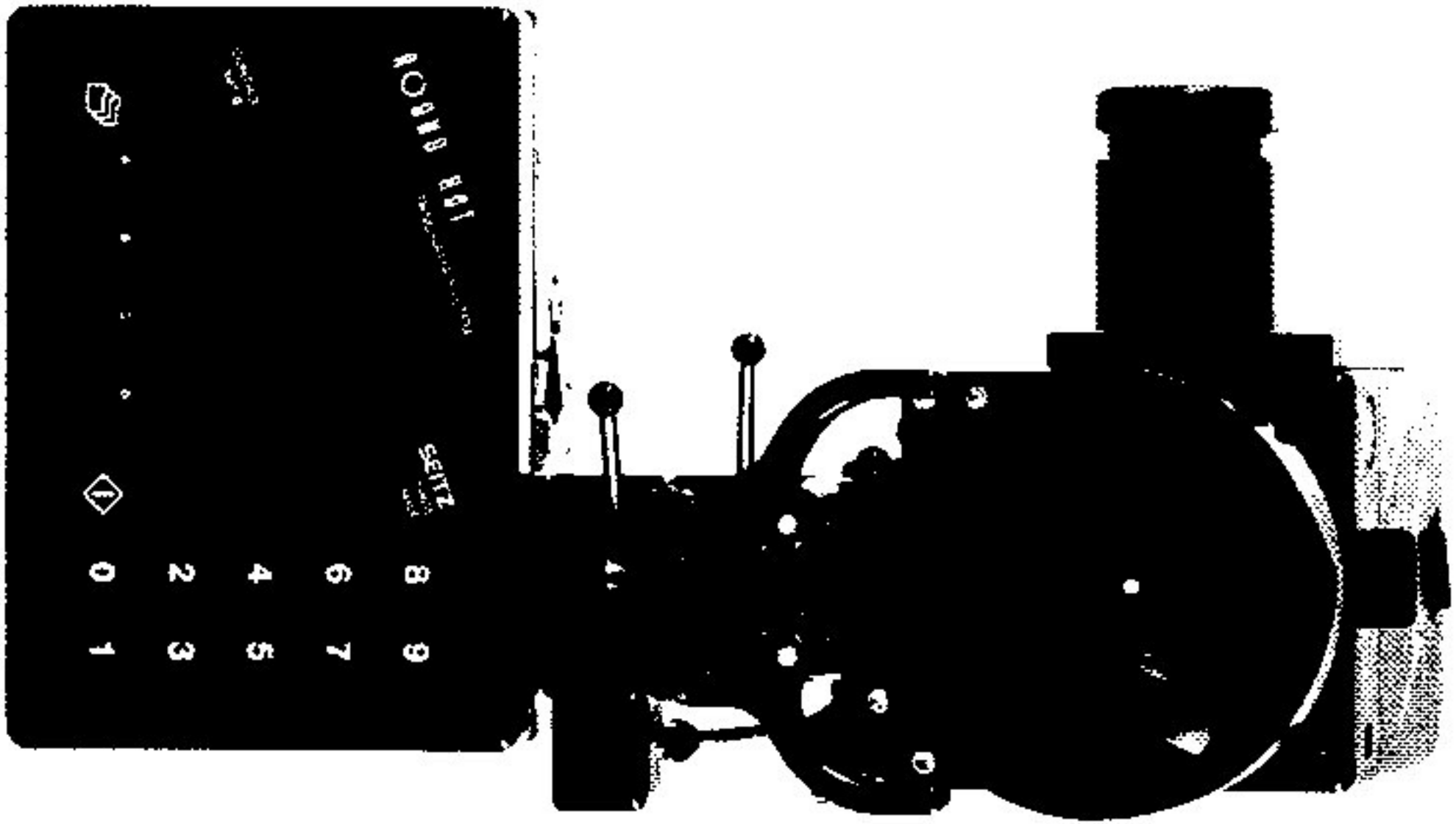
ROUND SHOT Super 220 VR - Super 35



Instruction Book

Version 3

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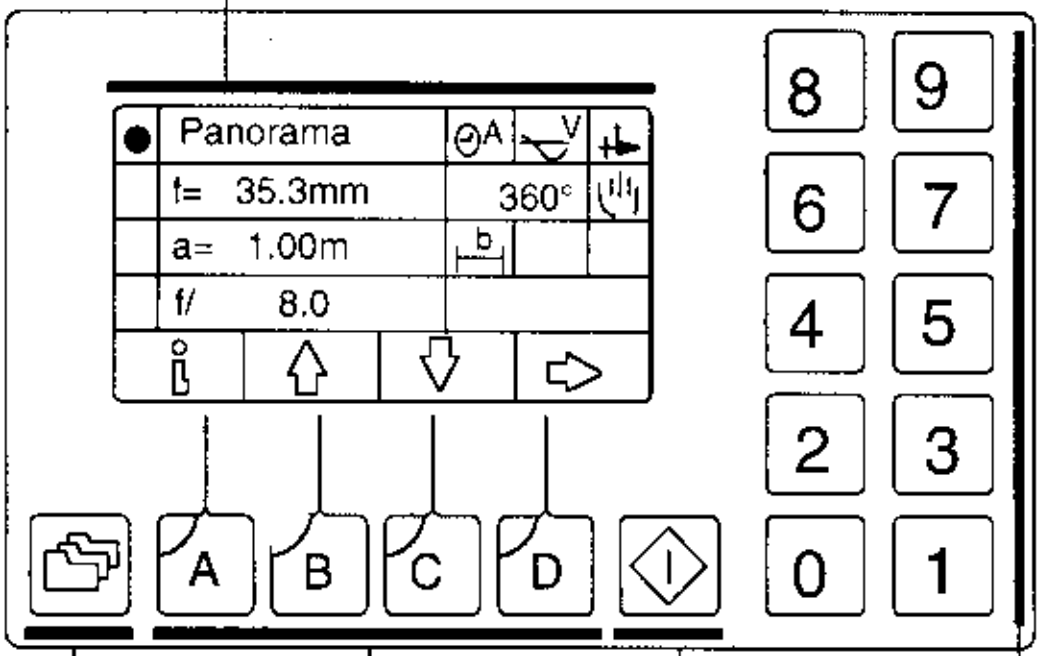
Control Unit

READ ME FIRST:
Press the RED button on the right side of the control unit to turn on the display. Whenever the display goes out press the RED button again if you want the display on. (It will stay on for 60 seconds after the last entry is made on the control unit. You will learn about controlling the display later in the instructions.)
If you accidentally push the Red button a second time the camera will run. No harm done. But, this is not the correct Start button for the camera. The " START " button is on the front of the display

The display shows all the important values. The background lighting can be switched off.



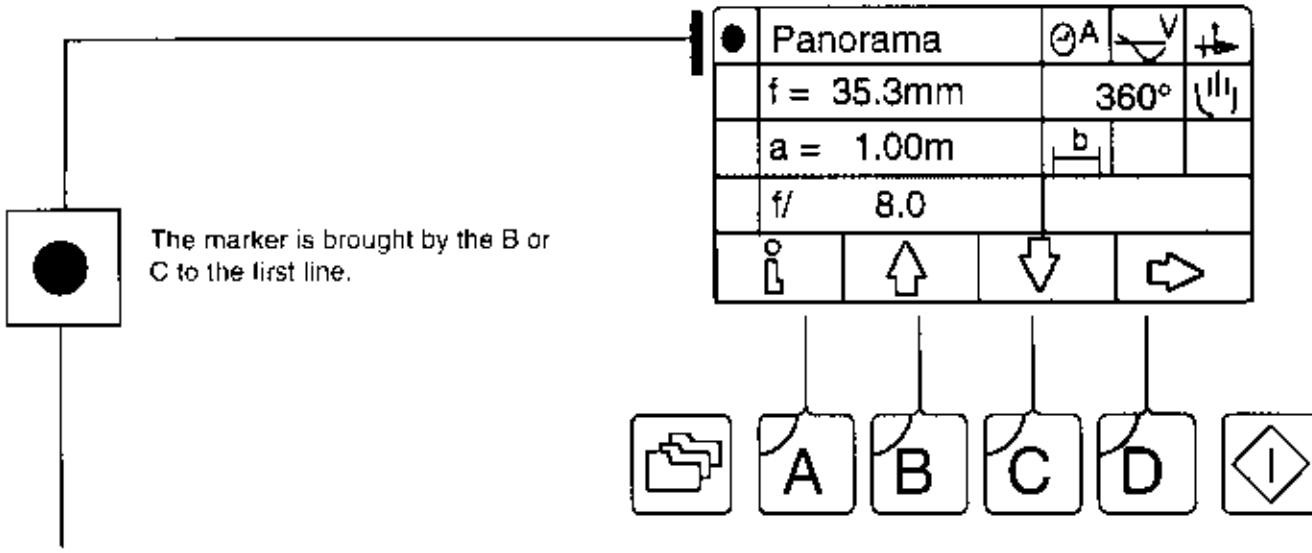
The buttons A, B, C, D, always take the function in the field directly above. Thus the button D refers to the arrow that moves the display the next function.

The number Keyboard serves to input any number values such as the turning angle, the lens focal length, the focus distance, etc.

The Page Button.
Go to the desired page (menu).
By pressing this button one can get out of programming at any time and return to the first page.

The Start button.
It is possible to start the camera with it any time. If the built in exposure meter is active, the next push of the button will make a scan. Only on the second push of the start button will a picture be taken.

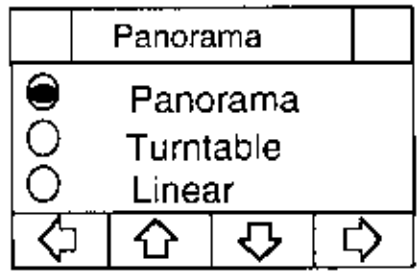
Mode



The marker is brought by the B or C to the first line.

Choice of Picture Taking Modes

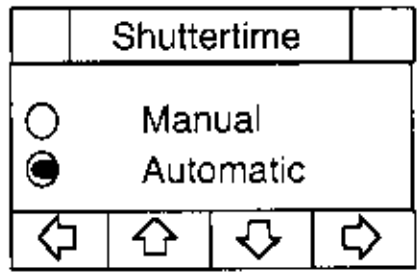
In order to select the taking mode, press the button D.



This illustration shows:
With the button C (arrow pointing down) the dot will move down one line, with the button B up one. The marker indicates the actual mode. This will likewise indicate the line above. The illustration above shows that the " Panorama " mode is active. In order to reach the Moving modus, use the button C to move below Linear.
Stereo and QTVR modus will switch on when the accessories are pluged in.

Exposure meter

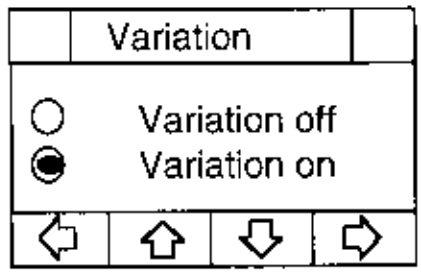
Press the button D again.



This illustration shows:
The exposure meter in the camera can be on or off. With button B or C, choose either manual or automatic. By automatic (as shown) the internal exposure meter is turned on.

Exposure Variation

Press the button D in order to select " Variation "

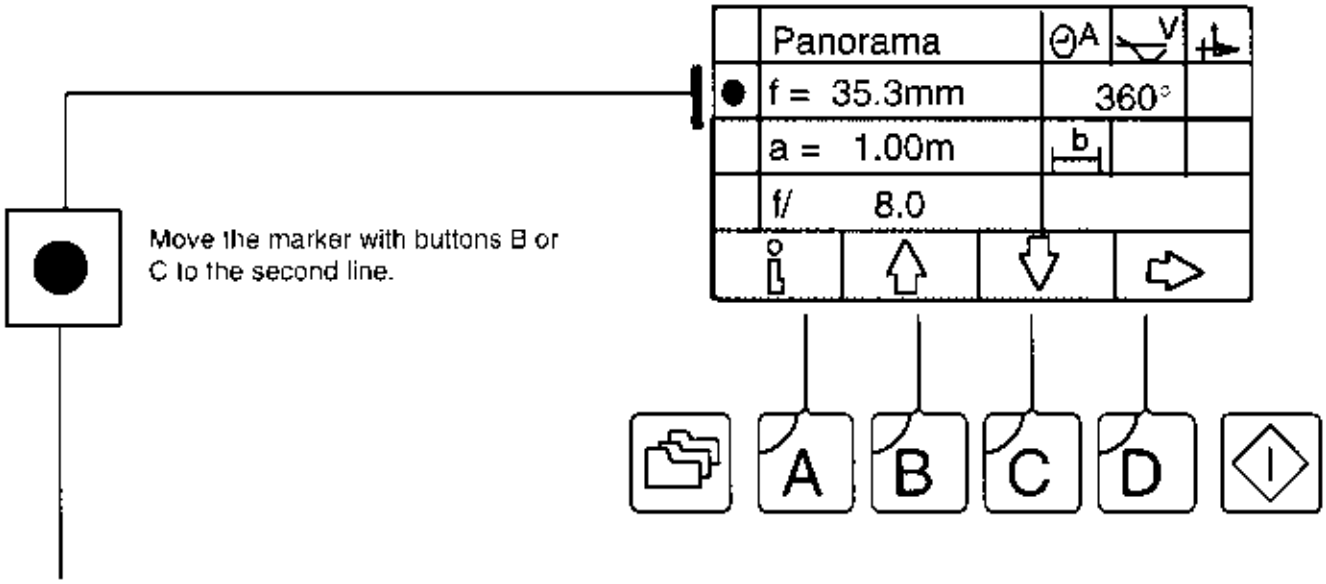


This illustration shows:
As above the marker is shifted with the buttons B or C. When the dot shows " Variation - On " the camera, during exposure, will compensate for the light and dark parts of the scene by varying the speed of rotation. (Automatic exposure)
Using " Variation - Off " the speed of rotation remains constant.

Symbols of the First Line

⊖M	Exposure Meter Off (Manual)		Variation On		Timer On
⊖A	Exposure Meter On (Automatic)	V	Variation Off		No Timer

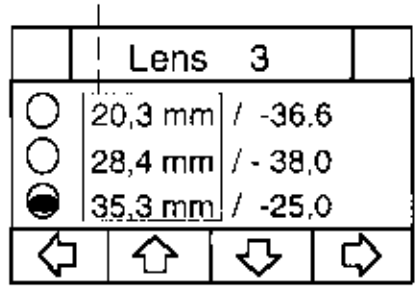
Lens



Move the marker with buttons B or C to the second line.

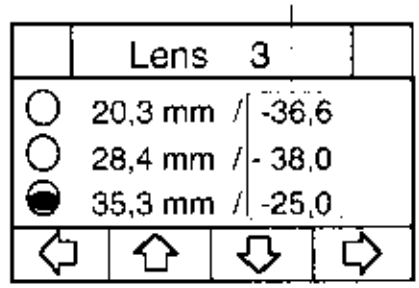
Lens Choice

Press D to see the Lens list



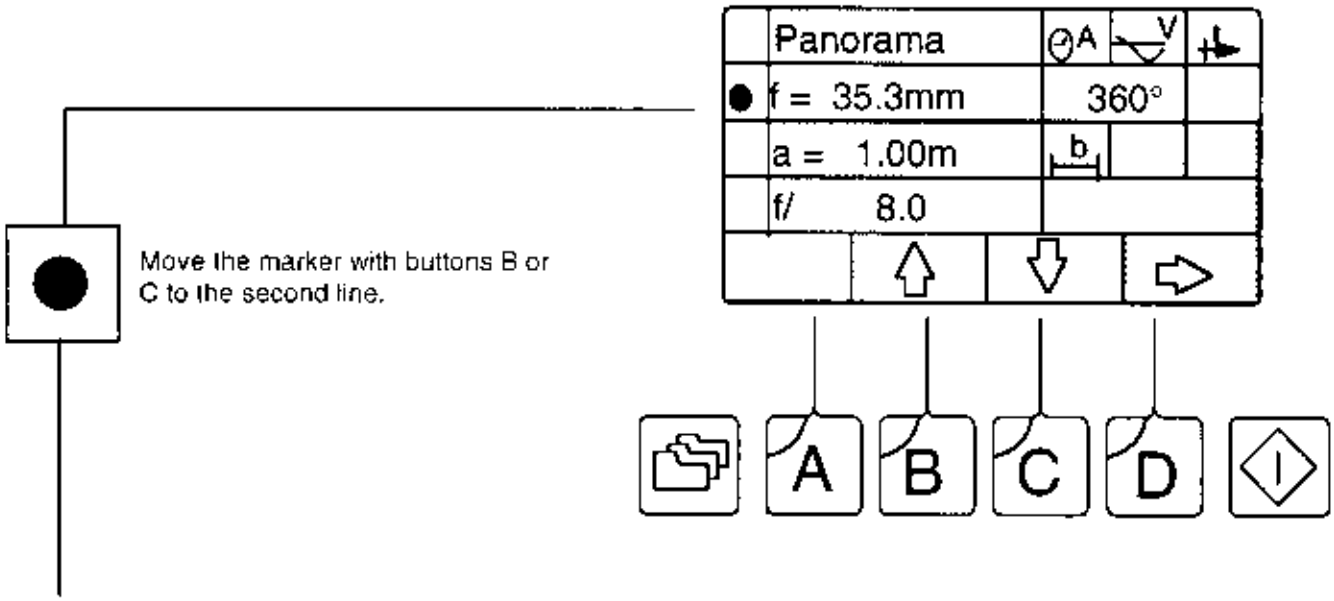
This illustration shows:
The lens is chosen using B or C. The lens is selected by the marker. There can be a maximum of 20 lenses stored in the list. With the number pad other values can be stored. Button D confirms the selection.

Second Number Value



After the focal length has been entered and confirmed using button D, the input field automatically appears at the second number. This value corresponds to both the distance the nodal point of the lens and that needed for the exact focal lenght calculation in the macro range.
Both values, lens size and the second value are taken from the lens list on page 36. The second value is entered by the number pad and confirm with button D.
Please take note whether the value is positive or negative signs. Use button B to change the sign.

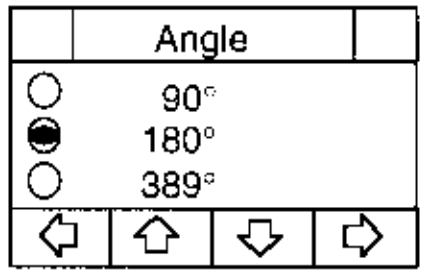
Picture taking angle and camera rotate



Move the marker with buttons B or C to the second line.

Picture Taking Angle

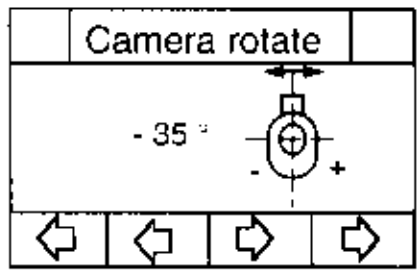
Press the arrow button D in order to determine the taking angle.



This illustration shows:
With B or C chose the angle. There are a maximum of 5 angles stored in the list.
The angle can be from 10° to 9999°.
With the number pad as mentioned above the values are inserted. The A button erases the input.

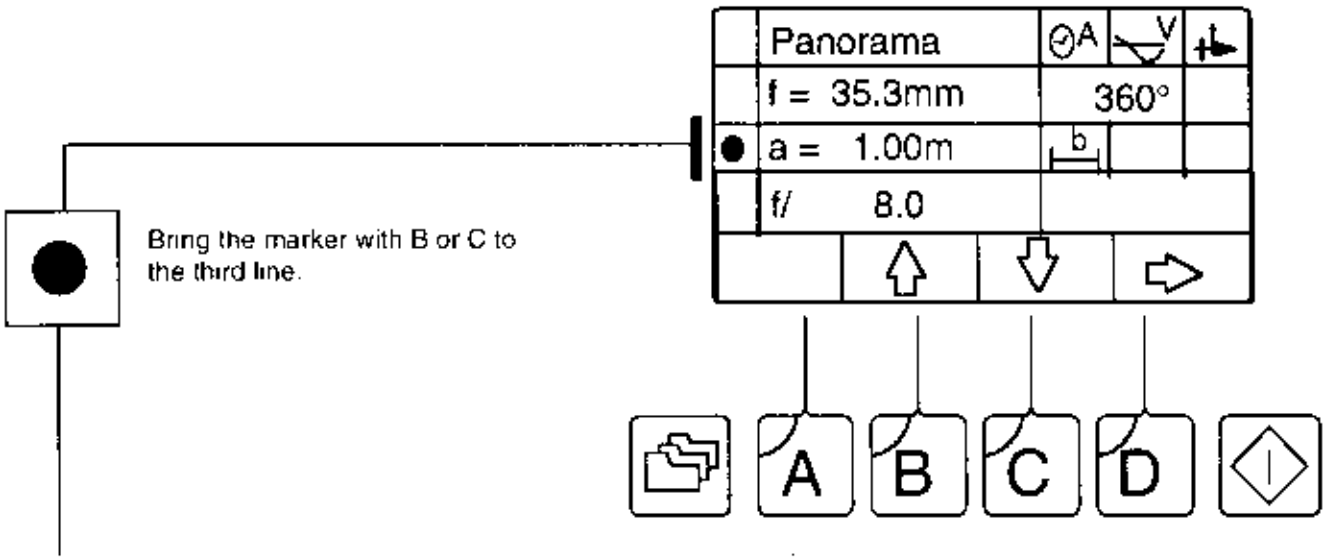
Camera Turning without Exposing Film

Press D again



With B or C, rotate the camera left or right.
In the linear mode the dolly moves left or right.
If the button is held more then 3 seconds the motor speeds up.
The camera body can be also turned to the desired position by hand.

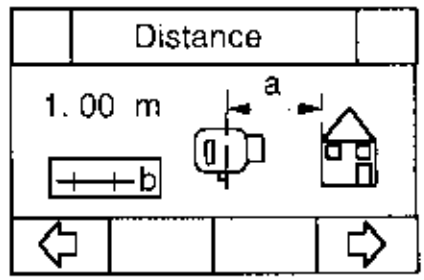
Focusing " a " and " b " Values



Bring the marker with B or C to the third line.

Distance Focusing " a "

In order to enter " a " press D.



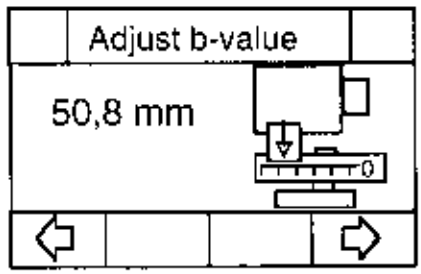
This illustration shows:
The distance adjustment on the display must have the focus distance entered.
The following preperation is advisable:
Get a sharp image in the viewer, read the distance value and put the same value into the controller.
Use the number pad to enter the value.
The C button serves for a decimal point, the A button to erase and the D to accept the entry.

ATTENTION! For shorter focus distance a symbol "b " will be visible in the display.
In order to maintain optimum image sharpness the camera head should be pushed to a new position on the optical bench. This new position is shown upon pushing button D

If there is no blinking " b " then the camera head may be put at any position you like on the optical bench. There will be no " b " value shown.

