IVS 435 / II

Integrated Video-Assist System II for the ARRIFLEX 435 Instruction Manual

As of: August 2003

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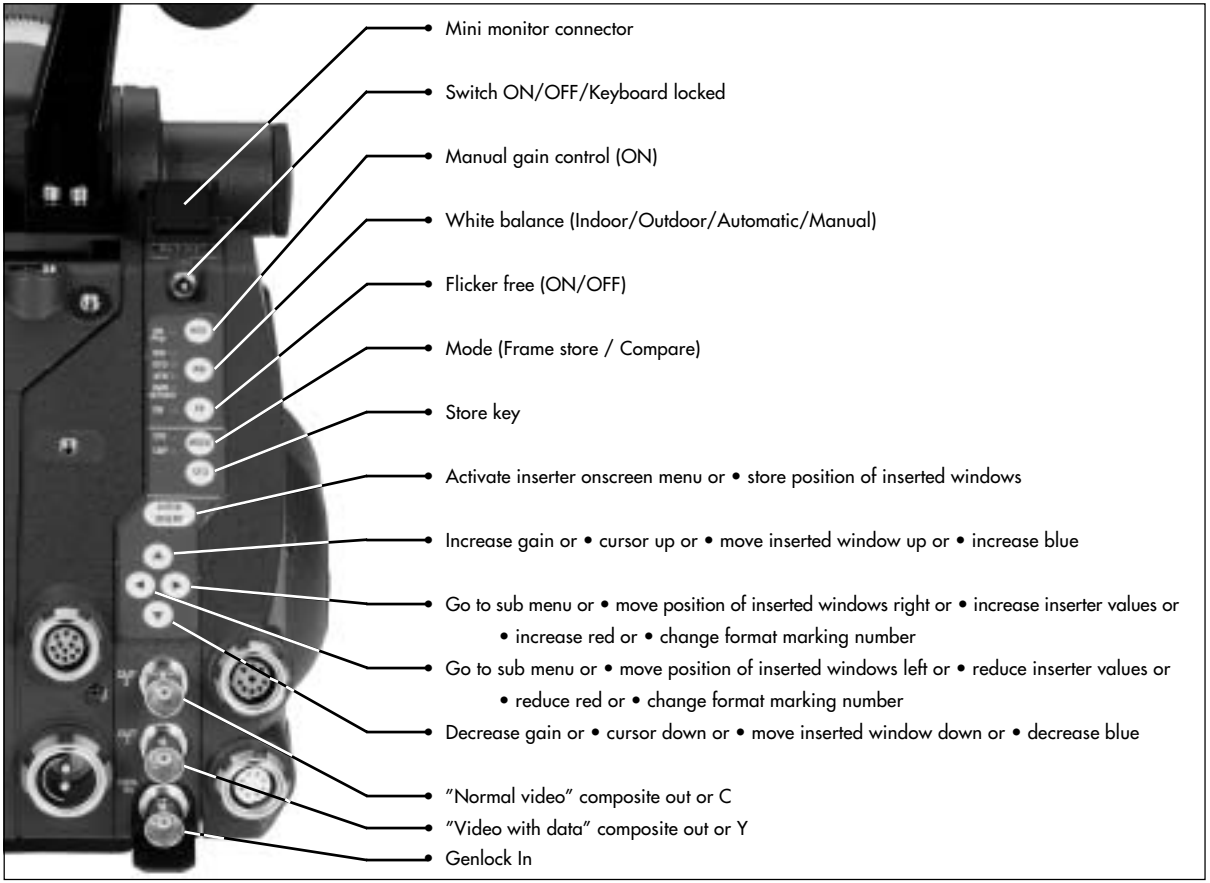
Mini monitor connector
Switch ON/OFF/Keyboard locked
Manual gain control (ON)
White balance (Indoor/Outdoor/Automatic/Manual)
Flicker free (ON/OFF)
Mode (Frame store / Compare)
Store key
Activate inserter onscreen menu or • store position of inserted windows
Increase gain or • cursor up or • move inserted window up or • increase blue
Go to sub menu or • move position of inserted windows right or • increase inserter values or • increase red or • change format marking number
Go to sub menu or • move position of inserted windows left or • reduce inserter values or • reduce red or • change format marking number
Decrease gain or • cursor down or • move inserted window down or • decrease blue
"Normal video" composite out or C
"Video with data" composite out or Y
Genlock In

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2. Safety Specifications

Warnings

Note: Operational error possible!

Danger of injury or equipment damage possible!

General Safety Specifications

Attention! Danger of injury! Never place your hand in the lens mount receptacle or the inside of the camera or magazine while it is running.

- In order to ensure optimal performance, it is essential that you acquaint yourself with this instruction manual, and the manual of the ARRIFLEX 435.
- Use the IVS only with ARRIFLEX 435 cameras, and only as described in this manual.
- Assembly and initial operation should be carried out only by persons who are familiar with the equipment!
- Remove all cables before transport or servicing!
- Repairs should be carried out only by authorized service centers!
- Use only original ARRI replacement parts and accessories!
- Check all operations on the corresponding monitor.

Important Notes

- In wet weather the normal safety precautions for handling electrical equipment should be taken.
- Avoid operational errors!
- Do not touch optical surfaces!
- Clean optical surfaces only with a lens brush or a clean lens cloth! In cases of solid dirt moisten a lens cloth with pure alcohol.
- Do not use solvents in cleaning!
- Do not use force!
- Do not remove any screws which are secured with paint!

Product Specifications

In the case of inquiries or when ordering parts, please advise serial number and model.

Explanation of the Symbols in the Instruction Manual

⇨ **photo** indicates objects which are shown in the photographs or drawings.

3. General Description of the IVS

The Integrated Video-Assist System (IVS) for the ARRIFLEX 435 responds to a strong request from camera users and integrates a complete video assist system totally into the camera body. It offers unsurpassed image quality combined with a state-of-the-art inserter to add frame lines, time code and text to the video image. Colors can be set to fixed values or controlled manually or automatically.

3.1 Main Features

- Integrated into the camera body
  Instead of a bulky add on, the video assist becomes an integrated part of the camera without additional cabling.

- High sensitivity
  A high speed lens with an aperture of 1 : 1.4 and one of the most sensitive CCD-Chip available on the market provide an excellent color video image in editing quality even when the light was set for a high speed film stock, which will be pushed during processing.

- High resolution
  The design of the new IVS optics was based on the 435´s view finder data and resulted in an image quality which can not be realized by add on solutions.

- Flicker-free
  An integrated digital frame store enables the video camera to be synchronized to the film camera´s mirror shutter and provides a flicker-free video image from 1 fps to maximum speed (in manual gain control mode) because the video image is always taken at the ideal position of the mirror shutter.

  Flicker free can be switched off to bypass the digital frame store and have the video assist output with no delay.

- Full manual white balance
  In addition to the standard indoor white balance setting with 3200 K, an outdoor setting with 5600 K and automatic adjustment, color can be fine tuned with a separate red and a separate blue channel for manual white balance.

- Even further resolution in camera run mode
  Video images are now also in the camera run mode in almost full video resolution due to a new technology.

- New video exposure time mode 'identical with film exposure'
  The exposure time of the video assist can be programmed to follow the exposure time of the film. Thus, identical motion blur on film and video assist is achieved.

- Store and recall for all settings
  All settings can be stored and recalled. By this, it is possible for example to trim all the settings for indoor shooting, store them, have some exterior scenes, go back indoor and call the old settings back.
  Up to 6 sets of settings can be stored.

- Integrated frame line inserter
  Frame lines can be electronically added to the video image. This ensures that the lines are visible even in difficult conditions. The area outside of the frame lines can be darkened electronically to emphasize the important image area.

- Integrated time code inserter
  It is possible to insert Time code into the video image. Thus, the video assist creates a reliable link to video editing. The information on "3:2" pull-down, which can be inserted as well, ensures the same reliability in an NTSC environment.

- Integrated text inserter
  Additional text like take numbers or production name can be added to the video image by sending characters on a serial interface.

- Two additional Y/C Outputs
  In addition to the usual composite outputs, the IVS offers a Y/C output (S-VHS) for an even better video image without annoying color artifacts with or without data inserted into the video image. The output is on a standard S-VHS connector as well as on two BNC sockets.

- On-Screen programming
  All functions, which do not effect the image appearance directly like gain control, can be conveniently programmed with an onscreen programming menu on the video monitor.

- Full remote controllable
  All settings can be controlled directly on the IVS as well as via RS 232 with the remote control software (under development)

- Image compare function
  It is possible to store a particular image and compare

it against other images. This clearly shows the difference between the images e.g. during stop effect shots.

- Automatic and manual gain control
  The gain is controlled automatically to its best value but can also be set manually.

- External synchronization input (Genlock)
  The IVS has an external synchronization input to enable multi camera use.

- Mini monitor connector
  The IVS offers a connector for a 12 V LCD mini monitor combined with a 1.1 A power supply.

Note: All ARRIFLEX 435 versions (435, 435 ES and Advanced) can be equipped with the IVS independently of the expanded function module**.** However, the time code functions such as insertion of time code, user bits, pull-down information, VITC and white line flags can only be activated if the expanded function module is installed.

As the IVS is designed for an 80 : 20 beam splitter, there is no need for the 50 : 50 beam splitter, which is used for other color video assists.

3.2 System Components

- Optic Silent and/or K2.47230.0
- Optic Academy K2.47231.0
- Video Electronic complete ..... K2.47365.0 for PAL
  or K2.47366.0 for NTSC

The Video Electronic complete consists of two parts:
- CCD Optic Module
- Inserter / Antiflicker Module

- Software for text input ..... On request

3.2.1 Optic Silent

For a complete and working IVS, either the optic silent or the optic acacemy has to be installed inside the CCD optic module. They can be easily exchanged.

The optic silent forms an image on the CCD chip which is based on the 35 mm silent format with a picture width of 24 mm. An additional area will surround the actual image. This is to check for important objects outside the image area.

The lenses are especially designed and built for the use with the ARRIFLEX 435 to achieve the best possible image quality. Especially the aperture of 1 : 1.4 is important for the use as video assist lenses because only a small portion of the light that goes through the camera lens reaches the video chip. Therefore the lenses are not designed as zoom lenses because it would be impossible to get the same image quality and speed.

All silent optics are marked with an S in the serial number, e.g. S0040.

There are no different lenses for PAL and NTSC.

3.2.2 Optic Academy

For a complete and working IVS, either the optic silent or the optic acacemy has to be installed inside the CCD optic module. They can be easily exchanged.

The optic academy forms an image on the CCD chip which is based on the 35 mm academy format with a picture width of 22 mm. An additional area will surround the actual image. This is to check for important objects outside the image area.

The lenses are especially designed and built for the use with the ARRIFLEX 435 to achieve the best possible image quality. Especially the aperture of 1 : 1.4 is important for the use as video assist lenses because only a small portion of the light that goes through the camera lens reaches the video chip. Therefore the lenses are not designed as zoom lenses because it would be impossible to get the same image quality and speed.

All academy optics are marked with an N in the serial number, e.g. N0040.

There are no different lenses for PAL and NTSC.

3.2.3 CCD Optic Module

The CCD optic module, which is mounted on the ARRIFLEX 435 view finder system has to be equipped with a video lens. This module contains the CCD-chip and all the necessary elements to center the video image on the TV-Monitor screen and to adjust the focus. It houses also a video pre-amplifier to increase the sensitivity of the IVS at low light conditions.

The CCD optic module is available in PAL and NTSC.

It is necessary to keep the combination of CCD optic module and Inserter/Antiflicker module together as delivered. Mixing the modules might lead to a reduced image quality. On request ARRI can supply a second CCD optic module optimized for a particular Inserter/Antiflicker Module.

3.2.4 Inserter / Antiflicker Module

The Inserter/Antiflicker module contains most of the IVS electronics. This 22 mm wide module, which is mounted on the right side of the ARRIFLEX 435, holds the video camera electronic, an anti flicker processor and the entire inserter. All control elements, which are often used, as well as all in- and outputs are located here.

The Inserter/Antiflicker module is available in PAL and NTSC.

It is necessary to keep the combination of CCD optic module and Inserter/Antiflicker module together as delivered. Mixing the modules might lead to a reduced image quality. On request ARRI can supply a second CCD optic module optimized for a particular Inserter/Antiflicker module.

4. Setup

4.1 Inserting the Optic

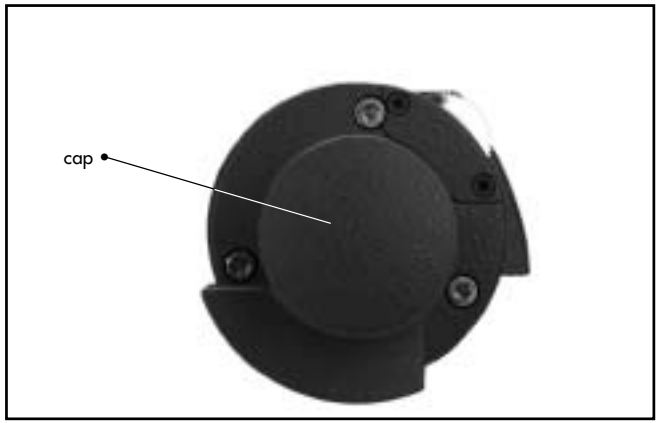
For a complete and working IVS, either the optic silent or the optic academy has to be installed inside the CCD optic module.

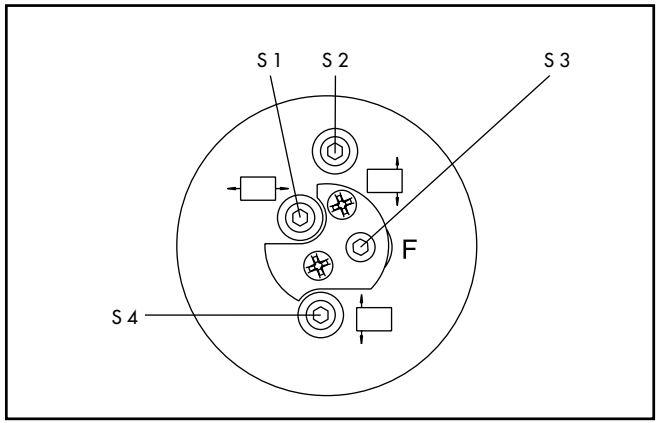
A 1.5 mm allen key is used.

Do not touch optic surfaces.
All lenses must be clean.
Do not use force.

a) Remove the cap, which is located at the end of the module ⇨ **photo** by twisting it counter clockwise to get access to the alignement screws.

b) Make sure that the focus screw (S3) ⇨ **photo** is in the middle of its range.





c) Insert the optic with the bayonet first into the CCD optic module. Make sure that the key is aligned with the key way ⇨ **photo**.

d) Press the optic carefully into the mount and rotate clock wise to the stop. Make sure that the key is on the right side of the lens securing spring.

e) To release the optic rotate carefully counter clock wise until loose and remove forward.

f) Reattach the cap at the end of the CCD optic module.

4.2 Mounting the IVS

The following tools are needed to mount the IVS:

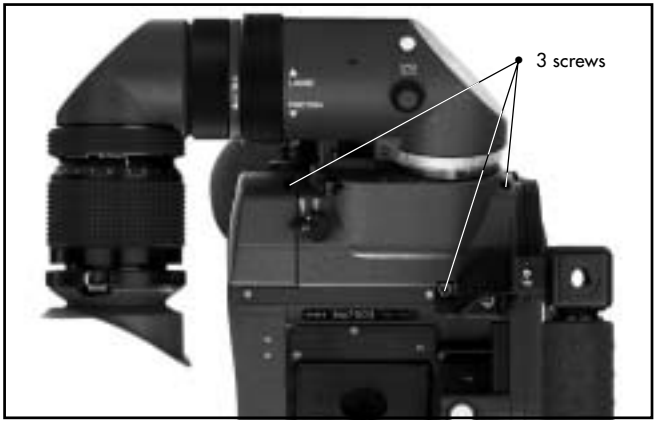
3 mm allen key
0.5 x 3.5 mm screw driver (first time installation only)
2.5 mm allen key
1.5 mm allen key

As there is a vertical connector between the CCD optic module and the Inserter/Antiflicker Module, it is necessary to take the view finder system off the ARRIFLEX 435 before the IVS is installed.

The CCD optic module is mounted on the right side of the ARRIFLEX 435 view finder system:

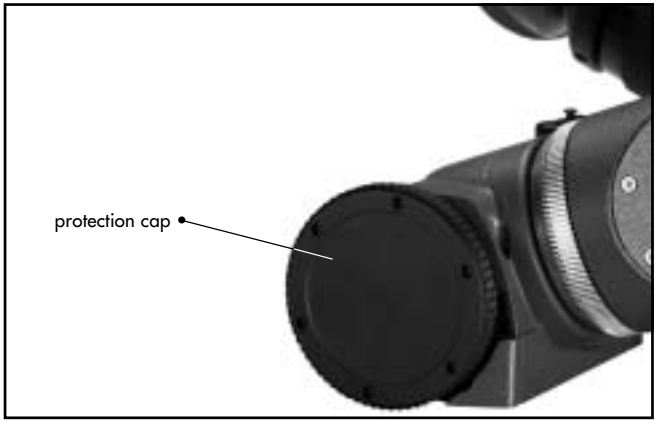
Disconnect camera of all power supplies.

For the initial installation of the IVS on the ARRIFLEX 435 it may be necessary to exchange the flange, which is mounted on the view finder system of the ARRIFLEX 435. The IVS is delivered with a modified flange that can hold the IVS as well as other video-assists. This new flange remains on the ARRIFLEX 435. Therefore it is not necessary to remove it when the IVS is taken off.



Support the viewfinder system.
Do not touch optic surfaces.

a) Remove the view finder system by loosening the three mounting screws ⇨ **photo**.

