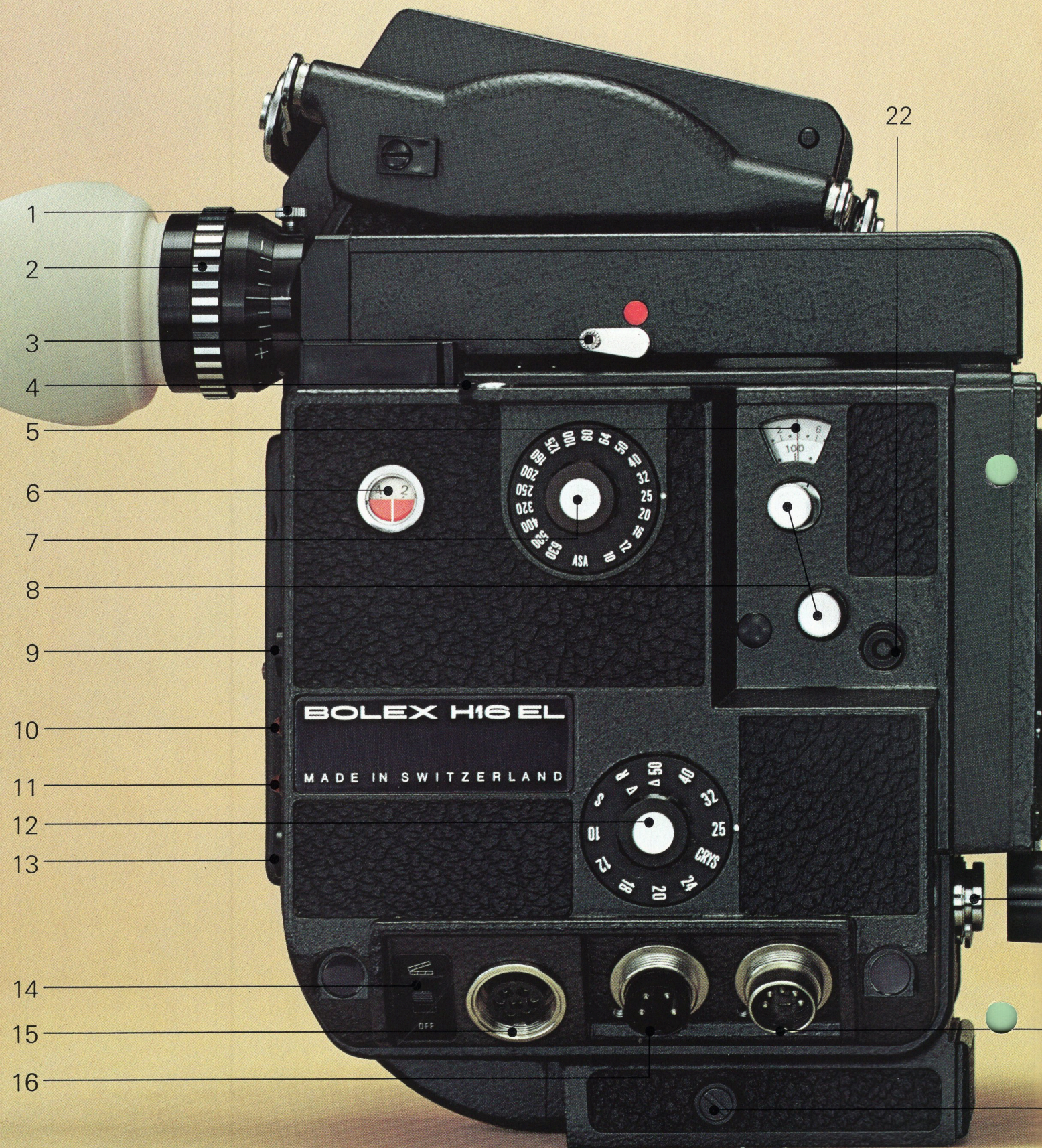


Bolex H16 EL

For Professionals





BOLEX H16 EL

MADE IN SWITZERLAND

A life-size view of the Bolex H16 EL camera



A built-in light meter – ultrasensitive to light changes and shock-resistant

Designed for professionals

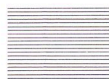
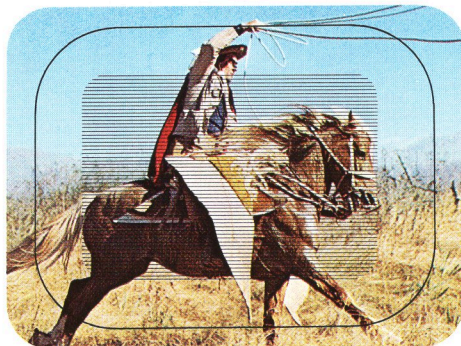
A built-in light meter can turn the most ruggedly built motion picture camera into a delicate instrument. Professional cameramen, who often have to work under difficult conditions, cannot always protect their equipment against all the hazards of everyday use. It was considered imperative therefore to equip the Bolex H16 EL with a light meter that is shock-resistant and unaffected by camera movement and vibrations. The obvious solution was a simple design, as rugged and reliable as possible, with neither servomotor nor delicate galvanometer.

