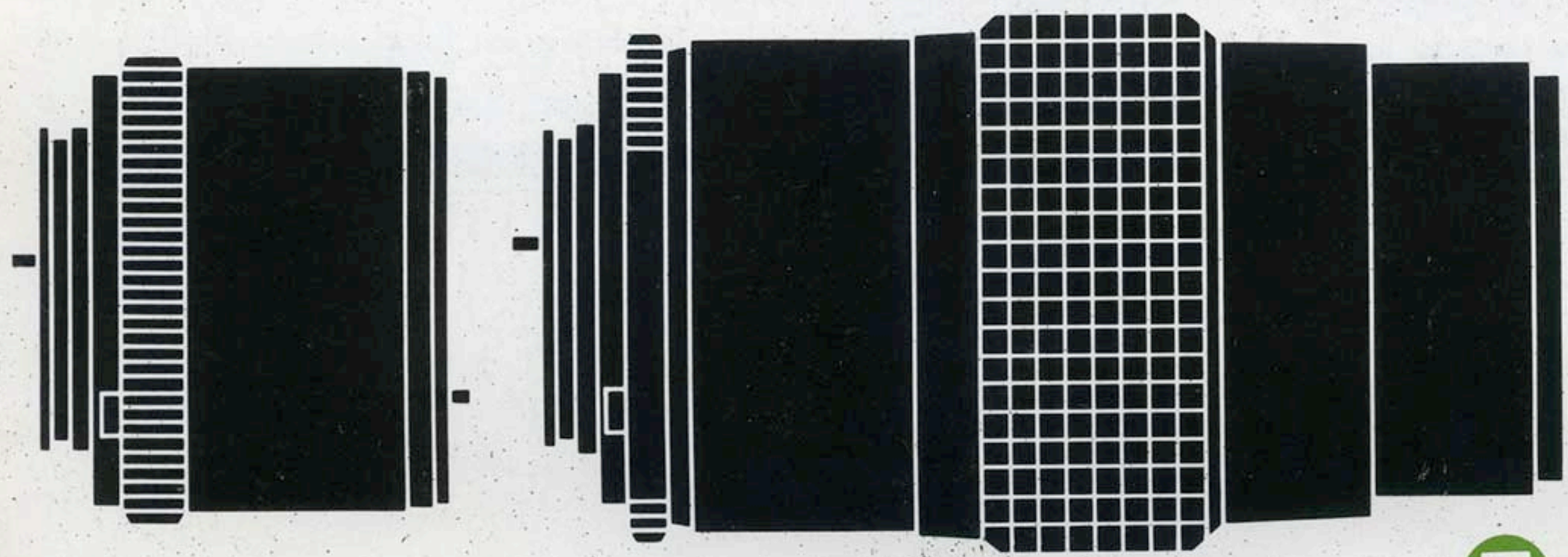
MC MACRO ROKKOR 100MM F3.5

OWNER'S MANUAL



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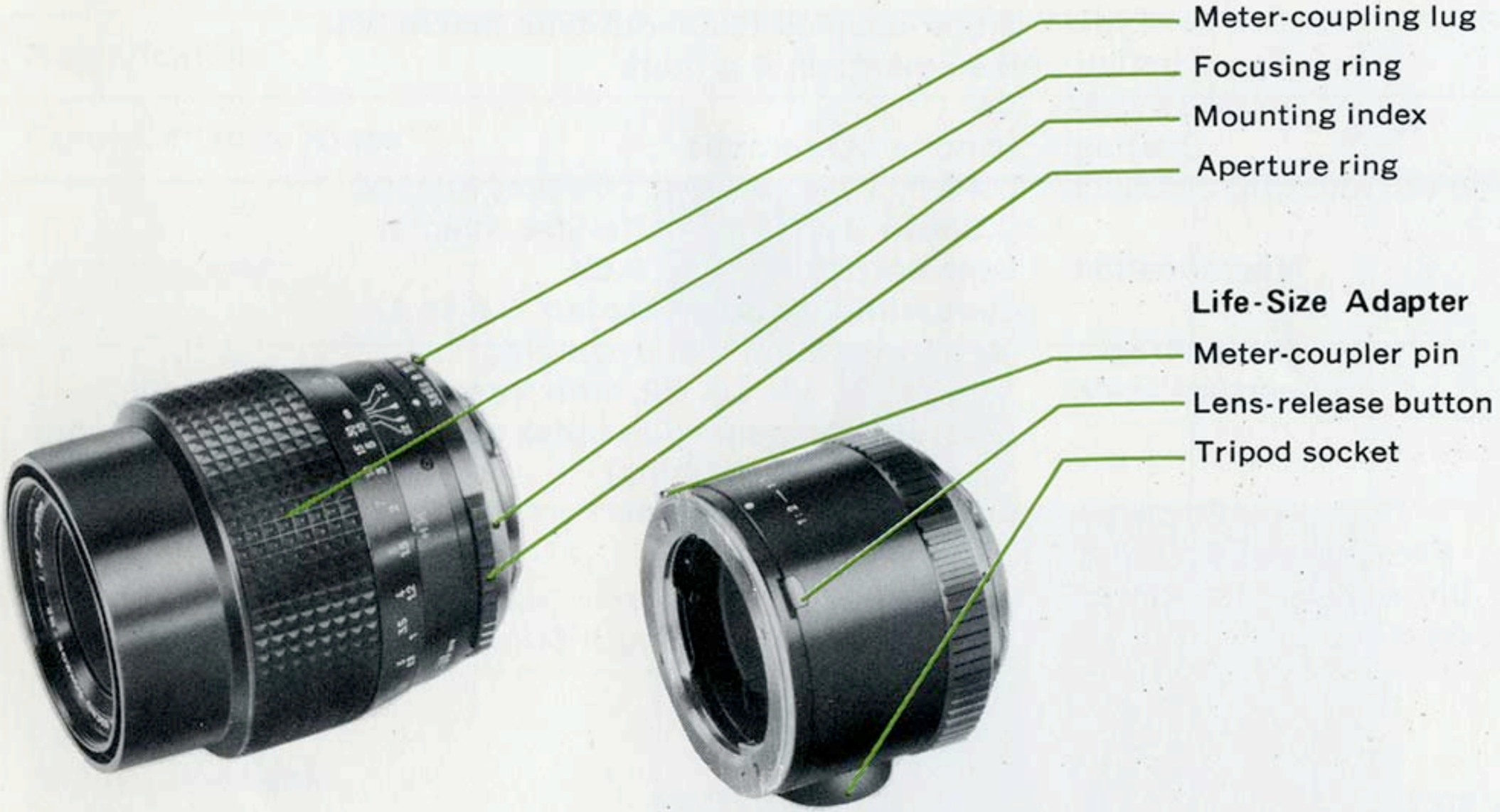
NAMES OF PARTS


Meter-coupling lug
Focusing ring
Mounting index
Aperture ring
Life-Size Adapter
Meter-coupler pin
Lens-release button
Tripod socket

