

# AF-S<sup>VR</sup> Zoom-Nikkor ED 70–200mm f/2.8G IF



**Nikon**

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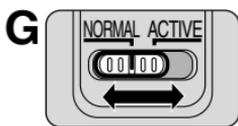
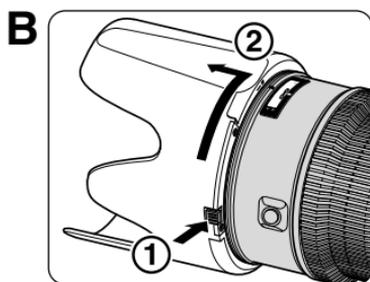
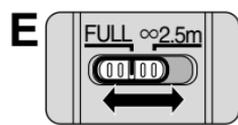
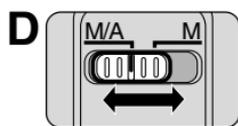
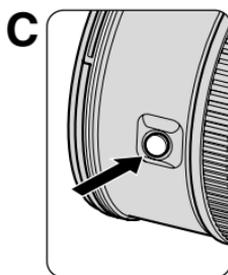
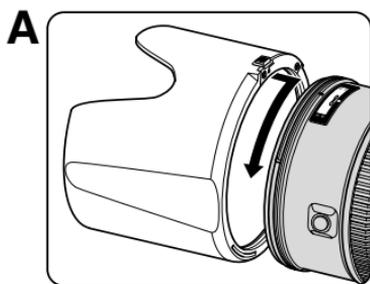
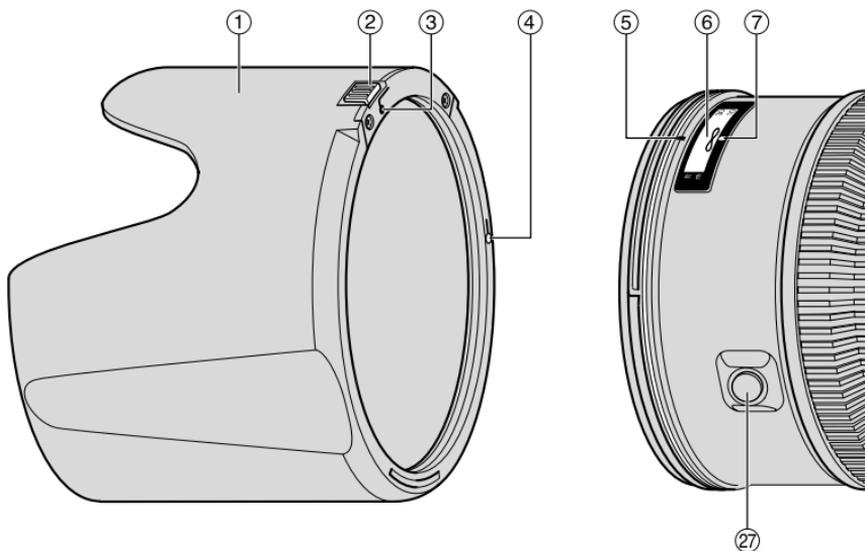
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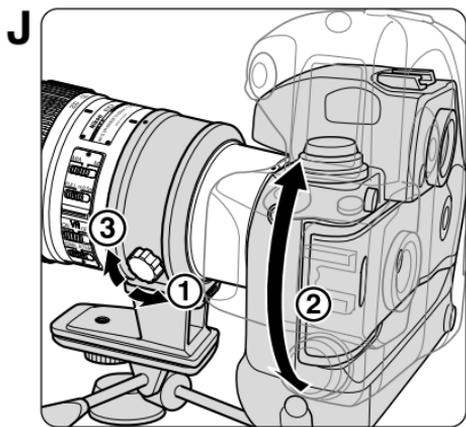
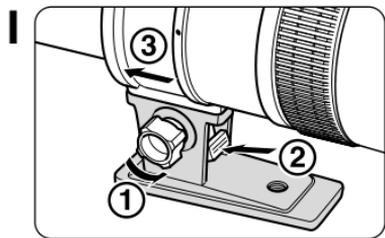
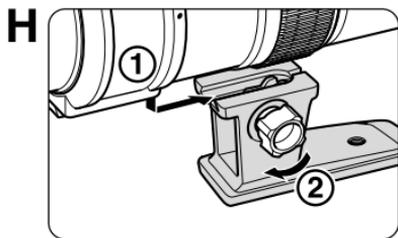
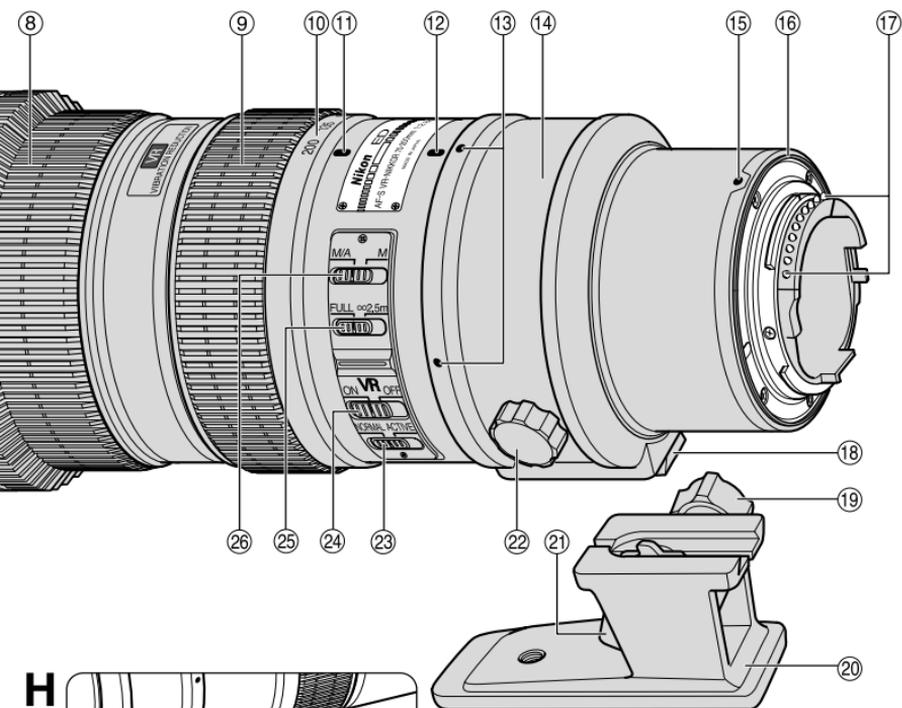
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## Nomenclature