Therefore the H16 EL is not equipped with a complex sensitivity arrangement: filming speeds are coupled automatically to the light meter, with a selector knob for film exposure ratings from 10–630 ASA.

The correct f-stop setting is found by a pair of light-emitting diodes in the reflex viewfinder; their brightness level is balanced by turning the diaphragm ring in either direction.

High degree of sensitivity

Light is measured through the lens by means of a cell which folds down in front of the camera aperture during adjustment of the diaphragm. The cell is exposed to the same lighting conditions as the film, thereby allowing precise measurement under even the least favorable level of light.



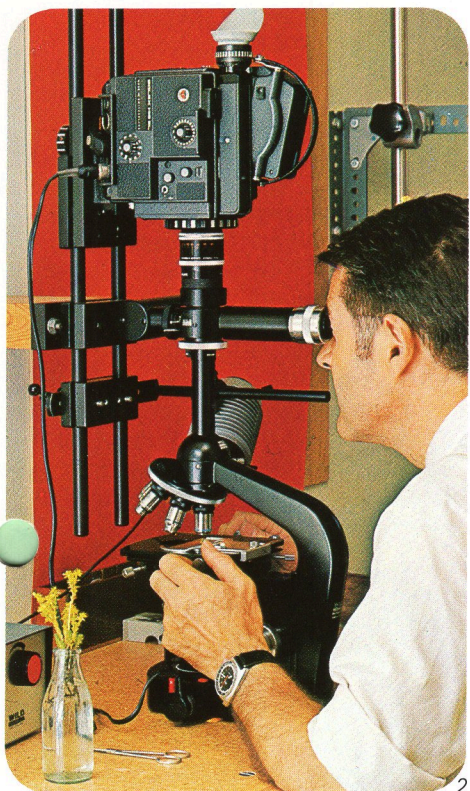
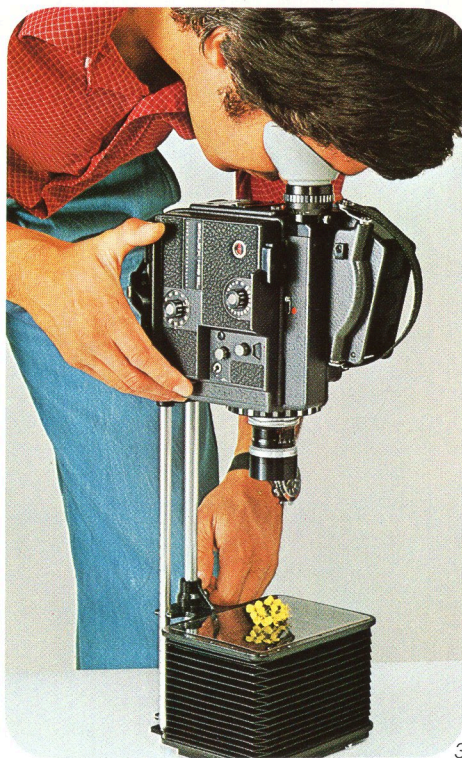
Center-weighted light reading
on 35% of the picture area.

