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TAMRON CO.,LTD.

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

Tokyo Main Office

Tamron Bldg., 17-11, 7-chome, Takinogawa, Kita-ku, Tokyo, Japan

Tel: (03) 916-0131 TELEX: J23977 TAMRON Cable: "TAMRONTAISEI TOKYO"

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AllPhotoLenses



Model 52B

TAMRON-SP

90mm F/2.5

TELE-MACRO

OWNER'S MANUAL



ADAPTALL-2 MOUNT SYSTEM

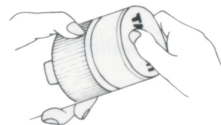


Thank you for selecting the new Tamron SP 90mm CF Tele-Macro Portrait Lens as the latest addition to your photographic equipment. Before attempting to use your new lens, please read the contents of this Owner's Manual thoroughly to become fully acquainted with the proper techniques that will give you the best results possible.

Every Tamron lens is made of carefully selected materials and is designed and manufactured for maximum durability to allow rugged use and long lasting performance. With proper handling and care, your Tamron SP 90mm lens will give you many years of beautiful and exciting pictures.

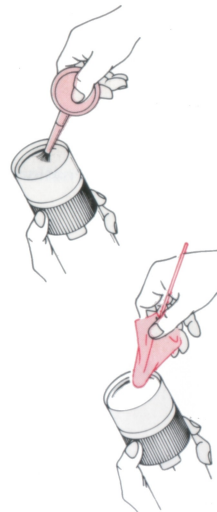
10. CARING FOR YOUR NEW LENS

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.

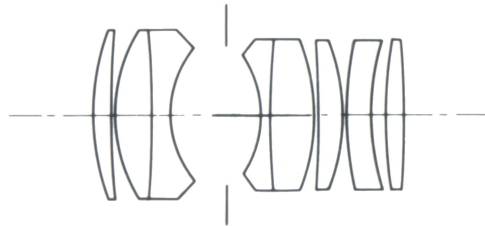


9. SPECIFICATIONS OF TAMRON SP SERIES LENSES

Model No. Specifications	52A	55B	52B	54B	01F
Focal Length-Aperture	70~210 mm F/3.5-4	500 mm F/8	90 mm F/2.5	300 mm F/5.6	2X the focal length of master lens
Angle of View	34°-11°	5°	27°	8°	—
Construction	16 elements in 15 groups	7 elements in 4 groups	8 elements in 6 groups	6 elements in 5 groups	6 elements in 5 groups
Coating	BBAR and Green multiple layer coating	BBAR multiple layer coating			
Minimum Focus from Film Plane	0.75 m (30 inches)	1.7 m (66.9 inches)	0.39 m (15.4 inches)	1.4 m (55.1 inches)	Same as that of master lens
Macro Magnification	1:2 - 1:10	1:3 - 1:10	1:2 - 1:10	1:3.3 - 1:10	2X the magnification ratio of master lens
Focusing Ring Rotation	∞ - 2 m 40°, 2 m - 0.75 m 122° (162°)	∞ - 4 m 126° 4 m - 1.7 m 201° (327°)	∞ - 1.5 m 29° 1.5 m - 0.39 m 195° (225°)	∞ - 2.5 m 75° 2.5 m - 1.4 m 86° (162°)	—
Lens Accessory Size	58 mm	30.5 mm (82 mm front)	49 mm	58 mm	—
Length (at infinity)	165 mm (6.5 inches)	87 mm (3.4 inches)	66 mm (2.6 inches)	163.5 mm (6.4 inches)	42.5 mm (1.7 inches)
Diameter	64.5 mm (2.5 inches)	84 mm (3.3 inches)	64.5 mm (2.5 inches)	64.5 mm (2.5 inches)	64.5 mm (2.5 inches)
Weight	750 g (26.5 ounces)	575 g (20.2 ounces)	420 g (14.8 ounces)	610 g (21.5 ounces)	250 g (8.8 ounces)
Lens Hood	Built-in, retractable	Screw-in type; detachable	Screw-in type, available as optional	Built-in, retractable	—
Accessory	Tripod mount ring, available as optional	w/Tripod mount ring & 5-piece filter set		Tripod mount ring, available as optional	

