



ZEISS Compact Prime CP.3 and CP.3 XD

Mount Change Instructions



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Introduction

In this manual you learn how to change the mount of a ZEISS Compact Prime CP.3 and CP.3 eXtended Data (abbreviation: ZEISS CP.3 and CP.3 XD) and how to match it to a digital camera. In order to explain the procedure, this manual uses a ZEISS CP.3 XD lens, which is scaled in feet with PL mount.

Proceed in the same sequences to switch from or to any other mount that is available for the ZEISS CP.3 or CP.3 XD (Canon¹ EF, Nikon² F, Sony³ E and MFT).

Please note that in this instructions the term “CP.3” always refers to both versions: CP.3 and CP.3 XD.

Explanation of Symbols



The information symbol indicates additional information, which is useful for the context.



The skip symbol indicates that under certain circumstances you can skip certain steps.



The result symbol indicates information about the obtained result of a step.



The warning symbol indicates dangerous situations and actions, which might impair the functionality of the product, damage the product or hurt the user.

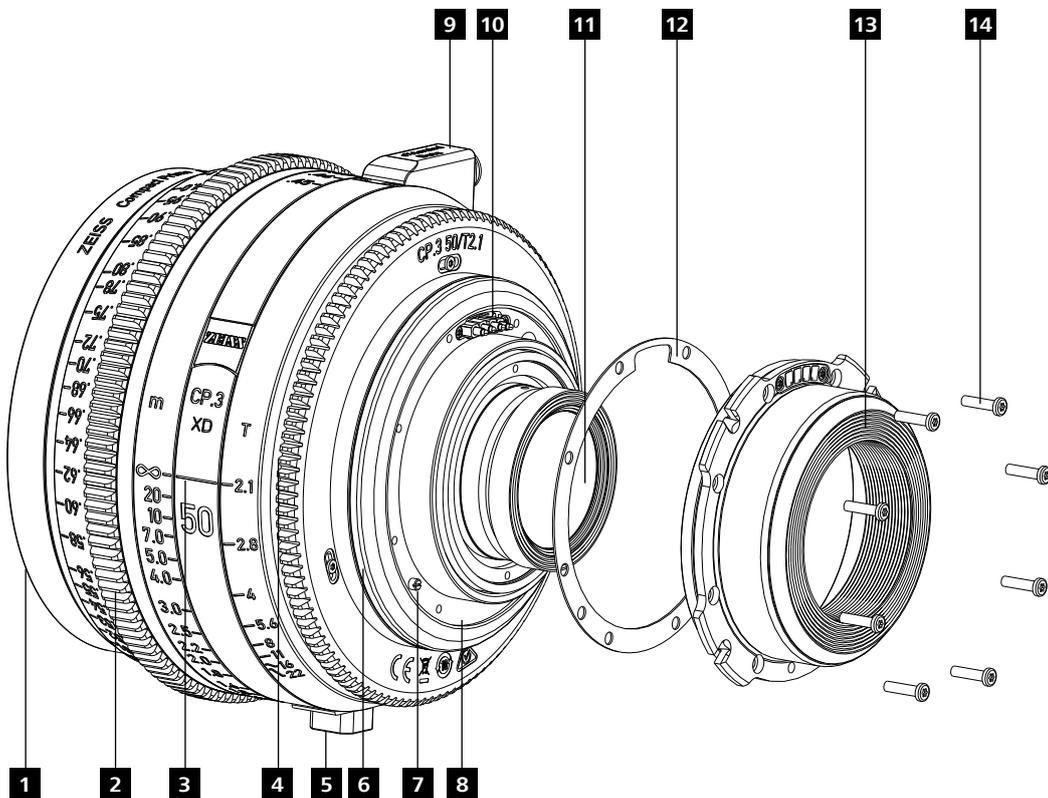
¹ Canon is a trademark or registered trademark of Canon Inc. and/or other members of the Canon Group.

