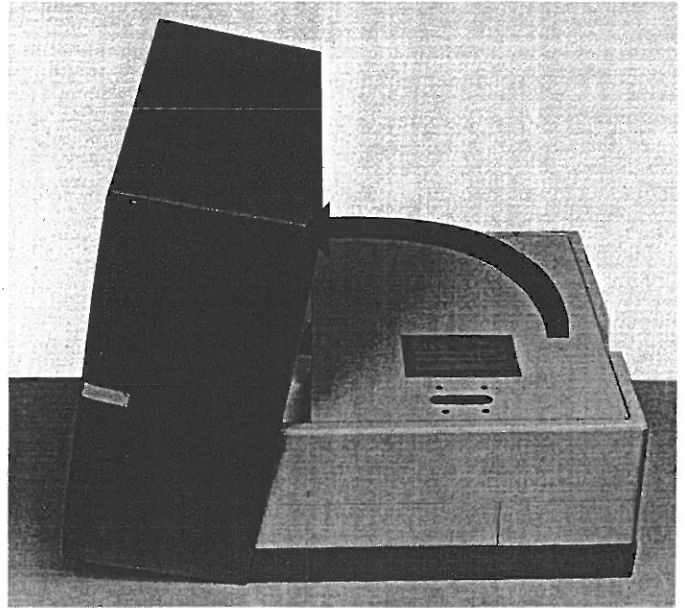


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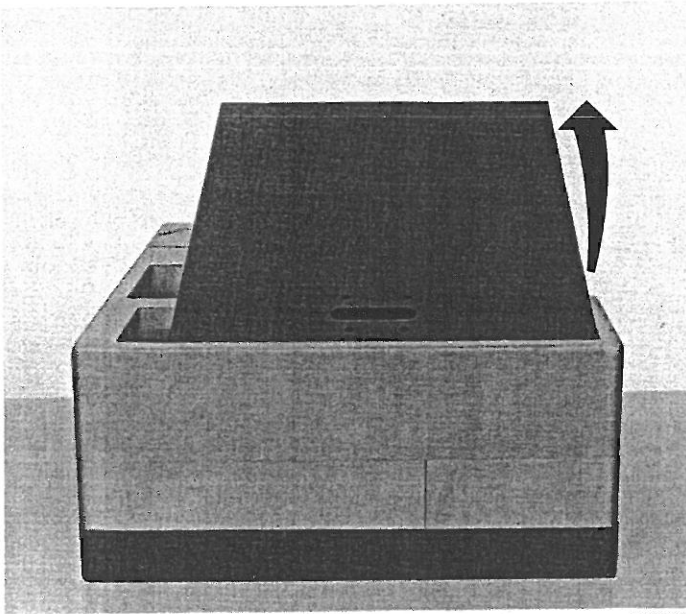
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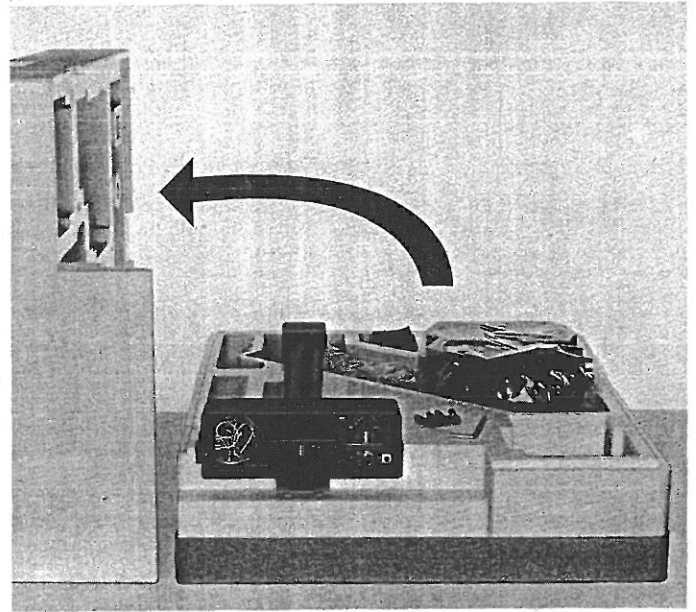
23 798-170

Assembling the instrument

1. Cut the wrapping straps
2. Remove the top of the inverted carton. Remove the piece of corrugated cardboard inserted for transport anchorage.



23 799-170

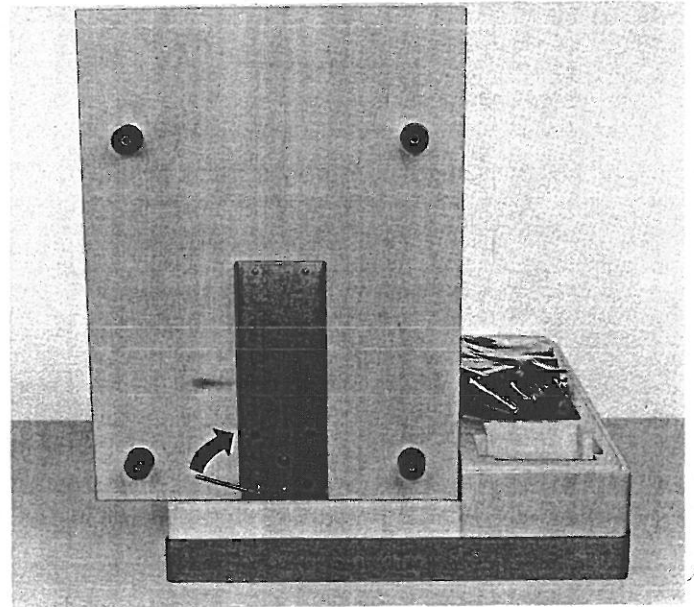


23 800-170

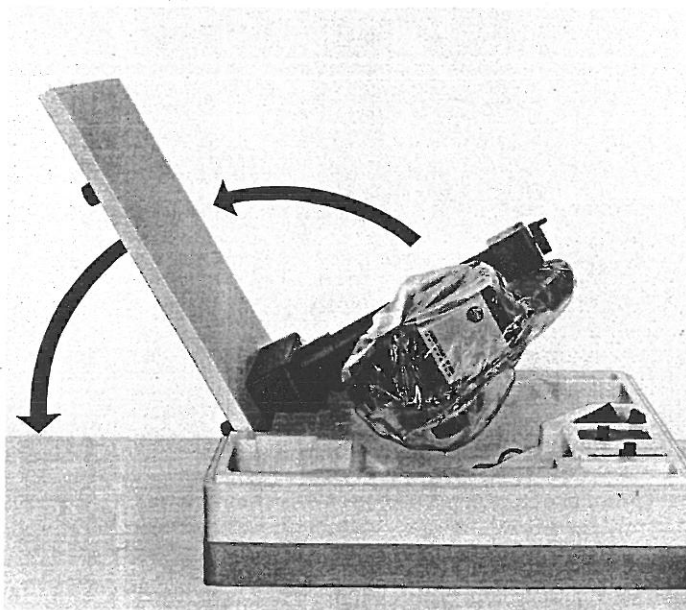
3. The baseboard is now freely accessible and can be removed from the packing material.

4. Remove the top of the Styropor packing material. This reveals the instrument and the separately packed accessories. **During assembly of the baseboard the instrument remains in the lower Styropor trough.**

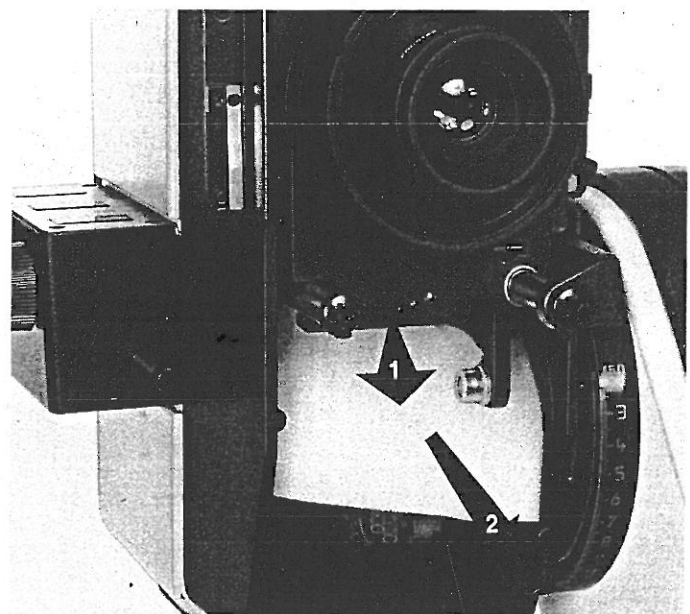
5. Attach the baseboard vertically in the assembly position and secure it with the 4 screws. Allen key is supplied. Please tighten the screws crossways.



