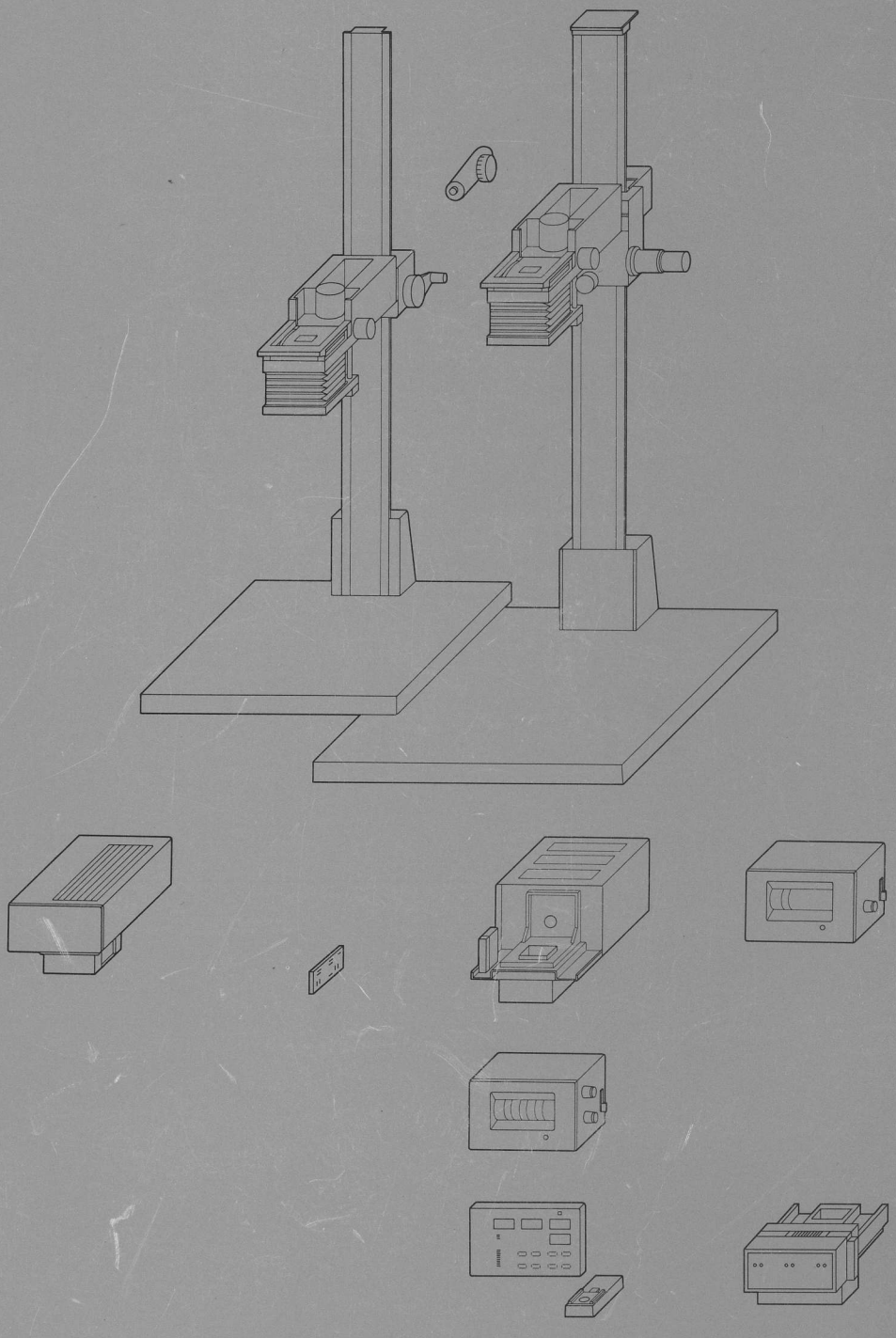
durst

Modular 70
User Manual



Through the procurement of this Durst Modular 70 System you are now the owner of a trademarked product from Durst Phototechnik GmbH, Brixen.

As a result of its great ease of operation and functionality, this enlarger will serve you well for all enlarging tasks in colour and B&W and give you a great deal of pleasure.

To ensure that your work with this enlarger is successful, however, you must follow the instructions in the user manual exactly. The manual endeavours to systematically explain both the mounting and the operation of the enlarger.

Please take sufficient time to read all details carefully. The more you know about the enlarger, the easier you will be able to avoid irritating mistakes or even damage.

Durst Phototechnik
GmbH
Brixen/Italy

Contents

1.0

The Modular 70 is an enlarging device designed to consist of a number of modules which are used as needed.

1.1
The building blocks of the system

Basic unit (= baseboard, column, main body)
- Modular 70 Start
- Modular 70 Start Pro

Halogen light source
- Modular 70 Lumo

Colour head
- Modular 70 Color

Gradation control head
- Modular 70 Vario

Digital analyser
- Modular 70 Micro

Stabilizer module
- Modular 70 Stabi

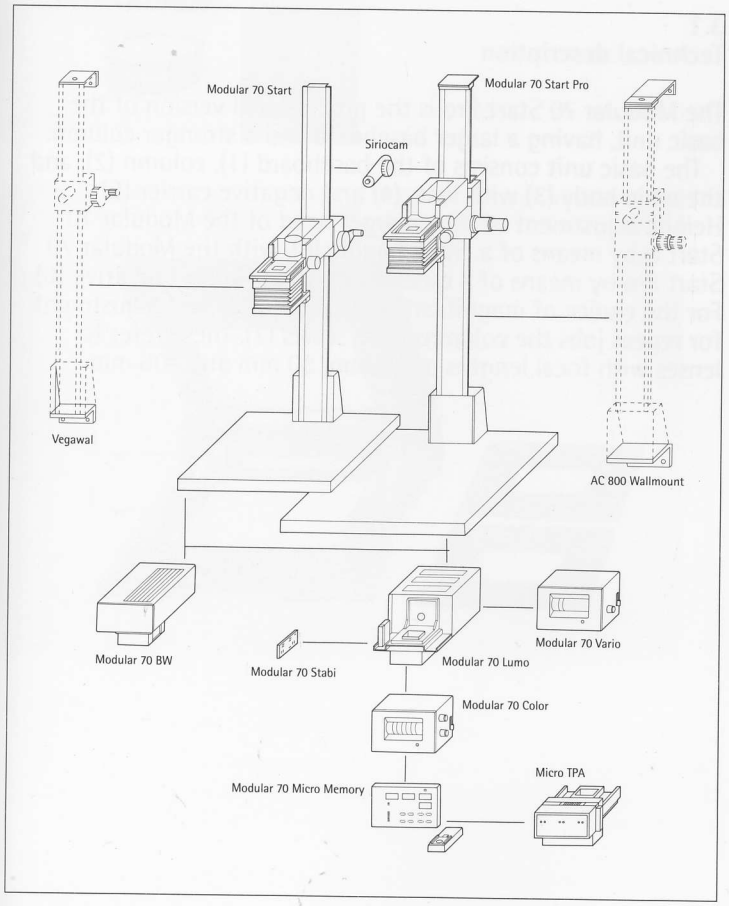
B&W condensor head
- Modular 70 BW

Wall mounting brackets
- Vegawal for the Modular 70 Start
- AC 800 Wallmount for the Modular 70 Start Pro

Camera adapter
- Siriocam

Extension arm
- Sirioar

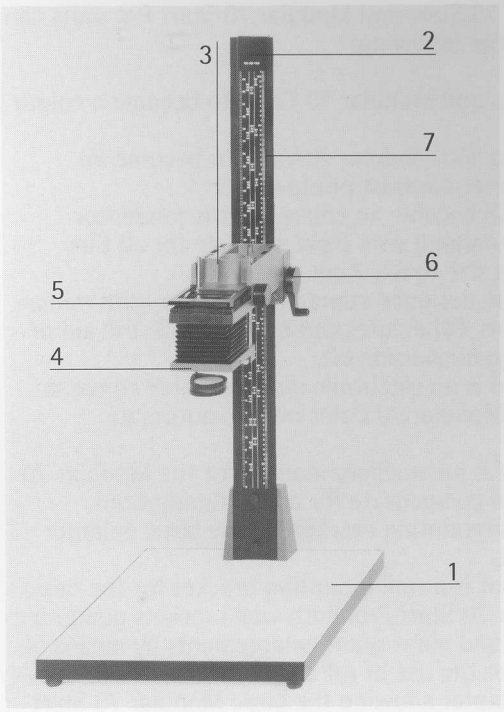
2.0



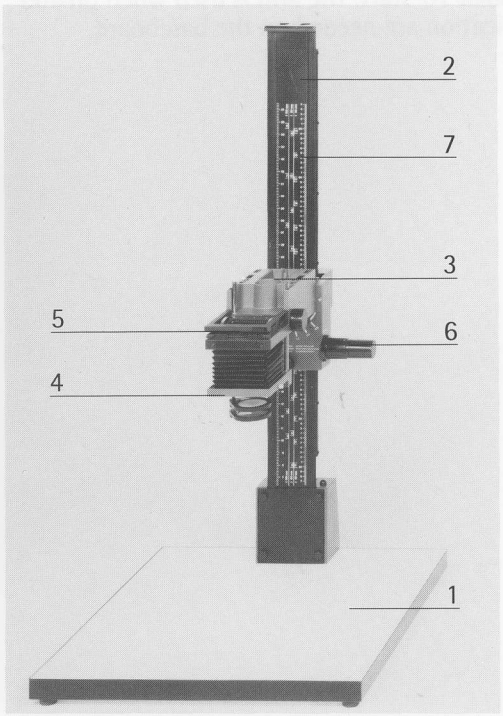
The basic Modular 70 Start and Modular 70 Start Pro units can be extended with the following:

- Modular 70 Lumo and Modular 70 Color to become a colour enlarger
- Modular 70 Lumo and Modular 70 Vario to become an enlarger for variable contrast photo-paper
- Modular 70 BW to become an enlarger with condensor illumination for working with B&W, suitable for all film sizes from pocket size to 6 x 7 cm.
  The basic units are designed standardly to work with miniature (35 mm) films. Other sizes can be used with the aid of the corresponding conversion kit.
- Modular 70 Micro is an electronic module which converts the colour head Modular 70 Color into an automatic enlarger.
- Modular 70 Stabi is an auxiliary module for the Modular 70 Lumo designed to compensate for mains fluctuations.
- Vegawal is a wall mounting bracket for the basic enlarger Modular 70 Start.
- AC 800 Wallmount is a wall mounting bracket for the basic enlarger Modular 70 Start Pro. Both wall brackets guarantee optimal stability and allow giant enlargements by means of floor projection or the use of roll paper easels.
- Siriocam is an adapter allowing the basic Modular 70 Start and Modular Start Pro to be converted to a camera tripod. It is suitable for reproduction work.
- Sirioar is an extension arm allowing extension of the column of the Modular 70 Start. The arm is used when greater scales of magnification are needed on the baseboard.

