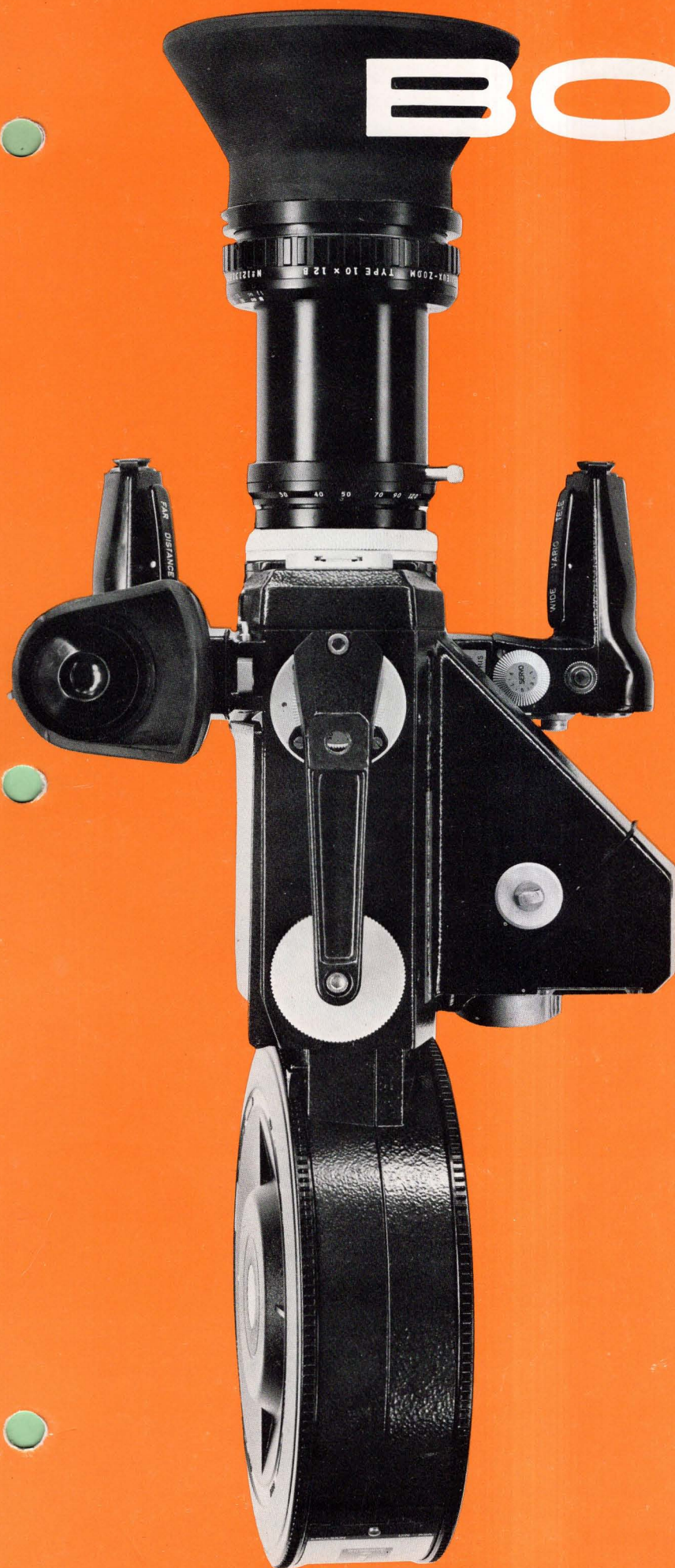


# BOLEX 16 PRO



## The One Professional Camera That Can Do Everything

- Film at 24 f.p.s. sync speed.
- Film at 25 f.p.s. sync speed.
- Film at variable speeds.
- Film slowmotion.
- Change running speed while filming with automatic adjustment of diaphragm.
- Shoot single frame.
- Shoot animation.
- Shoot time-lapse films.
- Shoot double system sync sound without a wire connection between camera and recorder.
- Take exposure readings through the lens.
- Film instantly without manually setting the lens diaphragm.
- Pan from light to dark with automatic adjustment in exposure.
- Zoom manually.
- Pushbutton power zooming.
- Change power zoom speed while filming.
- Pushbutton power focusing.
- Focus manually
- Add automatic focusing of lens.
- See diaphragm opening in viewfinder.
- Switch instantly from groundglass to clear field while viewing through the lens.
- See area surrounding the field covered by the lens.
- Have an uninterrupted view through viewfinder without a "black-out" at the end of the take.
- Shoot without creating blank frames between scenes.
- Shoot without overexposed frames at beginning and end of scene.
- Open and close lens diaphragm by pushing micro switches.
- Control all camera operations from the two handgrips.
- Cut partially exposed film in camera.
- Shoot from shoulder or tripod.
- Fade out by pushing button.
- Fade in.
- Produce lap dissolves.
- Rewind film without covering lens.
- Film in reverse.
- See condition of battery on camera.
- Switch from manual to automatic diaphragm setting while filming.
- See whether or not there is sufficient light.