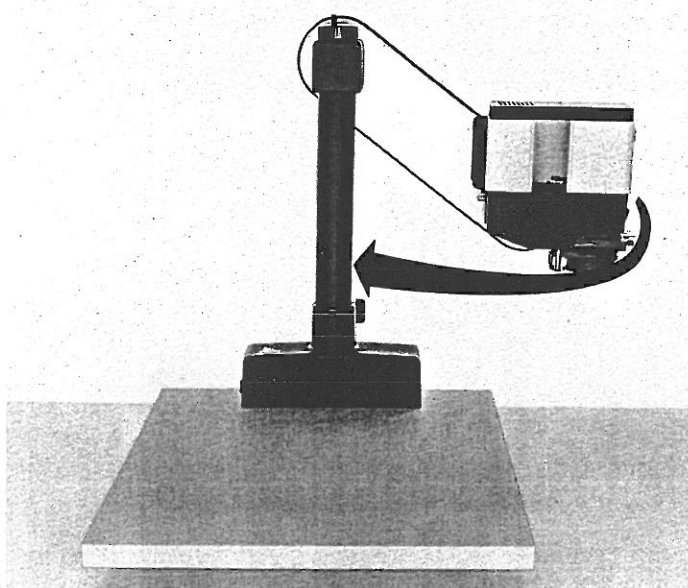
23 801-170



23 802-170



23 804-170



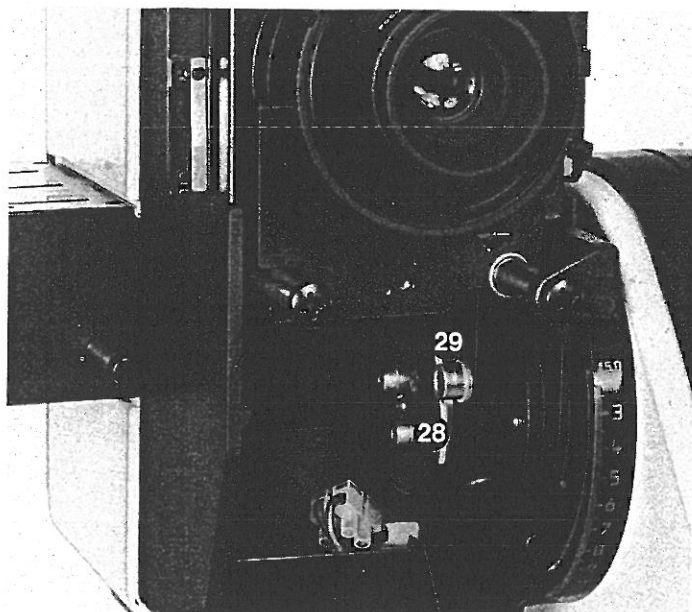
23 803-170

6. Swivel the assembled instrument out of the Styropor trough.

Attention:

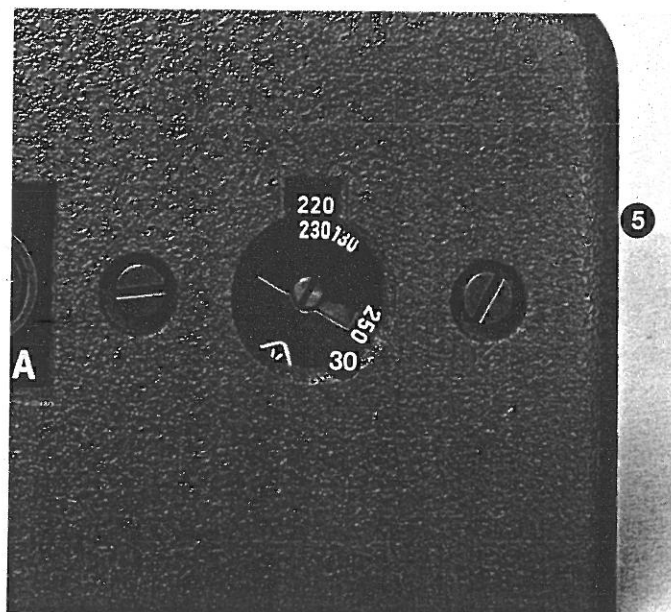
Release the control knob for vertical adjustment (23) on the vertical-adjustment arm only when the instrument is in an upright position, because for any other position the counter balancing spring has excessive tension.

7. Release the clamping screw (26) on the foot of the instrument, and turn the instrument with column (25) through 90° into the working position.



23 806-170

8. Pull the lens carrier downwards. Remove the transport anchorage for the control mechanism of the AUTOFOCUS device. Carefully replace the lens carrier, ensuring that the cam (28) is positioned correctly on the cam roller (29). The cam must be supported by the wider bearing surface of the smaller diameter. At the same time the large diameter of the cam roller makes contact with the bridge of the lens carrier.



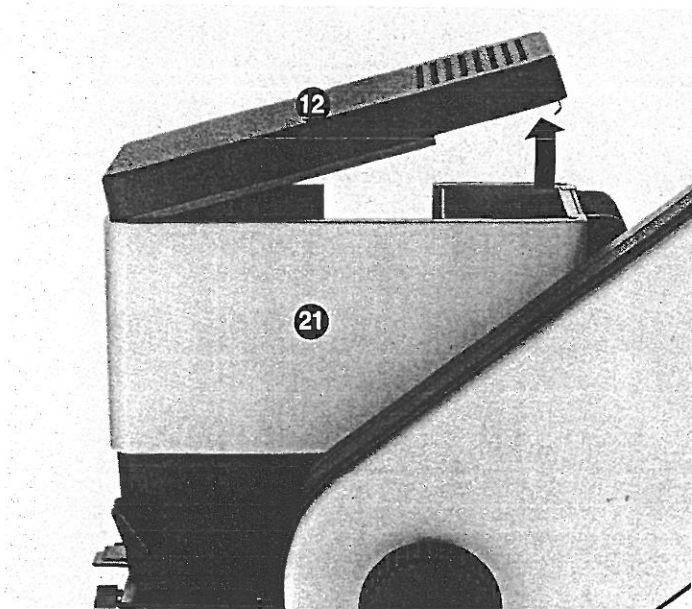
23 806-170

9. The nameplate (5) in the foot (27) of the enlarger indicates the electrical and operating data. In adjustable instruments the voltage selector (30) has four positions: 110, 120-130, 220-230 and 240-250v. The voltage set on it must agree with the mains voltage.

The voltage selector (30) can be turned with a coin.

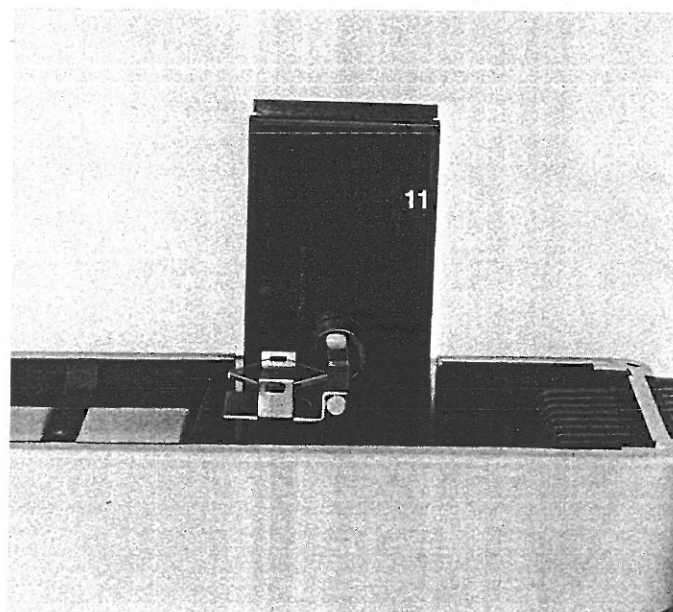
10. Plug the enlarger into the mains with the separate mains cable (4).

Attention: Do not connect and operate the instrument unless the baseboard is assembled.



