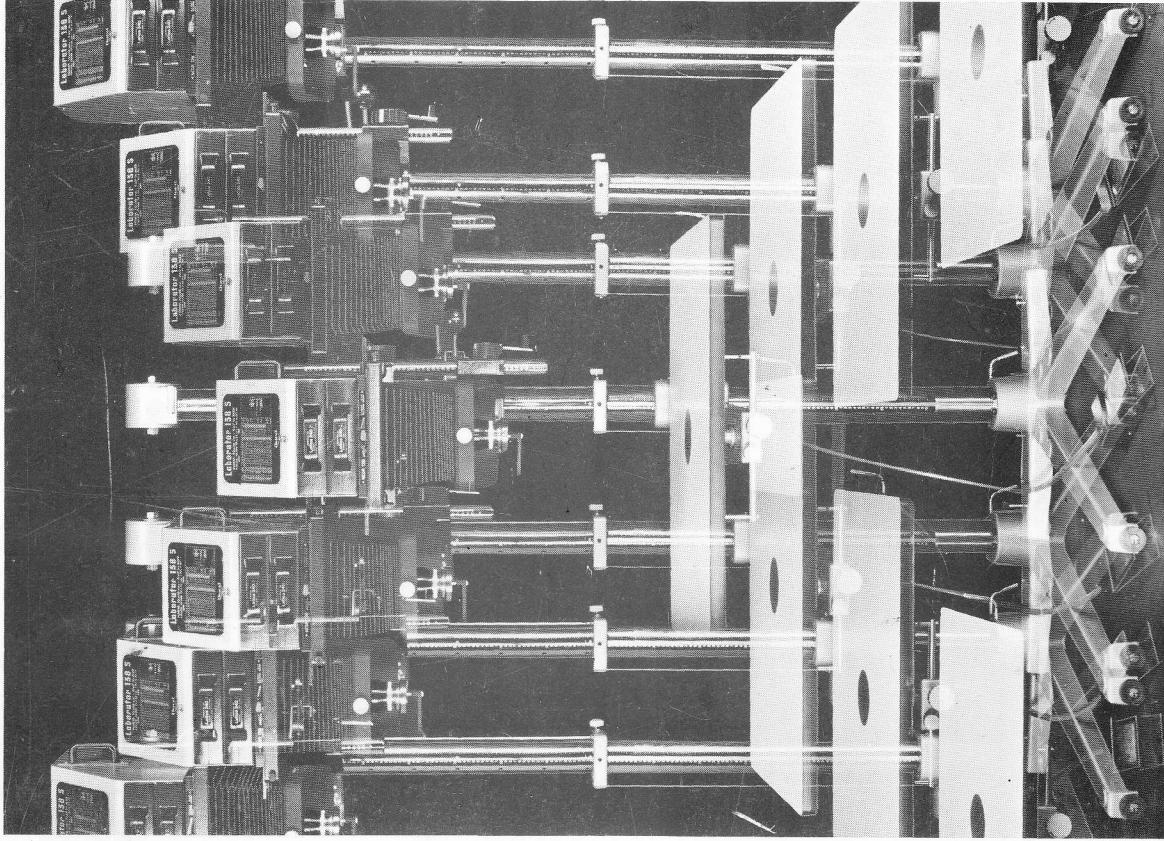


Durst Laborator 138 S



Durst[®]

Durst INC.
Phototechnical Equipment
P.O. BOX 445 - I 39100 - Bolzano/Italy



Studio Durst GA 2.9/571 (e) Printed in Italy

Operating Instructions

Specification of components and operating knobs

Series number	Description
1)	Enlarger head
2)	Model plate with table of the magnification factors and condenser combinations
3)	LATICO 240 condensers
4)	NEGA 138 negative carrier
5)	Wheel grips for adjustment of format masks
7)	Enlarger head column
8)	Grip for fixing the enlarger head column
9)	Baseboard
10)	Support bolts for the baseboard
11)	Supporting arm for the baseboard
12)	Locking knob of the supporting arm
13)	Handle for the adjustment of the baseboard
14)	Tube clamp of the lower column
15)	Setscrew for the enlarger base
16)	Enlarger base
17)	Pedal for the servo base baseboard adjustment device
18)	Scale for the vertical adjustment of the baseboard
19)	Clamping grip for the supporting arm
20)	Lever for disengaging the height adjustment friction drive
21)	Clamping grip for the upper column
22)	Scale for the vertical adjustment of the enlarger head
23)	Scale indicating the tilt of the enlarger head
24)	Wheel grip for tilting the enlarger head
25)	Milled screw of the lamp house flap
26)	Filter drawer
27)	Lamp house flap
28)	Wheel grip on the tubular lens guide
29)	Clamping grips for the enlarger head
30)	Ball handle for adjustment of the enlarger head
31)	Tubular lens guide
32)	Clamping grip of the lens guide sleeve
33)	Wheel grip for focusing
34)	Clamping lever for baseboard
35)	Milled nut for the lateral adjustment of the enlarger head
36)	Adjustment screw for the baseboard
37)	Centering notch for the baseboard
38)	Cover plate on the supporting arm of the enlarger head
39)	Locking knob of the lens guide
40)	Scale for the transversal tilt of the lens
41)	Lens guide
42)	Clamping grip for lens board
44)	Red marked oil holes
45)	Handle for the adjustment of the lamp centering
46)	Handle for the adjustment of the lamp centering
47)	Locking ring of the lamp centering
48)	Guide grooves for heat absorbing filter
49)	Milled screw for the lamp house cover
50)	Deflecting mirror
51)	Cable switch
52)	Threaded bolts on the column head
53)	Earth connection screw on the enlarger base
54)	Metal cover of the filter drawer
55)	Scale for focusing
56)	Cross slot screws for locking enlarger head in position

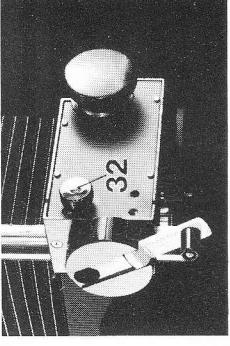
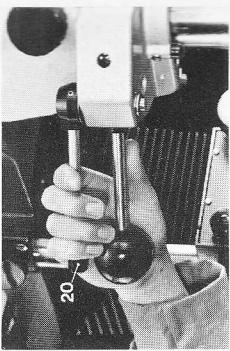
Durst LABORATOR 138 S

Professional Precision Enlarger for all negative formats up to 5 x 7 in. (13 x 18 cm), with manual focusing

We thank you
for your
confidence

In your purchase of the Durst LABORATOR 138 S you have demonstrated your confidence in our equipment. We are very grateful for this. At the same time we feel it our duty to help and advise you as completely as possible in order that you obtain full use of the extreme versatility of your Durst LABORATOR 138 S. The effortless operation and perfect function of this high - capacity enlarger ensure you many years of undisturbed pleasure in your darkroom work.

These directions for use give you step by step instructions on the assembly and operation of your Durst enlarger. It is definitely important to read them in order to learn quickly all of the functions and operating controls of your new enlarger, in order to avoid unintentional damage which could affect your guarantee rights.



Packing

For transport the enlarger is dismantled into the following components:

1. Enlarger head mounted on column, with deflecting mirror incorporated, filter drawer, lead with switch and plug.
 2. NEGA 138 negative carrier with two 5x7 in. (13x18 cm) planoparallel pressure glasses.

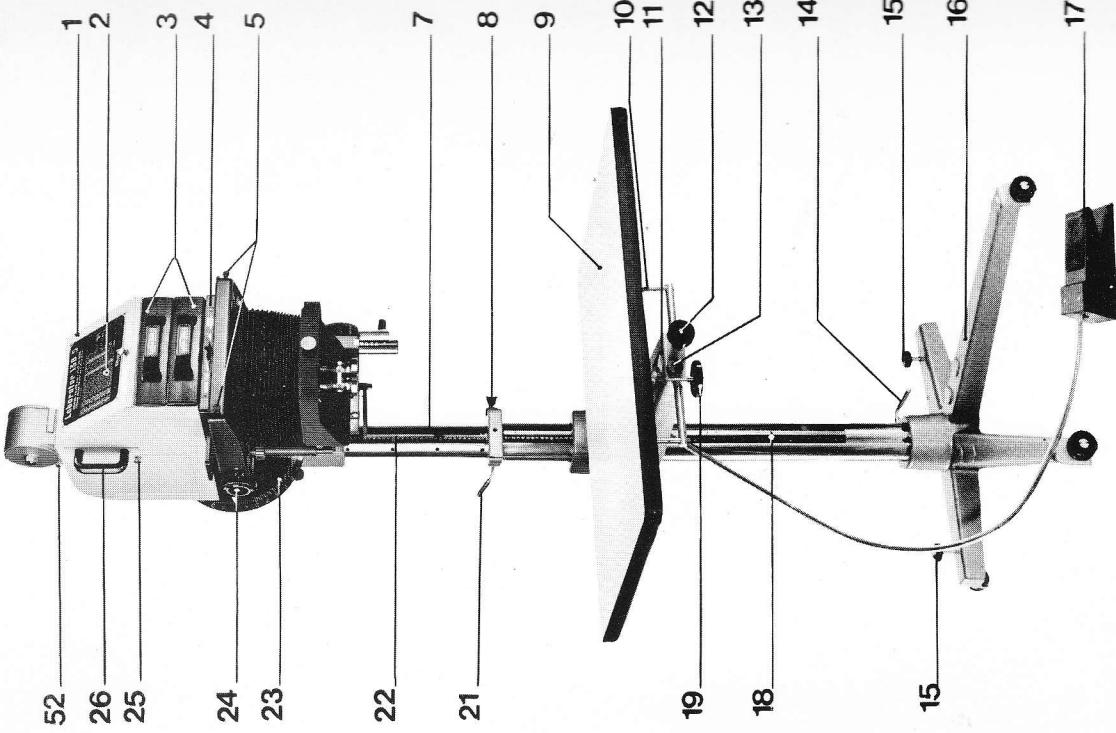
3. Lower column with supporting arm and pedal for servo baseboard adjustment.

- 4. Baseboard with joint.
- 5. Enlarger base.

Assembly

First ensure that all parts are cleaned and free of dust from packing materials. Then set up the base (16) on the floor, securing it with the setscrews (15) so that it does not slip. Make quite sure that the stand is really tight and completely vibration-proof if not, the performance of the enlarger will suffer. Insert the lower column, together with the supporting arm mounted on it (11), into the enlarger base (16), and secure firmly with the tube clamp (14).

Next insert the enlarger head column (7) into the lower column, turning head and conform slightly until the peg of the milled screw (8) engages in the slot of the column; then fasten the clamping grip (21). Set the base board (9) (clamping lever (34) on the right) with its ball-and-socket joint in position on the supporting arm (11), and fix it by means of the clamping grip (19). The adjustment screw (36) and centering notch (37) together with the two support bolts (10) make up the three-point bearing system which maintains the table parallel to the lens and the negative plane. The two support bolts (10), precision-adjusted in the factory, ensure that the base-board is absolutely horizontal. Next, the two LATICO 240 (3) condensers should be positioned inside the head with the curved surfaces facing each other. Then insert the NEGA 138 negative carrier (4) into the enlarger head (1); to do this press the two leaf springs (1a) slightly upwards, until the two studs slide into the guide grooves, finally coming to rest in position in the two retaining holes in the guide plate. If the enlarger is to have a permanent site, it can be further fastened to the wall by means of the two threaded bolts (52) in the column head and a hook.



