ARRI

ARRIFLEX 535B

INSTRUCTION MANUAL

urret

icator)

20 m magazine

Locking grip on
magazine cover
(take-up side)

Adjustment knob
for manual
image compensation

Release key for
manual image
compensation

Bubble level

Friction adjustment

Finder arm

Lock for finder
arm extension

PL-mount

Adjustable mirror
shutter

ARRI

Cover on
magazine opening

1

Eyepiece

Eyepiece lock

Regulator knob,
illuminated-frame finder

Eyecup

Socket for
heated eyecup

Lever for contrast filter

Release lever for finder turret

Magazine display
(electronic film stock indicator)

120 m magazine

Locking grip on
magazine cover
(take-up side)

ARRIFLEX 535B

ARRI

"PHASE"-key

Sliding switch
"DISPLAY LOCK"

Display

"RUN"-key

Operation control indicator

"MODE"-key

"SEL"-key

"SET"-key

Locking grip,
camera door

Grip system

Mechanical film stock indicator

Release key
for finder arm

Locking grip,
magazine cover
(feed side)

Video optical tap

RU socket

Dovetail-guide

ESU and MCL
socket

"RUN"-key

CCU-socket

Operation control
indicator

Sliding switch
"NORM-PS/CCU"

Power supply
socket

Main camera
switch

24 V accessory
sockets

12 V accessory
socket

"PROG"-key

Safety Specifications

• Warnings

Note: Operational error possible!

 Equipment damage possible!

• In order to ensure optimal performance, it is essential that you acquaint yourself with this instruction manual.

• Assembly and initial operation should be carried out only by persons who are already familiar with the equipment!

• Use only original ARRI replacement parts and accessories!

• Clean optic surfaces only with an optic brush or a clean optic cloth! In cases of solid dirt moisten an optic cloth with pure alcohol.

• Do not use solvents in cleaning the film gate!

• Do not unscrew any screws which are secured with paint!

Product Specifications

In the case of enquiries or when ordering parts please advise camera number and type designation.

Meaning of the Symbols in the Instruction Manual

signifies objects which are shown in photos.

Contents

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1. General Description of the ARRIFLEX 535B

The ARRIFLEX 535B is a compact, light-weight production camera. Due to the modular design of the camera, its range of functions can be individually expanded. The following functions are already integrated into the basic version of the ARRIFLEX 535B.

- Operational parameters can be set directly on the camera, accessories are not necessary.

- The frame rates range from 3-60 fps for forward or reverse running.

- The open sector of the mirror shutter can be mechanically adjusted from 180° to 11° when the camera is not running.

- The newly developed viewfinder system can be exchanged without tools. The viewfinder can be swung on two axes and can be used on both sides of the camera with full image compensation.

- The optical tap for a 1/2" CCD video camera is integrated into the viewfinder system

- The versatile grip system is connected directly to the camera body and can be used as a carrying handle or as an accessory holder.

A comprehensive range of optical, mechanical and electronic accessories further extends the working possibilities of the camera.
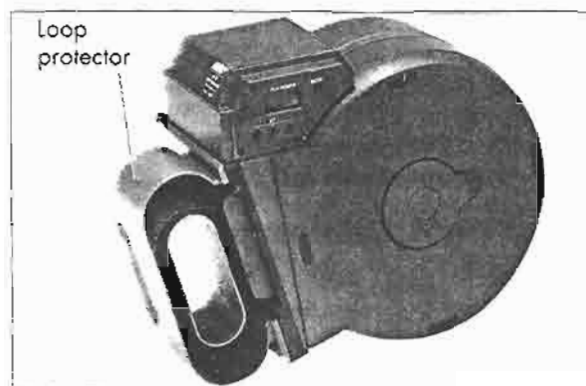
2. Installation of the Camera

Packing and Transport

In order to prevent damage to the mirror shutter, either a lens or a lens cavity cap must be on the lens mount receptacle.

If the ARRIFLEX 535B is transported or stored without a magazine the cover   should be attached.

Transporting or storing empty or loaded magazines should be carried out only with the loop protector to avoid damage to the film or the magazine throat assembly.

The loop protector   can also be used as a carrying handle.

Cover

Loop protector

Tripod Heads

The following tripod heads are suitable for use with the 535B:

- ARRIHEAD
- ARRIHEAD C
- ARRI Fluid-Heads
- Sachtler Studio 7, 150 H
- Mitchell-Head
- Moy-Head
- Ronford F7
- Hot-Head
- Cam-Remote-Head
- Worall-Head

Horizontal Leveling of the Camera

A built-in fluorescent bubble level   allows leveling of the camera even under poor light conditions.

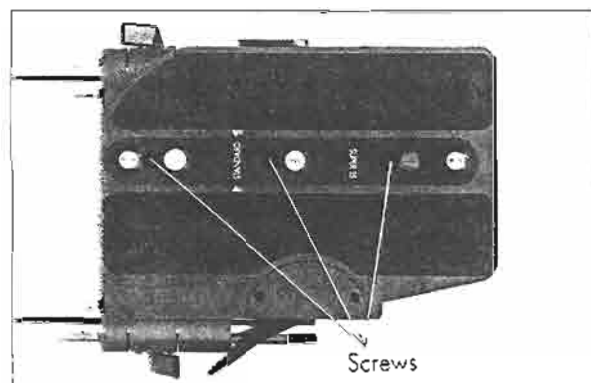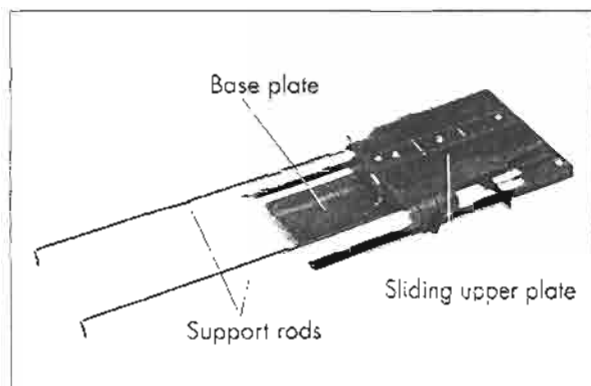Bubble level

Bridge Plate BP-5

The bridge plate facilitates balancing of the camera on the tripod. The bridge plate consists of the base plate   , the sliding upper plate   and a pair of support rods   . Pairs of support rods are available in the lengths 240 mm and 440 mm.

Super 35-Format

For filming with the Super 35 format the lens receptacle and the upper plate of the bridge plate must be adjusted. This ensures that the accessories also fit exactly to the optical centre which is altered in the Super 35 format.
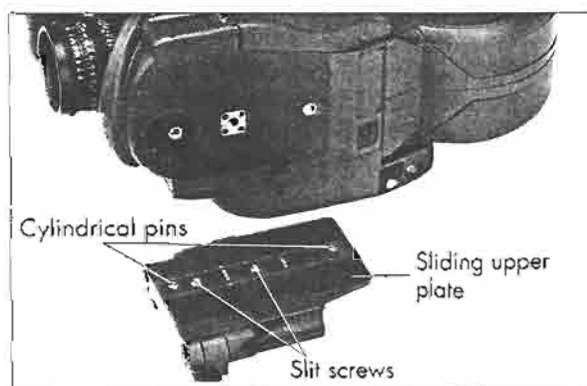
The position currently in use, Standard or Super 35, is indicated by two markers on the sliding upper plate. The bridge plate can be adjusted for the Super 35 format as follows:

• Remove the three screws   .

• Turn the rail 180° and refasten in this position.

Base plate

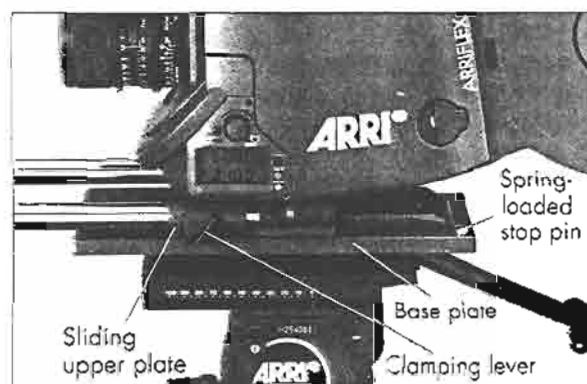Sliding upper plate

Support rods

Screws

Attaching the Bridge Plate to the Camera

• Fasten the sliding upper plate   with the two slit screws   to the camera base. The cylindrical pins (twist prevention) must glide into the holes.

• Then screw the base plate   onto the wedge plate on the tripod and lock onto the tripod head.

• Slide the camera with the upper plate into the dovetail-guide of the base plate until the spring-loaded stop pin   snaps back audibly.

• Slide the support rods into the guides and clamp.

• Equip with the desired accessories for balancing on the camera. Then loosen the clamping lever   and by sliding the camera on the base plate find the optimal position. Then retighten the clamping lever   .

Removing the Camera from the Tripod

• Before removing the camera make sure that all cables are disconnected and that the eyepiece leveling rod is detached.

• For fast removal of the camera from the tripod loosen the clamping lever   , push in the stop pin   and then pull the camera with the upper plate   from the base plate
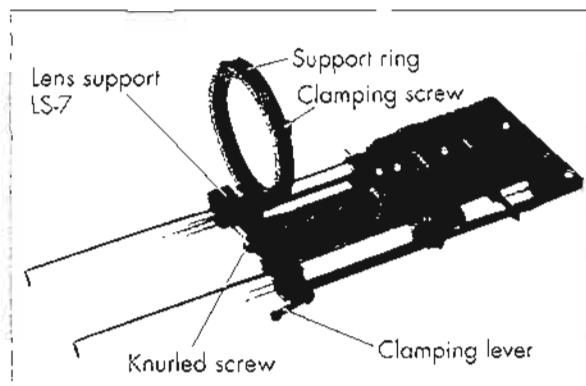
Cylindrical pins

Sliding upper plate

Slit screws

Spring-loaded stop pin

Base plate

Sliding upper plate

Clamping lever

Lens Support

The lens support consists of the lens support LS-7 and the individual lens support ring   for the lens in use

* Mount the lens support from the top onto the support rods and let it click shut by applying slight pressure.

* Slide the relevant support ring   onto the lens but do not yet clamp tight.

* Then slide the lens into the lens mount receptacle and lock.

* Connect the support ring with the lens support and tighten the knurled screw   and the clamping lever

* Tighten the clamping screw   on the support ring.

Note: Mounting the support ring on the relevant lens is usually carried out only once as the support ring can then remain in position on the lens.

Lens support LS-7 — Support ring — Clamping screw — Knurled screw — Clamping lever

Grip System

The new flexible grip system on the ARRIFLEX 535B guarantees the highest stability through its fixed connection to the camera body and offers various possibilities for attaching accessories. Eight 3/8" inner threads allow attachment in four directions.

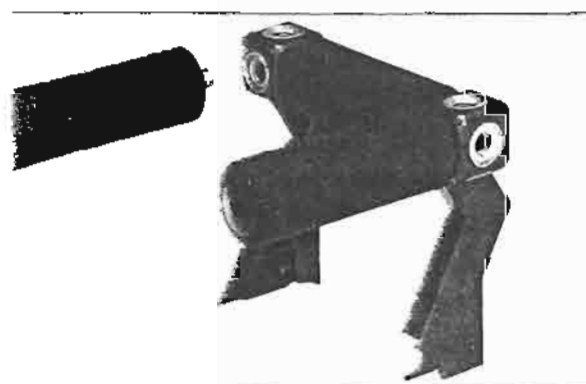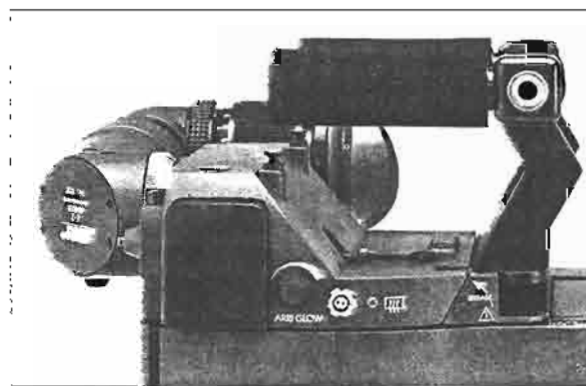Additionally the grip system can be used as the base for a hanging mounting of the camera.

Attaching Additional Handgrips

The additional handgrips can be screwed onto the grip system in various positions as required.

A safety mechanism in the handgrip prevents automatic loosening. This mechanism is activated by screwing in the handgrips tightly.

⚠ Before screwing in the handgrips make sure that the 3/8" threaded bolt is completely screwed out of the handgrip.
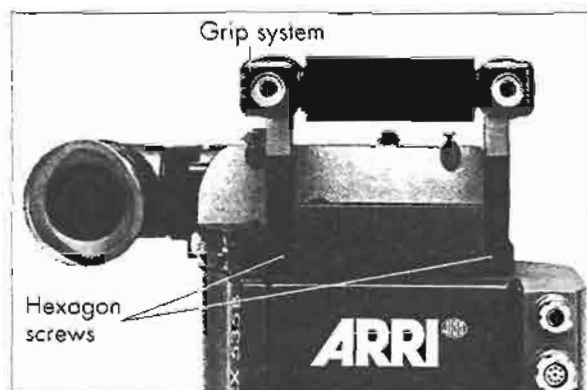
Grip System

In order to minimize camera height the entire grip system can be removed.

- First remove the magazine.

- Loosen both the hexagon screws   in the struts and pull the grip system   backwards.

Attaching the grip system is done in the opposite order.

Grip system

Hexagon screws

Shoulder Set S-1

The shoulder set S-1 was designed for takes that require frequent changes of the camera position. It allows quick transferring of the camera from the tripod onto the operator's shoulder without having to remove the optical accessories.

- Remove the camera from the tripod (see under „Bridge Plate BP-5").

- Slide the shoulder set into the dovetail-guide on the bridge plate (locks automatically in stop position).

- Plug the cable for the ON/OFF trigger key into the RS-socket.
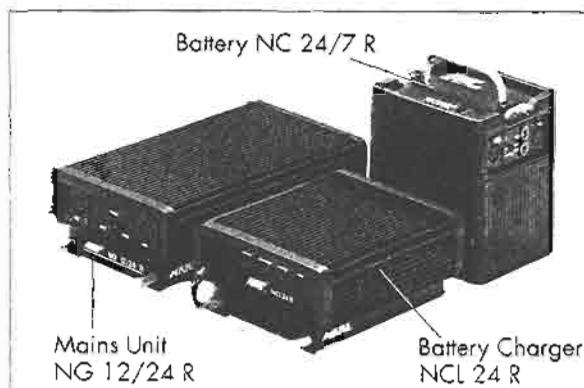
3. Power Supply

The camera is designed for use with a nominal voltage of 24 V DC. The acceptable voltage range is from 20 to 32 V DC. The power supply cable should be connected to the „BAT"-socket on the camera.

For power supply on the ARRIFLEX 535B
- the battery NC 24/7 R   and
- the mains unit NG 12/24 R
are available.

⚠ Do not open the batteries!
Charge batteries only with the ARRI chargers!
Do not bypass the fuse or temperature switch!
Do not heat NC-batteries!
Do not short-circuit NC-batteries!

Battery NC 24/7 R

Mains Unit NG 12/24 R

Battery Charger NCL 24 R

Battery NC 24/7 R

The battery NC 24/7 R has a capacity of 7 amp hours.

• Ensure that the main switch on the camera is off.

• Plug the battery cable KC 20 or the coiled battery cable KC 29 into the „BAT"-socket on the camera and into the battery-socket.

Mains Unit NG 12/24 R

Use of the mains unit is recommended for filming in the studio and when using electronic accessories with a high power consumption.

• First check that the correct mains voltage is set.

• Ensure that the main switch on the camera is off.

• Set the voltage switch on the mains unit to 24 V.

• Plug the battery cable KC 20 or the coiled battery cable KC 29 into the „BAT"-socket on the camera and into the 24 V-socket on the mains unit.

Charger NCL 24 R

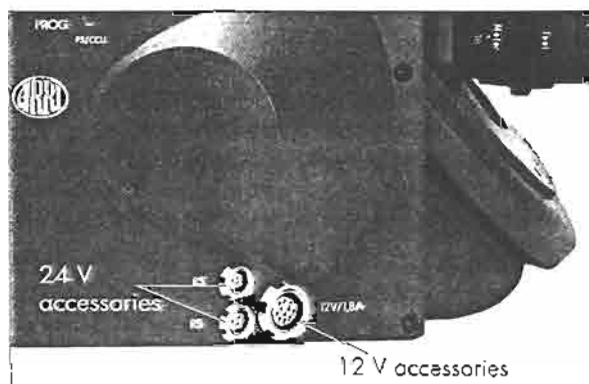With this charger all ARRI 24 V batteries can be charged.

• First check whether the correct mains voltage is set on the charger.

• Connect the charger to the power supply.

• Plug the charger cable into the battery socket.

• Press the start button.

LED	Meaning
yellow	discharging (1A)
red	charging
green	charger connected to the mains

Power Supply of Accessories

Power Supply of 24 V Accessories

Power Supply of 12 V Accessories

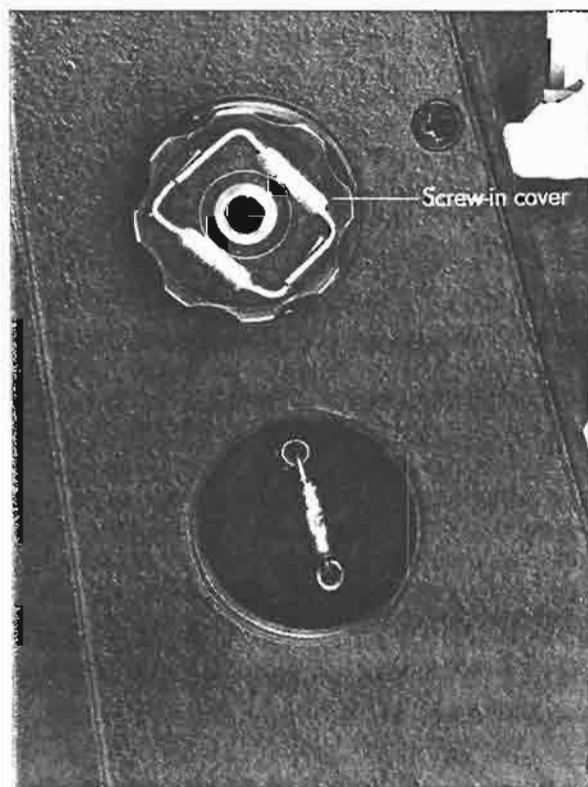

24 V accessories

12 V accessories

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Changing the Camera Fuse

Main fuse: 15 A

The fuse and the replacement fuse are located under the screw-in cover .

