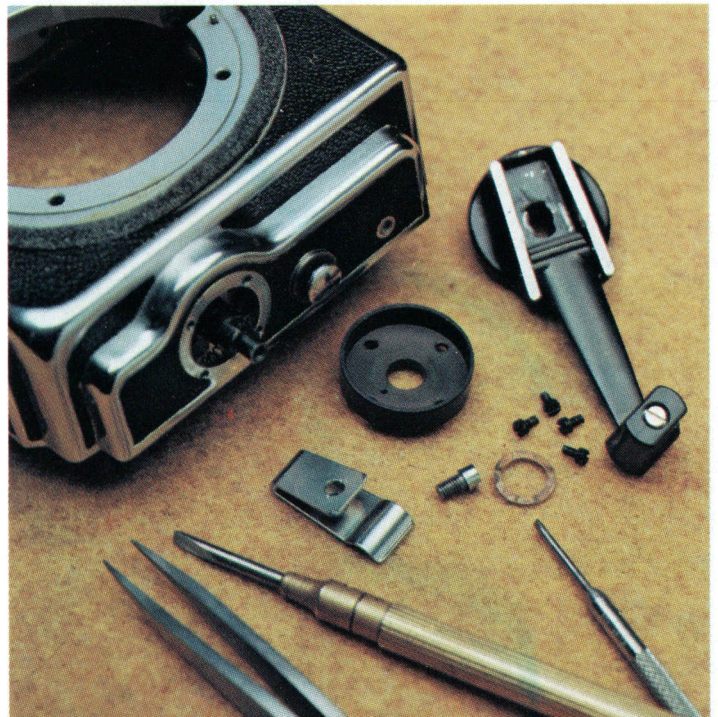
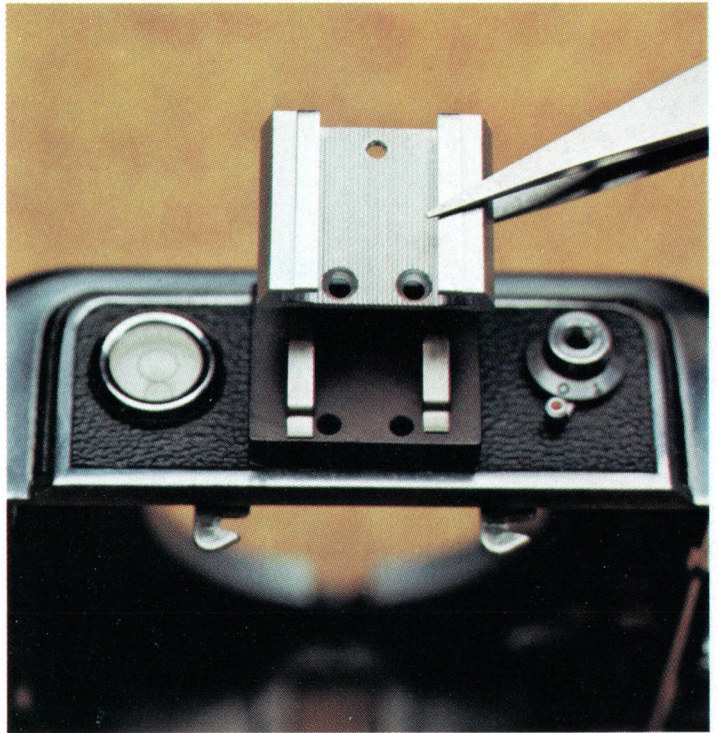


H A S S E L B L A D[®]



SWC/M



Conversion of the SWC

Whenever the Hasselblad system is modified, attempts are always made at avoiding unnecessary obsolescence of earlier equipment. This was also the case when the SWC/M was developed. So we put together a conversion kit which will convert an SWC into an up-to-date SWC/M.

The conversion kit includes all the parts required for modification of the viewfinder seat, tripod coupling plate, and film winding knob.

The conversion requires extensive reworking of the camera mechanism and must therefore be carried out by an authorized service technician. Among other things, the camera has to be dismantled and the lens removed. Mechanical adjustments are also necessary after conversion. This work should only be undertaken by a competent technician.