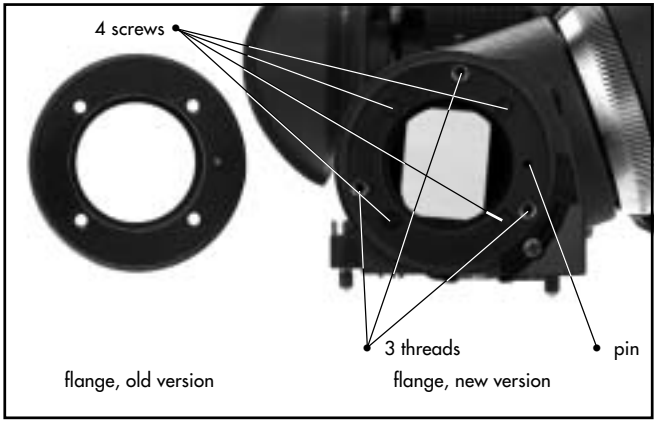


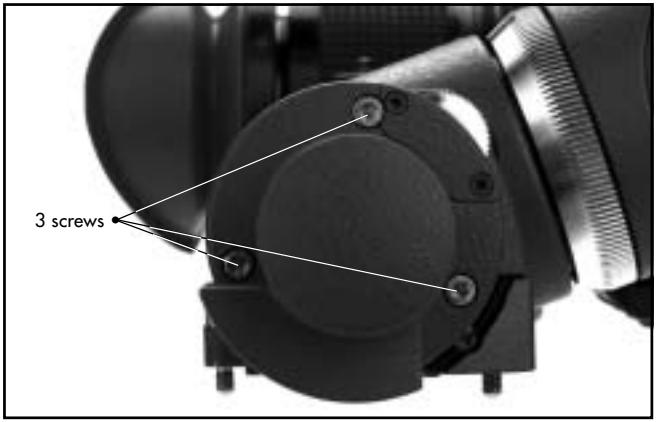
b) Remove the protection cap of the video tap ⇨ **photo**.

Note: Step c) is only necessary for the initial installation of the IVS. If the flange is already modified with three additional threads, proceed with step d).

c) Remove the old flange by taking out the four screws ⇨ **photo** and mount the new flange.
Make sure that the pin is aligned with the bore hole.
Put the four screws back and close them.

d) Insert the CCD optic module and mount it with three screws ⇨ **photo** at the new flange.





e) Take the expanded function module or the cover off the camera. To do so open the mounting screw ⇨ **photo** with a 3 mm allen key and swing the cover or the module off.

f) Attach the Inserter/Antiflicker module to the camera by placing the registration-pins in the appropriate receptables and swing module on.

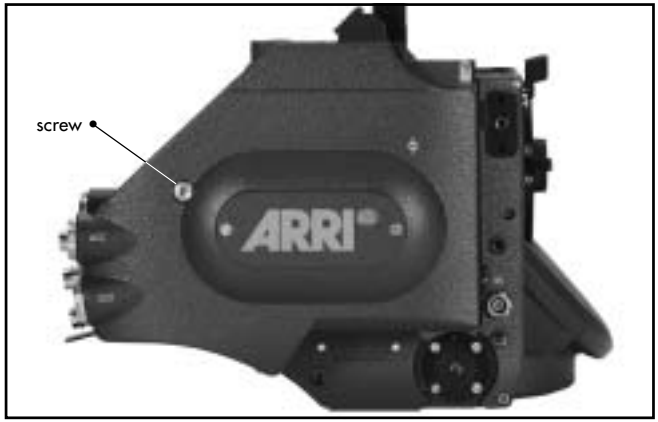
Do not use force

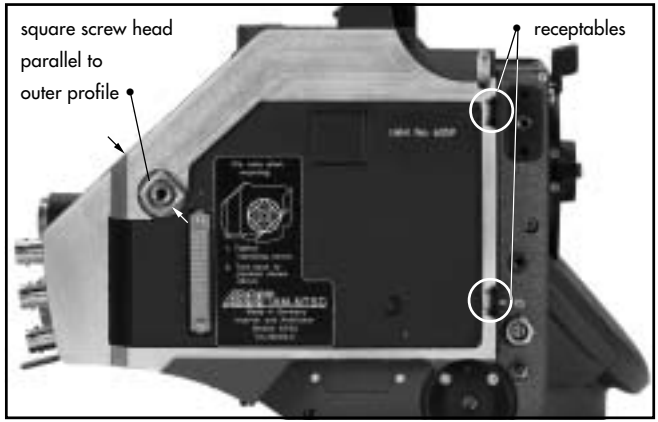
g) Close the mounting screw with the same 3 mm allen key that is used for the extended function module or the cover. Turn the mounting screw back until the square screw head is aligned parallel to the profile of the Inserter/Antiflicker module as illustrated ⇨ **photo**.

h) Align the registration pins of the expanded function module or the cover with the receptables of the IVS, swing on, and close the mounting screw.

Note: An expanded function module or cover must be in place before operating the camera.

With the cover attached only, there is no TC-recording or related functions.





i) Place the view finder system back on the camera body and close the three mounting screws.

Ensure clean contacts.
Do not use force.

Note: Because of the high speed video optic (Academy or Silent), it is no longer necessary to use a 50 : 50 beam splitter, as it was with other color video assists. The IVS is designed to work with a 80 : 20 beam splitter.

4.3 Changing the Optic

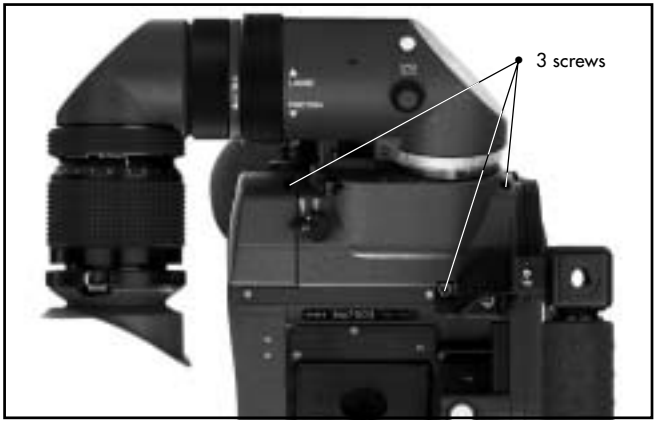
For exchanging the optic between academy and silent format, it is necessary to take the view finder system off the camera in order to remove the CCD optic module.
The following tools are necessary:
3 mm allen key
2.5 mm allen key
1.5 mm allen key.

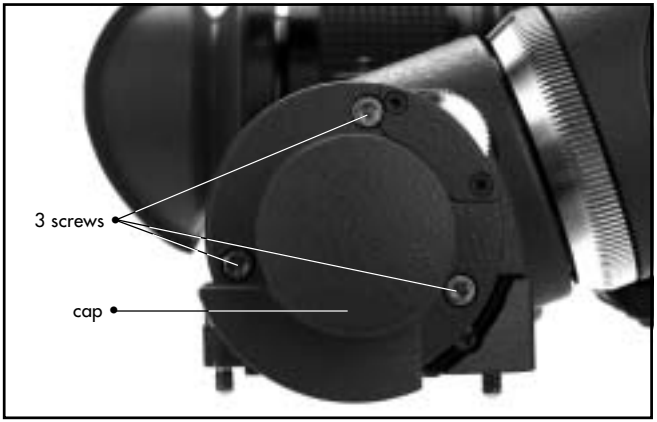
Disconnect camera of all power supplies.
Support the viewfinder system.
Do not touch optic surfaces.
All lenses must be clean.
Do not use force.

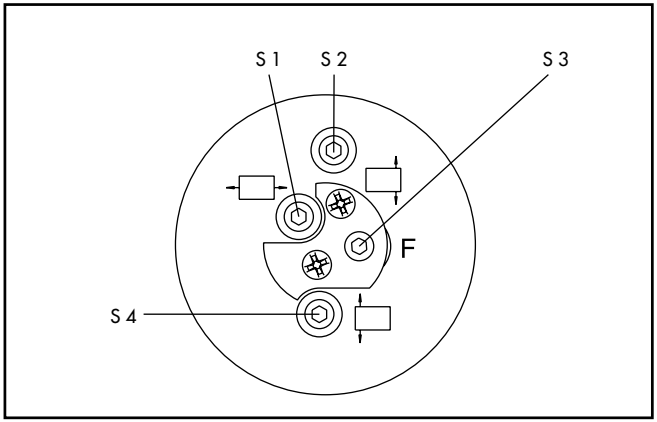
a) Take the view finder system off the camera by loosening the three mounting screws ⇨ **photo**.

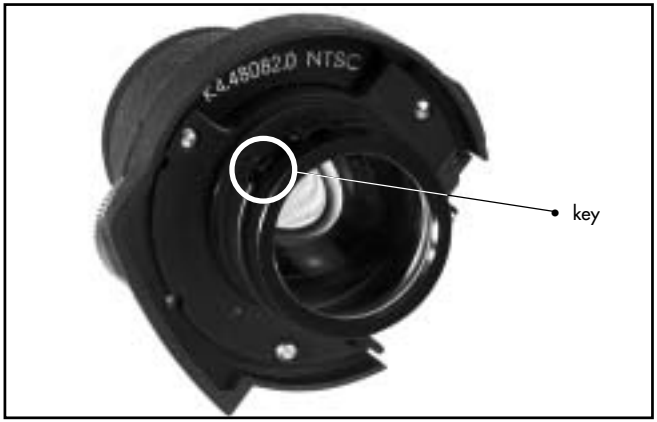
b) Remove the CCD optic module by opening the three screws ⇨ **photo**.

c) Remove the cap, which is located at the end of the module ⇨ **photo** by twisting it counter clockwise to get acess to the alignement screws.









d) Make sure that the focus screw (S3) ⇨ **photo** is in the middle of its range.

e) To release the optic rotate carefully counter clock wise until the key is on the other side of the spring and the optic gets loose. Remove forward.

f) Insert the new lens with the bayonet first into the CCD optic module. Make sure that the key is aligned with the key way ⇨ **photo**. Press the lens slightly into the module and rotate clockwise to the stop. Make sure that the key is on the right side of the lens securing spring.

g) Reattach the cap at the end of the CCD optic module

h) Mount the CCD optic module back to the view finder system with the three screws.

i) Put the view finder system back onto the camera and tighten the three mounting screws.

4.4 Connections

4.4.1 Outputs

In case that the composite output should be used and it is unknown, weather the BNC connectors on the IVS are switched to composite or to Y/C, please connect the composite signal to the "OUT 1" output first and check the setting (BNC Y/C or composite) in the menu first.
Please see chapter 6.4.9 "Composite or Y/C signal at BNC Connectors"

The IVS has two separate outputs for composite video, two outputs for Y/C and one output for a mini monitor. The Y/C signal can be taken from the standard S-VHS connector on the lower side of the IVS or in the Y/C mode on the two BNC connectors that supply the composite signal, when the Y/C mode is off.

4.4.1.1 Composite Video Outputs

Make sure that Y/C mode is switched off to get composite video signal out of the BNC connectors. See chapter 6.4.9 "Composite or Y/C signal at BNC Connectors"

The difference between the outputs is that there is "normal video" on one connector and 'video with data' on the other.

In the "normal video" output, which is marked with the "OUT 2" symbol ⇨ **photo**, almost no electronic information is inserted. Only a flashing bar at the button left corner of the video image indicates a running film camera.

In the "video with data" output, which is marked with the "OUT 1" symbol ⇨ **photo**, additional data like format marks or time code can be inserted.

4.4.1.2 Y/C Outputs

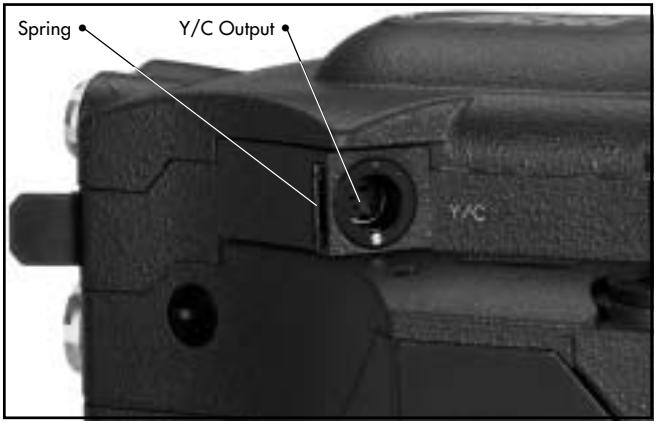
In comparison to the composite outputs, the Y/C outputs offer the even better S-VHS quality. There are also "normal video" and "video with data" signals available.
Y/C on the BNC connectors is only available when BNC Y/C is selected on the menu.
Please see chapter 6.4.9 "Composite or Y/C signal at BNC Connectors".

To change from "normal video" to "video with data" and vice versa, please see chapter 6.4.8 "Y/C-Output as 'normal video' or 'video with data' ".

In the "normal video" mode almost no electronic information is inserted. Only a flashing bar at the bottom left corner of the video image indicates a running film camera.

In the "video with data" mode additional data like format markings or time code can be inserted.

Y/C signals either in the mode "normal video" or in the mode "video with data" can be taken from two different connectors on the IVS: The BNC sockets or the standard S-VHS connector on the lower side of the IVS ⇨ **photo**.
For signals from the S-VHS connector please use the standard S-VHS cable, which was delivered with the IVS.



Note: This cable is secured by a spring ⇨ **photo**.
To release, please press the spring and pull the cable out.

Alternatively, the Y/C signal can be taken from the two BNC outputs on the rear side of the IVS.

For this, it is necessary to switch the BNC output from composite to Y/C, using the menu.
Please see chapter 6.4.9 "Composite or Y/C signal at BNC Connectors". Use the 3-way cable, with was delivered with the IVS. Connect the red BNC connector to "OUT 2" and the white connector to "OUT 1".

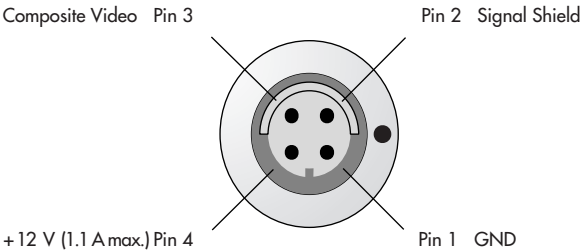
Note: For a standard black and white signal, use only the Y Signal. To do so, switch the BNC output to Y/C and connect a standard composite BNC cable to "OUT 1".

Note: In some combinations of accessory, e.g. single frame control of the Integrated Capping Shutter, the standard S-VHS cable in the Y/C connector on the bottom side of the IVS might collide with the additional accessory. In this case, please use the BNC outputs for Y/C signal, as described above.

4.4.1.3 Mini-Monitor Output

The IVS has a connector for a standard mini-monitor ⇨ **photo**.

As there is only one mini monitor connector, it is possible to switch between "Normal Video" and "Video with Data" on this output: To do so, please use the on-screen display menu. Please see chapter 6.4.7 "Mini-Monitor Output as "normal video" or "video with data"."



Pin-Outs Mini-Monitor Connector
(seen from outside)

4.4.2 Inputs

It is possible to synchronize the IVS to an external video source. Furthermore, the IVS can be remote controlled by a computer.

4.4.2.1 Genlock

The genlock input ⇨ **photo** allows the IVS to be synchronized to an external video source. This is necessary if several video cameras are used together.

Input is a standard composite video signal.

4.4.2.2 Remote Control

All inserter functions of the IVS, which can be called or set with the on screen menu, can also be controlled via the film camera's CCU interface.

A corresponding software for the ARRI Laptop Camera Controller is available on request (refer to seperate manual).

5. Standard Video Controls

The IVS can be used like a standard Video Assist if no inserter functions are used.

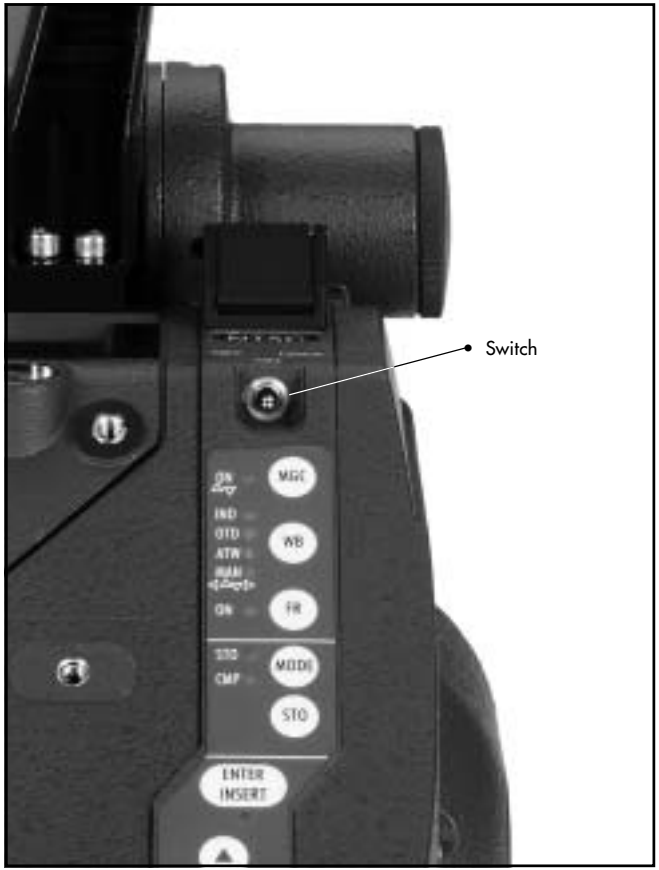
Note: For exchanging the optic between academy and silent format, refer to chapter "4.3 Changing the Optic".

