

Mamiya

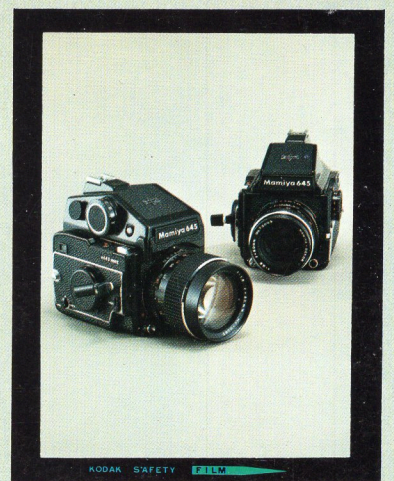
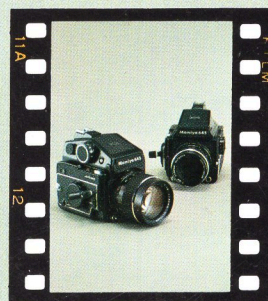
M645

1000S



M645

35mm



The advanced-capability medium-format (6x4.5cm) single-lens reflex camera system

Mamiya M645 1000S

The Mamiya M645 1000S produces a picture area 2.7 times larger than that of a standard 35mm camera (and a useable format almost proportional to the popular 8 × 10" and 16 × 20" enlarging paper sizes). But, because of its improved, compact body design, it's nearly as light and offers the same portability as a 35mm SLR camera. The M645 1000S marks a new phase in the history of medium-format photography.

The Mamiya M645 1000S gives a 6 × 4.5cm picture format (56 × 41.5mm actual image size), using 120/220 roll film. A roll of 220 film gives you 30 exposures, which compares well in convenience with the 36 exposures of a roll of 35mm film.

The operating ease of this camera is amazing. Even if you're accustomed to 35mm cameras, you will find few of the problems that are usually associated with larger-format cameras.

The advanced design features of the M645 1000S—among them a body profile designed in accordance with human-engineering principles and such components as the moving-coil type electronically controlled focal-plane shutter (a Mamiya patent), all designed from the point of view of the user—are the fruits of Mamiya's years of technological experience and expertise in the field of professional cameras. This is a field in which Mamiya's technology has an established and proved reputation.



A complete system of interchangeable accessories has been prepared so that the camera can be used under a wide variety of conditions and for any field of application. It is a multi-option system, allowing the user to combine accessories in numerous variations. For example, four types of interchangeable viewfinders and five focusing screens are available for use in combination with the other special accessories, and each is designed to give best results for various types of photographic applications. Interchangeable lenses are the biggest advantage of the single-lens reflex camera. Mamiya/Sekor C multi-coated lenses—from ultra-wideangle to telephoto—are of light and compact design and are well-known for their sharpness. Thus the high picture quality that is demanded of the larger 6 × 4.5cm format is guaranteed.

The world of 6 × 4.5cm cameras was pioneered by Mamiya. And now, with the M645 1000S, Mamiya has advanced the frontiers of medium-format SLR photography one stage further.

The 6 × 4.5 cm format has 2.7 times the picture area of a 35 mm camera, with an ideal length/width ratio.

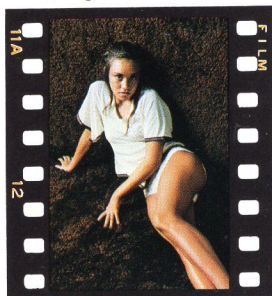
The illustration shows the actual image sizes of the 6 × 4.5cm and 35mm double-frame formats. Because the 6 × 4.5cm format gives an image area 2.7 times that of the 35mm format, the quality of the resulting pictures is particularly apparent in enlargements. For example, an 8 × 10" enlargement from a 6 × 4.5cm negative will give about the same quality as a 4 × 5" enlargement from a 35mm negative. This is a striking demonstration of the advantages of the medium format.

Moreover, the 1:1.33 width-to-length ratio of the 6 × 4.5cm format may be considered to be ideal, because it is closest to the common enlarging paper sizes and to the usual magazine illustration formats.

