



TYPE 800 PROJECTOR

Service Manual

SIEMENS & HALSKE AKTIENGESELLSCHAFT
BERLIN · MÜNCHEN

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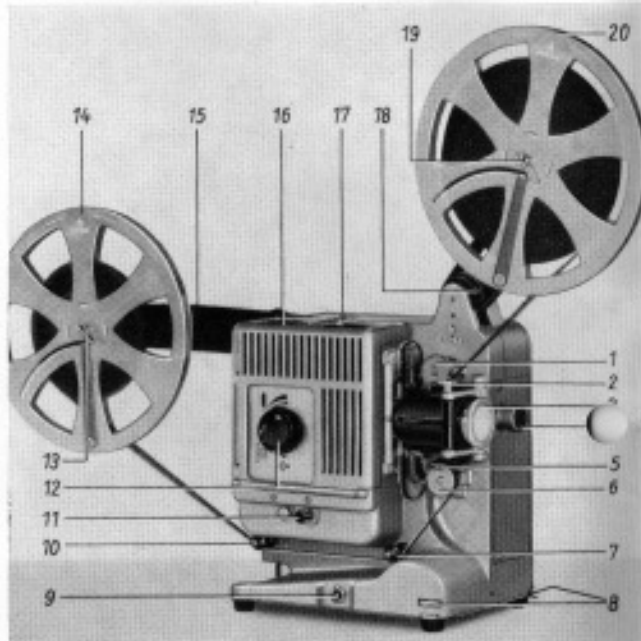


Fig. 1 General view

- 1 Upper sprocket
- 2 Frame-line control
- 3 Lens, Astro Kino IV 1:1.5/22 mm
- 4 Frame-frequency control 18 or 24 frames per sec
- 5 Pressure guide holder
- 6 Lower sprocket
- 7 Front guide roller
- 8 Elevation control
- 9 Pilot lamp switch
- 10 Rear guide roller
- 11 Lamp control
- 12 Program switch
- 13 Rear reel spindle
- 14 Take up reel
- 15 Rear reel arm
- 16 Cover of lamp house
- 17 Locking rod
- 18 Front reel arm
- 19 Front reel spindle
- 20 Film reel (supply reel)

General

The 800 projector for 8 mm film is equipped with a program switch for forward and reverse running (visible and nonvisible), motor rewind, and a circuit for switching on the projector lamp in two stages.

Standard illumination is provided by a 500-watt/5-amp projector lamp, but lamps for 250 watt/5 amp and 375 watt/5 amp may be used at option. A two-blade or a three-blade shutter may be used according to choice; either shutter may be inserted or removed without difficulty.

Film reels of any capacity up to 800 ft may be used. The frame frequency may be set to 18 or 24 frames per sec. With a frame frequency of 18 frames per sec, the projection of a 800 ft 8 mm film takes approx. one hour; with a frame frequency of 24 frames per sec, it takes approx. 45 minutes.

The projector operates on 220 v, 50 cps a-c only

The asynchronous motor does not require any form of special maintenance. Permanent lubrication (grease) eliminates the need for repeated lubrication.

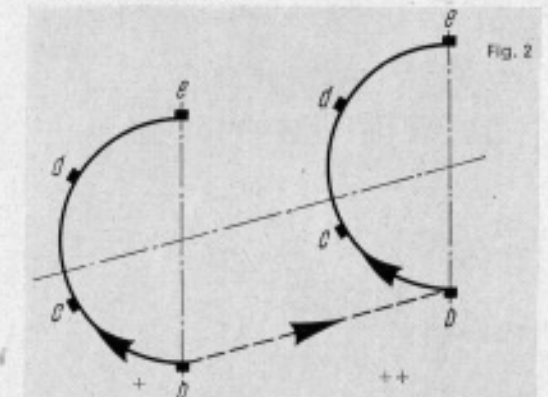
The built-in pilot lamp facilitates the threading of film and permits the operator to check the running of the film in the darkened room.

Magnetic sound facilities may be added at any time.

An anamorphic lens system for panoramic projection may also readily be added.

Explanation of symbols

- a Program control for forward and reverse running
- b OFF position of switch
- c FORWARD or REVERSE position
- d MOTOR and REDUCED LAMP INTENSITY position
- e MOTOR end FULL LAMP INTENSITY position
- f Control for adjusting lamp in direction of optical axis with lateral displacement
- g Fixing screw for lamp



+ Forward running

Turn program switch clockwise
Position c = motor ON
Position d = motor ON and lamp
at reduced intensity
Position e = motor ON and lamp
at full intensity

++ Reverse running nonvisible/visible

Press program switch and turn clockwise
Position c = motor ON
Scene-repeat (nonvisible reverse running)
Positions d and e = visible reverse
running

Preparations for film projection

1. Unroll connecting lead g (Fig. 3)
2. Set reel arm to working position
Press locking rod c (Fig. 3) to release front reel arm, and pull up arm
3. Press lifting frame h in direction of arrow and swing it out to bring rear reel arm into rest position (Fig. 3 and 4)

