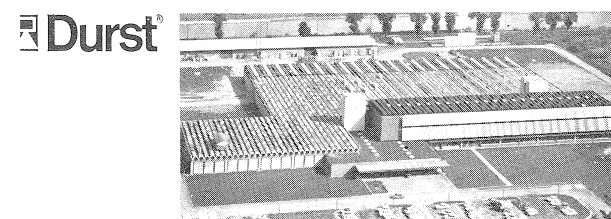
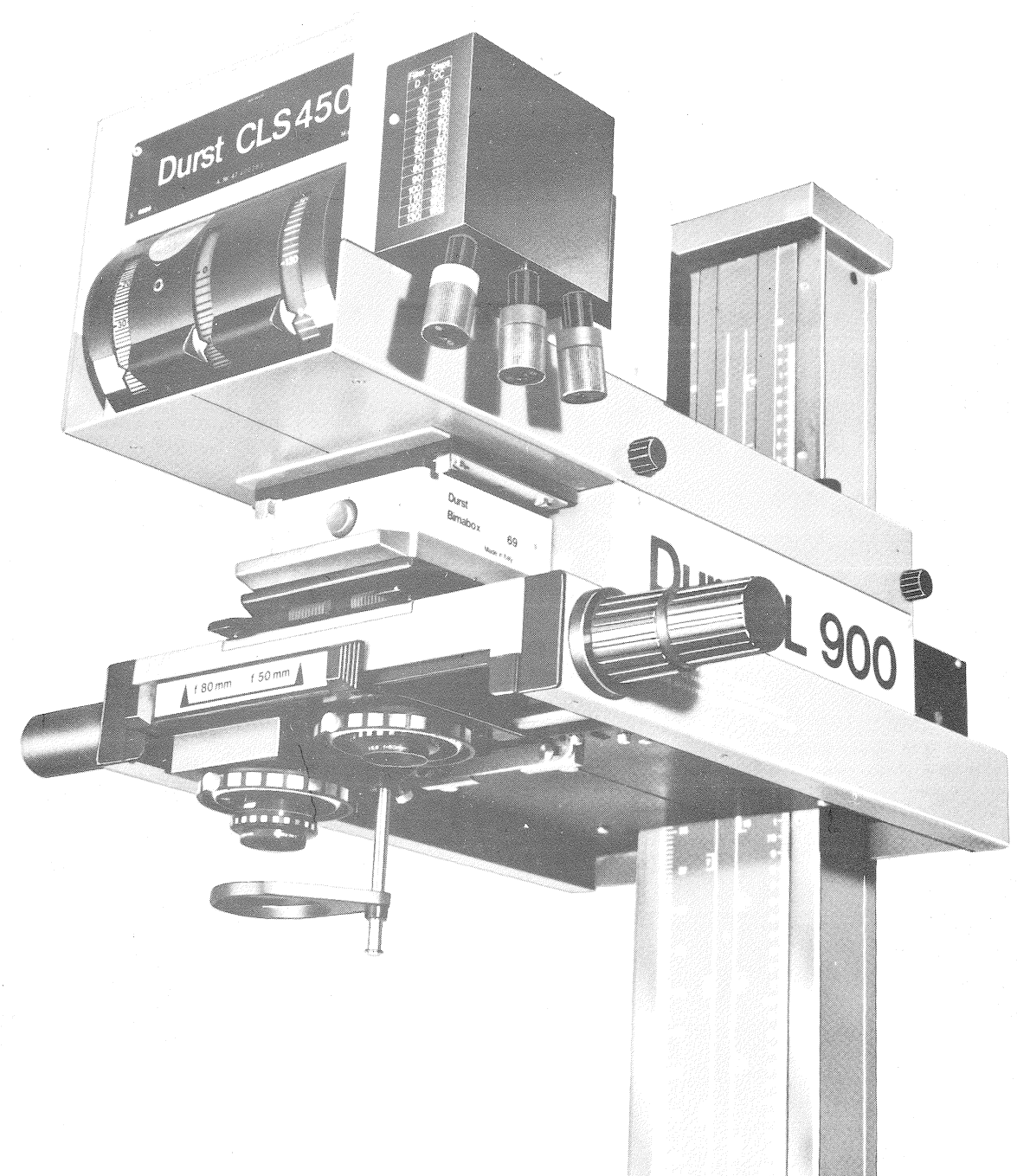


# Durst Laborator 900

SERVICING INSTRUCTIONS



Durst Inc. P.O.Box 445 - 39100 BOLZANO, Italy

Studio Durst(e) Printed in Italy - Mazzucchi (BZ)

