

BASIC UNIT - LABORATOR 1200 ELITE 2000 tim
ELITE 2000 mot

Colenta America Co. — or Colex

347 Evelyn St.

Paramus N.J. 07652 — zip CLS 501 4x5

*Phone — 201-265-5670
(Ask for Durst Division)*

EXPOSURE SYSTEMS : CLS 501
VLS 501
FEMOKIT N BW

FILM CARRIERS : FEMONEG
FEBIDAP / BIMANEG

AUTOFOCUS : ELITE 2000 tim
ELITE 2000 mot

WALL MOUNTING : FEMO / WALLMOUNT

Instruction Manual

Durst LABORATOR 1200 ELITE 2000 tim ELITE 2000 mot

Basic enlarger

CONTENTS

DESCRIPTIONS	4
Outfit of the basic enlarger	4
Dimensions and optical axes of the various combinations	5
Technical data	7
COMBINATIONS	10
Lighting systems	10
Model versions	10
ASSEMBLING THE BASIC ENLARGER	11
Cleaning	11
Assembling the baseboard	11
Mounting the enlarger on the lab bench	11
Mounting the enlarger head	12
Mounting the lenses on the lens boards	12
Assembling the red filter and diffuser	13
SETTING UP: THE ENLARGER HEAD	14
Inserting the negative carrier	14
Assembling the cable holder of the baseboard version	14
PRACTICAL OPERATION	15
Setting the print size with constant sharpness	15

Giant enlargements	16
Converging verticals	16
Reductions	17
MAINTENANCE	18
Care	18
CONVERTING THE LABORATOR 1200 ELITE TO A DIFFERENT ENLARGER HEAD	19
ACCESSORIES	20

DESCRIPTIONS

The Durst **LABORATOR 1200 ELITE 2000** tim and **ELITE 2000 mot** are efficient enlargers for handling films up to 10 x 12.5 cm (4 x 5 in.)

Applications: Colour and black-and-white prints, enlargements to match layouts, part enlargements

Suffixes that you will meet repeatedly in this manual:

Suffix	Enlarger
tim	LABORATOR 1200 (version with manual head adjustment) ELITE 2000 tim
mot	LABORATOR 1200 (version with motorised head adjustment) ELITE 2000 mot

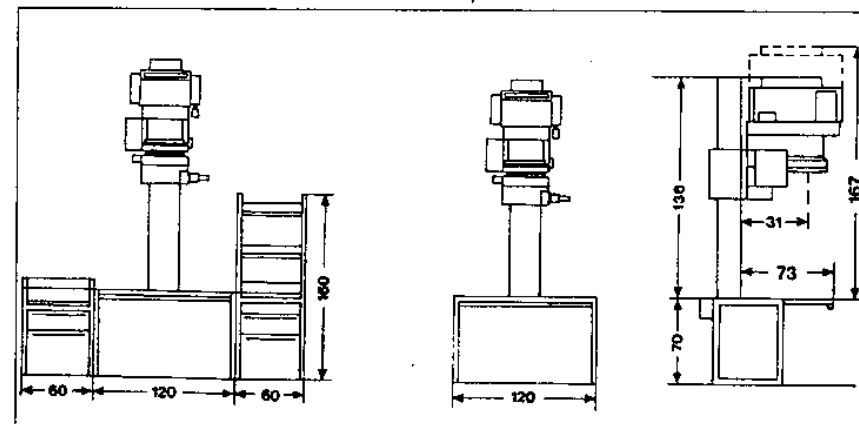
Outfit of the basic enlarger

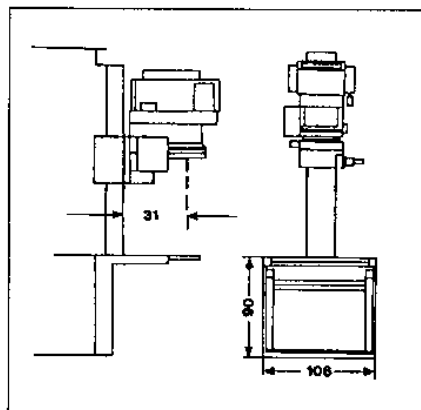
Versions/features	L 1200 ELITE 2000 tim		L 1200 ELITE mot	
Basic L 1200 enlarger	with base-board	without base-board	with base-board	without base-board
• with ELITE 2000 tim computerized focusing (motorised lens adjustment only)	x	x		
• with ELITE 2000 mot computerized focusing (motorised lens and head adjustment)			x	x
Built-in exposure timer coupled with magnification	x	x	x	x
FEMONEG negative carrier with glasses	x	x	x	x
FEMOGLA AN anti-Newton glass	x	x	x	x

TEST 69 focusing negative	x	x	x	x
FEMOBRE - baseboard	x		x	
For use as				
a) Bench unit	x		x	
b) For mounting on: - LABOM table - FEMO/WALLMOUNT: wall mounting - SLIDE Table FEMO: Folding table with fold-back baseboard		x		x

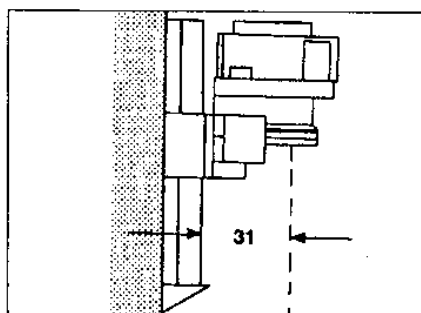
Dimensions and optical axes of the various combinations

a) Lab furniture

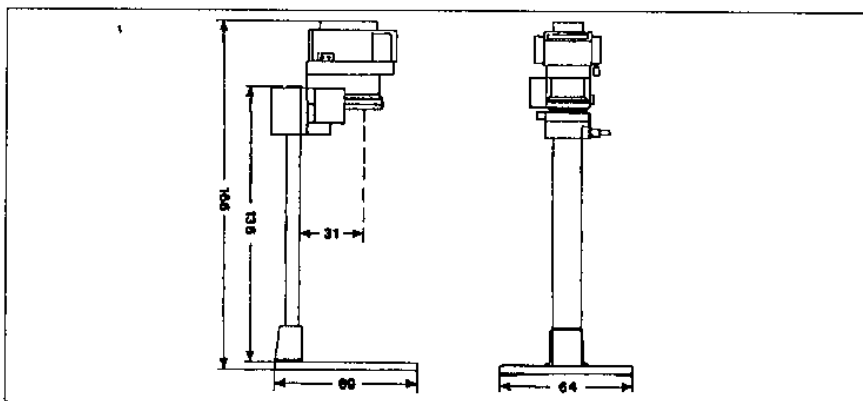




b) Folding table



c) Wall mounting



d) Bench unit

Technical data

Column height	:	136 cm (53.5 ")
Maximum height of fully raised head	:	167 cm (65.8 ")
Baseboard size	:	4 x 64 x 69 cm (1.6 x 25.2 x 27.2 ")
Usable baseboard area	:	64 x 57 cm (25.2 x 22.4 ")
Distance from optical axis to column base	:	31 cm (12.2 ")
Net weight	:	45 kg (99 lb)

LINEAR MAGNIFICATIONS											
Film size	Lens (mm)	Lens board	Magnification					GLASSLESS MASKS			
			MIN.		MAX.			for FEMONEG		for BIMANEG	
			a) normal*	b) FE-MOTUB*	c) DUTUB*	a) Base-board*	Print size*	b) LA-BOM*	Print size*	Format mask	Mask opening
10 x 12.5 cm 4 x 5"	150	LAPLA 42 LAPLA 50 RODING 5071	1.5 x	0.9 x	0.5-4.4 x	6.5 x	61 x 76 24 x 28.9	10.5 x	138 x 171 53.5 x 67.3	FEMOMASK 450	94 x 118 mm
9 x 12 cm 3.5 x 4.7"	135	LAPLA 39 LAPLA 42	1.2 x	0.8 x	0.4-3.6 x	7.5 x	60 x 84 23.6 x 33	12 x	97 x 134 38.1 x 52.7	FEMOMASK 92	81 x 112 mm
6 x 9 cm 2 1/4 x 3 1/2"	100	LAPLA 39	0.7 x 0.8 x	0.5-8.7 x* 0.55-8.7 x	0.3-1.4 x* 0.3-1.6 x	10.8 x 10.5 x	59 x 84 23.2 x 33 57 x 82 22.4 x 32.2	16.8 x 16.2 x	92 x 131 35.2 x 51.7 89 x 126 35.4 x 51.6	FEMOMASK 69 N	55 x 78 mm
6 x 7 cm 2 1/4 x 2 3/4"	100	LAPLA 39	0.7 x 0.8 x	0.5-8.7 x* 0.55-8.7 x	0.3-1.4 x* 0.3-1.6 x	10.8 x 10.5 x	60 x 73 23.9 x 28.7 58 x 71 22.8 x 27.9	16.8 x 16.2 x	93 x 114 35.6 x 44.8 89 x 110 35.4 x 33	FEMOMASK 67 N	55.5 x 68 mm
6 x 6 cm 2 1/4"	80	LAPLA 39	2.5 x	0.4-3 x*	0.2-0.9 x*	12.1 x	66 x 66 25.9 x 25.9	19.6 x	107 x 107 42.1 x 41.1	FEMOMASK 66 N	55 x 55 mm
4.5 x 6 cm 1 3/4 x 2 1/4"	80	LAPLA 39	2.5 x	0.4-3 x*	0.2-0.9 x*	12.1 x	47 x 66 18.5 x 25.9	19.6 x	76 x 107 29.9 x 42.1	FEMOMASK 45 N	38 x 55 mm
32 x 45 mm	60	SETOPLA 2839	4.2 x	0.3-1.4 x*	0.15-0.6 x*	19.5 x	60 x 85 23.6 x 33.4	29.5 x	91 x 129 35.8 x 50.7	FEMOMASK S (32 x 45 mm)	31 x 44 mm
24 x 36 mm	50	SETOPLA 2839	5.4 x	0.2-0.9 x*	0.15-0.6 x*	22.5 x	45 x 69 17.7 x 27.1	34.5 x	79 x 120 31.1 x 47.2	FEMOMASK 35 N	23 x 35 mm
18 x 24 mm	35	SETOPLA 2839	9 x	-	-	30.6 x	55 x 73 21.6 x 28.7	47.7 x	85 x 114 33.4 x 44.5	FEMOMASK S (18 x 24 mm)	16.5 x 23 mm
12 x 17 mm	28	SEPLA 7539	11.3 x	-	-	43 x	51 x 68 20 x 26.7	64.4 x	103 x 77 40.5 x 30.3	FEMOMASK S (12 x 17 mm)	11.5 x 16 mm

* Approximate Values

* Projection plane raised by 18 cm

Film size	Lens	Mixing boxes (CLS/VLS 501, OPTO-AC)				Condenser combinations (FEMOKIT N)	
		FEMONEG		BIMANEG		with FEMONEG	with BIMANEG
		FEMONEG	FEMONEG	FEMONEG	FEMONEG		
10 x 12.5 cm 4 x 5"	150 mm	FEMOBX 450	-	-	-	FEMOCON 152 FEMOCON 151	-
9 x 12 cm 3 1/2 x 4 3/4"	135 mm	FEMOBX 450	-	-	-	FEMOCON 152 FEMOCON 151	-
6 x 9 cm 2 1/4 x 3 1/4"	100 mm 105 mm	FEMOBX 69 N	-	BIMANEG 69 N	-	FEMOCON 151 FEMOCON 151	BIMACON 80
6 x 7 cm 2 1/4 x 2 3/4"	100 mm 105 mm	FEMOBX 69 N	-	BIMANEG 69 N	-	FEMOCON 151 FEMOCON 151	BIMACON 80
6 x 6 cm 2 1/4 sq.	80 mm	FEMOBX 66 N	-	BIMANEG 66 N	-	FEMOCON 80	BIMACON 80
4.5 x 6 cm 1 3/4 x 2 1/4"	80 mm	FEMOBX 66 N	-	BIMANEG 66 N	-	FEMOCON 80	BIMACON 80
32 x 45 mm	60 mm	FEMOBX 66 N	-	BIMANEG 66 N	-	-	-
24 x 36 mm	50 mm	FEMOBX 35 N	-	BIMANEG 35 N	-	FEMOCON 50 FEMOCON 80	FEMOCON 50 BIMACON 80
18 x 24 mm	35 mm	FEMOBX 35 N	-	BIMANEG 35 N	-	FEMOCON 50 FEMOCON 80	FEMOCON 50 BIMACON 80
12 x 17 mm	28 mm	FEMOBX 35 N	-	BIMANEG 35 N	-	FEMOCON 50 FEMOCON 80	FEMOCON 50 BIMACON 80

COMBINATIONS

Lighting systems

What combinations and colour heads are there?

