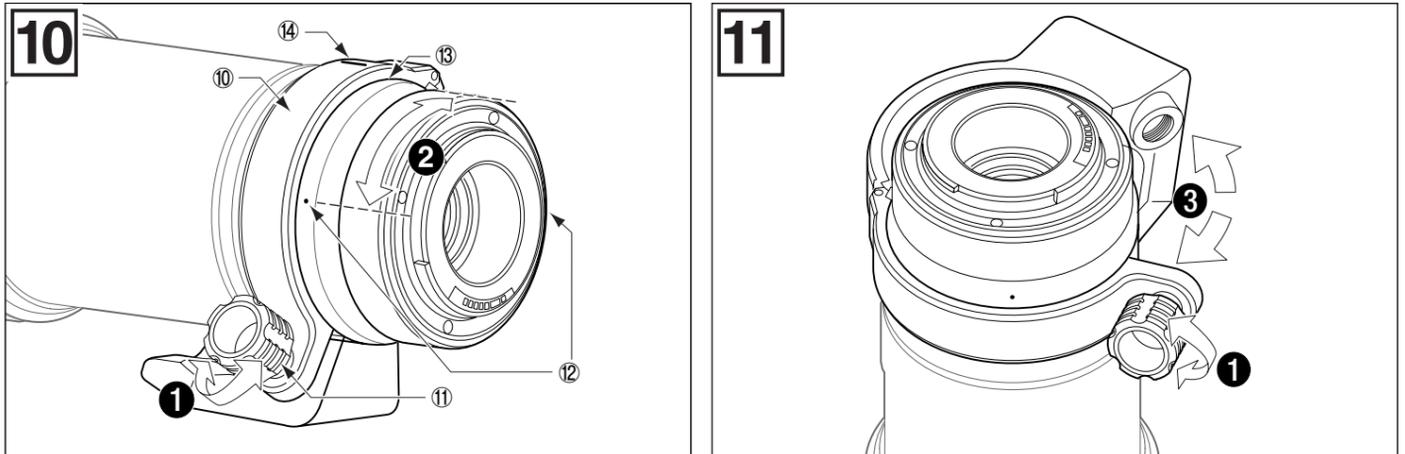
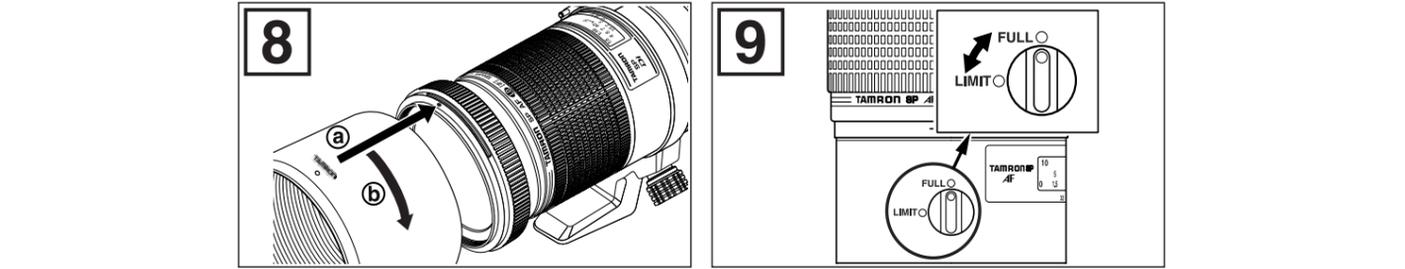
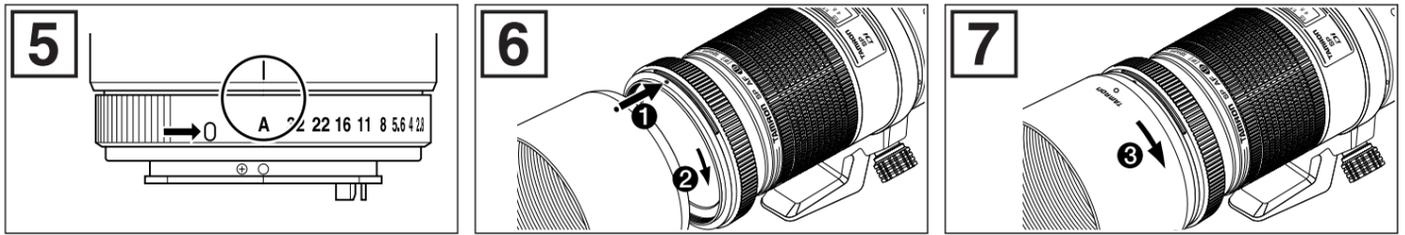