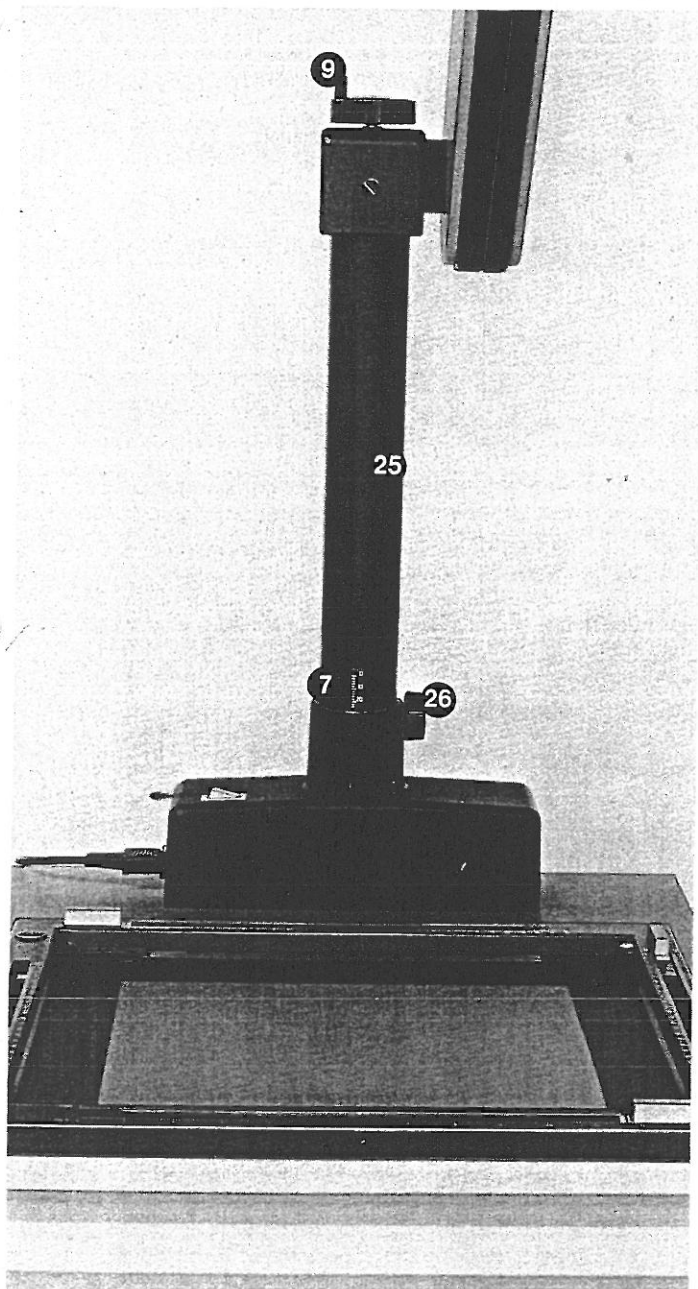
23 807-170

11. Lift the cover (12) of the lamp housing (21).

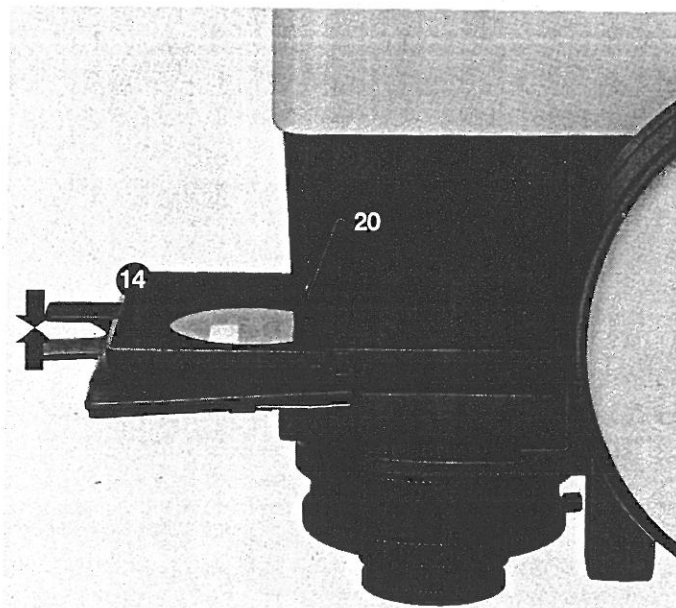


23 806-170

12. Insert the colour or black-and-white module (11) in the lamp housing (21). Insert the cover in front in the centring device, fold it to the rear and let it engage. Make sure that the ventilation slots of the cover (12) are not obstructed.



23 810-170



23 809-170

13. To ensure correct function of the AUTOFOCUS device of the FOCOMAT V35, the instrument must be raised according to the height of the masking frame used: release the clamping screw (26) for the column (25). Raise the instrument with crank (9) to the level of the masking frame used. The 0 mark corresponds to the level of the baseboard.

LEITZ 24x30cm masking frame
(Code No. 17 584)

25mm

LEITZ 30x40cm masking frame
(Code No. 17 586)

30mm

If other masking frames are used their height must be measured and the instrument adjusted to it.

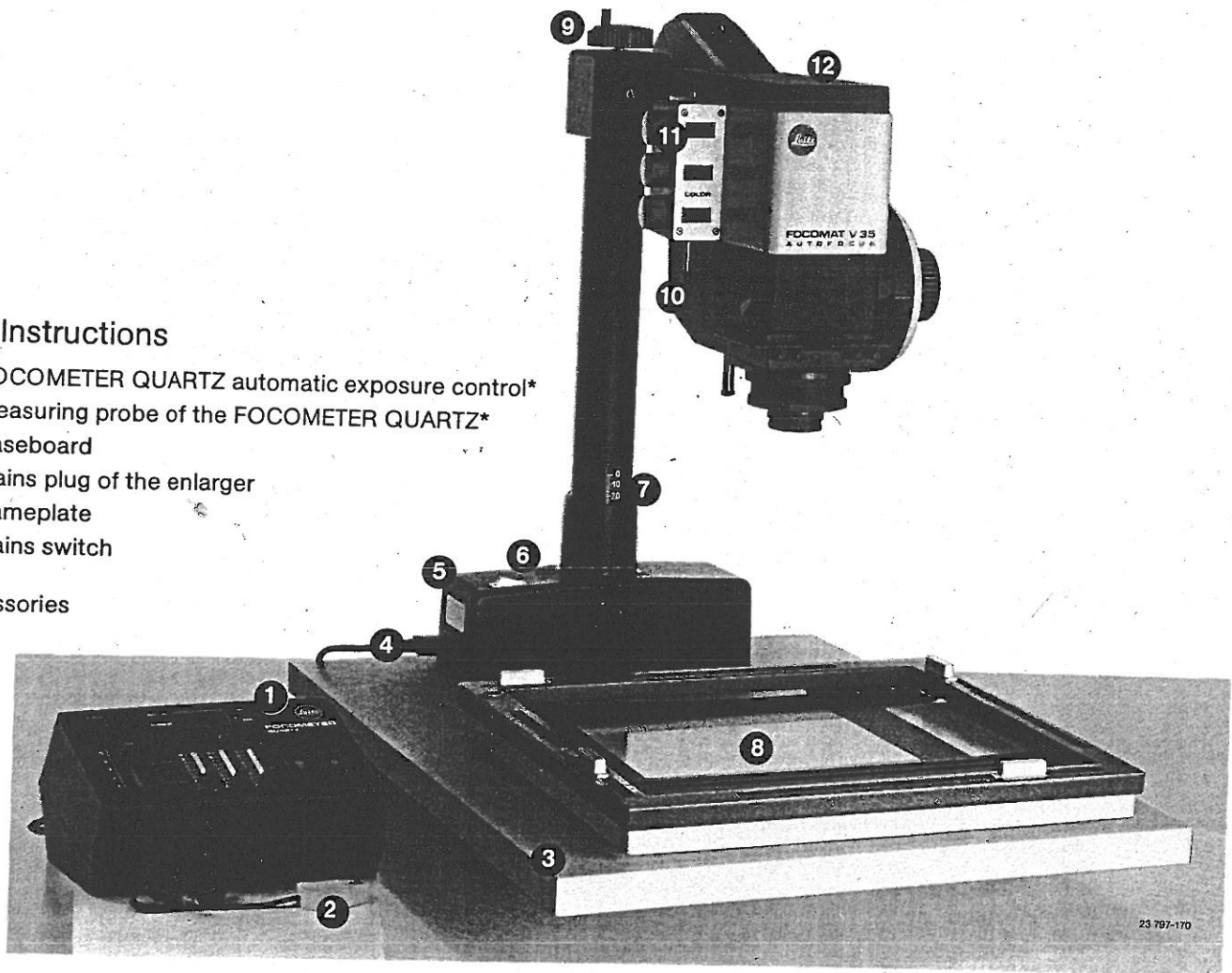
Tighten clamping screw (26).

14. Raise the pressure plate with one of the two operating levers (20). Squeeze the negative holder (14) with the double grip and insert it in the film stage.

