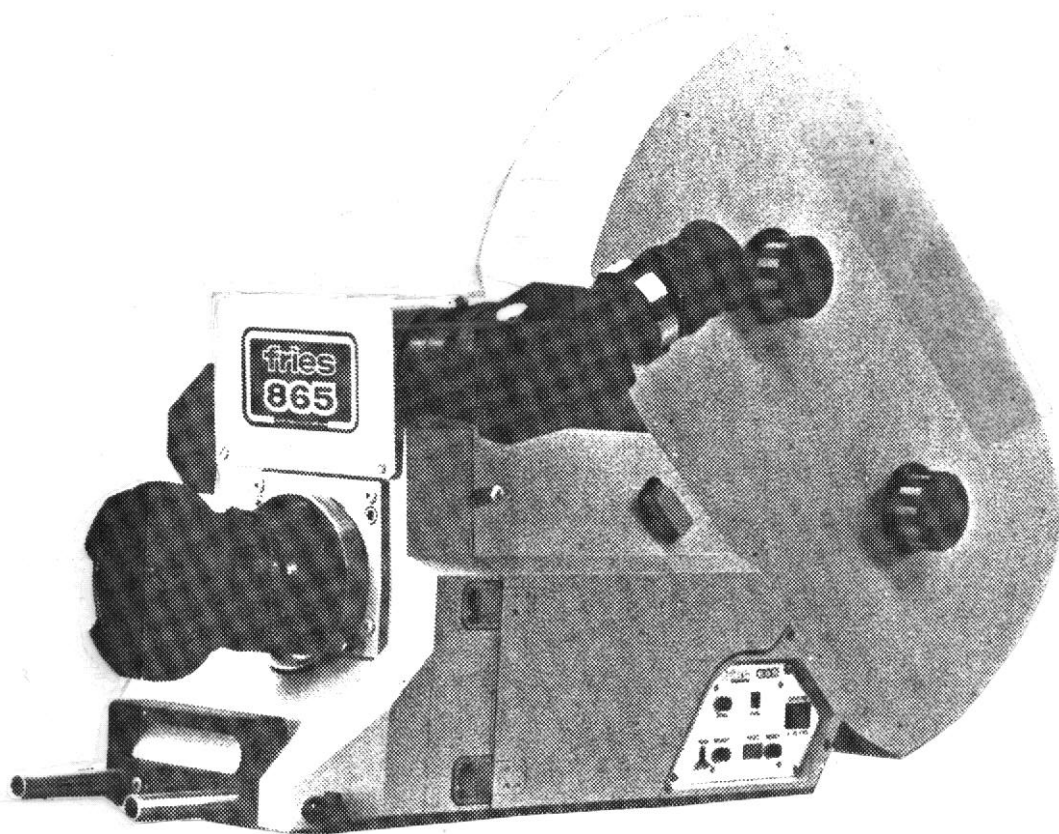


865

CAMERA OPERATION AND SERVICE MANUAL

65MM 8 PERFORATION CAMERA



MODEL 865

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SECTION I - Description

GENERAL DESCRIPTION

The Fries Model 865 is a new large format 65mm film camera. The new format in exhibition is called 870. The camera was designed to meet the requirements of new format for special venue type of productions, films for world fairs, film expo's, museums and the new interactive simulation rides.

CAMERA CONFIGURATION

The 865 is of the conventional motion picture camera layout. With the camera door and film compartment being on the operator or left side. Also on the left is the reflex viewfinder and the control panel, containing: camera start-stop, speed selector and indicator, footage and footage reset, ready and sync indicator lights.

The magazine attaches to the mag nest located on the slant back portion of the camera body. The camera front houses the shutter, reflex mirror, ground glass and the universal lens mount.

Located in a recess on the right side of the camera body, is the inching knob, also located on the right side is the strobe switch and connector. Located at the lower right rear of the camera is the power panel, containing input power connector, circuit breaker, fwd and reverse and the accessory connector. The camera drive motor and control electronics are located internally. In the base of the camera body are three 3/8-16 mounting holes.

VIEWFINDER

The orientable viewfinder can be rotated through a full 360 degrees. The image is self corrected through approximately 180 degrees. By use of the orientation adjusting ring, the viewfinder can be manually reoriented for all viewfinder positions.

Located at the top front of the viewfinder is the locking knob and the viewer closing thumb wheel. This eliminates stray light entering through the viewing system when the finder is not being used.