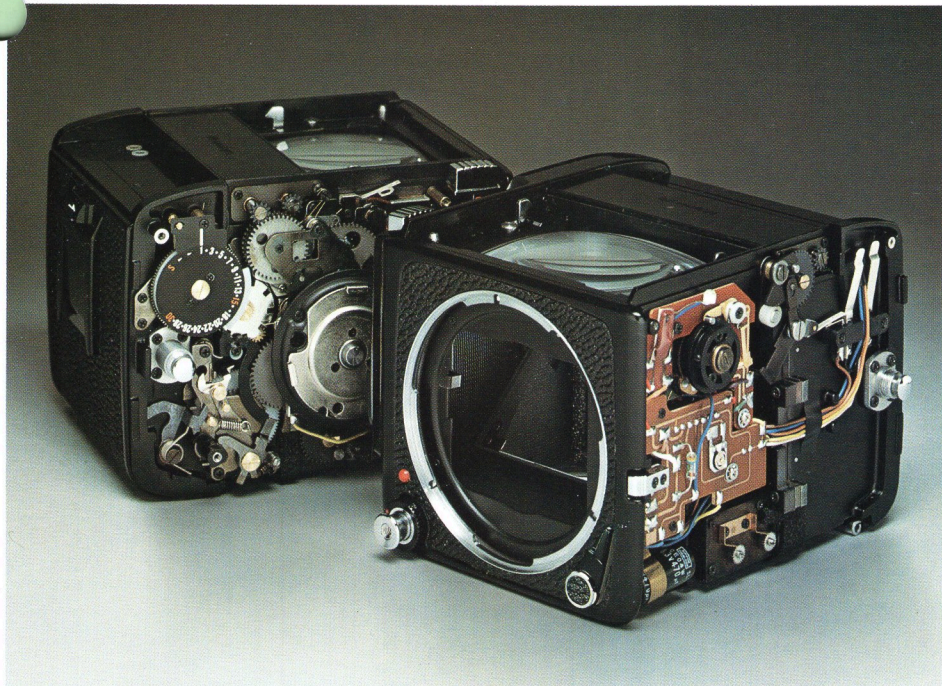


Mamiya M645 format:
Actual image size
56 × 41.5mm

35mm format: Actual
image size 36 × 24mm

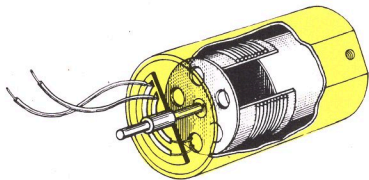


The M645 1000S has all these technical features, backed up by Mamiya's renowned technology



High-precision moving-coil electronic shutter

The moving-coil electronically controlled focal-plane shutter developed by Mamiya, for which patents are pending, is an important feature of the M645 1000S. The greater compactness of electronic as compared to mechanical-type shutters is one of the factors that made possible the easy-to-handle, light-weight body design of this camera. Among the features of the new shutter are: accurate exposure times (as short as 1/1000th second), stable long exposures (up to 8 full seconds), increased resistance to wear, improved response, greater stability, better temperature characteristics, and more economical power consumption.



Power consumption greatly reduced

The disadvantage of typical magnet-type shutters is that current is being used during the exposure, with the result that battery life is considerably shortened when long exposures are necessary. In the moving-coil method developed by Mamiya, power consumption is constant, independent of exposure times, and the life time of the battery increases up to tenfold. Thus the introduction of the mov-

ing-coil has meant that in addition to long-exposure control, which is the special characteristic of electronic shutters, battery consumption can be kept to the minimum. Thus Mamiya has been the first to introduce a high-precision electronic shutter with faster response and optimum stability.

Power source

One 6V silver-oxide battery is used as the power source. For normal photography (with a fresh battery, under normal temperature conditions, and using a prism finder or waist-level finder), one battery will give up to 100,000 exposures.

Slack-free film

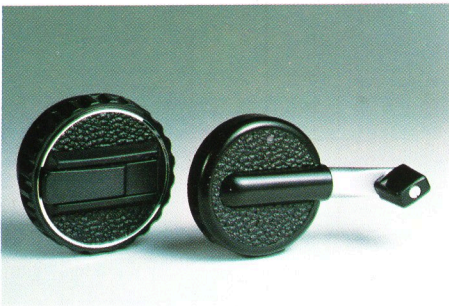
Mamiya has a definite technical policy, the result of their long experience as leaders in the field of professional cameras. Film flatness is one aspect of this policy. Mamiya's medium-format cameras (Press, RB67, C330 f) have had a good reputation for reliability of film flatness for years. The film-loading system of the M645 1000S utilizes specially developed film inserts, that insure that the film is never slack. There are two types of inserts, for 120 and 220 roll film respectively, and they are carefully designed in such a way that no slack appears even when film is loaded in the camera for a long time.



1/1000 sec. shutter speed

Because the shutter is electronically controlled, you can be certain of accurate exposures even at the maximum speed of 1/1000th second. This is an important point when considering the creative possibilities of a camera and the fast-moving subjects it can freeze on film.

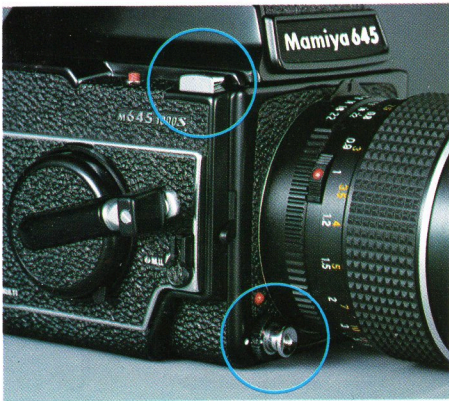




Interchangeable film-advance crank and knob

One full 360° revolution of the film-advance crank, designed to fit the hand comfortably, advances the film for your next shot.

It can be interchanged with a large film-advance knob available as an accessory.