 **Durst®**

Adjusting the came plate

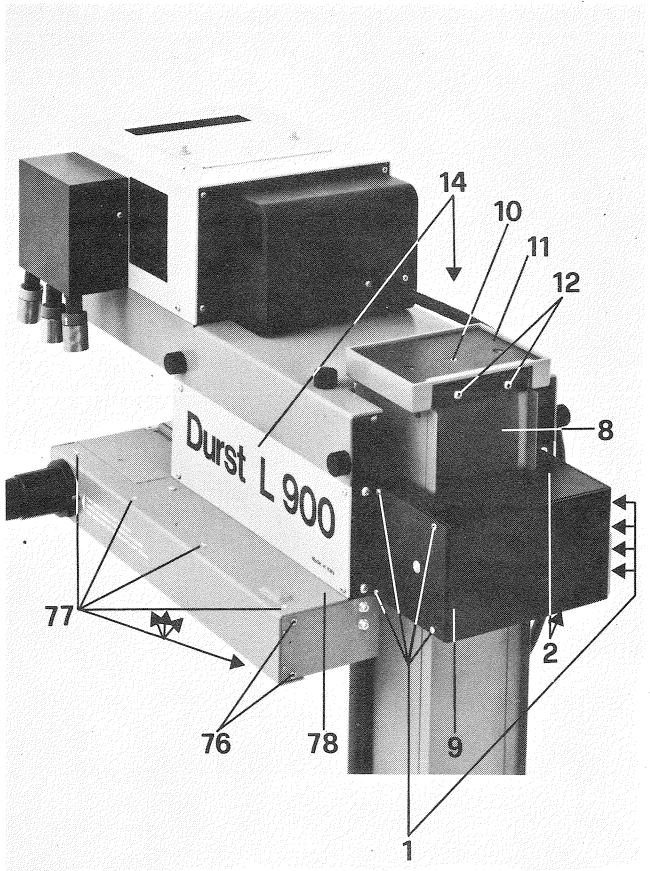
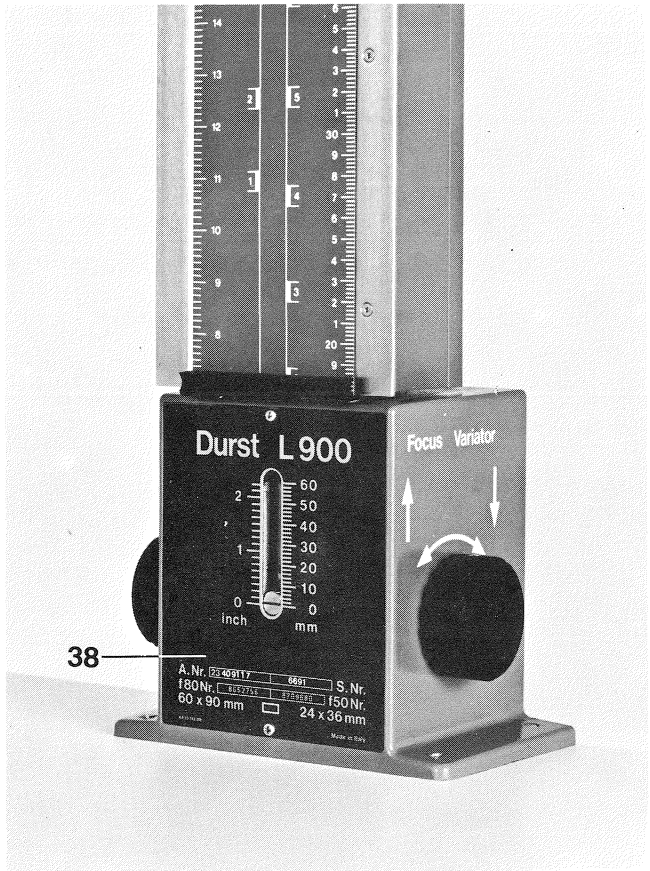
The focusing plane of the LABORATOR 900 must be so adjusted that it comes to lie slightly under the baseboard plane. Maximum sharpness on the baseboard is achieved by closing the f-stop by a quarter of a value. The lens and the negative carrier numbers must correspond to the numbers engraved on the enlarger plate (38). The use of other not previously adjusted lens of the same focal length requires a readjustment of the came plate. For definitive setting of a spare lens with supplied pre-adjusted came plate, proceed as follows:

1. Set the focus variator to zero and unscrew the side panel (14) of the enlarger head as well as the bottom cover panel (15).
2. Loosen the screws (16) and remove the came plate (17).
3. Put in the new pre-adjusted came plate and tighten the screws.
4. Set the enlarger head in its highest position, put in the test negative and check the sharpness.
5. Loosen the socket head screws (39) and move the lever (40) by rotating the socket head screw (41) till the focus is adjusted as described in the first paragraph of these operating instructions. When doing this it will be necessary to readjust the sharp focus several times, as this can be easily unsettled by locking the socket head screws (39).
6. Set the enlarger head to the smallest factor and check the sharp focus.
7. Should the projection in this position not be as well focused as described, then hold the came plate firmly and loosen the screws (16) as well as the nut (18) and rotate the came plate till the projection is well focused. Lock the screws (16) again.
8. Move the enlarger head upwards, check the sharpness and adjust again if necessary by raising and lowering the lens panel. The lens panel is raised or lowered by evenly regulating the screws (42) and the checkbolts (43).

9. Regulate the sharpness in the upper and lower positions as described under point 7 and 8 till the projection appears sharp. Then tighten the nut (18).
10. The pre-set came plate now ensures a sharp projection in all positions of the enlarger head with stopped down lens.

- An unprocessed came plate not pre-adjusted or used up is adjusted as follows:**
11. After mounting the came plate the unit is focused in the highest and lowest positions as described under point 1 to 9 of these instructions.
  12. Check the sharpness in all positions along the column by lowering the enlarger head step by step. In this way the point on which the sharp projection lies highest above the baseboard is located.
  13. In this position the unit must now be focused. Should this position be in the upper part of the column (till about 55 cm on the column scale), then the focusing can be achieved by raising or lowering the lens panel. In the lower range the came plate must be focused as described under point 7. Through this focusing the sharp plane in all other positions of the came plate comes to lie under the baseboard.
  14. Mark this point (44) of the came plate with a pen and make sure that the nut (18) is well tightened. Remove the came plate.
  15. Polish the came plate carefully and evenly so that the whole unsharp plate portion is brought on the focus of the marked point.

**Nota Bene:** If the lower negative carrier glass is to be replaced the sharpness must be checked and eventually adjusted according to point 8.