Enlarger Head

Height adjustment of the enlarger head (1) is made by turning the ball handle (30). When the handle is released, the enlarger head automatically stands still and may be locked in the desired position by means of the clamping grips (29). To make a rapid height-adjustment, of the enlarger head displace grip (20) towards the enlarger head, thus disengaging the friction drive mechanism and allowing the enlarger head to be adjusted freely. Focusing is carried out by turning the wheel grip (33) after releasing the clamping grip situated behind it (32); this clamp secures the lens guiding sleeve against slipping. For rapid adjustment the built-in crank can be swivelled out. The bellows extend according to the focal length of the lens; to effect this, the tubular lens guide (31) is adjusted by releasing or tightening the wheel grip (28). For short focal lengths the tube should be pushed back, for long focal lengths pulled out.

To swing the enlarger head into horizontal position for wall projection, turn the wheel grip (24) in an anti-clockwise direction from position "F" to position "L". After tilting the enlarger slightly set grip (24) to 90° so that it snaps in precisely at this angle. To lock it again in this position return the wheel grip (24) to position "F".

The five scales provided on the apparatus facilitate orientation with regard to the various settings and adjustments; notes should be taken of the various settings (perhaps in form of a table) so that the data are available for quick positioning when various types of work have to be repeated.

The single scales indicate:

Scale (18): the vertical adjustment of the baseboard.

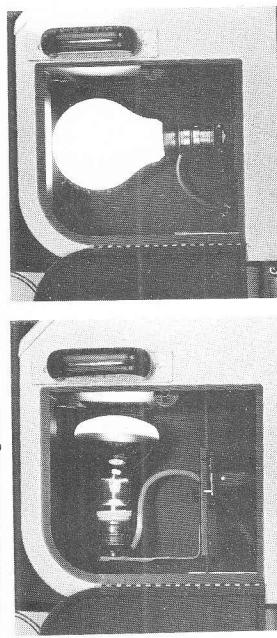
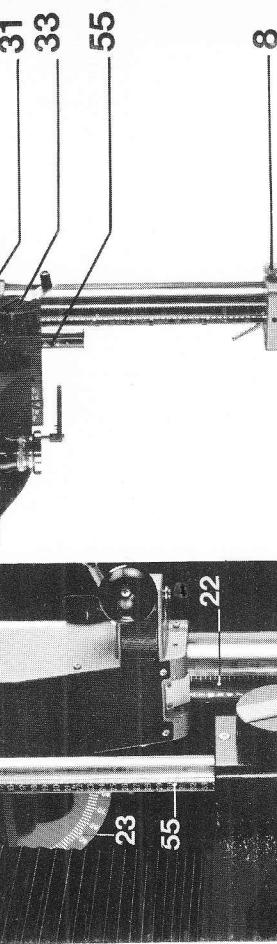
Scale (23): the degree of inclination of the enlarger head.

Scale (40): the degree of transversal inclination of the lens for distortion correction

Scale (55): focusing

Scale (22): the vertical adjustment of the enlarger head.

The table (2) on the front of the lamp house shows the magnification factors for the various lenses, together with the condenser combinations and lamps for different focal lengths.



Laborator 138 S	
FORM 13x18 cm 5x7 in SIZE	
COLOR FUSER 12x12 cm 4x4 1/4 in	
A. 1/4x1.8x1	
OPT. ANG.	1/4x1.8x1
1/4	1/4x1.8x1
2/5	2/5x1.8x1
3/5	3/5x1.8x1
4/5	4/5x1.8x1
5/5	5/5x1.8x1
6/5	6/5x1.8x1
7/5	7/5x1.8x1
8/5	8/5x1.8x1
9/5	9/5x1.8x1
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196/5	196/5x1.8x1
197/5	197/5x1.8x1
198/5	198/5x1.8x1
199/5	199/5x1.8x1
200/5	200/5x1.8x1

Illumination

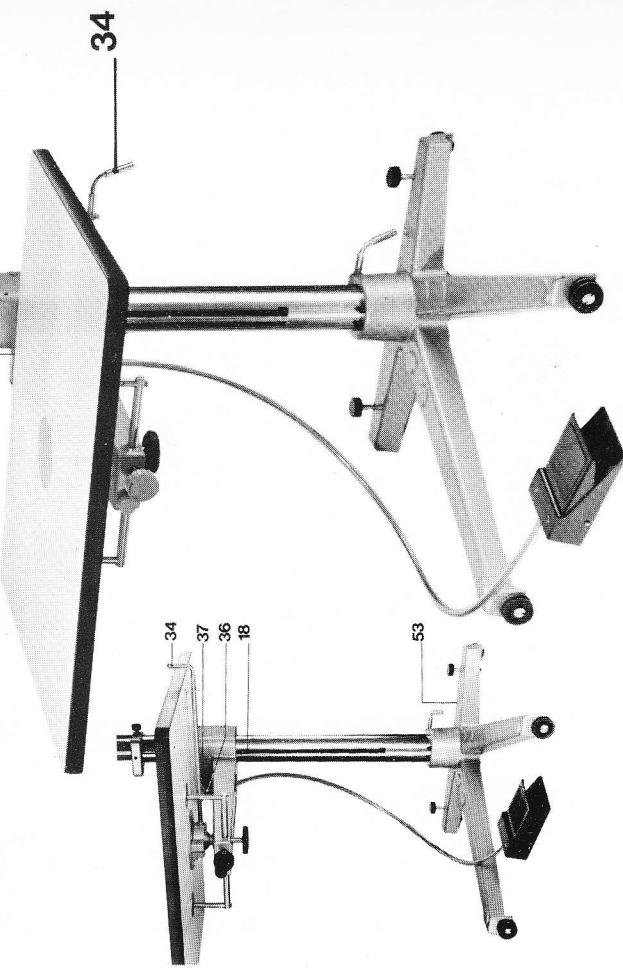
After releasing the milled screw (25), open the lamp house flap and fit the lamp into its socket. Although the entire electrical layout is quite safe, it is recommended that, unless it is fitted with a Schuko-type connection, the enlarger should be earthed as a precautionary measure to the mains (53). An exposure timer can also be inserted between enlarger head and the mains.

To ensure a good illumination of negative formats of 5x7 in. (13x18 cm) or under conditions involving high magnification factors, or with a lens of focal length greater than 150 mm, it is essential that the opal lamps should have a bulb of at least 110 mm diameter. We are able to supply large bulbs (code-word OPAL) of 200, 300 and 500 watts — also the PROLA 500 projection lamp, which has an Edison socket and an extra-large filament web giving a good illumination and high intensity. When using this lamp one should work with the largest aperture of diaphragm, unless a LAPAL opal glass is inserted into the filter drawer (26). Other suitable projection lamps are available from dealers; we recommend the Philips 375 E 500-watt or the General Electric DMS PH/500 TS.

With the aid of the separately available lamp holder LANIT is affixed to the lamp house in place of the standard lamp holder after loosening the two red knurled screws. It is also possible to use mercury vapour lamps (such as the Philips HP or HPL, or lamps of a similar type from OSRAM with impedance coil). Since, however, this type of lamp takes a few minutes to reach its full light output, exposures with it cannot be made by means of the switch, but with a shutter fixed in front of the lens, since the lamp must be left burning.

When maximum definition, reproduction of details and the shortest possible exposure times are required, it is advisable to use the low voltage point-light source PULAM/PUTRA which is available as an accessory, or the zircon point-light source which is even harder (see under Accessories). This consists of a low voltage point-light lamp (12 V/100 W) with Edison socket which is connected to the mains via the PUTRA transformer. In order to obtain best results, replace also a) the standard deflection mirror by the specially treated mirror LASPE P, and b) the standard glasses of the negative carrier by the specially treated glasses GLAS T, and c) the standard condensers by the optically coated LATICO T.

The condenser combinations used in conjunction with opal lamps are not always suitable for point-light lamps (see table).



When centering the lamp take care to align the filament helix exactly parallel with the deflection mirror. When the magnification factor has to be altered, move the point-light source forwards or backwards using handle (45) to ensure uniformity of illumination. Use the largest aperture when working with the point-light source as otherwise Newton rings will be projected. It will be found that in spite of the large aperture, the definition so obtained will be better than that obtainable with a low aperture and an opal lamp. Furthermore, the time of exposure needed will be considerably shorter.

For lamps of more than 300 watts it is essential to use the LAFAN cooling blower, which is available separately (s. "Accessories"). The hose of the cooling blower should be connected to the lamp hood, after removing the small flap (27). In addition on the top of the lamp house there is an aperture, fitted with a metal cover, to which a suction cooler may be attached.

Before using an opal lamp it should be examined thoroughly. When held against a very strong lamp, blemishes in the glass or spots of soot inside the opal lamp can easily be seen. Frequent fluctuations of mains current and long use may cause such residues from combustion resulting in uneven illumination.

The lamp is centered by adjusting the handles (45) and (46) on the lower side of the lamp hood. Slightly loosen locking ring (47), adjust height of the lamp and tighten locking ring. With the handle (45) the lamp can be pushed forward or backward, whereas handle (46) is for lateral adjustment. To assist in determining the best filament position, the actual lamp holder is designed to be turned in either direction. When centering the lamp, focus should be adjusted in advance, using a lens of medium or long focal length.

In order to protect condensers and negative from damaging heat, the heat absorbing filter LACALO is available separately. It is inserted into the grooves (48). Care should be taken that the lamp does not touch the heat absorbing filter during centering.

It is also possible to use screentype lighting units or pulsating xenon lamps of various brands as light sources for the Durst LACOLI 138/LACOTRA 138 cold light source, which has been developed specially to suit the LABORATOR and fit into the condenser drawers.

With its diffused soft light it is especially adapted for all types of black-and-white photography, especially for the enlargement of high contrast negatives of all formats from 24x36 mm up to 13x18 cm (35 mm up to 5x7"). Its high light performance permits brief exposures even with little sensitive paper (approx 7 - 10 times shorter than with a 200 W opal lamp). The unique quality of this illumination eliminates scratches and impurities on the negative, thus virtually eliminating the need for retouching work.

The HT fluorescent tube of the LACOLI 138, set in a plastic holder, is fed by 110 - 240 volts AC (45-60 Hz), through the LACOTRA 138 special transformer.

