

# AF Micro-Nikkor 60mm f/2.8 D

**Nikon**

使用説明書

Instruction Manual

Bedienungsanleitung

Manuel d'utilisation

Manual de instrucciones

Manuale di istruzioni

使用説明書

使用说明书

## 付属アクセサリ

62mmスプリング式前キャップ  
裏ぶたLF-1

## Standard accessories

62mm snap-on front lens cap  
Rear lens cap LF-1

## Serienmäßiges Zubehör

Aufsteckbarer Frontdeckel 62 mm  
Hinterer Objektivdeckel LF-1

## 標準配件

62mm弾簧扣鏡頭前蓋  
LF-1型鏡頭後蓋

## Accessoires standards

Bouchon avant à emboîtement 62 mm  
Bouchon arrière LF-1

## Accesorios estándar

Tapa frontal a presión de 62 mm  
Tapa trasera del objetivo LF-1

## Accessori standard

Tappo anteriore da 62 mm dia.  
Tappo posteriore LF-1

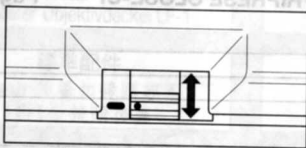
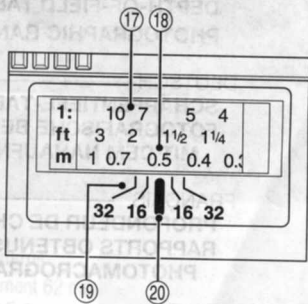
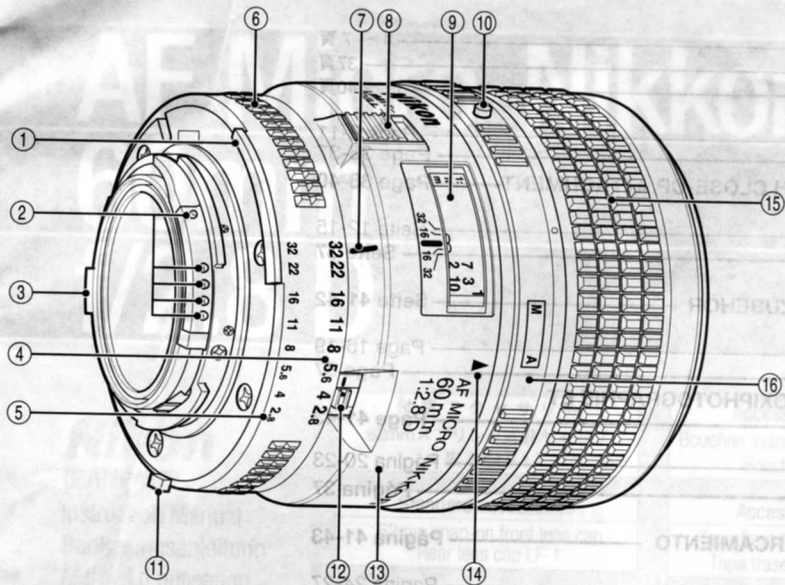
## 标准配件

62mm彈簧扣鏡頭前蓋  
LF-1型鏡頭後蓋

J  
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中

CE

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イラストA    Illust. A  
 Illust. A    Fig. A  
 Abb. A  
 Illust. A    圖A  
 Illust. A    图A

## Nomenclature

- ① Meter coupling ridge
- ② CPU contacts
- ③ Aperture indexing post
- ④ Aperture scale
- ⑤ Aperture-direct-readout scale
- ⑥ Aperture ring
- ⑦ Aperture index/Mounting index\*
- ⑧ Focusing limit switch
- ⑨ Distance scale window
- ⑩ A-M button
- ⑪ EE servo coupling post
- ⑫ Minimum aperture lock lever
- ⑬ Lens barrel
- ⑭ A-M index
- ⑮ Focus ring
- ⑯ A-M ring
- ⑰ Reproduction ratio scale
- ⑱ Distance scale
- ⑲ Depth-of-field indicators
- ⑳ Distance index

\* You can also use a black screw on the lens bayonet as the mounting index.

Thank you for your kind patronage of Nikon.

Features of the AF Micro-Nikkor 60mm f/2.8 D lens are:

- Compact and lightweight micro lens
- Closest focus distance of 0.219m (8 3/4 in.)
- Distance information used for 3D Matrix Metering or the 3D Multi-Sensor Balanced Fill-Flash<sup>1</sup> be transmitted instantly from the lens to the camera body.

Before using your new lens, read the following carefully so you get the most out of your lens now and for years to come.

