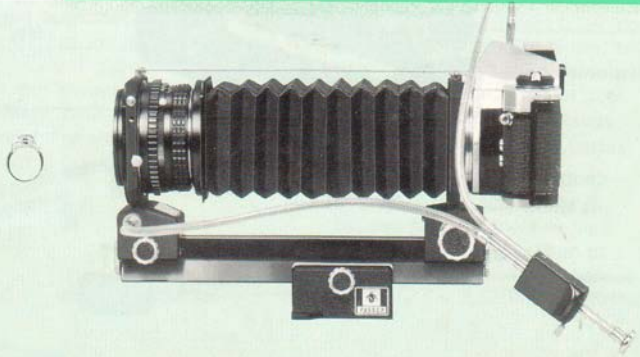
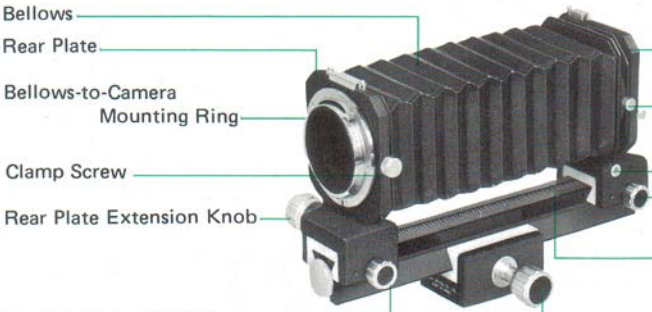
PENTAX

AUTO BELLOWS-M
SLIDE COPIER-M



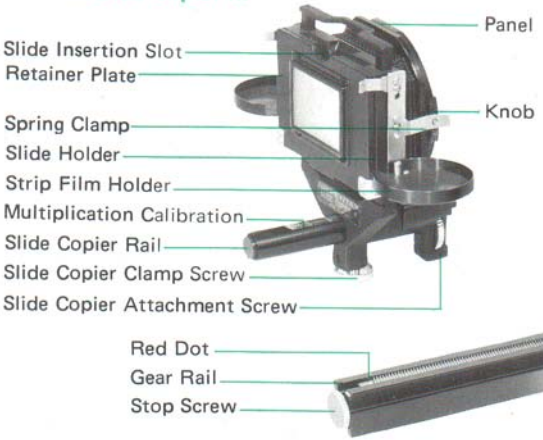
1


Bellows
Rear Plate
Bellows-to-Camera Mounting Ring
Clamp Screw
Rear Plate Extension Knob
Rear Plate Clamp Knob
Tripod Position Shift Knob
Front Plate
Bellows Clamp Screw
Cable Release Socket
Front Plate Clamp Screw
Gear Rail

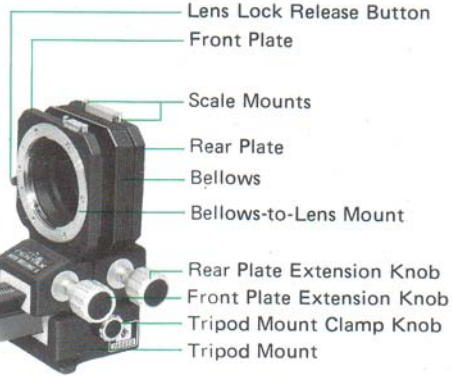

Scales


Double Cable Release

2 Slide Copier M



3 Auto Bellows M



SPECIFICATIONS

Suitable Cameras	Pentax K Series cameras
Suitable Lenses	SMC Pentax-M lenses, and SMC Pentax lenses up to 300mm.
Bellows Extension (Distance from the lens mount to the body mount)	NORMAL 38 ~ 170mm. (Lenses mounted in the normal way) REVERSE 56 ~ 174mm. (For 50mm f/1.7 lenses mounted in the reverse direction)
Automatic Diaphragm	Automatic diaphragm closed by double cable release.
Size	Width 97 x height 131.5 x length 207mm (Auto Bellows only) Width 158 x height 135 x length 298mm (With Slide Copier)
Weight	792g. (Auto Bellows only. Scales and double cable release included) 256g. (Slide Copier only)
Accessories	Double cable release, scales (for both 50mm and 55mm lenses)

FEATURES

The Asahi Pentax Auto Bellows M used with an Asahi Pentax K Series camera and any of the SMC Pentax lenses is all you need to be ready for a wide range of photography, from close-up work to macrophotography. And with the addition of either the normal or the automatic K extension rings, a complete range from the closest of close-up work with all lenses, right up to macrophotography is possible.
The lenses can also be attached to the front plate in reverse, so there is no need for the reverse adaptor K-52mm or K-49mm. It is also equipped with diaphragm automation, operated by the double cable release.
Moreover, together with the Slide Copier, you can also reproduce slides and film strips.