DRIVE MOTOR

The internal drive motor is a 30VDC-Servo controlled motor. The motor is crystal controlled from 2 to 72 FPS in 1 frame increments. The motor runs both forward and reverse.

FILM MOVEMENT

The film movement is designed to accommodate 65mm KS- 1866 camera negative film.

The film movement is a dual register pin intermittent film transport mechanism. A cam and eccentric mounted on a single shaft actuate the pull-down claw and operate the register pins. The pins position and hold the film during exposure. The exposed aperture size is 1.450 height by 2.072 width.

LIGHT VALVE

The light valve control knob has three positions. Center position "View": In the view position all the light reflected to the reflex system will go to the operator **viewfinder**. Rotate the knob counter clockwise to "Video": In the video position all available light will go to the video assist system. Rotate the knob clockwise to "Combo": The light is split $\frac{2}{3}$ to the operator and $\frac{1}{3}$ to the video assist.

GROUND GLASS

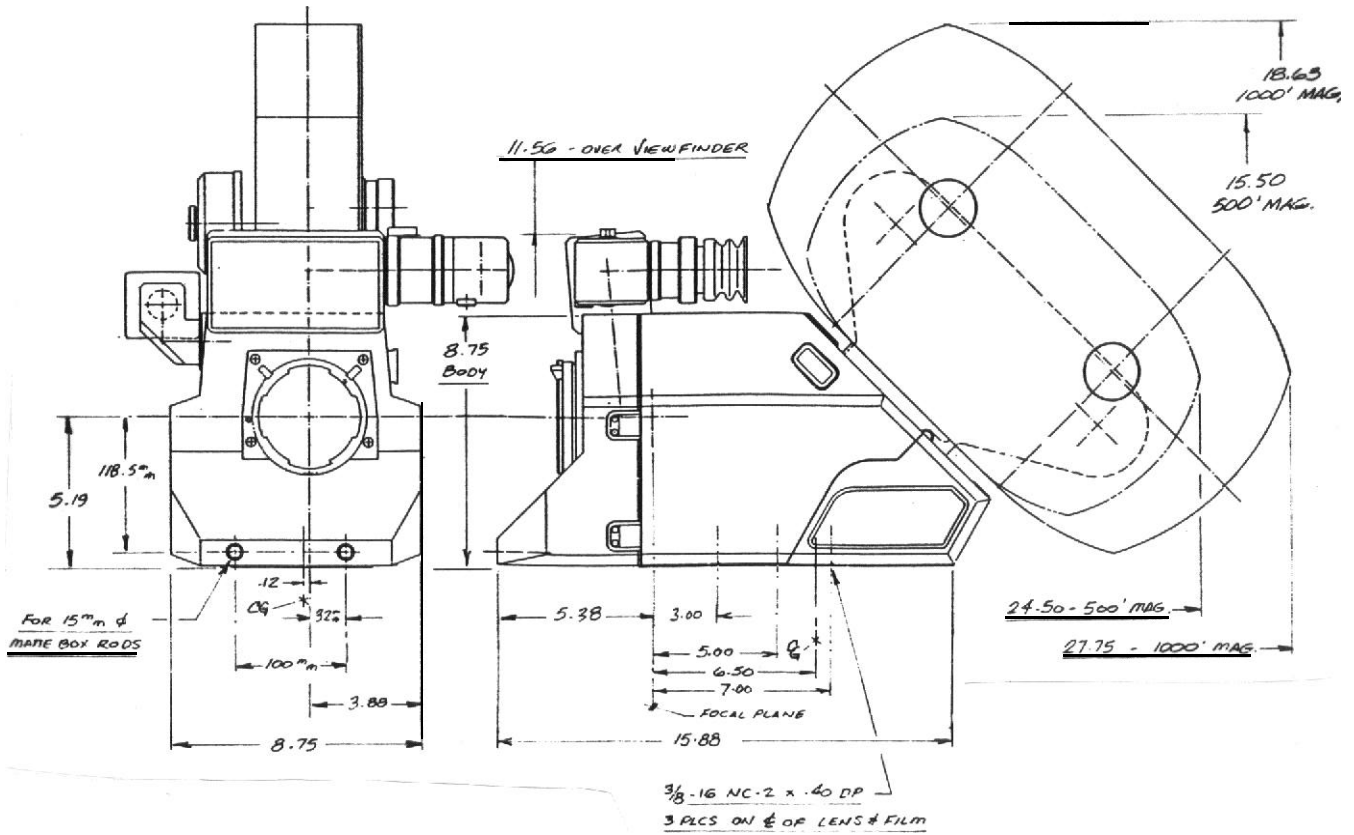
The visible area of the ground glass through the viewing system is the same as the film exposed area. The standard ground glass has a center cross and projection markings for the 870 format (1.438 x 1.913). Other ground glasses are available per customer requirements.