- ① Lens hood
- ② Lens hood lock release button
- ③ Lens hood attachment index
- ④ Lens hood setting index
- ⑤ Lens hood mounting index
- ⑥ Distance scale
- ⑦ Distance index line
- ⑧ Focus ring
- ⑨ Zoom ring
- ⑩ Focal length scale
- ⑪ Focal length scale index line
- ⑫ Tripod collar ring rotating index
- ⑬ Position indexes (90°)
- ⑭ Tripod collar ring
- ⑮ Mounting index
- ⑯ Lens mount rubber gasket
- ⑰ CPU contacts
- ⑱ Tripod collar mounting foot
- ⑲ Tripod collar lock screw
- ⑳ Tripod collar
- ㉑ Tripod collar lock release lever
- ㉒ Tripod collar ring fastening screw
- ㉓ Vibration reduction mode switch
- ㉔ Vibration reduction ON/OFF switch
- ㉕ Focusing limit switch
- ㉖ Focus mode switch
- ㉗ Focus lock button

## Usable cameras and available functions

There may be some restrictions or limitation for available functions. Refer to your camera's instruction manual for details.

Cameras	Vibration reduction	Autofocus	Exposure mode			
			P*1	S	A	M
F6, F5, F100, F80-Series/N80-Series*, F75-Series/N75-Series*, F65-Series/N65-Series*, D2-Series, D1-Series, D100, D70	○	○	○	○	○	○
Pronea 600i/6i*, Pronea S*2	×	○	○	○	○	○
F4-Series, F90X/N90s*, F90-Series/N90*, F70-Series/N70*	×	○	○	○	×	×
F55-Series/N55-Series*, F60-Series/N60*, F50-Series/N50, F-401x/N5005*, F-401s/N4004s*, F-401/N4004*	×	×	○	○	○	○
F-801s/N8008s*, F-801/N8008*, F-601M/N6000*	×	×	○	○	×	×
Other Nikon cameras*3	×	×	×	×	×	×

\* Sold exclusively in the USA.

