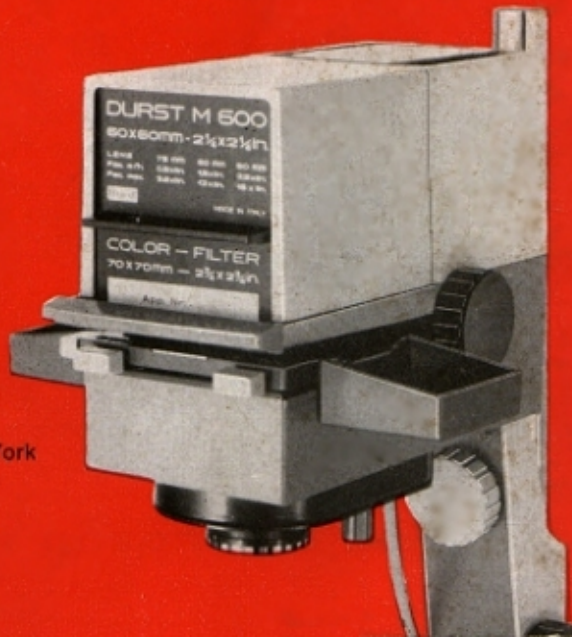


# Durst M 600

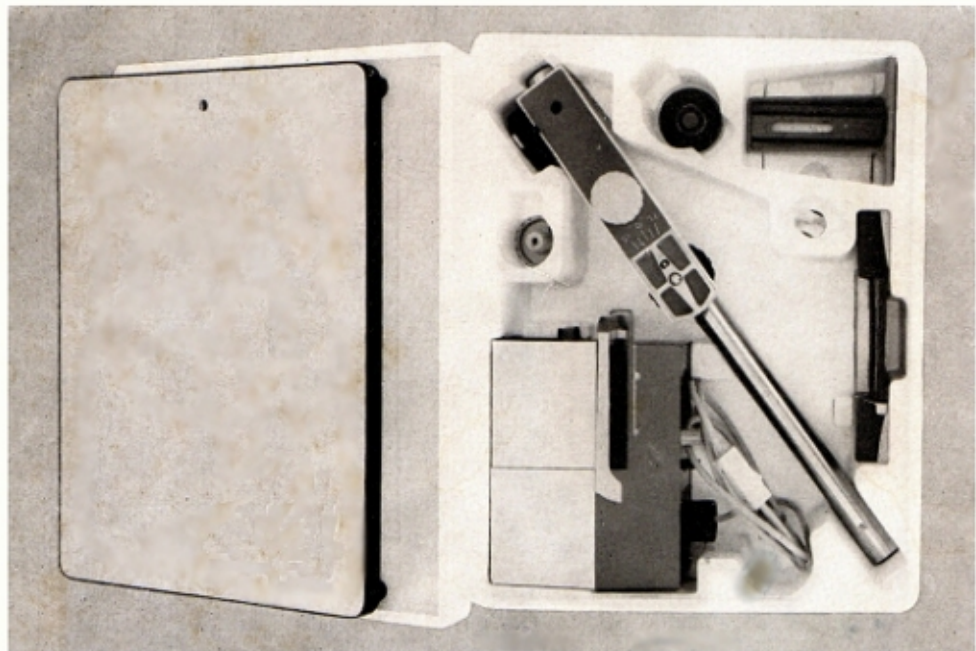
A photographic enlarger  
and copying unit with new,  
built-in focus indicator



Durst Inc.  
Phototechnical Equipment  
Bolzano - Hamburg - New York

## Durst

Registered Trade Mark



**You've chosen wisely!**

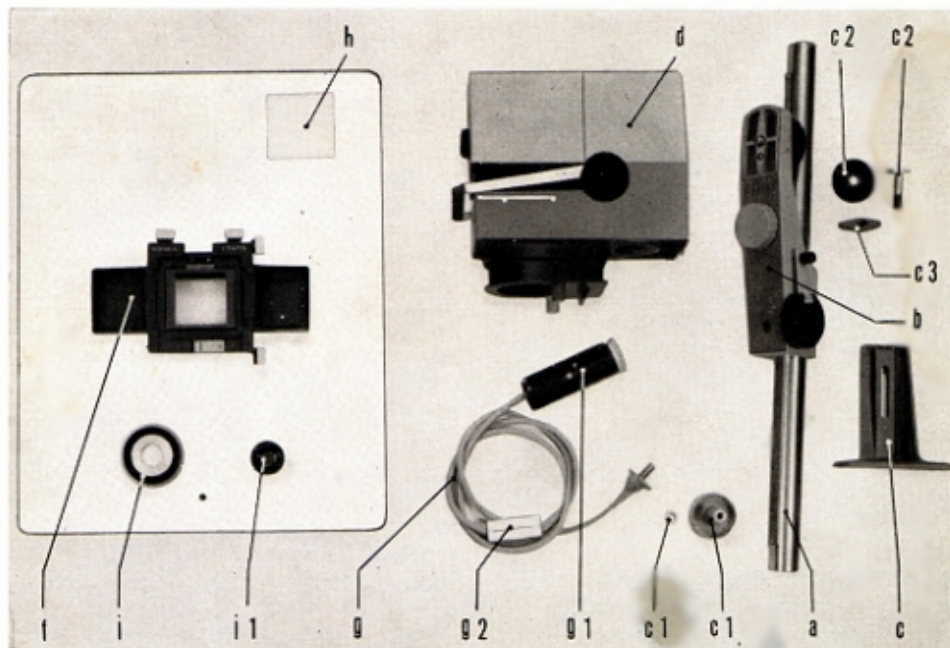
**A photographic enlarger and  
copying camera of the highest  
precision featuring the  
Durst built-in focusing aid**

In selecting the DURST M 600, you have chosen a product of the world's largest manufacturer of precision photo enlarging equipment. You can look forward to many years of troublefree enjoyment... and a growing sense of skill and accomplishment. This is a by-product of the ease of operation and professional precision of this remarkable enlarger.

As the scope of your interests increases... as you progress to complex and artistic printing techniques... as you make your first forays into colour printing, you will come to appreciate the versatility of your DURST M 600 more and more. It is fully equipped for the most intricate darkroom techniques. Yet, it is so simple to use that you can expect excellent results with your very first printing attempt.

This manual will take you, step-by-step, through the processes of assembling and using your DURST enlarger. Read it carefully. Then, follow it meticulously until you are thoroughly familiar with all parts and functions of your enlarger. In case you have never enlarged so far please consult likewise the brief instruction for enlarging at the end of this booklet. Preserve it as a constant reference, and as a handy guide to darkroom procedures.

# How to unpack your DURST M 600



Your enlarger comes to you carefully packed in a close-fitting expanded-plastic container. After opening the container, remove the component parts — **when removing the enlarger head, make sure that the condenser housing does not slide out of its guide. Hold it with the lens opening downwards** — wipe them over with a clean cloth and lay them on a large table or on the floor. Check them against the following list to make sure that no parts are missing (in the unlikely event of any component having been left out, inform your dealer immediately).