3.0



Modular 70 Start

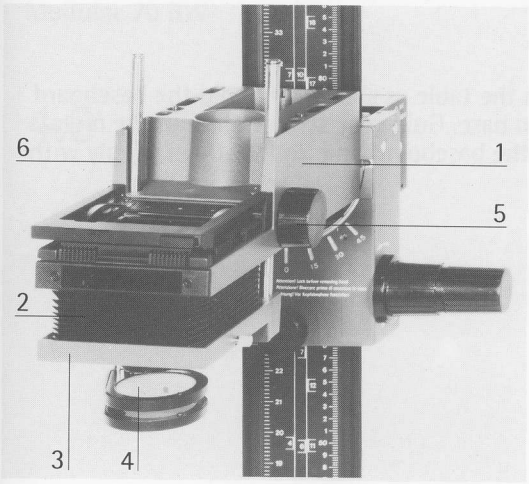


Modular 70 Start Pro

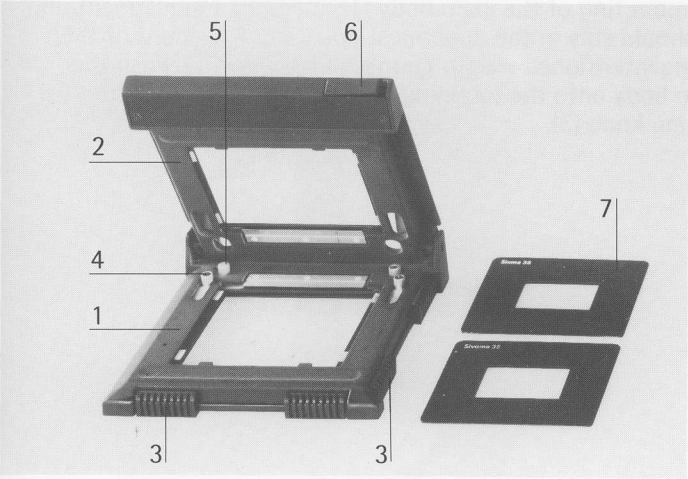
3.1
Technical description

The Modular 70 Start Pro is the professional version of the basic unit, having a larger baseboard and a stronger column.

The basic unit consists of the baseboard (1), column (2), and the main body (3) with lens (4) and negative carrier (5). Height adjustment of the enlarger head of the Modular 70 Start is by means of a crank handle (6), with the Modular 70 Start Pro by means of a quickly adjustable knob/fine drive (6). For the choice of magnification scale and for fast adjustment for repeat jobs the columns have scales (7). These refer to lenses with focal lengths of 50 mm, 80 mm and 105 mm.



The main bodies of the basic units (1) consist of the bellows (2), the lens mount (3) with the filter holder (4), the focussing knob (5) and the locking knob (6). Two threaded bolts are located on the underside of the main body and serve for the attachment of the lamphouse. The main body can be tilted on both sides for rectification and wall projection.

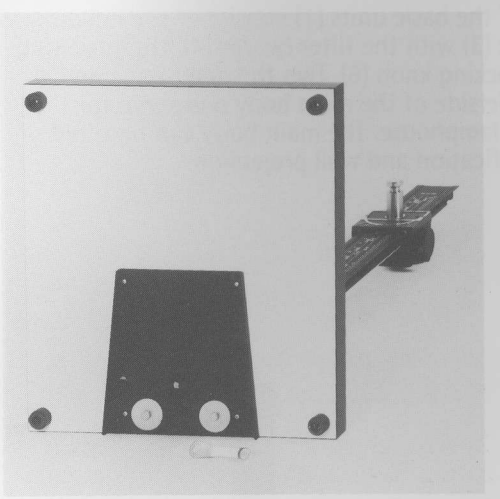


The negative carrier consists of a lower (1) and upper part (2). Within the lower part are the masking strips (3) for masking off sections of the negative, and the negative positioning pins (4), which can be pushed into the front (for 24 x 36 mm) or back position (for 120 or 220 films) depending on the film size. The negative carrier is outfitted with 2 adjustable register pins (5) to allow creative register work (e.g. copying in texts). The upper part of the negative carrier has an interlocking device allowing the negative carrier to be fixed in a slightly opened position. The negative carrier can be fitted with glasses and format masks (7).

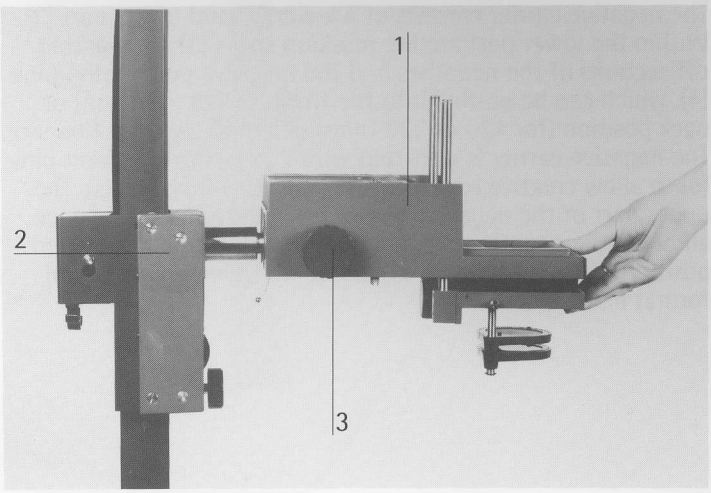
3.2
Standard equipment

- Baseboard
- Column with base
- Main body
- Sinoneg negative carrier
- Sivopar format masks
- Siriotub lens panel
- Metal washer plate (Modular 70 Start Pro)
- Screws with spanner

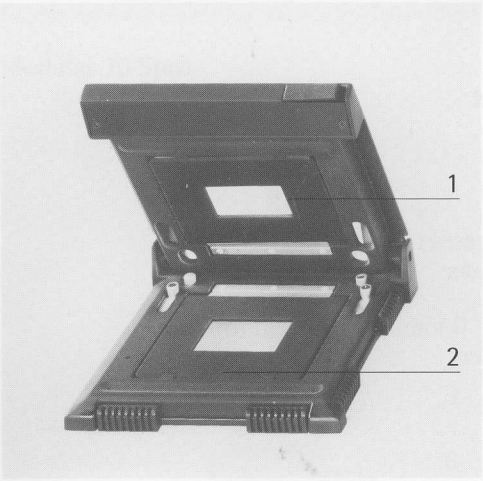
3.3
Mounting



Lay the column on the table as shown and hold the baseboard against the column base. Guide the screws through the metal washer sheet and the baseboard and tighten them snugly with the spanner.

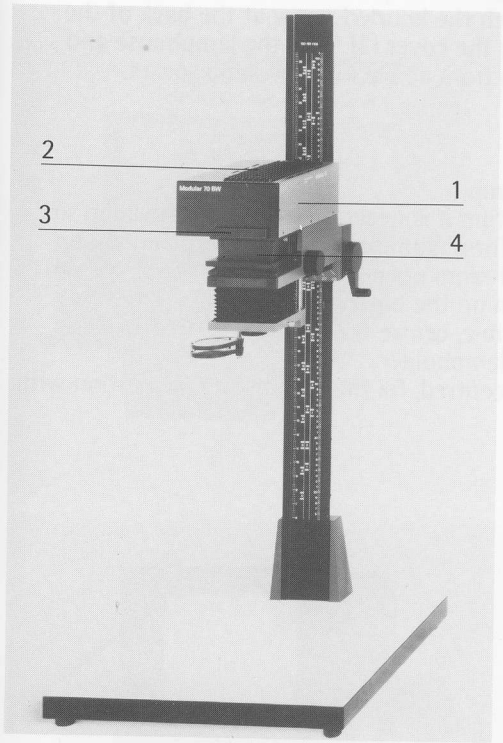


For mounting of the main body (1), the height adjustment unit (2) should stay in the uppermost position on account of the strongly tensioned weight counterbalance spring. Push the main body onto the retaining bolts and block it with the locking knob (3).



Now take up the negative carrier and insert the format masks. The Sivoma 35 (1) format mask is inserted into the upper part of the negative carrier with the label/logo upwards. The Sixma format mask is placed in the lower part with the label downwards.
Now screw the lens into the recessed side of the lens board and mount the board in the lens mount so that the aperture scale faces frontwards.
Block the lens board with the knurled screw on the right on the lens mount.

4.0

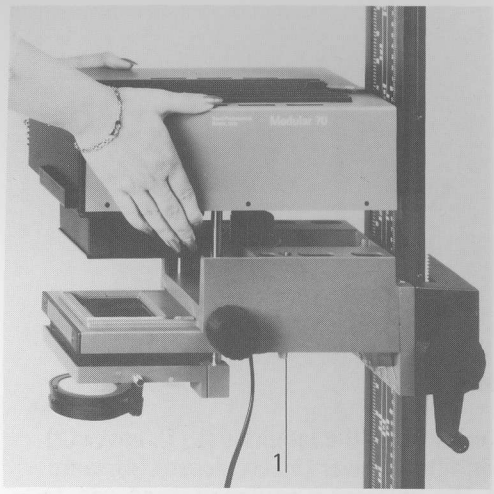


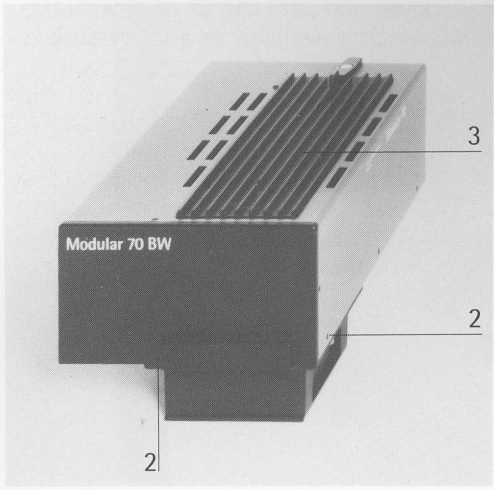
4.1
Technical description

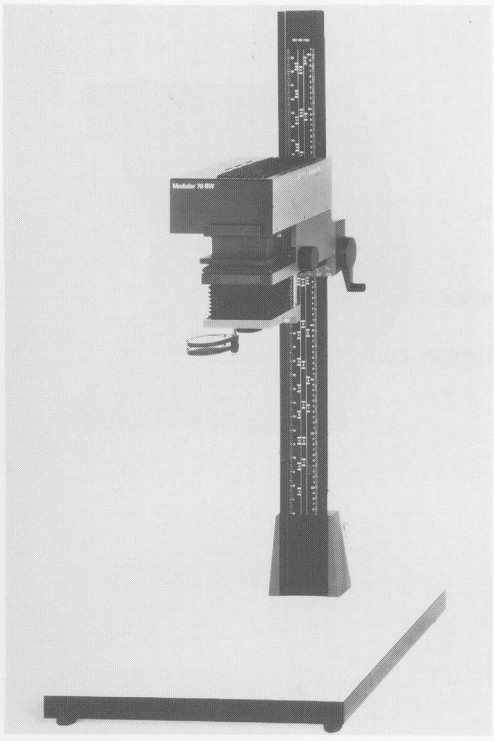
The Modular 70 BW consists of the lamphouse (1), cover (2) with reflecting mirror, filter drawer (3), condensor (4), lamp holder and the lamp. This enlarger is equipped standardly to work with 35 mm films. Other film sizes can be used with the aid of the conversion kit, which is available as an accessory.