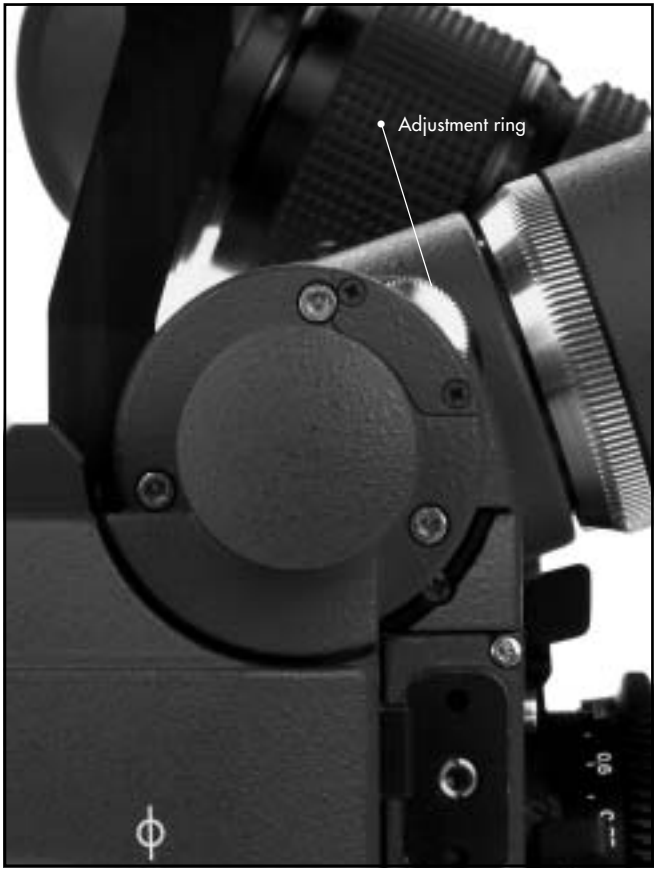
Note: All currently used settings are stored even if the IVS or the camera is switched off. After restarting the IVS the settings are unchanged.

5.1 On/Off and Locking the Keyboard

The IVS can be switched on and off independently of the film camera.

The "OFF" position switches the IVS off without affecting the film camera. "ON" activates the IVS and "LOCK" disables the keyboard to prevent unintentional handling ⇨ **photo**.





5.2 Mechanical Iris

Only a relatively small portion of the light which goes through the film cameras´s lens reaches the CCD-Chip of the video assist as the light is shared between the view finder, the CCD-Chip and the film. Therefore the IVS lenses are designed for a normal usage with a totally open iris to have maximum light on the CCD-Chip. Variations in lighting are compensated by the IVS´s gain control (automatically or manually).

Under certain conditions, such as when lighting is set for low-sensitivity film (under 100 ASA) or for motion effects, it is possible that the IVS´s gain range is exceeded. In this case the mechanical iris of the IVS lens can be closed.

Check all settings on the connected monitor.

If the mechanical iris is closed more than necessary, the IVS will compensate by increasing the gain and improve the image brightness electronically. This creates additional electronic noise. Avoid that by opening the mechanical iris.

5.3 Aligning the Image and Focusing

The position of the image on the CCD-Chip can vary slightly from film camera to film camera. The video image on the monitor may appear not centered. In addition to that, it is necessary to focus the lens on every new film camera.

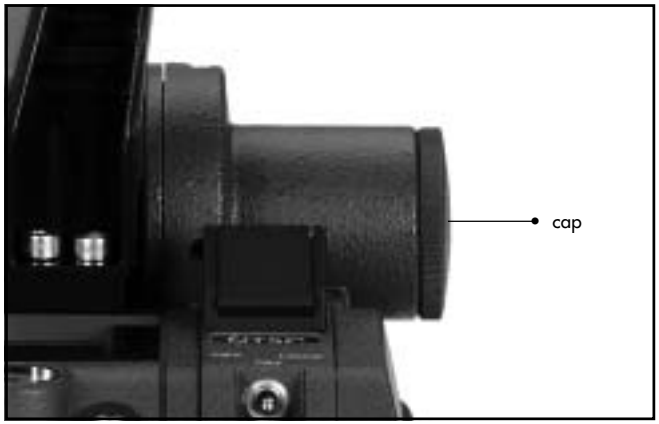
All settings can be made by using a 1,5 mm allen key.

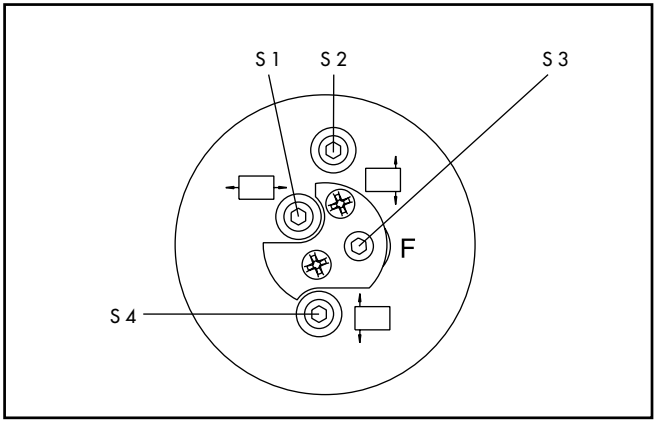
Do not use force.

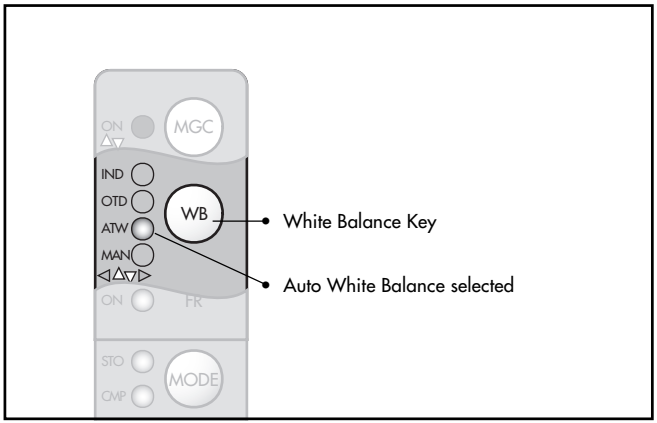
Both adjustments can be done on the CCD optic module. Remove the cap, which is located at the end of the module ⇨ **photo** by twisting it counter clockwise to get access to alignment screws.

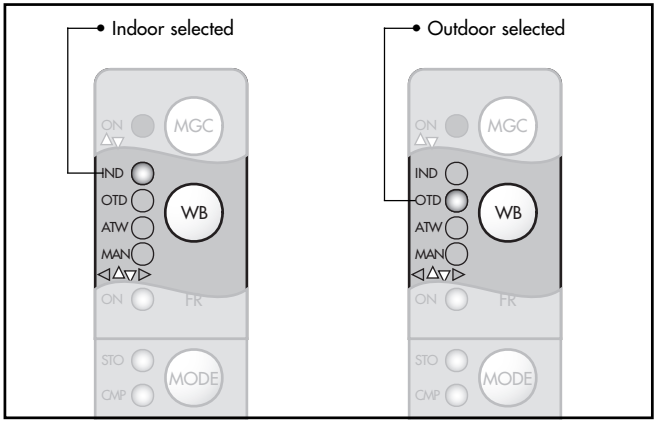
Screw S 1 moves the video image on the monitor horizontally. Screw S 2 rotates the image around a point which is located in the middle of the left side and screw S 4 rotates the image around a point which is located in the middle of the right side. Screw S 3 will focus the lens. Reattach the cap after adjusting.

Note: Make sure that the iris is fully open during focusing in order to optimize focus.









5.4 White Balance (WB)

The IVS offers a choice for White Balance between
- an automatic control (ATW),
- a fixed setting of indoor (IND)
- a fixed setting of outdoor (OTD)
- and a full manual control of white balance.

White balance can be adjusted in two different ways. It is possible to control it using the keyboard on the IVS or using the on-screen control menu.

5.4.1 Using the Keyboard

By pressing the key WB ⇨ **photo**, the setting will be changed from IND, OTD, ATW, to MAN. The next click on the WB-Key will cause the MAN-LED to blink. Thus, it is possible to change the red and blue channel using the ◁, ▷, △ and ▽ key. The next click on the WB key will cause the MAN-LED to be constantly on. Another click on the MAN-LED will lead back to IND. An illuminated LED shows the selected mode.

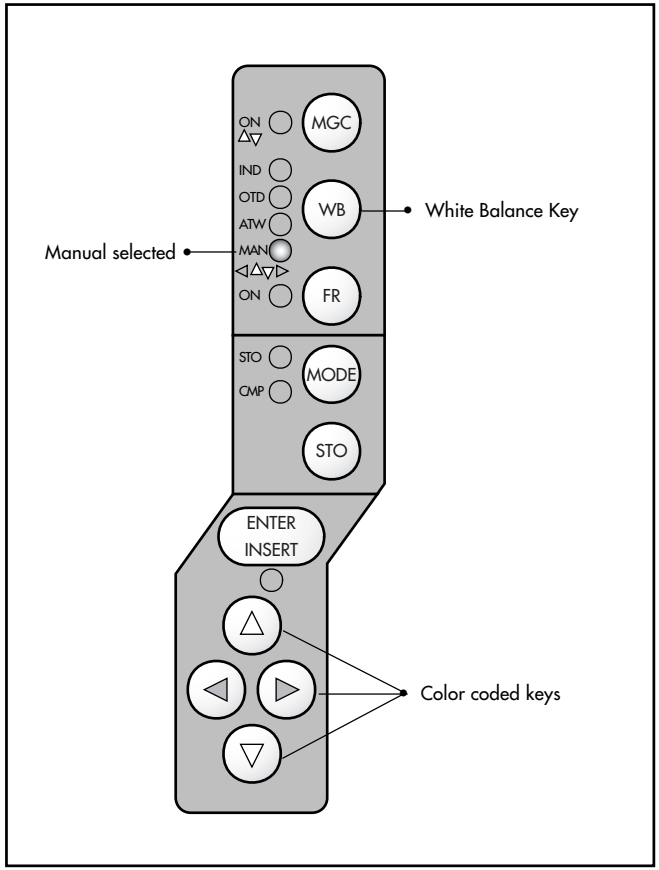
Check all settings on the connected monitor.

- If automatic White Balance (ATW) is selected ⇨ **photo**, the IVS will automatically set White Balance. For this no manual steps are necessary.
- If indoor (IND) is selected ⇨ **photo**, white balance is optimized for tungsten lighting with 3200 K.
- The outdoor (OTD) setting ⇨ **photo** optimizes the white balance for daylight with 5600 K.

To access the manual setting, press the WB key ⇨ **photo** until the MAN LED is on. By pressing the WB key again, the MAN LED will blink, indicating, that the manual white balance mode is active. Now the red of the video image can be increased, using the color coded red ▷ key or reduced using the ◁ key. Blue can be increased by using the color coded blue △ key or reduced by using the ▽. By either waiting more the 5 seconds or pressing the WB key again, the MAN LED will stop blinking and is constantly on, showing that the color setting is manual.

Note: With the MAN LED constantly on, no color settings can be made to avoid accidental handling.

Note: Changing green is done by changing red, blue and gain. The video singal is the addition of red, green and blue and amplified by the gain. Increasing green can be done by decreasing red and blue and increasing gain.



5.4.2 Using the on screen menu

Please see the chapter 6 "*Inserter Facilities*" for basics on the on-screen display.

White Balance

In parallel to the control via keyboard, the white balance can also be programmed via the on-screen menu. It toggles from indoor, outdoor and automatic to manual.

Call the sub menu VID ADJ.

Move the cursor > with the keys △ and ▽ to the line WB. Pressing the key ▷ will switch from indoor, outdoor and automatic to manual and back to indoor. The key ◁ will give the opposite direction.

If white balance is on manual, the display will change. Figures will appear in the line -RED and -BLUE, indicating the red and green saturation of the video image.

Manual White Balance red increase/decrease

Manual white balance red increase/decrease is only available if white balance control is on manual.

If manual white balance is on **MAN**, it is possible to adjust the red and blue saturation of the video image manually.

Move the cursor > with the keys △ and ▽ to the line **-RED**. Pressing the key ▷ will increase the red in the video image, the key ◁ will decrease it.

The range for this is from 0 (lowest) to 63 (highest).

If the key ▷ or ◁ is pressed shortly, the value is changed by one step, if the keys are pressed longer, the value will continue to change.

The LED in the keyboard will follow the changes which are made in this menu and vice versa, if this setting is changed via the keyboard, the on-screen menu will follow.

Manual White Balance blue increase/decrease

Manual white balance blue increase/decrease is only available if white balance control is on manual.

If manual white balance is on **MAN**, it is possible to adjust the red and blue saturation of the video image manually.

Move the cursor **>** with the keys △ and ▽ to the line **-BLUE**. Pressing the key ▷ will increase the blue in the video image, the key ◁ will decrease it.

The range for this is from **0** (lowest) to **63** (highest).

If the key ▷ or ◁ is pressed shortly, the value is changed by one step, if the keys are pressed longer, the value will continue to change.

The LED in the keyboard will follow the changes which are made in this menu and vice versa, if this setting is changed via the keyboard, the on-screen menu will follow.

5.5 Gain Control

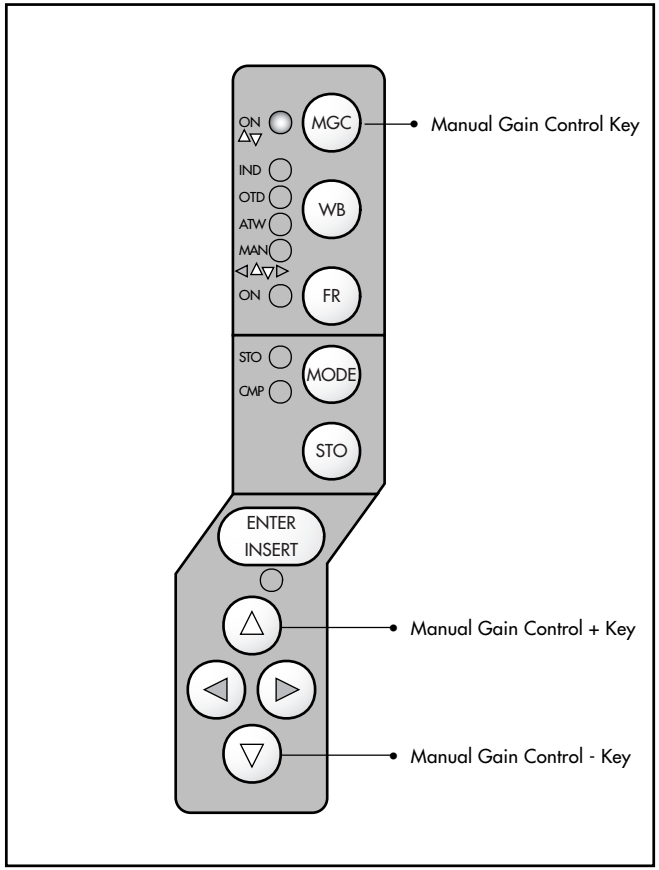
The IVS can control the brightness of the video image electronically. This gain control can be automatic or manual. If the automatic control is selected, the IVS outputs the best possible image brightness at all the time. Light changes in front of the film camera are compensated by the IVS, the brightness impression remains almost unchanged.
Gain control can be adjusted in two different way. It is possible to control it using the keyboard on the IVS or using the on-screen control menu.

5.5.1 Using the Keyboard

The brightness of the video image can be manually altered if manual gain control is selected. By using the color coded blue keys Manual Gain Control (MGC) △ or Manual Gain Control (MGC) ▽ the brightness can be increased or decreased. An automatic compensation of different light levels in front of the camera is suppressed.

By pressing "Manual Gain Control" (MGC) the setting alters between manual and automatic control. An illuminated LED shows the setting Manual Gain Control.

Check all settings on the connected monitor.



5.5.2 Using the on screen menu

Please see the chapter 6 "*Inserter Facilities*" for basics on the on-screen display.

Manual Gain Control

In parallel to the control via keyboard, the manual gain control can also be programmed via the on-screen menu. Manual gain control can be switched on or off. If it is on, specific values can be set between 0 (low gain) and 63 (high gain).

Call the sub menu VID ADJ.

Move the cursor > with the keys △ and ▽ to the line MGC. Pressing the key ▷ or ◁ will switch manual gain control off and on.

If manual gain control is on, the display will change. Figures will appear in the line –VALUE, indicating the gain.

The LED in the keyboard will follow the changes which are made in this menu and vice versa, if this setting is changed via the keyboard, the on-screen menu will follow.

Manual Gain increase/decrease

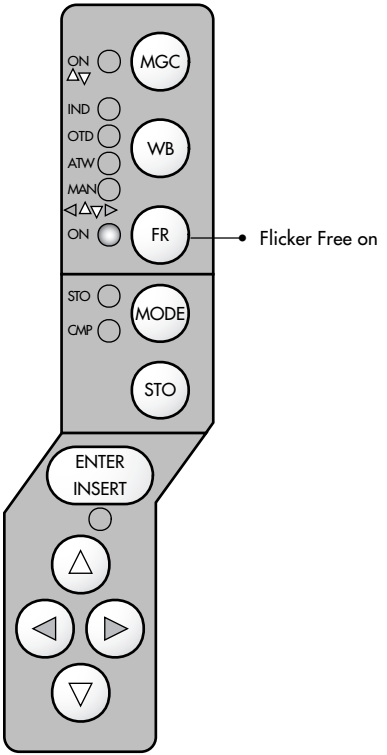
Manual gain increase/decrease is only available if manual gain control is on.

Move the cursor > with the keys △ and ▽ to the line −VALUE. Pressing the key ▷ will increase the gain, the key ◁ will decrease it.

The range for this is from 0 (lowest gain) to 63 (highest gain).

If the key ▷ or ◁ is pressed shortly, the value is changed by one step, if the keys are pressed longer, the value will continue to change.

The LED in the keyboard will follow the changes which are made in this menu and vice versa, if this setting is changed via the keyboard, the on-screen menu will follow.



5.6 Flicker Free on/off

The IVS suppresses the flickering of the video image, which normally occurs when the film camera and the video camera are running at different frame rates or if they are not in phase. This is done using a frame store.

Under critical conditions, like motion control, where it is not desirable to have any time delay between the live action in front of the camera and the video assist image, it might be helpful to switch the frame store off. This, the image will flicker again.