The " b " Value

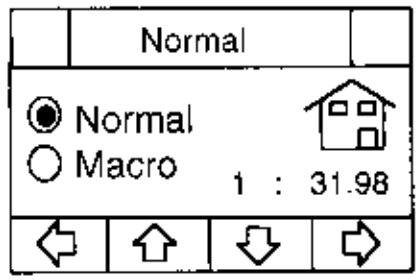
If the flashing " b " appears press button D.



The value near the drawing gives the point on the optical bench to which the camera body must be moved.

Macro and Normal

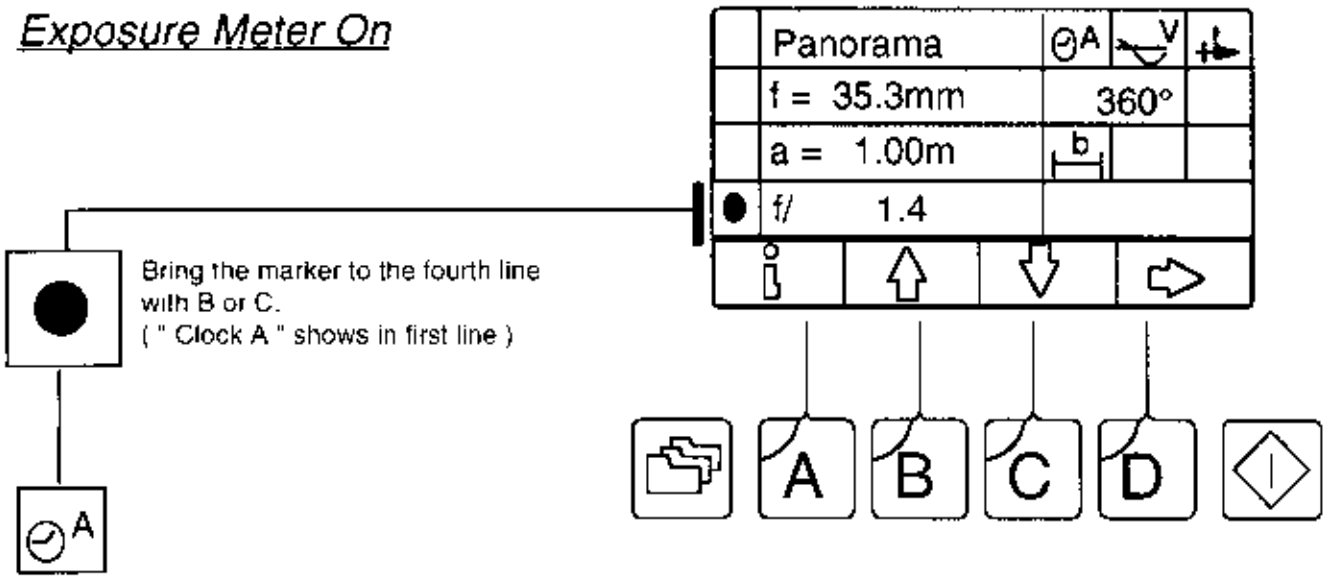
NOTE:
Macro is working only in the Turntable, Linear and Moving Mode



For normal picture taking in the infinity range as well as in the nearer distances set the indicator dot on "Normal" with the B button.
The ratio shows the relationship of the negative image size to the size of the real object
(Maximum size shown is 3296.)
When working in the macro region of the lens, the ratio given is incorrect and says the size on the film is larger than it should be. Thus, the indicator should be moved with button C to "Macro" and the proper image scale will now be shown.

Exposure Meter

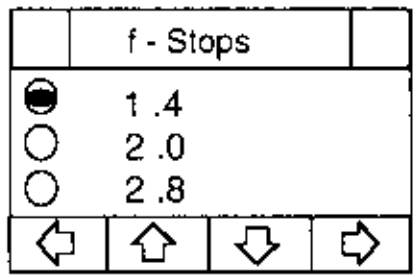
Exposure Meter On



Bring the marker to the fourth line with B or C.
(" Clock A " shows in first line)

The aperture Value in the Automatic Mode

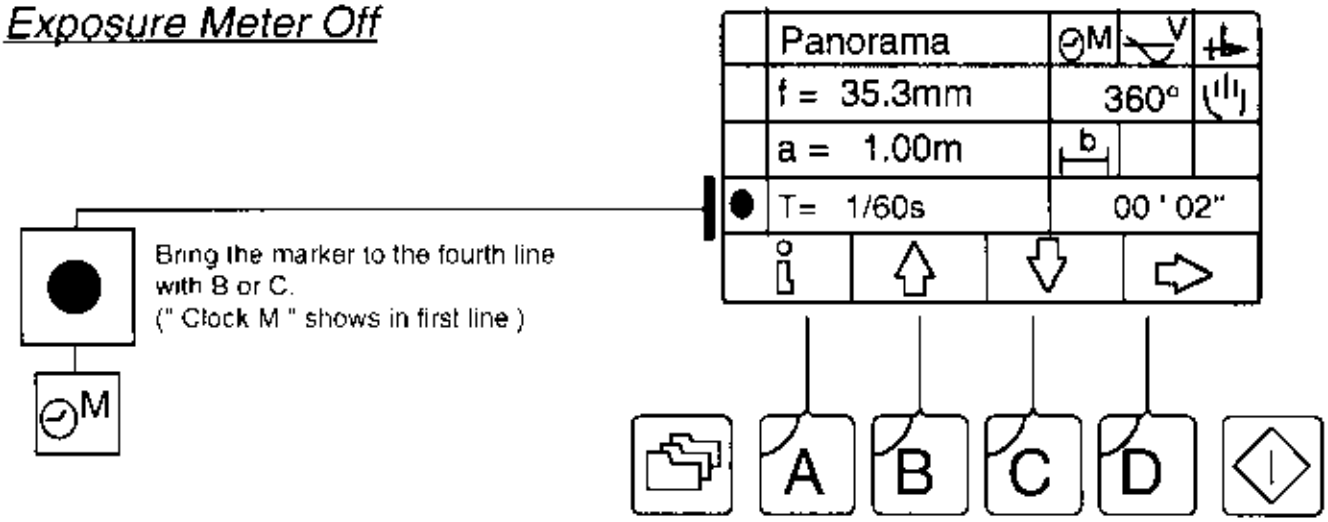
Press button D



This illustration shows:
The aperture value of the length must agree with the controller value. For this shift the marker to the right value using B or C
The aperture values in the display range from f = 1,0 to f = 32,0.
With the nuber pad other values can be stored.
Button D confirms the selection.

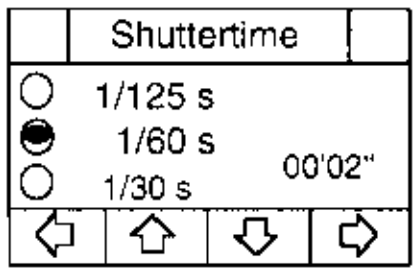
Exposure Meter

Exposure Meter Off



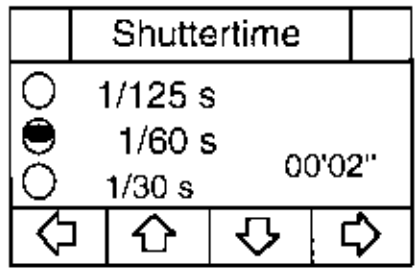
The Shuttertime in the Manual Mode

Press the D button to show speeds.



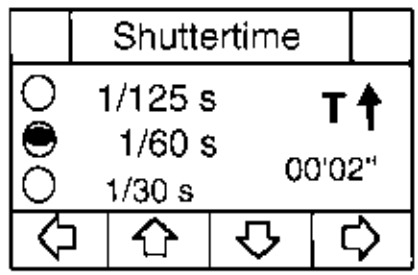
If the exposure meter is not on then an shuttertime must be chosen from the list.
For this move the marker with B or C to the desired value.
The value ranges from 1/250 seconds to 128 seconds.
In the same display the rotation time will appear. In this case it is 2 seconds.
If the rotation time exceeds 60 minutes, hours and minutes will appear.
Intermediate values such as 1/64 of a second you can store yourself to any deired position. By chosen value (here 1 / 60) with the keybourd the value will be overwritten.
Example : Keys 1 - C - 6 - 4 - D.

Rotation duration



In the same display the rotation duration is shown. In this case it is 2 seconds.
Rotation times exeeding 60 minutes will shown only hours and minutes.

Time to fast

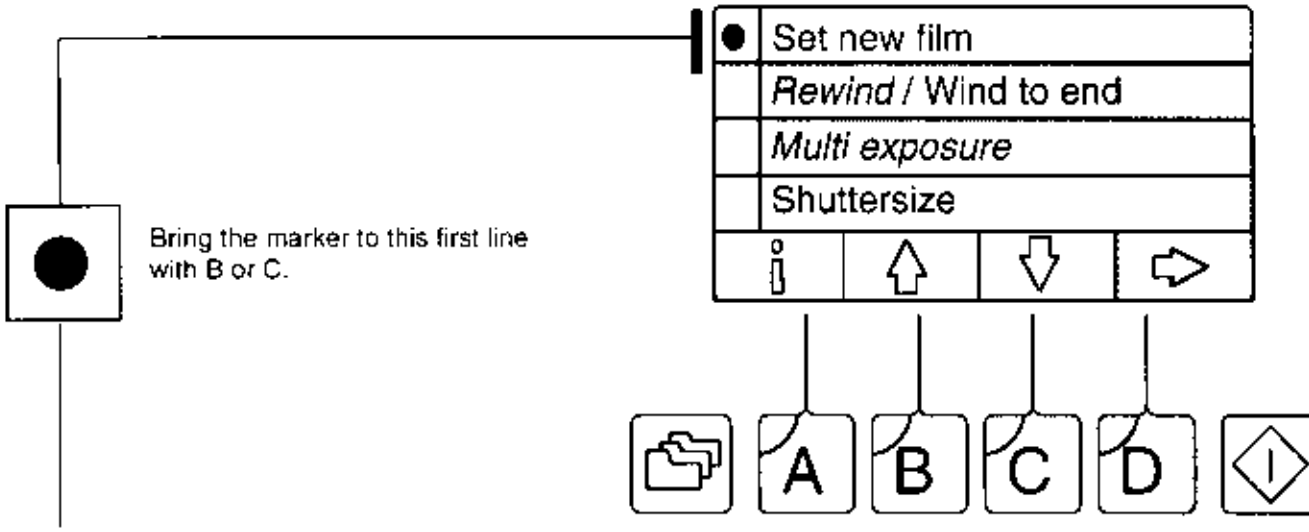


Exceeding the camera 's shuttertime range will cause a blinking T / arrow to appear.
If the camera nevertheless is started an announcement will appear in the display " Time to Fast ".

New Film

New Menu Page

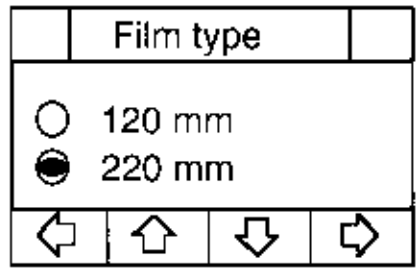
Press this symbol button



Bring the marker to this first line with B or C.

SUPER 220

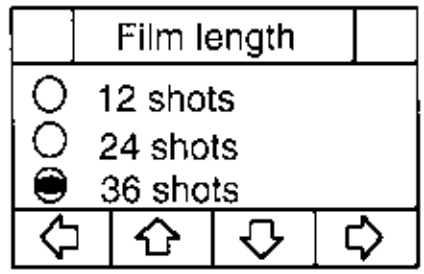
Selecting film types



With the Super 22 VR you can choose to use either 120 or 220 rollfilm by using the B or C button.

SUPER 35

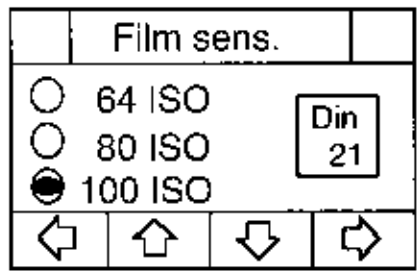
Selecting film types



With the Super 35 select the film length with the button B and C, for example 12, 24, or 36 frame film that is in place. With the C button you can move below the " 36 shots " and enter your own film length.

Film Speed, ISO

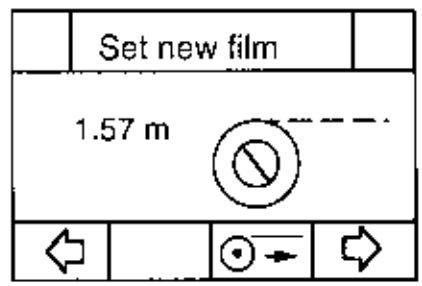
Press D to move to next menu.



The film speed must definitely be entered.
It appears on the selection list.
With the button B or C move the marker and at the appropriate ISO value of the installed film press D.
The Din value will likewise appear.
The ISO values range from ISO 6 to ISO 6400.

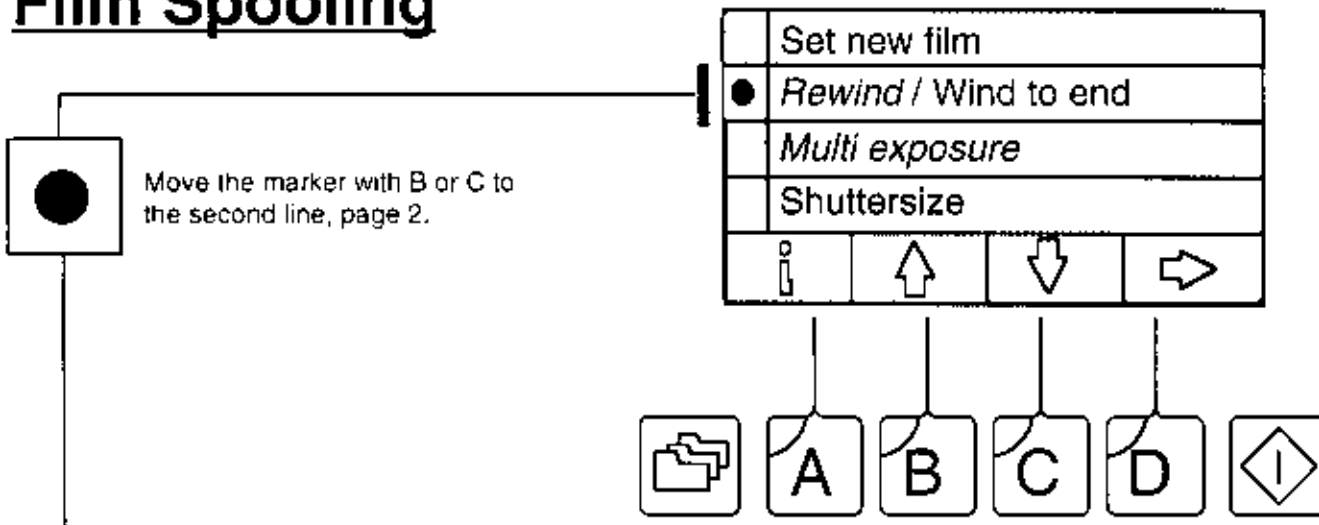
New Film

A new film is put in camera cover closed Press button D



This illustration shows:
A new film has been installed in the camera.
The end of the film is turned through the film drum and then inserted in the locking slot on the take up spool.
The cover of the camera is closed
Now press the button C of the controller and the exposed film end is moved onto the spool.
The unexposed film is now in place at the taking slit.

Film Spooling

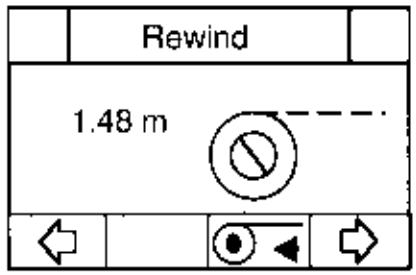


Move the marker with B or C to the second line, page 2.

SUPER 35

Rewinding Film

Press button D in order to roll up the remaining film

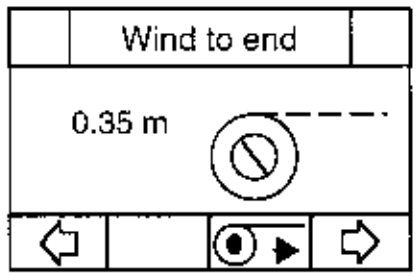


The display illustrated here shows that pressing button C will spool the film completely back into the cassette. It is possible to spool the film back at any time.
The film number values informs of the precise position of the film in meters and centimeters.
The process can be interrupted with the Stop button A.

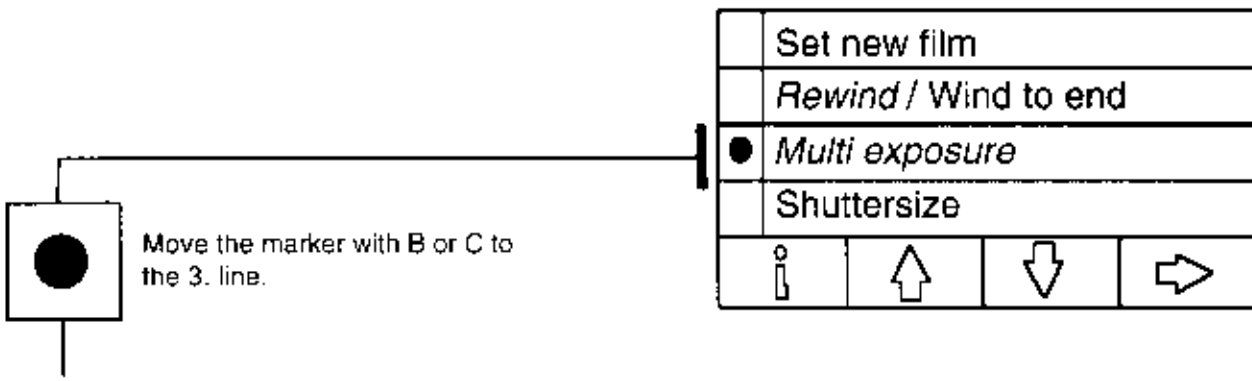
SUPER 220

Film Take - up

Press button D in order to roll up the remaining film.



The film display illustrated here shows that pressing button C will wind up the film completely on the take -up spool. It is possible to spool the film up at any time. The film number values informs of the precise position of th efilm in meters and centimeters. The process can be interrupted with the Stop button A



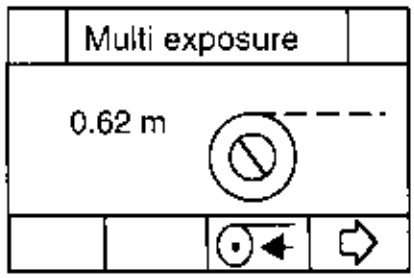
Move the marker with B or C to the 3. line.

SUPER 35

Multiple Exposures

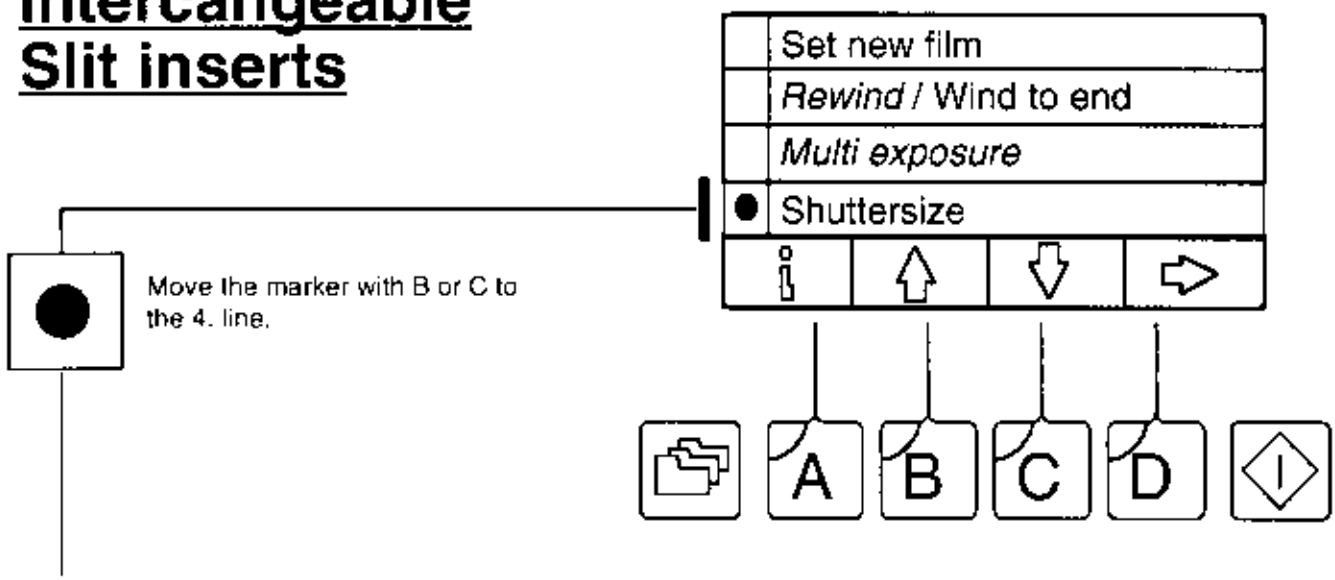
(only Super 35)

Press button D.



This display illustration shows:
The film will rewind to the start point of the previous picture. The number of rewinds is not limited.
The symbol button C starts the process.
Afterwards the display will change to the first page and a new picture can be started.
Note:
For multiple exposures use an absolutely stable tripod and do not chose a too fast shuttertime.

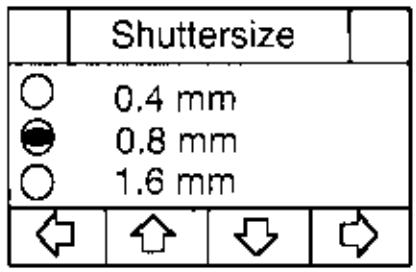
Intercangeable Slit inserts



Move the marker with B or C to the 4. line.

The Slit inserts

Press button D



According to the shooting plan and the lens used an intercangeable slit insert can be chosen. These differ in slit width. The slit insert and adjustment for the chosen set up must agree. The camera will be delivered with the standart slit insert of 0.8 mm. These insert are an excellent choice for most applicatins.

Slit insert and application:

Slit insert 0.4 mm is for short focal lengths from 13mm to 20mm in the panorama mode, for turntable and moving for all focal lengths.