## A TRULY PROFESSIONAL 16mm MOTION PICTURE CAMERA DESIGNED FOR THE MODERN STYLE OF MOVIE MAKING

### DESIGN

The basic design of the camera permits convenient handheld use, with a low profile for maximum visibility and use in confined quarters, such as inside of cars. With its 400' magazine at the rear, the camera rests on the shoulder of the cameraman for balance and ease of operation with maximum stability.

A sturdy, telescoping monopod is available and can be attached to the cameras as a body rest so that arms are used solely for guiding the camera, but not for supporting the camera's weight.

All camera controls are grouped in the two handgrips and can be operated instantly while filming.

The camera is available in two versions: #2510 for silent and double system sound filming.

#2500 for magnetic single system sound, double system sound, and silent filming.

### DRIVE AND SHUTTER MECHANISM

Many camera functions previously done mechanically are now done electronically, resulting in quieter, more reliable performance with a minimum of wear on mechanical parts.

A specially designed Vario-Synchro motor (3-phase induction type) built into the Bolex 16 Pro camera can be used for all types of filming, eliminating the need to buy additional motors or change motors while filming.

The built-in Vario-Synchro motor:

- runs at variable speeds from 16 to 50 f.p.s. (speed can be changed while filming) or 16 to 100 f.p.s. on 16 Pro-100
- runs at a constant speed of 24 and 25 f.p.s. (for sync sound shooting)
- runs forward and reverse

- permits single-frame filming for animation and time-lapse studies

Also, the motor starts and stops instantly, eliminating blank and over-exposed frames between scenes.

Other special features include:

A Mirror shutter, with a 132° opening for 1/60 sec. exposure at 24 f.p.s., mounted directly on the motor shaft.

High quality ball bearings lubricated for life.

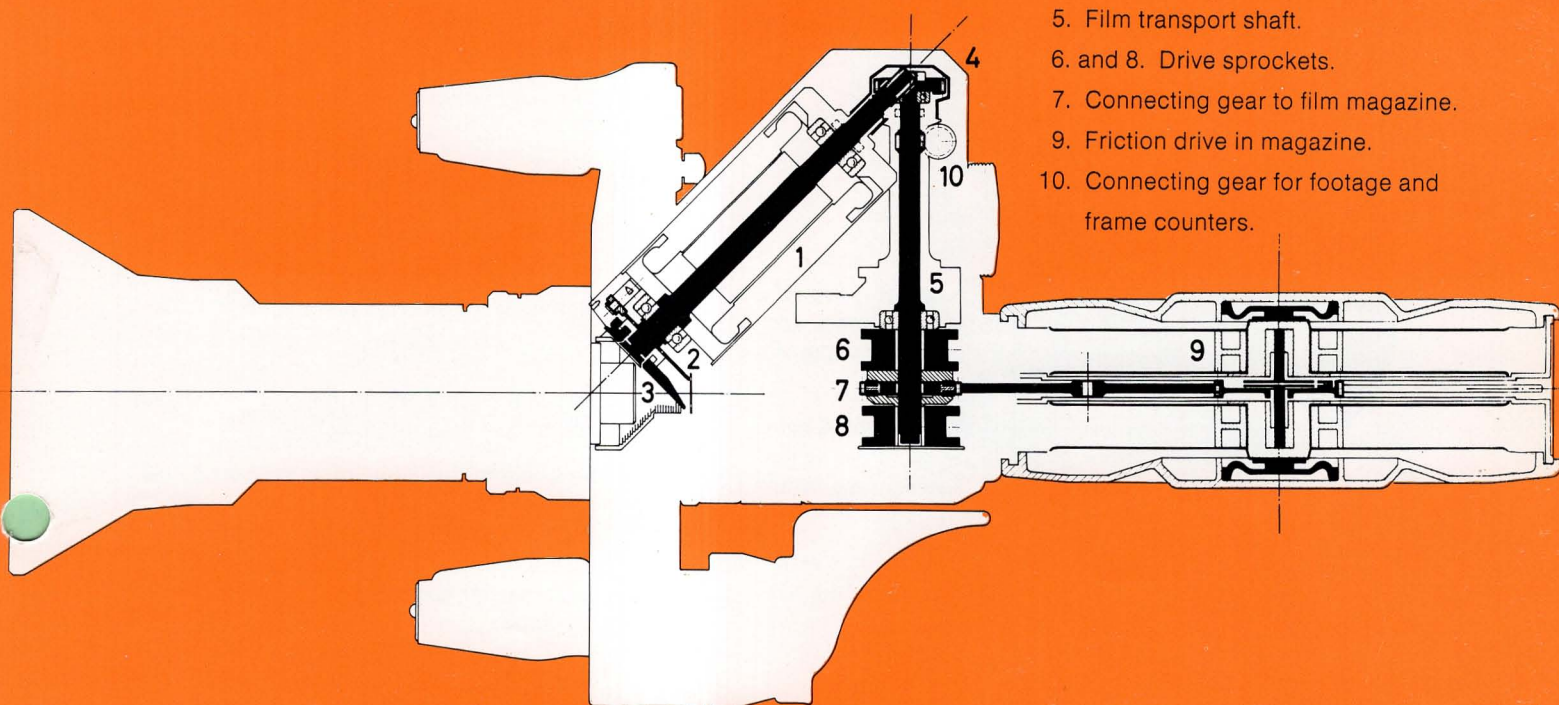
Perfect camera operation from -4°F. to +120°F.

