



Optical Devices

Home, Sweet Home

Night Vision Devices

Operating Manuals Horizon 202 Panorama

Camera Horizon 202 Panorama

Instruction for use

Since efforts are continually made to improve the reliability and performance of the product, minor changes may be introduced without special notice.

Attention!

Before using the camera, make thorough study of the present Description, which contains handling rules, and essential operating principles of the camera.

Do not keep the camera with the shutter cocked for a long period of time since it is likely to impair the shutter operation.

Due to ever-advancing development in camera construction and appearance, minor differences may occur between the text and the camera you have purchased.

Since the camera is a complex instrument, its repair and adjustment should be performed in repairs shop only.

The present Description can not be registered as a hand-book on photography.

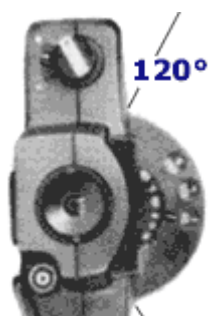
1. General Notes

1.1. Purpose and Features

Horizon-202 is a special camera with a fixed built-in lens intended for taking various panorama pictures: reporting, landscapes, interiors, sports events, fashion, tourism, architecture, etc., both by the amateur and professional photographers. It can be used to take various pictures on black-and-white or color films.

Features of the Horizon-202 camera:

- Shutter cocking lever with locking against half-cocking and double-cocking and quite small angle of cocking (210°) for the given frame size makes for fast picture taking and improves camera performance.
- Metallic focal shutter with shutter speeds 1/2, 1/4, 1/8, 1/60, 1/125 and 1/250 s enables to shoot in various conditions (indoors or out doors at poor lighting; low temperatures - up to -15°C) practically do not impair shutter operation.
- Rotating lens, when shooting, ensures the necessary image-quality all over the frame area due to eliminating of the inevitable optical distortion which occurs when taking pictures with wide-angle lenses.
- Frame counter, automatically re-setting to the initial position when reloading the film, releases the amateur from setting the counter to "0" manually.
- Optical viewfinder enables to determine the exact limits of the object to be





photographed. Correct camera position (strictly horizontal) is controlled by the level seen in the viewfinder field of view.

- Film rewinds crank and shutter disengaging button of stay-put type cut down the time necessary for preparation of the camera shooting.
- Back door lock is interlocked with the film rewind crank, which makes for simplified and fast film reloading.

1.2. Handling Rules

The camera is a precise optical-mechanical instrument. It should be handled carefully, kept clean and protected from jolts, dust, moisture and sharp temperature fluctuations.

Do not remove the camera from its case the moment it is brought indoors from cold to avoid sweating of its parts, especially optical ones.

Do not touch the surfaces of the optical parts with fingers since it may damage their coatings. Clean the coated optical surfaces with a clean soft cloth or cotton wool wad slightly moistened with rectified alcohol or ether.

Keep the camera closed in its case. Load and unload the camera indoors or in shade protecting it against direct sunlight or bright artificial illumination. Always wind the shutter as far as it will go.

When taking pictures in frosty weather, it is better to keep the camera under your street-clothes and take it out only for the time of shooting.

2. Specifications

Frame size	-24x58 mm
Film used	-35 mm, perforated
Length of film in cassette, max-	1.65 m
Number of frames	-22
Shutter speeds	-1/2, 1/4, 1/8, -1/60, 1/125, 1/250 s
Eyepiece magnification	-0.4x
Field of view	-110° x 44°
Standard lens	-MC 2.8/28
Focal length	-28 mm
Maximum relative aperture	-f/2.8
Angular field of the lens	-120° x 45°
Tripod bush thread	-1/4"
Level accuracy	-5°
Overall dimensions	-117.5 x 146 x 73 mm
Mass	-0.7 kg

Certificates of authorship: #217205, #189292

3. Complete set of delivery



Camera Horizon-202 panorama

Cameras strap

Hands grip (handle)