Replacing the drive wheel in the focus variator

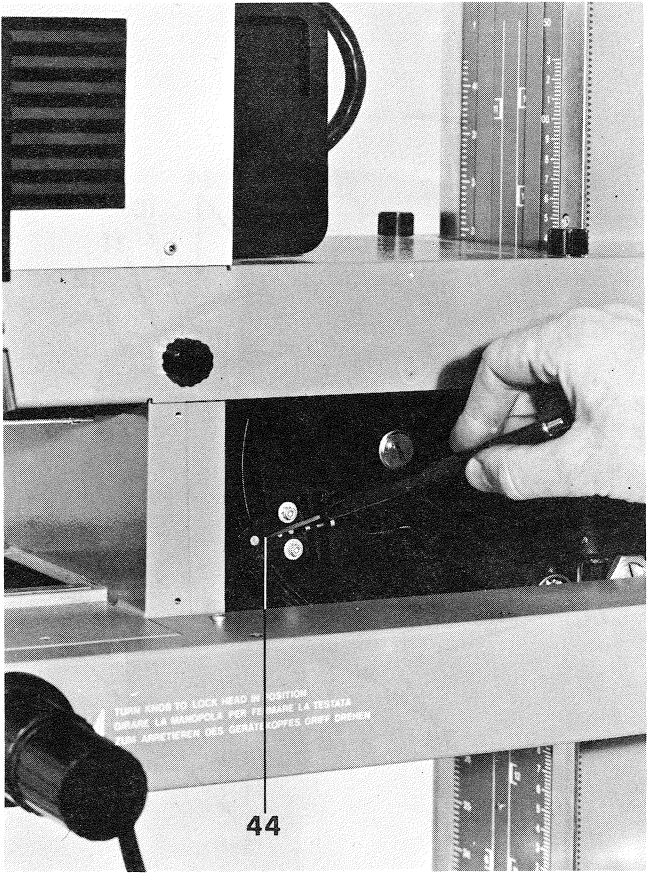
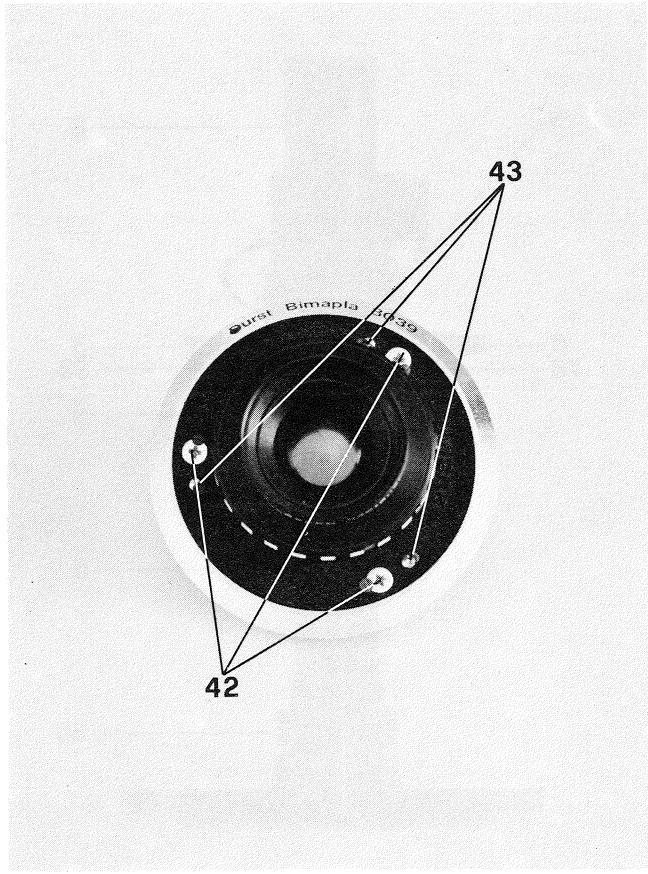
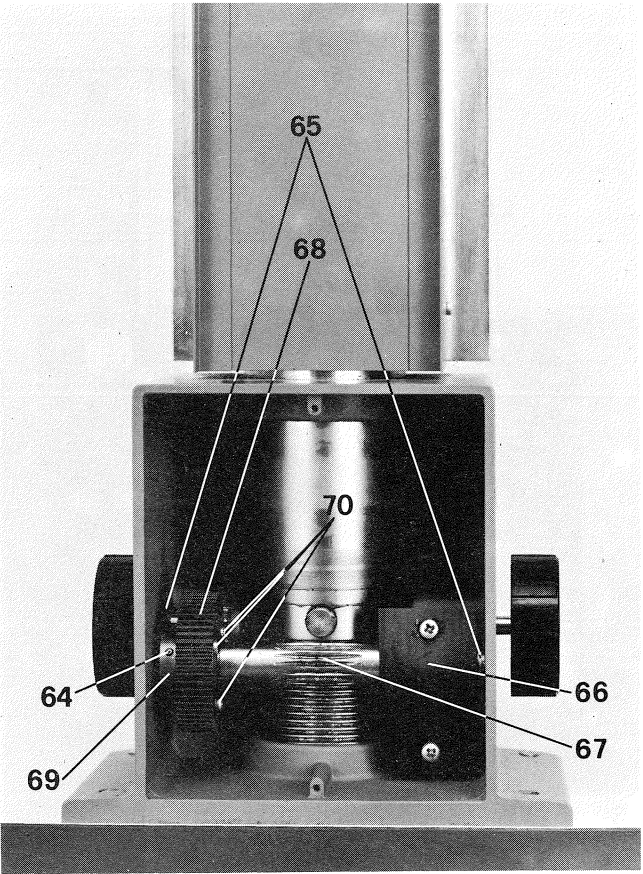
