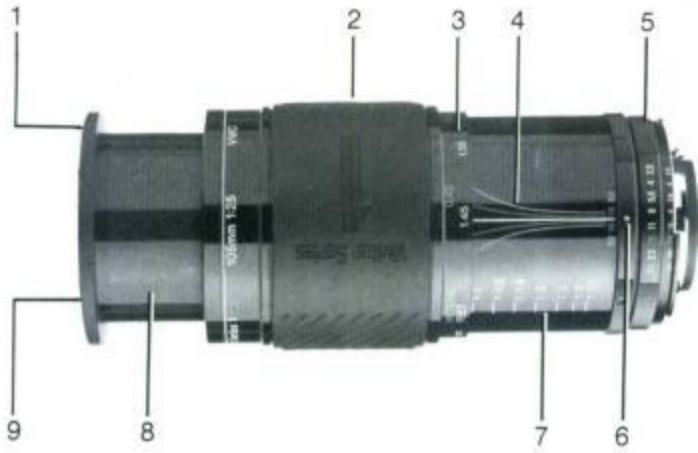


# Vivitar Series

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105mm f2.5



## Controls and Components

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1. Accessory Thread
2. Focus Control
3. Distance Scales
4. Depth of Field Scale
5. Aperture Ring
6. Aperture Index Mark
7. Magnification Scale
8. Built-in Extendable Lens Hood
9. Non-Rotating Front Barrel

## Mounting Your Lens

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Your Vivitar Macro Lens mounts in the same manner as your normal lens. Before mounting, set the Focus Control to infinity  $\infty$ .

**NOTE FOR CANON MOUNT LENSES:** 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 mark. 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 marks 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 marks on the lens *must* be in alignment.

## **Holding Your Camera and Lens**

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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

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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.

## Lenses for Automatic Cameras

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

**Note to Nikon owners** — The Vivitar 105mm f/2.5 lens is fully compatible with all Nikon A-1 and A-1S mounts. Since there is no external meter coupling device on this lens, however, it is not compatible with earlier Nikon F mounts.

## Focusing

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Your new Vivitar Macro Lens is designed to provide you with the utmost in fast and easy focusing. It enables you to focus at magnifications up to 1:1 (life-size), where the image on the negative is the same size as the subject. To focus, turn the Focus Control until the subject appears sharpest in the camera viewfinder.

## Distance Scales

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The green and white Distance Scales engraved on your lens indicate the distance from the subject in focus to the film plane. The white numbers denote this distance in feet while those in green represent distance in meters.

## Magnification Scale

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In some instances you may want to take pictures at a specific magnification such as life-size (1:1) or 1/2 life-size (1:2), etc. For this purpose, a Magnification Scale is engraved in orange on the Lens Barrel to indicate the approximate magnification at which you are shooting.

To set your lens for a specific magnification, turn the Focus Control until the rear

edge aligns with the desired setting on the Magnification Scale. Then move the camera and/or subject back and forth until the image appears sharpest in the viewfinder.

Example: To photograph a subject at 1:2 magnification (1/2 life-size), align the edge of the Focus Control with the orange line above the "1:2" on the Magnification Scale. Then, move the camera and/or subject to focus.

## Depth of Field

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There are Depth of Field scales marked in blue and green on the lens barrel. However, since depth of field is so small at high reproduction ratios, a lens opening of not larger than  $f/16$  is recommended. If your camera has the capability, it is desirable to preview the depth of field prior to taking the photograph, so you can see the area which will be in focus.

For the sharpest photographs, precise depth of field information is essential. Please use the depth of field tables provided at the end of this manual rather than simply reading from lens barrel.

## Helpful Hints

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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, called "bracketing", involves shooting the pictures at the  $f$ /stop indicated by the camera's through-the-lens meter, underexposing by  $1/2$  to 1 stop and overexposing  $1/2$  to 1 stop. The results will be well worth the small extra expense for film.

