BRONICA RF645

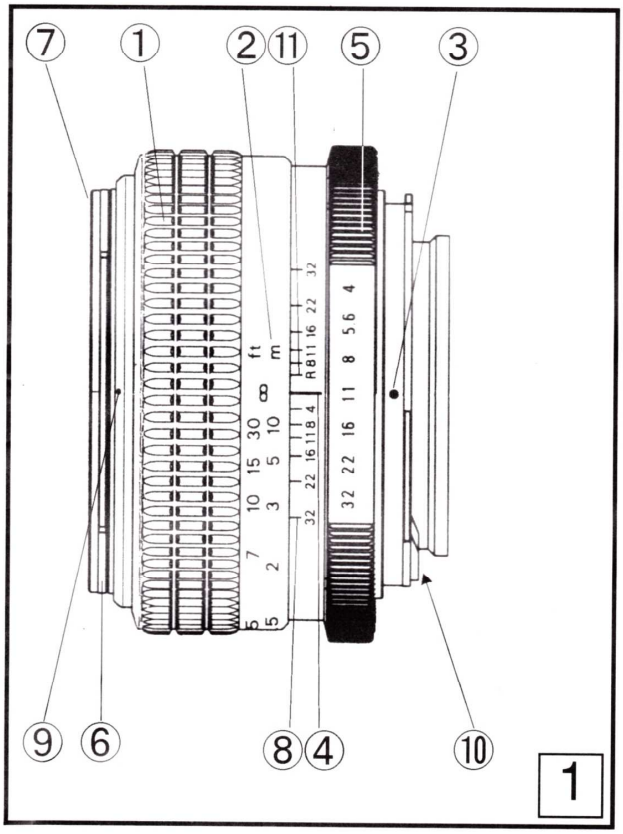
ZENZANON-RF 45mm F4

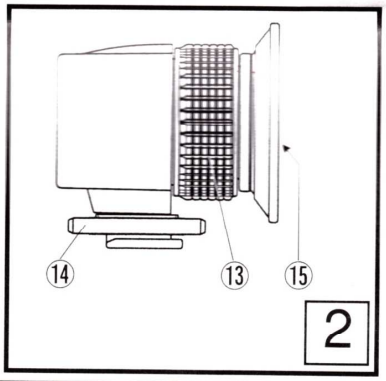
ZENZANON-RF 65mm F4

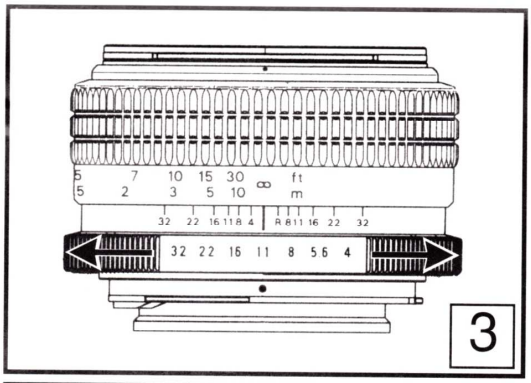
ZENZANON-RF 135mm F4.5

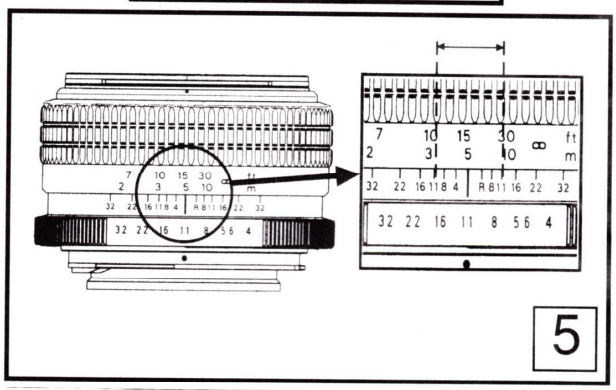
取扱説明書

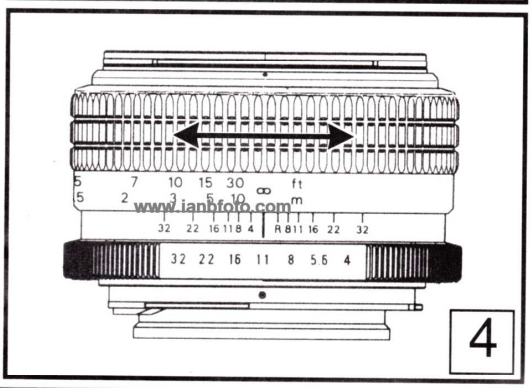
INSTRUCTIONS

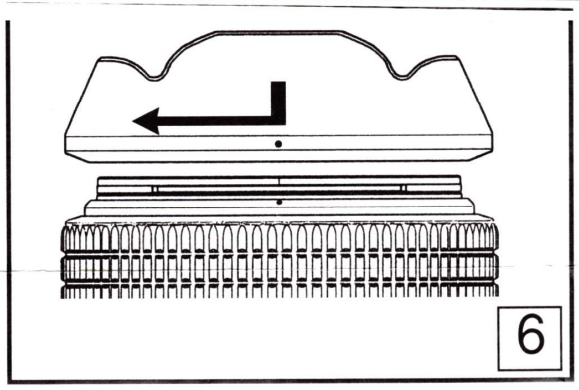


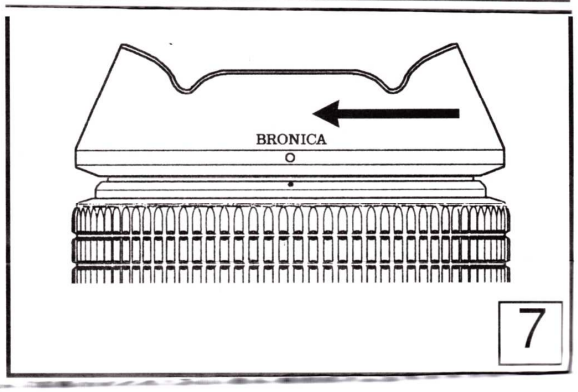












Depth of Field Scales 被写界深度表

［各部の名称］

① 焦点調節リング
② 距離目盛り環
③ レンズ着脱指標
④ 距離指標・絞り指標
⑤ 絞りリング
⑥ フード取付部
⑦ フィルターネジ
⑧ レンズ着脱マーク
⑨ フード取付け指標
⑩ 電気接点
⑪ 赤外指標
⑫ 被写界深度目盛
45mm用ビューファインダー
⑬ 視度調節リング
⑭ 固定ネジ
⑮ 接眼部

Names of Parts

① Focus ring
② Distance scale
③ Lens mounting
④ Distance index and aperture index
⑤ Aperture ring
⑥ Hood mount
⑦ Filter thread
⑧ Lens alignment dot
⑨ Hood mounting index
⑩ Electronic contact
⑪ Infrared index
⑫ Depth of field scale
External Viewfinder for 45mm lens