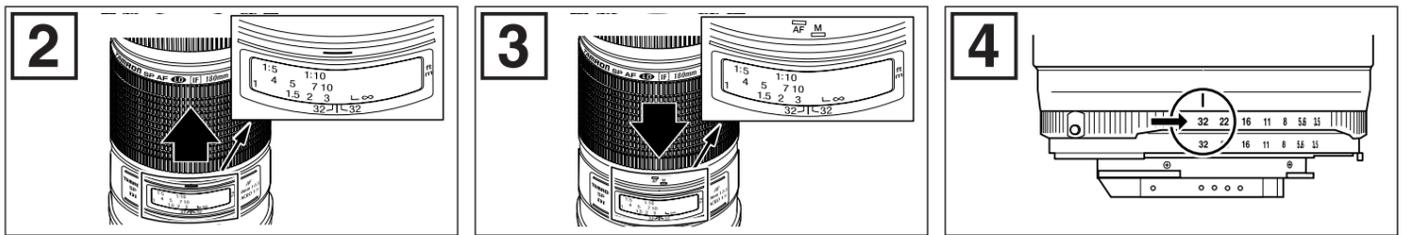
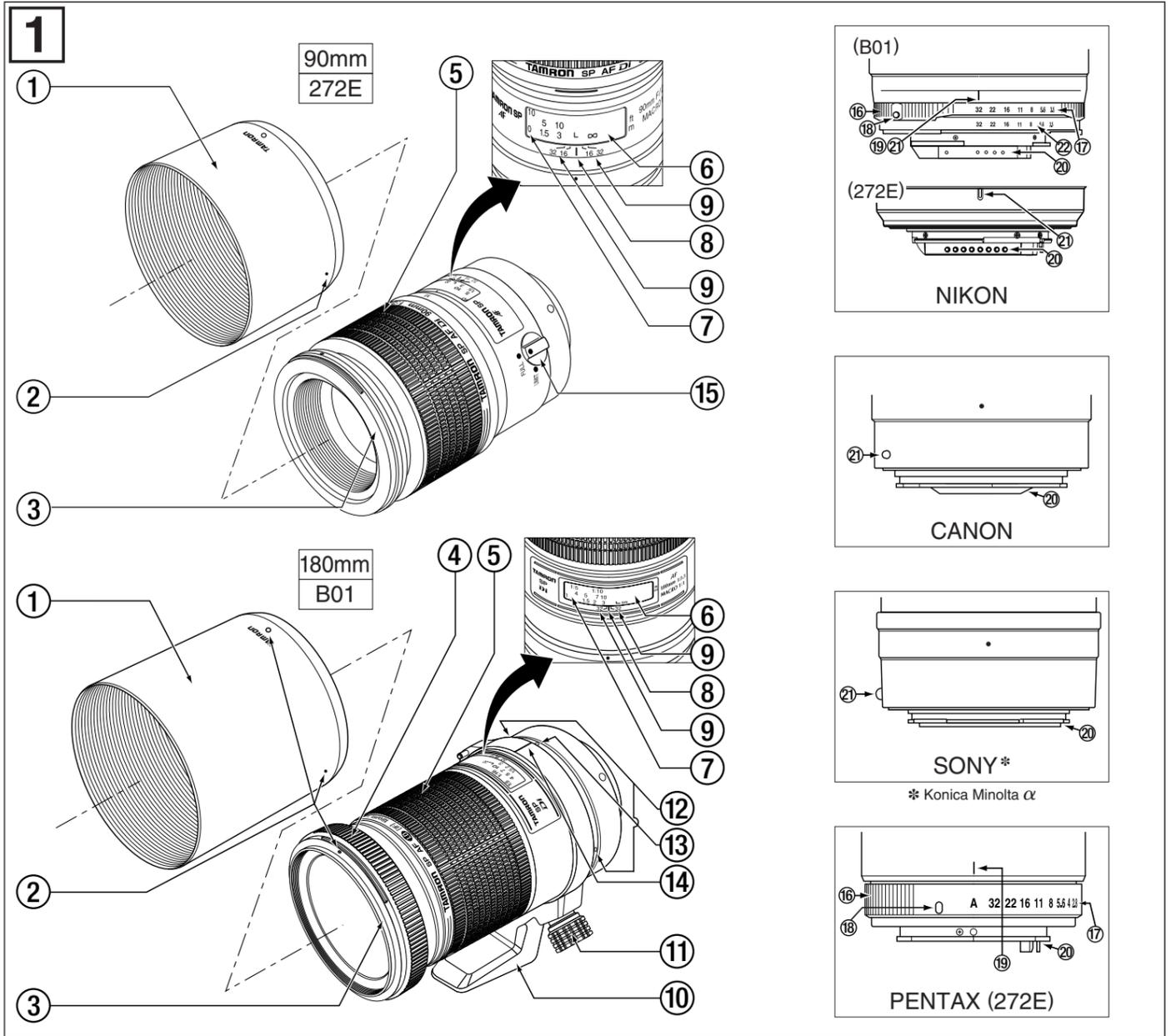


