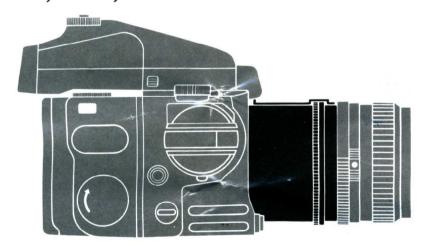
Mamiya 645

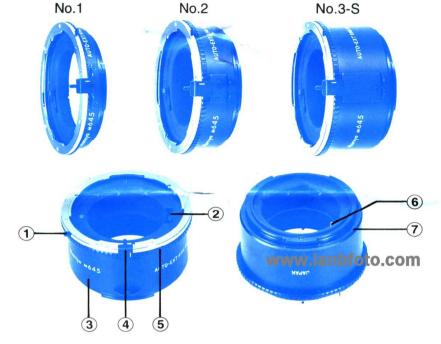


オート中間リング Muto Extension Ring

No.1, No.2, No.3-S



日本語 使用説明書 English Instructions



To take close-up photographs from a distance shorter than the minimum permissible photographing distance of your lens, use these Auto Extension Rings, whereby close-up photography or reproduction can be accomplished as easily as taking conventional photographs.

Mamiya Auto Extension Rings are available in three types (No.1, No.2, and No.3-S), and each ring interlocks with the automatic diaphragm of the lens. The same operating procedure applies to all three types.

Names of Parts

- 1 Lens Release Button
- 2 Diaphragm Actuating Lever
- 3 Aperture Ring Coupler
- 4 Coupler Ring
- **5** Knurled Ring
- 6 Diaphragm Actuating Pin
- Alignment Red Line for camera body

CAUTION

★These auto extension rings are designed for use with the 80mm f/ 1.9 and f/2.8 lenses. When used with other lenses vignetting may result. The No.3-S ring is designed

for use with either of the 80mm lenses. When using other rings together with the No.3-S ring, always place the No.3-S ring closest to the camera body.

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Attaching the Extension Ring

- **1.**By rotating the Aperture Ring, set it at the widest aperture (f/1.9 or f/2.8).
- 2. While gripping the Knurled Ring (a) of the extension ring in one hand, and rotating the Coupler Ring (c) with the other hand, align the position of the Aperture Ring Coupler (B) with the Alignment Line (D) as shown in the photograph.
- **3.** When the extension ring and the lens are fitted after aligning the Alignment Dot of the lens with the Alignment Dot of the extension ring,
- the coupler of the extension ring and the lens will also be set simultaneously. (The role of this coupler is to interlock with the exposure meter when the AE Prism Finder is employed. When the AE Prism Finder is not employed, connecting the coupler is unnecessary.)
- **4.** When the extension ring and the lens have been aligned and fitted, rotate the lens clockwise until it stops. (When the lens is rotated up to the stop position, the lens release button pops out to lock it.)

(Photo. 1)

CAUTION:

When rotating the lens, always grip the Knurled Ring of the extension ring. Should the Coupler Ring also be gripped simultaneously, the lens cannot be rotated.

5. When combined with an additional extension ring, the added ring must also be preliminarily set as described in item 1. Connect the two extension rings after aligning the Alignment Red Line of the front extension ring with the Alignment Dot of the rear ring; then rotate the front ring clockwise until it stops. (In this instance, grip the Knurled Ring of the rear ring.) (Photo.2)

6. When attaching the rings and lens to the camera body, attach them after aligning the Alignment Red Line with the Alignment Dot of the camera body, and rotate the lens clockwise until it stops. (Photo. 3)

CAUTION:

When two or three extension rings are employed in combination, grip the lens and rotate it clockwise until it stops, and then proceed with photography. If photography is attempted when the lens/ring are slightly dislocated by turning counterclockwise within the backlash, the automatic diaphragm may occasionally fail to interlock completely.