⑬ Diopter adjustment ring
⑭ Locking screw
⑮ Eyepiece

CE The EEC Conformity Report applies to the Council Directive 98/336/EEC 92/31/EEC, 93/68/EEC and is used by Tamron Co., Ltd. manufacturer of this product.

The CE Marking is a directive conformity mark of the European Community.

RF 45mm F4 被写界深度表

	Distance (m) 撮影距離 (m)	F4	F5.6	F8	F11	F16	F22	F32
45mm	1.0	0.95-1.06	0.93-1.08	0.91-1.12	0.88-1.17	0.83-1.27	0.78-1.41	0.71-1.75
	1.2	1.13-1.28	1.10-1.32	1.06-1.38	1.02-1.46	0.96-1.63	0.89-1.88	0.80-2.56
	1.5	1.38-1.64	1.34-1.70	1.29-1.80	1.22-1.95	1.13-2.27	1.04-2.82	0.91-4.78
	2	1.79-2.26	1.73-2.38	1.63-2.60	1.53-2.93	1.38-3.74	1.24-5.59	1.06-35.6
	3	2.55-3.66	2.41-3.99	2.22-4.66	2.03-5.90	1.77-10.6	1.54-440	1.27-∞
	5	3.84-7.21	3.52-8.69	3.13-12.7	2.75-30.9	2.29-∞	1.91-∞	1.50-∞
	10	6.18-26.50	5.39-73.2	4.51-∞	3.75-∞	2.93-∞	2.33-∞	1.74-∞
	∞	15.9-∞	11.5-∞	8.08-∞	5.89-∞	4.07-∞	2.98-∞	2.07-∞