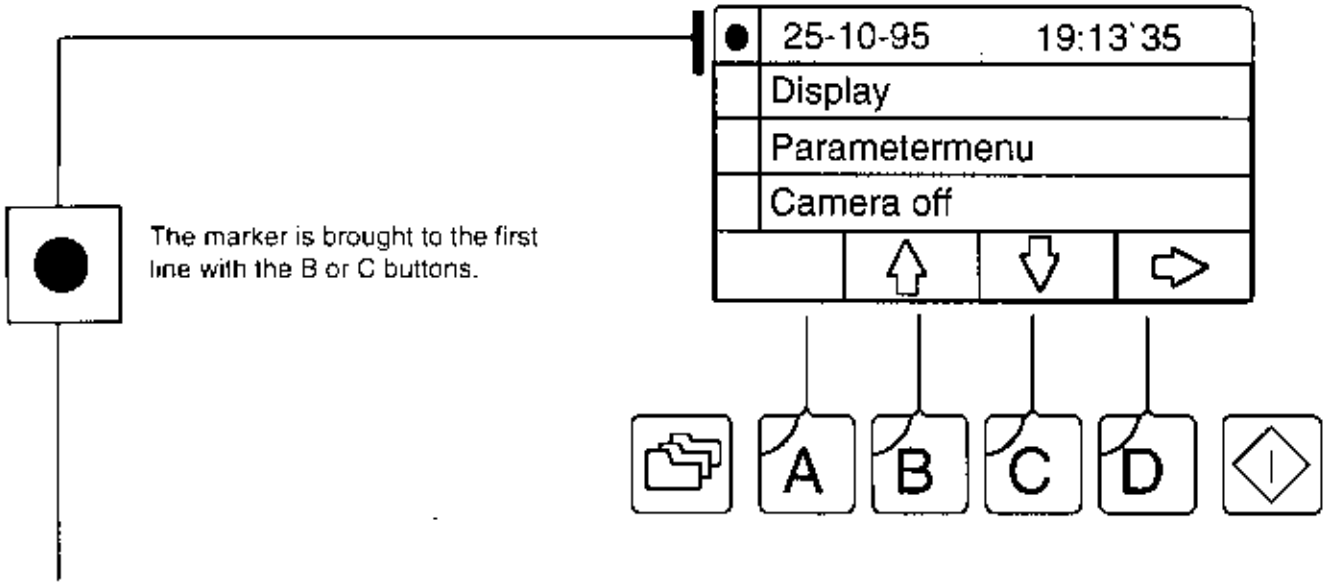
Slit insert 0.8 mm (standart)

Slit insert 1.6 mm for longer focal lengths from 80mm to 1000mm

Date / Time

New Page

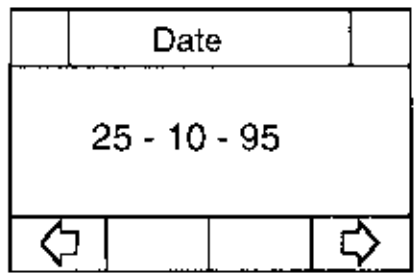
In the third page is reached by another press of the left symbol button.



The marker is brought to the first line with the B or C buttons.

Date

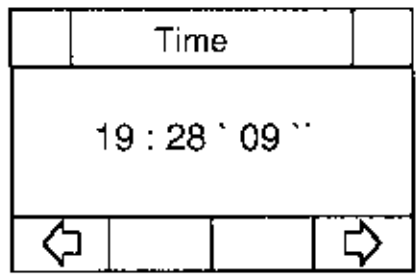
Press button D



The illustration shows the actual date. Should the date become changed, it can be put in with the number pad.
European convention: Day - Month - Year.
Confirm with button D.

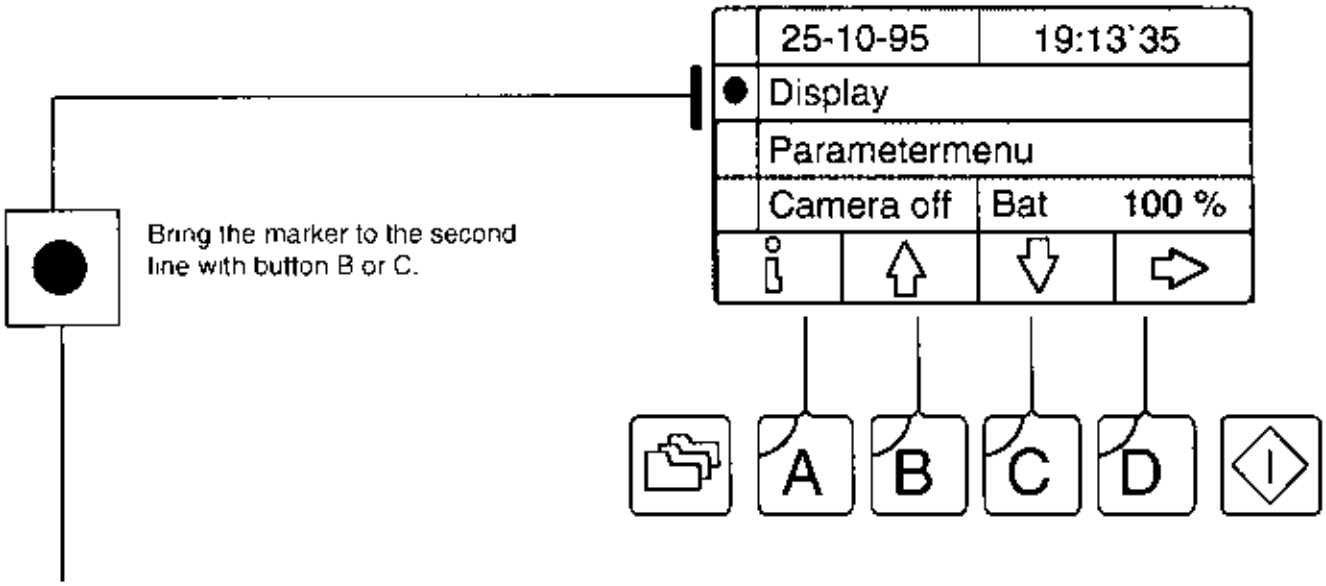
Time (24 Hour)

Press the D button again.



As already shown in the " Date " display the time can also be reset.
An impossible input will cause the word " Range " to appear.
Also here confirm with button D.

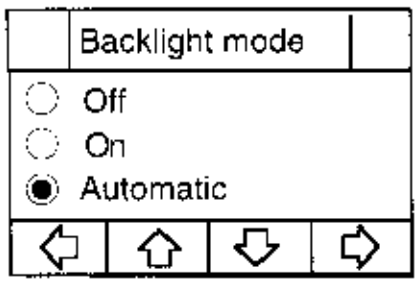
Display Adjustment



Bring the marker to the second line with button B or C.

Display Lighting

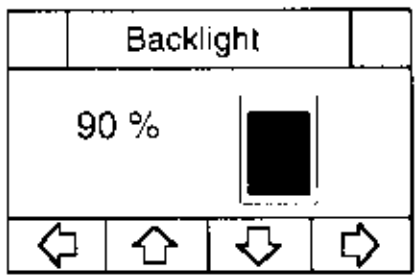
Press button D



There are 3 different display lighting conditions at one's disposal.
Display Off - The light is shut off.
Display On - The light is on.
Display Automatic - The light is on while the inputs are entered in the control unit.
At the start of the camera, or by automatic light measurement the light will turn off.

Display Brightness

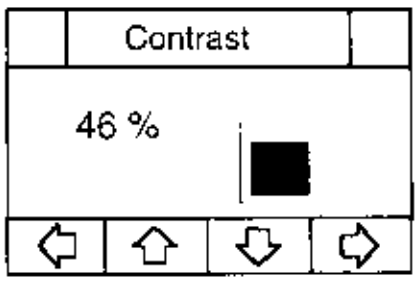
Press button D.



The brightness of the illumination can be adjusted to personal taste.
With the buttons B or C change the brightness it will be shown in percent and graphically.
Note:
At 100% the power requirement is 30 mA higher than the shut off illumination.

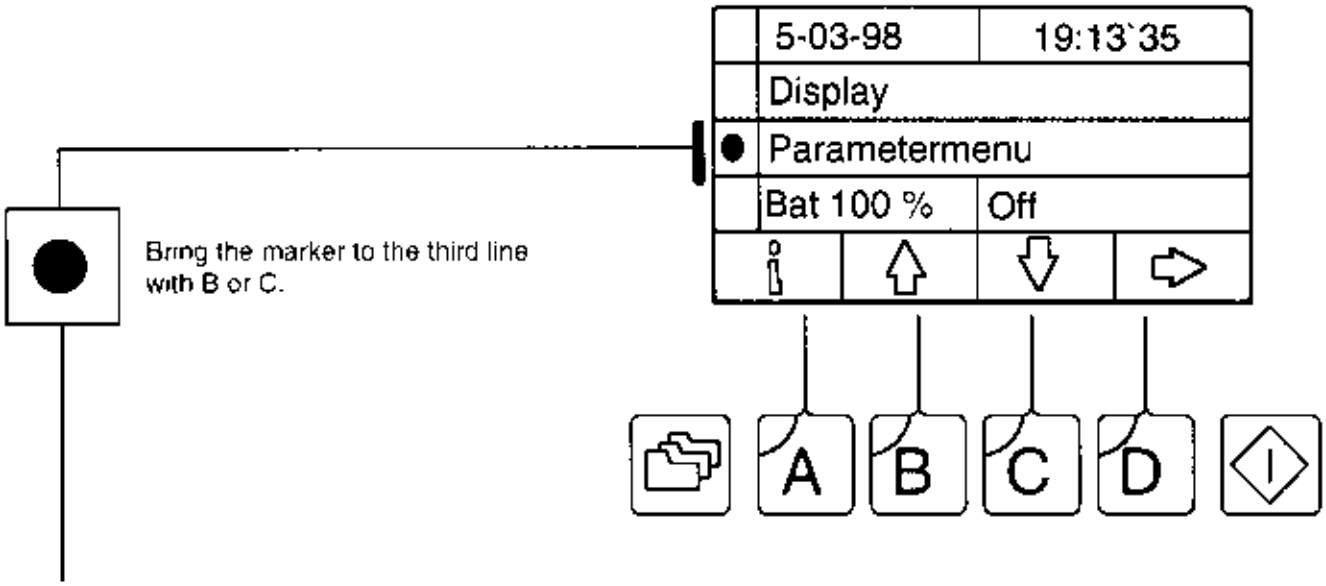
Display Contrast

Press button D.



Temperature and viewing direction may require the contrast of the display to be adjusted.
This is done as shown above.
For example: Looking at the screen straight on the contrast could be set at about 45 %.
By viewing more at an angle raise the percent value to about 90%.

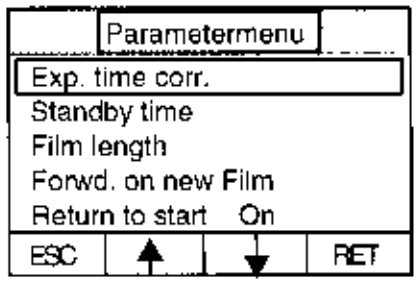
Parameter Menu



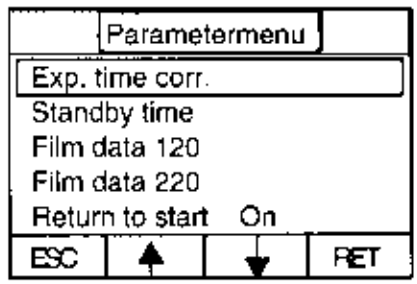
Bring the marker to the third line with B or C.

Exposure Meter Adjustment

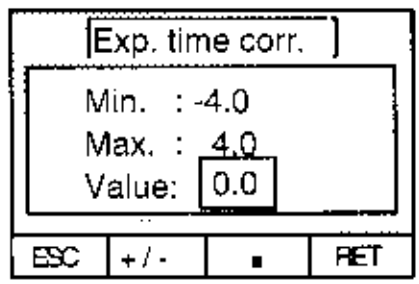
Press button D.



With button B move the selection frame all the way to the top as shown.
The frame will retrieve the line on which it is positioned.
Afterwards press the " RET " or D button.
The display will change.

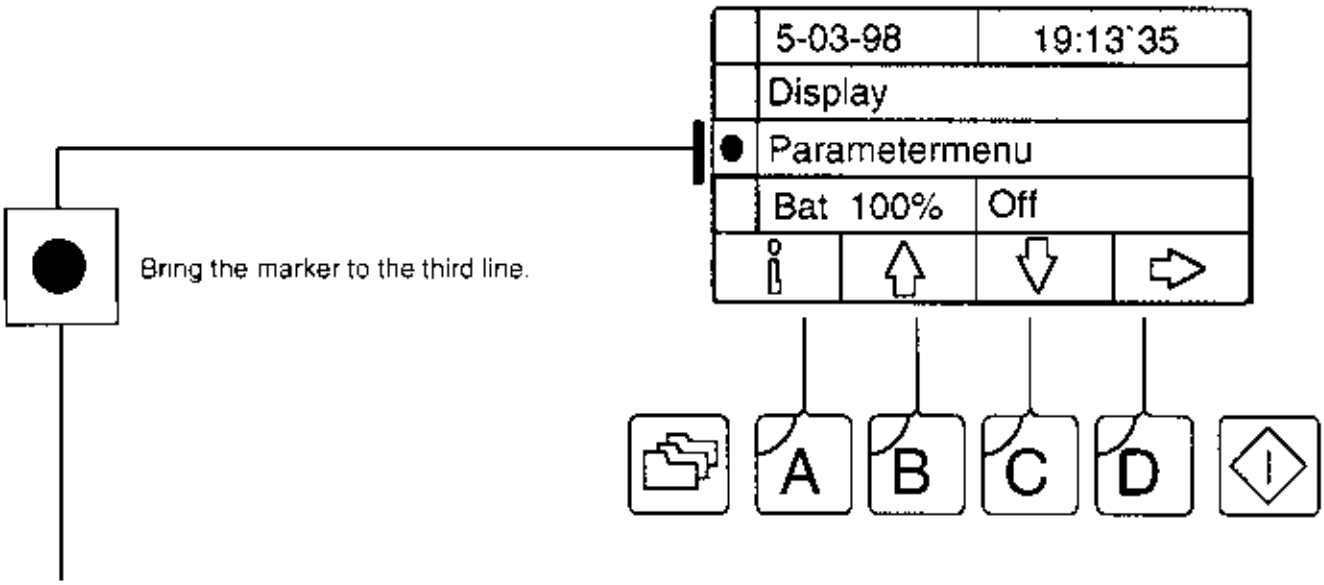


The parameter menu for the Super 220 VR differs for the 120 film data and the 220 film data.



By changing the amount in " Value " the base value is adjusted to a new position.
If the pictures are overexposed, then the value is positively corrected, for example + 1,2.
If the pictures are underexposed, then the value is negatively corrected, for example -0,5.
0,5 corresponds to half a stop.
The button B serves to place a plus or a minus in front, button C has the decimal point. The button " RET " or D to confirm the choice.
With the button " ESC " or A, return to the " Parameter Menu ".

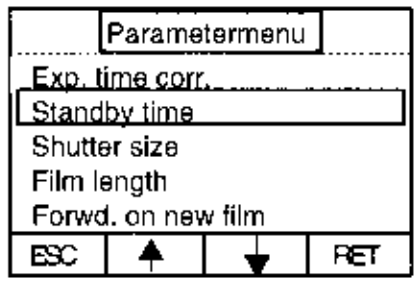
Parameter Menu



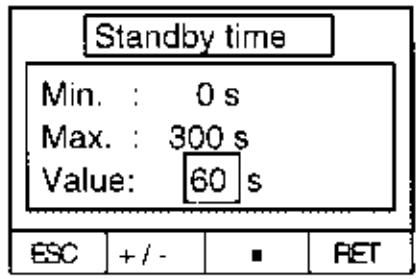
Bring the marker to the third line.

Standby Time

Press the button D.

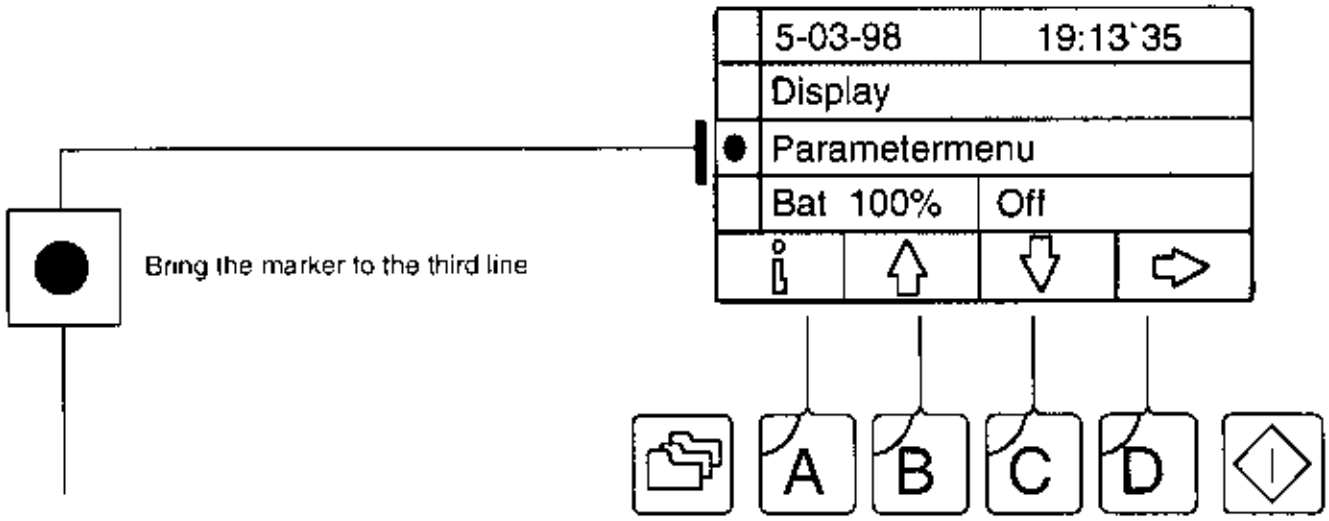


With button B or C move the selection frame to the second line as shown.
Afterwards the " RET " or D button press.
The display will change.



The control unit comes from the factory with the value 60 seconds operating. If no entry is made the camera will automatically shut off after this time.
The automatic shut off time can be varied from 0 to 300 seconds.
From the number pad, enter values and then confirm with the " RET " or D button
Note:
With " 0 " seconds the camera will only shut off when the menu is at " Camera Off "
With the " ESC " or A button return to the parameter menu.

Parameter Menu

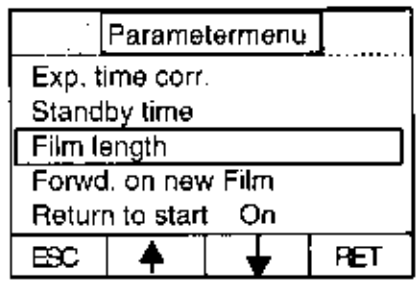


Bring the marker to the third line

SUPER 35

Entering a custom film length

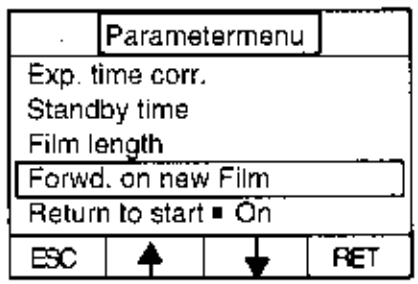
Press button D



Under this menu one can change the film length.
Press RET and then enter the film length with the number buttons.
Confirm with RET.

Prespooling installed film (Custom)

Press button D

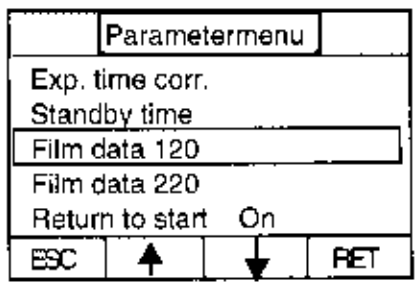


If you put in a new film and the cover is closed the film will foreward 0,09 meter after the button is pressed.
This value can be changed here.

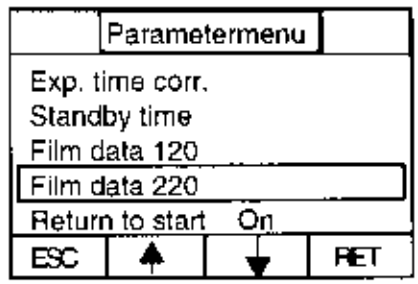
SUPER 220

Installing the film length

Press button D

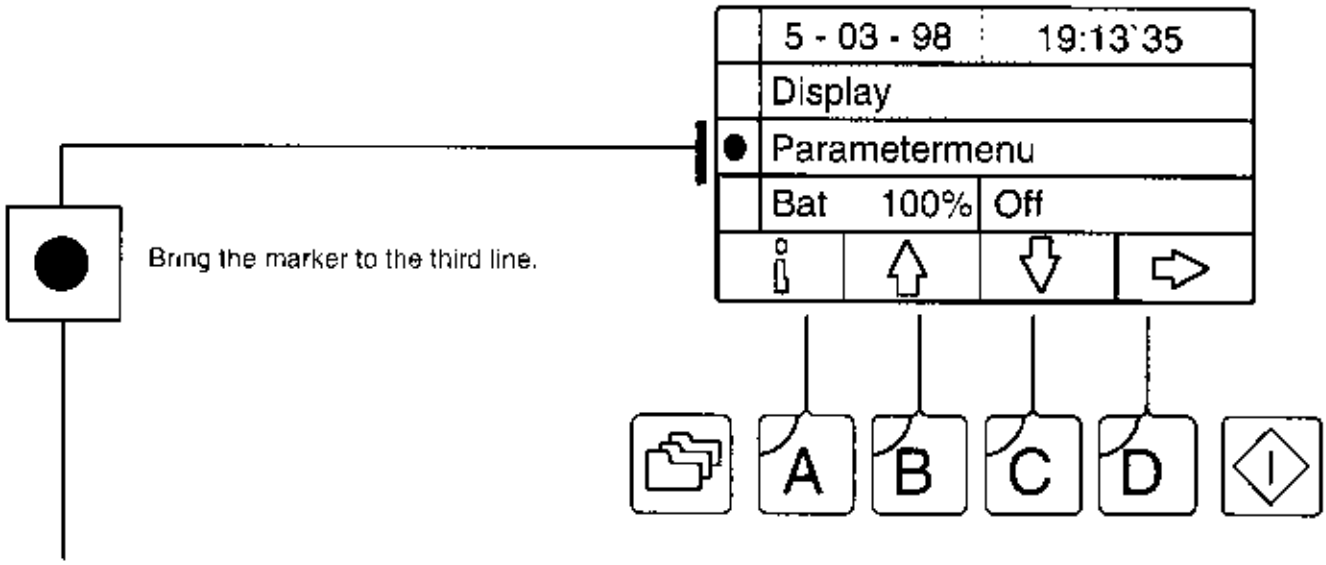


Here the values for the film and prespooling of the 120 rollfilm are chosen
(only Super 220 VR)
At the factory the values that follow were entered.
Film length 0,80 m
Forwd. on new film 0,27 m



Here the values for the film and prespooling of the 220 rollfilm are chosen.
(only Super 220 VR)
At the factory the values that follow were entered.
Film length 1,58 m
Forwd. on new film 0,37 m

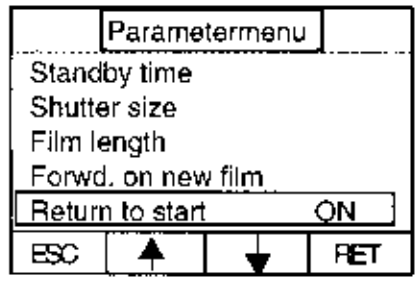
Parameter Menu



Bring the marker to the third line.

Return to Start point

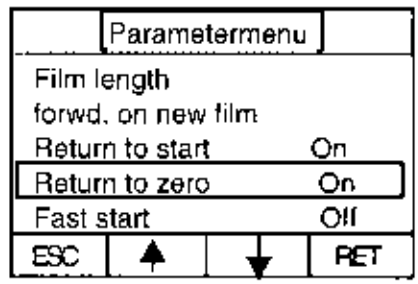
Press the button D



The camera head moves back to the start position after the shot. (Return to start ON). It can be switched off.
Press RET to switch OFF and RET again to switch On.
Confirm with ESC.