Condensers

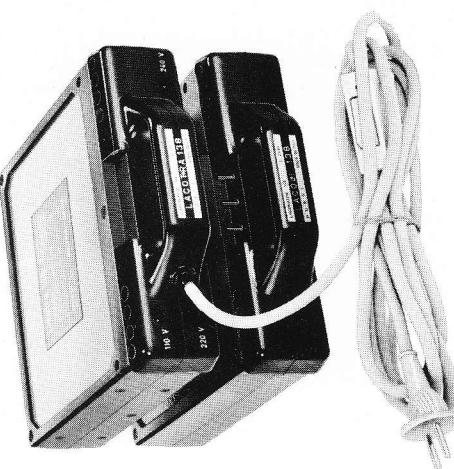
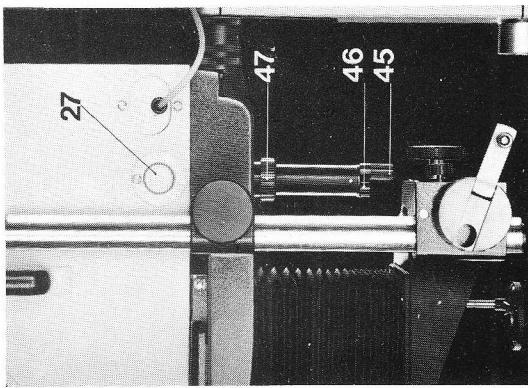
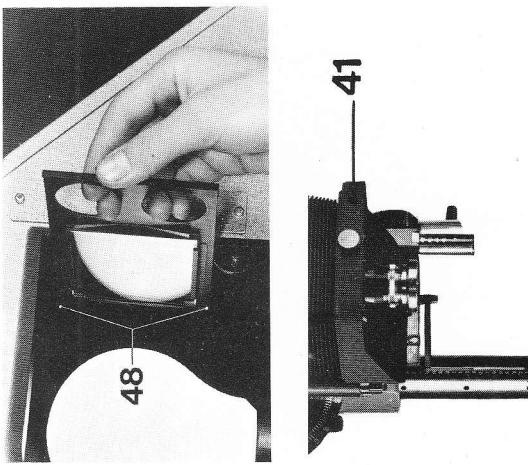
Lenses

The condenser combinations vary according to the focal length of the lens, and in some cases even with the same focal length, depending on magnification factors. (See table for condenser combinations).

The lenses are mounted on the separately available UNIPLA lens board (for one single lens) or on the TRIPLA lens board turret (for three lenses).

Insertion or removal of lenses is carried out after undoing the milled screw (42).

Lenses of focal lengths from 10 up to 24 cm should be mounted on LAPLA level lens boards. Lenses supplied by us in focal lengths 240, 210, 180, 150 and 135 mm are equipped with the necessary fitting joints, and may be inserted directly into the lens guide (41) with the adapter ring supplied standard with these lenses. Lenses of focal lengths 120 and 105 mm should be mounted on a LAPLA lens panel; and lenses of 75 - 80 mm on the SEIPLA 75 semi-sunk lens board (available separately). For lenses of 50 - 60 mm focal length the LATUB tube (also available separately), with LEICA M39 thread is provided. Lenses with the M25 thread require an IXODAP connection ring for the LATUB tube. Both LATUB and SEIPLA 75 must be removed before turning the lens turret (41). The lens, complete with the flat lens board, is mounted on the LATUB tube. For easy adjustment of the diaphragm, special diaphragm setting devices LENON (for Componor, Comparon and Componar lenses) and LEROD (for Rodagon and Yaron lenses) are supplied to order.



a) NEGA 138

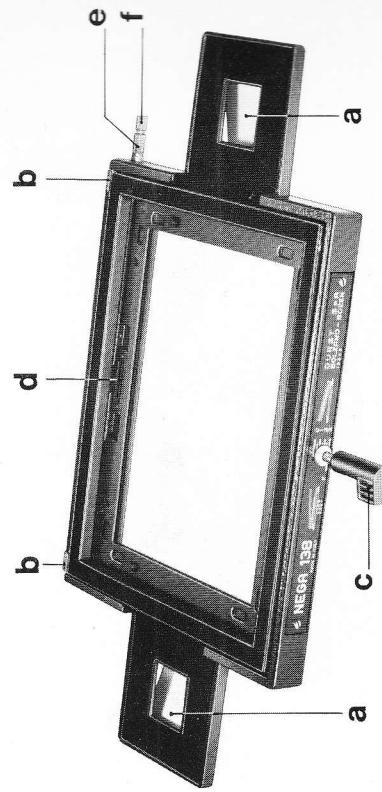
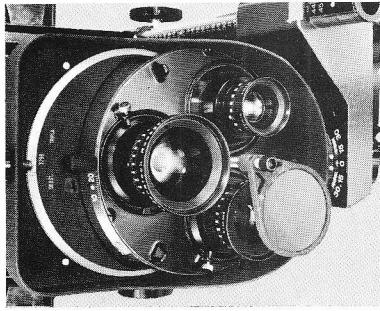
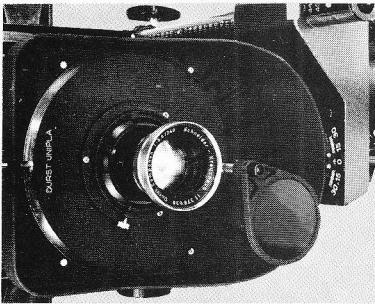
The UNIPLA and TRIPLA lens boards are fixed to the lens carrier (41) via a three-point stop equipment, making it necessary to fasten conveniently grip (42). These two lens board are equipped with a swivelling red filter, which is adjustable to the height of each lens. The red filter can be exchanged after loosening the snap ring.

To avoid reflections it is absolutely necessary to mask down the negative to the area actually needed for enlarging, using the built-in masks (wheel grip (5)). When making sectional enlargements the maximum optical performance of the lens is obtained by bringing the negative section as precisely as possible under the centre (optical axis) of the lens, either by moving the negative carrier NE GA 138 (4) or by adjusting the masks. To facilitate this adjustment, the pairs of masks are coupled, thus forcing the use of the middle section of the lens (if the marginal zones of the lens were used for enlarging sections, the print quality would be considerably diminished).

An even illumination can be obtained only when the lens focal length is greater than the diagonal measurement of the negative to be enlarged.

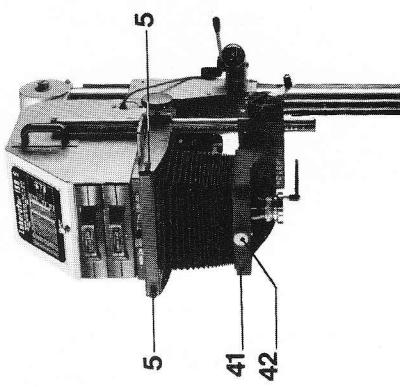
The LABORATOR 138 S is equipped with the standard NE GA 138 negative carrier (4), by means of which sheet films and plates up to 5x7 in. (13x18 cm) may be enlarged. The NEGA 138 consists of a frame with a swivel-mounted upper part on spring bearings. Each top and bottom pressure glass is fastened by four retaining springs. To obviate the possibility of the appearance of Newton rings, the upper of the two glass plates (GLAS) is available to order with an anti-Newton coating (GLAS AN). To enlarge without glasses LAPFE format masks (mask and mask backing) are available in the commonest metric or inch formats; these may be inserted into the negative carrier in place of the twin glass plates. To insert the NEGA 138 negative carrier into the enlarger head, press the springs (a) gently upwards and then, pushing inwards towards the centre of the enlarger, downwards; in this way the studs will slide along the guide grooves in the enlarger head and engage in their respective fixing holes. In order to bring the negative carrier into precise line with the optical axis, it must be pushed home far enough to allow the studs to come to rest in the rearmost pair of retaining holes.

The test mark (with cross hairs) incorporated in the negative carrier only so far that the studs engage the front pair of retaining holes.



The test mark serves the following purposes:

1. It enables sharp focusing adjustment to be carried out, particularly when the negative itself is unsharp or over-dense. This is done by first using the milled knob (e) to adjust to the focusing level of the lower glass plate (or frame, as the case may be); the adjustment is then fixed by the other milled knob (f). Next, the negative carrier is pulled into the front retaining holes, thereby projecting the test mark. When changing over from glass plates to LAPFE inserts, or vice versa, the focusing level must be adjusted again.

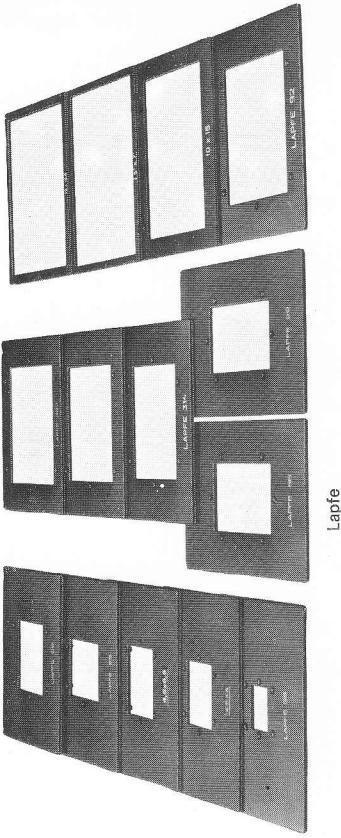


NEGA MC is introduced into the enlarger head in place of the standard negative carrier and consists of a frame onto which a swivelling upper part rests on springs. In the NEGA MC the aperture cards are treated without glasses. To obtain enlargements as large as possible we recommend the use of a 60 mm lens, which is mounted on the LABORATOR 138 S by means of the LATUB tube as well as the XODAP adapter plate (both available separately). The PULAM cold-light source with the PUTRA transformer as well as the zircon point-light source are particularly adapted for treating such line negatives (see "Illumination").

To insert the NEGA MC into the enlarger head and adjust it into the optical axis, proceed in the same way as with the NEGA 138 negative carrier. To insert the aperture cards, it is not necessary to remove the negative carrier from the enlarger head. It's enough to turn the milled knob (c) with its marking a half turn from the left to the right marking line, like it is represented on the plate in front of the negative carrier. In this way the upper part of the negative carrier is lifted somewhat, so that can be inserted until stop. The negative of the card is centered exactly by means of the guides (g). Now the milled knob (c) is turned back again, by which means the upper part of the negative carrier is brought down, pressing the card completely flat. The test negative with cross hairs (d) incorporated in the negative carrier serves the same purpose as the one in the NEGA 138 negative carrier and is brought into the optical axis in the same way.

c) LADANE 138

To enlarge rollfilms up to 2 1/2x3 1/2 in. (6.5x9 cm) - including 70 mm films - a pair of masks LADANE 138 is available separately, equipped standard with two AUDA 70 glass plates as well as with the masks DIFMA and DIFOB 138. A glass AUDA 70 AN with anti-Newton coating is available separately, which is inserted in the mask (b) in place of AUDA 70.