Why not combine the periodic service of benefit to every camera with a conversion to an SWC/M?

H A S S E L B L A D®



Photo: Tore Hagman

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Some reasons for cho SWC/M



osing the Hasselblad

The wide angle of view

90° (diagonal) and 72° (horizontal), facilitating work in cramped localities and adding depth to interior and exterior shots.

Optical performance

The Biogon lens, a unique Zeiss design yielding outstanding corner-to-corner resolution even wide open. The optic's outstanding correction for distortion is a major advantage in e.g. scientific and technical applications.

The large film format

The basic $2\frac{1}{4} \times 2\frac{1}{4}$ Hasselblad format produces negatives and transparencies convenient for darkroom work, projection or filing which are readily copied or enlarged with no loss of image quality.

The interchangeable magazines

The sheet film adapter enables you to use emulsions unavailable in roll film. The roll film magazines provide a choice of $2\frac{1}{4} \times 2\frac{1}{4}$, $1\frac{5}{8} \times 2\frac{1}{4}$, or $1\frac{5}{8} \times 1\frac{5}{8}$ formats and 12, 16, 24, or 70 exposure loads. The magazine 100 for Polaroid film, making it possible to check out exposure, etc., is an invaluable asset to many photographers.

The compact design

The Hasselblad SWC/M measures 6" (153 mm) from the front of the lens to the rear of the standard magazine and $5\frac{3}{4}$ " (144 mm) from the tripod socket to the top of the optical viewfinder.

The moving depth-of-field indicators

Any change in the aperture setting changes the position of indicators which designate the depth of field available.

The vast depth of field

Depth of field extends from 26" (65 cm) to infinity when the lens is stopped down to f/22.

The fully synchronized leaf shutter

Operates quickly and offers electronic flash synchronization (X) at the slowest shutter speeds (B and 1 s) to the fastest (1/500 s).

The built-in self-timer

Can be used when the photographer wishes to get into the picture or when shutter release is desired with a minimum of camera motion.

The built-in spirit level

Facilitates horizontal and vertical alignment with the camera on a tripod or hand-held.

Exact composition

The image can be composed and focused at the film plane when the focusing screen adapter is attached. Seven different viewfinders can be used with this adapter.

SWC/M

The Hasselblad model designation "SWC" has now been supplemented with an "M." The "M" stands for modified. The camera has been modified to accept a magazine 100 for Polaroid film.

The modification consists of three measures:

1. Elevation of the viewfinder attachment seat.
2. Lowering of the tripod coupling plate.
3. Revamping of the film-winding knob.

When the magazine 100 for Polaroid film is used, the camera mechanism is tensioned with a series of crank motions. When other magazines are used, the mechanism is tensioned by rotating the crank in a single motion.

The Hasselblad SWC/M has been modified to provide photographers with an exciting option: the magazine 100 for Polaroid film.

ZEISS

Biogon 38 mm f/4,5

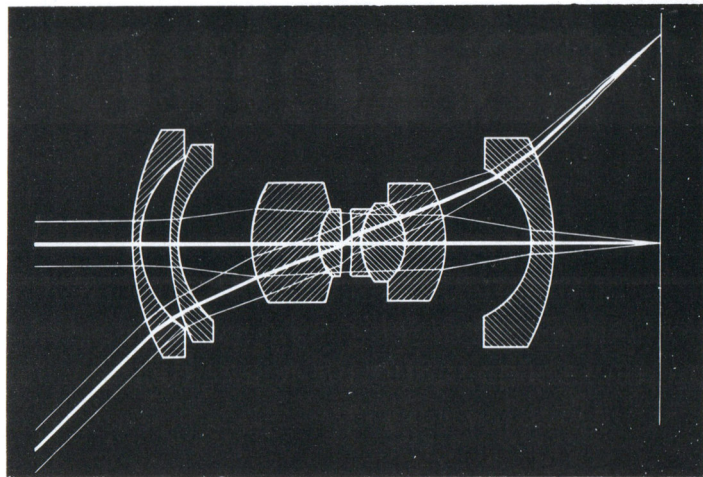
The Biogon is such a good lens that Victor Hasselblad Aktiebolag designed and built a camera just for it. The camera was introduced in 1954 and was called the SW (Super Wide). In 1959 manual shutter cocking was replaced with automatic cocking. The camera designation was then changed to SWC. The SWC/M was introduced in 1980. The lens design has remained unchanged the whole time, but the Biogon, like other Hasselblad optics, now features antireflection multi-coating (T*).