Colour enlargements

COLIKIT 1201 (CLS 501)

Colour mixing head with infinitely variable colour filters (Y, M, C with CC 0-130), built-in density diaphragm (CC 0-60) and supplementary filters (45Y, 45 M), complete with FEMOBOX 450 N mixing box.

Black-and-white enlargements

VALIKIT 1201 (VLS 501)

Diffused lighting system for conventional black-and-white papers and for variable-contrast papers, complete with FEMOBOX 450 N mixing box.

FEMOKIT N B/W

Condenser lighting system for enlarging low-contrast black-and-white negatives, complete with FEMOCON 151 and FEMOCON 152 condensers.

Model versions

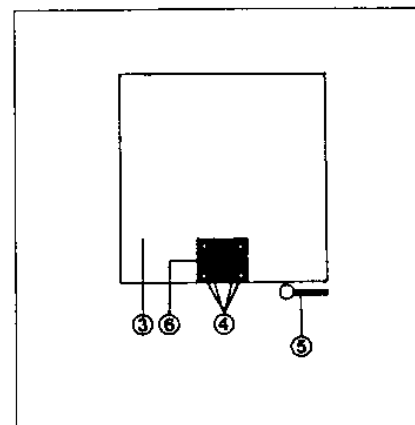
- a) Wall mounting with Durst PAPERMOT roll paper magazine
- b) Folding table with hinged baseboard for combined use with Durst PAPERMOT roll paper magazine
- c) Lab furniture
 - LABOM Table: Enlarger bench with vertically adjustable 70 x 112 cm (27.6 x 44.1 ") baseboard
 - LABOM Desk module: Working and parking surface, storage cupboards

ASSEMBLING THE BASIC ENLARGER

Cleaning

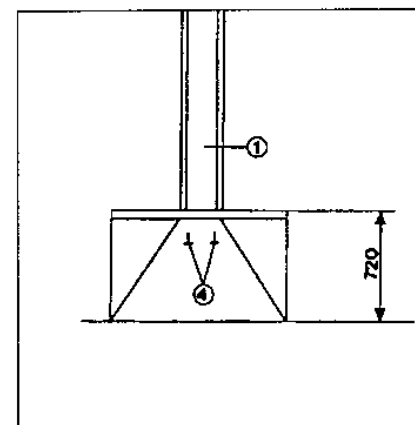
Before assembly clean all components with a cloth.

Assembling the baseboard



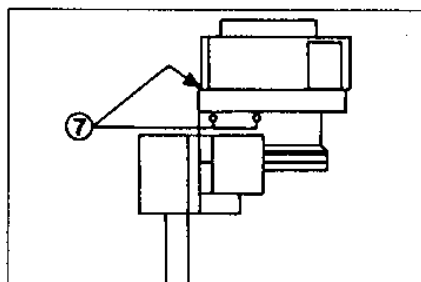
- Lay out the column (1) on a table or on the floor.
- Hold the baseboard (3) against the column (1) and secure the reinforcing plate (6) with the hexagonal bolts (4).
- Use the spanner (5) to tighten the hexagonal bolts.

Mounting the enlarger on the lab furniture bench



- Lift the enlarger with the column (1) onto the bench and secure from underneath with the bolts (4).

Mounting the enlarger head



- Mount the head on the basic enlarger and secure with the screws (7).

Mounting the lenses on the lens boards

The following lens boards are available extra to take the lenses of the various focal lengths:

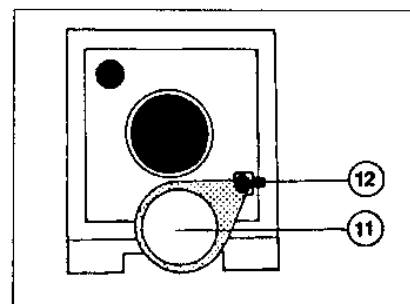
SEIPLA 75 39
 SETOPLA 28 39
 LAPLA 39
 LAPLA 42
 LAPLA 50

Screw the lens to be used into the appropriate lens board as listed in the table below:

Lens	Screw thread	Lens board required
28 mm RODAGON	M 39	SEIPLA 75 39
28 mm COMPONON	M 39	SEIPLA 75 39
35 mm RODAGON	M 39	SETOPLA 28 39
35 mm COMPONON	M 39	SETOPLA 28 39
50 mm RODAGON	M 39	SETOPLA 28 39
50 mm APO-RODAGON	M 39	SETOPLA 28 39
50 mm COMPONON	M 39	SETOPLA 28 39
50 mm NEONON	M 39	SETOPLA 28 39
50 mm EL-NIKKOR	M 39	SETOPLA 28 39

Lens	Screw thread	Lens board required
80 mm RODAGON	M 39	LAPLA 39
80 mm COMPONON	M 39	LAPLA 39
80 mm NEONON	M 39	LAPLA 39
80 mm EL-NIKKOR	M 39	LAPLA 39
80 mm APO-RODAGON	M 39	LAPLA 39
100 mm COMPONON	M 39	LAPLA 39
105 mm RODAGON	M 39	LAPLA 39
105 mm NEONON	M 39	LAPLA 39
135 mm RODAGON	M 39	LAPLA 39
135 mm COMPONON	M 42	LAPLA 42
150 mm RODAGON	M 50	RODING 5071 or LAPLA 50
150 mm COMPONON	M 42	LAPLA 42

Assembling the red filter and diffuser



- Use the securing screw (12) to fix the shaft with the red filter (11) on the lens carrier.

SETTING UP: THE ENLARGER HEAD

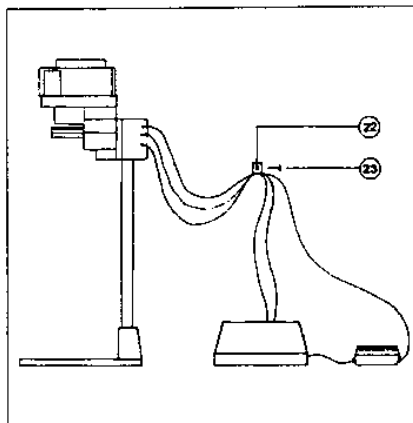
Inserting the negative carrier

See the instruction manual for the CLS 501, VLS 501, FEMOKIT N B/W

See the instruction manual for the negative carrier used:

FEBIDAP / BIMANEG
FEMONEG

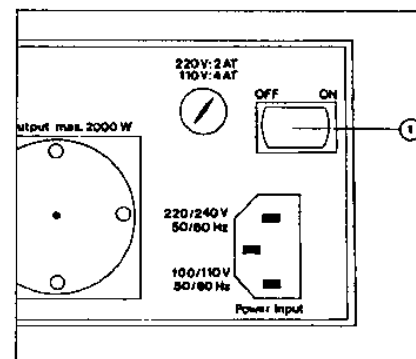
Assembling the cable holder of the baseboard version



- Use the screw (23) to mount the hook (22) on the wall and attach the cables.

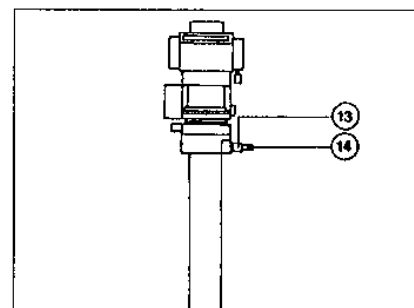
PRACTICAL OPERATION

Setting the print size with constant sharpness



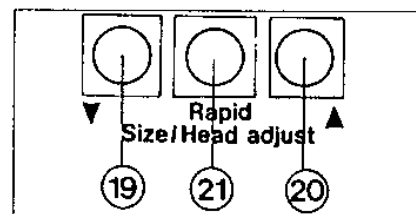
- Switch on the enlarger:
Press the main switch (1)

LABORATOR 1200 ELITE 2000 tim



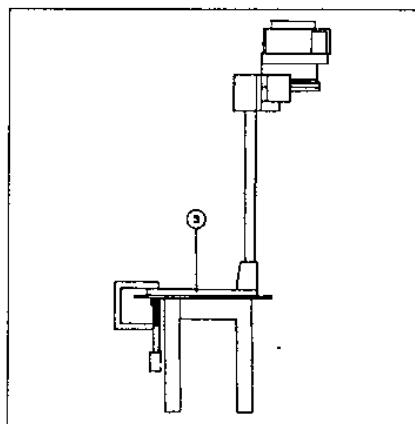
- Fast adjustment:
- Disengage the knob (13) and move the head to the required position: Lock the knob (13) again.
- Fine adjustment:
- Turn the knob (14).

LABORATOR 1200 ELITE 2000 mot

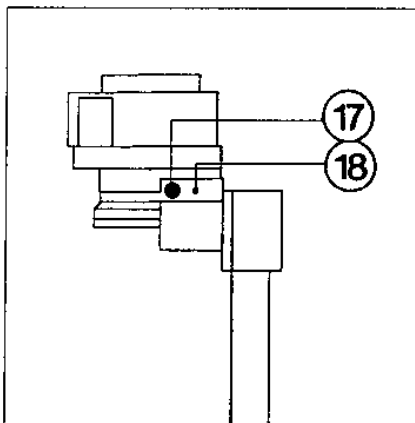


- Fast adjustment:
- On the control panel press the "RAPID" key (21) together with one of the "SIZE/HEAD ADJUST" keys (19 or 20) to lower or raise the enlarger head to the required point.
- Fine adjustment:
- Press one of the "SIZE/HEAD ADJUST" keys (19 or 20) on the control panel.