• Using a coin unscrew the screw-in cover .

• Remove the defective fuse with the special forceps for changing the ground glass.

• Take the replacement fuse out of the screw-in cover and put in place with the special forceps.

• Screw in the screw-in cover.

Screw-in cover

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4. Magazines

All ARRIFLEX 535 magazines can be used on the ARRIFLEX 535B.

An electronic and a mechanical indicator of film stock are integrated into the magazine.

The take-up and feed motors as well as the monitoring electronics are located in the magazine and are maintenance-free.

Loading the Magazine

Loading the magazine should be practised in daylight with a piece of test film until you are familiar with all movements and able to work in a darkroom or film changing bag.

Cutting the film through the middle of the perforation holes simplifies the loading process considerably. The ARRI Film Cutting Gauge simplifies cutting in the darkroom.

Magazine cover

Button

Flag-hinged locking grip

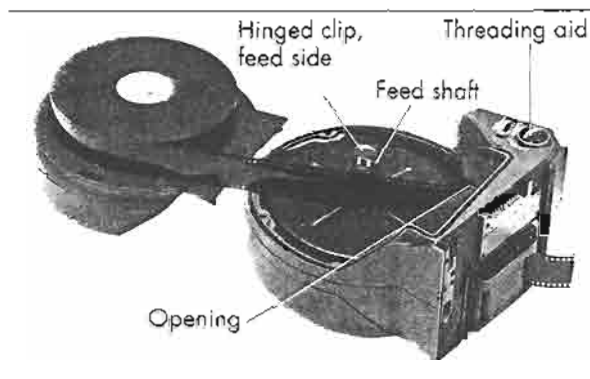**The following work should be carried out in a darkroom or film changing bag**

- Place the magazine with the feed side up (right side; mechanical film stock indicator face up) on a flat surface.

- Press the button   and flip the flag-hinged locking grip   up.

- Turn the locking key counter-clockwise until it stops and remove the magazine cover   Place this with its interior face down beside the magazine.

- Flip up the hinged clip on the feed shaft   .

- Place the film roll on the magazine cover   . The magazine cover serves as a height-compensation base.

- Then slide the film into the opening   . Continue sliding the film without catching or bending it until it emerges out of the magazine throat. If the film cannot be pushed through easily, use the threading aid   Flip up the threading aid   , turn it counter-clockwise and simultaneously push the film until the sprockets can be felt engaging the film perforation.

Push the film through until it emerges out of the magazine throat.

⚠ Ensure that the threading aid   is flipped back into position   . Otherwise it rotates when the camera is running which can cause a loud noise.

- Place the film roll on the feed shaft   .

- Flip down the hinged clip on the feed shaft   .

- Replace the magazine cover and lock.

Hinged clip, feed side

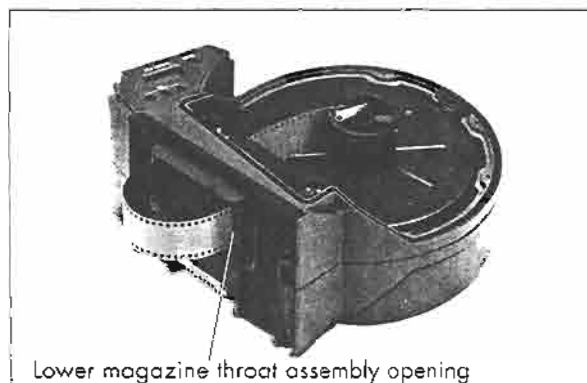Threading aid

Feed shaft

Opening

The following work can be carried out in daylight.

- Lay the magazine on the feed side (electronic film stock indicator facing up).

- Press the button   and flip up the locking grip   .

- Turn the locking grip counter-clockwise until it stops and remove the magazine cover   .

- Slide the head of the film into the lower magazine throat assembly opening   , until it emerges inside the take-up compartment.
  Note: The length of the loop is at this stage unimportant. It is set once the magazine has been attached to the camera.

- Place the head of the film in the expandable film core, clamp it in place and wind the film roll clockwise approximately one turn.

- Ensure that the film is running at a right angle to the take-up shaft. Otherwise the film roll can rub against the magazine cover and cause noise.

- Replace the magazine cover and lock.

⚠ After loading the magazine it is essential to set the magazine display. The set values are automatically read by the camera when the magazine is attached.

Lower magazine throat assembly opening

Magazine Display

The magazine display   indicates in mode 1 (counter) the remaining amount of unexposed film stock in the magazine.

Note: This indicator only serves as a counter, i.e. the indicated value is calculated based on the set quantity of film and is therefore only as accurate as the given setting. When running the camera backwards the counter runs backwards.

In mode 2 (Time Code Sensitivity) the film sensitivity value for the correct time code recording can be set and read.

A buffer battery in the magazine enables saving and storing the values even if the magazine is detached.
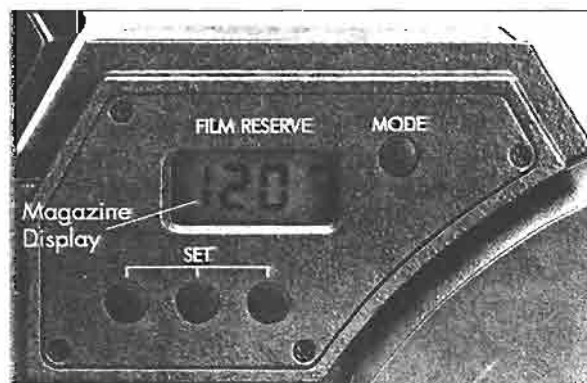
Setting Film Quantity

Note: Film quantity can also be set while the magazine is detached from the camera. If the magazine is attached, the camera must be in the Standby position when setting the values.

Each SET-key   stands for a position in the magazine display   In order for example to change the „tens"

indicator, the second SET-key from the left must be pressed.

By simultaneous depressing of the left and right SET-keys   the maximum film length for the magazine in use is set, e.g. on a 120 m magazine „120", or „393" if the unit of measurement is set at feet. The unit of measurement - meters or feet - is automatically set when the magazine is attached to the camera. If, for example, the camera display is set to „feet", the magazine will also count in feet when attached to the camera.

FILM RESERVE   MODE
120
Magazine Display
SET

Setting Film Sensitivity

Note: Film sensitivity can also be set if the magazine is detached from the camera. If the magazine is attached the camera must be in the Standby position for setting the values.
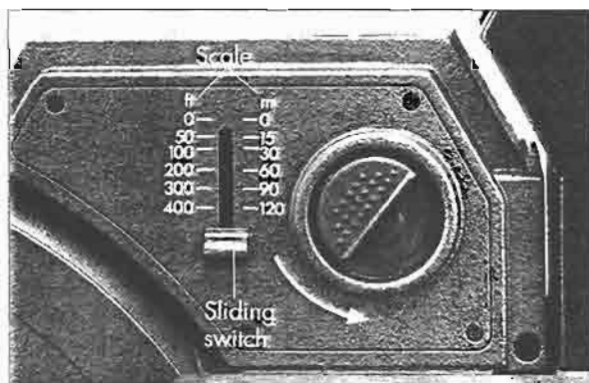
A list of the values for film sensitivity of the most frequently used emulsions is located in chapter 10.

- To set, depress the MODE-key once. Mode 2 (Time Code Sensitivity, TCS) is now chosen. In the magazine display „TCS" appears.

- Hold one of the SET-keys depressed until the desired TCS-value appears in the magazine display . In this mode all SET-keys have the same function.

- If within 5 seconds no programming is carried out, the magazine display springs back into mode 1 and now shows the remaining quantity of film stock.

Mechanical Film Stock Indicator

With the mechanical film stock indicator the approximate quantity of remaining film stock can be read in meters or feet in order to transfer this to the electronic film stock indicator.

- Push the sliding switch upwards until you notice resistance. The remaining quantity of film can be read from the scale in meters and feet.

- After releasing, the sliding switch slides automatically back into its initial position.
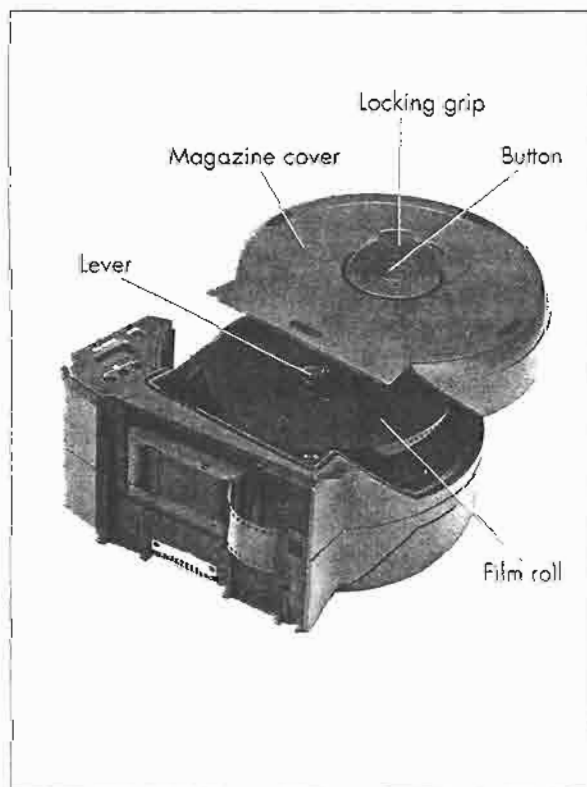
Removing Exposed Film

⚠ Only remove exposed film from the magazine in a darkroom or film changing bag.

- Place the magazine on the feed side.

- Depress the button and flip up the locking grip .

- Turn the locking grip counter-clockwise as far as it will go, and remove the magazine cover .

- Loosen the head of the film by pressing the lever towards the middle of the shaft.

- Pull the film roll upwards to remove, holding the film roll from underneath as far as possible to prevent it from caving in in the center.

- Place the film roll on a flat surface and insert a plastic film core.

⚠ Even if the film core only sits loosely in the film roll, the film roll should under no circumstances be pulled tight as this could cause scratches.
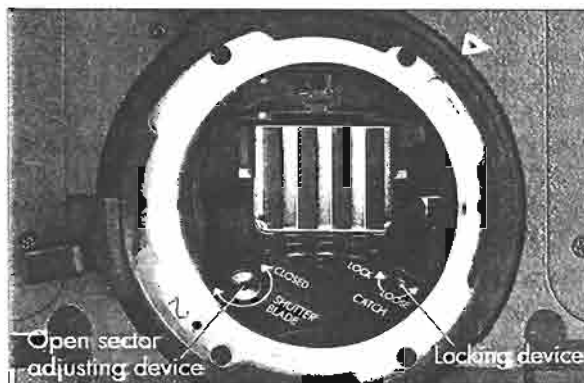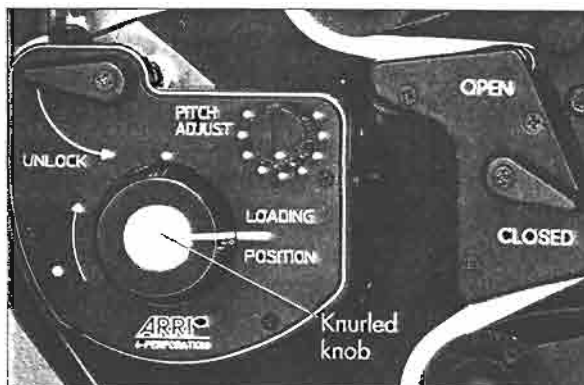
5. Camera Body

Mirror Shutter

The mirror shutter can be adjusted mechanically while the camera is disconnected. The open sector can be adjusted continuously from 180° to 11° Additionally the mirror shutter can be locked within the range of 180° to 15° in 15°-steps, as well as at 172,8° and 144°.

Setting the Mirror Shutter Angle

⚠️ Before setting the mirror shutter remove the camera from the power supply! Remove the lens or the lens cavity cap from the lens mount receptacle.

• By turning the knurled knob   on the movement, position the mirror shutter so that the open sector adjusting device   and the locking device   are easily accessible.

• With a 2 mm Allen key turn the locking device towards the „LOOSE" position until it stops.

• Turn the open sector adjusting device   with the same Allen key until the desired open sector angle is reached.

Knurled knob

Open sector adjusting device

Locking device

• Turn the locking device towards the „LOCK" position until this locks in place. The adjusting device may possibly have to be turned slightly back and forth.

Filming with HMI Light

When lighting scenes with HMI/CID-discharge lamps, pay attention to the pulsing light intensity which is dependent on the supply frequency. The camera frame rate, the supply frequency of the lighting and the angle of the mirror shutter must all relate to each other in order to achieve constant lighting. As the camera frame rate and the supply frequency of the lighting are normally given, compensation must be carried out through the angle of the mirror shutter.
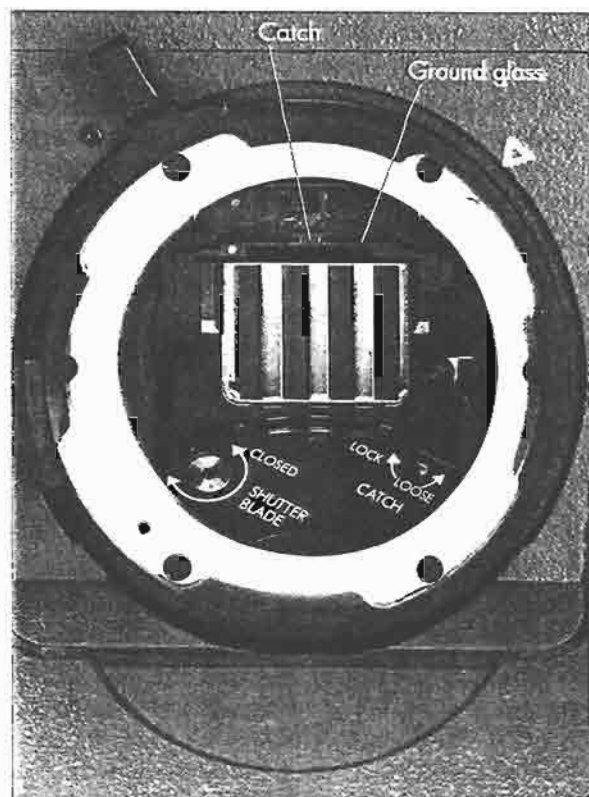
In the following table the mirror shutter angle to be set can be seen.

Supply frequency	50 Hz		60 Hz
Frame rate	25 fps	24 fps	24 fps
Open sector	180°	172,8°	144°

Exchanging the Ground Glass

Before exchanging the ground glass remove the camera from the power supply!

• Remove the lens/the lens cavity cap.

• By turning the knurled knob on the movement, twist the mirror shutter out of the lens receptacle area

• Using the special forceps, pull the ground glass out of the holder by its catch .

• Check that the ground glass to be inserted as well as the ground glass frame are completely clean and free of dust.

• Push the chosen ground glass with the special forceps into the holder as far as it will go. A ball catch fixes the ground glass in exactly the right position.

• Check that the ground glass is correctly locked in place.
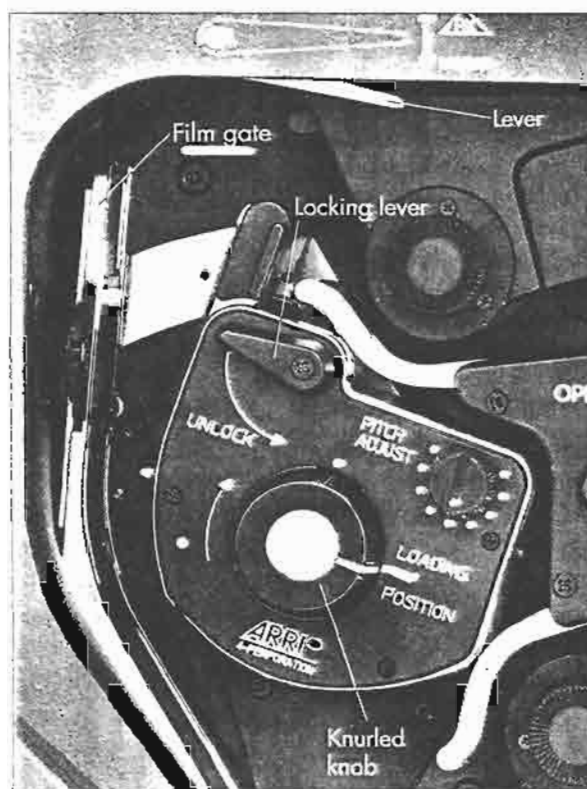

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Film Gate

Changing the Format Masks

⚠ When filming, a format mask must always be in the film gate.
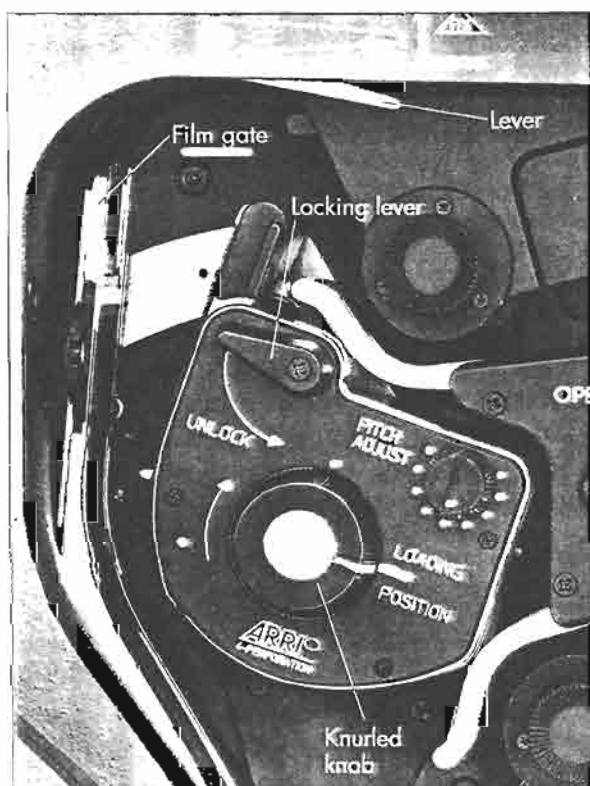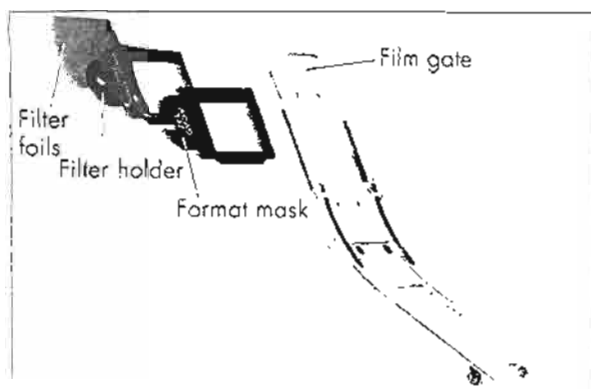
To take out the format mask

• Turn the knurled knob   on the movement until its marking matches that on the movement block.