Precise response under all circumstances

The Bolex H16 EL's light meter cell embodies the most modern idea in light measuring; it is a silicon cell with very definite advantages over the CdS cells in general use: it responds instantly to the slightest variation in brightness; it is insensible to blinding light. It has no memory and therefore allows shifting with confidence from the darkest to the brightest light or vice versa and with perfect results; it is impervious to extreme temperature variations; it provides power in proportion to available light within sufficient limits to satisfy all camera speed/diaphragm/sensitivity combinations (straight response curve); no corrections are required and you can always be sure of maximum precision.

Fast and accurate with every type of optical equipment

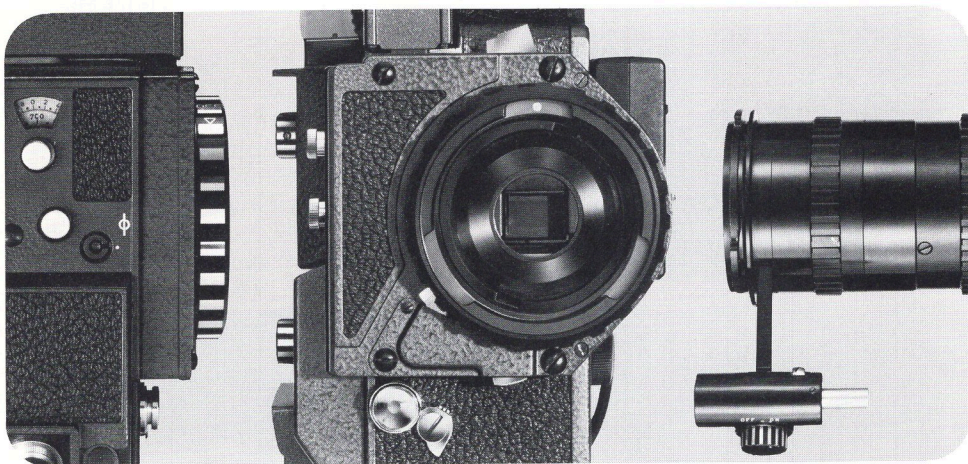
Since the light measurement is made through the lens and in front of the camera aperture, the Bolex H16 EL's light meter can be used even when the camera is equipped with special optical components like a microscope, an endoscope, light amplification devices, macrolenses, bellows, extension tubes, long telephoto lenses, etc.



1, 2, 3 and 4
Whatever the optical equipment on the camera or the type of filming, the built-in light meter guarantees perfect exposure.

5
From shade to bright light: the automatic diaphragm of the Vario-Switar 100 POE 16-100 mm f/1.9 lens adapts automatically to different brightness levels.

Optical equipment: Unmatched ruggedness and operating convenience



excellent brightness combined with high 13× magnification; constant viewing without flicker; fine grained full surface ground glass; rugged-misadjustment proof prism; exceptionally sturdy centering aperture; problem-free cleaning; large eyepiece with diopter adjustment and light trap; the rubber eyepiece allows filming with either eye, with or without eyeglasses. In addition to perfect framing, the Bolex H16 EL's viewing system provides greatest operating convenience. It is possible to completely open the diaphragm, zoom, focus, adjust the diaphragm for perfect exposure without removing the eye from the finder eyepiece.

An ideal system: the bayonet lens mount

An extremely rugged camera body equipped with a foolproof bayonet lens mount, coupled to a lens with ultra-resistant bayonet, combine into a system whose ruggedness, precision and operating simplicity are unequalled in 16 mm cameras.

