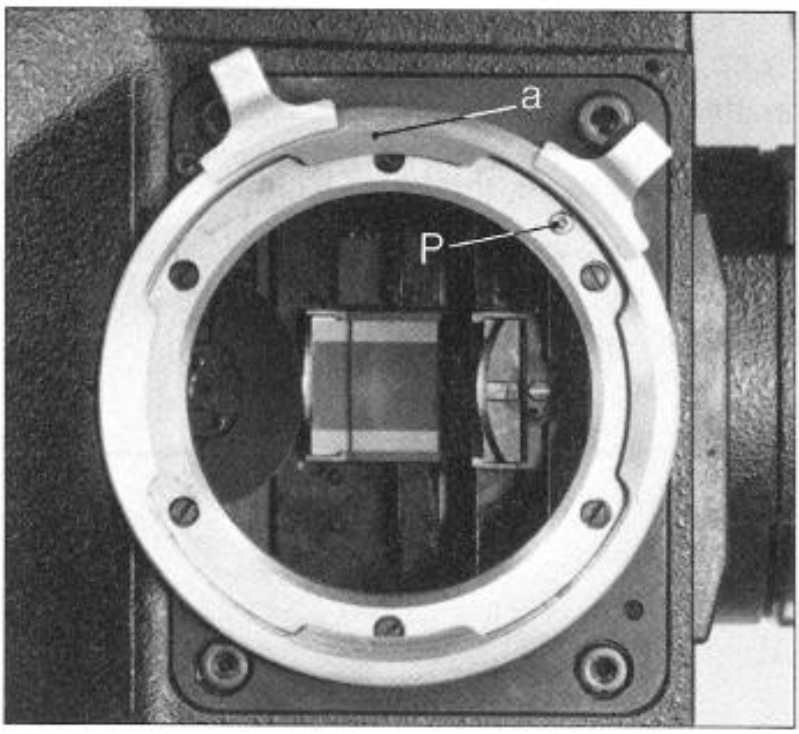
Distagon 25 mm f 1,2
Distagon 35 mm f 1,2
Planar 50 mm f 1,3

PL lens mount and PL adapters

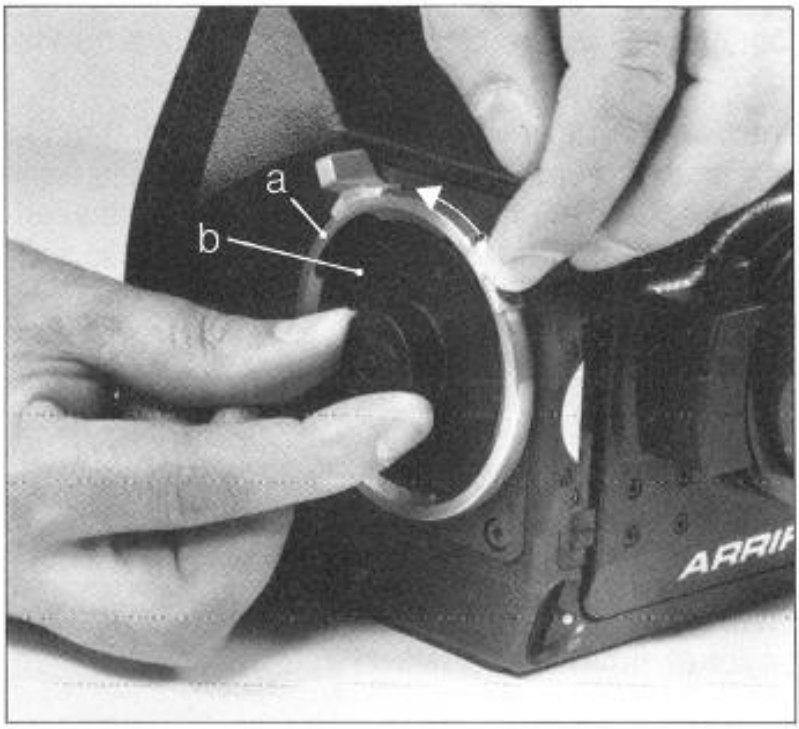
The PL lens mount (PL = positive locking) has a diameter measuring 54 mm. The bayonet positive locking feature ensures that even heavy lenses are held securely. The PL mount is made of chrome nickel steel which is resistant to wear and corrosion.

An adapter must be fitted to use lenses with 41 mm dia. standard or steel bayonet mount. Two adapters are available for fixed focal length lenses — one of these adapters has a bayonet lock which can be quickly removed from the lens, the other is permanently screwed to the lens.

A collar ring adapter is available for using zoom lenses with 41 mm dia. steel bayonet mount in the camera's PL mount. This collar ring adapter replaces the 41 mm dia. mount; no readjustment is necessary.



Fitting lenses with PL mount



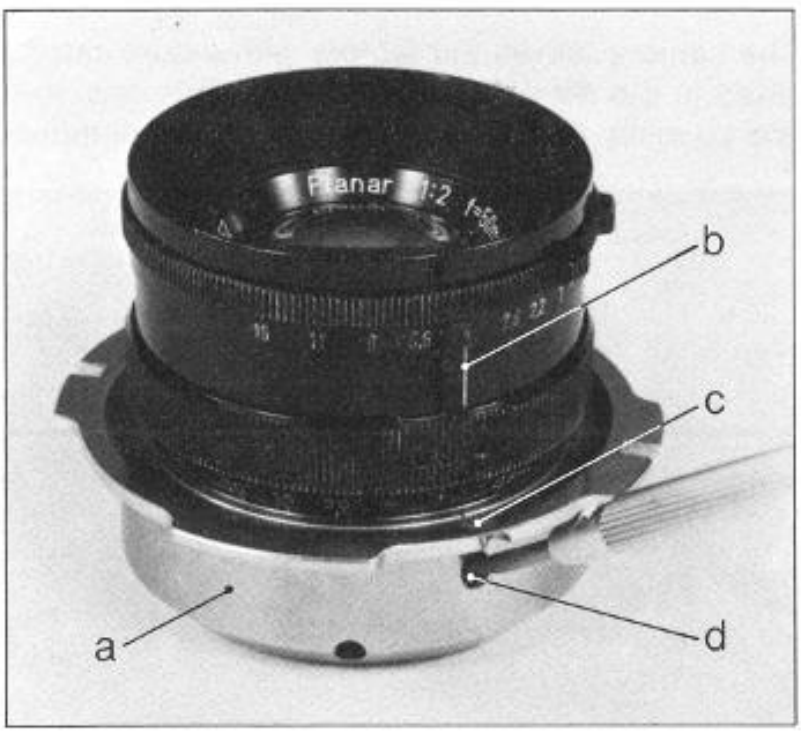
The camera leaves the factory with a dust cap (b) fitted to the lens mount. To remove this cap, turn the bayonet ring (a) in an anticlockwise direction



until resistance is met. The locking device is released and the cap can be removed. Place the lens squarely into the lens mount. The lens throat has four grooves set at 90° intervals to ensure a firm fit.

The dowel pin (p) in the camera lens mount must fit into one of these grooves. Then, holding the lens, turn the bayonet ring (a) in a clockwise direction until resistance is met. The lens is now locked in position.

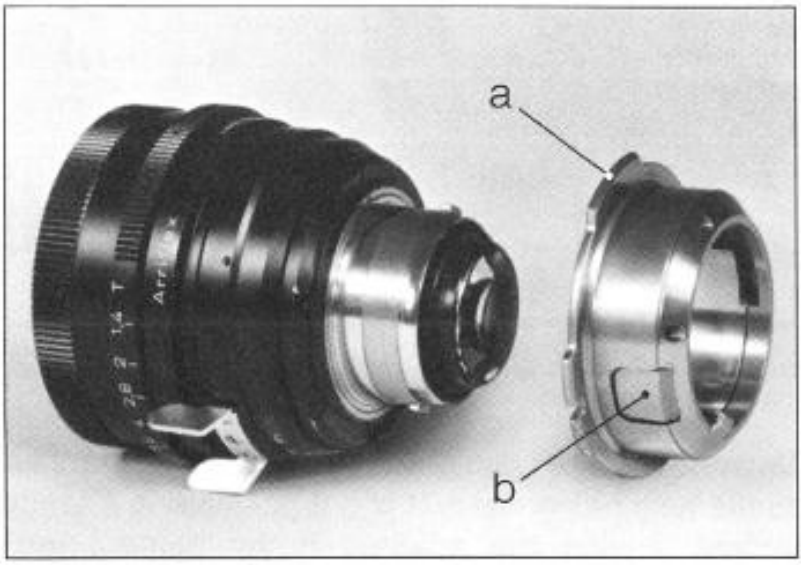
Fitting lenses with 41 mm dia. standard or steel bayonet mount



With fixed focal length lenses with 41 mm dia. standard or steel bayonet mount, the PL adapter (a) is pushed onto the mount and the lens index mark (b)

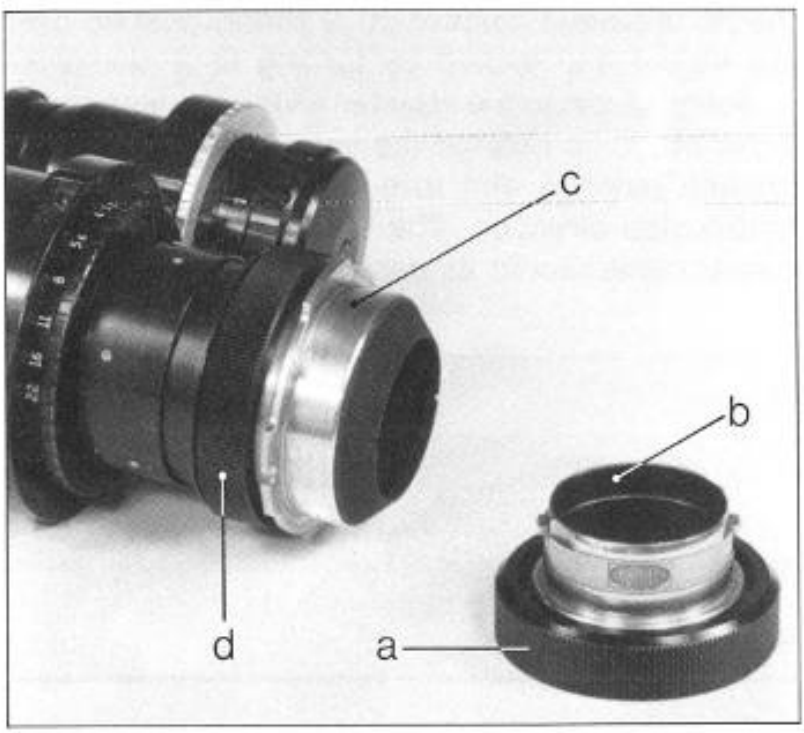
is brought into alignment with one of the adapter's two index marks (c). The adapter is then fixed to the lens with the 3 setscrews and the lens can then be placed into the camera lens mount as described before.

With fixed focal length lenses with 41 mm dia. standard or steel bayonet mount, as well as with older fixed focal length lenses where the front elements rotate when focussing, (e.g. Cooke Speed Panchro) the PL universal adapter (a) is simply pushed over the mount and locked by turning in a clockwise direction. A pin in the adapter aligns the lens to the index mark. To change the lens, press both of the release catches and turn the adapter in an anticlockwise direction. The lens is placed into the camera lens mount as described before.



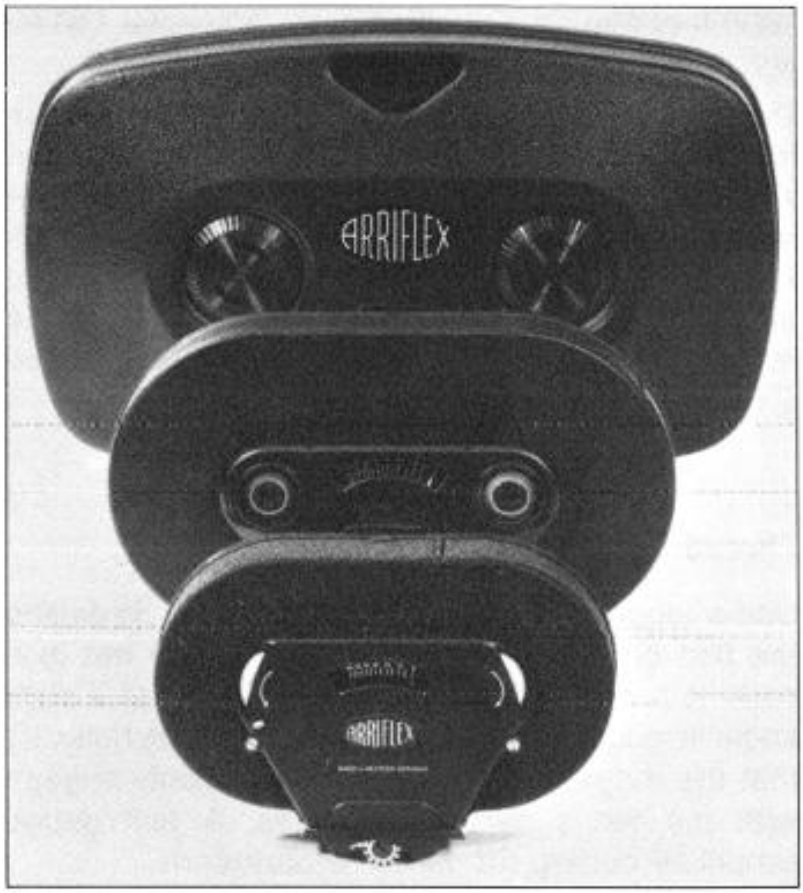
Converting zoom lenses with 41 mm dia. steel bayonet mount to PL mount (Cooke and Angénieux)

The zoom lens screw collar ring (a) is unscrewed and removed together with the 41 mm dia. steel bayonet mount (b). The PL zoom adapter (c) with screw collar ring (d) is placed in the correct position (i.e. the dowl pin on the lens must fit into the corresponding groove in the adapter) and then tightened. No readjustment is necessary. The lens is placed into the camera lens mount as described before, however, a lens support must be used.



Important: All PL adapters must be first attached to the lens being used. It is not possible to change a lens leaving the adapter in the camera lens mount.

Magazines



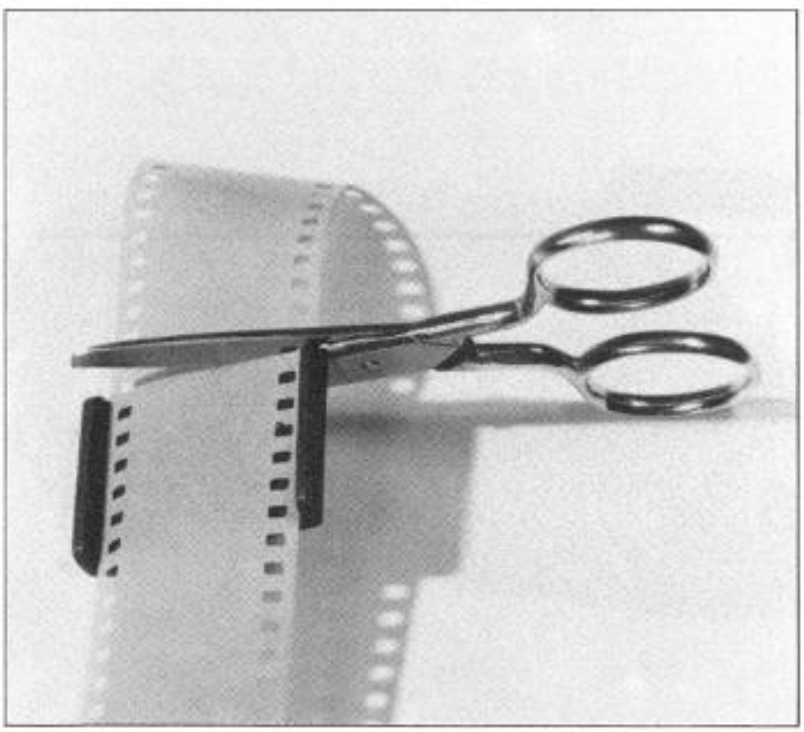


Magazines for use with the ARRIFLEX 35 III are available for 60 m/200 ft, 150 m/400 ft and 300 m/1000 ft of film on a plastic booby. A special 150 m/400 ft shoulder magazine is also available.

The 60 m magazines, as well as the 150 m magazines which have been constructed for forward and reverse travel (not the 150 m shoulder magazines) are identical to those used with ARRIFLEX 35 II C cameras. The shoulder magazines and the 300 m magazines are made of synthetic materials for weight reduction. All magazines have a film loop protector.

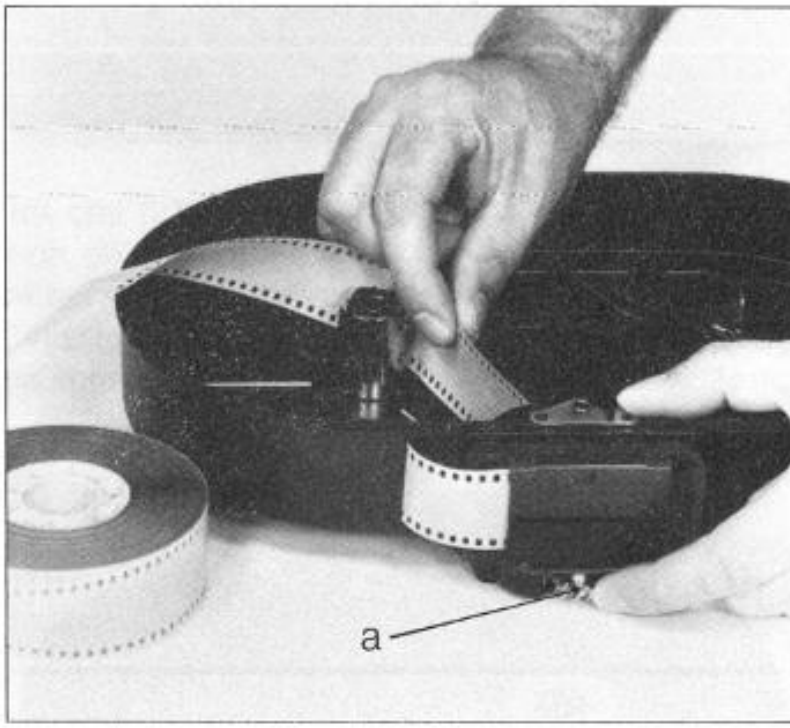
Threading the film

Use a piece of exposed film to practise threading the film before all steps can be carried out in a darkroom or changing bag. Cut the film at a right angle through the middle of the perforation holes so that the magazine throat sprockets easily engage with the film's perforation holes. A film gauge simplifies cutting the film in a darkroom.