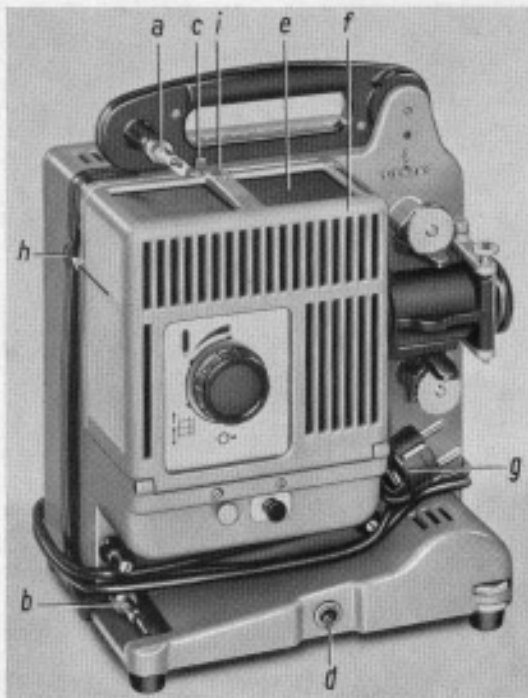


Fig. 3

- a, b Reel spindle
- c Locking rod
- d Pilot lamp switch
- e Lamp house
- f Cover of lamp house
- g Connecting lead
- h Lifting frame for rear reel arm
- i Holding screw

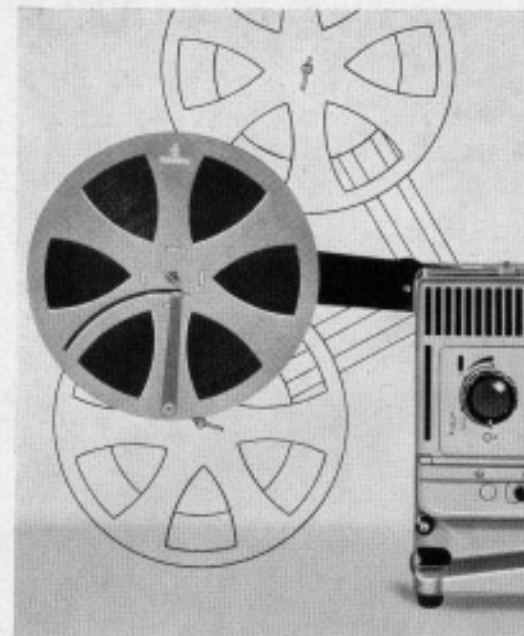


Fig. 4

Upper rest position is
for rewinding only

Middle rest position is
for 400 ft and 800 ft reels

Lower rest position is
for 50, 100 and 200 ft reels

Insertion of projection lamp

Loosen screw i (Fig. 3) and locking rod c (Fig. 3), pull down cover of lamp house f (Fig. 3) and carefully lift off black lamp house e (Fig. 3).

Any of the following projection lamps may be inserted: 250 watt/5 amp, 375 watt/5 amp and 500 watt/5 amp.

When inserting the lamp, remember that lamp socket has two lugs of different size and that lamp has to be inserted in socket e (Fig. 5) a certain way round.

(The small lug faces the mirror c.)

Introduce lamp b from side and hold it perpendicularly over socket; then press lamp into socket and turn clockwise by 90° until reaching stop.

The bulb of the lamp must not come into contact with the condenser or the mirror.

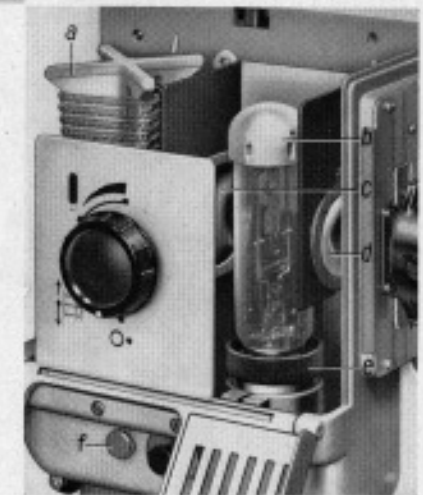


Fig. 5

- a Plug-in resistor
- b Lamp
- c Mirror
- d Condenser
- e Lamp socket
- f Holding screw

If the 250-watt lamp is used, first loosen holding screw 1 (Fig. 5) of socket holder; shift holder in direction of mirror; retighten screw; insert lamp.

Insertion of resistor

The plug-in resistor a (Fig. 5) must correspond to the chosen lamp (see Resistance Table on page 18). Take hold of resistor by the top and mount it on the three plug pins in such a way that the fastening screws face the mirror.

Each resistor is marked with the power supply voltage and the wattage of the appropriate projection lamp. After inserting lamp and resistor, place on lamp house e (Fig. 3) from above, shut cover f of lamp house, and tighten fastening screw l (Fig. 3).

Choice of shutter

The projector is provided with a two-blade shutter and a three-blade shutter. The two-blade shutter is mounted in the projector before it leaves the factory; the three-blade shutter is attached to the base plate.

The three-blade shutter is normally used for a frame frequency of 18 frames per sec, and the two-blade shutter for 24 frames per sec.