Giant enlargements



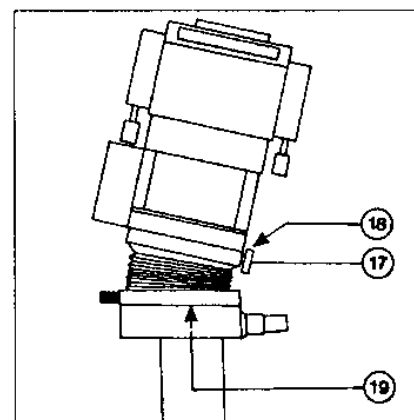
- Floor projection
- Unscrew the baseboard (3) and turn through 180 °, then refit the baseboard.



- Wall projection (only possible with LABORATOR 1200 ELITE 2000 tim)
- Unlock the knob (17).
- Move the lever (18) to "0".
- Swing the enlarger head to the left or right.
For horizontal projection (head swung to the left) move the lever (18) to "-".
- Tighten the locking knob (17).

Converging verticals

With the LABORATOR 1200 ELITE you can correct converging verticals by inclining the enlarger head, the lens carrier and the paper holder or masking frame.



- Unlock the knob (17).
- Move the lever (18) to "0" and incline the enlarger head.
- Release the locking knob (19) and incline the lens carrier.
- Tighten the knobs (17) and (19) again.

NOTE:
The maximum tilt possible with the not enlarger head is about 15 °.

Reductions

For reductions use the accessory DUTUB 2 reduction tube.

Lens	Tube	Enlarger head position	Magnification (approx.)	Notes
105 mm	FEMOTUB	27.6 cm	min. 0.55 x	Bellows fully extended
		23 cm	1 : 1	
	DUTUB 2	40.6 cm	min. 0.3 X	Bellows fully extended DUTUB 2 fully recessed
150 mm	FEMOTUB	23 cm	1 : 1	DUTUB 2 fully recessed
		40.4 cm	1 : 1	Bellows fully extended

MAINTENANCE

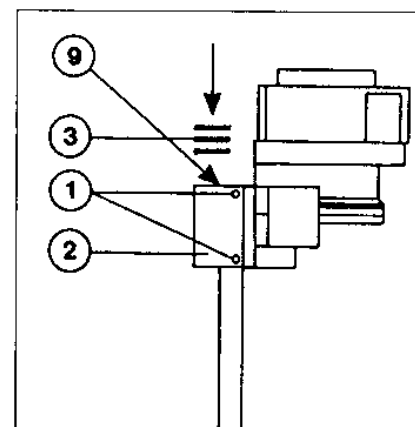
Care

Period	Items	Note
Every six months	Grease the following: - Counterweighting spring - Both lens carrier guide rails - The lens carrier shaft	Use special Durst grease

ATTENTION:

If the counterweighting spring shows signs of damage, get a Durst servicing engineer to rectify this.

CONVERTING THE LABORATOR 1200 ELITE TO A DIFFERENT ENLARGER HEAD



NOTE:

Always reprogram the automatic focusing system after switching enlarger heads.

- Fit the new enlarger head - see page 12.
- Remove the screws (1).
- Lift off the cover plate (2).
- Unscrew the screw (9).
- Insert or remove metal spacer plates (3) according to the enlarger head used (see table below).

Switching:

From	To	Metal spacers
CLS 501 CLS 501	VLS 501 Condenser lamphouse	Add 6 spacers Add 4 spacers
VLS 501 VLS 501	CLS 501 Condenser lamphouse	Remove 6 spacers Remove 2 spacers
Condenser lamphouse Condenser lamphouse	CLS 501 VLS 501	Remove 4 spacers Add 2 spacers

- tim The enlarger head should move smoothly up or down.
- mot The upward and downward movement rates of the enlarger head should be the same. If they are not, add or remove metal spacer plates (3) as required.

ACCESSORIES

Durst code	Description
* Mixing boxes	
FEMOBOX 69 N FEMOBOX 66 N FEMOBOX 35 N	Mixing box for film sizes up to 6 x 9 cm (2 1/4 x 3 1/4 ") as above, up to 6 x 6 cm (2 1/4 x 2 1/4 ") as above, up to 24 x 36 mm
* Glassless metal masks for FEMONEG negative carrier	
FEMOMASK 450 FEMOMASK 92 FEMOMASK 69 N FEMOMASK 67 N FEMOMASK 66 N FEMOMASK 45 N FEMOMASK 35 N FEMOMASK S	Glassless mask pair for 10x12.5 cm (4x5 ") films as above, for 9 x 12 cm (3 1/2 x 4 3/4 ") as above, for 6 x 9 cm (2 1/4 x 3 1/4 ") as above, for 6 x 7 cm (2 1/4 x 2 3/4 ") as above, for 6 x 6 cm (2 1/4 x 2 1/4 ") as above, for 4.5 x 6 cm (1 3/4 x 2 1/4 ") as above, for 24 x 36 mm as above, for all other DIN and ASA film sizes and special formats
FEMOGLA AN FEBIDAP	Anti-Newton negative carrier glass Special adapter for rapid and convenient handling of 35 mm and No. 120/220 rollfilms
* Mixing boxes	
BIMABOX 69 N BIMABOX 66 N BIMABOX 35 N	Mixing box for film sizes up to 5 x 9 cm (2 1/4 x 3 1/4 "). For use with FEBIDAP. as above, box for 6 x 6 cm (2 1/4 x 2 1/4 ") as above, box 24 x 36 mm
* Glassless metal masks for BIMANEG negative carrier	
BINEMA 69 BINEMA 67 BINEMA 66 BINEMA 45 BINEMA 35 BINEMA 110 BINEMA S	Glassless mask pair for 6 x 9 cm (2 1/4 x 3 1/4 ") films in BIMA-NEG negative carrier as above, for 6 x 7 cm (2 1/4 x 2 3/4 ") as above, for 6 x 6 cm (2 1/4 x 2 1/4 ") as above, for 4.5 x 6 cm (1 3/4 x 2 1/4 ") as above, for 24 x 36 mm as above, for No. 110 Pocket size as above, for all other DIN and ASA film sizes and special formats
BIDIA LURIOGLA BIMAGLA AN MIVALO	Metal mask for framed 35 mm (5 x 5 cm) slides, used in place of lower glass in BIMANEG negative carrier Normal carrier glass for BIMANEG negative carrier Anti-Newton carrier glass for BIMANEG negative carrier Register punch (see MIVALO manual)

* Lamps	
COLAMP 250 S DULAM 150 PULAM	250 W 24 V tungsten-halogen lamp for CLS/VLS 501 150 W opal lamp for FEMOKIT N 100 W 12 V point source lamp for VARIPOINT 1200
* Copying accessories	
FEMKA FILMKA 65 FILMKA 92 FILMKA 450	Precision frame for exposures on sheet film, used in place of the FEMONEG negative carrier. A special glass screen supplied serves for sharp focusing. Without sheet film holders. Sheet film holder for 6.5 x 9 cm (2 1/2 x 3 1/2 ") films as above, for 9 x 12 cm (3 1/2 x 4 3/4 ") films as above, for 10 x 12.5 cm (4 x 5 ")
* General accessories	
FEMO WALLMOUNT LABOM SLIDE Table PAPERMOT LACUF	Wall mounting Durst lab furniture Folding table with rear-hinged baseboard Roll paper magazines, 30 x 45 and 50 x 70 cm (12 x 16 " and 20 x 28 ") Dust cover
* Lens boards and tubes	
LAPLA 50 LAPLA 42 LAPLA 39 FLARING SETOPLA 2839 SEIPLA 7539 FEMOTUB DUTUB 2	Lens board for 100-150 mm lenses with M50 screw thread as above, with M42 thread as above, for 50-135 mm lenses with M39 screw thread M25/M39 adapter ring to screw lenses with an M25 thread into lens boards and tubes with an M39 thread Lens board for 28 and 35 mm lenses with M39 thread Lens board for 28 mm lenses with M39 thread Extension tube for 1 : 1 reproduction and reductions Extension tube for extreme reductions
* Condensers for FEMOKIT N and VARIPOINT black-and-white lamphouses	
FEMOCON 80 FEMOCON 50 BIMACOM 80	Double condenser for use with 60 mm and 80 mm lenses a) Supplementary condenser for the FEMOCON 80 with 28-50 mm lenses, and b) Supplementary condenser for the BIMACOM 80 with 50 mm lenses Double condenser for use with the FEBIDAP adapter with 80-105 mm lenses

FEMOCON 80 T	as above, specially coated for VARIPOINT
FEMOCON 60 T	as above, for 60 mm lenses
FEMOCON 50 T	as above

Durst products are being constantly improved to the latest state of the art. Descriptions and illustrations are therefore subject to change.

Instruction Manual

DURST LABORATOR 1200 **ELITE 2000 tim** **ELITE 2000 mot**

CLS 501 / VLS 501 / FEMOKIT N B/W

CONTENTS

DESCRIPTIONS

The outfit	4
CLS 501	4
VLS 501	5
FEMOKIT N B/W	5
Technical data	6
CLS 501	6
VLS 501	6
FEMOKIT N B/W	6

SETTING UP THE ENLARGER HEAD

Cleaning	7
Fitting the enlarger lamp	7
CLS 501 / VLS 501	7
FEMOKIT N B/W	7
Electric connections for the enlarger head	8
CLS 501 / VLS 501	8
FEMOKIT N B/W	8
Fitting the mixing boxes	8
CLS 501 / VLS 501	8
Changing the diffuser	9
Fitting the condenser lamphouse	9
FEMOKIT N B/W	9
Fitting the condensers	10

USING THE ENLARGER HEAD

Colour enlarging with the CLS 501	11
Setting the filters and density diaphragm	11
Supplementary filters	12
The white-light setting	12
Black-and-white enlarging with the CLS 501/VLS 501	12
Black-and-white prints on fixed-grade papers	12
Black-and-white prints on variable-contrast papers	13
Black-and-white enlarging with the FEMOKIT N B/W	14
Black-and-white prints on variable-contrast papers	16
MAINTENANCE	17
Schedule	17

DESCRIPTIONS

	You can mount the enlarger heads described in this instruction manual on either the LABORATOR 1200 ELITE 2000 tim or the ELITE 2000 mot enlarger.
DURST CLS 501	<p>Colour mixing head for perfectly even illumination with direct light path. Separate mixing boxes ensure optimum light output for every film size from 24 x 36 mm to 4 x 5".</p> <p>Applications: Individual handling of professional jobs (portrait, advertising and landscape shots).</p>
DURST VLS 501	<p>Diffused lighting system for black-and-white work with variable-contrast papers. A knob provides stepless contrast adjustment with automatic exposure correction.</p> <p>Applications: Rapid straightforward exposures on fixed-grade and variable-contrast black-and-white papers (covers grades 0 to 5).</p>
FEMOKIT N B/W	<p>Condenser lighting system with opal lamp.</p> <p>Applications: Enlargements from low-contrast black-and-white negatives; also copying.</p>

The outfit

CLS 501	<ul style="list-style-type: none"> • Colour head with adapter • 250 watt, 24 volt tungsten-halogen lamp • 10 x 12.5 cm (4 x 5 ") mixing box • Transformer or voltage stabiliser
----------------	---

VLS 501

Durst codes:
COLIKIT 1201 TR 110
COLIKIT 1201 ES 110
COLIKIT 1201 TR 220
COLIKIT 1201 ES 220
COLIKIT 1201 TR 240

- Diffused-light lamphouse with adapter
- 250 watt, 24 volt tungsten-halogen lamp
- 10 x 12.5 cm (4 x 5 ") mixing box
- Transformer