Column (a) with supporting arm (b) and socket (c);

Enlarger head (d);

Baseboard (e);

Negative carrier (f);

Cable (g);

Lampholder (g1);

Opal glass (h);

Bolt with washer (c2) and quick-locking lever (c3);

Lens panel (i) and lens (if ordered) (i1).

## Component parts and equipment of your DURST M 600

### a) Column:

- a1) Track
- a2) Top travel limiter

### b) Supporting arm:

- b1) Locking knob for enlarger head
- b2) Extension arm
- b3) Locking knob for extension arm
- b4) Tilt indicator
- b5) Wheel with crank handle for vertical adjustment
- b6) 4 friction drive adjustment screws

### c) Socket:

- c1) Column-locking knob
- c2) Bolt with washer
- c3) Quick-locking lever

### d) Enlarger head:

- d1) Lamphouse
- d2) Lamphouse-cap
- d3) Condenser housing
- d4) Filter compartment slide
- d5) Filter drawer

- d6) Lever for opening negative carrier
- d7) Focusing wheel
- d8) Telescopic lens extension
- d9) Quick-locking lens holder
- d10) Wheel for focus indicator diaphragm
- d11) Red-filter knob
- d12) Guide frame for opal glass

### e) Baseboard

### f) Negative carrier:

- f1) Glass plate
- f2) Clamping bar of glass plate
- f3) Film cups
- f4) Front knobs of format masks
- f5) Lateral knobs of format masks
- f6) Focus indicator mark
- f7) Retaining springs with locating pins
- f8) Regulating threaded pin for focus indicator mark

### g) Cable:

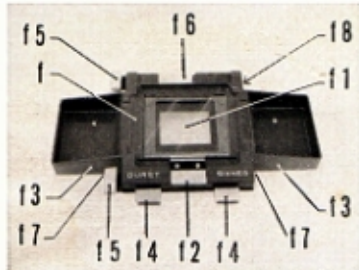
- g1) Lampholder
- g2) Cable switch

### h) Opal glass (diffusing screen)

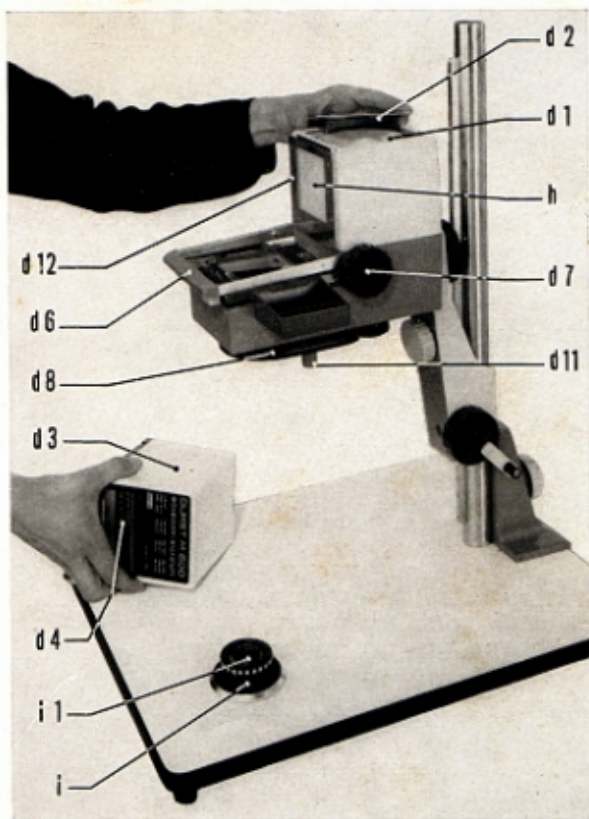
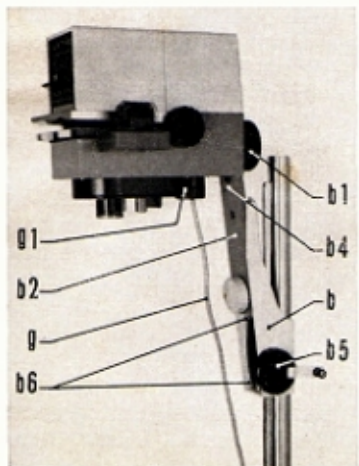
### i) Lens board

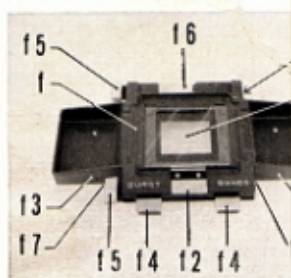
- i1) Lens



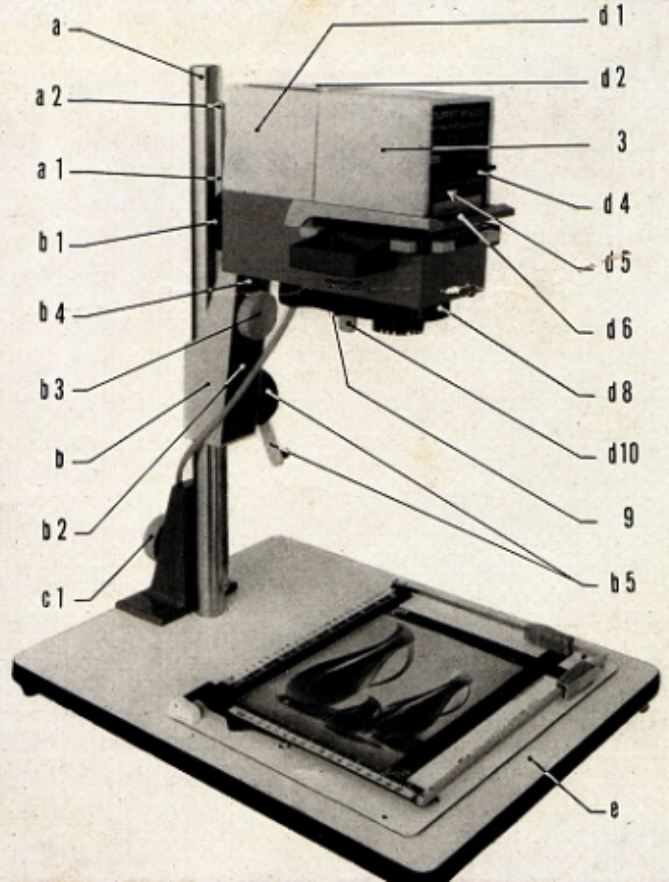
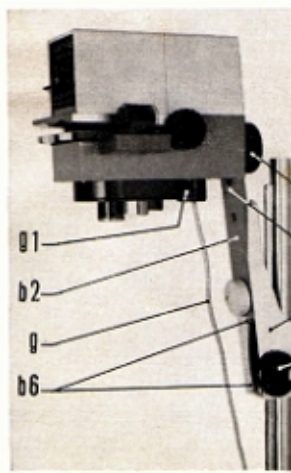


SIXNEG negative carrier





SIXNEG negative carrier





## How to assemble your CURST M 600

### You need no tool at all for that!

1. Place the baseboard (e) in front of you with the rubber feet facing downwards. Position the socket over the hole so that the reinforcing fins face outwards. Insert the fixing bolt (c2) from above through the holes in the socket and baseboard. Place the washer over the bolt (c2) underneath the baseboard. Then place the quick-locking lever (c3) in position and tighten securely. Make sure that the edge of the socket is parallel with the edge of the baseboard to ensure that the centre of the projected image coincides with the centre of the baseboard.