Counter rotation to start

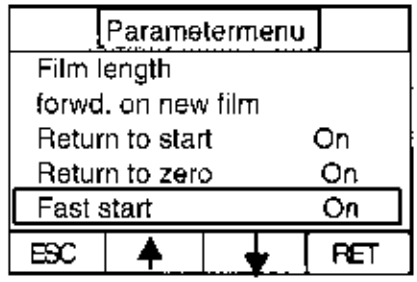
Press the button D



With the "Return to start" also (On), then "return to zero" causes the camera to turn back to the start position in the opposite direction from the picture scanning. This is important, if for example, a light is mounted on the camera head and is connected to a separate power cord, the cord will unwind.

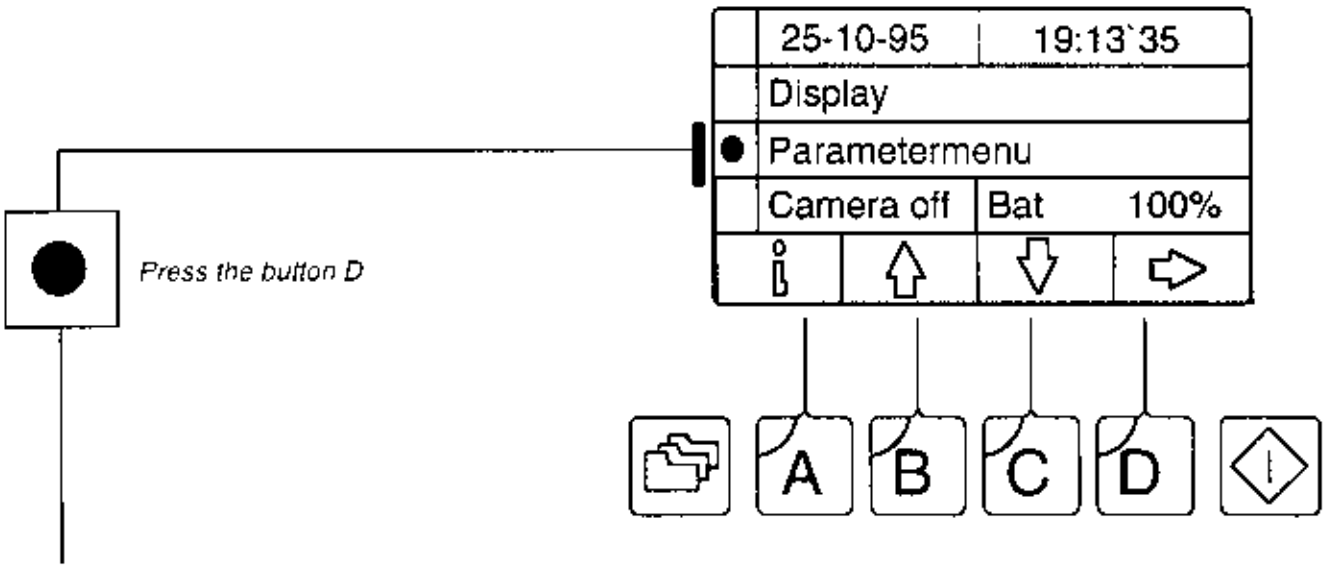
Fast start

Press the button D



With the "Fast start" (On), the camera will start immediately without ramping up to speed. The first and last couple of centimeters of the picture will show blurring and underexposure. If the "Fast start" is (Off) for the faster exposures the camera head will first back up so that a perfect exposure is guaranteed.

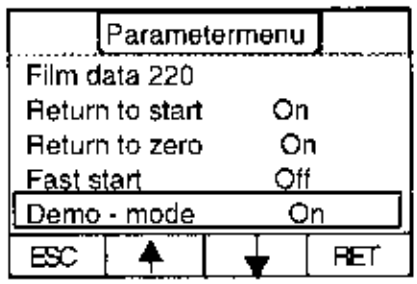
Parameter Menu



Press the button D

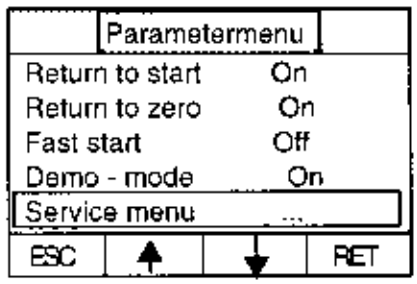
Demo - Mode Working without Film

Press the D button.



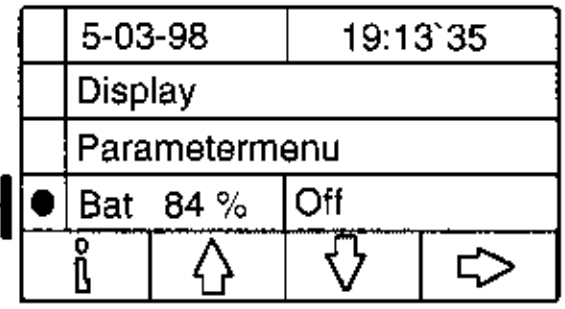
The camera automatically checks the take up spool. Is the film at the end, rolled on the spool incorrectly or is there no film in the camera, does the display report " Film End ". For test runs or a demonstration the Demo - Mode can be set " On ", then the control and " Film End " report do not apply.

Service Menu

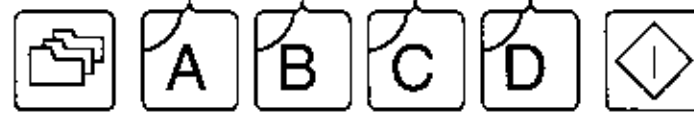


More adjustment possibilities are available in the service menu.
Only to a trained Roundshot service technician.

Battery

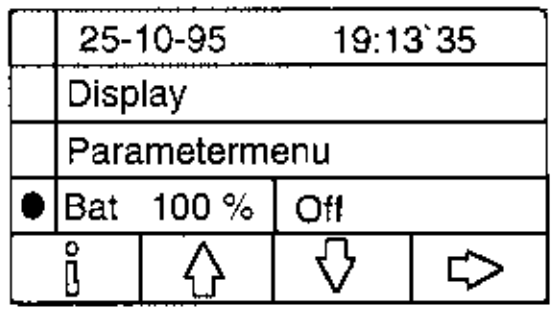


Bring the marker to the 4. line with B or C.

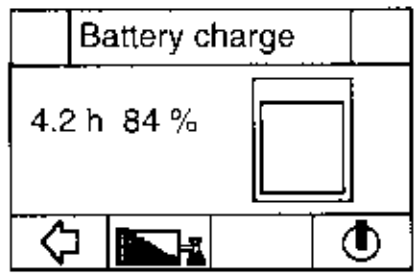


Battery condition

Press button D



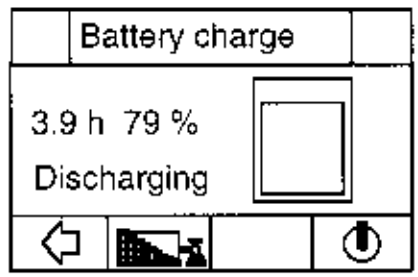
The illustration shows the battery charge level in %.



Pressing button D gives the charge level of the battery shown as a graphic as well as in percent.

Battery discharge

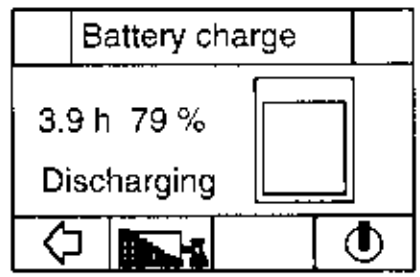
Press button D.



In order to counteract the memory effect the batteries should periodically be discarged Thereby the useful life and the performance of the batteries be enhanced.
After pressing button B the automatic discharge process starts. The battery voltage will be shown as a % and as a graphic. When the battery is empty the controller shuts off. The time to discharge the battery is shown as well.
Afterwards the battery should again be connected to the battery charger.

Camera shutoff

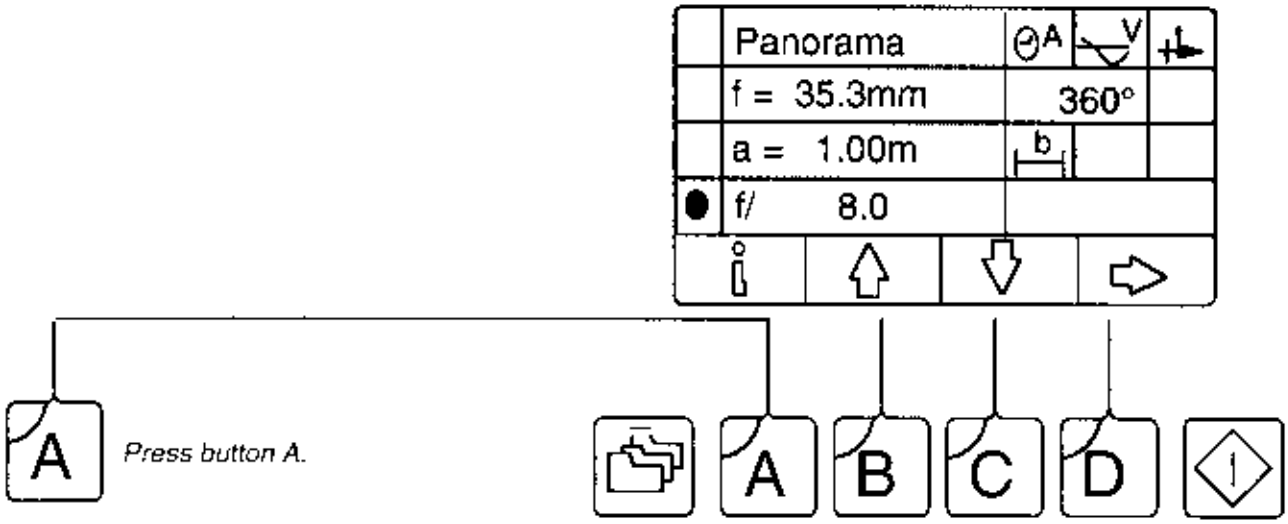
Press button D.



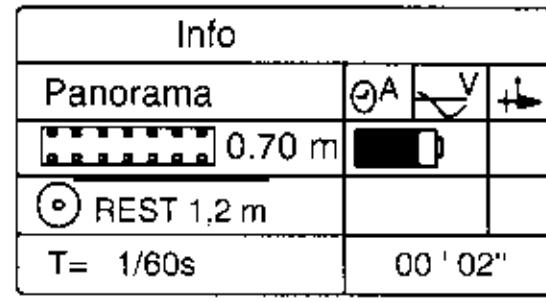
After pressing button D the camera will shut off in about 3 seconds.
In this condition the camera has no electrical contact.
Turn it on with the red button on the right side of the control unit.

The " Standby time " is set at the factory at 60 seconds. After this time the camera shuts itself off; - if no input has been made or if the camera is not taking a picture.
If one wants to shutoff the camera prematurely, this can be done with the " camera OFF " menu.
If the standdy time is set to 0, do not separate the controller and the camera. Press button D .

The Info button



The Info page shows additional information

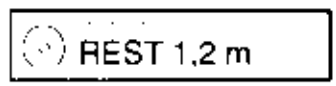


Film length

It will give film legth in meters of the actual picture.

ACHTUNG!
Blinkt die Zahl im Sekundenrhythmus, so ist die restliche Filmlänge zu klein für die Aufnahme.
Abhilfe:
1. Aufnahmewinkel verkleinern bis der Film reicht.
2. Die Start Taste drücken. Es erscheint die Meldung, FILM TOO SHORT. Erneut die Start Taste drücken.
Die Kamera startet und läuft bis zum Filmende. Bei erreichen des Filmendes stoppt die Kamera die Drehbewegung. Der Film wird anschliessend automatisch in dei Patrone zurück bzw. auf den Aufwickelkern gespult.

Film counter



The film counter gives how much film will left .

Battery condition

The graphic position of the battery voltage in percent is shown. A blinking graphic says the battery is to low.

Press the Page button to leave the Info.

Picture Taking

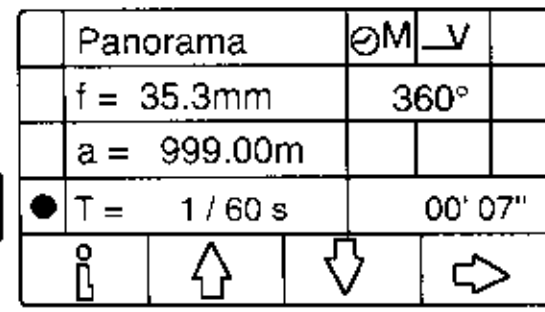
In all three different taking modes, Panorama, Turntable and Linear there exists the possibility to turn on or off the internal exposure meter for exposure correction.
For picture taking there are 4 different combination possibilities.
These are:

1. Shuttertime Manual - Variation Off
2. Shuttertime Automatic - Variation Off
3. Shuttertime Manual - Variation On
4. Shuttertime Automatic - Variation On

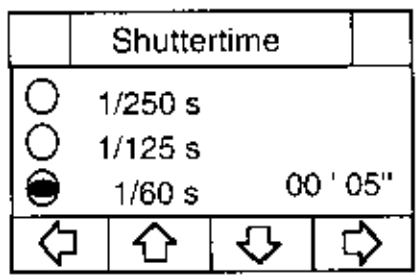
As all combination possibilities can be used with the 3 picture taking modes, only the panorama mode will be described on the following pages.

1. Shutter Speed - Manual Variation - Off

The display is as shown when the exposure meter and the variation are off.



Enter the Shuttertime



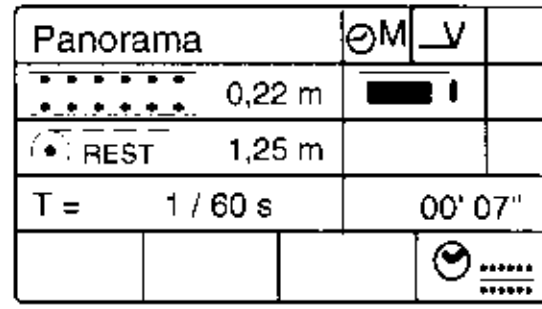
With a separate exposure meter determine the shutter speed and the aperture.
After that set the lens to the determined aperture.
With the buttons B or C shift the marker in the display until this agrees with the desired shutter speed.
The shuttertime range from 1/250 to 128 seconds.
A shuttertime can also be directly entered with the number pad.
An intermediate time such as for example 1 / 63 is possible.

Press the Start button.

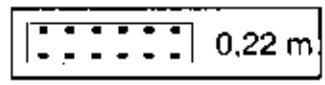
The display changes , and all important data in a summary.
Next page.

Picture Taking

The display shows all important specifications.
New are:

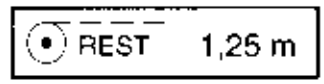


Film length



It will give film legth in meters of the actual picture.

Film counter



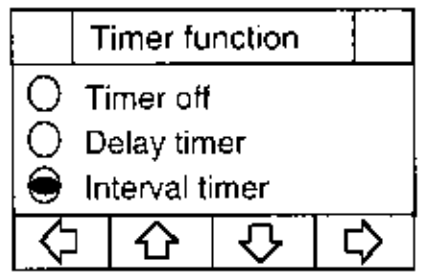
The film counter gives how much film will left .

Battery condition

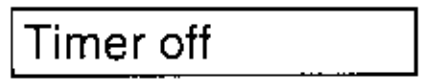
The graphic position of the battery voltage in percent is shown. A blinking graphic says the battery is to low.

Timer function

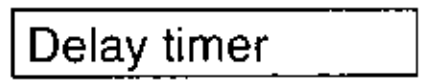
Using button D a timer function can be entered.
It stands for several types of timing upon selection.



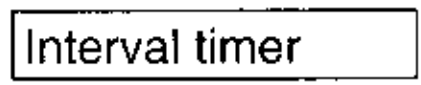
Three different possibilities can be chosen. With buttons B or C shift the marker.



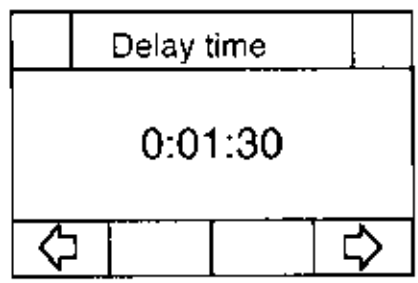
Timer is shut off.



The timer is on. The time until the start can be entered with the number pad.



It is possible to take several connected pictures with the timer. First enter the time interval to be between pictures and then the number of pictures (cycles).
Up to 99 pictures are possible.



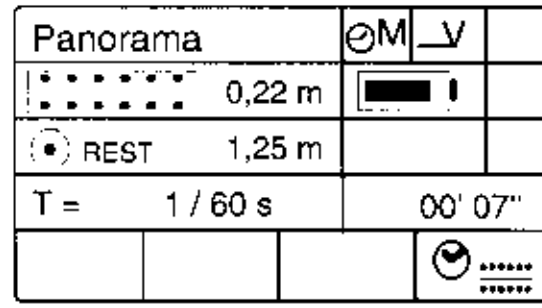
The timer delay time are entered with the number buttons.
0:01:30 / hours: minutes: seconds.
With button D the value will be stored.
Button A deletes the entry.
Automatically the previous value will reappear.

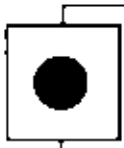
Start the Picture Taking

Press the Start button

Picture Taking

The display shows all important specifications.
New are:

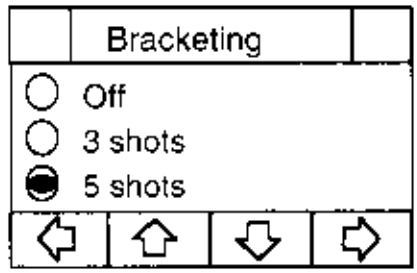




Press button D to activate Timer and Bracketing functions.

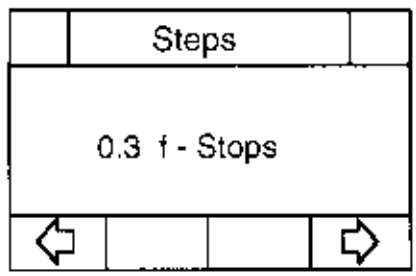
Bracketing

Press button D untill the shown display is visible



With the bracketing function it is possible to automatically make more exposures of the same scene. One has the choice of between 3 and 5 pictures. With the " 3 shots " there will be a picture under exposed, one correct and one over. With the " 5 shots " there will be 2 pictures under exposed, one correct and 2 over exposed.

Press button D again.



On this display one selects the steps from one picture to the next.
The steps can be selected in 0.1 stop increments from 0.1 to 1.0 stops with the number buttons.

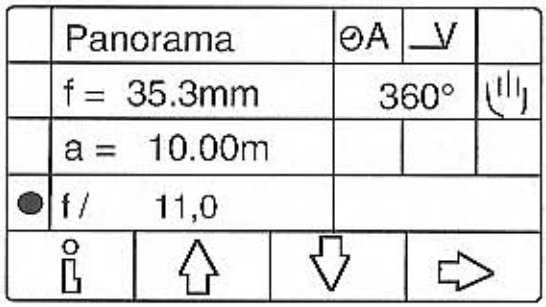
Start the Picture Taking

The serie of pictures will start.

Exposure Metering

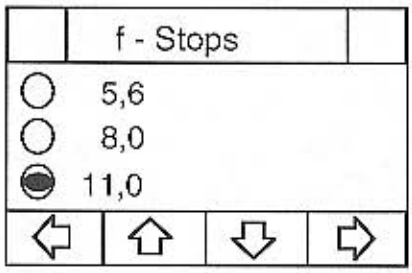
2. Shuttertime - Automatic
Variation - Off

Make the ecposure meter on and the variation off



Enter the Aperture

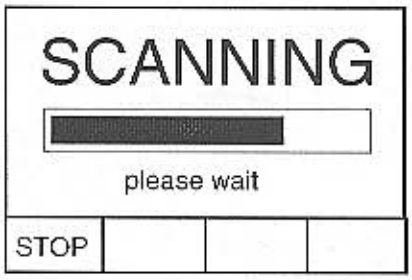
Press the start button



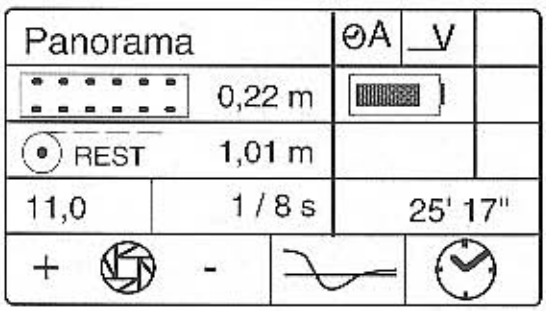
Set the desired aperture on the lens.
Afterwards shift the marker with B or C until it agrees with the value on the lens.
Note:
Additional changes can be made to the aperture.
If the aperture value of the lens is not on the stored list, then it may be entered by number buttons.
An example button combination for f = 1.2 is 1 - C - 2 - D.

Press the start button.

The camera turns and measures with the exposure meter the light level over the angle that has been entered.



The display illustrates with a bar graphic how much of the distance has already been scanned.
With the " STOP " button A the process can be interrupted.

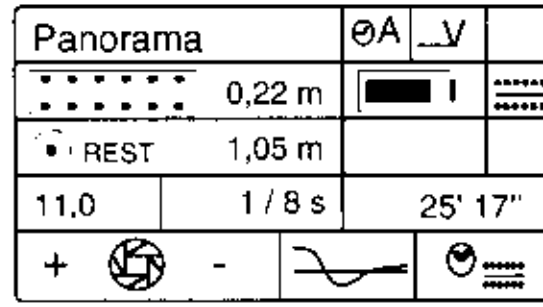


On the display is illustrated:
Near the aperture, by the average shuttertime and the taking time there are two more graphic symbols visible.

See next page.

Exposure Measurement

2. Shuttertime automatic Variation off



Aperture — 11,0

The actual aperture will be shown in this field.

Shuttertime — 1 / 8 s

This field shows the average shuttertime.

Aperture Changing — + -

With the button A the aperture value can be raised, with button B lowered.
The exposure duration and the average shuttertime will change.

Graphic of Metered Values

With button C a metered value graphic will appear.
It shows the differing light values a sine curve in relationship to the turning position.

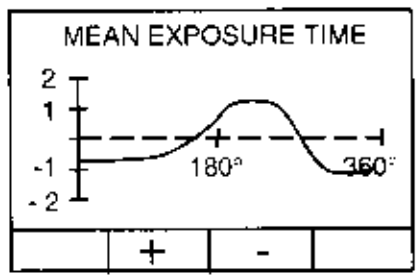
Bracketing

Press button D to reach the Timer and Bracketing functions.

Rescan — RESCAN

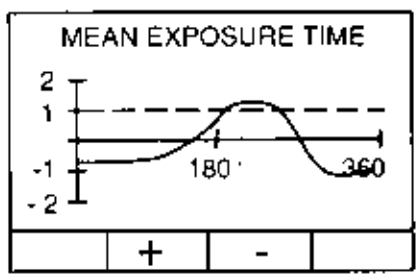
If the Variation is off and the Automatic exposure is on, you can chose the Rescan mode if the Delay or Interval time is being used. If Rescan is (On) the camera will, immediately before taking the picture, will rescan the light level and adjust the exposure rate for that next picture. If the Rescan exposure time exceeds the entered delay time the Rescan exposure time will be ignored and the exposure value of the first scan will be followed.

Press the button C . The graphic will be visible.