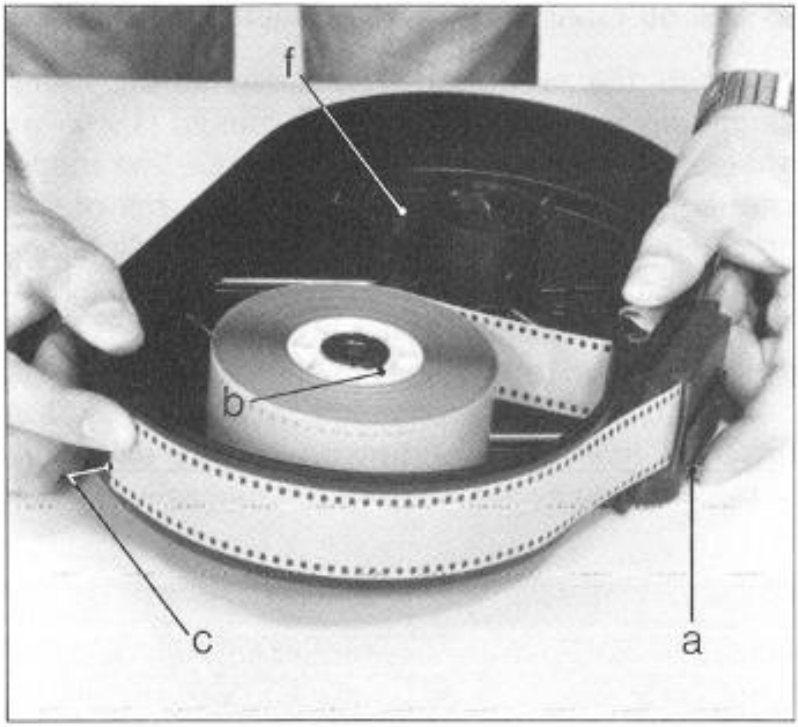


a) The 60 m/200 ft and 150 m/400 ft magazines

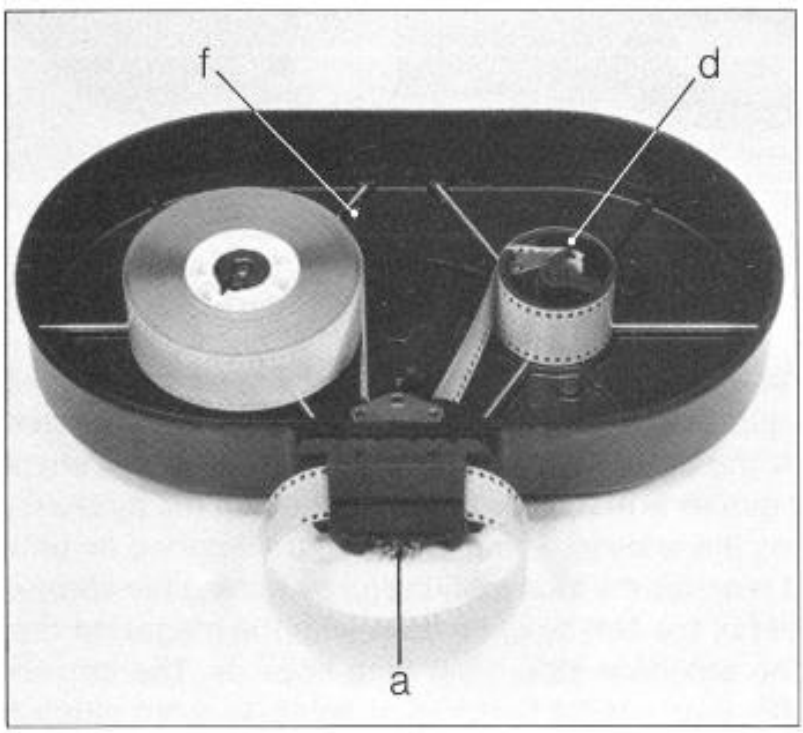
To open the magazine, press the safety catch simultaneously turning the lock handle (15) in an anticlockwise direction to position A/O. The magazine lid can now be lifted off. Lay the roll of film beside the magazine (with the emulsion side facing inwards) and feed the film from inside of the magazine into the left slot. Do not twist the film. Turning the gear wheel (a) carefully push the film until both perforation holes are engaged by the sprocket at the same time. Continue turning the gear wheel until the film end appears out of the magazine throat.



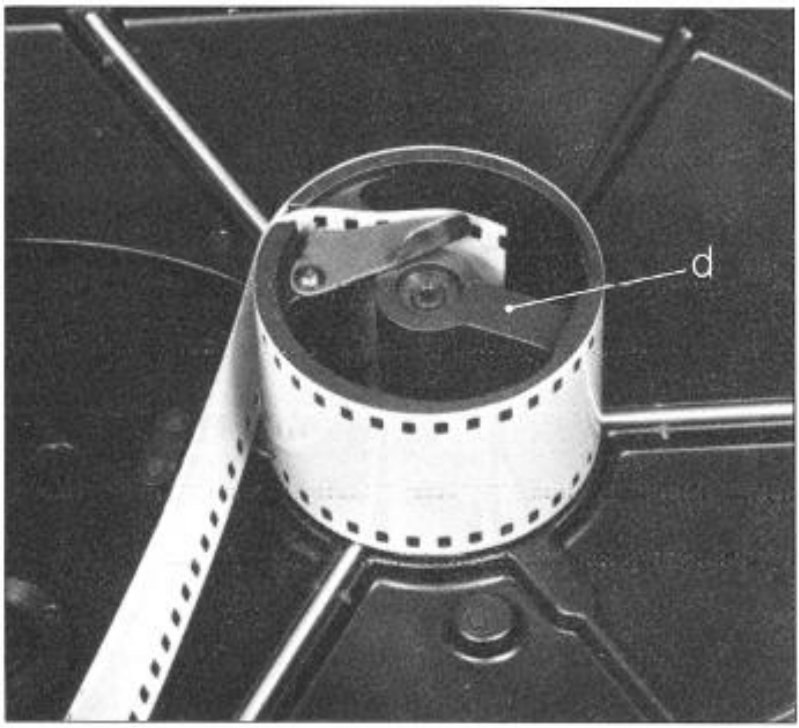
Now place the roll of film on the feed shaft. Take care that the drive key of the feed shaft is seated in the notch (b) of the plastic core. The raw stock counter arm (f) is swung onto the film roll by pressing the release. The film is then transported on until it reaches the loop marking (c) by turning the sprocket (a); the film must lie flush with the magazine and the emulsion side must face inwards. The correct film loop has 54 perforation holes. Without altering

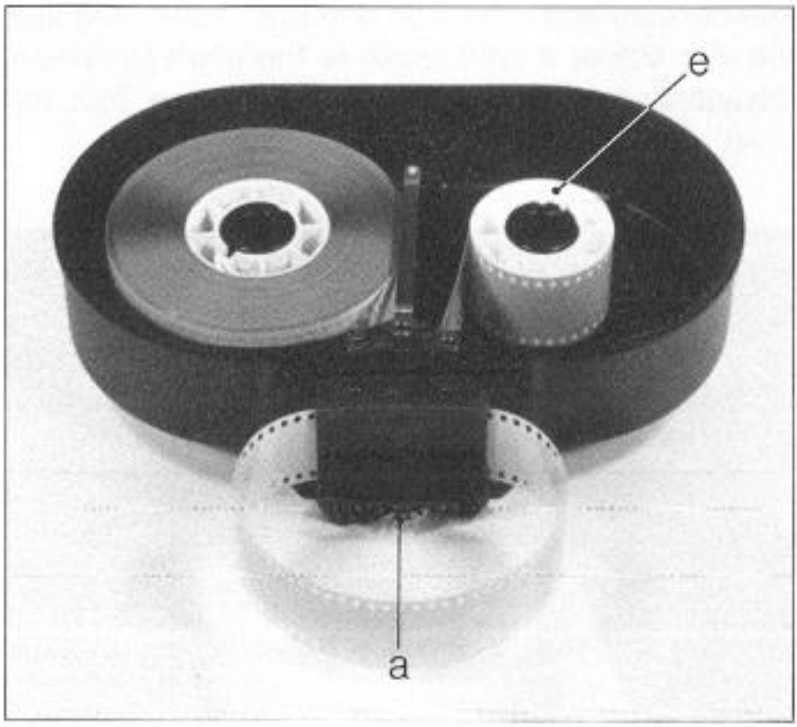


the length of the film, push the end of it into the right hand film channel. The emulsion side now faces outwards. Continue turning the sprocket to transport the film into the inside of the magazine, carefully clamp the film leader in the expandable

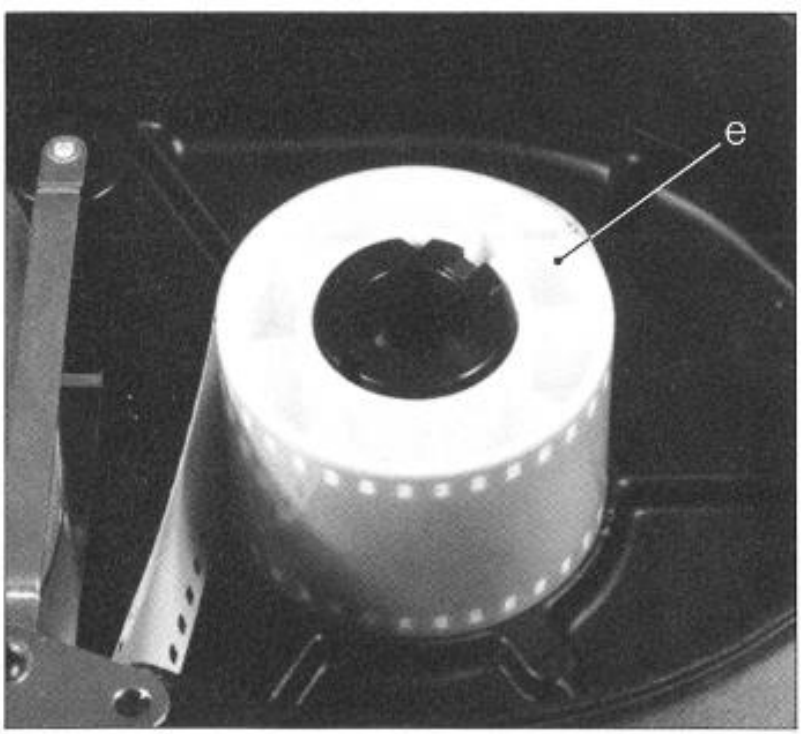


film core (d) and wind it on one turn. Take care that the film sits at a right angle to the shaft to ensure trouble-free winding and to prevent the film roll from rubbing against magazine lid.

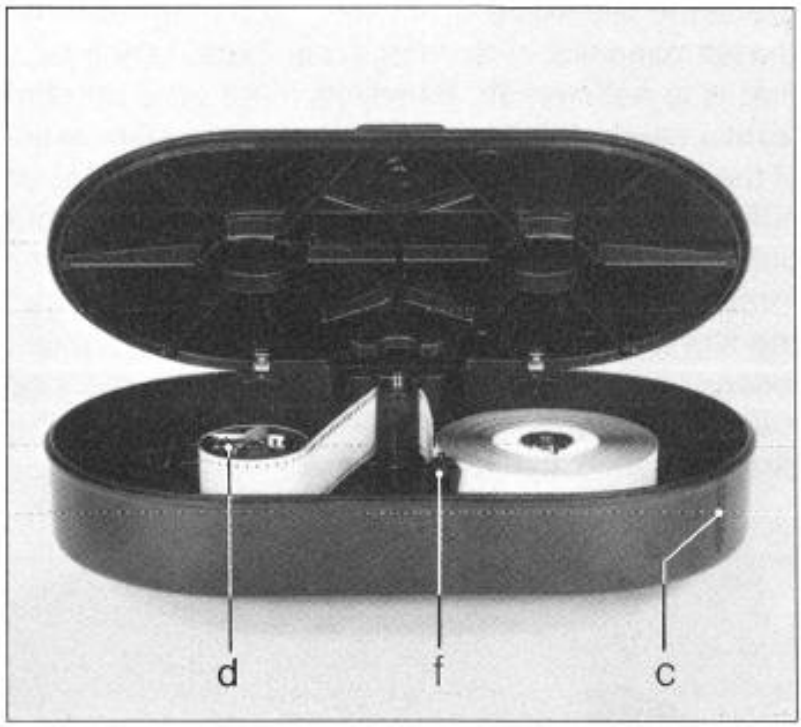




With the 60 m magazine the film leader is held in a plastic core (e) instead of an expandable film core. The slot in the plastic core for securing the film leader must be so positioned that its pointed edge faces the direction of rotation. Crease the film

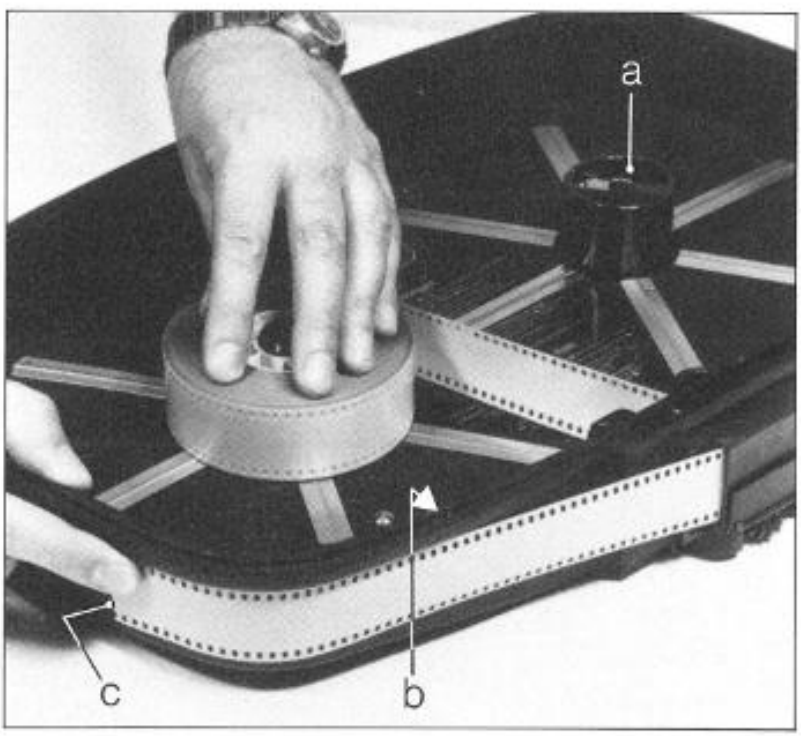


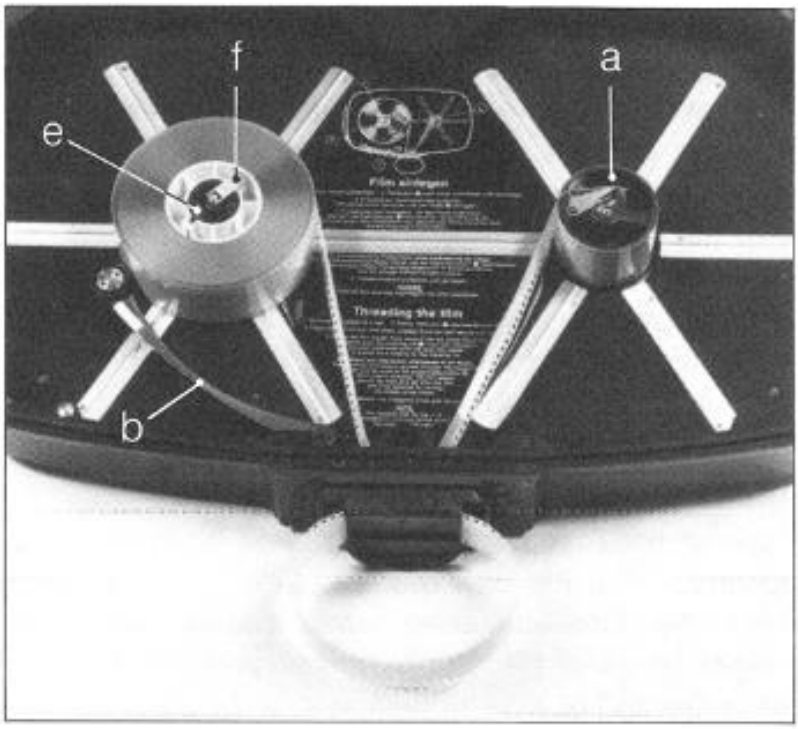
leader, hook the crease in the slot, and wind the film tightly onto the core. Replace the magazine lid and lock by turning the magazine lock in a clockwise direction. The safety spring now automatically prevents the lock from being released unintentionally.



b) The 300 m/1000 ft magazine

To open, pull the locking catch and turn it in the direction of the arrow; the lid can now be lifted off; pull back the raw stock counter arm (b) until it locks. Place the roll of film on the wind off shaft so that the catch (e) engages; secure with the lever (f). Guide the film leader from inside the magazine into the left hand slot of the magazine throat taking care that is is not twisted. Slowly turn the wind on core (a) in a clockwise direction and push the film on until the sprocket is felt to engage with the perforation holes of the film. Continue turning the wind on core until the film leader appears out of the magazine throat. With the emulsion side facing inwards, lead the film flush against the magazine housing until it extends approximately 10-15 cm beyond the loop mark (c). By turning the film roll in an anticlockwise direction wind the taut film back to the mark (c).





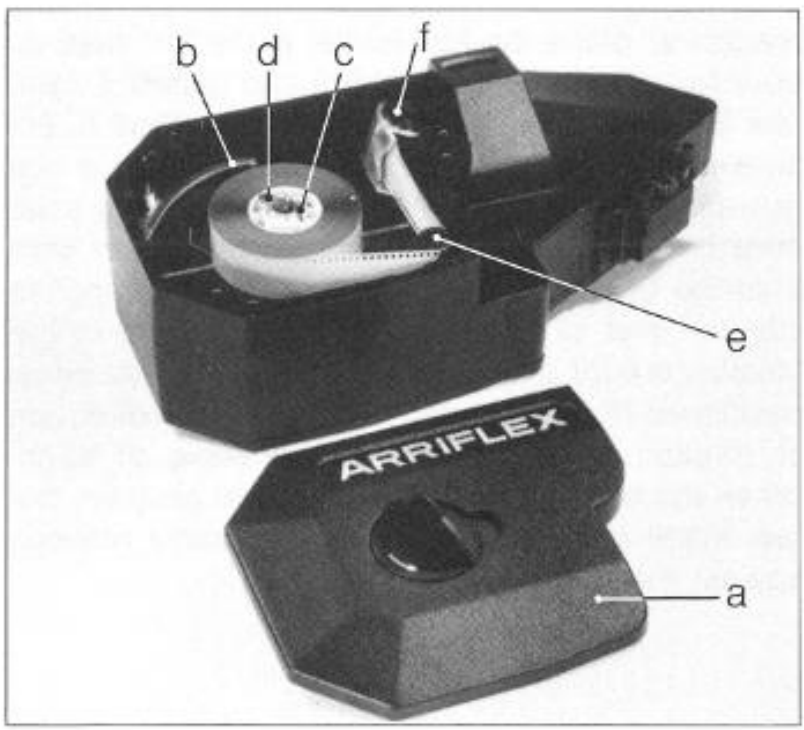
Without changing the length of the film, feed the film leader into the right hand slot of the magazine throat and at the same time turn the take up core (a) in a clockwise direction. The emulsion side now faces outwards. Continue turning the take up core and transport the film into the inside of the magazine; place the film leader in the film take up core (a) (expandable film core) and clamp it tight. The film must sit at a right angle to the shaft to ensure trouble-free winding and to prevent the film roll rubbing against the magazine lid. If a plastic core is used instead of an expandable film core then the film leader must be creased and hooked into the slot of the plastic core. The slot in the plastic core for securing the film leader must be so positioned that its pointed edge faces the direction of rotation. Wind the film on a couple of turns. When the magazine lid is replaced in position, the raw stock counter arm (b) automatically presses against the roll of film.

c) The 150 m/400 ft shoulder magazine

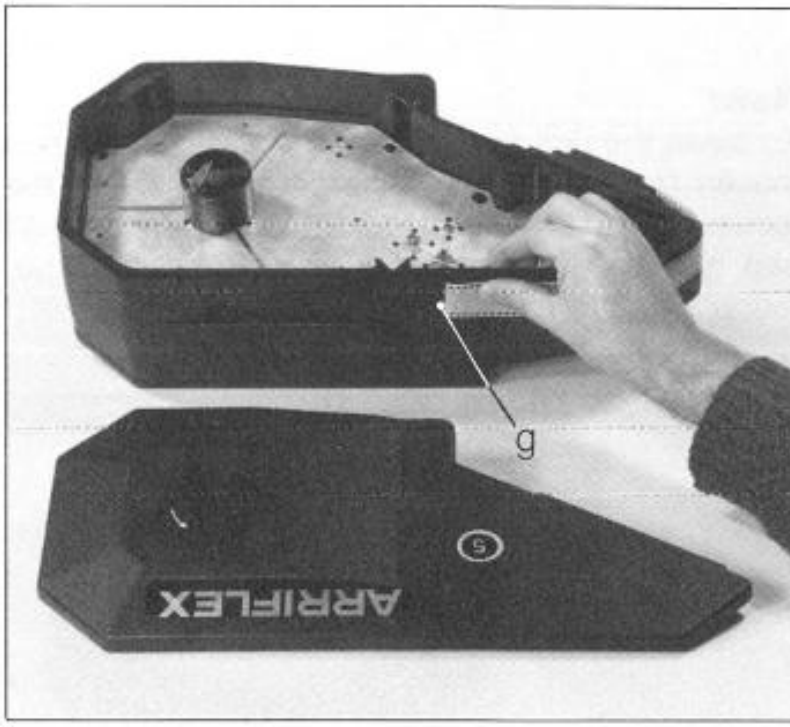
Before threading the film, it is advisable to remove both of the magazine lids. Place the magazine on its wind on side with the small lid (a) facing upwards. To open, pull the locking catch up and turn it in the direction of the arrow and lift the lid off. Turn the magazine over so that the wind off side is facing upwards, pull the locking catch up and turn in the direction of the arrow; lift the lid slightly and slide it out of the guide rails.

The following steps must be carried out in a dark room or a changing bag must be used.