The motor has no brushes, no collectors, and is therefore practically noiseless, without wear and tear and the need for service.





1. Vario-synchro motor.
2. Claw.
3. Mirror shutter.
4. Permanently lubricated connecting gears.
5. Film transport shaft.
6. and 8. Drive sprockets.
7. Connecting gear to film magazine.
9. Friction drive in magazine.
10. Connecting gear for footage and frame counters.





## FILM MAGAZINE

The coaxial 400' magazine is made of die-cast aluminum with a macrolon lid and takes 100', 200', or 400' films on reels or cores, Winding B.

Two-Chamber design limits darkroom operation to a minimum and permits opening one side of the magazine without exposing film in the other.

The magazine works forward or reverse, regardless of the amount of film in the feed or take-up chamber.

The magazine is simple in design, lightweight, and inexpensive, without sprockets or other film transport components, and therefore has no influence on the image quality and film transport performance. Further, it attaches to the camera instantly with a self-closing magazine lock.

The 16 Pro magazine connects to the camera mechanism through a direct gear drive. Two footage counters show the amount of film in each chamber.

Also, the magazine is at a slight angle to the camera to correct for the lateral displacement of the film from one chamber to the other and to permit convenient viewing.

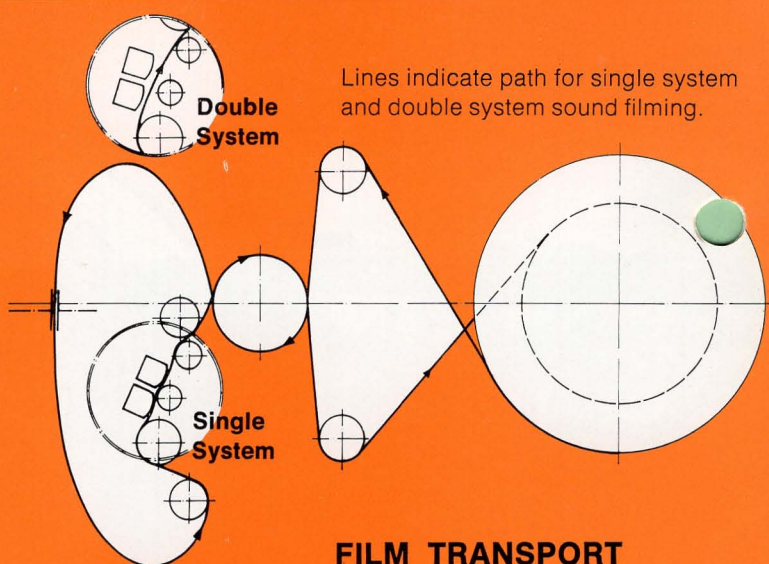


## FILM THREADING

With the magazine attached to the camera, the film threads itself automatically through the camera and attaches itself automatically to the core in the take-up chamber.