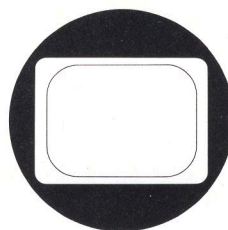
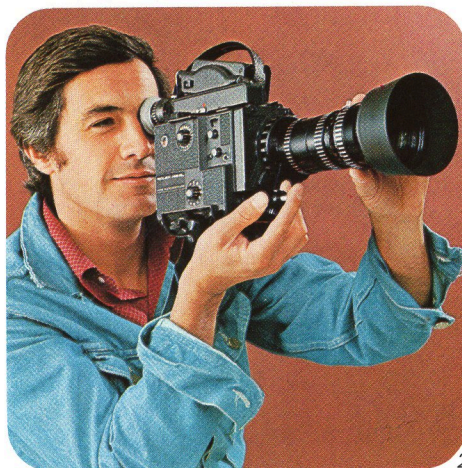


The Bolex bayonet cannot be deformed; misadjustment is impossible and the filmplane distance will always remain precise.

The Bolex bayonet mount does not limit the choice of lenses: the bayonet has a large 60 mm centering diameter for easy mounting of a wide selection of standard mount lenses.

Bright reflex viewfinder with 13× magnification

Pictures are "created" through the viewfinder and the Bolex H16 EL is therefore equipped with a finder offering maximum comfort while viewing the scene. Some of its outstanding features are:



Normal image area: 9,60 × 7,16 mm, R=0,5 mm. TV frame: 8,40 × 6,30 mm, R=1,7 mm.

¹ The Bolex bayonet lens mount is rugged and solid; it cannot be damaged or misaligned even if the camera is carried by the lens.

² A bright viewing image: the preselection diaphragm of the Vario-Switar 12.5–100 mm f/2 is fully open for accurate focusing and closes automatically to the shooting aperture when the release is depressed.

Mechanical construction: A masterpiece of efficiency and precision

An electronically controlled motor with instant start and stop

Since the high-performance motor starts and stops instantly and always with the shutter closed, the original film can be used without having to cut frames at the start and at the end of each take. Each take is correctly exposed from the first to the last frame; not one frame is lost. Its low power consumption (less than 1 Ah under normal working conditions) provides extended self-sufficiency with a modest-sized battery.

Operation of the camera is conveniently performed with a single selector switch:

10, 12, 18, 20, 24, 25, 32, 40 and 50 f.p.s. filming speeds, all electronically regulated. They remain constant whatever the emulsion or the filming conditions.

Single frame filming with perfectly even exposures.

