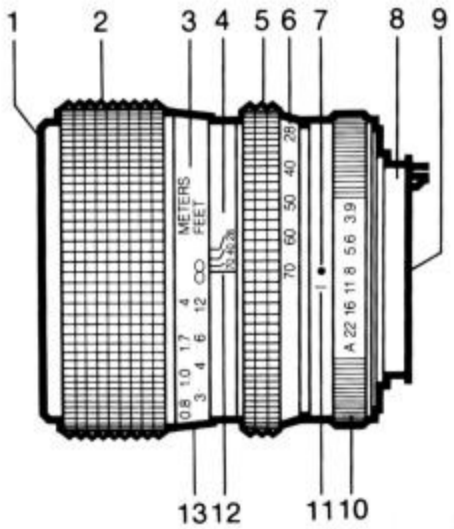


Vivitar

28-70mm f3.9/4.8



Controls and Components

1. Accessory Thread
2. Focus Control
3. Distance Scale
4. Infrared Index Lines
5. Zoom Control
6. Focal Length Scale
7. Aperture and Focal Length Index Dot
8. Lens Mount
9. Lens Mounting Alignment Dot
10. Aperture Ring
11. Variable Aperture Indicator
12. Distance Index Line
13. Macro Range Position and Index

Mounting the Lens

Your Vivitar zoom lens will mount on your camera in the same manner as your normal lens. While mounting your lens, leave the front lens cap on to avoid smudging the front element. Make sure the Lens Mounting Alignment Dot on the lens and the similar dot on the camera are aligned before attempting to mount the lens.

NOTE: Canon mount Vivitar lenses have a black locking ring at the back of the lens mount. To mount the lens on your camera, grasp the lens firmly in your right hand with the lens mount facing away from you. With the left hand, turn the locking ring counter-clockwise so that the red index dot on the locking ring is aligned with the red aperture index dot. Remove the rear lens cover. The locking ring is now in the correct position for mounting the lens on the camera.

Holding the camera in your left hand, mount the lens onto the camera, making sure that the red index dot on the camera is aligned with the red index dots on the lens. Turn the locking ring clockwise to lock the lens on your camera.

To remove the lens from the camera, simply reverse the process. Remember, in order to remove or mount the lens or to remove or replace the rear protective lens cover, the red index dots on the lens must be in alignment.

Holding the Camera and Lens

For best balance during use, support the lens/camera combination with your left hand under the lens. This leaves your right hand free to operate the camera controls.

Setting the Aperture

The Aperture Ring controls the amount of light allowed to reach the film by varying the size of the lens diaphragm opening. As the lens is set to higher f /stop numbers, the diaphragm becomes smaller, allowing less light to reach the film.

This lens has an automatic mechanism which allows you to focus and compose the picture with the diaphragm wide open. At the moment of shutter release, the diaphragm will automatically stop down to the aperture pre-selected manually or as determined by the camera's metering and exposure control system.

NOTE: Certain model lenses have an auto/manual selector which must be set at the auto position for automatic diaphragm control. In the manual position, the f /stop is selected by rotating the Aperture Ring.

Variable Aperture Lens

This is a variable aperture lens which means that the *effective* aperture changes from the *set* aperture as the lens is zoomed from the shortest focal length to the longest focal length. For correct metering, the aperture is always set at the red Aperture Index Dot. At the shortest focal length the aperture range is $f/3.9$ — $f/22$. The shortest focal length is color-coded in red and corresponds to the aperture set at the red index dot. At the longest focal length the effective aperture range is $f/4.8$ — $f/28$ and is shown by the yellow Variable Aperture Indicator.

If you are using a camera equipped with automatic shutter control, automatic aperture control, or both, your camera will automatically compensate for the variable aperture. If you are using the manual mode on cameras so equipped, follow metering procedures as outlined in your camera manual, remembering that changes in focal length may require manual adjustments in shutter speed or aperture due to the actual effective aperture values at the 70mm focal length.

Lenses for Automatic Cameras

Many of today's cameras are designed to automatically set the lens aperture. Your Vivitar zoom lens is fully compatible with these systems.

Canon: Canon mount lenses have a click stop at the green dot for automatic operation. The Aperture Ring may be set and removed from this position in a manner similar to your normal lens.

Pentax KA (P/K-A): Pentax KA mount lenses have a green "A" position on the aperture ring for automatic modes of operation. Set the green "A" to the red Aperture Index Dot.

Minolta: On Minolta mount lenses, the minimum aperture setting is engraved in green. When using this lens in automatic mode on correspondingly equipped cameras, set this minimum aperture position to the red Aperture Index Dot.

Focusing and Zooming

The "two-touch" design of this Vivitar lens lets you focus and compose your picture quickly and easily.

1. To focus in normal, non-macro operation, turn the Focus Control until the subject appears sharpest in the camera viewfinder.
2. To zoom from one focal length to another, rotate the Zoom Control to align the desired focal length with the Aperture and Focal Length Index Dot or until the subject is framed as desired. The Focal Length Scale shows the most common focal lengths. This zooming capability gives you excellent creative control over

the composition of your photo, since you can crop out unwanted backgrounds from around your key subject by increasing the focal length.