○: Possible ×: Impossible

\*1 P includes AUTO (General-Purpose Program) and Vari-Program System

\*2 Manual (M) is not available

\*3 This lens is not compatible with the F3AF

## Introduction

Thank you for purchasing the AF-S VR Zoom-Nikkor ED 70-200mm f/2.8G IF lens. This is a high-performance zoom lens featuring special Vibration Reduction (VR) and high-speed Internal Focusing (IF) mechanisms. It also employs a Silent (S) Wave Motor to drive the focusing mechanism.

## Major features

- With this lens, you can take pictures at shutter speeds approx. 3 stops slower than you ordinarily could without using a VR lens, expanding the range of usable shutter speed options and making telephoto shooting much easier without a tripod.
- Two vibration reduction modes are available: (1) the NORMAL mode for reducing camera shake, and, (2) the ACTIVE mode for reducing camera shake when taking pictures from a moving vehicle.
- Panning is also possible, as the lens automatically distinguishes panning from camera shake and vibration reduction works effectively (in the NORMAL mode).
- Autofocus (A) or manual (M) mode can easily be selected with the focus mode switch.
- Various functions provided: (1) autofocus with manual override providing an instant change from autofocus to manual focusing, (2) focusing limit switch to limit AF operation within a certain shooting distance, (3) focus lock button to lock focus on the lens, etc. (Refer to "Focusing.").
- More accurate exposure control is possible when this is mounted on a Nikon camera having 3D Matrix Metering capability, because subject distance information is transferred from the lens to the camera body.
- The use of five ED (extra-low dispersion) lens elements ensures sharp pictures virtually free of color fringing. Also, by utilizing a 9-blade diaphragm that produces a nearly circular aperture, out-of-focus images in front of or behind the subject are rendered as pleasing blurs.
- Closest focusing distance of 1.5m (4.9 ft.) (AF) and 1.4m (4.6 ft.) (MF) are provided.
- Detachable tripod collar is provided and can be removed when not needed.

## Important!

- Be careful not to soil or damage the CPU contacts.
- AF-/AF-S Teleconverters TC-14E/TC-14EII/TC-17EII/TC-20E/TC-20EII are usable. Even when a teleconverter is attached, both vibration reduction and autofocus functions work properly.
- When mounted on Nikon digital cameras (Nikon DX format) D2-Series, D1-Series, D100 and D70, the lens' picture angle becomes 22°50'–8° and its 35mm equivalent focal length range is approx. 105–300mm.
- If the lens mount rubber gasket is damaged, be sure to visit the nearest Nikon authorized dealer or service center for repair.

## Focusing

Set your camera's focus mode selector according to this chart:

Camera's focus mode		Lens' focus mode	
		M/A	M
Cameras F6, F5, F4-Series, F100, F90X/N90s*, F90-Series/N90*, F80-Series/ N80-Series*, F75-Series/ N75-Series*, F70-Series/N70*, F65-Series/N65-Series*, Pronea 600i/6i*, Pronea S, D2-Series, D1-Series, D100, D70	C S AF	Autofocus with manual priority	Manual focus (Focus assist is available.)
	M	Manual focus (Focus assist is available.)	
Other Nikon AF cameras (except the F3AF, F-601/N6006*)	C S AF M	Manual focus (Focus assist is available.)	

\* Sold exclusively in the U.S.A.

### Autofocus with manual override (M/A mode)

- 1 Set the focus mode switch to M/A. (Fig. D)
- 2 Autofocus is provided, but you can manually override the focus by operating the separate focus ring while lightly depressing the shutter release button or AF start (AF-ON) button on the camera body of cameras so equipped.
- 3 To cancel manual override, remove your finger from the shutter release button or the AF start button.