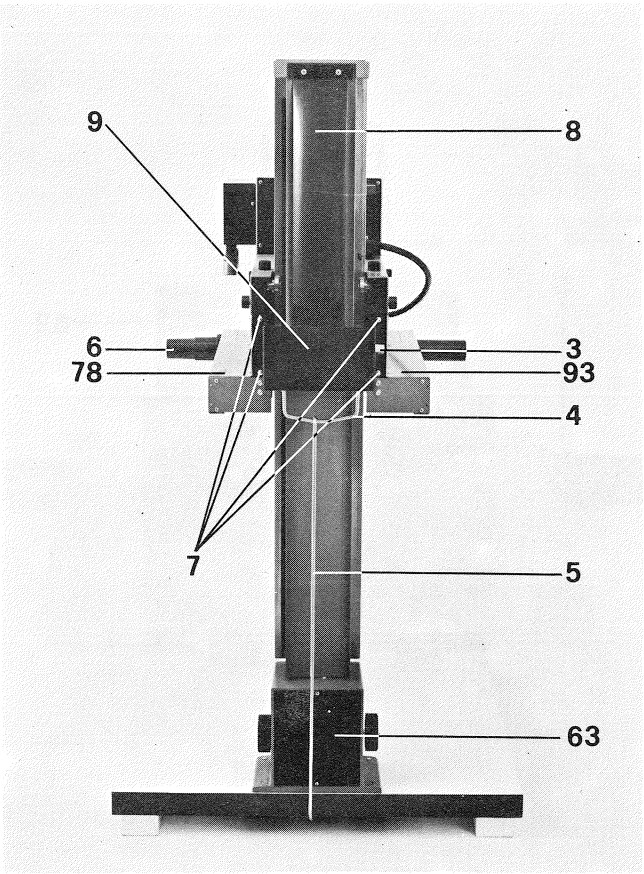
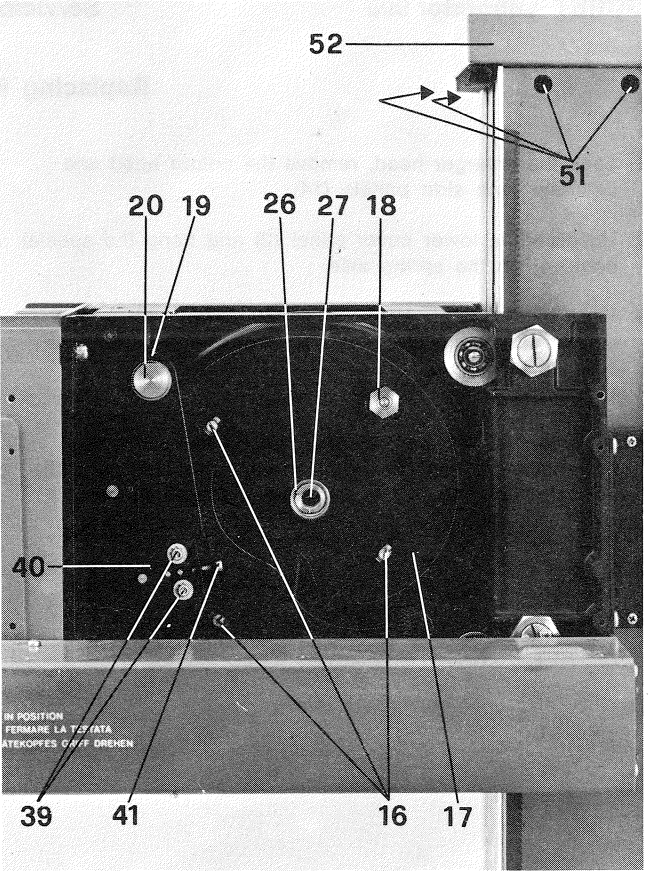
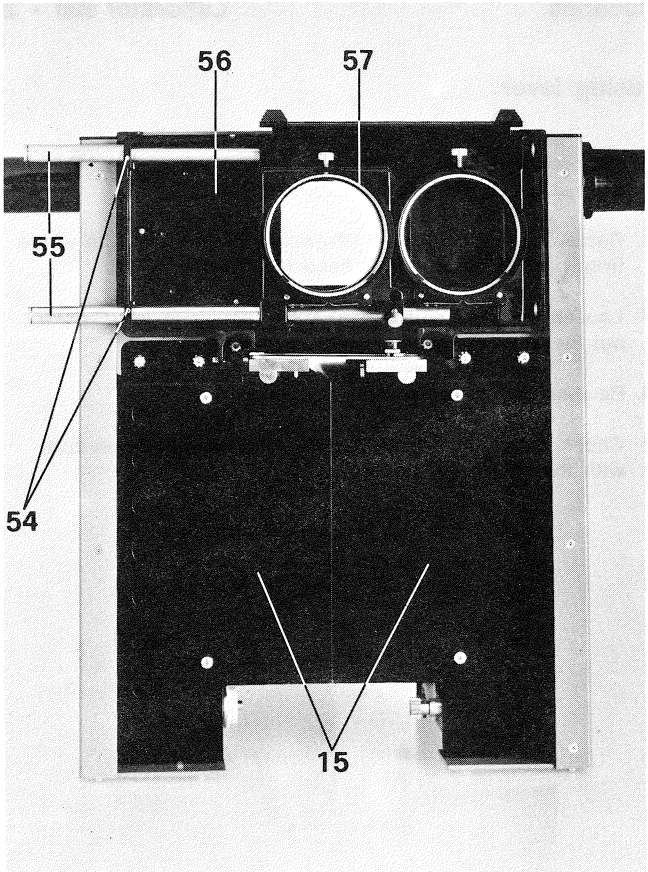
1. Unscrew the back cover panel (63).