Lapfe

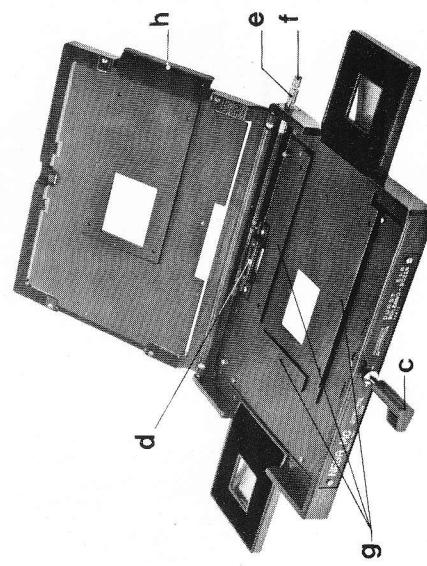
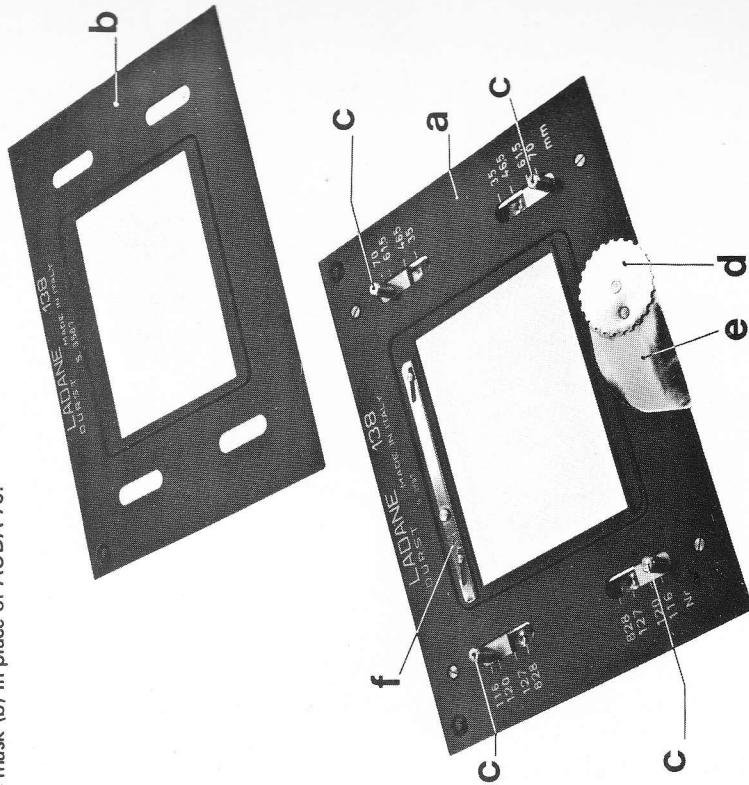
2. It facilitates calculation of magnification factor.
- To obtain frontal distortion correction of the projected image, turn handle (c) of the NEGA 138 negative carrier clockwise. This will lift the front edge of the glasses or masks. Read the angle of inclination off on the scale, reset handle (c) to 0 after the distortion has been corrected.

The negative carrier NEGA 138 will also enlarge 2 1/4 x 3 1/2 in. (6x9 cm) rollfilms (including 70 mm films). To avoid having to remove the negative carrier from the apparatus every time the film has to be wound on, turn handle (c) anti-clockwise as far as "F". The top part of the negative carrier is thereby lifted and the film can now be wound on without being scratched.

The top part of the negative carrier may be completely removed after the two set bars (b) have been turned through 180°.

b) NEGA MC

This negative carrier is produced particularly for the enlargement of aperture cards (unperforated microfilm negatives of format 32x45 mm mounted on punched cards).



**Servo base board
adjustment**

Make quite sure that the lower column has been cleaned perfectly free of any packing material.

Then release the large locking knob (12) on the right front of the supporting arm (11); take hold of the table somewhat behind the middle of the two side edges, and depress the pedal (17). The baseboard may now be raised or lowered effortlessly. **The baseboard should not be forced up or down, or the supporting arm may become jammed on the column.**

When the table has reached the desired position, release the pedal, take away your hands from the baseboard and fasten it by tightening the locking knob (12). (This is particularly suitable for work where repeatability is required).

The scale (18) shows the distance between the highest position and the supporting arm.

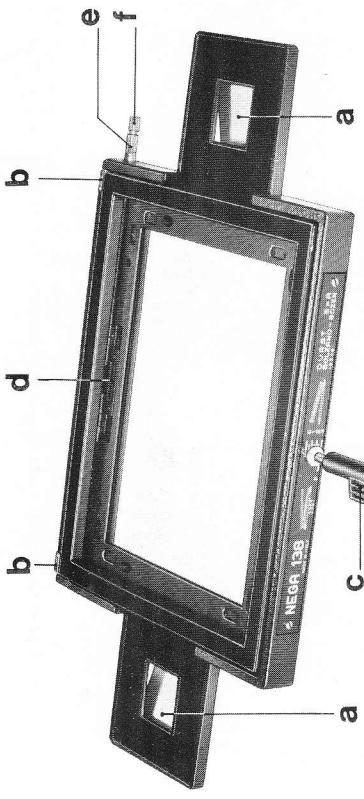
Never allow the enlarger to be moved or shaken by taking hold of the baseboard, as this may cause damage to the automatic servo baseboard adjustment mechanism.

LADANE 138 can be used in connection with the negative carrier NEGA 138 only;

insert mask (a) in place of the lower and mask (b) in place of the upper cover glass (GLAS).

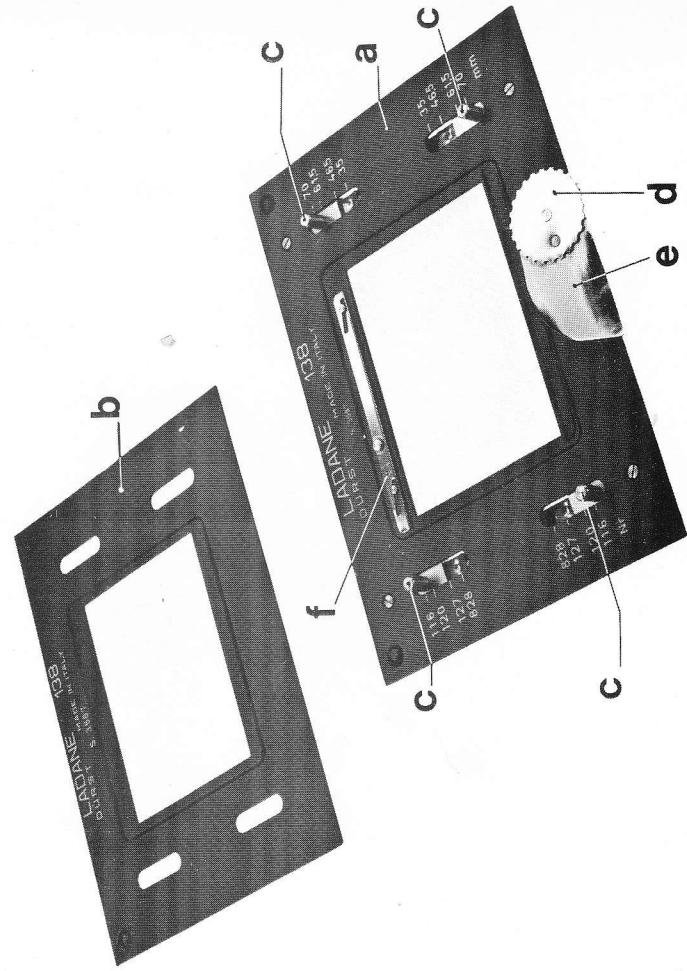
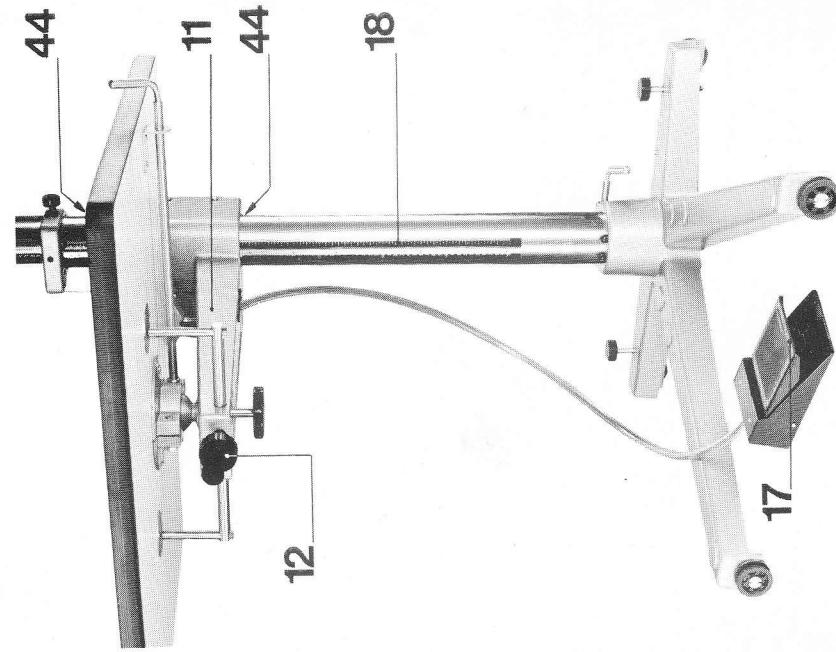
For glassless enlarging of 24x36 mm negatives, the metal mask DIFMA is inserted in place of the lower glass AUDA 70 and the metal mask DIFOB 138 in place of mask (b). Further metal masks without glasses for the sizes 6x6 cm (AUMET 66), 26x26 mm (AUMET 26), 24x24 mm (AUMET 24), 18x24 mm (AUMET 18) and 12x17 mm (AUMET 17) are available separately. These metal masks are inserted in place of AUDA 70 into the masks (a+b); for that purpose the bars (f) are removed.

The mask (a) is fitted with four adjustable guiding pins (c) for the most usual sizes. To fix and centre single negatives the spring (e), adjustable by setting the milled grip (d), is used. To allow the film to be advanced, the milled grip (c) — of the negative carrier NEGA 138 — is turned to the left; in this way the upper part of the negative carrier is raised, so that scratches in the film are avoided.



IMPORTANT

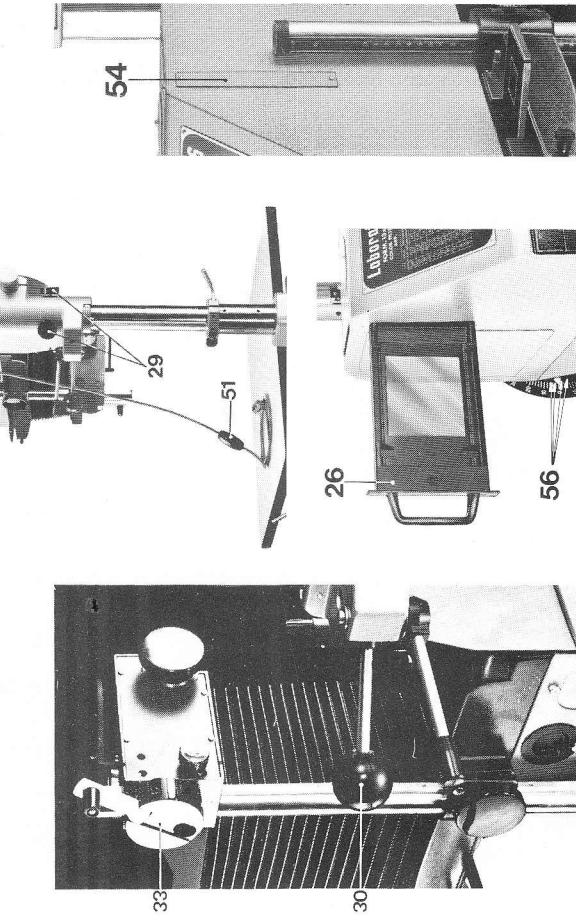
In order to ensure perfect functioning of the servo baseboard adjustment mechanism it should be regularly and thoroughly oiled (about once a fortnight) by the red ring on the top of the supporting arm cover (44).