The sine curve illustrates at which angles of the picture will be light and dark, plotted about the average shuttertime.
The dotted line corresponds to the average. It would shift on a change or adaptation of the shuttertime. Plots over the average line signify lighter, those under the line darker points on the locations. For example, if a darker picture would have better contrast, then shift the average down.

Changing the Average Value



With the Plus (+) or B button the shuttertime is corrected upwards in 1/4 stop steps
The average line moves up and the base line stays in place.
Should 1 stop more exposure be desired (rotate at half speed), then the C button must be pressed four times.

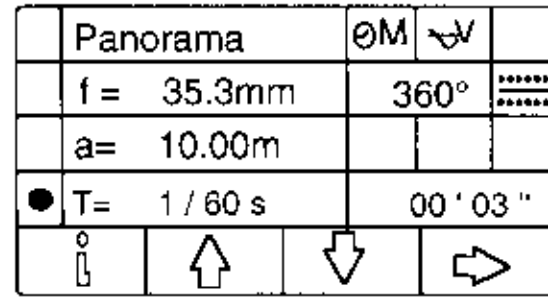
Start the Picture taking

Again press the start button, the picture taking begins.

Manuel Exposure Measuring

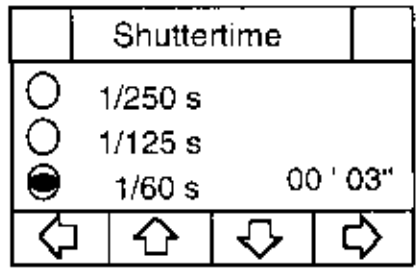
3. Shuttertime - Manual Variation - On

The exposure meter is off and the Variation is on. Shown in the display.



Entering Shuttertime

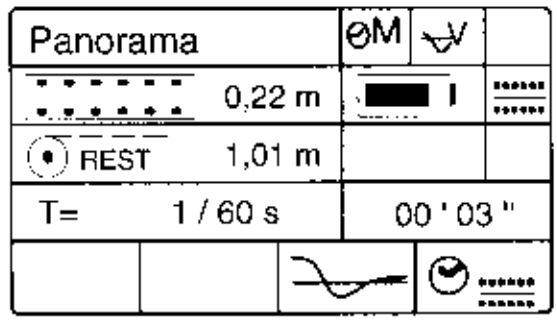
Press the D button.



With a separate exposure meter determine the shuttertime and the aperture. Afterwards set the aperture on the lens to the determined value. With the button B or C move the marker until this agrees with the determined shuttertime. A shuttertime can be entered directly with the number pad. It is also possible to enter intermediate times such as 1/ 44 seconds.

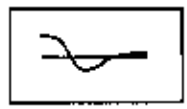
Press the start button

The display will insert a quick graphic " MAN EXPOSURE TIME " and then change to a display shown below.



Important inputs on the display are changed.

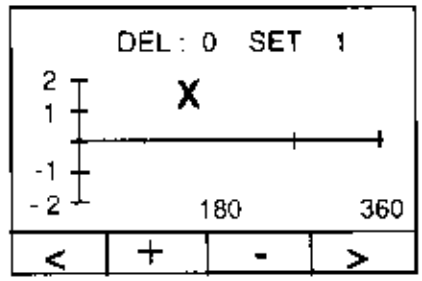
Graphic button C press.



For 1 second a sign says" Press key 9 for help! " This signigies that with the button 9 a help menu can be brought up. The particular points are shown following.

0 :	Clear Point	0	Erases a particular point.
1 :	Set point	1	Sets a particular point.
2 :	Toggle mode	2	A curve in a ppoint will be changed.
3 :	Scan	3	A renewed scan will be started.
4 :	Clear all	4	All points or rather all curves will be erased.
9 :	This help	9	Back to the help menu.

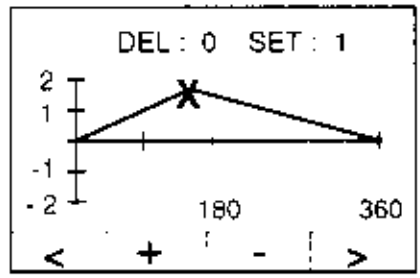
Manual variation Input



The display shows an empty graphic page. It is possible to enter your own exposure curve. This is brought about with the buttons A, B, C, D as well as the number buttons 1 (draw curve through " X ") and 0 (delete an " X ") The " X " will be moved on the display with the buttons. If a curve already exists it can be erased with button 4.

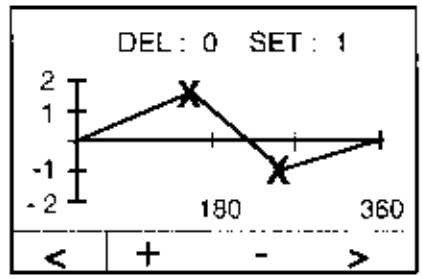
Manuel Exposure Correction

Placing a Curve

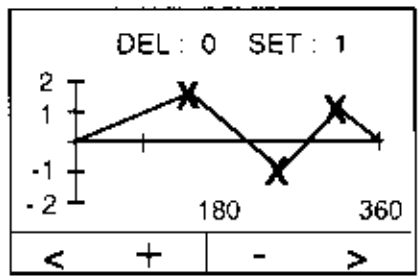


With the button A the "X" can be moved left and right with D. With button B move the "X" up and down with C.
The entire horizontal line symbolizes the picture taking angle. After positioning "X" with A,B,C and / or D the curve will be drawn by pressing "1".
This is illustrated in the display.

Further Curve Placement

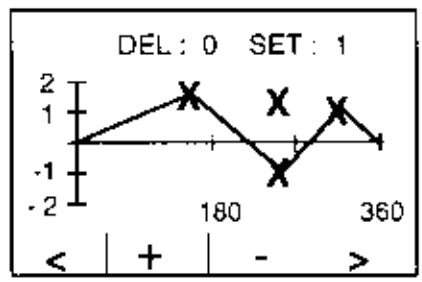


Should further areas in the picture need correction then another "X" can be moved as described above.
In the illustrated example there is a darker point about 250° with a 1-stop correction.
The "X" is moved to this location and with the button "1" a new curve is placed.

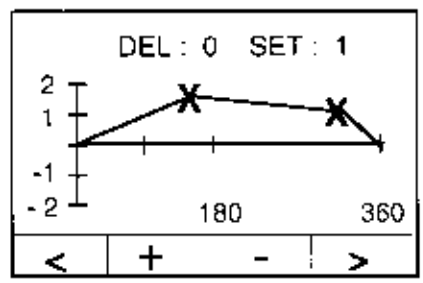


It is possible to set a maximum of 99 points.
In the linear mode the horizontal line relates to the travel distance.

To Delete a Curve



A positioned point can also be deleted.
With buttons A or D move the "X" along to the same horizontal point as the point to be deleted.
See illustration.



Pressing the number button 0 will deleted a point above or below the new point.
The illustrated exposure curve produces the following turning motion. After starting, the camera will turn faster until the first point is reached. It then slows down until the second point is reached. At that point it goes back to 0.

Press the start button

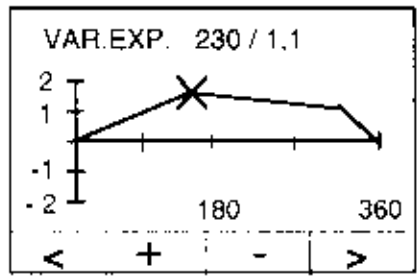
Pressing the start button will renew the overall graphic.

Start the Picture Taking

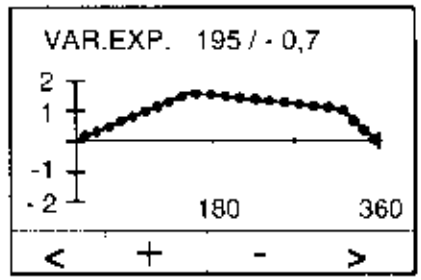
Press the button again and the picture taking begins.

Manuel Exposure Correction

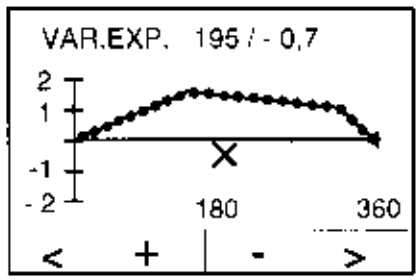
Particular change



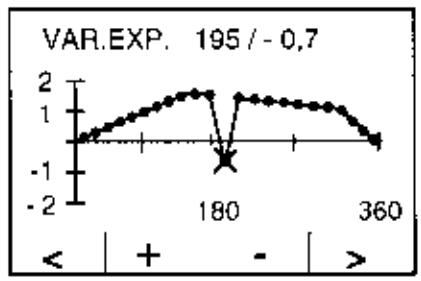
Now it is possible to change a particular segment of the variation curve. After one has pressed the start button once, the overall graphic is created.
Now the button C is pressed.
The graphic is visible.



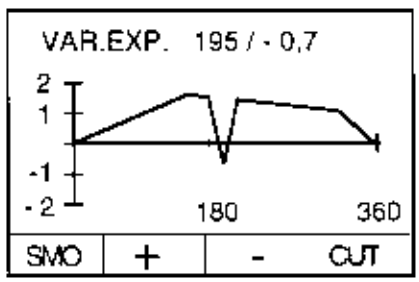
The number button 2 is pressed until the display changes as shown.
The 3 lines are changed into small segments.
Each of these segments allows only a single manual shift.



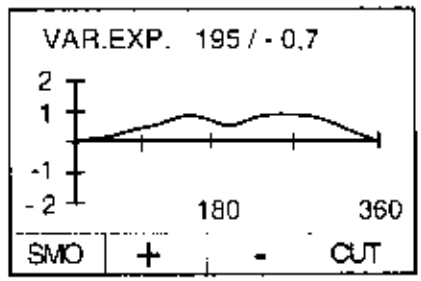
With button A snd D the X can be moved left or right, and with the B and C moved up or down.
In this case on the position 195 ' and -0.7 stops.



When the X is on the desired position press button 1 to connect the segment parts.



Pressing button 2 renews and displays the exposure curve.



With button A (SMO) the curve can be smoothed out as desired, reducing the extreme transitions.
Button A (SMO) can be used repeatedly.
Any extreme points can be cut down with button D (CUT).

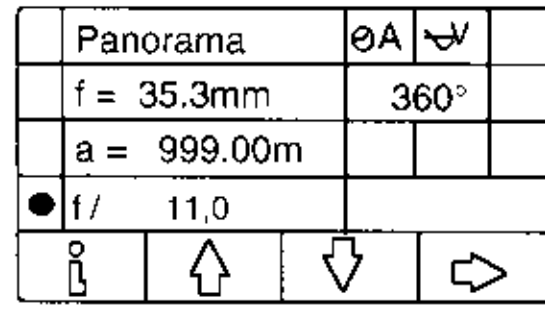
Start the Picture Taking

Press the button twiche and the picture taking begins.

Automatic Exposure Correction

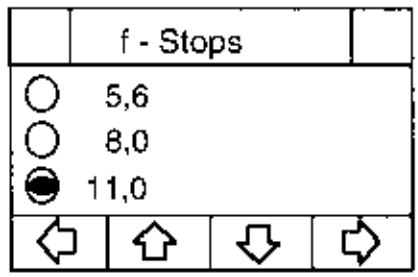
4. Shuttertime - Automatic Variation - On

The exposure meter and the Variation are switched on.



Adjust Aperture

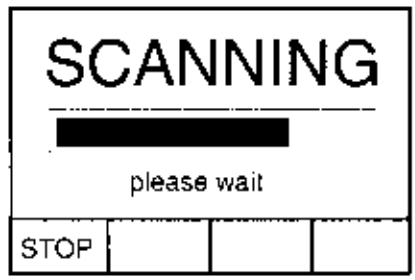
Press button D.



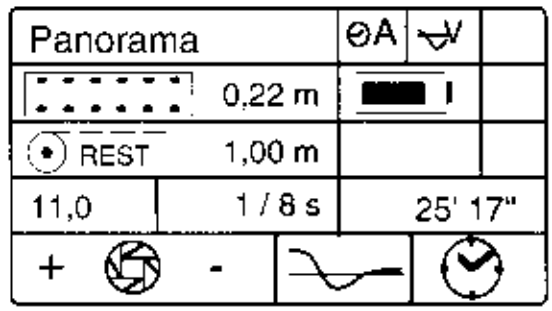
Set desired aperture on the lens. Afterwards with buttons B or C move the marker until it agrees with the lens value. The aperture can still be changed subsequently.

Press the start button.

The camera turns and with its exposure meter measures the brightness of the selected angle. After that it returns to the starting position

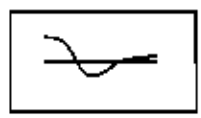


See the illustration.
The bar graphic plots the amount of the angle already scanned as it turns.
The turning can be interrupted with stop button A.



The display changes and a small variation diagram shows above the C button.

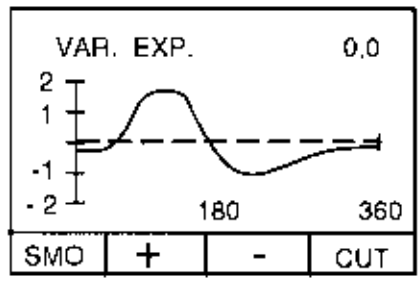
Press the C button.



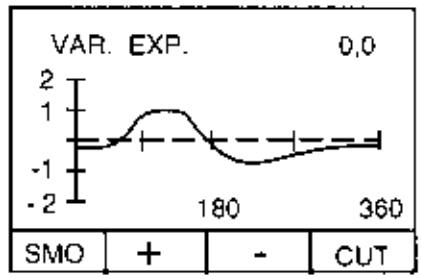
Then the display changes.
On the next page are further instructions.

Automatic Exposure Correction

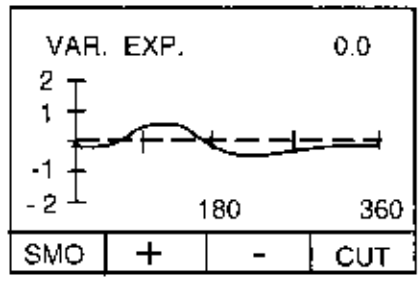
Variation Curve Smoothening SMO



The exposure curve will be plotted on the display. It gives the light and dark places in the scene.
The area over the middle line is lighter and below the line is darker.
The horizontal line always corresponds to the entire picture taking angle.

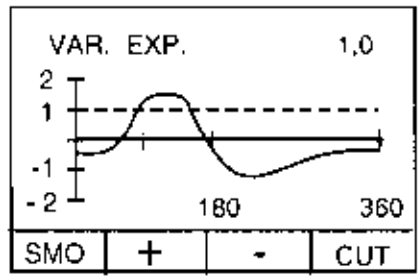


The exposure curve can be reduced (smoothed).
For this press button "SMO" or A.
The Variation will be weaker.

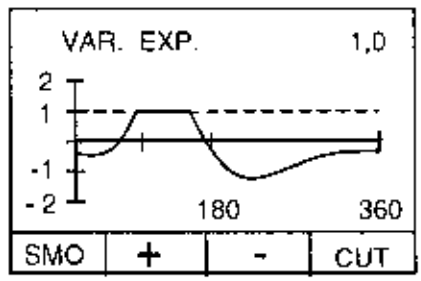


The smoothing can be repeated as often as you like.

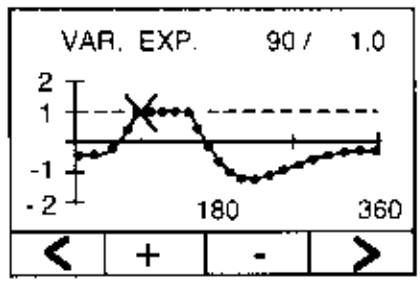
Cutting Extremes of Variation Curve



Extreme points can be cut off.
With button B move the base line up, or down with C.
When the base line gets the desired height, pressing button "CUT" or D will cut off the extreme portion of the curve.



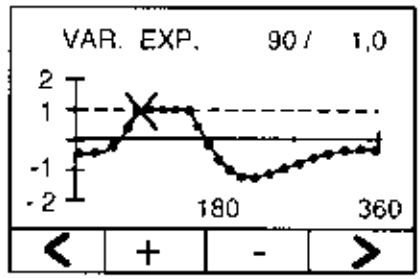
The extreme part of the curve is cut off.
Afterwards if you like you can now also use "SMO" for smoothing.
Note:
After using the cut off or smoothing functions the original curve can not be brought back. A new "Scan" is necessary.



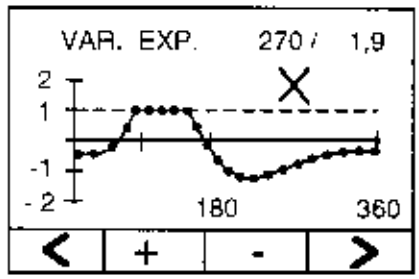
Depending upon the choice, a particular segment of the variation curve can be changed. Pres the number button 2 in order to alter a small segment of the line (Toggle mode).

Automatic Exposure Correction

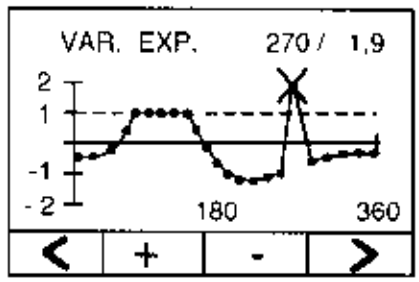
Working with a Variation Curve



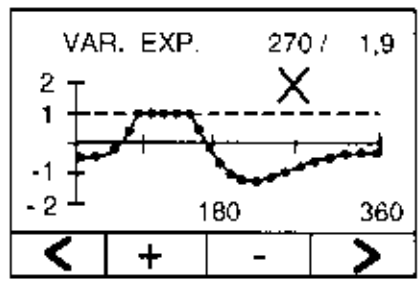
Altering only a small segment of the variation curve. Each of these segments can only be moved vertically. Moving the X with the buttons.



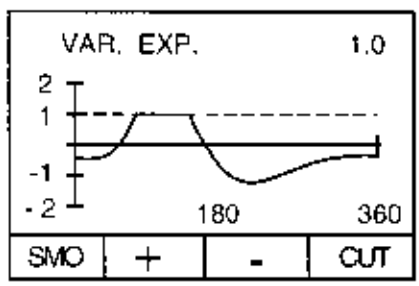
The X is moved left and right with the button A and D and with the button B and C moved up or down.



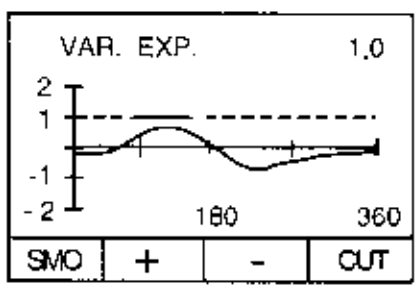
If the button 1 is pressed the segment (point) on the curve will move to the X. The altered curve is created. Every segment of the curve can be altered.



A curve with an altered segment already can be erased using button 0.



After renewing by pressing button 2 one is left in the " Toggle mode ". It is advantageous to smooth the variation curve with the button A (SMO) in order to get smooth transitions in the picture.

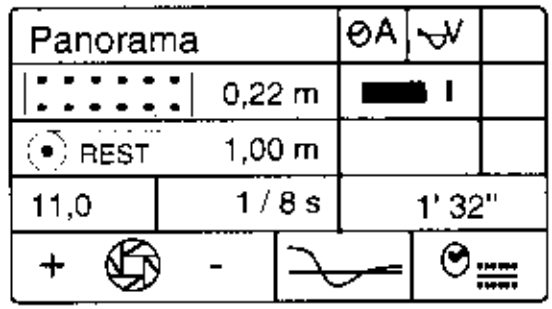


Smoothing can be repeatedly entered. A curve that is already smoothed can still be altered in the " Toggle mode " (button 2).

Press the start button

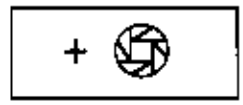
Pressing the start button will make a new overall graphic appear.

Automatic Exposure Correction

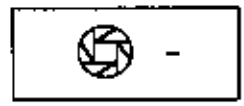


The overall graphic again shows all the important data.
Should the picture taking be of too long duration, it can be changed with button B.

Aperture Correction



With button A raise the aperture value to another value. The shuttertime and the picture taking time will automatically increase.



With button B lower the aperture to another value. The shuttertime and the picture taking time will both decrease.

Timer and Bracketing

With button D it is possible to turn on or off the timing and bracketing function.

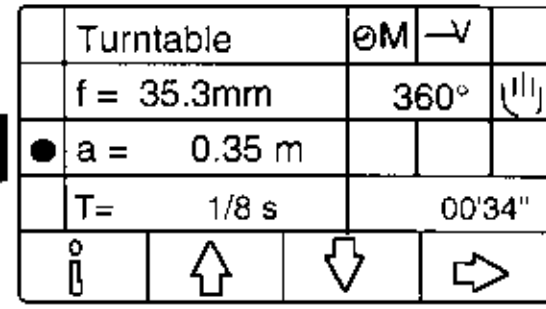
Start Picture Taking

After the second button pressing, picture taking will start.

Turntable Mode

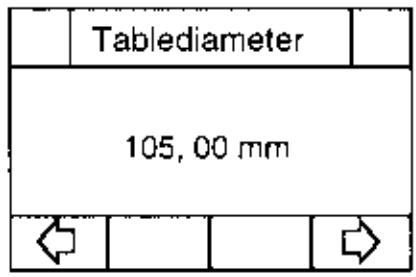
Select turntable mode from the first line of the first menu page.

Move the marker with button B or C to the third line.
Press D and then enter the focus distance.



Object Diameter

Press D three times



For round (periphery) scanning the object diameter must be entered.
The smallest diameter is 1 millimeter the biggest 9999 millimeter.

Please use a separate light meter.

A Difference Common to the Turntable -, Linear -, and Moving Modes

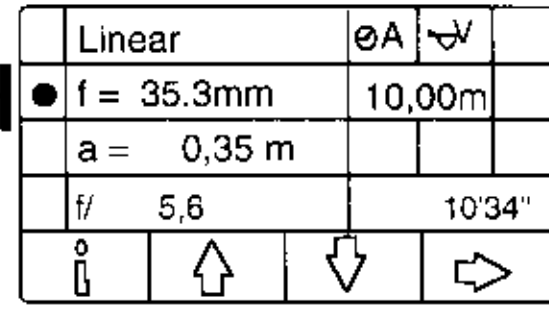
The depth of field is not the same as with Panorama mode. It is greatly reduced. This is because the film and the object are in motion and in principle only at the programmed distance will the velocities be synchronized to each other

Objects that are will be lengthened and the nearer will be shrunk. It is an advantage to use longest possible focal length. The velocity difference of the farther and nearer object becomes relatively smaller.

Linear Mode

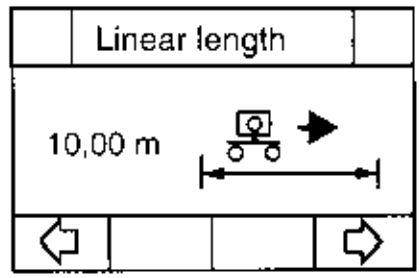
Select linear mode from the first line of the first menu page.

Move the marker with button B or C to the 2nd line.
Press D and then enter the camera travel distance.