4.2
Standard equipment

- Lamphouse
- Siriocon 50 condensor
- Lamp holder
- Opal lamp, 150 W (order code: Dulamp 150)
- Felt insert
- Knurled screws







4.3
Mounting

Place the lamphouse on the main body of the Modular 70 Start (or Start Pro) and attach it with the threaded bolt (1). Loosen the knurled screws (2) on the underside of the lamphouse to the extent that you can insert the condensor. Make certain that the flange on the condensor housing is to the front, then press the condensor all the way to the stop in the back and tighten the screws. Push the felt strip into the lower half of the round guide of the main body so that the faces close flush. Now push the lampholder from below into the main body and attach the knurled screw at the back of the lamp guide. Remove the cover (3) from the lamphouse and screw the opal lamp from above into the lamp socket.

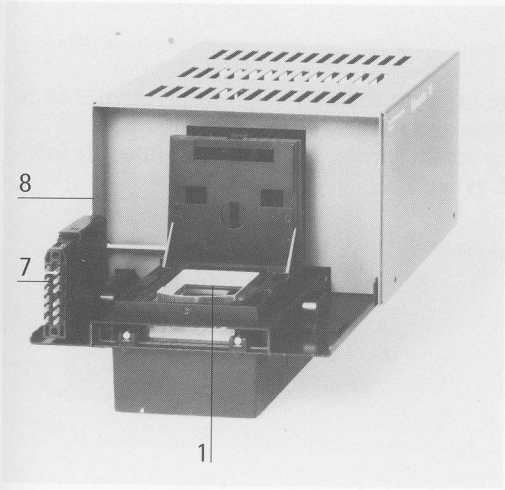
Centreing of the lamp

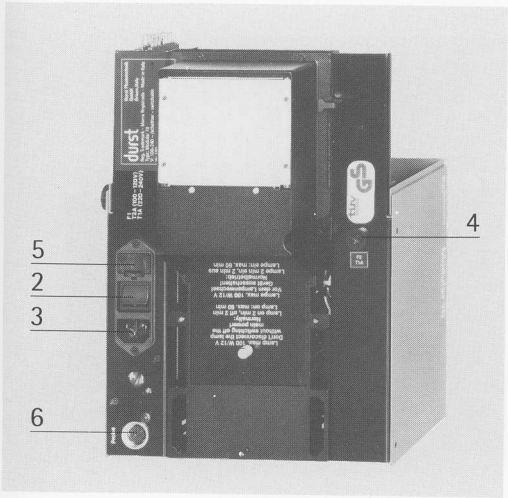
Prior to inserting a film it is necessary to adjust the lamp so that it provides uniform illumination. Turn on the enlarging light (with the diaphragm open and without a negative) and check the projection on the baseboard.

If shadows are visible, centre the lamp by vertical shifting and turning of the lampholder.

Once the lamp is centred, fix the lampholder in position with the knurled screw.

5.0





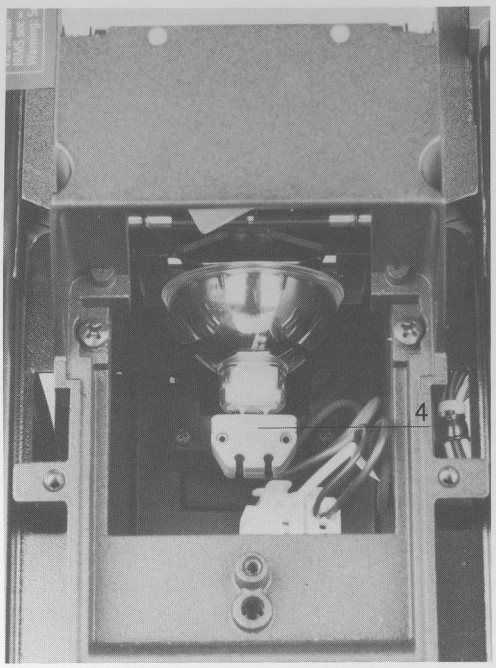
5.1
Technical description

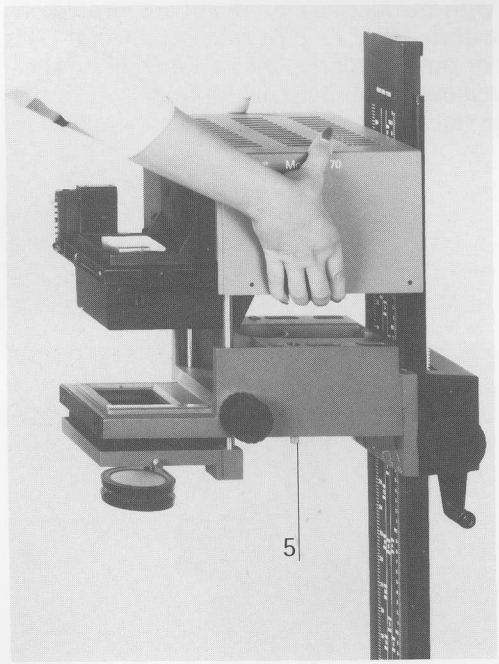
The light-module is used in connexion with the Modular 70 Vario or Modular 70 Color or Modular 70 Micro. The device consists of the lamphouse with an integrated transformer and built-in interchangeable light boxes (1) for diffuse illumination. A 12 V/100 W halogen lamp is the light source. The amount of light can be steplessly regulated via the density diaphragm (position "+" = less light, position "-" = more light).

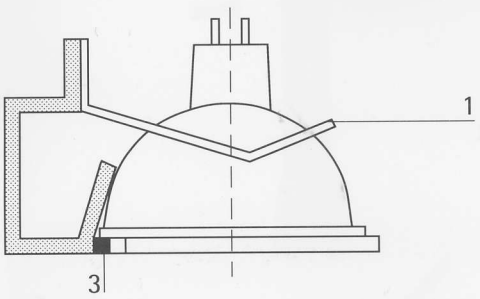
The power switch (2), 3-pole mains socket (3), lamp fuse (4), mains fuse (5) and the connexion for the sensor probe (6)(only necessary together with the Modular 70 Micro) are located on the underside of the device. The 12-pole frame connector (7) is used for connexion of the Modular 70 Micro. When using the Modular 70 Micro, remove the bridge, i.e. the front part of the connector. A voltage stabilizer can be added if necessary.

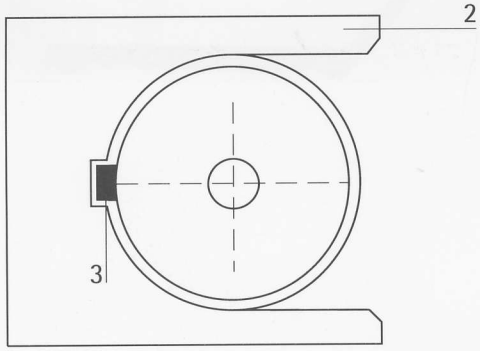
5.2
Standard equipment

- Lamphouse
- Fuses
- Mains cable









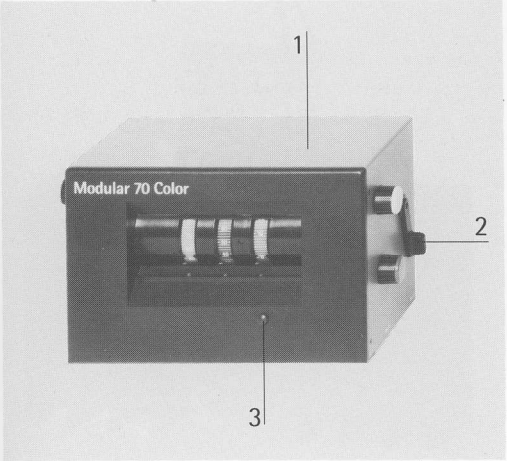
5.3
Mounting

Inserting the lamp

Lay the lamphouse down with the ground glass screen on top. Open the well of the lamphouse. Push the lamp between the pressure spring (1) and lamp guide (2) without touching the inner side of the reflector. Make sure the lamp is well centred. The projecting toe (3) on the reflector must seat properly in the recess. Connect the socket (4) and close the cover.
Now place the lamphouse on the main body (Modular 70 Start or Start Pro) and fix it in place with the threaded bolt (5).

Important!
When replacing the lamp or making other adjustments to it, make sure the plug to the mains has been pulled out.
After the fifth lamp replacement, the socket connector (4) should be replaced as well.

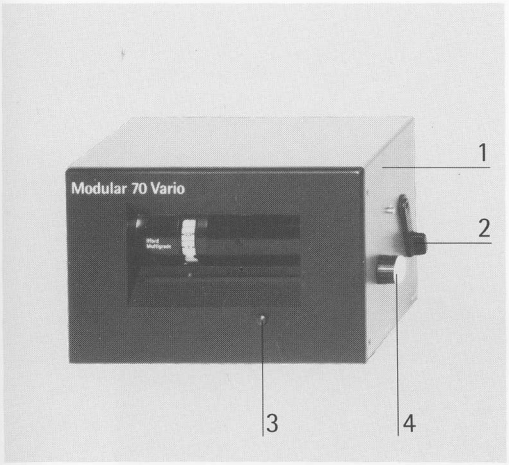
6.0



6.1
Technical description

The Color/Vario module consists of the housing with filter unit, reflex shaft, white light lever, and scale illumination.

The control mechanism of the Color module
allows the yellow, magenta and cyan filters to be steplessly adjusted by means of turning knobs and swung in or out of the light path by means of the white light lever.