	Distance (ft) 撮影距離 (f t)	F4	F5.6	F8	F11	F16	F22	F32
45mm	3.5	3.31-3.71	3.25-3.80	3.15-3.95	3.04-4.15	2.87-4.53	2.68-5.11	2.44-6.52
	4	3.75-4.29	3.67-4.41	3.54-4.61	3.39-4.89	3.18-5.46	2.96-6.34	2.65-8.73
	5	4.61-5.47	4.47-5.68	4.28-6.03	4.06-6.54	3.75-7.62	3.43-9.54	3.02-16.60
	7	6.23-8.00	5.98-8.46	5.63-9.30	5.25-10.60	4.72-14.00	4.22-22.50	3.59-∞
	10	8.47-12.20	8.00-13.40	7.37-15.70	6.72-20.00	5.86-37.10	5.08-∞	4.18-∞
	15	11.8-20.80	10.9-24.50	9.71-33.60	8.58-63.50	7.21-∞	6.05-∞	4.79-∞
	30	19.9-69.60	16.9-∞	14.2-∞	11.9-∞	9.36-∞	7.48-∞	5.62-∞
	∞	51.3-∞	37.4-∞	26.3-∞	19.2-∞	13.3-∞	9.75-∞	6.78-∞

RF 65mm F4 被写界深度表

	Distance (m) 撮影距離 (m)	F4	F5.6	F8	F11	F16	F22	F32
65mm	1.0	0.97-1.03	0.96-1.04	0.95-1.06	0.93-1.08	0.90-1.12	0.87-1.18	0.82-1.29
	1.2	1.16-124	1.15-1.26	1.12-1.29	1.10-1.33	1.06-1.39	1.01-1.48	0.95-1.66
	1.5	1.44-1.57	1.41-1.60	1.38-1.65	1.34-1.71	1.28-1.83	1.21-1.99	1.11-2.34
	2	1.89-2.13	1.84-2.19	1.78-2.280	1.71-2.41	1.61-2.65	1.50-3.03	1.35-3.97
	3	2.74-3.32	2.65-3.46	2.52-3.71	2.38-4.07	2.18-4.85	1.98-6.34	1.72-13.00
	5	4.30-5.97	4.08-6.47	3.78-7.41	3.47-9.06	3.04-14.40	2.66-50.30	2.20-∞
	10	7.52-14.90	6.85-18.60	6.03-29.70	5.26-115	4.33--∞	3.58-∞	2.78-∞
	∞	29.8-∞	21.3-∞	14.9-∞	10.9-∞	7.49-∞	5.47-∞	3.78-∞

	Distance (ft) 撮影距離 (f t)	F4	F5.6	F8	F11	F16	F22	F32
65mm	3.5	3.40-3.61	3.36-3.65	3.30-3.72	3.24-3.81	3.13-3.98	3.01-4.19	2.84-4.61
	4	3.87-4.15	3.81-4.21	3.74-4.30	3.65-4.43	3.51-4.65	3.36-4.96	3.14-5.58
	5	4.79-5.24	4.70-5.34	4.59-5.50	4.45-5.71	4.24-6.11	4.02-6.67	3.69-7.89
	7	6.57-7.49	6.41-7.71	6.19-8.06	5.94-8.55	5.55-9.52	5.16-11.00	4.62-15.00
	10	9.12-11.10	8.81-11.60	8.39-12.40	7.91-13.60	7.23-16.40	6.56-21.50	5.69-46.10
	15	13.1-17.60	12.4-18.90	11.6-21.30	10.7-25.30	9.46-37.00	8.32-83.60	6.94-∞
	30	23.1-43.00	21.1-52.00	18.8-76.00	16.5-180	13.7-∞	11.4-∞	8.89-∞
	∞	95.0-∞	68.4-∞	48.3-∞	35.3-∞	24.4-∞	17.8-∞	12.4-∞