Brief Instructions

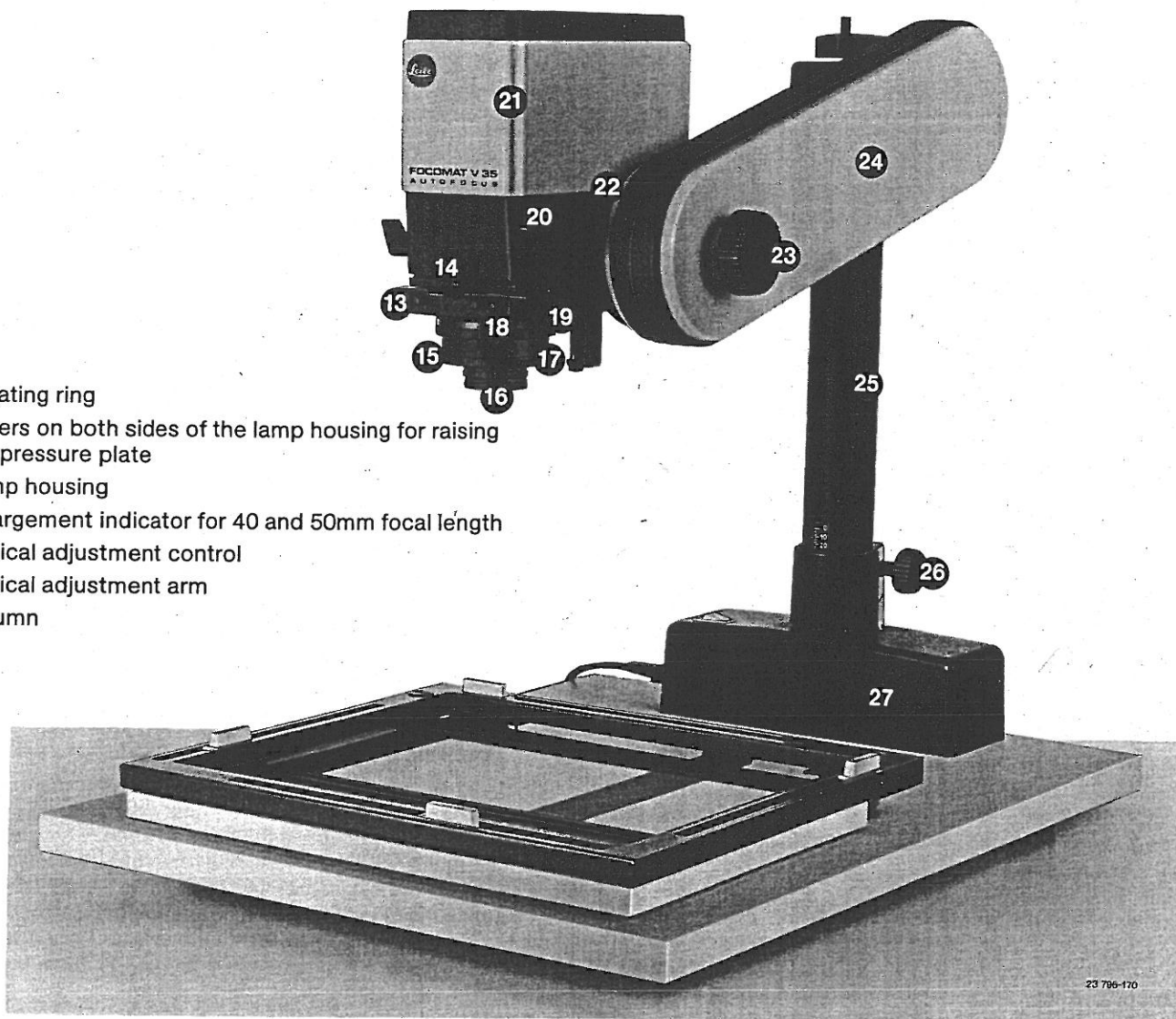
- 1 FOCOMETER QUARTZ automatic exposure control*
- 2 Measuring probe of the FOCOMETER QUARTZ*
- 3 Baseboard
- 4 Mains plug of the enlarger
- 5 Nameplate
- 6 Mains switch

* Accessories



23 797-170

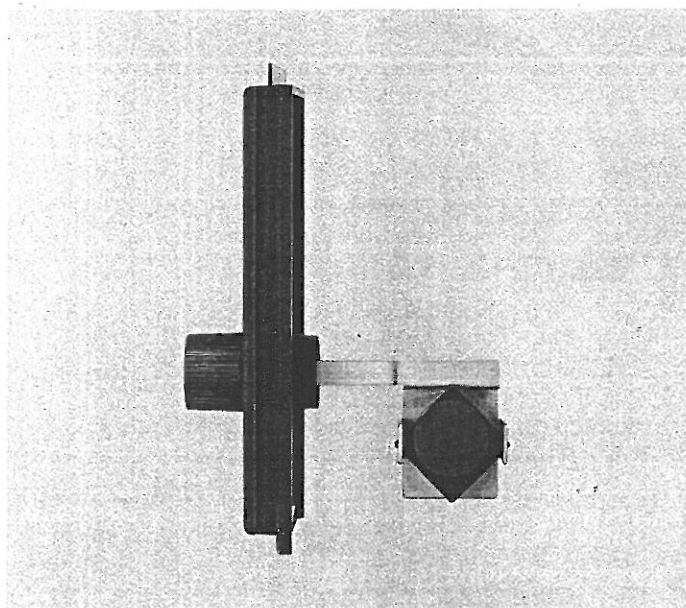
- | | |
|--|---|
| 7 Vertical adjustment scale | 13 Knurled knobs for masking |
| 8 Masking frame* | 14 Negative holder |
| 9 Crank for the vertical adjustment of the column | 15 Helical lens mount |
| 10 Lever for swivelling the filters on the colour module | 16 Enlarger lens |
| 11 Colour module | 17 Arresting screw for the click-stop of the helical lens mount |
| 12 Cover of the lamp housing | 18 Securing ring |



- 19 Rotating ring
- 20 Levers on both sides of the lamp housing for raising the pressure plate
- 21 Lamp housing
- 22 Enlargement indicator for 40 and 50mm focal length
- 23 Vertical adjustment control
- 24 Vertical adjustment arm
- 25 Column

- 26 Arresting screw
- 27 Foot of column with built-in transformer
- 28 Cam of the AUTOFOCUS device (page 7)
- 29 Cam roller of the AUTOFOCUS device (page 7)
- 30 Voltage selector (page 7)
- 31 Securing screw of the cover plate (page 20)

- 32 Cover plate of the lamp housing (page 20)
- 33 Lamp mount (page 21)
- 34 Holding ring of the lamp (page 21)
- 35 12V 75W cold-light halogen ellipsoid reflector-type lamp (page 21)
- 36 Fuse (page 24)



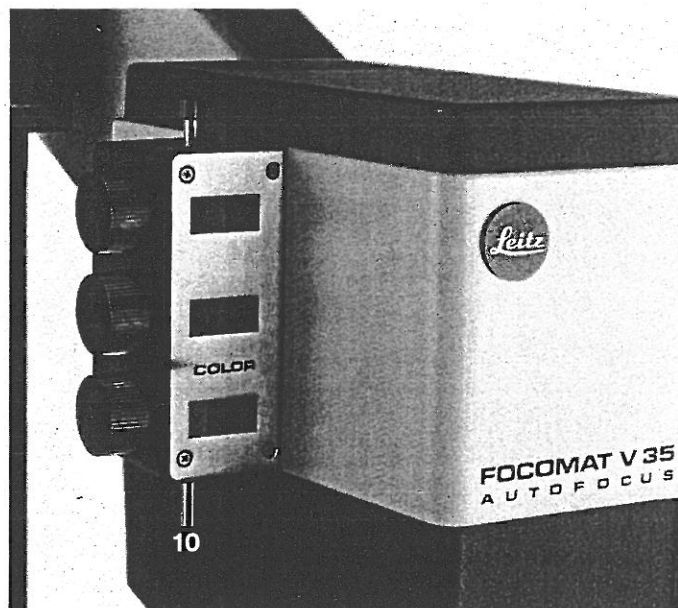
Operating the enlarger

Working with the black-and-white module

A red filter can be swivelled into the optical path with the control on the black-and-white module if the picture format or picture area is to be finally checked with the bromide paper already in position.

Working with the colour module

The rotary knobs for setting the filter values are arranged from bottom to top for the colours yellow (Y), magenta (M), and cyan (C). They can be operated from a sitting position. The densitometrically calibrated filter scales are illuminated and can be set continuously from 0 to 200 filter values. The lever (10) serves for swinging out the previously programmed dichroic filters and because of the full light transmission (white) permits improved focusing. When the filters are reinserted with lever (10) the previously determined programming is preserved. The lever can be operated from above or from below. Details about the use of colour negative or positive material will be found in our brochure "FOCOMAT V 35 AUTOFOCUS. Make your own enlargements – the easy way" No. 170-002 or



23 815-170

in information from the manufacturers of photographic materials.

