Model 55BB

TAMRON·SP

500mm F/8

CF TELE MACRO

CATADIOPTRIC LENS

OWNER'S MANUAL

ADAPTALL-2 MOUNT SYSTEM

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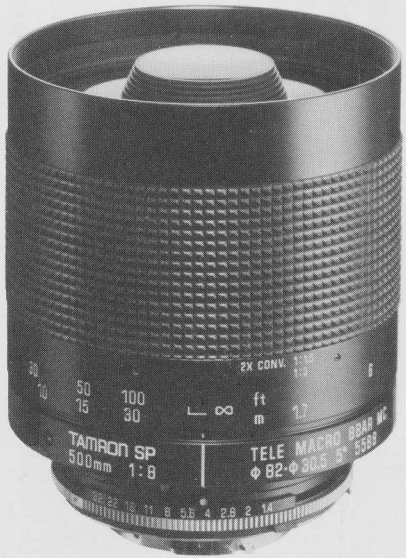
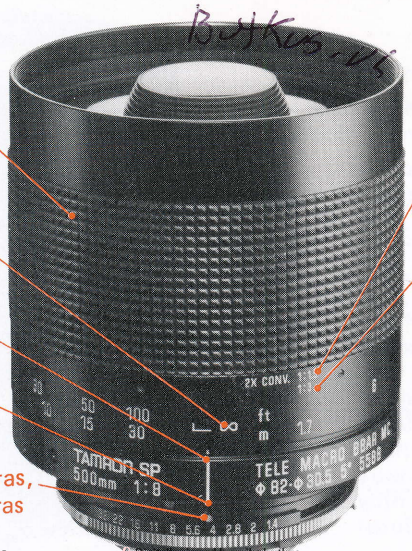


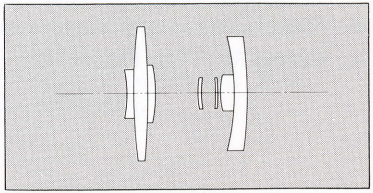
Welcome . . . . . to the ever-expanding world of Tamron

Thank you for selecting the Tamron SP catadioptric lens. Before using your new Tamron lens, take a few minutes and carefully read this instruction manual. This way, you will become fully acquainted with the features and proper method of operating your lens in the normal and macro modes. This will enable you to obtain the best possible results. With proper handling and care, your Tamron lens will provide you with many years of enjoyable and trouble-free operation.

CONTENTS

1. NAMES OF PARTS





mike butkus

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2 SPECIFICATIONS

Focal Length:	500mm
Aperture:	F/8
Construction:	7 elements in 4 groups
Angle of View:	5°
Coating:	BBAR multi-layer coating
Lens Accessory Size:	30.5mm rear, screw-in (82mm front)
Minimum Focus from Film Plane:	1.7m (66.9 in.)
Maximum Magnification (w/2X tele-converter):	1 : 3 (1 : 1.5)
Length (at infinity):	87m (3.4 in.)
Diameter:	84m (3.3 in.)
Weight:	535 g (18.8 oz)
Filter:	A rear normal filter is supplied with your lens.
Optional Accessories:	Rear filter set available consisting of ND4X, Y52, O56, and R60. ND2X and 81B also available separately. Flat-field 2X tele-converter, tele-view adaptor, 82mm "Normal" filter.

Specifications are subject to change without notice.

3. PRINCIPAL FEATURES

(1) Continuous Focusing – CF

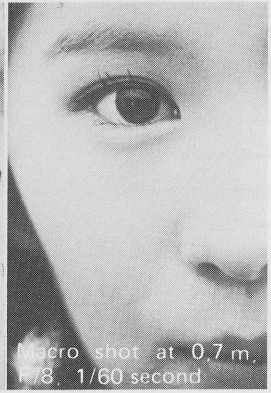
Continuous focusing from infinity to the minimum object distance of 1.7 meters is permitted. The maximum macro magnification ratio at the minimum object distance is 1:3.