Durst codes:
VALIKIT 1201 / 110
VALIKIT 1201 / 220
VALIKIT 1201 / 240

FEMOKIT N B/W

- Condenser lamphouse with adapter
- Condenser housing
- FEMOCON 151 and FEMOCON 152 condenser (see page 15 for condenser combinations and film sizes)
- 150 W opal lamp

Durst codes:
FEMOKIT N AM 110
FEMOKIT N EU 220
FEMOKIT N EU 240
FEMOKIT N SAA 240

TECHNICAL DATA

CLS 501

Light source	: 24 Volt 250 Watt tungsten-halogen lamp
Power supply	: With TRA 500 transformer: 110/120 V, 220 V or 240 V, 50-60 Hz With EST 500 voltage stabiliser: 110-140 V or 180-260 V/ 50-60 Hz ; output voltage: 24 V \pm 2%
Filters	: Dichroic yellow, magenta and cyan filters
Filter range	: Up to CC 130 (=1.3 D)
Supplementary filter	: approx. 45Y + 45M
Density diaphragm	: CC 0 to 60 (= 0.6 D)
Size	: 530 x 290 x 300 mm (20.9 x 11.4 x 11.8 ")
Weight	: approx. 16 kg (33 1/4 lb)

VLS 501

Light source	: 24 Volt 250 Watt tungsten-halogen lamp
Power supply	: With TRA 500 transformer: 110/120 V, 220 V oder 240 V, 50-60 Hz
Paper grades	: 0 to 5
Size	: 450 x 290 x 270 mm (11.7 x 11.4 x 10.6 ")
Weight	: approx. 9 kg (20 lb)

FEMOKIT N B/W

Light source	: 150 watt opal lamp
Power supply	: 110, 220 and 240 volts
Lighting system	: Deflecting mirror and condensers
Filter drawer	: 120 x 120 mm (4 3/4 x 4 3/4 ")
Size	: 340 x 295 x 190 cm (13.4 x 11.6 x 7.5 ")
Weight	: approx. 9.80 kg (21 1/2 lb)

SETTING UP THE ENLARGER HEAD

Cleaning

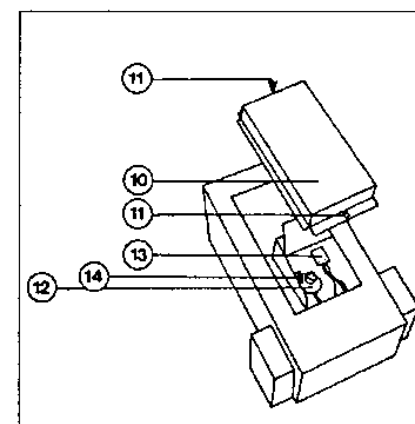
Before assembly wipe all components clean with a cloth.

Fitting the enlarger lamp

Important!

Switch off the enlarger before changing lamps.

CLS 501 / VLS 501

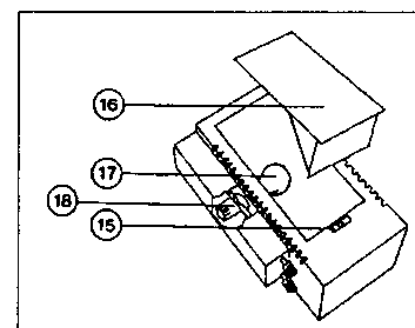


- Press the locking pins (11) to open the lamphouse cover (10).
- Plug the tungsten-halogen lamp (12) into the lamp fitting (13) and push underneath the retaining springs (14).

Never touch the inside of the reflector!

- Close the lamphouse cover (10) and secure by pressing the locking pins (11).

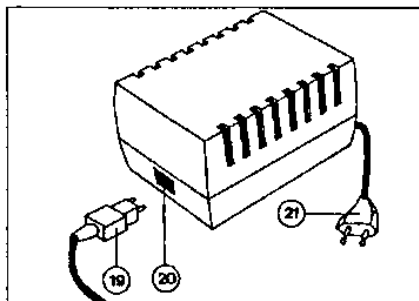
FEMOKIT N B/W



- Open the latch (15).
- Lift off the lamphouse cover (16).
- Screw an opal lamp (17) into the lamp-holder (18).

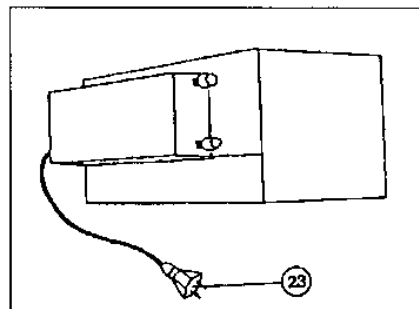
Electric connections for the enlarger head

CLS 501 / VLS 501



- Plug the plug (19) into the socket (20).
- Plug the plug (21) into the TIMER OUTPUT socket of your exposure timer or of the ELITE 2000 unit.

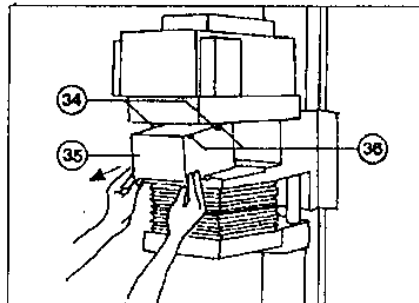
FEMOKIT N B/W



- Plug the plug (23) into the TIMER OUTPUT socket of your exposure timer or of the ELITE 2000 unit.

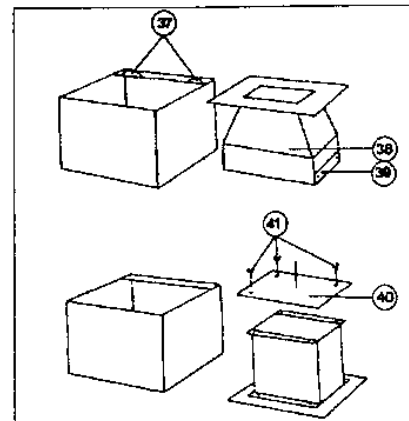
Fitting the mixing boxes

CLS 501 / VLS 501



- Pull forward the retaining strips (34).
- Raise the mixing box (35) to lift the four holding pins (36) into the cutouts provided for them in the strips (34).
- Push back the strips (34) to hold the box.

Changing the diffuser



- Remove the mixing box from the unit.
- Move aside the retaining springs (37) and remove the inner mixing box (38).

FEMOBOX 450 N

- Raise the retaining springs (39), remove the diffuser (49) and replace.

FEMOBOX 69 N / 66 N

- Unscrew the screws (41) and remove and replace the diffuser (40).

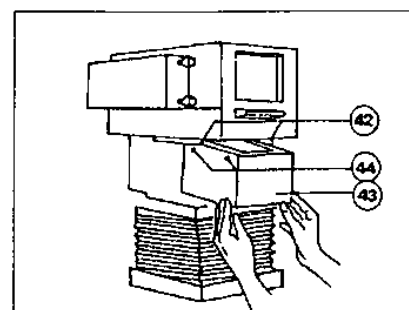
NOTE:

You can insert the inner mixing box oriented either way.

NOTE:

If reasonable rather than perfect colour mixing is acceptable, use the lower-density diffusers to reduce exposure times.

Fitting the condensers lamphouse

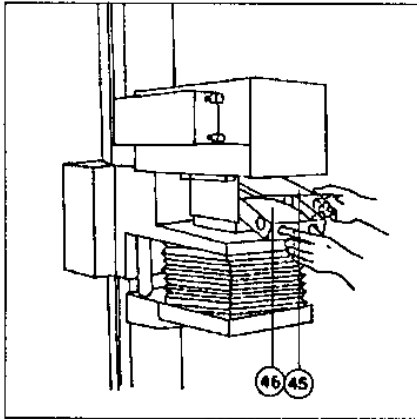


FEMOKIT N B/W

- Pull forward the retaining strips (42).
- Raise the condenser housing to lift the four holding pins (44) into the cutouts provided for them in the strips (42).
- Push back the strips (42) to hold the condenser housing.

USING THE ENLARGER HEAD

Fitting the condensers

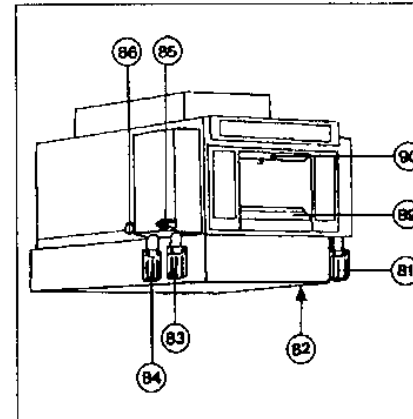


- Lift up the cover (45) and push in the condensers (46).
- Close the cover (45).

NOTE:
Condenser combinations see page 15.

Colour enlarging with the CLS 501

Setting the filters and density diaphragm



- Filter knobs:

81 Yellow
82 Magenta
83 Cyan

Settings:
Stepless from CC 0 to 130

- 84 Density diaphragm

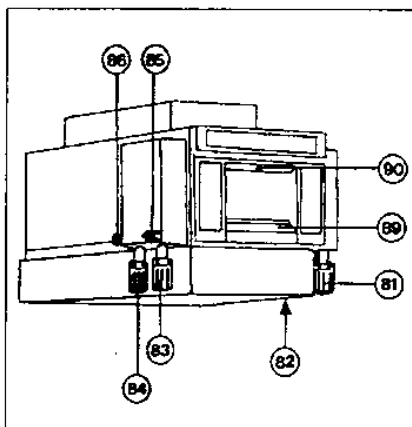
Settings:
Stepless from CC 0 to 60

Comparison table

Density diaphragm setting	Equivalent exposure change in f-stops
00	Working aperture of lens
15	1/2 f-stop smaller than working aperture
30	1 f-stop smaller than working aperture
45	1 1/2 f-stops smaller than working aperture
60	2 f-stops smaller than working aperture

- 89 Opening for scale illumination

Supplementary filters



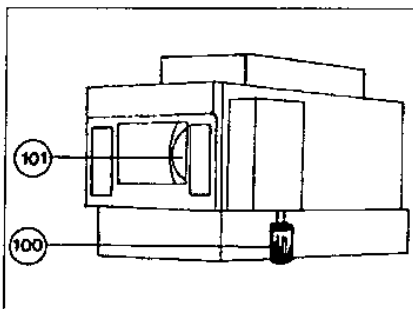
The white-light setting

- When the available yellow and magenta filtering range is insufficient, move the lever (86) to "IN". That swings the supplementary filter (45 Y + 45 M) into the light path.

- Pushing the lever (85) to "OUT" swings all filters and the density diaphragm out of the light path. The signal (90) lights up.

Black-and-white enlarging with the CLS 501 / VLS 501

Black-and-white prints on fixed-grade papers

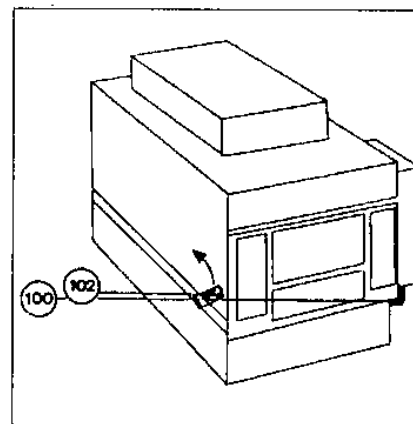


CLS 501

- Turn all filters on the colour head to zero. You can still use the density diaphragm for black-and-white prints.