For the making of black-and-white enlargements with the colour module in position, a red filter can be produced by the setting of filter values Y and M at 200 each, which is sufficient for the usual practice with such a filter (final assessment of the picture before exposure). Here, too, the lever (10) serves for swinging the filters out and in before the exposure. When ever a red filter is to be used for a longer time period than about 20 sec. the black-and-white module (17 427) should be used.

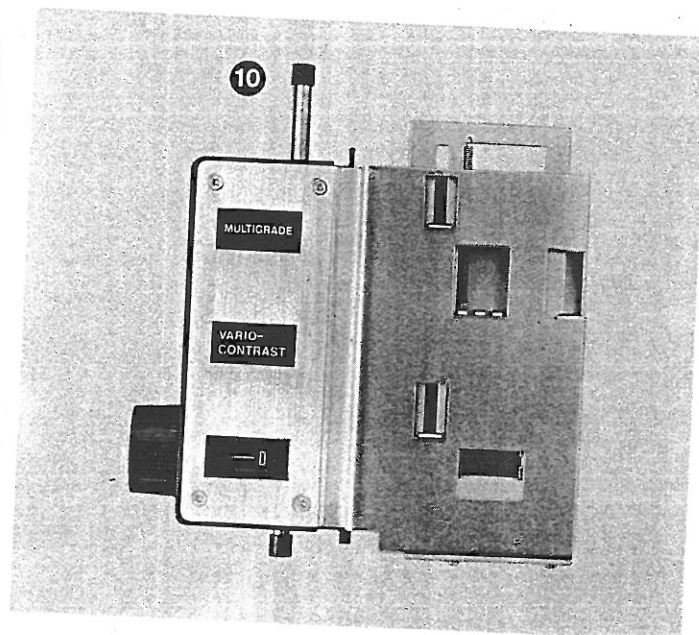
In the zero position the filters Y and M are still visible in the filter window of the colour module. They have been deliberately adjusted so that they slightly protrude into the window to adjust the light emitted by the tungsten halogen lamp to the colour characteristics of the enlarging papers.

Conversion table for essential filter-systems

Densitometric values	Kodak CC - values	Agfa copy-filter values
10	15	20
20	30	40
30	45	60
40	60	80
50	75	100
60	90	120
70	105	140
80	120	160
90	135	180
100	150	200
110	165	220
120	180	240
130	195	260
140	210	280
150	225	300
160	240	320
170	255	340
180	270	360
190	285	380
200	300	400

The extremely high light output of the lamp housing of the FOCOMAT V35 can produce very short exposure times even if the lens is stopped down radically. If stopping down the enlarger lens is not enough, exposure times for certain work can be extended in conjunction with the colour module. If identical filter values are set with all three Y, M, and C filters, a neutral density filter of corresponding density is produced. The colour module is a unit for the control of subtractive colour filters and offers the following possibilities:

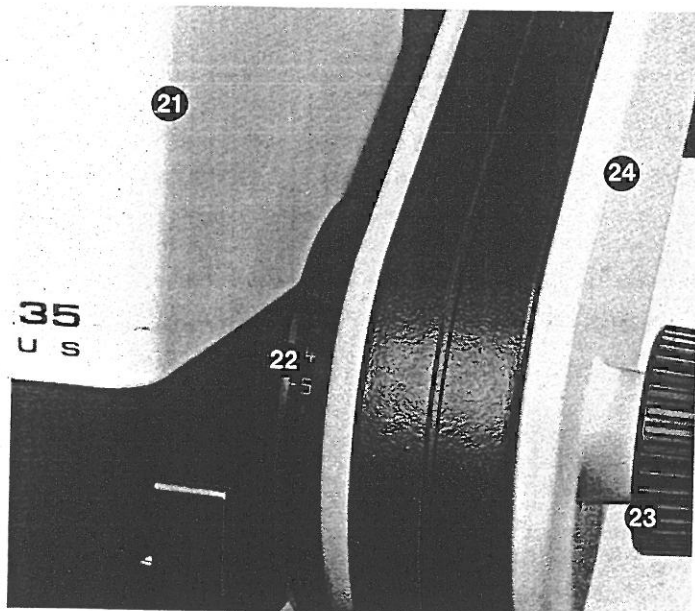
1. Use of all commercially available colour enlarging materials for colour negative and direct enlarging from slides
2. Use of all commercially available black-and-white enlarging materials
3. Use of black-and-white multigrade enlarging material



Working with the VARIOCONTRAST® module

Using this module, which is optimised for Ilford Multigrade paper, all grades between extra soft and extra hard can be set steplessly. Instead of 6 different packs of paper, only one need be bought and stored. Exposure times are the same for all the grades. When exposure meters are being used, they are calibrated using white light.

If multigrade paper from another manufacturer is used, exposure corrections may have to be taken into account.



23 812-170

Enlargement range

After release of the control (23) on the vertical-adjustment arm (24) the lamp housing (21) can be moved up and down. The enlargement scale set can be read off the scale (22). The values are approximate.

The range of the AUTOFOCUS device of the FOCOMAT V35 extends from 3 to 16x with the 40mm FOCOTAR f/2.8, and from 3 to 12x with the 50mm YSARON f/3.5.

Working outside the AUTOFOCUS range

After release of the arresting screw (26) the instrument can be raised up to 60mm with the crank. With the 40mm WA-FOCOTAR f/2.8 this produces a maximum enlargement of 17.5x, with the 50mm YSARON f/3.5 up to 13.5x on the baseboard.

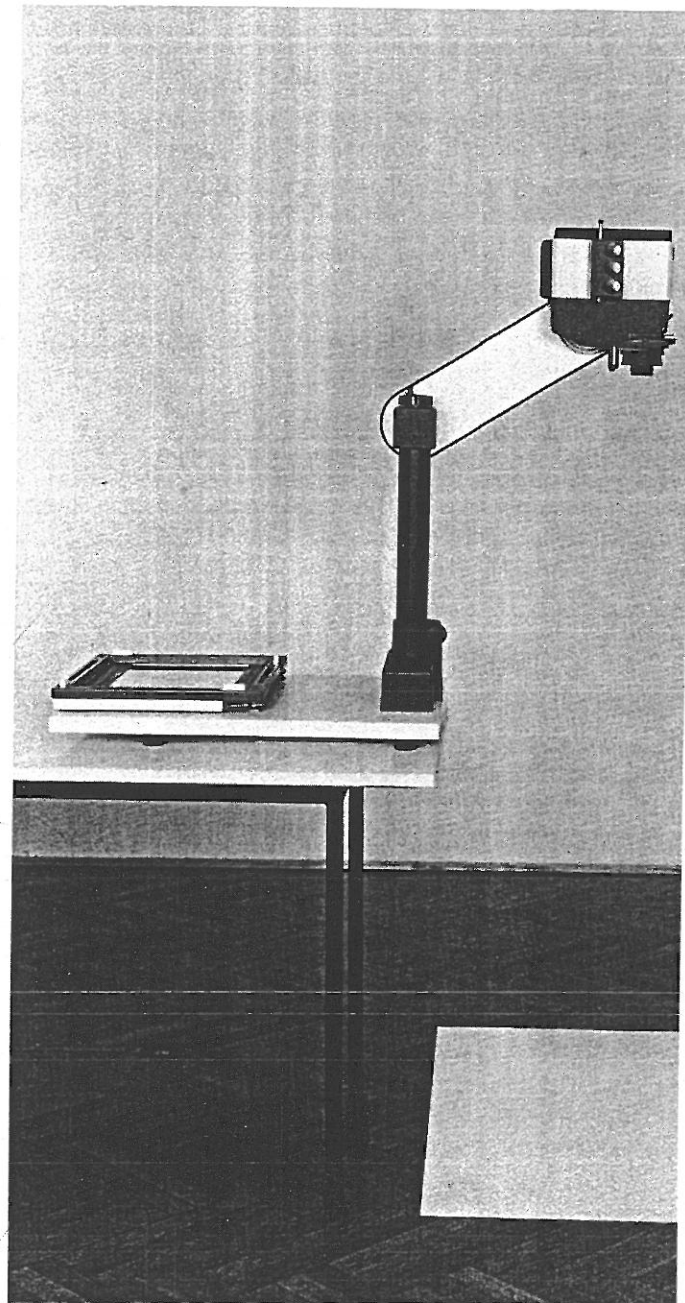
Smaller enlarging ratios from 3x to 1x can also be set with manual focusing. The longer extension of the lens this requires is obtained through the raise of the helical mount (15) and the insertion of the ring adapter (Code No. 16 615).