² Nikon is a registered trademark of Nikon Corporation

³ Sony and E-mount are registered trademarks of Sony Corporation

Overview

- | | | | |
|----------|-------------------------------|-----------|--|
| 1 | front lens | 8 | groove of the lens |
| 2 | focus ring | 9 | eXtended Data interface (CP.3 XD only) |
| 3 | focus and aperture index mark | 10 | electrical interface (CP.3 XD only) |
| 4 | aperture ring | 11 | rear lens |
| 5 | lens foot | 12 | shims |
| 6 | lens barrel | 13 | mount including the black inner ring |
| 7 | small screw | 14 | T6 screws |



Delivery Contents of a ZEISS CP.3 and CP.3 XD

- 1x ZEISS CP.3 or CP.3 XD
- 1x Front cap
- 1x Rear cap
- 1x Focus lever
- 3x Lens support riser 3/8"

Technical Data

ZEISS Compact Prime CP.3 and CP.3 XD lenses

	Aperture	Close Focus ¹	Length ²	Front diameter	Weight ³	Horizontal Angle of View					
						Full-Frame ⁴	APS-H ⁵	Super 35 ⁶	Normal 35 ⁷	APS-C ⁸	MFT ⁹
CP.3 & CP.3 XD 15 mm T2.9	T 2.9 to T 22	0.3 m 12"	83.7 mm 3.30"	95 mm 3,7"	0.87 kg 1.9 lbs	100°	90°	79°	73°	73°	60°
CP.3 & CP.3 XD 18 mm T2.9	T2.9 to T22	0.3 m 12"	83.7 mm 3.30"	95 mm 3,7"	0.86 kg 1.9 lbs	89°	80°	69°	63°	64°	51°
CP.3 & CP.3 XD 21 mm T2.9	T 2.9 to T 22	0.24 m 10"	83.7 mm 3.30"	95 mm 3,7"	0.82 kg 1.8 lbs	81°	71°	61°	55°	56°	45°
CP.3 & CP.3 XD 25 mm T2.1	T 2.1 to T 22	0.26 m 10"	83.7 mm 3.30"	95 mm 3,7"	0.82 kg 1.8 lbs	72°	62°	53°	47°	48°	38°
CP.3 & CP.3 XD 28 mm T2.1	T 2.1 to T 22	0.24 m 10"	83.7 mm 3.30"	95 mm 3,7"	0.84 kg 1.9 lbs	65°	57°	48°	43°	43°	34°
CP.3 & CP.3 XD 35 mm T2.1	T 2.1 to T 22	0.3 m 12"	83.7 mm 3.30"	95 mm 3,7"	0.80 kg 1.8 lbs	54°	47°	39°	35°	35°	28°
CP.3 & CP.3 XD 50 mm T2.1	T 2.1 to T 22	0.45 m 18"	83.7 mm 3.30"	95 mm 3,7"	0.77 kg 1.7 lbs	40°	34°	28°	25°	25°	20°
CP.3 & CP.3 XD 85 mm T2.1	T 2.1 to T 22	1 m 3'3"	83.7 mm 3.30"	95 mm 3,7"	0.88 kg 1.9 lbs	24°	20°	17°	15°	15°	12°
CP.3 & CP.3 XD 100 mm CF¹⁰ T2.1	T 2.1 to T 22	0.7 m 2'6"	126.5 mm 4.98"	95 mm 3,7"	1.01 kg 2.2 lbs	20°	17°	14°	13°	13°	10°
CP.3 & CP.3 XD 135 mm T2.1	T 2.1 to T 22	1 m 3'3"	126.5 mm 4.98"	95 mm 3,7"	1.15 kg 2.5 lbs	15°	13°	11°	9°	9°	7°

¹ Close focus distance is measured from the image plane

² Front to PL mount flange

³ The specified weight refers to the ZEISS CP.3 standard lenses. The ZEISS CP.3 XD lenses weigh about 0.01 kg/0.02 lbs more.

⁴ Horizontal angle of view for a full-frame camera (aspect ratio 1:1.5, dimensions 36 mm x 24 mm / 1.42" x 0.94")

⁵ Horizontal angle of view for an APS-H camera (aspect ratio 1:1.81, dimensions 30.2 mm x 16.7 mm / 1.19" x 0.66")

⁶ Horizontal angle of view for an ANSI Super 35 Silent camera (aspect ratio 1:1.33, dimensions 24.9 mm x 18.7 mm / 0.98" x 0.74")

⁷ Horizontal angle of view for a Normal 35 Academy camera (aspect ratio 1:1.37, dimensions 22 mm x 16 mm / 0.87" x 0.63")

⁸ Horizontal angle of view for an APS-C camera (aspect ratio 1:1.50, dimensions 22.3 mm x 14.9 mm / 0.88" x 0.59")

⁹ Horizontal angle of view for a Micro 4/3 (MFT) camera (aspect ratio 1:1.33, dimensions 17.3 mm x 13 mm / 0.68" x 0.51")