Fig. 6

- a Holding screw
- b Protective cover

The shutter may be changed as follows:

1. Using a coin, loosen holding screw a (Fig. 6) and remove protective cover b.
2. Turn frame-frequency control 4 (Fig. 1) until driver b (Fig. 7) comes to front.
3. Pull out shutter a in direction of arrow.
4. Remove shutter from base plate and insert with guide slot f (Fig. 8) between shutter holder c and pressure piece d and lift over drive b so that the latter enters rest e. The S & H sign on the two-blade shutter should here face the projection lamp.
5. Replace protective cover and tighten holding screw.

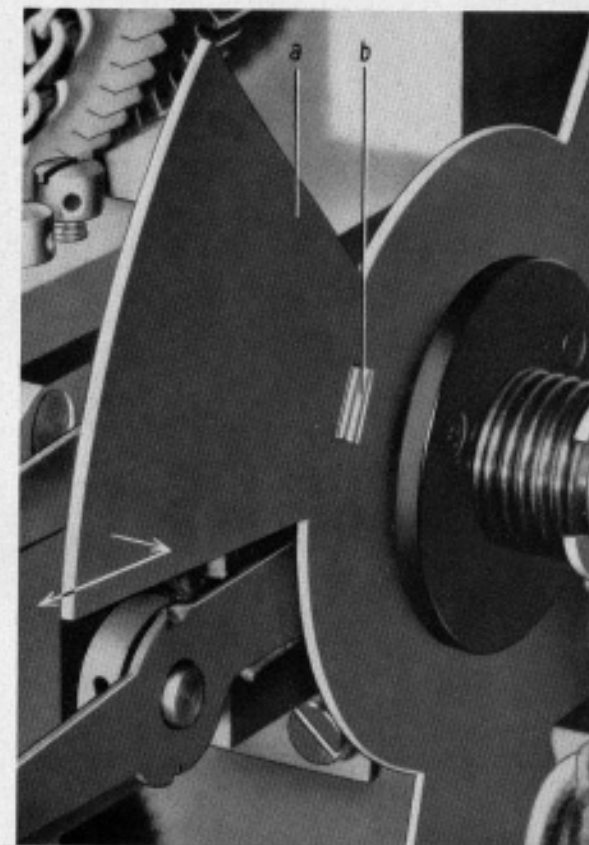


Fig. 7

- a Three-blade shutter
- b Drive

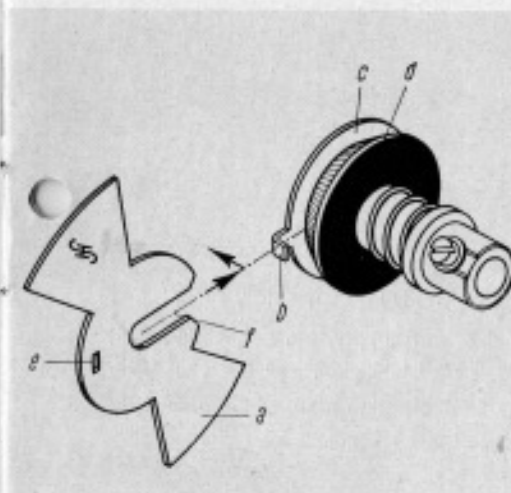


Fig. 8

- a Two-blade shutter
- b Drive
- c Shutter holder
- d Pressure piece
- e Rest for drive
- f Guide slot

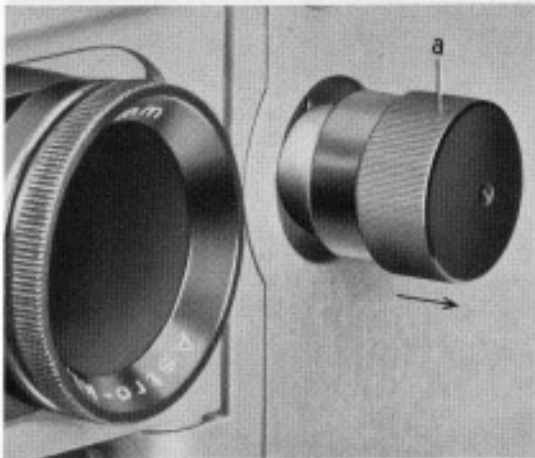


Fig. 9 18 Frames per sec.
a Frame-frequency control

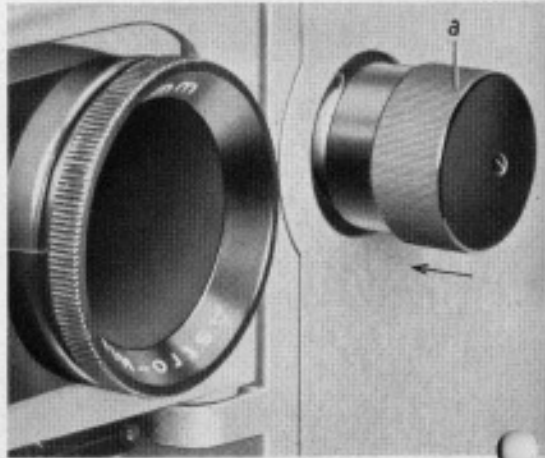


Fig. 10 24 Frames per sec.
a Frame-frequency control

Adjustment of film speed

To adjust frame frequency, press in or pull out control a as required (Fig. 9, 10).

Connection of projector to power supply

The connecting lead is terminated with a safety plug which fits into any safety socket.

