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TAMRON CO.,LTD.

Manufacturers of lenses for photographic, industrial, laboratory, video, and scientific applications.

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8703U Printed in Japan

TAMRON
SP 60-300mm F/3.8-5.4

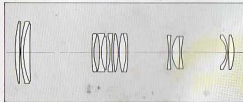
Model 23A



OWNER'S MANUAL

Thank you for selecting the Tamron 60-300mm F/3.8-5.4 zoom lens as the latest addition to your photographic equipment. Before using your new lens, please read the contents of this Owner's Manual thoroughly to become fully acquainted with the proper techniques that will give you the best results possible.

With proper handling and care, your Tamron lens will give you many years of beautiful and exciting pictures.



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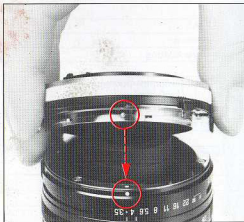
1. NAMES OF PARTS



2. SPECIFICATIONS

Focal Length	60~300mm
Aperture Range	F/3.8~5.4 – 32, AE
Lens Construction	11 groups, 15 elements
Coating	BBAR multiple-layer coating
Angle of View	40°~8°
Minimum Focus from Film Plane	1.9 m (6.2 ft.) (f=60mm-300mm) 0.3 m (11.8 in.) (f=60 mm)
Max. Reproduction Ratio	1:1.55 (f=60 mm M.O.D. 0.3 m)
Zooming System	One-touch, direct extention
Lens Accessory Size	62mm
Overall Length	166mm (w/Mount for Nikon) (6.5")
Max. Diameter	68mm (2.7")
Weight	870g (30.7 oz.)
Lens Hood	Bayonet type

3. FITTING/REMOVING THE ADAPTALL-2 MOUNT AND MOUNTING THE LENS TO YOUR CAMERA



This lens employs the Tamron Adaptall Interchangeable Mount system. The lens can be fitted to most of the SLR cameras on the market. Please read the instruction manual enclosed with the Adaptall Interchangeable Mount, so that the proper fitting is made.

1. Fitting the Mount to Your Lens

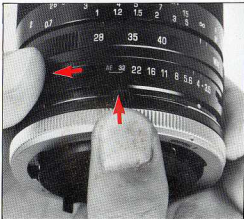
- (1) Align the green dot on the bayonet of the custom mount with the matching green dot on the lens barrel and turn the mount clockwise for approximately 2cm until the mount is locked into the proper position.



- (2) The custom mounts for cameras featuring TTL light-metering, AE and automatic diaphragm control, are provided with a meter coupling lever which activates the control ring. After fitting the custom mount, move the meter coupling lever so that it engages in the slot provided on the lens, and the exposure control mechanism of the lens will crosscouple to the camera's system.

NOTE: Some mounts have two coupling levers on both sides, so when fitting the mount of the lens, engage the two coupling levers in the corresponding slots on both sides of the lens.

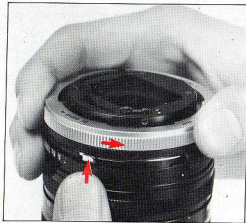
FITTING/REMOVING THE ADAPTALL-2 MOUNT AND MOUNTING THE LENS TO YOUR CAMERA



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2. Removing the Mount from Your Lens

- (1) Before removing the custom mount, be sure to move the aperture ring to the maximum opening. When the aperture ring is set at the AE position, depress the AE lock button to release the AE setting and then move the aperture control ring to the maximum opening.
- (2) An L-shaped mount release lever is provided directly opposite the aperture indicator which, when depressed, will release the mount. Therefore, while keeping the L-shaped mount release lever depressed, turn the custom mount counter-clockwise all the way until it stops and then lift the mount off the lens.



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3. Mounting the Lens to Your Camera

Your Tamron lens with the *Adaptall* custom mount can be fitted to your camera in the same manner as the camera manufacturer's lenses. When fitting the lens and adapter onto a camera, be sure to move the aperture control ring of the lens to the maximum opening.