The time code information is not valid if flicker reduction is switched off.

Flicker Free on/off can be adjusted in two different ways. It is possible to control it using the keyboard on the IVS or using the on-screen control menu.

5.6.1 Using the Keyboard

The flicker reduction key ⇨ **photo** switches the anti flicker facility on and off should this become necessary.

The LED indicates flicker free on.

Note: The lowest camera speed for flicker free display is 5 FPS in automatic gain control mode, and 1 FPS in manual gain control mode.

5.6.2 Using the on screen menu

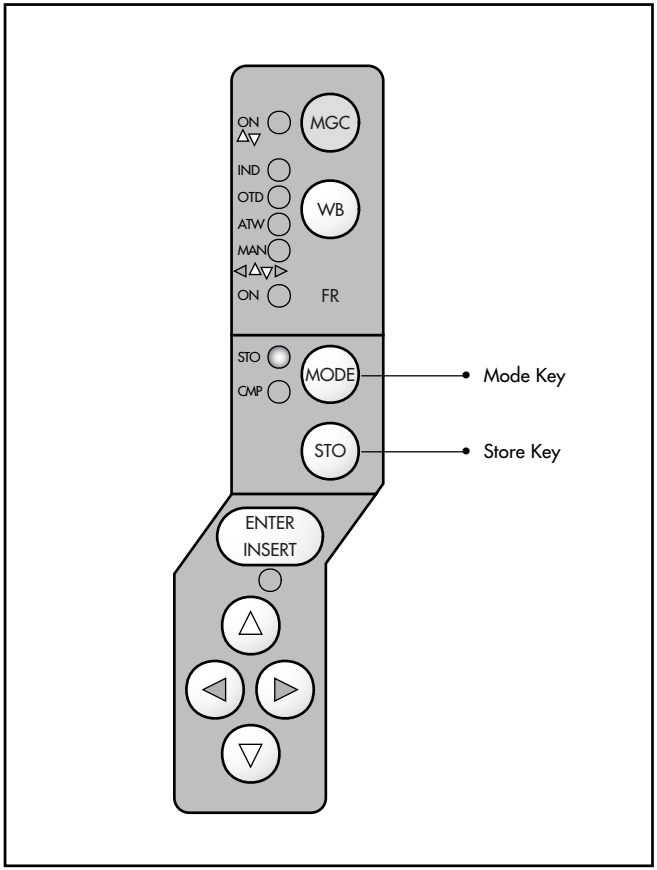
Please see the chapter 6 "*Inserter Facilities*" for basics on the On-Screen display.

Flicker free

The time code information such as time code, user bits, VITC and white line is not valid if flicker reduction is switched off.

Call the sub menu VID ADJ.

Move the cursor > with the keys ⓐ and ⓥ to the line FR. Pressing the key ⓑ or ⓒ will switch flicker free on or off.



5.7 Frame Store and Compare

The IVS can store one video image and compare it against the currently incoming images. Frame store and compare can be adjusted in two different ways. It is possible to control it using the keyboard on the IVS, or using the on-screen control menu.

5.7.1 Using the Keyboard

By pressing the key STO it is possible to grab one video image. To display stored video images, activate the frame store mode by pressing the key MODE. The STO LED is illuminated indicating the store mode.

The image remains only stored until another frame is stored, or until the IVS or the film camera is switched off or disconnected from the power supply.

To activate the compare mode press the key MODE after one image was stored. The illuminated CMP LED indicates this mode. The stored image is superimposed with the presently incoming video image. Differences between the two images can be easily seen.

By pressing the key MODE the IVS goes from normal mode to store mode to compare mode and back to normal mode. Every time the key STO is pressed with the IVS in store mode, a new video frame is grabbed.

5.7.2 Using the on screen menu

Please see the chapter 6 "*Inserter Facilities*" for basics on the on-screen display.

Display Mode

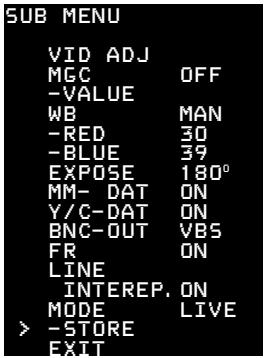
Please see next paragraph "Store image" for how to store one image.

Call the sub menu VID ADJ.

Move the cursor > with the keys △ and ▽ to the line MODE. Pressing the key ▷ will switch from LIVE to STO to CMP and back to LIVE. The key ◁ will give the opposite direction.

If LIVE is selected, the actual image will be displayed. If STO is selected, an image, which was stored before, will be displayed and if CMP is selected, a live image and a stored image will alternate to show the difference of both images.

The stored image is memorized until a new image is stored or until the IVS power was shot down.



Store image

Please see paragraph above, "*Display mode*", for information on different display modes, e.g. live, store and compare.

Call the sub menu VID ADJ.

Move the cursor > with the keys △ and ▽ to the line -STORE. Pressing the key ▷ or ◁ will store one particular image into the frame store. The line will change for 1 second to > -STORE DONE. To store a new video image, leave the line -STORE and go back to this line.

The stored image is memorized until a new image is stored or until the IVS power was shot down.

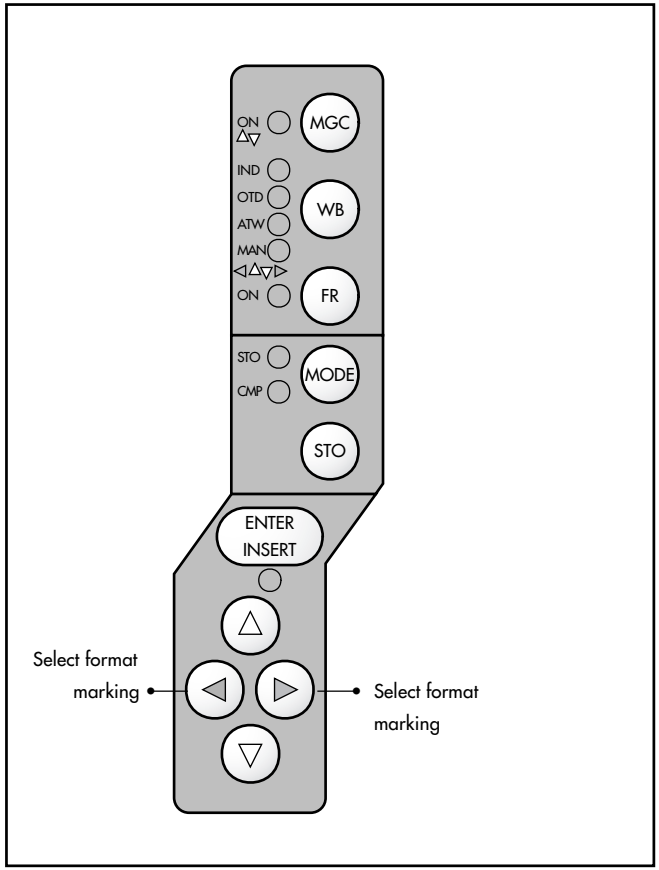
5.8 Changing Format marking number

The IVS can insert different format markings. It is possible to have
- no format marking (OFF),
- format marking number one (1),
- format marking number two (2)
- or both format markings at the same time (1 & 2) on display.

The adjustment of the different format markings can only be done via the on-screen display as described in chapter 6.5 "Format marking menu". However, it is possible to select which format markings are displayed via the keyboard.

The format marking selection is only available, when the white balance manual mode is not active (when the WB MAN LED is not flashing). If white balance manual mode is active, please wait for more than 5 seconds without pressing any key to leave this mode.

The key ▷ will switch from OFF, 1, 2 to 1&2. The key ◁ will switch in opposite order.



Standard Video Controls

6. Inserter Facilities

In addition to the usual video assist functions, the IVS offers a variety of inserter facilities. There are three different groups of information:

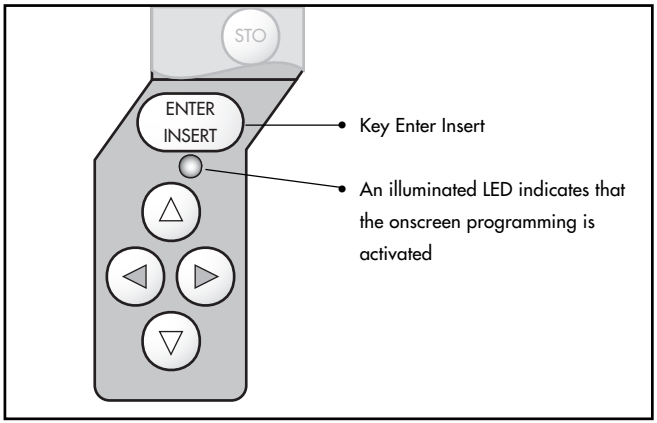
- **Format markings**
  Format markings, which are inserted electronically, are often more visible than format markings on the ground glass or on the ARRIGLOW.

- **Man readable information**
  Time code
  User Bits
  Camera status
  IVS Film Counter
  Additional text
  Pull-down information

- **Machine readable information**
  VITC
  White Line Flag

All inserted data are only available at the outputs "Video with data".
All engravings from the ground glass (i. e. TV-Safe etc.) are visible at all times at all outputs.

Note: All currently used settings are stored even if the IVS or the camera is switched off or disconnected from the power supply. After restarting the IVS the settings are unchanged.



6.1 Setting the On Screen Displays

During programming the inserted data are not fully updated (i. e. Pull-down information, TC-Frame Count). To get information updated, leave the onscreen display menu by pressing the key "Enter Insert" for more than three seconds.

Once the onscreen display is activated by pressing the key "Enter Insert" for more than three seconds, the following procedure is used to select and set all functions within the main menu and the sub menus:

Pressing the key ⓐ or ⓥ will move the cursor > up or down. Pressing the key ⓑ or ⓓ activates sub menus.

Within sub menus the cursor > can be moved up and down again by pressing the key ⓐ or ⓥ. The keys ⓑ or ⓓ will now change settings (e. g. switch the insertion of a time code window on and off), or activates functions (position mode of a window, `EXIT` or the `ALL STANDARD` call).

If the windows position mode is activated, the keys ⓐ, ⓥ, ⓑ or ⓓ will move the window across the video image. To leave the position mode press the key "Enter Insert" shortly.

To go from a sub menu back to the main menu, position the Cursor > by using the keys ⓐ and ⓥ on the line `EXIT` and press the key ⓑ or ⓓ.

All settings are immediately activated by changing them.

Note: Pressing the ENTER INSERT-key for more than three seconds will cause the system to exit the onscreen programming mode completely, regardless of which menu is activated, with the exeption of the positioning mode.

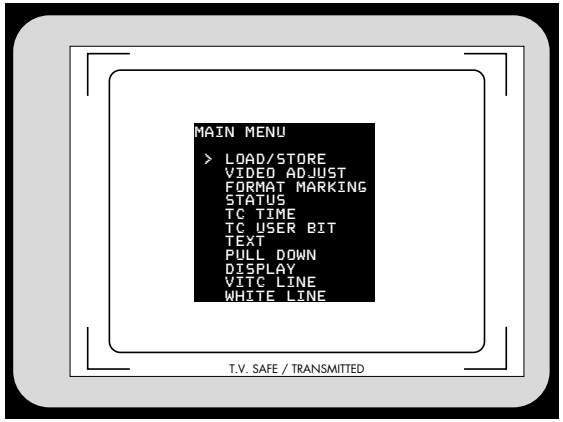
6.2 Main Menu

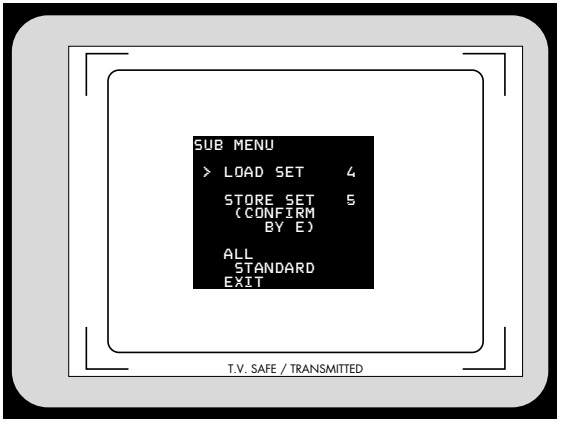
The inserter´s main menu is displayed on the monitor screen when the on-screen programming is activated by pressing the ENTER INSERT-key ⇨ **photo** for more than three seconds.

An illuminated LED indicates that the onscreen programming is activated.

Note: Pressing the ENTER INSERT-key for more than three seconds will cause the system to exit the onscreen programming mode completely, regardless of which menu is activated, with the exeption of the positioning mode.

The keys ⓐ or ⓥ move the cursor › up or down.
Pressing the key ⓑ or ⓒ will lead into a sub menu.





6.3 Load/Store Menu

The IVS can store up to 6 sets of settings and recall them. Thus it is possible to make all settings for e.g. indoor shooting and store them as setting 1. Shooting continues with some exterior scenes and the operator will make all settings for this and store them as setting 2. When the work is continued indoor, it is very easy recalling all the settings stored as setting 1 and get the same image appearance as before.

One set of settings consists of all set-ups in the IVS. Everything which can be set electronically, will be stored and recalled. All video adjustments such as manual gain control, white balance, flickerfree, display mode, exposure mode, outputs with or without data and line interpolation as well as all inserter setups, e.g. Time Code insertion off or on, framelines and so on are stored and recalled.

The adjustment of the white level of the inserted data, an inverse display and a fine adjustment is described in chapter 6.11

All settings are immediately activated by changing them.
Check all settings on the connected monitor.

- Enter the Load/Store submenu from the Main menu.

6.3.1 Load Settings

It is possible to load one out of six settings. Those new settings will influence all adjustments, that can be made electronically.

The new settings will immediately replace the previous settings. If the old settings might be needed, store them first as described in the next chapter "Store Settings".

Move the cursor > with the keys △ and ▽ to the line LOAD SET. Pressing the key ▷ will switch from 1 to 2 all the way up to 6 and back to 1, the key ◁ will switch in the opposite direction. Pressing either the key ▷ or ◁, will immediately load the new settings.

6.3.2 Store Settings

The set of settings, that is currently active, can be stored as one out of six settings.

Move the cursor > with the keys △ and ▽ to the line STORE SET. Pressing the key ▷ will switch from 1 to 2 all the way up to 6 and back to 1, the key ◁ will switch in the opposite direction.

When the cursor is positioned on the line STORE SET and the key ▷ or ◁ was pressed, the display will change from > STORE SET 5 to > STORE SET 5 E, indicating, that by pressing the ENTER INSERT-key, the current settings will be stored, e.g. as setting 5. After that, the display changes again to > STORE SET 5 DONE, indicating that the settings are stored.

6.3.3 All Standard

This menu recalls a default setting of all inserter values. By this, it is possible to obtain basic setting for the IVS.

The default values are:

Format marking 1, White Level 2, Outside Full
Time-Code ON, Size Big, Background Boxed, Counter Film
USER-BITS On, Size Big, Background Boxed
Status On, Size Small, Background Boxed, IVS film counter OFF
Text Off, Size Small, Background Boxed
Pull down OFF, Size Big, Background Boxed
Vertical Position 5, White Level 2, Inverse OFF
VITC On, Position 1 - 10, Position 2 - 12
White Line On, Position 11

Move the cursor > with the keys △ and ▽ to the line ALL. Pressing the key ▷ or ◁ recalls the default values.

If the ALL STANDARD function was called, it is possible immediately recall the values back, that were set before the ALL STANDARD function was called.

The prior settings can not be recalled after the display menu has been left, and no "ALL STANDARD UNDO" function is available untill "ALL STANDARD" is called again.

After calling the ALL STANDARD function, the display changes to ALL STANDARD UNDO. If this new function is called, the old settings will return.

Move the cursor > with the keys △ and ▽ to the line ALL. Pressing the key ▷ or ◁ recalls the old values.

6.3.4 Exit

Return to the main menu using EXIT.

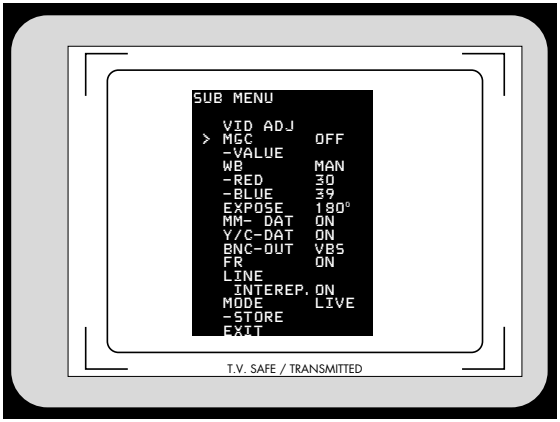
Move the cursor > with the keys ⓐ and ⓥ to the line EXIT and press the key ⓑ or ⓒ.

Note: Pressing the ENTER INSERT-key for more than three seconds will cause the system to exit the onscreen programming mode completely, regardless of which menu is activated, with the exception of the positioning mode.

6.4 Video Adjust Menu

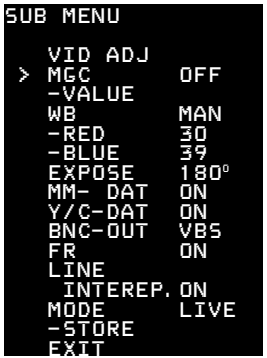
Video Adjust controls the entire video appearance. It enables the control of settings, which can be in parallel to this menu accessed via the keyboard but it enables also the control of settings, which can not be accessed via the keyboard, such as "EXPOSURE", "MM-DAT", "Y/C-DAT" and "LINE INTERPOLATION".

The adjustment of the white level of the inserted data, an inverse display and a fine adjustment is described in chapter 6.11



All settings are immediately activated by changing them.
Check all settings on the connected monitor.

- Enter the Video Adjust submenu from the Main menu.



6.4.1 Manual Gain Control On/OFF

In parallel to the control via keyboard, the manual gain control can also be programmed via the on-screen menu. Manual gain control can be switched on or off. If it is on, specific values can be set between 0 (low gain) and 63 (high gain). If manual gain control is off, automatic mode is active.

