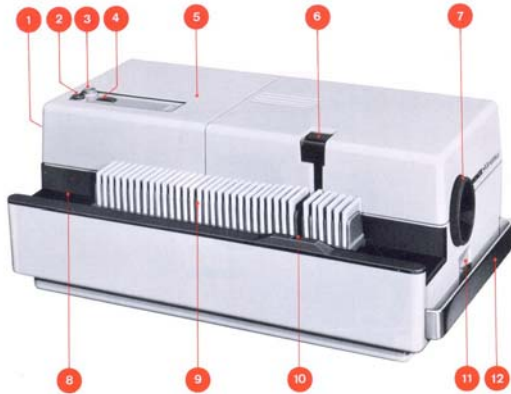




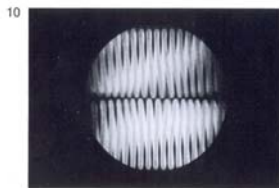
438 e Specifications subject to change without notice. Printed in Germany V 71



**Magazines, slide frames, transparency viewer/cutter**



The modern Minox HP 24 projectors are vastly superior to their predecessors, the Minomat and Minomat N projectors, in performance, convenience of operation, and functional dependability. To a considerable extent these advantages could be realized only by the replacement of the earlier magazine with its closed top. These earlier magazines can therefore not be used in the HP 24. Only the newer open-top Minox magazines (ill. 11), can be used in the Minox HP 24 projectors. They fit not only the HP 24, but also all the other Minox magazine projectors, the semi-automatic Minotact, as well as the automatic Minomat and Minomat N models. The plastic stacking cassette contains three magazines for 36 3 x 3 mm Minox slides each. The practical Minox slide frames (plastic, hinged frames with glass and metal mask) make mounting of Minox transparencies by the amateur child's play (ill. 11). A box contains 36 frames. The Minox transparency viewer/cutter (not shown) cuts the 8 x 11 mm transparency from a film strip and drops it into place in the slide frame.



**Checking**

You received a pinhole slide, a 3 x 3 cm piece of cardboard with a hole in the centre, with your HP 24. Insert this pinhole slide like a real slide in the magazine and position it for projection. If you now hold a piece of white paper immediately in front of the projector lens you will see two images of the lamp filament one below the other (roughly as shown in ill. 10, even if not quite as sharp). The lamp is correctly centered if the two luminous filament areas are vertically one below the other. If, however, the two filament images are laterally displaced from each other, the lamp must be re-centered.

**Centering the lamp**

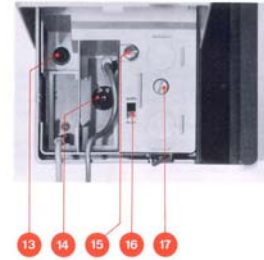
To obtain the brightest and most even illumination of the image on the screen, check the centration of a newly inserted lamp, and recenter the lamp if necessary. Check centration of the lamp only after you have replaced and locked the top part of the projector housing.

**Centering**

Raise the rear part of the hood and take the control unit (the remote control hand switch) out of its recess, to expose the centering screw in the middle - a circular plastic head with a coin slot across it (ill. 2, 17). Turn this centering screw to the left or right until the filament images as described in the section "Checking" are located above each other without lateral displacement.

**Description**

- 1 ON/OFF switch
- 2 slide change forwards
- 3 slide change backwards
- 4 focusing control
- 5 hinged cover
- 6 slide transport arm
- 7 lens mount
- 8 magazine channel
- 9 magazine with slides
- 10 number window
- 11 button for drop foot
- 12 carrying handle
- 13 socket for tape control
- 14 voltage selector
- 15 metal screw for locking the housing
- 16 autofocus / manual focusing selector switch (only in the HP 24 Autofocus model)
- 17 lamp centering screw



**Very important - read before you plug in!**

Check the serial number plate of your projector to make sure that the voltage and frequency (Hz or cycles) are the same as those of your local current. When in doubt, please check with your Minox dealer before using the projector.

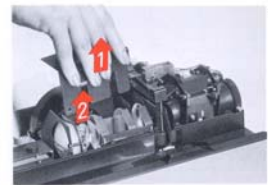
Each Minox HP 24 and HP 24 Autofocus projector is factory-equipped for perfect operation in the country where it is sold:

- U.S.A.** - for 110-volt and 125-volt, 60 Hz A.C.;
- U.K.** - for 240-volt, 50 Hz A.C. with switch for 120-volt, 50 Hz A.C.;

**Continent** - for 220-volt, 50 Hz A.C. with switch for 110-volt, 50 Hz A.C. (not suitable for U.S.A.).

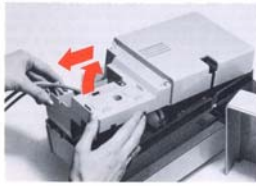
Please, turn the voltage selector (14) in the control compartment to the correct voltage.