2. Always try to use a tripod or other support for the camera when shooting at higher magnifications to assure that slight movements or vibrations do not degrade the picture quality. If for some reason a support cannot be used, take the picture at the fastest possible shutter speed that lighting conditions will allow.
3. It is always a good idea to use a cable release to trigger the shutter of the camera. Even the slight movement caused by pressing the shutter release can affect the quality of pictures taken at high magnifications. If your camera has a self-timer, you can use it to prevent this movement if a cable release is not available.
4. The unique design of this lens allows you to get crisp, clear pictures without using a conventional lens hood. However, in the event that a situation arises requiring extra control of stray light, the Vivitar 105mm  $f/2.5$  features a built-in, extendable lens hood.



## Copying

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Your Vivitar macro lens is ideally suited for photographing flat subjects such as documents, photographs, or postage stamps. For best results when copying it is recommended that you mount your camera on a copystand or macrophoto stand. This allows you to conveniently adjust the camera position to change magnification, and stabilizes the camera for maximum sharpness. If possible, place a piece of non-glare glass over the subject to keep it flat.

Unless you desire special shading, use two identical light sources, one on each side of the camera to eliminate distracting shadows. Place the lights about 30° above the subject plane and adjust their position to avoid glaring highlights in the picture.

After positioning the lights and camera and focusing on the subject, remove the subject and substitute an 18% reflectance gray card face up. Take the exposure reading off the gray card. This will indicate proper exposure for an average subject without excessive white or black areas. For predominantly light subjects, open the lens up an extra f/stop (i.e. from f/11 to f/8). For predominantly dark subjects, stop down the lens one f/stop. It is always a good practice to "bracket" exposures when doing copywork.

## Lens Care

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1. Keep your lens dust free by making sure both front and rear lens caps are in place when the lens is not in use.
2. Clean your lens with an air-brush, anti-static brush, good quality camel-hair brush, or use a lens tissue to gently brush away loose particles. To remove fingerprints or smudges, use a small amount of lens cleaning fluid and gently swab the lens surface with a lens tissue on the end of a cotton swab. Never rub the lens elements with your fingers, clothing, or other abrasive material which may scratch the lens coating and damage the glass surface.
3. 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

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**Focal Length:** 105mm

**Aperture Range:** 1/2.5 — 1/32

**Optical Construction:** 6 elements in 6 groups, multicoated

**Angle of Acceptance:** 23.2°

**Minimum Focusing Distance:** 1.15 feet (0.351 meters)

**Maximum Reproduction Ratio:** 1:1 (Life Size)

**Length at infinity:** 4.04 in. (102.5 mm)

**Weight:** 23.1 oz. (656 g)

**Maximum Barrel Diameter:** 2.8 in. (72 mm)

**Accessory Size:** 52mm

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

Dist.

F/Number

(ft)

	25	40	56	80	110	160	220	320	Mag. Ratio
$\infty$	414.65- $\infty$	294.67- $\infty$	210.12- $\infty$	147.05- $\infty$	106.53- $\infty$	73.07- $\infty$	52.99- $\infty$	36.29- $\infty$	1- $\infty$
23	21.79-24.28	21.33-24.87	20.74-25.72	19.92-27.13	18.96-29.10	17.59-33.14	16.18-39.80	14.27-59.85	1-65.5
98	9.65-10.07	9.55-10.17	9.42-10.30	9.25-10.50	9.06-10.76	8.76-11.25	8.40-11.91	7.87-13.16	1-27.1
65	6.46-6.66	6.43-6.69	6.40-6.76	6.30-6.82	6.23-6.96	6.07-7.12	5.91-7.38	5.68-7.81	1-12.5
49	4.90-4.95	4.86-4.99	4.82-5.02	4.79-5.05	4.76-5.12	4.69-5.18	4.59-5.32	4.46-5.51	1-11.6
39	3.90-3.97	3.90-3.97	3.87-4.00	3.87-4.04	3.84-4.07	3.77-4.13	3.71-4.20	3.64-4.33	1-9.8
33	3.261-3.301	3.255-3.311	3.241-3.320	3.225-3.337	3.206-3.360	3.173-3.399	3.133-3.445	3.071-3.521	1-9.6
26	2.615-2.638	2.608-2.641	2.602-2.648	2.592-2.658	2.579-2.671	2.559-2.694	2.536-2.720	2.500-2.763	1-5.9
23	2.287-2.307	2.283-2.310	2.280-2.313	2.274-2.320	2.264-2.330	2.251-2.346	2.234-2.362	2.208-2.395	1-4.9
197	1.962-1.975	1.962-1.975	1.965-1.978	1.952-1.985	1.949-1.992	1.939-2.001	1.926-2.011	1.910-2.034	1-3.9
18	1.801-1.808	1.798-1.811	1.795-1.814	1.791-1.818	1.788-1.821	1.782-1.831	1.772-1.837	1.759-1.854	1-3.4
16	1.637-1.644	1.637-1.644	1.634-1.647	1.631-1.650	1.627-1.654	1.621-1.660	1.614-1.667	1.604-1.680	1-2.9
148	1.473-1.480	1.473-1.480	1.473-1.480	1.470-1.482	1.467-1.486	1.463-1.490	1.460-1.496	1.450-1.503	1-2.4
13	1.309-1.312	1.309-1.312	1.309-1.316	1.309-1.316	1.306-1.319	1.306-1.319	1.303-1.326	1.303-1.329	1-1.8
114	1.145-1.148	1.145-1.148	1.145-1.148	1.145-1.148	1.145-1.152	1.145-1.152	1.142-1.155	1.142-1.155	1-1

