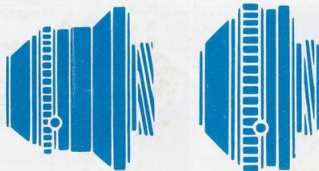


MINOLTA

# 12.5MM F2 BELLOWS MICRO 25MM F2.5 BELLOWS MICRO



OWNER'S MANUAL  
BEDIENUNGSANLEITUNG  
MODE D'EMPLOI  
MANUAL DE INSTRUCCIONES

(II)

## CLOSE-UP TABLE

## NAHAUFNAHME-TABELLEN

## TABLE PERMETTANT LA REALISATION DE GROS PLANS

## TABLA CLOSE-UP

mm		40	50	60	70	80	90	100	110	120	130	140	150	160	165
12.5mm f/2 + M-1 Adapter	A	(77.4X)	(92.1X)	(108.2X)	(126.5X)	(144.0)	(163.9X)	(185.0X)	(207.4X)	(231.1X)	(256.1X)	(282.3X)	(309.9X)	(338.8X)	(363.7X)
	B	8.01X	8.81X	9.61X	10.41X	11.21X	12.01X	12.81X	13.61X	14.41X	15.21X	16.01X	16.81X	17.61X	18.11X
	C	8.2mm	8.1	8.0	7.9	7.8	7.7	7.6	7.6	7.5	7.5	7.4	7.4	7.4	7.3
	D	124mm	134	144	154	164	174	184	194	204	213	223	233	243	248
	E	6%	6%	6%	7	7%	7%	7%	7%	7%	8	8%	8%	8%	8%
12.5mm f/2 + M-2 Adapter	A	(127.3X)	(146.0X)	(166.9X)	(187.2X)	(209.7X)	(233.6X)	(258.7X)	(285.1X)	(312.8X)	(341.7X)	(371.9X)	(403.5X)	(436.3X)	(453.2X)
	B	10.49X	11.29X	12.09X	12.9X	13.69X	14.47X	15.29X	16.09X	16.89X	17.69X	18.49X	19.29X	20.09X	20.5X
	C	7.8mm	7.8	7.7	7.6	7.5	7.5	7.5	7.4	7.4	7.4	7.3	7.3	7.3	7.3
	D	165mm	168	175	185	195	205	214	224	234	244	254	264	274	279
	E	7	7%	7%	7%	7%	7%	8	8%	8%	8%	8%	8%	8%	8%
25mm f/2.5 + M-1 Adapter	A	(16.4X)	(19.7X)	(23.3X)	(27.3X)	(31.6X)	(36.2X)	(41.1X)	(46.3X)	(51.8X)	(57.6X)	(63.7X)	(70.2X)	(76.4X)	(80.4X)
	B	3.2X	3.59X	3.49X	4.38X	4.77X	5.17X	5.56X	5.96X	6.35X	6.74X	7.14X	7.53X	7.93X	8.12X
	C	22.2mm	21.3	20.6	20.0	19.5	19.1	18.8	18.5	18.2	18.0	17.8	17.6	17.4	17.4
	D	132mm	141	151	140	169	179	188	198	208	217	227	238	247	252
	E	4	4%	4%	4%	5	5%	5%	5%	5%	5%	6	6%	6%	6%
25mm f/2.5 + M-2 Adapter	A	(27.7X)	(32.0X)	(36.6X)	(41.6X)	(46.8X)	(52.3X)	(58.2X)	(64.3X)	(70.8X)	(77.6X)	(84.7X)	(92.1X)	(99.8X)	(103.8X)
	B	4.42X	4.81X	5.21X	5.6X	6.0X	6.39X	6.78X	7.18X	7.57X	7.96X	8.36X	8.75X	9.15X	9.34X
	C	20.0mm	19.5	19.1	18.8	18.5	18.2	18.1	17.8	17.6	17.4	17.3	17.1	17.0	16.9
	D	160mm	170	180	189	199	209	218	229	238	248	258	268	277	282
	E	4%	5	5%	5%	5%	5%	5%	6	6%	6%	6%	6%	6%	6%

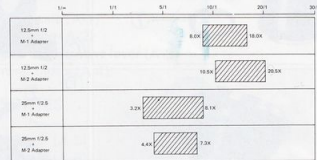
(III)

## MAGNIFICATION CHART

## MABSTABEBEREICHE

## GRAPHIQUE DE GROSSISSEMENT

## GRAFICA DE AUMENTOS

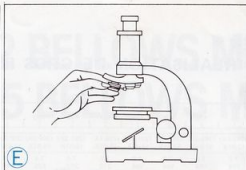
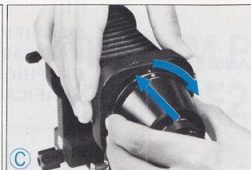