Position the magazine with the wind on side facing upwards. Pull the raw stock counter arm (b) back from the film roll area until it sinks into the magazine wind off compartment and locks. Then place the roll of film (emulsion side facing inwards) onto the wind off shaft so that the catch (c) engages; secure with the lever (d). Then guide the film leader around the guide roller (e) into the film channel. Place the magazine in an upright, shooting position. The wind up side faces to the right. Slowly



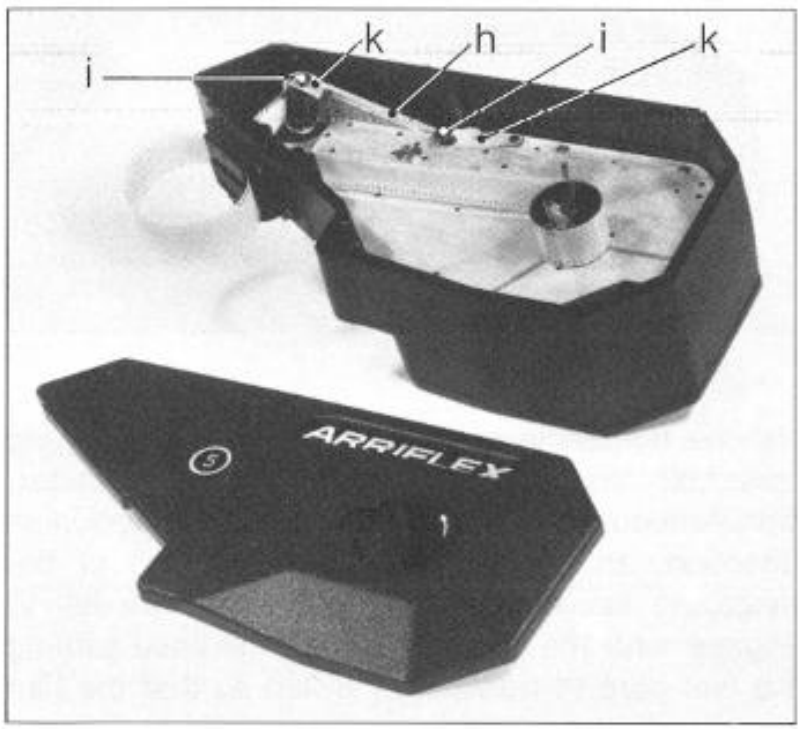
turn the knurled knob (f) in a clockwise direction pushing the film on until the end is felt to appear out of the magazine throat. The magazine lid (a) (wind up side) can now be closed. The remaining steps can be carried out in daylight.



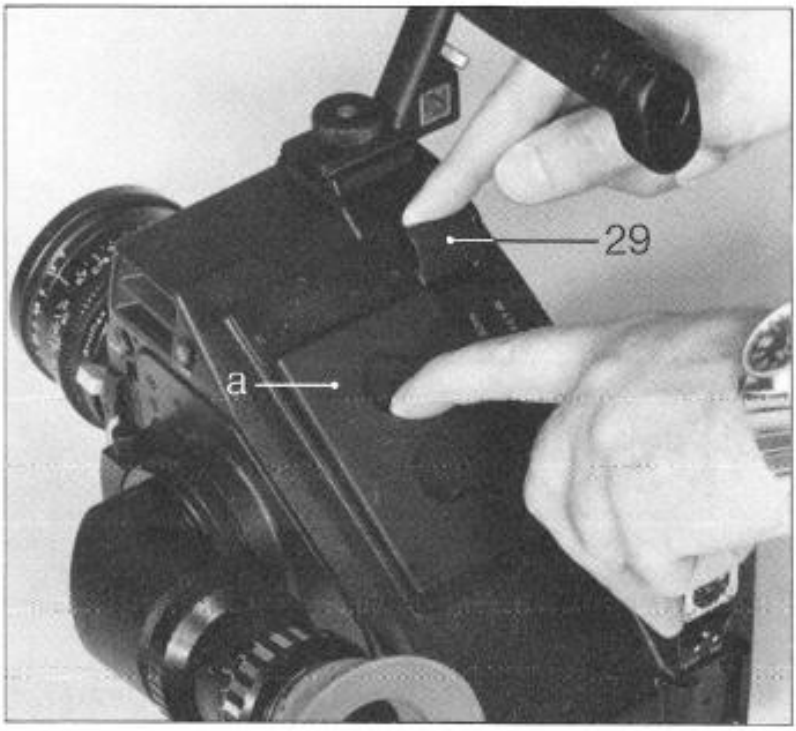
Lay the magazine on its side (wind off side facing upwards) and carefully pull the film leader, simultaneously turning the film core in a clockwise direction, and push it into the inner slit of the magazine throat until the perforations are felt to engage with the sprocket. Then continue turning the film core to transport the film so that the film leader appears out of the magazine throat. Pull the film leader out of the magazine throat until it reaches the loop marking line (g) — the film must lie flush against the magazine housing (emulsion side facing inwards). Without changing the length of the film, feed the film leader into the right hand side of the magazine throat. Continue turning the wind up core in a clockwise direction and transport the film into the inside of the magazine and clamp

it in the expandable film core. The film must sit at a right angle to the shaft to ensure troublefree winding up and to prevent the film roll from rubbing against the magazine lid. Slide the lid back in the guide rails, press down lightly and lock.

Note:
To clean the film channel (h) (e.g. after a film jam) loosen the two knurled screws (i) and move the locking plate (k) to the side. The film channel unit can now be lifted out and unfolded. To replace, follow steps in reverse order.



Mounting the loaded magazine on the camera

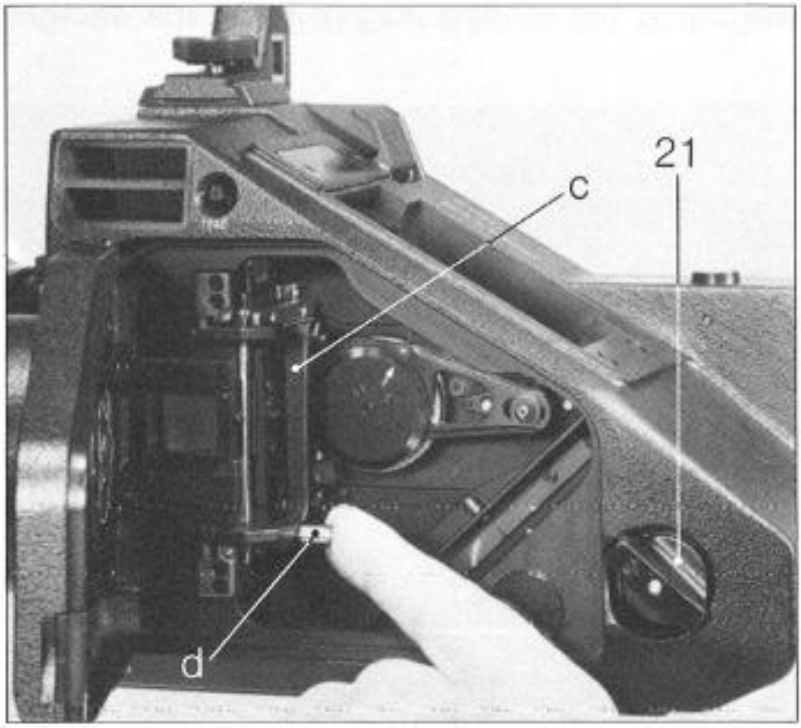


The following procedure applies for all magazines.

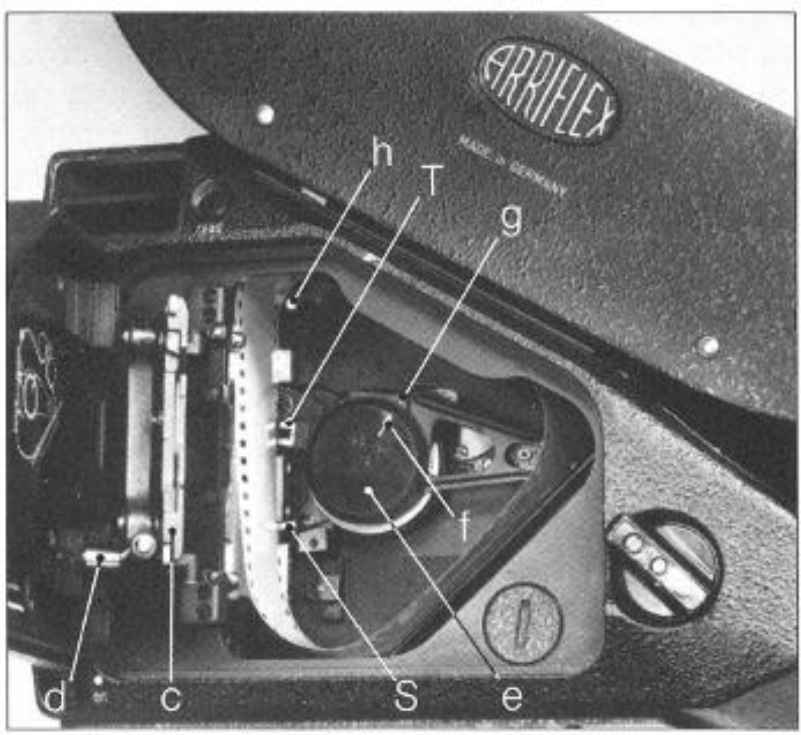
First release the camera door lock (21) by turning it in a clockwise direction and open the door as far as possible. Remove the magazine opening cover (a) by pulling the magazine lock button (29) upwards. The film pressure plate (c) must also be swung back as far as possible — to do this first push the retension pin (d) upwards.

Now remove the magazine loop protector and place the rear part of the magazine throat into the camera dovetail guide. Lead the film loop (do not bend or crease the film) through the magazine opening. Then push the magazine down so that it locks in the magazine opening. The magazine drive gear meshes automatically. If necessary, turn the knurled knob slightly to establish precise gear meshing.

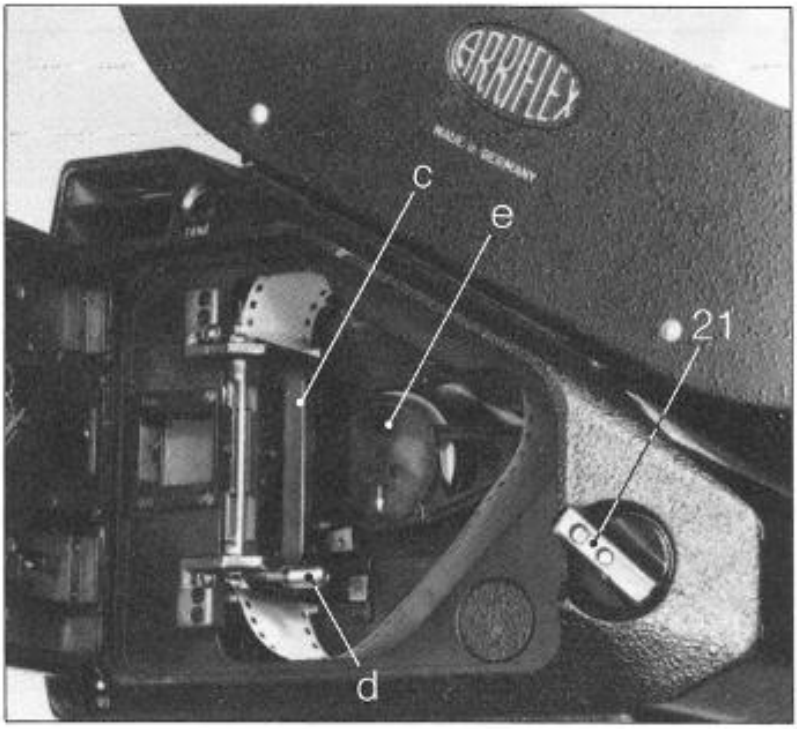
Now turn the knurled disc (e) in an anticlockwise diection until the arrow (f) coincides with the dot (g)



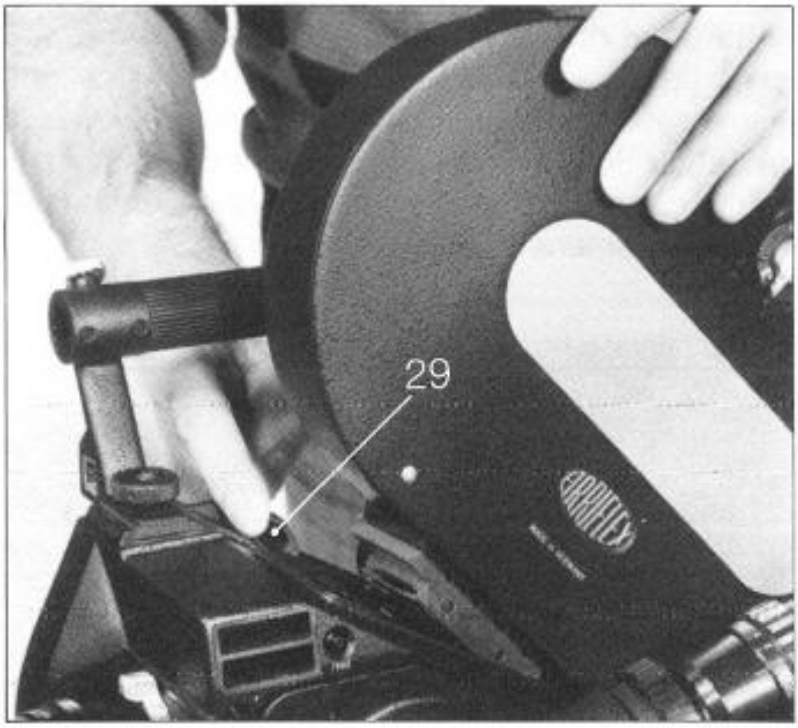
on the claw plate. In this position the claw pins (T = transport pins, S = registration pins) are cleared from the film plane. Shift the film on the film plane so that upper part of the loop is just above the mark (h).



By slightly turning the knurled disc in an anticlockwise direction, lower the transport claw pins into the nearest perforation holes and firmly hold the film in this position in relation to the mark (h). Close the film pressure plate (c) and lightly press it shut. Once again turn the knurled disc in an anticlockwise direction to ensure that the film is being correctly transported, and then close and lock the camera door.



Removing the magazine



The following procedure applies for all magazines. By pulling the magazine locking lever (29) the wedge breech lock in the camera's magazine opening is released and the magazine can be lifted off. If a magazine is not going to be placed on the camera, use a cover to prevent dirt entering the camera.

Removing exposed film

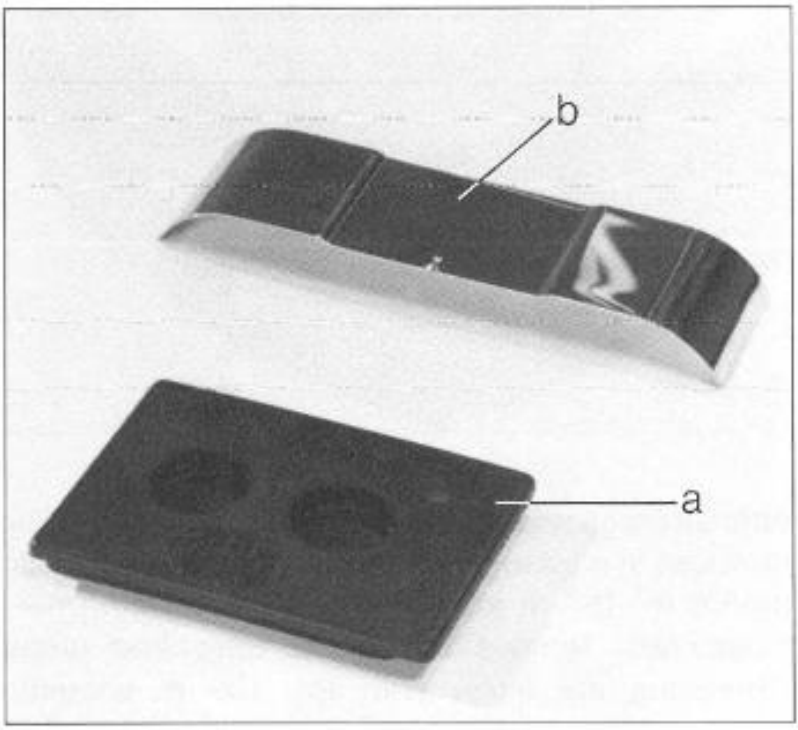


With all magazines the exposed film must either be removed in a changing bag or in a dark room. With the 60 m, 150 m and 300 m single compartment magazines, remove the lid as described under »threading the film«. With the 150 m shoulder magazine, a coaxial magazine, only the wind off lid needs to be removed. By pressing the clamp lock the expandable film core reduces releasing the film leader. The roll of film can now be lifted off the core. Hold the roll of film from underneath to prevent it sagging. Place the roll on a flat surface and place a plastic core in position to stabilize the roll. If a plastic core was used instead of an expandable film core (60 m magazine) remove the film roll with the core in place.

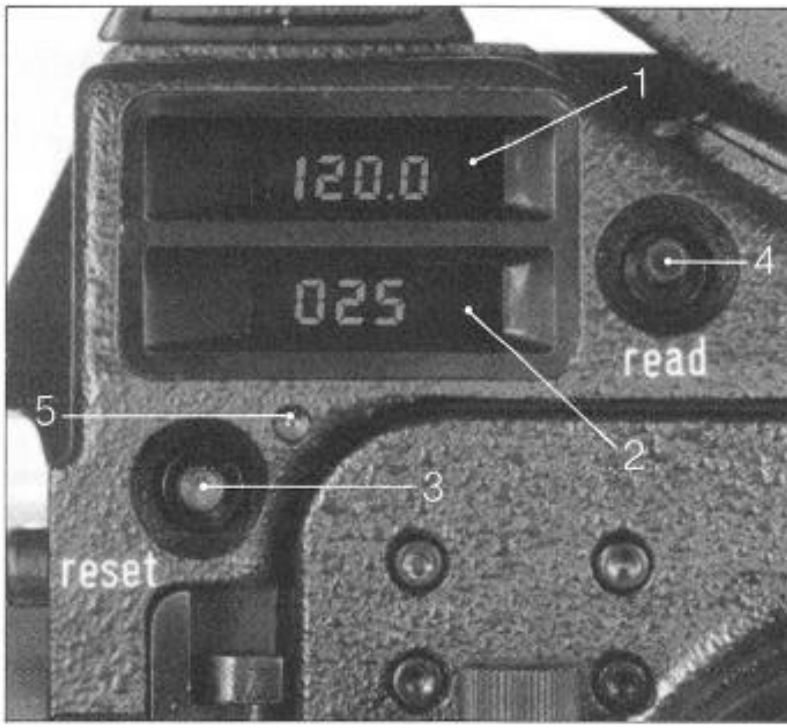
Care! The plastic film core sits loosely in the roll of film, but this is sufficient to stabilize it. On no account attempt to tighten the roll of film to make it sit more firmly — the exposed film will be scratched.

Should the ARRIFLEX 35 III be transported or stored without a magazine in position, use the magazine opening cover (a) to prevent dirt entering the camera.

During transport or when stored, loaded or empty magazines should be fitted with the loop protector (b) to prevent damage to the film or magazine throat.



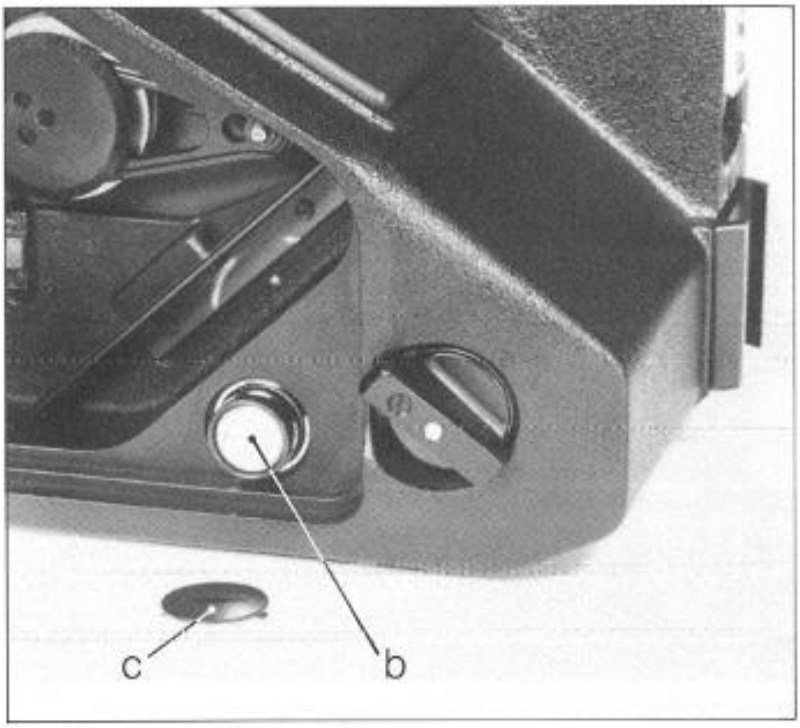
The counter for exposed film (1)



The counter for exposed film is an electronic, digital unit. It is recessed in the camera to enable easy ready reading of the display which, depending on the camera model, appears in meters or feet. To read, when the camera is not running, press the button »read« (4). To bring the reading back to zero (e.g. when a new magazine is fitted) press both buttons »reset« (3) and »read« (4) simultaneously. If the »reset« button is not pressed, the reading for length of film already shot is retained in the memory, even when the camera is disconnected from its power supply.