The condenser combinations tables in this booklet show the minimal and maximal magnification factors obtainable with various lenses. The largest workable format can be arrived at by multiplying the relative negative format by the magnification factor. Moving the enlarger head by means of the ball handle (30) gives the required format; turning the wheel grip (33) will ensure that the format is filled and the picture sharp.

Exposure can be made by means of either the cable switch (51) or a time-clock. To achieve enlargements of more than 24x32 in. (60x80 cm) (the size of the baseboard), use wall-projection turning the enlarger head through 90°.

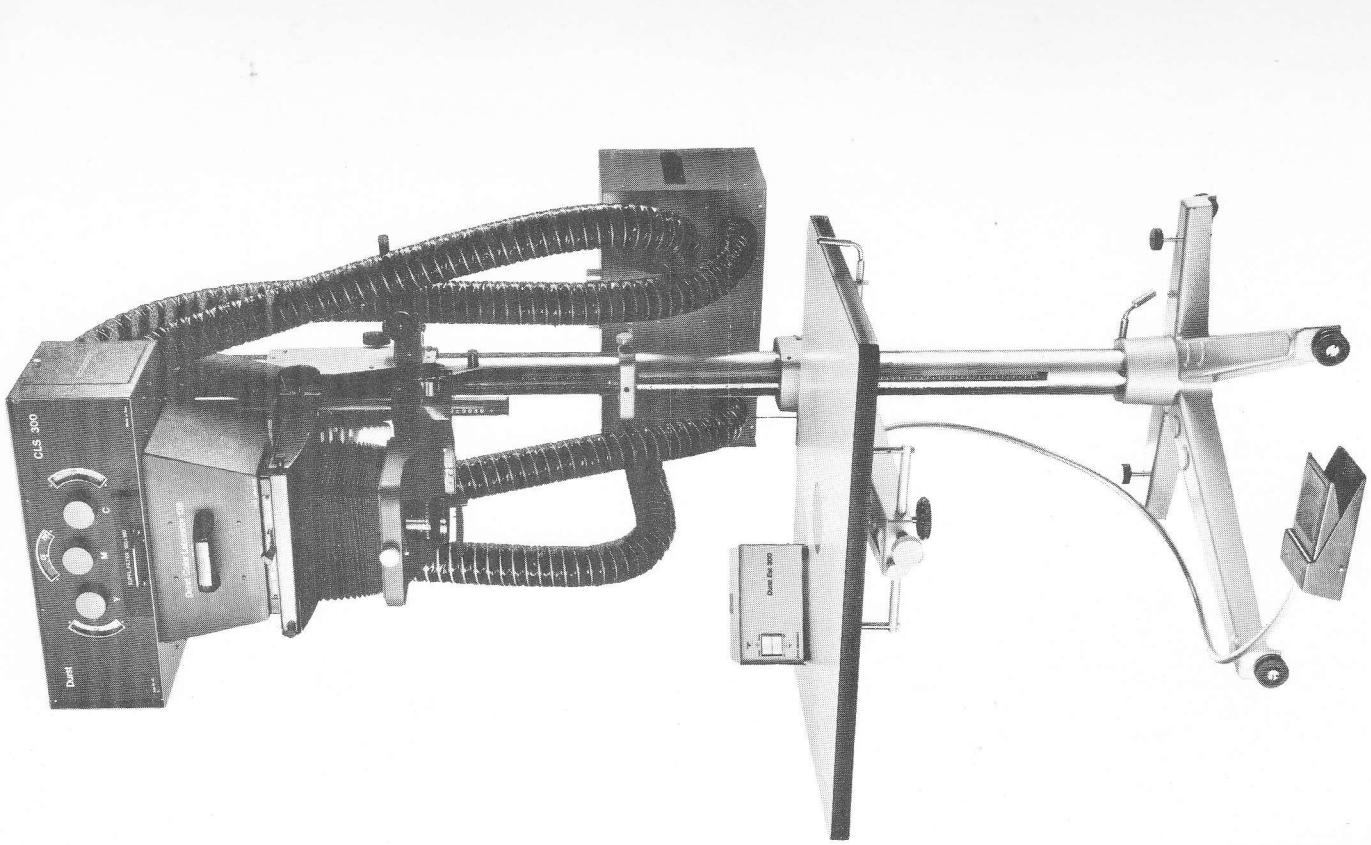
For wall projections in broadside format the head supporting arm LAWIN is supplied to order. It is inserted into the opening provided for this purpose, after loosening the four cross slot screws (56) and removing the enlarger head, and again fastened by means of the four cross slot screws (56). Now mount the enlarger head on LAWIN and secure it with the appropriate clamping grip. Before starting this operation, the enlarger head must be locked in position with clamping grips (29)!



Colour enlargements

The drawer (26) on the left-hand side of the lamp house is intended to take colour filters of format 4 3/4 in. sq. (12x12 cm); a retaining spring keeps them in position in the enlarger head. To insert filters, pull out the drawer (26) till the stop using the handle. By gently tilting the drawer upwards, it may be withdrawn. It may also be inserted on the opposite side; to do this, remove the metal cover (54) and fix the stop screw for the drawer on the upper side and fit the metal cover on the other side of the enlarger head.

For the production of colour enlargements by the additive process, the LATIRAD filter turntable (available separately) is required, while the LAVAKO or LAPLAT adapters are necessary, when the Durst CLS 201 colour head with continuous colour filters or the electronic colour control unit Durst CCU 100 are being used (see "Accessories").



Reductions

For reducing work a lens should be chosen the focal length of which corresponds to the diagonal distance of the reduction required. If, for instance, a 7×9 1/2 in. (18×24 cm) original is to be reduced to $2 1/2 \times 3 1/2$ in. (6.5×9 cm), the required focal length is 105 mm. Possibilities for reduction are calculated by means of the table, multiplying the negative format and the factor. In order to make possible reductions with a 50 mm focal length, the lens (which for enlargements was screwed to the LATUB tube in a recessed position) must be mounted on the flat LAPLA lens board; if this is not done, it will not be possible to bring the lens close enough to the baseboard.

A 7.5 cm lens can only be brought close enough to the baseboard as to permit reductions down to $0.55x$, that is to say, a 9×12 cm negative may be reduced to 9×0.55 by $12 \times 0.55 = 4.95 \times 6.60$ cm.

Distortion control

Generally speaking, the principle holds good for distortion correction, that the three optical planes (negative, lens and projection planes) are so inclined that their lines, if continued, would intersect in a single point; this means, that the projected image will be sharp over its entire surface, with no need to stop down. Distortion control with the LABORATOR 138 S may be carried out by any one of four different methods, each of which gives equally good results.

a) After turning the wheel grip (24), swing the enlarger head around to "L" as required, and by turning the same wheel grip (24) secure it at "F". The extent of tilt of the enlarger head may be read off from the large scale (23).

After loosening and exerting slight pressure on the locking knob (39), bring the lens guide back to the horizontal position.

For tilting the baseboard, previously the clamping lever (34) is to be slightly slackened and the two support bolts (10) are to be folded downwards.

b) Allow the enlarger head to remain in the vertical position, inclining towards each other the lens guide and the baseboard only.

c) Leave the baseboard in the horizontal position, inclining only the enlarger head and the lens guide to one another.

d) Incline towards each other the base baseboard and the enlarger head with lens guide.

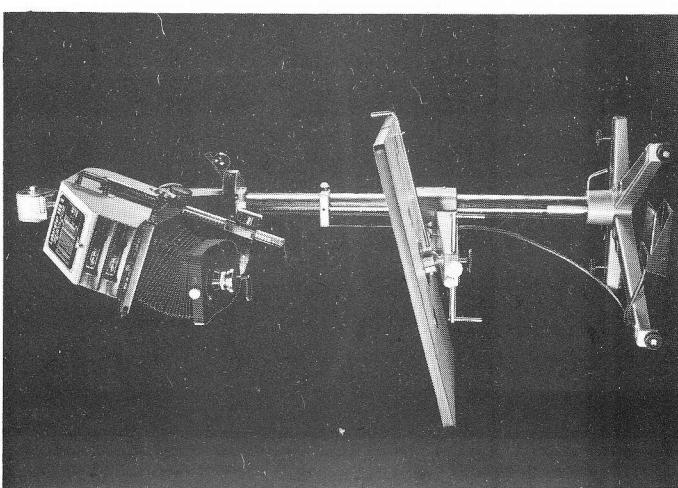
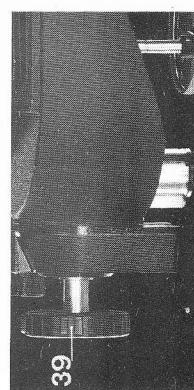
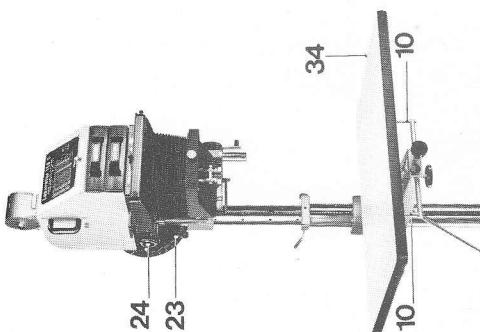
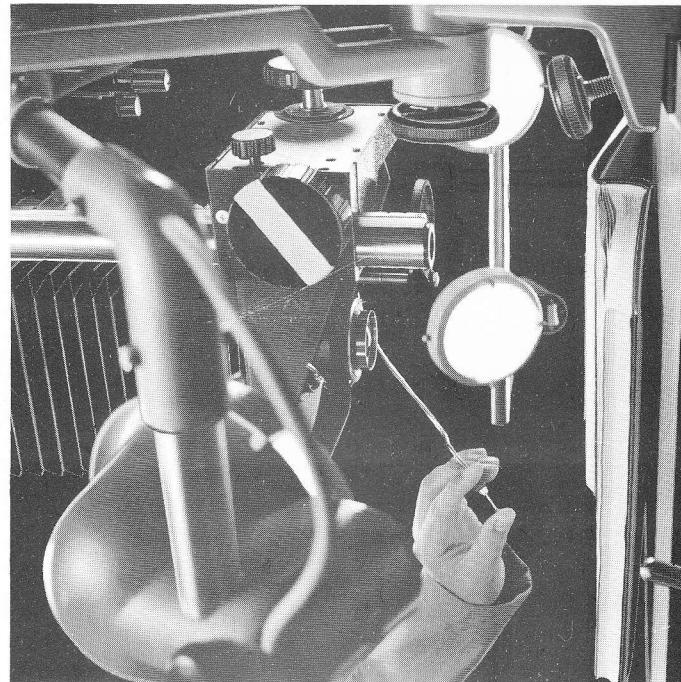
In order to use the LABORATOR 138 S as a copying apparatus, the following special accessories are required:

1. LARKA 138 copying cassette. It consists of a closed frame and a groundglass screen. Plate and sheet film holders as well as reducing and sheet film adapters are available separately for the formats 4.5×6 , 6×5 , 9×12 , 10×15 , 12×16.5 and 13×18 cm ($1 3/4 \times 2 3/8$ ', $2 1/2 \times 3 1/2$ ', $3 1/2 \times 4 3/4$ ', 4×6 ', $4 3/4 \times 6 1/2$ ', 5×7 ').