(2) Tele-Macro Capability

Your new mirror lens features a "tele-macro" capability which permits photographing an object in macro mode as close as 1.7 meters.

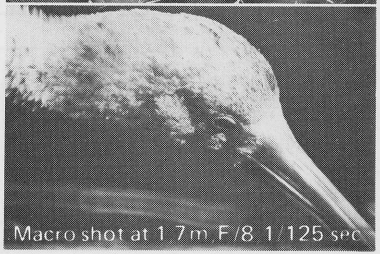
The lens has opened up new horizons for macro photography which have been almost impossible in the past; you can photograph objects which were normally restricted, distance wise, such as insects, timid animals, accessories in a show window, birds in a cage, etc. in macro mode without closely approaching the object.

Subject distance 20 m, F/8, 1/60 second



Macro shot at 0.7 m, F/8, 1/60 second

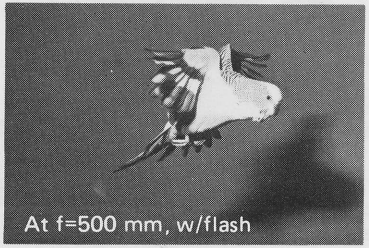
Subject distance 5 m F/8 1/125 sec



Macro shot at 1.7 m F/8 1/125 sec

(3) Constant F-Number

A conventional fixed focal length lens requires troublesome F/stop calculations depending on the object distance. Tamron's innovative focusing system allows you to maintain a constant light transmission while focusing so that the F-number does not change at any focus settings from infinity to close up (macro). Therefore, you can obtain optimum exposure time without any correction even in auto flash photography, which so far, required obtaining a corrected value by means of guide numbers. In addition, with the tele-macro capability of the Tamron mirror lens permitting the use of an auto flash at the minimum distance of 1.7 meters, high-speed macro photography utilizing an auto flash is possible.

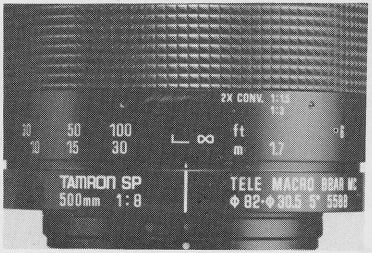


(4) Silver-Evaporated Reflex Mirrors

In order to increase light transmission efficiency, your new Tamron mirror lens incorporates special silver-evaporated reflex mirrors rather than the conventional mirrors whose surfaces are coated with aluminum. With two reflex mirrors, the total reflection percentage within a lens having aluminum-coated mirrors becomes 60% or less. However, Tamron has succeeded in obtaining a reflection percentage as high as 80% or more with the silver-evaporated reflex mirrors. The special silver evaporation which is applied to the reflex mirrors is extremely durable. The degree of durability exceeds the requirements contained in the MIL standard by more than three times thanks to Tamron's original coating technique employing a combination of a single layer of metallic coating and two layers of high molecular films.

(5) Unique and Convenient Outer Design

In designing the outer appearance of the lens, emphasis was put on the maximum handling convenience by concentrating all the necessary information in one place where it can be easily read. Most of Tamron lenses, including your new lens, are marked with the maximum macro magnification scale to be applied when Tamron's SP 2X tele-converter is used.

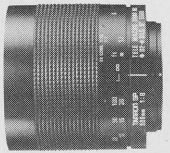


(6) Expanded Vistas of Photography by Employing an SP 2X High-Performance Tele-Converter

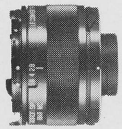
Tamron's SP 2X tele-converter is a high-performance converter in the Adaptall system. It was specially developed for exclusive use with the telephoto and zoom lenses in the SP and Adaptall-2 series. The combination of the tele-converter and your Tamron mirror lens greatly expands the conventional range of photography as follows:

a. The combination of the tele-converter and the lens permits expanding the range of the macro magnification ratio from 1:3 to 1:1.5 which is almost life-size.
b. The tele-converter and lens combine to make a very compact 1000mm ultra telephoto that is convenient to carry around.