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Removing the Extension Ring

- 1. When removing the lens, initially remove the extension ring from the camera body combined with the lens. To remove the extension ring, rotate the extension ring counterclockwise until it stops, while depressing the Release Button (A) of the camera body. (Photo. 4)
- 2. The lens can be removed from the extension ring by rotating the lens counterclockwise until it stops, while gripping the Knurled Ring of the extension ring and depressing the Lens Release Button (B).

 (Photo 5)

Close-up Photography Table

- **1.** Distances shown in the close-up photography table indicate distance from the front edge of the lens barrel to the subject.
- **2.** Figures in the left column of the table indicate the lens when unextended. Figures on the right indicate the lens extended to the closest focusing distance.

The Auto Extension Ring interlocks with the automatic diaphragm of the lens, whereby picture taking is effected in the same manner as for conventional phtography. Howerver, when the lens is extended for close-up photography, and distance between the lens and film plane increases beyond normal, image

●接写表 (80mmF2.8レンズ用) Close-up Photography Table (for 80mm f/2.8)

リングの組み合わせ	撮影倍率	被写体距離	写せる被写体の大きさ	露出倍数
Ring combination	Magnification	Distance	Subject size	Exposure factor
No. 1	0.15~0.30	58.7~31.0cm	28.2×38.1~13.9×18.7cm	1.3~1.7
No. 2	0.29~0.45	31.5~22.2cm	14.1×19.0~9.3×12.6cm	1.7~2.1
No. 3-S	0.44~0.60	22.4~17.7cm	9.4 ×12.7~7.0 ×9.4cm	2.1 ~2.6
No.1 + No. 3-S	0.59~0.74	17.8~15.0cm	7.1 ×9.5 ~5.5 ×7.5cm	2.6~3.1
No. 2+No. 3-S	0.73~0.89	15.1~13.2cm	5.6 ×7.6 ~4.6 ×6.2cm	3.1 ~3.6
No.1+No.2+No.3-S	0.88~1.04	13.3~12.0cm	4.7 ×6.3 ~4.0 ×5.4cm	3.6~4.2

●接写表(80mmF1.9レンズ用)Close-up Photography Table (for 80mm f/1.9)

リングの組み合わせ	撮影倍率	被写体距離	写せる被写体の大きさ	露出倍数
Ring combination	Magnification	Distance	Subject size	Exposure
No. 1	0.15~0.30	56.8~29.4cm	28.2×38.0~14.0×18.4cm	1.3~1.5
No. 2	0.29~0.44	29.6~20.5cm	14.1×19.0~9.3×12.6cm	1.5~1.8
No. 3-S	0.44~0.59	20.6~16.0cm	9.4 ×12.7~7.0 ×9.5cm	1.8~2.2
No.1+No. 3-S	0.59~0.74	16.0~13.3cm	7.0 ×9.5 ~5.6 ×7.6cm	2.2~2.5
No. 2+No. 3-S	0.74~0.89	13.3~11.5cm	5.6 ×7.6 ~4.7 ×6.3cm	2.5~2.9
No.1+No.2+No.3-S	0.88~1.03	11.5~10.2cm	4.7 ×6.3 ~4.0 ×5.4cm	2.9~3.3

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brightness on the film plane decreases, requiring an increase in exposure. To adjust the exposure, refer to the exposure factor prescribed in the close-up photography table.

The relationship between the exposure factor and the amount of exposure increase is shown below.

Exposure factor (X)	1	1.5	2	3	4
Aperture opening degree (Stop)	0	1/2	1	11/2	2

There is no need to make exposure calculations when using the AE Prism Finder. However, since the

amount of light reaching the film varies in accordance with the lens extension, be sure to make the exposure measurement After focusing the lens. Moreover, always keep your eye close to the Eye-cup whenever making an exposure measurement to prevent the possibility of extraneous light from entering the Eye-piece and unduly influencing the reading, resulting in under-expousre

Since even very slight camera movement affects picture sharpness, mirror lock-up photography is recommended. Stop down the aperture to f/11 or smaller to obtain satisfactory lens performance.