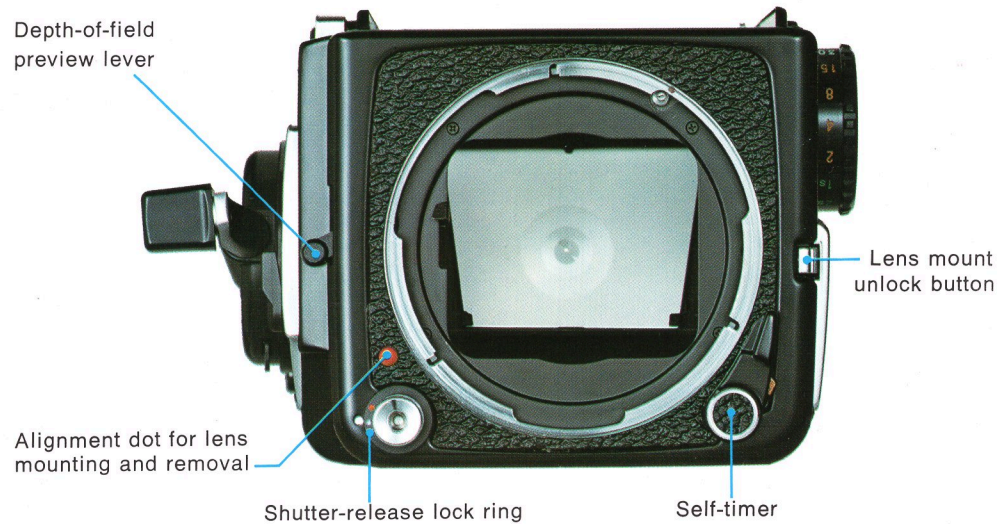
Two shutter-release buttons

The M645 1000S is provided with two shutter-release buttons, one on the top of the body and one on the right front. Either button can be used to release the shutter, depending on the angle at which the camera is held, whether vertical or horizontal, etc. Both release buttons can be locked simultaneously by means of a locking device incorporated in the shutter release on the camera front.



Bayonet lens mount

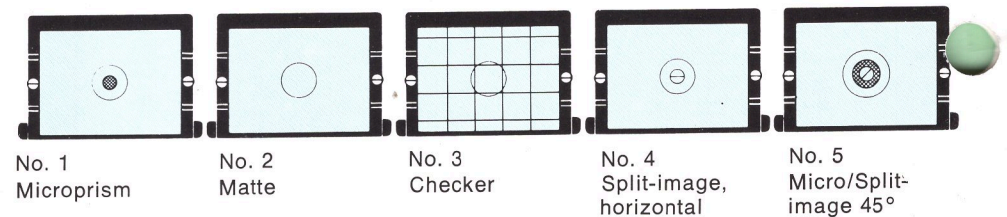
The lens mount is a special Mamiya bayonet type, making possible fast changing of lenses. The lens can be released or locked by rotating it through a 60° turn.



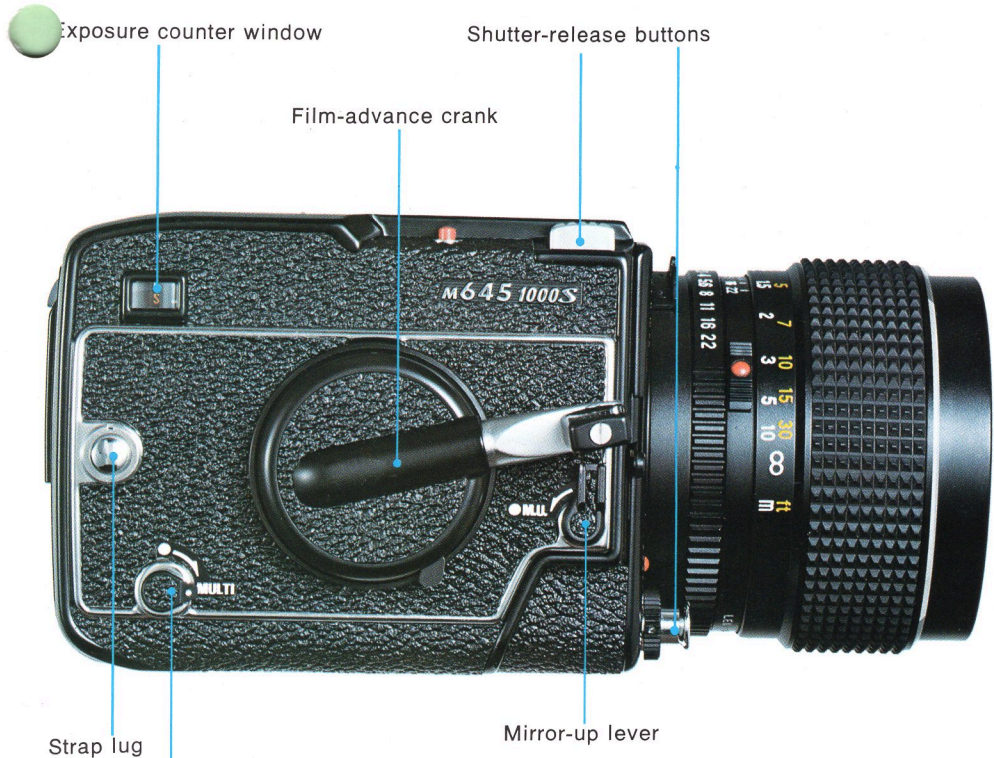
Five interchangeable focusing screens

Five types of focusing screens are available for different applications and can be easily interchanged. They cannot be

inserted incorrectly. The standard screen for the M645 1000S is the unique Micro/Split-image 45° type.