Before connecting the projector to the commercial power supply, the connecting lead must be protected by an appropriate fuse. A 250-500-watt lamp requires a 6 amp fuse.

To check voltage level of commercial power supply, look at rating plate of the electricity meter or at markings on any electric light bulb used in same room.

The projector operates only on 220 volts, 50 cps a-c.

Switching on and orienting projector

Turn program switch a (Fig. 11) clockwise to second contact.

Check and adjust size and position of frame on projection screen. The elevation is adjustable by means of the elevation control b (Fig. 11) mounted just above the rubber supports at the front of the projector.

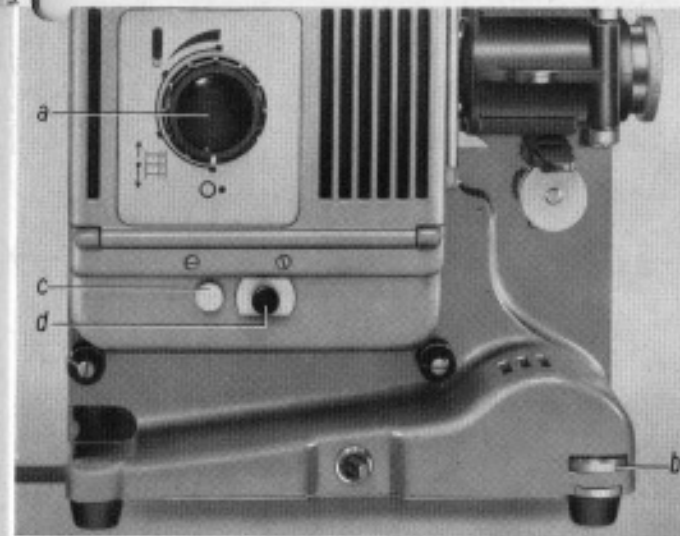


Fig. 11

- a Program switch
- b Elevation control
- c Fixing screw for lamp
- d Button for adjusting position of lamp

Adjustment of lamp

To secure optimum illumination of the picture at all times, the projection lamp must be exactly adjusted.

Loosen holding screw c (Fig. 11) and slide button d to left or right to adjust lamp in direction of optical axis. The lamp is adjusted laterally by turning button d.

The lamp may be considered properly adjusted when the direct images of the filament threads appear on the screen in between the images reflected by the concave mirror



Fig. 12

(Fig. 12). Neither the direct nor the reflected images should appear in sharp focus but uniformly unsharp; as viewed from the center of the picture, the spirals should appear to run from right to left.

When optimum adjustment is attained, tighten screw c to fix lamp.



Fig. 13

Checking position of film on reel

Fig. 13 indicates the proper position of the pictures – upright and the right side round. The titles must be the correct way round for reading, irrespective of the type of film. The sprocket holes must come on the left.

Mounting the reels

The supply reel with the film must be placed on the spindle of the front reel arm in such a way that the beginning of the film unrolls in a clockwise direction as seen from the control side of the projector. In the case of Siemens reels for 200 and 400 ft, the pivot arm must come on the same side as the catch at the end of the spindle. Adjust catch so that it does not obstruct pivot arm (Fig. 14). Place empty reel on spindle of rear reel arm in same manner and make sure that drive a (Fig. 15) enters slot in reel.