Focusing ranges and obtainable enlargement sizes with the 40mm WA-FOCOTAR f/2.8. At the 1:1 reproduction scale the masking frame must be raised.

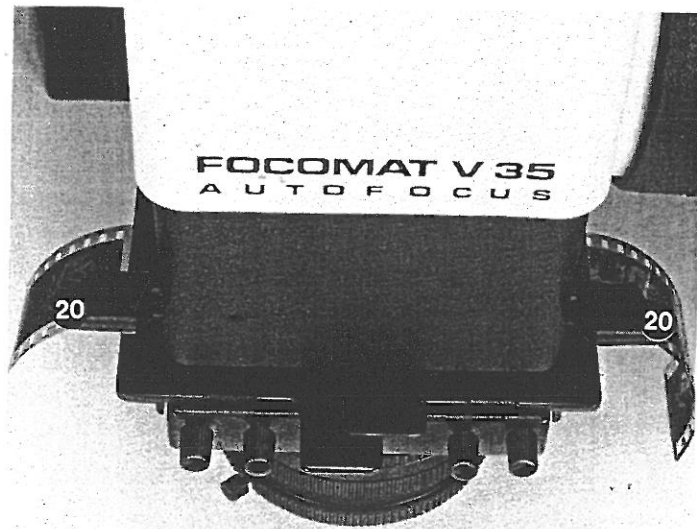
Rise of helical mount	Number	Ring Adapter	Height of ring mm	Size of enlargement mm	Reproduction scale
max.		—	—	42 x 62	1:1,8
min.	1 x	16 615	26	25 x 37	1:1,01
max.	1 x	16 615	26	20 x 30	1,2:1
min.	2 x	16 615	52	15 x 22,5	1,6:1
max.	2 x	16 615	52	13 x 19,5	1,85:1

For **giant enlargements** beyond the AUTOFOCUS range the enlarger including the column can be rotated through 180°. For this purpose the clamping screw (26) must be slackened and the column of the instrument zeroed with crank (9). A weight should be placed on the baseboard to prevent the instrument from toppling over because of imbalance. The negative is projected on to a base at a suitably lower level and focused for these giant enlargements or for extreme part enlargements with the helical focusing mount of the lens (manually).

The AUTOFOCUS position on the helical focusing mount is marked by a precision click stop (17). It can therefore always be easily and reliably reproduced. When the helical focusing mount is returned to the clickstop position, the AUTOFOCUS device is re-engaged for the normal working range.



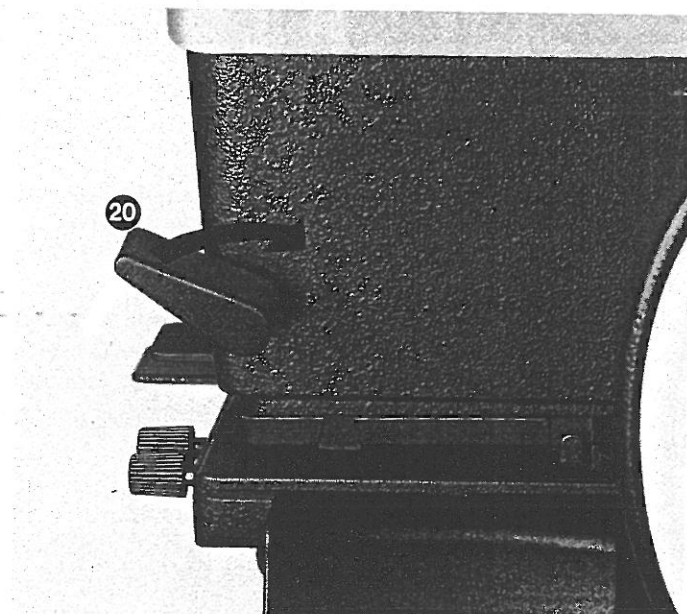
23 674-170



23 873-170

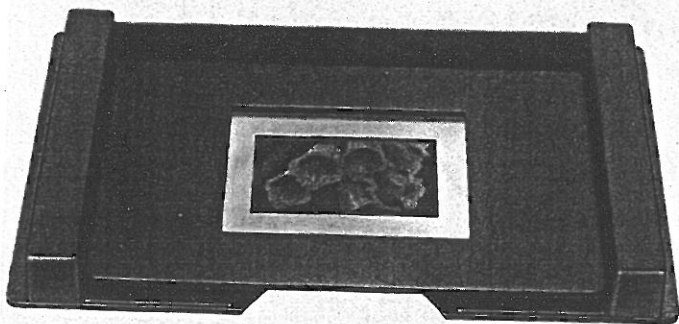
Film insertion

The levers (20) on both sides serve to raise the pressure plate. This opens the film stage. Insert the film, emulsion side facing down, into the negative holder from the front. The film slides against stops and can now be moved into the desired position by lateral adjustment. Lower the pressure plate so that the film is kept plane. When the film is to be moved on, one of the two levers (20) must be depressed to raise the pressure plate. As soon as the lever is released, the film is again under pressure.



23 821-170

The film can also be inserted in the negative holder (14) when this has been removed from the film stage. This is recommended, for instance when single negatives are to be enlarged. In addition, it permits a better assessment of the cleanness of the negative. Before the negative holder is removed the film stage must be opened with lever (20). When the negative holder is replaced, squeeze its double grip and operate the lever (20).



23 823-170

Enlarging mounted slides

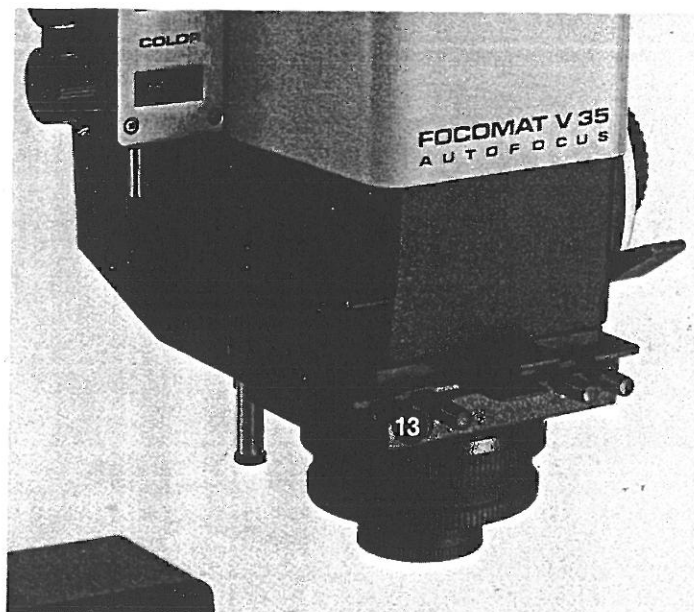
The slide holder (Code No. 17 419) serves for the enlargement of mounted slides, external format 50x50mm. The slide holder, with the slide inserted, is pushed into the open film stage. Lower the pressure plate. Raise the device to the topmost position. Focus with helical focusing mount (15) of the lens, because the focusing plane of mounted slides differs from that of the negatives. With critical focusing the AUTOFOCUS device operates within the entire range.



23 814-170

Working with the 40mm WA-FOCOTAR f/2.8

The click-stops of the 40mm WA-FOCOTAR f/2.8 indicate full lens stops. However, the diaphragm can also be continuously adjusted, which is useful with exposure measuring instruments and analysers i.e. for a pre-determined constant exposure time. For this purpose, the front ring of the 40mm WA-FOCOTAR f/2.8 is pulled down.



