ARRI

ARRIFLEX 16 SR II



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The 16 SR II is the top of the line 16mm, sync-sound camera system from ARRI. Provides outstanding image quality – gives the cinematographer a compact and refined tool for filming – and accepts a full line of ARRIFLEX accessories.

The 16 SR II system: equally suited to studio, location, and documentary production. Available in 3 models.



The ARRIFLEX 16 SR II prepared for hand-held operation. (fig.1)

AT A GLANCE

- 24/25 or 30 fps crystal speeds. 30 fps provides optimal frame rate for video transfer to NTSC systems.
- Adjustable frame rate via variable speed unit (VSU): 5–75 fps (10–150 fps: SR HS II Automatic).
- Modular construction, and symmetrical viewing orientation for left or right side operation. Viewfinder adjustable in 3 axes.
- Accepts Carl Zeiss/ARRIFLEX High speed bayonet prime lenses – Standard bayonet prime lenses – bayonet zoom lenses.
- Low operating noise level: 22 + 2dB(A).
- Video assist (when using T-bar viewfinder).
- Camera body prepared to receive 112-bit SMPTE optical serial time code.
- Automatic shut-off switches off camera at roll end (except in E model).
- Optional digital tachometer/footage counter for feet or meters.
- Optional ARRI sound set: on-board WM-D6C Walkman for one-man sync-sound filming.

CAMERA MODELS

All 16 SR II models include the standard 24/25 or 30 fps crystal speeds. All models include standard 180° mirror shutter – 172.8° and 144° shutters can be factory installed.

ARRIFLEX 16 SR II E
– the standard production camera – prepared for manual exposure control – without light meter or automatic iris control. Operates from 5–75 fps with variable speed unit (VSU).

ARRIFLEX 16 SR II
– with TTL exposure meter in viewfinder. Gives operator quick exposure reference in mobile situations. Meter programmable from 16–1000 ASA.

ARRIFLEX 16 SR HS II Automatic
– includes TTL exposure meter and auto-iris control: both effective at all frame rates (10–150 fps with VSU).

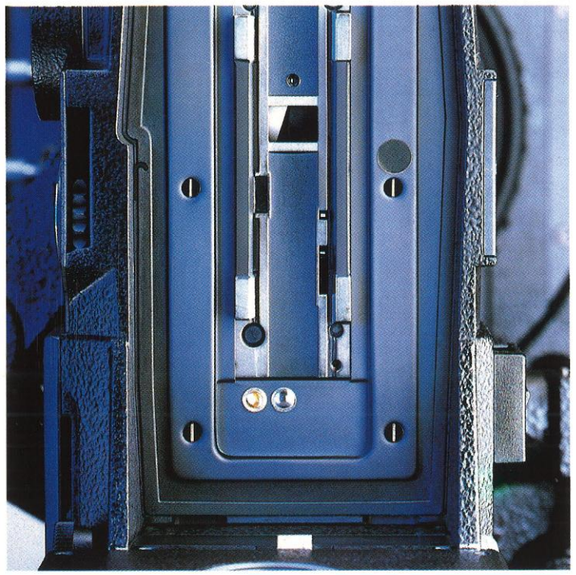
All ARRIFLEX 16 SR II models can be retro-fit to the Super-16 format.

MODULAR CONSTRUCTION

Lock-on magazines, easy-fit on-board batteries, and clip-on matte box make the ARRIFLEX 16 SR II a versatile, mobile camera system. The full range of ARRIFLEX 16mm lenses, electrical, and optical accessories make the system equally suited to studio filming.

THE MOVEMENT

The claw and pin movement provides picture steadiness better than 1/1250 of the frame height. The separate registration pin ensures camera's tolerance to film stock variations (particularly important in extreme climates) by isolating the functions of pulldown and registration. Pin registration also provides exceptional picture steadiness at high frame rates. The film guides have an abrasion-resistant surface which inhibits film emulsion build-up by minimizing friction with the film.