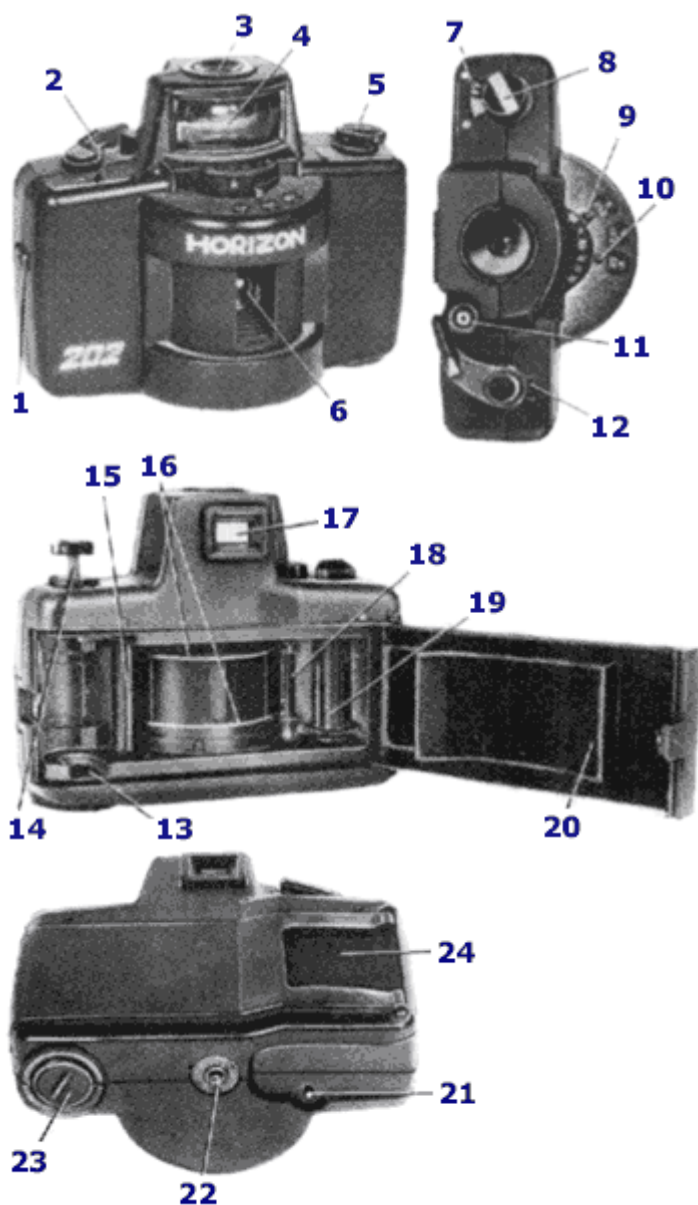
YG-2x, UV-1 x and N-2 x filters (yellow-green, ultra-violet and neutral)

Nylon case

Cases strap

4. Camera principal units and parts

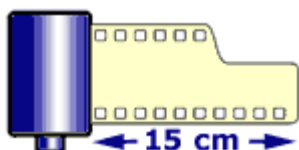
- 1 - Neckstrap eyelet
- 2 - Shutter cocking and film advance lever
- 3 - Level
- 4 - Viewfinder
- 5 - Film rewind knob
- 6 - Lens
- 7 - Operating mode selection switch
- 8 - Film rewind crank
- 9 - Shutter speed setting lever
- 10 - Aperture setting lever
- 11 - Release button threaded for cable release
- 12 - Frame counter window
- 13 - Cassette chamber
- 14 - Cassette spool guide
- 15 - Film guiding roller
- 16 - Film channels guides
- 17 - Viewfinder eyepiece
- 18 - Sprocket
- 19 - Take-up spool
- 20 - Back door
- 21 - Film rewind button
- 22 - Tripod socket
- 23 - End-cup
- 24 - Film check pocket



5. Operating Procedure

5.1. Loading the Camera

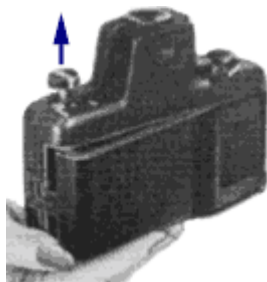
The camera accepts standard cassettes loaded with any type of 35-mm film. If you load the cassette with film on your own, be sure to properly secure the film end in the cassette spool to prevent it breaking away from the spool during operation. See to it that the film leader is free from bends and folds and cut to the standard form.