The display memory is fed from a battery independent of the camera power supply. When the memory battery is run down a control lamp lights up when the camera is connected to its power supply.

The battery (b) must be replaced by removing the protecting cap (c) using a coin.

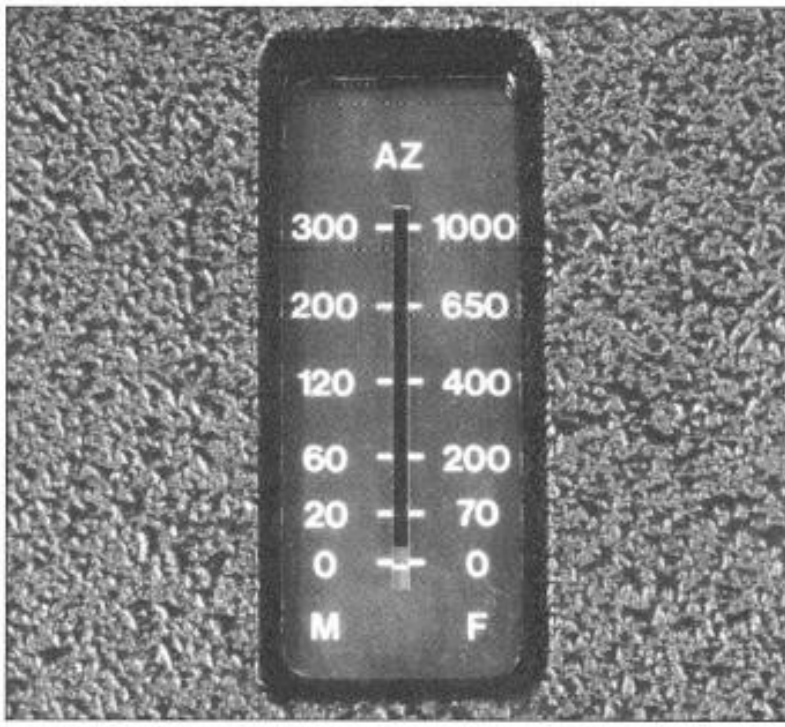


The frame speed display (2)

Using the frame speed selector switch (43) the ARRIFLEX 35 III can run quartz controlled with a frame speed of 24 or 25 fps. To read and set steplessly adjustable frame speeds, 6-50 fps, the camera is fitted with an electronic, digital frame speed display. The form and operation of this display are identical with the before mentioned counter for exposed film.

The counter for raw stock (27)

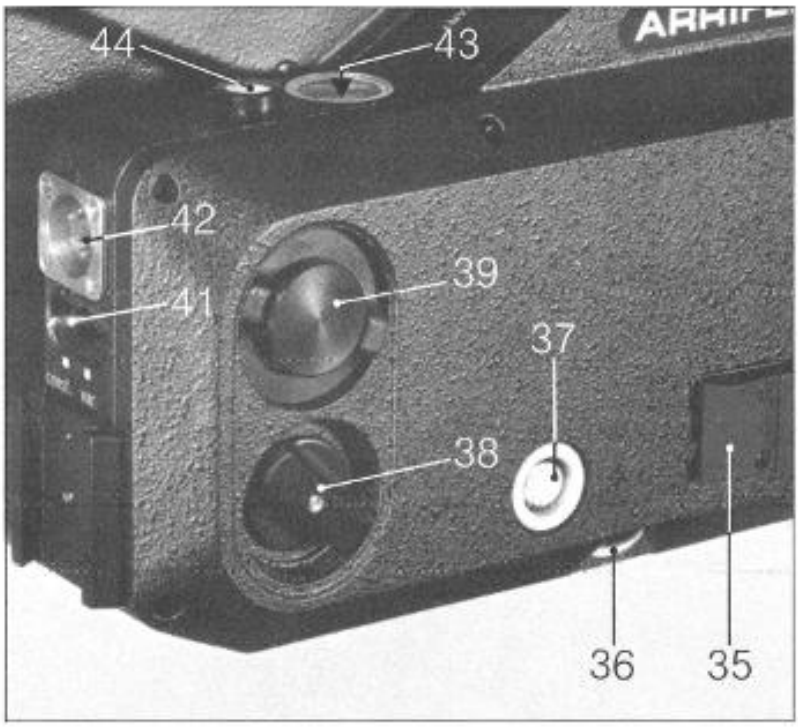
To be able to check the amount of raw stock available in the magazine (e.g. when the magazine is loaded with a roll smaller than the maximum capacity of the magazine) there is a mechanical, analog display fitted to the magazine. The reading is given from the raw stock counter arm which presses against the roll of film. (See »threading the film«). The scale is engraved in meters and feet.



ill. 300 m magazine raw stock counter.

The control panel

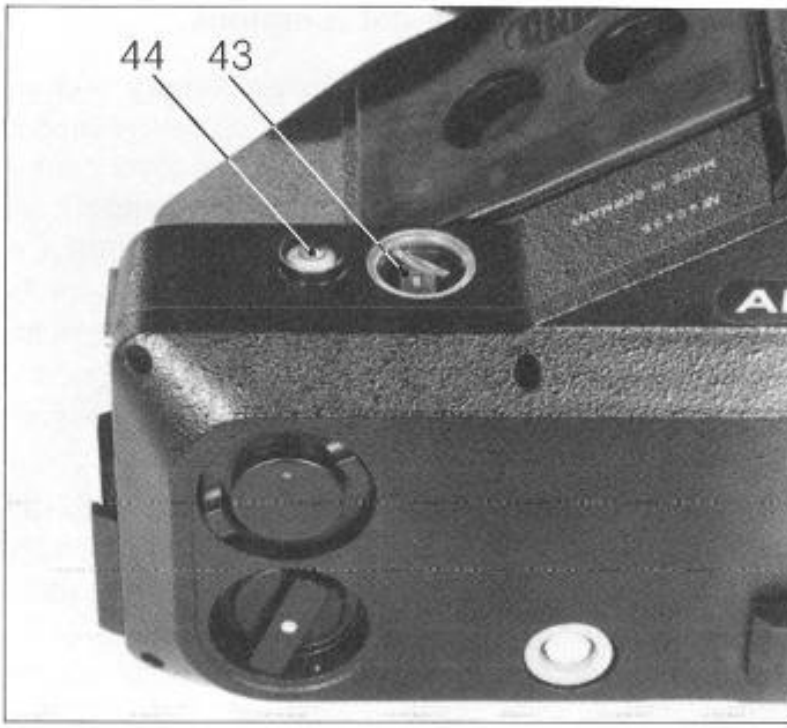
The control panel which is positioned at the rear of the camera, contains:



42) The 4 pin flange socket for the camera power supply

37) The 11 pin flange socket for the electrical accessories e.g. EFC 35, HSU, EXS II etc.
When two accessory units are used simultaneously (e.g. HSU and EFC 35) the accessory distributor ZV is placed in this socket.

39) When the bridge plug is removed, the high speed cable HSU for frames speeds of 6-100 fps is fitted here.

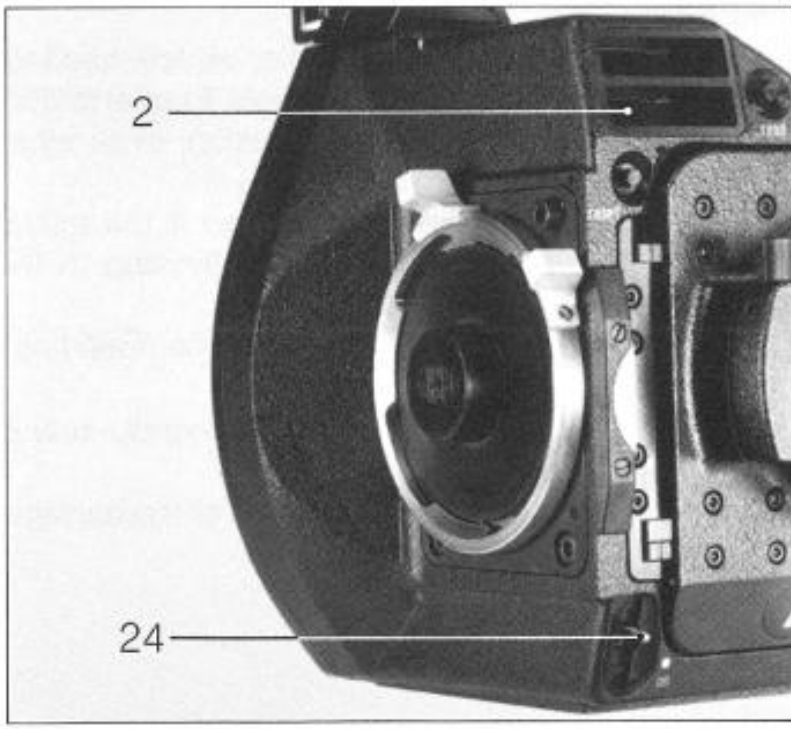


43) The frame speed selector switch for quartz controlled speeds, 24 or 25 fps, as well as a fuse which is part of the camera power circuit together with a spare fuse.
41) The mode of operation selector switch, used for changing the camera from variable to quartz controlled frame speeds (and vice versa), even when the camera is running.
38) The inching knob — to be used if the mirror reflex shutter does not automatically stop in the position »viewfinder open«.
36) The knurled knob for variable frame speed setting,
35) The 4 pin flange socket for the handgrip with electrical release)
44) Spirit level for checking the level of the camera.

Controlling the electrical functions

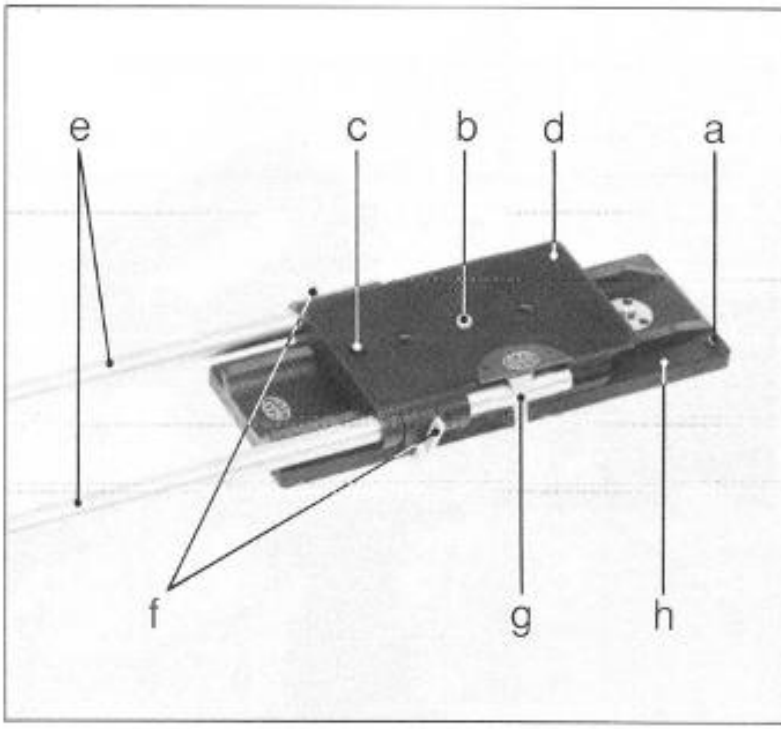
Connect the camera to the power supply and activate the release (24). Before the camera reaches the selected frame speed, a red out-of-sync control lamp lights up in the viewfinder image beneath the film format marking line. The out-of-sync lamp also lights up if the selected frame speed cannot be reached because the battery is too weak. When the camera is operated with variable frame speeds, a green control lamp is visible in the viewfinder image when the camera is running.

The frame speed is set with the knurled knob (36) and controlled via the digital display (2). When the camera is switched off, the red out-of-sync lamp lights up again until the camera stops running. An electronic control stops the rotating mirror shutter automatically in a viewing position. If necessary, the mirror shutter can be adjusted by hand pressing the adjustment button (38) in and turning as far as necessary.



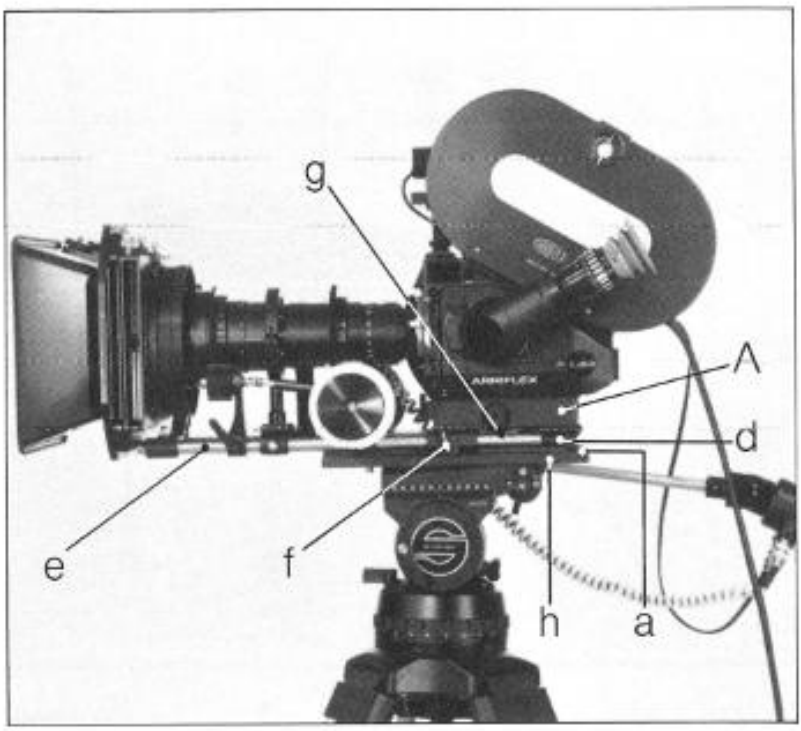
The bridge plate

When shooting from a tripod with zoom lens, matte box, servo zoom drive or follow focus unit, the bridge plate as well as the adapter plate (A) must be used.



To mount, press in the base plate's dove-tail guide. Screw on the adapter plate (A) to the camera making sure that the guide pin fits into the guide hole; then fasten the camera to the bridge plate using the special tripod screw (b). Ensure that the bridge plate guide pin (c) fits into the adapter plate guide hole. Then screw the base plate onto the tripod head. Push the camera with adapter and bridge plate into the base plate's dove-tail guide and the stop pin (a) will spring back.

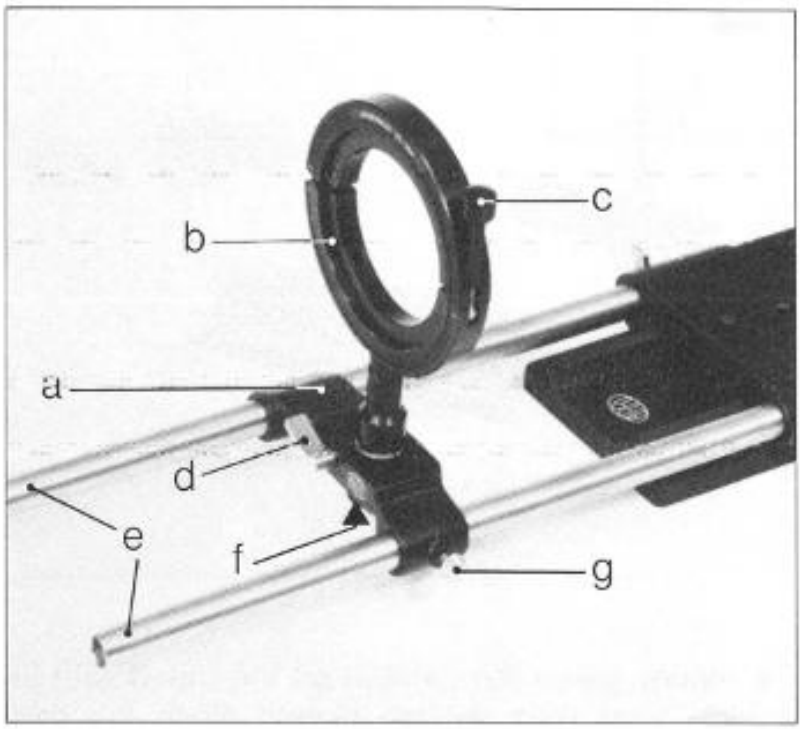
Now place the accessories which are going to be used onto the front of the bridge plate (d) support rods (e) and secure in position. (See also technical information sheet »the lens accessory system for ARRIFLEX 35 BL III and ARRIFLEX 35 III cameras with bridge plate«). The support rods can be moved in their holders and secured (f). When the camera



is ready for shooting, optimal balance can be found by moving it backwards and forwards on the base plate; the lever (g) is used to secure the setting. To remove the camera quickly from the tripod, release the lever (g), push in the stop pin (a) and remove the camera with bridge plate from the base plate (h) dove-tail guide.

The lens support

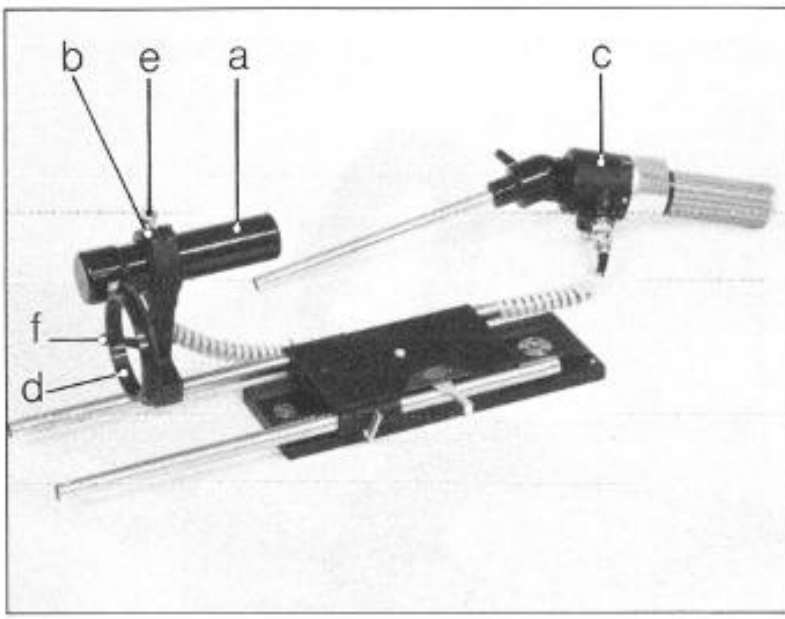
The lens support is comprised of a support guide (a) and a hinged support ring (b); when the exact position of the lens has been determined, the support ring is clamped in this position with the clamp screw (c). To mount, push the support guide (a) on-



to the bridge plate support rods (e), lock the lens (fitted with the appropriate support ring) into the camera. Holding the lens, position the support guide so that the support ring's spacing rod lies above the guide. Tighten knurled screw (f). Finally, tighten knurled screw (g) and fasten clamp lever (d).

Servo zoom drive

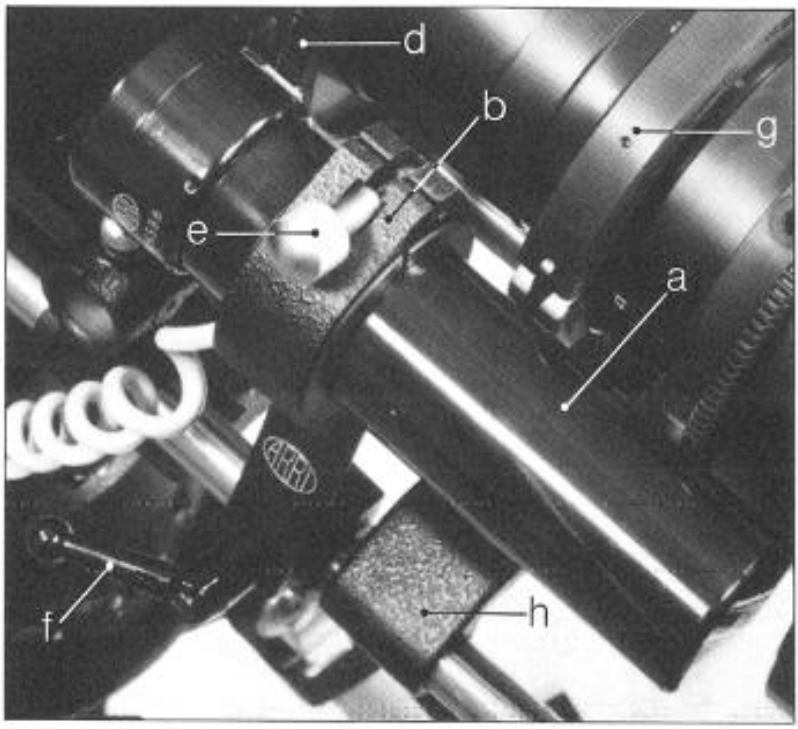
The servo zoom drive is comprised of the drive motor (a), the motor holder (b), the zoom hand grip (c) and the drive toothed ring (d) which is mounted on the lens.