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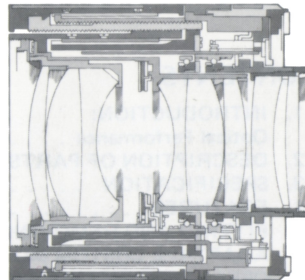
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1. INTRODUCTION: Optical Performance

Since the primary objective of conventional lenses incorporating a macro capability is the photography of subjects at a close distance, they had an inherent disadvantage that they are unable to maintain their performance when shooting distant subjects. Besides, with their relatively slow maximum aperture, conventional macro lenses also had the drawback of their being unable to produce the sometimes required out-of-focus effect in portraiture which is one of the main applications of lenses of this type

or to allow the use of fast shutter speeds in sport or other action photography. The Tamron SP 90mm f/2.5 has outstanding optical performance not only in macro photography but also in shooting subjects at a distance and allowing the use of fast shutter speeds due to its fast maximum aperture of f/2.5. It is a high-performance CF (Continuous Focus) Tele-Macro lens which is well suited both for portraiture and action photography.



Technically fascinating is the fact that your new Tamron SP 90mm f/2.5 is an ultra-compact CF Tele-Macro portrait lens which employs Tamron's newly developed optical configuration namely O.A.C. (Optical Aberration Compensator). With the use of the new optical system, focus-dependent aberration changes are reduced to the absolute minimum from infinity to the minimum object distance of 0.39 meters (15.3 inches) (macro range), optimizing the performance

8. GUIDE TO TAMRON ADAPTALL CUSTOM MOUNTS

Adaptall Mounts	Adaptall Lenses	SP/Adaptall-2 Lenses
Pentax K	Yes	Yes
Pentax ES	Yes	Yes
Pentax Universal	Yes	Yes
Nikon A1	Yes	Yes
Fujica ST	Yes	Yes
Mamiya SX	Yes	Yes
Topcon RE ♦	Yes	Yes ♦
Rollei/Voigtlander	Yes	Yes
Canon FL	Yes	Yes
Minolta ★	Yes	Yes ★
Olympus OM	Yes	(●)
Contax/Yashica ★	Yes	Yes ★
Canon FD (6 mounts) ▼ f/2.5, f/2.8, f/3.5, f/3.8, f/4.5, f/5.6	Yes	—
Konica AR (6 mounts) ▼ f/2.5, f/2.8, f/3.5, f/3.8, f/4.5, f/5.6	Yes	—
Minolta MD (4 mounts) f/2.5/4.5, f/2.8/5.6, f/3.5, f/3.8	Yes	—
SP/Adaptall-2 Mounts	Adaptall Lenses	SP/Adaptall 2 Lenses
Olympus OM	Yes	Yes
Canon FD	—	Yes
Minolta MD	—	Yes
Konica AR ★	—	Yes ★
Contax/Yashica	—	Yes
C mount for CCTV/VTR cameras and 16mm movie cameras	Yes	Yes
MS mount for CCTV/VTR cameras	Yes	Yes

♦ Due to small rear aperture, this mount will not accept the SP 70-210mm f/3.5-4, SP 90mm f/2.5, SP Flat Field 2X Converter, and Adaptall-2 80-210mm f/3.8-4.

★ Early SRT and SRT Super/X Adaptall adaptors cannot be used with SP 70-210mm f/3.5-4 lens, SP 90mm f/2.5 lens, SP Flat Field 2X teleconverter and Adaptall-2 80-210mm f/3.8-4 lens. However later types identified simply by the label "FOR MINOLTA" are fully compatible.

• Mount requires initial maximum aperture adjustment.

(●) Does not have aperture stop down control on adapter. SP lenses do not have A/M selector switch.

▼ Will not accept the Flat Field 2X Converter, due to its small inside diameter.

Note: The Tamron Flat Field SP Tele-Converter is compatible with most Tamron Interchangeable Lenses, except wide angle lenses. However, be sure to use the appropriate mount.