3. Under extremely cold conditions, all lenses experience a shift in focus. When operating under these conditions, you may observe that the lens will come into focus just prior to reaching the infinity mark and stop position. This is a normal condition.

Distance to Subject

Once focused, you can determine the approximate distance between camera and subject, if desired, (useful in flash and infrared photography) by finding the point on the feet or meters Distance Scale intersected by the Distance Index Line.

Infrared Index Line

Since infrared radiation focuses at a different point from light, your lens has Infrared Film Focus Shift Index Line engraved on the barrel for use with black and white infrared film. When using B&W infrared film, focus normally on your subject, select the zoom position you prefer and find the distance to subject as explained above.

Without changing the focal length, turn the Focus Ring to the right until this distance to subject intersects the Infrared Index Line for the focal length in use. Your lens will then be focused for average infrared photography.

Note: Infrared radiation is variable by nature and therefore this setting can only be an approximation and may not be sharp in every situation.

Depth of Field

Depth of field is the area of acceptable sharpness in front of and behind the subject in focus. This depth is determined by three factors: the lens aperture, the focal length, and the distance to subject. Increasing aperture size and/or focal length reduces the depth of field around a given subject. Decreasing aperture and/or focal length has the opposite effect.

Conversely, depth of field increases as distance to subject increases and vice versa.

This variability of the depth of field offers you creative possibilities — by opening the lens to wider apertures you can blur out unwanted backgrounds and foregrounds, something which is particularly pleasing in portrait and still-life photography.

Macro Mode Operation

1. Move the Zoom Control to the 70mm focal length position.
2. Rotate the Focus Control until it stops at the MACRO position marked 1:4.
3. Move your camera and lens toward the subject until the image comes into sharp focus. This is the maximum reproduction ratio. If desired, you may move away from the subject somewhat, then turn the Focus Control for sharpest focus.
4. Please refer to specifications for maximum reproduction ratio and minimum focusing distance from film plane.

NOTE: "Reproduction Ratio" refers to the relationship between the actual size of your subject and the size of its image on the film. For example, a reproduction ratio of 1:4 means that the size of the image on the film is 1/4 lifesize. A ratio of 1:2 means the size of the image is 1/2 lifesize.

Helpful Hints in Macro Operation

1. Because exposure in macro photography is critical to getting the best possible picture, it is a good idea to shoot several pictures of the same subject, varying

the exposure slightly. This method involves shooting the pictures at the $f/$ stop indicated by your camera metering system, underexposing by $1/2$ to $1 f/$ stop and overexposing $1/2$ to $1 f/$ stop. (Your particular camera may require use of the exposure compensation control.)

2. Always try to use a tripod or other stable support when shooting at higher reproduction ratios to assure that no slight movements occur to degrade picture quality. If a stable support is unavailable or impossible to use, take the photo at the fastest shutter speed that lighting conditions will allow.
3. It is always a good idea to use a cable release to trigger the shutter of your camera. Even the slightest movement caused by your finger depressing the shutter release can affect the quality of macro photos at high reproduction ratios. If your camera has a self-timer, you can use it to prevent this movement if a cable release is not available.
4. When shooting pictures in macro mode, the depth of field is diminished. It is therefore recommended you use the smallest $f/$ stop possible.

Lens Care

1. It is a good idea to keep a Skylight 1A or UV filter on your lens at all times. This not only improves photographs, but also protects the front lens element

from dirt and scratches.

2. Keep your lens dust free by making sure both front and rear lens caps are in place when the lens is not in use.
3. Clean your lens with an air brush, anti-static brush or wipe it lightly with a camel-hair brush or lens tissue to gently brush away loose particles. To remove fingerprints or smudges use a clean, soft cotton cloth moistened with lens cleaning fluid. Never rub the lens surface with your finger, clothing or any other possibly abrasive material. This will scratch the lens coating and cause damage to the element surface.
4. Always store your lens in a cool, dry place. It is a good idea to store it with the silica gel packet supplied, especially during wet or humid weather. A lens case with a silica gel packet is a handy means of storage and provides excellent protection for your lens.

Specifications

Focal Length: 28mm — 70mm

Aperture Range: f3.9/4.8 — f22/28

Optical Construction: 9 elements in 9 groups, multicoated

Angle of Acceptance: 75°20' — 34°20'

Minimum Focusing Distance: 0.8 m (2.6 ft.); Macro 0.34 m (1.1 ft.)

Maximum Reproduction Ratio: 1:4

Length at Infinity: 52 mm (2.03 in.) at 28mm; 66 mm (2.6 in.) at 50mm; 69 mm (2.72 in.) at 70mm

Weight: 330 g (11.64 oz.)

Maximum Barrel Diameter: 64.5 mm (2.54 in.)

Accessory Size: 55mm

Specifications subject to change without notice. Length and weight may slightly depending on lens mount.

Vivitar®

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