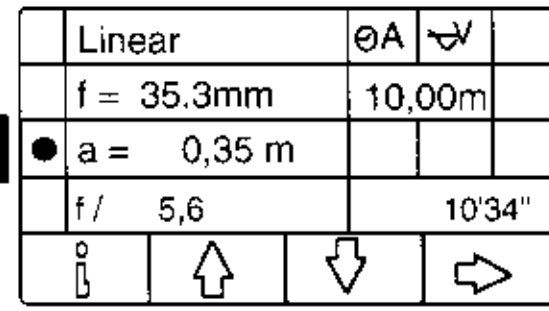
Linear length

Press button D 2 times



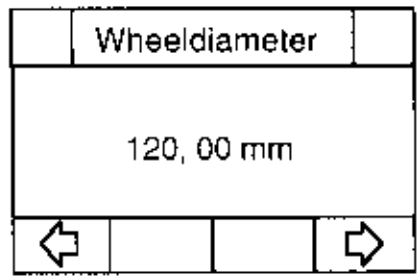
In place of the rotation angle the length of the travel for the linear picture will be entered using the number buttons.

Move the marker with button B or C to the third line.
Press D and then enter the wheel diameter.



Drivewheel Diameter

Press D three times.

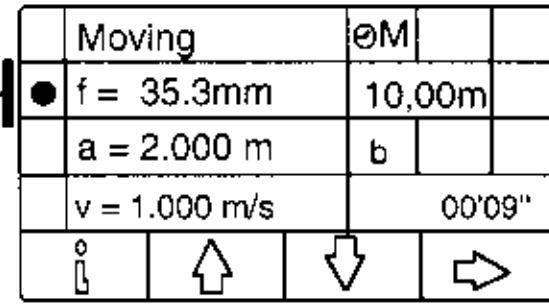


For linear scanning the drive wheel diameter must be entered in millimeters.
The SEITZ standard wheel has a diameter of 120,0 mm
Note:
Depending on the weight of the camera dolly the rolling diameter of the wheel may change. Use this new diameter.
Input an exact travel distance, for example 10,00 meter.
Bring a mark to the starting point, start, measure the travel distence.
A deviation in the travel distance must be compensated with the wheel diameter.

Moving Mode

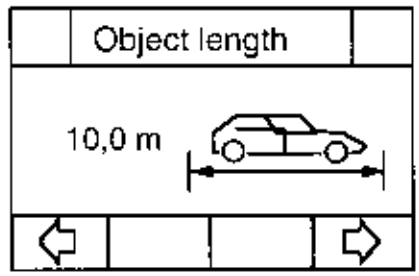
Select Moving mode from the first line of the first menu page.

Move the marker with button B or C to the 2nd line.
Press D twice.



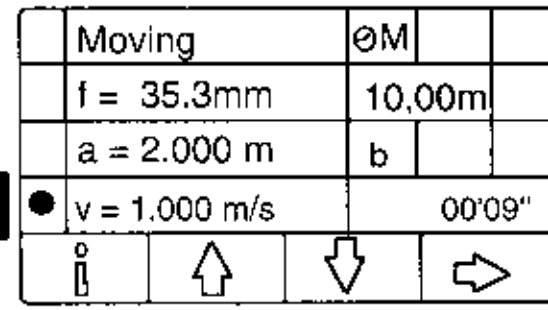
Lenght of the object

Press button D twice



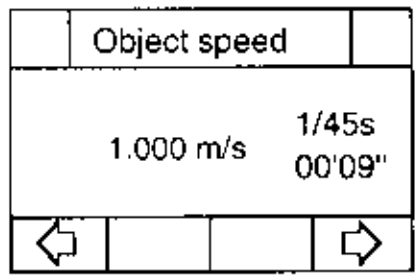
Only the length of the object will be entered. It is advisable to plan for some extra distance before and after the object.
For example: with an automobile that is 5 meters long it is useful to enter 15 meters for the object length. With that one gets the film exposure before and after the object.

Bring the marker to the 4th line.



Speed

Press button D



Enter the speed of your object in meter per second.
The efective shutterspeed and time for the shot will be shown as well.

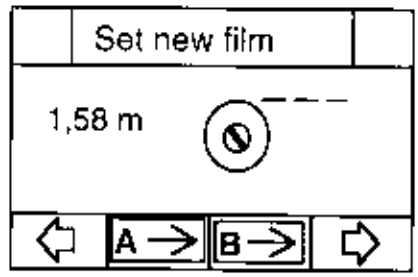
In the Moving Mode automatic exposure and variation are not possible

Stereo Mode

With a second camera body attached to the camera motor (stereo conection cable), the control unit recognizes and will automatically switsch to the stereo mode.
The stereo application can be used in panorama-, turntable-, linear-, and moving mode when needed. Except for the film function all the other inputs are the same.

Film spooling

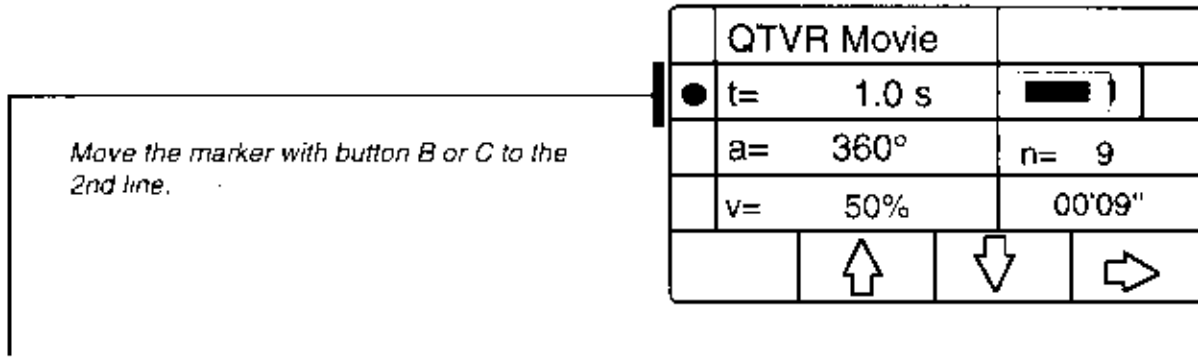
Press button B to spool film A, press C to spool film B



It appears in the illustrated display. Both films are inserted as in the single film mode and the covers are closed. Afterwards the button B is pressed. The film in the first box (a camera body) will be brought to the beginning position.
Then button C is pressed. A similar thing happens with the film in B cassette.
Be alert that both camera bodies are using similar film.
Than the camera is ready to use.

QTVR Movie Mode

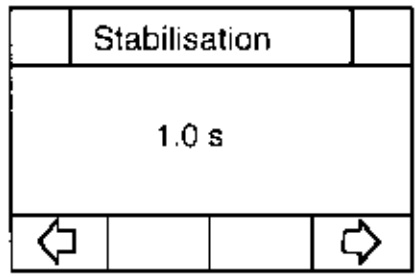
The QTVR Mode will switch on automaticely if the QTVR holder is installed or if there is no Seitz Camera head connected.



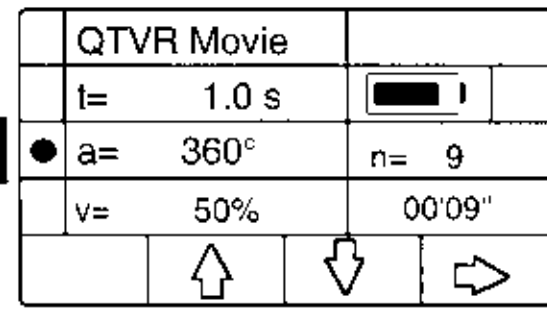
Move the marker with button B or C to the 2nd line.

Stabilisation Time

Press button D



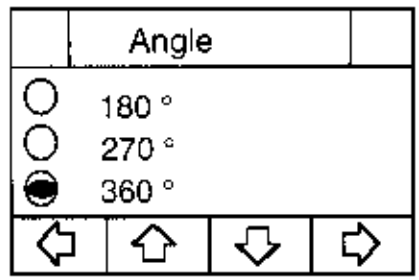
Objects or the camera can cause vibration by the rotating. Therefore after each exposure and turning the object or the camera must again come to rest. A stabilization time can be entered. This can range from 0.1 to 120 seconds. Enter this time with a number buttons.
Thereafter each of the waiting periods will be applied before the exposure is made.



Move the marker with button B or C to the 3nd line.

Angles

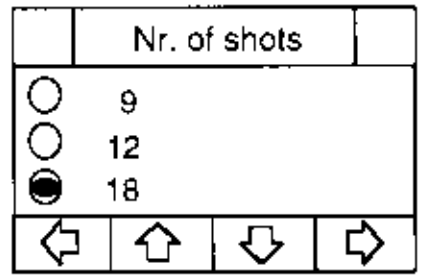
Press button D



The menu lists a choice of five angles. An angle can be entered by overwriting as for example 378°
When 360° is chosen for the object to rotate one time about the axis and will size up round about.

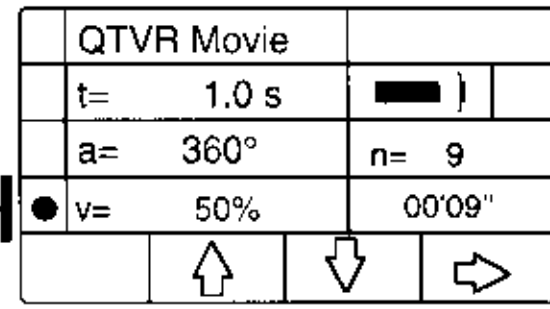
The Number of Pictures

Press button D



Now it is necessary to enter the number of pictures. Again there is a list of 5 values selection table. Also you can enter other values with the number buttons
If for example the angle is 360° and the number of pictures entered is 36 for the object then the camera takes a picture every 10°.

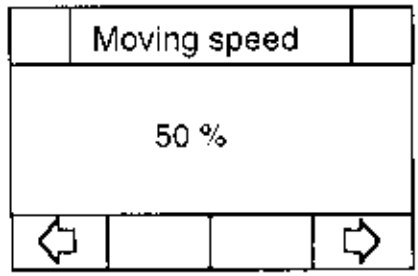
QTVR Movie Mode



Move the marker with button B or C to the 4nd line.

Rotating Speed

Press button D



Depending upon the object on the turntable or the camera on the turn motor the rotation speed can be entered to be given in percent. The values range from 5 to 100%. Each higher percent number makes the object/camera turn faster. The values can be entered with the number buttons and acknowledged with the button D.

Press the start button.

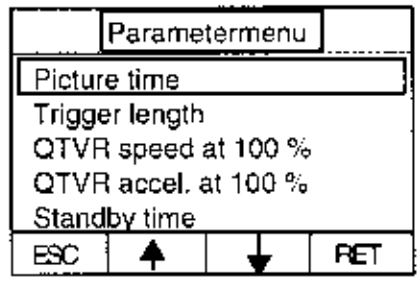
When the Start button is pressed the picture production begins. The controller shows how many pictures are remaining, also the remaining time in which ever condition the camera is in (Picture, Move, Stabilize).

QTVR Movie Mode

In the parameter Menu are a few adjustment possibilities that affect only the QTVR mode. Go to this parameter menu.

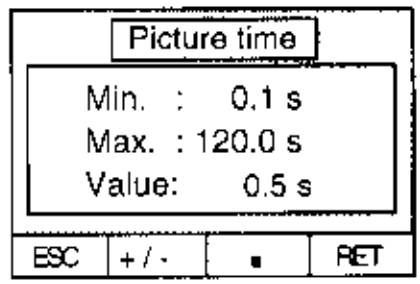
Picture Time

Press button D.



Picture time gives how long the release signal will be given from the Roundshot controller to the camera.

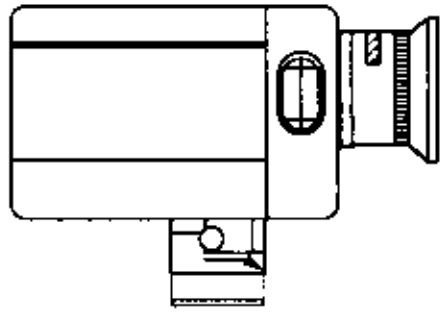
Press button D.



The values are between 0.1 and 120 seconds.
So it is for example possible to control the camera shutter time from the Roundshot controller. For this set the normal camera shutter to "B" (bulb).

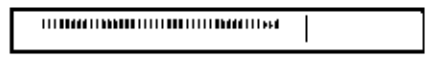
Camera Parts

Camera Body



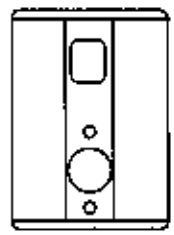
The camera body is attached to the optical bench with a slide clamp. The side mounted reflex viewer shows a 50mm view height. With the Super 35 the horizontal lineas in the viewer are seen 24mm apart and in the Super 220 Vr 43 mm apart. Certain very short focal lenght lenses have four permanent side lightshields. Therefore the lens mount is rotated from its normal position to use the unshielded corners of the lens for the slit's optical path. This allows for maximum lens shifting.
A circular bubble level allows exact leveling. Near there you find the locking screw for the cover. The slit can be removed for cleaning purposes.

Optical Bench



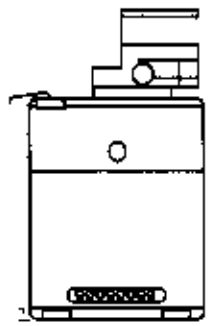
The camera is attached to two mounting tubes with a scale. The arrow of the tube must be in line with that of the slide clamp of the motor.

NiCad Battery



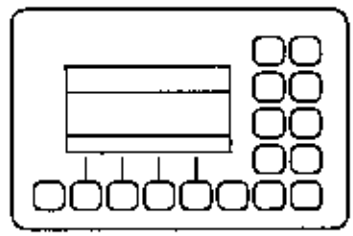
The battery has ten cells each with 1,2 volts, 2,5 Ah and has an integrated quick charge regulator. For complete charging of the battery the charger needs merely 3 hours for a full charge.
The battery charger attaches either directly to the socket of the battery or into the 4-pin socket on the camera motor attached to the battery.
A red LED on the battery shows the charging process.
The LED goes out automatically as soon as the charger is finished.

Camera Motor



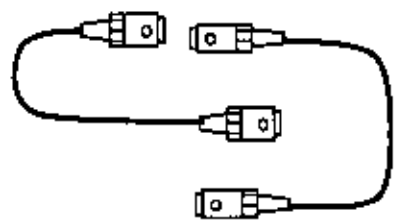
The camera motor serves in the panoramaa mode to turn the camera, in linear mode as a dolly motor and in the turntable mode as the object turntable motor. In the linear and turntable mode the tube clamp is unscrewed from the top of the motor and the turntable or wheel is attached.
On the underside there is a 3/8 inch thread, on the upper side a level for exact positioning.
Particular care must be taken in handling the spring pin contacts of both the battery and the control unit.
Should a pin nevertheless become defective, it can be changed from the outside.

Control Unit



Control Unit III directs all functions over a data buss.
Viewing from the front you find a red button on the right side, as well as a socket for a cable connection.

Cable



The short 8-pin cable serves as a connection of the camera to the turning motor. The long cable is connecting the control unit to the motor, if the unit is not joined to the motor.

Accessories

Power & Charger

Power and the charger require input of 110 to 240 volt AC. After completing charging it will turn itself off.

Slit Piece

The slit piece is the small, rounded projection on the top of the camera near the front. The slit piece can be taken out for cleaning by the small grooves on the front and back edge of the piece right at the camera surface. When installing be careful that the ball bearing in the front inside edge of the installation slot is in place.
There are 3 diverent slit insert sizes of 0.4mm 0.8mm and 1.6mm that are for every picture taking purpose.

Reflex Viewer

The reflex mirror viewer shows a 30mm high image. The horizontal line mark the usable film height of 25mm.
The perpendicular line marks the exact center of the slit.
To look at the image, the lens should be wide open and the camera turned either with the motor or by hand.

Changeable Lens plates

(Super 220 VR only

One can change the lens plates on the Super 220 VR.
It is possible to choose between Nikon-, Leica-, Contax-, and the shiftable Hasselblad-. and Pentax 67 plates.
Undo the 4 corner thumb screws and then tip foreward. When attaching the screws make sure the back side of the plate is very clean.

Viewer Loupe

The viewer magnifier can placed on the viewer opening from above.
It detends at different heights.
The loupe can be turned to focus for a individual's eye.

Lens hood (Compendium)

The compendium will be supplied with the Super 220 VR as a standart attachement The holder for the compendium is installed by inserting it into the front end of the optical bench tubes and tightened with both thumb screws. The slotted light shield (with two shields one behind the other) can be taken off in order to look at the image in the viewer better.

Camera Body Holder

The camera body holder with a 3/8 inch thread is used during turntable and linear picture taking.

Turntable / Drivewheel

It will screw directly to the motor. Undo the three set screws on top of the motor and remove the tube clamp. The wheel is set on and the same screws along with a separate screw which then need to be tightened. The turntable has a diameter of 120mm. Additional M4 threaded holes allow for mounting a larger disk to it.

Junction Box

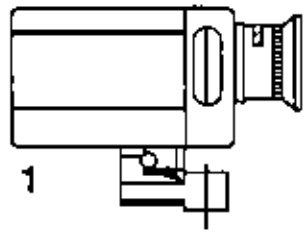
It has 4 sockets which are connected to each other.

Rails / Dolly

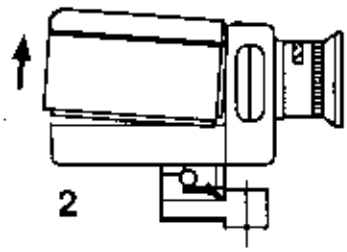
The aluminium rails are quick locking for rapid laying.
Levellable ties are set every 70cm.

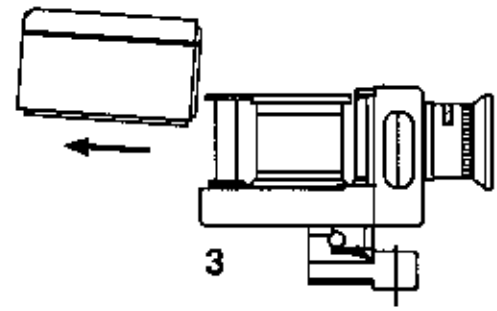
Film installation Super 220 VR

Opening the Cover

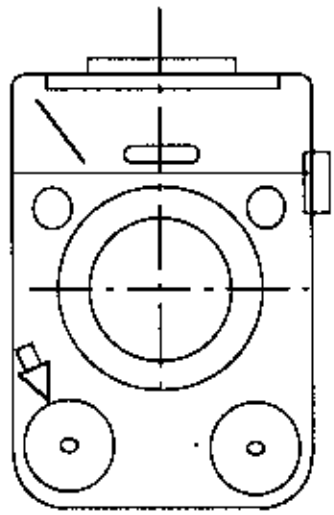


1. Turn the cover screw to the left.
2. Lift the back of the cover slightly then remove it to the rear.





Installing Film



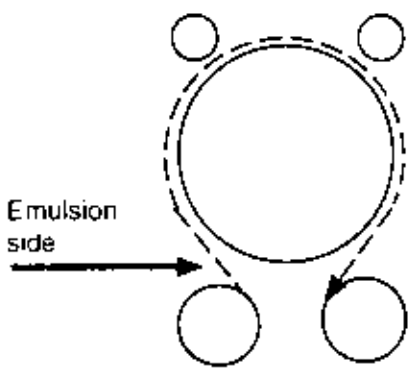
Arrow mark on camera base

With the cover off, first on the left side (viewed from the rear) Lift up the film spool holder. Insert the new film spool onto the key and close the spool holder.
Lay the paper leader on the drum.
Press lightly and at the same time turn the drum in a clockwise direction. The paper must feed cleanly and withoutwrinkles between and through the pressure rollers. After the paper has arrived on the right side continue to turn the drum until the paper reaches the take-up spool.

Position the papaer leader of the 120 Film type first in the center of the take up spool The leader must be tightly fastened to the spool.

With the 220 film type turn the film drum until the arrow in the camera lines up with vertical " Startmarks for Standart cameras " of the film.
Similarly pull the paper tight on the takeup spool the paper leader.

An o-ring can be forced off the roller by improper paper installation.

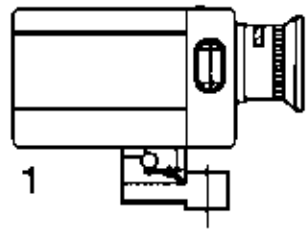


The film must be positioned as illustrated.
Pay attention that the emulsion side (black side) faces out.

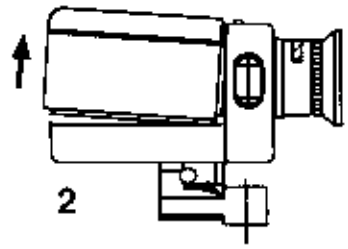
Close the cover.
On the controller select the film type (120 or 220) and exposure value.
Afterwards press button C. The paper leader will be spooled up until the beginning of the film is in position in front of the exposure slit.
The sign " Film in position " will be displayed.

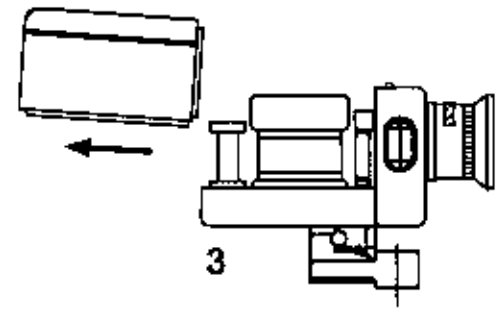
Film Installation Super 35

Open Cover

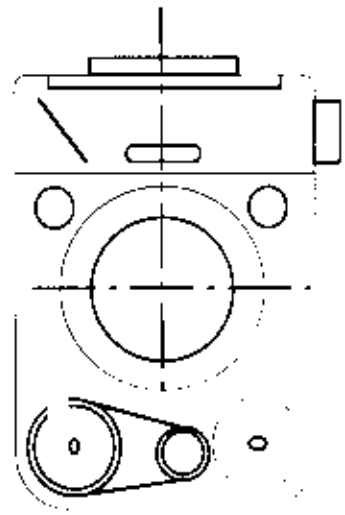


1. Unscrew the top srew turning left.
2. First lift the rear slightly.
3. Then pull back.

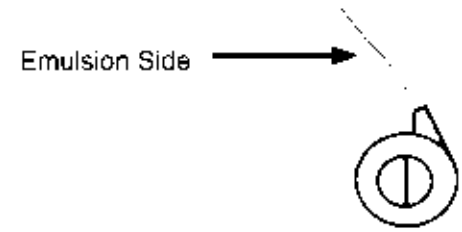


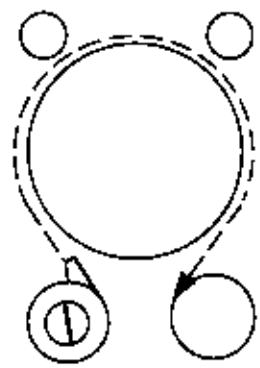


Film Installation



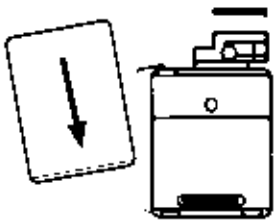
In the open condition insert the standart 35 mm cassette from above into the film holder.
Take care that the protruding core is down and the film end lays outside.



