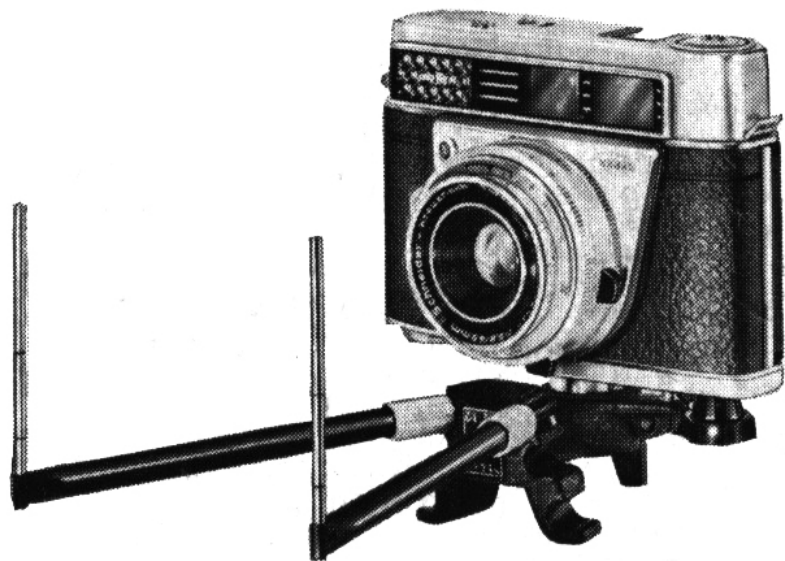
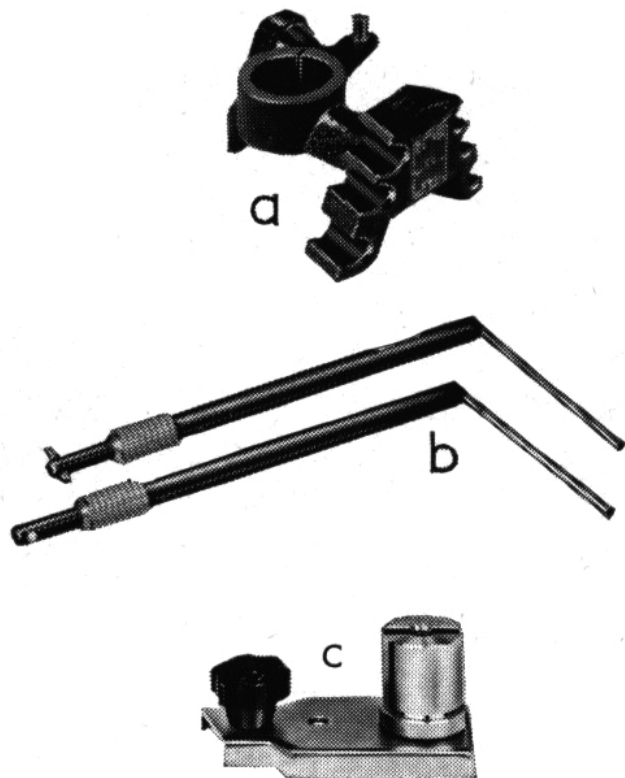


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CLOSE-UP

ATTACHMENT

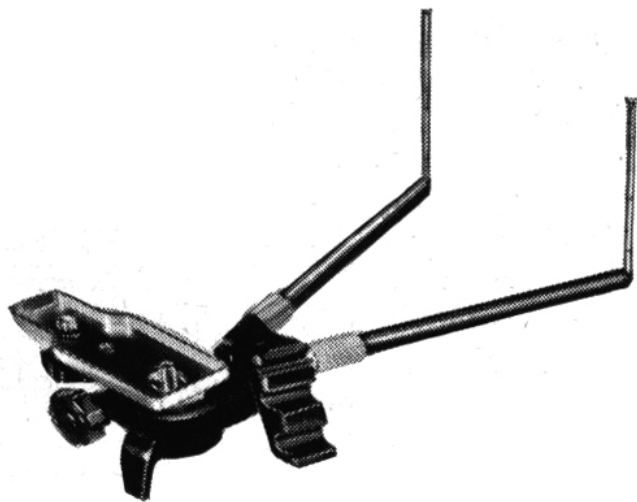


The **RETINA Close-up Attachment**, if used with the three R close-up lenses, permits picture taking inside of four proximity ranges from approx. 11 in. down to 6 in. on scales of 1:4.5, 1:3, 1:2 and even 1:1.5. (If used with RETINA cameras with 45 mm f/2.8 Xenar lens, the picture scales are 1:4.5, 1:3 and 1:2.)