When the lens was introduced, its design was regarded as an optical breakthrough, a real sensation. Photographers still describe the lens as "sensational." The graphs on the next page show in objective terms just how good it is. But practical picture-taking provides the real proof of its optical perfection. "It's good enough to use for architectural photography" is one way some photographers put it when they wish to pay a lens an especially high compliment.

Putting it another way, the Biogon lens can even be described as "good enough for copying." The lens is especially suitable for copying of engineering drawings, thanks to its outstanding resolution, high contrast and low residual distortion.

But the most common application for the SWC/M with its Biogon lens is still "ordinary" photography. It is the choice of press photographers because of its fast handling. And at f/22 its depth of field extends from 26" (65 cm) to infinity, making focusing unnecessary.

The archeological photographer uses it to take exact overviews and can e.g. at f/22 work with a depth of field from 2 to 20 ft. The police photographer uses it to record the scene of crime. The camera can cover



a subject field 15 ft square (4.5×4.5 m), i.e. about 225 sq ft, from a distance of only 10 ft (3 m).

Documentary and portrait photographers use it to capture images of people in their surroundings. It is virtually indispensable to the architectural photographer.

The Hasselblad SWC/M is standard equipment for many photographers.

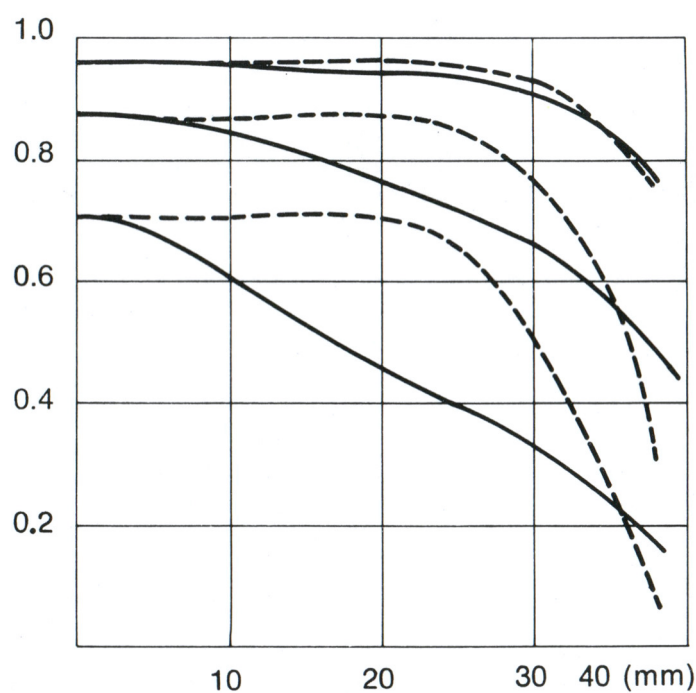
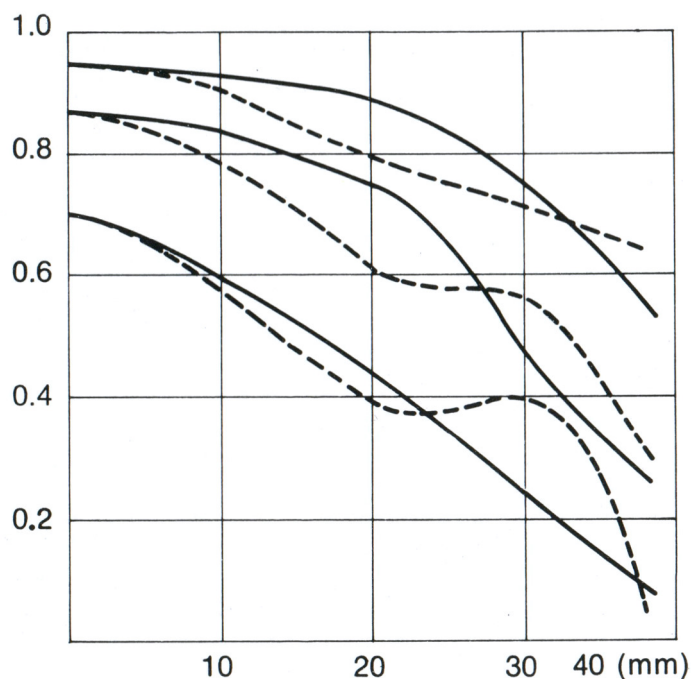
Specifications