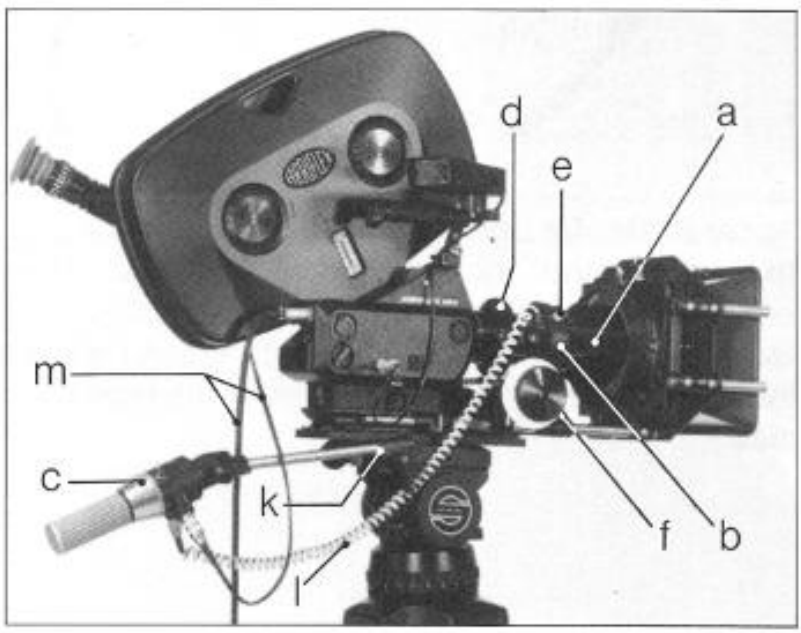
To mount, place the camera on the tripod with the bridge plate (see »bridge plate«). Push the drive motor (a) into the holder (b); place the holder (with drive motor) onto the right hand support rod of the bridge plate (seen in the taking direction) so that the head of the motor with pinion is facing the camera. Now place the lens support guide on the bridge plate support rods. Lock the lens (fitted with gear ring) into the camera and connect with the lens support guide.

Engage the drive pinion with gear ring of the lens (d) by swinging and pushing the motor holder (b) on the support rod and also by turning the motor (a) in its holder. Then secure knurled screw (e) and lever (f).

Now fit the zoom hand grip (c) with integral pan handle into the tripod head pan handle holder — Some holders need a reducing jacket (k) — and

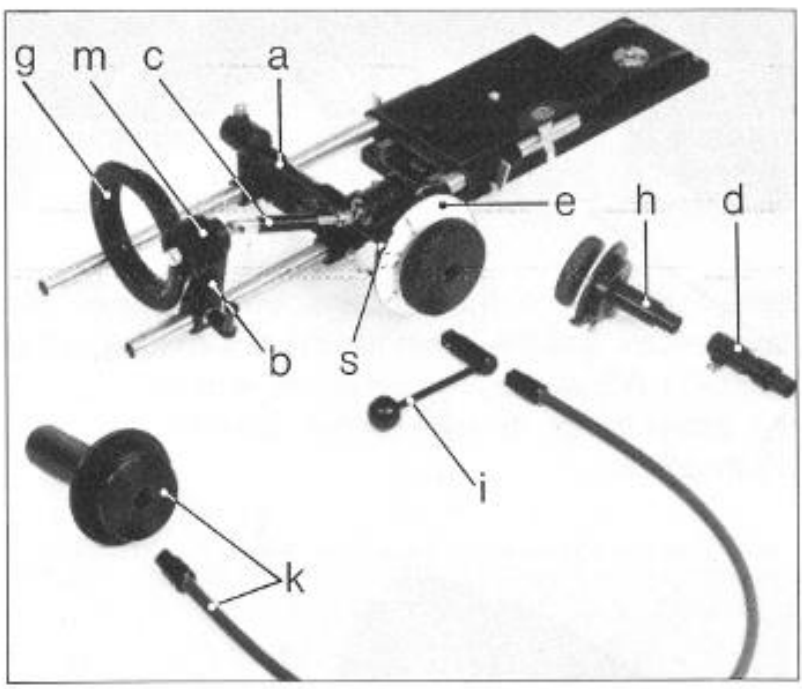


establish the electrical connection between the zoom motor and the zoom handgrip with the control cable (1). A 2-way power cable (m) is used to supply the zoom motor as well as the camera with electrical power.



Universal follow focus system

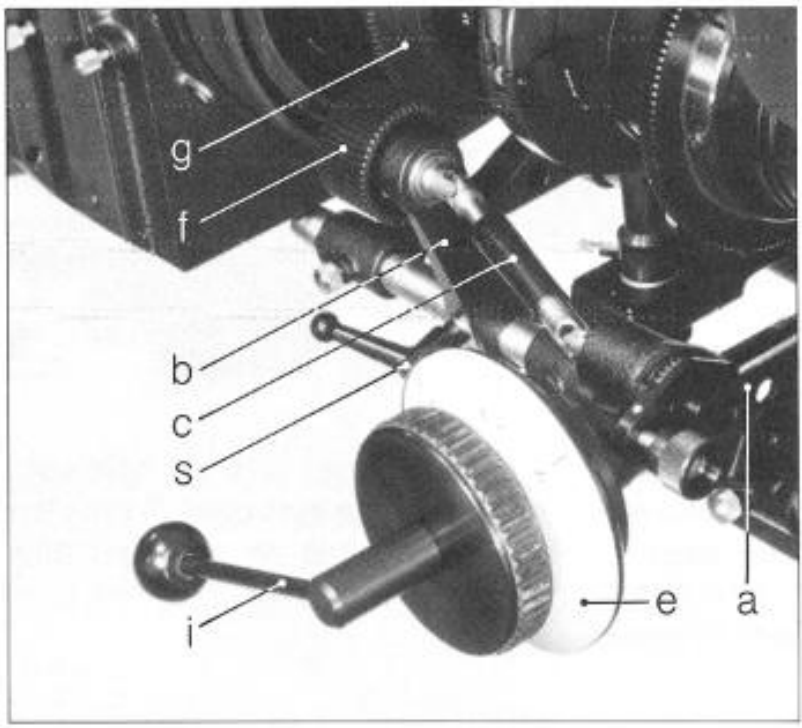
The follow focus system (a) is fitted to bridge plate support rods. A separate lens drive (1) is available for fixed focal length lenses. To drive zoom lenses a spring-loaded drive shaft (c), a clamp holder (b) and a separate gear ring for Cooke zooms (m) and a separate gear ring for Angénieux zooms (f) are necessary. The focussing discs (s) can be turned through 360° and fixed in any position required. The index disc (e) can be exchanged.



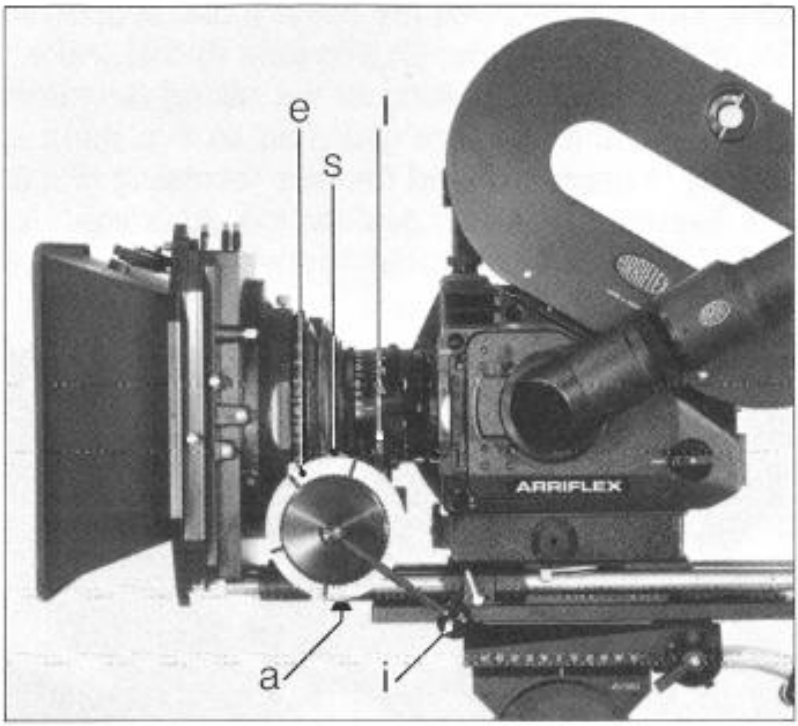
Accessories: for operation from the right hand side the right hand focussing knob (h) and when necessary, the extension (d), can be attached. The focus lever (i) and the flexible shaft (k) can be fitted into the focussing knob on the left or the right hand side.

Use with zoom lenses

Push the follow focus system (a) onto the support rods, lock the lens into the camera and support it. Place the clamp holder (b) with gear (f) onto the left hand support rod (looking in the taking direction) and swing onto the lens gear ring so that there is no play (if necessary, set the lens focussing ring to ∞). Fasten the clamp, position the drive shaft (c) and clamp the follow focus system.



Use with fixed focal length lenses

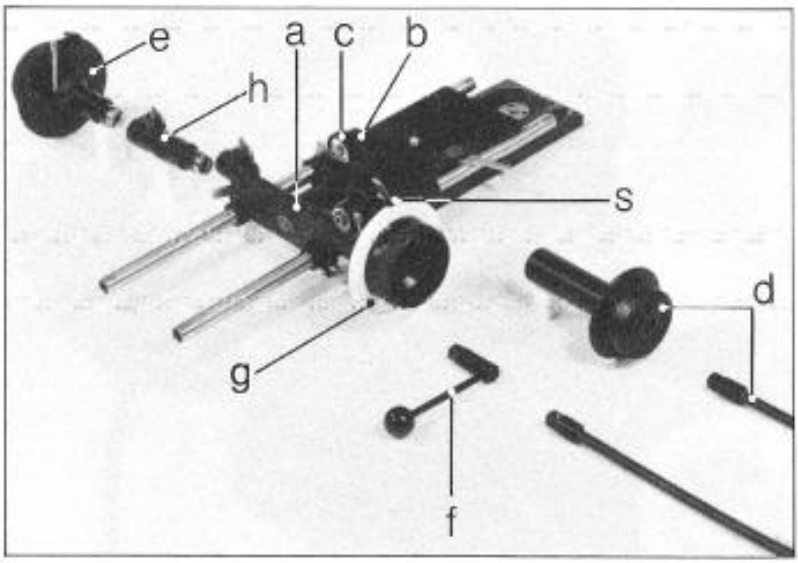


Place the follow focus system into an operating position and clamp. Swing the lens drive (l) onto the lens gear ring so that there is no play and then clamp; (if necessary set the lens focus setting to ∞ beforehand).

The universal follow focus system II

This follow focus system (a) is fastened to the bridge plate support rods. The gear (c), necessary to drive the lens, is fitted to the swing arm (b). The gear can be fitted to both sides of the swing arm. The swing arm can be swung up or down on to the lens gear ring according to the situation. The

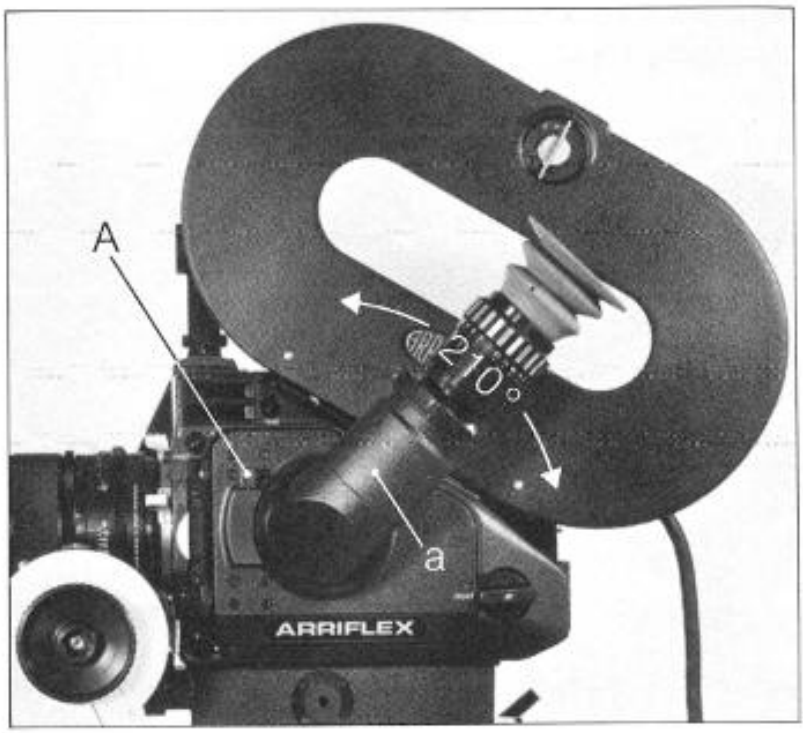
focussing index (s) can be turned through 360° and clamped as required. The marking discs (g) can be marked with a wax crayon, or better still, with a waterproof felt tipped pen. Spirits can be used to clean the discs. For use from the right hand side, the right hand focussing knob (e) and when necessary the extension (h) can be fitted. The focussing lever (f) and the flexible shaft (d) are plugged into the right or left hand side of the focussing knob.

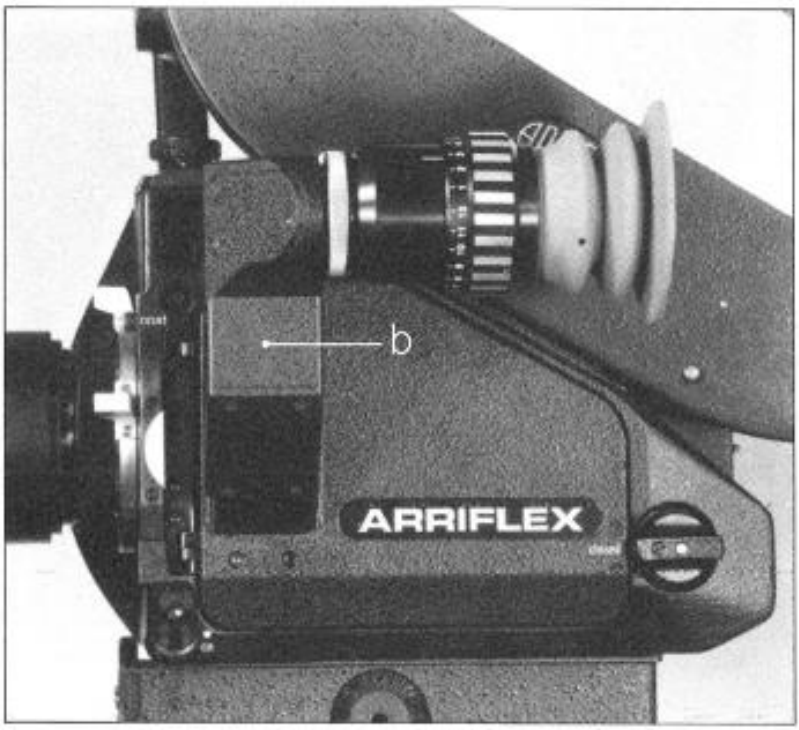


To fit, set the lens to ∞ if necessary, push the follow focus system onto the support rods in the operating position and clamp. Swing the gear arm with toothed ring onto the lens gear ring so that there is no play, then fasten.

Interchangeable camera doors

The ARRIFELX 35 III can be fitted with different camera doors. The **pivoting viewfinder** (a), for all production applications, can be steplessly adjusted through a 210° arc. With the friction setting (A) the torque can be adjusted as desired.

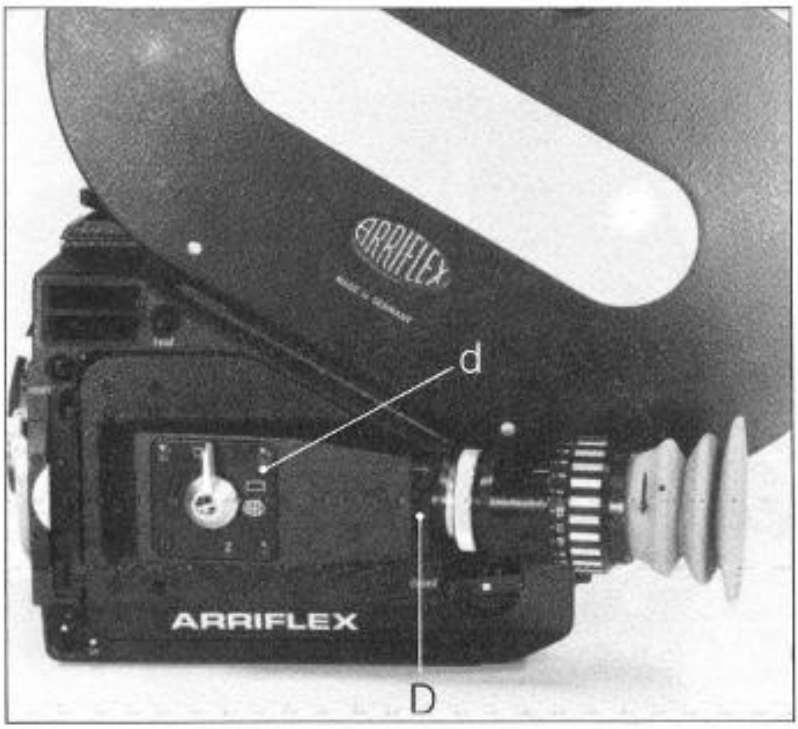


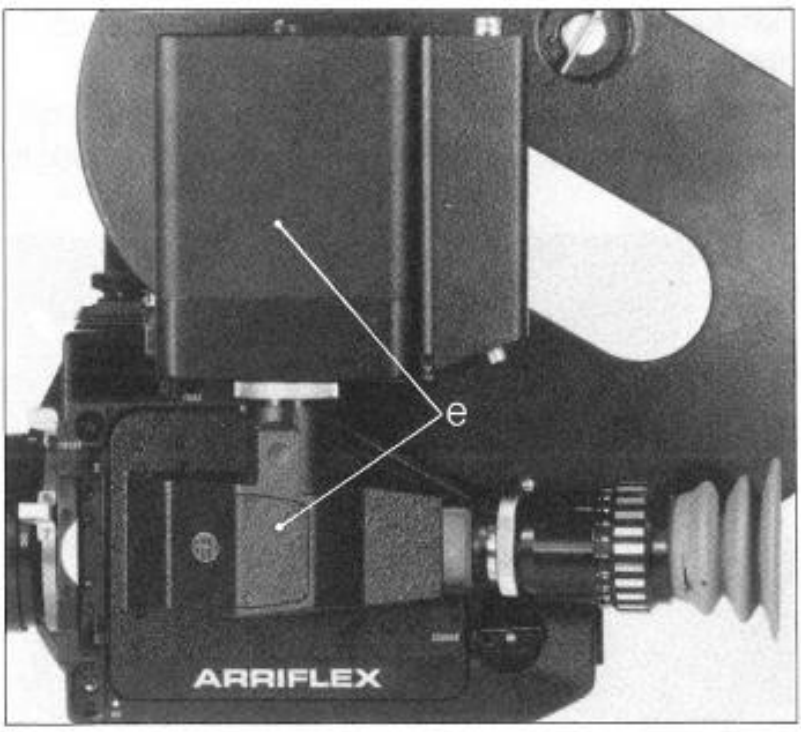


The offset viewfinder (b) moves the viewing position forwards so that with the shoulder magazine the camera is well balanced on the shoulder.

The fixed viewfinder (c) is ready fitted for video assist (e) and for viewfinder anamorphic elements (d).