¹⁰ CF: Close focus capability

Changing the Mount of a ZEISS CP.3 Lens

In this chapter you learn how to change the mount of a ZEISS CP.3. The procedure consist of two parts which are both mandatory to successfully change a mount. You learn how to detach the currently attached mount and how to attach a different mount. To make sure the ZEISS CP.3 works properly, additionally complete the subsequent procedure:

[Adjusting a ZEISS CP.3 to your Digital Camera.](#)

Detaching a Mount

You need

- ZEISS CP.3
- ZEISS T6 torx wrench with a torque of 0.4 Nm
- alternatively: regular T6 torx wrench with a torque of 0.4 Nm
- ZEISS Interchangeable Mount Set for ZEISS CP.3



The use of tools offered by ZEISS is highly recommended. You can purchase these tools directly from ZEISS or your trusted ZEISS dealer. See [Mount Change Accessories](#)

Requirements

- Ensure that your working space is flat and leveled, in order to prevent the lens from tilting and falling over.
- Ensure that the environment is clean and free from dust so that no dust particles enter the ZEISS CP.3.
- Ensure that the front lens cap sits on your ZEISS CP.3, in order to avoid scratches.

1. Place your ZEISS Compact Prime CP.3 on a flat surface with the mount facing up and the serial number facing away from you.



The serial number is located at the side of the lens foot.
The serial number varies.

2. Remove the rear lens cap.



You can now see the mount.

3. With a T6 torx wrench remove the eight torx screws of the mount.

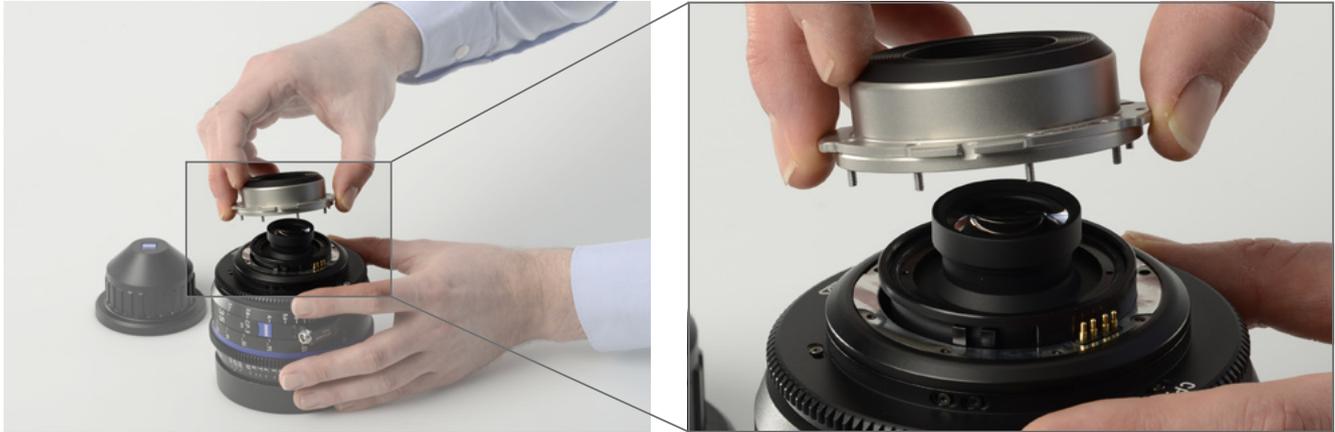


The black inner ring is securely fastened to the mount at the ZEISS factory and does not need to be removed.
This also applies to the electrical interface.



The mount is now loose.

4. Carefully detach the mount from your ZEISS CP.3.



If you are changing from a PL mount, you can directly see the shims.
If you are changing from any other mount than a PL mount, you can now see the black adapter ring.



If you are changing from a PL mount, skip step 6 and 7, since the PL mount doesn't have an adapter ring.