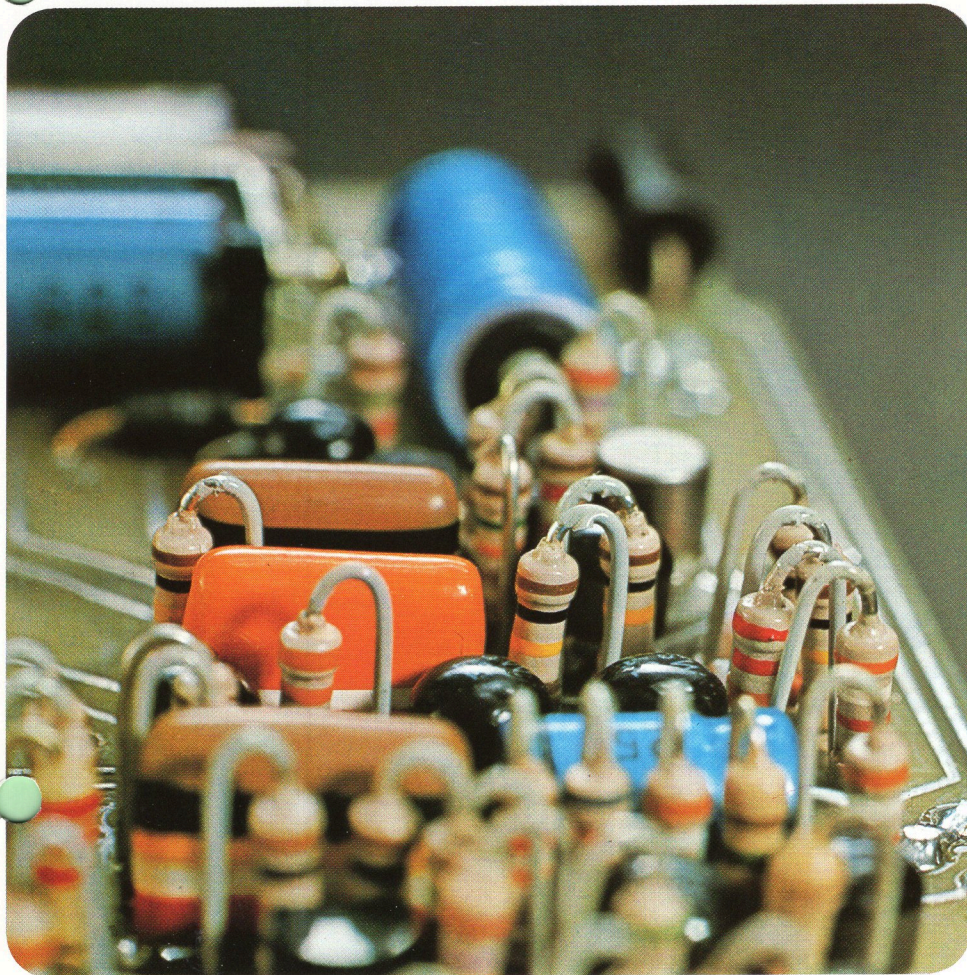
Reverse motion for double exposures or to remove partially exposed film.

The camera can also be remote-controlled as the power circuit is separate from the remote-control system. Remote operation is possible up to distances of several hundred yards using thin, low-resistance cable.

Power is provided by a SAFT Ni-Cd battery with low internal resistance. There are two choices of power pack: 0.45 Ah battery attached to the camera lid; sufficient for six 100 ft spools of film; fast about 20-minute recharging; 1.2 Ah battery carried on a shoulder strap or in the pocket; sufficient for twenty 100 ft spools of film or five 400 ft magazines; fast about 1-hour recharging.

Two battery chargers are available:

- a standard charger which recharges either power pack in about 12 hours;
- a fast charger which recharges the 0.45 Ah power pack in about 20 minutes and the 1.2 Ah power pack in about 1 hour.



Sync sound filming

Automatic loading in seconds — and in broad daylight

With standard 100 ft spools, the film threads itself fully automatically through the filmgate.

To the film maker, this automatic loading means:

- almost instant changing of film;
- assurance that film is threaded properly, that the film loops are properly formed;
- convenient loading in all situations, even with gloves.

The Bolex film transport mechanism includes an automatic loop former which re-forms the film loop if it ever should be lost, thereby eliminating camera jams. It also includes the well known Bolex claw movement which assures professional "pin" steadiness at all speeds. The Bolex H16 EL can also be equipped with a professional 400 ft magazine (see "Accessories available separately" at the end of this brochure).



The Bolex H16 EL offers the choice of: crystal-controlled synchronization, or sync pulse synchronization with automatic slating.

Crystal synchronization using a crystal-controlled tape recorder eliminates the need for a connecting cable between recorder and camera. The two are independent and the quartz crystal with which each is equipped controls their speed within an accuracy not exceeding a deviation of 1 frame in 400 ft of film.