TAMRON

- SP AF 90mm F/2.8 Di Macro1:1 (Model 272E)
- SP AF 180mm F/3.5 Di LD [IF] Macro1:1 (Model B01)



12 272E (90mm)

	①	②	③	④
1:1	0.29m	3.98x	+2.0	
1:1.1	0.30m	3.63x	+1.8	
1:1.3	0.31m	3.11x	+1.7	
1:1.5	0.32m	2.76x	+1.5	
1:1.8	0.34m	2.40x	+1.3	
1:2	0.35m	2.23x	+1.2	
1:2.8	0.42m	1.82x	+0.8	
1:3	0.43m	1.76x	+0.8	
1:4	0.52m	1.55x	+0.7	
1:5	0.61m	1.43x	+0.5	
1:7	0.78m	1.30x	+0.3	
1:10	1.04m	1.20x	+0.3	

12 B01 (180mm)

	①	②	③	④
1:1	0.47m	2.69x	+1.4	
1:1.2	0.49m	2.27x	+1.2	
1:1.5	0.54m	1.91x	+0.9	
1:2	0.62m	1.60x	+0.7	
1:3	0.80m	1.34x	+0.4	
1:5	1.15m	1.17x	+0.2	
1:10	2.03m	1.04x	+0.1	

- ① Magnification
Agrandissement
Vergrößerung
Aumento
Ingrandimento
Vergröttingsfactor
Aumentar
放大率
- ② Distance
Distancia
Abstand
Distanca
Afstands
Afstands
Distância
聚焦点
- ④ Exposure factor
Facture d'exposition
Korrekturfaktor
Factor de exposicion
Fattore esposizione
Belichtingsfactor
Fator de exposiçao
曝光放大倍率
- ③ Exposure compensation
Correction d'Exposition
Bilichtungskorrektur
Compensacion de la exposicion
Controllo esposizione
Belichtingscorrector
Correçao da exposiçao
放大倍率修正

13 272E (90mm)