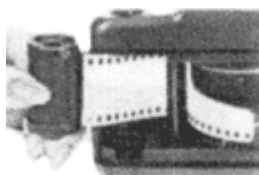
The camera loading should not be done in direct sun light.
Load the camera in conformity with a diagram depicted on the back door.

- Flip open film rewind crank 8 and holding it; pull out rewind knob 5 as far as it will go. Holding

the film rewind knob in this position, open back door 20 with your second hand.



- Carefully insert the film leader under guiding roller 15 and draw out the film by about 12-15 cm.



- Put a loaded cassette into socket 13 pulling out the rewind knob as far as it will go.



- Return the film rewind knob completely home slightly turning it to let spool guide 14 enter the cassette.
- Pass the film leader under sprocket 18 so that it appears from under take-up spool 19. To make this process easier rotate the sprocket with your fingers with button 21 pressed down.
- Insert the film leader into the slot of the take-up spool and draw the film back on to the film gate. Make sure that the sprocket teeth engage a film perforation hole. Reel the appear loop on the take-up spool rotating shutter cocking lever 2. The film should be placed on film channel guides 16 without skewing.



- Close the back door 20 tightly pressing it to make the lock latch. Cock and fire the shutter.
- To transport a non-exposed portion of film to the film gate, cock and fire the shutter once again. When cocking the shutter for the second time the frame counter should be set at "1", the latter being positioned approximately in the center of exposure counter window 12. Now you are ready to shoot.
- The shutter is cocked by turning smoothly lever 2 counter-clockwise to its fullest extent and released by pressing release button 11. Should the film be wound tightly in the cassette, the film rewind knob will rotate when the shutter is being cocked. If the film is loose in the cassette, the rewind knob will fail to rotate at the first frames.

Automatic frame counter shows the number of the frame being positioned against the film gate.
Put the film box label with film speed indicated on it, into the film check pocket 24.

5.2. Operating Mode Setting

5.2.1. Shutter Speed Setting

Turn operating mode selection switch 7 to set the required shutter speed range from 2 to 8 or 60 to 250; set lever 9 against the required shutter speed value. Each position of the lever is click-stopped.

5.2.2. Aperture Setting

Set aperture setting lever 10 opposite to the required aperture value. Each position of the lever is click-stopped. At exposed determining to obtain pictures of higher quality the aperture should be smaller and shutter speed longer. Shutter speed and aperture should be set only with the shutter cocked.

5.2.3. Depth of Field of the Lens

The MC 2.8/28 fixed built-in lens has no distance scale. To determine the depth of field, make use of the table set forth below. For example, with aperture set at 8, the depth of field will be from 2 m to infinity.

Depth of Field Table for the Horizon-202 Camera Lens

Aperture	Depth of field, m
2.8	5.5 to infinity
4	3.9 to infinity
5.6	2.9 to infinity
8	2 to infinity
11	1.5 to infinity
16	1 to infinity

5.3. Picture Taking



Cock the shutter.

When shooting hold the camera in the way shown in the picture. Be sure that the your fingers do not block the frame.

Aim the camera at the object to be photographed and looking through the viewfinder determine its limits. Camera horizontal position is adjusted by level 3. At correct camera position, which prevents a perspective distorted picture, the level ball should be in the center of the light circle seen in the viewfinder field of view.



For vertical shots no level is used.

Having prepared the camera for shooting press the release button as far as it will go to take a picture.

Remember, that sharp pressing on the release button results in camera shake at the moment of exposure and thus in blur of the picture.