RF 135mm F4.5 被写界深度表

	Distance (m) 撮影距離 (m)	F4.5	F5.6	F8	F11	F16	F22	F32
135mm	1.8	1.78-1.82	1.77-1.83	1.76-1.84	1.75-1.86	1.72-1.89	1.69-1.92	1.65-1.98
	2.0	1.97-2.03	1.96-2.04	1.95-2.05	1.93-2.08	1.90-2.11	1.87-2.16	1.81-2.24
	2.5	2.45-2.55	2.44-2.56	2.42-2.59	2.39-2.62	2.34-2.68	2.29-2.76	2.20-2.89
	3.0	2.93-3.07	2.92-3.09	2.88-3.13	2.84-3.18	2.77-3.27	2.69-3.39	2.57-3.60
	4	3.87-4.14	3.85-4.17	3.78-4.24	3.71-4.34	3.59-4.52	3.46-4.75	3.26-5.19
	5	4.80-5.22	4.76-5.27	4.66-5.39	4.55-5.55	4.37-5.85	4.17-6.25	3.88-7.05
	7	6.61-7.44	6.53-7.55	6.35-7.81	6.13-8.16	5.80-8.82	5.45-9.78	4.96-11.90
	15	13.3-17.20	13.00-17.80	12.2-19.40	11.4-21.80	10.3-27.40	9.25-39.80	7.88-161.00
	∞	92.70-∞	78.4-∞	57.6-∞	43.3-∞	30.6-∞	22.6-∞	15.8-∞

	Distance (ft) 撮影距離 (f t)	F4.5	F5.6	F8	F11	F16	F22	F32
135mm	6	5.92-6.08	5.90-6.10	5.86-6.15	5.81-6.20	5.73-6.30	5.64-6.42	5.49-6.63
	7	6.89-7.12	6.86-7.14	6.81-7.20	6.74-7.28	6.63-7.42	6.50-7.59	6.29-7.89
	10	9.76-10.30	9.71-10.30	9.59-10.44	9.45-10.60	9.22-10.90	8.96-11.30	8.55-12.00
	15	14.5-15.60	14.3-15.70	14.1-16.10	13.8-16.50	13.3-17.30	12.7-18.30	11.9-20.40
	25	23.5-26.70	23.2-27.10	22.5-28.20	21.7-∞	20.4-32.30	19.1-36.30	17.2-45.60
	50	44.20-57.60	43.1-59.60	40.7-65.00	38.0-73.10	34.3-92.70	30.7-136.00	26.1-640.00
	∞	335-∞	279-∞	201-∞	148-∞	104-∞	76.0-∞	52.6-∞

INSTRUCTION MANUAL (ENGLISH)

Important Safety Information

For your safety, be sure to read this manual and the following cautions before use. When you are done, store it in a place where they can easily access and review as needed.

WARNING

(This indicates instructions which may lead to death or serious injury if unheeded.)

・Do not look directly at the sun or strong light through the lens or with a camera on which the lens is mounted. Doing so could result in blindness.

・Do not place the lens within reach of young children. The lens might fall and the strap become wrapped around the child's neck, resulting in suffocation.

CAUTION

(This indicates instructions which if not heeded could lead to bodily injury or physical damage.)

・Do not set the lens in places exposed to direct sunlight. The light might focus on a nearby object, causing fire. When mounting the lens on the camera, check that the lens and the camera are properly set and securely locked. The lens may become stuck if it is not properly mounted, and if not properly locked, it might fall and cause personal injury or damage to the lens or camera.

・Do not modify or alter the lens. Doing so may result in damage to the lens of camera. Mount the lens hood when taking photographs in order to eliminate harmful stray light. Remove the hood if it causes shadows at the edges of the image when using a flash.

・Do not place excessive loads on the lens when it is mounted on the camera. Such loads may damage the mount section on the lens and the camera. Large lenses tend to place strong loads on the mount section.

・Always check the lens, take trial photographs, etc., before taking important pictures (weddings, trips, etc., so as not to lose valuable photo opportunities.