• Push the locking lever   towards the „UNLOCK" position and swing the movement block away from the film gate.

• Press the lever   towards the „LOOSE" position and flip out the film gate .

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- Pull the filter holder   sideways out of the film gate.

- Press the format mask   lightly on its side flap towards the film gate and then pull this out sideways too.

To insert a format mask

- Check that the film gate frame and the surface are absolutely clean.

- Push the new format mask sideways into the film gate

- Pull the film gate lightly towards the movement block and push in the filter holder   .

- Press the lever   towards the „LOOSE" position and push the film gate back into its correct position.

- Ensure that the lever   swings back completely.

Film gate
Filter foils
Filter holder
Format mask

Film gate
Lever
Locking lever
UNLOCK
PITCH ADJUST
LOADING POSITION
ARRI
Knurled knob

Inserting Filters into the Film Gate

Filter foils such as gelatine filters can be inserted into the filter holder.
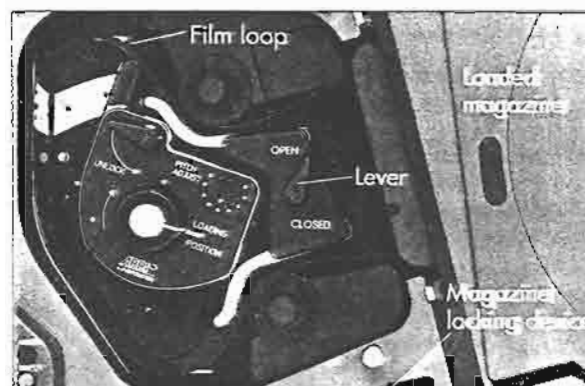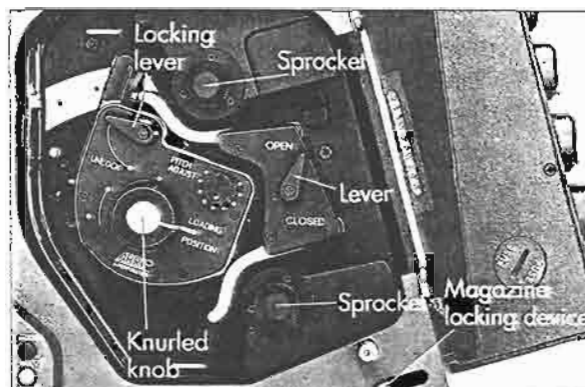
- Turn the knurled knob   until its markings match those on the movement block.

- Push the locking lever   towards the „UNLOCK" position and swing the movement block away from the film gate.

- Press the lever   towards the „LOOSE" position and flip out the film gate   .

- Pull the filter holder   sideways out of the film gate.

- Slightly expand the filter holder and insert the filter foil   . Cut off jutting edges.

- Push in the filter holder.

- Press the lever   towards the „LOOSE" position and push the film gate into its correct position.

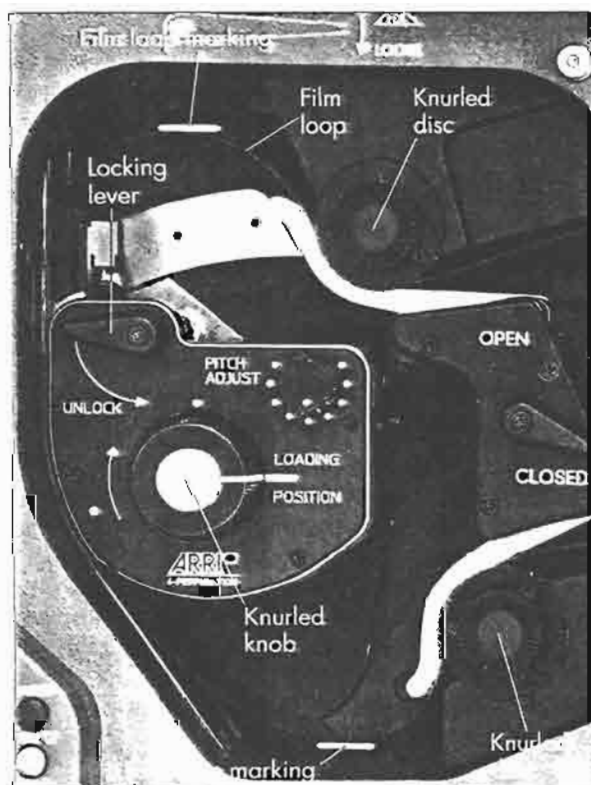- Ensure that the lever   swings back completely.

Movement

The ARRIFLEX 535B is equipped with the same reliable seven-link-movement as the ARRIFLEX 535.

Threading the Film

- Open the camera door and remove the protective cover from the magazine opening.

- Turn the lever   towards the „OPEN" position. The film guide rockers will be removed from the sprockets

- Turn the knurled knob   until its markings match those on the movement block.

- Push the locking lever   towards the „UNLOCK" position and swing the movement block away from the film gate.

- Push the loaded magazine   approximately halfway into the dovetail-guide on the camera.

- Place the film loop   between the movement and the film gate.

- Push the magazine into the camera as far as it will

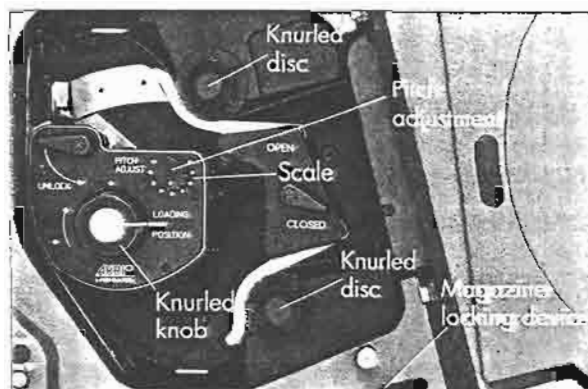go. The magazine locking device   locks automatically.

- Snap the film guide rockers onto the sprockets by carefully turning the lever   towards the „CLOSED" position, ensuring that the sprockets correctly engage the film perforation.

- Position the film loop   by hand between the two film loop markings   .

- Turn the knurled knob   until its markings match those on the movement block.

- Swing the movement block onto the film gate, turning the locking lever   downwards and ensuring that the transport claws slide into the film perforation.

- Ensure that the locking lever   swings back completely.

- Setting the upper and lower film loops is done with the knurled discs   on the sprockets. Depress the knurled discs and then turn these until the film loop is between the film loop markings   .

- Check correct film transport by turning the knurled knob   .

Pitch Adjustment

The camera is delivered with a transport claw pitch of 4,74 mm (short pitch). With this basic setting negative film stock, for which the perforation hole distance is within the tolerance range, is transported steadily and quietly by the claw movement.

For optimal quietness of running the movement can be finely adapted to the various film types or emulsion numbers with the pitch adjustment. It is recommended before beginning filming to establish the optimal pitch setting for the film material in use.

- Place approx. 60 m film in the magazine. See under „Threading the Film".

- Leave the camera door open.

- Switch on the camera.

- Slowly turn the pitch adjustment   back and forth until the quietest setting is reached

- The figures on the scale   serve to enable finding of previously chosen settings.

Removing the Magazine

- Firstly open the camera door

If unexposed film is still in the magazine:

- Swing back the movement block and snap the film guide rockers away from the sprockets.

- Press the magazine locking device   and pull the magazine approx. halfway out of the camera housing.

- Remove the film loop from the area between the movement and the film gate, then pull the magazine completely out of the camera body, ensuring that the film does not get caught on the movement or on the sprockets.

If the entire film has been used.

- If the entire film is on the take-up side it is not necessary to swing back the movement block.

- The film guide rockers should however be snapped away from the sprockets.

- Press the magazine locking device and pull the magazine out of the camera body.

Note: In the swung back position the movement is uncoupled from the drive system Both the movement and the drive system can now be turned independently of each other. Before swinging in the movement ensure that the coupling device is correctly positioned.

- Turn the knurled knob   until ·is markings match those on the movement block.

- Depress the „PHASE"-key to incn the drive system. The electronic control system then checks automatically that the coupling device on the drive side will stop in the correct position.

If the movement is swung in while not connected to a power supply, the correct position of the drive side coupling half is not ensured. If the movement meets with resistance while swinging in, the coupling engagement must be restored by slowly turning one of the knurled discs.

Never activate the movement locking device while the camera is running!

6. Optics

Lenses

All ARRIFLEX lenses with a PL-mount can be used on the ARRIFLEX 535B. Lenses with a 41 mm standard or bayonet mount can **not** be used. Heavy and long lenses, such as zoom-lenses, must be supported at all times.
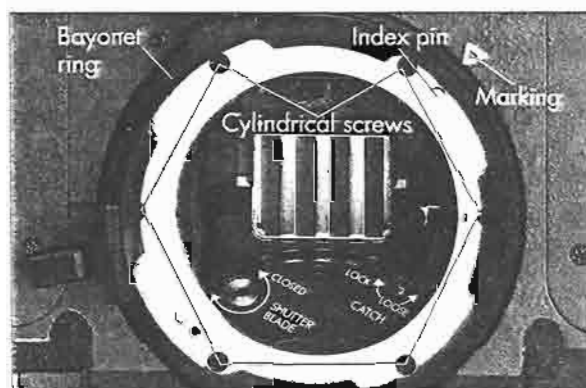
Attaching Lenses

• Remove the protective cap from the lens mount receptacle by turning the bayonet ring   counterclockwise as far as it will go and then pulling out the protective cap.

• Push the lens into the lens mount receptacle without catching it at the edges. One of the four slots on the lens mount must slide over the index pin   .

• Press the lens flat onto the lens mount receptacle and twist the bayonet ring clockwise to tighten.

Adjusting the Lens Mount Receptacle to the Super 35-Format

For filming with the Super 35 format the lens mount receptacle must be turned 180°.

• To do this remove the six cylinder screws

• Turn the lens mount receptacle so that the figure „2" stands next to the marking

• Unscrew the index pin   and screw into the inner thread opposite.

• Replace the six cylinder screws   and screw these tight.

Viewfinder System

The viewfinder system on the ARRIFLEX 535B can be swivelled in two axes. The viewfinder image is always upright and correct left-to-right when the viewfinder is swivelled within the main axes.

A video optical tap is integrated into the viewfinder system.

The entire viewfinder system can be replaced by a video finder (100%) without tools.

With slide-in masks the filming format currently in use is displayed in the viewfinder as an illuminated frame. The intensity can be continuously adjusted with the ARRIGLOW.

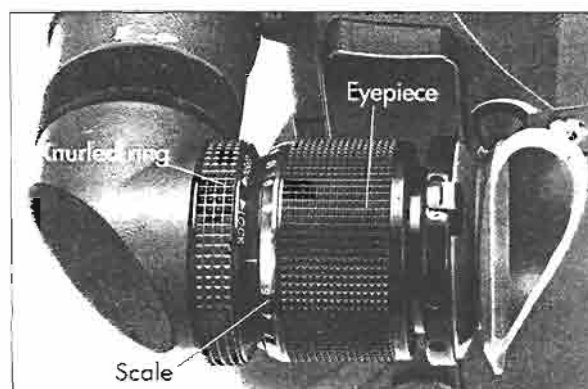## Adjusting the Eyepiece

Removing the Eyepiece

- Turn the knurled ring   towards the „OPEN" position.

- Remove the eyepiece   .

Attaching the Eyepiece

- Ensure that the knurled ring is turned to the „OPEN" position.

- Attach the eyepiece to the viewfinder

- Turn the knurled ring   towards me „LOCK" position.

Adjusting the Diopter

The diopter compensation is fitted with a scale   of 1 to 12. Position „6" is nominal focus.

Eyepiece

Knurled ring

Scale

Adjusting the Viewfinder

Turning the Eyepiece

The eyepiece can be rotated 360° around the finder arm. The eyepiece is held in position by friction. Friction is set by the knurled knob   .

Swivelling the Finder Arm

The finder arm can be swivelled approx. 270°. On the left side of the camera the finder arm locks into the horizontal position After depressing the release key   the finder arm can be swivelled out of this position. Now the finder arm is held in the set position by friction. If necessary, friction can be set with the hexagon screw   .

Extending the Finder Arm

The finder arm can be telescoped continuously by approx. 50 mm.

- To do this loosen the knurled ring   and pull the finder arm   to the desired length.

- Retighten the knurled ring.

Hexagon screw

Release key

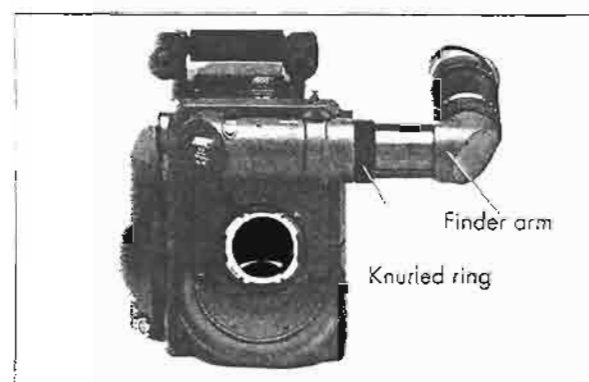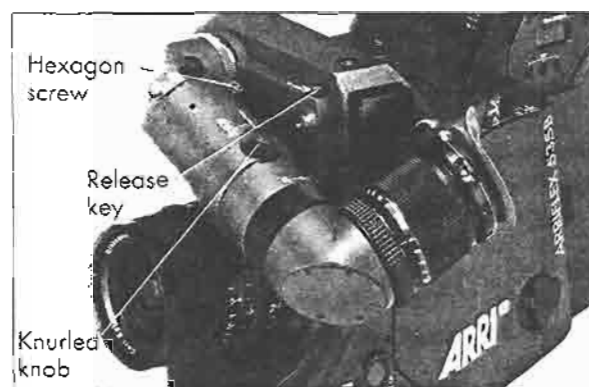Knurled knob

Finder arm

Knurled ring

Image Compensation

The viewfinder system is fitted with an automatic image compensation device. To enable setting a different image orientation in certain situations, the viewfinder system is additionally fitted with a manual image adjustment device. To manually adjust the image, depress the locking key   and simultaneously turn the adjustment knob   until the finder image is in the desired position. Automatic image compensation can be re-activated as follows:
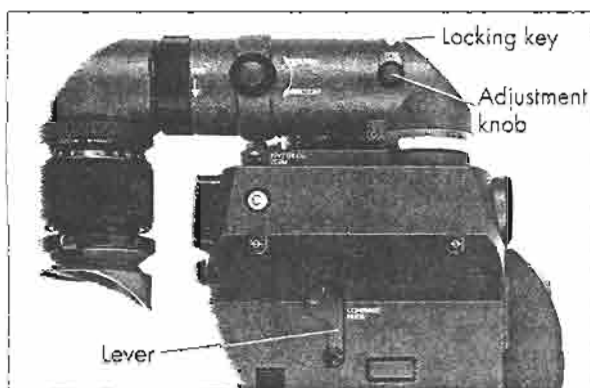
• Turn the adjustment knob   until this locks into position. Do not depress the locking key.

Note: The automatic image compensation locks into two positions which are 180° apart. This allows attachment of a finder extension with an image which is correct left-to-right and upright. If the finder image without the viewfinder extension is inverted, the compensation prism must be turned 180° by depressing the locking key   and simultaneously turning the adjustment knob   approx. 30°. Let go of the locking key   and continue turning the adjustment knob   until this locks into position.
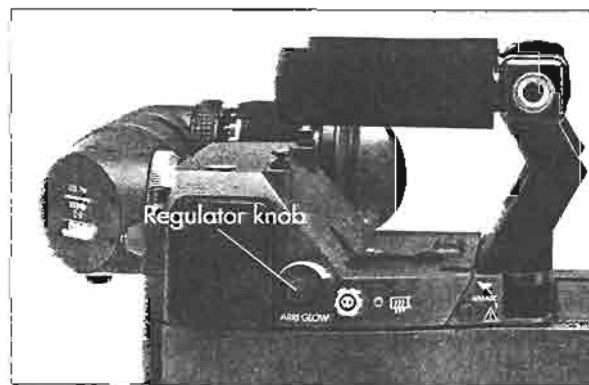
Contrast Filter

To enable better recognition of possible stray light and reflexes, a contrast filter (ND 6) can be pivoted into the optical beam path of the viewfinder by means of a lever   .

• Swivel the lever   into position „1".