Connection to other voltages or frequencies than shown on the serial number plate will cause permanent damage to the projector not covered under Warranty.



the rear part of the cover up, take the coiled cables out of the compartments or remove the unneeded cable from the guide slots. Release the metal locking screw (ill. 2, 15) by turning it counter-clockwise with a coin. Lift the back of the upper part of the housing, and pull it slightly to the rear until the housing slides out of its guide also in the front (ill. 8). Place the top part of the housing on the table next to the projector. Remove the metal cover above the lamp housing (ill. 9, arrow 1). Pull the burnt-out lamp out of the housing (ill. 9, arrow 2). Push the new 24v 150W halogen lamp (do not touch it with bare fingers) into the lamp socket. Replace the metal cover on the lamp housing, and push the top of the projector housing into position at the front, then lower it in the back; lock it by a clockwise turn of the metal screw. It is useful to check the centration of the lamp after a lamp change (next page).

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### Changing the projector lamp

HP 24 projectors use a 24-volt 150-watt halogen projection lamp. The lamp is burned out when it does not light up although all other functions of the projector are normal (blower can be heard, slide change functions when buttons are pressed etc.).

*If none of the functions of the projector operate when it is switched on — the lamp remains dark, the blower does not run, the slides are not changed — the lamp is not burned out. Either the mains socket is dead, or the overheating safety contact has switched off the instrument (p. 11).*

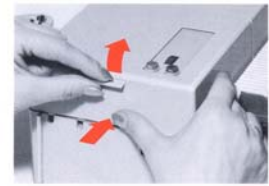
If the lamp burns out during projection, do not switch off the projector immediately but allow the lamp and lamp housing to cool for a few minutes with the blower switched on. All the same, touch the lamp and the metal parts of the lamp housing with a cloth only.

To change the lamp, switch off the projector and pull the power plug out of the wall socket. Turn

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### Connecting to power supply

Raise the hinged cover of the cable compartment: Slightly push in below the lifting tab and open (ill. 3). The power cable, permanently connected with the projector, is on the left. Uncoil it and insert the plug firmly in a wall power outlet or extension socket. Before closing the compartment cover, guide the power cable into the left recess at the edge of the compartment to permit snug closing. (HP 24 projectors sold in the U.S.A. are supplied with a 3-wire grounding plug.)



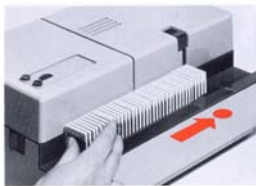
3

### Switching on

Push the rocker switch at the back of the projector so that the "0" symbol ("Off") disappears. This switches on the projection lamp and starts the cooling blower.

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### Inserting the magazine

Please use only the newer open-top Minox magazines for 36 x 3 cm slides, in which three sides of the slides are exposed to view. Older Minox magazines, closed at the top, cannot be used in HP 24 projectors.

Place the full magazine, Number 1 facing the projection screen, in the rear part of the magazine channel and push it forward as far as it will go (ill. 4).

All Minox plastic slide frames must be placed in the magazine with their white side facing backwards, i.e. to the back of the projector. With older Minox metal frames the oval window should face backwards.

### Slide change

Pressure on green button: slide change forwards. Pressure on red button: slide change backwards (e.g. when a slide is to be repeated).

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### Cooling

Cooling air is drawn into the HP 24 projector through the base. Make sure that entry of the cool air is not blocked by books, cushions, thick tablecloth etc. supporting the projector. If owing to such obstruction of the air current cooling is insufficient, a safety cut-out automatically switches the projector off as soon as the inside temperature rises abnormally. After some time when the temperature has dropped, the projector will be automatically switched on again. You may well use this enforced interruption to remove the obstruction to the air current.

The temperature limit can be exceeded also when the air drawn in through the base has been preheated. The HP 24 projector should therefore not be placed on or close to a hot radiator.

for the slide change in automatic projectors and what accessories you can use for tape recorders without such controls. The Minox HP 24 and HP 24 Autofocus projectors can be connected to a tape control unit for the sound coupling of a slide lecture according to both methods.

The plug on the cable from the tape recorder or the slide control unit is inserted in the round 6-pin socket in the bottom of the cable compartment (ill. 2, 13). When in doubt ask an expert to connect it for the first time; the technical information at the end of this section is for his benefit.

When the tape control is connected the slide change forwards is automatically operated by the signals placed on the tape.

