

—R—O—U—N—D—S—H—O—T—

The efficient medium-sized PANORAMA Camera for 70 mm and rollfilm

ROUND SHOT 65 EL Panorama by SEITZ

OPERATING INSTRUCTION

Your Seitz ROUNDSHOT 65 / 70 - 220 is a modern rotating camera, fitted with the latest in exclusive technical gadgets

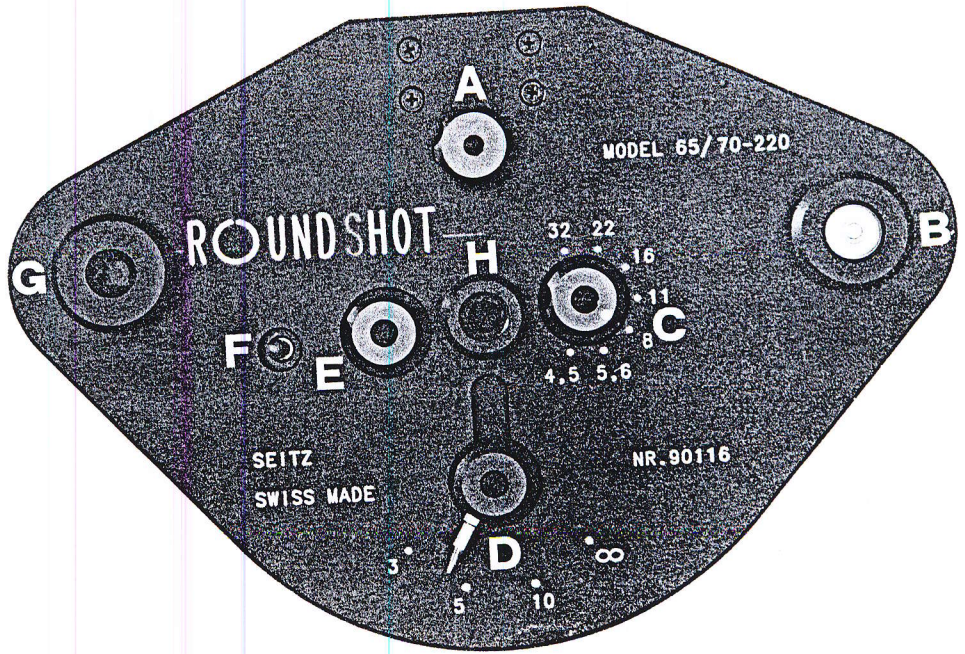
The ability to alter the movement in three dimensions necessitates creating new principles.

The axial rotation with variable speed determines the exposure time, thereby immediately and continuously recording the alternation in time, this is an unique advantage of this camera.

The shift adjustment of the lens alters the horizontal level of the image, the shift may be adjusted both electronically and manually.

Focusing is accomplished by changing the separation, using the built in lens, the focus can be varied between 3 mtr. and inf.

You now own an elite product of photographic technology with which we wish you every succes in the future.



N O M E N C L A T U R E

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A	-	Screw for the camera casing, to release turn to the left.
B	-	Bubble of spirit level.
C	-	Aperture adjustment knob.
D	-	Distance adjustment knob.
E	-	Knob for manual shift adjustment.
F	-	Switch for electrical adjustment of shift.
G	-	Thread 3 / 8 " (Light)
H	-	Thread to attach optical finder.

TECHNICAL DATA

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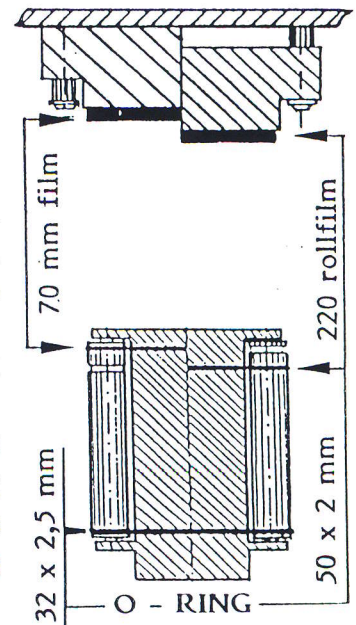
Lens	4,5 / 65 mm mc GRANDAGON
Rising lens	26 mm from the middle to top.
Focusing	Continuous from 3 mtr. to infinity.
Film 70 mm	Picture 360 ° = 412 x 60 mm = 6,8 : 1
Shooting angle	48 ° vertical, lens in middle position.
Film 220	Picture 360 ° = 412 x 54 mm = 7,6 : 1
Shooting angle	44 ° vertical, lens in middle position.
Shutter speed	1/250 - 1/125 - 1/60 - 1/30 - 1/15 - 1/8 - 1/4 - -1/2 - 1 S. - 2 S. - 4 S.- 8 S. - 16 S. - 32 S. - 64 S. - 128 S.
Rotations time	360 ° = from ca. 1 sec. to 18 hour
Pictures 360 °	10 using with 70 mm / 3 with 220 film.
Dimensions	W. 24 cm D. 16 cm H. 26 cm
Weight	5 kg, compl with case ca. 12 kg
Control unit	Frame counter, rotations angle selection, reset knob, start trigger, cable with plug