Detailed features of the M645 1000S

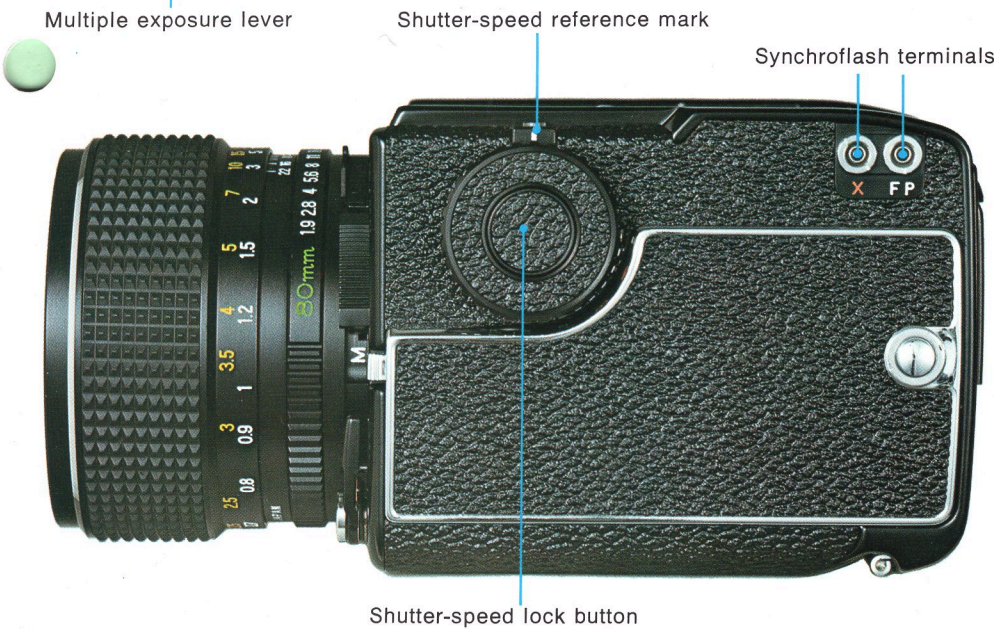


Self-timer

The self-timer can be set from 5 seconds (with the lever turned through 90°) to 10 seconds (lever turned through 180°). Since setting and starting of the self-timer are separate operations, the shutter can be released in the ordinary way even after the timer has been set.

Double-exposure prevention and multiple exposures

The camera normally operates so that double exposures cannot accidentally occur. However, when the multi-exposure lever is set to the MULTI position, the film advance crank only cocks the shutter without advancing the film or exposure counter. The same film area can then be reexposed any number of times.



Mirror-up locking device

The mirror-up lock fulfills an important function when it is desirable to avoid even the slightest mirror shock. If you set the mirror-up lever to the M.U. position, the mirror is locked in an "up" position and is independent of other camera functions. This feature is particularly useful when slow shutter speeds are used.

Depth-of-field preview

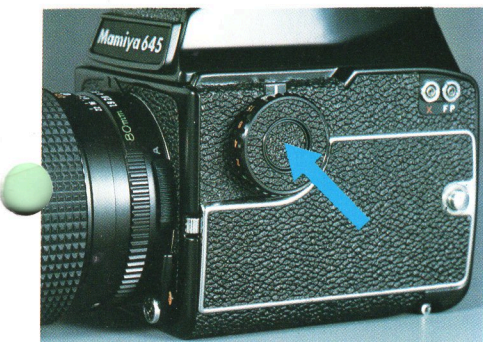
When the depth-of-field preview lever is pushed up, the image seen in the viewfinder shows the actual depth-of-field that will be obtained with the set aperture. When the lever is released, normal full-aperture viewing is resumed.

Flash synchronization

Since the M645 has a focal-plane shutter, two types of synchronization are provided: X (electronic flash) and FP (FP-type flashbulbs). Electronic flash can be synchronized up to 1/60 sec. When a cordless flash unit is used, attaching the unit to the hot-shoe on any of the three prism finders will automatically connect the unit to the X terminal.

Shutter-speed lock button

To prevent any accidental moving of the shutter-speed setting, the camera body shutter dial is provided with a positive locking device.



Battery check

When the battery-check button (on the top of the body) is pressed, the condition of the battery is indicated by the green LED check lamp.

M645 1000S with
PD prism finder and
45mm f/2.8 lens.



PD prism viewfinder

This is a prism viewfinder with a built-in IC-controlled TTL exposure meter using a high-sensitivity silicon photo-electric cell. The red and green LED's glow inside the finder to indicate exposure. It is a precise visual indication of proper exposure setting. When the exposure-meter is switched on, it stays ON for 15 seconds, after which it automatically switches off. This eliminates the possibility of forgetting to switch the meter off. It has an accessory shoe with flash contacts and a rubber eyecup.

The exposure reading is taken by the center-weighted open-aperture method. The sensitivity ranges from EV 0 (f/2.8 at 8 sec.) to EV 19 (f/22 at 1/1000 sec.) with an f/2.8 lens; and from EV-1.15 (f/1.9 at 8 sec.) to EV 19 (f/22 at 1/1000 sec.) with an f/1.9 lens (ASA 100).

Microprism focusing screen

This is a focusing screen for general purposes, with a microprism in the center for fast focusing. The surrounding matte area can also be used for focusing.



CdS prism viewfinder

This is a prism viewfinder incorporating a through-the-lens exposure meter with a cadmium sulfide photoelectric cell. The meter gives accurate, open-aperture, center-weighted readings by matching a pointer needle. The correct aperture is

selected by turning the lens diaphragm ring to center the needle seen in the viewfinder. The proper shutter speed will show on the prism shutter dial. One 1.5V battery is required to power the meter. There is an "ON/OFF" switch on the meter, a cordless flash accessory shoe on the back, and a rubber eyecup.

The measuring range is from EV 2.85 (f/1.9 at 1/2 sec.) to EV 17 (f/11 at 1/1000 sec.) with an f/1.9 lens; and from EV 4 (f/2.8 at 1/2 sec.) to EV 18 (f/16 at 1/1000 sec.) with an f/2.8 lens. Both ranges are for ASA 100 film.



M645 1000S with CdS prism finder and 70mm f/2.8 lens.