	F/2.8	F/4.0	F/5.6	F/8.0	F/11.0	F/16.0	F/22.0	F/32.0
0.291m	0.291-0.292	0.291-0.292	0.291-0.292	0.291-0.292	0.291-0.292	0.291-0.292	0.290-0.293	0.290-0.293
0.4m	0.399-0.401	0.399-0.401	0.398-0.402	0.398-0.402	0.397-0.403	0.395-0.405	0.394-0.407	0.391-0.410
0.5m	0.498-0.502	0.498-0.502	0.497-0.503	0.495-0.505	0.494-0.506	0.491-0.509	0.488-0.513	0.482-0.519
0.6m	0.597-0.603	0.596-0.604	0.595-0.605	0.593-0.608	0.590-0.611	0.585-0.616	0.580-0.622	0.572-0.632
0.8m	0.794-0.806	0.792-0.808	0.789-0.811	0.785-0.816	0.779-0.822	0.770-0.832	0.760-0.845	0.743-0.868
1.0m	0.991-1.009	0.987-1.013	0.982-1.019	0.975-1.027	0.966-1.037	0.951-1.055	0.934-1.078	0.907-1.117
1.5m	1.477-1.524	1.469-1.533	1.456-1.546	1.439-1.567	1.417-1.594	1.382-1.641	1.343-1.702	1.282-1.814
3.0m	2.903-3.104	2.866-3.147	2.816-3.210	2.744-3.310	2.660-3.444	2.530-3.694	2.390-4.047	2.190-4.820
5.0m	4.727-5.307	4.628-5.438	4.495-5.636	4.309-5.961	4.097-6.426	3.778-7.390	3.474-9.018	3.055-14.294
10.0m	8.941-11.364	8.587-11.975	8.129-13.005	7.527-14.933	6.890-18.337	6.041-29.623	5.265-114.488	4.340-∞
20.0m	16.13-26.321	15.00-30.021	13.64-37.563	12.01-60.327	10.45-250.236	8.597-∞	7.092-∞	5.497-∞
∞	70.84-∞	53.11-∞	39.14-∞	28.08-∞	20.76-∞	14.48-∞	10.64-∞	7.386-∞

13 B01 (180mm)

	F/3.5	F/4.0	F/5.6	F/8.0	F/11.0	F/16.0	F/22.0	F/32.0
0.47m	0.469-0.471	0.469-0.471	0.469-0.471	0.468-0.472	0.467-0.473	0.466-0.474	0.465-0.475	0.462-0.478
0.5m	0.499-0.501	0.499-0.501	0.499-0.501	0.498-0.502	0.497-0.503	0.496-0.504	0.495-0.505	0.493-0.507
0.55m	0.549-0.551	0.549-0.551	0.549-0.551	0.548-0.552	0.547-0.553	0.546-0.554	0.545-0.556	0.542-0.558
0.6m	0.599-0.601	0.599-0.601	0.598-0.602	0.598-0.602	0.597-0.603	0.595-0.605	0.594-0.606	0.591-0.609
0.7m	0.699-0.701	0.698-0.702	0.698-0.702	0.697-0.703	0.696-0.704	0.694-0.706	0.692-0.709	0.688-0.713
0.8m	0.798-0.802	0.798-0.802	0.797-0.803	0.796-0.804	0.794-0.806	0.792-0.808	0.789-0.811	0.784-0.817
1.0m	1.00-1.003	1.00-1.003	1.00-1.005	0.99-1.007	0.99-1.009	0.99-1.013	0.98-1.019	0.97-1.027
1.5m	1.49-1.507	1.49-1.508	1.49-1.511	1.48-1.516	1.48-1.522	1.47-1.533	1.46-1.545	1.44-1.567
2.0m	1.99-2.013	1.99-2.015	1.98-2.021	1.97-2.030	1.96-2.042	1.94-2.061	1.92-2.085	1.89-2.126
3.0m	2.97-3.031	2.97-3.035	2.95-3.050	2.93-3.071	2.91-3.099	2.87-3.146	2.82-3.204	2.75-3.307
∞	213.22-∞	191.68-∞	144.85-∞	106.00-∞	79.39-∞	55.97-∞	41.34-∞	28.80-∞