2. Insert the threaded bolt of column (a) through the slot in the socket (c), insert the washer over the threaded bolt, place the locking knob (c1) in position and fix the column (a) at the required height.

3. Fix the enlarger head (d) on the supporting arm (b), by introducing the shaft of the locking knob (b1) into the hole in the enlarger head. The click-stop engages

the groove on the supporting arm close underneath the hole. Tighten the locking knob (b1).

4. If the lens (i1) is not yet mounted, thread it as far as it will go into the lens board. Insert the lens board with the lens into the telescopic lens extension tube (d8), with the stop values at the front where they are clearly visible. To insert the lens board, press the knob of the quick locking device (d9) toward the rear.

5. Introduce the lamp holder (g1) with the cable (g2) into the lamphouse (d1) from below. Remove the lamphouse-cap (d2) and screw a 60-150 watt opal bulb into the bulb socket. Then replace the lamphouse-cap (d2). Normal clear glass bulbs may also be used in place of the opal bulbs; in this case the opal screen (h) must be fitted in the guide frame. The condenser housing (d3) must be removed first. Do not forget to remove the opal screen if the clear glass bulb is replaced by an opal bulb.

6. Withdraw the condenser housing (d3) and clean the surface of the condenser thoroughly. Also dust the lens carefully. It is advisable to read the instructions

given in the section « How to take care of your DURST enlarger ».

7. Lift the opening strap (d6) and insert the negative carrier (f)-with the front

knobs of the format masks (f4) facing you- as far as it will go in the enlarger head (d). Then release the opening strap (d6).



## How to dismantle your DURST M 600

Your new DURST enlarger is extremely compact: it can be assembled or dismantled in a few moments and packed away within the most confined spaces. For dismantling the enlarger, it is only necessary to undo the column-locking knob (c1) and pull the column (a) out of its socket. If you wish to pack the apparatus away into an even smaller space, the enlarger head can be detached from its supporting arm (b) by undoing the arm-locking knob (b1). To reduce the enlarger to still more compact dimensions, the lower part of the negative carrier (f) can be removed from the head (d) and the socket (c) unscrewed from the baseboard. The best method of storing your DURST M 600 is in the expanded-plastic container in which it was delivered from the factory.

## **How to centre the lamp to ensure even illumination**

Since your DURST M 600 is provided with a reflex illumination system, it is possible to move the lampholder (g1) up and down in its guides, or to rotate it, in order to obtain absolutely even illumination.

Open the format masks of the negative carrier (f) by moving their knobs (f4/5), insert the negative carrier as far as it will go in the enlarger head (d), holding the opening strap (d6) fully upwards.

Open the lens diaphragm fully and switch on the enlarger lamp. Lay a sheet of white paper or grey cardboard (14×14 inches = 35×35 cm in size) on the baseboard and move the lampholder until the rectangular area of illumination appears perfectly uniform in intensity.

If you prefer to use an exposure meter for checking the uniformity of illumination, proceed as follows:

**Using an incident-light meter:** Hold the exposure meter with the photo-cell facing straight upwards and move it over the entire illuminated area. If the pointer reveals any deflection, move the lamp-

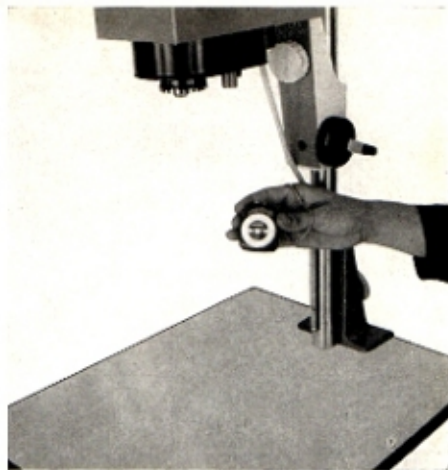
holder up or down until the pointer ceases to deflect.

**Using a reflected-light meter:** Lay a sheet of white paper or grey cardboard (14×14 inches = 35×35 cm in size) in the centre of the baseboard. Hold the exposure meter about 6 inches above the baseboard, taking care that the shadow of the meter does not fall within the area being measured. Move the meter over the entire illuminated area and note any deflection of the pointer. If necessary centre the lamp as described above.

**Your DURST M 600 is now completely assembled and ready for immediate use**



Incident-light meter



Reflected-light meter

## How to insert your negatives

The **negative carrier** of the DURST M 600 is of a completely new design, providing unprecedented ease of handling. The actual condenser housing (d3) acts as the upper pressure plate. The handy opening lever (d6) allows the condenser hous-

ing to be raised sufficiently for inserting the negatives; the downward return movement of the condensers is absolutely vertical and cannot displace the film. The mounting for the horizontal condenser is adjusted in relation to the negative carrier to ensure perfect light tightness. The negative carrier is also equipped with built-in format masks, which can be



adjusted individually by the regulating knobs (14/5): fully open, the format masks frame precisely a 2 1/4" x 2 1/4" (6x6 cm) negative, fully closed they



frame a film size of 3/4x3/4 in. (20x20 mm). They may, of course, be set anywhere in between for other film sizes and to crop your negative at the best possible place: right in the negative carrier.

As with all projection lenses, the sharpest part of the field of your enlarging lens is at its center. That's why it's always best to shift the portion of the negative that is being enlarged to the center of the negative carrier. If you're enlarging a corner of the negative, and the negative itself cannot be shifted far enough in the carrier, the entire negative carrier may be moved out to its middle position in the enlarger's head, without affecting the accuracy of the negative plane and lens alignment in the slightest.

**Inserting strip negatives:** Without taking the negative carrier out of the enlarger head, lift the opening strap (d6) and slide the film in from the front: the dull emulsion side must face downwards. When the opening lever is released, the negative will be held firmly in position. To move the film raise the lever once again: this will release the pressure on the film and allow it to be advanced without danger of scratching.



## Glassless enlarging

Your DURST M 600 may be used for glassless enlarging by simply removing the glass pressure plate in the negative carrier. This practice is only recommended, however, for negatives 35 mm and smaller, since larger negatives may buckle, even under the moderate heat of the M 600's light source.

It is best, when employing glassless enlarging techniques, to leave the enlarger's lamp on only for the time necessary to focus and to actually make the exposure. This will help to avoid heat build-up at the negative plane.