SP 2X
Tele-converter



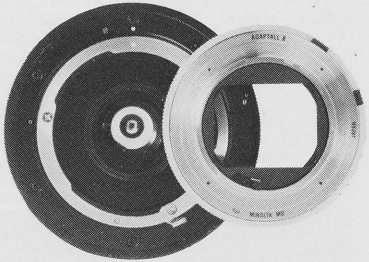
SP 500mm
(Model 55BB)

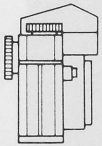


Adaptall
mount

(7) Adaptall Custom Mount System

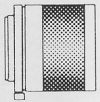
Via Tamron's exclusive Adaptall custom mount system, your new lens can be used with virtually any popular single lens reflex camera.





Camera

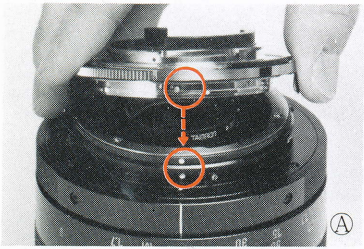
Mount



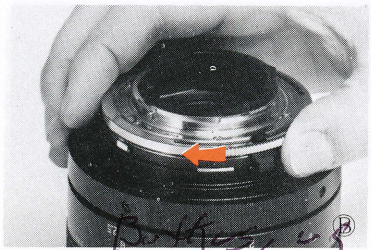
Lens

4. INSTALLING AND REMOVING THE TAMRON ADAPTALL CUSTOM MOUNT

1. Align the green dot on the custom mount with the matching green dot on the lens barrel and turn the mount clockwise until the mount is locked (clicks) into the proper position.



2. Move the meter coupling lever ⊐ provided on the custom mount so that it engages in the slot provided on the lens and now the aperture of the lens will couple to the exposure control mechanism of your camera. The method of installing custom mounts for Canon FD, Minolta and Nikon is the same as described in Steps 1 and 2, however, the custom mount for Canon FD, Minolta and Nikon have two coupling levers ⊐. Therefore, when the mount is installed, engage the two coupling levers in the corresponding slots on both sides of the lens.



Note 1. When Fitting The Custom Mount For Nikon with 500mm Mirror Lens.

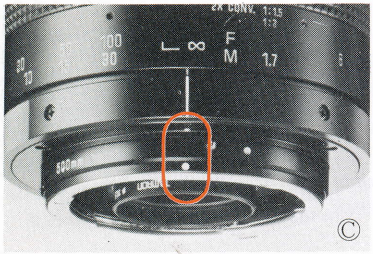
A) With All Nikon Cameras and The Nikkormat FT3:
For use with Nikon cameras and the Nikkormat FT3 (and also all other brand SLRs) the rear ring of the SP500mm is set during manufacture with the two green dots aligned together. Therefore with the above cameras be sure to use the lens in this position. With AI system cameras push the exposure meter coupling lever on the camera upwards to prevent the lens from cross-coupling to the meter. This allows the lens to be used in the stop-down metering mode in the same manner as a Nikon lens.

INSTALLING AND REMOVING THE TAMRON ADAPTALL CUSTOM MOUNT

B) With Nikkormat FT, FTN, EL and ELW:
As explained on the label affixed on the rear cap of the lens, slacken the red screw on the rear ring with the screwdriver supplied, and turn the ring clockwise all the way until it stops. Then retighten the screw. This allows the lens to be used in the stop-down metering mode in the same manner as a Nikon lens.

3. Your Tamron lens which is now fitted with an Adaptall custom mount can be secured to your camera in the same manner as the camera manufacturers' lenses.

4. Removing the Custom Mount:
An L-shaped mount release lever is provided directly opposite the aperture indicator window which, when depressed, releases the mount. Therefore, while keeping the L-shaped mount release lever depressed, turn the custom mount counterclockwise until it stops and then lift the mount off the lens.



