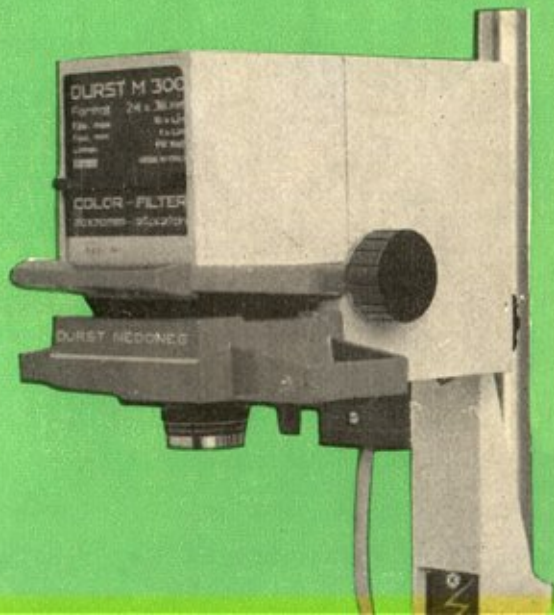


Durst M300

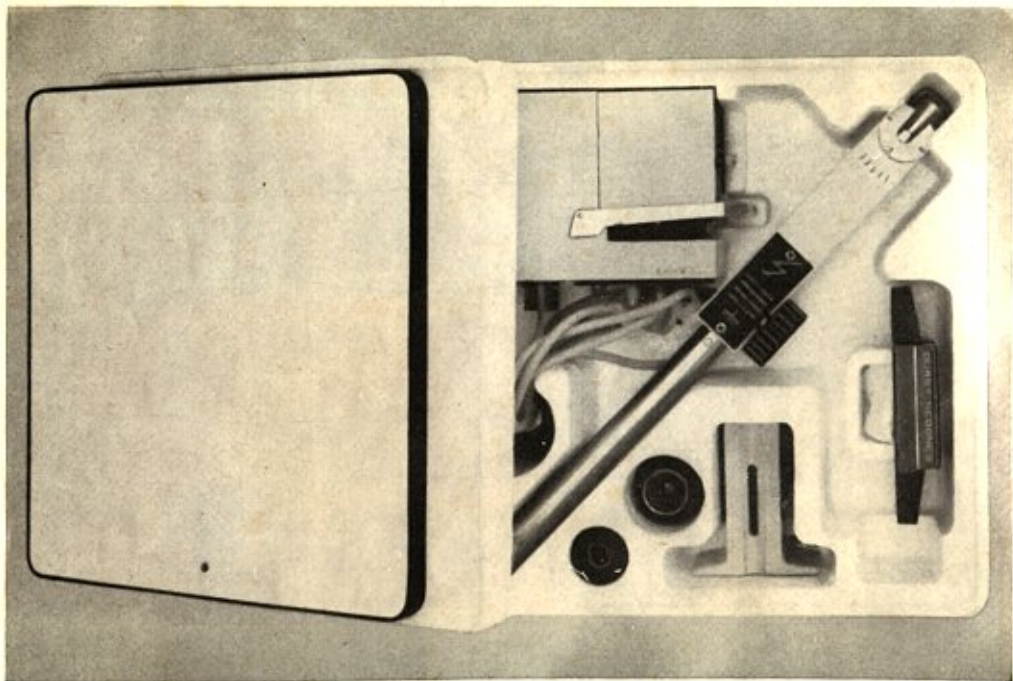
A photographic enlarger
and copying unit
with focus indicator



Durst Inc.
Phototechnical Equipment
Bolzano - Hamburg - New York

Durst

Registered Trademark



You've chosen wisely!

A photographic enlarger and copying unit of the highest precision with new-fashioned focusing aid

In selecting the DURST M 300 you have chosen a product of a manufacturer of precision photo enlarging equipment, specialized since more than 30 years. 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.

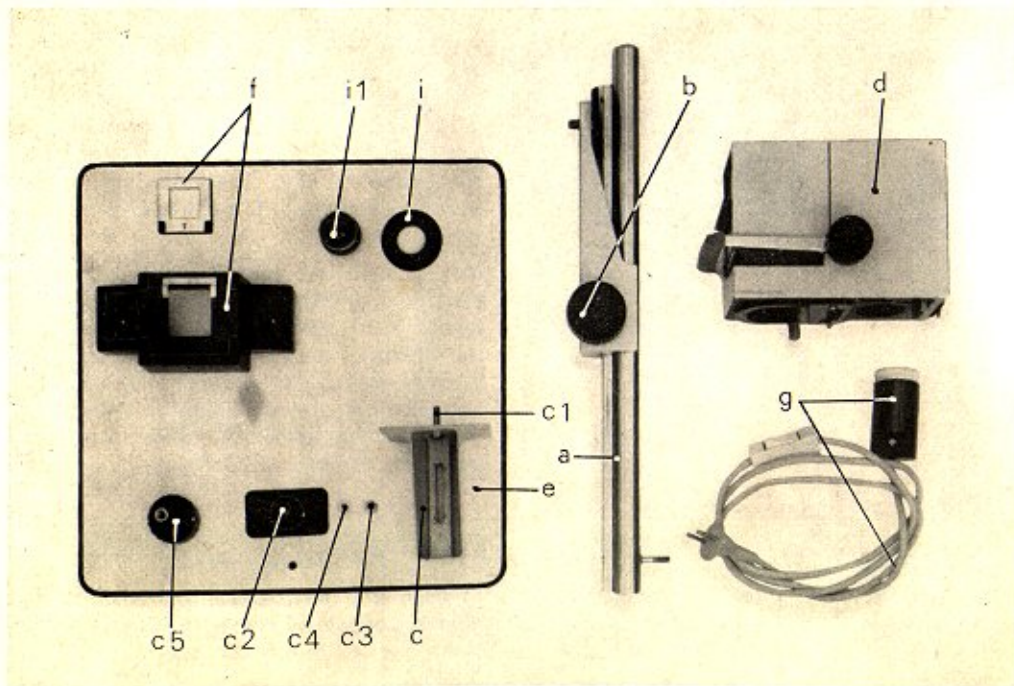
As the scope of your interests increases . . . as your progress to complex and artistic printing techniques . . . as you make your first forays into colour printing, you will come to appreciate the versatility of your DURST M 300 more and more. It is fully equipped for the most intricate darkroom techniques. 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 controls of your enlarger. Preserve it as a constant reference, and as a handy guide to darkroom procedures.