5. With a T6 torque wrench remove the torx screws of the black adapter ring.

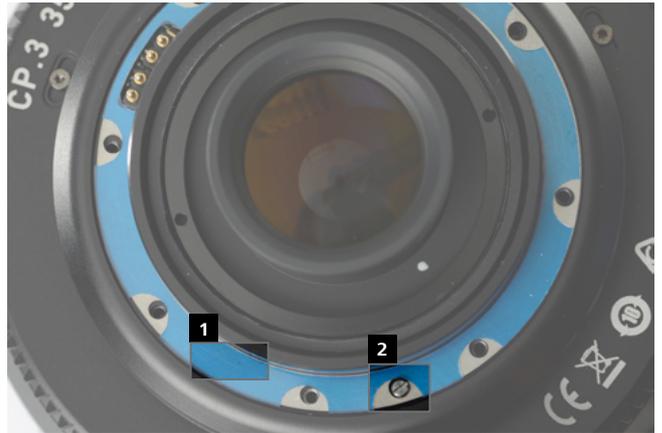


The shape and height of the black adapter ring varies according to the different mounts.



The black adapter ring is now loose.

6. Detach the black adapter ring from your ZEISS CP.3.



1 shims 2 small screw in the groove of the lens



Now you see the shim(s) and a small screw in the groove of the lens barrel.
You have now successfully detached the mount.



When detaching the mount for the first time, do not remove the shims.
Never remove the small screw in the groove of the lens.

Attaching a Mount

You need

- ZEISS CP.3
- ZEISS T6 torx wrench with a torx of 0.4 Nm
- ZEISS Interchangeable Mount Set for ZEISS CP.3



The use of tools offered by ZEISS is highly recommended. You can purchase these tools directly from ZEISS or your trusted ZEISS Dealer. See [Mount Change Accessories](#)

Requirements

- Ensure that your working space is flat and leveled, in order to prevent the lens from tilting and falling over.
- Ensure that the environment is clean and free from dust so that no dust particles enter the ZEISS CP.3.
- Ensure that the front lens cap sits on your ZEISS CP.3, in order to avoid scratches.
- Make sure you successfully completed Part 1: [Detaching a Mount](#)



If you are changing to a PL mount, skip step 1 and 2, since the PL mount doesn't have an adapter ring.

1. Carefully place the adapter ring, which came with your ZEISS Interchangeable Mount Set for the ZEISS CP.3. Make sure the small screw in the groove of the ZEISS CP.3 sinks into groove of the adapter ring and the electrical contact fits into the recess.



The shape and height of the black adapter ring varies according to the different mounts.

2. With the T6 torx wrench tighten the torx screws using a torque of 0.4 N



3. Place the mount on your ZEISS CP.3:

3.I PL mount: Place the PL mount on the ZEISS CP.3 in such a way that the recess of the mount lays on top of the electrical interface. The groove on the other side of the PL mount should then also lay on top of the small screw on the lens barrel.



3.II EF mount: Place the silver EF mount on the adapter ring in such a way that the notch aligns with the index mark.



3.III F mount: Place the F mount on the adapter ring in such a way that the notch aligns with the index mark.



3.IV MFT mount: Place the MFT mount on the adapter ring in such a way that the notch aligns with the index mark.



3.V E mount: Place the E mount on the adapter ring in such a way that the blue dot aligns with the index mark.



4. With the T6 torx wrench tighten the torx screws using a torque of 0.4 N



You have now successfully changed the mount of a ZEISS CP.3.

In this chapter you learned how to detach the mount of your ZEISS CP.3 and attach a new mount to your ZEISS CP.3. To make sure your ZEISS CP.3 works properly, also complete the subsequent procedure: [Adjusting a ZEISS CP.3 to Your Digital Camera](#)

Adjusting a ZEISS CP.3 to Your Digital Camera

In the following chapter you learn how to adjust your ZEISS CP.3 to a digital camera. This is necessary to ensure that the ZEISS CP.3 works properly and delivers the maximum image quality. In order to perform this adjustment, ZEISS provides shims in different colors which indicate their thickness.

You need:

- Tripod
- Digital camera with live view
- ZEISS CP.3 that needs to be adjusted
- Siemens star test chart
- Measuring tape or folding ruler
- Flat-blade screwdriver
- At least 3,5 m or 12 ft of free space
- ZEISS Interchangeable Mount Set for ZEISS CP.3
alternatively: ZEISS Shims set



The use of tools offered by ZEISS is highly recommended. You can purchase these tools directly from ZEISS or your trusted ZEISS Dealer. See [Mount Change Accessories](#)

Requirements:

- Make sure that the front and rear lens of the ZEISS CP.3 are clean.
- Ensure that the illumination is bright and uniform.
- Set your camera to standard settings (cf. work settings)