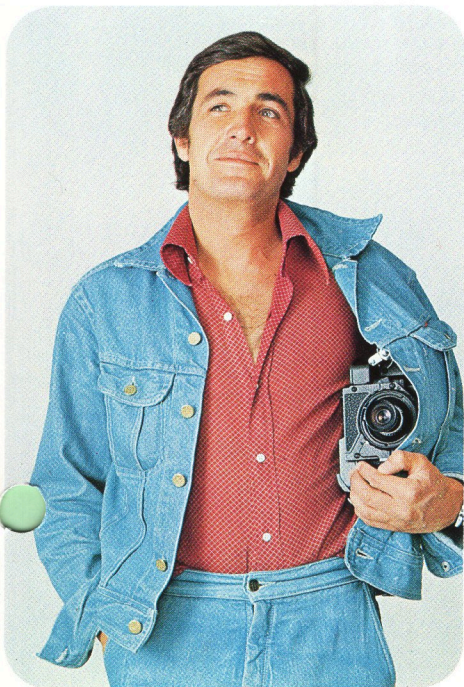
In sync pulse synchronization, the sync pulse is provided by the camera through a sync pulse accessory. A connecting cable between camera and tape recorder transmits the sync pulse and the signal for the automatic slating.

The instant start and stop action of the Bolex H16 EL offers attractive possibilities when coupled to the latest SONDOR transfer equipment of the OMA type (in Europe) or Magnasync (in the USA). The transfer machine starts and stops automatically as it detects the presence or absence of the

pilot signal. This yields a continuous sound track on perforated magnetic film which can be played back directly on a 16 mm interlock projector without any editing of film or tape. This procedure obviously combines the versatility and quality of double-system sound with the speed of single-system sound and is likely to have a great future in TV news reporting for instance.

Lightweight and compact equipment

There are many situations where cameramen do not want to attract attention. Light and compact, the Bolex H16 EL allows candid filming. With a lens like the Vario-Switar 17-85 mm Compact, for example, the camera weighs less than 8 lbs and measures only 12" (including lens shade) by 8 1/2" by 4 3/4".



Two helpful accessories for cameramen



The Bolex shoulder brace

The Bolex shoulder brace uses the Bolex quick-mounting system which permits instant mounting and removing of the camera. It facilitates high and low angle shots; the base plate is adjustable in the vertical plane. In addition to providing excellent stability and good weight distribution, it frees the cameraman's hands for operating the camera and lens. The shoulder brace is well padded and completely adjustable for convenient carrying and viewing by every film maker.

The Bolex professional monopod

Made for rough treatment, the Bolex professional monopod is designed for much more weight (over 33 lbs) than the Bolex H16 EL. Its collapsed length is 21"; fully extended, it measures 63". It weighs only 1 lb 8 oz.



Accessories

Important camera accessories (available separately)

1.2 Ah battery for carrying with shoulder strap or in pocket. It provides sufficient power for filming 20 × 100 ft of film or five 400 ft magazines. It is designed for fast recharging (about 1 hour).

Fast battery charger. It allows recharging of the 0.45 Ah power pack in about 20 minutes and the 1.2 Ah power pack in about 1 hour.

Remote control unit with timer

This Bolex accessory which plugs in to the remote control switch of the H 16 EL camera permits:

- manual remote control of the camera mechanism in normal and frame by frame running;
- sequences programmed between 1 and 9999 frames no matter what filming speed; the sequence can be re-run as required with only one impulse necessary;
- single frame or series of frames from 1 to 9 operation with exposure times adjustable between 1/21 and 1/53 of a second; minimum interval between two frames or series of frames: 0.5 sec.;
- automatic single frame operation or series of frames with interval adjustable from 0.5 to 999.5 sec.;
- length of camera connecting cable: 1.60 m.

400 ft magazine: easily attached to or removed from the camera, this magazine is designed for 200 ft spools or up to 400 ft of film on cores. It is used with a take-up motor providing constant film tension. A counter shows the remaining footage. Weight of magazine with take-up motor: slightly over 3 lbs.