SPECIFICATIONS

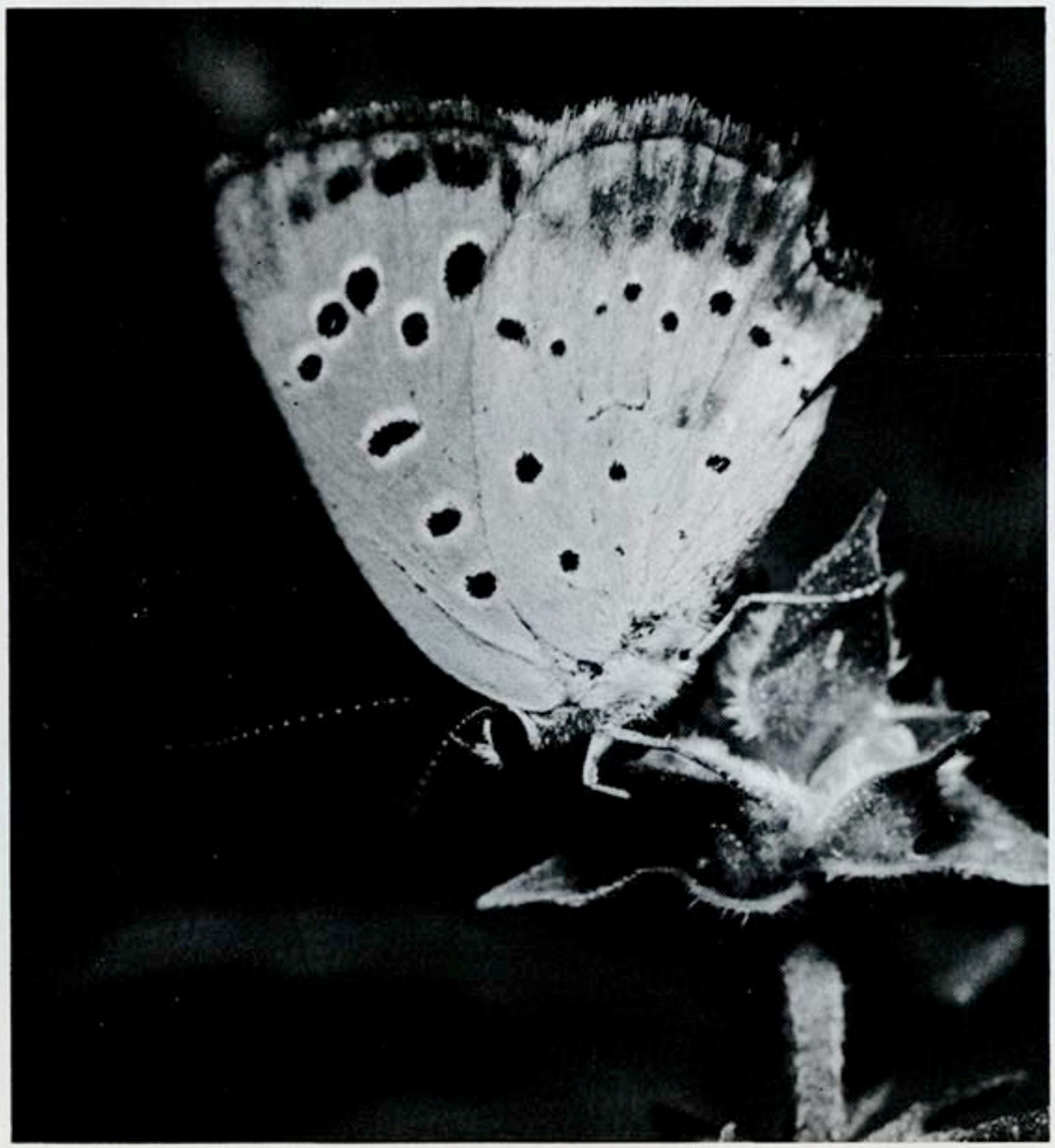
Type:	Meter-coupled telephoto-type macro lens
Construction:	5 elements in 4 groups
Angle of view:	24°
Coating:	Minolta Achromatic
Minimum focusing distance:	0.45m (1.5ft) without Life-Size Adapter 0.396 m (1.2ft) with Life-Size Adapter
Magnification:	Lens only: Infinity to 0.5X Lens with Life-Size Adapter: 0.5 to 1X
Diaphragm:	Fully automatic, meter-coupled
Aperture scale:	3.5, 5.6, 8, 11, 16, 22, with intermediate click stops Aperture compensation index on lens barrel (for use when not using TTL metering)
Focusing:	Double helicoid system
Filter thread diameter:	55mm
Dimensions and weight:	Lens: ϕ75.4mm × 88.5mm ($\phi 2\frac{7}{8}'' \times 3\frac{1}{2}''$), 550g ($19\frac{3}{8}$ oz.) Life-Size Adapter: Length 50mm ($2\frac{3}{4}''$) , 200g ($7\frac{1}{16}$ oz.)