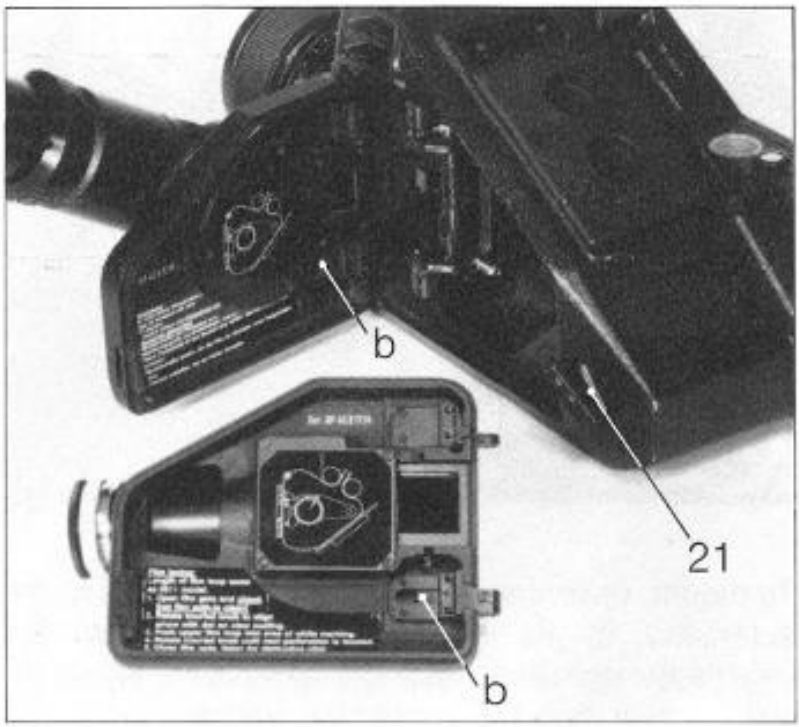




A **wide angle eyepiece** is also available for use with all of the camera doors.

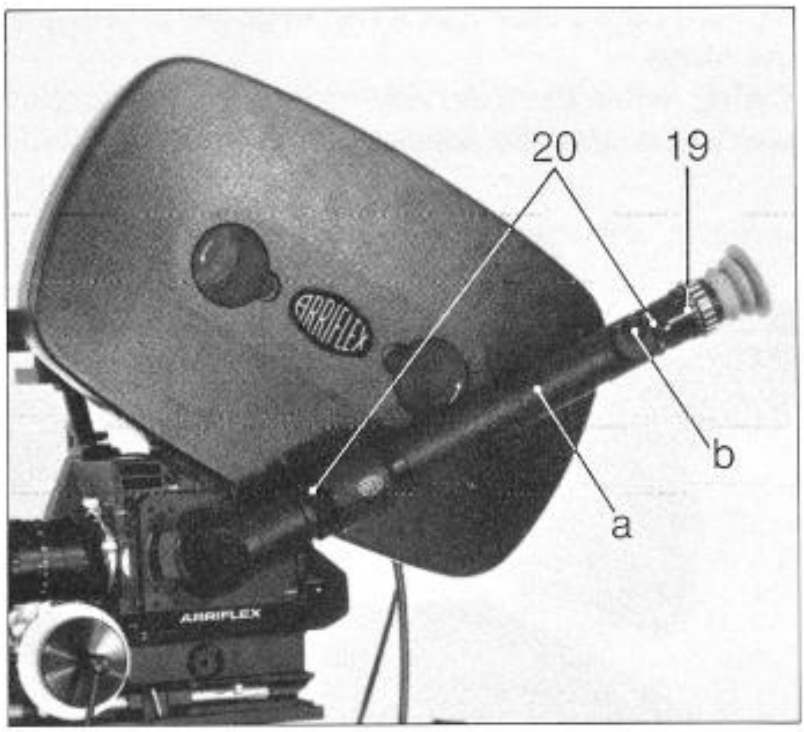
To change the viewfinder the lock (21) must be turned in a clockwise direction and the camera door opened. Press the spring loaded hinge bolt (b) outwards, pull the camera door upwards and remove. Press the spring loaded hinge bolt outwards and hang the new camera door with desired viewfinder in position. By carefully closing the camera door check that it has engaged properly in the hinge.

CARE: When the fixed viewfinder with anamorphic element is used the spacer disc (D) must be fitted.



The viewfinder extension

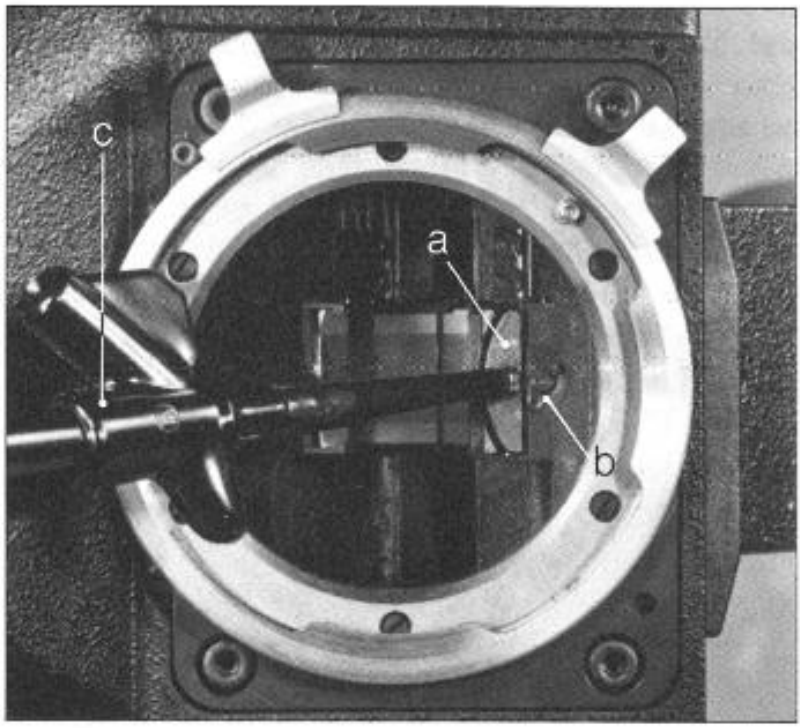
The viewfinder extension (a) should be used when shooting from a tripod or when the 300 m magazine is fitted. The swing in contrast filter (b) offers an extra advantage.



To mount, unscrew viewfinder eyepiece (19), fit the extension in its place and then screw the viewfinder eyepiece onto the extension. When fitted, ensure that the extension and the eyepiece supporting pins engage in their counterpart grooves. Tighten the screw collar ring (20). Care, double threads! If the screw collar ring cannot be easily tightened, then turn the eyepiece or the extension through 180° and try again.

Changing the ground glass

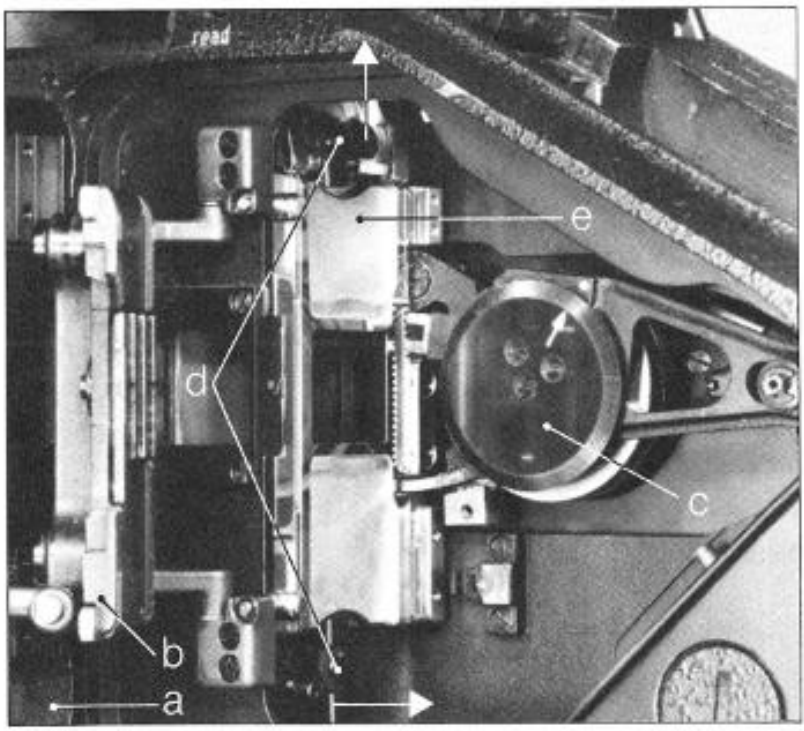
Ground glasses with different format markings for film and television are available for use with the ARRIFLEX 35 III. Before changing the ground glass, remove the lens and turn the inching knob to clear the mirror shutter from the lens mount area. Push the spring plate (b) to the side and using a special clamp (c) grasp the hook situated on the frame of



the ground glass and pull it out of the holder. Before fitting the new ground glass in place, ensure that no dirt is there, otherwise focussing of the lens might be impaired. Using the special clamp grasp the new ground glass and push into position. To secure, push the spring plate back into its original position.

Changing the film gate

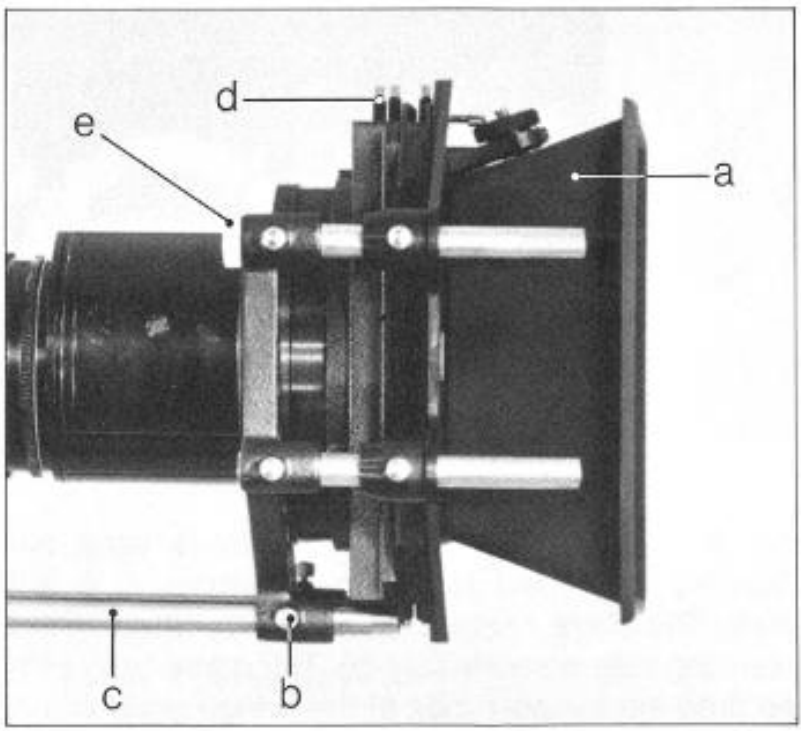
Before changing the film gate, unlock the camera door (a) and swing the film pressure plate (b) open as far as possible (see »mounting the loaded magazine on the camera«). Rotate the mirror shutter away from the film gate area by turning the inching knob (38). Turn the knurled screw (c) in an anticlockwise direction until the arrow points to the dot on the body of the registration pin system. **When the film gate is being changed it is essential that the transport and registration claw pins are removed from the film plane area otherwise the film gate will be damaged.** Now disengage both of the gripping levers from their support grooves by pushing in the direction of the arrow. Place the index finger in the opening of the gate and first slightly lift the front side of the film gate (e) and then pull it right out of its support. To position the new film gate, follow the directions in reverse order.



Care: Before positioning the new film gate ensure that the flange surfaces are clean otherwise the flange focal distance of the camera cannot be guaranteed. **Care must again be taken that the claw pins are removed from the film plane area otherwise the film gate might be damaged.**

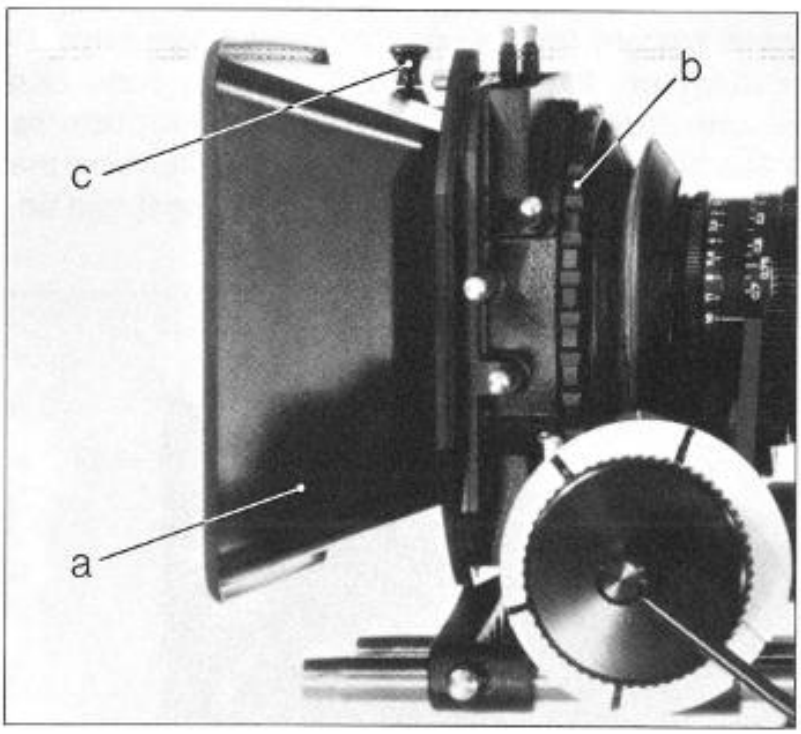
The 6" x 6 " production matte box (a)

Fasten the camera with adapter plate to the bridge plate. Fix the required accessories (e.g. follow focus system, lens support or servo zoom drive) in position on the bridge plate support rods and secure. Lock the lens into the camera and push the matte box onto the support rods (c). Determine the best position of the matte box by moving it and ad-



justing the eccentric (e) using the support rod's upper knurled knob on the matte box side; when the lens is fully extended the front ring of the lens should not touch any filters that might be used. Refer also to the technical information sheet »the lens accessory system for ARRIFLEX 35 BL III and ARRIFLEX 35 III with bridge plate« to see which lens accessories are necessary and in which order they must be placed on the support rods.

The 4" x 4" production matte box (a)

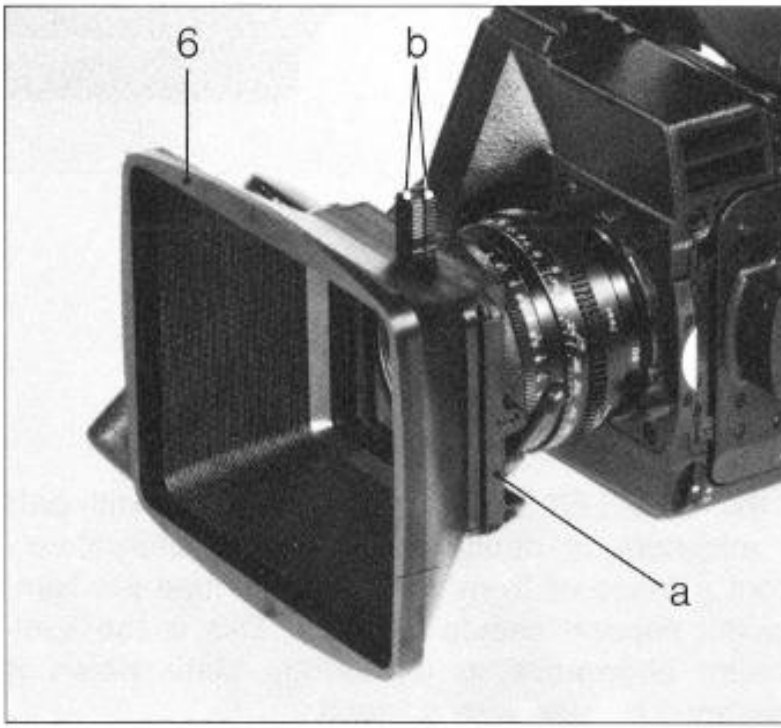


The 4" x 4" production matte box is used exclusively with fixed focal length lenses. If 4 ½" round filters are needed, they can be fitted in the filter ring with a screw ring (b). The matte box is fitted onto the support rods of the bridge plate in the

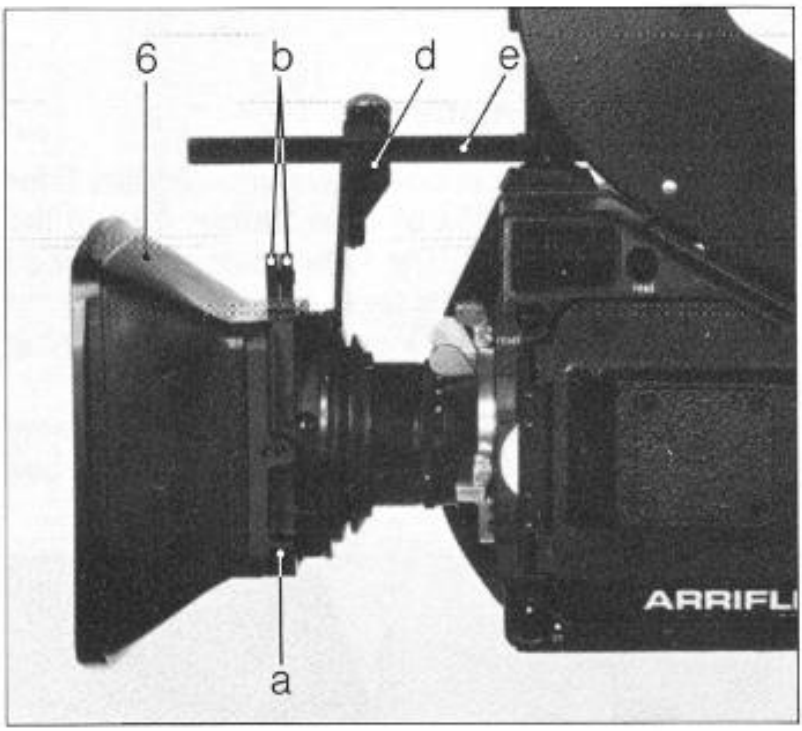
same way as the before mentioned 6'' x 6'' matte box, and can be swung open by pulling the knob (c). Refer to the technical information sheet »the lens accessory system for ARRIFLEX 35 BL III and ARRIFLEX 35 III with bridge plate« to see which accessories are necessary and how to fit them.

The light-weight matte box

The light-weight matte box is comprised of the filter holder (a), the two 3'' x 3'' filter frames (b) and the rectangular shade (6). The filter holder is clamped onto the front side of the lens; older lenses require an adapter ring for a close fit. When fixed focal length lenses with rotatable front ring for diaphragm adjustment are used, an additional matte box holder (d) is required. The matte box

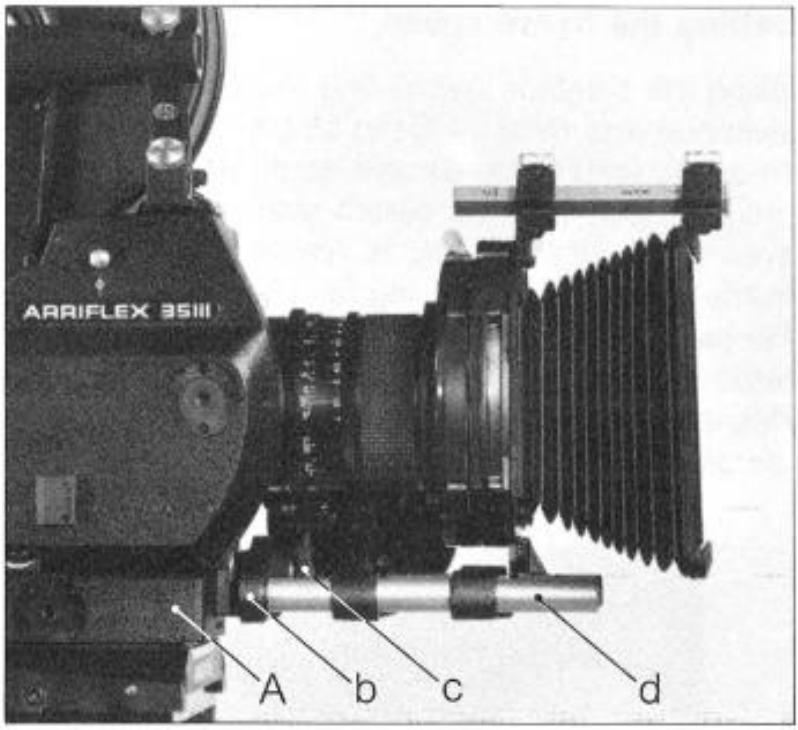


holder's guide rod (e) is inserted into the camera's carrying grip and the matte box holder is pushed on until the light protector ring lies flush with the diaphragm ring of the lens. The filter holder (a) is then fastened and the rectangular shade (6) is pushed on until the locking lever engages. The choice of accessories, as well as illustrations how to fit the light-weight matte box to different lenses, can be found in the technical information sheet »the light-weight matte box«.