Brief Instructions for Enlarging

In case you have never enlarged so far, please consult likewise the brief instructions for enlarging at the end of this booklet.

How to unpack your DURST M 300



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 guides. 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)**;
- Bolt **(c1)** with washer **(c2)** and nut **(c3)**;
- Washer **(c4)** with locking knob **(c5)**;
- Enlarger head **(d)**;
- Base board **(e)**;
- Negative carrier **(f)**;
- Cable and lamp holder **(g)**;
- Opal glass **(h)**;
- Lens board **(i)** and lens (if ordered **(i1)**).

Component parts and equipment of your DURST M 300

a) Column:

- a1) Guide track
- a2) Top travel limiter

b) Supporting arm:

- b1) Locking knob for enlarger head
- b2) Tilt indicator
- b3) Wheel-grip for vertical adjustment
- b4) Friction drive adjustment screws

c) Socket:

- c1) Bolt
- c2) Washer
- c3) Nut
- c4) Washer
- c5) Locking knob

d) Enlarger head:

- d1) Lamp house
- d2) Lamp house cap
- d3) Condenser housing
- d4) Filter compartment slide
- d5) Opening lever for negative carrier
- d6) Focusing wheel-grip
- d7) Telescopic lens extension tube

d8) Quick-locking lens holder

d9) Wheel-grip for focus indicator diaphragm

d10) Red filter wheel-grip

d11) Retaining spring for opal glass

e) Base board

f) Negative carrier:

f1) Retaining spring for format masks

f2) Film cups

f3) Recess for focus indicator mark (triangle)

f4) Retaining springs with locating pins

f5) Format mask

g) Cable:

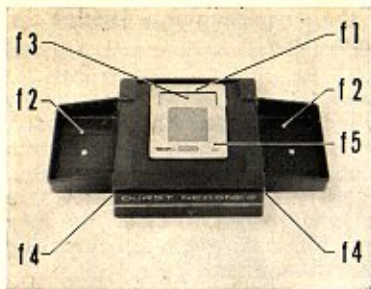
g1) Lamp holder

g2) Cable switch

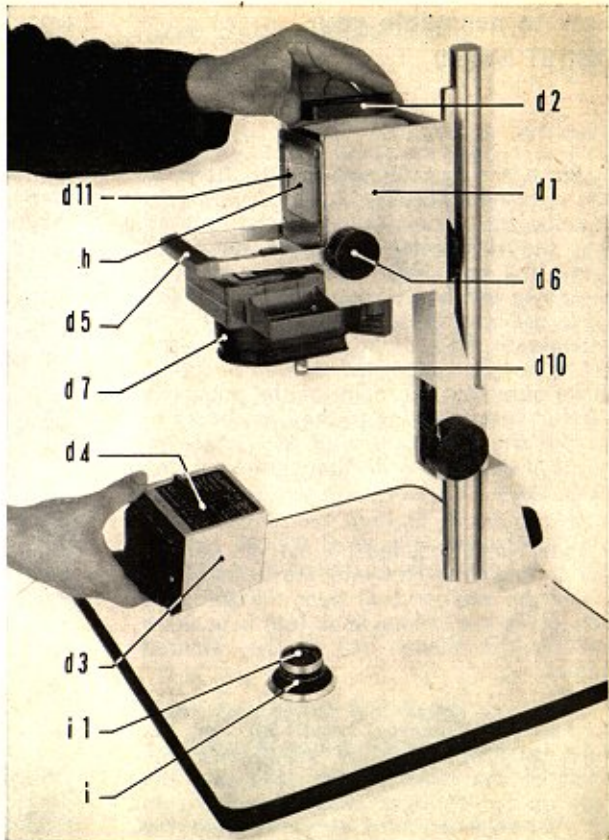
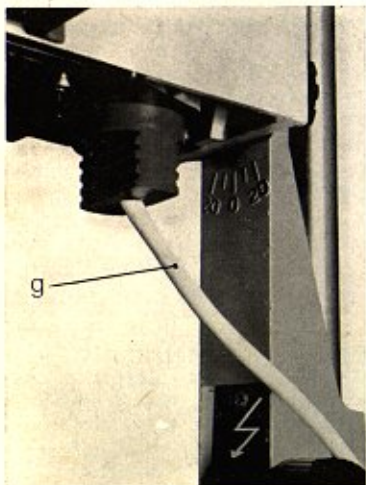
h) Opal glass (diffusing screen)