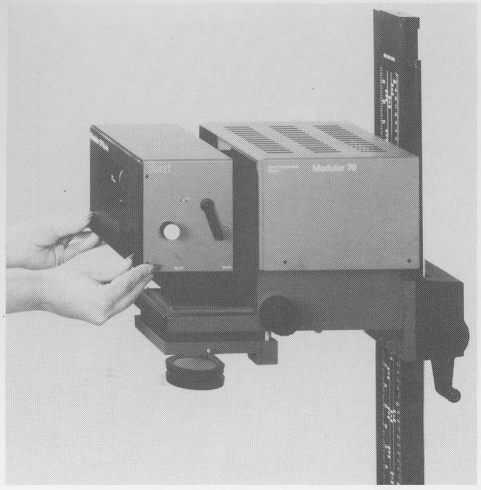


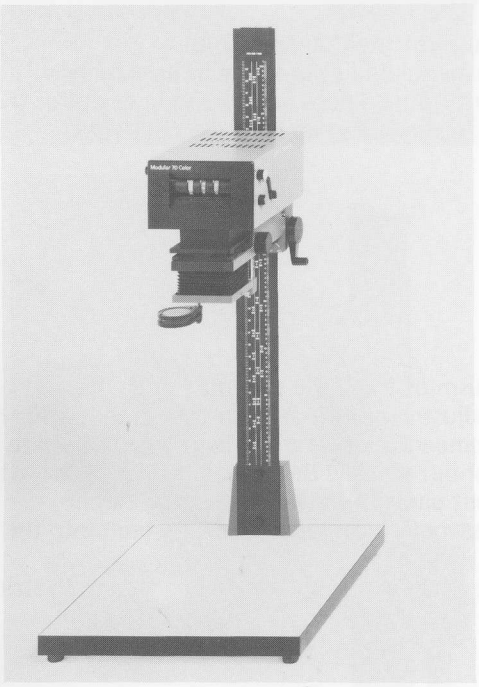
The control mechanism of the Vario module
allows the stepless adjustment of gradation from 0 to 5 with automatic density compensation. A white light lever is used to swing the filters in or out quickly. The scale illumination is integrated in the front panel of both modules and can be switched on as necessary (9 V compound battery built into the front panel).
Both modules utilize a halogen lamp selected according to strict tolerances.

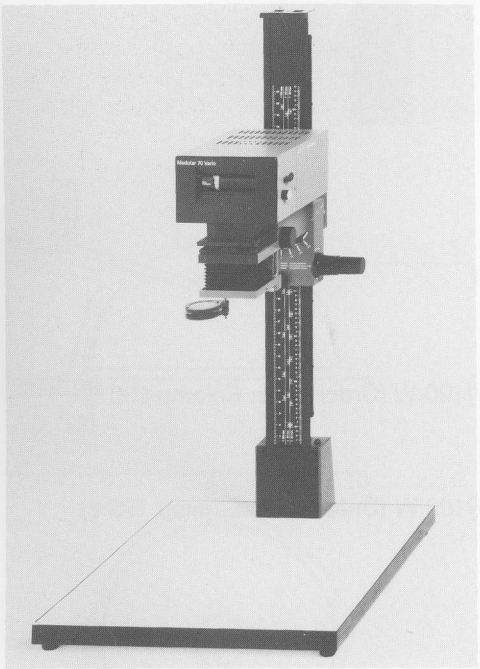
6.2
Standard equipment

Modular 70 Color
- Color module
- Halogen lamp 12 V/100 W (Order code: Colamp 100 S)

Modular 70 Vario
- Vario module
- Halogen lamp 12 V/100 W (Order code: Colamp 100 V)



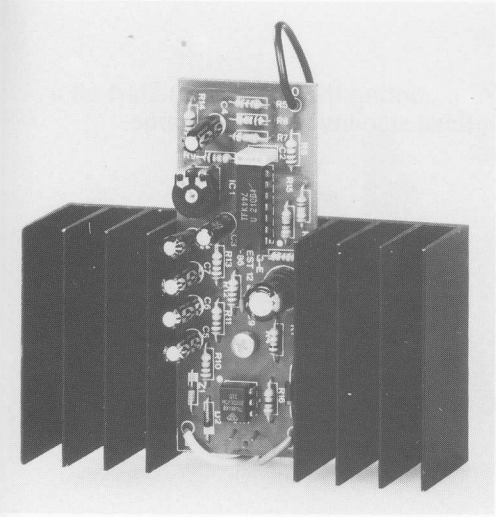




6.3
Mounting

Push the Color/Vario module from the front onto the lamphouse. Make sure that it clicks into place and comes together flush with the lamphouse.

7.0

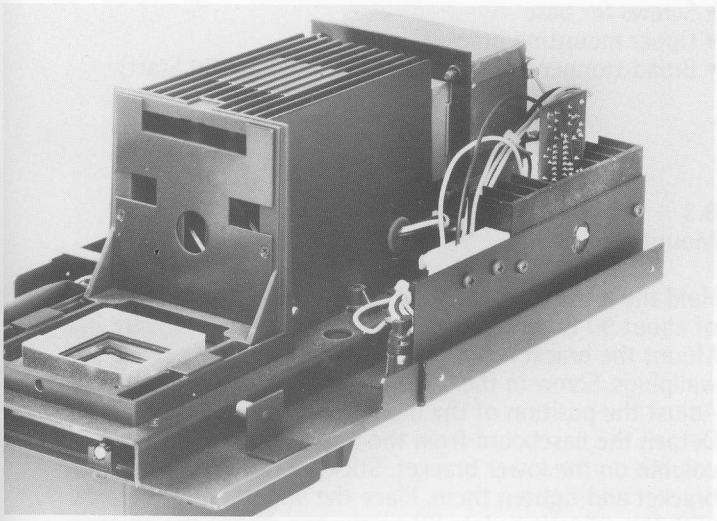


7.1
Technical description

This auxiliary module for the Modular 70 Lumo acts to stabilize voltage fluctuations of +10/-15 %. The module consists of an electronic voltage regulation system and the heat sink.

7.2
Standard equipment

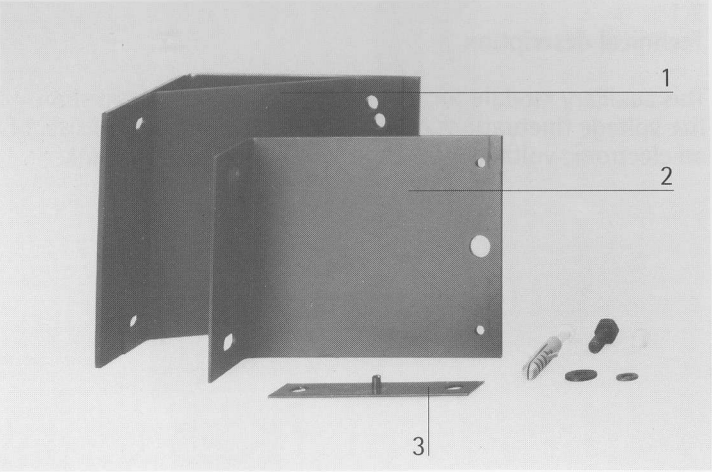
- Stabi module
- Screws with washers



7.3
Mounting

The Modular 70 Stabi is installed in the lamphouse/transformer housing of the Modular 70 Lumo. Loosen first of all the turning knob of the density diaphragm, then the 4 screws of the covering cap. Remove the shorting bar and connect the wires of the same colour via the cable clamp X 12. Put the covering cap back on and then place the lamphouse back on the basic enlarger.

8.0

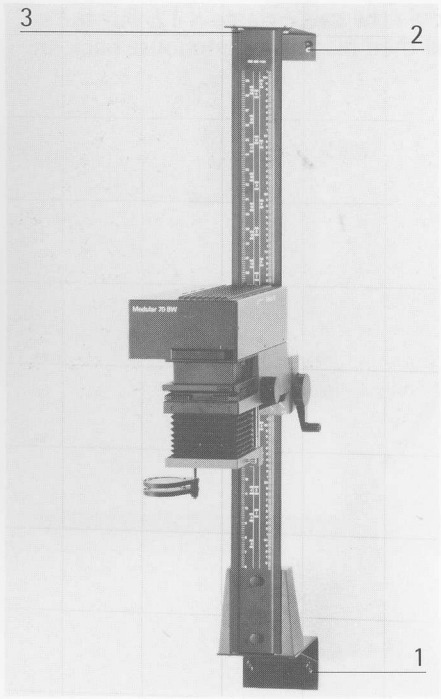


8.1
Technical description

This module serves for mounting the Modular 70 Start on a wall. It guarantees optimal stability and allows large magnification factors.

8.2
Standard equipment

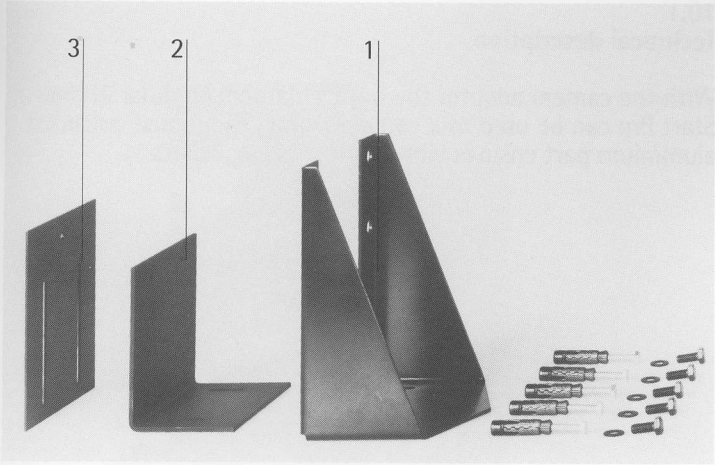
- Adjusting plate (3)
- Lower support bracket (1)
- Wallplug screws
- Wallplugs
- Washers
- Screws for base
- Upper mounting bracket
- Broad stopper (not used with the Modular 70 Start)



8.3
Mounting

Hold the lower support bracket (1) against the wall at a height of about 90 cm and pencil in the positions of the bore holes. Mount the bracket using the provided screws, washers and wallplugs. Screw in the screws with the spanner provided. Adjust the position of the bracket exactly using a spirit level. Detach the baseboard from the Modular 70 and place the column on the lower bracket. Stick the screws through the bracket and tighten them. Place the upper mounting part (2) with the adjusting plate (3) on the top end of the enlarger column so that the retaining stud engages in its bore hole. Now pencil in the bore holes for the upper mounting part. Remove the enlarger again and drill the upper bore holes. Locate the bore holes minimally under the pencil markings so that the column is subjected to some tension (pressure) after mounting. Now attach the upper mounting part using the provided screws, wallplugs and washers. Use the adjusting plate to align the column vertically. Now mount the enlarger and project a suitable negative to check the alignment of the optical axis.

9.0

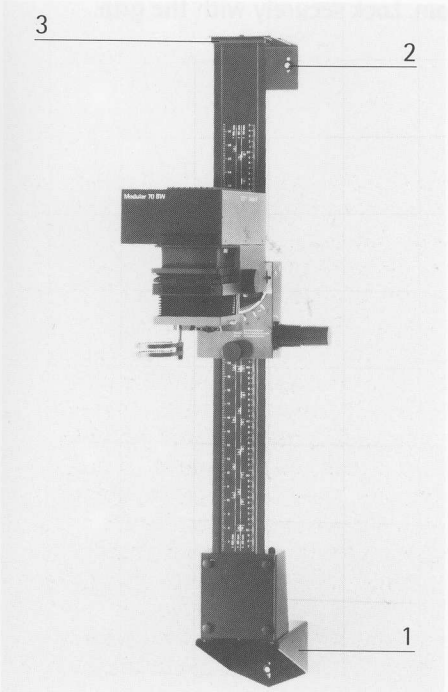


9.1
Technical description

This device allows the mounting of the Modular 70 Start Pro to a wall and increases the stability considerably, a factor which greatly improves the quality of projections with long exposure times. Wall mounting also permits greater magnification factors.