When used with Minolta Auto Bellows III

Für die Verwendung des Minolta Automatik-Balgengeräts III

Lors de l'utilisation avec le Soufflet Automatique Minolta III

Cuando se utilice con el Auto Fuelle III



# ENGLISH

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## NAMES OF PARTS

Aperture scale (A-1)  
Aperture ring (A-2)  
Aperture-adjustment lever (A-3)  
Mounting index (A-4)

## ACCESSORIES

M-1 Adapter (A-5)  
M-2 Adapter (A-6)  
Filter holder (gelatin filters only) (A-7)

Both the 12.5mm f/2 and 25mm f/2.5 Minolta Bellows Micro Lenses are special-application lenses that produce highly magnified images with unequaled sharpness from center to edges.

They can be attached directly to most microscopes, or with either the M-1 or M-2 adapters fitted to a Minolta bellows. Depending on which adapter is used, magnification rates from 8 to 20.5 times life size with the 12.5mm and 3.2 to 9.3 times' life size with the 25mm lens are possible.

Lens styling is not only attractive, but highly functional. The lens barrels are tapered to permit easy illumination of your subject, and the matte-black finish reduces undesirable reflections.

To realize the full potential of your new lens, read this manual thoroughly and use it together with the manual supplied with your bellows.

#### NOTE

- This is a combined manual for the 12.5mm and 25mm Minolta Bellows Micro lenses. Unless noted, operation is the same for both lenses.
- Throughout the text you will find a series of numbers. Each of these refers to a picture on the fold-out pages at the front.

## ATTACHING AND REMOVING LENS

### Bellows

In order for either Bellows Micro lenses to be used with a Minolta Bellows, the lens must first be attached to either the M-1 (A-5), or M-2 adapter (A-6). Choice of adapter will depend on magnification rate desired and lighting conditions. Further details on these adapters can be found in the "ACCESSORIES" section of this manual, as well as the included chart (III) and table (II).

Fitting a lens to either adapters is done by holding the lens stationary and screwing the adapter clockwise onto the threaded portion of the lens until it is firmly seated (B). The assembled lens and adapter can now be attached to the bellows by aligning the red indices on the adapter and bellows standard, inserting the bayonet into the socket, and turning the adapter clockwise until it locks into place (C).

To remove the lens and adapter, press and hold the release button (D-1) on the bellows standard, turn the adapter counterclockwise (D-2) as far as it will go and lift it from the socket (D-3).

### NOTE

- All lens and adapter combinations can be mounted directly to your camera, but there will be a loss of image quality when the M-1 adapter is used.
- Extra care should be taken to eliminate camera movement. Use of either the Minolta Copy Stand II or Macro Stand, plus a Minolta Cable Release II will give best results.

## Microscopes

Both Minolta Bellows Micro lenses have standard right-hand 20.32mm diameter threads for attaching them to most microscopes. To install either lens, screw it clockwise into the microscope's objective-lens mount until it is firmly seated. To remove, turn the lens counterclockwise until it is free of the mount (E).

## NOTE

- Because of the lenses' compact size, an aperture-adjustment lever (A-3) is included to make setting the aperture easier.

## DETERMINING EXPOSURE

### With TTL-metering cameras

1. After focusing with lens set at maximum aperture, stop the lens down to desired f-stop (F).
2. Turn the meter on and set appropriate shutter speed. If using an automatic-exposure camera, check that correct speed is within its automatic range. If not, adjust aperture.
3. With the lens stopped down to the proper aperture, release the shutter. It is recommended that a cable release such as Minolta's Cable Release II be used to avoid camera movement (G).

**NOTE**

- Minolta X-700 and XD-series cameras should only be used in the "A" or "M" mode.

**With non-TTL-metering cameras**

When a separate light meter (such as Minolta Flash Meter III, Auto Meter II) is used to make the exposure reading of a subject, consult the close-up table (II) to find the exposure factor and f-stop correction for length of bellows extension set.

**NOTE**

- The close-up table (II) indicates exposure factors **A**, image magnification rates **B**, lens-to-subject working distances **C**, distance between the film plane and the subject **D**, and exposure corrections in f-stops **E** for selected amount of bellows extension. The table (II) shows for example, that for an exposure factor of 4, there should be an exposure increase of 2 stops.

**ACCESSORIES****M-1 and M-2 adapters**

Both the 12.5mm and 25mm Minolta Bellows Micro lenses have 20.32mm diameter threads for attachment to microscopes. The M-1 and M-2 adapters (A-5), (A-6) provide a bayonet mount so the lenses can be used on a Minolta bellows.

The M-1 adapter mounts the lens close to the front of the bellows, while the M-2 mounts it further away providing an increase of extension, magnification rate, and easier illumination of your subject.