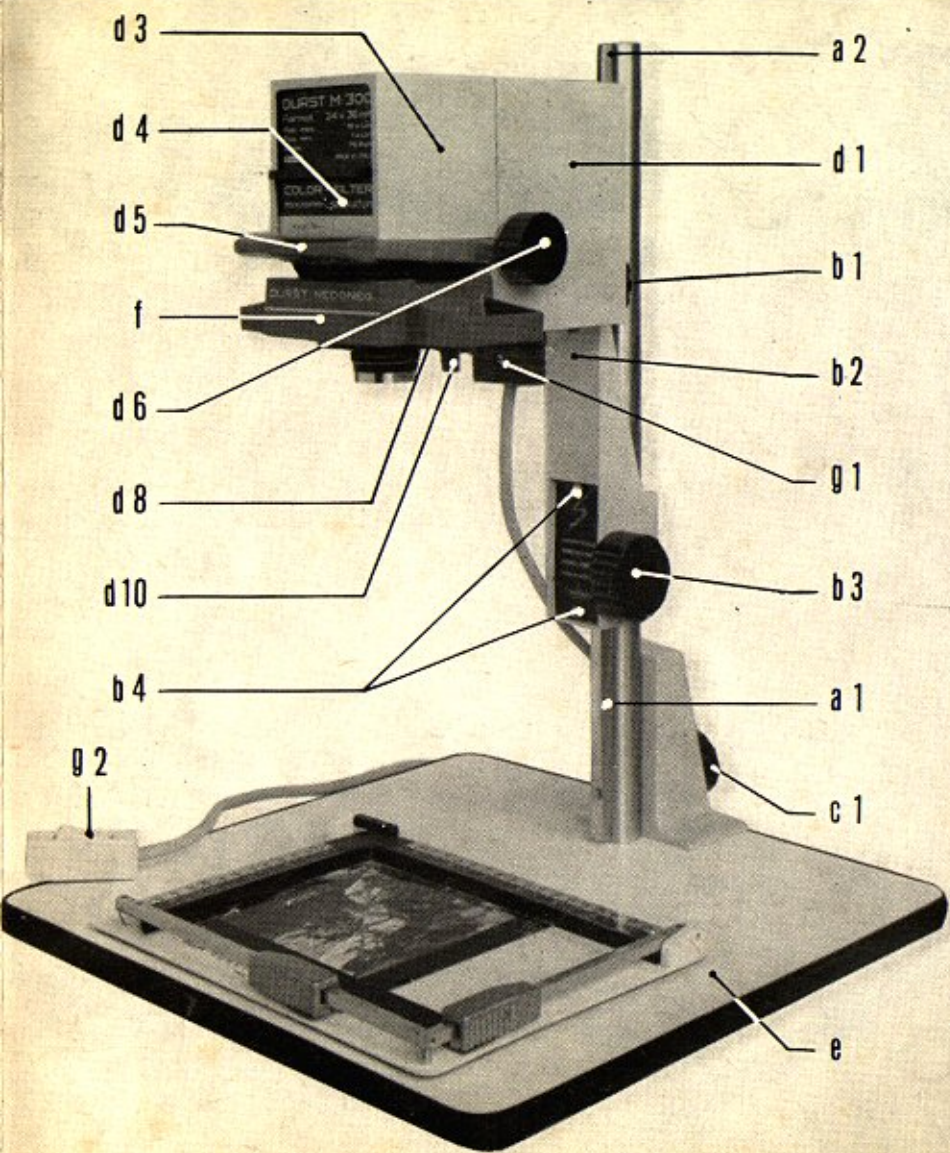
i) Lens board:

i1) Lens



NEDONEG negative carrier





How to assemble your DURST M 300

1. Place the base board **(e)** in front of you with the rubber feet facing downwards. Position the socket **(c)** over the hole so that the reinforcing fins face outwards. Insert the bolt **(c1)** from above through the holes into the socket and base board. Place the washer **(c2)** over the bolt **(c1)** underneath the base board. Then place the nut **(c3)** in position and tighten securely. Make sure that the edge of the socket is parallel with the edge of the base board to ensure that the centre of the projected image coincides with the centre of the base board.

2. Insert the threaded bolt of the column **(a)** through the slot into the socket **(c)**; insert the washer **(c4)** over the threaded bolt, place the locking knob **(c5)** 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 on the enlarger head. The click-stop on the enlarger head engages with the

groove on the supporting arm. Tighten the locking knob **(b1)**.

4. If the lens **(i1)** is not yet fitted, screw it as far as it will go into the lens board. Insert the lens board with the lens into the telescopic lens extension tube **(d7)**, with the stop values at the front where they are clearly visible. To insert the lens board, press the knob of the quick-locking lens holder towards the rear.

5. Insert the lamp holder **(g1)** with the cable **(g)** into the lamp house **(d1)** from below. Remove the lamp house cover **(d2)** and screw a 60-100 watt opal bulb into the bulb socket. Then replace the lamp house cover **(d2)**. A normal clear glass bulb may also be used in place of the opal bulb; in this case the opal glass **(h)** must be fitted in the fixing frame behind the spring **(d11)**. The condenser housing **(d3)** must be removed first. Do not forget to remove the opal glass if the normal clear glass lamp is replaced by an opal lamp.

6. Withdraw the condenser housing **(d3)** and clean the external 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 M 300».

7. Lift the opening lever (d5) and insert the negative carrier (f) — with the lettering facing you — as far as it will go into the enlarger head (d). Then release the opening lever (d5).



How to dismantle your DURST M 300

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 (c5) and pull the column (a) out of its socket. If you wish to pack the apparatus away into an even smaller space, then the enlarger head can be detached from its supporting arm (b) by undoing the 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 enlarger head (d) and the socket (c) unscrewed from the base board. The best method of storing your DURST M 300 is in the expanded-plastic container in which it was delivered from the factory.

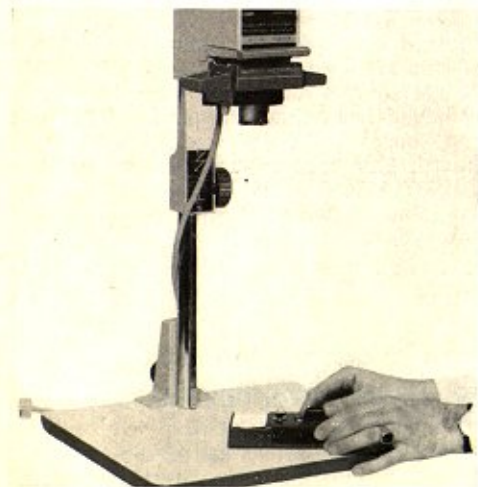
How to centre the lamp to ensure even illumination

Since your DURST M 300 is provided with a reflex illumination system, move the

lamp holder (g1) up and down in its guides, or rotate it, in order to obtain absolutely even illumination.