23 815-170

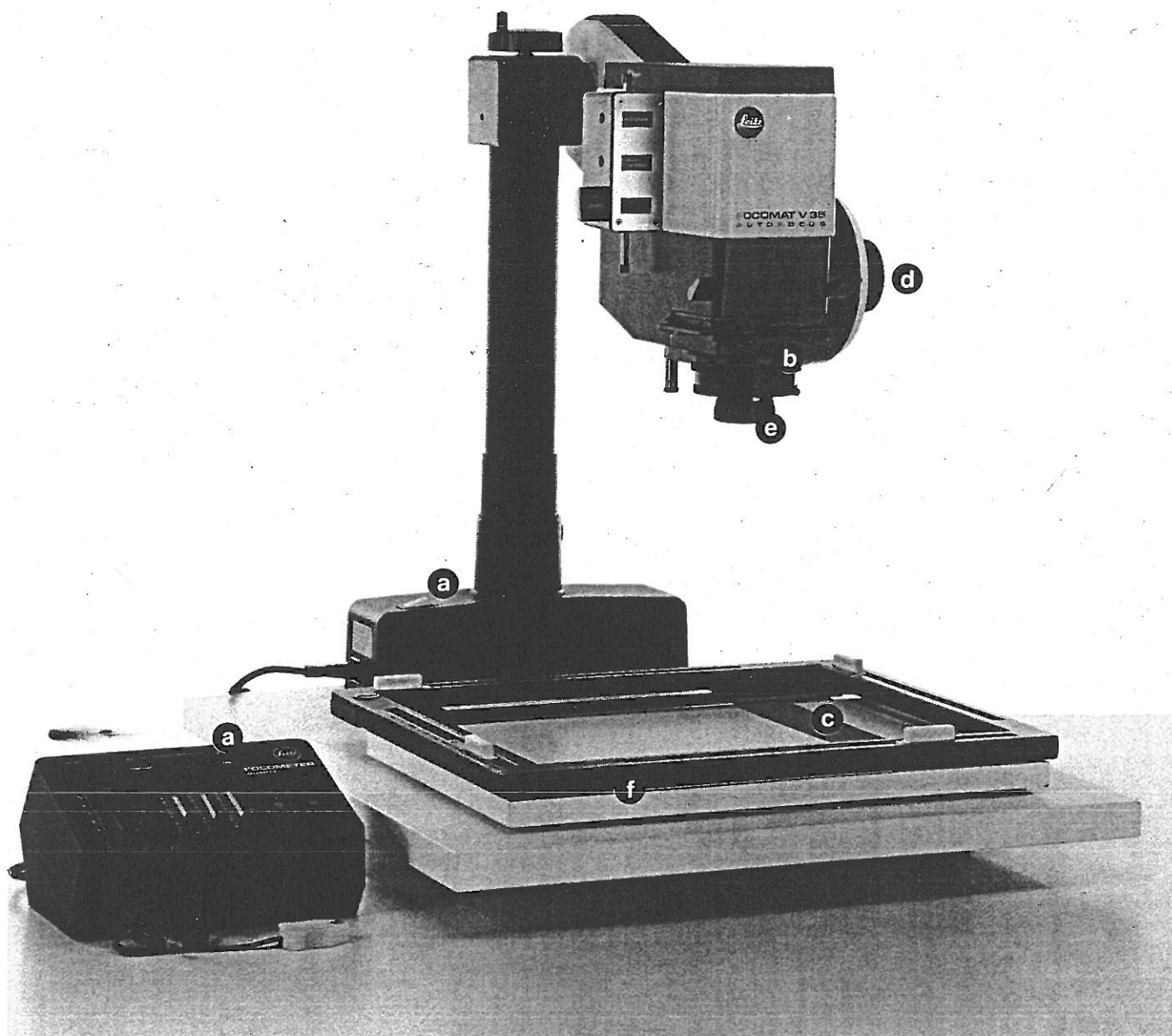
Masking

If required, certain picture portions of negatives or slides can be masked. In addition, the red number windows can be blocked during integrating light measurements in conjunction with exposure measuring instruments or colour analysers. Masking is carried out with knobs 13. When these are turned towards the centre the format is reduced.

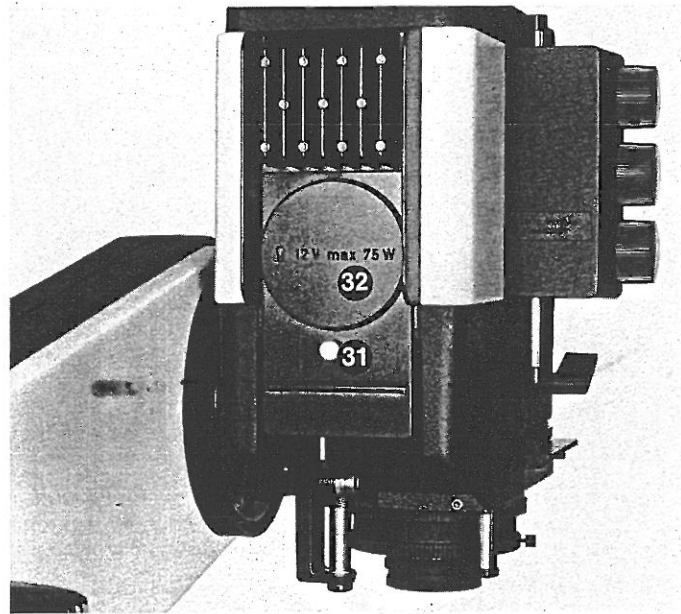
Enlarging

The following sequence should be adhered to during enlarging:

- a Switch on the illumination.
- b Open the film gate, insert the film material, in the appropriate holder, with emulsion side down and close the film gate. Set the lens to f 2.8.
- c Set the desired picture format on the enlarging frame. If any filters are in position, switch to white light with lever (10).
- d Set the desired enlarging ratio by adjusting the height of the arm (24) and choose the picture area.
- e Stop the lens down to f 5.6 or f 8. When using the colour or VARIOCONTRAST modules, switch the filters in using lever (10), then determine the exposure time and set this on the exposure timer. Switch off the illumination.
- f Place the paper in the frame. Expose via the timer (if using the LEITZ FOCOTIMER exposure timer or the LEITZ FOCOMETER-QUARTZ automatic exposure meter, see the respective instruction manuals).



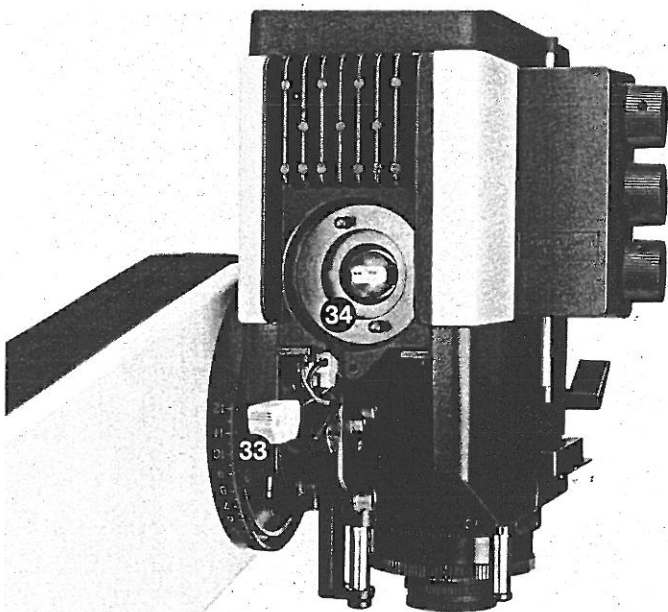
Lamp change



23 818-170

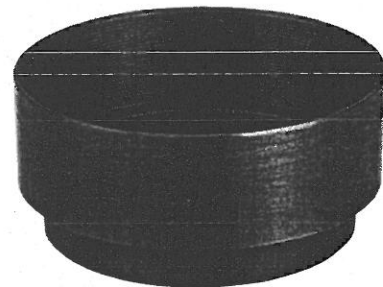
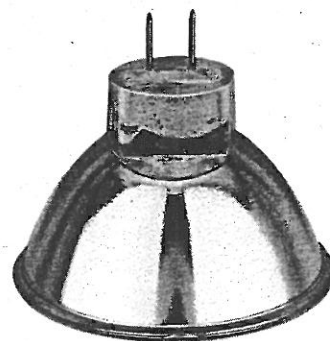
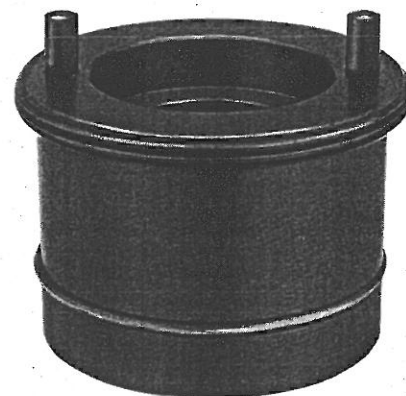
The FOCOMAT V35 is delivered with a lamp fitted into the lamp housing. A defect lamp has to be replaced as described below:

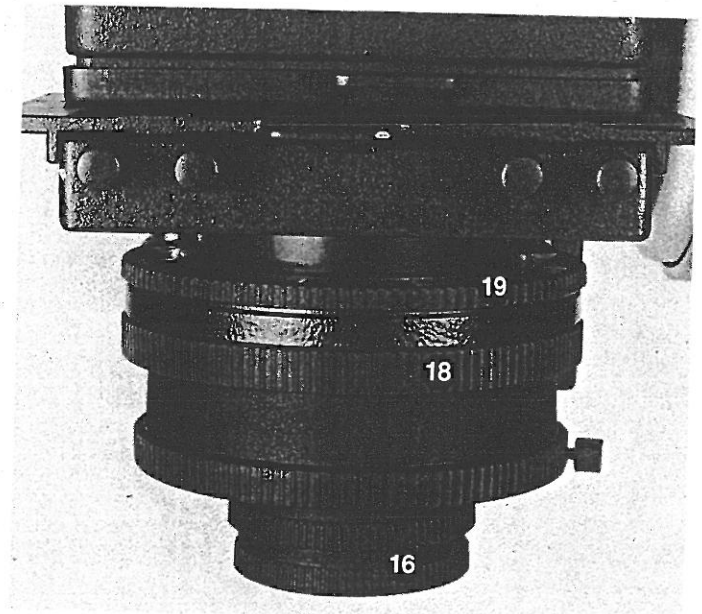
1. Switch off enlarger and let it cool down.
2. Unscrew arresting screw (31) of cover plate. Take off cover plate.
3. Pull off lamp mount (33).
4. Screw out lamp holder (34).
5. Hold lamp holder vertically and pull off ring (35).
6. Take out lamp.
7. Place enlarging lamp 12V/75W (Philips type 13139) into ring (39) with contact pins pointing upward.
8. Slip lamp holder (34) over lamp and push tightly into ring (35).
9. Insert complete assembly into lamp housing and tighten it slightly.