The camera is ready for filming in less than 4 seconds from the time the magazine is attached to the camera, without any manual film handling, loop forming, or opening of the pressure plate.

The indicator light below the viewfinder reveals when the camera is threaded and when the end of the film has passed through camera.



## FILM TRANSPORT

The film passes through the camera in a large natural loop. Therefore, only a very low pressure is required of the pressure plate, resulting in smooth film movement without emulsion buildup in the aperture. Vee type lateral film guides are used.

A new, high precision single-tip claw serves to transport and register the film. No separate registration pin is required.

Vertical and horizontal picture steadiness of better than 0.1% is guaranteed.

Film cannot move during camera transport because the claw is engaged in the perforation holes in a stopped position.

For convenience and simplicity, a knife for cutting partially exposed film is built into the camera.

## EXPOSURE CONTROL

A built-in photoresistor measures light passing through the lens and automatically sets the diaphragm opening by means of a servo motor.

The camera's automatic diaphragm control gives the filmmaker instant readiness for shooting, freedom of filming without time-consuming lens settings, freedom of panning from light to dark areas (or vice versa), the ability to follow a moving subject, and the possibility of automatic time-lapse filming in varying light situations.

The exposure meter is coupled to the speed control of camera; therefore camera speed can be changed while filming with an automatic adjustment of exposure.

A buzzer signal indicates insufficient light.

Sensitivity range: 12 to 1600 ASA.

There is also the possibility of manual, motor controlled, push-button diaphragm setting.

The camera's diaphragm opening is constantly visible on the side of the camera and in the viewfinder above the viewing field. Because of this, the filmmaker can, at any time, see the diaphragm opening, or set the diaphragm manually without removing his eye from the finder.



## VIEWFINDER

The Bolex 160 Pro offers practically flickerless reflex viewing with 20 X magnification and a lifesize image at 12mm focal length for accurate and faultless framing and focusing.

Also, the camera offers a constant, uninterrupted view through the viewfinder without a "blackout" when the camera stops. Manual turning of the shutter is unnecessary because the mirror shutter always stops automatically in the closed position.

A turret built into the eyepiece plane permits instant changing from groundglass to clear glass. The latter is exceptionally bright and clear, therefore especially valuable in dim light or when the lens is fully stopped down.

Other significant advantages include:

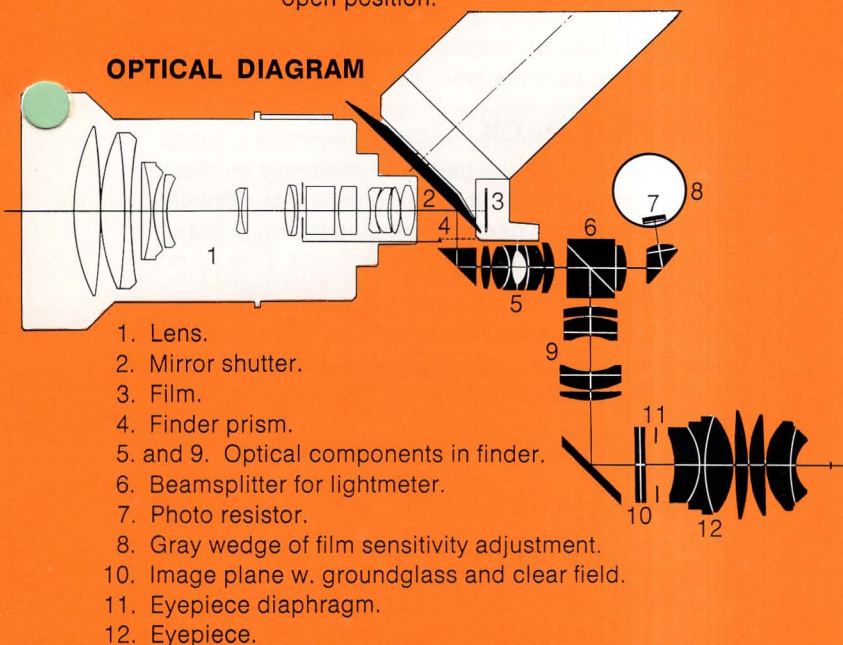
Aerial image frame engraved with TV area and center circle for aerial focusing.