4. TAMRON ADAPTALL-2 CUSTOM MOUNTS

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 A/E	Bayonet type	X	○
For Nikon A1	Bayonet type	○ ^{▲1}	○ ^{▲1}
For Fujica AX	Bayonet type	X	○
For Fujica ST	Screw-in type	○	○
For Mamiya SX	Screw-in 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.

5. OPERATING INSTRUCTIONS

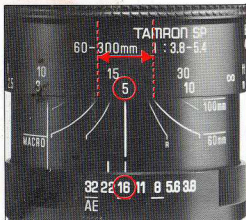


(1) Focusing

This lens features a one-touch zooming system, which means you can focus and zoom with one control ring. Focus by rotating the operating ring until the subject appears sharp in the viewfinder. Focusing is continuous from infinity to 1.9m throughout the entire focal length range. Almost life-size macro photography is possible at f=60mm. (For details, please refer to (4) MACRO OPERATION.)

It is easier to focus at the telephoto end of the zoom range due to the shallower depth of field.

The position of the infinity mark (∞) of this lens is shifted slightly to the positive side to enable focus adjustment even when focus shift is caused due to temperature changes. The shift range is denoted by an L-shaped line. Be sure to check the focus through the viewfinder even when you shoot at infinity.



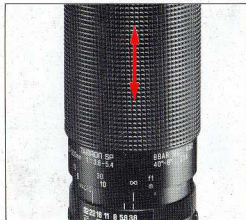
(2) Checking Depth of Field

To check depth-of-field, this lens has depth-of-field scales for apertures F/8, F/16 and F/32. The colors of the depth-of-field scales correspond to the colors of the lines under the aperture scales. The index for infra-red photography (red line marked R) can also be used as a depth-of-field scale at F/8.

Check depth-of field as follows:

Example: When you shoot at $f=100\text{mm}$, F/16, at a distance of 5 meters:

- (I) Set the aperture control ring to F/16.
- (II) Set the distance to 5 meters.
- (III) Read the value between the depth-of-field scale (two yellow lines in this case).



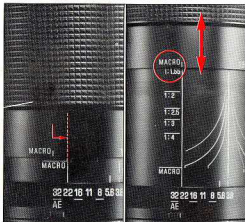
In this case, the depth-of-field is from 4 to 7 meters (13.1 to 23.0).

For depth-of-field at other apertures or more precise ones, please look at the depth-of-field tables on page 19.

When you want to check depth-of-field through the viewfinder of your camera, push the depth-of-field preview button on your camera (in case of Olympus cameras, push the built-in preview lever on the mount).

(3) Zooming

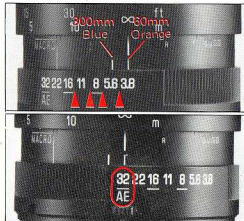
The focal length can be changed by pulling or pushing the operating ring, steplessly increasing or decreasing the size of the subject. Select the desired subject size and perspective while looking through the viewfinder.



(4) Macro Operation and Macro Magnification Ratio

With this lens, you can focus down to 0.3 meters (11.8 in.) at the 60mm focal length setting for an almost life-size 1:1.55 maximum magnification ratio. First, set the operating ring to the f=60mm setting and turn the ring to 1.9m minimum object distance setting. Pull the operating ring further and it will shift by about 1mm. Then, rotate the ring so that the orange lines on the right of the MACRO marks on the operating ring and the lens barrel meet together. Push the operating ring forward towards the object and you can see macro magnification scales, which show the macro magnification ratios at each setting. In this operation the object distance can be changed steplessly from 1.9m so the image will never disappear.

When you want to return to the normal mode



after macro operation, pull the operating ring towards the camera body and rotate it counter-clock-wise.

You can zoom when the operating ring goes past 1.9m, the minimum object distance in the normal mode.

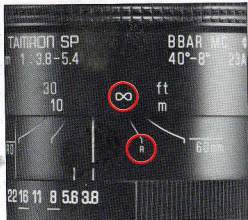
In macro photography, the operating ring will only shift forwards or backwards.