The light-weight support

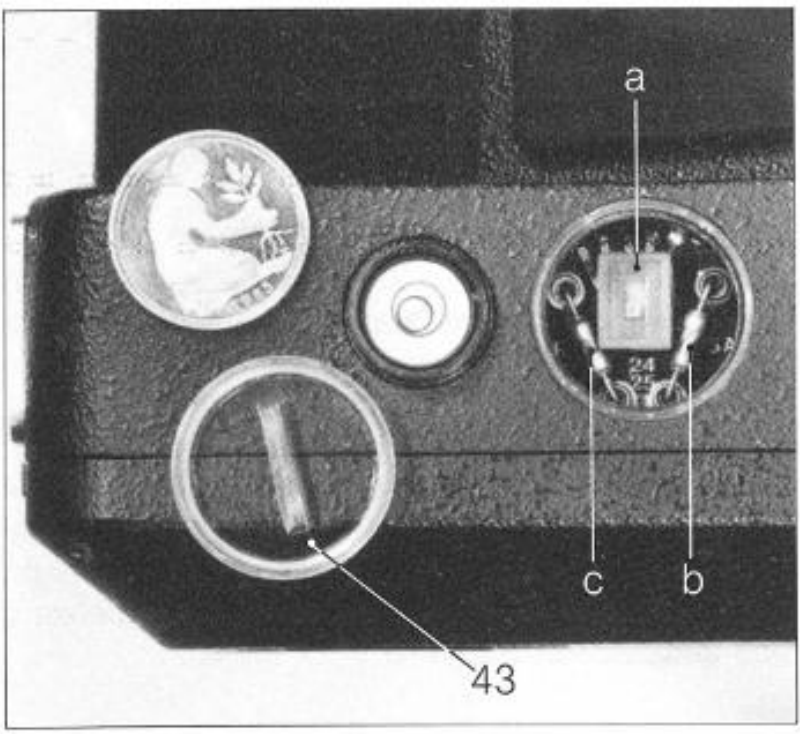
If the ARRIFLEX 35 III is going to be used with only a minimum of optical accessories, alternatively from a tripod or from the shoulder, then the light-weight support should be used. This is the light-weight alternative to the bridge plate which is designed for use with a tripod.



Attach the adapter plate (A) to the camera and then push the light-weight support (b) with its rectangular connector plate into the adapter plate's mounting shoe and fasten with the knurled screw (c). Push the required accessories (e.g. light-weight follow focus system and matte box) onto the support rods (d) and fasten in the working position. See also technical information sheet »the light-weight support« for information regarding the necessary lens accessories and how to fit them.

Setting the frame speed

Using the selector switch (41) the camera can be switched over from 24 fps to 25 fps quartz controlled speed (and back) as well as through a variable range of 6-50 fps; the switch over can take place even when the camera is running. The variable frame speeds are set using the knurled wheel (36). For switching over from 24 to 24 fps and back, first remove the plastic lid (43) with a coin. Place the sliding switch in the position required and replace the plastic lid.

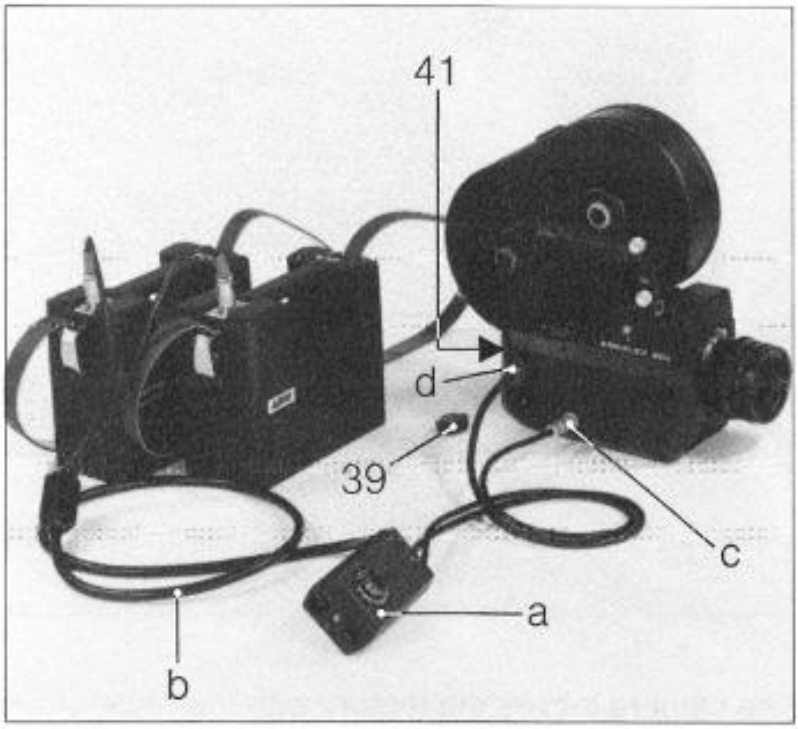


Changing the fuses

To change a fuse, remove the plastic lid (43) using a coin. Use a pair of tweezers to remove the fuse (b) which is located to the right of the frame speed switch and replace with the spare fuse marked »res«. Obtain a replacement spare fuse as soon as possible.

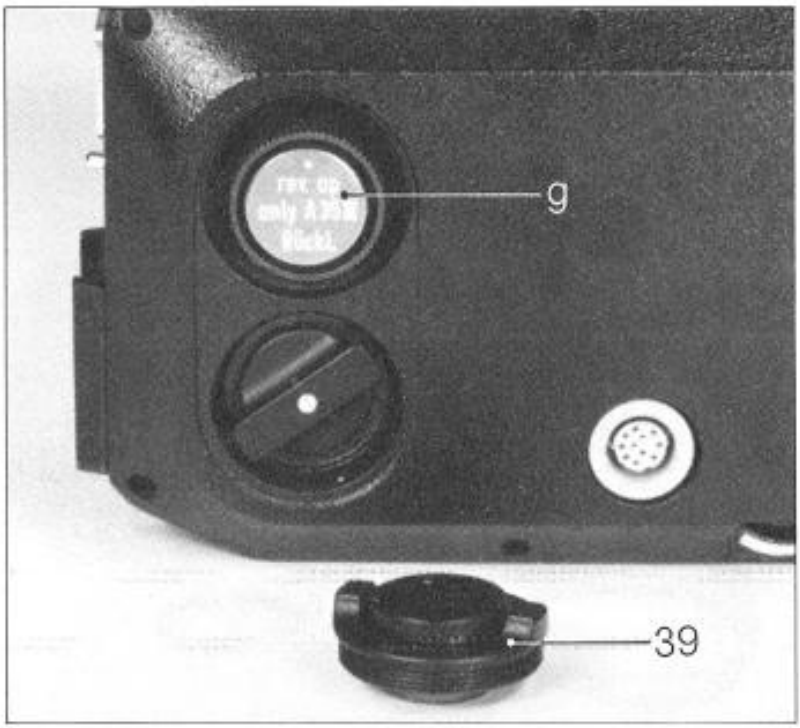
HSU (high speed) operation

To operate the camera with frame speeds of 6-100 fps the high speed cable HSU (b) and two 12 V batteries are necessary.



First position the operation selector switch (41) to »var« (variable). Now turn the bridge plug threaded ring in an anticlockwise direction until the bridge plug (39) can be pulled out. Place the 6 pin high speed cable plug (d) in its place and secure with the screw collar ring. Place the 11 pin plug (c) in the camera's accessory socket and **only after this has been carried out,** connect both of the batteries. The HSU controller (a) is now fitted to the tripod pan handle and secured. The camera can then be switched on either with the main switch or with the HSU controller release.

The ARRIFLEX 35 III camera with 180° mirror shutter — reverse travel without exposure



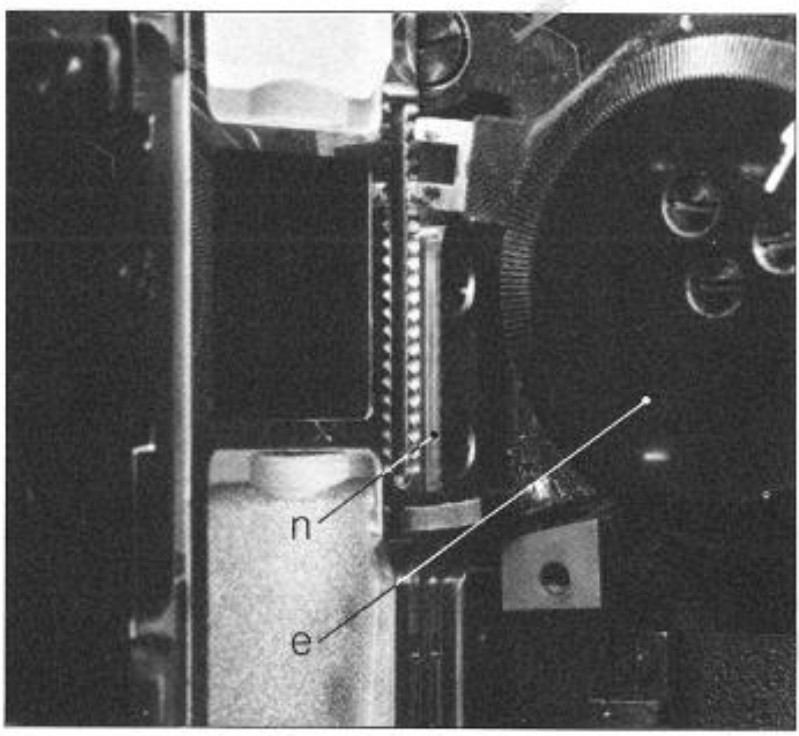
The camera leaves the factory with the registration pin system set for forward travel — **when the camera travels in reverse direction the film cannot be exposed.**

First ensure that the 150 m forward/reverse magazine is used. Then remove the bridge plug (39) and replace with one for reverse travel which has the marking »only A 35 III« (g). When the camera is switched on it now runs in reverse. In reverse travel do not run the camera at more than 50 fps. There is no direct facility to change the camera from forward to reverse travel, and back. The counter for exposed film (1) continues counting forwards even when running in reverse so a calculation to determine the amount of film exposed might be necessary.

On request **a special ARRIFLEX 35 III is available for forward and reverse travel with exposure.**

With this camera the procedure described under »mounting the loaded magazine on the camera« is different.

Through the »registration pin symmetry« the transport pull-down claws and the registration pins do not clear the film plane simultaneously. By turning the knurled knob (e) in an anticlockwise direction the transport claws sink into the film channel so that the registration pins clear the film plane. Push the film along the film channel next to the claws until the upper film loop appears just over the large mark (h). By slightly turning the knurled screw further, sink the pins into the nearest perforation holes. The film is thus held in a fixed relation to the mark (h) whilst the transport pull-down claws now clear the film plane and the film can be fully pushed into the film channel. Now close the film pressure plate and follow the procedures as described under »mounting the loaded magazine on the camera«.

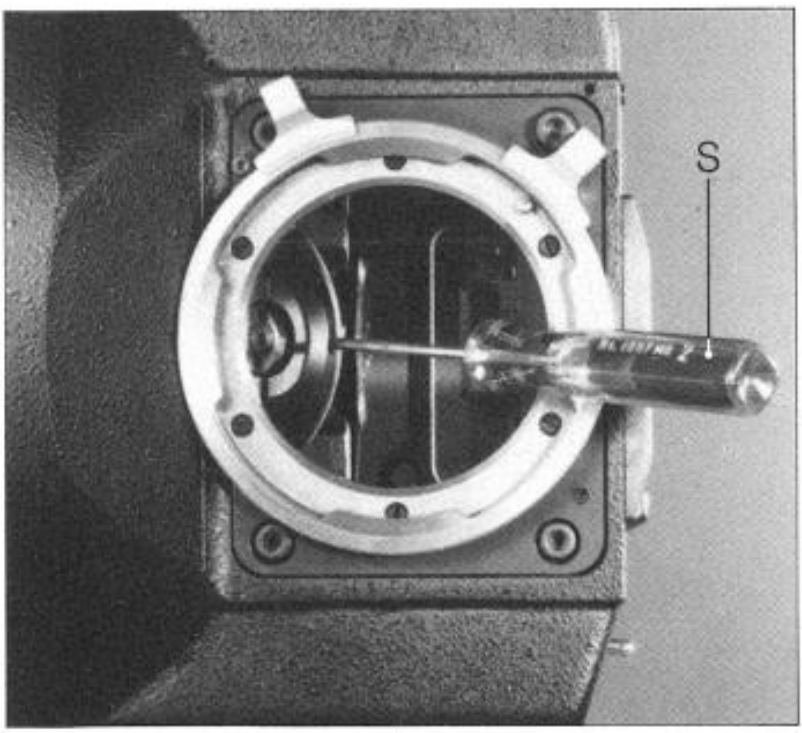


Care:

Before closing the film pressure plate ensure that the film is placed **under** the hold down rail (n) otherwise all of the exposed film will be damaged.

The ARRIFLEX 35 III with variable mirror shutter

When filming with HMI/CID gas discharge lamps, it must be borne in mind that their light has varying intensity dependent on the mains frequency. Filming with the camera also involves an intermittent process. To produce flicker-free results, the camera frame speed, the camera shutter segment and the lighting mains frequency must be held in a definite ratio to one another. Since the camera frame speed as well as the mains frequency for the lighting are fixed values, compensation must take place via the opening of the mirror shutter. Synchronizing the supply frequence of the lamp and the camera frame speed is not necessary when the values given in the table are maintained.



Mains frequency		50
Frame speed	25	24
Shutter opening	180	172.8

The opening of the mirror shutter can fixed with a special key (s) to the foll ings: 180°, 172.8° and 144°. Intermed are not possible.

To adjust, remove the lens or dust cap shutter is clearly visible and accessibl mirror shutter by turning the knob (38 the adjustment plate is approximately i of the lens opening. Using the special light axial pressure, loosen the setting turn the adjustment plate through a f The adjustment plate can now be turn the desired degree position. When the is reached, the pressure plate notches its own accord.

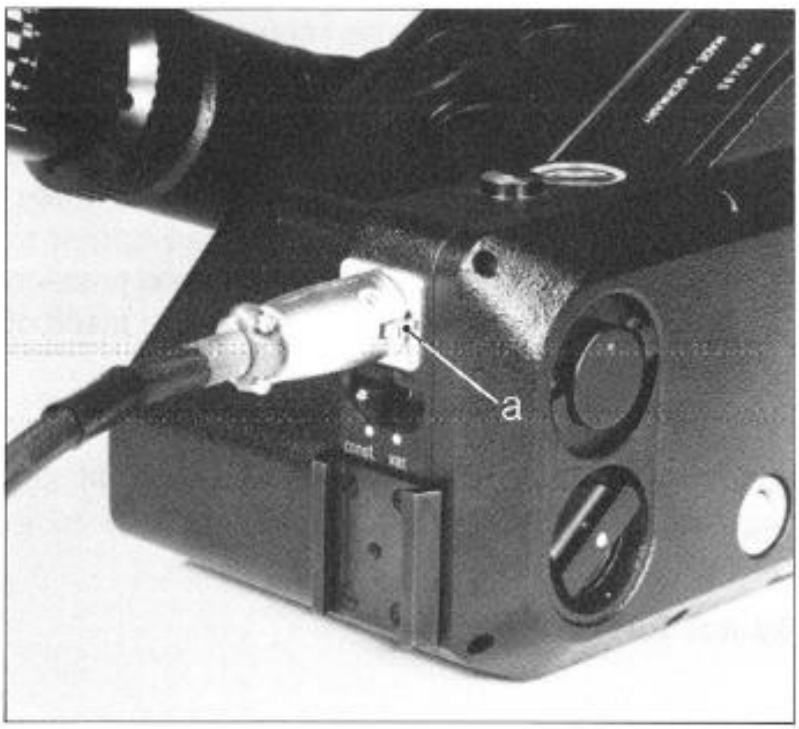
Care:

Before each change of setting, the must be used and light axial pressur loosen the setting.

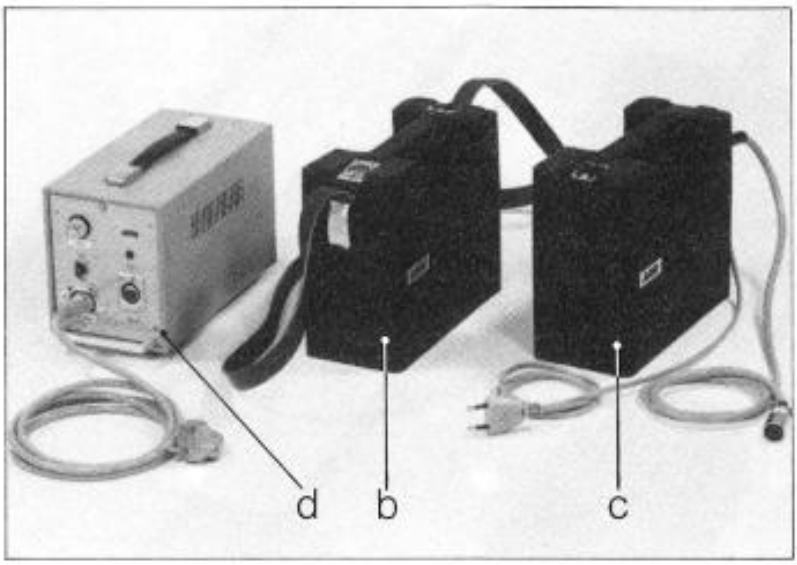
Do not turn using force.

The power supply

Connect the camera to the battery using the battery cable KCU or the coiled power cable KCU-Sp. When inserting the 4 pin connecting plug in the socket (42), the locking switch (a) must point to the right — i.e. the guide rib of the plug must slide exactly into the groove of the socket.



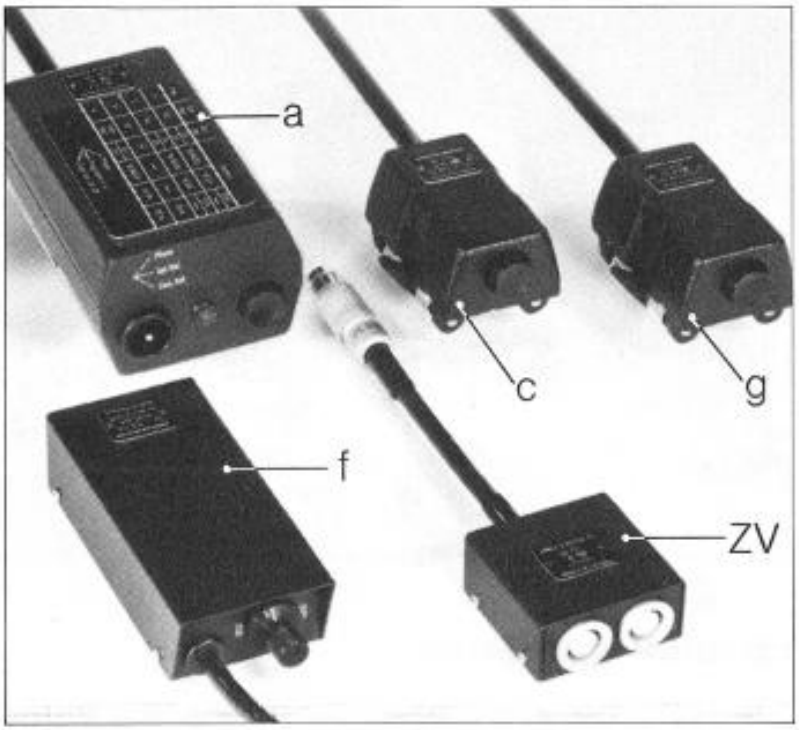
For mobile operation there is an NC 12/7R (b) battery available with shoulder strap as well as the NC 12/4R (not illustrated). They can be charged with the battery charger NCL08R (c) with automatic voltage selection 110/220 V. Indoors use the mains unit NG7U (d) instead of a battery.