The ARRIFLEX 16 SR II film gate. Sensor at bottom provides auto shut-off. (fig.2)

EXPOSURE CONTROL

Both the TTL-silicon follow-pointer exposure meter and the automatic exposure control are effective throughout the camera's entire speed range. With the 16 SR II model, the operator adjusts the aperture manually, according to the meter reading.

The SR HS II Automatic features both exposure meter and auto-iris control for lenses equipped with a spring-loaded diaphragm (Zeiss Vario Sonnar 10–100mm). Pushing the camera's memory button retains one aperture setting (independent of camera power) until a new setting is entered.

The exposure meter reads a central image area approximately 25% of the frame size, and is programmable for film speeds from 16–1000 ASA.

TIME CODE

All ARRIFLEX 16 SR II models feature a modified camera body designed to accept an optical serial SMPTE time code signal.

The 112-bit (SMPTE RP 136) type B time code exposed on the film's edge can be used to expedite post production when read by time code-equipped film and video editing systems.

ROTATABLE VIEWFINDER

Swing-over viewfinder pivots 190° around lens axis for left or right side operation. Auto-closure eyepiece rotates 360° parallel to the camera and pivots 25° towards or away from the camera body. Viewfinder maintains upright image at all times. The resulting freedom of viewing positions is unprecedented in 16mm production cameras.

Optional viewfinder extension also provides easier viewing from difficult camera positions, and greater comfort for tripod and dolly operation. Auto-closure eyepiece blocks stray light from entering viewing system. The f1.2 viewing system speed and the 10x image magnification, together ensure a bright and large viewing image.



The swing-over viewfinder rotates 190° for left or right side operation. (fig.3)

VIDEO ASSIST

The ARRIFLEX black and white CCD video assist camera is designed to accompany the modified T-bar video viewfinder (with optical adapter). CCD chip provides less image bloom and lag than tube cameras, and a longer life. Flicker reduction processor reduces flicker considerably at speeds above 20 fps. CCD camera includes standard BNC connection, and mini-plug for use with on-board monitors. Available in 60Hz and 50Hz versions.

ARRIFLEX 16 SR II

ADDITIONAL ACCESSORIES

ARRI fluid heads, tripods, and foam-lined aluminum cases are available in various sizes for the ARRIFLEX 16 SR II camera system.



"The 16 SR Book" – a comprehensive technical guide describing the entire ARRIFLEX 16 SR system – is now available.

CARL ZEISS/ ARRIFLEX LENSES

The 41 mm steel bayonet lens mount of the ARRIFLEX 16 SR II accepts any 41 mm bayonet lenses, including:
- Carl Zeiss/ARRIFLEX T1.3 High speed prime lenses (9.5mm–50mm).
- Carl Zeiss/ARRIFLEX T2.1 Standard prime lenses (8–600mm).*
- Carl Zeiss/ARRIFLEX T2.0 10–100mm Vario-Sonnar zoom lens with macro focusing ring.
- Cooke zoom lenses (available from ARRI).
- Wide angle attachments for zoom lenses (Mutar) and prime lenses (Aspheron).
- 2x range extenders for Carl Zeiss/ARRIFLEX zoom lenses and for 300mm Tele-Apotessar lens.

*180mm and 300mm Standard lenses: T3.



The High speed lenses employ a 41 mm steel bayonet mount. (fig. 4)

FOR THE ARRIFLEX 16 SR II

Carl Zeiss/ARRIFLEX lenses provide the cameraman with:
- Exceptional sharpness.
- Optimal contrast rendering (High speed lenses designed specifically for the critical 16mm format).
- Rugged construction.
- Highest practical speed available (T1.3) for flexibility in low-light filming.
- Uniform front diameters for easy attachment of matte boxes.
- A focusing scale spanning 300° for optimal legibility and follow focus performance.

CAMERA AND LENS SUPPORT

With the camera mounted directly to a tripod, and also during mobile filming, the lightweight support is attached to the camera. It accompanies lightweight follow focus and either bellows type or (clip-on) lightweight matte box (LMB-2). For comfortable hand-held operating, the molded rubber shoulder cushion attaches directly beneath the camera.