Fig. 14

Fig. 15

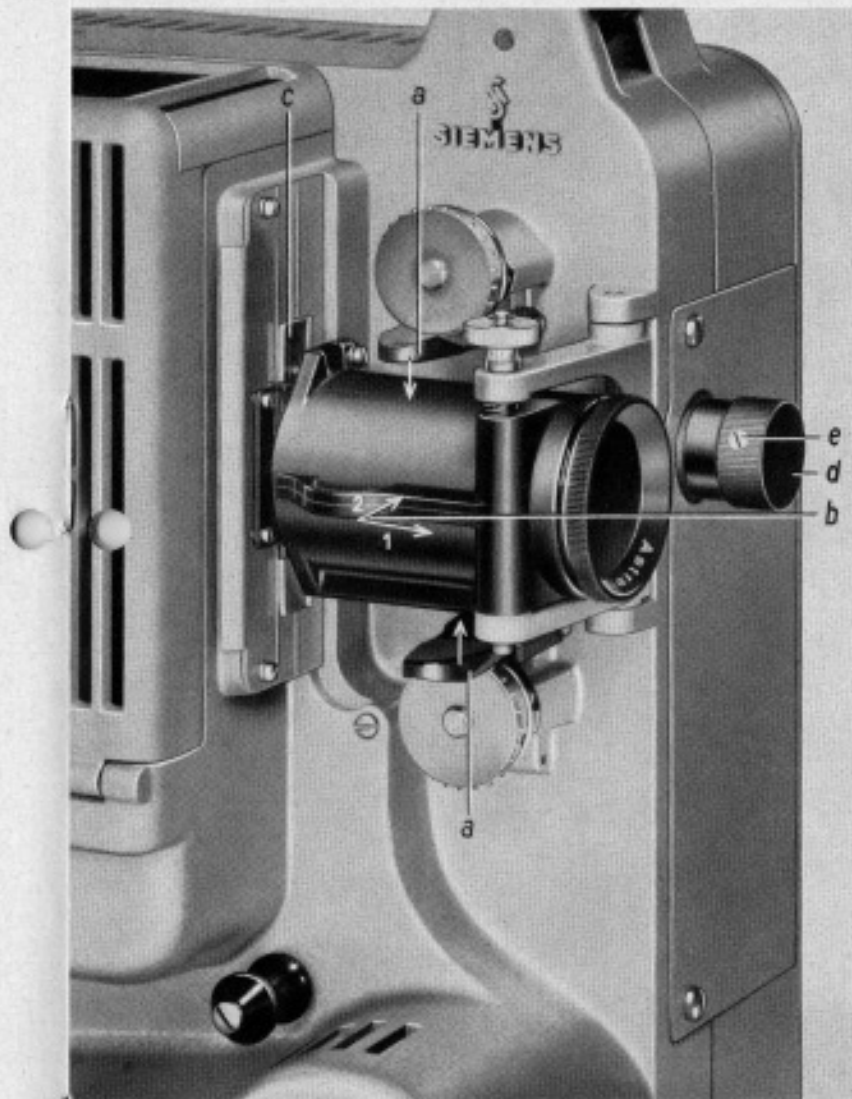


Fig. 16

- a Pressure guide
- b Finger rest on lens holder
- c Film channel
- d Frame-frequency control
- e Fastening screw

Threading the film

1. Open pressure guide a (Fig. 16) by pressing in direction indicated by arrow.
2. Shift lens holder towards wall of housing (arrow direction 2) by lightly pressing finger rest b in direction of projection (arrow direction 1). The film channel is now open and remains so when lens holder is snapped into position.
3. Turn control d (Fig. 16) until fastening screw e (Fig. 16) faces lens — the claw is now disengaged.

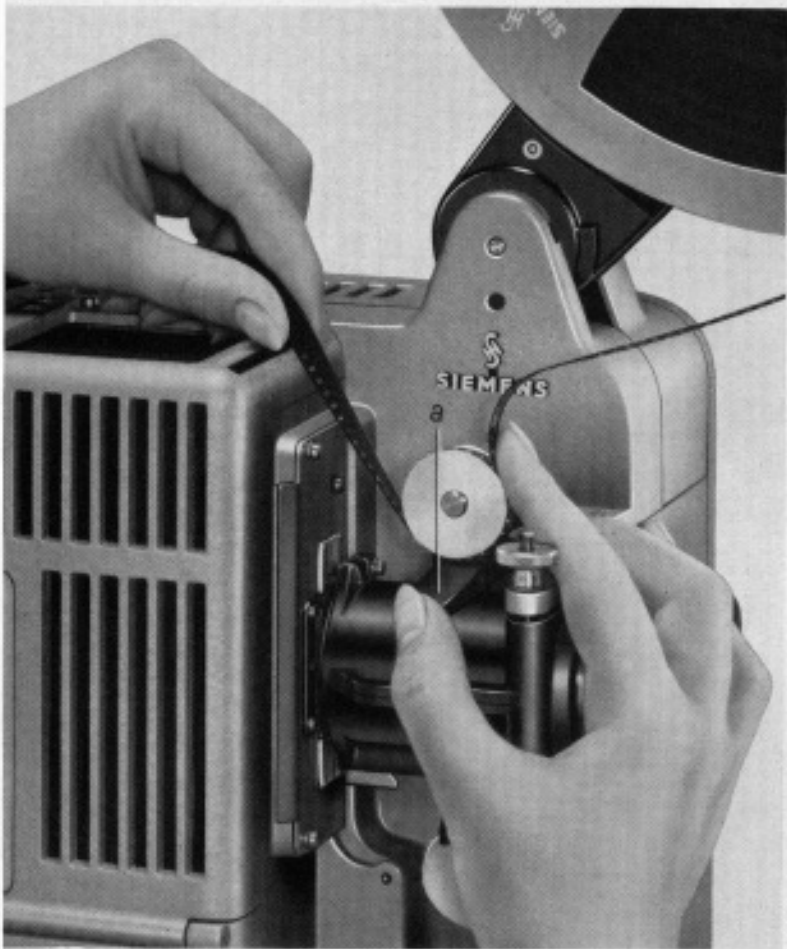


Fig. 17
a Pressure guide

4. Pull down about 5 ft of film from supply reel. Close pressure guide a (Fig. 17) by using index finger of right hand and placing thumb and index finger of left hand under upper sprocket.
5. Thread film through film channel and under lower sprocket; hold film in position with thumb and index finger of right hand and close pressure guide holder with left hand (Fig. 18).
6. Hold film in film channel with thumb and index finger of left hand below and above pressure plate a (Fig. 19) of lens holder. Pivot lens holder slightly away from housing in direction of arrow, and close film channel.