HOW TO OPERATE THE AUTO BELLOWS M UNIT

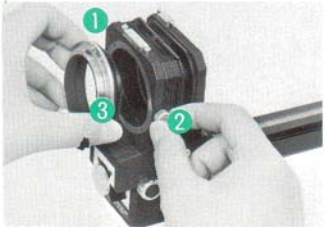
WITH THE LENS UNREVERSED

Fig. 4 Loosen the clamp screw (2) on the right side of the rear plate (1), and remove the bellows-to-camera mounting ring (3).

Fig. 5 Remove the lens from the Pentax camera, and attach the bellows-to-camera mounting ring (3) to the lens mount (4) of the camera in place of the lens.

Fig. 6 Now connect the camera to the bellows unit by attaching the bellows-to-camera mounting ring (3) to the rear plate (1) of the bellows. If the camera is to be used in the horizontal position, align the upper edge of the rear plate (1) with the front edge of the pentaprism housing of the camera, and tighten the clamp screw (2).

4



5

6

Fig. 7 If the camera is to be used in the vertical position, however, rotate the camera so that the shutter release button is on the operator's right hand side. Align the side edge of the camera with the upper edge of the rear plate (1), and then tighten the clamp screw (2).

7

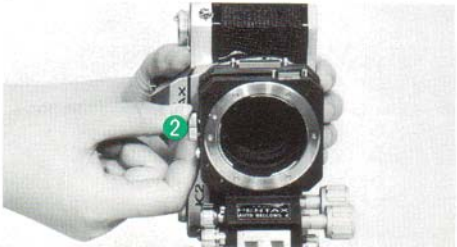


Fig. 8 Attach the lens to the bellows-to-lens mounting ring (6) located on the front plate (5). To remove the lens again, depress the lens lock button (7), and turn the lens 65° counterclockwise. Note that this lock button does not operate in the same way as the lens lock release lever on Pentax K Series cameras.

8

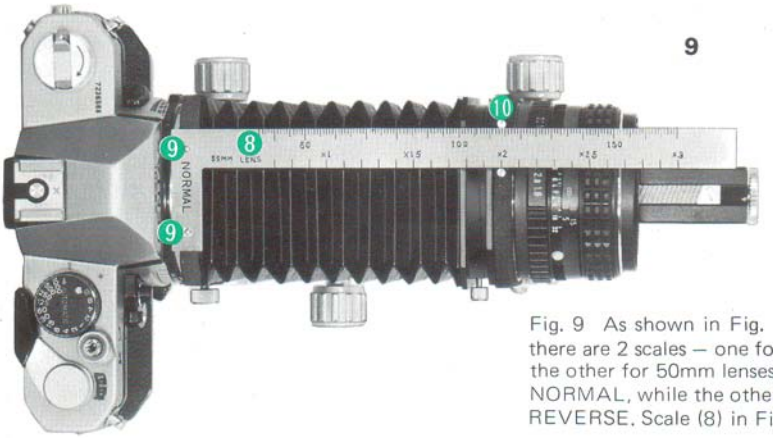


Fig. 9 As shown in Fig. 1 on page 2, there are 2 scales – one for 55mm lenses, and the other for 50mm lenses. One side is marked NORMAL, while the other is marked REVERSE. Scale (8) in Fig. 9 shows the

NORMAL side, and it is mounted on the two pins (9) at the upper side of the rear plate, the scale being kept in position by magnets. The extension (length) of the bellows is indicated on the top of the front plate (10). The magnification scale along the opposite edge of the extension scale is only for use with the slide copier.

Fig. 10 Loosen the front plate clamp screw (11) and turn the front plate extension knob (12) to adjust the extension of the bellows (13). After focusing, always remember to retighten the front plate clamp screw (11).