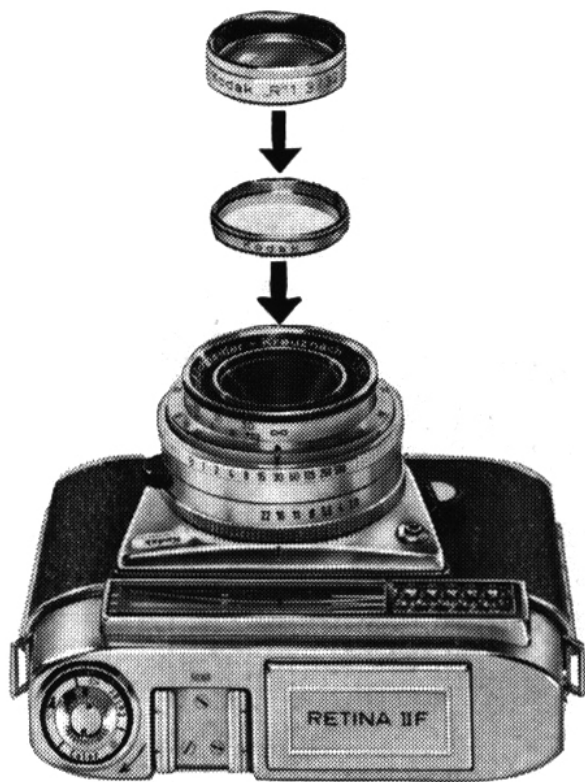
The Close-up Attachment consists of the rod holder (a) and four pairs of gauge rods (b). For attachment to the camera, the RETINA Camera Holder (c) is required.



Introduce two gauge rods of equal denomination, say No. 2, into the guide grooves of the attachment identified with the same number and tighten the thumb nuts. The rod marked with a small circle goes on the side of the attachment also marked with a circle. Gauge rods 2 and 1.5 have two guide grooves in common.



Insert the connecting end of the camera holder into the locking ring of the gauge rod holder for the guide pin to engage in the hole provided. Tighten the setscrew then.



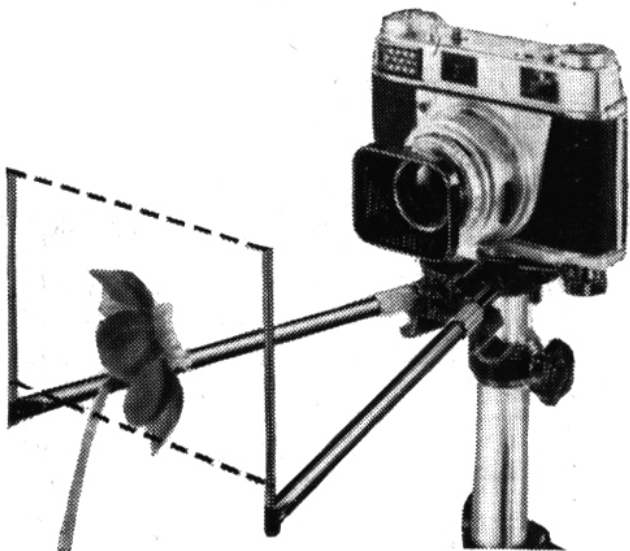
Screw the R close-up lens in front of the basic lens of your RETINA camera. The mark on the R lens must conform with the mark on the gauge rods used. For gauge rods 1.5 combine the R 1:2 and R 1:4.5 lenses and screw the combined lenses to the camera, the R 1:2 lens next to the camera lens. Filters are screwed to the R close-up lens.



Place your RETINA on the camera holder. Make certain that the guide pin is in the guide hole in the camera bottom. Secure the camera with the tripod screw.