Dist.

F/Number

(m)

25

40

56

80

110

160

220

320

Mag.  
Ratio

$\infty$	126.38- $\infty$	89.81- $\infty$	64.04- $\infty$	44.82- $\infty$	32.47- $\infty$	22.27- $\infty$	16.15- $\infty$	11.06- $\infty$	1- $\infty$
70	6.64-7.40	6.50-7.58	6.32-7.84	6.07-8.27	5.78-8.87	5.36-10.10	4.93-12.13	4.35-18.24	1-65.5
30	2.94-3.07	2.91-3.10	2.87-3.14	2.82-3.20	2.76-3.28	2.67-3.43	2.56-3.63	2.40-4.01	1-27.1
20	1.97-2.03	1.96-2.04	1.95-2.06	1.92-2.08	1.90-2.12	1.85-2.17	1.80-2.25	1.73-2.38	1-12.5
15	1.49-1.51	1.48-1.52	1.47-1.53	1.46-1.54	1.45-1.56	1.43-1.58	1.40-1.62	1.36-1.68	1-11.6
12	1.19-1.21	1.19-1.21	1.18-1.22	1.18-1.23	1.17-1.24	1.15-1.26	1.13-1.28	1.11-1.32	1-9.8
10	0.994-1.006	0.992-1.009	0.988-1.012	0.983-1.017	0.977-1.024	0.967-1.036	0.955-1.050	0.936-1.073	1-9.6
08	0.797-0.804	0.795-0.805	0.793-0.807	0.790-0.810	0.786-0.814	0.780-0.821	0.773-0.829	0.762-0.842	1-5.9
07	0.697-0.703	0.696-0.704	0.695-0.705	0.693-0.707	0.690-0.710	0.686-0.715	0.681-0.720	0.673-0.730	1-4.9
06	0.598-0.602	0.598-0.602	0.597-0.603	0.595-0.605	0.594-0.607	0.591-0.610	0.587-0.613	0.582-0.620	1-3.9
055	0.549-0.551	0.548-0.552	0.547-0.553	0.546-0.554	0.545-0.555	0.543-0.558	0.540-0.560	0.536-0.565	1-3.4
05	0.499-0.501	0.499-0.501	0.498-0.502	0.497-0.503	0.496-0.504	0.494-0.506	0.492-0.508	0.489-0.512	1-2.9
045	0.449-0.451	0.449-0.451	0.449-0.451	0.448-0.452	0.447-0.453	0.446-0.454	0.445-0.456	0.442-0.458	1-2.4
04	0.399-0.400	0.399-0.401	0.399-0.401	0.399-0.401	0.398-0.402	0.398-0.402	0.397-0.404	0.395-0.405	1-1.8
035	0.349-0.350	0.349-0.350	0.349-0.350	0.349-0.350	0.349-0.351	0.349-0.351	0.348-0.352	0.348-0.352	1-1



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