VLS 501

- Turn the filter knob (100) to 2.5 on the scale (101) for white light.



- For maximum light output set the lever (102) to MANUAL.

Black-and-white prints on variable-contrast papers

VLS 501

Select the required paper grade (0 to 5) by turning the knob (100). Move the lever (102) to AUTOMATIC.

ADVANTAGE WHEN CHANGING PAPER GRADE SETTING:

The automatic density diaphragm keeps exposure constant.

You can swing aside the density diaphragm with the lever (102).

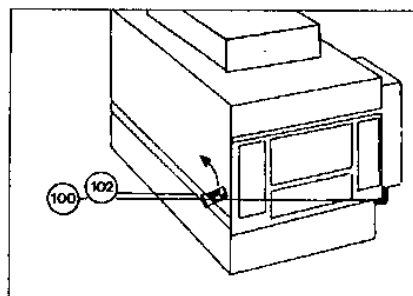
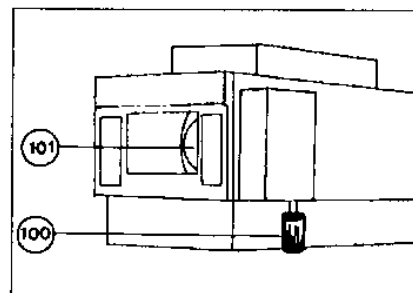
PAPER GRADE (CONTRAST) SETTINGS

Harder grade

Turn the knob (100) towards 2.5-5 on the scale (101).

Softer grade

Turn the knob (100) towards 2.5-0 on the scale (101).



CLS 501

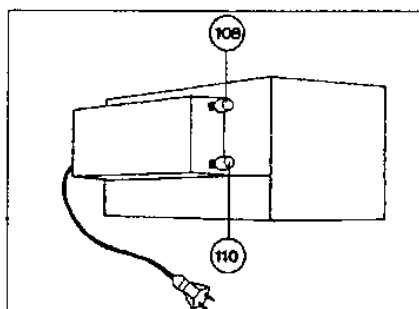
Set the required paper grade (0 to 4) by adjusting the yellow and magenta filter settings as indicated in the table below.

NOTE:

Increased yellow filtration makes the gradation softer, increased magenta filter settings yield a harder effective paper grade.

Paper grade	Filter settings on colour head for ILFOSPEED MULTIGRADE II			Paper grade	Filter settings on colour head for KODAK POLYCONTRAST II		
	Y	M	C		Y	M	C
0	65	37	-	0	70	4	-
0.5	49	46	-	0.5	58	10	-
1	34	56	-	1	47	16	-
1.5	26	62	-	1.5	39	24	-
2	19	68	-	2	32	32	-
2.5	15	77	-	2.5	22	39	-
3	12	86	-	3	15	46	-
3.5	5	103	-	3.5	5	88	-
4	-	120	-	4	-	130	-

Black-and-white enlarging with the FEMOKIT N B/W



Check the illumination:

Switch on the enlarger lamp

Press the "LIGHT" key

Fully open the lens aperture

Centering the lamp:

If hot spot or shadows appear on the baseboard, center the lamp as follows:

Adjust the knobs (108) and (110) until all shadows disappear.

Lamp rotation and shift adjustment

108 = Height adjustment

110 = Depth adjustment

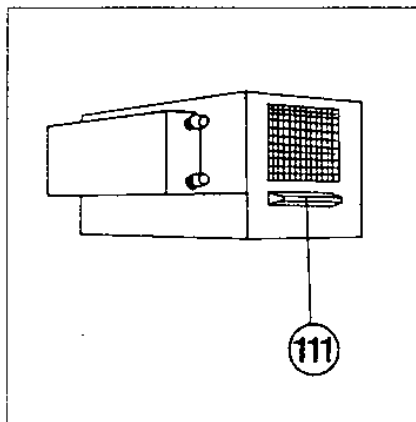
Establishing contrast by using enlarging papers of different contrast grades

Table of condenser combinations for the FEMOKIT N B/W with LABORATOR 1200 ELITE 2000 tim / ELITE 2000 mot

Focal length	Film size	Lens board	Approx. linear magnifications *			FEMO-CON condenser combination
			min.	max.	min. w. FEMO-TUB	
150 mm	4x5"	LAPLA 42 LAPLA 50 RODING 5071	1.5 x	5.5 x	0.9 x	152 151
135 mm	9 x 12 cm 3 1/2 x 4 3/4"	LAPLA 42 ou LAPLA 39	1.1 x	6.4 x	0.8 x	152 151
105 mm	6 x 7 cm 2 1/4 x 2 3/4" 6 x 9 cm 2 1/4 x 3 1/4"	LAPLA 39	0.8 x	8.7 x	0.55 x	151 151
100 mm	6 x 7 cm 2 1/4 x 2 3/4" 6 x 9 cm 2 1/4 x 3 1/4"	LAPLA 39	0.7 x	9.0 x	0.50 x	151 151
80 mm	6 x 6 cm 2 1/4 x 2 1/4"	LAPLA 39	2.5 x	12.1 x	0.50 x	80
50 mm	24 x 36 mm	SETOPLA 2839	5.4 x	19.8 x	-	50 80
35 mm	18 x 24 mm	SETOPLA	9.0 x	30.6 x	-	50 80
35 mm	12 x 17 mm	SETOPLA	9.0 x	30.6 x	-	50 80

* Approximate values

Black-and-white prints on variable-contrast papers



Contrast control:
Place 12 x 12 cm variable contrast filters
(available from photo dealers) in the filter
drawer (111)
NOTE:
Yellow filters yield softer gradation
Magenta filters yield harder gradation

MAINTENANCE

Schedule

Period	Items	Note
Every day	Clean the following: - Negative carrier glasses - Lenses - Condensers - Mixing boxes	Use chamois leather, anti-static cloth or antistatic brush
Every six months	Clean the following: - Dust filters - Colour filters - Special variable-contrast filters - Heat filters	Should be carried out by a servicing engineer of your local Durst agency

Always disconnect the power supply:

- When opening any lighting unit for servicing;
- When changing lamps

Durst products are being constantly improved to the latest state of the art. Descriptions and illustrations are therefore subject to modification.

CONTENTS

Instruction Manual

DURST LABORATOR 1200

ELITE 2000 tim

ELITE 2000 mot

FEMONEG

Applications	4
Inserting single negatives and film strips	4
Advancing film strips	4
Fitting glassless masks and glasses	4
Masking strips	5
ACCESSORIES	6

Applications

- For enlarging all film sizes from 35 mm to 10 x 12.5 cm or 4 x 5 " with or without negative carrier glasses
- Register work

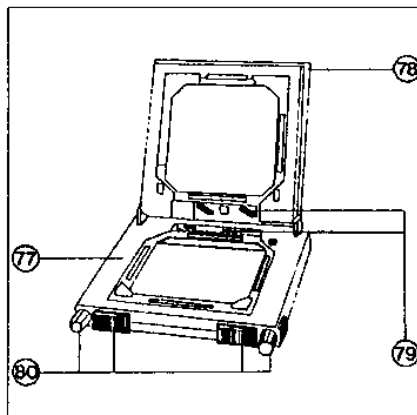
Inserting single negatives and film strips

- Remove the negative carrier (77).
- Insert the negative in the carrier and centre it.
- Push the carrier (77) back into the enlarger.

Advancing film strips

- Raise the opening bracket (78).
- Advance the film strip.
- Let go of the opening bracket (78).

Fitting glassless masks and glasses



- Remove the negative carrier (77) from the enlarger.
- Open the carrier.
- Push aside the retaining springs (79).
- Insert the required format mask or glass plate and push back the retaining springs (79).

For format masks and glasses see Accessories section on page 6.

Masking strips

The masking strips (80) are intended to eliminate glare and reflections.

NOTE:

Do not use the masking strips to mask down the film area or in place of FEMOMASK format masks.

ACCESSORIES

MIVALO register punch (see MIVALO instruction manual).

Format masks

FEMOMASK 35 N	:	for 24 x 36 mm films
FEMOMASK 45 N	:	for 4.5 x 6 cm (1 3/4 x 2 1/4 ") films
FEMOMASK 66 N	:	for 6 x 6 cm (2 1/4 x 2 1/4 ") films
FEMOMASK 67 N	:	for 6 x 7 cm (2 1/4 x 2 3/4 ") films
FEMOMASK 69 N	:	for 6 x 9 cm (2 1/4 x 3 1/4 ") films
FEMOMASK 92	:	for 9 x 12 cm (3 1/2 x 4 3/4 ") films
FEMOMASK 450	:	for 10 x 12.5 cm (4 x 5 ") films
FEMOMASK S	:	for all other DIN and ASA film sizes and special sizes

Negative carrier glasses

FEMOGLA	:	Standard negative carrier glass
FEMOGLA AN	:	Anti-Newton negative carrier glass

Instruction Manual

Durst LABORATOR 1200 ELITE 2000 tim ELITE 2000 mot

FEBIDAP

CONTENTS

INTRODUCTION	4
--------------	---

FITTING THE ADAPTER	5
---------------------	---

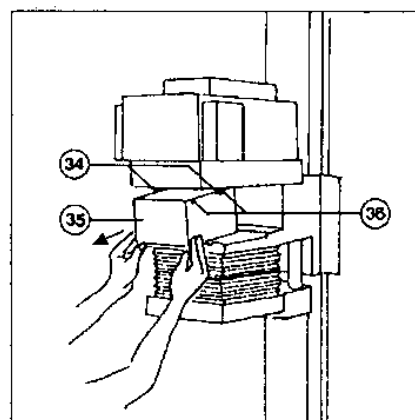
Inserting the BIMABOX mixing boxes or BIMACON / FEMOCON 50 condensers	5
---	---

Table of condenser combinations	6
---------------------------------	---

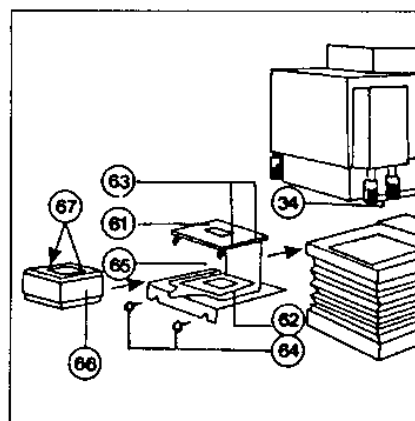
Inserting a glassless mask or a negative carrier glass	7
--	---

The masking strips	7
--------------------	---

FITTING THE ADAPTER



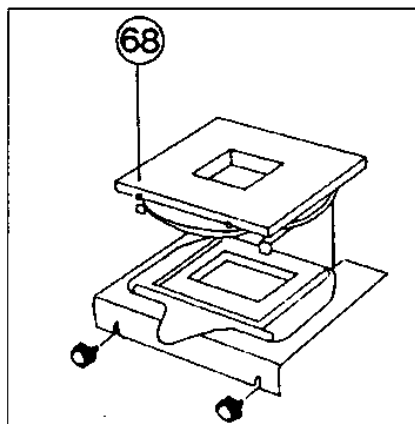
- Remove the mixing box (35).
- Pull forward the retaining strips (34).