Viewer that can be rotated for viewing down or viewing from front of camera.

Eyepiece adjustment from +3 to -3 diopter.

Also, an extension section can be inserted for left-eye viewing, and the rubber eyecup with built-in diaphragm against stray light can be locked in open position.

### OPTICAL DIAGRAM



## LENSES

The Bolex 16 Pro features a choice of three versatile lenses:

Angenieux 12-120mm f/2.2 with automatic diaphragm, power focusing, power zooming.

Schneider Variogen 10-100mm f/2 with automatic diaphragm, power focusing, power zooming.

Zeiss Distagon 8mm f/2 fixed focus, with automatic diaphragm.

(Note: Other lenses can be adapted for use on the Bolex 16 Pro.)

Lens features include:

Quick lens changing with a precision heavy-duty bayonet mount, seated deep in camera body, for additional sturdiness and greater protection of the lens.

A special sleeve around the lens protecting the lens from rain and dust.

A shock-absorbing rubber lens shade on zoom lenses.

Noiseless servo motors for focusing, zooming, and diaphragm adjustment built into the camera body and gear-coupled to the lens controls.

All three lenses have fully closing diaphragms for fading in and fading out and rewinding of film without the necessity of covering the lens. Because of the camera's film rewind ability, lap dissolves can be produced in the camera. The camera motor turns off automatically when the diaphragm is fully closed.

## CAMERA CONTROLS

All of the camera's vital controls are conveniently located in two prominent hand grips.

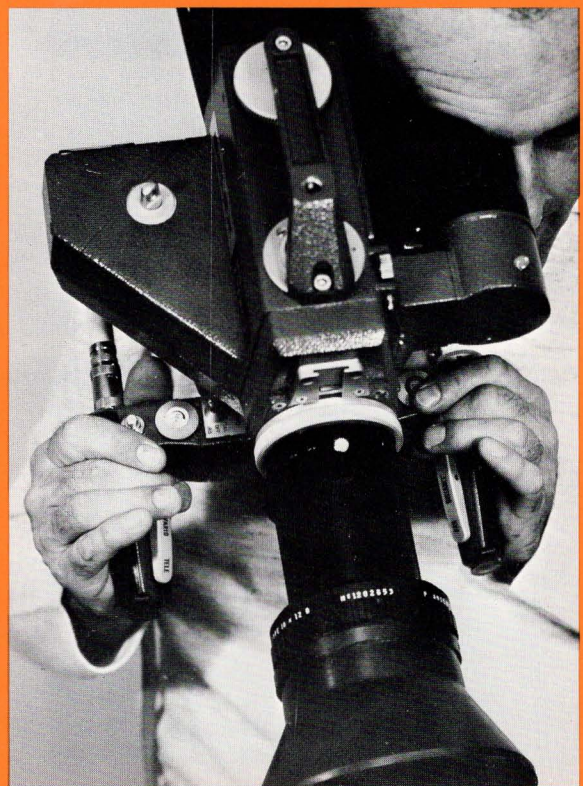
Controls on right grip:

Rocker switch for power zooming.

Speed control for focusing and power zooming, adjustable within a 10:1 speed range. (It can be changed while zooming or focusing.)

Camera release which can be locked while running. An electrical lock prevents running the camera when it is not loaded with film.

Switch for servo motors with three positions: all





servo motors off, all servo motors on, servo motor for diaphragm on only.

Switch for overriding the automatic stop when the diaphragm is fully closed to allow a double exposure and lap dissolves.

Outlet for remote operation of camera release and zoom. (Necessary cable available as an accessory.)

#### Controls on left grip:

Rocker switch for power focusing.

Camera running speed control. (It can be changed while filming or locked at 24 and 25 f.p.s.)

Control for automatic or manual diaphragm operation.

Pushbuttons for manual opening and closing of the diaphragm.

Outlet for remote operation of power focusing. (Necessary cable available as an accessory.)

#### Plus these important advantages:

Focus and zoom control on the lens can also be turned manually.

Remote control for camera release, focus, and zoom permits camera operation from pan handle of tripod.

The frame counter and footage counters (in both meters and feet) can be set to "0" individually and are visible from the rear of the camera.