Max. aperture	f/4.5
Focal length	38.6 mm
Largest format	$2\frac{1}{4} \times 2\frac{1}{4}$
(other)	$1\frac{5}{8} \times 2\frac{1}{4}$, $1\frac{5}{8} \times 1\frac{5}{8}$
Angle of view,	
diagonal	90°
horizontal	72°
No. of elements	8 (multicoated)
Focusing range	12" to ∞ (0.3 m— ∞)
Shutter	Synchro-Compur leaf
Shutter speeds	1—1/500 s, B
Synchronization	M and X at all shutter speeds
Self-timer	V, built-in
Accessory mount	Series 63
Weight	46.2 oz (1380 g) with Magazine A12
Dimensions	$6 \times 4 \times 5\frac{3}{4}$ " (153 × 108 × 145 mm)
Tripod sockets	3/8" and 1/4" and tripod coupling plate

MTF graphs

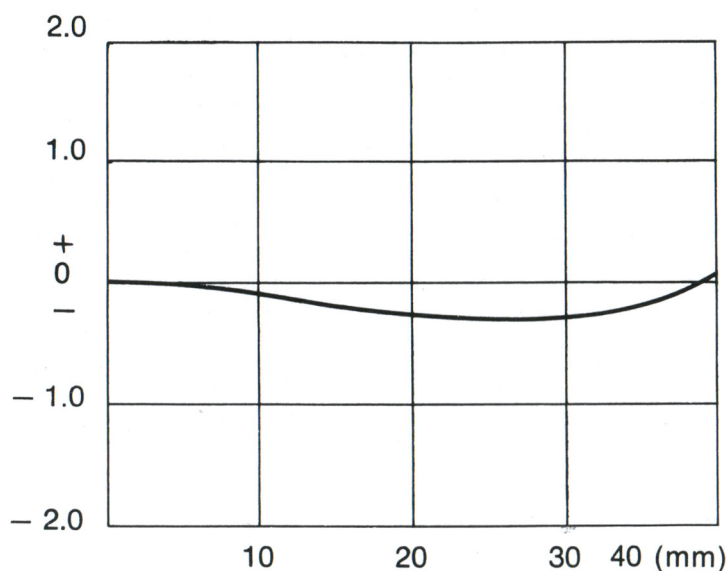
The ability of a lens to reproduce detail, i.e. its resolving power, can be expressed in MTF curves. MTF stands for “Modulation Transfer Factor” and is based on measurements in the film plane of test patterns consisting of pairs of black and white lines spaced at varying distances (frequencies), each line pair forming a unit. The adjacent graphs (1 and 2) show the results of measurements at a spatial frequency of 10 units per mm (top curve [1]) and 20 and 40 units per mm (middle curve [2]).

The measurements were made tangentially from the center (bold line) and perpendicular to this orientation (dashed line). The MTF graphs were made at two different f/stops, f/4.5 in the top graph and f/8 in the middle graph. The vertical axis indicates the MTF value, and the horizontal axis indicates the distance in mm from the center to the corner of the field.



Distortion

The bottom diagram (3) shows a measurement of distortion in the Biogon lens. The horizontal axis designates image height, i.e. the distance in mm from the center to the corner of the field. The vertical axis designates distortion as a percent of image height (almost unmeasurable in this case). A positive value indicates pincushion distortion and a negative value indicates barrel distortion.



Magazines

The ability to change magazines quickly, to switch from black & white to color in the middle of a roll without the loss of a single frame, and the choice of different formats are all major advantages of the Hasselblad system.

Previously, SWC photographers could use all the Hasselblad magazines except those for Polaroid film. This limitation is now a thing of the past. Thanks to a modification, the camera now accepts the magazine 100 for Polaroid film. So even SWC photographers can now have access to Polaroid "insurance."