10. Attach lamp mount (33).
11. Put cover plate (32) into its position and arrest it with screw (31).
12. Tolerances of the enlarging lamp coating may change colour temperature. Consequently basic filter readjustment by testing is necessary after each lamp replacement.

Important: Use exclusively the special enlarging lamp 12V/75W Philips type 13139. Other lamps might cause disturbances for or damages of the enlarger due to their electric, thermal and light qualities.



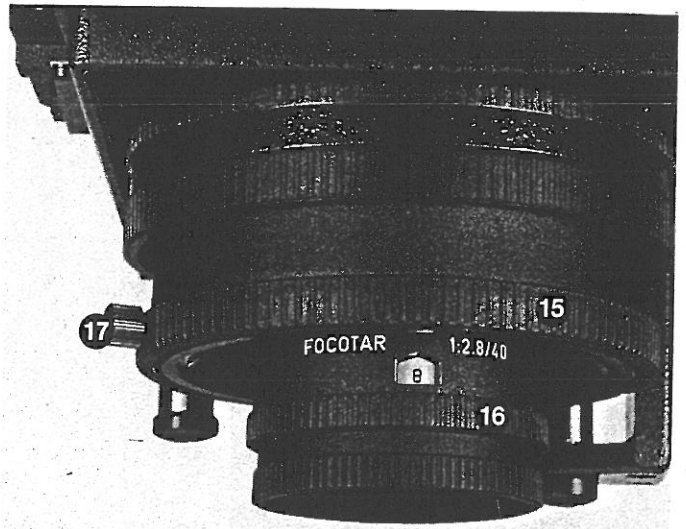


23 813-170

Aperture scale of the enlarger lens

If the illuminated aperture scale of the enlarger lens (16) is to be moved to a different position, proceed as follows:

1. Move the lamp housing (21) to its bottom-most position.
2. Release securing ring (18).
3. Rotate the lens (16) with holder on the upper knurled ring (19), until the illuminated aperture scale of the lens is in the desired position.
4. Tighten the securing ring (18).



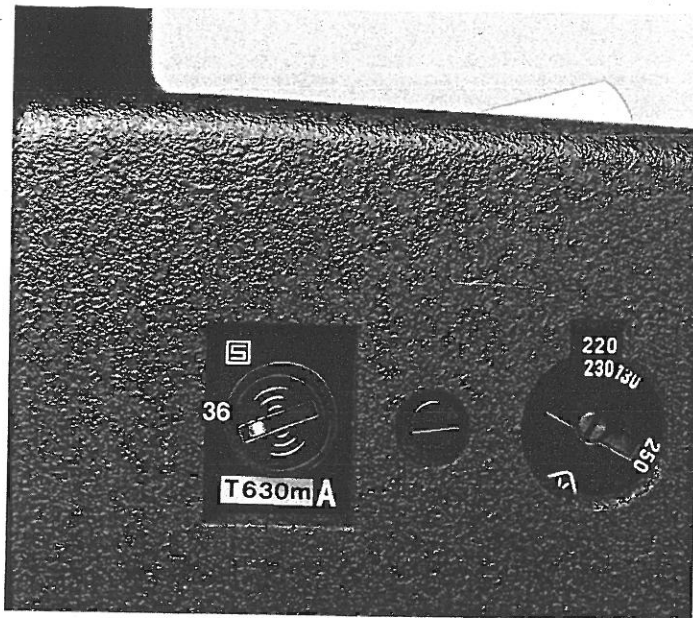
23 814-170

Checking the click-stop position on the helical focusing mount of the enlarger lens

Insert test strip in the negative holder. It is best to carry out the test under working conditions either using a masking frame or the baseboard. Adjust height of column accordingly. Move the lamp housing (21) into its topmost position. Produce optimum sharpness for the centre of the picture by rotating the helical focusing mount of the lens (15). If the helical focusing mount is not in the click-stop position, release the arresting screw

(17). Hold the lens (16) in position with one hand, at the same time turn the knurled ring (15) into the click-stop position. Tighten arresting screw (17), carry out a final check of the setting.

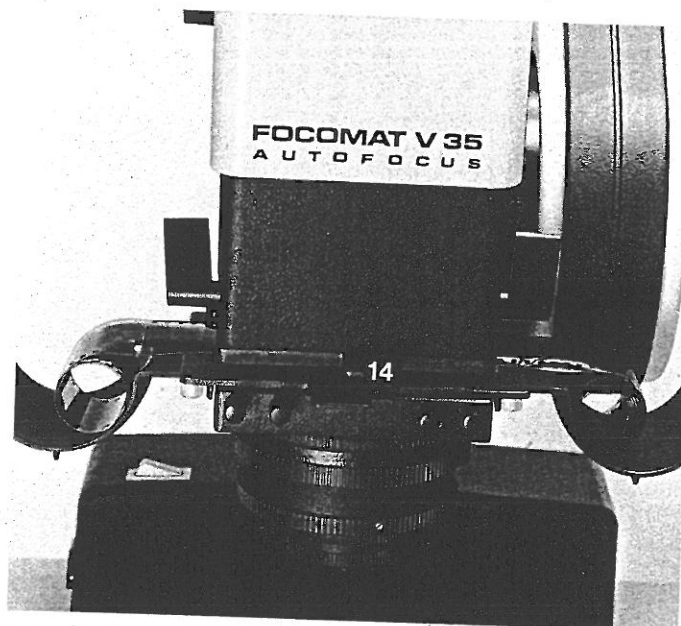
The click-stop position of the ring (15) automatically guarantees optimum sharpness within the entire focusing range.



23 806-170

Electrical safety

The FOCOMAT V35 conforms to the electrical safety regulations. Display of VDE, GS, and interference suppression symbols as well as international safety symbols have been applied for. A fuse (36) protects the instrument against overload or short in the circuit. For 220V the G fuse insert A 0315 DIN 41 662, and for 100V the G fuse insert A 0.63 DIN 41 662 is used.

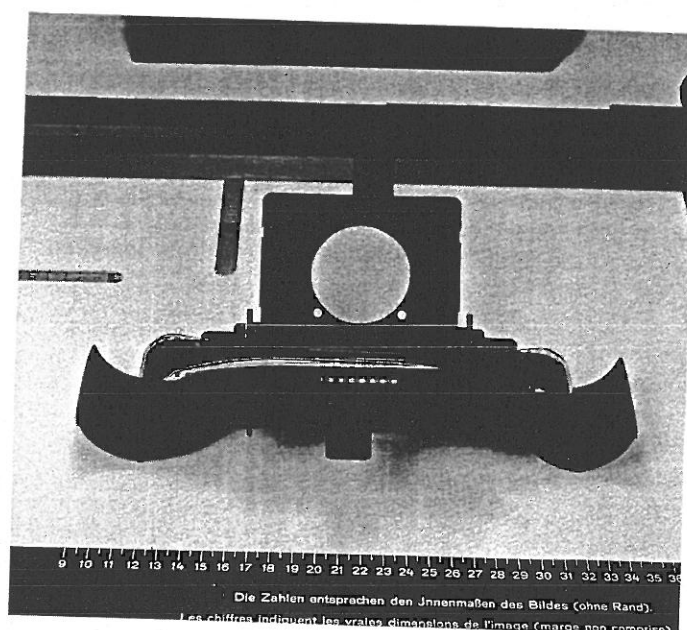


23 816-170

Trough for uncut film

Take out negative holder (14). Attach the film troughs and screw them in position with the knurled screws. Negative holder and film troughs are now an integrated component which can be taken out and reinserted as a whole. This considerably facilitates film insertion outside the instrument.

Code No. 17 425



23 817-170