9.2
Standard equipment

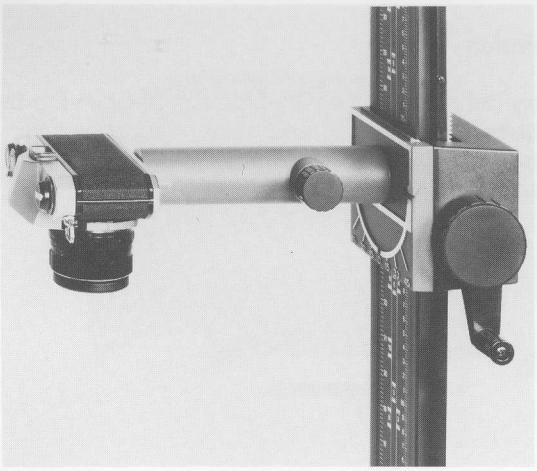
- Lower support bracket (1)
- Upper mounting bracket (2)
- Adjusting plate (above)(3)
- Wallplugs
- Screws
- Washers



9.3
Mounting

Hold the lower support bracket against the wall at a height of about 90 cm and pencil in the positions of the bore holes. Mount the bracket using the provided screws, washers and wallplugs. Align the bracket with a spirit level. Detach the baseboard from the Modular 70 Start Pro and place the column on the lower bracket. Stick the screws through the bracket and tighten them. Now place the upper mounting bracket with the adjusting plate on the top end of the enlarger column and pencil in the bore holes for the upper mounting bracket. Remove the enlarger again and drill the upper bore holes. Locate the bore holes minimally under the pencil markings so that the column is subjected to some tension after mounting. Now mount the upper mounting bracket, using the adjusting plate to align the column vertically. Mount the enlarger and project a suitable negative to check the alignment of the optical axis.

10.0



10.1
Technical description

With the camera adapter the basic enlargers Modular 70 Start/ Start Pro can be used as a camera tripod. The robust extruded aluminium part ensures vibrationless camera shots.

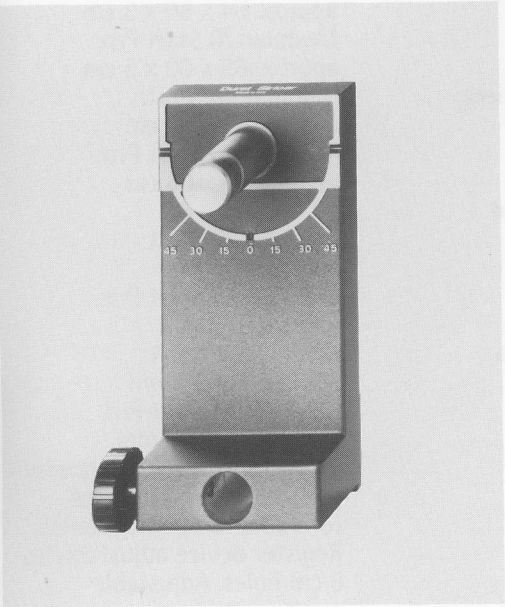
10.2
Standard equipment

- Camera arm with locking knob.

10.3
Mounting

Screw the camera adapter into the tripod thread of the camera until it is snugly tight. Remove the enlarger head and push the adapter onto the guide pin. Lock securely with the grip.

11.0



11.1
Technical description

The extension arm allows higher magnification factors and is mounted in place of the enlarger head.

11.2
Standard equipment

- Extension arm with locking knob

11.3
Mounting

Remove the enlarger head from the height adjustment unit and mount the extension arm in its place.

Then mount the enlarger head on the guide pin of the extension arm.

12.0

12.1
Modular 70 Start
Modular 70 Start Pro

Film size:	Standard 24 x 36 mm with accessory 13 x 17 mm up to 6 x 7 cm
Max. height of enlarger:	Modular 70 Start: approx. 1290 mm Modular 70 Start Pro: approx. 1330 mm
Size of baseboard:	Modular 70 Start: approx. 54 x 50 x 3 cm Modular 70 Start Pro: approx. 65 x 60 x 5 cm
Usable baseboard area:	Modular 70 Start: approx. 47 x 50 cm Modular 70 Start Pro: approx. 60 x 60 cm
Optical axis/column distance:	Modular 70 Start: approx. 250 mm Modular 70 Start Pro: approx. 275 mm
Column dimensions:	Modular 70 Start: 90 x 25 x 1100 mm Modular 70 Start Pro: 100 x 45 x 1100 mm
Negative carrier:	Exchangeable format masks/ glasses. Adjustable stops for 135 and 120 negatives. Register device adjustable to 8 cm holes. Adjustable masking strips.

Magnification factors

Lens focal lenght	Negative size	Magnification factor size min.	max.	Print size min.	max.
35 mm	13 x 17 mm	4.6 x lin	28.0 x lin	5.5 x 7.6 cm	33 x 46 cm
35 mm	18 x 24 mm	4.6 x lin	28.0 x lin	7.8 x 10.5 cm	47 x 64 cm*
50 mm	26 x 28 mm	2.2 x lin	19.0 x lin	5.7 x 6.2 cm	49.5 x 53 cm
50 mm	24 x 36 mm	2.2 x lin	19.0 x lin	5.1 x 7.7 cm	43 x 66 cm
80 mm	6 x 6 cm	1.5 x lin	11.0 x lin	8.2 x 8.2 cm	60 x 60 cm*
100/105 mm	6 x 7 cm	1.5 x lin	7.8 x lin	8.2 x 10 cm	42 x 53 cm

* The projection is limited by the base.
Lens connexion: by means of lens boards with M39 thread.

12.2
Modular 70 Lumo

Light source:	Halogen lamp 12 V/100 W Durst Colamp 100 S for the Modular 70 color Durst Colamp 100 V for the Modular 70 Vario
Light mixing:	Integrated interchangeable boxes for 24 x 36 mm and 6 x 7 cm
Light regulation:	Via a mechanical diaphragm. Range 0.60 D corresponds to 2 f/stops.
Overheating protection:	Built into the transformer. The lamp switches itself off after 60 minutes of continuous operation.

12.3
Modular 70 Color

Filter:	Dichroic glass filter Y-M-C
Filter values:	Steplessly adjustable between 0 and 170 D.
White light lever:	Built in
Scale illumination:	LEDs (switched on as desired)

12.4
Modular 70 Vario

Filter:	Dichroic glass filter Y-M
Gradation:	Steplessly adjustable between 0 and 5
White light lever:	Built in
Scale illumination:	LED - can be turned on as needed

12.5
Modular 70 Stabi

Stabilization of voltage fluctuations +10/-15 % to +/-1 %

12.6
Modular 70 BW

Light source:	Opal lamp Durst Dulamp 150 W
Light output:	Via exchangeable condensors for 24 x 36 mm, 6 x 6 cm and 6 x 7 cm
Filter drawer:	For individual filters 82 x 82 mm

12.7
Vegawal

For wall mounting of the Modular 70 Start

12.8
AC 800 Wallmount

For wall mounting of the Modular 70 Start Pro

12.9
Siriocam

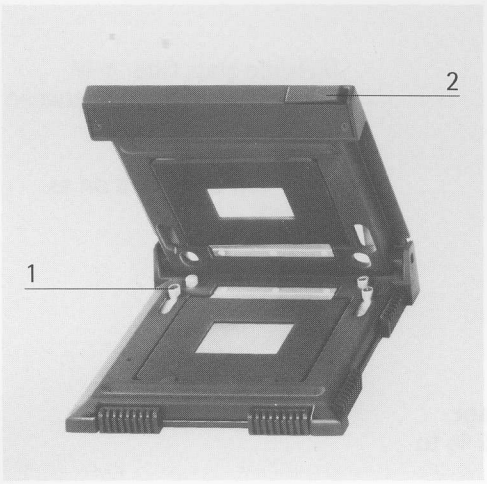
Connecting pin:	ø 32 mm
Connecting thread:	1/4"

12.10
Sirioar (usable only with the Modular 70 Start)

Magnification factor:	50 mm lens = 25 x lin 80 mm lens = 14.5 x lin 105 mm lens = 10.5 x lin

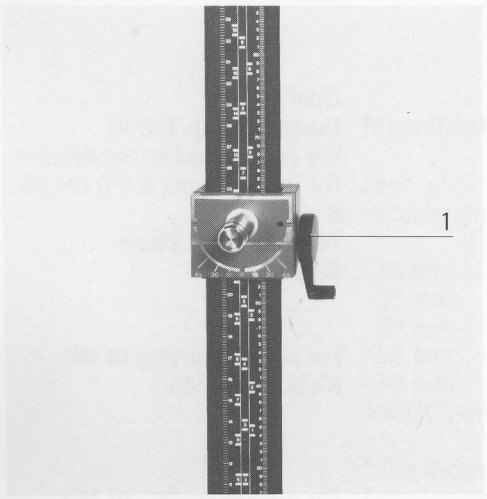
13.0

The instructions apply to both the Modular 70 Start and Modular 70 Start Pro in combination with the B&W-, Vario- and Color-module.



13.1
Inserting the film strip/individual negatives

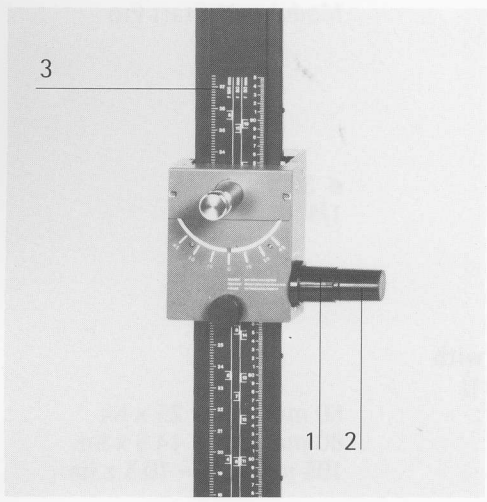
Clean your negatives with an anti-static cloth prior to use. Make sure that the emulsion layer is not scratched. Lay the single negative exactly on the opening of the mask with the emulsion side downwards. Close the negative carrier and push it into the enlarger again. When working with n gative strips you can leave the negative carrier in the enlarger. Make sure that the negative positioning pins (1) are positioned properly (in front for 24 x 36 mm films and in back for 120 films). Lift the upper half of the negative carrier slightly until it stops. Then insert the negative strip from the front until it stops at the pins. When the lamp is switched on, the entire image should appear on the projection surface. Now close the negative carrier by pressing the key (2).