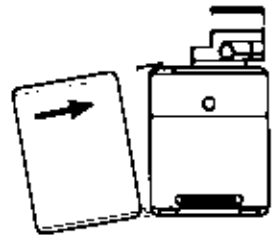


Pull the film about 10 cm (4 inches) out of the cassette.
Place the film end between the film pressure rollers and the film cylinder. By hand turn the film cylinder until the film end projects about 10 to 12 cm (4 to 5 inches) on the viewer side.
Pull the film end through behind the take spool and thread into the slot. Rotate the take up spool by hand to insure film is caught on the tooth.
Close the cover. On the control unit chose the film length (12, 24, or 36 frame) and the film exposure value.
After pressing the button C the exposable film will be transported into position.
The sign " **Film in position** " will be displayed.

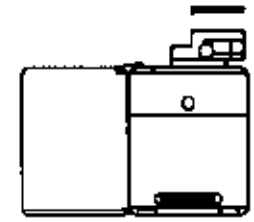
Camera Assembly



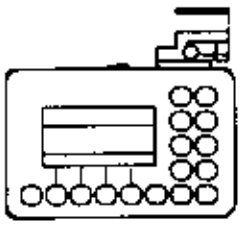
Hold the battery at a slight angle. The power socket must be down, pin contacts up.



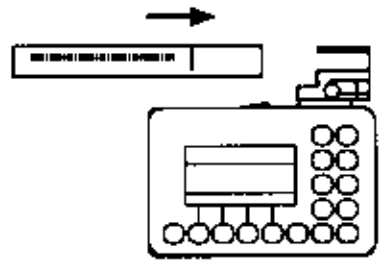
Place bottom on the attachement hock of the motor part.



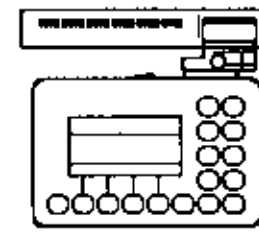
Swing the battery to the motor part and press until this connects. Be careful of the spring contact pins.



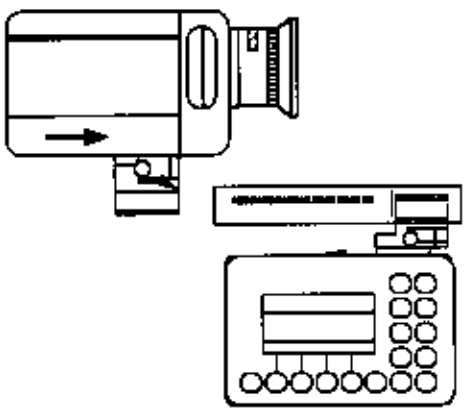
The control unit likewise attaches as the battery. Also be careful of the 8 spring contact pins.



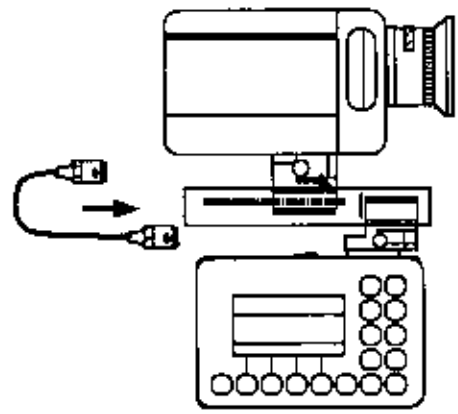
Push the optical bench tubes from the rear of the motor clamp



The arrow of the clamp device and the tube arrow must be aligned.

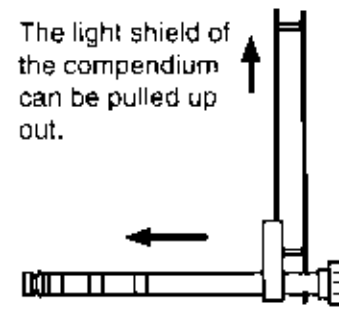


Push the camera body onto the optical bench from the rear and tighten with the clamp device



Connect the short cable from the motor to the camera body.

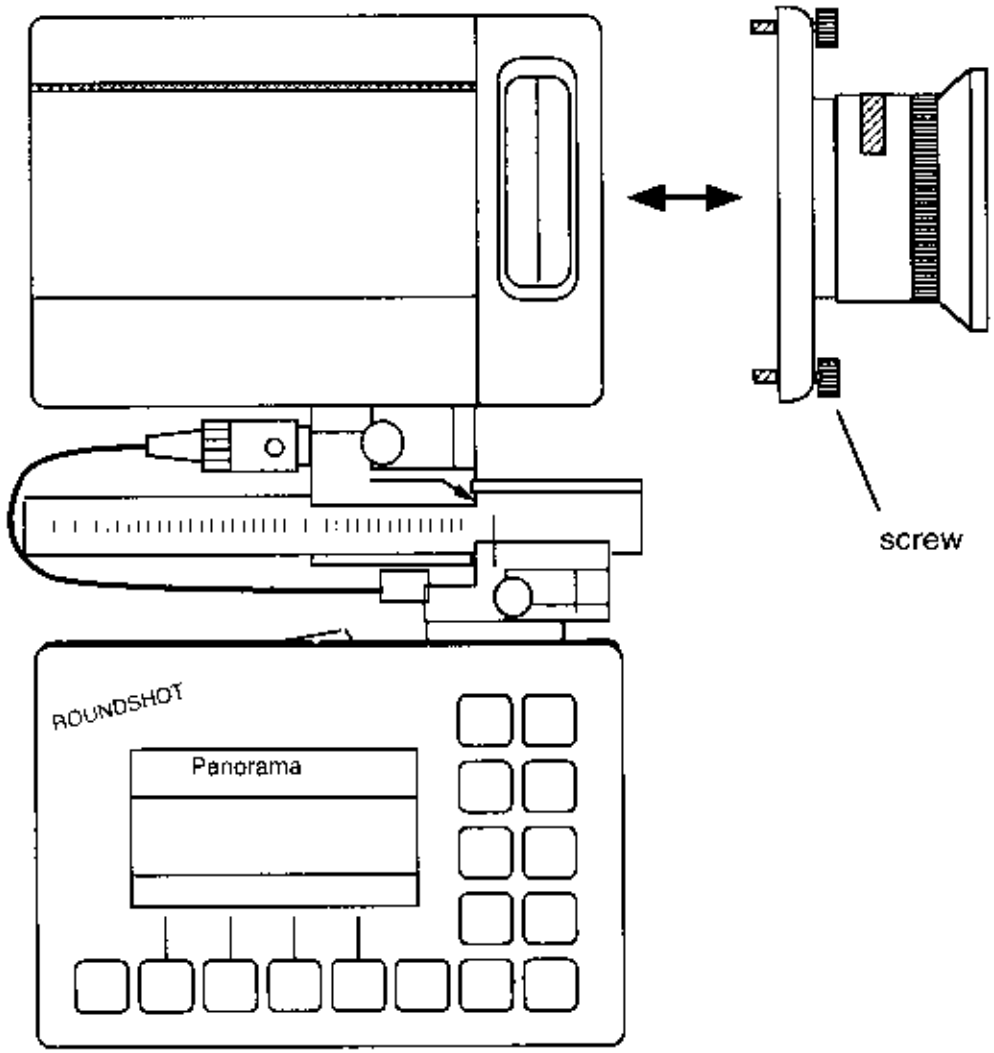
The light shield of the compendium can be pulled up out.



The holder of the compendium will be installed from the front and tightened with the thumb srews. The shield should be moved into direct contact with the lens.

Changing the Lens Plate

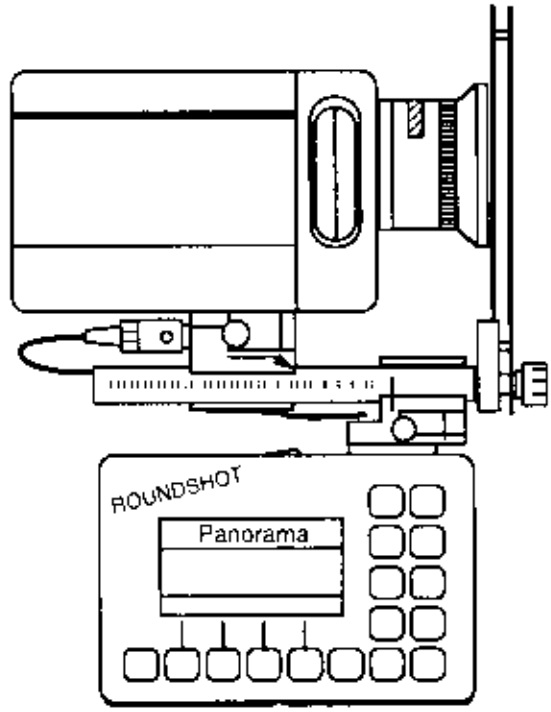
The Super 220 VR allows the lens plate to be changed. Loosen the four corner screws on the lens plate and withdrawn the plate forward. Then place in the new plate and attach well. It is important that there is no dirt particles under the plate.



The shiftable Hasselblad and Pentax lens plates can also be positioned on the camera. From forward is found on the right side the screw for tightening in place the rise and fall part of the plate. The screw can be tightened harder or softer depending upon the lens's weight. Loosening it somewhat allows the lens attachment ring to be moved up or down. A scale on the left side gives the position. For the exposure the screw should again be tightened.

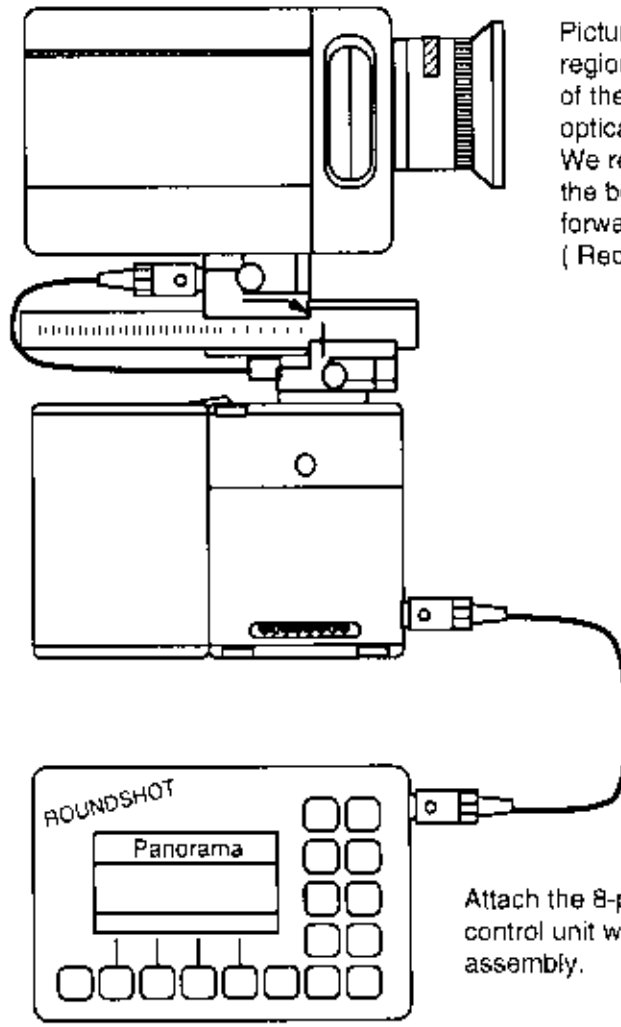
Panorama Picture Taking

Picture Taking - Short Distance



A blinking symbol " b " indicates if the camera body must be moved on the optical bench.
The display shows the precise set point. The arrow of the body (upper) clamp device must be aligned with engraved tube scale.
Move the camera body to the correct position.
This is the forward edge of the clamping device.
Here in the drawing one can likewise see the position of the compendium.

Picture Taking - at Longer Distances

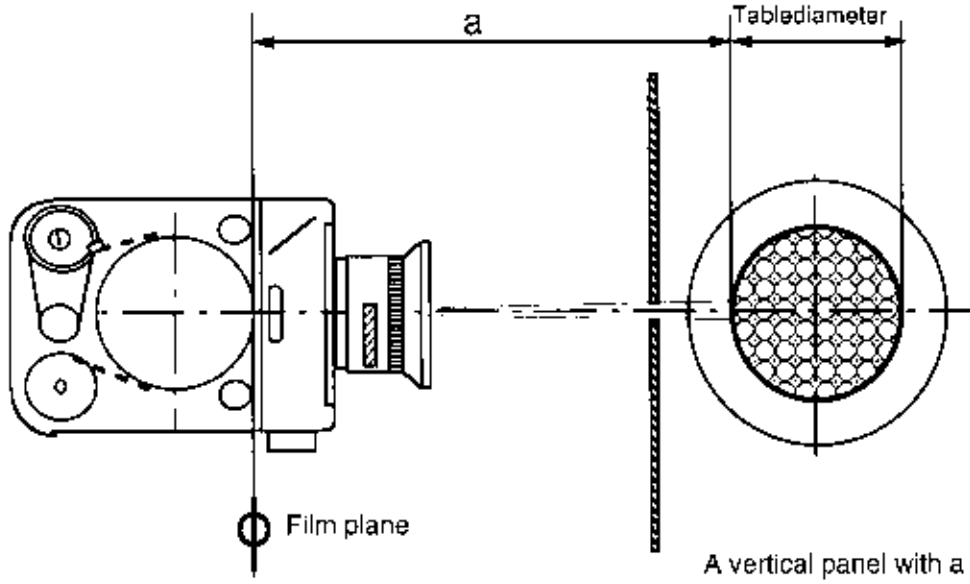


Pictures in the infinity region need NO positioning of the camera body on the optical bench.
We recommend pushing the body completely forward.
(Reduced imbalance)

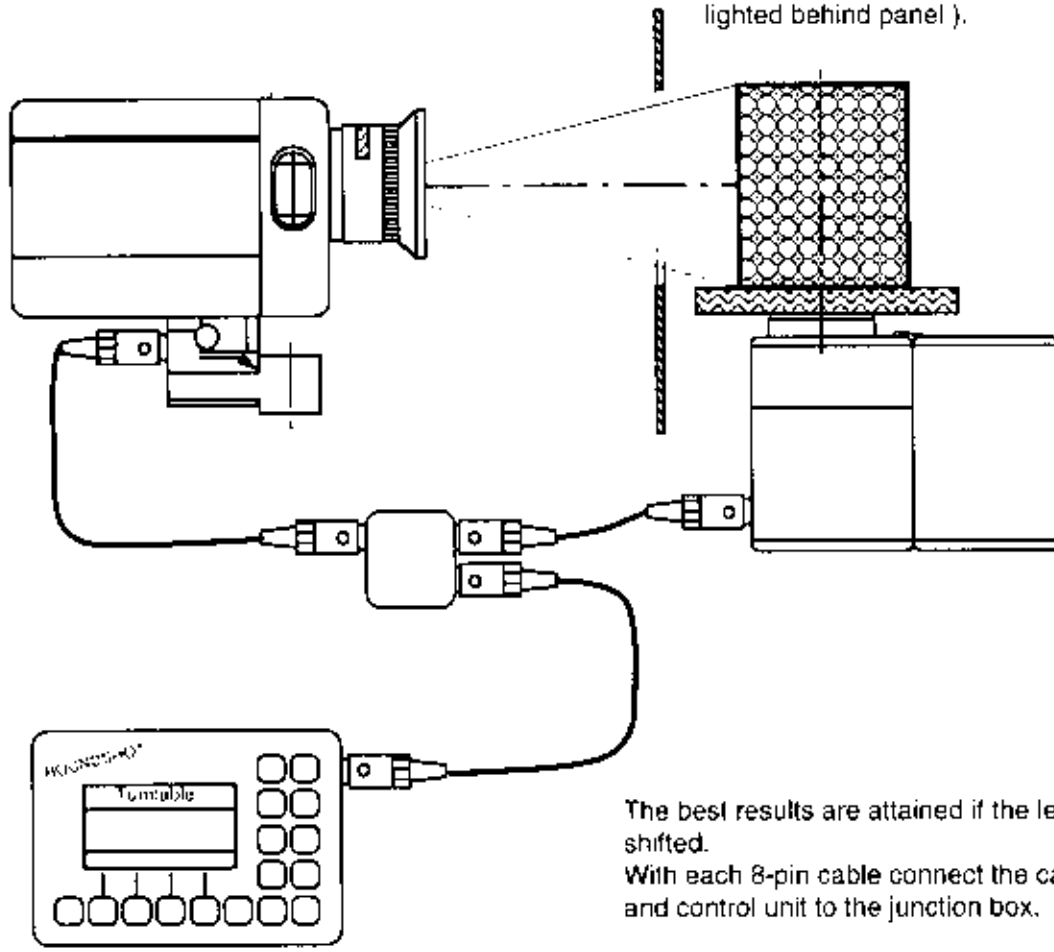
Attach the 8-pin connection cable if the control unit will be taken from the camera assembly.

Turntable Picture Taking

For round (periphery) scanning the motor and the camera body are separated. The camera body is attached to the tripod by clamping to a seperate holder. The turntable is screwed onto the motor and positioned in the optical axis of the camera. The opject is placed on the turntable and centered. The vertical line off the reflex viewer shows the exact middle of the slit. Measure the distance " a " with a ruler or tape and enter into the control unit. The distance from film plane symbol on top of the camera to the object surface. Then measure the diameter of the object and likewise enter it into the control unit. If the object is bigger on the screen than it is in reality, choose the Mode " Macro".



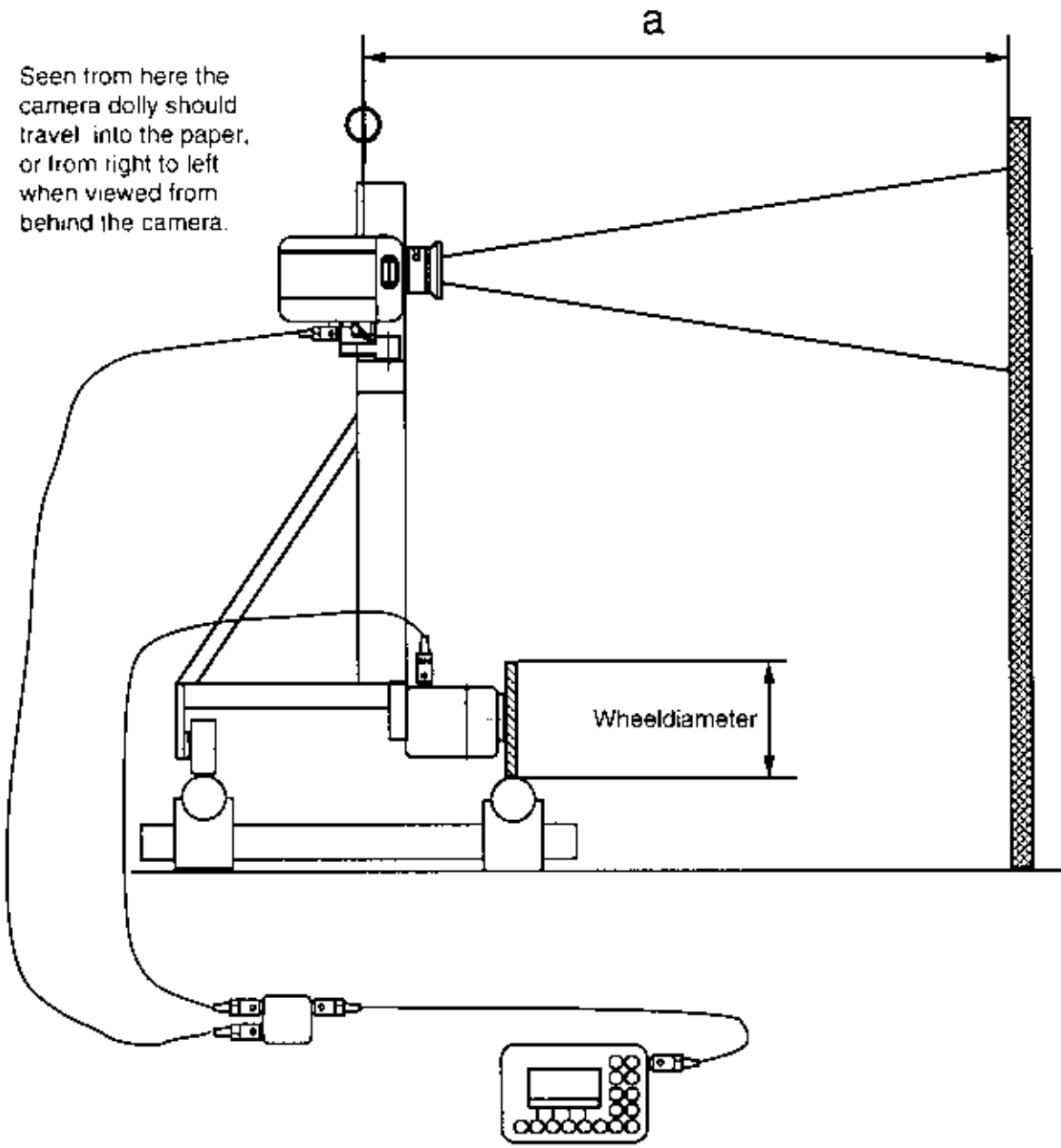
A vertical panel with a slit in front of the object that is aligned to the camera slit and the axis of the turntable will bring the best results (black carton material and object lighted behind panel).



The best results are attained if the lens is not shifted.
With each 8-pin cable connect the camera, motor and control unit to the junction box.

Linear Scanning

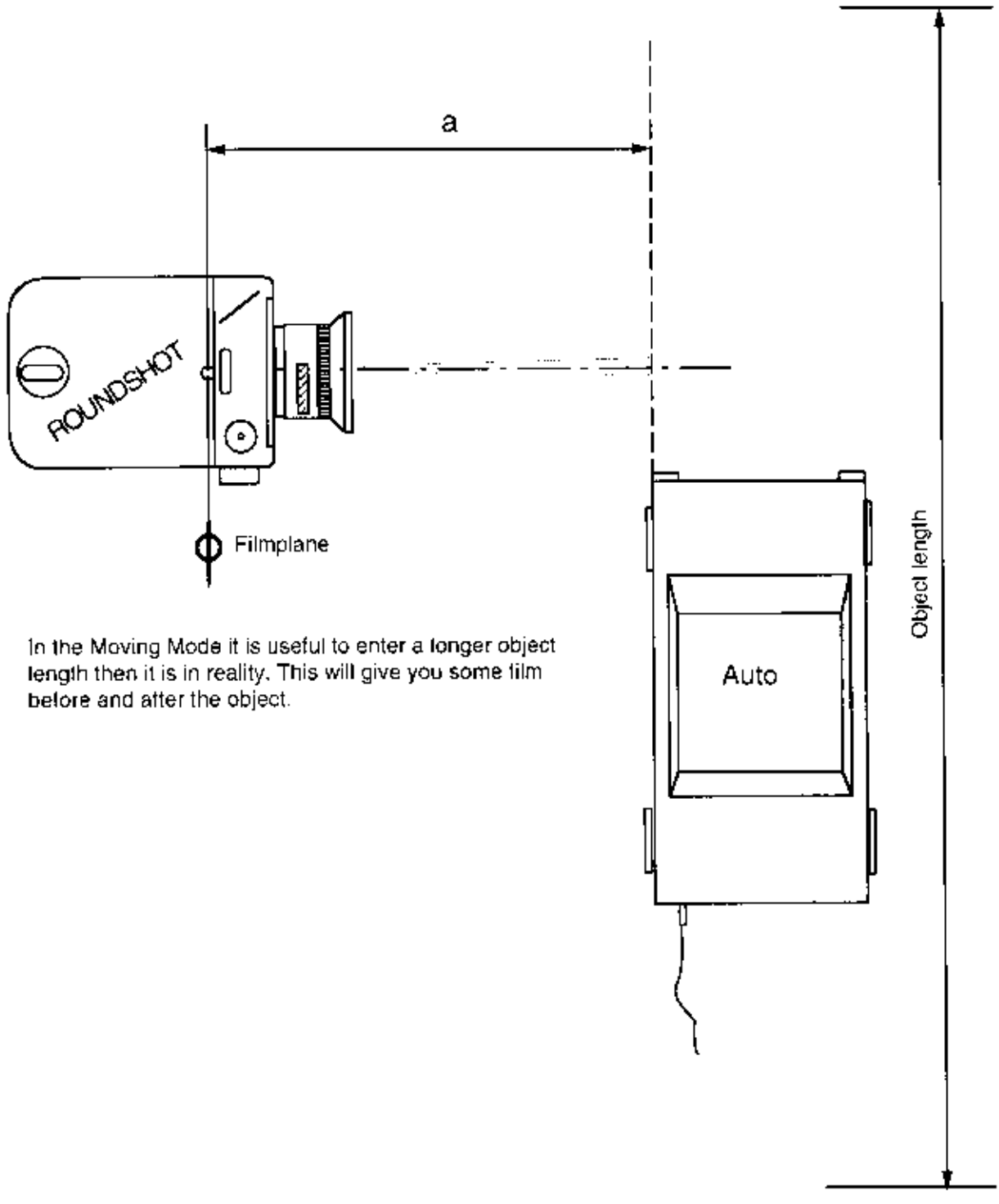
For the linear scanning it becomes additionaly necessary to use special rails (the transition from rail to rail must be very exact) and a camera dolly.
The rails are to be constructed completely parallel to the object and pay attention that these are precisely positioned.
Mount the camera body to the clamp holder of the dolly at a 90° angle to the object.
The drive wheel (it is also the turntable) screws directly to the motor and fasten these to one side of the dolly. Measure the distance " a " and enter into the control unit.
Check Makro or Normal and set also.