(5) Aperture Control

Rotate the aperture control ring and set the required aperture against the index line. In fact, there are two aperture indexes, because the maximum aperture of this lens changes at the wideangle and telephoto ends. Set the desired f-stop to the orange line at the wideangle position (f=60mm) or to the blue line at the telephoto position (f=300mm).

[Intermediate click stops are provided from F/3.8 to F/32].

OPERATING INSTRUCTIONS



(6) AE Setting

When using your lens on cameras which incorporate a shutter priority automatic mode, turn the aperture control ring on your lens to the AE position which also serves F/32 when the lens is used on other cameras.

(7) Infra-Red Index

Since the focal point shifts in infra-red photography, it is necessary to correct the focus. Focus in the normal manner, and shift the indicated distance to the red line marked "R".



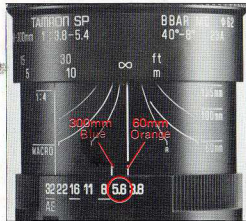
(8) Lens Hood

A bayonet type lens hood is supplied. The use of this lens hood is always recommended since it prevents unwanted light from striking the lens and causing image degrading flare, which results in poor print quality.

(9) Depth of Field Tables

Example of the use of depth of field tables:
Shooting at a distance of 5m (16.4 ft) with the aperture set at F/5.6 at a focal length of 135mm.
Read off the depth of field from where the F/5.6 column intersects with the 5m (16.4 ft) distance on the horizontal row. In this case the depth of field is from 4.78–6.24m.

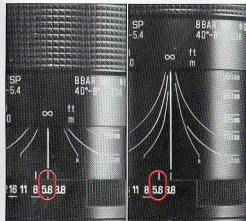
Focal Length	Aperture (F)				
	Distance (m)	4.7	5.6	8	11
f = 135mm	1.00	1.88 – 1.92	1.87 – 1.93	1.86 – 1.94	1.85 – 1.95
	2.00	1.97 – 2.03	1.97 – 2.03	1.96 – 2.04	1.95 – 2.05
	3.00	2.94 – 3.07	2.92 – 3.08	2.89 – 3.12	2.87 – 3.15
	5.00	4.91 – 5.20	4.78 – 5.24	4.69 – 5.36	4.64 – 5.43
	10.00	9.24 – 10.9	9.11 – 11.1	8.78 – 11.6	8.64 – 11.8



(10) Notes: Shooting with an electronic flash

This lens features a variable aperture design, with the maximum aperture changing about one stop between the wideangle and telephoto ends of the zoom range (F/3.8–F/5.4). When you shoot in the normal mode using a TTL light metering mode, the aperture will automatically be adjusted to the amount of the incident light. When shooting with an electronic flash, adjust the aperture by following the procedure below.

1. Set the f-stop (obtained from the guide number of the flash) to the orange aperture index line at the 60mm wideangle end or the blue aperture index line at the 300mm telephoto end.
2. When you shoot at an intermediate focal length setting or while zooming, set the



3. When shooting with the type of auto flash that controls the f-stop with a signal from the camera, use the flash in a manual mode.
4. When you use film with limited latitude such as reversal film, at f=60–100mm, set the f-stop to the blue index line. At f=100–200mm, to the middle of the two lines and f=200mm and over, to the orange index line. This way, you will get the correct exposure.

NOTE: When shooting with cameras that control the exposure during exposure itself, no adjustment is needed.