OPERATING THE CAMERA - 4 -

The ROUNSHOT Camera 65 / 70 - 220 accept 70 mm perforated film in cartridge 4,5 m. as well 220 rollfilm.

To remove the camera casing, unscrew (A) align the focusing lever above the slot and lift the casing off. Change the O-Ring from the pressure plate (70 - 220) and fixed the filmholder up or down

Once the casing is removed, it is important that the blind on the front runs into its slot. A fully loaded battery allows up to 200 shots of 360 degree at a short time setting of 1/250 or 15 shots using a slow time setting (4 sec.). Which equals 15 minutes rotations time, by 20 ° celsius.



C H E C K L I S T

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BEGINNING	- of the film should be firmly on to the take up spool.
INSTALL	- on a stable tripod, with 3/8 " thread.
APERTURE	- to be set, mean calculate average lighting.
DISTANCE	- is set by turning the lever to the mark.
CABLES	- from the control unit and battery is plugged.
VIEWFINDER	- is screwed on, so that is can be rotated.
SHIFT	- setting is adjusted to the desired horizontal level.
SHUTTER	- speed is set according to light conditions and movement.
PRESETTING	- of the angle of resolution, PROGRAM 1 = 90 °
COUNTER	- must be reset by pushing the reset knob.

LOADING THE FILM

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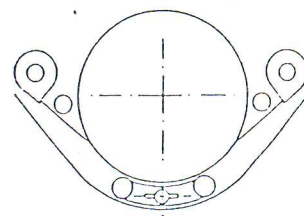
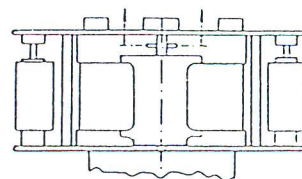
When the camera is open, swivel the pressure roller to the outside.

The new cartridge is clamped between top holder and centralising support.

Remove the cover of the empty cartridge and secure the beginning of the film to the spool. Replace the cover.

Push the top holder up with the empty cartridge and insert the latter into the transport clamp.

Tightens the film snugly onto the filmrest with the knob. Swivel the pressure roller back into position.



NOTE: THE FILM MUST NOT BEHIND THE DISTANCE BOLT.

FILMFORMAT

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PROGRAM	Angle	70 mm Image size	Rollfilm	Ratio
1	90°	103 x 60 mm	103 x 54 mm	1,7 : 1
2	180°	206 x 60 mm	206 x 54 mm	3,4 : 1
3	270°	309 x 60 mm	309 x 54 mm	5,1 : 1
4	360°	412 x 60 mm	412 x 54 mm	6,8 : 1
5	450°	515 x 60 mm	515 x 54 mm	8,6 : 1
6	540°	618 x 60 mm	618 x 54 mm	10,3 : 1
7	630°	721 x 60 mm	721 x 54 mm	12,0 : 1
8	720°	824 x 60 mm	824 x 54 mm	13,7 : 1
9	810°	927 x 60 mm	927 x 54 mm	15,4 : 1

SHUTTER SPEED SETTING - 8 -

The wheel for the shutter speed is placed in the lower immobile part of the camera. While the camera rotates a narrow slit continuously exposes the film, at 1/250 shutter speed the camera does a 360 degree turn in ca. 1 second. Moving objects are not blurred.