Insert the negative carrier (f) as far as it will go into the enlarger head (d), holding the opening lever (d5) fully upwards. Open the lens diaphragm fully and switch on the enlarger lamp. Lay a sheet of white paper or grey cardboard (10 x 5 in. = 24 x 36 cm. in size) on the base board and move the lamp holder until the

Incident-light meter

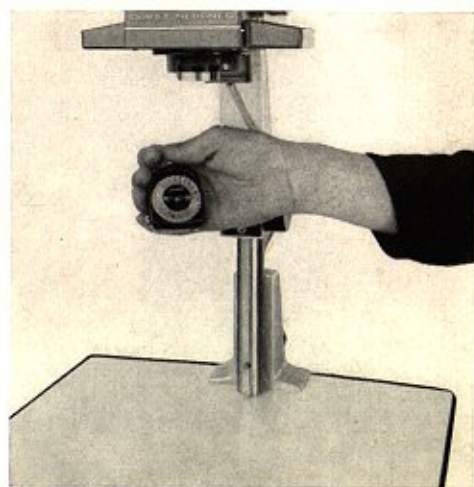


projected image appears perfectly uniform in illumination intensity.

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

Reflected-light meter



lamp holder up or down until the pointer ceases to deflect.

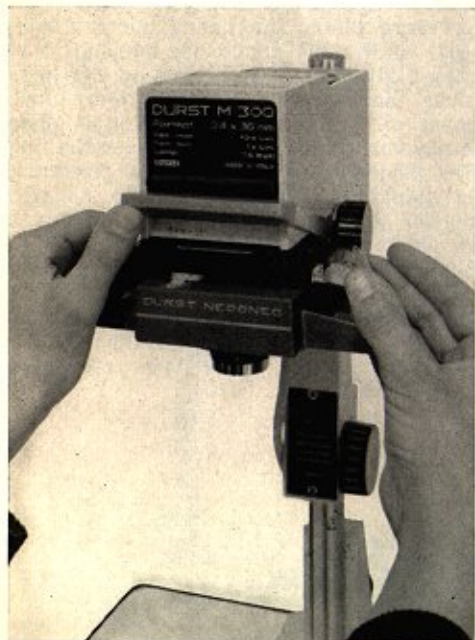
Using a reflected-light meter: lay a sheet of white paper or grey cardboard 10 x 5 inches (24 x 36 cm.) in size in the centre of the base board. Hold the exposure meter about 6 inches above the base board, taking care that the shadow of the meter does not fall within the area being measured. Move the meter over the entire illuminated area. Note any deflection of the pointer and if necessary centre the lamp as described above.

Your DURST M 300 is now completely assembled and ready for immediate use

How to insert your negatives

The negative carrier of the DURST M 300 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 (**d7**) allows the condenser housing to be raised sufficiently for inserting the negatives; the downwards-pressing return movement of the condenser housing 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. A red mask on the horizontal surface of the condenser and a metal format mask (**f5**) in the lower part of the carrier hold the negative perfectly flat while gripping it only by the top and bottom edges; Newton's rings are thus effectively prevented.

Inserting strip negatives: without taking the negative carrier out of the enlarger head, lift the opening lever (**d5**) 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 roll of film on by one frame, raise the lever once again: this will release the pressure on the film and allow it to be advanced without danger of scratching.

Subminiature negatives:

To enable enlargements to be made from negatives smaller than 35 mm. (24 x 36 mm.), NEDMA masks are supplied separately; these masks are inserted into the negative carrier under the retaining spring (**f1**) in place of the format mask (**f5**). In the case of format masks NEDMA 35, 24 and 18, the retaining spring (**f1**) can also be used to hold single negatives. NEDMA masks are available in the following formats:

8 x 11 mm. (NEDMA 11)

10 x 10 mm. (NEDMA 10)

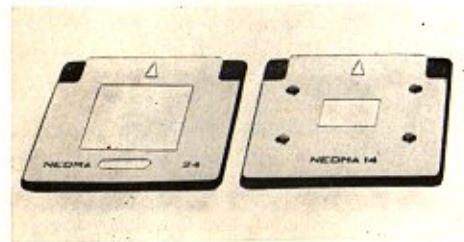
10 x 14 mm. (NEDMA 14)

12 x 17 mm. (NEDMA 17 N)

12 x 17 mm. Rollei (NEDMA 17 R)

18 x 24 mm. (= half frame) (NEDMA 18)
24 x 24 mm. (NEDMA 24)
26 x 26 mm. (NEDMA 26)
24 x 36 mm. (35 mm.) (NEDMA 35)
8 mm. Cine (NEDMA 8)
Super 8 mm. Cine (NEDMA 8 S)
9.5 mm. Cine (NEDMA 9)
16 mm. Cine (NEDMA 16)

NEDMA



How to clean your negatives

If there are any specks of dust or finger-prints on your negatives, these will be made conspicuous 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). Finger-prints 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 into 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-grip **(b3)**; the higher the head is on the column, the larger will be the image projected onto the base board.

Focusing

The lens is focused by turning the knob **(d6)**. This focusing will hold the lens always in correct alignment with the reflex illumination system.

Place your enlarging easel on the base board and insert a sheet of paper of the same size and thickness that you are going to enlarge upon into the easel (the back of an unwanted print is excellent for this purpose). Open the lens diaphragm fully and switch on the enlarger lamp.

Raise or lower the enlarger head until the desired image just fits the area of the paper in the easel. Focus sharply. Focusing

will alter the size of the image slightly, so it will be necessary to move the enlarger head again, until the desired image fills the paper area. Re-focus sharply. It may be necessary to move the enlarger head again. This process is repeated until the desired image is perfectly focused, and fills the paper area correctly.