If formats larger than 35 mm are to be enlarged by the glassless method, the use of a DURST SIXCALO heat absorbing filter is recommended. This is easily and instantly inserted in the filter drawer (d5).

SIXMA



Glassless masks are available for the following sizes:

- 8 mm Cine (SIXMA 8)
- Super 8 mm Cine (SIXMA 8 S)
- 9,5 mm Cine (SIXMA 9)
- 16 mm Cine (SIXMA 16)
- 8×11 mm (SIXMA 11)
- 10×10 mm (SIXMA 10)
- 10×14 mm (SIXMA 14)
- 12×17 mm (SIXMA 17 N)
- 12×17 mm Rollei (SIXMA 17 R)
- 18×24 mm (SIXMA 18)
- 24×24 mm (SIXMA 24)
- 26×26 mm (SIXMA 26)
- 24×36 mm (SIXMA 35)
- 4×4 cm (SIXMA 44)
- 6×6 cm (SIXMA 66).

The glassless masks SIXMA 35 as well as SIXMA 24 and SIXMA 18 are fitted with a leaf spring to clamp single negatives in position.

In order to prevent the formation of Newton's rings when using SIXMA format masks, the respective counter mask SIXNEMA must be clamped to the bottom of the condenser. SIXNEMA counter masks are available for: SIXMA 35, SIXMA 26, SIXMA 24, SIXMA 18, SIXMA 17 R and SIXMA 17 N.

## How to clean your negatives

If there are any specks of dust or fingerprints on your negatives, these will be magnified to an obtrusive size in your enlargements. It is therefore advisable always to make a practice of cleaning your negatives before placing them in the negative carrier.

Although it is seldom practicable to remove every foreign body from the negative, as much dust as possible should be removed by dusting both sides with a soft camel's-hair brush (or one of the special negative or anti-static brushes available from photographic dealers). Fingerprints may be eliminated by wiping gently with a fluff-free cloth. Do not rub your negatives vigorously, however, since this may scratch the gelatine emulsion coating. Obstinate foreign bodies may be removed with any good film-cleaning preparation: use only one or two drops on a piece of soft, fluff-free cloth. Make certain that the negative is completely dry before inserting it in the carrier.

## Size of enlargement

The size of the desired enlargement is selected by adjusting the enlarger head.

To move the head up or down the column, rotate the wheel (b5); the higher the head is on the column, the larger will be the image projected onto the baseboard. For rapid adjustment the crank handle can be swung out to regulate the height of the enlarger head quickly. For final adjustment it is sufficient to turn the wheel.

## Focusing

Focusing is effected by rotating the knob (d7). The focusing mechanism is designed so that the lens is always correctly positioned in relation to the reflex illumination system.

Place your enlarging easel on the baseboard and insert a sheet of white paper in the easel of exactly the same size and thickness as the enlarging paper which you intend to use (the back of an unwanted enlargement will serve perfectly).

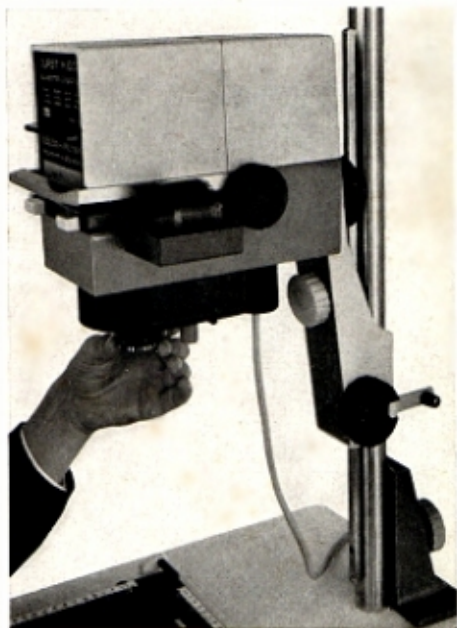
Open the lens diaphragm fully and switch on the enlarger lamp. Adjust the enlarger head on the column until the projected image just fills the paper area. Then focus the image sharply. Focusing will

alter the size of the projected image. Compose and crop the projected image, adjusting the format masks by rotating the knobs (f4/5) on the negative carrier until the picture is precisely as you want it to appear in the finished print. Move the enlarger head up and down the column until the magnified image just fills the paper area in the easel. Re-focus.

The repeated focus adjustment may well alter the size of the projected image slightly. For this reason the enlarger head should be adjusted on the column until the image appears in exactly the right size. Now move the easel on the baseboard, until the projected image coincides accurately with the particular paper size. Final focusing must be carried out before exposing. The new, patented focus indicator of your DURST M 600 is very useful at this stage. This indicator consists of a diaphragm, the opening of which is covered half by a red filter and half by a green filter. This diaphragm can be swivelled by means of the knob (d10) into the path of the beam of light. An additional component of the focus indicator is the focus indicator mark (f6) in the negative carrier. When checking the focus, this indicator mark must also be brought

into the path of the beam. For this purpose pull the negative carrier out of the enlarger head as far as the front click-

Diaphragm setting



stop, at the same time lifting the opening strap (d6).

The knobs of the focus indicator dia-

Focus indicator



phragm (d10) as well as that of the red filter (d11) can be adjusted vertically according to the focal length of the lens which is used. We recommend you to carry out this adjustment with the diaphragm of the focus indicator swivelled into the path of the beam of light as well as with the red filter swivelled out of the path of the light. For lenses with focal lengths between 28 and 35 mm the knobs are fully pushed in, for 50-60 mm lenses brought into the intermediate position, and for 75-80 mm lenses fully pushed out. When adjusting knob (d10), make sure that the red filter is swivelled out of the path of the light by means of the knob (d11).

The three fields of the focus indicator mark will now be seen on the plane of projection. Until the image is sharply focused, these three fields will have outlines of red and green colouring. Rotate the focusing knob (d7) until the colours disappear and you see the three fields completely colourless with sharp outlines. You can now be sure that the projected image of the negative will also be focused perfectly.

Push the negative carrier back to the



rear-most click-stop in the enlarger head. If a new glass plate (f1) is used, or if the glass pressure plate is replaced by a glassless negative plate, the focusing indicator mark may be thrown out of exact alignment. It can be quickly brought back into correct alignment by rotating the threaded pin (f8).

## Exposure

The ideal exposure time for every picture is determined by the density of the negative and the distance between the enlarger head and the paper.

Switch off the room lighting, turn on the darkroom safelight, and cut a sheet of the enlarging paper you propose to use into 2 inch-wide strips. Then examine the projected image and select an area which contains all the most important density variations of the negative (whenever possible, select a human face).

Close the lens aperture by two stops and move the red filter into the beam by means of knob (d11). Remove the sheet

of paper used for focusing from the masking frame, taking care not to displace the frame. Then lay one of the test-strips



16 Sec.

14 Sec.

12 Sec.

10 Sec.

8 Sec.

6 Sec.



over the selected area and cover it with a sheet of cardboard.