2. Rotate the focus variator to a favourable position, lock and get the grooved dowel pin (64) through.

3. Pull off the spring ring (65) and unscrew the pressure spring (66).
4. Push through the tooth shaft (67) and remove the pressure spring (66).

5. Mount the bush (69) on the new drive wheel (68) after loosening the screws (70).

6. Re-assemble in the reverse sequence.



Replacing the focusing lever

1. Lock the enlarger head, remove the colour head and unscrew both side panels (14).

2. Unscrew the lower cover panel (2) and hang the special hook (4) on the spring axle.

3. Hook in the safety hook (5) on the lower part of the column, push the unit upwards and at the same time connect the upper part of the safety hook (5) to the special hook (4).

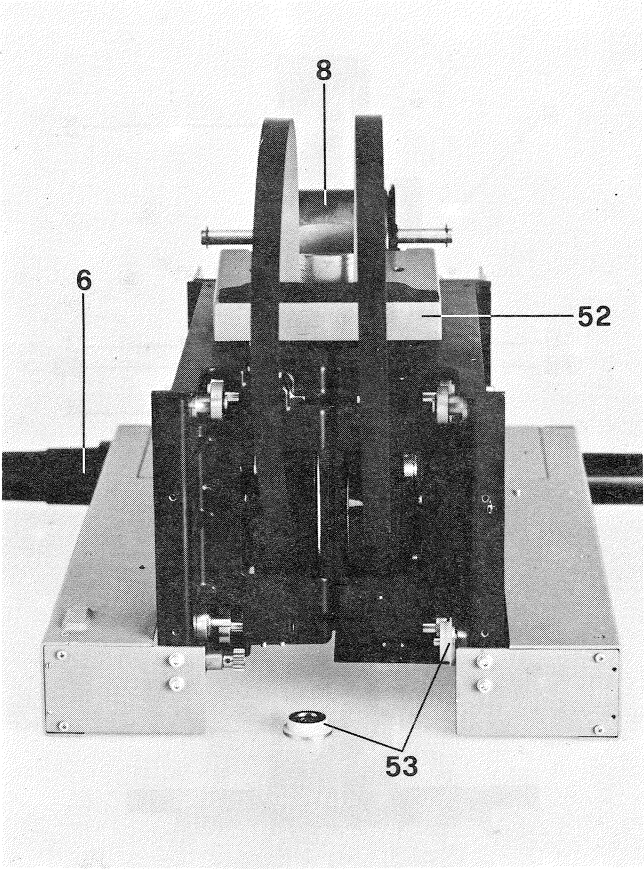
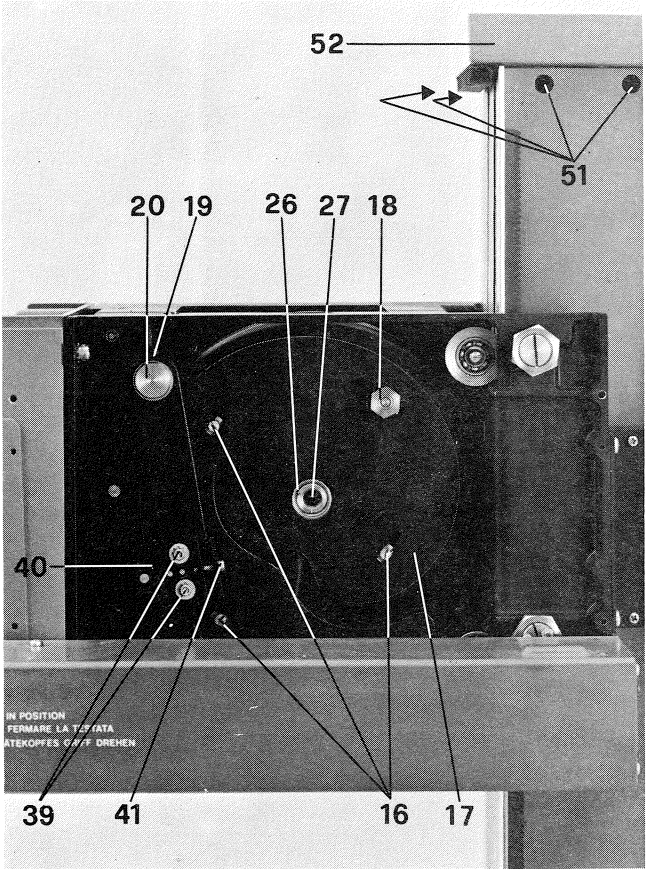
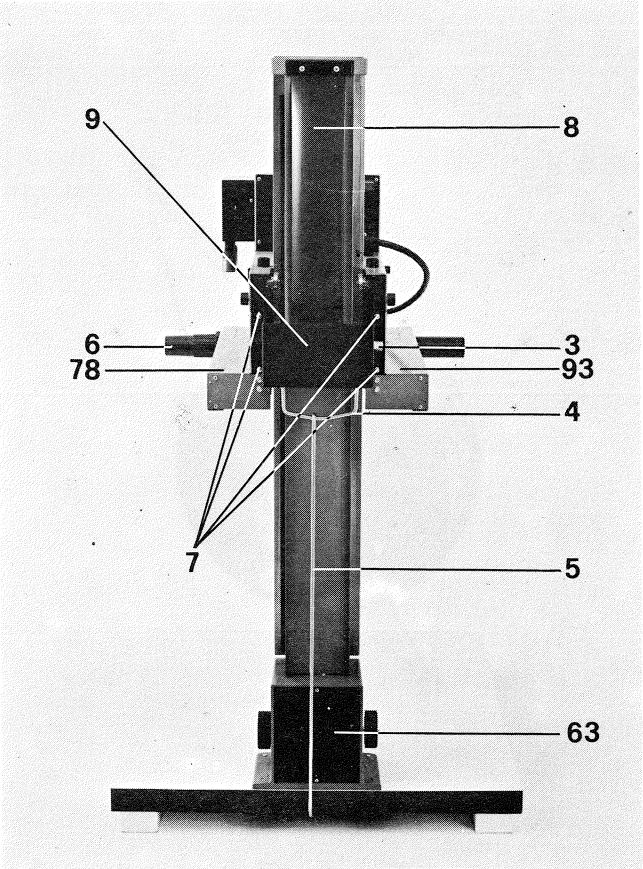
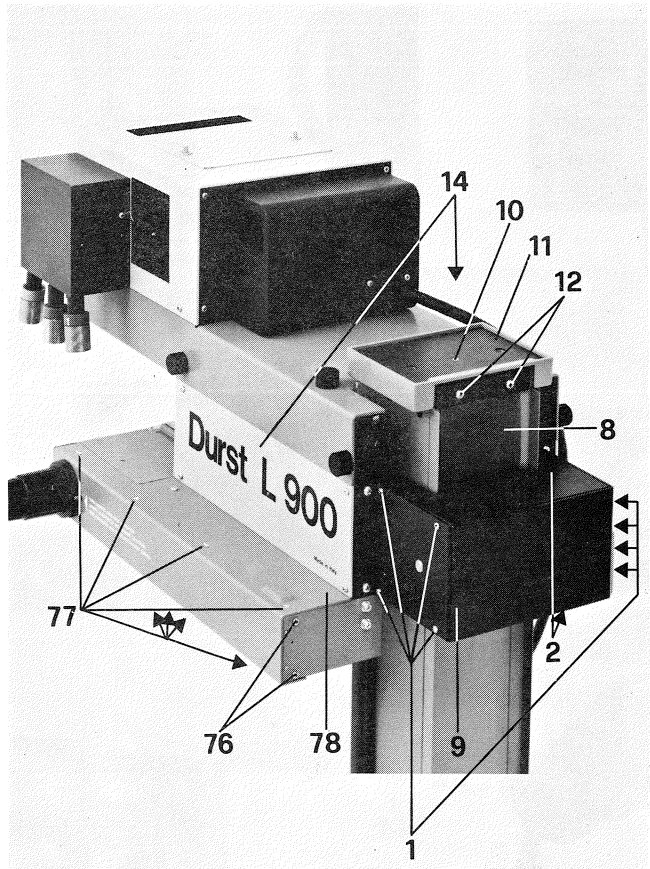
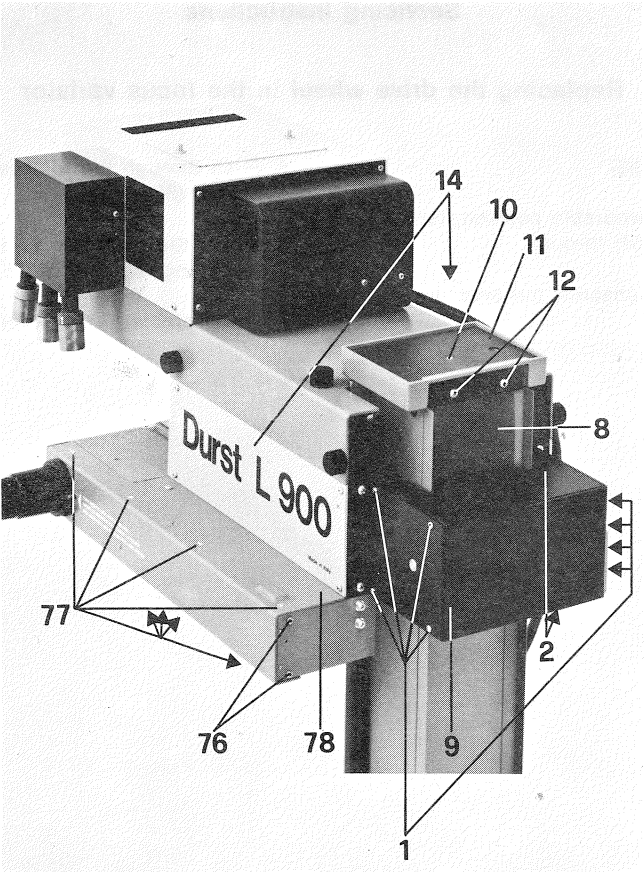
4. Unscrew the screws (77) and pull off sideways the right-hand grip together with the chain housing (78). The left-hand housing (93) is removed in the same way.
5. Unscrew the front screws (89) on the left and on the right so as to free the two side sections (90).