### Important!

- Be careful not to soil or damage the CPU contacts.
- Do not attach the following accessories directly to the lens, as they might damage the lens' CPU contacts:  
Auto Extension Ring PK-1, Auto Extension Ring PK-11, K1 Ring, Auto Ring BR-4, Macro Adapter Ring BR-2 or K2 Ring.  
(Use PK-11A instead of PK-11, BR-2A of BR-2.)
- Depending on the camera model, the lens cannot be mounted with the minimum aperture lock lever.  
Before mounting the lens, make sure the minimum aperture is not locked (for details, see "Minimum Aperture Lock").
- This lens cannot be used with AF finder DX-1 (for the Nikon F3AF).

### Focusing

This lens can be used for both autofocus and manual focus.

**To select autofocus**, while pressing the A-M ring lock button, turn the A-M ring so that "A" is aligned with the A-M index. With the Nikon F-501/N2020<sup>2</sup>, setting to M may cause camera to malfunction.

**To select manual**, turn the A-M ring so "M" is aligned with the A-M index. With the Nikon F-501/N2020, also set the camera's focus mode selector as desired.

- When using a close-up attachment lens, autofocusing is not possible; use manual focusing.
- *The Nikon N2020 is sold exclusively in the U.S.A. and Canadian markets.*

### Presetting focus range

In cases when you want to shoot within a specified distance range, you can reduce focusing time by setting the focus limit switch from FULL position to LIMIT. (There are two focusing limit zones; approx. 0.3m [1 ft.] to infinity for normal shooting, approx. 0.3m [1 ft.] to 0.219m [8 3/4 in.] for shooting at a close distance.)

### Focusing at a predetermined reproduction ratio

The reproduction ratio is the relation between the size of the image recorded on film and the actual subject size. If, for example, the image on the focusing screen is one-fifth the actual subject size, the reproduction ratio is 1: 5.

To photograph at a predetermined reproduction ratio, use the following procedure:

1. Manually turn the focus ring until the desired reproduction scale number is aligned with the distance index.
2. Aim at the subject, then change your position, moving closer to or farther away from the subject, until the image in the viewfinder sharpens.

To obtain the appropriate reproduction ratio for each focal distance, see the table on page 37.

### Recommended Focusing Screens

Various interchangeable focusing screens are available for Nikon cameras to suit any type of lens or picture-taking situation. Those which are recommended for use with your lens are listed.

Screen Camera	Screen																				
	A/L	B	C	D	E	G1	G2	G3	G4	H1	H2	H3	H4	J	K/P	M	R	T	U	F	
F4 + DP-20	⊙				⊙	⊙									⊙	⊙					
F4 + DA-20	⊙				⊙	⊙									⊙	⊙					
F3	⊙	⊙			⊙	○				○				⊙	⊙			△	⊙		

⊙ = Excellent focusing

○ = Acceptable focusing

Slight vignetting or moire phenomenon affects screen image, but film image shows no traces of this.

△ = Acceptable focusing

The in-focus image in the central circular area may prove to be slightly out of focus on the film. Focus on the surrounding matte area. 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.

For the K2, B2 and E2 focusing screens, refer to the columns on the K, B and E screens, respectively. For details, also refer to the specific camera's instruction manual.

### Depth of Field

The depth of field indicator lines are engraved beside the distance index line. At close distances, however, so little is in focus that it may be more useful to check the depth of field table (on page 37). If your camera has a depth of field preview button or depth of field preview lever, you can check the depth of field in the viewfinder.

### Minimum Aperture Lock (Illust. A)

For programmed auto or shutter-priority auto exposure shooting, use the minimum aperture lock lever to lock the lens aperture at f/32.

1. Set the lens to its minimum aperture (f/32).
2. Slide the lock lever in the direction of the aperture ring so the white dot on the lever aligns with the orange dot.

To release the lock, slide the lever in reverse direction.

## Notes on Close-up Photography and Duplication Work

### Camera shake

The AF Micro-Nikkor 60mm f/2.8 D provides such exceptionally high image magnification that even the slightest movement during shooting causes a blurred image. Be sure to mount the camera on a tripod and use a cable release or remote cord to mount the shutter.

### Close working distances

At the high reproduction ratios used in close-up shooting, the depth of field is very shallow. To ensure greater depth of field, stop down the lens, then carefully position the camera to ensure the most important surface of the subject is in the same zone of sharp focus.

### Exposure measurement with close-up attachments

For a lens in normal position, see the following table. For a reverse-position lens, be sure to use stop-down measurement.

