

AUTO BELLOWS



Summary

- The Auto Bellows is placed between the OM body and taking lens to adjust the distance between them for close-up and macrophotography.

Main Characteristics

- The aperture iris diaphragm built into the bellows can be stopped down to the pre-selected aperture by the use of the Double Cable Release simultaneously with the shutter release.
- A simple lever operation makes it possible for the photographer to view the subject prior to taking the picture through the aperture diaphragm fully opened or stopped down as desired without exposure.
- This unit incorporates a removable lens mount board which requires no adapter to reverse the lens.

Notes • Related Units

- In most cases accurate focus and lens apertures smaller than F8 are necessary for fine macrophotographs because of the extremely small depth of field.
- Use of a tripod or Macrophoto Stand VST-1 is recommended to steady the Auto Bellows for the slow shutter speeds that are often required in macrophotography.
- Move the preset lever to the vertical position to stop down the aperture for exposure reading.
- Focusing Screens recommended for the Auto Bellows are 1-4, 1-10, 1-11 and 1-12.

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OM SYSTEM AUTO BELLOWS

● Clamping Screw
This screw clamps the lens mount board to the bellows.

● Lens Mount
Directly accepts OM System lenses except the Macro lenses 38mm F3.5 or 20mm F3.5 which must be mounted via the Objective Lens Mount PM-MTob.

● Lens Mount Board
To reverse the lens mounted on the Auto Bellows:
By loosening the bellows clamping screw and front rail screw, remove the lens and the lens mount board together from the rail. Remount the lens on the rail so that the lens faces the bellows.

● Focusing Rail
This is a sturdy dovetail type rail to assure steady, smooth movement of the OM body for accurate focus.

● Front Rail Screw
As screwed into the front of the rail, it prevents the lens mount board from running off the rail. Removable to reverse the lens mount board.

● Scale
The scale engraved on the rail is graduated in increments of 5mm over a total range of 180mm.

● Magnification Scale
The magnification indexes are engraved on the rail surface for use with the slide copier. The front of the lens mount board should be aligned to the orange-white line, and the camera body mount can be adjusted according to the lens position. 1X and 1.5X magnifications are graduated for the 1:1 Macro 80mm and Macro 50mm Lenses.

● Lens Shift Knob
The distance between the lens and camera body can be adjusted by rotating this knob after loosening the rail clamping knob.

● Preset Lever
By this lever operation, the aperture diaphragm can be stopped down or opened fully for convenience of focusing and exposure adjustment.

● Focusing Knob
After completing the magnification adjustment, bring the subject into focus by means of this knob.

● Connecting Plate
This plate connects the bellows to the lens mount board. When the lens is reversed, it connects the bellows to the lens hood.

● Bellows

● Camera Shift Knob
By rotating this knob, adjust the length of the bellows. Prior to rotating the camera shift knob, the camera clamping knob (located on the opposite side to the shift knob) must be loosened.

● Focusing Tripod Block
Provided with two tripod sockets at the lower surface of the block. Screw the tripod into one of the sockets as required; taking into consideration the weight with camera and lens, bellows extension required, focal length of lens, etc.

● Camera Body Mount
Loosen the camera mount clamping screw on the bellows and remove the camera body mount. Attach the camera body mount to the OM body in the same manner as you would attach a standard lens.

● Camera Body Release Lever
Functions in the same way as the lens release button of any OM System lens.

● Back Rail Screw
Prevents the camera body mount board from running off the rail.

● SPECIFICATIONS

Camera:	OM Bodies.
Lens mount:	OM-Mount bayonet (rotation angle 70°)
Lenses:	1:1 Macro 80mm F4, Macro 38mm F3.5, Macro 20mm F3.5 (Macro 50mm F3.5, Standard 50mm F1.8, 50mm F1.4, 55mm F1.2)
Bellows extension range:	36-198mm (1 1/8" - 7 7/8") (lens in normal position)
	56-218mm (2 1/8" - 8 5/8") (lens in reversed position)
Graduated focusing rail is	180mm (7 1/8") long.
Focusing:	Adjustable by focusing knob on the focusing stage with locking device.
Automatic stop-down exposure:	Diaphragm linked with shutter by means of the double cable release.

● Camera Body Mount Board
● Camera Mount Clamping Screw

● Shutter Release Socket
When using the standard lenses or Macro 50mm F3.5 in conjunction with the Auto Bellows, automatic stop-down exposure can be obtained by using the double cable release. To ensure proper stop-down exposure, the double cable release must be correctly adjusted to stop down the aperture diaphragm immediately before exposure.