6. DEPTH OF FIELD TABLES

Focal Length	Aperture (F)		3.8	4	5.6	8	11	16	22	32
	Distance (m)									
f = 60mm	1.90	1.81 ~	1.81 ~	1.77 ~	1.72 ~	1.66 ~	1.58 ~	1.48 ~	1.35 ~	
		2.00	2.01	2.05	2.12	2.22	2.41	2.70	3.36	
	2.00	1.90 ~	1.89 ~	1.86 ~	1.80 ~	1.74 ~	1.64 ~	1.54 ~	1.39 ~	
		2.11	2.12	2.17	2.26	2.37	2.59	2.92	3.73	
	3.00	2.76 ~	2.75 ~	2.66 ~	2.53 ~	2.40 ~	2.20 ~	2.00 ~	1.75 ~	
		3.29	3.31	3.45	3.69	4.05	4.82	6.30	13.1	
	5.00	4.32 ~	4.29 ~	4.06 ~	3.76 ~	3.44 ~	3.03 ~	2.64 ~	2.19 ~	
		5.95	6.01	6.53	7.54	9.34	15.6	87.5	∞	
	10.00	7.51 ~	7.41 ~	6.72 ~	5.90 ~	5.12 ~	4.21 ~	3.48 ~	2.71 ~	
15.1		15.5	19.8	34.6	54.0	∞	∞	∞		
20.00	11.9 ~	11.6 ~	9.99 ~	8.24 ~	6.77 ~	5.23 ~	4.12 ~	3.06 ~		
	64.4	73.0	∞	∞	∞	∞	∞	∞		
70.00	20.4 ~	19.7 ~	15.3 ~	11.5 ~	8.79 ~	6.33 ~	4.75 ~	3.38 ~		
	∞	∞	∞	∞	∞	∞	∞	∞		
200.0	25.1 ~	24.0 ~	17.8 ~	12.8 ~	9.52 ~	6.69 ~	4.95 ~	3.48 ~		
	∞	∞	∞	∞	∞	∞	∞	∞		
∞	28.6 ~	27.2 ~	19.4 ~	13.7 ~	9.97 ~	6.91 ~	5.06 ~	3.53 ~		
	∞	∞	∞	∞	∞	∞	∞	∞		

Focal Length	Aperture (F)		4.7	5.6	8	11	16	22	32
	Distance (m)								
f = 135mm	1.90	1.88 ~	1.87 ~	1.86 ~	1.85 ~	1.82 ~	1.79 ~	1.75 ~	
		1.52	1.93	1.94	1.96	1.98	2.02	2.08	
	2.00	1.97 ~	1.97 ~	1.96 ~	1.94 ~	1.91 ~	1.88 ~	1.83 ~	
		2.03	2.03	2.05	2.06	2.10	2.13	2.20	
	3.00	2.94 ~	2.92 ~	2.89 ~	2.85 ~	2.79 ~	2.72 ~	2.61 ~	
		3.07	3.08	3.12	3.16	3.24	3.34	3.53	
	5.00	4.81 ~	4.78 ~	4.69 ~	4.58 ~	4.42 ~	4.23 ~	3.96 ~	
		5.20	5.24	5.36	5.50	5.77	6.12	6.62	
	10.00	9.24 ~	9.11 ~	8.78 ~	8.39 ~	7.83 ~	7.24 ~	6.43 ~	
10.9		11.1	11.6	12.4	13.9	16.3	22.8		
20.00	17.1 ~	16.7 ~	15.6 ~	14.4 ~	12.7 ~	11.2 ~	9.36 ~		
	24.0	25.0	28.0	33.0	46.8	94.7	∞		
70.00	43.8 ~	40.9 ~	34.7 ~	29.2 ~	23.1 ~	18.5 ~	13.9 ~		
	174.0	244.0	∞	∞	∞	∞	∞		
200.0	73.7 ~	65.8 ~	51.1 ~	40.0 ~	29.3 ~	22.2 ~	15.9 ~		
	∞	∞	∞	∞	∞	∞	∞		
∞	116.0 ~	97.7 ~	68.5 ~	49.8 ~	34.3 ~	25.0 ~	17.2 ~		
	∞	∞	∞	∞	∞	∞	∞		