2. Durst RILU copy light unit consists of two hard-chromium plated steel bars for supporting the lamps which are attached to the back of the baseboard by means of sturdy clamping sleeves. The height of the bars can be regulated, and they can be locked in position by means of a screw. Each bar has two individually circuited lamps, which can be moved backwards and forwards along the bar and swung up and down. Opal lamps of up to 150 W are used in each one. Each lamp is also equipped with a light diffusing screen to ensure even illumination of the baseboard. Special effects can be achieved by using colour or polarization filters instead of the diffusing screen. The lamp bars can be swung back when the lamps are not in use, so that they are not in the way when making enlargements.

The RILU copy light unit can also be used in conjunction with other enlargers or copiers. If it is not possible to attach it directly to the baseboard with the clamping

Copying



sleeves, the connecting pieces supplied with the unit should be screwed onto the baseboard first. Special extension arms RLLA.R can be supplied separately for providing uniform illumination of originals larger than 12x16 in. (30x40 cm) in size

Method of operation when copying

The LARKA 138 copying cassette is pushed into the enlarger head till the stop in place of the normal negative carrier. To insert the cassette, grasp it by the two hinged brackets (a) so that they can be slid past the right-hand wheel grip for operating the format masks.

There is a clamping screw (b) on each of the two brackets, and on the right-hand bracket there is also a locking screw (c) for eliminating lateral play in the copying cassette. After the LARKA 138 has been inserted into the enlarger head, the two brackets (a) are folded downwards so that their jaws engage beneath the ribs on the enlarger head. Then tighten first the locking screw (c) and subsequently the two clamping screws (b).

The size and definition of the image may be adjusted by either of the two following methods:

- By viewing it in the mirror: undo the milled screw (49) holding the lamp house cover and swing the cover upwards, take out the lamp house cover and swing the cover upwards, take out the mirror (50) by means of its handgrip and replace it in its grooves with the silvered surface facing downwards. Then switch on the copy board illumination, whereupon the original and the negative-format grid lines on the groundglass screen (f) will appear reflected in the mirror (50). The size of the image can then be adjusted to fit within the required area by moving the enlarger head up or down the column, whilst the definition is controlled by turning the appropriate handwheel. When viewed from above, the original must appear reflection-free illuminated. When undertaking all forms of copying work the lens should be well stopped-down (preferably to f/11) in order to obtain the best possible definition.

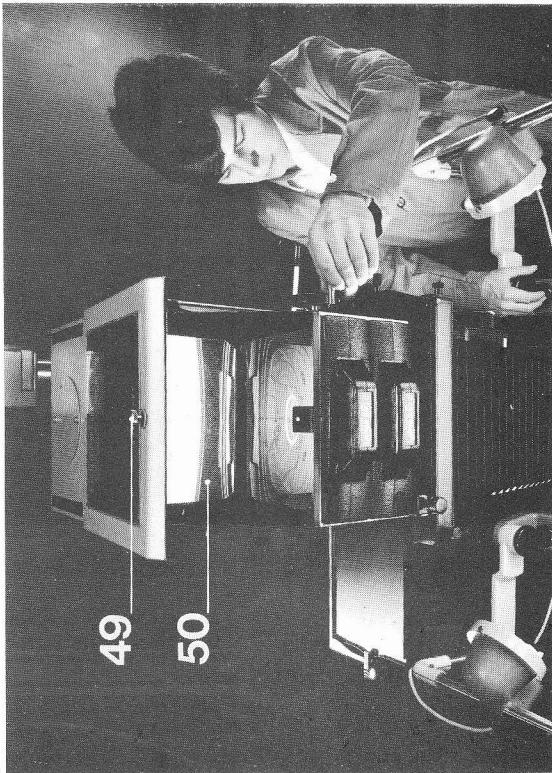
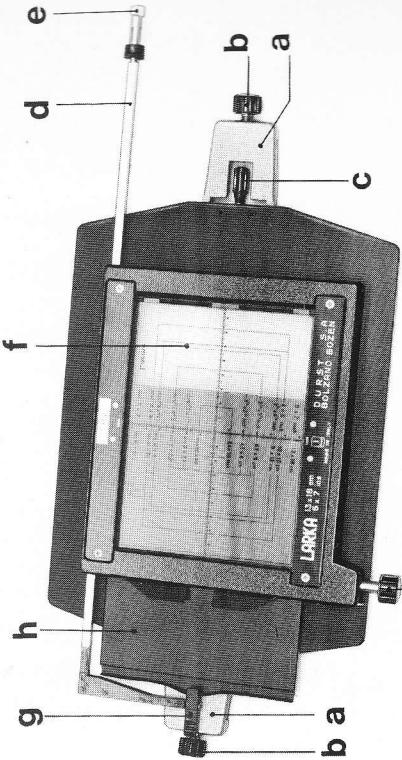
- By projection: switch on the enlarger lamp and project the negative-format grid lines on the groundglass screen (f) on the original to be copied. By adjusting the height of the enlarger head it will be possible to make the area covered by the projected format grid lines coincide with that of the original. Finally focus the image of the grid sharply by turning the appropriate handwheel.

Slide the guide bar (d) right up to its left-hand stop by means of the milled grip (e) and position the cassette (h), loaded with a suitable plate or sheet film, beneath the groundglass screen (f) with the darkslide facing downwards. Then hook the clip (g) of the guide rail (d) on to the plate holder (h) and pull the rail as far as it will travel towards the right, which action will slide the plate holder (h) completely underneath the groundglass screen (f). In order to ensure that the guide rod only is withdrawn when exposing the film or plate, the holder (h) should be locked in position by turning the knurled knob (i) to the right. In order to open the plate holder (h), push the guide rail (d) as far as it will go to the left. By turning the milled grip (e) on the guide rail (d), the opening travel of the darkslide can be adjusted. The film or plate may then be exposed by switching the lighting unit on and off. Finally, close the darkslide once again by pulling the guide rail (d) towards the right.

Rotate the knurled knob (i) in a counter-clockwise direction and then push the guide rail (d) towards the left. The closed plate holder (h) may then be withdrawn from the frame and can be detached by pressing the clip (g) together.

Maintenance

The Durst LABORATOR 138 S has been designed to stand up to intensive use yet demanding a minimum of maintenance. It never fails to give the highest performance even in the most unfavourable conditions. It is necessary to lubricate the column and guide tracks from time to time, after removing the dust impregnated greasy film. In addition lubricate in the red marked holes (44) above the hexagonal nut on the head of the column (right-hand side) and on the supporting arm of the baseboard (left-hand side) as well as alongside the red ring on the upper cover of the supporting arm itself, on the ball handle for the adjustment of the enlarger head and on the lens guide. On no account use heavy oils or greases and lubricants containing acids.



If after long use the enlarger head should tend to slip when the ball handle (30) is operated, remove black cover plate (38) (after undoing the 3 screws) and retension the spiral spring by tightening the now accessible square nut. The highest position of the head is recommended when the enlarger is not in use.

For dusting and cleaning the glasses of the negative carriers, the condensers and the mirror, a chamois leather or soft brush should be used. Antistatic agents are also recommended. Do not allow the opal lamp to burn unnecessarily. Don't forget to keep clean the inferior column and to lubricate the servo baseboard adjustment. A graduated scale makes it easy to reset any previously used setting.

Accessories

**CCU 100
Electronic Colour Control Unit**
The electronic colour control unit Durst CCU 100 comprises of the colour mixing head CLS 100, the measuring head CIC 101, the clamping jaws COINCAD 138 N., the calibration photocell CEL 100 and the control cabinet CCD 100 and is built for fully automatic production of colour prints in all sizes from miniature up to 5x7" (13x18 cm) with directed lighting, or up to 4x5" (10x12.5 cm) with diffused light, or from sections of negatives.

The Durst CLS 201 with built-in blower is a colour mixing head with very high light intensity and stepless filter strips. It can be used with diffused lighting for negative sizes up to 4x5" (10x12.5 cm). The low voltage 24 V/200 W lamp is fed via a transformer. The built-in dichroic filters do not bleach. The scale for the individual filters are stretched in such a way that most accurate settings are possible even for high filter values.

CLS 201 Colour Head

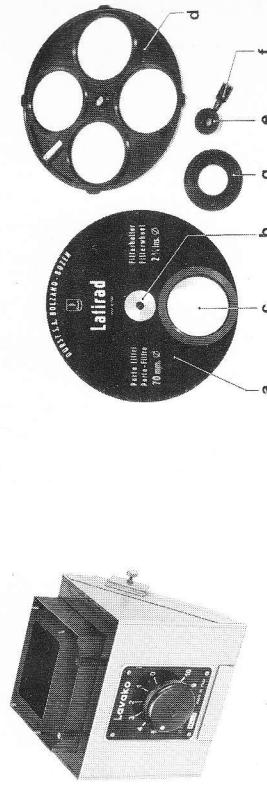
The Durst CCU 100 with condenser lighting, the adapter LAVAKO is required. The colour head is mounted on LAVAKO by means of four screws.

The lid of the housing should be taken off by first removing the hinge pin, then the mirror. Now, place the LAVAKO (to which the colour head has been attached) into the grooves of the housing and secure it with the two lateral knurled screws. When using the colour head, the condenser combinations should be employed as indicated in the table at the end of this booklet. The most suitable illumination in each case is obtained by adjusting, that is to say, turning the LAVAKO knob. A graduated scale makes it easy to reset any previously used setting.

LAVAKO Colour Head Adapter

To use the Durst CCU 100 with condenser lighting, the adapter LAVAKO is required. The colour head is mounted on LAVAKO by means of four screws. The lid of the housing should be taken off by first removing the hinge pin, then the mirror. Now, place the LAVAKO (to which the colour head has been attached) into the grooves of the housing and secure it with the two lateral knurled screws. When using the colour head, the condenser combinations should be employed as indicated in the table at the end of this booklet. The most suitable illumination in each case is obtained by adjusting, that is to say, turning the LAVAKO knob. A graduated scale makes it easy to reset any previously used setting.

LAPLAT Colour Head Adapter



With the aid of the intermediate piece LAPLAT and the mirror shafts LABOX 69 and LABOX 201 the Durst CCU 100 as well as the Durst CLS 201 can be used with diffused lighting for all negative formats up to 4x5" (10x12.5 cm).

LATIRAD Filter Turret

The LATIRAD filter turret can be used for:

1. making colour enlargements by the additive method, using three standard filters;
2. producing colour separations for process work;
3. enlarging on variable-contrast papers.

The LATIRAD consists of a revolving plastic disc with four circular apertures in which filters of 70 mm diameter (and up to 4.2 mm thickness) can be fitted. The filter turret is fitted in place of the red filter, on the same spindle.