MAGNIFICATIONS OBTAINABLE WITH VARIOUS COMBINATIONS

Magnification	0×*	0.5×	1×	2×
Exposure factor (stops**)	1(0)	2(1)	4(2)	9(3)
Camera+Lens				
Camera+ Life-Size Adapter+Lens				
Camera+ Auto Bellows I+Lens	0.39×			2.03×
Camera+ Bellows III+Lens	0.36×			2.05×

*Camera focused at infinity (∞) setting

**i.e., number of stops lens must be opened over metered exposure



ATTACHING AND REMOVING (LENS AND ADAPTER)

Like all Rokkor interchangeable lenses, the 100mm F3.5 Macro Rokkor is attached to the camera by aligning the red dots on lens and flange, inserting the bayonet into the socket, and turning the lens clockwise until it locks with a click.

Removal is accomplished by pushing the lens-release button, turning the lens counterclockwise until the dots are aligned again, and lifting it out of the socket.

The same procedures are used in connecting and separating Life-Size Adapter and camera, lens and adapter, or lens or adapter and extension tubes or bellows, etc.

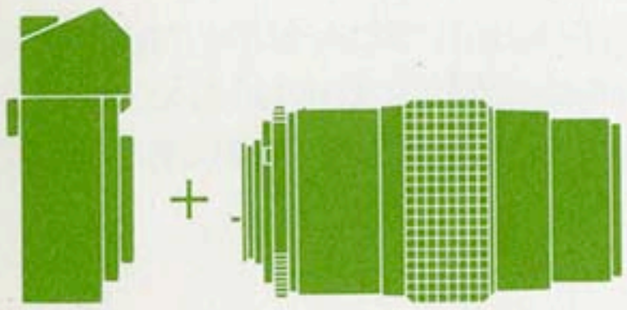
NOTE:
It is normal that the diaphragm control pin in the Life-Size Adapter is not straight.