- Raise the top section of the adapter (61) to lift the four holding pins (36) into the cutouts provided for them in the strips (34).
- Push back the strips (34) to hold the adapter.
- Push in the bottom section (62) of the adapter and secure with the milled screws (64).

Inserting the BIMABOX mixing boxes or BIMACON/FEMOCON 50 condensers

- Pull forward the retaining strips (65).
- Raise the mixing box (66) to lift the two holding pins (67) into the cutouts provided for them in the strips (65).
- Push back the strips (65) to hold the box.

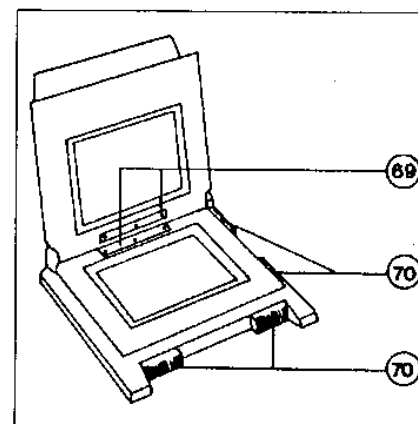


- To avoid vignetting remove the intermediate plate

Table of condenser combinations

Focal length of lens	Film size	Approx. linear magnifications *		Condenser combinations with FEBIDAP
		min.	max.	
50 mm	24 x 36 mm	5.4 x	22.5 x 26 x	FEMOCON 50 BIMACON 80
80 mm	6 x 6 cm 2 1/4 x 2 1/4 " 4.5 x 6 cm 1 3/4 x 3 2 1/4 "	2.5 x	12.1 x	BIMACON 80
100 mm	6 x 9 cm 2 1/4 x 3 1/4 " 6 x 7 cm 2 1/4 x 2 3/4 "	0.7 x	10.8 x	BIMACON 80
105 mm	6 x 9 cm 2 1/4 x 3 1/4 " 6 x 7 cm 2 1/4 x 2 3/4 "	0.8 x	10.5 x	BIMACON 80

Inserting a glassless mask or a negative carrier glass



- Remove and open the negative carrier.
- Insert the required glassless mask or glass in the carrier and push against the retaining springs (69).

The masking strips

- The masking strips (70) are designed to eliminate glare and reflections.

NOTE:

Do not use the masking strips to mask down the film area or in place of BINEMA format masks.

NOTE:

If reasonable rather than perfect colour mixing is acceptable, use the lower-density diffusers of the BIMABOX mixing boxes to reduce exposure times.

Instruction Manual

Durst ELITE 2000

Computerized autofocus system
ELITE 2000 tim and ELITE 2000 mot version

CONTENTS

DESCRIPTIONS	4
Technical data	4
BEFORE SETTING UP ELITE 2000 AUTOFOCUSING	5
Connections	5
SETTING UP ELITE 2000 AUTOFOCUSING	8
Programming the computerized focusing system	8
SUBSEQUENT CORRECTION OF AUTOFOCUSING AT A GIVEN ENLARGER HEAD POSITION	12
PRACTICAL OPERATION OF ELITE 2000 AUTOFOCUSING	14
Setting the positive variator	17
Setting the negative variator	18
Manual focusing	19
ERROR SIGNALS AND THEIR CAUSES	21
APPENDIX	22
What the controls do	22

DESCRIPTIONS

Durst **ELITE 2000** is a new microprocessor-controlled computerized autofocusing system for the Durst **LABORATOR 1200 ELITE 2000 tim** and **LABORATOR 1200 ELITE 2000 mot** enlargers.

Suffixes that you will meet repeatedly in this manual:

Suffix	Enlarger
tim	LABORATOR 1200 (version with manual head adjustment) ELITE 2000 tim
mot	LABORATOR 1200 (version with motorised head adjustment) ELITE 2000 mot

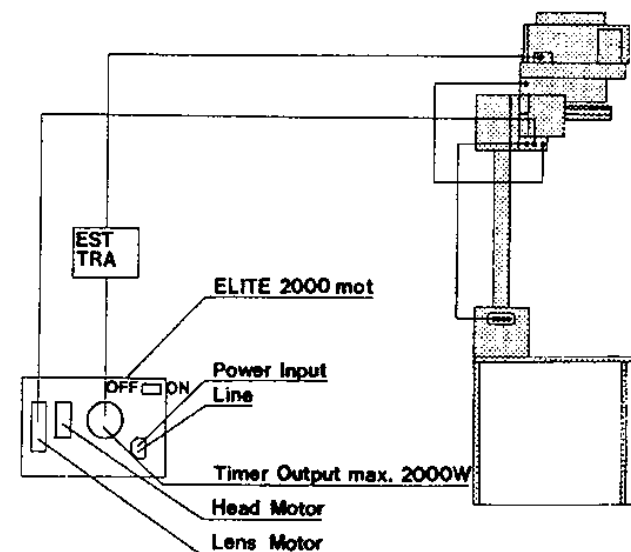
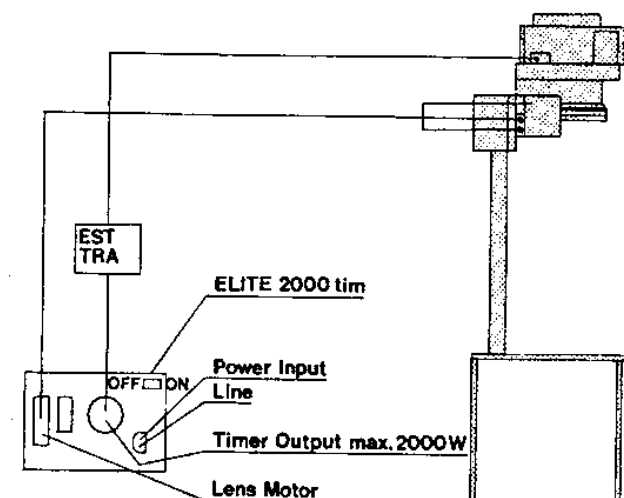
Technical data

Lens carrier movement rate	:	fast = approx. 7.2 mm/sec. slow = ca. 1.2 mm/sec.
Programmable focal lengths	:	28 to 250 mm
Positioning resolution	:	0.01 mm
Reproducibility of lens position	:	±0.02 mm
Environment conditions	:	RH 30 - 80 % Temperature 18 - 30 °C (65-86 °F)
Lens channels	:	10 (0 - 9)
Positive variator range	:	+ 999 / - 99 mm (each DIGIT = 1 mm)
Negative variator range	:	+ 99 / - 99 (each DIGIT = 0.05 mm)
Exposure timer range	:	0-99.9 and 100-999 sec
Aperture range	:	f/2.8 bis f/45

BEFORE SETTING UP ELITE 2000 AUTOFOCUSING

Connections

How the cables link up



SETTING UP ELITE 2000 AUTOFOCUSING

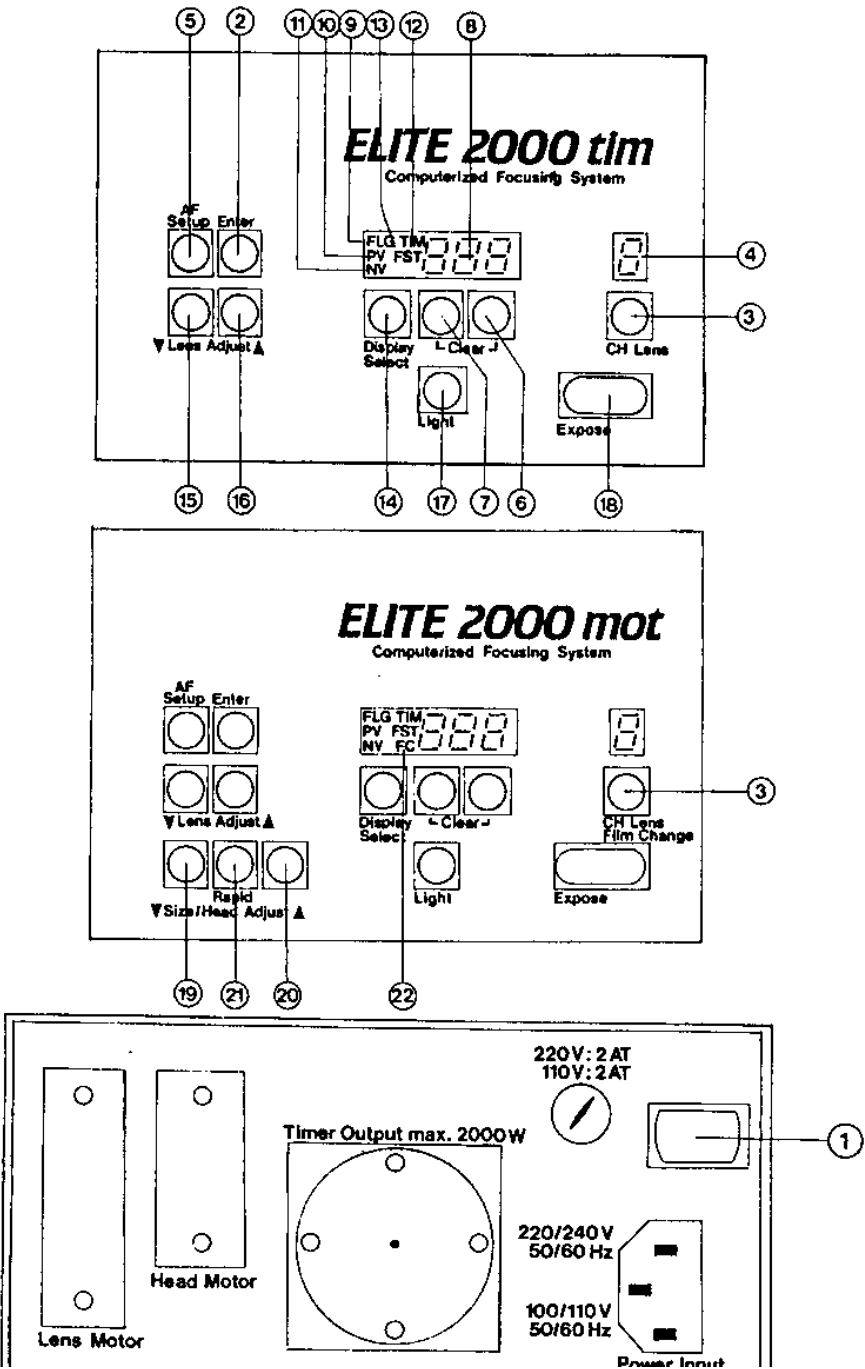
Programming the autofocus system

Aids:

Basic outfit:
TEST 69 test negative

Accessory: Durst FOCUS TARGET
glass focusing target

Step No.	Working step	Control/ operation	Response of unit
A1	Switch on unit	Press main switch (1)	LED signals light up and lens carrier moves to reference position
A2	Place test negative supplied in negative carrier		
A3	Select required memory channel	Press and hold down "ENTER" key (2) while pressing "CH LENS" key (3)	Channel No. appears in display (4)
A4	When programming for baseboard level clear any PV values from memory. NOTE: When using a roll paper magazine, Durst LABOM bench or when projecting on the floor (level difference more than ± 10 cm), see page 15 (Setting the PV positive variator)	Press "DISPLAY SELECT" key (14) four times	PV (10) signal lights up. If the display (8) shows any value, press both "+ and - CLEAR" keys (6 and 7) together. If not, proceed to step A5



To De Program — Program out of channel
follow step A4 TO A8 — Then Stop.