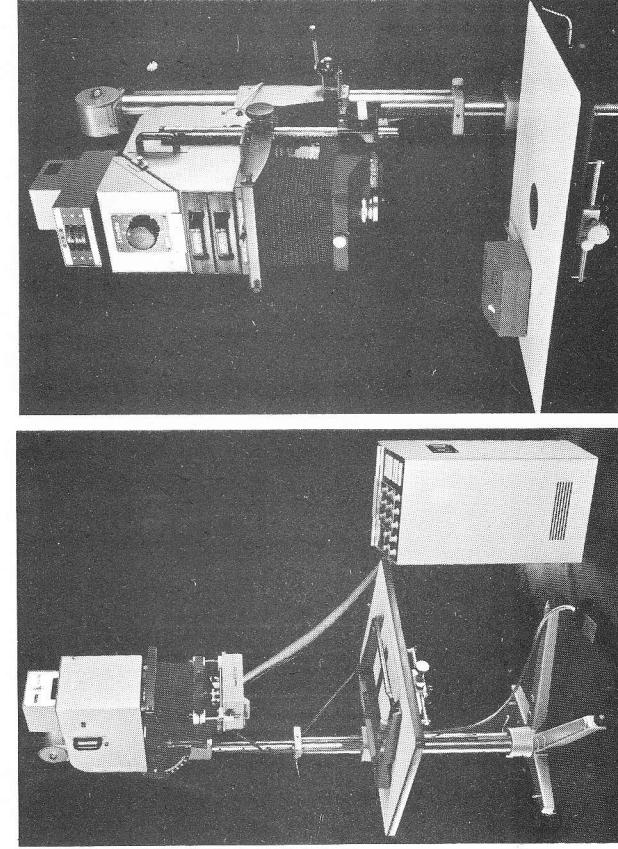
The opening in the upper cover disc has a rubber rim which clasps round the lens actually used. To obtain an absolutely light-tight seal between the lens and the filter turret, three plastic rings are provided, which can be cut out to suit the lenses employed in the enlarger.

One or even two of these turrets can be fitted on the spindle. Very thin gelatine or celluloid filters, if used, should be held in place by means of the three pairs of LARING retaining rings which are provided. A supplementary turret (LAZURAD) is available for using more than three colour filters.

For this additional filter carrier retaining rings LARING are available separately.

OPERATION

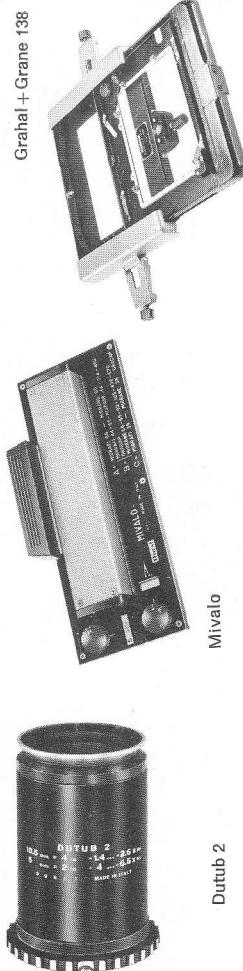
With the lenses already in position, detach the normal red filter by removing the screw at the end of the filter spindle, taking care not to lose the ball catch. Now fit the turret cover (a) by sliding the bush (b) over the filter spindle, so that the inscription is uppermost and the aperture (c) faces the front. The actual turret (d) — with the filters in position — is then slid over the bush and both components are secured by fitting locking ring (e) and tightening the knurled screw (f). The cover (a) and the turret disc (d) should fit closely although not too tightly together; knurled screw (f) must not of course project into the aperture (c). If a perfect light-seal between the filter and the lens is required for particular types of work, then a plastic washer (g) should be laid over the opening in the cover (a).



Cut the washer so that its diameter is slightly longer than the one of the front lens.
Finally push the whole LATIRAD unit up the filter spindle until the washer (g) is
in contact with the lens; it should however still be possible to adjust the lens dia-
phragm.

DUTUB 2 Extension Tube

Adjustable extension tube for reductions and macrophotographs. The lens with
lens board is screwed on DUTUB 2 and so more distant from the negative plane.



**Zircon Point-
Light Source**
Equipment

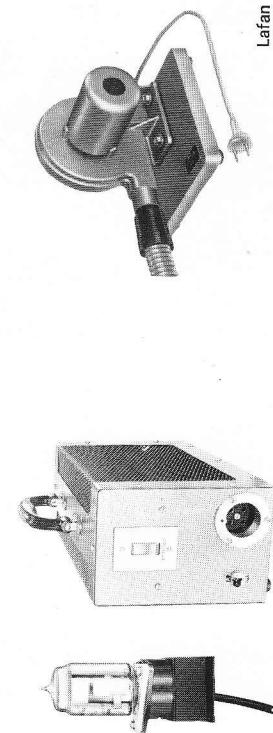
To ensure precision in all photographic operations requiring extreme accuracy of register, the following accessories are available for use in the punch register system: the GRAHAL positioning frame, the GRANE 138 negative carrier for films up to 5x7 in. (13x18 cm), the GRADAP 138 register bar, as well as the precision punch MIVALO.

The GRAHAL positioning frame is inserted in place of the standard NEGA 138 negative carrier and fixed unmovably; it contains the guides for the automatic centering of the GRANE 138 negative carrier. The GRADAP 138 register bar is provided with 2 micro centering pins, on which the film is attached, perforated by means of MIVALO, and kept between 2 glasses, of which the upper one is also available with an anti-Newton coating (GRAGLAS 138 AN).

For the formats 24x36 mm, 4x4 cm, 6x6 cm and 6,5x9 cm (35 mm, 1 1/2" sq., 2 1/2" sq. and 2 1/2 x 3 1/2"), inserts with micro centering pins (code: MIGRAFI) are available for the GRANE 138 negative carrier. The corresponding pairs of perforations are punched with the MIVALO perforator.

The ideal light source for blowing back all sorts of line negatives. It comprises of a generator for 110 - 125 - 145 - 220 - 245 V/50-60 cycles, a special lamp holder and a point light lamp 18 V/100 W. The latter is connected to the mains via the generator.

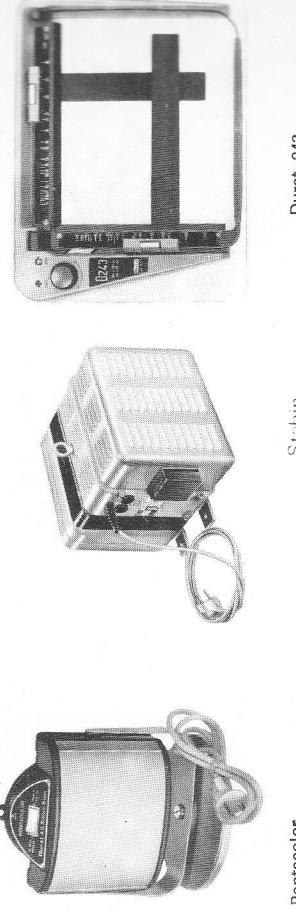
When centering the lamp, its filament webb should be brought to lie parallel to the deflection mirror. When altering the enlargement factor the lamp should also be re-adjusted with grip (45) so as to obtain the best and most uniform illumination. Owing to the inertia of ignition of this lamp and the extremely short exposure times obtained with it, the use of lenses with built-in shutter is recommended.



The LAFAN cooling blower is supplied complete with a reinforced flexible tube for connecting it to the lamp house on the right side of which an aperture (27) is pro-
vided for the purpose. Its output is 2 cubic metres (approx 287 cu. ft.) per minute;
the LAFAN is supplied for use with 220 V/50-cycles single-phase current. Special
models for other voltages can be made on order.

Practical strong plastic dust cover providing against dust and humidity of the dark-
room.

LACUF
Protection Cover



Durst 243

The Durst STABIN voltage stabilizers, available for 500, 1000 and 2000 W are indispensable, particularly for colour work, to avoid faulty exposure due to frequent oscillations of the mains voltage. The Durst STABIN voltage stabilizers attain a stabilization accuracy of + 2% and compensate current fluctuations up to + 10% and - 20%; input voltage 220 V - output voltage 220 V - 50 cycles resp. 110 V - 60 cycles as specified in order.

A useful addition to your darkroom is the darkroom safelight lamp PENTACOLOR. PENTACOLOR It is equipped with five interchangeable colour filters: white, orange, ruby red, olive green and pan green. The filters are fitted in a turntable, so that the type of light required for the darkroom can be instantly adjusted. A heat absorbing filter prevents blistering or warping of the filters. Direct or indirect lighting can be obtained by swivelling the lamp, which can be either attached to the wall or placed on the table.

This masking frame relieves the operator of much manual and mental labour when adjusting the various formats. It consists of a cast frame, which is coated with annealing lacquer and impervious to chemical action, with independently adjustable mask bands. Any required width of edge from 5/32 in. to 1 3/8 in. (4 to 35 mm) can be obtained with the aid of these mask bands and a paper stop, which is adjusted by means of a milled knob.

All paper formats up to 10x12 in. (24x30 cm) can be used. The frame can be easily adapted to inch formats, and can be supplied at extra charge with a base board covered with formica.

Check the performance of your lens with the aid of this test negative available separately; it can also be used as a focusing aid. This test negative is available in the formats 35 mm (24x36 mm), 2 1/2 x 3 1/2" (6.5 x 9 cm) and 5 x 7" (13 x 18 cm).

Test Negative

Lafan

Condenser combinations Durst LABORATOR 138 S equipped with opal lamps
and Componon lenses

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VERTICAL PROJECTION

Lens $f = \frac{\text{mm}}{\text{inch}}$	Negative size $\frac{\text{mm}}{\text{inch}}$	Linear magnification min.	Condenser combi- nations max.	Condenser combi- nations	Upper lower	Opal lamp min. \emptyset mm
240 9 1/2	130 x 180 5 x 7	1.7x	4.4x	240 240	110	
		0.9x	1.7x	240R 240		
210 8 1/2	130 x 180 5 x 7	1.2x	5.3x	240 240		
		0.7x	1.2x	240R 240		
180 7 1/8	100 x 150 4 1/4 x 6 1/2	3.2x	6.6x	240 200		
		0.5x	3.2x	240 240		
150 6	100 x 125 4 x 5	1.0x	8.5x	240 200	90	
		0.4x	1.0x	240 240		
135 5 1/4	85 x 100 3 1/4 x 4 1/4	1.0x	9.5x	240 160		
		0.4x	1.0x	240 240		
105 4 1/8	65 x 90 2 1/2 x 3 1/2	1.6x	11.8x	240 130		
		0.3x	1.6x	240 200		
80 3 1/4	60 x 60 2 1/4 x 2 1/4	0.6x	17.5x	200 130		
60 2 3/8	32 x 45 40 x 40 1 1/2 x 1 1/2	2.9x	23.5x	130 85		
50 2	24 x 36 35 mm	3.8x	28.5x	24 x 36 35 mm	102.0x	65