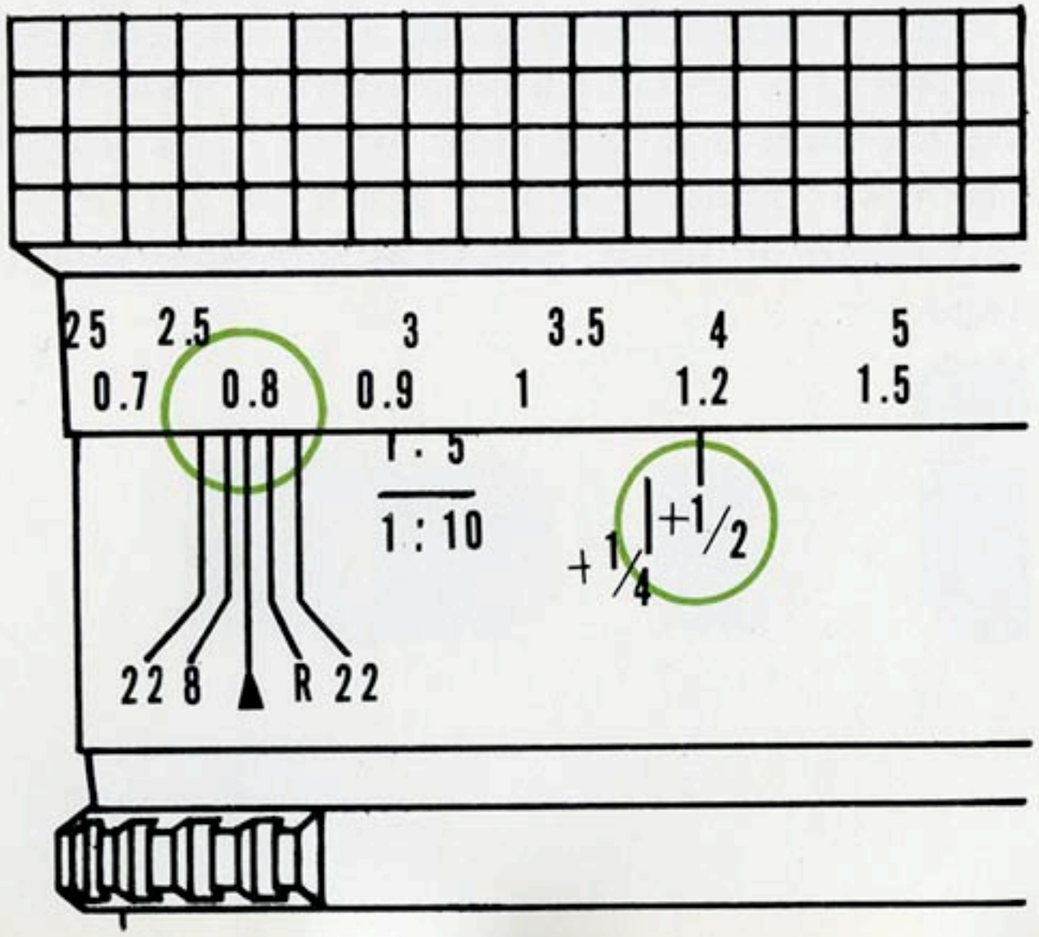
CAMERA+MC MACRO ROKKOR LENS

General photography from infinity (∞) and close-ups up to 1/2 life size (0.5X) are possible with this macro lens mounted on the camera in the usual way. It is thus convenient to photograph at usual magnifications and make pictures of such subjects as flowers or book pages at closer-than-usual distances simply and without any attachments.

With through-the-lens-metering Minolta SLR cameras, light is metered at full aperture and exposure set in the usual way. No compensation for the additional extension for close-ups is necessary.

For such non-TTL cameras as the SR-1s, give the number of stops' extra exposure indicated by the white aperture compensation scale on lens barrel. For example, if the edge of the distance scale at the focus setting used touches the "½+" scale line, open the lens by one half stop from the correct value as metered.



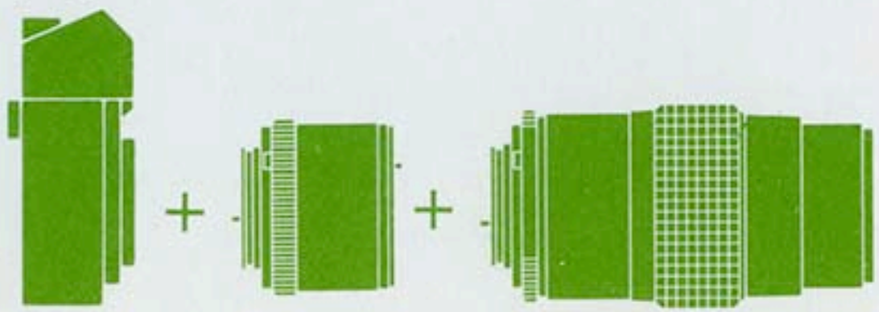


CAMERA+LIFE-SIZE ADAPTER +LENS

Attaching the Life-Size Adapter between the lens and camera permits taking close-ups at magnifications from 0.5X (1/2 life size) to 1:1 (life size) as easily as with only the lens.

Metering and exposure setting are done in the usual way with Minolta TTL SLR cameras, and no close-up compensations are necessary.

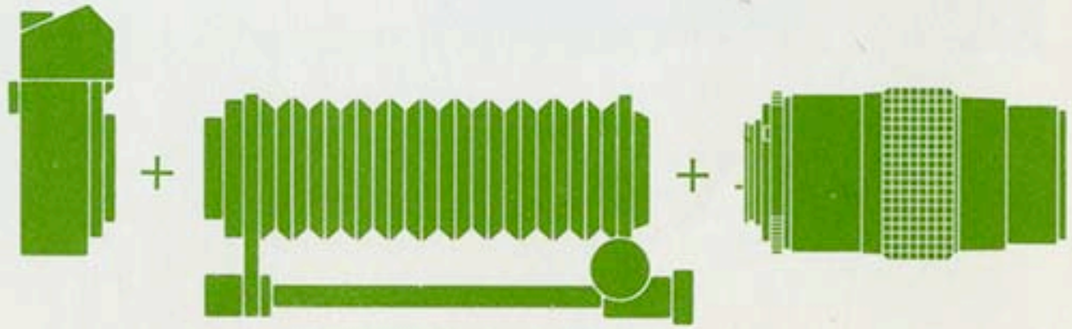
With non-TTL Minoltas, the normal lens opening for correct exposure is increased by the number of stops indicated by the orange aperture compensation scale at the focus setting to be used. See example on previous page.