7. OPTIONAL ACCESSORY

(1) Tamron Wide-Field Tele-View Adapter

As an optional accessory, the unique Tamron high-performance wide-field tele-view adapter is available for use with Tamron's 35mm SLR photographic lenses. The combination of the tele-view adapter using high-precision dove prisms and your SP 90mm photographic lens makes a compact, powerful 4.5X telescope which provides a very useful field of view wider 50% or more than that of ordinary telescopes or binoculars and brighter than that of a view-finder of 35mm SLR cameras.

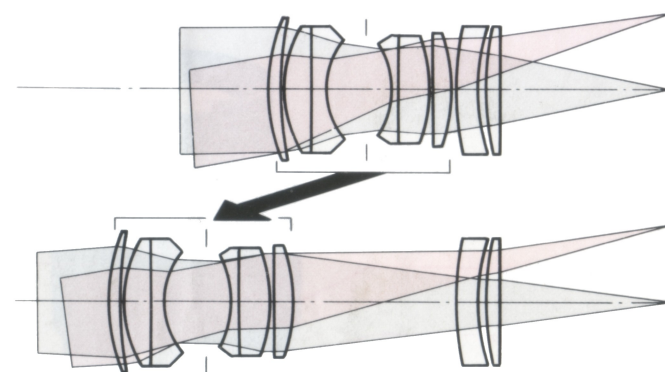
Since the tele-view adapter features the bayonet mount system, you can mount the tele-view adapter onto your lens, in the same manner as the Adaptall custom mount, with a flick of the wrist. For your reference, the following table indicates the approximate magnifications of Tamron photographic lenses combined with the tele-view adapter:



f = 90mm w/tele-view adapter	4.5X
f = 200mm w/tele-view adapter	10.0X
f = 300mm w/tele-view adapter	15.0X
f = 500mm w/tele-view adapter	25.0X

The tele-view adapter and a zoom lens combine to make a powerful zoom telescope.

of the lens over the entire image format and yielding high contrast and sharp images throughout its focusing range. The most distinctive characteristic of the lens' optical configuration is that it features a floating system to compensate for aberrations; the optical system is composed of a group of moving Gauss-type master lens elements and a pair of compensator lens elements remaining stationary at the rear part of the lens. To be more specific, aberration changes which take place due to focusing are automatically corrected by the rear compensator lens elements remaining stationary. The Gauss-type master lens which is made as symmetrical as possible helps reduce the burden of aberration compensation given to the rear compensator lens. Thanks to the employment of the new optical system, Tamron has succeeded in designing a new method which allows compensation for aberrations in a more natural and reasonable way than that of conventional lenses.



With respect to the color rendition, the SP 90mm uses selected glass materials having excellent light transmission, and Tamron's original BBAR (Broad-Band Anti-Reflection) coating is applied to achieve the most ideal CC (color contribution) value of 9-0-1 for optimum color balance and rendition.

The high optical performance as outlined here is not the only advantage of the Tamron SP 90mm f/2.5 ultra-compact CF Tele-Macro portrait lens. The SP 90mm has features in abundance as outlined in section 4 of this Owner's Manual.

2. DESCRIPTION OF PARTS



(4) Lens Hood (Optional Accessory)

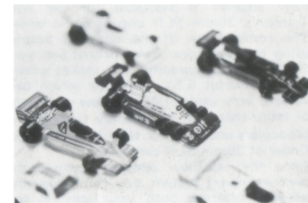
As an optional accessory, a screw-in type lens hood is available. The lens hood prevents unwanted light from striking the lens and causing image degrading flare giving

poor print quality.

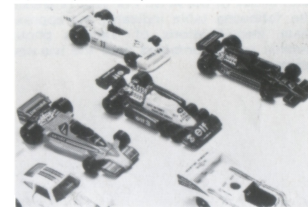


(5) Depth-of-field

The depth-of-field is marked on the lens barrel between the distance scale index and aperture indicator window of the lens. When you wish to preview depth-of-field, use the lever or button on the camera body (in the case of Olympus the mount has a built-in depth-of-field lever).



F/2.5 (max. aperture) 1/125 sec.



F/32, 1/4 sec.