Now switch off the lamp with switch (g2) and swing the red filter out of the ray path by turning knob (d11). Expose by operating switch (g2).

With a little practice you will soon be able to make a reasonable guess at the correct exposure time. A good average value to aim at is 10 seconds. Slide back the cardboard to expose about an inch or so of the test-strip and expose this for 2 seconds; then move the cardboard back another inch and expose for a further 2 seconds. Repeat this procedure until the first «step» has received a total of 10 seconds' exposure; now, for the sixth time, move the cardboard back another inch and expose the whole length of the test-strip for 6 seconds; then switch off the enlarger lamp, develop and fix the test-strip. The developed strip should indicate the ideal exposure time; possibly the best density will be a compromise between two steps with a 2-second difference in exposure, e. g. 9 seconds. Finally fit the enlarging paper in the masking frame and expose it for the predetermined time.

## Several enlargements from one negative

Even the most experienced photographer is seldom able to photograph the precise area he wishes to include in the final picture, and exclude all else. Selecting the most effective section of the negative for enlargement is part of the darkroom technique and plays a most important role in the composition of the picture. By enlarging only a portion of the total image it is even possible to obtain a number of different pictures from the same negative.

After exposing and making your print, find a new center of interest in your picture, and crop a second image around that by moving the masks in the negative carrier. Experimentation of this kind may be carried on indefinitely, simply by rotating the adjustment knobs (f4/5).

For example, after printing a picture of a group of people, try isolating one or two from the group by a new cropping. It's a rewarding exercise in photographic composition!



## Reduction

The lenses used in the DURST M 600 are also suitable for 1 : 1 copies or reductions (i.e.). The projected image appears in the same size or smaller than on the negative. For that purpose move the enlarger head downwards to its bottom stop on the column and focus the lens. In order to obtain higher degrees of reduction, the working surface of the baseboard is to be raised by a support of about 2-3 cm (3/4 - 1 1/4 in.).

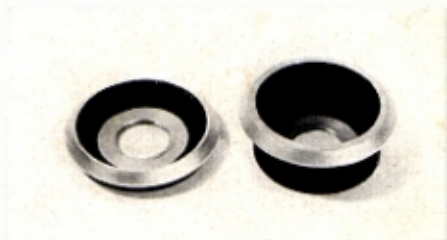
80 mm lens on SIXPLA lens panel  
approx. 1 × lin.

75 mm lens on SIXPLA lens panel  
approx. 0.9 × lin.

60 mm lens on SIXTUB lens panel  
with support approx. 0.9 × lin.

SIXTUB

SIXTIF



50 mm lens on SIXTUB lens panel with support approx.  $0.8 \times \text{lin.}$

35 mm lens on SIXTIF lens panel with support approx.  $0.6 \times \text{lin.}$

28 mm lens on SIXTIF lens panel with support approx.  $0.7 \times \text{lin.}$

You will obtain still higher degrees of reduction when employing shorter-focus lenses mounted on the special SIXPLA panel.

## Lenses and lens panels

The 75 or 80 mm Schneider-Durst lens mounted on the SIXPLA lens panel which is normally used with the DURST M 600, gives best results with all negatives from  $2\frac{1}{4} \times 2\frac{1}{4}$ " ( $6 \times 6$  cm) down to the smallest formats. Bigger enlargements can, however, be obtained by using a Schneider-Durst 50 mm or 60 mm lens (mounted on the SIXTUB tube). The 60 mm lens can be used for formats of  $1\frac{1}{2} \times 1\frac{1}{2}$ " ( $4 \times 4$  cm) and smaller, while the 50 mm

lens can handle a maximum format of 35 mm and of course also all the subminiature formats. In addition lenses of shorter focal lengths of 28 to 35 mm can be used in your M 600; these must be mounted on the SIXTIF tube. The 35 mm lens covers all subminiature negative sizes up to the maximum size of  $24 \times 24$  mm, while the 28 mm lens can normally handle all subminiature negative sizes up to and including  $18 \times 24$  mm. Lenses of this type with a short focal length are naturally also very useful for producing **sectional enlargements** from larger negative formats.

The standard lens board SIXPLA is provided with an M 39 or M 25 thread.

It is essential to use each lens on the appropriate lens board, otherwise accurate focusing and uniform illumination cannot be obtained. If enlarger lenses other than the Schneider-Durst models are used in the M 600, please make sure that the combination of lens and lens board is correct.

According to the focal length of the particular lens which is used, the enlargement formats shown in the table on page 21 can be obtained on the baseboard.

**Table of enlargement factors or image formats which can be obtained with the various lenses used in the DURST M 600 (Approximate values)**

Nominal size of negative	3 1/8" (80 mm) lens	3" (75 mm) lens	2 3/8" (60 mm) lens	2" (50 mm) lens	1 3/8" (35 mm) lens	1 1/8" (28 mm) lens
2 1/4 x 2 1/4" (6 x 6 cm)	20 x 20" (51 x 51 cm)	20 1/2" sq. (52 x 52 cm)	* 20 1/2" sq. (52 x 52 cm)	* 20 1/2" sq. (52 x 52 cm)	* 20 1/2" sq. (52 x 52 cm)	* 20 1/2" sq. (52 x 52 cm)
1 1/2 x 1 1/2 (4 x 4 cm)	14 1/4" sq. (36 x 36 cm)	14 1/2" sq. (37 x 37 cm)	20 1/2" sq. (52 x 52 cm)	* 20 1/2" sq. (52 x 52 cm)	* 20 1/2" sq. (52 x 52 cm)	* 20 1/2" sq. (52 x 52 cm)
35 mm (24 x 36 mm)	8 1/4 x 12 1/2" (21 x 32 cm)	8 1/2 x 13" (22 x 33 cm)	11 3/4 x 17 3/4" (30 x 45 cm)	14 1/4 x 22" (36 x 56 cm)	* 20 1/2" sq. (52 x 52 cm)	* 20 1/2" sq. (52 x 52 cm)
1 x 1" (24 x 24 mm)	8 1/4" sq. (21 x 21 cm)	8 1/2" sq. (22 x 22 cm)	11 3/4" sq. (30 x 30 cm)	14 1/4" sq. (36 x 36 cm)	20 1/2" sq. (52 x 52 cm)	* 20 1/2" sq. (52 x 52 cm)
3/4 x 1" (18 x 24 mm)	6 x 8 1/4" (15 x 21 cm)	6 1/4 x 8 1/2" (16 x 22 cm)	8 1/4 x 11 3/4" (21 x 30 cm)	10 1/4 x 14 1/4" (26 x 36 cm)	15 x 20 1/2" (38 x 52 cm)	15 x 20 1/2" (38 x 52 cm)
5/16 x 7/16" (8 x 11 mm)	3 x 4" (7.5 x 10 cm)	3 x 4" (7.5 x 10 cm)	4 x 5 1/2" (10 x 14 cm)	4 3/4 x 6 3/4" (12 x 17 cm)	8 x 10" (20 x 25 cm)	8 1/2 x 11 3/4" (22 x 30 cm)

\* For sectional enlargements only.