DEPTH OF FIELD TABLES

Focal Length	Aperture (F)		5.2	5.6	8	11	16	22	32
	Distance (m)								
f = 200mm	1.90	1.89~ 1.91	1.89~ 1.91	1.88~ 1.92	1.87~ 1.93	1.86~ 1.94	1.85~ 1.95	1.83~ 1.98	
	2.00	1.99~ 2.01	1.99~ 2.01	1.98~ 2.02	1.97~ 2.03	1.96~ 2.04	1.94~ 2.05	1.92~ 2.09	
	3.00	2.97~ 3.03	2.96~ 3.04	2.95~ 3.05	2.93~ 3.07	2.90~ 3.11	2.87~ 3.15	2.81~ 3.22	
	5.00	4.90~ 5.10	4.90~ 5.11	4.85~ 5.16	4.80~ 5.22	4.71~ 5.32	4.62~ 5.46	4.46~ 5.69	
	10.00	9.60~ 10.4	9.57~ 10.5	9.40~ 10.7	9.20~ 11.0	8.87~ 11.5	8.51~ 12.1	7.98~ 13.4	
	20.00	18.4~ 21.9	18.3~ 22.0	17.7~ 23.0	17.0~ 24.4	15.9~ 27.1	14.7~ 31.2	13.2~ 41.8	
	70.00	53.8~ 100.0	52.9~ 104.0	47.8~ 131.0	42.8~ 193.0	36.3~ 974.0	30.8~ ∞	24.6~ ∞	
	200.0	107.0~ 1481.0	104.0~ 2920.0	85.9~ ∞	70.7~ ∞	54.7~ ∞	43.0~ ∞	31.7~ ∞	
	∞	231.0~ ∞	214.0~ ∞	150.0~ ∞	109.0~ ∞	75.1~ ∞	54.6~ ∞	37.6~ ∞	

Focal Length	Aperture (F)		5.4	5.6	8	11	16	22	32
	Distance (m)								
f = 300mm	1.90	1.89~ 1.91	1.89~ 1.91	1.89~ 1.91	1.89~ 1.91	1.88~ 1.92	1.88~ 1.92	1.87~ 1.93	
	2.00	1.99~ 2.01	1.99~ 2.01	1.99~ 2.01	1.99~ 2.01	1.98~ 2.02	1.97~ 2.03	1.96~ 2.04	
	3.00	2.98~ 3.02	2.98~ 3.02	2.98~ 3.02	2.97~ 3.03	2.95~ 3.05	2.94~ 3.06	2.91~ 3.09	
	5.00	4.95~ 5.05	4.95~ 5.05	4.93~ 5.07	4.91~ 5.09	4.87~ 5.14	4.82~ 5.19	4.74~ 5.29	
	10.00	9.81~ 10.2	9.81~ 10.2	9.72~ 10.3	9.63~ 10.4	9.46~ 10.6	9.28~ 10.8	8.98~ 11.3	
	20.00	19.2~ 20.8	19.2~ 20.8	18.9~ 21.2	18.5~ 21.7	17.9~ 22.6	17.3~ 23.8	16.2~ 26.0	
	70.00	61.5~ 81.3	61.2~ 81.8	58.0~ 88.2	54.5~ 97.7	49.6~ 119.0	44.7~ 162.0	38.4~ 400.0	
	200.0	143.0~ 333.0	141.0~ 341.0	126.0~ 490.0	110.0~ 1071.0	91.7~ ∞	76.2~ ∞	59.5~ ∞	
	∞	500.0~ ∞	482.0~ ∞	338.0~ ∞	246.0~ ∞	169.0~ ∞	123.0~ ∞	84.4~ ∞	