10

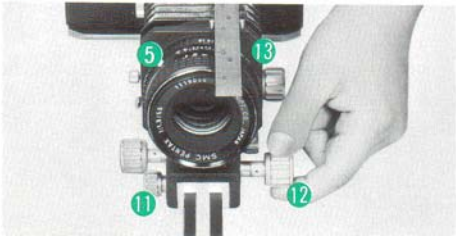


Fig. 11 The bellows can also be adjusted by loosening the rear plate clamp screw (14) and turning the rear plate extension knob (15). Again, remember to retighten the clamp screw (14) after focusing.

11

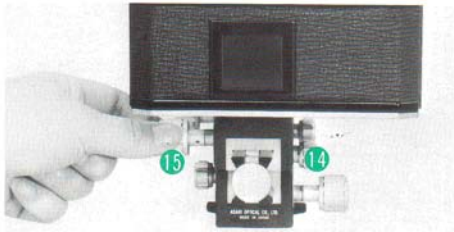
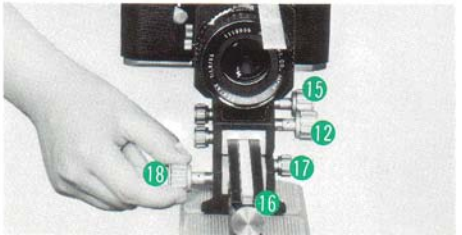


Fig. 12 The tripod mount (16) can be freely moved up and down the gear rail by turning the tripod position shift knob (18) after the tripod mount clamp knob (17) has been released. In other words, the Auto Bellows K assembly can be moved back and forth when mounted on a tripod. But the clamp knob must always be retightened again. This is a relatively simple operation, especially if you remember that the shift knob (18) is located on your right side (when looking from behind), while the front extension (12) and rear extension knobs are located on your left.

Fig. 13 The end of one of the cables of the double cable release (19) has a red ring. Screw this cable in the cable release socket (20) located below the front plate. (At this time, be careful not to force the socket in.) Screw the other cable into the shutter release button (21) of your Pentax camera.

12

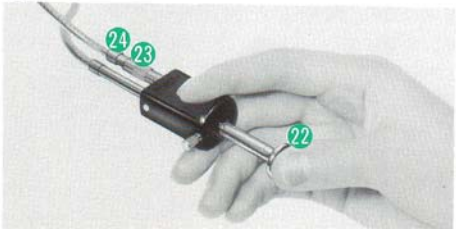


13

HOW TO OPERATE THE AUTO BELLOWS M UNIT

Fig. 14 First check the action of the automatic diaphragm. While looking through the front of the lens, press button (22) of the double cable release. The diaphragm should operate before the shutter. Because of the slight delay between these two actions, the auto bellows unit is not suitable for rapidly moving subjects. Note that if the double cable release is not inserted (or simply forgotten), the diaphragm will remain open.

14



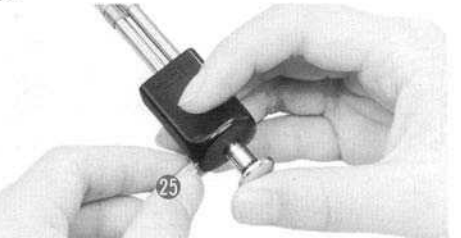
Double Cable Release Check

Since a shutter release occurring before diaphragm closure will result in overexposure, test the double cable release by the following method. Screw the cable with the red ringed tip into the cable release socket as before, and set the diaphragm to the smallest aperture opening (f/22 for standard lenses, and f/32 for macro lenses). Do not screw in the other cable at this stage. Depress the double cable release button (22) as shown in Fig. 14. The diaphragm will close down to its minimal aperture. Make a note of this aperture position.

Now screw the other cable into the shutter release button as before and depress the double cable release button once again. Check whether the shutter releases after the diaphragm has closed down to its minimal aperture. If by chance, the shutter releases before the diaphragm reached its minimal aperture, loosen screw (23) in Fig. 14. Turn (24) in a clockwise direction, and (23) in a counterclockwise direction. This reduces the amount of projection from the cable for the shutter release, thus delaying the shutter release time. But be careful not to delay it too much.

Fig. 15 For T (time) exposure, set the shutter speed to B. While keeping the double cable release depressed (shutter remains open), tighten the locking screw (25). This enables you to make exposures of 10, 20 or more seconds. To close the shutter, simply release the locking screw (25).