CAMERA+AUTO BELLOWS I OR BELLOWS III+LENS

With one or the other of these bellows attached between lens and camera, close-ups and photomacrographs from about 1/3X to over 2X magnification can be made (with focus set at infinity).

With TTL metering Minolta SLR cameras, light is measured by pushing the camera's diaphragm stop-down button and taking a stop-down reading in the usual way after focusing. With the Auto Bellows I, the lens is then reopened to full aperture to check focus, and diaphragm will close down automatically to the preset aperture at the moment of exposure. With the Bellows III, diaphragm operation is not automatic, and



the lens must be left closed down to the aperture for proper exposure. Compensation for greater-than-normal lens-to-film distance is made automatically by the camera.

With non-TTL Minolta models, the same respective procedures as above are followed, but it is further necessary to adjust the normal lens opening as metered to compensate for the greater-than-normal extension of the lens.

The exposure factor used to do this is found by dividing the distance in millimeters between the front lens mount surfaces of camera body and bellows by 100, adding 1 to the result, and squaring this figure. For example, if the distance between the two mount surfaces measures 150mm, dividing this by 100 yields 1.5. Adding 1 to this equals 2.5, the square of which is 6.25, the number of times' the metered exposure necessary to produce proper exposure at this extension. Since each larger lens opening doubles the amount of exposure, the compensation needed can be supplied by opening the lens approximately 2½ stops.

DEPTH-OF-FIELD TABLE

IN METERS

Dist.(m) \ F No.	3.5	5.6	8	11	16	22
∞	∞ 85.8	∞ 53.1	∞ 37.6	∞ 26.6	∞ 18.8	∞ 13.4
10	11.3 8.98	12.2 8.46	13.5 7.95	15.8 7.33	20.8 6.60	38.1 5.79
5	5.29 4.74	5.49 4.59	5.72 4.44	6.08 4.25	6.69 4.00	7.78 3.70
3	3.10 2.91	3.16 2.85	3.23 2.80	3.34 2.72	3.51 2.62	3.78 2.49
2	2.04 1.96	2.07 1.94	2.10 1.91	2.14 1.88	2.20 1.83	2.30 1.77
1.5	1.52 1.48	1.53 1.47	1.55 1.45	1.57 1.43	1.60 1.41	1.65 1.38
1.2	1.21 1.19	1.22 1.18	1.23 1.17	1.24 1.16	1.26 1.14	1.29 1.12
1.0	1.01 0.991	1.01 0.987	1.02 0.982	1.03 0.974	1.04 0.964	1.06 0.950
0.9	0.906 0.894	0.910 0.890	0.915 0.886	0.921 0.880	0.930 0.872	0.943 0.861
0.8	0.805 0.795	0.808 0.792	0.811 0.789	0.816 0.785	0.822 0.779	0.832 0.771
0.7	0.703 0.697	0.705 0.695	0.708 0.693	0.711 0.690	0.715 0.685	0.722 0.679
0.6	0.602 0.598	0.603 0.597	0.605 0.595	0.607 0.593	0.610 0.591	0.614 0.587
0.5	0.501 0.499	0.502 0.498	0.503 0.497	0.504 0.496	0.505 0.495	0.507 0.493
0.45	0.451 0.449	0.451 0.449	0.452 0.448	0.452 0.448	0.453 0.447	0.455 0.446