Smudges and fingerprints on the lens surface can gently be removed with a soft brush and then with a dry and clean cotton cloth. The ZEISS lens cleaning kit will give superior results and is highly recommended for this purpose. For further information, please watch our tutorial on how to clean your lens. <https://youtu.be/syOzecbtuwg>

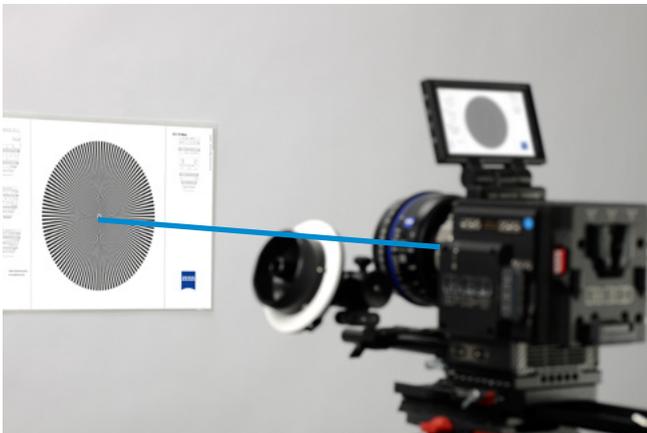


Testing the Sharpness

1. Fasten the siemens star test chart on a wall.
2. Mount the ZEISS CP.3 on the camera.
3. Mount the camera on a tripod.
4. Position your camera at the testing distance of 3 m or 10 ft.



The testing distance is measured from the siemens star test chart to image plane on your camera..



-
5. Level the camera.

6. Set the aperture of the CP.3 to full speed by rotating the aperture ring.



The aperture setting must not be changed during the adjustment process.

7. Activate the live view of your camera.

8. Select the maximum magnification of the live view.

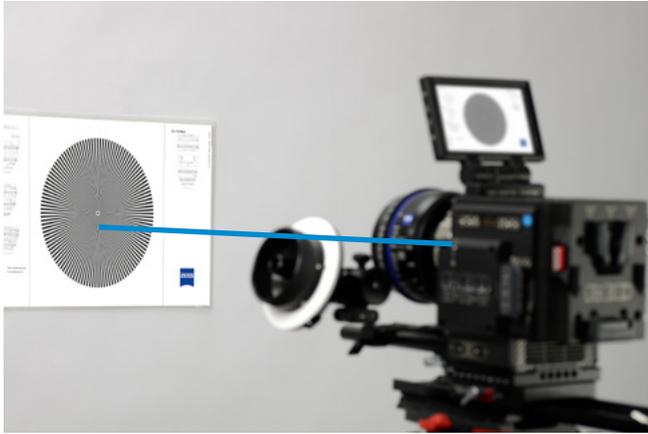
9. Make sure that the center of the image aligns with the center of the siemens star test chart.

10. Set the focus ring according to the testing distance. See Shimming Table.



The focus setting must not be changed during the adjustment process.

11. Obtain maximum image sharpness on the live view by varying the distance between the test chart and the camera.



12. Now remeasure the testing distance between the image plane mark on the camera body and the test chart (= the actual distance)



If the testing distance has changed, note the distance. The change indicates that the flange focal distance of the ZEISS CP.3 must be adjusted. Proceed with the steps in Correcting the Flange Focal Distance.

13. Do not take down the setup as you will need it again to recheck the sharpness later in the process.

Correcting the Flange Focal Distance

1. Remove the ZEISS CP.3 from the camera.

2. Follow the steps of chapter [Detaching a Mount](#).

3. Determine the total thickness of the shims that already lay in the lens groove.

4. Increase or decrease the total shim thickness according to the tables in the appendix by using a flat-bladed screwdriver or a pair of tweezers.



Any combination of shims is possible to achieve the required thickness and therefore the desired flange focal distance. Always use the closest possible combination of shims.

Example:

Using a Compact Prime CP.3 35mm/T2.1 lens with an EF mount, scaled in feet and a test chart at a test distance of 4 ft, an actual distance of 4 ft 1' is measured. Due to the table on page 14, you add a silver shim 0.013mm to the total thickness of the shims.

5. Use a flat-bladed screwdriver or a pair of tweezers to remove or add shims.



Handle the shims carefully as they can easily kink or tear which makes them unusable. Ensure that the colored shims lie on top of each other in the groove of the lens barrel and do not cover the screw holes. The shims might otherwise be damaged, while screwing in the screws.