**Maximum enlargements on the baseboard:**

- with 3 1/8" (80 mm) or 3" (75 mm) lens (on SIXPLA lens board) approx. 9.3×lin.
- with 2 3/8" (60 mm) lens (on SIXTUB tube) approx. 13×lin.
- with 2" (50 mm) lens (on SIXTUB tube) approx. 15.5×lin.
- with 1 3/8" (35 mm) lens (on SIXTIF tube) approx. 23×lin.
- with 1 1/8" (28 mm) lens (on SIXTIF tube) approx. 27×lin.



## Giant enlargements

If the extension arm (b2) does not give sufficient enlargement, even with head raised to its limit of travel, the arm may be raised from the lower to the upper position. Loosen the locking knob (b3), raise the arm and re-fasten the knob in the lower recess of the extension arm. An additional 2" of distance may be obtained by loosening knob (c1) and fastening the column in the desired position. The easel may now be moved near to the socket.

If even greater magnification is desired, the entire arm and head may be rotated 180° to project on the floor. Loosen the quick-locking lever on the bolt (c3) on the bolt (c2) and rotate the entire column, arm and head. Tighten the quick-locking lever. NOTE: before swinging the head around, place a heavy object on the base-board to prevent the enlarger from tipping over.

Another technique in giant enlarging is swinging the head 90° to project on a wall. This is accomplished by loosening the knob (b1) and swinging the head

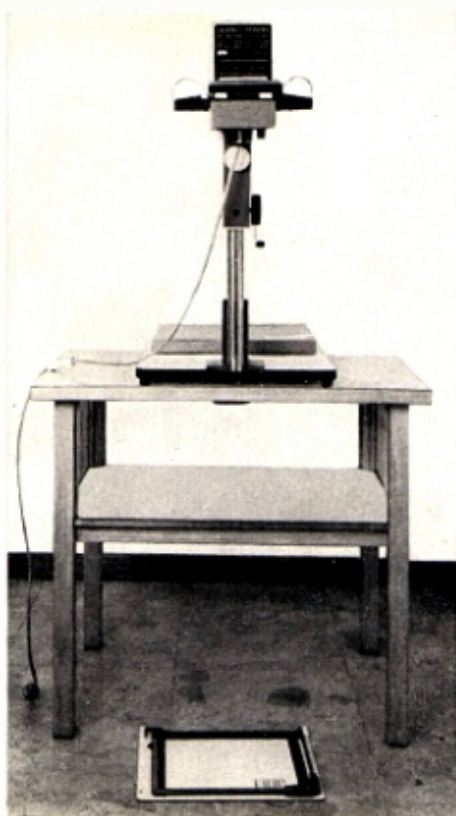
until it clicks into a horizontal position. Then, tighten the knob.

To re-align the head, loosen knob (b1) and swing the head back to its vertical position. It will click into correct verticality. Then, re-tighten knob (b1).

Focus and exposure times are determined and set in the same way as previously described, but remember that increased distance between the light source and the paper requires drastically increased exposure times, since light decreases in intensity by the **square** of the distance between the light and the plane it is falling on.

The intensity of illumination at the projection plane (i. e. the paper) is inversely proportional to the **square** of the distance between the projection plane and the light source. If the exposure determined for a particular setting is 10 seconds, then the exposure will become 40 seconds (or **four** times the original figure), when the projection distance is doubled. This should be borne in mind when exposing the test-strips. The exposure time can be shortened, however, by opening the lens diaphragm: in the example given above, the exposure could be reduced to 20





Floor projection

seconds by increasing the aperture by one stop. As a rule the lenses give their maximum sharpness at an aperture about two stops below the maximum opening. Your SCHNEIDER-DURST enlarging lenses have such critical definition, combined with near-perfect field-curvature correction, that the loss in image quality will be unnoticeable when the aperture is increased by a single stop.

## Colour enlarging

The DURST M 600 is specifically equipped for making colour prints. Its reflex illumination system protects the colour negative from damage by overheating. The filter compartment (d5) (accessible after lifting-up the filter compartment slide (d4)) holds the colour filters in the most effective position, between the negative and the light source, i. e. still before the path of the image-forming rays. Scratches, finger-prints and other imperfections on the filters will therefore not be projected. The most critical definition of fine details

will be obtained with a SCHNEIDER-DURST lens (mounted in the corresponding panel).

Inserting colour filters



## Correcting converging lines

The generally undesirable distortion of vertical lines is caused by tilting the camera upwards whilst taking the original picture. If, for example, a high building is photographed from street level, then the upper stories on the negative will appear to be converging towards a single point.

Compensation for this effect can be provided with the DURST M 600 by tilting the enlarger head in the opposite direction. To tilt the enlarger head, slacken off the arm-locking knob (b1) and adjust the head to the desired angle, i. e. until the vertical lines of the projected negative appear exactly parallel. Tighten the locking knob (b1) once again.

In order to maintain uniform definition over the whole image whilst the enlarger head is tilted, the lens aperture must be reduced beyond the usual two-stops-down setting in order to increase the depth of focus. Close the diaphragm gradually until the entire image area appears sharp.

When preparing the test-strips, remember that the exposure time must be doubled

for every stop by which the lens aperture is reduced.



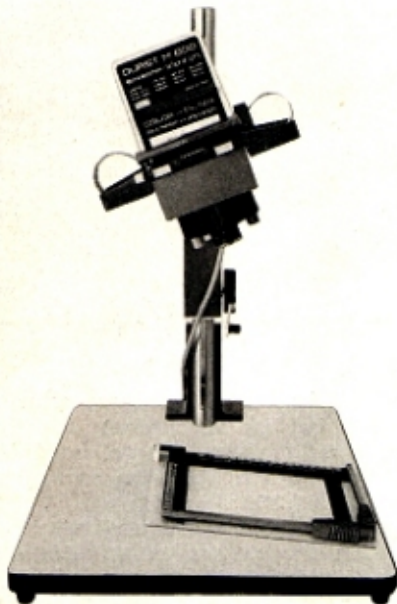
### **The total correction of converging lines**

If it becomes necessary to tilt the enlarger head by more than  $15^\circ$  in order to eliminate the distortion, then place a small object such as a matchbox beneath the opposite side of the masking frame

at which the vertical lines are converging. This has the same effect as an additional tilting of the enlarger head. Naturally the lens will have to be stopped down even further.

The sole limitation on this method of correcting distortion lies in the depth of focus obtainable with the lens, and also in the fact that tilting the masking frame

brings one end of the print closer to the light source than the other, with the result that it receives a more intensive exposure.



