SMC PENTAX 67 SHIFT 75MM F4.5

Operating Manual



Introduction

Your SMC Pentax 67 75mm shift lens is of great value for architectural, scenic, and general-purpose photography as well. Corresponding roughly to a 35mm lens in the 35mm format, it has the capability of correcting converging lines by making them perpendicular. It features full 360° barrel rotation and offers a maximum shift of 20mm, enabling creation of virtually an infinite variety of perspectives. You not only have the choice of correcting, but also of "over-correcting" or not correcting the subject in order to produce the most pleasing, striking or dramatic effect. Moreover, the precise shift capability of the lens makes it possible to create sweeping double-negative panorama by joining together two corrected and perfectly matched negatives.

Notes on Focusing

For critical work, the best results can be obtained by using the interchangeable finder screen featuring a mat field with crosslines, enabling precise alignment of the image.

When using the microprism focusing screen supplied with the camera for focusing, use the mat field to

focus. Focusing with the microprism is ineffective with the shift lens because of darkening of the center.

Operating the Shift Lens

For critical photography such as architecture, precise results and the most pleasing effects are obtained if shifts are made with the lens perpendicular to the film plane or tilted slightly upwards. For this reason, and due to the weight of the camera, use of a tripod is recommended. The lens may be mounted either vertically or horizontally to the tripod but a sturdy model should be used to prevent camera movement which causes misalignment.



Lens Rotation: The lens rotates a full 360° via the lens rotation ring Fig. 1-(1). Click-stops are provided for every 30° of rotation and in between setting may also be used. The green dot in front of the rotation ring Fig. 1-(2) indicates the direction in which the lens will shift as you turn the ring. With the dot at the top, the lens will shift upward (simultaneously the image in the viewfinder will move downward); with the dot at the image upward; when the dot is located 90° to the left, the lens moves horizontally to the left, etc.

Shifting: Because the lens rotates fully, two shift scales (with click-stops at 1-millimeter intervals) are provided to facilitate checking the degree of shift. As you turn the shift ring (Fig. 2-(3)) the amount of shift is indicated by the white index dot on the shift scale (Fig. 2-(4)). In Fig. 2, for example, the camera is mounted horizontally to the tripod and the lens is set for a maximum 20mm shift (although not pictured, the white dot for the other scale, 180° opposite the dot in the photo, indicates the same). The position of the green dot (also not pictured) is not 90° to the left of the white dot in the photo, thus, the lens is set to shift to the left.

CORRECTING FOR CONVERGING LINES

When set for zero millimeters shift, the shift lens will function as a normal 75mm wide-angle lens, Thus, when tilted upward, lines will converge at the top, conversely, when the lens faces downward (as when photographing from the top of a tall building) lines will converge at the bottom; when the camera is level, lines will converge to the right or left in accordance with the direction the lens is moved off a perpendicular axis from the subject.

Whenever desiring to correct for converging lines, the lens must be shifted in the direction in which the lines converge. If the lines appear to converge at the top as when photographing a tall building, for example, proceed as follows.

 Turn the lens rotation ring so that the green dot is facing upward (the same applies whether the camera is mounted horizontally or vertically on the tripod).
Sight the subject through the viewfinder and slowly rotate the shift ring counterclockwise. As the shift ring is rotated, the lens will shift upward and the image in the viewfinder will simultaneously move downward.





Fig.2

3. Recenter the image in the viewfinder (you will find that the lines no longer converge to the same extend). Continue shifting the lens and recentering the image until the lines appear perpendicular. Notes: When the desired shift cannot be obtained at the maximum 20mm shift, tilt the camera upward so the axis inclines slightly; this will enable you to include the subject in the viewfinder, although lines will not be perfectly perpendicular. If greater correction is still desired, back away from the subject to the point where the desired correction can be obtained with the optical axis remaining perpendicular to the subject (excess can be trimmed later during enlarging).

Aperture Setting: Although the 67 shift lens does not feature an automatic diaphragm, it features convenient open-aperture viewing by means of the combined use of a special preset ring in conjunction with the aperture ring. First, preset the shooting aperture, f/11 for example, on the preset ring (Fig. 3-(5)) by aligning f/11 with the aperture index dot (Fig 3-(6)). Then, set the aperture ring (Fig. 3-(7)) to f/4.5 for bright viewing. Next, after focusing and composing, rotate the aperture ring to the right until it stops in line with the preset ring. Now, proceed by making a stopped down exposure measurement and taking the picture.

(6)

Note: Shifting up until the point of shutter release should be carried out at open aperture. Because of the effects of shifting, shooting apertures when the lens is stopped down should be f/8 or f/11 or as near to these as possible. Conversely, if the lens is stopped down farther (to f/16, f/22, etc.,) some loss of sharpness will result because of diffraction during shifting.

Exposure Measurement: Exposure will vary in accordance with the extent and direction of shift. Moreover, when the lens is shifted, the sensitivity of the exposure needle differs slightly from normal. To compensate for this, with the camera mounted horizontally, underexpose ½ stop; conversely, with the camera mounted vertically, overexpose ½ stop. Another method is to frame the subject first and take the exposure reading, then make appropriate compensation for shifting. Because shooting conditions vary from photo to photo, your own experience will produce the best results in compensating for lens shift.

"Emphasizing and Overcorrecting"

In addition to correcting for converging lines at the top by shifting the lens upward, the shift lens can also be shifted downward (reverse shift) to emphasize or exaggerate the degree to which lines converge; for example, to apparently increase the height of a tall building, or the length of a model's legs. Moreover, when an 8mm upward shift is required to make the converging lines of a building appear perpendicular, an over-shift of 15mm will cause the lens to converge in the opposite direction for different emphasis. By employing the various shifting techniques, one can create new perspectives in order to achieve the most dramatic and pleasing effect.

PANORAMICS

Sweeping panoramics in which the picture format is effectively doubled horizontally from 6 x 7 to 6 x 14 are easily created with the SMC Pentax 75mm shift lens. Panoramics appear most attractive when made in the horizontal format; thus, the camera should be mounted to the tripod horizontally. Also, keep the camera perfectly level if you desire to keep lines from converging.

1. Shift the lines completely to the left and make the first exposure.

2. Next, rotate the lens 180° so that the 20mm shift is on the right, and make the second exposure (rotating the lens and advancing the film should be carried out as gently as possible to prevent camera movement, which will result in mismatching of the two photographs).

3. Prints can later be made from the two negatives. The portions which overlap are removed, forming two perfectly matched negatives which are joined together to make one panoramic view.

Filters

In addition to accepting both 82mm screw-in type and bayonet-type filters which fit over the front of the lens, the 6 x 7 shift lens also features a gelatin filter clip at the rear which accepts gelatin filter squares, trimmed to size and inserted.

About The Manual

This fan-produced SMC PENTAX 67 SHIFT 75MM F4.5 Operating Manual pays homage to the original manual in content and layout. I updated the images to use a Pentax 645Z vs. a Pentax 6 x 7 camera. The images of the shift lens are shown attached to the camera via a *Pentax Adapter 645 For 67 Lenses*.

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