15

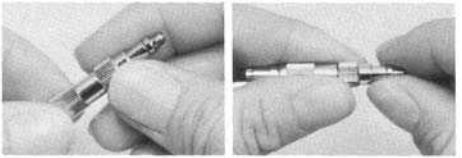


NOTICE: CHANGE IN CABLE RELEASE DESIGN (Applies to Instructions on Pages 11 - 12)

Due to a change in the design of the Double Cable Release now used with the Auto Bellows unit, the "Double Cable Release Check" section of this manual on pages 11 - 12 no longer applies to operation with the double cable release. The adjustment screw for the new double cable with the black cables is at the tip of the cable with the red ringed tip. When adjustment is required, do so in accordance with the following paragraph.

Double Cable Release Check

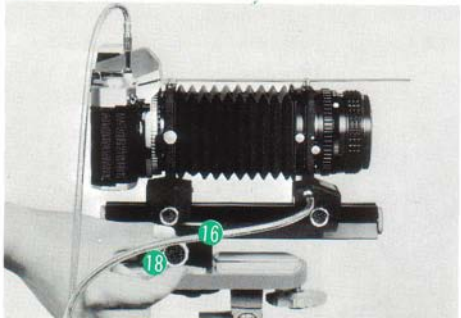
The new double cable release is designed so that the lens stops down well before the shutter releases. With some cameras, however, adjustment may be required before the shutter will release. To check if this is necessary, screw the cable with the red ringed tip into the cable release socket as described on page 10 and set the diaphragm of the lens to its smallest aperture opening. Screw the other cable into the camera shutter and press the double cable release button. If the shutter fails to release, make the following adjustment: Grasp the two knurled collar sections of the red tipped cable just above the red tip unscrew the collar furthest away from the tip by turning it away from you until it separates a millimeter or two from the other collar. Test the shutter release again. If it still fails to release, unscrew the ring another millimeter or so until the shutter releases.



MOUNTING TO A TRIPOD

Fig. 16 Now the auto bellows assembly is ready to be mounted on a sturdy tripod which should be at least 3.5 kg in weight, and have very firm interlocking parts.

16



The assembly should be positioned with the lens side a little on the heavy side. Adjust the position of the tripod mount by turning the shift knob (18). Although mounting the assembly at its center of gravity would appear to be more stable, it can in fact often result in camera movement. A camera-heavy situation is definitely undesirable.

HOW TO ASSEMBLE THE AUTO BELLOWS M UNIT FOR REVERSE

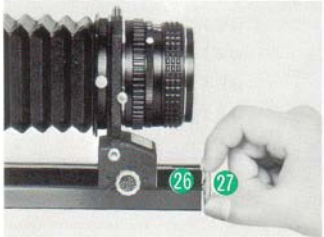
Reversed lens photography is only for magnifications of greater than 1X.

Fig. 17 Undo the stop screw (27) from the end of the gear rail (26).

Fig. 18 Loosen the bellows clamp screw (28), and separate the bellows (13) from the front plate (5).

Fig. 19 Loosen the front plate clamp knob (11) and remove the lens and front plate from the gear rail.

17



18

19

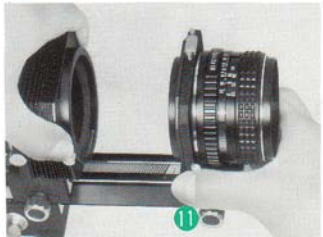
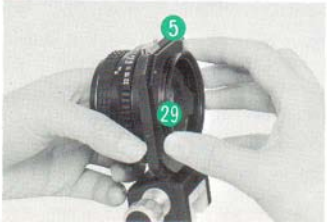


Fig. 20 When using a 49mm filter size lens, reverse the front plate (5) and then remove the adaptor (29) by rotating it counterclockwise.

Fig. 21 Screw the adaptor (29) into the front frame of the lens.

Fig. 22 Turn the lens and front frame in the reverse direction, and reinsert onto the gear rail (25).

20



21

22

Fig. 23 Attach the front of the bellows (13) to the front frame of the lens, tighten the bellows clamp screw (27). 52mm threads are found inside the ring (30) at the rear side of the front panel (30). This ring is used for attaching a 52mm screw-in filter, 52mm lens hood, etc.