To remove the ground glass, grip the front edge of the ground glass and pull forward through the lens port. To reinstall, slide ground glass back in, through lens port with ground surface and reticles facing down towards the **mirror** and shutter.

LENS MOUNT & LENSES

The camera is supplied with the universal lens mount. This is a bayonet type mount with a large 2.950 diameter port and a film to flange depth of 2.7559 inches. The standard 2 1/4 format lenses are needed to cover the new 870 format.

CAMERA ENVELOPE & MOUNTING



The matte box rods are located in ARRI standard position. The center of gravity "CG" locations are with a 1000' of film, 500 on supply side and 500 on take-up side of magazine.

CAMERA WEIGHTS

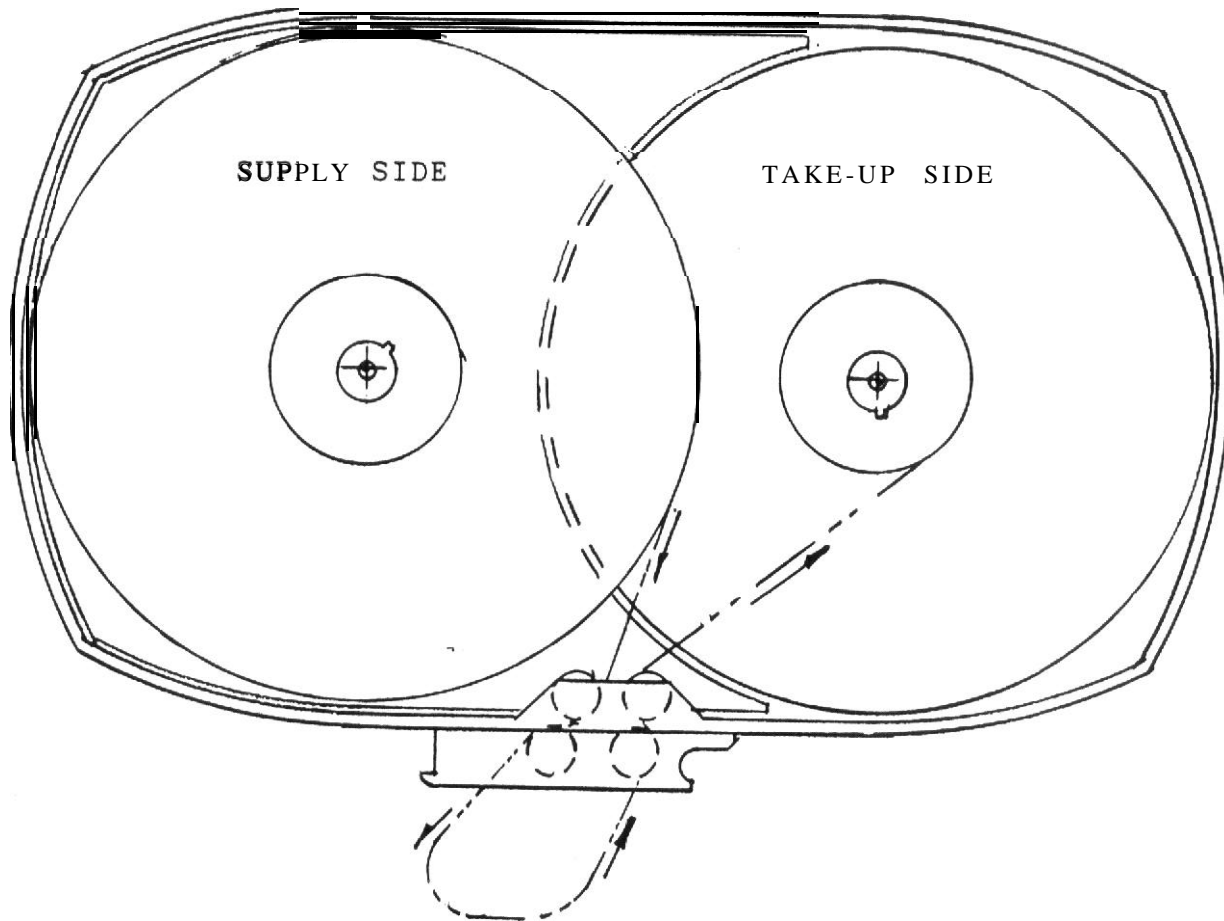
Camera body
 1000' magazine
 camera complete 1000' film 80mm lens

45 lbs.
 13 1/2 lbs
 68 1/2 lbs

SECTION II - Operation

LOADING MAGAZINE

THE FILM MAGAZINE MUST BE LOADED IN EITHER A DARK ROOM OR A CHANGING BAG.