Move the cursor > with the keys △ and ▽ to the line MGC. Pressing the key ▷ or ◁ will switch manual gain control off and on.

If manual gain control is on, the display will change. Figures will appear in the line –VALUE, indicating the gain.

The LED in the keyboard will follow the changes which are made in this menu and vice versa, if this setting is changed via the keyboard, the on-screen menu will follow.

6.4.2 Manual Gain increase/decrease

Manual gain increase/decrease is only available if manual gain control is on.

If manual gain is on, it is possible to adjust the gain manually.

Move the cursor > with the keys △ and ▽ to the line −VALUE. Pressing the key ▷ will increase the gain, the key ◁ will decrease it.

The range for this is from 0 (lowest gain) to 63 (highest gain).

If the key ▷ or ◁ is pressed shortly, the value is changed by one step, if the keys are pressed longer, the value will continue to change.

The LED in the keyboard will follow the changes which are made in this menu and vice versa, if this setting is changed via the keyboard, the on-screen menu will follow.

6.4.3 White Balance (Indoor/Outdoor/Automatic/ Manual)

In parallel to the control via keyboard, the white balance can also be programmed via the on-screen menu. It toggles from indoor, outdoor and automatic to manual.

Move the cursor > with the keys △ and ▽ to the line WB. Pressing the key ▷ will switch from indoor, outdoor and automatic to manual and back to indoor. The key ◁ will give the opposite direction.

If white balance is on manual, the display will change. Figures will appear in the line -RED and -BLUE, indicating the red and green saturation of the video image.

6.4.4 Manual White Balance red increase/decrease

Manual white balance red increase/decrease is only available if white balance control is on manual.

If manual white balance is on **MAN**, it is possible to adjust the red and blue saturation of the video image manually.

Move the cursor **>** with the keys △ and ▽ to the line **–RED**. Pressing the key ▷ will increase the red in the video image, the key ◁ will decrease it.

The range for this is from **0** (lowest) to **63** (highest).

If the key ▷ or ◁ is pressed shortly, the value is changed by one step, if the keys are pressed longer, the value will continue to change.

The LED in the keyboard will follow the changes which are made in this menu and vice versa, if this setting is changed via the keyboard, the on-screen menu will follow.

6.4.5 Manual White Balance blue increase/decrease

Manual white balance blue increase/decrease is only available if white balance control is on manual.

If manual white balance is on **MAN**, it is possible to adjust the red and blue saturation of the video image manually.

Move the cursor **>** with the keys △ and ▽ to the line **–BLUE**. Pressing the key ▷ will increase the blue in the video image, the key ◁ will decrease it.

The range for this is from **0** (lowest) to **63** (highest).

If the key ▷ or ◁ is pressed shortly, the value is changed by one step, if the keys are pressed longer, the value will continue to change.

The LED in the keyboard will follow the changes which are made in this menu and vice versa, if this setting is changed via the keyboard, the on-screen menu will follow.

6.4.6 Exposure time video assist same as film

The exposure time of the video assist can be programmed to follow the exposure time of the film. Thus, identical motion blur on film and video assist is achieved. The mirror shutter of the film camera consists of a reflective part, which will always send light for 180° of one exposure cycle into the view finder system and a plate, which can optionally reduce the exposure time of the film to get different resolution of motion. The video assist can now be programmed to work the same way. The option "180°" will set the video assist to be exposed for the maximum available time. Thus the image will be brightest. Alternatively, the setting "FILM" will cause the video assist to learn the open sector of the shutter mirror system and will adopt the time, where the CCD Chip is light sensitive to the same timing.

Move the cursor > with the keys △ and ▽ to the line EXPOSURE. Pressing the key ▷ or ◁ will switch from 180° to FILM.

The display will change from to.

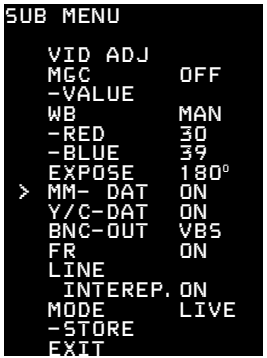
> EXPOSE 180°

> EXPOSE FILM

```
SUB MENU

  VID ADJ
  MGC        OFF
  -VALUE
  WB         MAN
  -RED       30
  -BLUE      39
> EXPOSE     180°
  MM- DAT    ON
  Y/C-DAT    ON
  BNC-OUT    VBS
  FR         ON
  LINE
   INTEREP.  ON
  MODE       LIVE
  -STORE
  EXIT
```

While the camera is ramping the speed up or down, the trigger for the exposure of the CCD-Chip in mode "EXPOSURE FILM" might occasionally fall into a phase where the CCD-Chip is not ready causing one very bright or dark image.



6.4.7 Mini-Monitor Output as "normal video" or "video with data"

The mini monitor output can be programmed to have "normal video" or "video with data".

Note: If the on-screen menu control is on (red LED next to the ENTER INSERT-key is on), there will always be data in this output. This is necessary because if the output is switched to data off, no insert were available and therefore, it would be impossible to go back into the on-screen menu to change the settings.

Move the cursor > with the keys △ and ▽ to the line MM-DAT. Pressing the key ▷ or ◁ will switch insertion of data in the mini monitor ON and OFF.

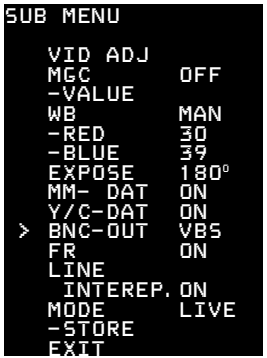
6.4.8 Y/C-Output as "normal video" or "video with data"

It can be programmed to have "normal video" or "video with data" on the Y/C output.

Note: If the on-screen menu control is on (red LED next to the ENTER INSERT-key is on), there will always be data in this output. This is necessary because if the output is switched to data off, no insert were available and therefore, it would be impossible to go back into the on-screen menu to change the settings.

The setting Y/C DAT On or OFF will effect both Y/C outputs. The Y/C output on the bottom of the IVS as well as the Y/C output via two BNC sockets.

Move the cursor > with the keys △ and ▽ to the line Y/C-DAT. Pressing the key ▷ or ◁ will switch insertion of data in the Y/C channels ON and OFF.



6.4.9 Composite or Y/C signal at BNC Connectors

If selected, the Y/C signal is available on the same BNC connectors, on which the composite signal is outputted. Therefore it is necessary to switch between both signals on the BNC connecter.

Move the cursor > with the keys △ and ▽ to the line BNC-OUT. Pressing the key ▷ or ◁ will switch the output signal on the BNC connector between composite and Y/C

The display will switch between

and

Note: The Y/C output on the bottom of the IVS is not effected by this setting.

6.4.10 Flicker free on/off

Flicker free can be switched of to bypass the digital frame store and have the video assist output with no delay.

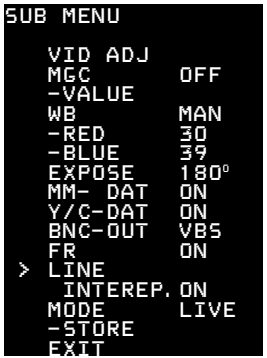
The film camera runs normally at a different speed than the video assist. E.g. the film camera runs at 24 FPS and the video assist at 25 FPS. This would normally cause different brightness of the video image. To eliminate this so called flicker, video images are stored at the speed of the film camera into a video frame storage and recalled in the speed of the video system. This storage might cause a slight delay, which is not desirable in some crucial time conditions, e.g. motion control or shooting of a pop video.

Therefore it is possible to switch the flicker free system off. This ill eliminate the delay. However, flicker will occur in this mode.

The time code information such as time code, user bits, VITC and white line is not valid if flicker reduction is switched off.

Move the cursor > with the keys △ and ▽ to the line **FR**. Pressing the key ▷ or ◁ will switch flicker free on or off.

Note: The lower camera speed for flicker free display is 5 FPS in automatic gain control mode and 1 FPS in manual gain control mode.



6.4.11 Line interpolation on/off

Due to the rotating mirror shutter of the film camera, the CCD chip of the IVS gets light only for a maximum of 50 % of the time. All video assists will therefore have one true video field and the next one will be the repetition of the previous one. So the repeated video field does not have new information. To improve this situation, the video assist can be electronically enhanced with a so called line interpolation.

Move the cursor > with the keys △ and ▽ to the line LINE. Pressing the key ▷ or ◁ will switch the line interpolation on and off.

Note: This setting effects only the video image while the film camera is in run mode.

6.4.12 Display mode

In parallel to the keyboard, the display mode can also be programmed via the on-screen menu.

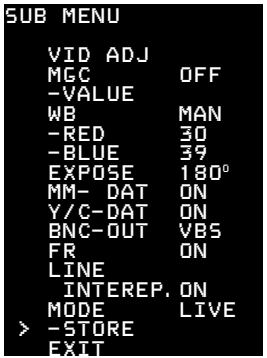
The IVS can store one particular image, display that or overlay it against the live image in front of the camera to compare both images. Display mode allows to select whether a live image, a stored image or both images in an alternating display mode are displayed. (Please see next chapter 6.4.13 "Store image" for how to store one image).

Move the cursor > with the keys △ and ▽ to the line MODE. Pressing the key ▷ will switch from LIVE to STO to CMP and back to LIVE. The key ◁ will give the opposite direction.

If LIVE is selected, the actual image will be displayed. If STO is selected, an image, which was stored before, will be displayed and if CMP is selected, a live image and a stored image will alternate to show the difference of both images.

The stored image is memorized until a new image is stored or until the IVS power was shot down.

The LED in the keyboard will follow the changes which are made in this menu and vice versa, if the setting is changed via the keyboard, the on-screen menu will follow.



6.4.13 Store image

The IVS can store one particular image, display that or overlay it against the live image in front of the camera to compare both images. The store image command will grab one particular image, no matter of the selected display mode. (Please see last chapter 6.4.12 "*Display mode*" for information on different display modes, e.g. Live, Store and Compare).

Move the cursor > with the keys △ and ▽ to the line –STORE. Pressing the key ▷ or ◁ will store one particular image into the frame store. The line will change for 1 second to > -STORE DONE. To store a new video image, leave the line –STORE and go back to this line.

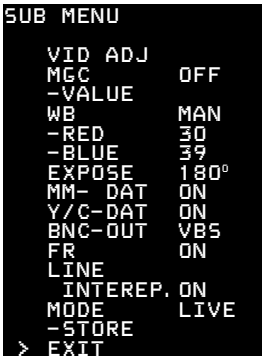
The stored image is memorized until a new image is stored or until the IVS power was shot down.

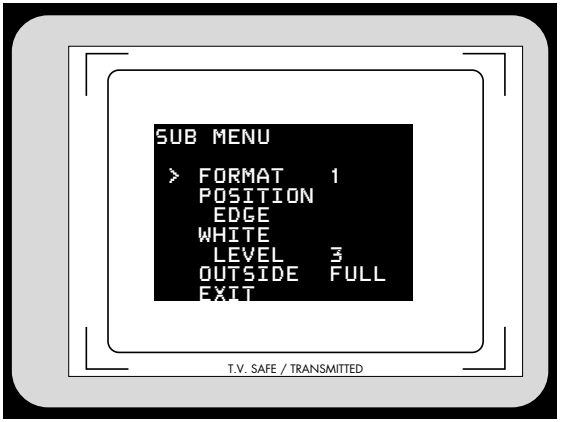
6.4.14 Exit

Return to the main menu using **EXIT**.

Move the cursor **>** with the keys ⓐ and ⓥ to the line **EXIT** and press the key ⓑ or ⓒ.

Note: Pressing the ENTER INSERT-key for more than three seconds will cause the system to exit the onscreen programming mode completely, regardless of which menu is activated, with the exception of the positioning mode.





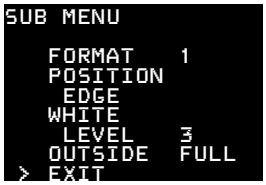
6.5 Format Marking Menu

The IVS can insert two different format markings electronically in the video image, either individually or simultaneously. The position of these format markings can be set anywhere on the screen, to line up exactly with the ground glass markings. The brightness is adjustable in four steps and the area outside of one format marking can be electronically darkened.

All settings are immediately activated by changing them.
Check all settings on the connected monitor.

- Enter the Format Marking submenu from the main menu.

6.5.1 Activate Format Markings

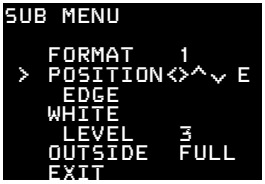


It is possible to have no format marking (OFF),
format marking number one (1),
format marking number two (2)
or both format markings at the same time (1 & 2) on display.

If the electronic format markings are not parallel to the ground glass format markings, readjust the CCD chip with the alignment screws on the CCD Optic Module (chapter 5.3).

Move the cursor > with the keys △ and ▽ to the line FORMAT. Pressing the key ▷ will switch from OFF to 1 to 2 to 1&2 and back to OFF, the key ◁ will switch in the opposite direction.

Note: Pressing the ENTER INSERT-key for more than three seconds will cause the system to exit the onscreen programming mode completely, regardless of which menu is activated, with the exeption of the positioning mode.



6.5.2 "Position" Positioning of the Format Marks

The format markings can be adapted to every different format. The format markings on the ground glass serve as a reference.

To align the electronic format markings with the ground glass markings proceed as follows:

a) Point the film camera towards a bright object so that the format markings on the ground glass are clearly visible.

b) Move the cursor > with the keys △ and ▽ to the line POSITION. Call the positioning mode with the keys ▷ or ◁.
The submenu is displayed on the screen ⇨ **photo**.

- The symbol 1⌜ indicates that it is now possible to move the left and the upper line of format 1.

- The keys ▷ or ◁ move the vertical line right or left, the keys △ or ▽ move the horizontal line up and down.

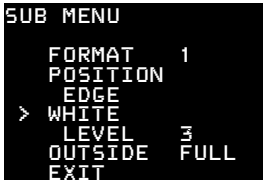
c) When the correct position has been set, confirm by pressing the ENTER INSERT-key shortly.

- The symbol will now change from 1⌜ to 1⌟. It is now possible to set the lower and right line with the keys △, ▽, ▷ or ◁.

d) When the correct position has been set, confirm by pressing the ENTER INSERT-key shortly.

If both format markings are activated, the symbol 2⌜ is now displayed. In this case the left and upper line of format 2 can be set. Proceed as described above.

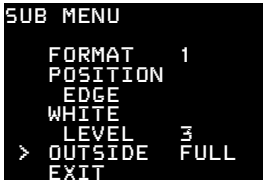
6.5.3 "White" Setting the Brightness of the Format Markings



The brightness of the format markings can be set to black (0), dark gray (1), light gray (2) or white (3).

Move the cursor > with the keys △ and ▽ to the line WHITE. Pressing the key ▷ will switch the settings from 0 to 1 to 2 to 3 and back to 0, pressing the key ◁ will switch the settings in the opposite direction.

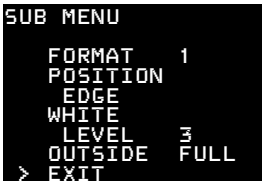
6.5.4 "Outside" Darkening the Area outside of the Format Markings



Note: This function is only available if one format marking is activated. No darkening function is available if there is no format marking or if two format markings are switched on.

The brightness of the area outside of one format marking can be reduced electronically to emphasize the important image area. The setting FULL shows the outside area with normal brightness, the setting DARK will reduce the brightness of that area.

Move the cursor > with the keys △ and ▽ to the line OUTSIDE. Pressing the key ▷ or ◁ will switch between FULL and DARK.



6.5.5 Exit

Return to the main menu using EXIT.

Move the cursor > with the keys ⓐ and ⓥ to the line EXIT and press the key ⓑ or ⓒ.

Note: Pressing the ENTER INSERT-key for more than three seconds will cause the system to exit the onscreen programming mode completely, regardless of which menu is activated, with the exception of the positioning mode.

6.6 Status Menu

The IVS can insert the camera status into the video image. The following information is available:
- standby or run
- forward (FWD) or reverse (REV)
- film camera speed in full frames per second
- IVS film counter

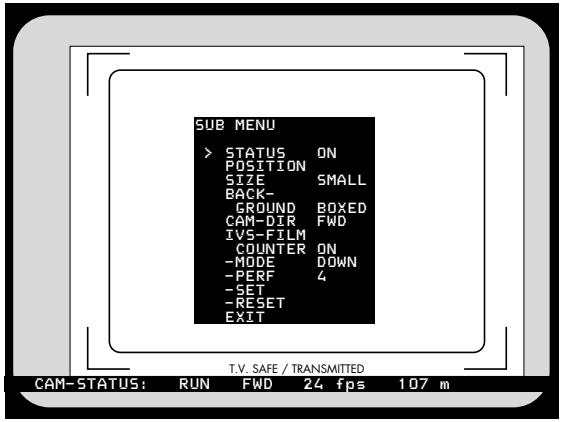
The information forward or reverse is also displayed if the film camera is in standby. In this case the information refers to the selected camera running direction.

The information on camera speed always displays the current film camera speed. The corresponding digits are blanked out if the camera is in standby.

The data is displayed only in full frames. A camera speed of 23.976 fps would be displayed as 24 fps.

The IVS film counter is an independent counter which is not linked to the film camera´s film counter. It can be set to count up or down. It can be set to any number or it can be reset.

Like all man readable information, the data is inserted as a window on the monitor image. The window can be switched



on and off independently. Background, position and character format can be altered without effecting the settings of other windows.

This additional line shows the camera status:

CAM-STATUS: RUN FWD 24 fps 107 m

The adjustment of the white level of the inserted data, an inverse display and a fine adjustment of the vertical position is described in chapter 6.11

- Enter the Status Menu from the Main Menu.

All settings are immediately activated by changing them. Check all settings on the connected monitor.

6.6.1 Status

This sub menu line switches the insertion of camera status data on (ON) and off (OFF) independently of other inserted data.