A5	Switch on autofocus programming mode	Press "AF SETUP" key (5)	LED of "AF SETUP" key lights up and FLG (9) signal blinks NOTE: Any negative variator setting ($NV \neq 0$) blocks autofocus programming (NV LED blinks on pressing "AF SETUP" key). Remedy by setting NV to 0 (press both + and - CLEAR keys (6 and 7) together).
A6	Enter focal length of lens	Press "+" (6) oder "-" (7) key	Display (8) shows focal length
A7	Store focal length	Press "ENTER" key (2)	"FLG" signal (9) lights with steady light. Display shows "CLR".
A8	Clear autofocus reference points	Press "+ - CLEAR" keys (6,7) together	Lens carrier runs to reference position. Display: <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> followed briefly by SFC (SETUP FOCUS).
A9	Set enlarger head position according to focal length used and sharply focus image	Set enlarger head to following positions: tim * Release quick adjustment knob (13) and set enlarger head to positions indicated below	

Channel 1 — 50
 2 — 80
 3 — 135

First level
 Down — 4 — 50 mm
 5 — 80 mm
 6 — 135 mm

Second level
 Down — 7 — 50 mm
 8 — 80 mm
 9 — 135 mm

tim*
 Fine focus by turning knob (14)

mot*
 For rapid adjustment press and hold down "RAPID" key (21) while pressing one of the "SIZE/HEAD ADJUST" keys (19 or 20)

mot*
 Fine focus by pressing one of the "SIZE/HEAD ADJUST" keys (19 or 20). Focus sharply at the positions listed in Table 1 (for procedure see steps A10 to A14)

Table 1

135 mm lens
 35.2
 37
 40
 45
 50
 55
 60
 65
 70
 75
 82

LABORATOR 1200 ELITE 2000 tim and LABORATOR 1200 ELITE 2000 mot enlargers Focal lengths of lenses	150 mm with FEMO- TUB		
28 mm	80 mm	100 mm	150 mm
35 mm		105 mm	
50 mm			
60 mm			

Enlarger head positions on cm scale

9	9			
20	20	24	43.5	40.6
21	21	26	45	41
24	23	30	47	42
30	26	35	50	44
50	30	45	55	47
75	40	60	60	52
82	60	80	79	60
	110	110	85	70
			110	90
				110

A10	Switch on enlarger lamp	Press "LIGHT" key (17)	
A11	Sharply focus image	Press "LENS ADJUST" keys (15,16) IMPORTANT: To eliminate mechanical deviations in programming always approach final position of sharpness from below.	
A12	Store enlarger head position	Press "ENTER" key (2)	Enlarger focuses automatically as a check
A13	Is the image sharp? Yes: Go to A14 No: Go to A11		
A14	Have you calibrated all the positions listed in Table 1 for the lens being used? Yes: Go to A15 No: Go to A8		
A15	Switch off autofocus programming mode	Press "AF SETUP" key (5)	LED of "AF SETUP" key goes out. END

SUBSEQUENT CORRECTION OF AUTO- FOCUSING AT A GIVEN ENLARGER HEAD POSITION

Step No.	Working step	Control operation	Response of unit
B1	Switch on unit	Press main switch (1)	LED signals light up and lens carrier runs to reference position. After about 2 sec. the enlarger focuses. AFC display appears during this adjustment.
B2	Insert test negative supplied in negative carrier		
B3	Select head position to be corrected	Set enlarger head to this position	Enlarger focuses automatically. AFC display appears during this adjustment.
B4	Switch on autofocus programming mode	Press "AF SETUP" key (5)	LED of "AF SETUP" key lights up and FLG signal (9) blinks. Display shows focal length of this channel.
B5	Store indicated focal length	Press "ENTER" key (2)	"FLG" signal (9) lights with steady light. Display shows "CLR".
B6	Do not clear autofocus reference points and skip this point	Press "ENTER" key (2)	Lens carrier runs to reference position. Display: SFC
B7	Sharply focus image	Press "LENS ADJUST" keys (15,16) IMPORTANT: To eliminate mechanical deviations in programming al-	

		ways approach final position of sharpness from below (key, 16).	
B8	Store enlarger head position	Press "ENTER" key (2)	Enlarger focuses automatically as a check. SFC displayed during this adjustment
B9	Is the image sharp? Yes: Go to B10 No: Go to B7		
B10	Switch off autofocus programming mode	Press "AF SETUP" key (5)	LED of "AF SETUP" key goes out. END

NOTE:

If a corrected enlarger head position is less than 5 mm from a reference position stored during calibration, then that reference position is overwritten. Otherwise the unit establishes a new reference position.

To correct a calibration point, this must be set again exactly within 5 mm. Preferably use the positions recommended in Table 1 on page 10.

PRACTICAL OPERATION OF ELITE 2000 AUTOFOCUSING

Step No.	Working step	Control operation	Response of unit
C1	Switch on unit	Press main switch (1)	LED signals light up and lens carrier runs to reference position. After about 2 sec. the enlarger focuses.
C2	Fit appropriate lense		
C3	Fit appropriate mixing box and format mask		
C4	Select programmed memory channel	Press and hold "ENTER" key (2) while pressing "CH LENS" (lens channel) key (3)	Channel appears in display (4). Enlarger focuses automatically. Display during focusing: AFC
C5	Switch on enlarger lamp	Press "LIGHT" (17) key	
C6	Insert negative in negative carrier	On mot model press "FILM CHANGE" key (3) and hold down for about 1 sec.	The enlarger head runs down to a convenient level for the seated user. The FC signal (22) blinks and the autofocus system is switched off. Pressing "FILM CHANGE" (3) once again runs the enlarger head back to its original position and switches the AF system on again

C7	Set required print size	<p>tim *</p> <p>For rapid adjustment disengage knob (13) and move enlarger head to required position</p> <p>tim *</p> <p>Fine focus by turning knob (14)</p> <p>mot*</p> <p>For rapid adjustment press and hold down "RAPID" key (21) while pressing one of the "SIZE/HEAD ADJUST" keys (19 or 20)</p> <p>mot*</p> <p>Fine focus by pressing one of the "SIZE/HEAD ADJUST" keys (19 or 20).</p>	
C8	Set lens aperture		
C9	Switch off enlarger lamp	Press "LIGHT" key (17)	
C10	Select aperture also on control panel	Repeatedly press "DISPLAY SELECT" key (14) until "FST" signal (13) lights	"FST" signal (13) lights

		Press "+" or "-" keys to select same aperture as set on lens. NOTE: Any aperture change automatically corrects the exposure time. This does not allow for reciprocity failure. To eliminate reciprocity problems adjust the aperture to keep the exposure time constant. NOTE: The exposure time set remains allocated to the lens channel in use.	Aperture appears in display (8) and unit computes new exposure time. NOTE: A blinking aperture display signals a time outside the timer range (0-999 sec). In that case enter a new time - see C11, C12
C11	Select timer function	Repeatedly press "DISPLAY SELECT" key (14) until "TIM" signal (12) lights	"TIM" signal (12) lights
C12	Set exposure time	Press and hold "ENTER" key (2) while pressing "+" (6) or "-" (7) keys	Display (8) shows exposure time
C13	Expose and process enlarging paper	Press "EXPOSE" key (18) END	

Setting the positive variator (PV)

NOTE:

After a channel change the unit automatically focuses within 2 sec. The exposure time remains allocated to the channel, i. e. after a channel change the unit displays the exposure time last set in the channel concerned.

Required when using:

- A masking frame
- The Durst LABOM bench
- Roll paper magazines etc.

NOTE:

If the level difference of the projected image plane (PV value) is greater than ± 10 cm, re-program the autofocus system for the new projection plane (paper magazine or floor):

Measure the difference in levels and enter in unit, then program the autofocus system (see page 6).

If the level adjustment of the projection plane (e.g. with a masking frame) is less than ± 10 cm, enter the PV value as described below:

Step No.	Working step	Control operation	Response of unit
D1	Switch on unit	Press main switch (1)	LED signals light up and lens carrier runs to reference position. After about 2 sec. the enlarger focuses. "AFC" display appears during this adjustment.

D2	Enter PV value	Press "DISPLAY SELECT" keys (14) four times Enter level difference of projection plane with "+" or "-" keys (6,7) Enter "+" value for floor projection or when using a roll paper magazine; enter "-" value with masking frame. Each DIGIT = 1 mm	Signal: PV After about 2 sec. the enlarger focuses. "AFC" display appears during this adjustment.
D3	Is the image sharp? Yes: Go to D5 No: Go to D4		
D4	Modify PV value until image is sharp	Press "+" or "-" keys (6 or 7)	After about 2 sec the enlarger focuses. "AFC" display appears during this adjustment.
D5	Return to normal operation	Press "DISPLAY SELECT" key (14) twice	Signal: "TIM" (12) display of exposure time End

Setting the negative variator (NV)

Compensates thickness differences of original, e.g. internegatives with emulsion side up

Step No.	Working step	Control operation	Response of unit
----------	--------------	-------------------	------------------

E1	Switch on unit	Press main switch (1)	LED signals light up and lens carrier runs to reference position. After about 2 sec. the enlarger focuses. "AFC" display appears during this adjustment.
E2	Enter NV value	Press "DISPLAY SELECT" key (14) five times With "+" or "-" keys (6,7) enter or adjust thickness deviation of original until image is sharp. Each DIGIT = 0.05 mm	"NV" display (11) appears. After about 2 sec. the enlarger focuses. "AFC" display appears during this adjustment
E3	Is the image sharp? Yes: Go to E5 No: Go to E4		
E4	Modify NV value until image appears sharp	Press "+" or "-" keys (6,7)	After about 2 sec. the enlarger focuses. "AFC" display appears during this adjustment.
E5	Return to normal operation	Press "DISPLAY SELECT" key (14) once	Signal: "TIM" (12) and display of exposure time END

Manual focusing

Follow the steps listed below:

Step No.	Working step	Control operation	Response of unit
F1	Switch on unit	Press main switch (1)	LED signals light up and lens carrier runs

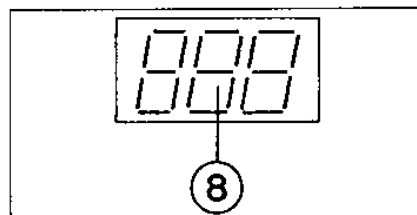
			to reference position. After about 2 sec. the enlarger focuses. "AFC" display appears during this adjustment.
F2	Fit appropriate lens in enlarger		
F3	Focus the image	<p>Use "LENS ADJUST" keys (15,16). The lens carrier moves up or down at two speeds: initially at about 1.2 mm/sec, then - after 5 sec - at 7.2 mm/sec.</p> <p>NOTE: If the channel was previously programmed, the enlarger focuses automatically only after a further magnification change.</p> <p>END</p>	

ERROR SIGNALS AND THEIR CAUSES

Model version	Display	Cause	Remedy
mot	ERR 5	Enlarger head movement locked	*Press "ENTER" key. NOTE: If this fault recurs, contact the customer service organisation of your local Durst agency.
tim mot	ERR 6	Attempt to use more than 30 reference points for autofocus programming	*Press "ENTER" key. Clear all reference points as follows: *Press "AF SETUP" key (5) twice *Press "ENTER" key (2) once *Press "+ - Clear" (6,7) together and reprogram autofocusing
tim mot	ERR 7	Lens carrier movement blocked	*Press "ENTER" key (2) NOTE: If this fault recurs, contact the customer service organisation of your local Durst agency.
tim mot	Exposure time or aperture display blinks	Permissible time range (0 to 999 sec) exceeded	Set different aperture or magnification
tim mot	"E" lights very brightly	Data in memory lost Possibly faulty battery	Please contact the customer service organisation of your local Durst agency.