If the camera moves slower, at with a shutter speed of 1/30, a full rotation will take about ca. 8 seconds, depending on which side the camera is rotating. Moving objects will appear lengthened or shored

Shutter speed in comparison to revolution time for 360 °

1 / 250	=	0,9 sec.	1 s.	=	3 min. 45 s.
1 / 125	=	1,8 sec.	2 s.	=	7 min. 30 s.
1 / 60	=	3,75 sec.	4 Sec.	=	15 min.
1 / 30	=	7,5 sec.	8 Sec.	=	30 min.
1 / 15	=	15 sec.	16 Sec.	=	1 hour
1 / 8	=	28,125 s.	32 Sec.	=	2 hour
1 / 4	=	56,25 s.	64 Sec.	=	4 hour
1 / 2	=	1 min 52 s.	128 Sec.	=	8 hour

A P E R T U R E S E T I N G

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On top of the camera you will find the button (C) to set the aperture at :
4,5 / 5,6 / 8 / 11 / 16 / 22 / 32

The mark on the knob indicates the chosen aperture, values in between can be used as well.

TIP: If you are shooting picture of more than 360 degree, measure the light conditions in the crucial sector.

F O C U S I N G

Focus the picture with the focus lever (D) on top of the camera, the following settings can be chosen: **3 m. / 5 m. / 10 m. / Infinty.**

Here again choose a setting that will focus in the crucial part of the picture.

NOTE: The focusing lever is simultaneously the camera covers securit latch, before removing the cover, align the lever with the slot.

DEPTH OF FIELD

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GRANDAGON 4,5 / 65 mm in meters

Aperture	3 Meters	5 Meters	10 Meters	Infinty
4,5	2,5 - 4,0	3,8 - 7,5	8,0 - 10	14 - Inf.
5,6	2,3 - 4,4	3,5 - 9,0	7,0 - 21	11 - Inf.
8	2,1 - 5,0	3,0 - 12	5,0 - 36	7,5 - Inf.
11	2,0 - 6,5	2,6 - 22	3,6 - 60	6,0 - Inf.
16	1,7 - 20	2,2 - 35	3,0 - Inf.	4,5 - Inf.
22	1,6 - 15	1,9 - 50	2,8 - Inf.	3,6 - Inf.
32	1,5 - 30	1,7 - 70	2,6 - Inf.	3,2 - Inf.

V I E W F I N D E R

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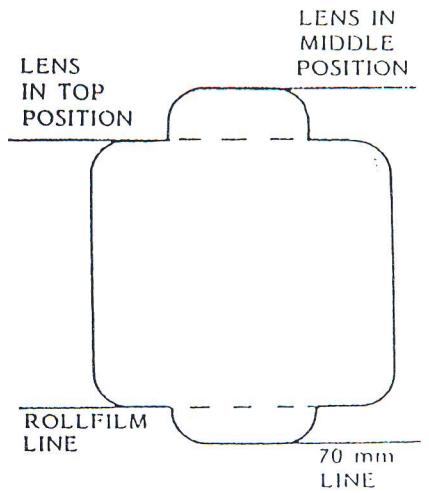
Before you set up the camera, use the viewfinder to choose the exact spot.

The viewfinder is screwed into the thread located in the centre of the camera top.

The frame shows both the lower and the upper borders of the picture. Now rotate the viewfinder to see the extent of the shot.

Shifting the lens, show the desired horizontal frame in the viewfinder. The viewfinder can be swivelled without turning the camera. To check the highest and lowest point of the object.

PARALLAX CORRECTION



S H I F T A D J U S T M E N T

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The lens can be shifted upwards to correct converging vertical lines and to increase the vertical angle the picture.

The shooting angle by 70 mm films in middle position from the lens : 48 degree = 24° up + 24° down.

In top lens position : 41° up + 3° down.

By 220 rollfilm is the shooting angle in middle lens position:

44 degree = 24° up + 20° down

38° up + 2° down, in top lens position .

The setting can be achieved both manually by the button (E) and electronically by the level (F). The arrow shows the direction of the shift

C O N T R O L U N I T

- 13 -

FOUR switch - 4 year Lithium battery powered.

LCD readout controller with a 6,5 ft. (2 mtr.) cable.

PROGRAM Switch - To set in memory the number of 90 degree rotation segments to be used in the next picture taken.

RESET Switch - Return the number of picture segments taken memory counter to zero, after camera has been loaded and is ready to use. Also permit continue rotation without stopping by 90 degree segments.

STOP Switch - For stopping the camera before finish the program.

START Switch - Starts rotation and taking of picture simultaneously.

A R T I F I C A L L I G H T

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If additional light is needed on the object, a model - lamp or a strobe light can be attached to the 3/8 thread.