General Instructions for Exposures with R Close-up Lenses

1. The R close-up lenses should be screwed on the connecting ring (Cat. No. 62391).
2. A lens hood (with supplementary hood, if possible), should be used for all exposures.
3. A change in exposure time is not required. For best exposures, incident light should be metered rather than reflected light. (For incident light readings always clip the diffusing screen in front of the honeycomb window of your exposure meter.)
4. Before exposing, turn the focusing ring of your camera to ∞ (infinity), regardless of the gauge rods used.
5. For exposures with the R 1:4.5 and R 1:3 close-up lenses, stop down the lens aperture to at least 8 and to not less than 11 for the R 1:2 lens and the combined R 1:2 / R 1:4.5 lenses.



For most pictures, the left and right limit indicator rods should be pulled out all the way. The **left and right** image margins should be some $\frac{1}{4}$ in. inside the limit indicator rods so that the shadow cast by the rods is kept out of the picture. The **upper** limit is an imaginary line connecting the upper ends of the rods while the **lower** limit likewise is an imaginary line between the black marks. (See illustration.) For free-standing subjects (such as flowers), aim the camera with close-up attachment at the subject for the

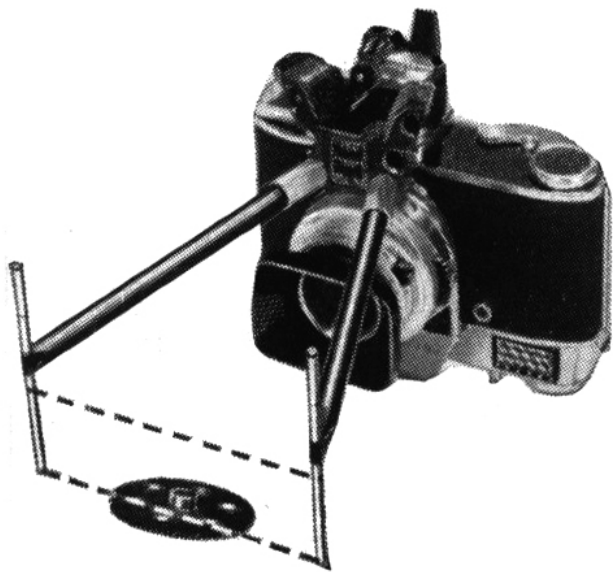


image to be sharply pictured to be on a level with the limit indicator rods. Observe the depth of field (see table p. 11) in all such cases.

For low-angle shots of subjects on a firm base, such as toys, small animals, jewelry, etc., push the limit indicator rods back to the center stop and turn the camera through 180° (see illustration), so that the rod holder points up. Now, the center line through the image is an imaginary line between the upper ends of the rods.



For copying flat originals from about 4 by 6 in. to 16 by 21 in. in size, the close-up attachment with camera should be attached to the right-angle head of the RETINA Table Stand. The camera is thus given the firm seating and support required for long exposure times plus a precisely vertical position to the copying plane. For copying, it is advisable to use the smallest stop openings.

Set-up and Depth of Field Table

Gauge Rods	Close-up Lens	Subject Size in Inches			Depth of Field in Inches *			
		Retina camera lens f/2.8-50	Retina camera lens f/2.0-50	Retina camera lens f/2.8-45	f : 8	f : 11	f : 16	f : 22
4.5	R 1 : 4.5	$3^{15}/_{16} \times 5^{29}/_{32}$	$4^{7}/_{32} \times 6^{19}/_{64}$	$4^{21}/_{64} \times 6^{1}/_{2}$	$1^{9}/_{32}$	$5^{3}/_{64}$	$1^{7}/_{32}$	$1^{11}/_{16}$
3	R 1 : 3	$2^{3}/_{4} \times 4^{9}/_{64}$	$3 \times 4^{3}/_{32}$	$3^{5}/_{64} \times 4^{39}/_{64}$	$5/_{16}$	$7/_{16}$	$5/_{8}$	$5^{5}/_{64}$
2	R 1 : 2	$2^{1}/_{64} \times 3$	$2^{1}/_{8} \times 3^{3}/_{16}$	$2^{1}/_{4} \times 3^{11}/_{32}$		$1^{4}/_{64}$	$5/_{16}$	$7/_{16}$
1.5	R 1 : 2 + R 1 : 4.5	$1^{19}/_{64} \times 1^{31}/_{32}$	$1^{27}/_{64} \times 2^{1}/_{8}$	not suitable		$6/_{64}$	$5/_{32}$	$1^{3}/_{64}$

Camera setting is ∞ (infinity). * Setting plane approx. midway between table values. Circle of confusion 0.019 inch.

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