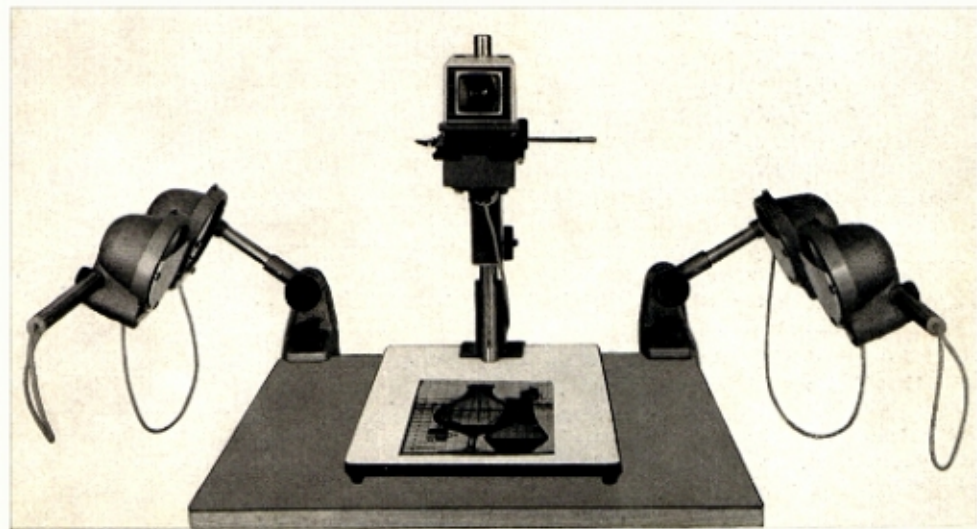
## How to employ your DURST M 600 as a photo-copying apparatus

In a few seconds you can convert your DURST M 600 into a high-precision copying unit, complete with reflex image-viewing device. For this lift off the condenser housing (d3) and withdraw the dark slide of the filter drawer (d4) downwards. Then replace the mirror-condenser housing on its side, so that the condenser stands vertically facing out towards the front of the enlarger head. The entire condenser housing with its built-in deflecting mirror now acts as a reflex viewing unit, enabling the image of the original lying on the baseboard to be focused sharply and the framing of the area to be photographed (image field) adjusted accurately. Take the SIXNEG negative carrier out of the enlarger head and replace it with the URSIX copy cassette. This is a precision film-holder for copy work and includes a ground-glass viewing screen with ruled lines for precise framing and centering. The cassette, loaded with a sheet film or plate is slid into the URSIX beneath the ground-glass screen, with the dark slide facing downwards and locked. URSIX also



includes a handy clamp and slide bar for moving the dark slide in and out easily. Exposure is effected by switching on and off the copying lights. For copying photographs or any other type of original which contains a variety of colour densities or tones of grey, a

film of medium speed and contrast should be employed. To record only pure black and white, as when copying a line drawing or printed matter, an ultra-high-contrast material is desirable. The framing and focusing of the image is performed exactly as for enlarging: the



enlarger head is moved up and down the column until the desired area is brought within the lines on the ground-glass screen of the copying cassette. The focusing wheel (d7) is turned until the image appears sharp.

#### **Always focus at the full lens aperture:**

this will ensure that the image is uniformly sharp over its entire area.

The light used for illuminating the object to be copied should be distributed uniformly over its entire surface. It is important to make sure that there are no brilliant local patches, reflections or flare spots. The best way to check the evenness of the lighting is to pass an exposure meter over the entire surface to be photographed and observe any deflection of the meter needle.

Two swivel-mounted Photoflood lamps, mounted at a maximum angle of 45° to the baseboard, may be used as a source of illumination. Standard domestic lamps may also be employed, but the exposure times will be considerably longer. The best possible illumination will be obtained

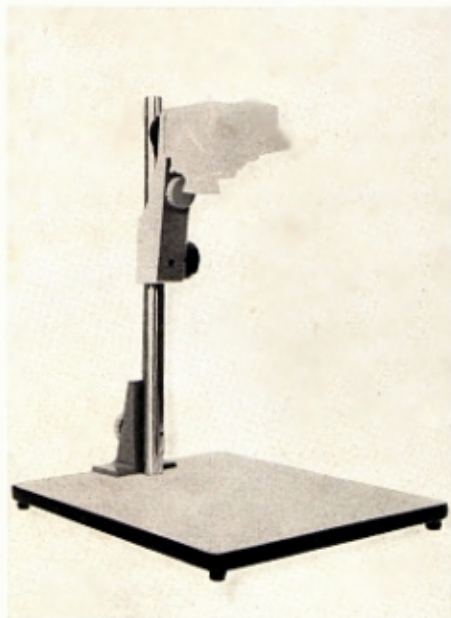
by using the DURST RILU lighting unit for copying. This consists of four reflectors mounted on two separate arms, providing both vertical and horizontal adjustment to achieve the most effective lighting. The lamps are also provided with diffusing screens, designed to ensure a reflection-free, even illumination over the entire area to be copied.

Determine the exposure time by means of an exposure meter and stop down the lens to make sure that the resulting copy is perfectly sharp at the edges.

#### **The DURST M 600 can also be used as a camera stand**

Remove the enlarger head (d) loosening the arm-locking knob (b1). The thread of this locking knob will fit any 3/8-inch tripod bush, with which many cameras are fitted; cameras with a 1/4-in. tripod thread will require an adaptor bush. The supporting arm (b), the column (a) and baseboard (e) will now form an extremely

stable support for your camera which is highly suitable for direct photo-copying with the camera.



## How to take care of your DURST M 600

Dust is the most deadly enemy of good enlarging. When you are not working with your DURST M 600, keep it in a well-fitting drawer or in a dust-proof hood such as the SIXCUF plastic hood, obtainable from your photo-dealer. If you have not used the enlarger for some time, all surfaces should be dusted with a soft, fluff-free cloth.

The only part of the enlarger which requires occasional lubrication is the column. For this purpose we recommend the use of the rothenized special oil (best suited for phototechnical precision equipment), which we supply on order in plastic tubes of approx. 60 cubic cm contents. If need be you may use vaseline or mineral oil, but on no account heavy oils or greases and lubricants, containing acids.

Clean condensers, mirror and glass plates before and after every use. If they are lightly soiled, wipe them clean with a lintfree cloth. NEVER SCRUB! you may scratch their highly polished surfaces. Stubborn dirt and fingermarks may be re-

moved by wiping with a lens tissue which has been slightly moistened with any good grade of lens cleaning fluid.

Pay special attention to the glass plate and the bottom of the horizontal condenser. Clean the bottom of the horizontal condenser by lifting the complete condenser housing (d3). The glass plate (f1) may be removed by withdrawing the clamping bar (f2) from the negative carrier. Should you replace the glass plate with a new one or by a glassless metal mask, you must turn the thread pin (f8) until the focus indicator mark (f6) is brought to the new focal plane.

You are apt to get fingermarks on the glass plate and condenser whenever you remove the negative carrier for any reason. Check carefully and remove all marks immediately.

**Cleaning of the lens:** Remove the lens in its lensboard. Blow away large particles of dust and grit with an ear syringe. Remove small dust flecks and fingermarks by wiping gently with a lens tissue slightly moistened with a good lens cleaning fluid.