6. Remove the socket head screws (91) and lift off the whole front part of the enlarger head (92).

7. Loosen the stud bolt (19) of the appropriate lever, draw out the bolts (20) and change the lever.

8. Re-assemble in the reverse sequence.

9. Check the sharpness of the unit and eventually readjust with the regulating panel.



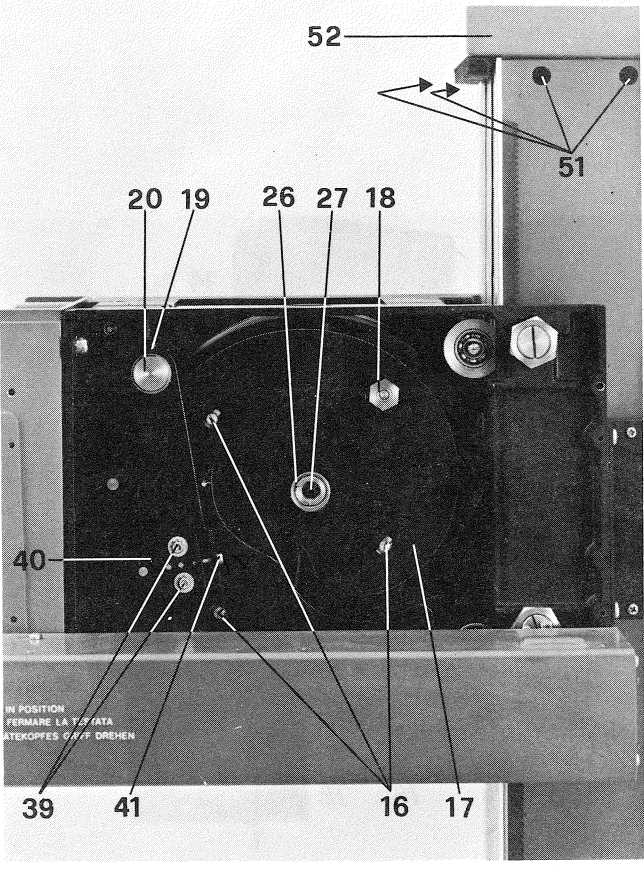
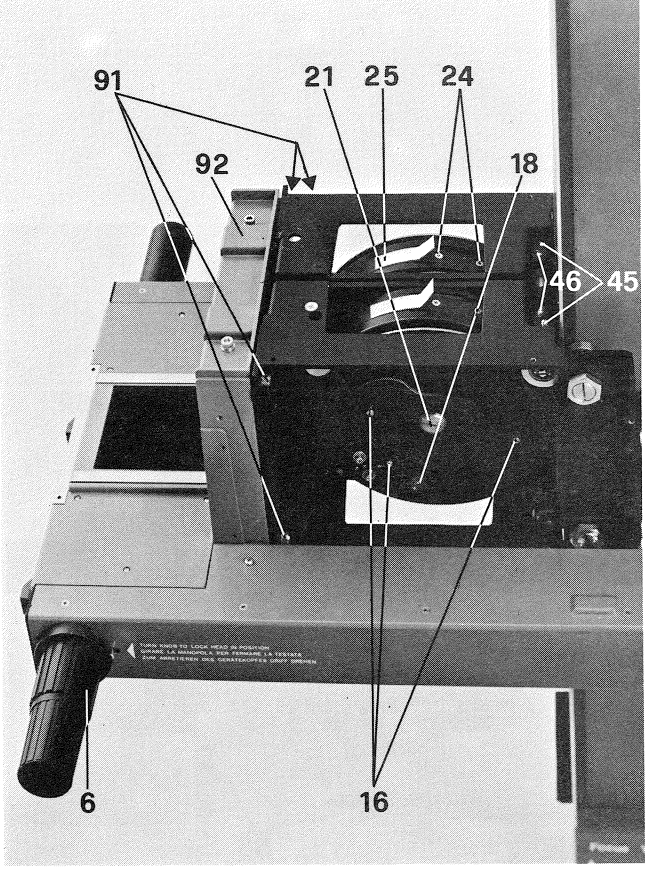
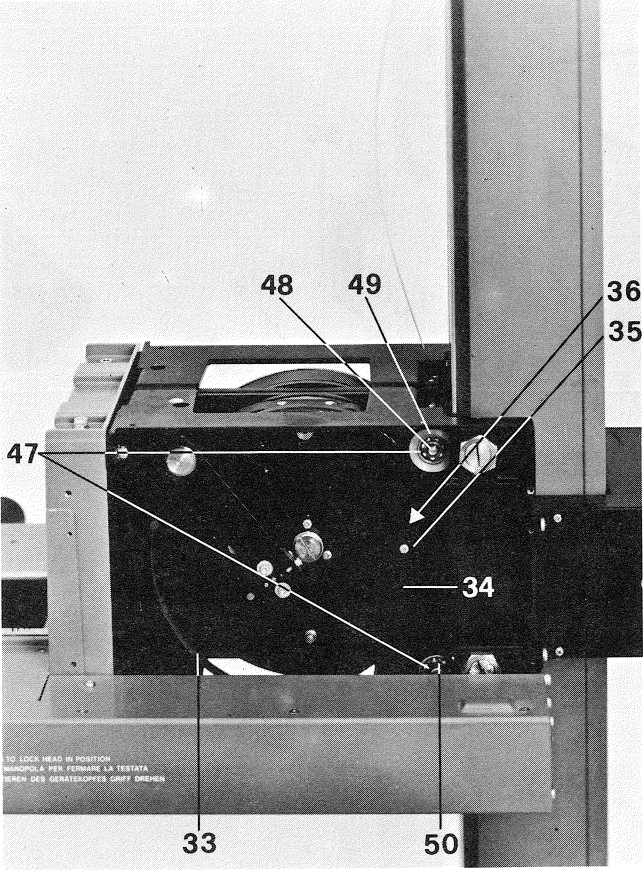
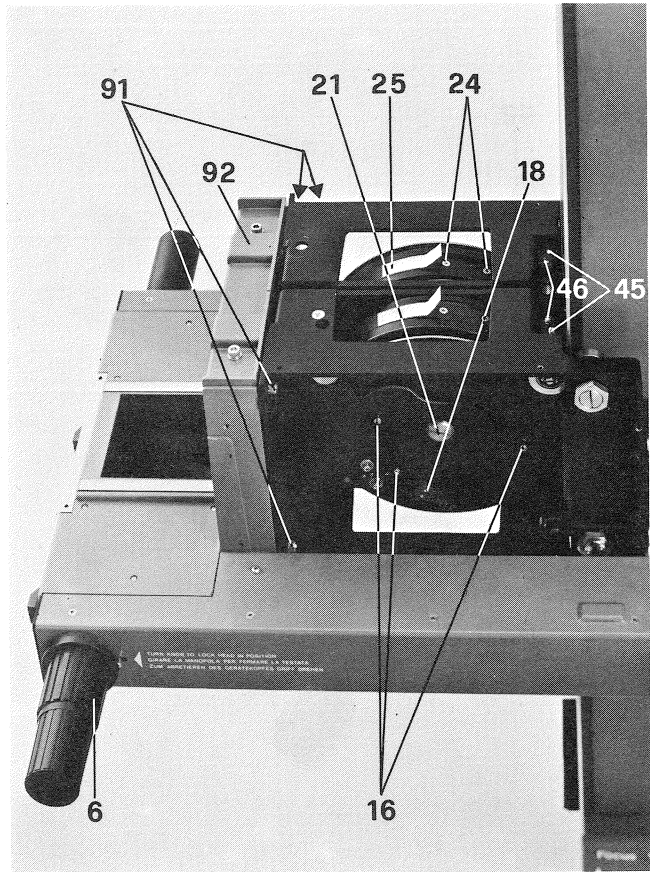
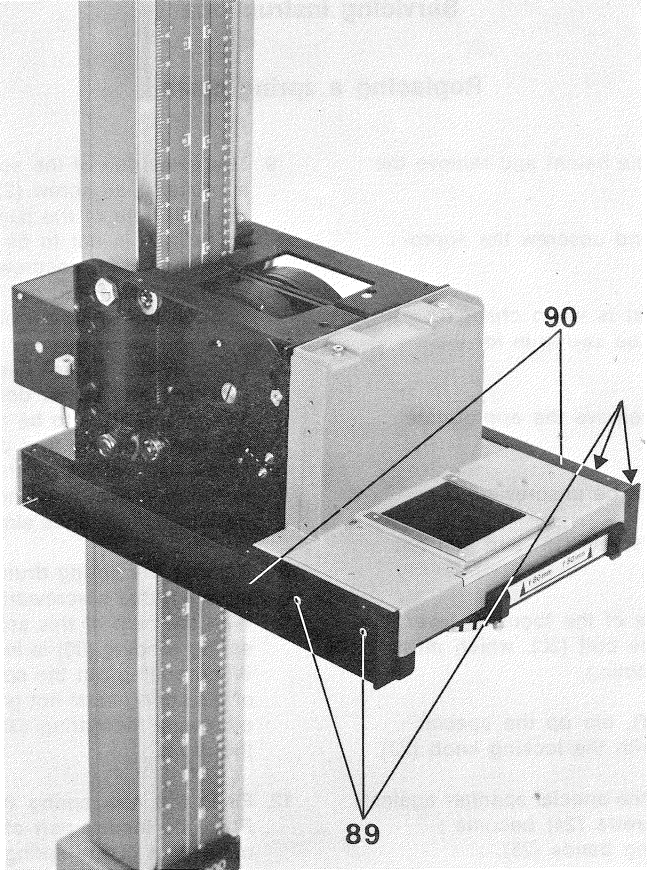
Replacing the rollers