## SOUND

The low noise level of approximately 35db at a 5' distance makes the Bolex 16 Pro camera ideal for location or studio sync sound shooting.

Double system sound filming can be done at either 24 or 25 f.p.s.

A crystal synchronization module with a quartz oscillator in the power pack drives the motor at a very precise speed and permits sync sound shooting without connection between the camera and crystal-controlled tape recorder. The same oscillator supplies the pilot signal for sync sound work with non-crystal-controlled tape recorders.

The crystal synchronization module can be changed instantly and is available in different versions:

TYPE	FILM SPEED	PILOT SIGNAL
BC-20/4330	25 f./s	100 c./s
BC-20/4340	25 f./s	50 c./s
BC-20/4350	24 f./s	60 c./s
BC-20/4360	24 f./s	50 c./s

A built-in slating lamp fogs 5 frames, and a six volt current is supplied to the oscillator of the tape recorder for automatic "blooping".

The Bolex 16 Pro single system cameras, otherwise identical to the double system cameras are equipped with a magnetic recording module and can be used for single system or double system sound filming. A lever control permits automatic threading over the

magnetic sound heads, or by-passing the sound heads to eliminate unnecessary wear.

Other significant sound features on single system cameras:

Specially designed dual fly-wheels stabilize film movement at the sound heads to ensure wow and flutter-free recordings when moving the camera in any direction.

A built-in playback head lets the cameraman listen to what has already been recorded on the film and therefore permits complete control over recording.

The speaker and amplifier with volume control for monitoring are built on the inside of the camera door, eliminating the need for earphones.

The film channel is designed so that no part of the camera except the magnetic heads touches the magnetic stripe on the film.

Two separate recording amplifiers are available:

A simple version, without controls and with automatic dynamic compression, can be attached to the power pack to permit one man sync sound shooting.

A more comprehensive recording amplifier, with two dynamic microphone inputs, one condenser microphone input, and a line input, together with headphones, a VU-meter and recording level control, can be carried by the sound man like a portable tape recorder.

## POWER PACK

The camera's power pack and electronic control unit are separate units which fit together for easy carrying. This design permits changing batteries instantly, using one and the same control unit. Size of combined unit: 4½" X 4" X 3". Weight: 12.7 lbs.

12V DC rechargeable lead acid battery is completely sealed, needs no maintenance. A yellow lamp on the camera flickers when the battery needs recharging.

A battery charger can be connected to any AC line between 110 and 250 volts, 50 or 60 cycles. It charges a discharged battery within fourteen hours.

A red lamp shows when battery charging takes place; the charger turns off automatically when the battery is fully charged. The battery can be left connected to the charger with a trickle charge which will compensate for the automatic discharge of the battery when stored for long periods.

A fully charged battery runs eight to ten 400' reels at 70°F.

A powerbelt, which also holds the electronic control unit, is also available.

## ELECTRONIC CONTROL UNIT

An electronic camera control unit attaches to the top of the battery and is connected to the camera with 14 pole cable. It contains the electronic controls for all of the camera motors.



Most of the camera's components are designed as plug-in modules in an araldite sealing compound.

The control unit contains a main switch for forward and reverse running and a position "0" indicating that all components are turned off. The reverse running switch returns automatically to 0, preventing the film maker from running the camera accidentally in reverse.

An inverter changes 12V DC to a 3-phase AC current.

The control unit also contains a battery charger and synchronizing crystal (to be ordered separately) as well as outlets for connecting time lapse units, tachometers, and remote counters.

## SERVICE

The entire camera is designed to permit simple exchanging of the various electronic components by the user, thereby eliminating extensive mechanical repairs which must be done at special service centers.