13.2
Height adjustment

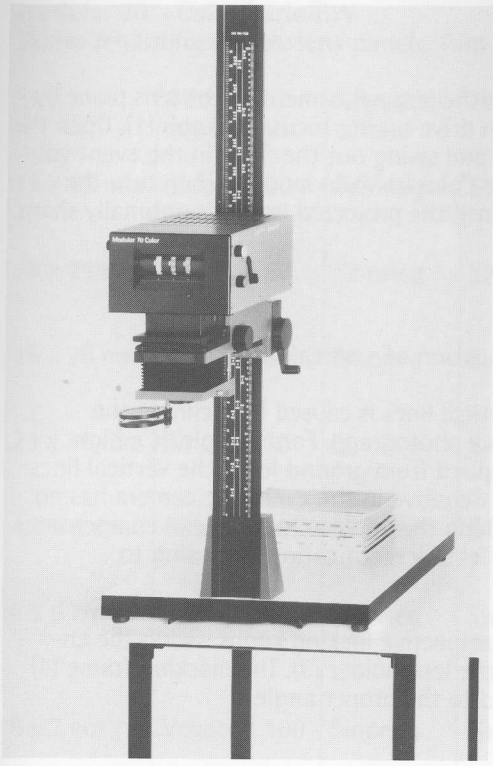
The desired magnification is attained by raising or lowering the enlarger head - the higher the head, the greater the magnification.

Height adjustment on the Modular 70 Start is by means of a crank handle (1).



In the case of the Modular 70 Start Pro the head is moved by means of a quickly adjustable handle or a fine drive mechanism. To make a quick adjustment, disengage the inner knurled handle (1)(counter-clockwise). This allows you to adjust the height of the head quickly and effortlessly. Fine adjustments can be made once the inner knurled handle has been engaged again. To do this, turn the outer knurled handle (2).

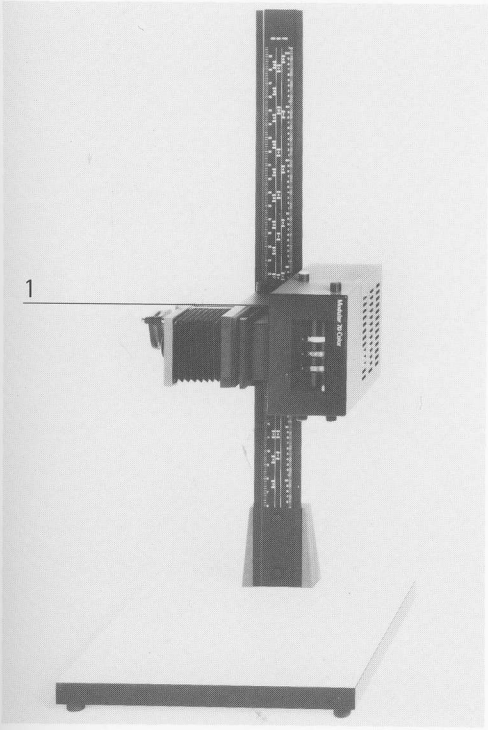
Scales in cm and inch, as well as the magnification factors (3) with regard to a 50 mm, 80 mm and 105 mm lens, are printed onto the column to facilitate size adjustments.



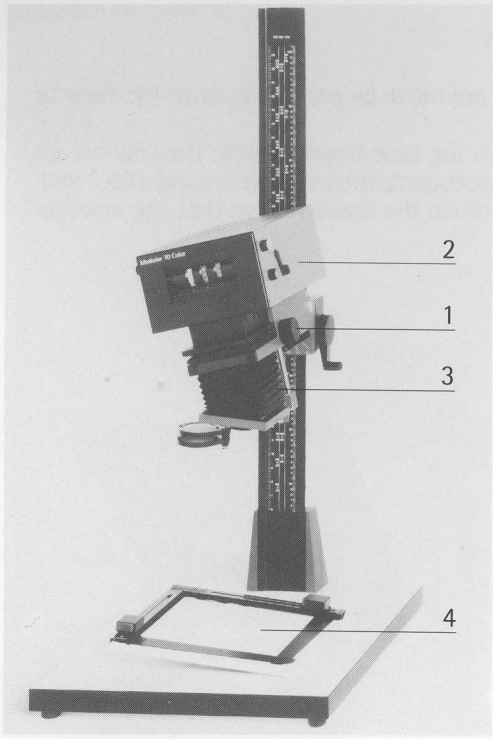
13.3
Giant enlargements

Giant enlargements are made by projecting onto the floor or wall.

For floor projection the base together with the column are removed from the baseboard, then turned around 180 ° and remounted. Weight down the baseboard so that the enlarger does not fall over.



For wall projection one loosens the locking knob (1) and turns the enlarger head 90 ° until it clicks into place.



13.4
Focussing

Focussing is accomplished by adjustment of the lens plane by means of the friction drive on the focussing knob (1). Open the aperture completely and swing out the filter in the event you are working with the Color or Vario module. Then turn the focussing knob (1) until the projected image is optimally sharp.

13.5
Schleimpflug rectification of vertical lines

The distortion of vertical lines is caused by inclining the camera when taking a photograph. For example, if a high building is photographed from ground level, the vertical lines run together on the negative in the event the camera has no possibility of controlling the perspective. You can compensate for this undesired effect by rectification according to Scheimpflug.

After loosening the respective locking knobs, swing the enlarger head (2) and the lens holder (3). The masking frame (4) must also be inclined to the proper angle.

Modular 70 - Color/Vario/BW
Tables regarding lenses, lens panels, film sizes, magnification factors

Size	BW condensors	Negative carrier	Mask	Lens panel	Glasses	Color light box	Lens focal length	Magnification factor
13 x 17 mm	Siriocon 50	Sinoneg	Sivopar 110	Neriotub	-	24 x 36 integrated	35 mm	min. 4.6 x lin. max. 28.0 x lin.
18 x 24 mm	Siriocon 50	Sinoneg	Sivopar 18	Neriotub	-	24 x 36 integrated	35 mm	min. 4.6 x lin. max. 28.0 x lin.
26 x 26 mm	Siriocon 50	Sinoneg	Sivopar 26	Siriotub 39	-	24 x 36 integrated	50 mm	min. 2.2 x lin. max. 19.0 x lin.
24 x 36 mm	Siriocon 50	Sinoneg	Sivopar 35	Siriotub 39	-	24 x 36 integrated	50 mm	min. 2.2 x lin. max. 19.0 x lin.
4.5 x 6 cm	Siriocon 80	Sinoneg	Sivopar 45	Siriopla 39	-	6 x 7 integrated	80 mm	min. 1.5 x lin. max. 11.0 x lin.
6 x 6 cm	Siriocon 80	Sinoneg	Sivopar 66 Sixma 66	Siriopla 39 Siriopla 39	- Sivogla AN/ Sixgla	6 x 7 integrated	80 mm	min. 1.5 x lin. max. 11.0 x lin.
6 x 7 cm	Vegacon 100	Sinoneg	Sixma 67	Siriopla 39	Sivogla AN/ Sixgla	6 x 7 integrated	100/105 mm	min. 1.5 x lin. max. 7.8 x lin.

Conversion kits for Color

Sinocolset 66 (for 6 x 6 cm)
Sivogla AN
Sixma 66
Siriopla 39

Sinocolset 67 (for 6 x 7 cm)
Sivogla AN
Sixma 67
Siriopla 39

Conversion kits for BW

Sinoset 66 (for 6 x 6 cm)
Siriocon 80
Sivogla AN
Sixma 66
Siriopla 39

Sinoset 67 (for 6 x 7 cm)
Vegacon 100
Sivogla AN
Sixma 67
Siriopla 39

13.6
Enlarging with Modular 70 BW/Vario/Color

Operating procedure	Modular 70 BW	Modular 70 Vario	Modular 70 Color
Make sure the lens/condensor and light box combination are correct			
Connect the enlarger with the mains via the timer	•	•	•
Insert the negative in the negative carrier	•	•	•
Open the aperture	•	•	•
Open the density diaphragm with the turning knob		•	•
Use the white light lever to swing out the filter		•	•
Determine the magnification and focus	•	•	•
Stop down the enlarger lens 2 f/stops	•	•	•
Use the white light lever to swing in the filter		•	•
Set the gradation		•	
Set the filter values			•
Set the exposure	•	•	•
Insert photo-paper and expose	•	•	•
Develop the photo-paper	•	•	•

13.7
Determination of gradation

With the Modular 70 Vario the paper gradation can be adapted to the given negative contrast.
- High-contrast negatives require filters "0" to "1"
- Negatives with normal contrast require filters "2" to "3"
- Low-contrast negatives require filters "4" to "5"

The proper gradation is determined by means of an exposure series with various settings.

13.8
The red filter

B&W photo-paper is not exposed by the enlarger light when the red filter is in the light path under the lens. Brief checks of the projection (max. 30 sec.) on the photo-paper are therefore possible.

13.9
Filter correction

For a fine filter test one makes a series of exposures on one sheet of photo-paper only - proceeding from the original ("rough") filter settings. The following three filter colours can be used for colour correction.

Y = yellow
M = magenta (purple)
C = cyan (blue green)

The filter colours which are lacking (red, green, blue) are produced through the combination of two filter colours in the colour mixing head.
- Blue: by setting equal amounts of cyan + magenta, e.g.: 10 red = 10 yellow + 10 magenta
- Green: by setting equal amounts of yellow + cyan
- Red: by setting equal amounts of yellow + magenta

Before you use these filters/filter combinations, you must be fully aware of their effect. For this reason, note the following rules:

1
A colour cast in an enlargement is eliminated by one filter or by a filter combination of the same colour.
2
Too strong a correction causes a colour cast in the complimentary colour; proper reduction of the filtering brings about a colour balance again.
3
One or two filter colours may always be used, but never three. Use of the third filter colour leads to a gray tone which does not enhance the effect of filtering, but only extends the exposure time.
4
The stronger the colour cast is, the greater the filtering must be to eliminate it.
5
The greater the filtering is, the longer the exposure time will be. This applies to purple and blue-green in particular.
6
It is necessary to note down the filter value, exposure time and f/stop value on the back of every test exposure and to number each exposure so that one can refer back to a particular result.
7
Colours should be evaluated in daylight or in conditions similar to daylight as much as possible.

So that correct exposure can be made despite a change of filter values, one must determine the exposure time anew in each respective case. Filtering rules 1 and 2 apply to colour negatives. Correction is direct with colour positives.