● Camera Clamping Knob
After the subject is sharply focused at the magnification desired, clamp the lens and camera body on the rail with their respective shift knobs, then tighten the camera clamping knob.

● Rail Clamping Knob

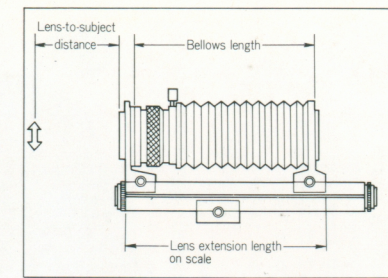
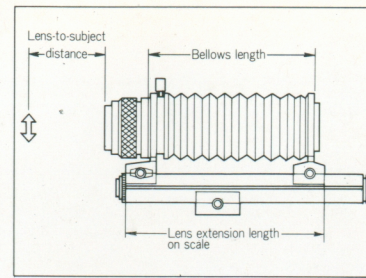
Actual size

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INDICATION OF LENS EXTENSION DISTANCE

The scale engraved on the rail surface indicates the lens extension length. The left side picture shows the normal lens position and the right side one shows the lens reversed.

The reference table below indicates the lens extension length in mm and the distance from lens front end to subject in cm.



Lens	Lens Position	Subject Area Covered (mm)	Magnification	Scale																																									
				0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9	1.0	1.2	1.4	1.6	1.8	2.0	2.2	2.4	2.6	2.8	3.0	3.5	4.0	4.5	5.0	5.5	6.0	6.5	7.0	7.5	8.0	9.0	10.0	11.0	12.0									
BASIC METHODS	ZUIKO 1:1 MACRO 80mm F4	Normal	Scale (mm)	68	71	79	87	95	103	111	119	127	143	159	175	191	207	223	231																										
			Distance from lens to subject (cm)	34.7	31.0	24.3	20.3	17.6	15.7	14.3	13.2	12.3	11.0	10.0	9.3	8.8	8.3	8.0	7.8																										
	ZUIKO MACRO 38mm F3.5	Normal	Scale (mm)															68	75	83	90	98	106	113	132	151	170	189	208	227	231														
			Distance from lens to subject (cm)															4.6	4.4	4.3	4.1	4.0	3.9	3.8	3.6	3.5	3.4	3.3	3.2	3.2	3.2														
	ZUIKO MACRO 20mm F3.5	Normal	Scale (mm)																													68	73	83	93	103	113	123	133	143	163	183	203	223	231
			Distance from lens to subject (cm)																													2.1	2.1	2.0	2.0	2.0	2.0	1.9	1.9	1.9	1.9	1.8	1.8	1.8	1.8
AUXILIARY METHODS	ZUIKO MACRO 50mm F3.5	Normal	Scale (mm)															68	69	74	79	84																							
			Distance from lens to subject (cm)															8.8	8.6	7.7	7.0	6.4																							
		Reversed	Scale (mm)															102	112	123	134	144	155	166	177	187	198	209	230																
			Distance from lens to subject (cm)															6.2	5.3	4.7	4.2	3.8	3.5	3.3	3.1	2.9	2.8	2.6	2.4																
	ZUIKO 50mm F1.8	Normal	Scale (mm)															68	69	74	79	85																							
			Distance from lens to subject (cm)															9.4	9.2	8.3	7.6	7.0																							
		Reversed	Scale (mm)															78	89	99	109	120	130	140	151	161	171	197	223	231															
			Distance from lens to subject (cm)															7.8	7.2	6.7	6.3	6.1	5.8	5.6	5.5	5.3	5.2	4.9	4.8	4.7															
	ZUIKO 50mm F1.4	Normal	Scale (mm)															68	69	74	79	85																							
			Distance from lens to subject (cm)															8.4	8.2	7.3	6.6	6.0																							
		Reversed	Scale (mm)															73	74	84	95	105	115	126	136	146	157	167	193	219	231														
			Distance from lens to subject (cm)															7.8	7.8	7.2	6.7	6.3	6.0	5.8	5.6	5.4	5.3	5.2	4.9	4.8	4.7														
ZUIKO 55mm F1.2	Normal	Scale (mm)															68	72	78	83	89																								
		Distance from lens to subject (cm)															8.9	8.0	7.0	6.2	5.6																								
	Reversed	Scale (mm)															89	93	104	115	126	137	149	160	171	182	211	231																	
		Distance from lens to subject (cm)															7.7	7.5	7.0	6.6	6.3	6.0	5.8	5.6	5.5	5.3	5.1	4.9																	

(Set the focusing ring at ∞.)

(Set the focusing ring at closest distance.)

(Set the focusing ring at ∞.)

(Use the adapter ring 55→49mm.)