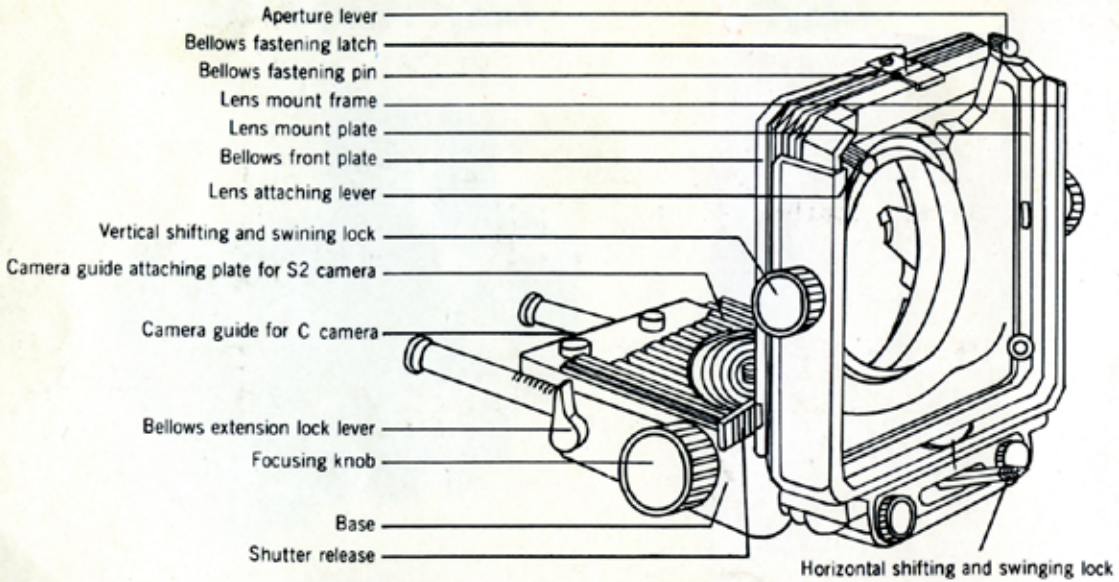
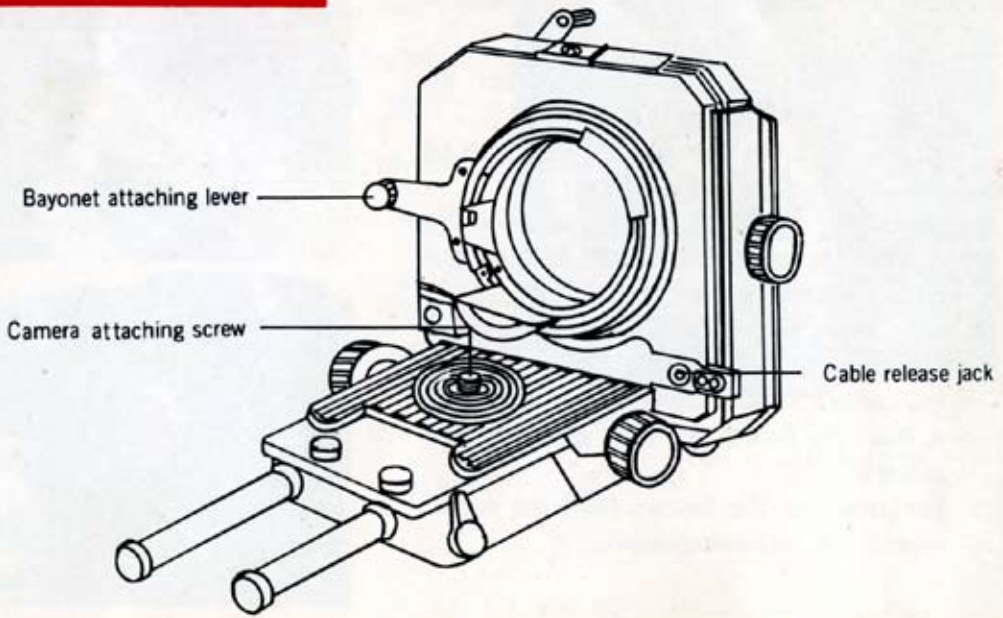
Zenza BRONICA

Bronica Bellows Attachment model 2 in conjunction with the camera Bronica Model C, or S2 permits taking picture up to 1× magnification (life-size) with the 75mm lens. Its device for raising, lowering, shifting and swinging the lens makes the equipment indispensable for scientific and commercial photography.