• To enable unrestricted viewing swivel the lever into position „0".
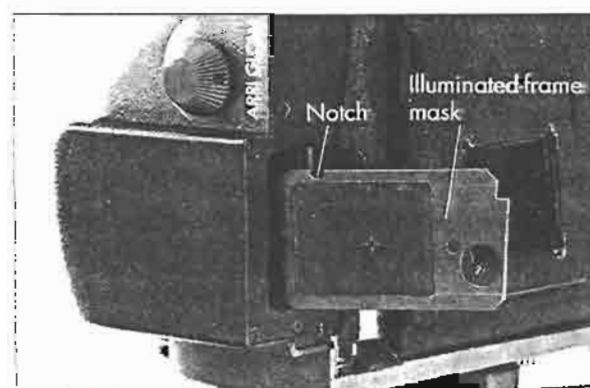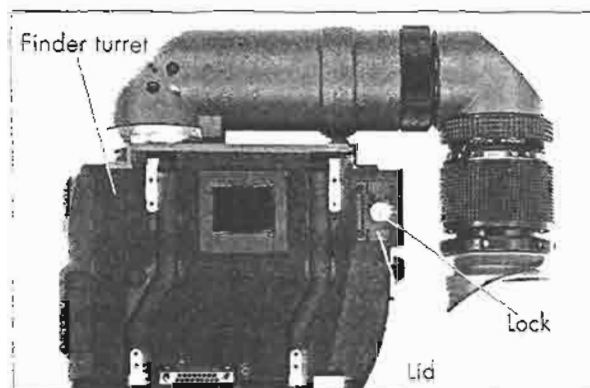

Locking key
Adjustment knob
Lever

Illuminated-Frame Finder

The brightness of the illuminated-frame finder can be continuously set with the regulator knob   . By turning the regulator knob counter-clockwise as far as it will go, the illumination is switched off.

Regulator knob

Illuminated-Frame Mask

- Remove the viewfinder system (see below).

- Open the lid   on the underside of the finder turret   by turning the lock   clockwise until the lid springs up.

- Grasping the illuminated-frame mask   with the special forceps, pull it out.

- Grasp the new illuminated-frame mask with the special forceps and push in with the notch towards the rear until this locks noticeably in position.

- Push down the lid   and lock.

- Replace the finder system (see opposite).

Finder turret

Lock

Lid

Notch   Illuminated-frame mask

Exchanging the Finder System

Finder System

Before removing the finder system the viewfinder should be brought back to its normal position.

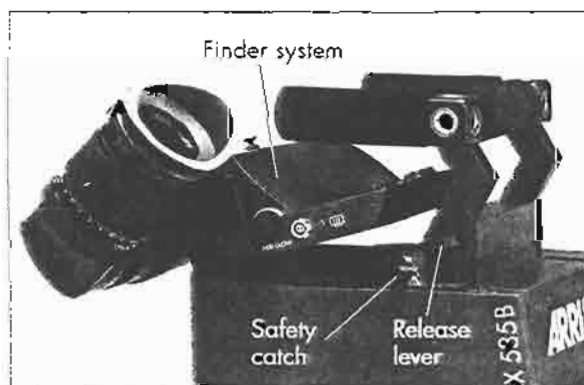⚠️ When operating the release lever, hold the finder system securely!

- Depress the safety catch   and pull the release lever   upwards.

- Tip the finder system forwards. Let go of the release lever   and remove the finder system by pulling upwards.

Attaching the Finder System

- Place the finder system   on the guide pins, tipping it slightly forwards.

- Swing the finder system downwards until it locks in position.

Finder system
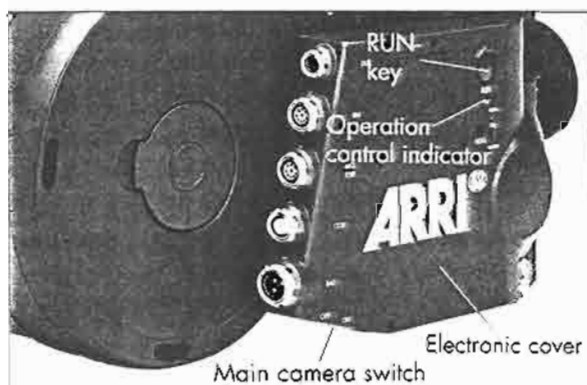
Safety catch   Release lever

- Check that the release lever is completely in its original position. If the finder system is detached or not completely locked in place, the release lever stands at a slight angle.

7. Camera Operation

Main Camera Switch

The main camera switch   is on the underside of the electronic cover   . The recessed location prevents unintentional switching on or off

In the „ON" position the camera is in Standby. In the „OFF" position, the camera is cut off from the power supply and the display gives no indications.

Main camera switch   Electronic cover

Running the Camera

An ON/OFF key (RUN) is located   on both sides of the camera.

Switching on the Camera

• Depress the RUN key briefly. While the camera is running up, the operation control indicator glows red. Once the set frame rate has been reached, the operation control indicator   switches to green.

⚠ If the operation control indicator glows red while in Standby, the camera is not ready and cannot be switched on (see warning displays).

It is possible to operate the ARRIFLEX 535B with the movement block swung back. In this case the operation control indicator blinks red in Standby and red/green while the camera is running.
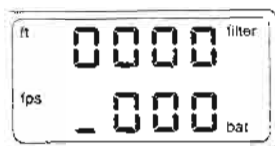
Switching off the Camera

• Again depress the RUN key   briefly. While the camera is running down the operation control indicator glows red. The mirror shutter automatically stops in a position that enables an unrestricted view through the viewfinder. On reaching this position the operation control indicator flashes green before going out.
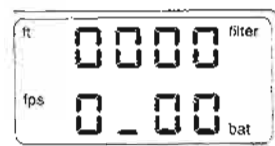
Warning Displays

In order to enable it to recognize operational errors, the ARRIFLEX 535B is fitted with various sensors. The corresponding warning displays can be seen on the camera display until the error is rectified. During this time the camera cannot be used and the operation control indicator glows red.

On the camera display operational errors are shown as follows:

Movement block not locked in position. At the rear stop the display will blink and the camera can be run without the movement.
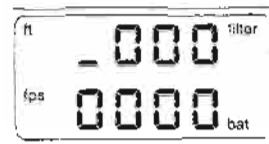

Film jam in the upper film loop area

Film guide rockers not locked in position

Film jam in the lower film loop area

Magazine not completeley attached

Magazine test. If there is no error this indication disappears after approx. 2 seconds.

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Inching

Inching can be started by depressing the „Phase" key while the camera is in Standby. If the „Phase"-key is only lightly tapped, the mirror shutter opens respectively closes.

Displaying and Setting Operational Parameters

The currently set operational perameters on the ARRIFLEX 535B are displayed on the camera display in various modes. The desired mode is selected via the „MODE"-key. In each mode the corresponding operational parameters can be set using the „SEL"- and „SET"-keys.

To prevent an unintentional alteration of the operational perameters the „SEL"- and „SET"-keys can by locked using the sliding switch „DISPLAY LOCK".

An Overview of the Display Modes

Mode	1. Display Line	2. Display Line	Adjustment Possibility
Mode 1	Total exposed film counter (m/ft) or take counter (m/ft) or mirror shutter angle	Frame rate (fps))	Standard frame rate selection
Mode 2	Programmed frame rate	Programmed frame rate (fps)	Programmed frame rate (forwards/reverse) selection
Mode 3	Total exposed film counter (m/ft) or remaining film stock (m/ft) or take counter m/ft)	Power supply (V)	Unit of measurement (m/ft) selection. Film counter configuration selection
Mode 4	Time code time (hours, minutess)	Time code time (seconds, fps))	Time code on/off
Mode 5	Time code user bits	Time code user bits	
Mode 6	Setting of the audible warning signal	TCS-value or voltage of the time code buffer battery (V)	Warnign signal on/off

Mode 1 is shown:

- when the camera is switched on.

- after operating the RUN key.
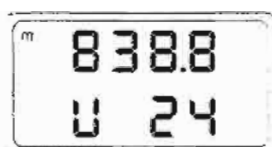
- 30 seconds after the last operation.

An Overview of Display Symbols

Symbol		Meaning
TC	glows	TC-recording is switched on
	blinks	"RUN": No recording "Standby": the last synchronization was over 8 hours ago (TC can be recorded for test purposes)
bat	glows	Battery voltage < 20V (camera cannot be started)
asy	glows	asynchronous operation
end	glows	film end
	blinks	film end warning
fps	blinks	ESU is attached and no relevant frequency is available
jam	glows	film jam in the upper film loop
filter	glows	a filter is in the film gate

Film Counter

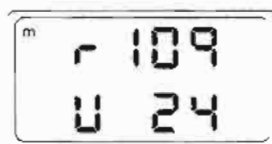## Displaying the Film Counter Values (Modes 1 and 3)

Film counter values are shown in modes 1 and 3. As described below, two of three counter values can be shown at a time:

```
m  838.8
   U  24
```
the total amount of exposed film

```
m  t38.0
   U  24
```
the amount of film exposed in individual scenes (takes)

```
m  r 109
   U  24
```
the remaining film in the magazine
(= magazine display)

Setting the Film Counter Configuration (Mode 3)

The display configuration can be set individually. The following combinations are possible:

Mode 1	Mode 3
Film amount exposed in individual takes	Total exposed film
Total exposed film	Film amount exposed in individual takes
Total exposed film	Remaining film in the magazine

By choosing the desired counting method in mode 3 the display configuration is set.

- Change from mode 1 to mode 3 by depressing the „MODE"-key twice.

- Depress the „SEL"-key twice; the first digit in the first display line blinks.

- Within 3 seconds depress the „SET"-key repeatedly until the desired method of counting is displayed in mode 3.

The corresponding film counter value in mode 1 is thereby automatically altered.

Resetting the Film Counter (Modes 1 and 3)

- The total exposed film counter can be set to zero by depressing the „SET"-key (for at least three seconds) while in Standby.

- The counter of the film amount exposed in individual takes is automatically reset each time the camera is restarted.

- The counter of the remaining film takes on the value which is displayed on the magazine.

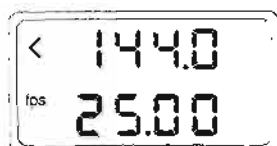## Changing the Unit of Measurement (Meters/ Feet, Mode 3)
Standby Operation

- Change from mode 1 to mode 3 by depressing the „MODE"-key twice.

- Depress the „SEL"-key once (the symbol m/ft blinks).

- Depress the „SET"-key to change the unit of measurement.

Displaying the Angle of the Mirror Shutter (Mode 1)

• As long as the Phase-key is depressed while in Standby the set angle of the mirror shutter appears in the first display line. During this period the camera runs at inching speed.

```
< 144.0
fps  25.00
```

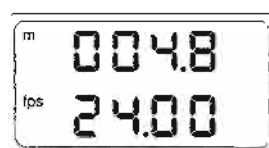Example: The set angle of the mirror shutter is 144°.

Setting Frame Rates

The ARRIFLEX 535B offers the possibility to set frame rates and to store these for later use. It is possible to choose

• a standard frame rate (24, 25, 29,97 and 30 fps)

• and a freely programmed frame rate (in increments of 0,001 fps).
The desired frame rate is activated with the „PS"-switch on the right side of the camera.

Choosing a Standard Frame Rate (Mode 1)
Standby Operation.

• The camera must be in mode 1.

• Depress the „SEL"-key repeatedly until the desired frame rate is chosen. Within 3 seconds, confirm this choice by depressing the „SET"-key, otherwise the program returns to its initial setting.

```
m   004.8
fps  24.00
```

Example: The set standard frame rate is 24 fps.
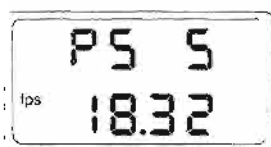
Setting a Programmed Frame Rate (Mode 2)
Standby Operation

• Change from mode 1 to mode 2 by depressing the „MODE"-key once.

• Depress the „SEL"-key repeatedly until the desired digit to be set is activated.

Note: The thousandth-position is shown in the right-hand corner of the first display line.

• Depress the „SET"-key repeatedly until the desired value is reached.

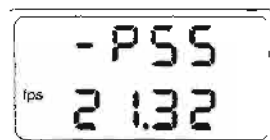Note: The frame rate can only be chosen between 3 and 60 fps.

```
PS   5
fps  18.32
```

Example: The set programmed frame rate is 18.325 fps.

Choosing Reverse Operation (Mode 2)

Standby Operation

• Change from mode 1 to mode 2 by depressing the „MODE"-key once.

• Depress the „SEL"-key repeatedly until „CD" blinks.

• Confirm with the „SET"-key. On the display before the indicator „PS", a minus sign will be displayed.

Note: The frame rate can be altered as described above.

```
-PSS
fps  21.32
```

Example: The set reverse frame rate is -21,325 fps.

Changing the Frame Rate while the Camera is Running

By means of the „PS"-switch   the frame rate can be changed from standard to programmed while the camera is running.
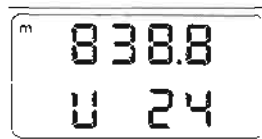
Fine-tuning of the frame rate can be carried out by means of the keys „SEL" (slower) and „SET" (faster) while the camera is running.

Phase Shifting

To film from quartz-locked monitors while the camera is running, hold the „PHASE"-key depressed until the horizontal bar is no longer visible in the viewfinder. In the camera display the frame rate will be seen to increase by 0,2 fps.

Displaying the Power Supply Voltage (Mode 3)

• Change from mode 1 to mode 3 by depressing the „MODE"-key twice. The power supply voltage is shown in the second line of the display.

```
m  838.8
   U  24
```

Example· The power supply voltage ist 24 V.

Time Code

Note: The time code modes 4 and 5 are activated only if the TC-module is installed. If the TC-module is not installed the display jumps directly from mode 3 to mode 6.

Displaying the Current Time Code Time (Mode 4)

• Change from mode 1 to mode 4 by depressing the „MODE"-key three times. In the first line time code time will be displayed as „hours : minutes", in the second line as „seconds : fps".

```
h:min  07:02
TC
sec:f  36:24
```

Example: The current time code time is 7 hours, 2 minutes and 36 seconds, the frame rate is 24 fps.

Switching off Time Code Recording (Mode 4)

• Change from mode 1 to mode 4 by depressing the „MODE"-key three times. Hold the „SET"-key depressed for 3 seconds. The „TC"-symbol will go out.

Switching on Time Code Recording (Mode 4)

• Change from mode 1 to mode 4 by depressing the „MODE"-key three times. Hold the „SET"-key depressed for 3 seconds. The „TC"-symbol will appear.
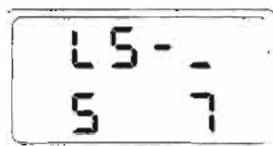
Displaying Time Code User Bits (Mode 5)

• Change from mode 1 to mode 5 by depressing the „MODE"-key four times. The user bits will be displayed in the first and second lines of the display.

```
       23:11
TC UB  1  2  3  4
       19:93
```

Displaying TCS-Values (Mode 6)

• Change from mode 1 to mode 6 by depressing the „MODE"-key five times.

• The TCS-value (time code sensitivity; the recording intensity for time code, which is dependent on the film stock used) will be displayed in the second line of the display with values of 1 to 9. An indication of the TCS-values is only possible if the magazine is attached. Otherwise there is no indication.
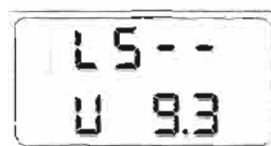
Note: A list with the TCS-values for the most commonly used film stocks is given in Chapter 10, Time Code.

Example: The set TCS value is „7"

Displaying the Voltage of the Time Code Buffer Battery (Mode 6)

• Change from mode 1 to mode 6 by depressing the „MODE"-key five times. If no TC-module is installed mode 6 will come immediately after mode 3, i.e. if no TC-module is installed it is only necessary to depress the „MODE"-key three times.

• Depress the „SEL"-key once

• The TC-battery voltage is displayed in the second line of the display. If the voltage is < 7V, the battery should be replaced.

Example: The TC-battery voltage is 9.3V.

Switching on and off the Warning Signal for Asynchronous Running (Mode 6)

Standby Operation

• Change from mode 1 to mode 6 by depressing the „MODE"-key five times (or three times if the TC-module is not installed).

• By depressing the „SEL"-key twice, the setting for the warning signal is activated.

• With the „SET"-key, select one of the four following possibilities:

Display	Warning tone on starting the camera	Warning tone on stopping the camera
LS _ _	off	off
LS – _	on	off
LS _ –	off	on
LS – –	on	on

• With the „MODE"-key confirm the selection and return to mode 1.

Example: The warning tone is on when starting and off when stopping the camera.
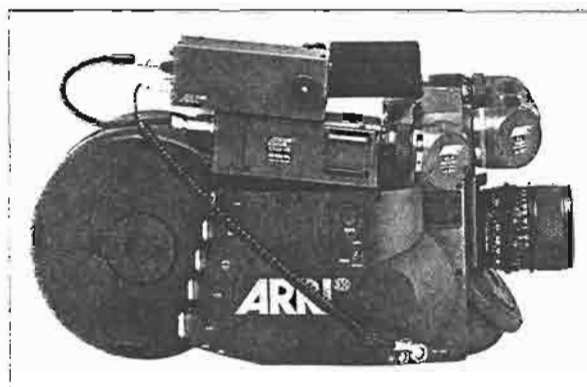
8. Video-Assist-System

The video-assist-system provides a high quality, nearly flickerfree monitor image for PAL or NTSC. The video-assist-system consists of the video set, the 1/2" color video camera CCD 2-FR and the anti-flicker processor AFP-2.

The brightness of the video image is automatically adapted to the given lighting conditions. This balancing can also be carried out manually. The white balance is designed for standard values for interior and outside filming. The integrated technology for image-storing enables reproduction of a stored image or the alternation between the real and the stored image - in order for example to align the camera to an earlier scene.

When using several video cameras the video-assist-system can also be synchronized by an external video signal.

Changing from a color to a black/white CCD-camera is simple and calls for no subsequent adjustment. The ARRIFLEX 535B is fitted in the standard version with a beamsplitter which reflects 20% of the viewfinder beam to the video camera. A 50% beamsplitter can be installed subsequently.
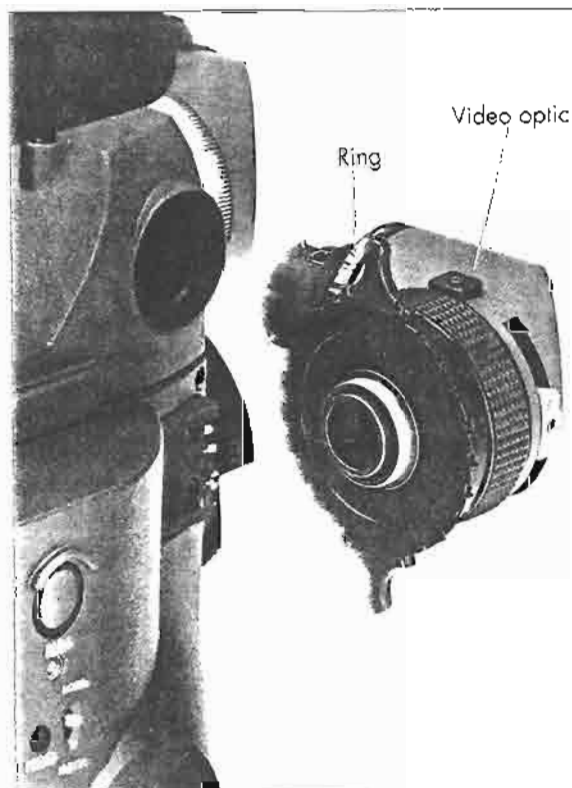
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Mounting the Video-Assist-System

Mounting the Video Optic
- Firstly unscrew the cover on the finder turret.