CE

* The CE Marking is a directive conformity mark of the European Community (EC).
 * Das CE-Zeichen entspricht der EC Norm.
 * La marquage CE est un marquage de conformité à la directive CEE (CE).
 * La marca CE es marca de conformidad segun directiva de la Comunidad Europea (CE).
 * Il marchio CE attesta la conformità alla direttiva della Comunità Europea (CEE).
 * CE标志表示符合欧洲共同体(CE)指标

The EEC Conformity Report applies to the Council Directive 98/336/EEC, 92/31/EEC, 93/68/EEC and is used by Tamron Co., Ltd., manufacturer of this product.

Thank you for purchasing the Tamron 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 familiarize yourself with your lens and the proper techniques for creating the highest quality images possible. With proper handling and care, your Tamron lens will give you many years of photographing beautiful and exciting pictures.

- Explains precautions that help to prevent problems.

- Explains things you should know in addition to basic operations.

NOMENCLATURE (Refer to Fig. ①, if not specified)

- | | |
|---|--|
| ① Lens hood | ⑫ Vertical indicator on tripod mount (B01) |
| ② Hood attaching alignment mark | ⑬ Horizontal indicator on tripod mount (B01) |
| ③ Hood attaching bayonet ring | ⑭ Tripod mount indicator (B01) |
| ④ Filter Effect Control (FEC) Ring (B01) | ⑮ Focus limiter knob |
| ⑤ Focusing ring | ⑯ Aperture ring (B01 Nikon, Pentax) |
| ⑥ Focus macro magnification scale display | ⑰ Aperture scale (B01 Nikon, Pentax) |
| ⑦ Distance (macro magnification) scale | ⑱ AE lock button (B01 Nikon, Pentax) |
| ⑧ Distance (macro magnification) index | ⑲ Aperture Index (B01 Nikon, Pentax) |
| ⑨ Depth-of-field scale | ⑳ Lens mount/ Lens mount contacts |
| ⑩ Tripod mount (B01) | ㉑ Lens attachment mark |
| ⑪ Tripod mount locking screw (B01) | ㉒ Aperture scale for finder display (Nikon) |

SPECIFICATIONS

	272E	B01
Focusing Distance	90 mm	180 mm
Maximum Aperture	F/2.8	F/3.5
Angle of View	27°	14°
Lens Construction	9/10	11/14
Minimum Focus Distance	0.29 m	0.47 m
Maximam Magnification Ratio	1:1	1:1
Filter Size	55 mm	72 mm
Length	97 mm	165.7 mm
Diameter	71.5 mm	84.8 mm
Weight	400 g	920 g

- Lengths, diameters and weights listed in lens specifications are for lenses with Nikon mounts.
- Features and cosmetic designs of lenses listed in this owner's manual may be revised without notice.

ATTACHING LENS TO CAMERA

How to mount the lens

Remove the rear cap of the lens, align the lens attachment mark on the lens barrel with its counterpart on the lens mount of the camera and insert the lens mount into camera's mount opening. Rotate the lens clockwise until it click-locks. For Nikon models, align the lens attachment mark with the dot on the camera and rotate the lens counter-clockwise until it click-locks.

How to detach the lens

Press the lens release button of the camera, turn the lens, counter-clockwise (in case of Nikon lens, clockwise), and lift the lens off the camera's lens mount.

- For further details, please read the instruction manual of your camera.

SWITCHING BETWEEN AF & MF MODES (Ref. Figs. ② & ③)

Nikon and Canon models

Simply move the focusing ring forward (to AF) and backward (to MF) to change the focusing mode between autofocus (AF) and manual focus (MF).