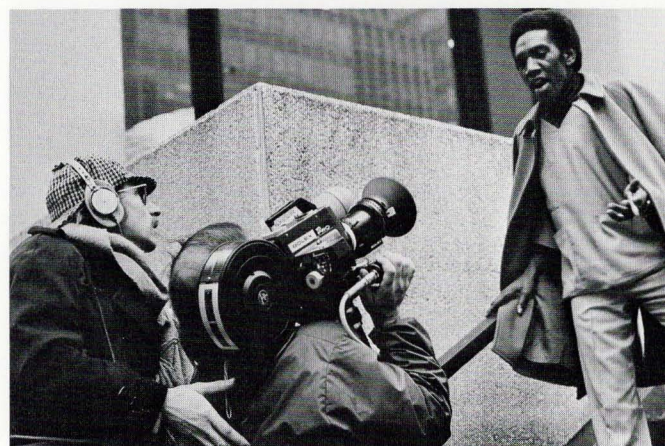
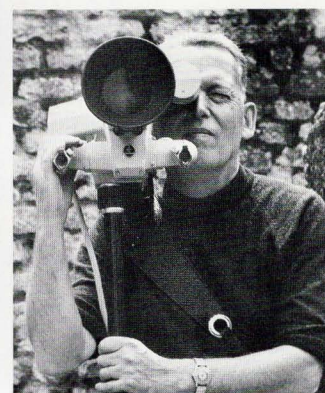
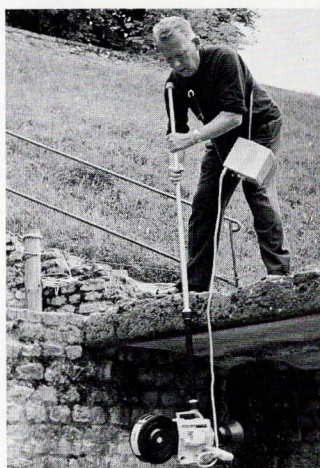
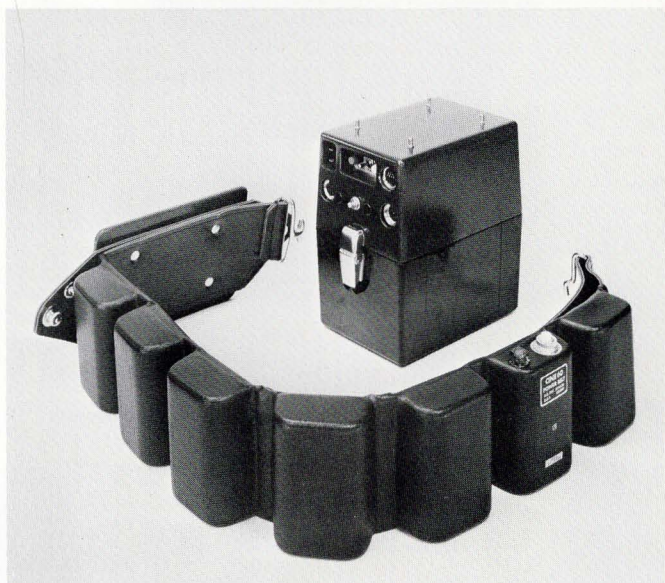
Mechanical components are kept to a minimum and are practically maintenance free. The motor has no brushes, collectors, or other parts that can wear out.

## ACCESSORIES

A wide range of accessories are available for the Bolex 16 Pro.