- Pull the cover off the bayonet-mount on the video optic.

- Place the bayonet-lock on the video optic into the recess on the finder system

- Turn the video optic   counter-clockwise until it locks in place.

Note: In the locked position, the video optic is angled upwards by 5°.
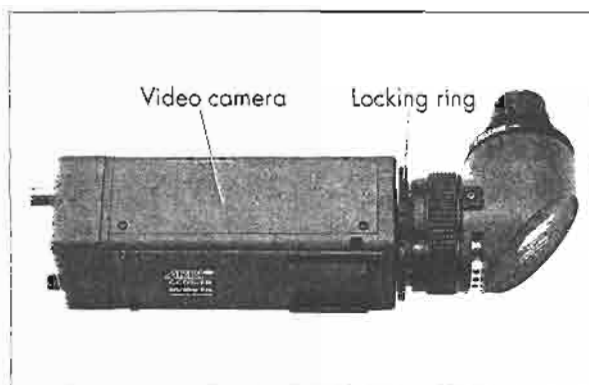
Removing the Video Optic
- Pull back the ring marked „RELEASE"   and turn the video optic   clockwise as far as it will go

- Pull off the video optic.

Ring

Video optic

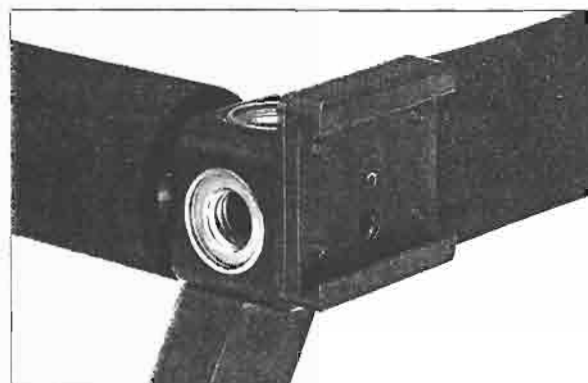57

Mounting the Video Camera

- Unscrew the protective cover from the C-mount on the video optic.
- Unscrew the protective cap on the video camera.
- Screw the video camera   onto the C-mount thread on the video optic.
- Loosen the locking ring   approx. 15°.
- Turn the video camera into the correct angle position.
- Pull the locking ring tight.

Video camera   Locking ring

Mounting the Anti-Flicker Processor AFP-2

- Screw in the dovetail-adapter on the grip system of the ARRIFLEX 535B.
- Then slide the anti-flicker processor into the dovetail-guide and screw tight.

Note: Like the video optic, the dovetail-guide must also be angled by 5°
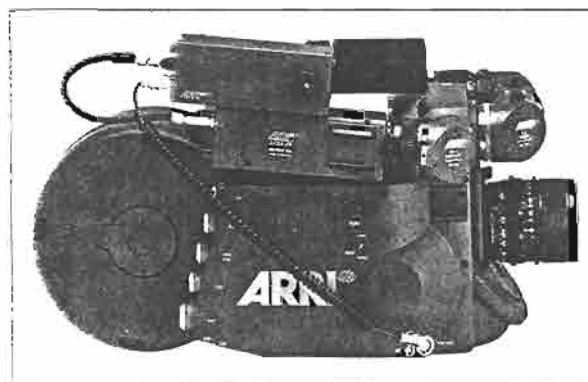
Wiring the Video-Assist-System

- It is imperative to turn off the main switch on the ARRIFLEX 535B.
- Attach the anti-flicker processor AFP-2 via the socket MOVIE CAMERA to one of the RS-sockets of the camera with the cable KC 37.
- Plug the cable KC 34 into the socket VIDEO CAMERA on the AFP-2 and into the video camera.
- The video signal for the monitor is possible from two sockets on the AFP-2:

Mini monitor: socket MINI MONITOR

Standard video monitor: BNC-socket VIDEO OUT

The BNC-socket „VD in" on the video camera CCD 2-FR is used in synchronizing with an external video signal. Do not use as a video output!

- Set the code switch on the underside of the anti-flicker processor to „9".
- Switch on the main switch of the ARRIFLEX 535B.

- Switch on the video-assist-system using the switch on the AFP-2.

Note: The anti-flicker function can be optimally adjusted as required with the slit screw „PHASE ADJ"

Adjusting the Video Optic

Adjusting the Image Orientation

• Loosen the locking ring   approx. 15° (as seen in the direction of filming, counter-clockwise).

• Adjust the angle position by turning the CCD-camera, at the same time checking the image on the monitor.

• Set the horizontal position with the adjustment screw   SW 1,3 marked x.

• Set the vertical position with the adjustment screw   SW 1,3 marked y, ensuring that on loosening the adjustment screw   the image follows. Otherwise press the CCD-camera at the screw-on position slightly upwards.
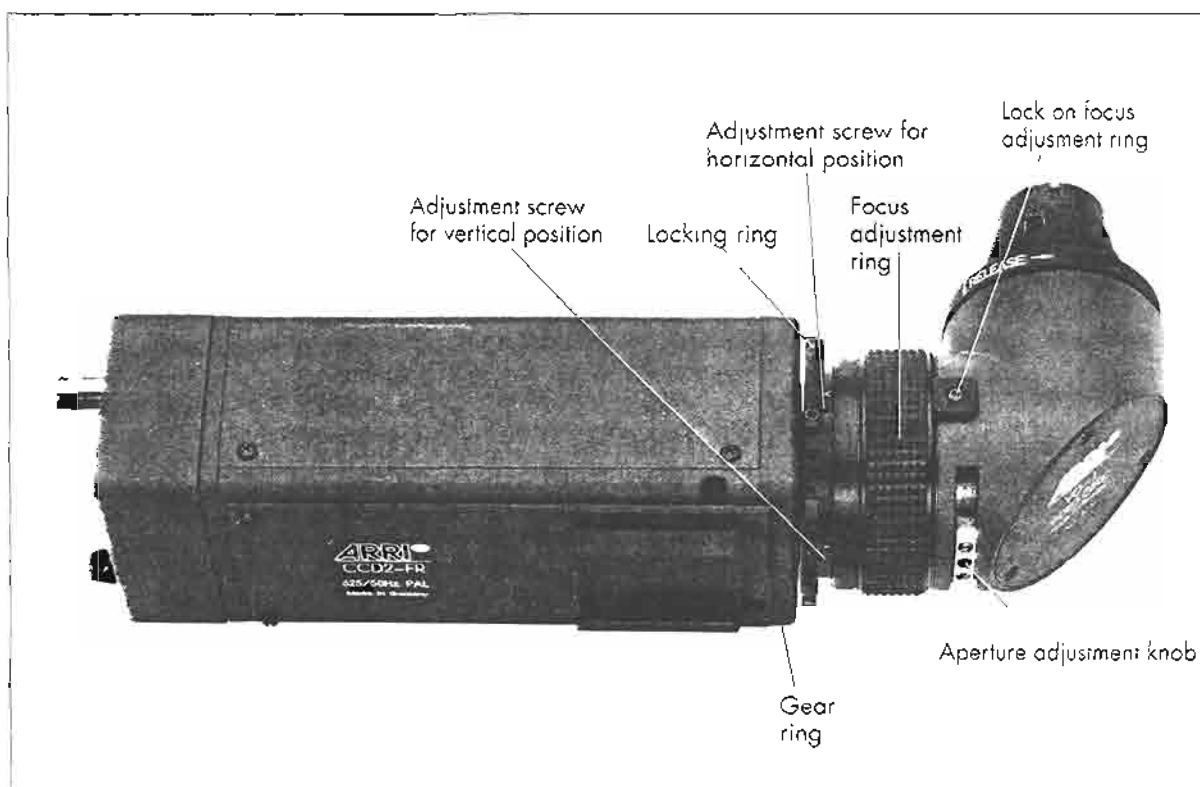
• Retighten the locking ring.

Adjusting the Aperture

• Loosen the aperture lock in the aperture adjustment knob   .

• Align the aperture to the monitor.

• Retighten the aperture lock.

Adjusting Focus

• Loosen the lock   on the focus adjustment ring.

• Check focus through the monitor and adjust with the focus adjustment ring. For more accurate judgement, the aperture can be completely opened.
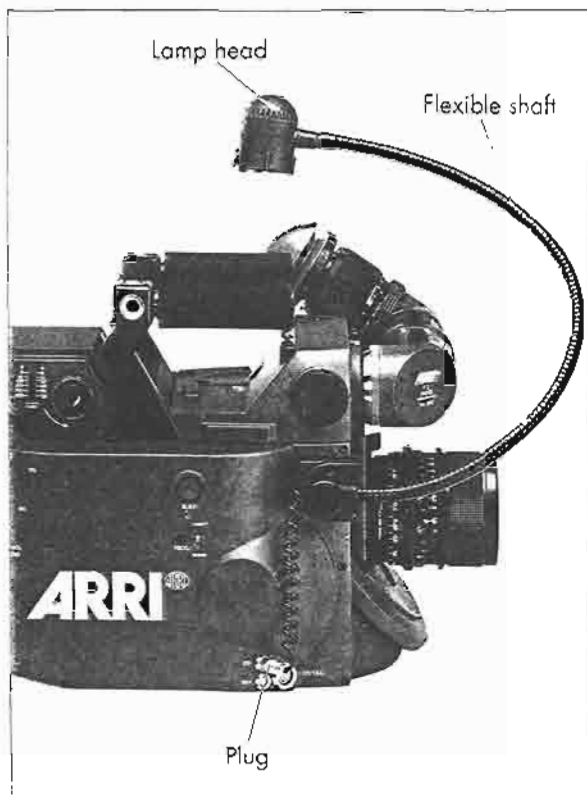
• Tighten the lock on the focus adjustment ring   .

Note: The focus range off the video optic can be altered with the gear ring   on the video camera.

Adjustment screw for vertical position
Locking ring
Adjustment screw for horizontal position
Focus adjustment ring
Lock on focus adjustment ring
Adjustment screw for vertical position
Aperture adjustment knob
Gear ring

9. Accessories

Work Light WL-3

- Slide the work light into the dovetail-guide and fasten with the knurled screw.

- Plug the plug   into one of the „RS"-sockets.

- By setting the flexible shaft   bring the work light into the desired position. The work light can be turned on and off with the switch on the lamp head   . The brightness of the work light can be adjusted with the mechanical aperture.

Lamp head

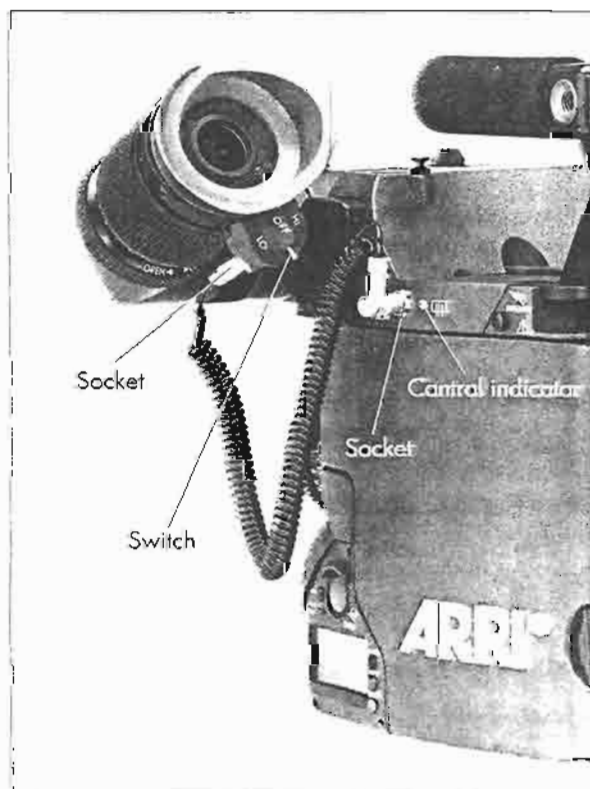Flexible shaft

ARRI

Plug

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Heated Eyecup

The heated eyecups are available in two versions.

1. Anatomically shaped eyecup: HE-3A

2. Folding eyecup: HE-3F

The heated eyecup prevents the eyepiece from misting over in low temperatures as for example when filming outside in winter.

- Pull the normal eyecup off the eyepiece, then place the heated eyecup on the eyepiece.

- Plug the fully detachable cable with the appropriate plug into the socket on the camera   .

- Plug the other plug into the socket   on the eyecup.

- To set the level of heat with the switch   :
  „LO": low heat output
  „HI": higher heat output.
  The control indicator   glows if the heat is switched on.

Note: If the camera and accessories are powered by batteries, it is recommended to switch off the eyecup-heating during lengthy breaks in filming.

Socket

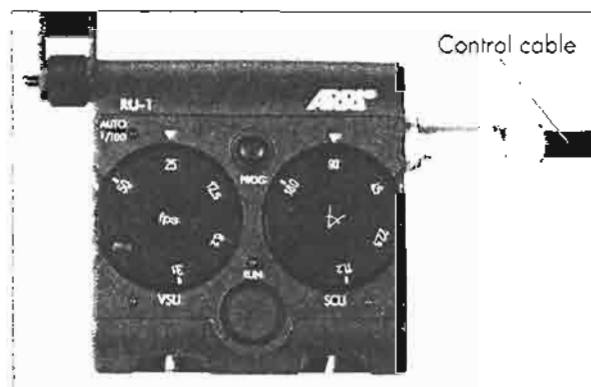Control indicator

Socket

Switch

ARRI

Remote Control Unit RU-1

Using the remote control unit RU-1 it is possible to switch the camera on and off and adjust the frame rate externally.

On the ARRIFLEX 535B it is not possible to alter the open sector of the mirror shutter with the RU-1.

- Switch the main camera switch to „ON" (Standby).

- Plug the control cable   into the socket on the camera and into the RU-1.

- Set the switches on the RU-1 so that only the LED „VSU" lights up.

- On the display on the camera, the indication „SU" will appear in the upper line.

- Adjust frame rate with the left adjusting wheel; in standby operation the selected frame rate is shown on the camera display in mode 2.

- Depress the „RUN"-key to start the camera. Depress this key again to switch the camera off

Control cable

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Remote ON/OFF Switch RS-4

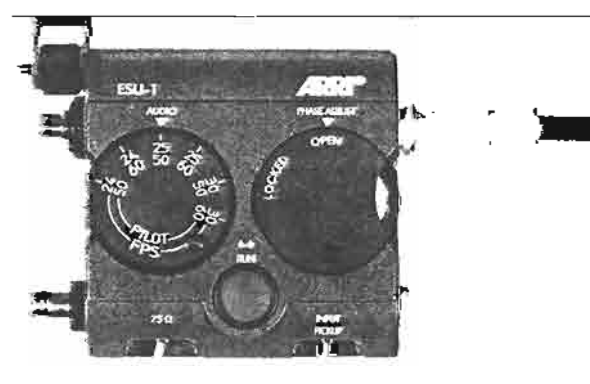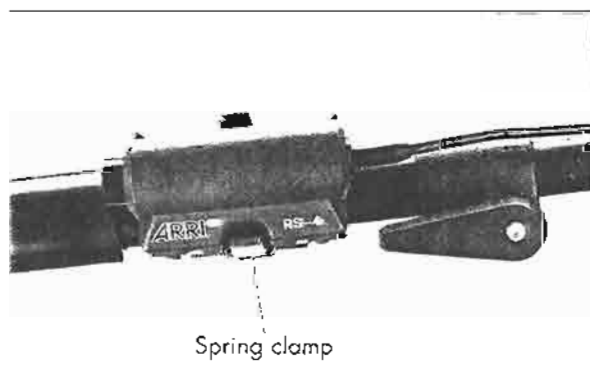Plug the RS-4 plug into one of the „RS"-sockets.

The remote ON/OFF switch can be attached to the pan handle of a fluid head with the sping clamp

External Synchronization Unit ESU-1

The external synchronization unit ESU-1 can be used on the ARRIFLEX 535B as well as on the ARRIFLEX 535 and the 16SR 3. The ESU-1 allows synchronization of the camera with other equipment such as TV monitors. By means of a BNC-socket it is possible to synchronize on an external standard video signal (50/60 Hz) or through an inductive pickup on a computer or video monitor. Other sources can be synchronized via the MCL-input The frame rate is indicated on the camera display in mode 2. A phase shifter and a pilot tone generator have been integrated into the external synchronization unit. The synchronization is also stored when the camera is switched off.

On the camera display the indication „ESU" appears in the upper line.

See TECHN. INFORMATION „External Synchronization Unit ESU-1"

Spring clamp

Camera Control Unit CCU-1

The camera control unit CCU-1 enables control of the following functions:

• Switching the camera on or off.

• Choosing the frame rate.

• Checking all set operational parameters.

• Entry of programmed frame rate changes.

• Display and operation of the film counter.

• Setting of warning signals.

• Displaying and setting of TC-time (time code) and TC-user bits.

• Displaying of the set TC-sensitivity.

Setting TC-time and TC-user bits can only be carried out via the camera control unit or through external synchronization. The camera control unit is supplied with power by the camera. If the camera is not plugged in, the camera control unit will be fed by the internal batteries. As the battery the life of the camera control

unit is limited to approx. 5 hours, the display illumination switches off approx. 10 seconds after the last operation when it is being run on batteries, and the camera control unit itself switches off after approx. 5 min.
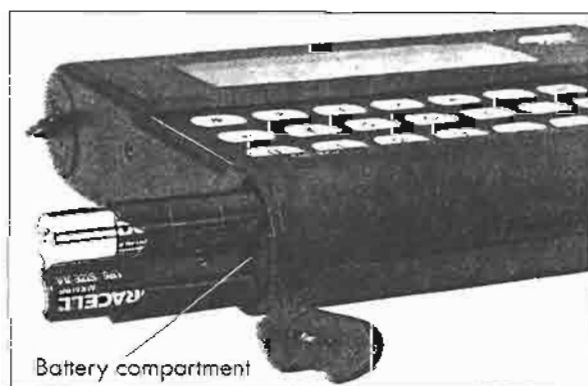

Replacing the Batteries

• Open the battery compartment   with a coin.