Sync Pulse accessory. It includes:

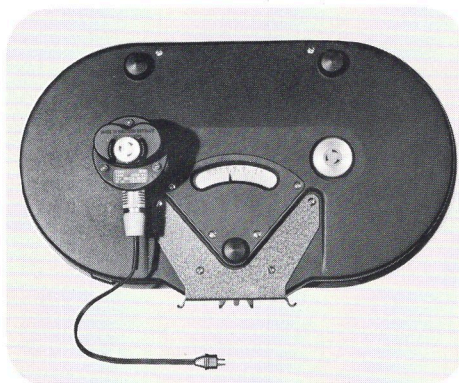
- 1 Sync Pulse Generator: 24 f.p.s./60 cycles
- 1 slating lamp mount
- 1 slating lamp
- 1 connecting cable to the camera
- 1 cable for connection to tape recorders

The Sync Pulse Generator transforms the signal emitted by the camera generator into a 60 cycle pulse and transmits DC current to the tape recorder's beep generator (oscillator) while the slating lamp is on.

Crystal Control accessory. It includes:

- 1 Crystal Control Unit for 24 f.p.s. (25 f.p.s. version also available);
- 1 20" universal connecting cable.

This accessory guarantees accurate running speed at 24 or 25 f.p.s. Maximum deviation in 400 feet of film (about 16,000 frames): less than 1 frame.



Lenses

— zoom type:

Kern Vario-Switar 100 POE 16–100 mm f/1.9
Kern Vario-Switar 12.5–100 mm f/2
Kern Vario-Switar Compact 17–85 mm f/3.5
Angénieux 10 × 12 C 12–120 mm f/2.2
Sopelem Pan-Cinor 85 «Compact» 17–85 mm f/3.8

— with fixed focal length:

Kern Switar 10 mm f/1.6
Kern Macro-Switar 26 mm f/1.1
Kern Macro-Switar 75 mm f/1.9
Kern Macro-Yvar 150 mm f/3.3

Aspheron 5.5 mm super-wide-angle optical accessory for Switar 10 mm

This aspherical optical accessory, specially designed to go with the Switar f/1.6 10 mm wide-angle lens with presetting of the diaphragm, makes it possible to practically double the field of view without detracting from the quality of the image. Resultant focal length: $f = 5.5$ mm.

The camera also accepts most lenses with standard mount in combination with an adapter.

Bayonet adapter. It enables C mount lenses to be used on the bayonet lens mount.

Hand grip: equipped with the rapid coupling system; supplied with camera connecting cable. It can be equipped with a connecting cable to the Vario-Switar 100 POE 16–100 mm f/1.9 and Vario-Switar 12.5–100 mm f/2 lenses for presetting the diaphragm.

Other accessories available

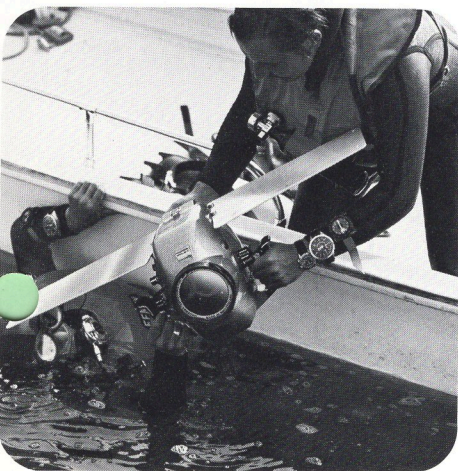
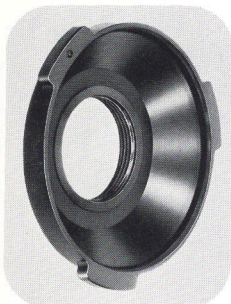
Extension tubes, lens hood, tripod, underwater housing, blimp (barney), carrying case, aluminium case, etc.

The Bolex underwater housing is designed to hold the Bolex H16 EL camera with a battery and a Switar 10 mm f/1.6 or a Macro-Switar 26 mm f/1.1 lens; viewing through the reflex viewfinder, underwater cameramen can adjust the diaphragm according to the light meter built into the camera.