23

24

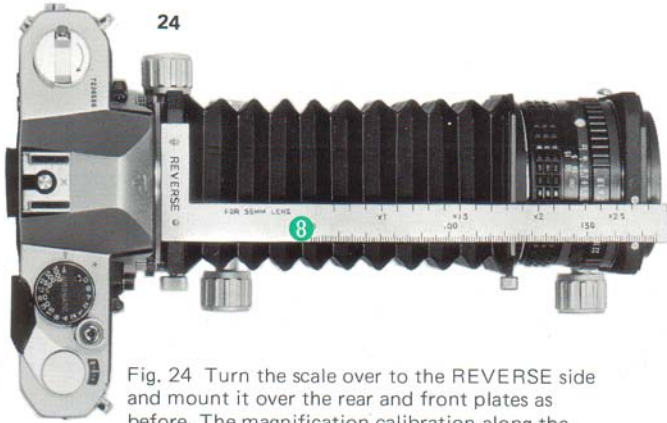
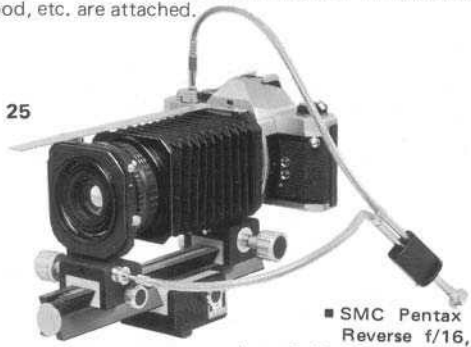


Fig. 24 Turn the scale over to the REVERSE side and mount it over the rear and front plates as before. The magnification calibration along the opposite edge is the same magnification for use with the slide copier as explained before.

Fig. 25 The double cable release is attached in this way as for NORMAL, and the same sturdy tripod shown in Fig. 16 can be used. The screw-in filter, lens hood, etc. are attached.

25



"Marigold"
■ SMC Pentax 35mm, f/3.5, Reverse f/16, Neo-Pan film. Auto Bellows M, bellows length 173mm, magnification 5.2x. "Autorobo" Automatic flash, synchronized cord for distance adjustment.

FOCUSING

The diaphragm remains open no mater what aperture is selected. So it is possible to focus in the same way as any ordinary Pentax camera.

To focus the camera, move either the front plate (12) or rear plate (15) extension knobs or the shift knob (18), while looking through the viewfinder (31). What focusing method should be used depends on magnifications. When magnification is low, use the front plate extension knob. At higher magnifications, the the cross microprism and split image become dark, making focusing difficult. So the area around the dark region has to be used for focusing.

At higher magnifications, adjustment on the lens barrel will usually not give you a sharp picture.
Remember that when you use the Auto Bellows M unit, the distance and depth of field scales on the lens barrel cannot be used.

26

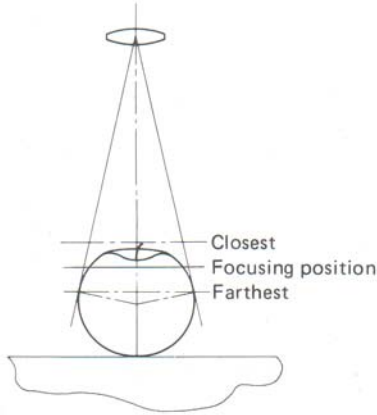
27

Depth of Field

The closer the lens is to the subject, the shallower the depth of field becomes. Even for minimum apertures of f/22 for standard lenses and f/32 for SMC Pentax Macro 50 and 100mm lenses, you may still not be able to get the desired depth of field. Therefore, be very careful in your focusing.

For close-ups, the focus plane lies right in the center of the depth of field. So in Fig. 28, the best focusing of the area between the closest and farthest limits of the depth of field is achieved by focusing for a position exactly mid-way between the two planes.

28



Exposure

The automatic diaphragm is operated by the double cable release with the exposure being measured when the diaphragm closes down. If Pentax K2 or ME is set to AUTOMATIC, and the double cable release used to first close the diaphragm down and then release the shutter, the exposure will still be measured automatically, but no stray light should be allowed to enter via the viewfinder. If you need to take your eye away from the viewfinder, cover it with the viewfinder cap. Manual exposure measurements with Pentax MX, K2, KX or KM must be made in the stopped-down mode. To stop down (close) the diaphragm, push in and rotate clockwise either of the knurled rings shown in the illustration, (32) or (33). After adjusting the camera for proper exposure by rotating the shutter speed dial and aperture ring, release the shutter by pushing in the plunger of the double cable release (illus. 14, p. 11). The diaphragm can be reopened at anytime by rotating the knurled ring counterclockwise.

29