DURST M 300

Focus indicator

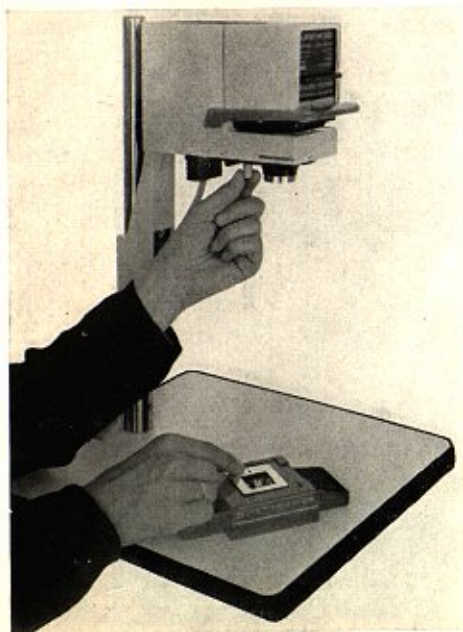
Before the exposure you have to focus finally. Herefore you'll have a great help by using the focus indicator of your DURST M 300.

This ingenious device, a DURST invention, permits you to focus with extreme accuracy under all conditions, even with very dense negatives. It consists of a diaphragm masked half-and-half by a red and green filter which is placed in the path of the light beam by means of a wheel-grip **(d9)**. There is a focus indicator mark **(f3)** for each NEDMA format mask. To check

focus, this indicator must also be swung into the light beam.

This is accomplished by pulling the nega-

Focus indicator



tive carrier out of its slot in the enlarger head to the front click-stop and lifting the opening lever **(d5)**.

The focus indicator knob **(d9)** as well as the red filter **(d10)** are adjusted vertically according to the focal length of the lens being used. Fully IN for 28 mm. up to 35 mm. lenses; fully OUT for 50 mm. lenses. NOTE: when adjusting the knob or when using the focus indicator, be sure the red filter is swung fully out of the path of beams.

The focus indicator mark will now be projected onto the paper in the easel on the projecting plane. When the lens is out of focus, the image of the focus indicator mark will be seen with red and green outlines. Rotate the focusing knob **(d6)** until the colours disappear, and the field is completely colourless with well focused outlines. The lens is now sharply focused.

Push the negative carrier back into the enlarger head until it clicks into position.

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, switch 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 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 wheel-grip **(d10)**. Remove the sheet of paper used for focusing from the enlarging easel, taking care not to displace it. Then lay one of the test strips over the selected area and cover it with a sheet of cardboard.

Now switch off the lamp with the cable switch **(g2)** and swing the red filter **(d10)** out of the ray path. Expose by operating cable 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 about an inch or so of



6 Sec.

8 Sec.

10 Sec.

12 Sec.

14 Sec.

16 Sec.

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 enables you to

compose a number of different pictures from the same negative. With your DURST M 300 you can do this without adjustment of the negative in the negative carrier. After you have exposed, developed and fixed your first enlargements, try to find another interesting section of the negative by covering part of the image projected onto the base board with the sliding masks of the masking frame, or with strips of cardboard. There is unlimited opportunity for experiments of this type. For example, after you have printed a picture of a group of people, see if you can select one or two individuals for separate enlargement. All this will give you valuable experience in picture composition.



Reduction

The lenses used in the DURST M 300 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 greater reductions, the working surface of the base board is to be raised by a support of about 3/4 - 1 1/4 in. (2-3 cm.).

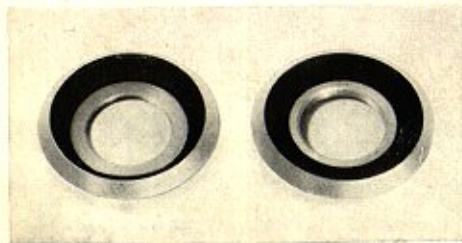
2" (50 mm.) lens mounted on NEPLA lens board (with support) appr. 1 x lin.

1 3/8" (35 mm.) lens mounted on NEDOTUB 35 (with support) appr. 0.9 x lin.

1 1/8" (28 mm.) lens mounted on NEDOTUB 28 (with support) appr. 0.7 x lin.

NEDOTUB 35

NEDOTUB 28



Lenses and lens boards

The 50 mm. SCHNEIDER-DURST lens mounted on the NEDOPLA lens board, which is normally used with the DURST M 300, gives best results with all negatives from 35 mm. down to the smallest formats. Greater enlargements can, however, be obtained by using a SCHNEIDER-DURST 35 mm. lens (mounted on the NEDOTUB 35 tube). The 35 mm. lens can be used for formats of 24 x 24 mm. and below while the 28 mm. lens can handle a maximum format of 18 x 24 mm. (half frame) and of course also all the subminiature formats. The 28 mm. lens is mounted on the enlarger by means of the NEDOTUB 28 tube. Lenses of this type with a short focal length are of course also very useful for making sectional enlargements from larger negative formats.

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 300, please make sure that the combination of lens and lens board is correct.

The table on the next page gives maximum enlargements obtainable on the base board, with each lens focal length.

Magnification factors or image formats which can be obtained with the various lenses used in the DURST M 300 (approximate values):

Nominal size of negative	2" (50 mm.) lens	1 3/8" (35 mm.) lens	1 1/8" (28 mm.) lens
35 mm. (24 x 36 mm.)	1 x 1 1/2" (25 x 38)	* 1 1/2 x 1 1/2" (* 38 x 38)	* 1 1/2 x 1 1/2" (* 38 x 38)
1 1/32 x 1 1/32" (26 x 26 mm.)	1 1/16 x 1 1/16" (27 x 27)	1 1/2 x 1 1/2" (38 x 38)	* 1 1/2 x 1 1/2" (* 38 x 38)
half frame (18 x 24 mm.)	3/4 x 1" (19 x 25)	1 1/8 x 1 1/2" (28 x 38)	1 1/8 x 1 1/2" (28 x 38)
16 mm.	13/32 x 7/16" (9 x 11)	15/32 x 11/16" (12 x 17)	9/16 x 25/32" (14 x 20)
8 mm.	5/32 x 3/16" (4 x 5)	1/8 x 5/16" (6 x 8)	9/32 x 13/32" (7 x 9)

* for sectional enlargements only

Maximum linear magnification factors on base board:

2" (50 mm.) lens mounted on NEPLA lens board appr. 10.4 x lin.