IN FEET

F No. / Dist.(ft)	3.5	5.6	8	11	16	22
∞	∞ 281′	∞ 174′	∞ 123′	∞ 87′ 4″	∞ 61′10″	∞ 43′ 9″
30	33′ 5″ 27′ 2″	36′ 25′ 8″	39′ 3″ 24′ 3″	45′ 1″ 22′ 6″	57′ 1″ 20′ 4″	91′ 7″ 18′
15	15′ 9″ 14′ 3″	16′ 3″ 13′10″	16′11″ 13′ 5″	17′10″ 12′11″	19′ 5″ 12′ 2″	22′ 2″ 11′ 4″
10	10′ 3″ 9′ 8¼″	10′ 6″ 9′ 6 1/16″	10′ 9″ 9′ 3¾″	11′ 1″ 9′ 11/16″	11′ 8″ 8′ 8 11/16″	12′ 7″ 8′ 3 7/16″
7	7′ 1 13/16″ 6′10 3/16″	7′ 3″ 6′ 9⅛″	7′ 4 5/16″ 6′ 8 1/16″	7′ 6¼″ 6′ 6 1/16″	7′ 9 3/16″ 6′ 4½″	8′ 1 5/8″ 6′ 1 13/16″
5	5′ 7/8″ 4′11⅛″	5′ 1 3/8″ 4′10 5/8″	5′ 2″ 4′10 1/16″	5′ 2 7/8″ 4′ 9 5/16″	5′ 4 3/16″ 4′ 8 5/16″	5′ 6 3/16″ 4′ 6 7/8″
4	4′ 1/2″ 3′11 7/16″	4′ 13/16″ 3′11⅛″	4′ 1 3/16″ 3′10 13/16″	4′ 1 11/16″ 3′10 3/8″	4′ 2½″ 3′ 9¾″	4′ 3 5/8″ 3′ 8 7/8″
3.5	3′ 6 3/8″ 3′ 5 5/8″	3′ 6 9/16″ 3′ 5 3/8″	3′ 6 7/8″ 3′ 5⅛″	3′ 7¼″ 3′ 4 13/16″	3′ 7 13/16″ 3′ 4 5/16″	3′ 8 9/16″ 3′ 3 11/16″
3	3′ 1/4″ 2′11 11/16″	3′ 3/8″ 2′11 9/16″	3′ 9/16″ 2′11 3/8″	3′ 13/16″ 2′11⅛″	3′ 1 3/16″ 2′10 13/16″	3′ 1¾″ 2′10 3/8″
2.5	2′ 6⅛″ 2′ 5 13/16″	2′ 6¼″ 2′ 5 11/16″	2′ 6 3/8″ 2′ 5 5/8″	2′ 6½″ 2′ 5 7/16″	2′ 6¾″ 2′ 5¼″	2′ 7 1/16″ 2′ 4 15/16″
2.25	2′ 3 1/16″ 2′ 2 7/8″	2′ 3 3/16″ 2′ 2¾″	2′ 3¼″ 2′ 2 11/16″	2′ 3 3/8″ 2′ 2 9/16″	2′ 3 9/16″ 2′ 2 7/16″	2′ 3 13/16″ 2′ 2 3/16″
2	2′ 1/16″ 1′11 7/8″	2′ 1/8″ 1′11 13/16″	2′ 3/16″ 2′11¾″	2′ 1/4″ 1′11 11/16″	2′ 3/8″ 1′11 9/16″	2′ 9/16″ 1′11 7/16″

ACCESSORIES FOR CLOSE-UPS AND PHOTOMACROGRAPHY

Extension Tube Set II

This set of five tubes can be used in various combinations to increase magnification by lengthening the lens-to-film distance.

MC Auto Extension Tubes

When these fully coupled tubes are used with Minolta TTL SLR's and MC Rokkor lenses, metering and focusing are at full aperture, and the lens stops down only at the instant of exposure.

Bellows III

Continuous calibrated extension between lens and film at higher magnifications is provided by this bellows.

Auto Bellows I

Diaphragm operation with MC lenses is automatic with this deluxe, double-track bellows, which enables magnifications similar to the one above.

Angle Finder V

This unit rotates to allow focusing from any point around a full circle at right angles to the usual viewing position.

Magnifier V

This accessory is useful to obtain the precise focusing required in making close-ups, copies, and photomacrographs.

Copy Stand II

A rigid camera support that assures maximum stability, this unit is highly recommended when photographing either flat or three-dimensional objects.

Cable Release

This very flexible metal release threads directly into the shutter-release button.

CARE AND STORAGE

Whisk loose matter off lens surfaces with a bellows lens brush and then wipe them with a soft, clean cloth if necessary.

Store away from heat, high humidity, and harmful chemicals and vapors. Always keep the lens capped and in its case when not in use.

NOTE:

In doing close-ups and photomacrography, it is particularly important to focus precisely and to use a steady camera support and cable release to avoid camera movement.

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