Check for reflecting surfaces by rotating the head of the tripod.

Movements can be documented a rhytmical intervals using a strobe light.

NOTE: The power line of the light heads turn with the camera. Lay the cable around the tripod before shooting.

T I P S B E F O R E S H O O T I N G - 15 -

Check, if all the cables are properly plugged in, go through the check list.

Be sure that the camera is properly secured on a stationary driving or flying support, in a horizontal, vertical, oblique or swaying way. Arrange the objects in a way that the important ones are at close or middle range.

Check out the wanted and unwanted movements that could occur during the shot.

Horizontal lines should be in the background or on the horizon lines running away from the camera are preferable.

After inserting a new film, set the PROGRAM on " 2 " and press the START button, now depress the RESET button.

S H O O T I N G

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The trigger the camera just press the START button. Stay out of the area you want to shoot, when using a short revolution time, if you are shooting with a long revolution time, you can easily walk behind the camera. If the PROGRAM is set at 8, a 720 degree shot will ensue registering changes in the field of vision after a certain time.

TIP: Set the program at " 5 " when you are shooting 360 ° pictures, thereby enabling you to choose the best frame.

R E M O V I N G T H E F I L M

Loosen screw (A) and align the focus lever with the slot before removing the camera casing. Push the spool upward against the top holder. Slip the lower end out of the transport clamp and remove the full spool.

CARING FOR YOUR CAMERA - 17 -

The camera should be kept and transported in its case and thus protected from damage.

Only use flawless cartridges, neither slot nor spool should hamper the movement of the film.

In sand or windy areas protect the camera with a plastic bag before shooting, air must be able to circulate in the bag to prevent the lens from misting over.

Charge the battery 24 Volt (2 x 12 V / 2 Ah) by plugging the mains cable in to Electronic Box (AC from 100 Volt to 240 Volt)

The unit should be fully charged after approx. 12 hours, a protective circuit prevents overloading.

Located on the front cover:

The **main socket**, a 14 pin socket for the camera, the **extension socket** for an additional 24 Volt source and the **connection socket** for the control unit.

- The **Indicator of battery charge level**; during the rotation of the camera, one of the green control LEDs will light up and indicate the charge level, from 25 % to 100 %. The red LED by "**BAT**" will flash, if the battery (Accu) has to be charged.

- The "**RUN**" LED will flash as long as the camera is rotating. (Very important for long exposure times because you cannot see the camera rotating).

- Select **Shutter time** by turning the red knob.

- The "**Start**" pushbuttons: "**B**" - the camera will run while the button is pressed; press "**T**" and "**B**" at the same time, camera will run by itself until "**B**" is pressed again.

Attention: for short shutter times of 1/30 - 1/250: after triggering, the camera will first turn backwards a little before it then moves forward to ramp up to be at the proper speed when the shutter opens.

Located inside the box:

- Slide-in, maintenance free **lead batteries (Accu)** 24 Volt / 2 Ah (2x12V) To change batteries, slide end panel at controller socket end of box down, slide out batteries.

- The **computer** for electronic regulation and motor control.

- The **power unit** takes from 100 - 240 Volt AC input. Never plug in with batteries out

- The automatic **charger** which has overcharge protection.

The traditional photographic technique only shows a section of the whole without relaying the continuity.

The system works like our body which turns when our angle of vision is too small.

There are limits to creativity. All we can look at, can be photographically recorded the way we see it . It just depends upon the right point of view.

A round shot is the ideal addition to detail shots, to show the spatial relationship of objects and people.

A fixing on the viewpoint and the time that elapses during shooting a 360 degree angle is guaranteed 100 % accurate.

Events and documentations taken completely by amateurs or professionals, only show the most beautiful or most important part when reproduced, for scientific uses, Einsteins theory of relativity can be demonstrated photographically

CONDITIONS OF GUARANTEE - 20 -

The manufacturer's guarantee includes damage to your camera Seitz ROUNDSHOT 65 / 70 - 220. Due to faulty material or poor assembly, for a duration of 12 months from the date of purchase.

During this time the camera will be repaired free of charge or new spare parts supplied.

This guarantee only applies when the damage is not due to incorrect handling of the camera or external force.

The guarantee only includes free repair of the camera or free delivery spare parts, heavier claims will not be met.

SEITZ Phototechnik AG 8513 - LUSTDORF SWITZERLAND