1 3/8" (35 mm.) lens mounted on NEDOTUB 35 tube appr. 16.5 x lin.

1 1/8" (28 mm.) lens mounted on NEDOTUB 28 tube appr. 19 x lin.

when using NEAR:

2" (50 mm.) lens mounted on NEPLA lens board appr. 15 x lin.

1 3/8" (35 mm.) lens mounted on NEDOTUB 35 tube appr. 23.5 x lin.

1 1/8" (28 mm.) lens mounted on NEDOTUB 28 tube appr. 21 x lin.

Giant enlargements

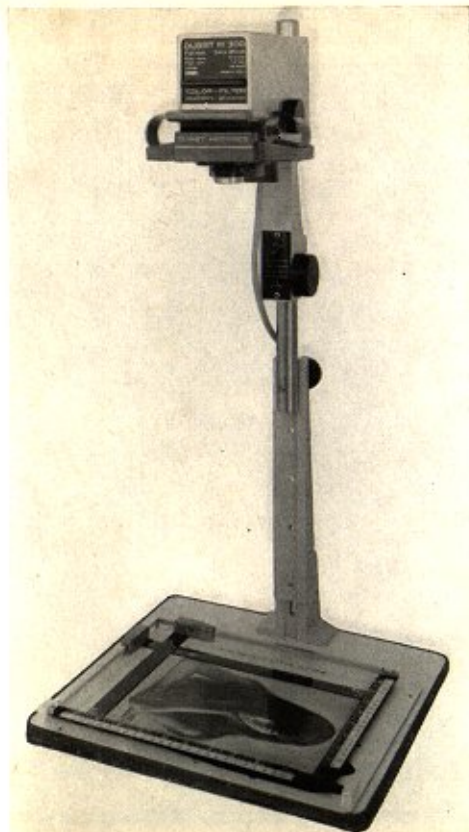
If enlargements bigger than 10 x 14' (24 x 36 cm.) are required, the distance between the lens and the paper must be greater than is possible between the base board and the enlarger head when the column is used. For this purpose the NEAR extension socket is separately available. When a 50 mm. lens is used, this device permits a 15 x magnification factor to be obtained.

The NEAR extension is mounted on the socket after releasing the knob (c5) and removing the column. The NEAR has several holes into which the enlarger column can be fixed by means of the knob and adapter which are supplied.

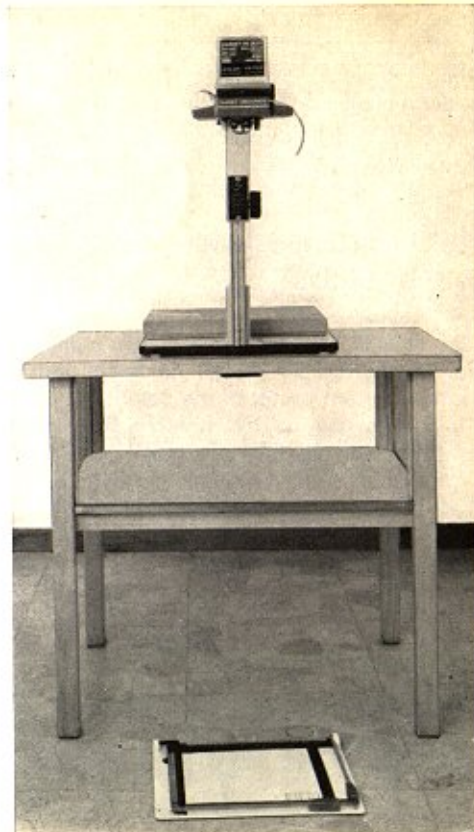
If the NEAR extension socket does not give the maximum magnification factor which you require, your mask frames or other paper holders may be placed on the floor.

Release the fixing screw of the socket and rotate the latter together with the column through 180°. Place a heavy object on the base board to prevent the enlarger from toppling over. It is also possible to swivel

the enlarger head through 90° and project images onto the wall. For this purpose, release the locking knob (b1). When it is tilted through 90°, the enlarger head will engage in a click-stop. Tighten the locking knob again. Determine the magnification factor and focus as described above, but remember that a larger distance requires a much longer exposure time. 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 seconds by increasing the aperture of the lens 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, however,



M 300 with NEAR extension socket



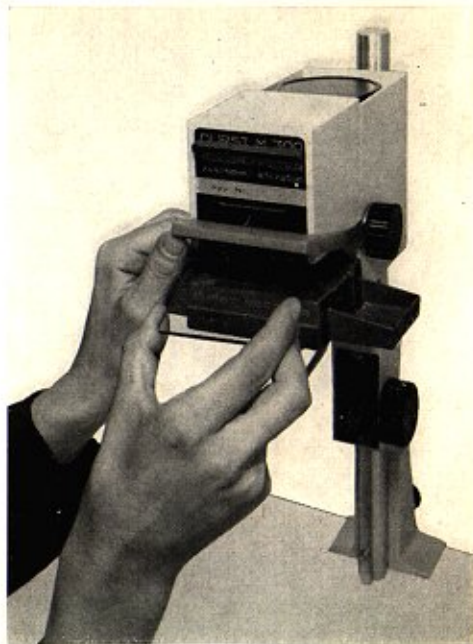
Floor projection

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 with your DURST M 300

The DURST M 300 is excellently equipped for making colour prints. Its reflex illumination system protects the colour negative from damages by overheating. The filter compartment (**d4**) holds the colour filters in the most effective position, between the negative and the light source, i. e. filtering the light rather than the projected image outside 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 50 mm. lens (mounted in the corresponding lens board).