Sony and Pentax (272E) models

Move the focusing ring forward (to AF) and backward (to MF) and at the same time, set the AF/MF selector switch of the camera body to the coinciding focusing mode (AF or MF).

Mount	AF/MF Switching Operation
Nikon, Canon	Move focusing ring only
Sony, Pentax	Move and switch both focusing ring and selector of camera body

- Carefully read "Autofocus" and "Manual focus" sections below and operate the camera and lens accordingly. In addition, please refer to the instructions related to focusing operations of your camera.

FOCUSING (Autofocus (Ref. Fig. ②))

- Set the camera in the AF mode, and move the focusing ring upward to the AF position.
- Press the shutter release button half-way while looking through the viewfinder. The focusing ring will move automatically to focus.

- With Sony and Pentax cameras, when the focusing ring is set in the manual focus position while the camera is set in the AF mode, the focusing ring rotates as if it were in the autofocus mode. Turning of the focusing ring in this instance may cause damage to the lens and/or the camera body. Also, do not force the focusing ring when it is set in the manual focus mode. Manual rotation of the focusing ring when the camera is still set in the autofocus mode (AF) will cause mechanical damage to the lens and/or to the camera body.
- The distance scale (㉒) is marked for guidance purposes. The actual focal point may slightly differ from the distance marked on the focal length index.

FOCUSING (Manual Focus) (Ref. Fig. ③)

Nikon and Canon models

- Simply move the focusing ring backward to the MF position.
- Rotate the focusing ring manually while looking through the viewfinder until the image in the finder comes into sharp focus.

Sony and Pentax (272E) models

- Switch the AF/MF selector switch on the camera body to MF mode then, slide the focusing ring backward to the MF position.
- Rotate the focusing ring manually while looking through the viewfinder until the image in the finder comes into sharp focus.

- Before rotation of the focusing ring, make sure that the camera is set to the MF mode. Manual rotation of the focusing ring when the camera is still set in AF mode will cause mechanical damage to the lens and/or to the camera body.
- When using the lens on Nikon F-501 (N2020), please use the switches both on camera body and the lens in order to select MF or AF.
- When the focusing ring is set to the AF position, the focusing ring rotates freely and you cannot adjust focus.

- If you use the lens in the manual focus mode on an autofocus camera, rotate the focusing ring while holding the shutter release button depressed half-way. The focus confirmation indicator will light when subject comes into focus.
- Because B01 uses an internal focus mechanism, the lens does not extend (grow longer out of the front of the camera) even during macro photography. This prevents large loss of balance during focusing.
- The focusing ring rotates beyond the infinity (∞) position in order to properly focus to infinity under a variety of environmental conditions. When manually focusing, make sure the subject at infinity is sharp in the viewfinder.
- At infinity, make sure the image in the viewfinder appears sharp. The infinity position is made with certain allowances to insure proper focus under a variety of conditions.

LENS APERTURE AND AE MODE (Ref. Figs. ④ & ⑤)

Setting lens f-numbers with Nikon (272E), Canon & Sony cameras

Set the f-number with aperture setting device of the camera body in accordance with the selected photographing mode.

Setting lens f-numbers with Nikon (B01) & Pentax (272E) cameras

Depending on the photography mode, it is possible to set the aperture on either the lens aperture ring or on the camera body.

Setting the aperture on the lens aperture ring

Set the lens aperture ring so it is on the smallest f-stop for a Nikon camera and so it is not on the A mark for a Pentax, then set the f-stop you want with the indicator.

Setting the aperture on the camera

Set the lens aperture ring so it is on the smallest f-stop for a Nikon camera and so it is on the A mark for a Pentax, then set the f-stop you want with the indicator on the camera body.

- The lens aperture varies with focusing movement. Cameras read the different lens openings and automatically adjust the exposure properly.
- For further details, please read the instruction manual of your camera.