### To limit the range of autofocus (with M/A mode compatible cameras only)

With AF operation, if the subject is always more than 2.5m (8.2 ft.) away, set the focusing limit switch to "∞-2.5m" to reduce focusing time. If the subject is 2.5m (8.2 ft.) or closer, set it to "FULL" (Fig. E).

### Focus lock (with M/A mode compatible cameras only)

With autofocus operation, focus is locked while pressing the focus lock button. (Fig. C)

- The AF-Lock function can be engaged on either the camera and lens. Focus is locked while either of these buttons is pressed.

### Vibration reduction mode

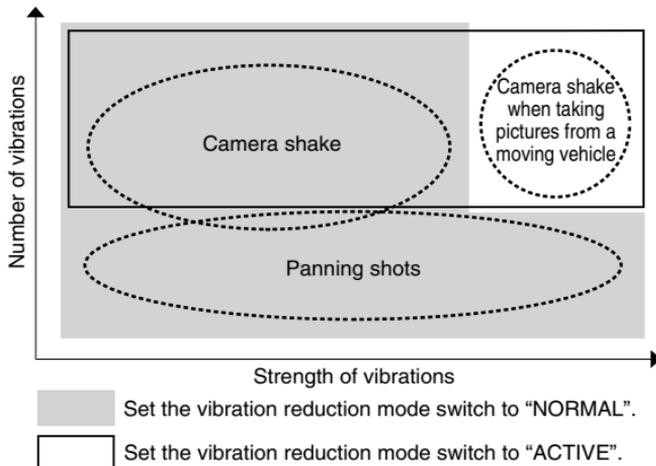
The following cameras are usable:

**35mm SLR cameras:** F6, F5, F100, F80-Series/N80-Series, F75-Series/N75-Series, F65-Series/N65-Series

**Digital SLRs cameras:** D2-Series, D1-Series, D100, D70

- When using the lens with cameras other than those listed above, set the vibration reduction mode switch to OFF to cancel the vibration reduction mode. With the Pronea 600i/6i camera, in particular, battery power may become depleted quickly if this switch is left ON.

## Basic concept of vibration reduction



When taking pictures	Set the vibration reduction mode switch to either "NORMAL" or "ACTIVE".
When taking panning shots	Set the vibration reduction mode switch to "NORMAL".
When taking pictures from a moving vehicle	Set the vibration reduction mode switch to "ACTIVE".

### Setting the vibration reduction ON/OFF switch (Fig. F)

**ON:** Vibration is reduced while the shutter release button is lightly pressed and also at the instant the shutter is released. Because vibration is reduced in the viewfinder, auto/manual focusing and exact framing of the subject are easier.

**OFF:** Vibration is not reduced.

### Setting the vibration reduction mode switch (Fig. G)

First, set the vibration reduction ON/OFF switch ON, then select the following mode:

**NORMAL:** The vibration reduction mechanism primarily reduces camera shake, making smooth panning shots possible.

**ACTIVE:** The vibration reduction mechanism reduces camera shake when taking pictures and those from a moving vehicle. In this mode, the lens does not automatically distinguish panning from camera shake.

## Notes on using vibration reduction

- Wait until the image in the viewfinder stops vibrating before fully depressing the shutter release button after you have lightly pressed the shutter release button.
- When taking panning shots, be sure to set the vibration reduction mode switch to NORMAL. If you move the camera in a wide arc when panning, vibration in the direction of that movement is not affected. For example, if you pan the camera horizontally, only vibration in the vertical direction is reduced, making smooth pans much easier.
- Due to the characteristics of the vibration reduction mechanism, the image in the viewfinder may become blurred after releasing the shutter.
- Do not turn the camera power OFF while the vibration reduction mode is in operation. Otherwise, the lens may emit a chattering noise if the camera is shaken. This is not a malfunction. Turn the camera power ON again to correct this.
- If the lens is removed from the camera while the vibration reduction mode is in operation, the same thing may happen as stated above. Mount the lens and press the shutter release button halfway to eliminate the chattering noise.
- With F80-Series/N80-Series, F75-Series/N75-Series, F65-Series/N65-Series, D100 and D70 cameras, vibration reduction does not work while the flash is recycling.
- When the lens is mounted on a tripod, set the vibration reduction ON/OFF switch to OFF. However, set the switch to ON when using a tripod without securing the tripod head, or when using a monopod.
- If you set the AF start (AF-ON) button to ON on the body of cameras so equipped, vibration reduction does not operate.