Micro/Split-image 45° focusing screen

Rapid and accurate focusing is made possible by the 45° split-image center spot surrounded by a micro-diaphragm ring and a ground-glass ring.

With the 45° split-image of this screen, it is possible to easily focus on a horizontal subject.

The 70mm f/2.8 lens is of the leaf-shutter type, so all speeds from 1/30 to 1/500 sec. can be used for electronic flash photography, with the X synchronization contact.





M645 1000S with prism finder, auto extension rings, angle finder, and 80mm f/1.9 lens.

This arrangement is ideal for close-ups and for copying with the camera on a vertical copy stand.

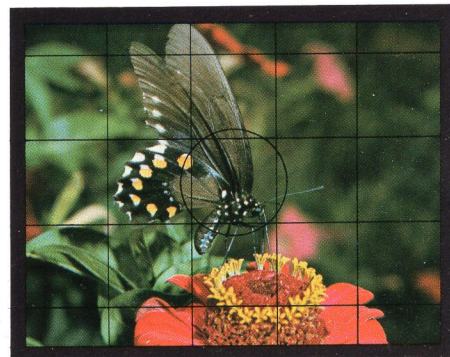
Prism viewfinder

This viewfinder gives an upright, laterally correct image. The pentaprism is divided into two prisms, one large and one small, resulting in a very compact viewfinder. Because the reflecting surfaces of the two prisms are silver-coated by the vaporization process, all parts of the image are bright. Moreover, as the finder image is upright and laterally correct, it is ideal not only for fast-moving subjects, but also for

general photography. The viewfinder does not have a built-in exposure meter, but this makes for compact dimensions and ease of handling. It has a cordless accessory flash shoe and a rubber eyecup.

Checker focusing screen

This matte screen has a checkerboard grid and is especially useful for critical compositions to a specific layout. It is also useful for close-ups, reproduction, and architectural photography.

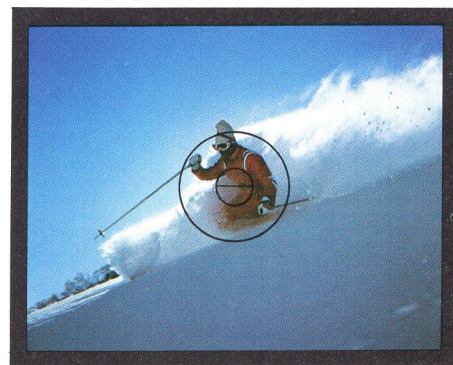


Waist-level viewfinder S

– Sports finder –

This is a special viewing frame and sight, attached outside the hood of the waist-level viewfinder S, which can be quickly and simply

turned into a sports finder. Joint use with the waist-level finder opens up a wide range of possibilities, such as photography of fast-moving subjects or aerial photography with a free choice of vertical or horizontal framing. The sports finder is designed for use with an 80mm standard lens, but with the addition of masks can also be used for 110mm, 150mm, or 210mm lenses. The finder hood can be opened for focusing while the viewing frame is in position.



Split-image focusing screen

For general use. Focusing can be accomplished quickly and accurately by bringing together the upper and lower halves of the horizontal split image in the center spot.



M645 1000S with sports finder and 150mm f/4 lens.





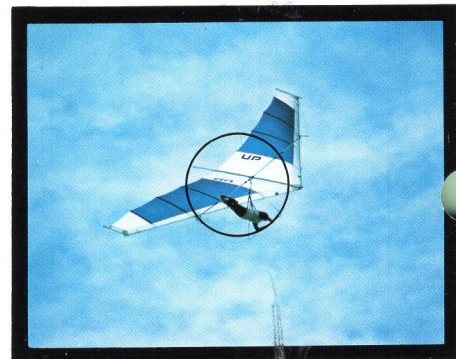
M645 1000S with waist-level finder S and 500mm f/5.6 lens.

Waist-level viewfinder S

This is a light weight, easy-to-use waist-level finder that flicks open with one action. Completely light-tight, viewing is not interfered with by reflected light. It is ideal for low-angle, close-up, and reproduction work. Since the focusing screen is viewed through a magnifying lens, the finder image is exceptionally bright. Light in weight compared to the other finders, it features outstanding portability and compactness.

Matte focusing screen

This is also a general-purpose screen. Ideal for telephoto work or when there is a need for depth-of-field preview.



Mamiya/Sekor C multi-coated lenses give razor-sharp pictures

There is a varied range of interchangeable lenses for use with the M645 1000S (and the earlier M645)—from ultra wideangle to telephoto—allowing a wide choice for every kind of photography.

All Mamiya/Sekor C lenses are multi-coated, minimizing flare and ghosts to give a crystal-clear image, and assuring outstanding color fidelity.