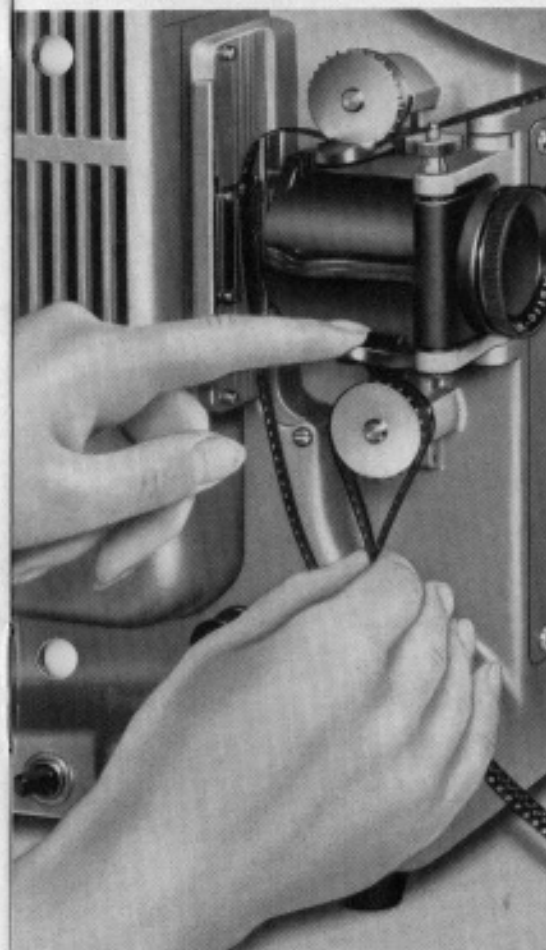


Fig. 18

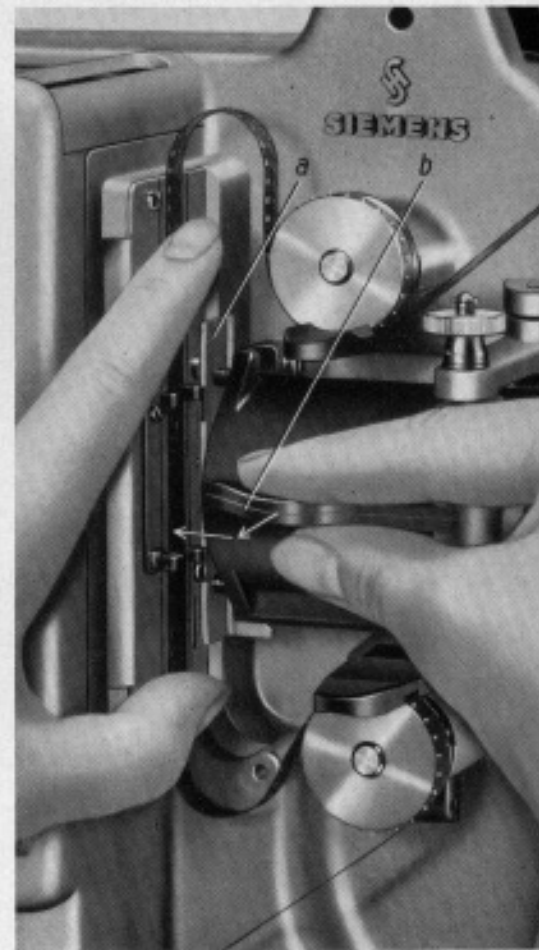


Fig. 19
a Pressure plate
b Finger rest

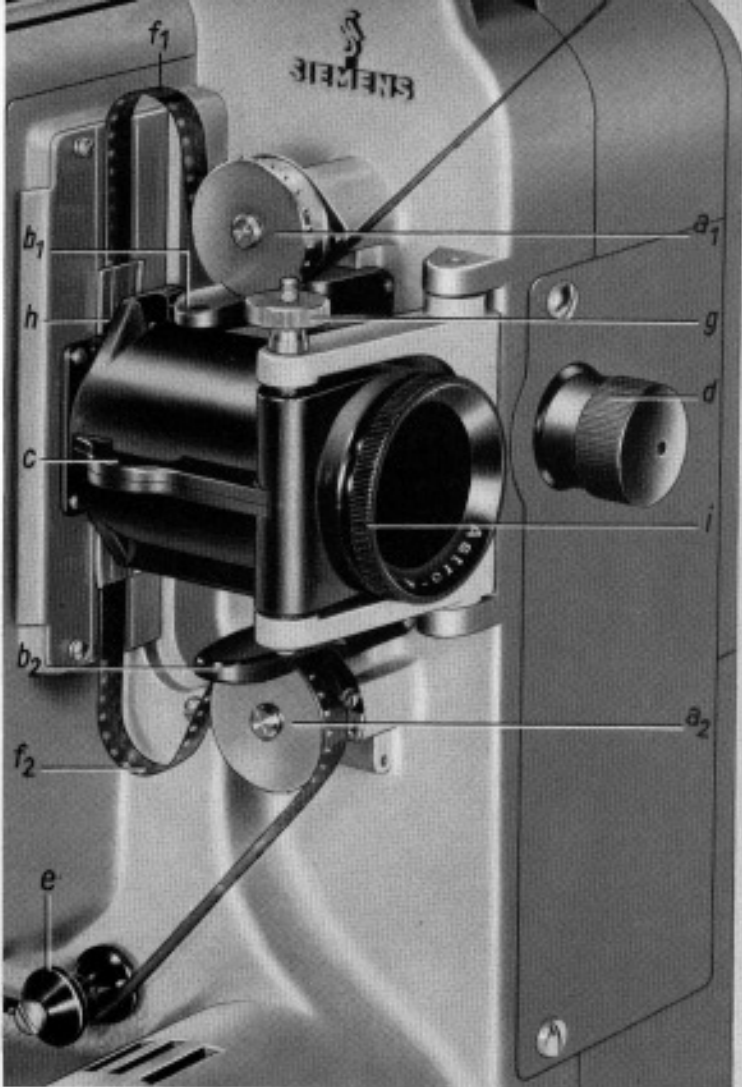


Fig. 20

Projector with film threaded

- a₁ Upper sprocket
- a₂ Lower sprocket
- b₁ Upper pressure guide holder
- b₂ Lower pressure guide holder
- c Finger rest for opening film channel
- d Frame-frequency control
- e Front guide roller
- f₁ Upper film loop
- f₂ Lower film loop
- g Frame-line control
- h Film channel
- i Knurled focusing ring of lens

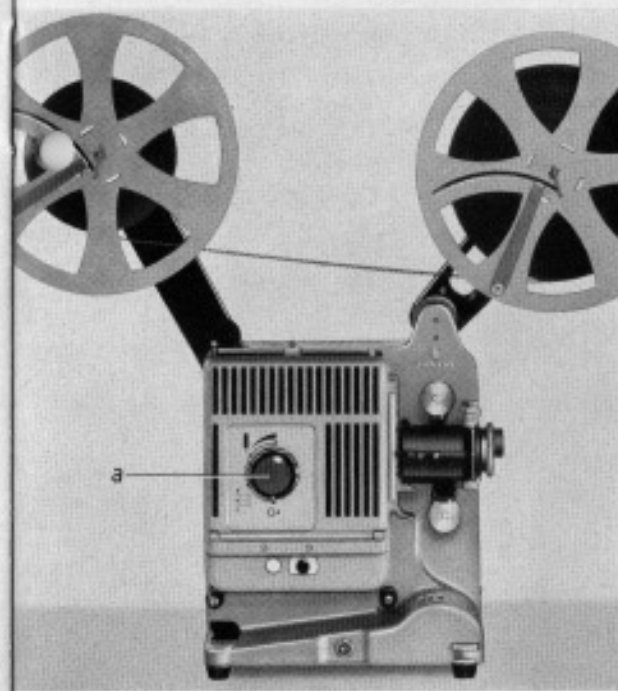
7. Pull film gently up and down to check whether it runs freely through the film channel; also make sure that top and bottom film loops f₁ and f₂ (Fig. 20) are of equal size.
8. Thread film under front and rear guide rollers e (Fig. 20) and 10 (Fig. 1); attach end of film to empty reel.
9. Start up projector and check film for proper transportation. The projector is now ready for operation.

Projection of film

To insure proper projection, the following preparations must be made.

1. Set up or hang up projection screen.
2. Set up projector at distance corresponding to desired size of picture.
3. Set frame frequency (Figs. 9, 10) and choose shutter (Figs. 6, 7, 8).

Fig. 21



4. Connect projector to commercial power supply, switch on and orient with respect to projection screen.
5. Switch off projector.
6. Thread film.
7. Switch on projector — turn program switch clockwise to third contact.
8. Adjust focus of picture. Coarse adjustment: draw out or push in lens by hand; Fine adjustment: turn lens with aid of knurled ring (Fig. 20).
9. Adjust frame line. Adjust line separating two successive frames by turning frame-line control g (Fig. 20). Observe frame line and focus during projection and readjust if necessary.
10. At end of projection, switch off projector.
11. Insert new film or rewind old film.

Rewinding

1. Lift rear spool arm into top position (Fig. 21).
2. Set frame-frequency control to 24 frames per sec (Fig. 10) for high-speed rewinding.
3. Attach end of film to empty front reel.
4. Press in program switch a (Fig. 21) and turn clockwise to first contact (reverse running, nonvisible).
5. On completion of rewind, switch off projector.
6. If a new film is to be projected on completion of rewind, set rear spool arm to middle or lower position as required (Fig. 4), as otherwise the film will not be taken up.