BRONICA BELLOWS ATTACHMENT MODEL 2
INSTRUCTIONS

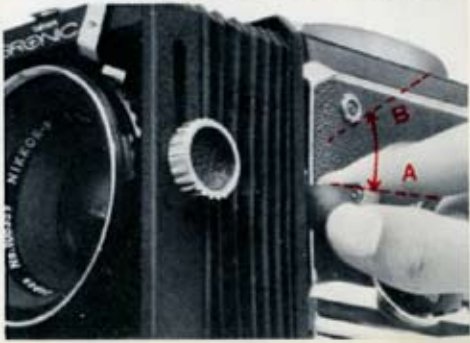

Aperture lever
Bellows fastening latch
Bellows fastening pin
Lens mount frame
Lens mount plate
Bellows front plate
Lens attaching lever
Vertical shifting and swining lock
Camera guide attaching plate for S2 camera
Camera guide for C camera
Bellows extension lock lever
Focusing knob
Base
Shutter release
Horizontal shifting and swinging lock

NOMENCLATURE



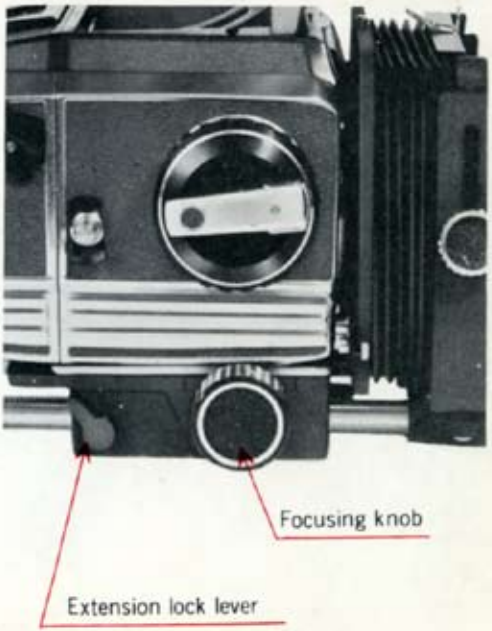
ATTACHING THE CAMERA

1. Remove the lens focusing unit from the camera body, beforehand.
2. First, release the Bellows fastening latch on the top of the Bellows.
3. Extending slightly the Bellows, screw in the attaching screw on the Bellows to the tripod on the camera bottom.
4. Turn the bayonet lever to the position B. Placing the bayonet of the Bellows against the camera, turn the lever up to the position A. Now, the Bellows has been attached to the camera.
5. For detaching the Bellows from the camera reverse the above procedures.



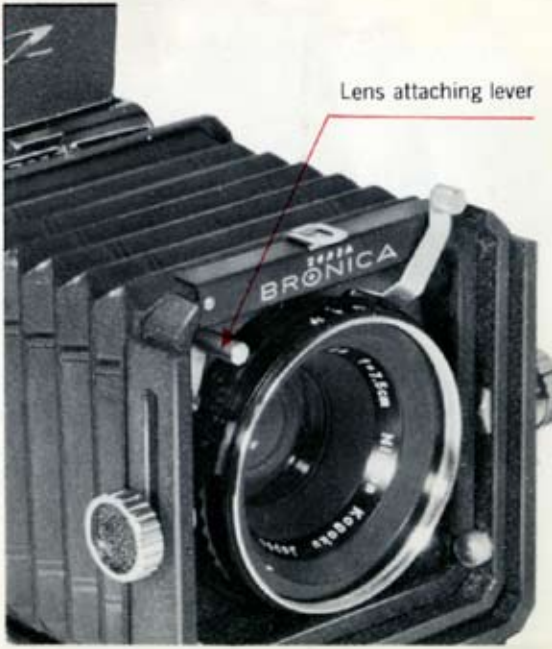
FOCUSING

1. Turn the extension lock lever toward the lens, and the Bellows will be locked. To release, turn the lever toward the camera body.
2. Focusing is performed by means of the focusing knob.



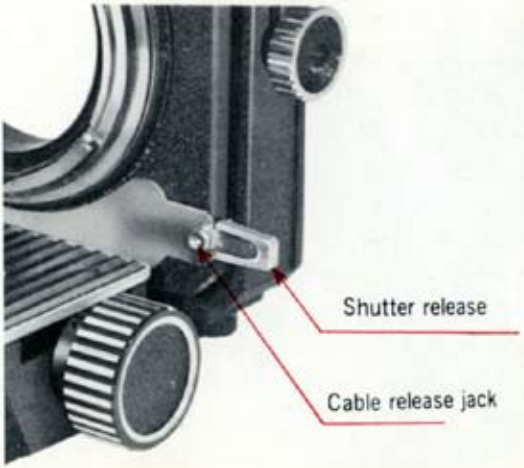
ATTACHING THE LENS

1. The lens is attached to the opposite end of the Bellows the same way as the camera body: viz. lining up the red dot on the lens with that on the bayonet of the Bellows, turn the lens clockwise.
2. To remove the lens from the Bellows push the lens attaching lever outward and turn the lens counter-clockwise.