Move the cursor > with the keys △ and ▽ to the line STATUS. The keys ▷ and ◁ switch the insertion on and off. A line similar to the depicted line will appear:

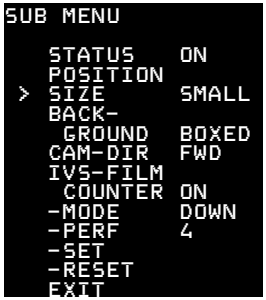
6.6.2 Position

The window can be positioned anywhere on the monitor screen.

Move the cursor > with the keys △ and ▽ to the line POSITION. Activate the positioning mode with the keys ▷ or ◁. The following menu is displayed on the screen:

The keys △ and ▽ move the window up and down. When the desired position has been set, confirm by pressing the key ENTER INSERT.

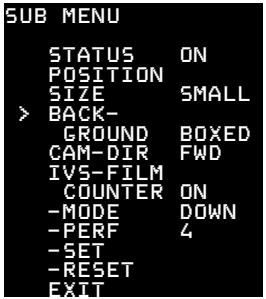
6.6.3 Size



The format of the inserted characters can be changed independently of other windows from SMALL to WIDE to HIGH to BIG.

Move the cursor > with the keys ⓐ and ⓥ to the line SIZE. Pressing the key ⓑ will change the setting from SMALL to WIDE to HIGH to BIG and back to SMALL. The key ⓒ will switch in the opposite direction.

6.6.4 Background



The background of the window can be set electronically to black (BOXED) to improve the readability. If this is not activated, the area around the text is the normal video image (VIDEO).

Move the cursor > with the keys ⓐ and ⓥ to the line BACK-. The keys ⓑ or ⓒ switch between BOXED and VIDEO.

6.6.5 Camera Direction

The camera direction forward "FWD" or reverse "REV" must be set in the IVS in order to get valid information in the IVS film counter.

Move the cursor > with the keys △ and ▽ to the line CAM-DIR. The keys ▷ and ◁ will switch between forward and reverse.

6.6.6 IVS Film Counter On/Off

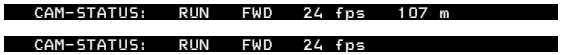
The IVS film counter is an independent footage counter. It is not slaved to the footage counter of the film camera and can be used in parallel. It can be switched to be displayed in the camera status line or it can be taken out of this line.

The IVS Film Counter can be set to count upwards or downwards (i. e. to show remaining film stock), it can be set to any film length or cleared.

This sub menu line IVS-FILM switches the IVS film counter on and off.

Move the cursor > with the keys ⓐ and ⓥ to the line IVS-FILM. The keys ⓑ and ⓒ will switch between IVS film counter on and off.

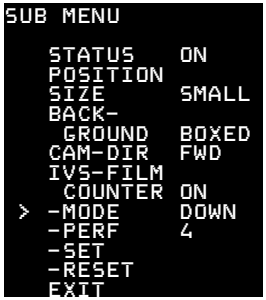
If the IVS film counter is on, the status line has film counter information otherwise the information is blanked out.



Note: The accuracy of the IVS filmcounter depends on the chosen unit for measurement – m or ft – and is displayed in full units.

6.6.7 IVS Film Counter Mode

The IVS film counter can count up or down. In the count up mode, it is possible to see the footage, which ran through the camera. In the count down mode, it is possible to see how much film is left, if the length of the film that was loaded was programmed in. This is described in the next paragraph.



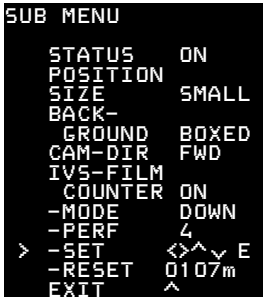
This sub menu line switches the IVS film counter mode from count up to count down.

Move the cursor > with the keys ⓐ and ⓥ to the line -MODE. The keys ⓑ and ⓒ will switch between IVS film counter mode "up" and "down".

6.6.8 IVS Film Counter Perf

Depending on the installed movement in the film camera the advance step per frame can be either 3 or 4 perforations. The correct advance step must be set in order to get correct data in the IVS film counter.

Move the cursor > with the keys △ and ▽ to the line −PERF. The keys ▷ and ◁ will switch between 3 and 4 perforation steps in film advance.



6.6.9 IVS Film Counter Set

The IVS film counter can be preset to a given value. This enables the user, to set the length of the film material and have an indication of the remaining film length in the magazine.

Note: For this, please set the IVS film counter mode to count down.

Move the cursor > with the keys ⏶ and ⏷ to the line –SET. Pressing the keys ⏵ and ⏴ will lead into the set menu. Within this set menu, it is possible to change the active digit, which is the digit, marked with the ^ symbol.

The ⏵ key will move the ^ symbol from the first digit one digit right. By pressing the same key, the ^ symbol will continue to move right to the last digit, which is M for meter or FT for feet. After that, it will get back to the first digit. The ⏴ key will move the ^ symbol in the opposite direction.

Pressing the ⏶ key will increment the active digit by one.

Every time, the ⏶ key is pressed, the active digit is incremented from 0 to 9 and back to 0. The ⏷ key will give the opposite direction.

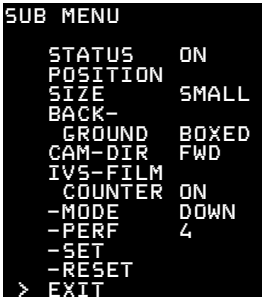
If the last digit is selected it is possible to switch between meter "M" and feet "FT" display. Pressing the ⏶ or ⏷ key will change between the two formats.

When the desired value has been set, confirm by pressing the ENTER INSERT-key.

6.6.10 IVS Film Counter Reset

This sub menu line will reset the IVS film counter to 0000.

Move the cursor > with the keys △ and ▽ to the line -RESET. The keys ▷ or ◁ will reset the counter to zero.



6.6.11 Exit

Return to the main menu using EXIT.

Move the cursor > with the keys △ and ▽ to the line EXIT and press the key ▷ or ◁.

Note: Pressing the ENTER INSERT-key for more than three seconds will cause the system to exit the onscreen programming mode completely, regardless of which menu is activated, with the exception of the positioning mode.

6.7 TIME CODE Menu

For all TC- and related functions, the ARRIFLEX 435 must be equipped with a Function Expansion Module (FEM).

The IVS can insert the film camera's time code into the video assist image to create a direct link to the post production.

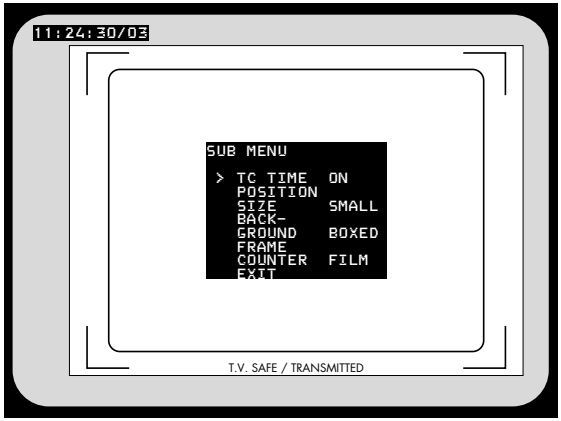
It is possible to insert time code, which is related to the film camera speed, e. g. 24 fps or a time code which counts according to the type of video assist (25 full video frames per second with PAL or 30 full video frames per second with NTSC).

Like all man readable information, the data is inserted as a window on the monitor image. The window can be switched on and off independently. Background, position and character format can be altered without effecting the settings of other windows.

The adjustment of the white level of the inserted data, an inverse display and a fine adjustment of the vertical position is described in chapter 6.11

This additional line shows the TC information:

11:24:30/03



Note: The frame information (the last two digits of the time code display) is only active if time code is actually recorded on film. If there is no time code recording on film because for example the camera is not running on a time code speed, only the symbol "**" is displayed on that position.

- Enter the Time Code Menu from the Main Menu.

All settings are immediately activated by changing them. Check all settings on the connected monitor.

6.7.1 TC Time

This sub menu line switches the insertion of time code data on (ON) and off (OFF) independently of other inserted data.

Move the cursor > with the keys △ and ▽ to the line TC TIME. The keys ▷ or ◁ switch the insertion on and off.

6.7.2 Position

The window can be positioned anywhere on the monitor screen.

Move the cursor > with the keys △ and ▽ to the line POSITION. Activate the positioning mode with the keys ▷ or ◁. The following menu is displayed on the screen:

The keys ▷ and ◁ move the window left and right, the keys △ and ▽ move the window up and down.

When the correct position has been set, confirm by pressing the ENTER INSERT-key.

6.7.3 Size

The format of the inserted characters can be changed independently of other windows from SMALL to WIDE to HIGH to BIG.

Move the cursor > with the keys △ and ▽ to the line SIZE. Pressing the key ▷ will change the setting from SMALL to WIDE to HIGH to BIG and back to SMALL. The key ◁ will switch in the opposite direction.

6.7.4 Background

The background of the window can be set electronically to black (BOXED) to improve the readability. If this is not activated, the area around the text is the normal video image (VIDEO).

Move the cursor > with the keys △ and ▽ to the line BACK-. The keys ▷ or ◁ switch between BOXED and VIDEO.

6.7.5 Frame Counter

It is recommended to check the requirements of all facilities involved in post-production prior to shooting.

Very often the camera is set to run at a different speed than the video system. In areas with NTSC video system for example, the film camera would run at 24 fps whereas the video system works with 30 full video frames per second. In order to adapt to the specific needs there are two different time code formats possible.

To have the time code count related to the film camera, select the mode "Frame counter Film", which is often referred to as "film related time code". In this mode, the frame counter of the time code (the last two digits of the time code display) is increased by 1 if the film is advanced by one frame e.g. 24 times a second at 24 fps. By this it is easy to identify one particular film frame by looking at the video image. On the other hand, this mode will create an unusual time code count because some video images are repeated to cope with the different frame rates of the video and the film camera. These repeated images will get duplicated time code words which will create error messages on some time code readers.

To relate the time code count to the video system, select mode "Frame counter Video". This is often referred to as "video related time code" . Every full video frame will advance the time code by 1 e.g. 25 times a second in PAL or 30 times a second in NTSC. By this the IVS creates a standard time code. On the other hand, it is more difficult to get the link back to the time code, which was recorded on film. To get a reliable relation, it is necessary to utilize the Pull-Down (refer to chapter 6.10) or White-Line-Flag information (refer to chapter 6.13).

At every full second, both time counts are identical.

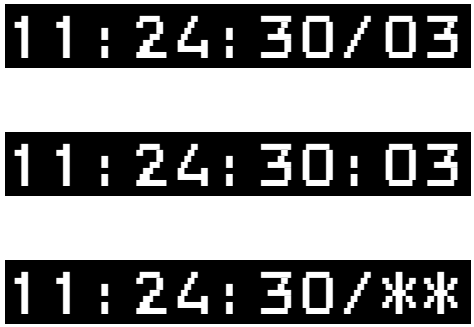
In case of "Frame counter Film" there will be a "/" before the frame count (the last two digits of the time code display), in case of "Frame counter Video" there will be a ":" ⇨ **photo**.

*The frame count is only active if time code is actually recorded on film. In all other cases a "**" ⇨ **photo** symbol will appear for the frame count.*

Time code is only recorded on film at standard speeds. These are 23.976 fps, 24 fps, 25 fps, 29.97 fps and 30 fps. At all other speeds, time code is displayed on the video assist without the frame count and it is not recorded on film.

Time code is only valid when flicker free is on!

Move the cursor > with the keys △ and ▽ to the line FRAME. The keys ▷ and ◁ switch the frame counter mode between FILM and VIDEO.



6.7.6 Exit

Return to the main menu using **EXIT**.

Move the cursor > with the keys △ and ▽ to the line **EXIT** and press the key ▷ or ◁.

Note: Pressing the ENTER INSERT-key for more than three seconds will cause the system to exit the onscreen programming mode completely, regardless of which menu is activated, with the exception of the positioning mode.

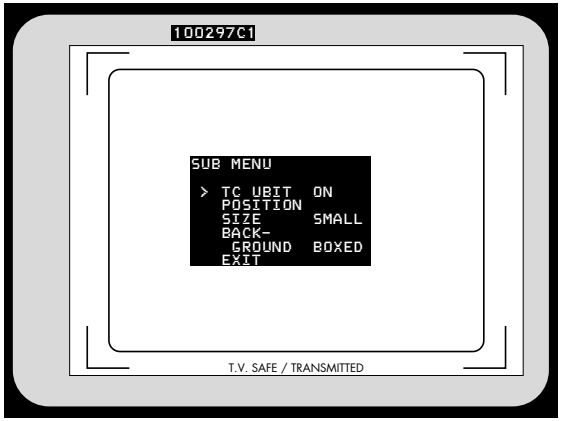
6.8 USER BITS Menu

For all TC- and related fuctions, the ARRIFLEX 435 must be equipped with a Function Expansion Module (FEM).

The IVS can insert the user bits of the film camera's time code into the video assist image to create a direct link to the post production.

Like all man readable information, the data is inserted as a window on the monitor image. The window can be switched on and off independently. Background, position and character format can be altered without effecting the settings of other windows.

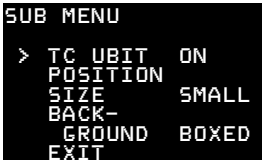
The adjustment of the white level of the inserted data, an inverse display and a fine adjustment of the vertical position is described in chapter 6.11



This additional window shows the User Bits information:
100297C1

- Enter the User Bits Menu from the Main Menu.

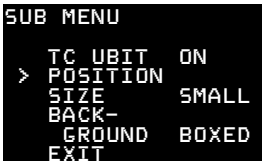
All settings are immediately activated by changing them.
Check all settings on the connected monitor.



6.8.1 TC UBit

This sub menu line switches the insertion of user bit data on (ON) and off (OFF) independently of other inserted data.

Move the cursor > with the keys ⓐ and ⓥ to the line TC UBIT. The keys ⓑ and ⓒ switch the insertion on and off.



6.8.2 Position

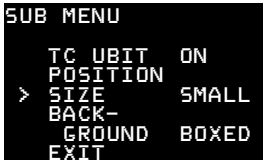
The window can be positioned anywhere on the monitor screen.

Move the cursor > with the keys ⓐ and ⓥ to the line POSITION. Activate the positioning mode with the keys ⓑ or ⓒ. The following menu is displayed on the screen:

The keys ⓑ and ⓒ move the window left and right, the keys ⓐ and ⓥ move the window up and down.

When the correct position has been set, confirm by pressing the ENTER INSERT-key.

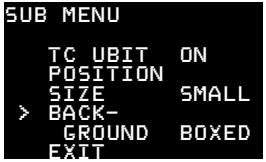
6.8.3 Size



The format of the inserted characters can be changed independently of other windows from SMALL to WIDE to HIGH to BIG.

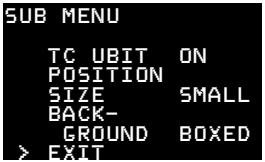
Move the cursor > with the keys △ and ▽ to the line SIZE. Pressing the key ▷ will change the setting from SMALL to WIDE to HIGH to BIG and back to SMALL. The key ◁ will switch in the opposite direction.

6.8.4 Background



The background of the window can be set electronically to black (BOXED) to improve the readability. If this is not activated, the area around the text is the normal video image (VIDEO).

Move the cursor > with the keys △ and ▽ to the line BACK-. The keys ▷ or ◁ switch between BOXED and VIDEO.



6.8.5 Exit

Return to the main menu using EXIT.

Move the cursor > with the keys ⓐ and ⓥ to the line EXIT and press the key ⓑ or ⓒ.

Note: Pressing the ENTER INSERT-key for more than three seconds will cause the system to exit the onscreen programming mode completely, regardless of which menu is activated, with the exception of the positioning mode.

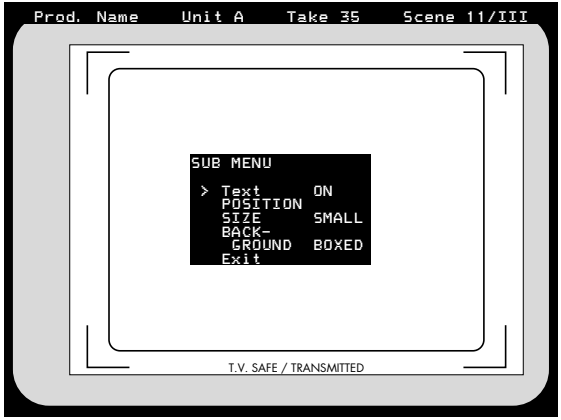
6.9 Text Menu

The IVS can insert additional text into the video image, for example the production name or a scene number. As there is no text input possibility on the camera or on the IVS it is necessary to enter that text on a computer and to send it to the IVS via the RS 232 interface into the CCU connector of the camera.

Later versions of the Laptop Camera Controller will have corresponding possibilities.

If information is stored in the text memory, it will remain there until the memory is cleared or a new information overrides the old one, even if the IVS or the camera is switched off or disconnected from the power supply. This enables for example a camera rental house to store information which is then available to the production team. This might for example be the production name.

Like all man readable information, the data is inserted as a window on the monitor image. The window can be switched on and off independently. Background, position and character format can be altered without effecting the settings of other windows.



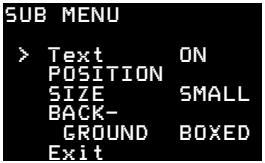
This additional line shows the text information:

Prod. Name Unit A Take 35 Scene 11/III

The adjustment of the white level of the inserted data, an inverse display and a fine adjustment of the vertical position is described in chapter 6.11

- Enter the Text Menu from the Main Menu.

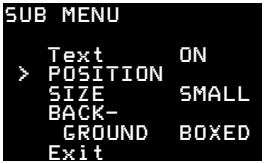
All settings are immediately activated by changing them.
Check all settings on the connected monitor.