### Technical instructions for connection

The socket in the HP 24 and HP 24 Autofocus is wired to DIN 45 523 standards. Contacts 2 and 3 operate the slide change. A supply voltage of 24 V (pulsating a.c.) lies across contacts 3 and 6 for control units without their own current supply. For connection a 3-wire cable with 0.2 or 0.25 mm<sup>2</sup> wires and a 6-pin round multiple plug should be used.

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### Tape-controlled slide change

Your photo dealer will be pleased to advise you which tape recorders have built-in control devices

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### Remote control

Open the hinged cover (push in bottom edge below the lifting tab) and take the control unit with the colored buttons for slide change and the knurled focusing control out of the projector. It is connected to the projector by a 2.5 m (10 ft) cable, which makes it into a convenient remote control (ill. 7). Before closing the cover, introduce the cable into the slot at the edge of the right-hand cable compartment.

The functions of the changing buttons and the knurled focusing control remain unchanged.

After the end of the show wind the remote control cable up again, store the cable drum in the right-hand cable compartment, and replace the control unit with the colored buttons to the rear in the recess provided for it, where it is secured in position by a magnet. Close the cover again.

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### Projection of slides outside the sequence

If you want to project a certain slide independent of its position in the series in the magazine, pull the slide transport arm fully out (ill. 5). You can now freely adjust the magazine by hand (ill. 6) until the desired slide is precisely below the pulled-out transport arm. Now push the transport arm in to bring the slide into the projection position. If you know the number of the magazine slot of the desired slide, it is best to turn the pulled-out transport arm up, so that its transport lug does not obscure the number window (ill. 1-10). As a makeshift it is also possible to project a single slide without the magazine: pull out and turn up the transport arm, push the slide a few mm (fraction of an inch) into the projector slot below the transport arm, turn down and push in the transport arm.



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### Focusing

The two models of the Minox projector, HP 24 and HP 24 Autofocus, differ considerably from each other in the focusing procedure. Whereas in the regular HP 24 each slide is individually focused by hand (if refocusing is necessary at all) the Autofocus device (Leitz System) of the HP 24 Autofocus automatically refocuses each successive slide and does it so quickly that the viewer remains almost invariably unaware of the process.

### HP 24 (non Autofocus)

In contrast with most other projectors, the image is focused in the regular Minox HP 24 not by rotation of the lens; the ring of the lens mount visible at the front of the projector cannot be rotated. To focus the first slide, push the knurled switch on the control panel (ill. 1, 4) forward or backward until the screen image is sharp. For any refocusing

of the following slides, a brief touch of the switch will be enough.

### HP 24 Autofocus

The Autofocus device (Leitz System) is engaged if the sliding control (ill. 2, 16) is set at "auto". Focus the first slide sharply on the screen with the Autofocus engaged, by rotating the black lens ring on the front of the projector. Each following slide will then be moved into the same sharp focusing position as the first by electronic control. Thus, refocusing of slides is necessary.

The knurled focusing switch on the control panel does not function when the projector is set to "auto".

Conversely, the Autofocus control does not function if the sliding control is set at "man" (manual focusing), when the focusing procedure will correspond to that of the regular HP 24 model without Autofocus.

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### Vertical adjustment

Pull out the carrying handle on the front of the projector. This exposes the locking button of the drop foot. Depress the button with the thumb, at the same time supporting the carrying handle with the other fingers of the same hand, raise or lower the projector until the projected image is in the desired position on the screen. When the button is released the drop foot is automatically locked in position.

It is not advisable to tilt the projector up at a steeper angle than the drop foot would permit. The screen image would appear very distorted and could no longer be focused sharply over the entire image.

### Correction of wrong slide positions

If a slide appears on the screen upside-down or rotated through 90° (vertical subject horizontal or vice versa), pull the transport arm out fully and turn it up. You can now lift the slide from the magazine, replace it after turning it as necessary.

The white side of the frame should always face the rear during this manipulation. Turn the transport arm down again and push it in.

If a picture appears upright but wrong-way-round although the white side faces the rear, the transparency was mounted the wrong-way-round in its frame. Although you can, in order not to interrupt your show, project the slide provisionally with the grey side of the mount facing the rear, it is advisable to reframe the transparency before the next show (open the frame, flip the transparency over, close the frame).

### End of projection

Pressure on the green button (slide change forwards) after the projection of the 36th slide releases the magazine, which can be pulled out to the front and the projector can now be switched off.

If you want to end your show halfway through the magazine, for instance because the magazine is only half full, pull out the transport arm fully; the magazine can now be freely moved and pulled out towards the front or rear.

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