The 16mm bridge plate supports the ARRIFLEX 16 SR II whenever any production matte box is used. Its two-plate system provides easy balance, and quick removal of camera from tripod head. 16mm bridge plate includes lens rods and is used on tripod heads with or without a balancing feature.

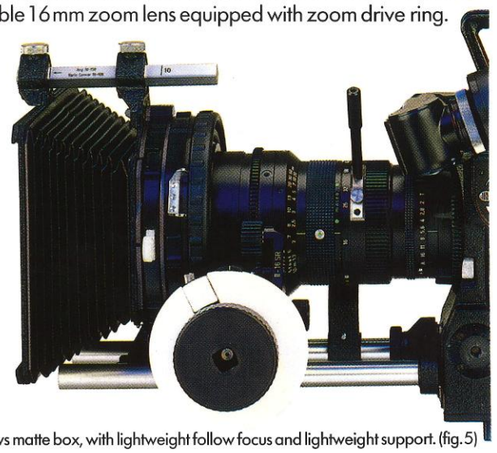
LIGHTWEIGHT AND UNIVERSAL FOLLOW FOCUS SYSTEM

The compact, lightweight follow focus mounts on the lightweight support and compliments either the bellows matte box or the (clip-on) lightweight matte box (LMB-2). Optimal camera mobility is achieved and no bridge plate system is required.

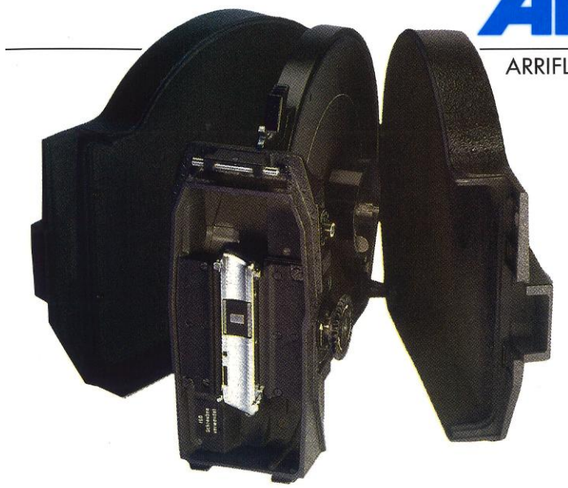
The universal follow focus (FF-2) mounts on the bridge plate support rods, and allows precise focus control – can be operated from either side of the camera with standard focus knob, optional lever, or flexible focus extension. Normally accompanies a production matte box.

SERVO ZOOM

The ARRI servo zoom motor with handgrip allows smooth zooming. Offers adjustable zooming speed and is powered from the camera's accessory flange socket. Functions with any applicable 16mm zoom lens equipped with zoom drive ring.



The bellows matte box, with lightweight follow focus and lightweight support. (fig. 5)



The ARRIFLEX 16 SR II magazine with pressure plate (middle). (fig. 6)

QUICK-CHANGE MAGAZINES

The 400ft coaxial magazines are amongst the easiest to load of any 16mm camera. Magazine mounts on camera with a fast and simple lock-on motion, ensuring quick change-over between camera rolls.

Magazine houses the pressure plate so film "threading" entails only advancing the claw with the electronic "Test" button. An exposed footage counter (side) and remaining footage counter (rear) are incorporated.

MATTE BOXES

The 5 matte boxes designed for the ARRIFLEX 16 SR II system differ according to the lens and filter sizes they accept, and particular filming conditions.
- The lightweight matte box (LMB-2) attaches directly to the lens. Accompanies 16mm zoom lenses and 16mm prime lenses from 8–180mm. Accepts two 3″ x 3″ filters, and with adapter ring, one Series 9 filter.
- The bellows matte box has one fixed and one rotatable stage which both accept 3″ × 3″ or 3″ x 4″ filters. Optional frames hold up to four 3″ x 3″ filters, or two 4″ x 4″ filters. Matte box attaches to the lightweight support.
- The 4″ x 4″ production matte box has 2 rotatable filter stages. An additional rotatable filter ring for a 4½″ round filter can be attached. Matte box swings open 90° for lens changing.
- The 5″ x 6″ production matte box has one rotatable stage that holds two filters. Both filters can be located at various heights with respect to the matte box. Another rotatable stage for 138mm round filters is available. An additional rotatable stage for a 5″ x 6″ filter, with a flexible drive for graduated filters can be attached. Matte box swings open 90° for lens changing.
- The 6.6″ x 6.6″ production matte box contains 3 rotatable filter stages. It accepts a rotatable filter ring for either a 6″ or 138mm round filter.