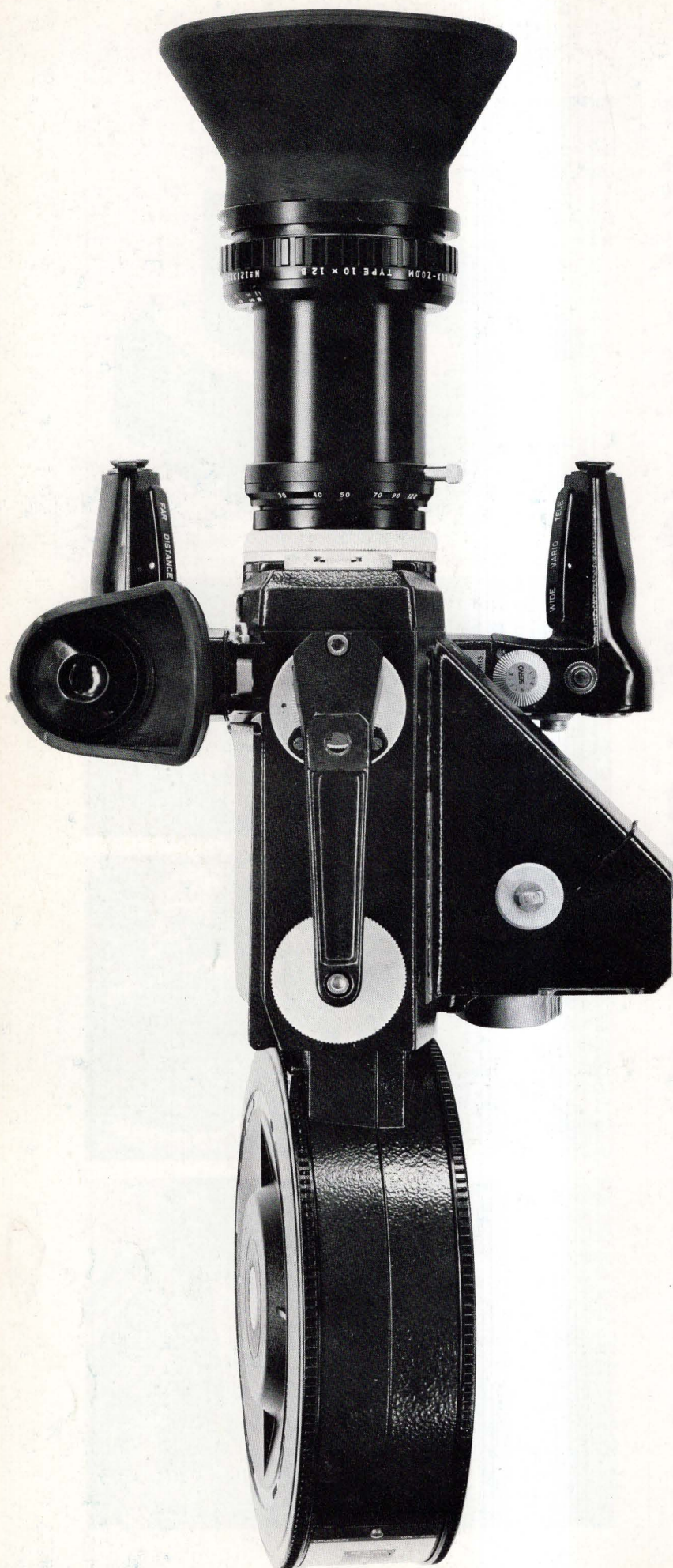
- Aluminum metal case, which holds the complete camera equipped with lens and magazine, power pack and control unit, monopod and additional magazines
- Monopod
- Leather carrying case for camera with power pack, additional magazine, and further small accessories
- Adapter for left-eye viewing
- Changing bag for magazine
- Separate charging unit
- Carrying belt for power pack
- Power belt
- 16' remote control cable for left-hand grip
- 16' remote control cable for right-hand grip
- Carrying strap for camera
- 12V car charging unit
- Recording amplifier with automatic dynamic compression
- Amplifier with 3 "Mike" inputs, "Line" input, and VU-meter recording level controls
- Infrared rangefinder for automatic focusing
- Close-up lenses
- Filters
- Clamping device for tripod
- Tripod release

*(Further accessories are currently being designed.)*





# BOLEX 16 PRO



- Release camera from a distance or from "pan handle".
- Focus lens from a distance or from "pan handle".
- Zoom from a distance or from "pan handle".
- Shoot sound indoors or outdoors without blimp.
- See from outside whether film is in camera.
- See amount of exposed and unexposed film in magazine.
- Thread camera automatically.
- Thread camera without manual attaching of film on take-up.
- Slate tape and film automatically.
- Use 400' film on reels or cores.
- See the 16mm projection and the TV area in the viewfinder.
- View and focus without a disturbing groundglass.
- View through finder from behind camera, above camera, and from the front of camera.
- Close the lens diaphragm completely.
- See the amount of footage and the number of frames shot.
- Change film magazines instantly.
- Lock the film magazine covers so they cannot come off accidentally.
- See a 20 X magnified image in finder.
- Protect the lens with rubber shade.
- Add a simple monopod as a body brace.
- Film in confined quarters (i.e. inside of a car).
- Exchange components instead of sending complete camera in for service.
- See the image with practically no flicker.
- Add a simple section for left-eye viewing.
- Recharge battery by simply connecting it to an AC outlet.

## The Single System Bolex 16 PRO, In Addition, Lets You:

- Hear the sound already recorded on the striped film.
- Listen to the sound recording without earphones.
- Adjust the volume in monitoring.
- Thread film automatically over the soundhead.
- Bypass soundhead in silent or double system filming.
- See the threading path from the outside.
- Shoot single system sound with automatic volume adjustment.

## Bolex 16 Pro Models

### Double System Sound

- Available in 16-50 f.p.s. model
- ..... or 16-100 f.p.s. model

### Single System Sound

- Available in 16-50 f.p.s. model
- ..... or 16-100 f.p.s. model