## Focusing, zooming, and depth of field

First turn the zoom ring until the desired composition is framed in the viewfinder before focusing. If your camera has a depth of field preview (stop-down) button or lever, depth of field can be observed while looking through the camera viewfinder.

## Setting the aperture

Because this lens does not have an aperture ring, you must set the aperture on the camera.

## Taking flash pictures with cameras having built-in flash

When using the following cameras, check the focal length and shooting distance before taking flash pictures to prevent vignetting since the light emitted from the flash may be obstructed by the lens barrel.

Cameras	Usable focal length / Shooting distance
F75-Series/N75-Series*	70mm / 3m (9.8 ft.) or greater 80mm or longer / No restriction
F70-Series/N70*	80mm / 1.8m (5.9 ft.) or greater 105mm or longer / No restriction
F65-Series/N65-Series*, F60-Series/N60*, F55-Series/N55-Series*	105mm / 1.8m (5.9 ft.) or greater 135mm or longer / No restriction
F50-Series/N50*	105mm / 4m (13.1 ft.) or greater 135mm or longer / No restriction
Pronea 600i/6i*	80mm / 2.5m (8.2 ft.) or greater 105mm or longer / No restriction
Pronea S	135mm / 4m (13.1 ft.) or greater 200mm / No restriction
F-401x/N5005*, F-401s/N4004s*, F-401/N4004*	135mm or longer / No restriction

\*Sold exclusively in the U.S.A.

## Recommended focusing screens

Various interchangeable focusing screens are available for certain Nikon SLR cameras to suit any picture-taking situation. The ones recommended for use with this lens are:

Screen Camera	Screen															
	A	B	C	E	EC-B EC-E	F	G1 G2	G3	G4	J	K	L	M	P	U	
<b>F6</b>	⊙	⊙	—	⊙	—	—	—	—	—	⊙	—	⊙	—	—	—	
<b>F5+DP-30</b>	⊙	⊙	⊙ (+0.5)	⊙	⊙	—	—	⊙	—	⊙	—	⊙	—	—	—	
<b>F5+DA-30</b>	⊙	⊙	⊙	⊙	⊙	—	—	⊙	—	⊙	—	⊙	—	—	—	
<b>F4+DP-20</b>	—	⊙	⊙	⊙	—	—	—	⊙	—	⊙	⊙	—	—	⊙	—	
<b>F4+DA-20</b>	—	⊙	⊙ (-0.5)	⊙	—	—	—	⊙	—	⊙	⊙	—	—	⊙	—	

⊙: Excellent focusing

⊙: Acceptable focusing

Slight vignetting or moiré patterns appear in the viewfinder, but not on the film.

—: Not available.

( ): Indicates degree of exposure compensation needed (Center-Weighted metering only). For F6 cameras, compensate by selecting "Other screen" in Custom Setting "b6: Screen comp." and setting the EV level to -2.0 to +2.0 in 0.5 EV steps. When using screens other than type B or E, "Other screen" must be selected even when the required compensation value is "0" (no compensation required). For F5 cameras, compensate using Custom Setting #18 on the camera body. For F4-Series cameras, compensate using the Exposure Compensation Dial for the focusing screen.

See instruction manual of the camera body for more details.

Blank box means not applicable. Since type M screen can be used for both macrophotography at a 1:1 magnification ratio and for photomicrography, it has different applications than other screens.

• When using the B and E focusing screens in cameras other than those listed above, refer to the columns for the B and E screens.

## Using a tripod

When using a tripod, attach it to the lens' tripod collar instead of the camera.

### CAUTION

When using a tripod, be sure to fully tighten the tripod collar lock screw, otherwise the lens may fall off the tripod accidentally and cause bodily injury.