• Pull out the battery pack.

• Use batteries as designated on the battery pack.

• Insert the battery pack into the camera control unit and close the battery compartment.

⚠ Pay attention to the correct polarity of the battery pack!

Plugging in the Camera Control Unit

• Plug the cable KC 24 (2,4m) or KC 30 (20m) into the socket   on the side of the camera control unit, pressing the slide on the plug in the direction of the plug.

• Plug the cable into the CCU-socket on the camera.

• Switch on the camera.

• Switch on the camera control unit with the red key on the side.

Battery compartment

Key

Socket

Key Functions in all Menus

Key	Function
RUN	switches the camera on or off.
SEND	sends the chosen values to the camera.
HELP	shows the help text for the activated menu. Cannot be used in the input mode. The help text can be left by depressing the ENTER-key.
EXIT	ends input or leaves the activated menu.
	switches display illumination on or off.

Error Readings

In the case of functional errors on the camera, the display on the camera control unit will show an error reading in the upper right-hand corner.

In the case of operational errors, an error reading will appear and then disappear the next time a key is depressed. Simultaneously an acoustic signal will be heard. This can however be turned off.

The Main Menu

When the camera control unit is switched on the main menu appears on the display. It enables access to the sub-menus and shows the speed currently set on the camera. It also shows whether the camera is switched off (OFFLINE), in Standby (STANDBY) or is running (RUN).

• Select the desired menu using keys 1, 3, 5, 6, 7 or 8. The displayed menus SHUTTER (2) and FORMAT (4) have no function on the ARRIFLEX 535B

The SPEED Menu

With the SPEED menu any desired frame rate within the range of 3 to 60 fps in increments of 0.001 fps can be set exactly. The frame rate can be altered in Standby as well as while the camera is running. In both upper lines of the CCU the frame rates currently set on the camera control unit and on the camera are displayed.

• Switch the sliding switch on the camera to PS/CCU.

• Using keys 1 to 5 select one of the listed standard speeds - the chosen frame rate is displayed in the uppermost line.

• Transfer the chosen value to the camera with the SEND-key.

Alternatively any desired frame rate within the acceptable range can be selected:

• Switch the sliding switch on the camera to PS/CCU.

• Depress key 8 (VAR) in the SPEED menu.

• Enter the desired frame rate.

• If not all positions after the decimal point were entered, finish the input with the ENTER-key - the selected frame rate is displayed in the uppermost line on the CCU.

• Transfer the chosen value to the camera with the SEND-key.

All selected frame rates within the acceptable range of 3 to 60 fps can be increased or decreased in increments of 0.001 fps in order to carry out a fine-tuning of the speed.

• Switch the sliding switch on the camera to PS/CCU.

• Pre-select the frame rate.

• Depress key 9 in the SPEED menu.

• Switch the camera to mode 2.

• To carry out fine-tuning: increase speed with key F1, decrease speed with key F2.

• Leave fine-tuning with the EXIT-key

The REMOTE Menu

In the REMOTE menu the camera control unit displays the same information as the camera. The keys F1 to F3 take on the meaning of the operating elements on the camera:

F1 PHASE key

F2 MODE key

F3 SET key (RESET on the CCU)

In the lower line on the CCU display the key functions are displayed.

Operating the camera in the REMOTE menu is carried out parallel to setting with the corresponding keys on the camera.

The TIME CODE Menu

In the TIME CODE menu the most recently set values on the camera control unit for time code, as well as all user bits, are displayed and can be reset.

Changing Time Code Time:

- Depress key 1 - „TIMECODE" is displayed against a dark background.

- Depress the ENTER-key - the camera control unit is ready for input of the new TC-time.

- Enter all 6 positions within the acceptable range of 00:00:00 to 23:59:59 - the new TC-time is displayed. Input is ended automatically after the sixth digit. If input is interrupted by depressing the ENTER-key, all unfilled positions will be filled with zeros.

- Transfer the new TC-time to the camera with the SEND-key.

Changing Time Code User Bits:

- Depress key 2 - „USERBITS" is displayed against a dark background.

- Depress the ENTER-key - the camera control unit is ready for input of the new user bits.

- Enter all 8 user bits with figures 0-9 or letters A-F - the new user bits will be displayed. Input is ended automatically after the eigth figure. If input is interrupted by depressing the ENTER-key, all unfilled positions will be filled with zeros

- Transfer the new user bits to the camera with the SEND-key.

The OPTIONS Menu

The OPTIONS menu allows access to the sub-menus ASYNC-MODE, LENGTH UNIT, END WARNING and COUNTER DISPLAY MODE.

- With the keys 1 to 4 select the desired mode

ASYNC-MODE

Enables switching the asynchronous warning signal on and off. There are four possibilities available:

	Warning tone on starting the camera	Warnting tone on stopping the camera
1	off	on
2	on	off
3	on	on
4	off	off

- Select the desired setting with the corresponding key.

- Transfer the chosen setting to the camera with the SEND-key.

LENGTH-UNIT

Enables switching the film counter from meters to feet and back again.

- Select meters with key 1 or feet with key 2 - the selected unit of measurement is displayed against a dark background.

- Transfer the chosen setting to the camera with the SEND-key.

END WARNING

Enables setting the amount of film remaining when the camera displays a warning of nearing film end.

- Depress the ENTER-key.

- Enter the desired remaining film amount (0-99 in meters or feet, depending on the unit of measurement chosen on the camera).

Note: The set value is automatically taken on by the camera after the second figure has been entered.

COUNTER DISPLAY MODE

Enables changing the configuration on the film counter. There are three possible combinations:

	Camera-Display Mode 1	Camera-Display Mode 3
1	total exposed film counter	take counter
2	take counter	total exposed film counter
3	total exposed film counter	remaining film counter

• Select the desired combination with the corresponding key.

• Transfer the chosen setting to the camera with the SEND-key.

The PROGRAM Menu

Enables setting and storing of programs for the alteration of the frame rate.

Note: It is not possible to program adjustments to the mirror shutter on the ARRIFLEX 535B. Possibly entered shutter angles will not be transferred.

To program:

• Set the sliding switch on the camera to PS/CCU

• Activate one of the available storage areas with keys 1 - 6.

• The FETCH-key places the program which has been stored in the camera into the chosen storage area.

• The DELETE-key deletes the chosen storage area.

• The EDIT-key allows entering new values with the keys.

Note: Alterations to the frame rate are defined by a starting speed, a finishing speed and an adjustment time.

• Transfer the program from the activated storage area to the camera with the SEND-key. If a program is already stored on the camera, this will be replaced.

Running programs:

• Set the sliding switch on the camera to PS/CCU.

• Activate the program mode with the PROG-key on the right side of the camera (the indication „Pr" appears in the display).

• Start the camera. The camera runs at the starting speed.

• Depress the PROG-key. The camera changes its frame rate in the given time to the finishing speed.

- By again depressing the PROG-key the frame rate will return to the starting value in the same amount of time.

Note: The program itself is stored in the camera and can therefore be activated even if the CCU is not plugged in.

The INFO Menu

The INFO menu allows access to the menu functions STATUS and COUNTER, as well as switching on and off the acoustic signal on the camera control unit.

• Select the desired menu function with keys 1-2.

• Switch on or off the acoustic signal with key 4

STATUS

Displays the values currently set on the camera.

COUNTER

Displays the current counter status of the total exposed film and take counters as well as the power supply voltage to the camera

SOUND CCU ON/OFF

Switch the acoustic signal on or off with key 4 When first switched on, a control signal sounds.

10. Time Code

In modern post-production time code (TC) is finding increased application. The precise correlation of the film, sound and video recordings has been made possible through the use of equipment with time code capability.

The ARRIFLEX 535B is equipped for recording time code onto film. To do this, simply fit the TC-recording module in place of the film recognition module.

Time code is optically exposed onto the film in compliance with SMPTE regulations RP 135 and RP 136, Format Type C.

Time Code Frame Rates

Recording time code is only possible at the following forwards frame rates:

Frame rate	TC-Display
24,000 fps	24
25,000 fps	25
29,970 fps	29
30,000 fps	30
23,976 fps	23

At speeds 29,970 fps and 23,976 fps the time code is counted to comply with NTSC video in the „Nondrop-Frame" mode. The time in the „Nondrop-Frame" mode runs of exactly 0,1% slower than real time.

Mounting the Time Code Module

• Switch off the main camera switch.

• Pull out the film recognition module

• Push in the time code module   A ball catch locks the module in the correct position. No further adjustment is necessary.

After switching on the camera the time code frame rate and time code itself must be set. The film sensitivity (TCS-value) must be set on the magazine.

Film recognition module

Time code module

Setting Film Sensitivity (the TCS-Value)

In order to attain optimal readability of the recorded time code, the intensity of the recording LED must be adapted to the film stock being used. The sensitivity of the various film types is listed in the following table.

Table: TCS-Values

The corresponding TCS-value is set on the magazine. If the magazine is already attached to the camera, the camera must be in Standby.

* On the magazine, depress the MODE-key once to choose mode 2. The magazine display shows the indication „TCS".

* Hold one of the SET-keys depressed until the desired TCS-value appears on the magazine display   . In this mode all SET-keys have the same function

* If within 5 seconds no input is made, the magazine display will jump back to mode 1 and display the remaining amount of film again.

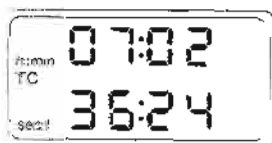| Manufacturer	Type	Film	TCS
Agfa	XT 100	CN	6
	XTR 250	CN	5
	XTS 400	CN	5
	PAN 250	B/W	7
Fuji	8510	CN	7
	8520	CN	5
	8530	CN	6
	8550	CN	4
	8560	CN	6
	8570	CN	6
Eastman Kodak	5245	CN	7
	5247	CN	6
	5293	CN	6
	5294	CN	5
	5296	CN	5
	5297	CN	5
	5298	CN	5
	5239	CR	6
	5240	CR	5
	5222	B/W	8
	5231	B/W	8
	5248	B/W	7

Setting the Film Loop

It is absolutely essential that the upper film loop be located within the marking   to ensure proper recording of time code.

* To check the film after setting the length of the film loop, advance the film at least one frame. Reset the knurled knob   to the „LOADING POSITION" and check the length of the film loop again.

Switching on and off the Time Code Recording

Switching the time code recording on and off is carried out on the camera.

* Change to mode 4 by depressing the MODE-key three times.

* Hold the SET-key depressed for 3 seconds. The TC-symbol goes out/appears.

Time Code Input

Setting Time Code Time and User Bits

The time code generator (TCG) which is built in to the camera can be set via the CCU-1 or a master clock. In the following section the setting of time and user bits via the camera control unit CCU-1 is described.

• Plug the CCU-1 into the camera socket marked „CCU".

Setting Time Code Time with the CCU-1

• Change to the TIMECODE menu by pressing key „5".

• Press key „1".

• Depress the ENTER-key and then enter the new value via the numbered keys. It is not possible to enter a value higher than 23:59:59 (h:min:sec). Input is ended automatically after the sixth figure. If the input is interrupted by depressing the ENTER-key, all unfilled positions will be filled with zeros.

• Depress the SEND-key to transfer the chosen to the camera.

• Return to the main menu by depressing the EXIT-key.

Entering Time Code User Bits with the CCU-1

Normally the current date and the camera number are given as user bits. It is also possible to enter letters (A to F) and digits (0 to 9) as desired.

• Change to the TIMECODE menu by depressing key „5".

• Depress key „2".

• Depress the ENTER-key, then enter the new value from A - F and from 0 - 9 with the keys. Input is ended automatically after the eighth entry. If the input is interrupted by depressing the ENTER-key, all unfilled positions will be filled with zeros

• Depress the SEND-key to transfer the chosen values to the camera.

• Return to the main menu by depressing the EXIT-key.

External Synchronization

The ARRIFLEX 535B can be synchronized onto other equipment which is compatible to time code. For this it is necessary to plug an LTC-signal (longitudinal time code) into the socket marked „MCL", such as signals from a time code master clock, a time code recorder, another camera or a time code studio supply.

For this a suitably configured cable is necessary (available through an ARRI service workshop) and an LTC-signal level of > 500 mVpp.

If the time code cable with the LTC-signal is plugged into the"MCL"-socket or the „CCU"-socket, time code time and the user bits will automatically be taken on by the camera if the signal is correct. However, only one LTC-input can be used at a time, i.e. either the „CCU"-socket or the „MCL"-socket.

Synchronization can be checked in mode 4 on the camera display: when the LTC-signal is plugged in, a blinking „EC" (external code) will display in the last two display positions instead of the time code frame rate. If the information has been correctly transferred, the indication „CC" (code correct) will appear at the same position for 10 seconds.

Note: In cases of external synchronization (via MCL), both pieces of equipment to be synchronized should be running at the same speed.

Time Code Output

Time code information is always available as 80 bit LTC on the CCU-socket and in Standby also on the „MCL"-socket. Both outputs are 5 V asymmetrical.

Via the LTC-output other TC-compatible equipment can be synchronized on the camera's time code or constantly supplied with time code by the camera. The camera then takes on the function of the master clock. The camera's inbuilt time code generator is accurate to +/- 1 frame in 8 hours.

Time Code and the External Synchronization Unit ESU-1

In time code operation it is also possible to operate the ARRIFLEX 535B with the ESU-1 synchronously to other pieces of equipment (e.g. a television monitor). Before plugging in the ESU-1, it is necessary to set the camera - and the integrated time code generator - to the expected ESU frame rate. A variation from the time code frame rate of maximum +/- 1% is acceptable. If the ESU frame rate varies too much from that of the time code, the time code recording will switch off (the TC-symbol on the camera display goes off). Only once the acceptable speed range has been reached will time code be recorded again.

Note: In cases of simultaneous time code and ESU operation, the counting of the frames and of time code run separately from each other if the source of synchronization does not run with an exact time code rate. This causes a jump in the time code count.

Time Code Buffer Battery

The internal time code clock on the camera continues running if the camera is switched off (or if the power supply is removed) as long as a time code buffer battery has been inserted into the camera. Eight hours after time code was last set the clock switches off

Replacing the Buffer Battery

The buffer battery is a standard 9V battery pack and in normal operation lasts for at least a week. By depressing the SEL-key in mode 6 (depress the MODE-key five times) the battery voltage is displayed.

The buffer battery is located in a compartment on the underside of the electronic cover.

- Open the catch. The lid is opened by a spring.

- Replace the battery, paying attention to the correct polarity.

- Refasten the lid.

Overview of the Display Indications in Time Code Operation

Display	Meaning
No time code symbol (TC)	time code is not running
Time code symbol	time code is set and will record when the camera is running
Time code symbol blinks in Standby	time code was last set/external synchronization was last carried out over 8 hours. Note: For test purposes time code can still be recorded
Time code symbol blinks while the camera is running	time code will not be recorded on the film as there is a problem

11.Maintenance

For maintenance and cleaning of the camera and accessories, pay careful attention to the following notes and suggestions:

- Clean the camera and accessories only on a clean and flat surface which is covered with foam material or a clean, non-fraying cloth.

- Under no circumstances use acetone or nitro-thinner. These chemicals dissolve the paint and are aggressive to highly-polished surfaces

- For cleaning it is recommended to use soft, non-fraying cloths and cotton swabs. Also suitable are special cleaning tissues and small sponges as used in cleaning computers and video equipment.

- When cleaning the mirror shutter and the film movement do not exert too much pressure. Use only the prescribed special tools. Use only screwdrivers of the correct size.

- From time to time - at the latest however after the occurrence of a film jam - it is recommended to clean the entire interior of the camera and also the magazine throat and the film guide rockers, the film movement and the film gate with a brush. In most cases it is sufficient to remove dust and film scraps from the camera and the magazine interiors by vacuum. A small battery-powered vacuum cleaner, as used in cleaning computers, is suitable for this task.

Camera

Cleaning the Film Gate

To avoid a build up of fluff in the image area the format mask on the ARRIFLEX 535B is set back from the film track.

Loose dust leads to a layer of emulsion forming on the film gate. This can cause scratches on the film and can also lead to a change in the film's coefficient of friction. To clean the film gate remove it.

⚠️ Keep fingers out of the film gate opening in order to prevent damaging of the mirror shutter

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To remove the film gate

- Turn the knurled knob   until its marking matches that on the movement block.

- Push the lock lever   towards the „UNLOCK" position and swing the movement block away from the film track.

- Now turn the knurled knob so that its marking is aligned with the upper point   . The movement claws are now be pulled back as far as possible to avoid damage.

- Press the lever   towards the „LOOSE" position and flip out the film gate   . Now pull the film gate upwards out of its holder.
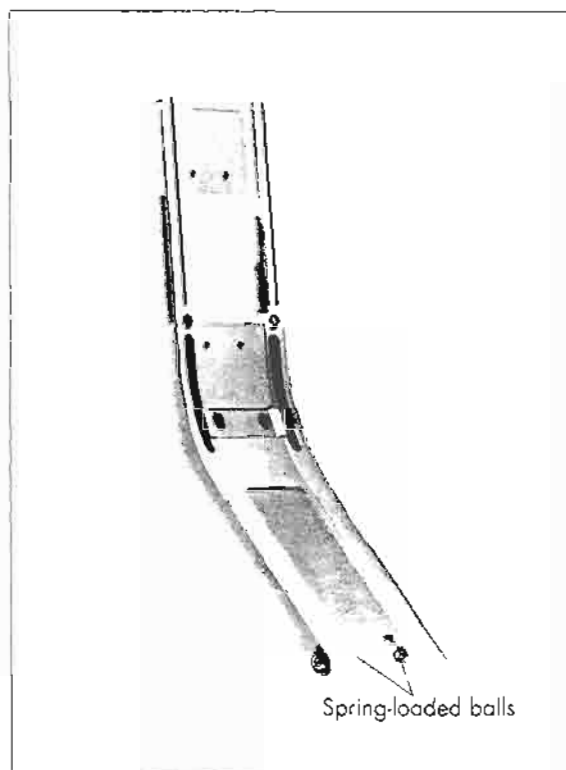
To clean the film gate

• Remove the layer of emulsion from the film gate with a PVC-rod (e.g. an ARRI film gate cleaner). Under no circumstances use hard or metal objects.