HORIZONTAL PROJECTION

Lens $f = \frac{\text{mm}}{\text{inch}}$	Negative size $\frac{\text{mm}}{\text{inch}}$	Linear size $\frac{\text{mm}}{\text{inch}}$	Linear magnification min.	Condenser combi- nations	Upper lower	Opal lamp min. \emptyset mm
240 9 1/2	130 x 180 5 x 7	130 x 180 5 x 7	4.4x	21.0x	240 240	110
		130 x 180 5 x 7	5.3x	21.0x	240H 240H	
210 8 1/2	130 x 180 5 x 7	100 x 150 4 1/4 x 6 1/2	6.6x	26.0x	240 200	
		100 x 125 4 x 5	8.5x	30.0x	240 200	
180 7 1/8	100 x 150 4 1/4 x 6 1/2	85 x 100 3 1/4 x 4 1/4	9.5x	39.0x	200 160	90
		65 x 90 2 1/2 x 3 1/2	11.8x	44.0x	200 130	
150 6	100 x 125 4 x 5	60 x 60 2 1/4 x 2 1/4	17.5x	65.0x	160 130	
		60 x 60 2 1/4 x 2 1/4	18.0x	65.0x	160 130	
135 5 1/4	85 x 100 3 1/4 x 4 1/4	32 x 45 40 x 40 1 1/2 x 1 1/2	23.5x	92.0x	130 85	65
		24 x 36 35 mm	28.5x	102.0x	130 85	

Condenser combinations Durst LABORATOR 138 S equipped with opal lamps
and Rodagon lenses

Condenser combinations Durst LABORATOR 138 S equipped with
opal lamps and Rodagon lenses

VERTICAL PROJECTION

Lens $f = \frac{\text{mm}}{\text{inch}}$	Negative size $\frac{\text{mm}}{\text{inch}}$	Linear magnification factors min.	Condenser combi- nations max.	Upper tower	Opal lamp min. $\emptyset \text{ mm}$
180 7 1/8	130 x 180 5 x 7	3.0x	6.3x		110
		1:0x	3.0x		
		0.6x	1.0x		
150 6	100 x 150 4 1/4 x 6 1/2	0.5x	8.2x		
135 5 1/4	100 x 125 4 x 5	0.9x	9.3x		
		0.5x	0.9x		
105 4 1/8	85 x 100 3 1/4 x 4 1/4	0.3x	12.6x		
80 3 1/4	65 x 90 2 1/2 x 3 1/2	0.8x	17.0x		
60 2 3/8	60 x 60 2 1/4 x 2 1/4	2.4x	23.3x		
50 2	32 x 45 40 x 40 1 1/2 x 1 1/2	3.5x	28.3x		
					90

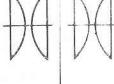
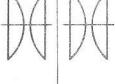
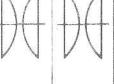
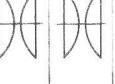
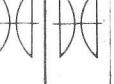
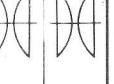
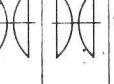
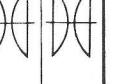
HORIZONTAL PROJECTION

Lens $f = \frac{\text{mm}}{\text{inch}}$	Negative size $\frac{\text{mm}}{\text{inch}}$	Condenser combi- nations	Linear size $\frac{\text{mm}}{\text{inch}}$	magnification factor max.	Condenser combinations
180	130 x 180	240	130 x 180	6.3x	20.6x
7 1/8	5 x 7	240H	5 x 7		240H
150	100 x 150	4 1/4 x 6 1/2	6.8x	25.5x	240H
6					200
135	100 x 125	4 x 5	7.6x	30.5x	240H
5 1/4					200
105	85 x 100	3 1/4 x 4 1/4	10.3x	39.0x	200
4 1/8					160
80	65 x 90	2 1/2 x 3 1/2	17.5x	44.3x	160
3 1/4					130
60	60 x 60	2 1/4 x 2 1/4	23.0x	67.8x	160
2 3/8					110
50	32 x 45	40 x 40	28.0x	93.4x	130
2	1 1/2 x 1 1/2				110

Condenser combinations Durst LABORATOR 138 S equipped with point-light
and Compontor or Rodagon lenses

VERTICAL PROJECTION

			80 3 1/4	60 x 60 2 1/4 x 2 1/4	3.6x	17.5x	160T
					1.3x	3.6x	110T
					0.8x	1.3x	200T
					0.6x	0.8x	160T
			60 2 3/8	32 x 45 40 x 40 1 1/2 x 1 1/2	4.0x	23.5x	240T
					2.9x	4.0x	130T
			50 2	24 x 36 35 mm	3.8x	28.5x	85T
							130T
							85T

Lens mm. f = inch	Negative size mm. inch	Linear magnification factors min. max.	Condenser combi- nation	Condenser upper- lower
240 9 1/2	130 x 180 5 x 7	2.2x 0.9x	240PT 240T 240PT 240PT	 
210 8 1/2	130 x 180 5 x 7	2.1x 0.7x	240PT 240T 240PT 240PT	 
180 7 1/8	100 x 150 4 1/4 x 6 1/2	1.2x 0.5x	240T 240T 240T	 
150 6	100 x 125 4 x 5	2.5x 0.8x 0.4x	240T 240T 240T	 
135 5 1/4	85 x 100 3 1/4 x 4 1/4	1.6x 0.7x 0.4x	240T 240T 240T	 
105 4 1/8	65 x 90 2 1/2 x 3 1/2	2.5x 0.9x 0.4x 0.3x	240T 240T 240T 240T	

**Condenser combinations Durst LABORATOR 138 S equipped with point-light
and Componon or Rodagon lenses**

**Condenser combinations Durst LABORATOR 138 S equipped with Durst CCU 100
and Componon lenses**

HORIZONTAL PROJECTION

Lens $f = \frac{\text{mm}}{\text{inch}}$	Negative size $\frac{\text{mm}}{\text{inch}}$	Linear magnification factors min.	Condenser combi- nations	Upper lower
210 8 1/2	130 x 180 5 x 7	4.4x	22.4x	
180 7 1/8	100 x 150 ^{**} 4 1/4 x 6 1/2	5.3x	8.2x	
150 6	100 x 125 4 x 5	8.2x	20.5x	
135 5 1/4	85 x 100 3 1/4 x 4 1/4	6.6x	13.5x	
105 4 1/8	65 x 90 2 1/2 x 3 1/2	11.8x	47.0x	
80 3 1/4	60 x 60 2 1/4 x 2 1/4	17.5x	75.0x	
60 2 3/8	32 x 45 1 1/2 x 1 1/2	23.5x	104.0x	
50 2	24 x 36 35 mm	28.5x	116.0x	

Lens $f = \frac{\text{mm}}{\text{inch}}$	Negative size $\frac{\text{mm}}{\text{inch}}$	Linear magnification min.	Condenser combinations horizontal projection	Condenser vertical projection
240 9 1/2	130 x 180 5 x 7	1.7x	4.3x	$\frac{240}{240}$
210 8 1/2	130 x 180 5 x 7	0.9x	1.7x	$\frac{240}{240R}$
180 7 1/8	100 x 150 4 1/4 x 6 1/2	4.3x	22.0x	$\frac{240}{240}$
150 6	100 x 125 4 x 5	1.7x		$\frac{240}{240R}$
135 5 1/4	85 x 100 3 1/4 x 4 1/4	5.2x	20.8x	$\frac{240}{240}$
105 4 1/8	65 x 90 2 1/2 x 3 1/2	3.5x	6.4x	$\frac{240P}{200}$
80 3 1/4	60 x 60 2 1/4 x 2 1/4	0.6x	3.5x	$\frac{240}{240}$
60 2 3/8	32 x 45 1 1/2 x 1 1/2	6.4x	26.0x	$\frac{240}{200}$
50 2	24 x 36 35 mm	150 6	1.5x	$\frac{240}{200}$
105 4 1/8	85 x 100 3 1/4 x 4 1/4	0.4x	1.5x	$\frac{240}{240}$
135 5 1/4	85 x 100 3 1/4 x 4 1/4	8.2x	32.0x	$\frac{240}{200}$
105 4 1/8	65 x 90 2 1/2 x 3 1/2	9.4x	200 160	$\frac{200}{160}$
135 5 1/4	85 x 100 3 1/4 x 4 1/4	0.4x	4.7x	$\frac{240}{200}$
105 4 1/8	65 x 90 2 1/2 x 3 1/2	9.4x	42.0x	$\frac{200}{160}$
135 5 1/4	85 x 100 3 1/4 x 4 1/4	0.3x	1.2x	$\frac{200}{160}$
105 4 1/8	65 x 90 2 1/2 x 3 1/2	12.3x	49.0x	$\frac{200}{130}$

Condenser combinations Durst LABORATOR 138 S equipped with Durst CCU 100
and Rodagon lenses

80 3 1/8	60 x 60 2 1/4 x 2 1/4	1.8x 0.8x	17.2x 1.8x	<u>160</u> <u>130</u>
60 2 3/8	32 x 45 40 x 40 1 1/2 x 1 1/2	17.2x 1.5x 23.4x	51.0x <u>130</u> 97.0x	<u>160</u> <u>130</u> <u>85</u>
50 2	24 x 36 35 mm	2.0x 28.9x	28.9x 118.0x	<u>110</u> <u>85</u>

		Lens f = <u>mm</u> <u>inch</u>	Negative size <u>mm</u> <u>inch</u>	Linear magnification min.	factors max.	Condenser vertical projection	Condenser combinations horizontal projection
		240 9 1/2	130 x 180 5 x 7	1.5x	4.5x	<u>240</u> <u>240</u>	
				0.8x	1.5x	<u>240</u> <u>240R</u>	
				4.5x	22.0x	<u>240</u> <u>240</u>	
		210 8 1/2	130 x 180 5 x 7	1.2x	5.4x	<u>240</u> <u>240</u>	
				0.7x	1.5x	<u>240</u> <u>240P</u>	
				6.5x	21.0x	<u>240H</u> <u>240H</u>	
		180 7 1/8	100 x 150 4 1/4 x 6 1/2	0.6x	6.4x	<u>240</u> <u>240</u>	
				6.4x	26.0x	<u>240</u> <u>200</u>	
		150 6	100 x 125 4 x 5	1.1x	8.2x	<u>240</u> <u>200</u>	
				0.4x	1.1x	<u>240</u> <u>240</u>	
				8.2x	31.5x	<u>240</u> <u>200</u>	
		135 5 1/4	85 x 100 3 1/4 x 4 1/4	3.0x	9.4x	<u>200</u> <u>160</u>	
				0.4x	3.5x	<u>240</u> <u>200</u>	
				9.4x	42.0x	<u>200</u> <u>160</u>	
		105 4 1/8	65 x 90 2 1/2 x 3 1/2	2.2x	12.6x	<u>200</u> <u>160</u>	
				0.3x	2.2x	<u>240</u> <u>200</u>	
				12.6x	46.6x	<u>200</u> <u>130</u>	

80 3 1/8	60 x 60 2 1/4 x 2 1/4	1.8x	17.6x	<u>160</u> 130	
		0.8x	1.8x	<u>200</u> 160	
		17.6x	50.5x		<u>160</u> 130
60 2 3/8	32 x 45 40 x 40 1 1/2 x 1 1/2	1.7x	23.8x	<u>130</u> 85	
		23.8x	84.0x		<u>130</u> 85
50 2	24 x 36 35 mm	2.1x	28.2x	<u>110</u> 85	
		28.2x	118.0x		<u>110</u> 85