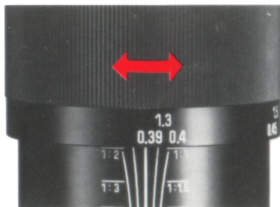
OPERATING INSTRUCTIONS

(2) Focusing

a. Focusing in general

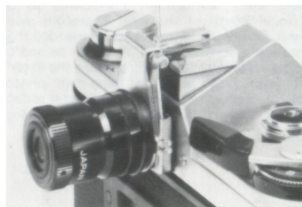
While looking through your camera's viewfinder, turn the focusing ring until you see a sharp image on the screen. Since the maximum aperture of your SP 90mm lens is f/2.5, it is advisable to use a matte-fresnel screen if your camera takes different focusing screens. This type of screen is normally recommended for telephoto lenses as it will make focusing easier.

With cameras not taking different screens, bring the lens into focus by observing the image on the matted area around the edge of the screen or around the split image in the center of the screen.



b. Focusing in macro mode

Depth-of-field becomes extremely shallow when you use a 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, the combination of a transparent cross-screen and a magnifier is recommended for optimum results rather than open-aperture focusing with a split image rangefinder. Effective use of adequate lighting would also greatly assist you.



(3) Macro Operation

The SP 90mm f/2.5 lens has a special 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 of course doubles the focal length of the lens) are engraved in yellow. Simply set the lens to the desired macro magnification scale and then bring the lens into focus.



3. SPECIFICATION

Focal Length:	90mm
Aperture Range:	f/2.5–32, AE
Angle of View:	27°
Construction:	8 elements in 6 groups
Coating:	BBAR multiple layer coating
Minimum Focus from Film Plane:	0.39 meter (15.3 inches)
Macro Magnification:	1:2 – 1:10 (1:1 – 1:5 w/2X teleconverter)
Focusing Ring Rotation:	30° from infinity to 1.5m (225° 21')
Lens Accessory Size:	49mm
Length (at infinity):	66mm (2.6 inches)
Diameter:	64.5mm (2.5 inches)
Weight:	420 grams (14.8 ounces)
Optional Accessories:	SP Flat-field 2X Tele-converter, Screw-in lens hood

4. FEATURES

(1) Continuous Focusing — CF

Continuous focusing from infinity to the minimum object distance of 0.39 meters (15.3 inches) macro range is possible. The maximum macro magnification ratio at this distance is 1:2 (half life-size).

(2) Tele-Macro Capability

Your new Tamron SP 90mm features a "tele-macro" capability which allows the photography of an object in the macro mode at a distance of 0.39 meters (15.3 inches). The lens has opened up new hori-

zons for macro photography which have been almost impossible in the past; you can now photograph such subjects as insects, timid animals, or objects in a shop window which were difficult distance-wise, without having to get too close. In addition, an auto-flash can be conveniently used, which



F/8, 1/250 sec., 8m



Obj. distance 1.5m



F/8, 1/125 sec., 0.39m



Removing the Custom Mount:

- (1) Before removing the custom mount, be sure to move the aperture ring to the maximum aperture. (However, with the Canon or Konica mount whose aperture ring is set to the AE position, depress the AE lock button to release the AE setting, and then move the ring to the maximum aperture.)
- (2) 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 fully counterclockwise until it stops and then lift the mount off the lens.



6. OPERATING INSTRUCTIONS

(1) Correct Method of Handling a Telephoto

Lens and Use With a Tripod

As with all telephoto lenses, the angle of view of your SP 90mm lens is narrow, which is likely to 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 aperture control ring of the lens with your left hand. Draw the camera towards you holding it against your face with your right hand. If you wear glasses, fix the viewfinder frame securely against the glass. The slowest shutter speed for hand-held shots is normally considered to be 1/focal length of the lens. Therefore, with your SP 90mm lens, it is recommended that you use a shutter speed of 1/100 second or faster. However, depending upon the extent of your proficiency in hand-held photography with a telephoto lens, shutter speeds slower than 1/100 second may also be used.



b. Using a tripod is especially recommended when you take photographs with a telephoto lens of the type using the SP flat-field tele-converter. A cable release is always advantageous.