6. Follow the steps of chapter [Attaching a Mount](#) to attach a new mount.

7. Recheck the sharpness of the lens. Follow the steps of testing the sharpness once more.

- a. If the testing distance has changed, follow the steps of chapter [Correcting the Flange Focal Distance](#) once more.
- b. If you achieve the maximum sharpness at the testing distance proposed in the tables, you successfully tested your Compact Prime CP.3. No further steps are required.

In this chapter you learned how to adjust a Compact Prime CP.3

Appendix

Color Code of the Shims

Shimming Table

Minus sign: Enlarge the flange focal distance. → Remove Shims

Plus sign: Reduce the flange focal distance. → Add Shims

Shim color	Thickness [mm]	
Silver	0.013	
Gold	0.019	
Purple	0.025	
Light Blue	0.032	
Red	0.038	
Blue	0.051	
White	0.064	
Green	0.076	
Orange	0.102	
Light Purple	0.127	
Clear	0.152	

Meter distance scale

Distance to test chart [mm]	3000
Object distance at best focus [mm]	Change of total washer thickness [mm]
2960	-0,05
2970	-0,04
2980	-0,02
2990	-0,01
3000	0,00
3010	+0,01
3020	+0,02
3030	+0,04
3040	+0,05

Feet distance scale

Distance to test chart [ft]	10
Object distance at best focus [ft]	Change of total washer thickness [mm]
9ft 10'	-0,06
9ft 10 1/2'	-0,05
9ft 11'	-0,03
9ft 11 1/2'	-0,02
10ft 0'	0,00
10ft 1/2'	+0,02
10ft 1'	+0,03
10ft 1 1/2'	+0,05
10ft 2'	+0,06

Mount Change Accessories

Accessories	ZEISS Identification Number
Front Lens Cap CP.3	4047865905114
Rear Lens Cap - EF	4047865900560
Rear Lens Cap - PL	4047865900577
Rear Lens Cap - F	4047865900959
Rear Lens Cap - MFT	4047865901222
Rear Lens Cap - E	4047865901468
IMS PL - XD eXtended Data - T2.9/15; T2.1/50; T2.1/85	4047865905121
IMS PL - XD eXtended Data - T2.9/18	4047865905138
IMS PL - XD eXtended Data - T2.9/21; T2.1/25; T2.1/28; T2.1/35	4047865905145
IMS PL - XD eXtended Data - T2.1/100	4047865905152
IMS PL - XD eXtended Data - T2.1/135	4047865905169
IMS PL - T2.9/15; T2.1/50; T2.1/85	4047865905176
IMS PL - T2.9/18	4047865905183
IMS PL - T2.9/21; T2.1/25; T2.1/28; T2.1/35	4047865905190
IMS PL - T2.1/100	4047865905206
IMS PL - T2.1/135	4047865905213
IMS EF - T2.9/15; T2.1/50; T2.1/85	4047865905220
IMS EF - T2.9/18	4047865905237
IMS EF - T2.9/21; T2.1/25; T2.1/28; T2.1/35	4047865905244
IMS EF - T2.1/100	4047865905251
IMS EF - T2.1/135	4047865905268
IMS MFT - T2.9/15; T2.1/50; T2.1/85	4047865905275
IMS MFT - T2.9/18	4047865905282
IMS MFT - T2.9/21; T2.1/25; T2.1/28; T2.1/35	4047865905299
IMS MFT - T2.1/100	4047865905305
IMS MFT - T2.1/135	4047865905312
IMS E - T2.9/15; T2.1/50; T2.1/85	4047865905329
IMS E - T2.9/18	4047865905336
IMS E - T2.9/21; T2.1/25; T2.1/28; T2.1/35	4047865905343
IMS E - T2.1/100	4047865905350
IMS E - T2.1/135	4047865905367
IMS F - T2.9/15	4047865905374
IMS F - T2.9/18	4047865905381
IMS F - T2.9/21; T2.1/25; T2.1/28; T2.1/35	4047865905398
IMS F - T2.1/100	4047865905404
IMS F - T2.1/135	4047865905411
IMS F - T2.1/50; T2.1/85	4047865905442

Glossary

Flange focal distance	flange-to-film distance, flange focal depth, flange back distance, flange focal length
Shim	washer
Index mark	aperture indicator, aperture line, aperture mark, aperture index
Flat-blade screwdriver	slotted screwdriver, flathead screwdriver

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