35mm f/3.5

Construction:
9 elements in 7 groups
Angle of view: 90°
Minimum aperture: f/22
Minimum focus: 45 cm
35 mm equivalent: 22 mm
Filter size: 77 mm
Hood: not required
Weight: 445 g

55mm f/2.8

Construction:
9 elements in 6 groups
Angle of view: 65°
Minimum aperture: f/22
Minimum focus: 53 cm
35 mm equivalent: 34 mm
Filter size: 58 mm
Hood: screw-in type
Weight: 395 g

70mm f/2.8

Construction:
6 elements in 4 groups
Angle of view: 53°
Minimum aperture: f/22
Minimum focus: 80 cm
35 mm equivalent: 43 mm
Filter size: 58 mm
Hood: screw-in type
Weight: 395 g
* 1/30, 1/60, 1/125, 1/250,
1/500 a sec., leaf-shutter

80mm f/1.9

Construction:
7 elements in 6 groups
Angle of view: 47°
Minimum aperture: f/22
Minimum focus: 70 cm
35 mm equivalent: 49 mm
Filter size: 67 mm
Hood: screw-in type
Weight: 420 g

45mm f/2.8

Construction:
9 elements in 7 groups
Angle of view: 76°
Minimum aperture: f/22
Minimum focus: 50 cm
35 mm equivalent: 28 mm
Filter size: 77 mm
Hood: slip-on type
Weight: 530 g

80mm f/4 Macro

Construction:
6 elements in 4 groups
Angle of view: 47°
Minimum aperture: f/22
Minimum focus:
18.3cm (lens only)
10.1 cm (with Macro Spacer)
35 mm equivalent: 49 mm
Filter size: 67 mm
Hood: not required
Weight: 585 g

80mm f/2.8

Construction:
6 elements in 5 groups
Angle of view: 47°
Minimum aperture: f/22
Minimum focus: 68 cm
35 mm equivalent: 49 mm
Filter size: 58 mm
Hood: screw-in type
Weight: 255 g

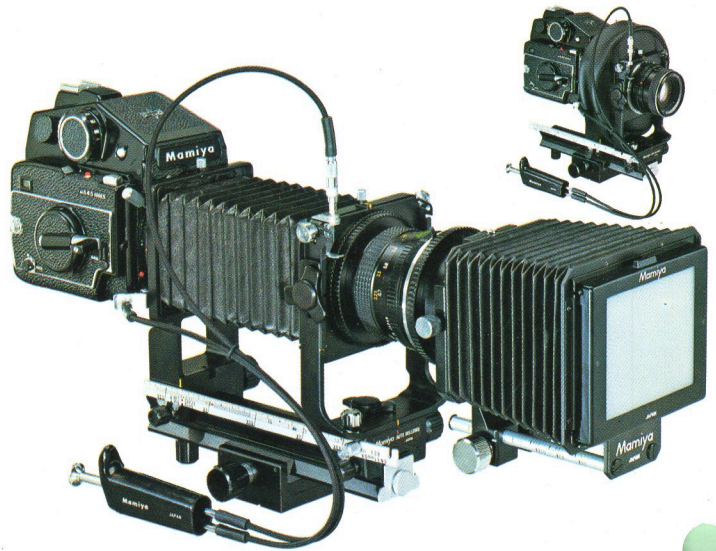
110mm f/2.8

Construction:
5 elements in 5 groups
Angle of view: 35°
Minimum aperture: f/22
Minimum focus: 120 cm
35 mm equivalent: 68 mm
Filter size: 58 mm
Hood: screw-in type
Weight: 390 g

Special accessories

In addition to interchangeable lenses, a wide range of accessories is essential for increasing the scope of a complete camera system.

For the M645 1000S, a whole system of accessories has been designed, enabling it to be used under many conditions and for any kind of photographic assignment. We recommend that, when purchasing the camera, you also choose the accessories that are needed for your kind of photography. The system chart gives a comprehensive view of the interchangeable accessories available for the M645 1000S.



Auto bellows

With the new auto bellows, together with slide copier and bellows lens hood, the M645 1000S represents an advanced camera system that will expand the scope of your close-up photography. The most distinctive feature of this auto bellows is its ability to tilt and swing the lens. At its full extension of 185mm, you can get 2.5 × magnification with an 80mm f/2.8 standard lens (2.76 × ... 80 mm f/1.9 lens) in reverse mounting.

The complete set consists of:

1. Auto bellows unit
2. Bellows lens hood
3. Slide copy attachment set
4. Reverse ring
5. Connecting ring
6. Retaining ring
7. Balloon bellows

Auto extension rings

These automatic extension rings for close-up photography are coupled to the lens aperture and the meter prisms. They are available in three sizes. By using all three rings in combination with an 80mm lens, life-size pictures can be obtained.



Close-up photography (with 80mm lens)

Rings used	Magnification	Subject coverage (cm)
No.1	0.15 ~ 0.30	28.2 × 38.1 ~ 13.9 × 18.7
No.2	0.29 ~ 0.45	14.1 × 19.0 ~ 9.3 × 12.6
No.3	0.44 ~ 0.60	9.4 × 12.7 ~ 7.0 × 9.4
No.1 + No.3	0.59 ~ 0.74	7.1 × 9.5 ~ 5.5 × 7.5
No.2 + No.3	0.73 ~ 0.89	5.6 × 7.6 ~ 4.6 × 6.2
No.1 + No.2 + No.3	0.88 ~ 1.04	4.7 × 6.3 ~ 4.0 × 5.4



150mm f/4

Construction:

5 elements in 4 groups
 Angle of view: 26°
 Minimum aperture: f/32
 Minimum focus: 150 cm
 35 mm equivalent: 95 mm
 Filter size: 58 mm
 Hood: built-in
 Weight: 440 g

210mm f/4

Construction:

5 elements in 4 groups
 Angle of view: 19°
 Minimum aperture: f/32
 Minimum focus: 244 cm
 35 mm equivalent: 129 mm
 Filter size: 58 mm
 Hood: built-in
 Weight: 715 g

300mm f/5.6

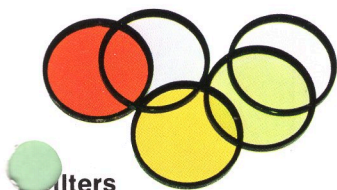
Construction:

6 elements in 5 groups
 Angle of view: 13°
 Minimum aperture: f/32
 Minimum focus: 400 cm
 35 mm equivalent: 186 mm
 Filter size: 58 mm
 Hood: built-in
 Weight: 710 g

500mm f/5.6

Construction:

6 elements in 5 groups
 Angle of view: 8°
 Minimum aperture: f/45
 Minimum focus: 900 cm
 35 mm equivalent: 309 mm
 Filter size: 105 mm
 Hood: built-in
 Weight: 2,280 g



Filters

Five filters (02, SL, UV, Y2, YG) are available for each lens diameter. The UV filter (absorbing ultraviolet radiation) does not affect color rendition, so it may always be attached to the lens to serve as protection.



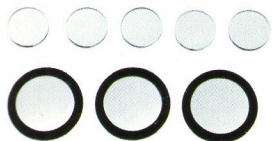
Lens hoods

Lens hoods are indispensable for outdoor and against-the-light photography. There are Mamiya hoods for all lens diameters. (The 35mm lens does not need a hood, and some other types of lenses have built-in hoods.)



Focusing handle

Focusing can be accomplished faster and easier by attaching this handle to the lens focus knurling. It fits all the lenses from the 55mm to the 300mm except the 80mm f/1.9 and 70mm f/2.8 lenses.



Diopter correction lenses and magnifiers

Six types of diopter correction lenses are available for prism finders, from -3 to +3 diopters. Five types of magnifiers are available for the waist-level finder, from -3 to +2 diopters.



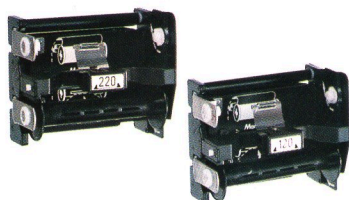
Magnifier

This magnifier is for more precise focusing in such fields as close-up photography and gives a 2X magnification of the center of the finder image. (Adjustable from -5 to +5 diopters.)



Angle finder

The angle finder easily rotates through a full 360°, so low-angle shots, close-ups, etc., can be taken from a comfortable position. It has click-stop detents every 90°, but the entire viewfinder field can be seen at any position in the full 360° circle. It has a built-in adjustment from -4 to +5 diopters.



Film inserts

Two types of film inserts are available, one for 120 roll film and one for 220 film. Additional inserts are moderately priced and can be preloaded with film, making very rapid re-loading possible. Each accessory insert is supplied with a dust-free carrying case.



Film-advance knob with crank

The film advance knob can be used when the camera is mounted on a tripod and when it is necessary to advance the film carefully. A pull-out crank is built into the knob.



Rotating tripod adapter

When used on a tripod, this adapter can be turned to quickly change the camera position from vertical to horizontal or back to vertical without changing the lens axis.



Quick-shoe model 2

This quick-shoe is designed to facilitate speedy mounting of the camera on to and removal from the tripod.



Hand and neck straps

Strong, convenient, swiveling straps for carrying the camera with the lens down.



Pistol grip

This pistol-shaped grip enables the camera to be held comfortably in the left hand. The trigger on the grip is coupled with the shutter release on the camera. It is especially convenient for eye-level photography using a prism viewfinder.



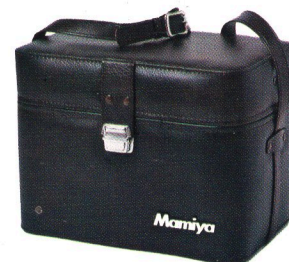
Camera case

This is a soft case for the M645 1000S with standard lens and any type of finder attached.



Deluxe L-grip

This grip permits the camera to be held and the shutter release to be operated by the left hand. The camera can be used easily in either vertical or horizontal positions. A rotating accessory shoe can be attached for mounting an electronic flash unit.



Compartment case

This case will take the camera with grip attached, together with several lenses and accessories. (External dimensions: 36 x 22 x 26 cm.)



Grip holder

This is a simplified version of the L-grip and is provided with an accessory shoe. There is no shutter-release button on this grip.



Custom aluminum case

This sturdy, shock-resistant case will carry an M645 camera (with lens attached), a grip, and numerous additional lenses and accessories — all protected in custom-cut, foam-lined compartments. (External dimensions: 47 x 35 x 17 cm.)



Fine design... The Mamiya M645 awarded a "G" mark

The M645, winner of the Japan's Ministry of International Trade and Industry's "G" mark good-design award, is well known as the world's first 6 × 4.5cm format SLR camera. It is essentially similar to the M645 1000S, although its maximum shutter speed is only 1/500 sec., and it differs in a few other respects as can be seen from the specifications below. All the lenses and accessories that can be used with the M645 1000S can also be used with the M645.