Polaroid film is mainly used for making checks. Checks to ensure that equipment is in working order and checks on lighting and composition. Polaroid film also reveals any irrelevant details intruding into the picture and provides inspiration for changes in composition.

The Polaroid image can be employed for discussions with clients prior to final takes. It can also be used to make prints for a working file of takes, documenting the progress of a big assignment. Magazines for Polaroid film are also time-saving aids in the training of photographers.

Architectural pictures place great demands on the photographer and the equipment. The subject must be studied in detail at different times of the day, perhaps even at different times of the year. You have to find a time when the light is just right. The Hasselblad SWC/M is often the perfect camera for the job. The camera's Biogon lens yields a distortionless image with depth of field sufficient to cover a whole room. Polaroid film can be used for convenient determination of exposure. The Polaroid print enables you to e.g. study composition or the effect of filters before the final take.

Photo: Gerhard Trumler





A file of blueprints can ultimately become inconveniently large and may require reduction by photographic means. There are special-purpose cameras for this application. But copying can be undertaken with equal expertise by an SWC/M. The camera's wide angular field makes it possible to carry out copying work in cramped spaces.

A 22×33" (549×841 mm) engineering

drawing can be copied from a lens-to-subject distance of only 27½" (700 mm). In copying work, it is important for the film plane and original to be parallel to one another. Alignment can be assured with the Hasselblad linear mirror unit, one mirror of which is placed on the original and the other on the lens (as the SWC/M has a fixed lens). A focusing screen adapter replaces the film magazine. Alignment is facilitated if a magnifying hood is employed.

The linear mirror unit is used in copying work when parallelism between the film plane and the original must be very accurate.



Photo: Gun Andersson



The Hasselblad SWC/M is suitable for e.g. reportage photography. Its wide angular field enables you to work quickly with less concern about the field covered. The important thing is to get the picture. The image can be cropped later.

Focusing is no longer a problem either, thanks to the wide depth of field, constantly displayed by the automatic depth-of-field indicators on the lens.

Flash is often employed with other types of reportage. Modern automatic flash units enable you to operate with a fixed shutter speed and f/stop so all your attention can be devoted to the subject.

The Compur shutter is synchronized for flash at all speeds, even 1/500 s. Thus, you can choose to utilize flash as fill-in or as the main source with no "ghosts" from ambient lighting.

The Hasselblad SWC/M is frequently used on a tripod and is then attached in seconds with the Hasselblad tripod quick-coupling. Various brackets, flash holders, and pistol grips can be attached to the SWC/M's tripod coupling plate. However, bracket release bars will not actuate the SWC's release button.



Photo: Jens Karlsson



Accessories can often facilitate photography and provide opportunities for innovative imagery. Here are some of the Hasselblad accessories especially suitable for the SWC/M.

Filters (1) are an almost obvious choice. There are a large number of filters for use with black & white film and a series of matched light balance filters for color film. The polarizing filter (2) is equally effective with color and black & white film in reducing reflections and adding drama to an image. Multi-prism supplementary lenses (3) are fun to work with in surrealist rendition of a subject. Lens shades (4) should be mandatory equipment. The compendium-type Professional lens shade provides excellent protection against extraneous light. It also has a filter

slot enabling you to use e.g. gelatin filters to improve color rendition in fluorescent lighting. The film cutter (5) is for trimming sheet film for use in the sheet film holder and sheet film adapter (6). A quick-focusing handle (7) facilitates fast focusing. The tripod quick-coupling (8) is practical in work on a tripod. The magnifying hood (9) makes focusing even easier. Take your choice of magazines (10) in the desired format and capacity. Viewfinder masks (11) delineate the fields for the $1\frac{5}{8} \times 1\frac{5}{8}$ and $1\frac{5}{8} \times 2\frac{1}{4}$ formats. A camera case (12) provides excellent camera protection. Thanks to its wide angular field, the Hasselblad SWC is frequently used in the underwater housing (13). Correction lenses (14) are used to correct the image angle reduction caused by light refraction in water. A strap (15) is a convenient way to carry the camera.



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