Really careful workers examine the lens

surface with a jeweler's glass to be sure that no trace of foreign matter remains. This may seem like going to extremes, but such perfectionists have many fewer dust spots to contend with in their finished prints!

## Adjusting enlarger head tension

The amount of resistance which you encounter in moving the enlarger head up and down the column has been carefully set at the factory. However, you may prefer more or less tension. In any event, after long use, the tension will ease somewhat.

To adjust tension, loosen the locking knob (b3), lift up the extension arm together with the enlarger head until you can fix the extension arm (b2) with the knob (b3) in the lower recess. In this position you will find a black plate, held by four set-screws (b6). Tighten these screws to increase tension; loosen them to decrease tension.



**Do not attempt to undertake  
any further adjustments  
or maintenance work on your  
enlarger**

For the first year after purchase you have the right to demand free repairs to your enlarger in the event of its failing to function correctly on account of faults in materials or manufacture. Return the enlarger to your dealer, who will send it to the nearest authorized DURST servicing agency. The enlarger should be re-packed in its original container, or in an equally strong and shockproof transit case.



Adjusting enlarger head tension

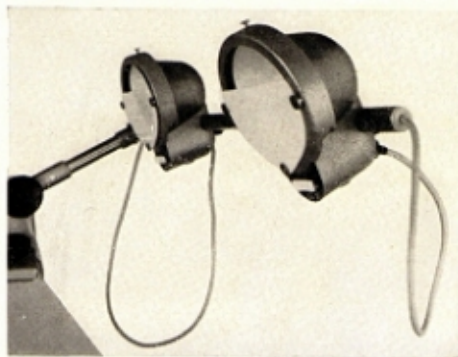
### RILU copy lighting unit

ideal for glare-free illumination. Two hard-chromium plated supporting bars, with two reflectors each are attached to behind the enlarger by means of sturdy clamps; the height of these bars can be adjusted and then locked with clamping screws. The reflectors accept opal bulbs up to 150 W and are provided with light diffusing screens to ensure uniform illumination of the copy; they can be switched individually, moved laterally as well as swung upwards or downwards.

### PENTACOLOR darkroom safelight lamp

Five interchangeable filters, white, orange, ruby, olive-green and pan green, are fitted in a rotating turret, so that the type of safelight required can be instantly selected. A heat absorbing filter prevents blistering or warping of the filters. Indirect lighting can be obtained by swivelling the lamp, which can be either attached to the wall or placed on the table.

RILU



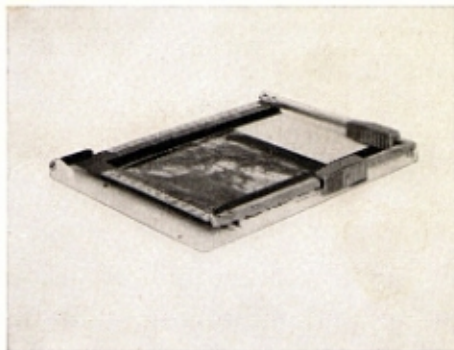
PENTACOLOR



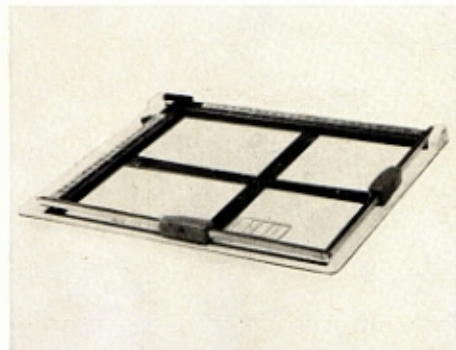
## MIN and MIN 205 masking frames

These all-metal easels for all paper sizes up to 5×7 in. (13×18 cm) (MIN) and 8×10 in. (20×25 cm) (MIN 205) resp. are hinged on a white lacquered base plate and consist of two rigid and two sliding masking strips with easily-legible scales. MIN and MIN 205 are constructed with the same precision as the most costly professional masking frames and meet the needs of the most exacting amateur or semi-pro perfectly.

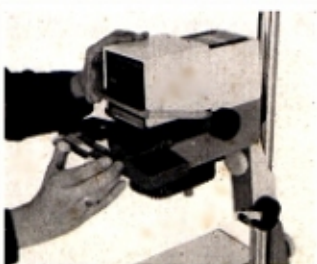
MIN



MIN 205



## BRIEF INSTRUCTIONS FOR ENLARGING



1 Place the negative in the negative carrier, emulsion side down (matt side). If you don't do this, your pictures will be reversed which of course, at times, may be just what you want. Don't forget to switch on the darkroom safelight and to turn off the white light.



2 Turn on the enlarger lamp, open the lens diaphragm fully and move the enlarger head upwards or downwards along the column until the projected negative or the chosen section of it, is visible at the size you wanted on the enlarging easel.



3 Focus sharply the projected image and close the lens aperture 2 click stops or until a good print results from an exposure time of about ten seconds. With a little practice, you will soon learn the approximate setting.



4 Switch off the enlarger and insert a sheet of photographic bromide paper (shiny side uppermost) in the enlarging easel. Ensure that the paper lies flat and adjust the masks of the easel so that the picture is composed to your satisfaction. This is done by projecting the image through the safety red filter.



5 Expose by switching the enlarger lamp on and off. Normally, the correct exposure time is ascertained by exposing a test strip of bromide paper, utilizing exposures of for example, six seconds, nine seconds, twelve seconds and fifteen seconds. The test strip should then be inserted into the developer in its appropriate tray for the length of time recommended in the instructions supplied with the chemicals. Examine the test strip very carefully and it should not be too difficult for you to decide on the correct exposure for your finished print.

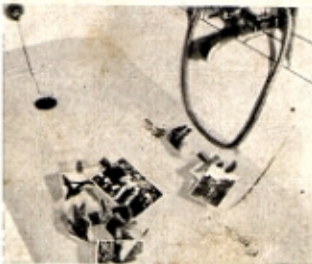


6 Remove the paper from the easel and slide (don't dunk) it quickly and smoothly into the developing tray. Agitate the developer by rocking the tray gently. Now comes your first big thrill! Your picture will gradually appear on the white paper — before your eyes. Leave it in the developer for the full time recommended by the manufacturer... usually about two or three minutes, agitating every few seconds.





7 Lift the photographic paper out of the developing tray with print tongs and immerse it in the water bath (centre tray) for 10 seconds, then fix for 10 minutes (see illustration), and again moving it gently to and fro. After 30 seconds of the fixing period, the room lighting may be switched on.



8 Rinse the picture for an hour in running water, or in water changed at least eight times. The washing period can be considerably shortened by means of an intermediate bath in hypo remover.



9 After wiping off the water, place the print on a sheet of blotting paper and let it dry overnight. If you wish to produce a glossy surface on your print, this can be done by using a print dryer with a ferrotype or chrome glazing plate. Details can be obtained from your favourite Photographic Dealer. A print dryer also has the advantage of being able to dry print, quickly (about 10 minutes).

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