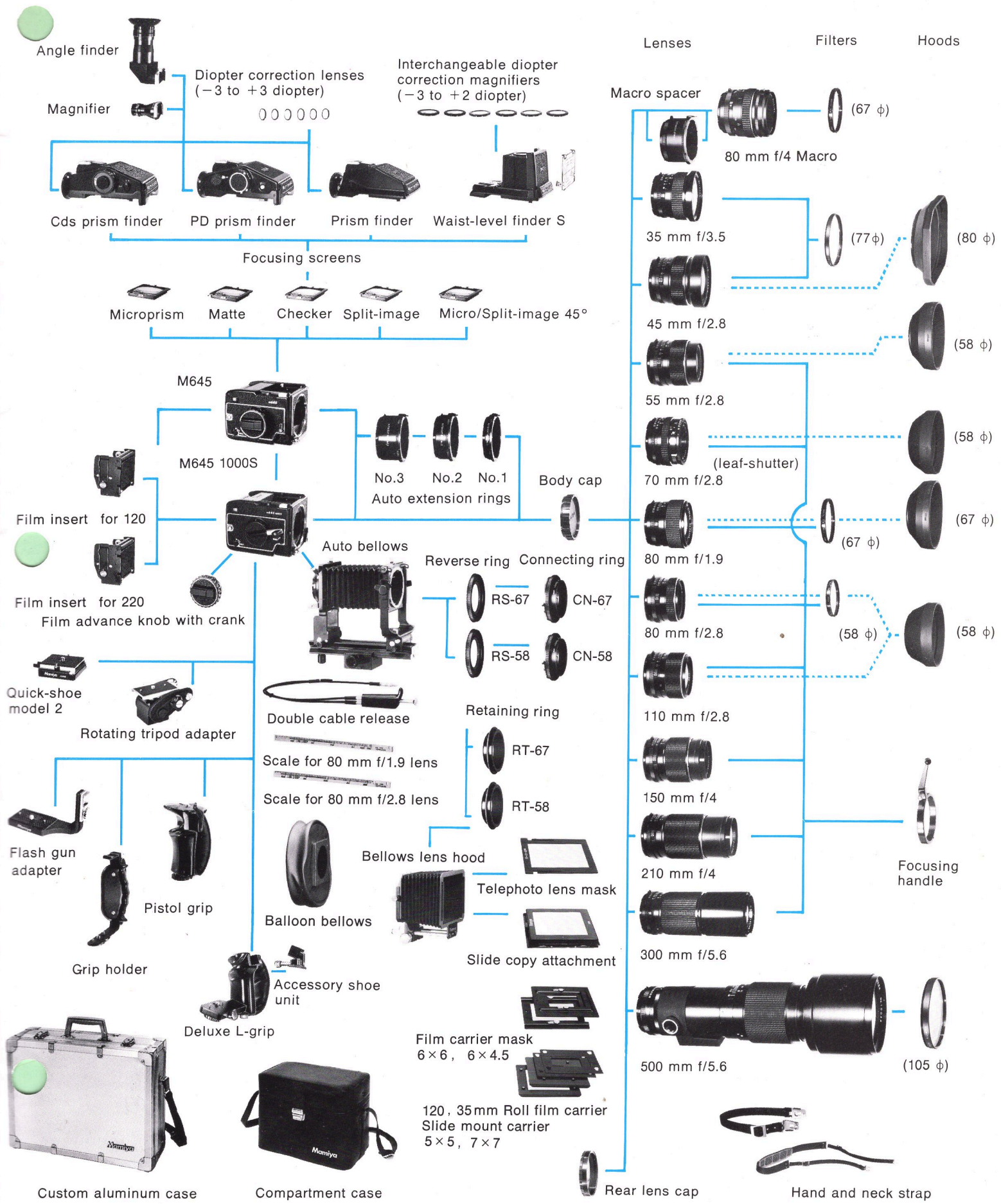
The "G" mark

"G" stands for "good design" and the "G" mark is awarded to products selected by Japan's Ministry of International Trade and Industry on the basis of excellence in design, including the aspects of appearance, function, and quality. Presence of the "G" mark has become one of the criteria consumers look for in making a choice between products.

You can use both the M645 and the M645 1000S with confidence, assured that Mamiya's extensive technology and experience, gained in the field of manufacturing professional cameras, are incorporated in both.

Specifications of Mamiya M645 models

	M645 1000S	M645
Camera type	6 × 4.5cm format, electronically controlled focal-plane shutter, single-lens reflex.	
Actual film image size	56 × 41.5mm	
Film	120 roll film (15 exposures), 220 roll film (30 exposures).	
Standard lenses	Mamiya/Sekor 80mm f/1.9 Mamiya/Sekor 80mm f/2.8	
Lens mount	Special Mamiya bayonet mount.	
Shutter	Moving-coil, electronically controlled focal-plane.	
Shutter speeds	1/1000, 1/500, 1/250, 1/125, 1/60, 1/30, 1/15, 1/8, 1/4, 1/2, 1, 2, 4, 8 (secs.); with shutter-speed dial lock	1/500 — 8 (secs.); no lock.
Self-timer	5 ~ 10 secs. delay; independent setting and starting.	None
Shutter release	2 buttons, on top and front of body respectively; with lock.	
Interchangeable viewfinders	Waist-level viewfinder S, Prism viewfinder, PD (meter) prism viewfinder, CdS (meter) prism viewfinder.	
Focusing screens	Micro/Split-image 45° (standard); 4 other types.	Microprism (standard); other interchangeable screens can be used.
Film advance	Single-revolution crank, (interchangeable)	Knob with crank.
Exposure counter	Self-resetting; automatic adjustment for 120/220 films.	
Depth-of-field preview	Single-action body lever provided.	Auto/Manual switch on each lens.
Multiple exposures	Possible (lever)	
Battery	One 6V silver-oxide battery	
Flash synchronization	X-contact (up to 1/60 sec.), EP-contact.	
Weight (Body only)	965g	920g
Body dimensions	Width, 99.3mm; height, 84mm; length, 109mm.	





BHMC

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