### Attaching the tripod

- Insert the tripod collar mounting foot ① into the tripod collar, then fully tighten the tripod collar lock screw ②. (Fig. H)
- Loosen the tripod collar ring fastening screw ①. Depending on the camera's position (vertical or horizontal) ②, turn the lens to an appropriate position index on the tripod collar ring by aligning the tripod collar ring rotating index on the lens, then tighten the screw ③. (Fig. J)

### Detaching the tripod

- Fully loosen the tripod collar lock screw ①. While holding down the tripod collar lock release lever ②, slide the tripod collar mounting foot ③ to detach. (Fig. I)

## Using bayonet hood HB-29

### Attaching the hood

Align the lens hood attachment index (☑) on the lens hood with the hood mounting index on the lens, and turn the hood counterclockwise (as viewed from the camera side) until it click stops. (Fig. A)

- Make sure that the lens hood mounting index aligns with the lens hood setting index (☐).
- If the lens hood is not correctly attached, vignetting can occur.
- To facilitate attachment or removal of the hood, hold it by its base rather than its outer edge.
- To store the lens hood, attach it in the reverse position.

### Detaching the hood

While holding down the lens hood lock release button, turn the hood clockwise (as viewed from the camera side) to detach. (Fig. B)

## Lens care

- Clean the lens surfaces with a blower brush. To remove dirt and smudges, use a soft, clean cotton cloth or lens tissue moistened with ethanol (alcohol) or lens cleaner. Wipe in a circular motion from center to outer edge, taking care not to leave traces or touch other parts of the lens.
- Never use thinner or benzene to clean the lens as this might damage it, result in a fire, or cause health problems.
- To protect the front lens element, an NC filter is recommended at all times. A lens hood also helps protect the front of the lens.
- When storing the lens in its lens case, attach both front and rear caps.

- When the lens will not be used for a long time, store it in a cool, dry place to prevent mold. Also store the lens away from direct sunlight or chemicals such as camphor or naphthalene.
- Do not get water on the lens or drop it in water as this will cause it to rust and malfunction.
- Reinforced plastic is used for certain parts of the lens. To avoid damage, never leave the lens in an excessively hot place.

## Supplied accessories

- 77mm snap-on front lens cap LC-77
- Rear lens cap LF-1
- Bayonet hood HB-29
- Semi-soft case CL-M2

## Optional accessories

- 77mm screw-in filters, including circular polarizing filter II
- AF-S Teleconverters (TC-14EII/TC-17EII/TC-20EII)

## Specifications

Type of lens:	G-type AF-S Zoom-Nikkor lens having built-in CPU and Nikon bayonet mount. Special vibration reduction (VR) mechanism incorporated
Focal length:	70 to 200mm
Maximum aperture:	f/2.8
Lens construction:	21 elements in 15 groups (including 5 ED lens elements)
Picture angle:	34°20'–12°20' (22°50'–8° with Nikon digital cameras (Nikon DX format); 27°40'–9°50' with IX240 system cameras)
Focal length scale:	70, 80, 105, 135, 200mm
Distance information:	Output to camera body
Zooming:	Manually via separate zoom ring
Focusing:	Nikon Internal Focusing (IF) system (utilizing an internal Silent Wave Motor); manually via separate focus ring.
Vibration reduction:	Lens-shift method using voice coil motors (VCMs)
Shooting distance scale:	Graduated in meters and feet from 1.5m (5 ft.) to infinity (∞)
Closest focusing distance:	1.5m (4.9 ft.) at all zoom settings in AF mode 1.4m (4.6 ft.) at all zoom settings in MF mode
Diaphragm:	Fully automatic
Aperture scale:	f/2.8–f/22
Exposure measurement:	Via full-aperture method with cameras with CPU interface system
Focusing limit switch:	Provided; two ranges available: FULL (∞–1.5m), or ∞–2.5m
Tripod collar:	Rotatable through 360°, lens rotating position index at 90°, tripod collar only detachable
Attachment size:	77mm (P = 0.75mm)
Dimensions:	Approx. 87mm dia. x 215mm extension from the camera's lens mounting flange
Weight:	Approx. 1470g (51.9 oz.) with tripod collar; approx. 1395g (49.2 oz.) for lens only

# ***Nikon***

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