Inserting colour filters



Correcting converging lines

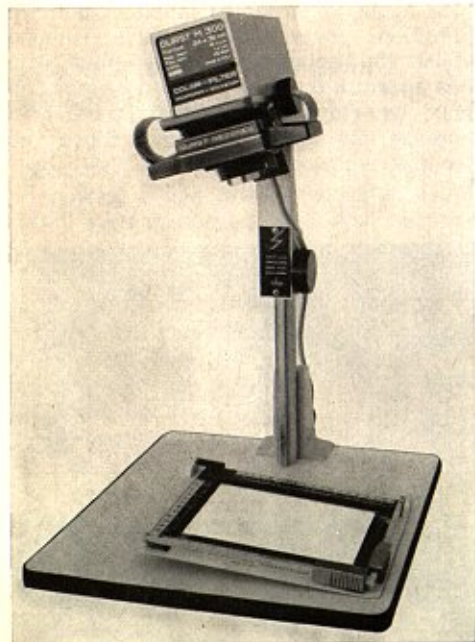
The generally undesirable distortion of vertical lines is caused by tilting the camera upwards whilst taking the original picture. If, for example, a high building is photographed from street level, then the upper stories on the negative will appear to be converging towards a single point. Compensation for this effect can be provided with the DURST M 300 by tilting the enlarger head in the direction required.

To tilt the enlarger head, slacken off the locking knob (**b1**) and adjust the enlarger head to the desired angle, i.e. until the vertical lines of the projected negative appear exactly parallel. The scale (**b2**) indicates the exact tilt angle of the enlarger head. 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 sharply.

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

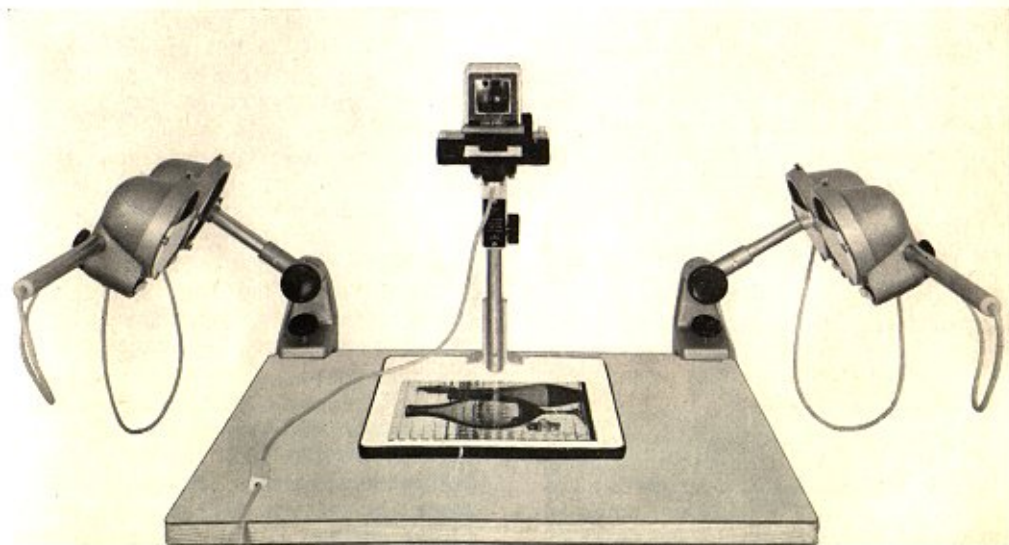
If it becomes necessary to tilt the enlarger head by more than 20° in order to eliminate the distortion, then place a small object such as a matchbox beneath the side of the masking frame at which the vertical lines are converging. This has the same effect as an additional tilting of the enlarger head. 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 field 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 300 as a copying apparatus

In a few seconds you can convert your DURST M 300 into a high-precision copying unit, complete with reflex image-viewing

device. For this you will need the NEREP copying cassette and the RILU lighting unit (both available separately). NEREP is provided with ground glass screen, film wind knob, two fixing screws, a format mask 35 mm. (24 x 36 mm.) and a dark slide. Lift off the condenser housing (d3) and withdraw the dark slide of the filter drawer (d4). Then replace the 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 base board to be focused sharply and the framing of the area to be photographed adjusted accurately. Put the ground glass screen with its etched frame lines (mat side facing downwards) on the format mask in the negative carrier; now you can focus and frame the image accurately. 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-grip (d6) is turned until the image appears sharply.

Always focus at the full lens aperture: this will ensure that the image is uniformly sharp over its entire area.

Now remove the condenser housing (d3) once again, switch off the copying lamps and switch on the appropriate safelighting (if any), and then insert a length of unexposed film about $1\frac{3}{4}$ in. long, emulsion (mat) side down, into the copying cassette.

Now fit the upper part of the copying cassette, secure it with the two screws and replace the negative carrier with the copying cassette.

Instead of this short length of film, daylight cassettes for 20 or 36 exposures can be positioned on the left-hand side of the copying cassette. An empty cassette is fitted on the right-hand side, and the shaft of the film wind knob supplied with the copying cassette is fitted into the core of the cassette. In this manner a whole series of exposures can be made one after another. After completing each exposure the film wind knob should be turned through one complete revolution, until a sensation like a spring clicking into position is felt and the marking line on the film wind knob points to the red dot. You can then make the next exposure. Do not forget to close the dark slide of the copying cassette whenever the lights are switched on between exposures.

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

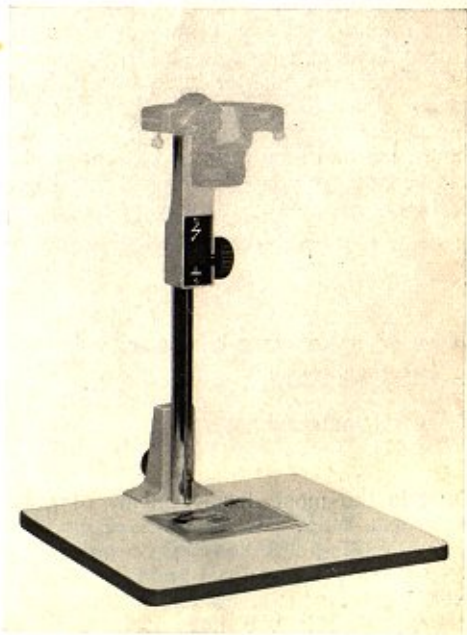
meter over the entire surface to be photographed and observe any deflection of the meter needle.