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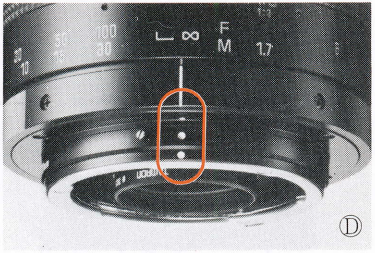

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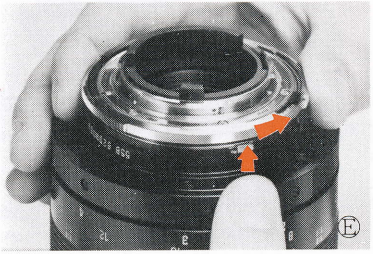
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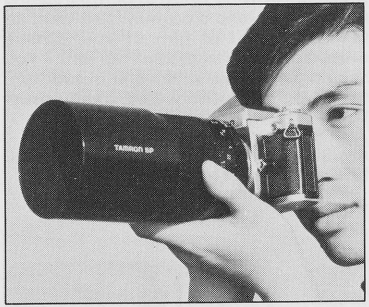
(1) Correct Method of Handling a Long Telephoto Lens and Using It with a Tripod

Compared with telephoto lenses normally used (i.e. 135 to 300mm), the angle of view of your lens is considerably narrower, which can possibly cause "camera shake" problems when the shutter is released. Therefore, taking this into consideration, follow the recommendations as described below when you use the lens.

a. Hand-Held Photography

Hold the focusing ring of the lens with your left hand. Draw the camera near and hold it firmly against your face with left hand. If you wear glasses, fix the viewfinder frame securely against the glasses. The slowest shutter speed which permits hand-held shots is normally considered to be 1/focal length of the lens. Therefore, with your lens, it is recommended that you use a shutter speed of 1/500 second or faster, however, depending upon the extent of your proficiency in hand-held photography with a long telephoto lens, shutter speeds slower than 1/500 second may also be used.



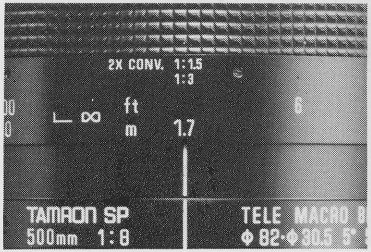
b. With Tripod:

It is recommended to use heavy duty tripod when using a long telephoto lens. Also use cable release for shutter releasing.

(2) Focusing

a. While looking through your camera's viewfinder, turn the focusing ring until you see a sharp image. If your camera accepts different focusing screens, then it is advisable to use a matte-fresnel screen. This type of screen is normally recommended for ultra-telephoto lenses and it will make focusing easier.

Note: Since your mirror lens is an ultra-telephoto lens, the position of the distance scale index and infinity mark are



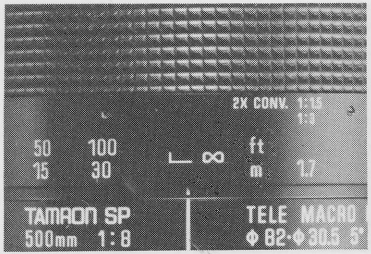
moved slightly to the positive side. (In case of SP500mm lens, this position is marked with L-shaped mark on the distance scale).

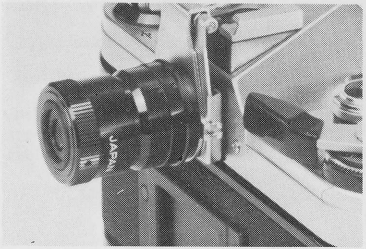
b. Focusing In Macro Mode

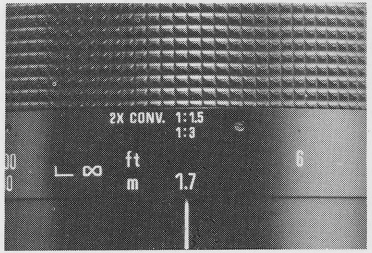
The depth of field becomes extremely shallow when you use an ultra-telephoto lens in the macro mode. You should first practice focusing prior to photographing any subjects and you may also want to take a test roll of film. If your camera accepts interchangeable screens you should use a cross-screen and in addition, a viewing magnifier would greatly assist you.