6.9.1 Text

This sub menu line switches the insertion of additional text on (ON) and off (OFF) independently of other inserted data.

Move the cursor > with the keys △ and ▽ to the line TEXT. The keys ▷ or ◁ switch the insertion on and off.



6.9.2 Position

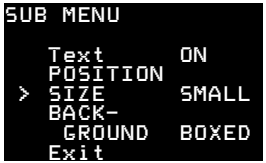
The window can be positioned anywhere on the monitor screen.

Move the cursor > with the keys △ and ▽ to the line POSITION. Activate the positioning mode with the keys ▷ or ◁. The following menu is displayed on the screen:

The keys △ and ▽ move the window up and down.

When the desired position has been set, confirm by pressing the ENTER INSERT-key.

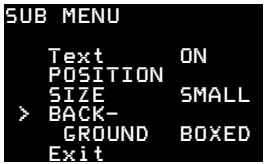
6.9.3 Size



The format of the inserted characters can be changed independently of other windows from SMALL to WIDE to HIGH to BIG.

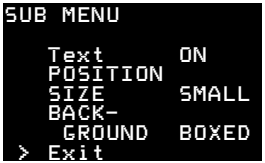
Move the cursor > with the keys △ and ▽ to the line SIZE. Pressing the key ▷ will change the setting from SMALL to WIDE to HIGH to BIG and back to SMALL. The key ◁ will switch in the opposite direction.

6.9.4 Background



The background of the window can be set electronically to black (BOXED) to improve the readability. If this is not activated, the area around the text is the normal video image (VIDEO).

Move the cursor > with the keys △ and ▽ to the line BACK-. The keys ▷ or ◁ switch between BOXED and VIDEO.



6.9.5 Exit

Return to the main menu using EXIT.

Move the cursor > with the keys ⓐ and ⓥ to the line EXIT and press the key ⓑ or ⓒ.

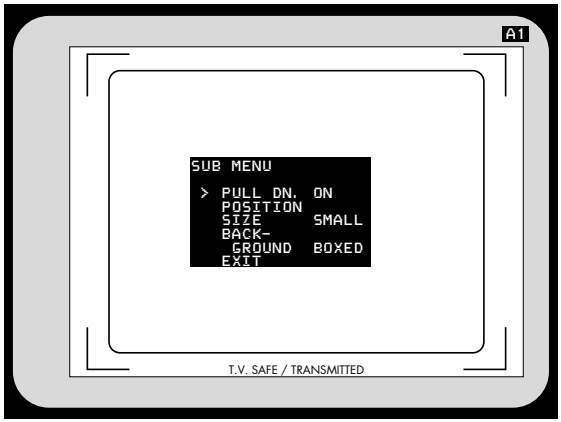
Note: Pressing the ENTER INSERT-key for more than three seconds will cause the system to exit the onscreen programming mode completely, regardless of which menu is activated, with the exception of the positioning mode.

6.10 Pull-Down Menu

For all TC- and related functions, the ARRIFLEX 435 must be equipped with a Function Expansion Module (FEM).

The IVS can generate information on whether the current video image corresponds to a new film frame or whether it is a repeated video image. The Pull-Down information displays that in man readable form.

The adjustment of the white level of the inserted data, an inverse display and a fine adjustment of the vertical position is described in chapter 6.11

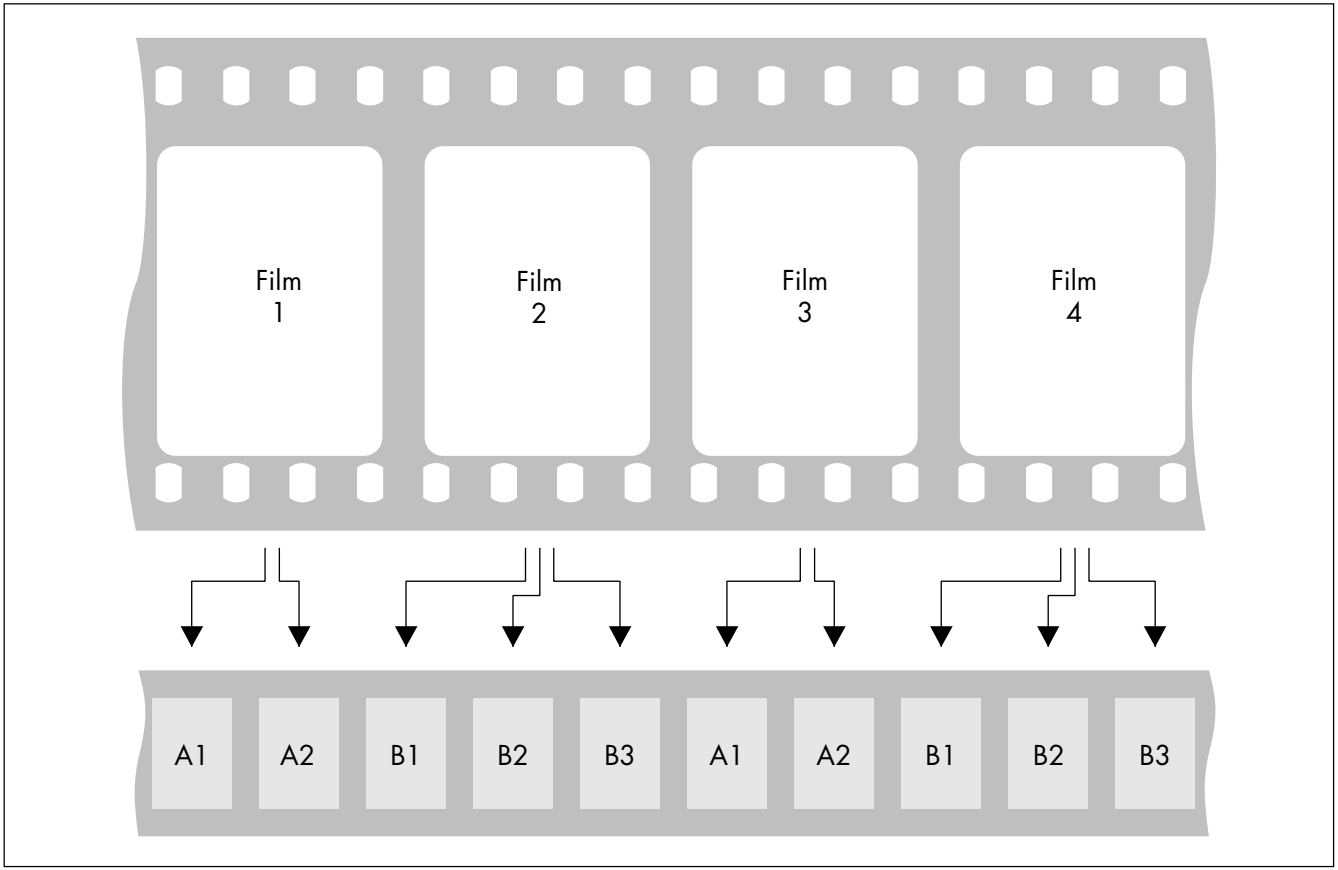


This additional window shows the pull-down information:

A1

- Enter the Pull-Down Menu from the Main Menu.

All settings are immediately activated by changing them.
Check all settings on the connected monitor.


Film
1
Film
2
Film
3
Film
4
A1
A2
B1
B2
B3
A1
A2
B1
B2
B3

All video assists are based either on PAL or NTSC video systems, with a fixed video frequency of either 25 full video frames per second with PAL or 29.97 full video frames per second with NTSC. The speed of the film camera on the other hand can be selected over a wide range. At every film speed which is different from the video frequency, the IVS has to add repeated video fields to compensate for the different frame rates.

In practice the most important case is a film camera speed of 23.976 fps and a NTSC video assist.

This creates a situation described in the drawing.

From the first film frame, two video fields are derived, the second film frame, three video fields are derived, from the next film frame, two video fields and so on.

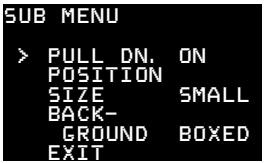
The Pull-Down information is created as follows:

Every time, the video field corresponds to a **new** film frame, the letter will change either from A to B or B to A and the number will be set to 1. As long as no new film frame is taken, the video fields are counted, beginning from 1. Consequently A2 is the first repetition of A1. B2 would be the first repetition of B1, B3 would be the second repetition.

In spite of the fact that the name Pull-Down comes from the working practice in the NTSC systems, where on a telecine the film is running on 23.976 fps and gets converted to 29.97 fps, the definition of Pull-Down information on the IVS can also be applied to PAL and to film speeds other than 23.976 fps.

Like all man-readable information, the data is inserted as a window on the monitor image. The window can be switched on and off independently. Background, position and character format can be altered without effecting the settings of other windows.

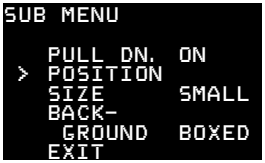
Note: Pull-Down information is only inserted, when time code is actually recorded on film. If there is no time code recording, for example because the camera is not running on a time code speed, only "A1" will be displayed.



6.10.1 Pull-Down

This sub menu line switches the insertion of pull down information on (ON) and off (OFF) independently of other inserted data.

Move the cursor > with the keys △ and ▽ to the line PULL DN. . The keys ▷ and ◁ switch the insertion on and off.



6.10.2 Position

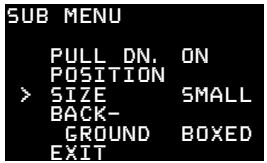
The window can be positioned anywhere on the monitor screen.

Move the cursor > with the keys △ and ▽ to the line POSITION. Activate the positioning mode with the keys ▷ and ◁. The following menu is displayed on the screen:

The keys ▷ and ◁ move the window left and right, the keys △ and ▽ move the window up and down.

When the desired position has been set, confirm by pressing the ENTER INSERT-key.

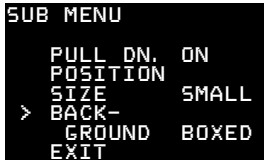
6.10.3 Size



The format of the inserted characters can be changed independently of other windows from SMALL to WIDE to HIGH to BIG.

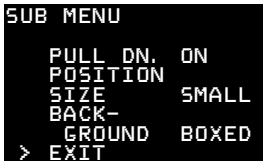
Move the cursor > with the keys ⓐ and ⓥ to the line SIZE. Pressing the key ⓑ will change the setting from SMALL to WIDE to HIGH to BIG and back to SMALL. The key ⓒ will switch in the opposite direction.

6.10.4 Background



The background of the window can be set electronically to black (BOXED) to improve the readability. If this is not activated, the area around the text is the normal video image (VIDEO).

Move the cursor > with the keys ⓐ and ⓥ to the line BACK-. The keys ⓑ or ⓒ switch between BOXED and VIDEO.



6.10.5 Exit

Return to the main menu using EXIT.

Move the cursor > with the keys ⓐ and ⓥ to the line EXIT and press the key ⓑ or ⓒ.

Note: Pressing the ENTER INSERT-key for more than three seconds will cause the system to exit the onscreen programming mode completely, regardless of which menu is activated, with the exception of the positioning mode.

6.11 Display Menu

In the sub menu "Display" it is possible to change some basic settings, which effect all active man-readable windows of the inserter at the same time.

- Enter the Display Menu from the main menu.

All settings are immediately activated by changing them.
Check all settings on the connected monitor.

6.11.1 Vertical Position

By changing the setting in the line "Vertical Position" of this sub menu it is possible to simultaneously shift all man-readable windows with the exception of the format markings vertically by one video line (fine adjust). The single steps are smaller than the steps in the normal position mode. This will place all windows as far outside the actual image area as possible.

Move the cursor > with the keys △ and ▽ to the line VERT. . By pressing the key ▷ the value will increment starting from 0 to 9, after that it will go back to 0. Higher values will cause the windows to be at a higher video line. They will therefore appear lower on the video screen. The key ◁ will increment in the opposite direction.

6.11.2 White Level

This line is used to change the brightness of all man-readable windows but the frame lines. Value 0 means dark gray, value 4 corresponds to bright white characters.

Move the cursor > with the keys △ and ▽ to the line WHITE. By pressing the key ▷ the values for the brightness of the characters will increment beginning from 0 to 4, and after that back to 0. The key ◁ will decrement in the opposite direction.

6.11.3 Inverse

This menu changes the appearance of all man-readable windows but the format markings. If inverse OFF is selected, the characters will appear white. If the background is BOXED it will appear black in this case. If inverse ON is selected, the characters will appear black. If the background is BOXED it will appear white in this case.

Move the cursor > with the keys △ and ▽ to the line INVERSE. The keys ▷ or ◁ will switch between ON and OFF.

6.11.4 Exit

Return to the main menu using **EXIT**.

Move the cursor > with the keys ⓐ and ⓥ to the line **EXIT** and press the key ⓑ or ⓒ.

Note: Pressing the ENTER INSERT-key for more than three seconds will cause the system to exit the onscreen programming mode completely, regardless of which menu is activated, with the exception of the positioning mode.

6.12 VITC Line Menu

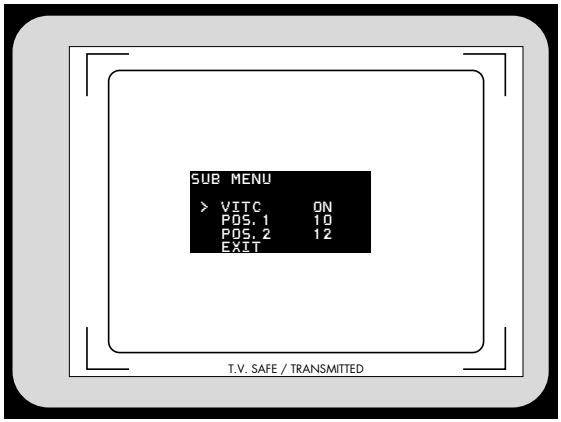
For all TC- and related fuctions, the ARRIFLEX 435 must be equipped with a Function Expansion Module (FEM).

The IVS can convert the time code, which can also be displayed man-readable in the video image, into machine readable VITC (Vertical Interval Time-Code) and place it in non visible video lines.

Note: The time code count that is used ("film related" or "video related time code") depends on the settings of the line "Frame Counter" in the sub menu "Time Code" (see chapter 6.7.5).

Note: VITC is only outputted if time code is actually recorded on film. If no time code is recorded on film for example because the camera is not running at a time code speed, no VITC is available.

Note: The White Line has priority over VITC lines. If the same line is selected for White Line as well as for VITC, White Line will appear.



- Enter the VITC Line Menu from the Main Menu.

All settings are immediately activated by changing them.
Check all settings on the connected monitor.

6.12.1 VITC

This sub menu line switches the insertion of VITC on (ON) and off (OFF).

Move the cursor > with the keys △ and ▽ to the line VITC. The keys ▷ and ◁ switch the insertion on and off.

6.12.2 Position 1

The insertion of VITC can be single or multiple line between line 6 and 22. If the same lines on position 1 and position 2 are selected, the insertion will be single line, otherwise multiple line. The value of position 1 can be higher or lower than that of position 2.

Move the cursor > with the keys △ and ▽ to the line POS. 1. By pressing the key ▷ the value will be increased until line 22 is selected. By pressing the key ◁ the value will be decreased until line 6 is reached.

6.12.3 Position 2

The insertion of VITC can be single or multiple line between line 6 and 22. If the same lines on position 1 and position 2 are selected, the insertion will be single line, otherwise multiple line. The value of position 1 can be higher or lower than that of position 2.

Move the cursor > with the keys ⏶ and ⏷ to the line POS. 2. By pressing the key ⏵ the value will be increased until line 22 is selected. By pressing the key ⏴ the value will be decreased until line 6 is reached.

6.12.4 Exit

Return to the main menu using EXIT.

Move the cursor > with the keys ⏶ and ⏷ to the line "EXIT" and press the key ⏵ or ⏴.

Note: Pressing the ENTER INSERT-key for more than three seconds will cause the system to exit the onscreen programming mode completely, regardless of which menu is activated, with the exception of the positioning mode.