Two swivel-mounted Photoflood lamps, mounted at an angle of 45° to the base board, may be used as a light source. Standard domestic lamps may also be used, 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, stop down the lens and then expose the film by switching on and off the copying lighting system. The lens should be stopped well down to make sure that the resulting copy is perfectly sharp at the edges. The exposed film should only be removed from the cassette by the appropriate safe-lighting.

For copying photographs or any other type of original which contains a variety

of colour densities and 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, then an ultra-high-contrast material is desirable.



The DURST M 300 can also be used as a camera stand

Remove the enlarger head (**d**) by loosening the 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 adapter bush (available in every special-line shop). The supporting arm (**b**), the column (**a**) and base board (**e**) will now form an extremely stable support for your camera and the whole is highly suitable as a copying table.

How to take care of your DURST M 300

(General instructions)

Dust is the most deadly enemy of good enlarging. When you are not working with your DURST M 300, keep it in a well-fitting drawer or in a dust-proof hood such as the NECU 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 lens 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 finger - marks may be removed by wiping with a lens tissue which has been slightly moistened with any good grade of lens cleaning fluid.

Special attention should be devoted to the underside of the horizontal condenser.

The condenser housing is completely as tight as to make unnecessary cleaning the inner side of the condensers. If cleaning, however, should be necessary, the horizontal condenser can be removed after loosening the two screws on its bottom side.

Cleaning of the lens

Remove the lens from its lens board. Blow away large particles of dust with an ear syringe. Remove small dust flecks and finger - marks 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. At any rate, after long use, the tension will ease somewhat. To adjust tension, uniformly tighten the screws **(b4)** on the supporting arm to increase it, and loosen them to decrease tension.

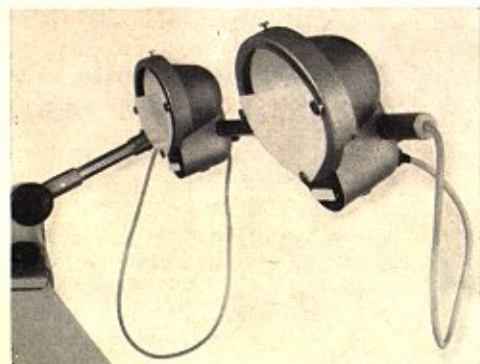
Do not attempt to undertake any further adjustments or maintenance work on your enlarger

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 repair-shop. The enlarger should be re-packed in its original container, or in an equally strong and shock-proof transit case.

RILU lighting unit for copying

Ideal for reflection-free illumination. Two hard-chromium plated supporting bars, with two reflectors each, are attached 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 lamps up to 150 W. and are provided with light diffusing screens to ensure uniform illumination of the original; they can be switched individually, moved laterally as well as swung upwards or downwards.

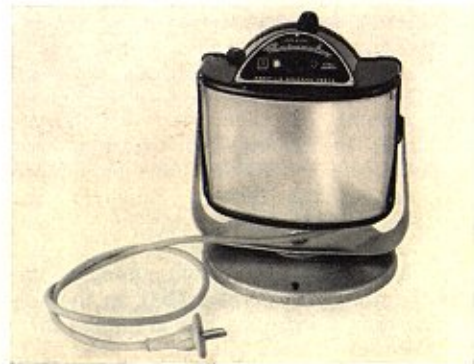
RILU



PENTACOLOR darkroom safelight lamp

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

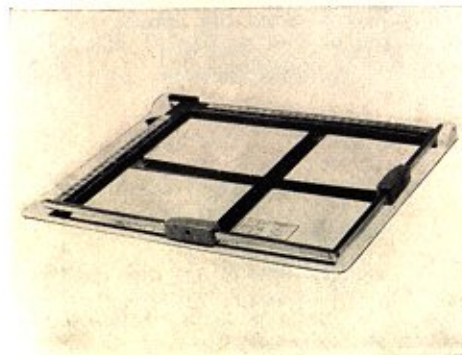
PENTACOLOR



MIN and MIN 205 masking frames

These all-metal easels for all paper sizes up to 5 x 7 in. (13 x 18 cm.) (MIN) and 8 x 10 in. (20 x 25 cm.) (MIN 205) resp. are swivel-mounted on a white-lacquered base plate and consist of two rigid and two sliding masking strips with easy-read scales. MIN and MIN 205 are constructed with the same precision as the most costly professional masking frames.

MIN 205



DURST TIM 100

The electronic exposure meter and timer DURST TIM 100 is a compact table model with a shock-proof plastic housing. Its electronic construction guarantees the highest measurement and exposure timing exactness so that exposure mistakes are impossible. The measurement and timing circuits are mains stabilized and compensate completely for current fluctuations of $\pm 10\%$. The measuring sensitiveness is extremely high even with weak light, it corresponds to an aperture value of $\pm 1/4$. The exposure time range is very large and enables 25 different exposures from 1 up to 250 seconds. The exposure times are logarithmically staged, three stages double the exposure time. The unit can be used with the following voltages: 110, 125, 140, 160, 220 and 240 V. (50 or 60 cycles). Because of its highest precision of measurement the TIM 100 is also well-suited for colour enlargement.

TIM 100



Brief Instructions for Enlarging



1 Place the negative into the negative carrier, emulsion side down (mat 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 yellow-green.



2 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 want 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 place a sheet of photographic bromide paper (shiny side uppermost) on 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, making 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 paper. 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 till 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 20 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 prints quickly (about 10 minutes).

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