Specifications

	RF45mmF4	RF65mmF4	RF135mmF4.5
Focal length	45mm	65mm	135mm
Maximum aperture	F/4	F/4	F/4.5
Lens construction	7 elements, 5 groups	6 elements, 4 groups	6 elements, 5 groups
Angle of view	75.5°	56.4°	29.0°
Focus ring rotation angle	9°	90°	60°
M.O.D.	1m	1m	1.8m
Maximum magnification ratio	1:20	1:14	1:12
Shutter	Seiko #00 (electronically controlled) B.1 to 1/500		
Filter size	58mm	58mm	62mm
Dimensions (length x max. diameter)	43.9 x ϕ76 mm	43.9 x ϕ76 mm	85.3 x ϕ76 mm
Weight	330g	300g	530g
Accessories	ϕ 58mm front lens cap Rear lens cap RF Lens hood for RF 45 65		ϕ 62mm front lens cap Rear lens cap RF Lens hood for RF135

Specifications (External Viewfinder for 45mm)

For use with:	RF645 with 45mm lens attached
Viewfinder type:	Inversed Galilean type Viewfinder
Method of attachment:	Mounted on hot shoe on top of camera
Dimensions:	50.1mm x 44mm x 51.1mm
Weight:	100g

*The details and specifications of this manual are subject to change without notice.

Thank you for your purchase of a Zenzanon RF Series lens. This high-performance lens is designed exclusively for use with the Bronica RF645 series of medium format cameras, and features lens shutter construction, shutter charging and integrated electro-magnetic aperture control mechanism. Building on the achievements of the renowned Zenzanon P-series lenses for Bronica SLR cameras, the RF Series features combine superior design characteristics with outstanding optical quality and performance.

Please read this manual carefully before using the lens. Handle and clean the lens properly, and the Zenzanon RF will provide you with many years of enjoyment.

Mounting and Dismounting the Lens

This lens can be mounted on the Bronica RF645 camera.

・Please do not mount or dismount the lens in sandy or dusty conditions. Sand and dust may cause damage to the lens or the camera.

・The camera mount and its neighboring section contain parts such as the electric contacts, rangefinder coupling roller, light shielding curtain, that are easily stained or damaged if touched, interfering with the proper operation of the lens. Please use utmost caution not to touch these parts when mounting or dismounting the lens.

・Mounting the Lens

To mount the lens, line up the red dot on the lens with the red dot on the body, insert the lens, then rotate it fully clockwise until it stops with a click.

・Dismounting the Lens

To dismount the lens, press the lens release button to the lower left of the camera mount, while rotating the lens counterclockwise until it stops, at which point it can be removed.

*Please also read the section "1-2: Lens Mounting and Dismounting" in the RF645 Main Camera Body Manual.

(3) Focus in the normal way. Then when focused, shift the focus ring to a point of infrared index maintaining the positional relationship to the normal index line.

For example, if the distance scale reading is 3m when focused, move it to the infrared line.

This will result in corrected focus at 3m in the infrared photography.

External Viewfinder

When the RF45mm lens is attached to the main camera body, the viewfinder in the camera body cannot provide an accurate field of view for this lens. For this reason, an external viewfinder is indispensable with this lens.

・Mounting

The external viewfinder is mounted on the hot shoe of the RF645 camera. Once mounted on the hot shoe, the locking screw is used to lock it in place. When removing the viewfinder, loosen the screw and then remove the unit.

View Frame

When looking through the external viewfinder, a view frame covering the field of view of the 45mm lens can be seen. When the subject is located between infinity and 3m, compose the image using the outer viewframe. When the subject is between 1m and 3m away, use the inner viewframe instead.

When looking through the viewfinder, look straight through from the eyepiece.

・Diopter Adjustment

The external viewfinder diopter adjustment is performed by rotating the eyepiece ring. The adjustment range is between -2.5 and +-.5 diopter, and is increased (+) by turning clockwise and decreased (-) by rotating counter-clockwise.