SHUTTER RELEASE AND CABLE RELEASE

1. Push the shutter release (see Fig.) provided near the focusing knob, and the shutter will be released.
2. When using a cable release, screw it into the release jack from the camera side.



APERTURE ADJUSTMENT

When the NIKKOR lens 50mm, 75mm, 135mm or 200mm is used with the Bellows, the aperture diaphragm is manipulated by means of the aperture lever.

Turn this lever to the position A, and the aperture will be fully open.

Turn the lever to the position B, and the aperture will be stopped down to the preselected value.

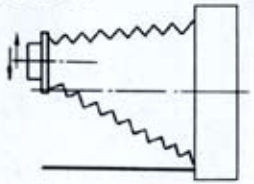
Adjustment of the aperture opening should be made with the lever turned to the position A and the lens fully opened.

VERTICAL AND HORIZONTAL SHIFTING AND SWINGING

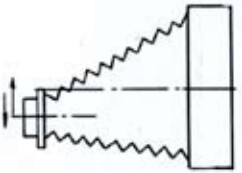
These extraordinary positions of the lens, resulting in destroying the centering or perpendicularity of the optical axis to the film plane, are used for correcting the converged or diverged lines in the picture.

1. Vertical shifting and swinging.
   For this purpose release both of the lock screws on the right and left sides of the lens mount frame. While viewing the finder screen image, change the vertical position and angle of the lens. Fasten the lock screws.

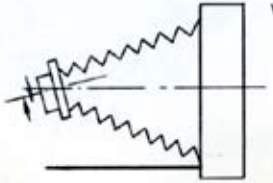
2. Horizontal shifting and swinging.
Release the lock lever underneath the lens mount frame by pushing to the left (viewed toward the lens). Swing or shift the lens horizontally. When a proper lateral position of the lens is obtained, refasten the lock lever in this position.