Technical specifications

Items supplied with the camera

- 1 0.45 Ah battery
- 1 standard (12 hour) battery charger
- 4 gelatine filter holders (1 in the camera, 3 separately)
- 1 rubber eyepiece
- 1 protective cap for the bayonet lens mount
- 1 3-ft remote control cable



Nominal capacity: all 16 mm films on 100 ft spools.
Possibility of mounting an accessory 400 ft magazine.

Electric motor, electronically regulated by impulses, for optimum use of the power of the battery and perfectly constant filming speeds. Filming speeds of 10, 12, 18, 20, 24, 25, 32, 40 and 50 f.p.s. + single-frame. 24 and 25 f.p.s. filming speed accuracy in accordance with sync pulse standards. Possibility of sound synchronization with crystal control accessory at 24 and 25 f.p.s.; maximum deviation for 400 ft of film: less than one frame. Camera stops with shutter closed for all functions. Practically instant start and stop, with no noticeable overexposure of the first or last frame of a take. Unlimited reverse running. Built-in device for testing the power pack charge; the current is automatically switched off as soon as the power pack voltage drops below the critical level. 170° rotary shutter opening. Automatic film threading; spool ejector; loop former.

Powered by SAFT Ni-Cd battery with low internal resistance, nominal voltage 12 V-DC (alternating current excluded, for fear of destroying elements);
choice of two power packs:
– 12 V/0.45 Ah, mounted on the camera lid; capacity: about 600 ft of film at +20° C and 25 f.p.s.;
– 12 V/1.2 Ah, carried slung over the shoulder or in a pocket; capacity: about 2000 ft of film at +20° C and 25 f.p.s.
Both power packs are equipped for rapid recharging (temperature probes and safety thermostat); all SAFT VR-type Ni-Cd elements are also provided with a safety valve as protection against excessive pressure. Two battery chargers are available:
– standard charger: recharges either power pack in about 12 hours;
– rapid charger: recharges the 12 V/0.45 Ah power pack in about 20 minutes and the 12 V/1.2 Ah power pack in about 1 hour.

Reflex viewfinder with light captured through swivelling prism mounted in front of the shutter. Misadjustment-proof ground glass on prism itself. Adjustable eyepiece: ± 5 diopters. Magnification: 13 \times . Field of view corresponding to standard 16 mm projection field. TV frame: 8.40 \times 6.30 mm; R=1.7 mm.

Extremely rugged **bayonet lens mount**, with built-in filter holder. Bearing on three small tongues. Centering diameter: 60 mm. Distance between bearing plane of tongues and lens focal plane: 23.22 mm. Most «C» mount lenses easily adapted.

High performance, **built-in light meter**. Through-the-lens measurement of the light by a cell which fits in front of the filming aperture while the diaphragm is being set. Instant reaction, linear characteristic silicon cell, for electronic processing of the data: film sensitivity, filming speed, lighting of the cell; it is practically proof against dazzle, variations in temperature, and ageing. Sensitivity range: 10 to 630 ASA (11 to 29 DIN) with automatic coupling at all filming speeds. The silicon cell is «adapted» to the spectral sensitivity of the film by an optical filter. Measurement of the light in the centre of the field of view over about 35% of the picture area. Manual operation of the diaphragm setting ring, the correct opening being set by balancing the brilliance of two light-emitting diodes located in the viewfinder; possibility of detecting an over- or under-exposure of 1 stop.

Sync pulse socket for sync pulse and automatic slating, or for connecting a crystal accessory.

Synchro-flash socket.

Built-in **release switch** controlling at functions: forward and reverse motion, single-frame operation. Safety lock: prevents the accidental operation of the camera; also makes it possible to lock the release in the «release» position (for continuous operation).

Frame counter up to 1000 frames.

Footage counter.

Remote-control socket.

Quality and after-sales service

Bolex products are manufactured with the utmost care and subjected to meticulous testing and inspection. They embody the traditions of precise quality workmanship which has earned Bolex its worldwide reputation. Bolex's international network stands ready to provide faultless service throughout the world. You can entrust your camera with complete confidence to Bolex distributors, most of whom employ skilled and often Swiss-trained technicians.



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