1. Remove the magazine cover by unscrewing the two large locking knobs located on the magazine cover.
2. Before loading, clean inside of magazine with a brush or light air pressure.
3. Place the film roll on the supply side spindle with the film coming down from the right side. This is important as the film emulsion is on the inner surface and the emulsion must face the camera lens.
4. Feed the film through the back side of the front roller, the film will exit the magazine through the front film slot. Next feed the film through the rear film slot, the film will enter to the front side of the rear roller. Attach the film to a film core on the take-up spindle. NOTE the film is taken up counter clock wise film emulsion out.

SECTION III - Maintenance

CLEANING CAMERA BOX

The interior of the **film compartment** should be cleaned after each period of use. The cleaning is usually done with a" air syringe to blow off loose dust and with a lint-free cloth to wipe polished surfaces. To clean the **camera box** interior, proceed as follows:

Place **camera** in a room that is free from drafts and dust. Open **access door** of film compartment by depressing latch.

Use an air syringe to blow all loose dust **from** interior of the **film** compartment. Be particularly **sure** that all bits of **film** emulsion are removed.

Wipe polished metal surfaces carefully with a **soft**, lint-free cloth, exercising caution not to catch the cloth on the teeth of the sprocket or on other sharp projections.

CLEANING APERTURE PLATE

Check **aperture** plate every 1000 feet, or each time **camera** is threaded, to insure cleanliness and absence of emulsion pickup. To clean aperture plate, proceed as follows:

Turn **inching** knob until pull-down claw is fully retracted from plate in upper position of travel, pull register-pin retaining knob and register pins will automatically retract.

Pass a piece of **film** between pressure and register plates and the aperture plate to **ensure** that pi" and claw are fully retracted **from aperture** plate. Failure to check that pin and claw are fully retracted may result in damage to the **aperture** plate.

Loosen the aperture plate **holddown** screw and slide aperture plate STRAIGHT OFF guide pin

An **allen** key has been provided for loosening the aperture **holddown** screws. This same allen key can be used for removing the complete film movement. The **allen** key is stored in a holder located on the inside of the camera door.

Clean the aperture plate and film race. Never use a" abrasive cleaner on the aperture plate, as damage to the highly polished surfaces may result.

Remove accumulated emulsion from the **aperture** and pressure plates, registration pi" holes, and pull-down claw travel slots using a pointed, soft wooden prod covered with absorbent cotton saturated with a solvent like acetone.

Using a" air syringe, blow through registration pi" holes and claw slots.

Polish the plates with the heel of the hand. Place a drop of oil on the plates and **rub** it in thoroughly with the thumb or heel of the hand to remove all excess oil. Be **sure** the registration pi" holes and claw slots are dried completely. Ensure that the hand is completely free of grit and perspiration before performing this cleaning operation on the plates.

CLEANING PRESSURE PLATE

The pressure plate must be inspected and cleaned each time the **aperture** plate is cleaned. Proceed as follows:

Remove pressure plate from camera by swinging retainer **arm** upward and lifting plate out.

Remove all loose dust and bits of emulsion with a camel's hair brush.

Wipe the forward side of the plate with the ball of the thumb to remove all loose dust and bits of emulsion.

CLEANING FILM MOVEMENT

The movement must be kept clean at all times. If salt water, sand or any **other** foreign material enters the movement, it should be thoroughly cleaned as follows:

Remove and clean aperture and pressure plates

Remove **the three** screws which hold the movement to the camera box and withdraw the movement. Be careful of exposed registration pins when **aperture** plate is removed.

Hold movement over pan of clean solvent and brush all parts carefully. Do not immerse entire movement, as lubricant **in** sealed ball bearings may be contaminated.

Blow all parts dry with air or wipe **dry** if air pressure is not available.

CAUTION

Do not use air pressure in excess of 15 psi when drying the movement.

After cleaning **the** movement it must be lubricated before reinstalling

Replace **aperture** plate and pressure plate.