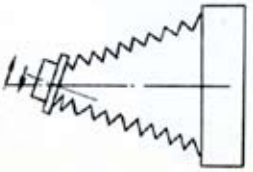
Raising



Shifting

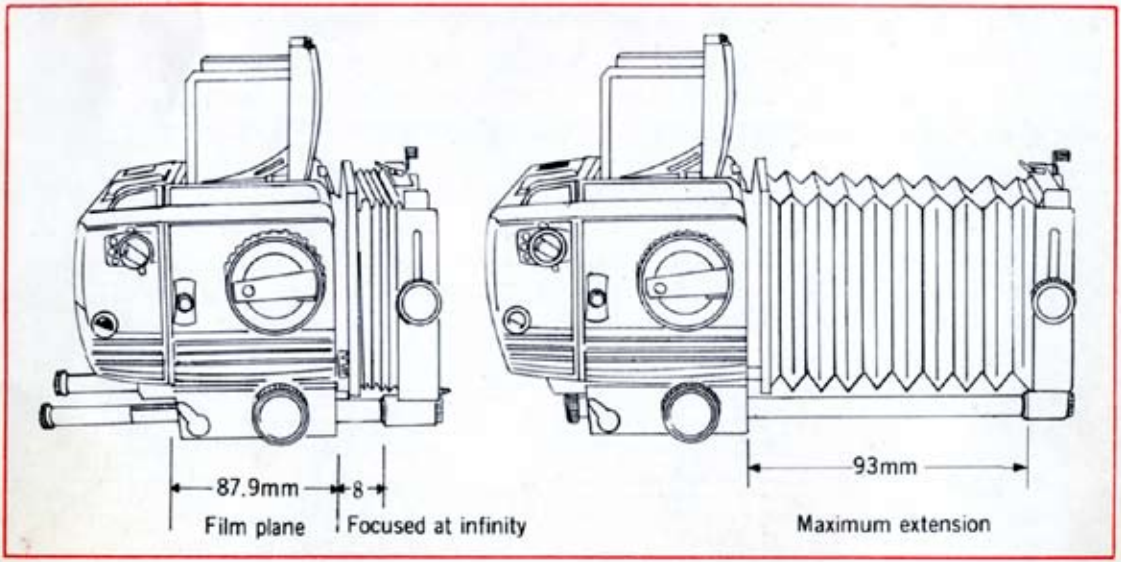


Vertical swinging



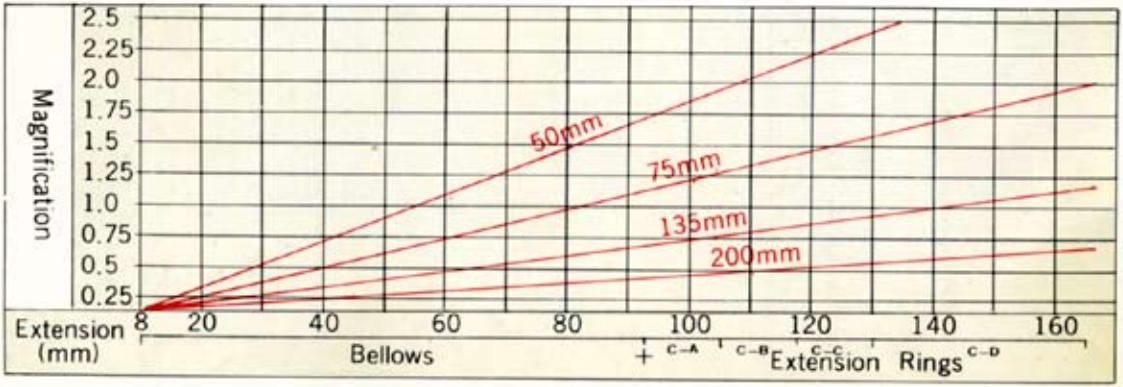
Horizontal swinging

MECHANICAL BACK FOCUS



RANGE OF MAGNIFICATION

The Bellows can be used with the lenses up to 200mm focal length for taking picture from infinity to close-up distances. Additional use of the extension rings permits photographing at closer distances and therefore at higher magnifications. The range of magnification obtained with various interchangeable NIKKOR lenses are given below:



EXPOSURE FACTOR

As the magnification increases, the effective aperture, i.e. the actual brightness of picture, decreases, even though the same f-number is used. Therefore, the f-number must be multiplied by the following factors depending upon the magnification increase to compensate for the decreased brightness:

Magnification	Exposure factor	Magnification	Exposure factor
0.4	1.96	1.5	6.25
0.5	2.25	1.6	6.76
0.6	2.56	1.7	7.29
0.7	2.89	1.8	7.84
0.8	3.24	1.9	8.41
0.9	3.61	2.0	9.00
1.0	4.00	2.1	9.61
1.1	4.41	2.2	10.24
1.2	4.84	2.3	10.89
1.3	5.29	2.4	11.56
1.4	5.76	2.5	12.25

If the Bronica TTL Exposure Meter is used no consideration of such factors will be required, because the correct exposure is determined directly by bringing the pointer on the meter onto coincidence.

LENS REVERSING ADAPTER RING

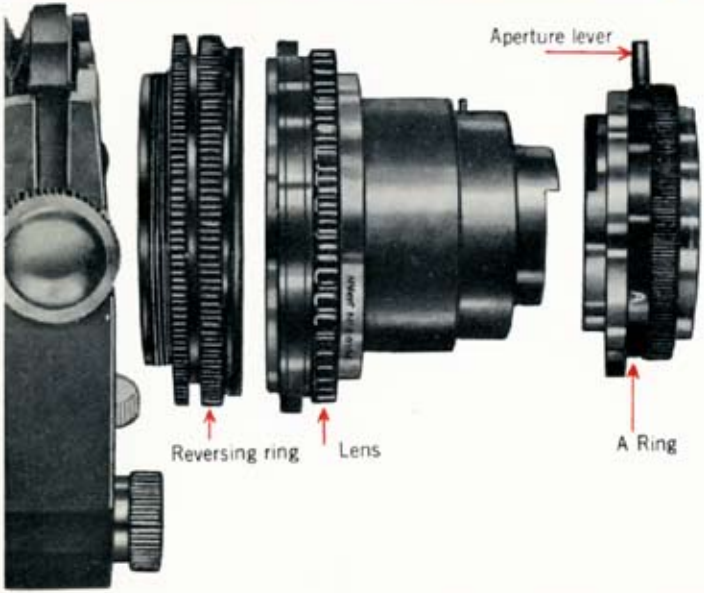


Image sharpness may not be ensured over the whole area of picture field, when the ordinary photographic lens is applied to close-up photography over 1x magnification. To improve the picture quality attach the lens onto the Bellows in reverse position by means of this ring.

BRONICA TTL EXPOSURE METER

This CdS Exposure Meter of "Through-The-Lens" system is exclusively and originally designed for the Bronica cameras.

The Meter measures the average brightness on the finder screen. The influence of extraneous light entering through the finder eyepiece is eliminated by the compensating circuit provided in the Meter.

EXTENSION RINGS

Consisting of four rings, the extension ring set permits taking picture with the 75mm lens at the magnifications up to 1x (life-size).

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