• Pay particular attention to the area between the movement and the film gate when cleaning if film stock is used which causes a strong build-up of emulsion.

Inserting the film gate

• When replacing the film gate ensure that the spring-loaded balls   at the bottom of the film gate lock exactly into position in the camera housing.

⚠ It is absolutely necessary to ensure that the connecting areas are free of dust and foreign bodies (e.g. film scraps) in order to guarantee the precision of the film channel.

Spring-loaded balls

Cleaning the Field Lens

⚠ Detach the camera from the power supply! Take the lens or the lens cavity cap out of the lens mount receptacle.

• Remove the ground glass (see chapter „Camera Body").

• Push the safety plate   upwards with your finger or a screwdriver

• Holding the field lens   by its catch   using the special forceps, pull it off the holder

• Clean the field lens with a dry, non-fraying cloth

• Make sure that the frame is completely clean.

• Push the field lens with the special forceps as far as it will go into the holder. A ball catch fixes the field lens in the correct position.

• Push the safety plate   down again, then replace the ground glass as previously described.

Magazine

Cleaning the Turnover Loop

• Remove the magazine cover on the take-up side.

• Depress the locking knob   and pull the turnover loop completely off its holder.

• Clean the turnover loop only with a brush or compressed air.

• Push the turnover loop back carefully back into its holder as far as it will go, ensuring that the interlocking tappet runs in the center of the guiding groove and then locks audibly

• Applying slight pressure, check that the turnover loop fits exactly into the locking device.

Locking knob

Appendix

Troubleshooting

Problem	Cause	Remedy
Scratches on the emulsion side of the negative.		
In the picture area, over several frames.	Dirty or damaged lateral guides on the film gate.	Clean or, if defective, replace the film gate or format mask.
In the picture area, short and periodically recurring.	Upper or lower film loop too long, film touches inside of camera housing.	Follow the upper and lower film loop markings
Outside the picture area.	Dirty or damaged longitudinal guides on the film gate, film guide rockers or guides in the magazine throat.	Carefully clean film gate, film guide rockers and magazine throat; if defective, replace.
Scratches on the glossy side of the negative.		
In the picture area.	Dirty or damaged film track or spacer gate.	Clean film track and spacer gate; if defective, replace.

Problem	Cause	Remedy
Outside the picture area.	Dirty or damaged longitudinal guides on the film track or on the guides in the magazine throat.	Carefully clean longitudinal guides and magazine throat.
Scratching in general.	Strong tendency of raw film stock to emulsion deposits; dust deposits on raw stock from perforation process; extreme temperatures; scratched raw stock.	Complain to the manufacturer; use different film stock.
Unsteady Image.		
Vertical.	Heavy emulsion deposit in the film gate area; damaged film perforation; very poor gliding ability of the raw film stock; film stock with positive perforation; raw stock not standard size.	Clean film gate area; use different film stock.
Horizontal.	Heavy emulsion deposit in the film gate area; film edge cut undulated.	Clean film gate area, use different film stock.
Pressure exposures around perforation holes.	Mechanical stress on the perforation holes.	Pressure exposures do not effect the image steadiness.

Problem	Cause	Remedy
Image Problems Soft image.	The flange focal distance is out of alignment; lens is incorrectly adjusted; poor quality or defective lens; the film gate is not properly locked in position.	When removing and cleaning the film gate, ensure that the contact surfaces are absolutely clean; check the lens and the flange focal distance
Problems in extremely low temperatures. Damage to the film.	Greatly reduced tensile strength and increased brittleness of raw stock. Especially in temperatures under -15°C also a change in the film's gliding properties.	The camera, battery and particularly the film must be protected from extreme cold. When a cold camera is brought into a warm and humid room, condensation builds up; this can be prevented by interim storage of the equipment at approx. 0°.

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Problem	Cause	Remedy
The camera does not reach the selected frame rate.	The battery is low.	Check the battery charge, following the directions in the instruction manual. Check that the camera movement turns easily by turning the knurled knob on the movement by hand; if difficult to turn, let the camera run for a few minutes without film.
Problems in extremely high temperatures. Increased emulsion build-up.	The mechanical properties of the film undergo a considerable alteration in temperatures of over 30°. The film becomes soft and easily deformed. The film's coefficient of friction changes and the film builds up more emulsion.	Protect the camera and the film from extreme heat, e.g. by shading or white covering etc.

Technical Data

Film width
35mm (DIN 15501)

Magazines
120m/300m coaxial magazines with individual drive motors.

Lens mount
54mm PL-mount, positive locking
Adjustable for Super 35mm

Flange focal distance
51,98-0,01mm

Reflex Shutter
Can be adjusted mechanically from 11° - 180° continuously
Locks in positions at intervals of 15° as well as at 144° and 172,8°.

Movement
7-link movement with dual transport claws and registration pins for 35mm negative film (DIN 15501)

Speed range
3-60 fps forwards and reverse, can be selected digitally

Noise level
< 20 dB (A)

Viewfinder
Adjustable in two axes, automatic image compensation and additional manual image compensation, illuminated-frame finder with continuously adjustable brightness

Ground glasses
Interchangeable for various filming formats

Acceptable Temperature Range
-20°C to +50°C

Power supply
24 V DC
acceptable voltage range: 20...32 V DC

Function monitoring
Power supply
Synchronous running
Time code recording
Display of time code information

Time code
Inbuilt time code generator for 80 bit time code compliant with SMPTE RP136, format type C.
Time code quartz accuracy: +/- 1 frame in 8 hours at 0° to 50°C

Dimensions

Length	with 120m magazine without lens:	approx. 495mm
Width	with finder on the left:	approx. 300mm
	with finder on the right:	approx. 335mm
Height	with grip:	approx. 280mm
	without grip:	approx. 230mm

Weight

With 120m magazine, without film, without lens:	14,1 kg
Camera body:	7,7 kg
Viewfinder system:	2,3 kg
Magazine 120m:	4,1 kg

Order Numbers

ARRIFLEX 535B K1.43417.0

Installation

ARRIHEAD K2.34350.0
ARRIHEAD C K2.43670.0
Fluid-head Studio 80 II M K2.45348.0
Fluid-head ARRI 150 H K2.50491.0
Bridge plate BP-5 ....K2.42537.0
Lens support LS-7 ....K2.42538.0
Shoulder set S-1 ....K2.42535.0

Power Supply

Main fuse 05.07959.0
Battery NC 24/7 R K2.41950.0
Battery cable KC-20 ....K2.31993.0
Spiral cable KC-29 ....K2.44693.0
Charger NCL 24 R K2.42010.0
Mains unit NG 12/24 R K2.44481.A

Magazines

120 m / 400 ft magazine K2.42528.0
300 m / 1000 ft magazine K2.42529.0

Optical Accessories

Follow focus device FF-3 ....K0.59973.0
3" x 3" light-weight matte box LMB-2 ....K0.59954.0
4" x 4" light-weight matte box LMB-3 ....K2 44471.0
4" x 4" production matte box MB-16 .....K2.44472.0
5" x 6" production matte box MB-15 ....K2.44473.0
6" x 6" production matte box MB-14 ....K0.59971.0
Heated eyecup HE-3 ....K2.42202.0
Connector cable KC 27 ....K4.44549.0

Accessories

Camera control unit CCU-1 ....K2.42320.0
External synchronization unit ESU-1 ....K2.46006.0
Remote ON/OFF switch RS-4 ....K2.44478.0
Remote control unit RU-1 ....K2.42543.0
Work light WL-3 ....K2.42534.0

Video

Video set K2.43551.0
1/2" color video camera CCD-2-FR, PAL..K2.45865.0
1/2" color video camera CCD-2-FR,
NTSC K2.45866.0
Anti-flicker processor AFP-2, PAL..............K2.43194.0
Anti-flicker processor AFP-2, NTSC K2.43195.0

Time Code

SMPTE time code module K2.44274.0
Time code input cable Nagra-535B,
KCT 2 ....K2.47024.0
Time code input cable Fostex-535B,
KCT 4 ....K2.47026.0
Time code output cable Nagra-535B,
KCT 11 ....K2.47138.0
Time code output cable Fostex-535B,
KCT 13 ....K2.47139.0

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Contents

400 ft Light Weight Magazine LM-1

The light weight magazine LM-1 was specially conceived for using the ARRIFLEX 535B with Steadicam. The vertically standing displacement design has the effect of preventing the centre of gravity from shifting horizontally during filming. For minimal weight, materials such as magnesium and carbon fibre laminate were used. Due to noise isolating elements the operational noise level of the light-weight magazine is comparable with that of the coaxial magazine.
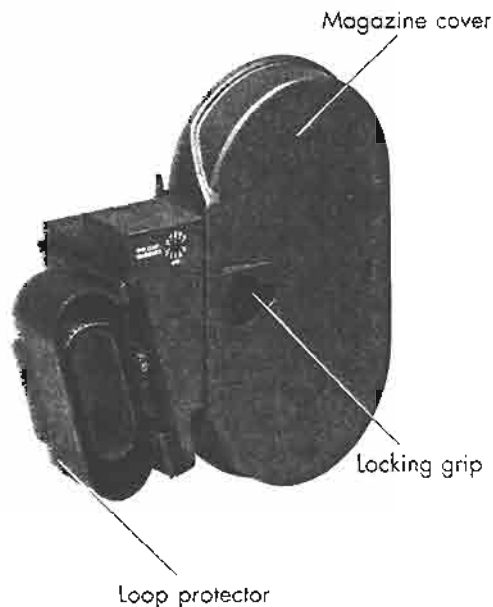
Loading film

Loading film should be practised in daylight with a piece of test film until all movements can also be carried out confidently in a darkroom or a changing bag.

The film head should be cut off straight. The ARRI film cutting gauge simplifies cutting the head of the film in the dark.

- Release the loop protector   by pulling the release lever, and remove from the magazine.
- Place the magazine on an even surface with the magazine cover   facing upwards.
- Flip up the flag-hinged locking grip   and turn it anti-clockwise to unlock the magazine cover   .
- Flip up the magazine cover   .

Magazine cover

Locking grip

Loop protector

- Flip up the hinged clip on the feed shaft   .
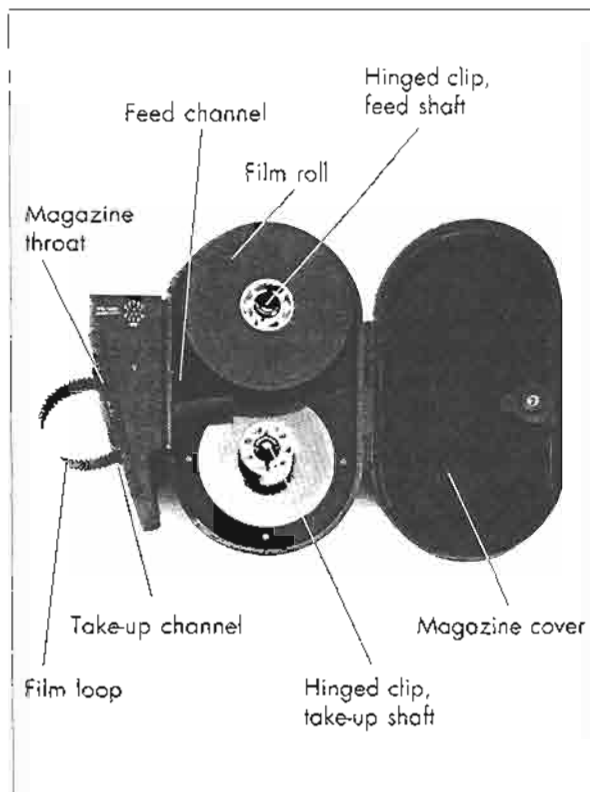- Place the film roll   on the feed shaft; the film feeds clockwise.

⚠️ Only press the film roll downwards at its core as otherwise the film roll may become conical and rub during operation!

- Flip down the hinged clip on the feed shaft   .
- Feed the head of the film into the feed channel   and push through until it emerges out of the magazine throat   .
- Form a loop with the emulsion side facing outwards and feed the head of the film into the take-up channel   in the magazine throat   .

Note: The length of the film loop is at this stage unimportant. It is adjusted after the magazine has been attached to the camera.
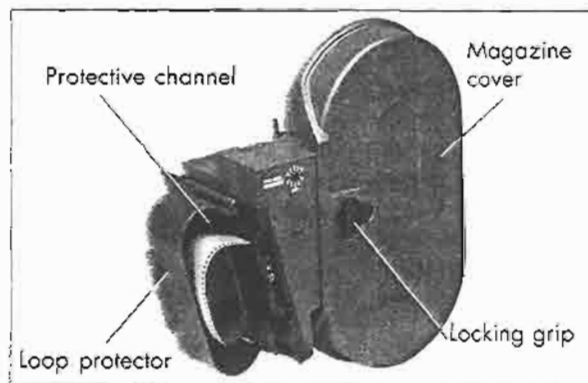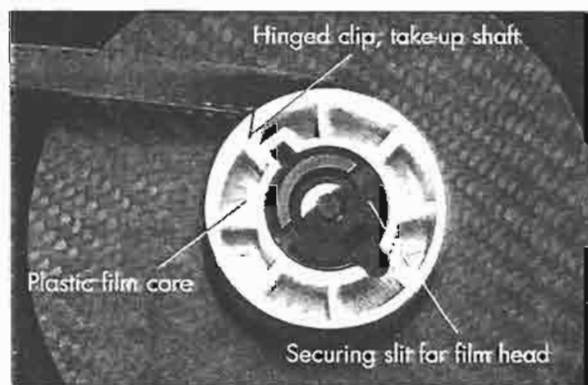
- Push the film through the take-up channel   until it emerges in the interior of the magazine.

Feed channel
Hinged clip, feed shaft
Film roll
Magazine throat
Take-up channel
Magazine cover
Film loop
Hinged clip, take-up shaft

- Flip up the hinged clip on the take-up shaft and attach a plastic film core   , ensuring that the securing slit for the film head   points in the direction of operation. The film is wound clockwise.
- Flip the hinged clip on the take-up shaft back down.
- Bend the head of the film, hang it in the securing slit,   and wind it tightly a few turns, ensuring that the film is wound at right angles to and aligned with the film core in order to avoid dragging the film on the winder-plate.
- Close the magazine cover   and lock by turning the locking grip   clockwise. Flip down the locking grip to prevent the lock from being unintentionally released.
- Outside the darkroom or changing bag push on the loop protector   again. The film loop is then positioned in the protective channel   . If necessary, alter the length of the film loop accordingly.

Note: The loop protector can also be used as a carry handle for the magazine.

Note: For reverse operation the film roll can also be placed on the take-up shaft. The film is then threaded in the reverse order.

Hinged clip, take-up shaft
Plastic film core
Securing slit for film head

Protective channel
Magazine cover
Loop protector
Locking grip
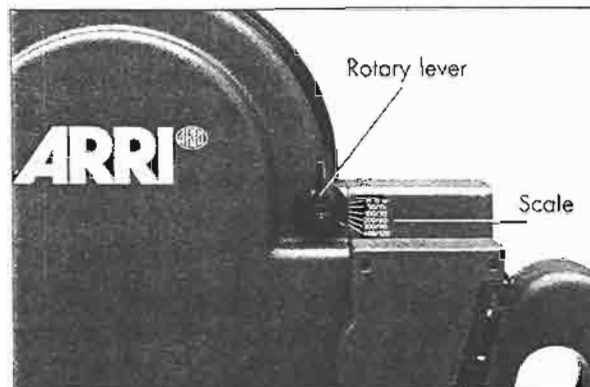
Film Stock Indicator

The LM-1 magazine has a mechanical film stock indicator. Via a pivoted feeler the length of the feed roll can be determined in meters or feet.

- Swing the rotary lever   anti-clockwise until resistance can be felt. The remaining amount of film can now be read off the scale   in meters and feet.

- Upon release the lever returns automatically to its initial position and pulls the feeler off the film roll.

⚠   Never use the lever while the camera is running!

Note: The magazine's electronics measure the number of revolutions of the feed roll during operation and calculate the remaining amount of film. This value is transferred to the camera and is displayed in mode 3 on the camera display, thereby ensuring that the film end warning also functions on the camera.
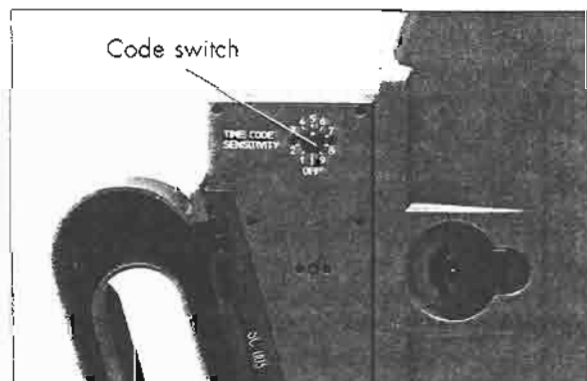

Rotary lever

Scale

Setting Film Sensitivity for Time Code

When recording time code the intensity of the recording LED must be adapted to the film stock used. According to the film stock, a sensitivity value (time code sensitivity) is set on the magazine. The values for the various film stocks can be found in the table on page 76 of the ARRIFLEX 535B instruction manual.

The values are set via a rotary code switch   on the left side of the magazine.

- Turn the code switch   with a coin until the indicator points to the correct value. The value is automatically transferred to the camera when the magazine is attached.