(3) Macro Operation

The Tamron mirror lens has a new feature which permits continuous focusing from infinity to macro and no additional special operation is required for macro use. On the focusing ring, the macro magnification ratios are shown in orange. In addition, the magnification ratios for use with the SP 2X tele-converter (which doubles the focal length of the lens) are engraved in yellow. Simply set the lens at the desired macro magnification scale and then focus the lens.







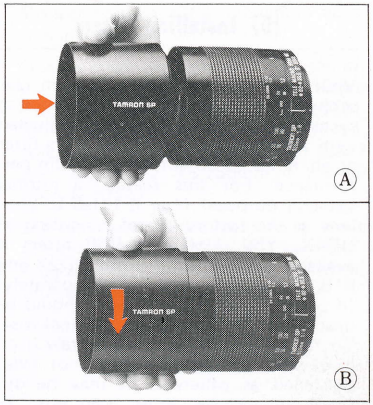
Note for custom mounts which have an aperture scale

Some custom mounts such as Nikon AI and Minolta MD have an aperture scale which is visible in cameras which have this facility. When fitting the custom mount simply align the green dot on the mount with the matching green dot on the lens barrel as described in the owner's manual. Please note that as the SP 500mm lens has a fixed aperture of F/8 this value is transmitted to the camera irrespective of the fact that the aperture display on the mount shows F/4. Similarly, when the 01F flat field 2X tele-converter is used the effective aperture value of F/16 is transmitted to the camera although the aperture display on the mount again shows F/4, and F/8 is indicated on the body of the tele-converter itself. As mentioned the above has no effect in actual picture taking as the correct exposure value is always transmitted to the camera.

(4) Lens Hood

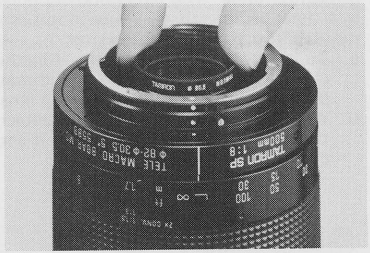
A lens hood is supplied with the Tamron lens. The lens hood prevents unnecessary light from striking the lens and causing unwanted glare. The lens hood supplied is a detachable, screw-in type hood employing a very convenient system.

a. To attach the hood, rotate it in the clockwise direction onto the thread provided on the front end of the lens.
b. When the lens is not in use, detach the hood from the lens, reverse it and put it on the lens barrel.



(5) Installing Filters

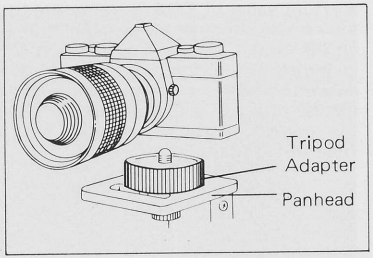
Your mirror lens accepts 30.5mm rear screw-in filters. Since the focusing system of the lens is precisely adjusted with a filter fitted, you must use a filter at all times to obtain the optimum performance. For this reason, a normal (general purpose) filter is fitted to your lens at the factory. A set consisting of ND4X, Y52, O56 and R60 filters is available as an optional extra. ND2X and 81B filters are also available separately. In order to remove a filter it should be unscrewed by turning it anticlockwise. To fit another filter simply screw it on clockwise making sure it is not overtightened as otherwise it may be difficult to remove. When you wish to replace filters, it is easier if the custom mount is removed from the lens. It is best to use filters which have been precision engineered for ultra tele photo lenses and hence this is the reason the above mentioned filters are available. You should always hold the filter by its rim and not by the glass surface because finger prints, etc. can damage the quality of your pictures and possibly damage the filter coating.