Camera	Accessory	Exposure measurement
F90X/N90s <sup>3)</sup> , F90-Series/ N90 <sup>3)</sup> , F70-Series/N70 <sup>3)</sup> , F50-Series/N50 <sup>3)</sup> , F4 series, F-801/N8008 <sup>3)</sup> , F-801s/ N8008s <sup>3)</sup> (CPU•AI)	PK-11A, 12, 13/PN-11/ TC-201/TC-14A	Full-aperture
	PK-2, 3/PN-1/Bellows	Stop-down <sup>1)</sup>
F3 series, FE, FM, EL2, Nikkormat FT3, F2 Photomic A, F2 Photomic AS (AI)	PK-11A, 12, 13/PN-11/ TC-201/TC-14A	Full-aperture
	PK-2, 3/PN-1/Bellows	Stop-down <sup>1)</sup>
F-501/N2020, FE2, FA, FM2, FG, FG-20, EM, F-301/N2000 <sup>4)</sup> (AI)	PK-11A, 12, 13/PN-11/ TC-201/TC-14A	Full-aperture (or light intensity feedback)
	PK-2, 3/PN-1/Bellows	Stop-down <sup>1)</sup>
Non-AI	PK-11A, 12, 13/PN-11/ TC-201/TC-14A/Bellows	Stop-down <sup>1)</sup>
	PK-2, 3/PN-1	Stop-down <sup>1)</sup>
		Full-aperture <sup>2)</sup>

- The F-401s/N4004s<sup>3)</sup> exposure metering system will not work with PK-11A, PK-12, PK-13 or bellows.

- 1) For stop-down exposure metering, consult your camera's instruction manual.
- 2) Lens modification required. After mounting modified lens, manually perform maximum aperture indexing.
- 3) The Nikon N90s, N90, N70, N50, N8008, N8008s and N4004s are exclusively in the U.S.A.
- 4) The Nikon N2000 is sold exclusively in the U.S.A. and Canadian markets.

## Exposure Compensation

At a close distance (at reproduction ratios 1:10 or greater), the amount of light reaching the film decreases as the lens-to-film distance increases. When shooting without TTL exposure metering (i.e., when performing TTL auto flash photography, or when using a separate exposure meter etc.), make exposure compensation while referring to the table below:

Reproduction ratio	Exposure factor	Amount of exposure compensation (approx.)
1:10	1.15	1/5 stop
1:8	1.19	1/4 stop
1:6	1.27	1/3 stop
1:4	1.42	1/2 stop
1:2	1.92	1 stop
1:1.8	2.04	1 stop
1:1.6	2.21	1 1/6 stops
1:1.4	2.43	1 1/3 stops
1:1.2	2.73	1 1/2 stops
1:1	3.20	1 2/3 stops

To compensate exposure without increasing aperture more than one full stop, use slower shutter speeds. For example, for a 1:1 reproduction ratio, use shutter speed one step slower, then open the lens by 2/3 stop. Or use shutter speed two steps slower, then stop the lens down by 1/3 stop.

## Lens Care

- Clean lens surface 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 and not to touch the other lens parts.
- If you use ether in cleaning the lens, a smudge sometimes appears on the surface of a multi-coated lens. If this happens, wipe it again with a cotton cloth moistened with alcohol.
- Never use thinner or benzine to clean the lens.
- To protect the lens surface from dirt or damage, the use of an NC filter is recommended at all times. The lens hood also helps to protect the lens.
- Keep the lens cap in place whenever the lens is not in use.
- If you will not use the lens for a long time, protect it from rust and mold by storing it in a cool, dry place. Also, do not store in direct sunlight, and keep it away from naphthalene or camphor.
- Be careful not to get the lens wet or drop it in water. Water on the lens may cause malfunction.
- Reinforced plastic is used on the exterior of the lens unit; to avoid damage, take extra care to never leave the lens in an excessively hot place.

## Optional Accessories

62mm screw-in filters, Screw-in lens hood HN-22, UR-3 adapter (for SB-21), Hard lens case CL-32s, Flexible lens pouch No. 62, AI Teleconverter TC-201, AI Teleconverter TC-14A

## Specifications

**Focal length:** 60mm

**Maximum aperture:** f/2.8

**Lens construction:** 8 elements in 7 groups

**Picture angle:** 39°40'

**Distance scale:** Graduated in meters and feet/inches from 0.219m (83/4 in.) to infinity (∞)

**Distance information:** Output into camera body

**Reproduction ratio:** 1:10 to 1:1 (life size)

**Aperture scale:** f/2.8 to f/32 on both standard and aperture-direct-readout scales

**Minimum aperture lock:** Provided

**Diaphragm:** Fully automatic

**Exposure measurement:** Via full-aperture method for AI cameras or cameras with CPU interface system; via stop-down method for other cameras