Note: In the „off" position time code will not be recorded by the camera, regardless of whether the time code module is attached or not.
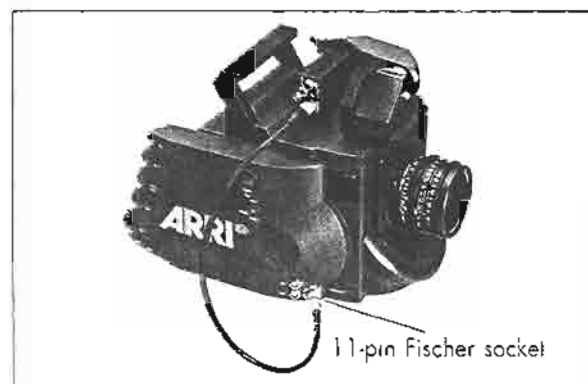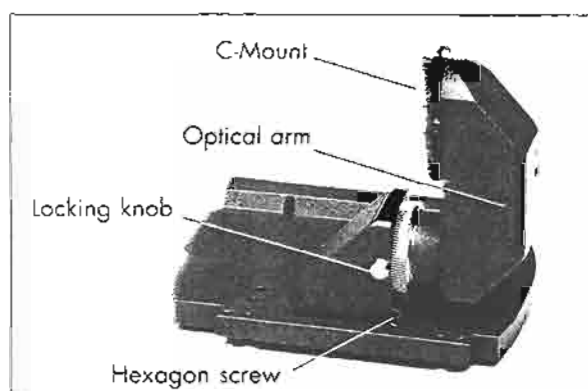

Code switch

Attaching the CCD Camera

To improve access to the C-mount, the optical arm
of the VT-1 can be swung upwards.

* To do this, press the locking knob   on the front
side of the VT-1 and swing the arm into the desired
position. A second locking notch is located opposite
the operating position.

* Screw on the CCD camera and lock the arm into the
operating position. The friction of the rotary flange
can be adjusted with the hexagon screw
under the flange.

Power Supply for the CCD Camera

The ARRIFLEX 535B offers a 12 V power supply via the
11-pin Fischer socket on the front right side of the
camera

C-Mount
Optical arm
Locking knob
Hexagon screw

11-pin Fischer socket

Adjusting the Video Image

Image Orientation

The CCD camera   is turned until the upper side
faces backwards.

* Loosen the knurled ring   on the VT-1 mount to
turn the CCD camera.

* Screw the ring tight after adjusting.

X-Y Adjustment

* Loosen the knurled ring   on the VT-1 mount
and adjust the horizontal and vertical positions of the
image with the adjustment screws on the ring marked
X and Y   .

* After adjustment screw the ring tight.

Iris

To optimally adapt the sensitivity range of the CCD
camera, the VT-1 possesses a mechanical iris. It can be
adjusted with the sunken wheel   on the side of
the optical arm.

Focus

Focusing of the VT-1 is adjusted to the C-mount
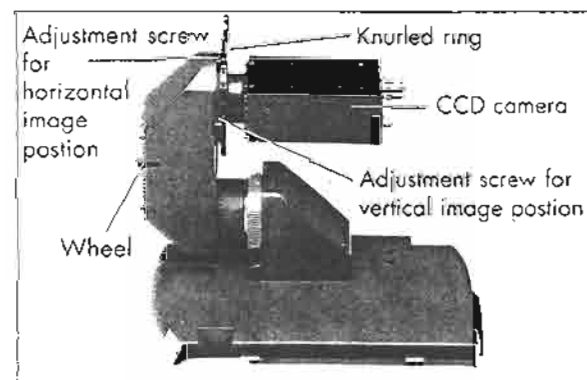dimensions during production.

Technical Data
Video Finder VT-1

100% video finder for ARRIFLEX 535B camera

Video mount:	C-mount
Image size:	1/2"
Dimensions:	Length 133 mm/5.2", Width 177 mm/7", Height 80 mm/3.1"
Weight:	650 g/1.4 lbs without video camera

Adjustment screw for horizontal image postion
Knurled ring
CCD camera
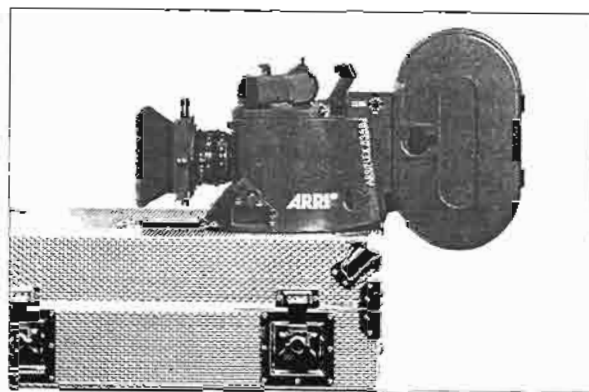Adjustment screw for vertical image postion
Wheel

Attaching the Magazine to the Camera/Removing the Magazine from the Camera

Attaching and removing the LM-1 magazine on the ARRIFLEX 535B is carried out in exactly the same way as for coaxial magazines (see ARRIFLEX 535B, instruction manual p. 30ff).

Note: In standby operation the film rolls are automatically tensioned when the magazine is attached to the camera.

Note: The magazine extends downwards to the same level as the upper plate on the camera bridge plate. If the camera is set down without the bridge plate but with a magazine attached, ensure that the magazine is not put under pressure
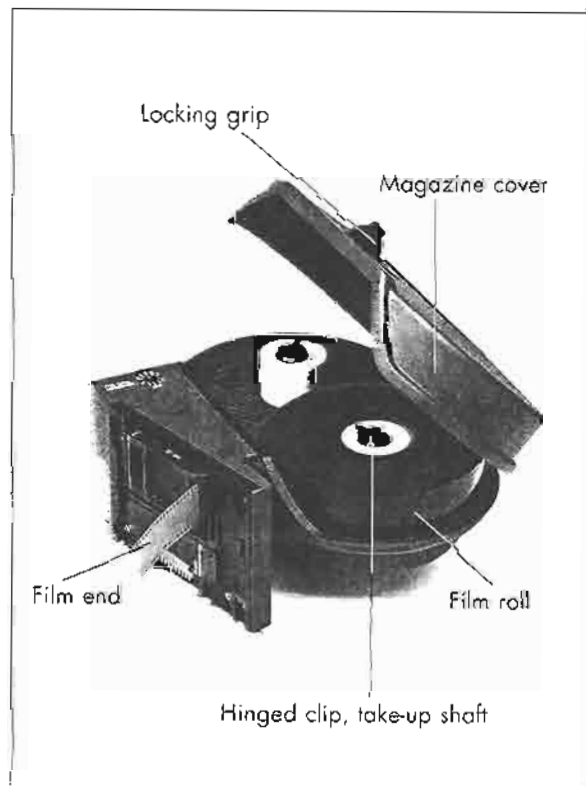

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Removing Exposed Film

⚠ Only remove exposed film from the magazine in a darkroom or a changing bag.

• Place the magazine on an even surface with the magazine cover   facing upwards.
• Flip up the flag-hinged locking grip   and turn anti-clockwise to unlock the magazine cover
• Flip up the magazine cover
• Carefully turn the film roll   clockwise until the end of the film   is pulled out into the interior of the magazine.
• Flip up the hinged clip on the take-up shaft
• Remove the film roll   by pulling upwards, holding the film roll from underneath as far as possible to prevent it from caving in in the middle.

⚠ The film roll should under no circumstances be pulled tight as this could cause scratches.

Locking grip

Magazine cover

Film end

Film roll

Hinged clip, take-up shaft

Maintenance

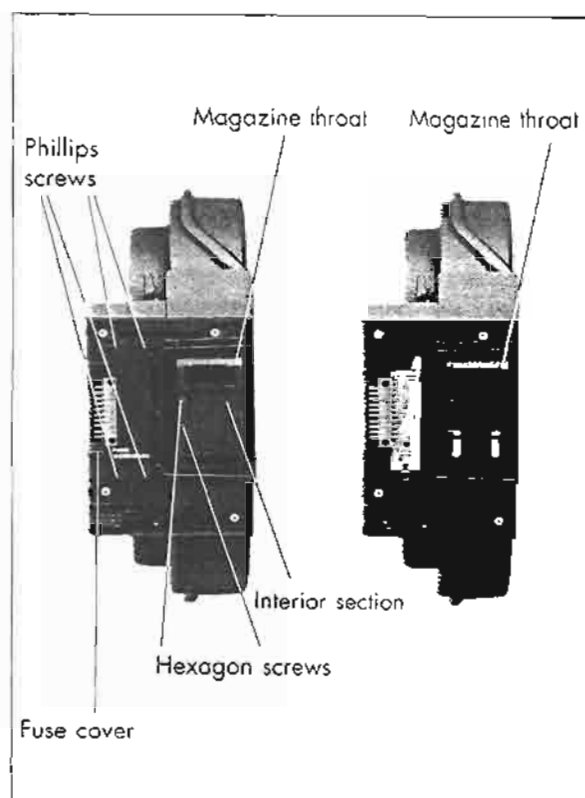### Cleaning the film guides

- Loosen the two hexagon screws   on the magazine throat   .
- Remove the interior section   by pulling it forwards.
- Carefully clean the film transport surfaces of the guide rollers and tracks with a brush.
- Replace the interior section in the inverse order.

Changing Fuses

A 3A Picofuse protects the camera and the magazine's electronics from damage.

The fuse and a replacement fuse are situated under the fuse cover   .

- Loosen the four Phillips screws   on the fuse cover   and remove the cover.
- Remove the defective fuse with the special forceps for changing the ground glass.
- Insert the replacement fuse.
- Screw on the fuse cover.

Phillips screws — Magazine throat — Magazine throat — Interior section — Hexagon screws — Fuse cover

Technical Data
400 ft Light Weight Magazine LM-1

Noise-reduced 400 ft displacement magazine

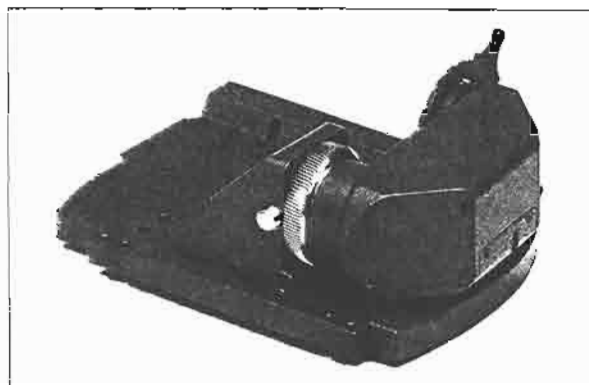|	
Drive:	2 motors with electronic film tension control
Speed range:	3-60 fps, forwards and reverse
Dimensions:	Length approx. 270mm/10.6"
	Width approx. 120mm/4.7"
	Height approx. 330mm/13"
Weight:	2.6kg/5.7 lbs

Video Finder VT-1

The VT-1 video finder is a 100% video tap module. For crane or Steadicam work the VT-1 video finder can be used instead of the standard finder system. The VT-1 has a C-mount for commercially available block-and-white 1/2" CCD video cameras.

Attaching the VT-1 to the Camera

Remove the finder system from the ARRIFLEX 535B.

- To do this press the safety catch   and pull the release lever   upwards. The finder system can now be tipped forwards.
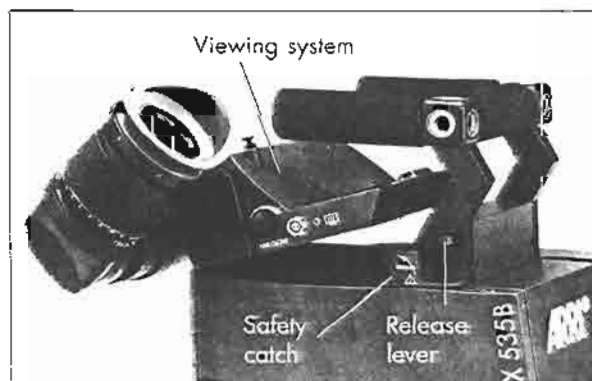- Release the lever and remove the finder system by pulling it upwards.

⚠ When operating the release lever, always hold the finder system securely.

- If the two side grips of the camera are attached, remove these.

It is recommended to attach the VT-1 from the front of the camera.

- The module should firstly be tilted slightly forwards and threaded onto the guide pins. The base plate of the VT-1 should be aligned with the front edge of the camera.
- Press the VT-1 into a horizontal position until it locks into place. Once it has locked into the correct position, the release lever falls back into its horizontal position.

Viewing system · Safety catch · Release lever
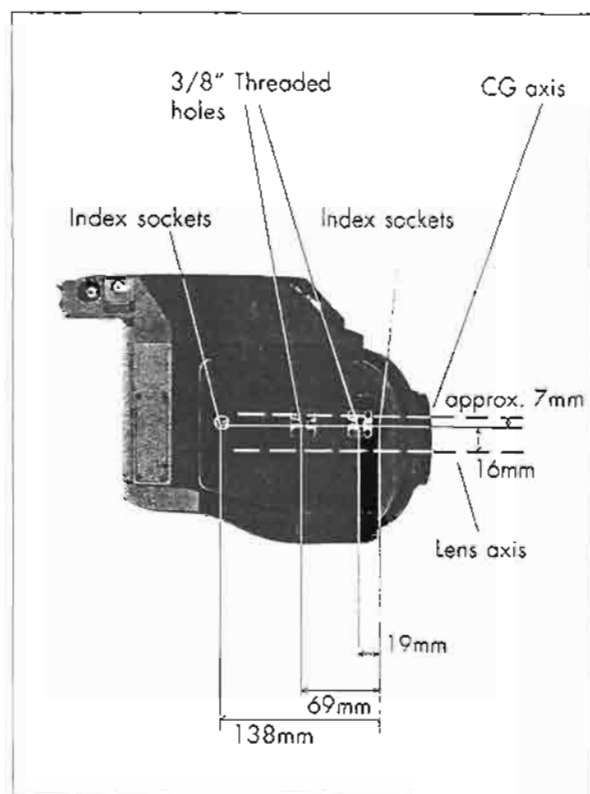

Release lever · Safety catch

Operating the ARRIFLEX 535B on Steadicam

For operating the ARRIFLEX 535B on Steadicam, the use of the 400 ft light weight magazine LM-1 and the video finder VT-1 with 1/2" b/w CCD camera is recommended. In addition, a special brace for suspended (low-mode) operation is available.

Mechanical Attachments

The camera base of the ARRIFLEX 535B is equipped with two 3/8" threaded holes and two index sockets for pins with diameter 7.5 mm   . The light weight bridge plate of the Steadicam can be directly attached to the camera base. An alignment pin to prevent twisting is recommended.
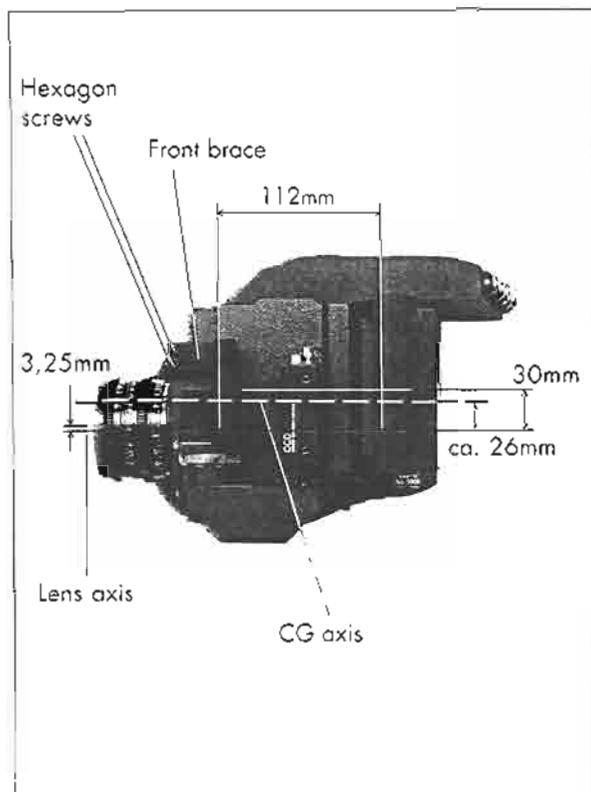
For suspended (low-mode) operation the special brace set K2.47194.0 should be used. It is mounted as follows:

- Attach the video finder VT-1 to the ARRIFLEX 535B.
- If attached, remove the magazine.
- Loosen the two hexagon screws   on the grip struts and remove the grip   by pulling backwards.
- Push in the rear brace   from behind and fasten it with the two hexagon screws   .

- Fasten the front brace   with two hexagon
  screws   on the video finder.
- Fasten the light weight bridge plate on the Steadicam
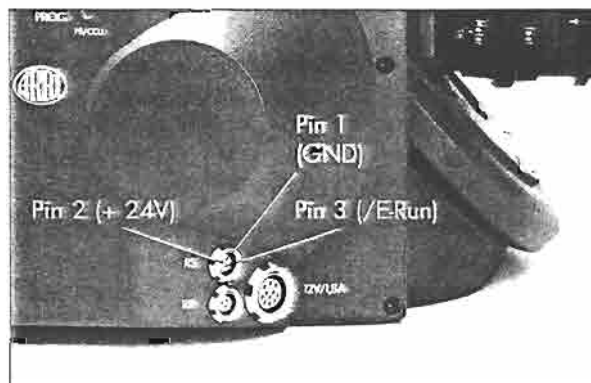 with the four screws (M4) to the braces   .

Note: To ensure unhindered change of sides (switches)
while in low mode, it is recommended to position the
gimbal of the Steadicam underneath the mount on the
Steadicam arm with an adapter (J-bracket).

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Power Supply

The ARRIFLEX 535B operates on a 24 V power supply.
Converters are available for the Steadicam to transform
the voltage of the on-board batteries. Power is supplied
via the BAT socket (2-pin Fischer).

Note: The ARRIFLEX 535B is equipped with a protective
circuit which automatically turns off the camera if the
voltage is less than 18 V. The increased power demand
when running up the camera can in some converters
cause a momentary drop in the supply voltage to under
18 V, causing the camera to turn off. Should this happen,
the voltage drop can be compensated by connecting
an appropriate capacitance parallel to the converter.

Switching the Camera on and off
by Remote Control

The ARRIFLEX 535B can be attached to remote switches
via the RS-socket. The camera is started or stopped
when Pin 1 (GND) and Pin 3 (/E-RUN) are electrically
connected for at least 200 ms   .

Technical Data
ARRIFLEX 535B
Steadicam Configuration

Dimensions

(without lens):   Length approx. 485 mm/19"
                         Width approx. 220 mm/8.7"
                         Height approx. 330 mm/13"

Weight

(without lens or film): approx 11.1 kg/24 4 lbs