5. FITTING AND REMOVING THE ADAPTALL CUSTOM MOUNT

Fitting the Custom Mount:

- (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 position.



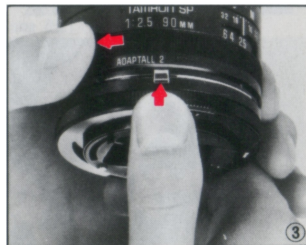
- (2) Custom mounts for cameras featuring TTL light-metering, AE and automatic diaphragm control are provided with a meter coupling lever which activates the control ring. After fitting the custom mount, move the meter coupling lever so that it engages in the slot provided on the lens, and the exposure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

Note: The method of fitting custom mounts for Canon FD, Minolta MD and Nikon AI is the same as described in Steps (1) and (2) above. However, the custom



mounts for Canon FD, Minolta MD and Nikon AI each have two coupling levers. Therefore, when the mount is fitted, engage the two coupling levers in the corresponding slots on both sides of the lens.

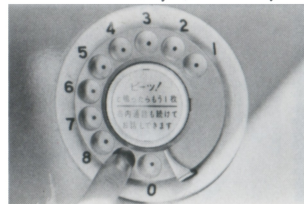
- (3) The Tamron lens with the Adaptall custom mount can be fitted to your camera in the same manner as the camera manufacturer's lenses. (When fitting the lens and adapter onto a Canon FTb or AT-1 camera, be sure to move the aperture ring to a position other than 'AE'.)



helps expand the lighting variations in conventional close-up photography making high-speed auto-flash macro photography possible.



F/8, 1/125 sec., 3m



F/5.6, 1/60 sec., 0.39m

(3) Small, Lightweight and Compact Design

As far as optical performance is concerned, there are lenses which have both moderate telephoto and macro capabilities. However, most of them are heavy and awkward to use, measuring 70mm (2.7 in.) or more in diameter and weighing around 650 grams (22.9 oz.). The high-performance Tamron SP 90mm featuring CF tele-macro capability and fast aperture of f/2.5 is unusually compact and convenient to use, measuring 64.5mm (2.54 inches) in overall diameter and weighing only 420 grams (14.8 oz.). Besides, it takes 49mm filters.



(4) Fast Aperture of F/2.5

The fast aperture of f/2.5 of the SP 90mm not only provides a brighter viewfinder image for easier focusing but also allows shallow depth-of-field for creative portraiture technique. The fast aperture is also useful in sports or any other action photography which requires high shutter speeds.

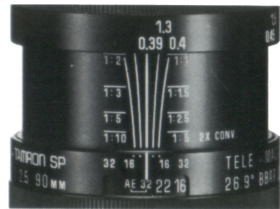


F/8, 1/500 sec., 1.2m

FEATURES

(5) Unique and Convenient Outer Design

In designing the outer appearance of the lens, emphasis was put on the maximum handling convenience by showing all the operating information where it can be most conveniently read. All the Tamron SP lenses incorporating macro, including your new SP 90mm are marked with the maximum macro magnification scale to be used in conjunction with Tamron's flat field 2X tele-converter.



(6) Expanded Vistas of Photography by Employing the SP Flat Field 2X Tele-Converter

Tamron's SP 2X tele-converter is a high-performance converter in the Adaptall system. It was specially developed for use with the telephoto and zoom lenses in the SP series. The combination of the tele-converter and your SP 90mm f/2.5 lens greatly expands the conventional range of photography as follows:



- a. The combination of the tele-converter and the lens extends the macro range from a ratio of 1:2 to 1:1 life size.



1:2 magnification



1:1 (life-size) w/converter

- b. The tele-converter and lens combine to make a very compact 180mm telephoto that is convenient to carry since it



f=90mm, F/8, 1/125 sec.



f=180mm, F/8, 1/125 sec.

measures only 114.5mm (4.5 inches) in overall length and weighs only 670 grams (23.6 oz.).



(7) Adaptall Custom Mount System

With Tamron's exclusive Adaptall custom mount system, your new SP 90mm lens can be used with most popular single lens reflex cameras.