Filter correction and the effect on enlargements of colour negatives

Colour cast in the print	Correction on the colour mixing	The effect on the headprint	The effect of over-correction on the print
yellow	+ yellow	less yellow	yellow cast
magenta	+ magenta	less magenta	green cast
cyan	+ cyan	less cyan	red cast
blue	+ magenta/+ cyan (= blue)	less blue	yellow cast
green	+ yellow/+ cyan (= green)	less green	magenta cast
red	+ yellow/+ magenta	less red	cyan cast

Filter correction and the effect of the enlargement of colour slides

Colour cast in the print	Correction on the colour mixing	The effect on the headprint	The effect of over-correction on the print
yellow	+ magenta/+ cyan	less yellow	yellow cast
magenta	+ yellow/+ cyan	less magenta	green cast
cyan	+ yellow/+ magenta	less cyan	red cast
blue	+ yellow	less blue	yellow cast
green	+ magenta	less green	magenta cast
red	+ cyan	less red	cyan cast

13.10
Density correction with negatives

The print is too light:
Lengthen the exposure time or open the lens aperture, resp.

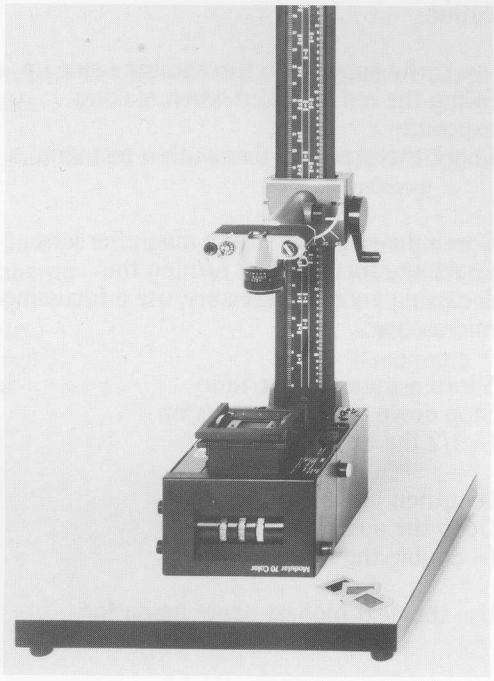
The print is too dark:
Shorten the exposure time or close the lens aperture, resp.

This procedure applies to colour and B&W negatives. The correction for slides is exactly the opposite.

14.0

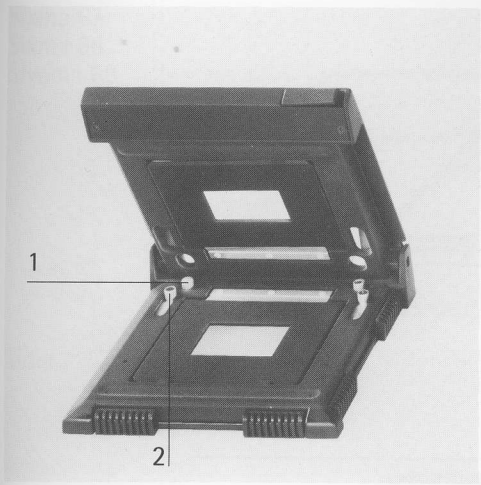
Problem	Probable cause	Solution
No picture visible on the paper	• The paper was inserted with the emulsion side down • The red filter was swung in during the exposure • The exposure time was too short	• Insert the paper with the emulsion side up • Swing the red filter out when making exposure • Check the exposure time with a test strip
The print is not sharp	• Unclear negative • The enlarger was not optimally focussed	• Check the negative with a magnifier lens • Check the focussing by turning the focussing knob. If necessary, use a focussing microscope
The print is too dark	• The paper was exposed too long	• Shorten the exposure time • Stop down the lens one f/stop (= 1/2 the exposure time)
The print is too light	• The paper was underexposed	• Lengthen the exposure time • Open the aperture one stop (= double the exposure time)
The print lacks contrast	• A flat negative (lacking contrast)	• Use the next highest paper gradation
The print is too contrasty	• The negative has dense black areas and black shadow tones. It is overexposed, overdeveloped, or both	• Use the next lowest paper gradation
The paper is totally black	• The paper was exposed to room light properly before turning on the room light	• Make sure the paper package is closed

15.0



The basic Modular 70 unit is excellently suited for use as a repro-tripod. Remove the main body by loosening the locking knob and then mount the Siriocam camera adapter on the height adjustment mechanism. To reproduce transparencies, the Modular 70 Lumo lamphouse is positioned on the baseboard with the ground glass screen upwards in combination with the Modular 70 Color.
When reproducing framed transparencies first remove the metal masks from the negative carrier. In their place, insert the Sidia mask (accessory) with the positioning pins. If using unframed transparencies, you can leave the metal masks in the negative carrier. Switch on the enlarger light and correct possible colour displacements with the colour head filters.

16.0

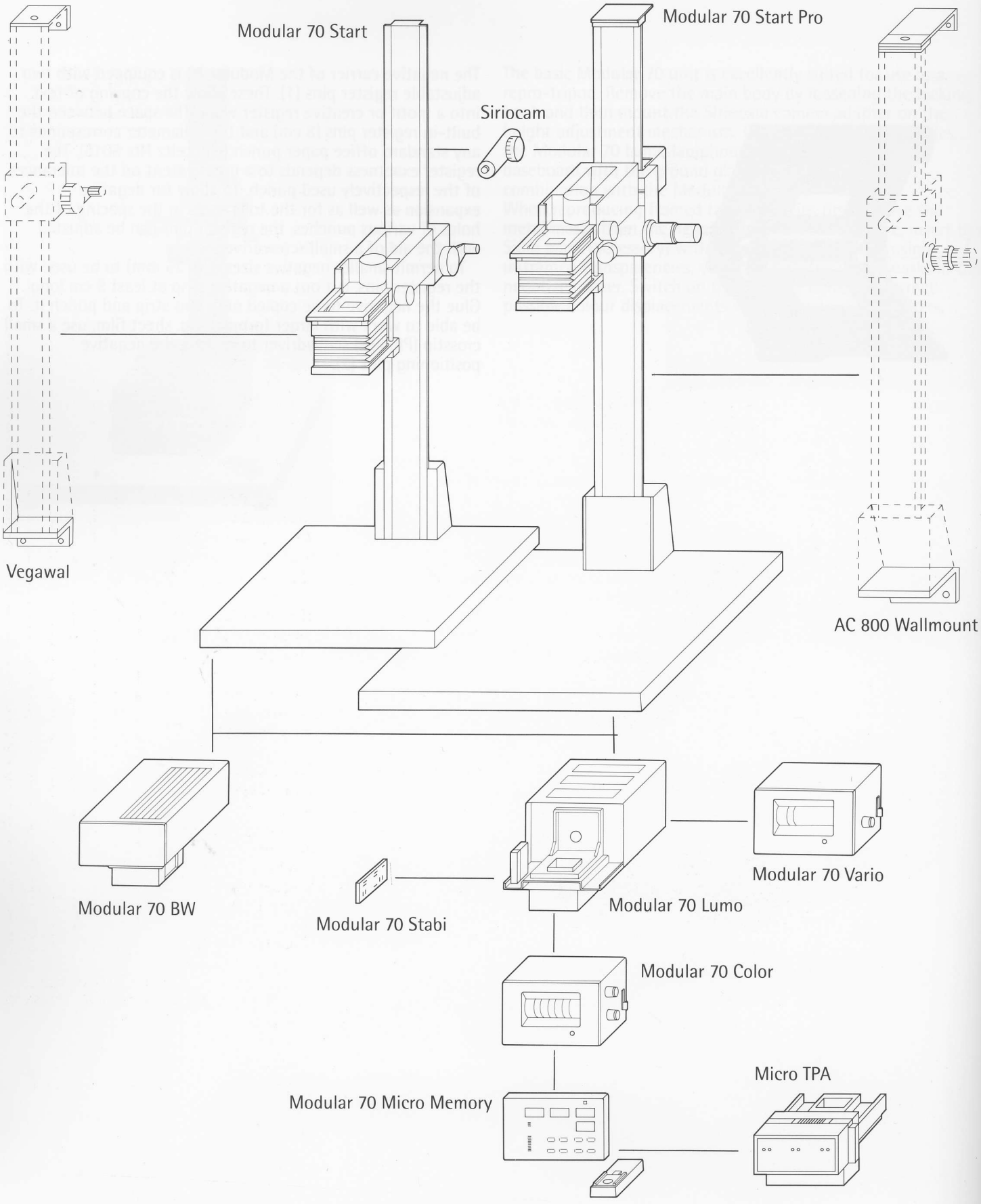


The negative carrier of the Modular 70 is equipped with two adjustable register pins (1). These allow the copying of text into a motif or creative register work. The space between the built-in register pins (8 cm) and their diameter corresponds to any standard office paper punch (e.g. Leitz No. 5018). The register exactness depends to a great extent on the tolerances of the respectively used punch. To allow for negative expansion as well as for the tolerances in the spacing of the holes of various punches, the register pins can be adjusted with the aid of a small screwdriver.

To permit smaller negative sizes (e.g. 35 mm) to be used with the register pins, cut out a negative strip at least 9 cm long. Glue the negative to be copied onto this strip and punch it. To be able to work with larger formats, e.g. sheet film, use a small crosstip (Phillips) screwdriver to remove the negative positioning pins (2).

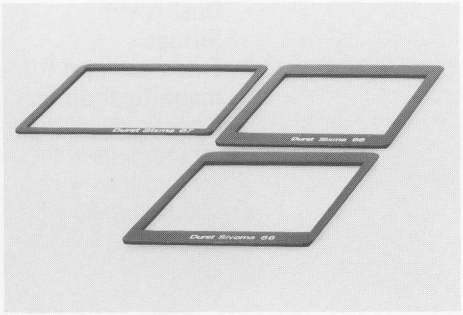
Depending on the respective equipment, the system can be adapted as desired to suit changing requirements.