(6) Mounting on the Tripod

Although the compact design of the lens allows successful hand-held shooting in certain circumstances, it is usually advisable to use a sturdy tripod due to the highly magnified image.

To mount the lens on a tripod, use the tripod socket of the camera. In some cases, the lens catches on the tripod panhead which stops the camera from being mounted correctly. In these cases the camera can be raised sufficiently by using the "tripod adaptor" supplied with the lens, which acts as a spacer between camera and panhead. It is also advisable to use a cable-release when shooting with a tripod.



6. TAMRON ADAPTALL/ADAPTALL-2 MOUNT SYSTEM

Mount	Mount Type	Adaptall lenses	SP/ Adaptall-2 lenses
For Canon	Bayonet type	X	○
For Minolta MD	Bayonet type	X	○
For Konica AR	Bayonet type	X	○*
For Contax/Yashica	Bayonet type	X	○
For Olympus	Bayonet type	○	○
For Pentax K	Bayonet type	○	○
For Pentax ES	Screw-in type	○	○◈
For Pentax Universal	Screw-in type	○	○
For Nikon AI/E	Bayonet type	X	○
For Nikon AI	Bayonet type	○▲1	○▲1
For Fujica AX	Bayonet type	X	○
For Fujica ST	Screw-in type	○	○
For Mamiya ZE	Bayonet type	○	○
For Rollei	Bayonet type	○	○
For Topcon	Bayonet type	○	○◈
For Praktica-B	Bayonet type	○▲2	○
For Praktica-LLC	Screw-in type	○	○
For "C" mount for CCTV/VTR cameras and 16mm movie cameras		○	○
For "MS" mount for CCTV/VTR cameras		○	○

* Mount requires initial maximum aperture adjustment.

◈ Due to small rear aperture, this mount will not accept the SP 70-210mm F/3.5-4 (52A), SP 90mm F/2.5 (52B), SP flat-field 2X tele-converter (01F), Adaptall-2 80-210mm F/3.8-4 (03A) and Adaptall-2 75-250mm F/3.8-4.5 (04A & 104A).

▲1 Will not synchronize with Auto Mode of designated speed light of Nikon EM.

▲2 Program AE system and AE system of shutter speed priority will not work.

7 SPECIFICATIONS OF TAMRON LENSES

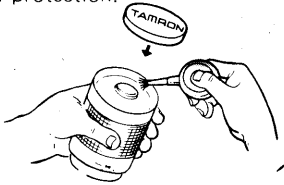
Model No. / Specification	13A	17A	27A	01A	28A	22A	26A	19AH	103A
Focal Length	24–48mm	35–70mm	28–80mm	35–80mm	28–135mm	35–135mm	35–210mm	70–210mm	80–210mm
Max. Aperture	F/3.5–3.8	F/3.5	F3.5–4.2	F/2.8–3.8	F/4–4.5	F/3.5–4.2	F/3.5–4.2	F/3.5	F/3.8–4
Angle of View	84°–48°	64°–34°	75°–30.5°	64°–30°	75°–18°	63°–18°	64°–11°	34.5°–12°	30°–11°
Lens Construction	9/10	7/7	8/9	8/9	10/17	12/14	12/16	11/15	10/13
Coating	BBAR Multiple Layer Coating								
Minimum Focus from Film Plane	0.6m	0.25m	0.36m	0.27m	2.0m	1.8m	1.6m	0.85m	0.9m
Max. Reproduction Ratio	–	1 : 2.8	1 : 3.4	1 : 2.5	1 : 4	1 : 4	1 : 3.8	1 : 2.66	1 : 2.8
Aperture Range	3.5/3.8–32, AE	3.5–32, AE	3.5/4.2–32, AE	2.8/3.8–32, AE	4/4.5–32, AE	3.5/4.2–32, AE	3.5/4.2–22, AE	3.5–32, AE	3.8/4–32, AE
Lens Accessory Size	77mm	58mm	67mm	62mm	67mm	67mm	67mm	62mm	58mm
Length at ∞ (W/Nikon Mount) (mm)	61 (65.5)	55 (59.5)	82 (86.5)	72 (76.5)	106 (110.5)	105 (109.5)	121.2 (125.7)	150 (154.5)	137.7 (142.2)
Max. Diameter (mm)	64.5	65.6	70	64.5	70	72.4	73	71	65
Weight (g)	346	330	480	386	715	625	875	860	634
Lens Hood	Bayonet	Push-on	Bayonet	Push-on	Bayonet	Bayonet	Bayonet	Bayonet type, coupled to zooming	Screw-in