Focusing

To focus, look into the viewfinder, and align the two super imposing images by rotating the focus ring.
The distance scale indicates the distance from the film plane to the subject, meters in white, feet in orange.(Fig-4)
・Depth of Field Scale
When focusing, there is a clear zone of sharpness to the front and back of the subject, known as the depth of field. The depth of field scale shows the zone of sharpness and can be utilized for quickly and simply ascertaining the depth of field. The depth of field scale is next to the distance scales and is made up of identical pairs of apertures on both sides of the orange-colored distance index. These symmetrical pairs of apertures indicate the distance that will be in focus at the given aperture setting.
For example, when the 65mm lens is focused at a distance of 5m, it can be seen from the depth of field scale that the zone will extend from about 3.5m to 9m when a lens aperture of F11 is used. (Figure 5)
Please refer to the Depth of Field Tables for more information.

Setting the Aperture

Rotate the aperture ring to set the desired aperture setting. In the middle of each aperture setting, there is a position where the aperture ring clicks into place. (Figure 3)
*Intermediate or quarter-step settings are not functional. Even if the aperture is set in-between the click positions (1/4 stops), the actual aperture setting will default to one of the presets on either side.
*This lens employs a fully automatic diaphragm that is electro-magnetically controlled. Diaphragm blades stop down to the selected aperture position only when the shutter is released.
*Please also refer to the section "3-4-1: Shutter Speed Dial and Aperture Ring Operation" in the RF645 Camera Main Body Manual.

Lens Hood

The lens comes with a lens hood. This hood effectively cuts unwanted stray light, and it is therefore recommended to attach the hood at any time when shooting. The hood can be used on both the 45mm and the 65mm lenses.
・Mounting
Align the hood mounting index on the hood with the corresponding index on the lens. Press in on the hood, then turn it clockwise to lock it in place. (Figure 6&7)
To remove the hood, simply turn it counterclockwise.

Depth of Field Table

Use the depth of field table to determine the depth of field at any given aperture. Aperture values are sorted in the vertical column, and shooting distance in the horizontal row. For example, if the aperture is F/8 and the shooting distance is 1m, the depth of field value is 0.95 to 1.06m: the value indicated where F/8 and 1m intersect on the table.

Infrared Photography

When taking infrared photographs, the focal point is slightly deviated from that for visible-light photography, so compensate for the focus position by that amount.
(1) For infrared photography, an infrared film is used (monochrome), with a red filter.
(2) The red line to the right of the orange center index on the lens is the infrared index.

Precautions in Shooting

・When mounting or dismounting the lens, please do not try to force the lens to revolve in a non-rotational direction.
・In bulb shooting, never remove the lens while the shutter is open. This will result wrong exposures in the current and the following frames even when another lens is properly attached.
・When the lens is removed, do not leave the camera in sunlight for extended length of hours. The film in the camera may be exposed to light beams.
・When using an external exposure meter in manual mode shooting, set the aperture at locations where it clicks into place (full or half stops). If set between clicks (at quarter stops), the aperture will default to one of the click stop position on either side, not the quarter stop setting. This is because the aperture is controlled electro-magnetically.
・Try not to change lenses in sandy or dusty locations. Sand and dust in the lens can lead to damaging the lens or the camera.

To Ensure Long-Term SatisfactionCare and Storage

・Remove dirt or dust from the lens surface using a blower or photographic brush. Do not touch the lens with your fingers.
・Use lens cleaning paper and lens cleaning solution to remove fingerprints or oil from the lens surface. Note that using silicon cloth may scratch the lens coating.
・Mildew, moisture, sand and dust are the enemies of your lens. Be sure to remove any fingerprints or oil from the lens and to clean it after use in humid or dusty areas such as beaches or mountains. Also, to protect the lens from dust or scratches when it is removed from the camera, always keep the front and rear lens caps on and store the lens in its case. Choose well-ventilated, dirt-free location to store your lens. When storing the lens in its case, put a drying agent in the case and replace it from time to time.
・Be careful not to touch the electronic contacts of the lens. Dust or dirt on the contact surface may lead to faulty contact, which will prevent the correct transfer of information signals.
・Sudden changes in temperature could cause the formation of water droplets inside the camera or lens, possibly damaging them permanently. To avoid this, temporarily place the camera and lens in a case or plastic bag to give them sufficient length of time to adjust to the surrounding temperature.
・Do not store with chemicals other than silica gel.

After Purchase Service

Please refer to the warranty policy and service information documents that are provided separately.

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