Electrical accessories

The electrical accessories are connected to the camera's 11 pin socket (37) and can be attached to the pan handle. When two of the below-listed accessories are used together, the accessory distributor ZV is indispensible.

a) The EXS II external synchronizer is used to synchronize the camera with the mains, a second camera or with a signal from a monitor (signal 50/60 Hz $\geqq$ 2 V_{pp} $\leqq$ 10 V_{pp}, signal form sinus or BAS, impulse minimal 1 msec, impulse ratio : 1:10). The EXS II can be used to switch the camera on and off; it has an out-of-sync indicator, a camera selection switch and a built in phase shifter. A monitor sync cable KMS is also supplied with the unit.



b) The NSYTR 2 mains synchronizing transformer is used together with the EXS II for synchronizing the camera with the mains; primary voltage is 220 V/ 50 Hz, secondary voltage 1 V_{eff}.

c) The PHU phase shifter enables correction of the phase relationship of the quartz controlled camera when filming from quartz controlled monitors.

d) The plug-on EFC 35 electronic speed and exposed film counter for readings in either meters or feet (switchover). The reading is stored in a memory; a battery, with a life of six months, ensures that the reading is stored even when the camera is disconnected from the power supply. If the counter has no battery fitted, or if the battery is too low, then an LED lights up.

e) With the HSU high speed cable 35 BL II/A 35 III frame speeds of up to 100 fps can be obtained. The HSU is comprised of two sockets for two 12 V batteries, a 6 pin high speed plug, an 11 pin accessory plug and a control unit which can be fastened to the pan handle. The camera can be switched on and off either from the main switch or from the control unit.

f) For lip sync filming the external pilotone accessory (A 35 III Pilot) can be used to mark the point on the sound recording when the camera has reached its full speed. The pilotone accessory can be switched from 50/60 Hz and is plugged between the camera and the sound recorder. An accessory socket on the pilotone accessory is provided so that additional accessories can be used.

g) The RCSR pan handle switch makes switching on and off easier when the camera is being used on a tripod.

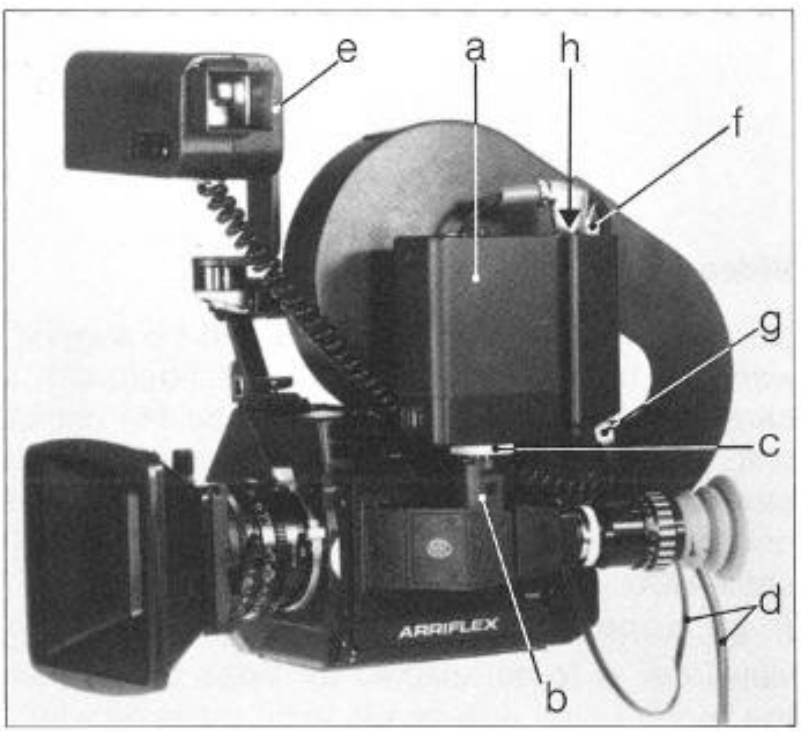
Video assist

On request the ARRIFLEX 35 III can be supplied with a video assist. The camera is fitted with a camera door with fixed finder and built-in optical unit. The video camera with video power supply can easily be attached to and removed from this unit; it is connected to the battery using the power cable KCU VID 35 III.

If an ARRIFLEX 35 III with offset or pivoting viewfinder is to be adapted for video assist, then the camera door only needs to be replaced with a camera door with fixed finder and optical unit. A camera door with fixed finder without optical unit can be fitted with the optical unit; this work, however, can only be carried out in the factory or an authorised ARRI service centre. The viewfinder system must also be adjusted.

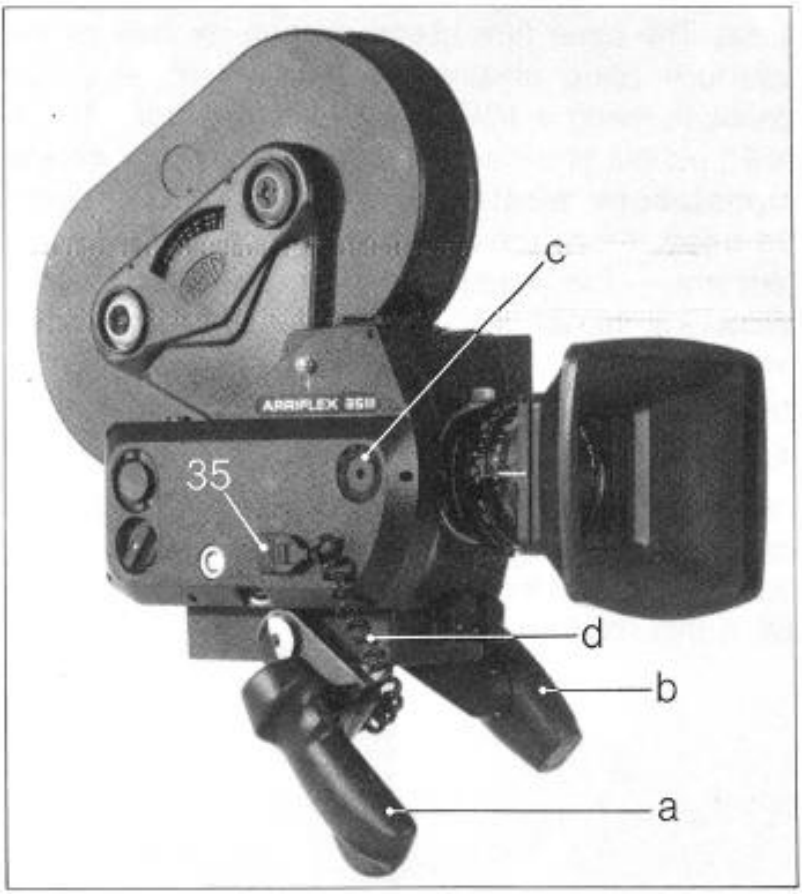
To fit, place the video camera (a) onto the optical unit's (b) flange, engage the guide pin and fasten with the collar ring (c). To power the ARRIFLEX 35 III as well as the video camera, the battery cable KCU VID 35 III (d) must be used. A BNC standard plug (f), located at the rear of the video assist, enables one or more monitor to be connected. Additionally, a mini-monitor (e) can, with a special holder, be fitted into the accessory holder on the carrying handle and then pivoted.

The socket (g) is used for the electrical connection. With the mini-monitor the camera operator or assistant has a second control image. If a servo zoom drive is going to be used at the same time as a video assist, then the video camera should be powered via an extra cable K-VID (E9/2/103/2-3) from the 11 pin flange socket (37).



The handgrips

A right or left handgrip is available for the ARRIFLEX 35 III. The right handgrip (a) is fitted directly onto the camera grooved collar (c) and can be moved vertically until the most comfortable position is found and then fastened. The right handgrip has a release function and is connected electrically to the camera via a coiled cable (d) which is plugged into the 4 pin flange socket (35).



The left handgrip (b), available with or without release function, is screwed onto the adapter plate which is also needed to fit the camera to the bridge plate.

For holding the camera with both hands (e.g. aerial shots) two handgrips can be fitted at the same time (ill.).

Maintenance

In the film guide channel formed by the aperture gate and pressure gate, the film is only pressed against the aperture gate. This area must be kept clean, especially when the film material tends to leave emulsion deposits. Loose dust builds up an emulsion deposit on the film gate which can lead to scratches on the film, as well as changing the gliding qualities of the surface; this in turn may impair frame steadiness. To clean, if necessary remove the film gate (see exchanging the film gate). The open film pressure gate as well as the aperture plate should be freed from emulsion deposits using a PVC rod — reommended is the ARRI plastic film track cleaning rod. **Under no circumstances whatsoever should hard objects be used.** From time to time — especially after a film jam — the inside of the camera as well as the magazine throat should be cleaned out with a brush.

The ARRIFLEX 35 III requires no further maintenance — it needs neither grease nor oil.

For servicing, contact an authorised ARRI service centre. If a problem should occur with the camera refer also to the technical information notes included in this manual.

Technical Data:

Film width	35 m*
Lens mount	54 mm dia. PL (positive locking); for lenses with 41 mm dia. mount adapters are available
Flange focal distance	52-0,01 mm
Shutter opening	variable 180°, 172,8°, 144°, 135° automatic shutter stopping feature
Viewfinder system	Mirror reflex viewfinder system with interchangeable camera doors: Pivoting viewfinder Offset viewfinder Fixed viewfinder with optical unit for video assist Fixed viewfinder with anamorphic element Fixed viewfinder
Viewfinder magnification	6,5 times
Frame speed	Quartz controlled 24/25 fps Variable 6-50 fps (integrated) Variable with HSU high speed unit 6-100 fps
Reverse travel	With external reverse travel bridge plug without film exposure Special model, on request, with film exposure
Exposed film counter	Electronic digital LED display
Frame speed display	Electronic digital LED display
Async display with quartz controlled frame speeds	Visible in viewfinder (red)

Display for variable frame speed setting	Visible in viewfinder (green)
Magazines Single compartment	60 m/200 ft, 150 m/400 ft (for forward and reverse travel) 300 m/1000 ft
Coaxial magazine	150 m/400 ft shoulder magazine
Camera drive	Quartz controlled DC motor
Operation voltage	12 V for 6-50 fps, 24 V for 6-100 fps
Power consumption	ca. 2,5 A with 24/25 fps
Battery	12 V/7 Ah NC
Operating temperature	—25 °C to +50 °C (—13° F to +122° F)
Actual frequency output	for external pilotone connection
Weight of camera without film, without lens	with 60 m magazine 5,9 kg/13,00 lbs with 150 m magazine 6,7 kg/14,80 lbs with 300 m magazine 8,6 kg/18,96 lbs with 150 m magazine 7,8 kg/17,20 lbs
Measurement without lens	with 150 m magazine and fixed viewfinder Lenght 322 mm 13.2 inches Width 183 mm 7.5 inches Height 335 mm 13.7 inches

* The camera is delivered with a claw system for 35 mm negative film unless requested otherwise.

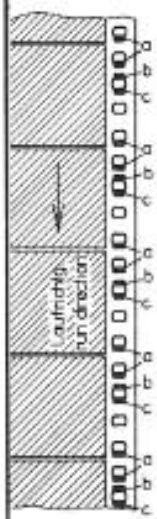
If required the camera can also be supplied with a claw and transport system for 35 mm positive film material.

ARRIFLEX 35 III

Supplementary technical information to the instruction manual; an aid for remedying problems which might occur.

When requesting service, always state the problem and quote the problem number

No.	Problem	Cause	Remedy
	Scratching on the emulsion side of the negative		
1	In the picture area going back over several pictures.	Dirty or damaged cross bar on film gate (see also no. 6).	Clean the film gate, or, if damaged, replace.
2	In the picture area, short and rythmically recurring.	The upper film loop is too large, the film touches the upper lock lever of the film gate.	At the time of inserting the film, before the pins engage the perforation holes, the upper film loop must pass through the white dot as shown by the film insertion diagram inside the camera door.
3	Outside the picture area.	Dirty or damaged are: the vertical edge of the film gate; the oblique guide rail; the guide tracks in the magazine throat (see also no. 6).	Carefully clean film gate, guide rails, magazine throat, or, if damaged, replace.
	Scratching on the glossy side of the negative.		
4	In the picture area.	Dirty or damaged cross bar on film channel pressure plate (see also no. 6).	Clean cross bar, or, if pressure plate is damaged, replace.
5	Outside the picture area.	Dirty or damaged are; the vertical edge of the film channel; the guide tracks in the magazine throat (see also no. 6).	Carefully clean the vertical edge, and, if necessary, the magazine throat.
6	**Scratching generally.**	Strong tendency to emulsion deposits; dust deposits on raw stock from perforating process; extreme temperatures; scratched raw stock.	Complain to manufacturer, use different raw stock (see also nos. 19 & 20).
7	Unsteady image - vertical.	Heavy emulsion depositing in the film gate area; damaged film perforation; very poor gliding ability of the raw stock; film material with positive perforations; raw stock not standard size, film movement incorrectly adjusted.	Clean film gate area; if film perforations damaged see nos. 10-12; use only raw stock with negative perforations; use a different film material; have the film movement adjustment examined.
8	Unsteady image - horizontal.	Heavy emulsion depositing in the film gate area; insufficient side pressure on film; film edge not cut straight.	Clean film gate area; correct film gate side pressure - each pressure spring 120-125 g.

No.	Problem	Cause	Remedy
9	Mechanical exposures from perforation holes.	Mechanical stress of the perforation holes, see »damage« nos. 10-12	Pressure exposures do not effect the steadiness of the image.
	Mechanically damaged perforation holes. Type of damage.		
10	 **as** a	Damage from the tips of the registration pin during the transport phase caused by poor gliding conditions in the film gate.	Reduce power demand during transport phase, i.e. improve gliding ratios in the film gate area, e.g. avoid emulsion deposits building up. See also 19/20.
11	**as** b	Film transported too far and strongly pulled against run direction by the register pin.	If the fault recurs, have the film transport system checked in the factory.
12	**as** c	Film not transported far enough, and then pulled in the run direction by the register pin; a result of damage as in no. 10.	As in no. 10.
13	Film jam inside camera.	Film jam in upper loop area. Film led from magazine is not transported by the film transport system and when the film perforation holes are badly damaged the film often tears.	A result of severe damage to the perforation holes. See nos. 10-12.
14	Film jam inside the magazine.	Film jam on the take-up side. Film led from the camera is not wound on.	Increase the take-up friction (control with setting gauge). Fasten the film end more securely to the bobby.
15	Echo images.	During the exposure (shutter open) the film has been repositioned e.g. by the claw movement. See also no. 18 reverse travel.	The claw pin tips must not move the film as they move in, otherwise readjustment is necessary. See also no. 16.
16	Lack of definition in a corner.	During partly opened shutter the film was moved slightly.	The correcting phase of the registration pins must be covered by the shutter, the registration pin tips must not move the film as they move in, otherwise readjustment is necessary.
17	Picture lacks definition.	The lens flange focal distance is out of adjustment; lens incorrectly set; defective lens.	When changing the film gate ensure that contact edges are absolutely clean. Control lens and lens flange focal distance.

No.	Problem	Cause	Remedy
18	During reverse travel, double image undefined, unsteady pictures.	Mirror reflex shutter does not cover the picture during the registration pin movement phase. Reverse travel exposure test is not carried out in the factory.	Only on special request is the camera adjusted for reverse travel as necessary. Disadvantage: a compromise with picture steadiness adjustment in forward travel, free shutter sector max. 172,8°.
	General film transport troubles. Film jam, damaged perforation holes, poor picture steadiness.		
19	Extreme cold.	Selected frame speed is not attained because power requirement is greater and battery power is diminished. Damage to film due to greatly reduced strength factor and brittleness of raw stock emulsion carrier, especially below —15 °C the film can also tear, gliding conditions are also changed.	Camera, battery and above all the especially susceptible film, together with magazine, must be protected from extreme cold, e.g. by protecting with a fur covering etc.; when a cold camera is brought into a warm humid room, condensation builds up. This can be prevented by first storing camera at approx. 0 °C (32 ° F).
20	Extreme heat.	The raw stock's mechanical properties change, drastically at temperatures above 30 °C (86 °F). The emulsion carrier becomes soft and deformed. The film's coefficient of friction is unfavourable and tends to form heavy emulsion despositing.	The camera, and especially the film, should be protected against extreme heat, e.g. by shading, white covering.
21	The camera does not attain the selected frame speed.	Engery source, see also no. 19. Operator error, too high energy consumption. Standard value 25 fps/25 °C (77 °F) ca. 2.5 A (see also instruction manual page 34).	Check that the battery is charged. Follow directions in instruction manual (pages 34). Check that the camera (movement) turns easily by rotating the claw pin knurled knob by hand. If difficult to turn, let the camera run at approx. 25 fps for a few minutes. Check the magazine wind-up friction with setting gauge and, if necessary, set lower.
22	Electro static discharge causing visible branches.	The film material humidity level is too low.	Acclimatise the raw stock for approx. 24 hours, especially if the air humidity is low, take the film out of the pack and load and expose within a short time.

No.	Problem	Cause	Remedy
23	Camera fails to run even though the camera main switch is »On«. The red out-of-sync lamp is lit up and can be seen in the viewfinder.	The battery is not sufficiently charged or is defective.	Check the battery capacity and if necessary change the battery.
		The bridge plug for forward and reverse travel is missing or has a break (see also instruction manual page 58).	Fit bridge plug or replace.
		The electrical drive is defective.	Contact authorised ARRI service centre.
24	Out-of-sync indicator does not light up in the viewfinder.	The battery is fully discharged or the camera connection cable (KCU) has a break.	Change camera cable and/or battery.
		Fuse (0,75) has blown. (See also instruction manual page 56).	Change the fuse; if the fuse blows again contact service centre.
25	The camera does not run quartz constant at 24 or 25 fps. The green control lamp lights up in the viewfinder.	The mode selector switch is placed at »variable«. (See also instruction manual page 56, as well as problem 21).	Place moder selector switch to »constant«. The green control lamp must now go out. The camera will now run quartz constant 24 or 25 fps.
26	Camera does not reach the selected frame speed (up to 50 fps). The red out-of-sync lamp lights up. (See also instruction manual page , as well as problem 21).	The battery is not sufficiently charged or the camera connection cable has a defect.	Check the battery capacity and change battery and/or camera connection cable.
		Especially at low temperatures: camera and/or magazine is sluggish.	Check the battery under load. Measure the voltage at the camera during run. Check the ease of run of the camera without magazine and with magazine and film. If sluggishness is caused by the cold conditions use remedy suggested for problem 19.

No.	Problem	Cause	Remedy
27	Camera does not reach the selected frame speed between 50 and 100 fps (using HSU). The red out-of-sync lamp lights up in the viewfinder.	The camera does not reach 43 fps, the speed necessary to switch over to 24 V as described in causes Nr. 26. HSU switches over, however, the camera only reaches ca. 60 fps, and then the red out-of-sync lamp lights up. The red »fault« lamp lights up on the HSU, the relay switch is then blocked.	Test battery A under load, measure the voltage during the camera run, if necessary change the battery. Battery B is either not connected or is discharged. Connect battery B and measure voltage, if necessary change battery B. Switch off the camera via HSU and then switch on again, if necessary switch over to position »intern« and then to position »variable«. Should the red »fault« lamp light up again, contact ARRI service centre.
28	When the camera main switch is »on« the camera runs uncontrolled with ca. 60 fps and the camera cannot be switched off.	The electrical governor is defective. Actual frequency lead is broken. The red out-of-sync lamp lights up.	Contact ARRI service centre.
29	The camera travels reverse when the camera connection cable is plugged in, without the camera main switch being in the »On« position.	The internal camera connections are incorrectly poled.	Disconnect power at once. The fuse 2 (see instruction manual page 56) is in this case burnt out to protect the electrical governor. Change the fuse and have the poles correctly placed in a service centre.
30	In spite of correctly poled connections, the camera runs uncontrolled at about 60 fps without the main switch being in the »On« position.	The end stage of the electrical camera governor is damaged due to extended use with incorrectly poled internal camera connections.	Contact ARRI service centre.

No.	Problem	Cause	Remedy
31	The camera runs normally when the camera main switch is »On«, but cannot be switched off. The red out-of-sync lamp lights up in position »Off«.	If the camera keeps running with the same speed when in position »Off« then the nominal frequency switch is defective. If the camera speed drops back to 2 fps but camera does not stop then the index signal is missing or the cut-off logic is defective.	You can finish shooting without cause for worry. In both cases the camera can be stopped by placing the camera main switch to »Off« and pulling the camera connection cable out. To restart the camera place the camera main switch to position »On«. Unobstructed viewing through the viewfinder is achieved by turning the inching knob (see instruction manual pages 33 and 34). Contact a service centre at earliest convenience.
32	Tachometer reading varies, however the red out-of-sync lamp does not light up.	The tachometer module is defective or the actual frequency lead is broken.	The camera still runs sync. You can finish shooting without cause for any worry. Contact a service centre at earliest convenience.
33	Red pilot lamp for memory battery control (beneath the counter) lights up when the camera main switch is »On« or when the »read« button is pressed. (See also instruction manual pages 29/30).	Memory battery capacity for the film counter is exhausted.	Film counter and memory function are still possible. The battery should, however, be exchanged as soon as possible.



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