ELECTRICAL ACCESSORIES

- ARRI sound set (modified Sony WM-D6C Walkman cassette recorder) records crystal sync-sound while on board the camera. Receives sync and power from camera.
- ARRI Time Code (see p. 3)
- ARRI Variable speed unit (VSU) for 5–75 fps (10–150 fps: SR HS II).
- Panhandle remote control on/off switch (RCSR) allows easy camera start/stop for the operator.
- Phase shifter (PHU II) allows filming of crystal-controlled TV monitors.
- Electronic tachometer and footage counter, for feet or meters.
- Accessory distributor (ZV) allows simultaneous connection of two accessories through one socket.
- External synchronizing attachment (EXS II) allows synchronization of camera with another camera, AC power, or the BAS signal of a monitor.
- Remote control unit (FSZ II) for external synchronization (from 6–75 fps) with additional quartz-controlled speeds.

THE ARRI NICKEL CADMIUM BATTERIES AND CHARGERS

Camera and accessories are powered by the 12V/1.2Ah NC on-board battery. A single charge will run at least five 400ft magazines at normal shooting speeds. The accompanying NCL SR III, charges one on-board battery in 4–5 hours; two batteries in 8–10 hours.

The ARRI NC 12V/7Ah battery is recommended when using the variable speed unit or multiple accessories. It powers the camera throughout the entire speed range, and is protected by a plastic-coated housing that is water tight at the base.

Two popular chargers are available for the NC 12V/7Ah battery:

The NCL 08/R-I battery charger features a normal charging time of 14 hours. Batteries with temperature monitoring (R series) can be quick-charged in 3.5 hours. The NCL 08 D double battery charger allows simultaneous charging of two batteries. It also requires a 14-hour charging time. Both units can charge 8V, 12V, and 16V batteries, with a capacity up to 7Ah.

The latest 12V (14Ah)/24V (7Ah) nickel cadmium battery can provide the 16 SR II with even longer running times, when used in the 12-volt mode. The NC 24 R requires the NCL 24R charger that features a 3.5-hour charging time.

ARRIFLEX 16 SR II

TECHNICAL DATA:

Film width:	16mm, one-sided or double perforation (winding)
Noise level:	22 dB (A) +2dB (A)
Shutter opening:	180°; with Super 16: 172,8°, 144° on request
Lens mount:	Bayonet mount, 41 mm dia
Viewfinder magnification:	10x
Frame speeds:	Quartz 24/25 or 30 fps US-standard; Variable 5–75 fps; (16 SR HS II 10–150 fps)
Magazines:	400 feet coaxial magazine
Motor:	12V DC motor, quartz-controlled
On-board battery:	12V, 1.2Ah NC
Temperature range:	–4°F to 122°F (–20°C to 50°C)
Measurements:	
Viewfinder horizontal:	L: 10.4"; W: 6.3"; H: 7.7" L: 264mm; W: 160mm; H: 195mm
Viewfinder vertical:	L: 10.4"; W: 3.9"; H: 11.3" L: 264mm; W: 100mm; H: 287mm
Weight:	Camera body 7 lbs (3.2 kg), 400ft magazine 4.8 lbs (2.2 kg) Operational weight with camera, 400ft magazine, w/o. film, battery pack 13 lbs (5.9 kg)
Exposure meter film speed:	16 to 1000 ASA (13 to 31 DIN)
Indication range in the viewfinder:	± 2f-stops



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