To take picture with longer exposures than 1/60 s the shutter is better released with the help of a cable release that is screwed into the release button socket.

You can as well make use of a tripod having removed the handle beforehand.

5.4. Mounting the Handle

Take the handle out of the case. remove the end-cap 23 from the camera locating hole. To do this take a pressure on the end-cap with your thumb and turn at in either sides till it comes out of the camera.

Put the handle in the hole and pressing it to the camera turn it either direction to a click-stop.

At correct mounting of the handle the key should be on the outer side of the camera. To remove the handle from the camera press the key down to a stop and turn the handle till it comes out of the camera.

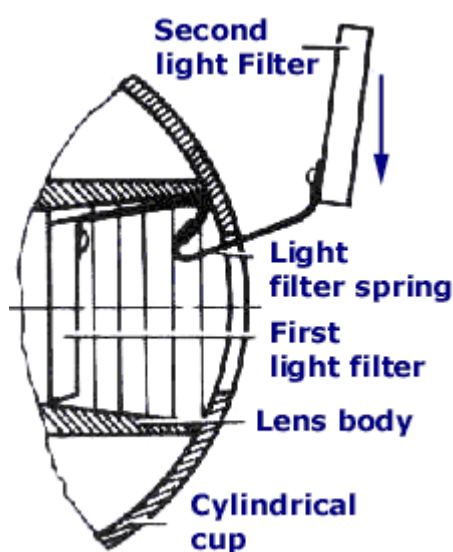
5.5. Camera Unloading

When the exposure counter shows figure 22, the film should be rewound back into the cassette and the camera unloaded. To do this:

- Press button 21 on the camera bottom.
- Flip open crank 8 and rotate it in the arrow direction till the film leader leaves the take up spool. Try to rotate the crank smoothly, without jerks and not too fast to avoid traces of static electricity on film.
- Pull film rewind knob 5 all the way outs; open the back door. Remove the cassette, holding the film rewind knob.

If necessary, the camera can be unloaded after exposing any number of frames, having rewound the film into the cassette beforehand.

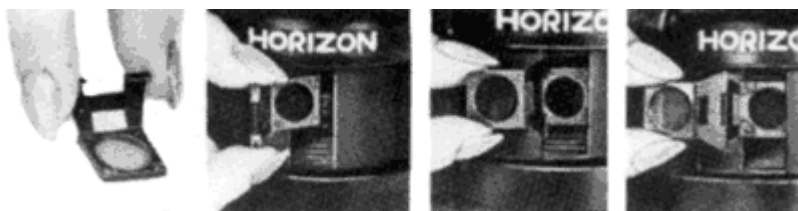
5.6. Mounting the Light Filters



Mount the light filter on the camera. To do this with the help of the shutter-cocking lever, align the lens axis with the film gate center in body. Through the cylindrical cup window put the light filter mount into the lens body socket. In so doing, press the light filter spring and put it behind the cup window (see the diagram).

To remove the light filter, take the second one delivered with camera and coupling the hooks, slightly draw

the light filter in the direction indicated by an arrow in the above mentioned diagram.



6. Care

Protect the camera from dust, moisture, snow, harmful vapours, jerks, jolting, impacts and sharp temperature variations.

Handle the camera with care, do not exert the excessive efforts in handling it, keep the camera clean.

Clean the camera regularly. Remove the dust from its external and internal surfaces with a soft brush or blow off the dust with the aid of a rubber bulb. Thoroughly protect the optical components from getting dusty or dirty, try to avoid touching them with fingers. Protect the camera shutter curtains from mechanical damage.

Store the camera in the case.

Having brought the camera from the frosty weather into the warm premises, do not open it immediately, let it become gradually warmed up in the case for 2-3 h.

When some defects or faults have been discovered, do not carry out the repair on your own.

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© This page created with MS FrontPage 98 by KALIMEX s.r.o., 10.03.1999
Best experienced with resolution min. 600x800x256 (32k); font Times New Roman



Last updated 28.03.1999