17.0

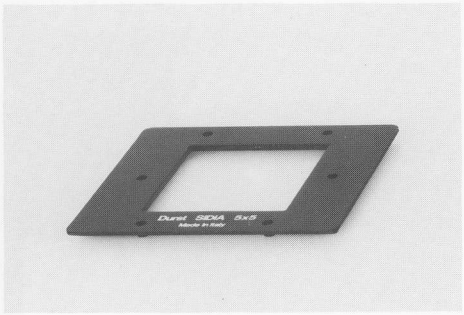


18.0

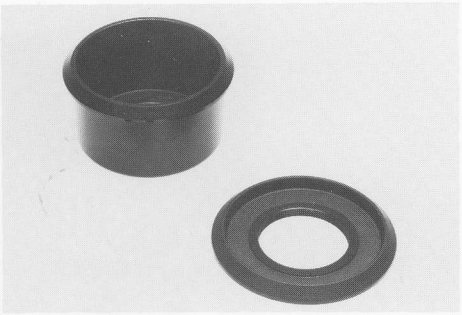
Sixma 67
Sixma 66
Sivoma 66



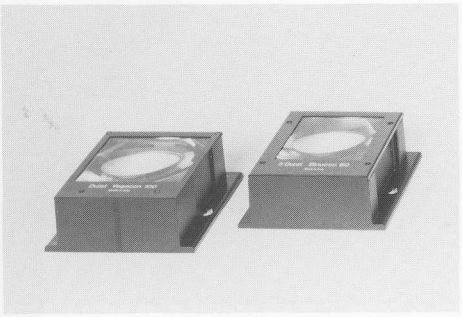
Sidia



Neriotub 39
Siriopla

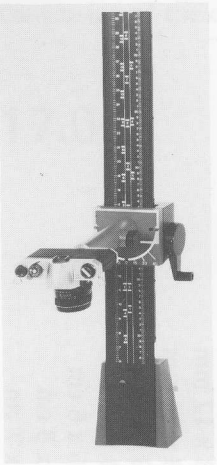


Siriocon 80
Vegacon 100

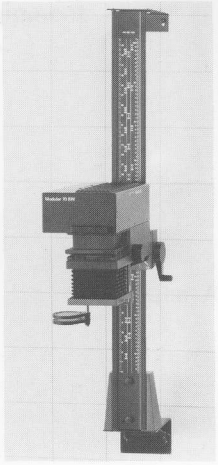


		13 x 17 mm	18 x 24 mm	26 x 28 mm	24 x 36 mm	4.5 x 6 cm	6 x 6 cm	6 x 7 cm
Format inserts	**Sivopar 110**	○						
	Sivopar 18		○					
	Sivopar 26			○				
	Sivopar 35				●			
	Sivopar 45					○		
	Sivopar 66						○	
	Sixma 66 Lower mask						○	
	Sivoma 66 Upper						○	
	Sixma 67 Lower mask							○
	Sidia Mask for framed 35 mm slides				○			
	Sivogla AN Anti-Newton glass			○	○	○	○	○
	Sivogla Normal glass			○	○	○	○	○
Lens panels	**Neriotub 39**	○	○					
	Siriotub 39			●	●			
	Siriopla					○	○	○
Condensors	**Siriocon 50**	●	●	●	●			
	Siriocon 80					○	○	
	Vegacon 100							○
Conversion kit	**Sinocolset 66**						○	
	Sinocolset 67 for the Modular 70 Color and the Modular 70 Vario							○
	Sinoset 66						○	
	Sinoset 67 for Modular 70 BW							○

● standard equip.
○ special accessories



Siriocam



Vegawal

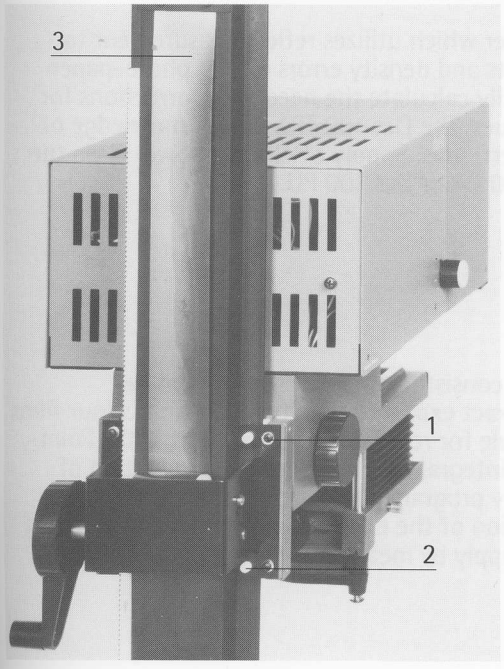
Special accessories

Stabilizer
Modular 70 Stabi
Printed circuit board module
Vegawal
Wall mounting bracket for the Modular 70 Start
AC 800 Wallmount
Wall mounting bracket for the Modular 70 Start Pro
Siriocam
Camera adapter (1/4" thread)
Autocuf
Dust cover
Sirioar
Extension arm for higher magnification factors
(only for Modular 70 Start)
50 mm lens = factor 25 x lin
80 mm lens = factor 14.5 x lin
105 mm lens = factor 10.5 x lin

19.0

The Durst Modular 70 is designed to require a minimum of care. Nevertheless, moving parts should be regularly checked and maintained.

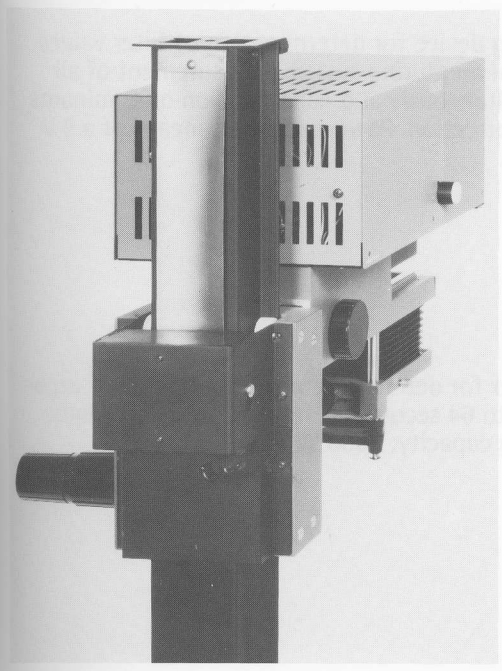
Focussing mechanism
Clean the guide rods of the focussing mechanism about every 3 months with alcohol and then lubricate them with mineral oil.



Height adjustment of the Modular 70 Start
If the movement of the height adjustment mechanism is too tight or too loose, adjust the slide elements. Remove the plastic cover at the back of the height adjustment mechanism by loosening the two screws.

Turn the screws (1) of the slide elements (2)(each of them about a 1/4 turn) in the required direction and check the movement until it is acceptable. Then replace the cover.

Lubricate the weight counterbalance spring (3) at regular intervals with mineral oil.



Height adjustment of the Modular 70 Start Pro
The function of the weight counterbalance for height adjustment of the enlarger head is performed by a weight counterbalance spring. The spring is subjected to continuous wear, which can cause fractures on both sides of the spring. Check the springs of your enlarger as follows:

1
Crank the enlarger head to the lowest position on the column

2
Lock the enlarger head in place by means of the knurled knob on the column

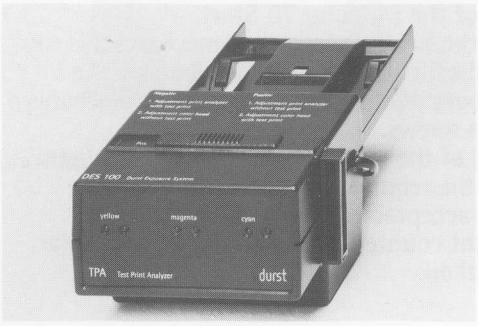
3
Check the spring for fractures.

4
If damage is visible, have the spring replaced by a service man.

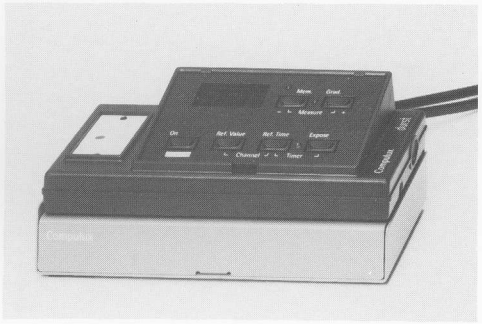
Negative carrier glasses, condensors and lenses are cleaned best of all with an anti-static brush or cloth.

Replacement of the battery for scale illumination (Modular 70 Color/Vario)
Loosen the four screws next to the front panel and then remove the panel. Put in new 9 V compound batteries.

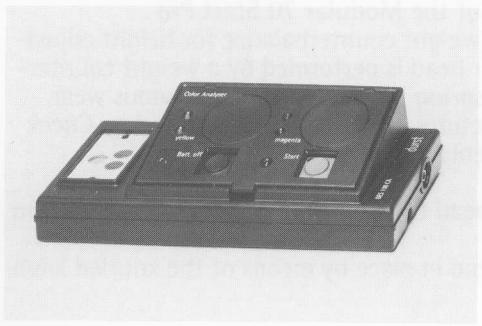
19.0



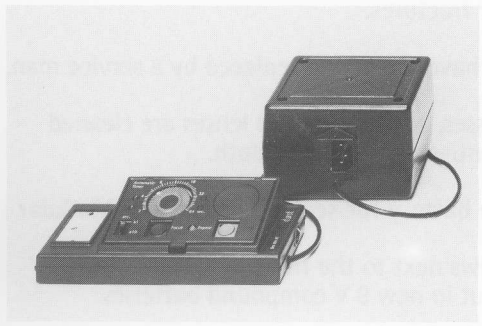
Des 100 TPA
A test print analyser which utilizes reflex measurement to register colour casts and density errors on the photo-paper and to automatically calculate the necessary corrections for the basic filter values. The Des 100 TPA makes knowledge of colour theory superfluous. Supply of electric power is via the Des 101 AT, Des 100 CA or Des 100 PU.



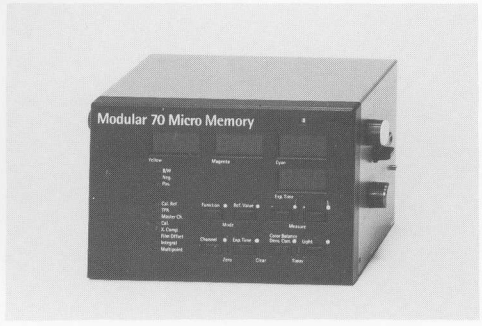
Compulux
A modular system consisting of a measuring module determining the exact exposure time for B&W and colour films and a circuit module for regulating the exposure time. Point-, multi-point-, and integral measurement, determination of gradation, 10 freely programmable memory channels. Automatic correction of the exposure time when the f/stop is changed. Power supply by means of a 9 V compound battery.



Des 100 CA
A colour measuring device for determination of filter values through an integral measuring system. Measurement of all three colours simultaneously and consideration of dominants with 50 % undercorrection. Power supply be means of a 9 V compound battery.



Des 101 AT
An automatic timer for determination and switching of exposure times from 2 to 64 seconds or from 20 to 640 seconds. Maximal switching capacity: 1800 W (220 V).



Modular 70 Micro Memory
An electronic module which transforms the colour head Modular 70 Color into an automatic enlarger. Automatic determination of filter values and exposure time, integral and multi-point measurement, variable undercorrection, and display of gradation when working with B&W. 30 paper and 30 film channels can be combined for working with positives, negatives and B&W. The calibration values of the most frequently used types of paper and film are stored in the memory of the module.

Functions	Des 100 TPA	Des 100 CA	Des 101 AT	Compulux	Modular 70 Micro
Density measurement	●		●	●	●
Colour measurement	●	●			●
Density and colour measurement	●				●
Integral measurement		●	●	●	●
Point measurement			●	●	●
Multi-point measurement				●	●
Reflex measurement	●				●
Gradation determination				●	●
Fixed undercorrection		●			
Variable undercorrection					●
Calibration channels				●	●
Calibration cards		●	●		

durst

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