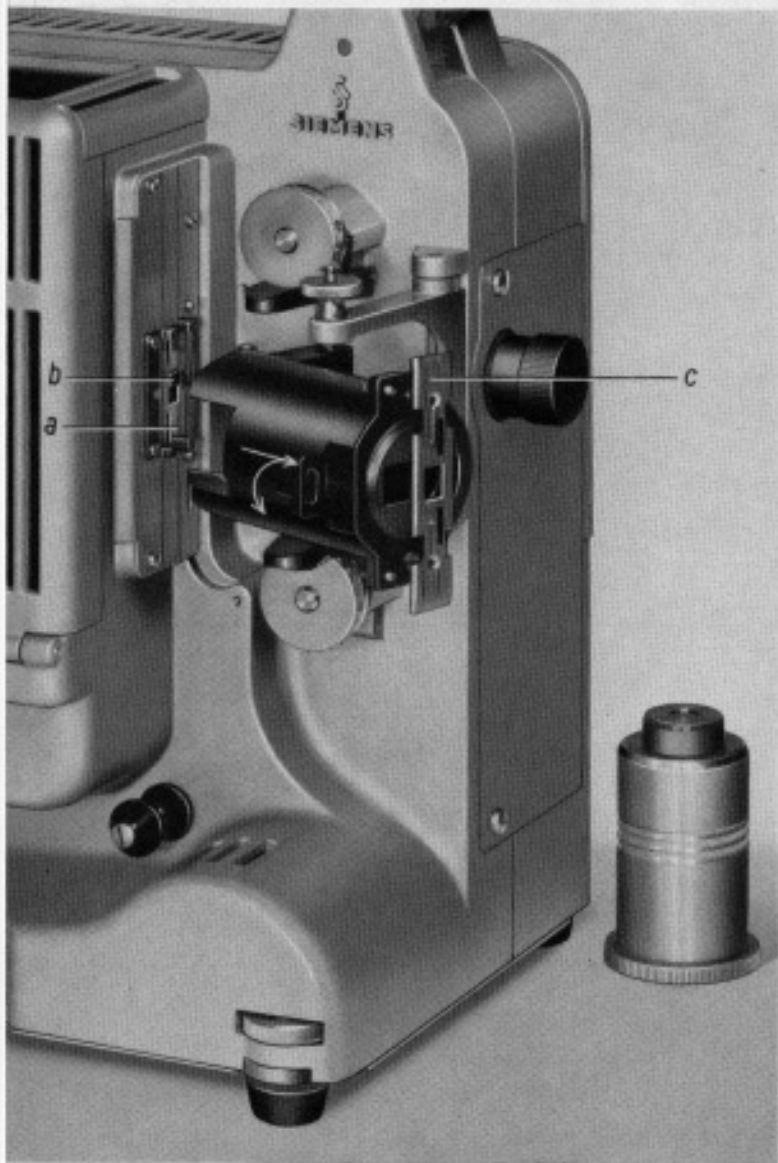


Fig. 22 Projector with lens holder pivoted outward

- a Film channel
- b Gate
- c Pressure plate

Servicing the projector

After running through a film, all emulsion particles should be removed from film channel a (Fig. 22), gate b (Fig. 22) and pressure plate c (Fig. 22) of the lens holder.

For cleaning, the lens assembly should be pivoted outward as follows:

1. Draw out lens from lens holder
2. Press lens holder in direction of projection and pivot outward in direction of arrow (Fig. 22).

Make particularly sure that all particles of emulsion adhering to the two runners of the film channel are removed. Such particles form dark narrow streaks which adhere with great tenacity. These must be completely removed as otherwise they will grow steadily larger and eventually make scratches on the film. For removing such deposits, always use slivers of hardwood and on no account metal scrapers.

Any crackling noises which may be heard during a performance will not be caused by the projector, but will result from deposits on the runners.

The claw and sprockets should also be cleaned of emulsion particles at intervals. A fine-haired brush is provided for cleaning the mirror, condenser and lens. Remove fingerprints and any grease spots found on lens by breathing on it and afterwards wiping it with a wad of cotton wool.

The projector is permanently lubricated and need therefore not be lubricated before or during operation.

Packing the projector

After a performance, leave the projector sufficient time to cool off before packing it into its carrying case (Fig. 23). It will cool off more quickly if allowed to run for a few minutes with the projection lamp switched off.

1. Unplug connecting lead from electric light socket.
2. Unlock front reel arm by applying pressure to side, and fold back until it snaps into position.
3. Unlock rear reel arm by applying pressure to side, and fold back into housing until it snaps into its bottom position.
4. Wind connecting lead around projector as seen in Fig. 3.
5. Place projector in carrying case.

Resistance table for Siemens 800 projector

The required dropping resistor should be chosen according to the power supply voltage of the projector and the wattage of the projection lamp. The head of each resistor is marked with the power supply voltage and the wattage of the lamp for which it is rated. The data required for ordering a resistor may be ascertained from the table below.

Projection lamp in use		Power supply voltage 220 volt
250 watt/5 amp	(50 v)	Sf. WD 8.1
375 watt/5 amp	(75 v)	Sf. WD 8.2
500 watt/5 amp	(100 v)	Sf. WD 8.3

Example of how to order: Assuming that a Siemens 800 projector is to be operated with a 500-watt, 5-amp projection lamp from a 220-v a-c power supply, the dropping resistor here required should be ordered as follows:
1 dropping resistor Sf. WD 8.3

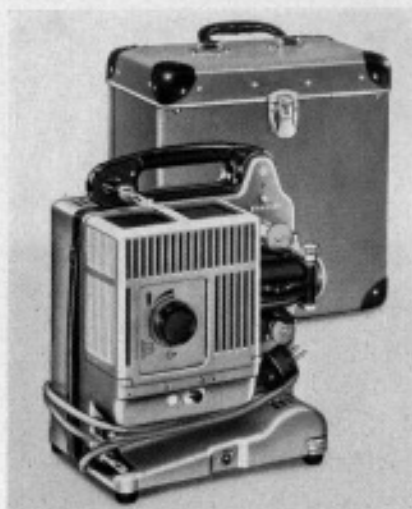


Fig. 23
Projector
with carrying case

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Fig. 24 Inside view

- 21 Three-blade shutter
- 22 Claw drive
- 23 Driving chain for rear reel arm
- 24 Terminal strip
- 25 Blower
- 26 Drive motor
- 27 Capacitor
- 28 Driving belt
- 29 Pulley
- 30 Drive for front reel arm