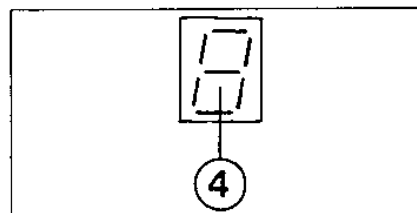
APPENDIX

What the controls do

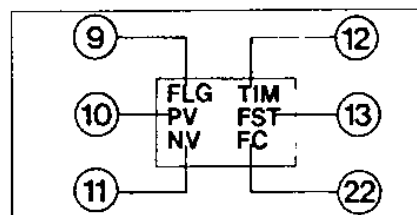


Digital display of

- Focal length
- Positive variator
- Negative variator
- Exposure time and aperture

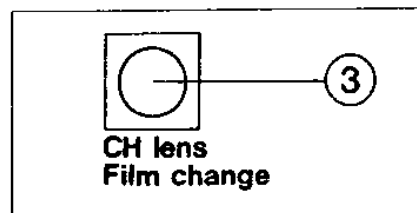


• Digital display of lens channel



Signal	Description
FLG	FOCAL LENGTH of lens
PV	Positive variator (see DISPLAY SELECT description)
NV	Negative variator
TIM	Exposure time
FST	Aperture
FC	Film change position (for description see page 12)

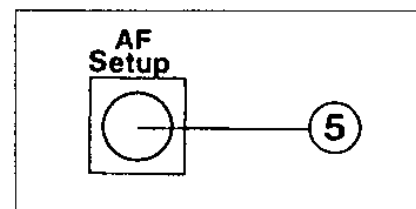
CH LENS / FILM CHANGE:



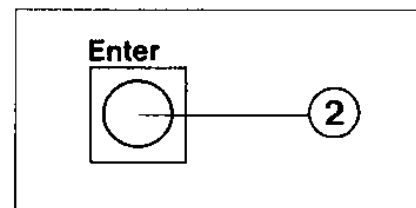
a) Quickly calls a given lens channel. E.g. for channel 4 press and hold down "ENTER" key (2) and keep pressing "CH-LENS" key (3) until display (4) shows channel 4

NOTE: If you keep the key depressed for longer than 1/2 sec., the unit runs through the lens channels backwards.

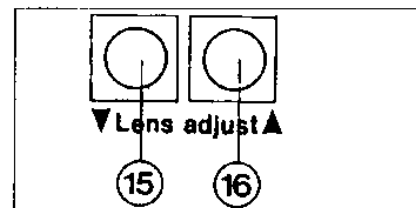
b) Serves for easy and rapid film changing. The enlarger head runs down to a convenient level for the seated operator and disengages automatic focusing. Pressing the key a second time returns the enlarger head to its previous position and refocuses the image.



Switches autofocus programming ON or OFF

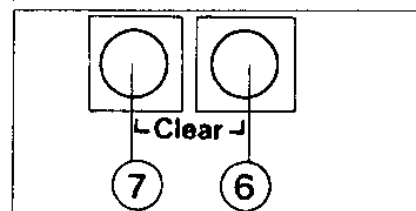


- Enters focal length, channel, exposure time
- Stores a sharply focused position

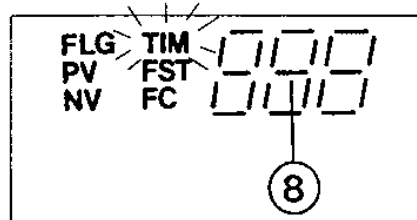


Move lens carrier up or down at two speeds:

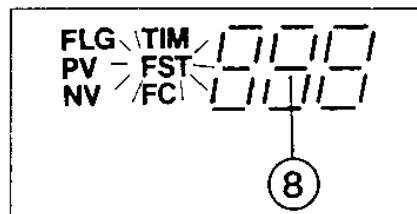
- For first 5 sec. after pressing key: approx. 1.2 mm/sec.
- After 5 sec.: approx. 7.2 mm/sec.



- Enter indicated values in display
- Clear indicated values (press both keys together)
- Clear stored reference points

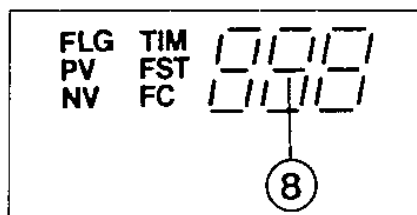


Signal:
"TIM"-TIMER exposure time (0 to 99.9 and
100 to 999 sec.)

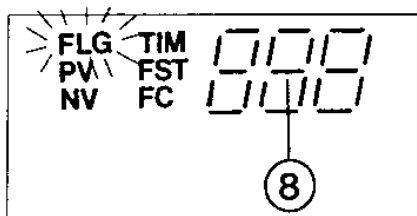


1. Press key (14) once:
"FST" =Focal Stop (aperture) from f/2.8
to f/45
Set required aperture with "+" and "-"
keys.
NOTE: The aperture set is stored in all
lens channels.

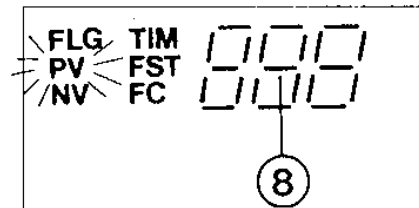
NOTE:
Any aperture change automatically corrects
the exposure time. This does not allow for
reciprocity failure. To eliminate reciprocity
problems adjust the aperture to keep the ex-
posure time constant.



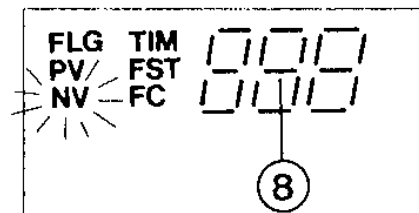
2. Press key (14) once: Signals go out to
avoid fogging of sensitised papers.



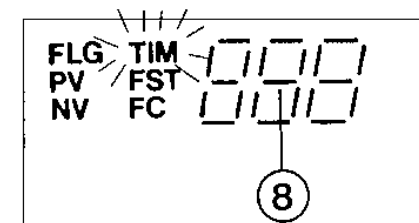
3. Press key (14) once: "FLG" = focal
length of lens.



4. Press key (14) once: "PV" signal lights
up, ready for entering a PV value. Com-
pensates level differences in the pro-
jection plane (for instance of a masking
frame, roll paper magazine etc).
Entry in mm, range from +999 to -99mm
(each digit = 1 mm).



5. Press key (14) once:
"NV" signal lights up, ready for enter-
ing an NV value. Compensates thick-
ness differences of original (e.g. inter-
negatives inserted emulsion side up).
Range ± 99 (each DIGIT =
0.05 mm).

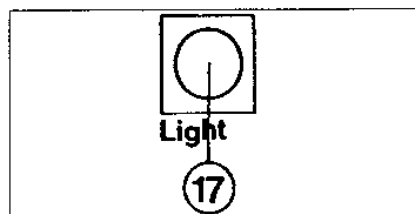


6. Press key (14) once:
"TIM" lights up and display (8) shows ex-
posure time. (Range 0-99.9 and 100-
999 sec.)

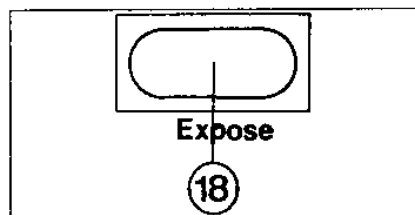
NOTE:
The display (8) blinks if the exposure time
is outside the range (below 0.1 sec. or be-
yond 999 sec.).

REMEDY:
Set a different aperture or enter a new
time.

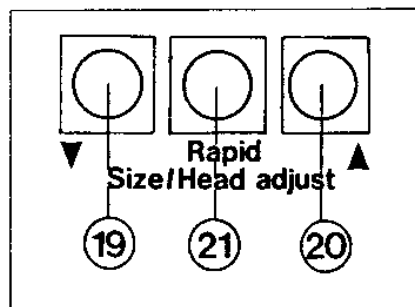
NOTE:
If you press the "DISPLAY SELECT" key
(14) for longer than 1/2 sec., the unit runs
through the above sequence backwards.



(17) Switches enlarger lamp on and off.



(18) Triggers an exposure.



Key (19, 20) moves the enlarger head and lens carrier up or down at low speed, while maintaining sharp focus.

Pressing key (21) together with "HEAD ADJUST" keys (19), (20) moves the enlarger head and lens carrier up or down at high speed, while maintaining sharp focus.

Durst products are being constantly improved to the latest state of the art. Descriptions and illustrations are therefore subject to modification.

Instruction manual

Durst LABORATOR 1200

FEMO / WALLMOUNT

CONTENTS

GENERAL NOTE	_____	4
Applications	_____	4
ASSEMBLING THE FEMO/WALLMOUNT	_____	5
Fitting the wall mounting	_____	5

GENERAL NOTE

The Durst FEMO/WALLMOUNT is a wall mounting system for the following Durst enlargers:

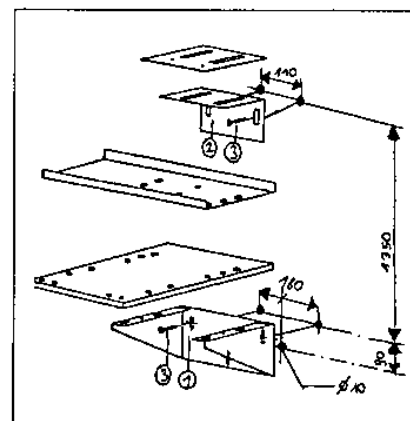
- LABORATOR 1200
- LABORATOR 1200 ELITE 2000 tim
- LABORATOR 1200 ELITE 2000 mot
- LABORATOR 1200 AUTOCOLOR ELITE
- AC 1201

Applications

- for use with roll paper magazines
- for use with the Durst SLIDE Table hinged baseboard
- when making giant enlargements, for instance by projection on the floor

ASSEMBLING THE FEMO/WALLMOUNT

Fitting the wall mounting



- Check the wall for unevenness. Pack the wall if necessary.
- Use the template supplied to mark the position of holes to be drilled.
- Drill 10 mm dia. holes and insert plugs.
- Use screws (3) to fix brackets (1) and (2).
- Lift the enlarger with the column (4) onto the supporting plate (1) and screw in place at the top and bottom with bolts (5).
- Check the vertical and horizontal alignment of the enlarger (preferably with a spirit level) and finally tighten the bolts (5).