ATTACHING THE LENS HOOD (Ref. Fig. ①, ⑥, ⑦ & ⑧)

- Align the index mark (•) on the hood with the index mark (•) on the lens. Place the hood onto the hood's attaching bayonet ring. (⑥ - ①)
- Turn the hood clockwise until it clicks. (⑥ - ②) The index mark (○) on the hood appears at the top when it is correctly attached. (⑦ - ③)
- Stowing lens hood on the lens (Ref. Fig. ⑧)
 - Detach and reverse the lens hood. Then align the index mark (○) on the hood with the index mark (•) on the lens. Place the hood onto the hood's attaching-bayonet ring. (⑧ - ④)
 - Turn the hood clockwise until it clicks. The index mark (•) on the hood appears at the top when correctly stowed. (⑧ - ⑤)

USING THE FOCUS LIMITER (272E) (Ref. Figs. ⑨)

When the focus limiter knob is set to "LIMIT", the camera can be autofocused with greater speed within that range.

For the range from maximum close-up to infinity

Set the focus limiter knob to "FULL".

For close-ups (0.29m to approx. 0.4m)

Set the distance scale to a point between 0.29m and 0.4m, then set the focus limiter knob to "LIMIT".

For normal photos (0.45m to infinity)

Set the distance scale to a point between 0.45m and infinity (∞), then set the focus limiter knob to "LIMIT".

- When shooting close-ups with the focus ring set between about 0.40m and 0.45 m the focus limit knob cannot be set to LIMIT. This is due to the camera's mechanical system.

TRIPOD MOUNT (B01) (Ref. Figs. ⑩ & ⑪)

B01 is equipped with a tripod mount. Secure the camera to the tripod with the tripod mount when using tripod.

Changing the camera position

Setting the camera to vertical position

- Turn the tripod mount locking screw counter-clockwise to loosen it. (Fig ⑩, Step ①)
- Rotate the camera using the lens as the axis, and align Tripod mount indicator and the vertical indicator on tripod mount. (Fig ⑩, Step ②)
- Tighten the tripod mount locking screw and lock the camera into vertical position. (Fig ⑩, Step ①)

Setting the camera to horizontal position

- Turn the tripod mount locking screw counter-clockwise to loosen it. (Fig ⑩, Step ①)
- Rotate the camera using the lens as the axis, and align Tripod mount indicator and the horizontal indicator on tripod mount. (Fig ⑩, Step ②)
- Tighten the tripod mount locking screw and lock the camera into horizontal position. (Fig ⑩, Step ①)

Attaching and detaching the tripod mount

Removing the tripod mount

- Turn the locking screw on the tripod mount counter-clockwise. (Fig. ⑪, Step ①)
- The tripod mount will loosen and can then be removed from the lens. (Fig. ⑪, Step ③)

Attaching the tripod mount

- Loosen the tripod mount locking screw and attach it to the lens barrel. (Fig. ⑪, Step ①)
- Tighten the tripod mount locking screw and turn the locking screw clockwise to secure. (Fig. ⑪, Step ③)

- When attaching or removing the tripod mount, be careful not to drop the camera and/or the lens.
- Be cautious when carrying the lens while lens is attached to the tripod mount.

FILTER EFFECT CONTROL (B01)

B01 features a mechanism that allows you to rotate the filter with the hood on. Rotation of the ring (④ Filter Effect Control Ring), which is near where the filter attaches, triggers rotation of the filter allowing you to adjust the effect of the PL filter.

- The Filter Effect Control Ring and the filter rotates opposite to each other. When you rotate the Filter Effect Control Ring in a clockwise direction, the filter rotates in a counter-clockwise direction.
- The rotation angle of the Filter Effect Control Ring is different from that of the filter. If you wish to rotate the PL filter to an exact position using the index as the standard, remove the hood and rotate the filter while keeping an eye on the index mark.

- You can change the visual effect by rotating PL and non-PL special effects filters such as a cross filter.

ABOUT MACRO PHOTOGRAPHY (Ref. Fig. ⑫)

From infinity (∞) to the macro zone, you can use AF or MF operation.