Inserter Facilities

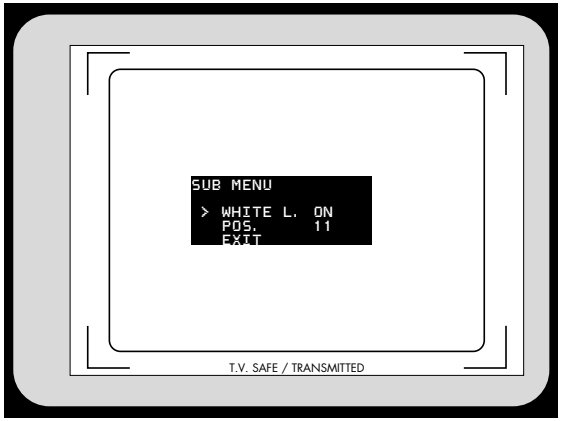
6.13 White Line Menu

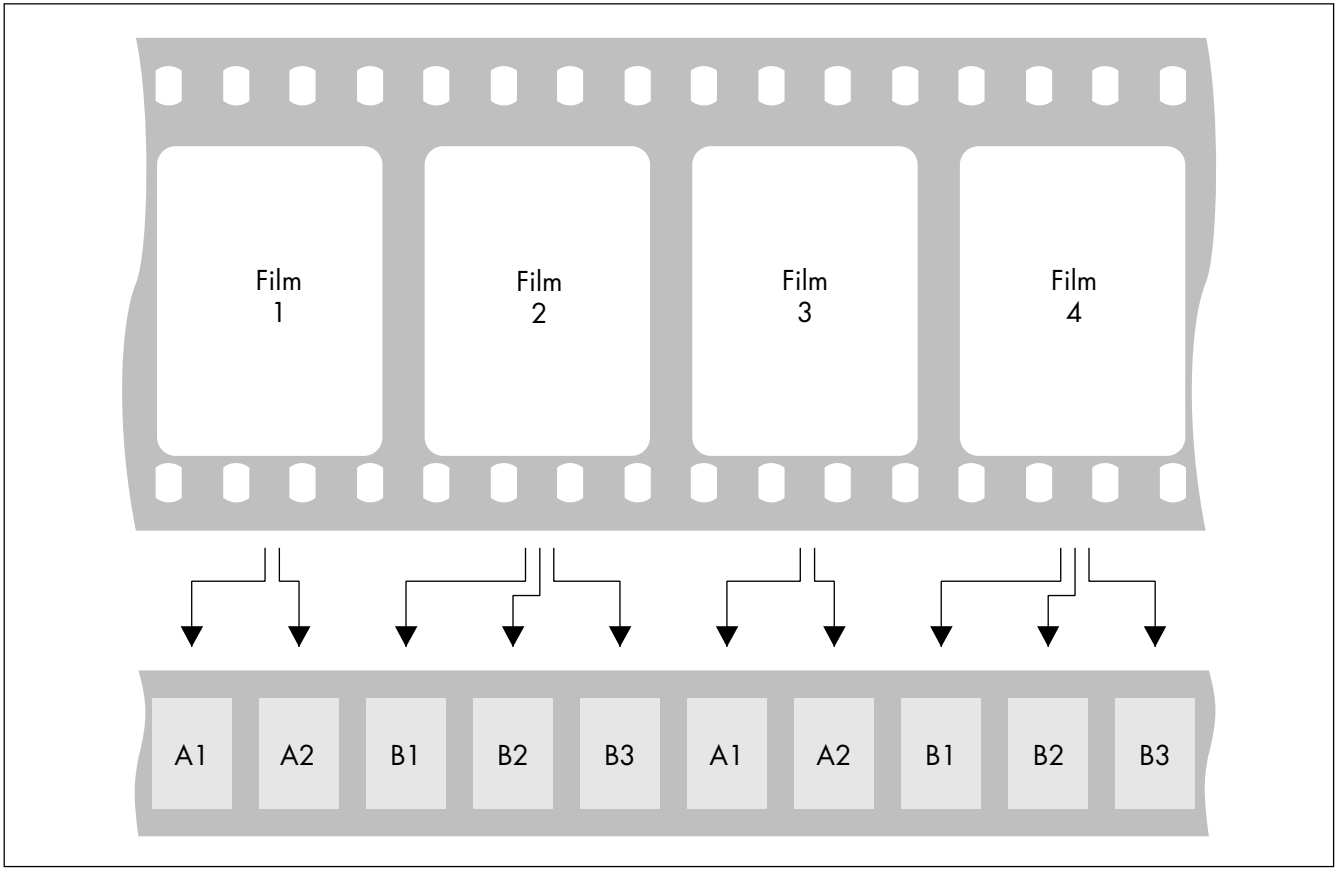
For all TC- and related fuctions, the ARRIFLEX 435 must be equipped with a Function Expansion Module (FEM).

The IVS can generate information on whether the current video image corresponds to a new film frame or whether it is a repeated video image. The White-Line flag displays this in machine readable form.

- Enter the White Line Menu from the Main Menu.

All settings are immediately activated by changing them.
Check all settings on the connected monitor.




Film
1
Film
2
Film
3
Film
4
A1
A2
B1
B2
B3
A1
A2
B1
B2
B3

All video assists are based either on PAL or NTSC video systems, with a fixed video frequency of either 25 full video frames per second with PAL or 29.97 full video frames per second with NTSC. The speed of the film camera on the other hand can be selected over a wide range. At every film speed which is different from the video frequency, the IVS has to add repeated video fields to compensate for the different frame rates.

In practice the most important case is a film camera speed of 23.976 fps and a NTSC video assist.

This creates a situation described in the drawing.

From the first film frame, two video fields are derived, the second film frame, three video fields are derived, from the next film frame, two video fields and so on.

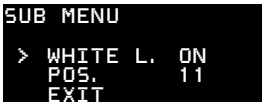
The White-Line flag works as follows:

Every time, the video field corresponds to a **new** film frame, the letter will change either from A to B or B to A and the number will be set to 1. As long as no new film frame is taken, the video fields are counted, beginning from 1. Consequently A2 is the first repetition of A1. B2 would be the first repetition of B1, B3 would be the second repetition. On every A1 or B1, the selected video line will get set to video signal white, indicating that only these video frames correlate one-to-one to film frames. The duplicated video fields are not marked.

In spite of the fact that the name Pull-Down comes from the working practice in the NTSC systems, where on a telecine the film is running on 23.976 fps and gets converted to 29.97 fps, the definition of Pull-Down information on the IVS can also be applied to PAL and to film speeds other than 23.976 fps.

Note: The insertion of White-Line flags is only done, when time code is actually recorded on film. If there is no time code recording, for example because the camera is not running on a time code speed, no White-Line flag is sent out.

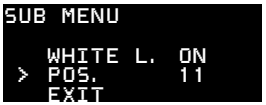
Note: The White Line has priority over VITC lines. If the same line is selected for White Line as well as for VITC, White Line will appear.



6.13.1 White Line

This sub menu line switches the insertion of White-Lines on (ON) and off (OFF).

Move the cursor > with the keys △ and ▽ to the line WHITE L. The keys ▷ and ◁ switch the insertion on and off.

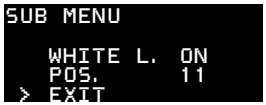


6.13.2 Position

The insertion of White-Lines can be between line 6 and 22.

Move the cursor > with the keys △ and ▽ to the line POS. . By pressing the key ▷ the value will be increased until line 22 is selected. By pressing the key ◁ the value will be decreased until line 6 is reached.

6.13.3 Exit



Return to the main menu using Exit.

Move the cursor > with the keys ⓐ and ⓥ to the line EXIT and press the key ⓑ or ⓒ.

Note: Pressing the ENTER INSERT key for more than three seconds will cause the system to exit the onscreen programming mode completely, regardless of which menu is activated, with the exception of the positioning mode.

7. Technical Data

Weight ..... approx. 0,7 kg

Power Consumption ..... approx. 11 W

Width of the Inserter/Antiflicker Module ..... 21,5 mm

Inputs ..... Genlock input for composit video

Outputs ..... 2 outputs for composite video
2 outputs for composite video
1 Mini-Monitor Output

Optic ..... 2 different versions for Academy and Silent Format

Optic Alignment ..... X-Y and focus

8. Order numbers

Optic Silent and/or K2.47230.0

Optic Academy K2.47231.0

Video Electronic complete ..... K2.47365.0 for PAL
or K2.47366.0 for NTSC

9. Index

W

Y

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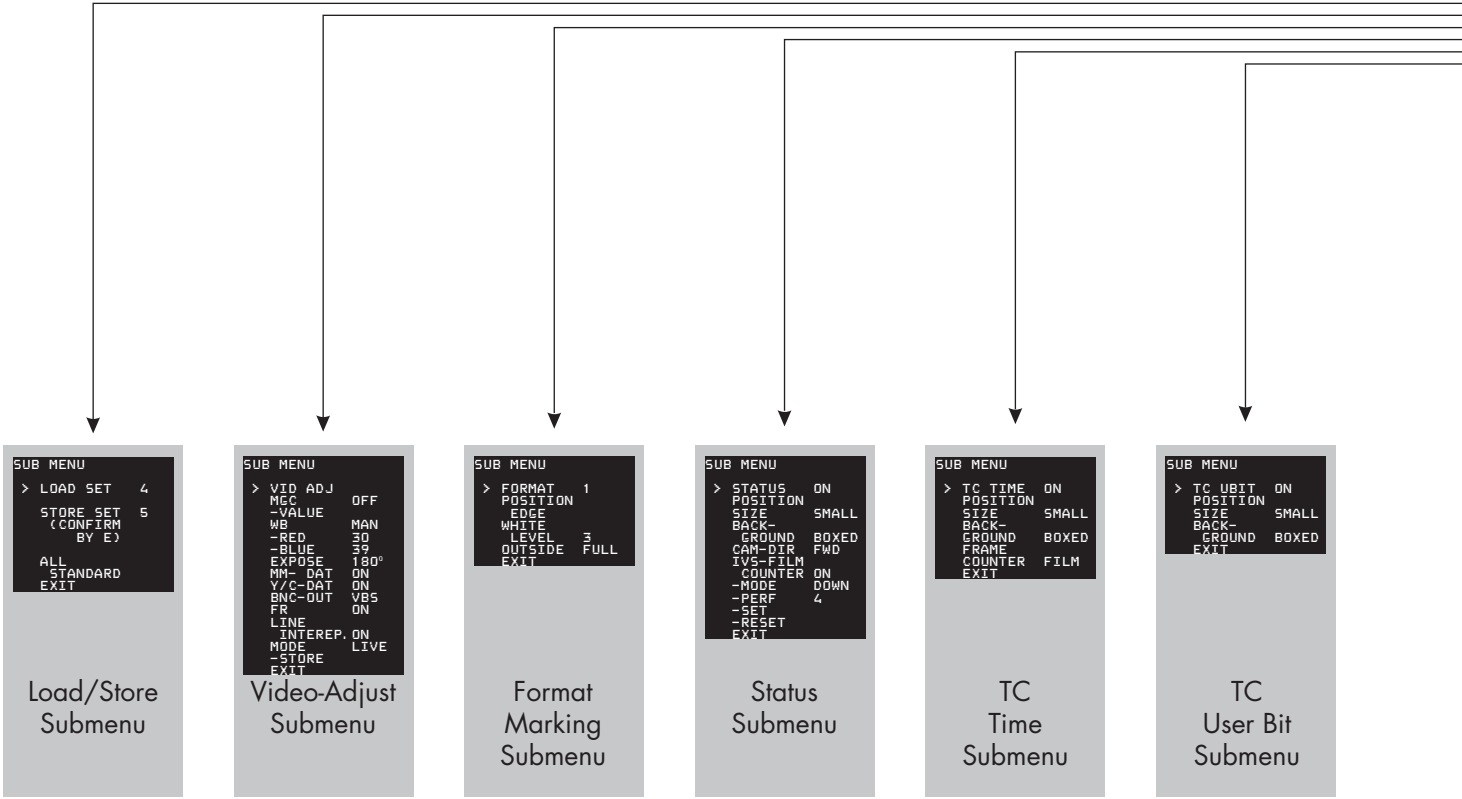
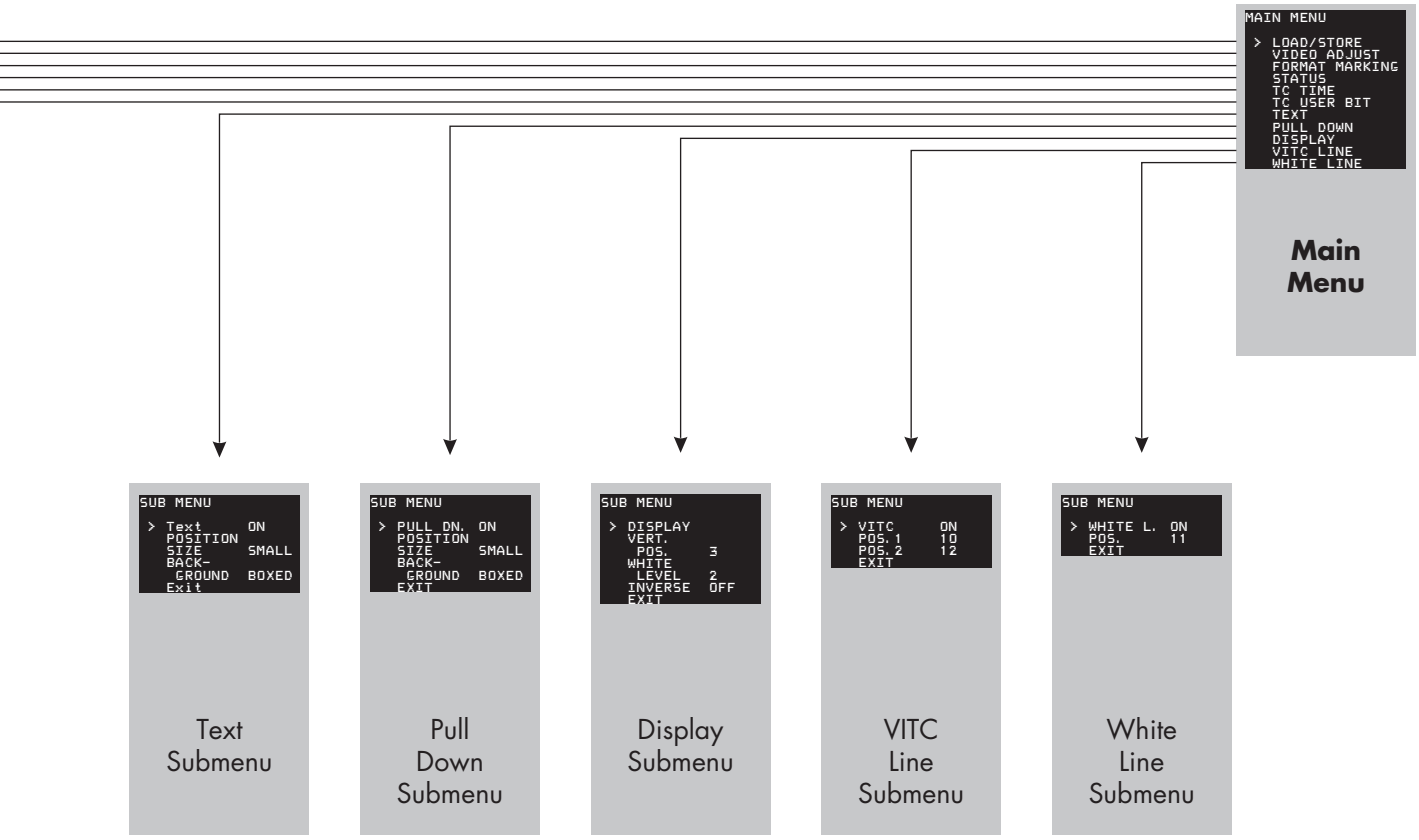
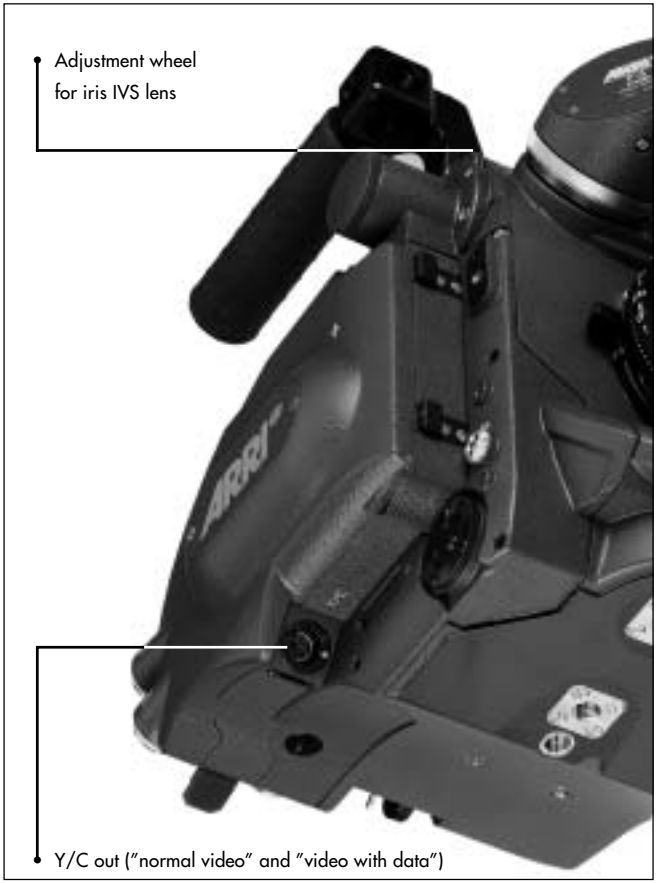

SUB MENU
> LOAD SET 4
STORE SET 5
(CONFIRM
BY E)
ALL
STANDARD
EXIT
Load/Store
Submenu
SUB MENU
> VID ADJ
MGC OFF
-VALUE
WB MAN
-RED 30
-BLUE 39
EXPOSE 180°
MM- DAT ON
Y/C-DAT ON
BNC-OUT VBS
FR ON
LINE
INTEREP. ON
MODE LIVE
-STORE
EXIT
Video-Adjust
Submenu
SUB MENU
> FORMAT 1
POSITION
EDGE
WHITE
LEVEL 3
OUTSIDE FULL
EXIT
Format
Marking
Submenu
SUB MENU
> STATUS ON
POSITION
SIZE SMALL
BACK-
GROUND BOXED
CAM-DIR FWD
IVS-FILM
COUNTER ON
-MODE DOWN
-PERF 4
-SET
-RESET
EXIT
Status
Submenu
SUB MENU
> TC TIME ON
POSITION
SIZE SMALL
BACK-
GROUND BOXED
FRAME
COUNTER FILM
EXIT
TC
Time
Submenu
SUB MENU
> TC UBIT ON
POSITION
SIZE SMALL
BACK-
GROUND BOXED
EXIT
TC
User Bit
Submenu


MAIN MENU
> LOAD/STORE
VIDEO ADJUST
FORMAT MARKING
STATUS
TC TIME
TC USER BIT
TEXT
PULL DOWN
DISPLAY
VITC LINE
WHITE LINE
Main Menu
SUB MENU
> Text ON
POSITION
SIZE SMALL
BACK-
GROUND BOXED
Exit
Text Submenu
SUB MENU
> PULL DN. ON
POSITION
SIZE SMALL
BACK-
GROUND BOXED
EXIT
Pull Down Submenu
SUB MENU
> DISPLAY
VERT.
POS. 3
WHITE
LEVEL 2
INVERSE OFF
EXIT
Display Submenu
SUB MENU
> VITC ON
POS.1 10
POS.2 12
EXIT
VITC Line Submenu
SUB MENU
> WHITE L. ON
POS. 11
EXIT
White Line Submenu


Adjustment wheel
for iris IVS lens
Y/C out ("normal video" and "video with data")

Identnumber for Instruction Manual:
K 5.58233.0

available languages
German
English

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