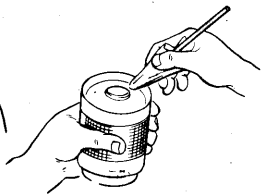
23A	06A	31A	51B	01B	02B	52B	03B	107B	54B	06B	55BB	01F
60–300mm	200–500mm	200–500mm	17mm	24mm	28mm	90mm	135mm	300mm	300mm	350mm	500mm	
F/3.8–5.4	F/6.9	F/5.6	F/3.5	F/2.5	F/2.5	F/2.5	F/2.5	F/2.8	F/5.6	F/5.6	F/8	
40°–8°	12°–5°	12.5°–5°	104°	84°	75°	27°	18°	8°	8°	7.3°	5°	–
11/15	8/14	10/14	10/12	9/10	7/7	6/8	4/4	6/7	5/6	4/7	4/7	5/6
BBAR Multiple Layer Coating												
1.9m	3.0m	2.5m	0.25m	0.25m	0.25m	0.39m	1.2m	3.0m	1.4m	1.1m	1.7m	–
1 : 1.55	–	1 : 3.52	–	–	1 : 5.8	1 : 2	1 : 7	–	1 : 3.3	1 : 2.5	1 : 3	–
3.8/5.4–32, AE	6.9–32	5.6–32	3.5–22, AE	2.5–22, AE	2.5–32, AE	2.5–32, AE	2.5–32, AE	2.8–32, AE	5.6–32, AE	–	–	–
62mm	82mm	95mm 43mm (rear)	Built-in	55mm	49mm	49mm	58mm	112mm 43mm (rear)	58mm	82mm 30.5mm (rear)	82mm 30.5mm (rear)	–
161.5 [166]	370 [374.5]	360.5 [365]	43 [47.5]	38 [42.5]	33 [37.5]	66 [70.5]	79.5 [84]	199 [203.5]	163.5 [168]	74.5 [79]	87 [91.5]	42.5 [47]
68	90	105	70	64.5	64.5	64.5	64.5	117.5	64.5	86	84	64.5
870	2,770	2,724	270	230	180	420	410	2,071	610	577	535	250
Bayonet	Built-in	Built-in	Push-on	Screw-in	Screw-in	Screw-in	Built-in	Bayonet	Built-in	Screw-in	Screw-in	–

* Specifications and availability are subject to change without notice.

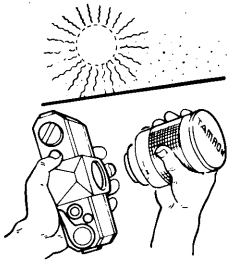
8. CARING FOR YOUR LENS

1. Avoid touching the surface of your lens. When not using your lens, be sure to put the lens cap on for protection.





2. Cleaning your lens:
   a. Use a photographic lens brush to remove dust or dirt from the surface.
   b. Moisten a lens cleaning tissue with one drop of cleaning solution and clean the surface gently.
   c. Remove excess moisture from the lens surface with a dry tissue.



3. When carrying a zoom lens mounted on your camera, hang it from your shoulder with the lens towards your body to protect it from objects that it might hit.

4. Fine photographic equipment can be delicate. Protect it from any avoidable impact.

5. Always store your lens in a cool, dry place. During humid or wet weather it is an especially good idea to store it with the silica gel packet that was supplied with your lens.