The chart (III) and table (II) in this manual illustrate these differences between the M-1 and M-2 adapters.



### Filter holder

Both the M-1 and M-2 adapter have provision for the attachment of a optional gelatin-filter holder (A-7) to allow color balancing and other filter effects. The holder accepts filters up to 0.3mm thickness, and mounts behind the lens to protect the gelatin filters (H).

## CARE AND STORAGE

- Never touch lens surfaces with your fingers.
- Should a lens surface become dirty, gently remove loose, dry matter from it with a blower brush. If necessary, the glass surface may then be wiped gently with a circular motion from the center outward with a soft, dry cotton cloth or special photographic lens tissue.
- Liquid lens cleaner should be used only when fingerprints or other matter can not be removed with a dry cloth or lens tissue. Never drop lens fluid directly on the lens. Always apply it first to the cloth or lens tissue and wipe the lens gently from center to edge.
- The lens barrel and other metal parts may be wiped with a silicon-treated cloth.
- For all other service and repairs, contact your authroized Minolta repair facility.
- Do not store lenses where temperature or humidity is high, or near corrosive chemicals or gases.
- If the lens is to be stored for an extended period, it is best to store it in its case, along with a small bag of drying agent (such as silica gel).

## SPECIFICATIONS

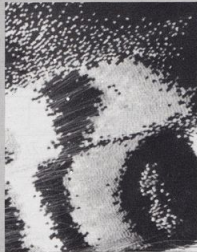
Focal length and f-stop:	12.5mm f/2	25mm f/2.5
Construction:	4 elements in 4 groups	6 elements in 4 groups
Diaphragm:	Manual	
Aperture scale:	f/2 to f/16 with click-stops	f/2.5 to f/16 with click-stops
Focusing:	By bellows and/or focusing rail	
Mount:	20.32mm diameter thread	
Flange focal distance:	-7.5mm	11.2mm
Filter size:	(Use the accessory filter holder)	

Magnification (with Auto Bellows III)		
* With M-1 Adapter:	8 to 18 x	3.2 to 8.1 x
* With M-2 Adapter:	10.5 to 20.5 x	4.4 to 9.3 x
Accessories:		
* Standard:	Aperture-adjustment lever	
* Optional:	M-1 and M-2 adapters	
	Filter holder (for gelatin filters)	
Size:	$\phi 33 \times 23.5\text{mm}$	$\phi 33.5 \times 17\text{mm}$
Weight:	40g (1-7/16 oz.)	40g (1-7/16 oz.)

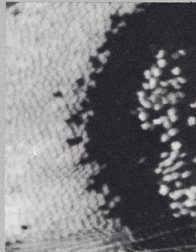
Specifications subject to change without notice



0.5X



4X



10X

Minolta Camera Co., Ltd.

Minolta Camera Handelsgesellschaft m.b.H.

Minolta France S.A.

Minolta (UK) Limited

Minolta Vertriebsgesellschaft m.b.H.

Minolta Nederland B.V.

Minolta (Schweiz) GmbH

Minolta Svenska AB

Minolta Corporation

Head Office

Los Angeles Branch

Chicago Branch

Atlanta Branch

Minolta Canada Inc.

Head Office

Montreal Branch

Vancouver Branch

Minolta Hong Kong Limited

Minolta Singapore (Pte) Ltd.

30, 2-Chome, Azuchi-Machi, Higashi-Ku, Osaka 541, Japan

Kurt-Fischer-Strasse 50, D-2070 Ahrensburg, West Germany

357 bis, rue d'Estienne d'Orves, 92700 Colombes, France

1-3 Tanners Drive, Blakelands, Milton Keynes, Buckinghamshire MK14 5EW,  
England

Seidengasse 19, A-1072 Wien, Austria

Zonnebaan 39, Postbox 264, 3600 AG, Maarssenbroek-Maarssen,  
The Netherlands

Riedhof V, Riedstrasse 6, 8953 Dietikon-Zurich, Switzerland

Brännkyrkagatan 64, Box 17074, S-Stockholm 17, Sweden

101 Williams Drive, Ramsey, New Jersey 07446, U.S.A.

3105 Lomita Boulevard, Torrance, CA 90505, U.S.A.

3000 Tollview Drive, Rolling Meadows, IL 60008, U.S.A.

5904 Peachtree Corners East, Norcross, GA 30071, U.S.A.

1344 Fewster Drive, Mississauga, Ontario L4W 1A4, Canada

7575 Trans Canada Hwy., Montreal, Quebec H4T 1V6, Canada

1620 W. 6th Avenue, Vancouver, B.C. V6J 1R3, Canada

Oriental Centre Ground Floor, 67-71 Chatham Road South,

Kowloon, Hong Kong

5th Floor, Chiat Hong Bldg., 110, Middle Road, Singapore 0718



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