Since the distance scale and the magnification scale are imprinted side by side, you can get a general idea of the magnification when shooting a picture.

	272E	B01
Minimum Focus Distance	0.29 m	0.47 m
Maximum Magnification ratio		1:1
Magnification scale		1:10 - 1:1

- For the correlation between the photographic distance and photographic magnification, please refer to table ⑫.

EXPOSURE RATE (Ref. Fig. ⑫)

When the lens is moved outwards to increase the magnification ratio for shooting close-ups, the actual brightness on the film decreases and the effective F number changes. For auto exposure photographing using the camera's TTL photometry function, the camera automatically corrects this changed effective F number. When shooting with photometry using an external exposure meter or when using an external light-adjusting flash, however, the exposure must be corrected for this decrease in brightness according to the magnification ratio. For the amount of the correction, refer to table ⑫.

DEPTH OF FIELD (Ref. Fig. ⑬)

With a camera equipped with a depth-of-field-preview button or a aperture-stop-down mechanism, the depth of field can be directly observed through the viewfinder screen of your camera. For the operational details, read the instruction manual of your camera.

INFRARED PHOTOGRAPHY

Please be aware that there is no infrared index line on any models listed in this owner's manual. Therefore practically no black-and-white infrared film can be used with these lenses.

PRECAUTIONS IN SHOOTING

- The optical design for 272E and B01 takes into consideration the various features of digital SLRs. However, due to the configuration of the digital SLRs, even when the autofocus accuracy is within specifications, the focal point may be a little forward or behind the optimum point when shooting with auto focus under some conditions.
- Do not use the lens hood when using the camera's built-in flash. Also, when shooting close-ups, the lens unit may obstruct the light of the flash even when not using the lens hood, resulting in vignetting at the bottom part of the image. Thus, we recommend using a special externally-mounted flash for flash photography. Also refer to the section of your camera's instruction manual pertaining to the use of the built-in flash.
- When using 272E and B01 with a tele-converter, use the manual focus. When a tele-converter is used with the macro lens, the autofocus may not operate correctly, depending on the focusing distance. This is due to the camera's mechanical system. Use a Tamron tele-converter with a Tamron lens for the best results. Tele-converters produced by other manufacturers may not mount properly and/or cause malfunctions. When a tele-converter is mounted onto a lens, the focusing ring normally feels heavier when rotating.
- When using the lens in macro range, it may be necessary to use a tripod to avoid camera shake. Using high speed film (ISO 400 or faster) with a fast shutter speed is also helpful to reduce the influence of camera shake.
- Do not forcibly turn the focusing ring when camera and/or lens is/are set in the AF mode. Doing so could damage the lens and/or camera.
- Certain camera models may indicate the maximum and minimum aperture values of the lens in approximate numbers. This is inherent to the design of the camera and not an indication of an error.

TO ENSURE LONG-TERM SATISFACTION

- Avoid touching the glass element surface. Use a photographic lens cloth or blower to remove dust from the lens element surface. When not using the lens, always place a lens cap on it for protection.
- Use a lens cleaning tissue or lint cloth with a drop of cleaning solution to remove fingerprints or dirt on the glass lens surface with a rotary motion from the center to the edge. Use a silicon cloth to clean your lens barrel only.
- Mildew is an enemy of your lens. Clean the lens after shooting near water or in any humid place. Store your lens in a clean, cool and dry place. When storing the lens in an lens case, store it with commercially available drying agent such as silicagel, and change the agent occasionally. If you find mildew on your lens, consult an authorized repair shop or nearby photographic store.
- Do not touch the lens-camera interface contacts since dust, dirt and/or stains may cause a contact failure between the lens and camera.
- When using your equipment [camera(s) and lens(es)] in an environment where the temperature changes from one extreme to the other, make sure to put your equipment temporarily in a case or a plastic bag for a length of time in order for the equipment to go through a gradual temperature shift. This will reduce potential equipment trouble.