Carefully install movement in camera. The movement will only engage the drive coupling in one position. Visually align the two rubber drive pegs and the indexing pin with that of the movement. Manually rock the **inching** knob until **the** movement slips into place. Replace and tighten the three attaching screws. Manually **tom** **the** **inching** knob ensuring that everything is operating properly.

CLEANING THE MIRROR

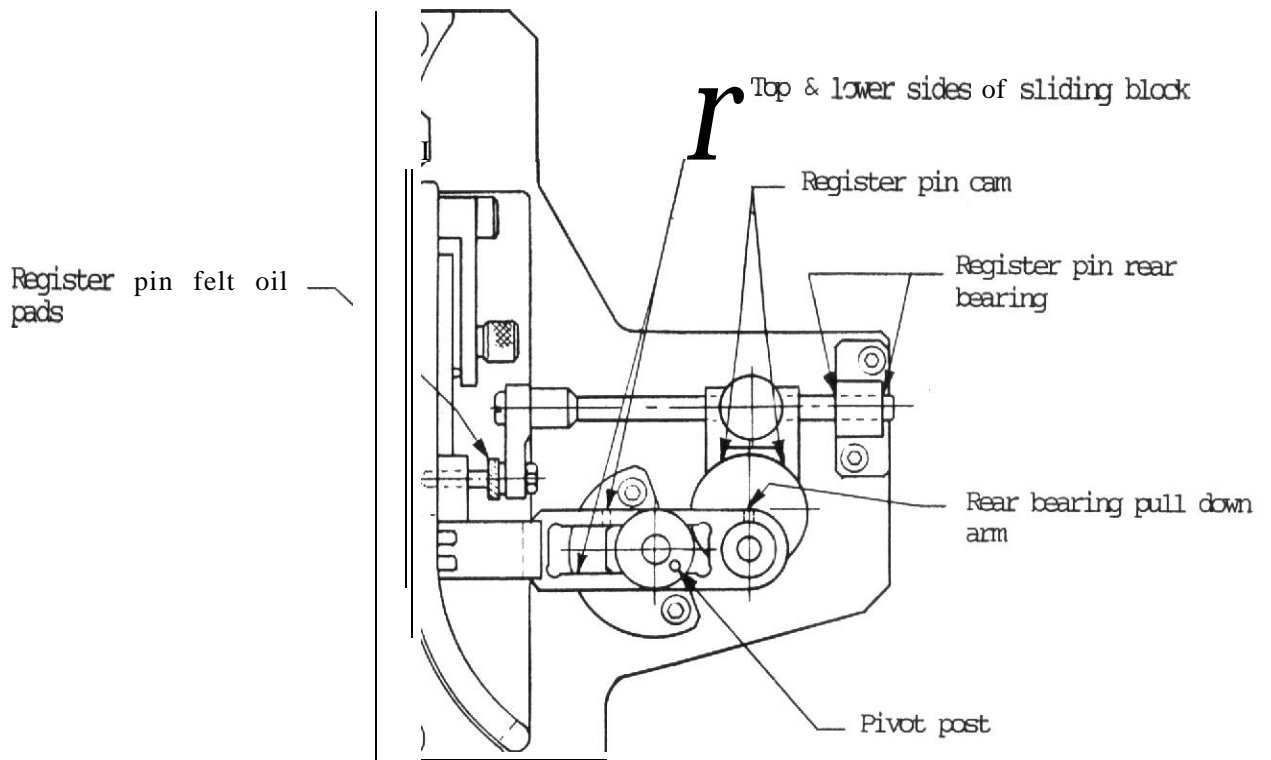
The mirror is **fragile** and should be cleaned and handled only when necessary, and with extreme care.

For dust or light dii specs try using a clean, soft camel hair brush; brushing **the** mirror surface lightly.

After brushing, if there are still a few small specs or oil spots, try using standard lens cleaner and lens tissue. Do not apply pressure to the mirror surface.

PRECAUTIONARY NOTE: If mirror is not wiped dry, but allowed to dry in air, a stain may result which will **permanently** damage the coating.

LUBRICATION



Lubricate all points with oil **every** 10,000 feet of **film** when **operating at 24FPS**.

Lubricate all points before every high speed run, 60FPS and above.

All other idler rollers, sprocket guide rollers and keepers need only to be lubricated every 50,000 feet of **film**. Use Fries Camera **Oil for all lubrication** points requiring oil.