**Mount:** Nikon bayonet mount

**Attachment size:** 62mm (P=0.75mm)

**Dimensions:** Approx. 70mm dia. x 74.5mm extension from the camera's lens mounting flange; overall length is approx. 82.8mm

**Weight:** Approx. 455g

## Depth of Field

景深

曝光补偿

页率 (ft.) 放大率

Focused distance	Depth of field								Reproduction ratio
	f/2.8	f/4	f/5.6	f/8	f/11	f/16	f/22	f/32	
8 3/4 in.	8 11/16" — 8 3/4"	8 11/16" — 8 3/4"	8 11/16" — 8 3/4"	8 11/16" — 8 3/4"	8 11/16" — 8 3/4"	8 11/16" — 8 3/4"	8 11/16" — 8 3/4"	8 11/16" — 8 3/4"	1/1.2
9 in.	9" — 8 15/16"	9" — 8 15/16"	9" — 8 15/16"	9" — 8 15/16"	9" — 8 15/16"	9" — 8 15/16"	9" — 8 15/16"	9" — 8 15/16"	1/1.4
9 1/4 in.	9 1/4" — 9 3/16"	9 1/4" — 9 3/16"	9 1/4" — 9 3/16"	9 1/4" — 9 3/16"	9 1/4" — 9 3/16"	9 1/4" — 9 3/16"	9 1/4" — 9 3/16"	9 1/4" — 9 3/16"	1/1.5
9 1/2 in.	9 1/2" — 9 7/16"	9 1/2" — 9 7/16"	9 1/2" — 9 7/16"	9 1/2" — 9 7/16"	9 1/2" — 9 7/16"	9 1/2" — 9 7/16"	9 1/2" — 9 7/16"	9 1/2" — 9 7/16"	1/1.7
10 in.	10" — 9 15/16"	10" — 9 15/16"	10" — 9 15/16"	10" — 9 15/16"	10" — 9 15/16"	10" — 9 15/16"	10" — 9 15/16"	10 1/16" — 9 7/8"	1/2.0
1 ft.	1' — 11 15/16"	1' — 11 15/16"	1' — 11 15/16"	1' — 11 15/16"	1' 1/16" — 11 7/8"	1' 1/16" — 11 7/8"	1' 1/8" — 11 13/16"	1' 3/16" — 11 3/4"	1/2.9
1 1/4 ft.	1' 3" — 1' 2 15/16"	1' 3 1/16" — 1' 2 7/8"	1' 3 1/16" — 1' 2 7/8"	1' 3 1/8" — 1' 2 13/16"	1' 3 3/16" — 1' 2 3/4"	1' 3 9/16" — 1' 2 11/16"	1' 3 7/16" — 1' 2 9/16"	1' 3 5/8" — 1' 2 3/8"	1/4.3
1 1/2 ft.	1' 6 1/16" — 1' 5 7/8"	1' 6 3/8" — 1' 5 13/16"	1' 6 3/8" — 1' 5 3/4"	1' 6 1/4" — 1' 5 11/16"	1' 6 3/8" — 1' 5 9/16"	1' 6 9/16" — 1' 5 7/16"	1' 6 13/16" — 1' 5 1/4"	1' 7 3/16" — 1' 4 15/16"	1/5.6
2 ft.	2' 13/16" — 1' 11 3/4"	2' 5/16" — 1' 11 11/16"	2' 7/16" — 1' 11 9/16"	2' 5/8" — 1' 11 3/8"	2' 15/16" — 1' 11 1/8"	2' 1 5/16" — 1' 10 3/16"	2' 1 15/16" — 1' 10 3/8"	2' 2 7/8" — 1' 9 3/4"	1/8.2
3 ft.	3' 9/8" — 2' 11 3/8"	3' 7/8" — 2' 11 1/8"	3' 1 1/4" — 2' 10 13/16"	3' 1 13/16" — 2' 10 5/16"	3' 2 1/16" — 2' 9 11/16"	3' 3 15/16" — 2' 8 13/16"	3' 5 7/8" — 2' 7 11/16"	3' 9" — 2' 6 1/4"	1/13.3
7 ft.	7' 4 1/8" — 6' 7 15/16"	7' 6 1/16" — 6' 6 3/8"	7' 8 15/16" — 6' 4 3/8"	8' 1 3/8" — 6' 1 11/16"	8' 8 7/16" — 5' 10 1/4"	9' 8 9/16" — 5' 5 7/8"	11' 7 3/16" — 4' 6 5/8"	16' 4" — 11' —	1/33.6
∞	125' — ∞	88' — ∞	63' — ∞	44' — ∞	31' — ∞	22' — ∞	16' — ∞	4' — ∞	1/∞