The cable is connected as illustrated. In addition the charger can be connected with a 4-pin cable.
The drive wheel diameter (120 mm) must even be adjusted for the weight of the dolly if compressed.
Input an exact distance and let the dolly travel. Measure the travel distance and correct the eventual difference with the wheel diameter.
The best results are obtained if it possible to use a long focal length lens.

ATTENTION: The camera dolly has to move from right to the left, seen from the rear side.

Moving

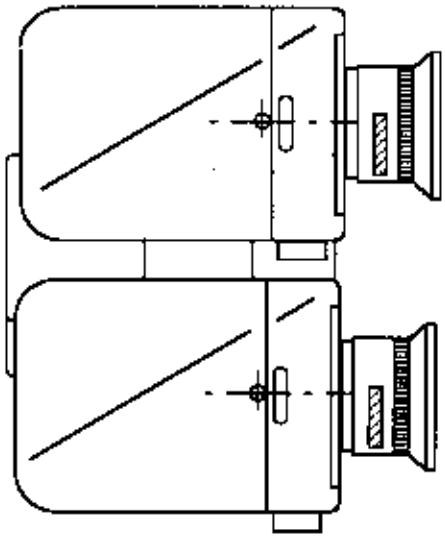


In the Moving Mode it is useful to enter a longer object length then it is in reality. This will give you some film before and after the object.

Stereo - Pictures

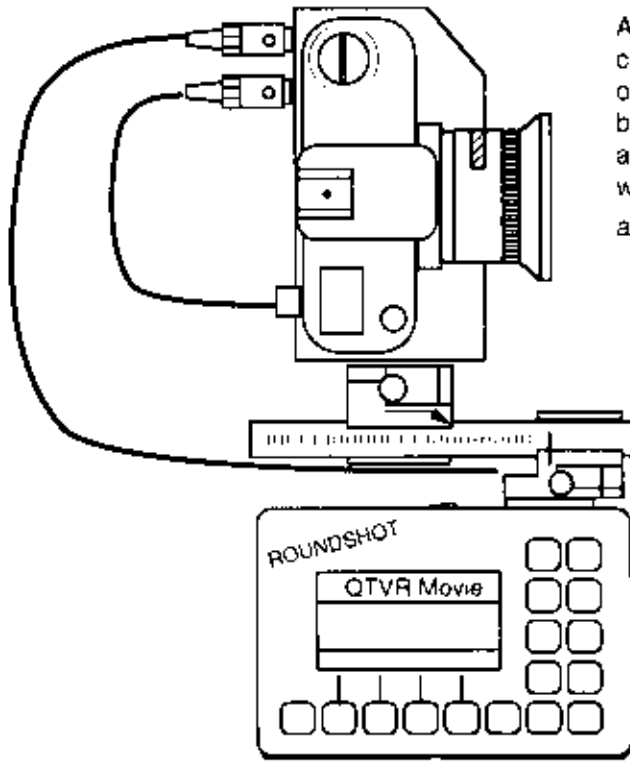
(Stereo Mode)

For stereo pictures a second camera head, a stereo fixture as well as a special connection cable will be needed. Both camera heads become connected and electronically controlled by the controller in the Stereo Mode. It is important that two identical lenses are used.

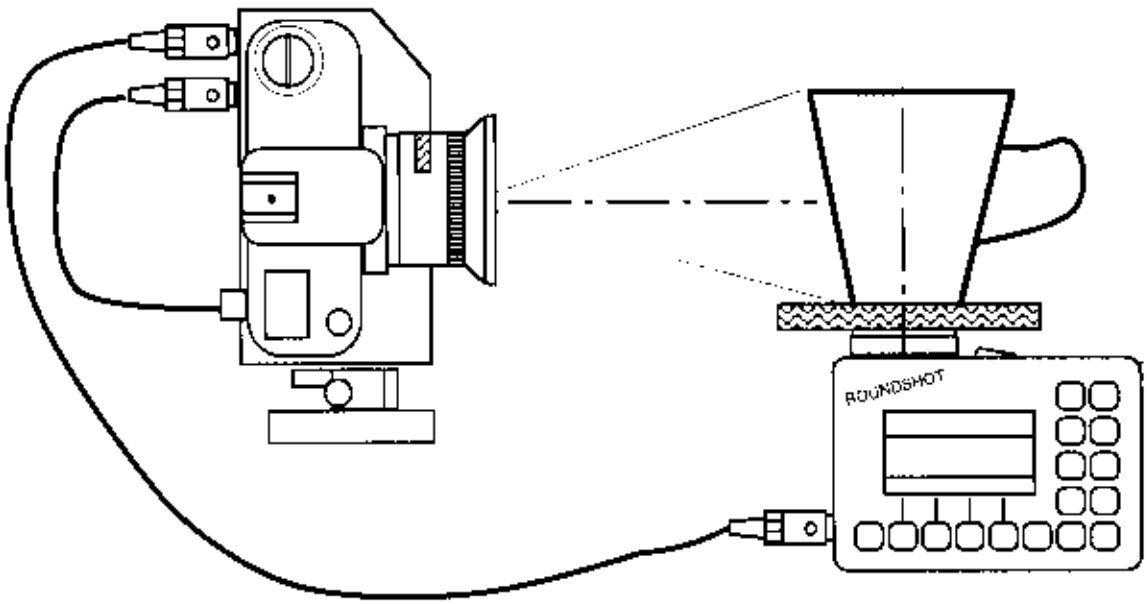


The stereo fixture will be shared on the optical bench. This allows both of the cameras to be mounted. This is attached by pushing the fixture on from behind to selected value. Connect the two heads with the special cable.

QTVR Movie



A normal camera will screwed onto the carrier of QTVR- fixture. It attaches to one of the hole available on the camera body. The turning motor and the fixture are connected with an 8 pin plug, and with a special camera plug the camera and the fixture are linked up.



The QTVR fixture will be separate from the turning motor. A turntable can be attached to the motor and then the object turned. The normal camera with the QTVR fixture will be attached as shown to a standard tripod.

Lens Testing

For the calculation of the turning speed of both motors it is extremely important to enter the exact focal lenght of the lens.
If this value is not right, the picture becomes streched or compressed. The picture quality suffers.
On the next page we have a list of the standart lenses and placed with them the associated effective (actual) focal lengths.
Yet these values can deviate with each series and vintage.
There are two possibilities to get the exact value.

1. You have your optics which specifically are designed for the ROUNDSHOT Super 35, to be measured 1/10 mm (for example 35,3 mm).
2. You take some time and film and make a few test runs.
Thereby it is necessary to use your eyes as the measure. For the second case the following test procedure is described.

Test Procedure

1. Attach the desired lens.
2. Turn the camera on.
3. Chose the panorama Mode.
4. Shuttertime on manual.
5. Variation shut off.
6. The camera screwed to very stable tripod placed on a very firm surface.
7. Put up a test chart in the view field of the camera (a line star or letter pattern)
8. Focus on this chart and enter this value into the control unit.
   Attention: For the short distances you must bear in mind the " b " setting.
9. Place the shuttertime from 1/2 to (maximum)1/30 second and adjust the aperture to the light level.
10. There must not be 360° It should range between 90° and 180°.
11. Do you plan for example to test the 18 mm lens? Then take from the list on the next page the effective value that we had determined. in this case 18,3 mm.
12. Place a f-value of 18,1 mm in the control unit.
13. Note this value on a test table.
14. Start the picture taking. Be careful about it, that no wind or other outside influence spoil the picture.
15. Now you shift the f.value in the control unit to 18,2 mm. Note the new value in your test table (for later assignment to the picture)
16. Start taking the new picture.
17. Report this process at least three times each time raising the f-value by 1/10 mm.
18. After development you now compare the pictures and seek the best result.
19. The value of the best picture put in the lens list for the control unit.
20. Determine the f-values for the other lenses by the same method.

NIKON Nikkor Lens List

Lens	Effective Focal Length " f "	Distance Mainplane h = H - H'
Nikkor 13 mm / 5,6	13,3	- 69,3
Nikkor 15 mm / 3,5	15,4	- 64,2
Nikkor 18 mm / 3,5	18,1	- 58,0
Nikkor 20 mm / 2,8	20,3	- 36,6
Nikkor 24 mm / 2,0	24,5	- 37,0
Nikkor 24 mm / 2,8	24,6	- 31,5
Nikkor 28 mm / 2,0	28,4	- 38,0
Nikkor 28 mm / 2,8	28,7	- 23,8
PC - Nikkor 28 mm / 3,5	28,6	- 40,0
Nikkor 35 mm / 1,4	35,8	- 24,5
Nikkor 35 mm / 2,0	35,7	- 22,0
Nikkor 35 mm / 2,8	35,4	- 25,0
PC - Nikkor 35 mm / 2,8	36,4	- 21,0
Nikkor 50 mm / 1,2	51,6	15,0
Nikkor 50 mm / 1,4	51,6	15,5
Nikkor 50 mm / 1,8	51,5	2,0
Micro - Nikkor 55 mm / 2,8	55,0	- 5,5
Noct Nikkor 58 mm / 1,2	57,9	10,0
Nikkor 85 mm / 1,4	84,9	0,0
Nikkor 85 mm / 2,0	85,0	18,4
Nikkor 105 mm / 1,8	104,9	18,0
Nikkor 105 mm / 2,5	105,0	31,3
Micro - Nikkor 105 mm / 2,8	105,4	64,2
Micro - Nikkor UV 105 mm / 2,8	105,1	- 8,5
Nikkor 135 mm / 2,0	135,1	- 4,0
Nikkor 135 mm / 2,8	135,1	0,0
Nikkor 135 mm / 3,5	135,1	- 2,3
Nikkor 180 mm / 2,8	180,2	- 55,0
Nikkor IF - ED 200 mm / 2,0	199,4	- 91,0
Nikkor 200 mm / 4,0	199,5	- 90,0
Micro - Nikkor 200 mm / 4 IF	201,5	177,0
Nikkor IF - ED 300 mm / 4,5	299,9	238,0
Nikkor IF - ED 400 mm / 2,8	400,2	170,0
Nikkor IF - ED 400 mm / 3,5	400,1	265,0
Nikkor IF - ED 400 mm / 5,6	400,1	376,0
Nikkor IF - ED 500 mm / 4,0	495,5	350,0
Reflex Nikkor 500 mm / 8,0	520,0	999,0
Nikkor IF - ED 600 mm / 4,0	602,0	480,0
Nikkor IF - ED 600 mm / 5,6	601,0	630,0
Nikkor IF - ED 800 mm / 5,6	801,5	980,0
Reflex Nikkor 1000 mm / 11,0	999,7	999,0

NIKON AF Nikkor Lens List

Lens	Effective Focal Length " f "	Distance Mainplane h = H - H'
AF Nikkor 18 mm / 2,8 D	18,5	- 42,0
AF Nikkor 20 mm / 2,8 D	20,4	- 35,0
AF Nikkor 24 mm / 2,8 D	24,2	- 39,0
AF Nikkor 28 mm / 1,4 D	28,5	- 58,0
AF Nikkor 28 mm / 2,8 D	28,8	- 20,0
AF Nikkor 35 mm / 2,0	35,9	- 19,0
AF Nikkor 50 mm / 1,4	51,6	12,0
AF Nikkor 50 mm / 1,8	51,6	5,0
AF Micro Nikkor 60 mm / 2,8 D	60,1	10,0
AF Nikkor 85 mm / 1,8	84,8	105,0
AF DC Nikkor 105 mm / 2,0 D	103,4	70,0
AF Micro Nikkor 105 mm / 2,8 D	105,3	79,0
AF DC Nikkor 135 mm / 2,0	134,6	180,0
AF Nikkor 180 mm / 2,8 IF - ED	180,0	100,0
AF Micro Nikkor 200 mm / 4,0 D	201,3	150,0
AF Nikkor 300 mm / 2,8 IF - ED	299,8	100,0
AF I Nikkor 300 mm / 2,8 IF - ED	299,8	100,0
AF Nikkor 300 mm / 4,0 IF - ED	299,4	150,0

LEICA Lens List

Lens		Effective Focal Length " f "	Distance Mainplane h = H - H'
Super Elmar R	3,5 / 15 mm	15,4	- 77,4
Elmarit R	2,8 / 19 mm	19,4	- 49,9
Super Angulon	4,0 / 21 mm	21,7	- 32,9
Elmarit R	2,8 / 24 mm	24,3	- 32,5
Elmarit R	2,8 / 28 mm	28,5	- 27,2
Super Angulon Shift	2,8 / 28 mm	29,2	- 57,9
Summilux R	1,4 / 35 mm	36,0	- 28,7
Summicron R	2,0 / 35 mm	35,2	- 26,2
Elmarit R	2,8 / 35 mm	35,2	- 16,6
PA Curtagon R	4,0 / 35 mm	35,2	- 21,6
Summilux R	1,4 / 50 mm	52,4	6,7
Summicron R	2,0 / 50 mm	52,3	6,8
Macro Elmarit R	2,8 / 60 mm	61,4	9,7
Summilux R	1,4 / 80 mm	80,0	11,4
Summicron R	2,0 / 90 mm	89,9	15,8
Elmarit R	2,8 / 90 mm	91,0	13,6
Apo Macro Elmarit R	2,8 / 100 mm	100,2	- 7,8
Macro Elmar R	4,0 / 100 mm	100,1	- 3,5
Elmarit R	2,8 / 135 mm	135,1	- 7,6
Elmarit R	2,8 / 180 mm	179,6	30,0
Apo Telyt R	3,4 / 180 mm	181,7	- 62,4
Elmar R	4,0 / 180 mm	179,7	-102,6
Telyt R	2,8 / 250 mm	251,8	-177,4
Telyt R	2,8 / 280 mm	279,2	-156,2

CONTAX - ZEISS Lens List

Lens (Yashica mount)		Effective Focal Length " f "	Distance Mainplane h = H - H'
Distagon T *	15 mm / 3,5	15,4	- 77,4
Distagon T *	18 mm / 4,0	18,6	- 43,1
Distagon T *	21 mm / 2,8	21,0	- 75,5
Distagon T *	25 mm / 2,8	25,9	- 36,2
Distagon T *	28 mm / 2,8	28,5	- 27,0
Distagon T *	35 mm / 1,4	36,5	- 32,5
Distagon T *	35 mm / 2,8	35,9	- 15,7
PC Distagon T*	35 mm / 2,8	35,2	- 49,8
Tessar T *	45 mm / 2,8	46,5	- 0,9
Planar T *	50 mm / 1,4	51,8	9,8
Planar T *	50 mm / 1,7	51,9	8,6
Makro Planar T*	60 mm / 2,8	61,7	9,0
Planar T *	85 mm / 1,4	84,8	18,3
Planar T *	100 mm / 2,0	99,9	23,1
Makro Planar T*	100 mm / 2,8	100,0	- 11,9
Sonnar T *	135 mm / 2,8	134,1	- 7,2
Sonnar T *	180 mm / 2,8	178,1	- 3,8
Aposonnar T *	200 mm / 2,0	199,9	- 73,2
Tele Apotessar T *	300 mm / 2,8	300,6	-108,3
Telle Tessar T *	300 mm / 4,0	300,0	- 98,7
Mirotar T *	500 mm / 4,5	504,5	228,7
Mirotar T *	500 mm / 8,0	500,0	949,0
Mirotar T *	1000 mm / 5,6	1020,6	391,7

SIGMA Lens List

Lens	Effective Focal Length " f "	Distance Mainplane h = H - H'
AF / MF 3,5 / 14 mm	14,5	- 62,4
AF 3,5 / 18 mm	18,6	- 51,8

ZEISS Hasselblad Lens List

Lens		Effective Focal Length " f "	Distance Mainplane h = H - H'
Distagon	40 mm / 4,0	40,9	- 69,4
Distagon	50 mm / 2.8	51,7	- 62,8
Distagon	50 mm / 4,0	51,3	- 55,5
Distagon	60 mm / 3,5	60,2	- 32,5
Planar	80 mm / 2,8	80,5	3,4
Planar	100 mm / 3,5	100,3	12,1
UV Sonnar	105 mm / 4,3	107,5	- 17,6
Planar	110 mm / 2,0	110,8	19,8
Makro Planar	120 mm / 4,0	120,9	9,5
Makro Planar	135 mm / 5,6	137,1	11,0
Sonnar	150 mm / 2,8	151,1	- 1,2
Sonnar	150 mm / 4,0	151,2	0,6
Sonnar	180 mm / 4,0	179,4	14,4
Tele Tessar	250 mm / 4,0	246,3	- 98,0
Sonnar	250 mm / 5.6	248,4	- 39,8
Sonnar Superachromat	250 mm / 5,6	248,7	- 79,1
Tele Tessar	350 mm / 4,0	350,3	- 57,0
Tele Tessar	350 mm / 5,6	341,2	- 126,1
Tele Apotessar	500 mm / 8,0	499,3	- 284,0

PENTAX 67 Lens List

Lens		Effective Focal Length " f "	Distance Mainplane h = H - H'
Pentax 67	45mm / 4		
Pentax 67	55mm / 4		
Pentax 67	75mm / 4,5		
Pentax 67 Shift	75mm / 4,5		
Pentax 67	90mm / 2,8		
Pentax 67	105mm / 2,4		
Pentax 67 Soft	120mm / 3,5		
Pentax 67 Macro	135mm / 4		
Pentax 67	165mm / 2,8		
Pentax 67 LS	165mm / 4		
Pentax 67	200mm / 4		
Pentax 67	300mm / 4		
Pentax 67 M*	400mm / 4		
Pentax 67	500mm / 5,6		
Pentax 67	600mm / 4		
Pentax 67 M*	800mm / 6,7		
Takumar 67	800mm / 4		
Reflex 67 Takumar	1000mm / 8		

Mamiya 645 Lens List

Lens	Effective Focal Length " f "	Distance Mainplane h = H - H'
Mamiya C 24 mm / 4,0	24,0	
Mamiya C 35 mm / 3,5	35,8	
Mamiya C 45 mm / 2,8	46,0	
Mamiya Shift C 50 mm / 4,0	51,0	
Mamiya C 55 mm / 2,8	55,5	
Mamiya C 80 mm / 1,9	80,0	
Mamiya C 80 mm / 2,8	80,1	
Mamiya Macro C 80 mm / 4,0	80,1	
Mamiya Macro A 120 mm / 4,0	117,0	
Mamiya A 150 mm / 2,8	147,3	
Mamiya C 150 mm / 3,5	145,9	
Mamiya A 200 mm / 2,8 Apo	195,3	
Mamiya C 210 mm / 4,0	210,3	
Mamiya A 300 mm / 2,8 Apo	292,4	
Mamiya C 300 mm / 5,6	299,7	
Mamiya A 500 mm / 4,5 Apo	493,7	
Mamiya C 500 mm / 5,6	500,0	

Care and Tips

Cleaning

As with all optical instruments, the ROUNDSHOT Super 35 also needs some care. Apart from the mirror, the viewer glass and the matte adhesive cloth the camera can be cleaned with a soft cloth, lightly wet with denatured alcohol. The special transport rubber bands must be oiled and dirt free. You should particularly devote yourself to cleaning the slit. With a sticky ribbon tap away or with an airdust can. In a like method the matte adhesive cloth can be cleaned. The mirror and the viewer glass can be cleaned with a damp cotton swab.

Tripod

Please use a stable tripod if possible without a ballhead. No 1/4 inch conversion screw.

Battery

The NiCad battery can receive through an unnecessary charge a memory defect.
Therefore the battery where possible needs to be run to the well down and not charged after every new film.
It is necessary to use the discarge capability of the controller from time to time.
The battery live will be improved.
A battery charge can transport about 30 films at 20° C (68° F) and short shuttertimes.

Spring Contacts

The spring contacts on the motorpart (for the battery and the control unit) must always be protected. Should these in spite of this become bent or brocken, they are easy to change from the outside.
Temporarily for a time the long cable can be used (for the control unit). All the spring contacts for the battery are tripled.

Troubleshooting

Filmend

The camera has reached the end of the film or the display shows a trouble report " Filmend ".

No Film

The take up spool is monitors during the picture taking as to whether it has the right winding speed.
If it turns too fast (film is poorly or not attached) the display shows a trouble report " No film ". **Put film in the camera or attach it tighter.**

Film Jam

Is the take up spool to slow or is not rotating the display shows a " Film Jam ". **Open the cover and check whether the film is positioned correctly.**

Time to fast

Too fast exposure time shows a blinking " T ". If the picture taking is started anyway a report shows " Time to fast ".
Lower the exposure time until the blinking goes out.

Windmodule no cable connection

This trouble report shows if the cable connection to the camera fails.
Disconnect the battery or control unit from the power supply and check the cable connections and then reconnect.

Object too Close

If the entered value of the object distance is too short, the "a" and "b" symbols will blink. If now you try to start the camera an announcement "object too close" will appear. On the first menu page is shown the trouble indicator of the blinking "f/a" symbol. **The object distance must be changed and checked once more.**

Range

The entered values are too high or too difficult..

Film to short

Too little film for the actual picture.
You can start pressing the Start button twice. It will run until the film end
is reached. After that it will rewind automatically.

Display screen Shuts off

After the start the display shuts off immediately.
The battery power is too low. **Change the battery or charge it.**

Long Streaks " Telephone Wires "

Long streaks or telephone wires can appear on the film if the slit is not clean.
Take out the slit and clean (with airdust can).

Guaranty Card

Please fill out the included guaranty card and send the first page back to us immediately.

Many thanks.
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