7. SPECIFICATIONS OF TAMRON LENSES

Model No.	13A	17A	27A	35A	38A	42A	3048	36A	18A4	100A	164A
Focal Length	34-48mm	36-72mm	28-80mm	28-80mm	28-135mm	36-138mm	30-140mm	28-210mm	70-210mm	80-210mm	70-280mm
Max. Aperture	F/3.5-4.5	F/3.5	F/3.5-4.5	F/3.5-3.8	F/4-4.5	F/3.5-4.2	F/3.5	F/3.5-4.2	F/3.8	F/3.8-4	F/3.8-4.5
Angle of View	64°-48°	64°-34°	76°-30.5°	64°-30°	35°-18°	63°-18°	34°-18°	64°-11°	34.5°-12°	36°-11°	36°-10°
Lens Construction	9/10	7/7	8/9	6/6	10/17	12/14	10/12	13/16	11/15	10/13	10/13
Coating	BBAR Multiple Layer Coating										
Minimum Focus from Film Plane	0.6m	0.25m	0.38m	0.27m	2.0m	1.8m	0.7m	1.6m	0.85m	0.6m	1.2m
Max. Reproduction Ratio	-	1:2.8	1:3.4	1:3.5	1:4	1:4	1:5	1:3.8	1:3.68	1:2.8	1:3.4
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	3.5-32, AE	3.5/4.2-32, AE	3.5-32, AE	3.8/4-32, AE	3.8/4.5-32, AE
Lens Accessory Size	77mm	58mm	67mm	62mm	67mm	67mm	48mm	67mm	62mm	58mm	62mm
Length in (w/ Nikon Mount) (mm)	61 (58.4)	66 (59.5)	82 (80.5)	73 (71.5)	106 (110.5)	105 (109.5)	99 (100.5)	121.2 (125.7)	160 (158.5)	137.7 (142.2)	172 (170.5)
Max. Diameter (mm)	64.5	65.6	70	64.5	70	72.4	64.5	70	71	65	71
Weight (g)	340	330	480	385	715	625	450	875	860	630	890
Lens Hood	Bayonet	Push-on	Bayonet	Push-on	Bayonet	Bayonet	Built-in	Bayonet	Bayonet type, coupled to zooming	Screw-in	Built-in

23A	85A	31A	51B	61B	028	028	050	048	100B	048	068	080B	01F
80-200mm	21-35mm	200-500mm	11mm	24mm	28mm	50mm	135mm	200mm	300mm	300mm	350mm	500mm	
F/2.8-5.4	F/1.5	F/6.6	F/3.5	F/2.5	F/2.8	F/2.8	F/2.5	F/3.5	F/2.8	F/5.6	F/5.6	F/8	
60°-47°	34°-2°	12.5°-4°	100°	84°	76°	37°	36°	12°	6°	6°	3.2°	5°	-
11/15	12/15	10/14	10/13	9/10	7/7	6/6	4/5	5/5	6/7	5/5	4/7	4/7	5/5
BBAR Multiple Layer Coating													
1.0m	2.5m	2.0m	0.20m	0.25m	0.25m	0.20m	1.2m	1.7m	3.0m	1.4m	1.5m	1.7m	-
1:1.88	-	1:3.52	-	-	1:5.8	1:2	1:7	1:5.9	-	1:3.3	1:3.5	1:3	-
3.0/5.4-32, AE	4.5-32, AE	5.6-32	3.5-32, AE	2.5-22, AE	2.5-32, AE	2.5-32, AE	2.5-32, AE	3.5-32, AE	2.8-32, AE	5.6-32, AE	-	-	-
62mm	62mm	65mm (43mm front)	Built-in	58mm	49mm	49mm	58mm	58mm	112mm (43mm front)	68mm	82mm (30.5mm front)	82mm (30.5mm front)	-
161.5 (159.5)	274 (278.5)	365 (369.5)	40 (47.5)	38 (42.5)	33 (37.5)	66 (70.5)	70.5 (84)	108 (112.5)	169 (203.5)	103.5 (108)	74.5 (78)	87 (91.5)	42.5 (47)
60	36	185	20	44.5	65.5	61.5	64.5	68	117.5	64.5	86	84	64.5
370	2,140	2,700	270	230	180	420	470	540	2,070	610	572	505	380
Bayonet	Built-in	Built-in	Push-on	Screw-in	Screw-in	Screw-in	Screw-in	Built-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 lens surface. Use a photographic brush or blower to remove dust from the lens surface. When not using the lens, put a lens cap on for protection.
2. Use a lens cleaning tissue or lintless cloth with a drop of cleaning solution to clean fingerprints or dirt on the lens surface with a rotary motion from center to edge. Use a silicon cloth to clean your lens barrel only.



3. When carrying a lens on your camera without a camera case, hang it from your shoulder with the lens towards your body to protect it from objects which it might hit.

4. When storing your lens in a lens case, turn the focusing ring so that the ∞ mark on the distance scale is aligned to the index line. Also store it with a packet of desiccant.



5. Fungus is an enemy of your lens. Clean the lens after shooting at seaside or in a humid place. Store your lens in a clean, cool and dry place. If you find fungus on your lens, please consult a repair shop or nearby photographic store.