- 1. Set the head in middle position up the column and lock.
- 2. Remove the illumination hood.
- 3. Loosen the stud bolts (45) and (46) of the appropriate roller.
- 4. Push off the spring ring (47), push the bearing (48) shaft towards the inside and replace the roller (49).
- 5. Push the bearing shaft (48) outwards and shove in the clamping ring (47).
- 6. Press the roller (49) against the edge of the guide column and tighten a little the appropriate stud bolt (46).
- 7. Rotate the bearing shaft (48) with a screwdriver till the roller (49) comes to lie on the guide column.
- 8. Tighten the stud bolts (45) and (46) and mount the illumination hood again.

**Upper back and bottom front rollers**  
These rollers can be changed without a special disassembly of the unit:

- 9. Remove the illumination hood and move the enlarger to the highest position of the column. For the bottom rollers (50) unscrew the side panels (14).

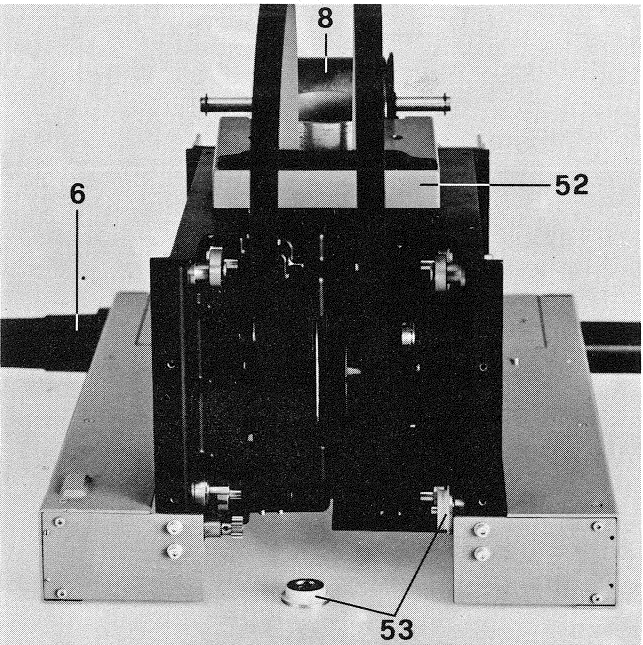
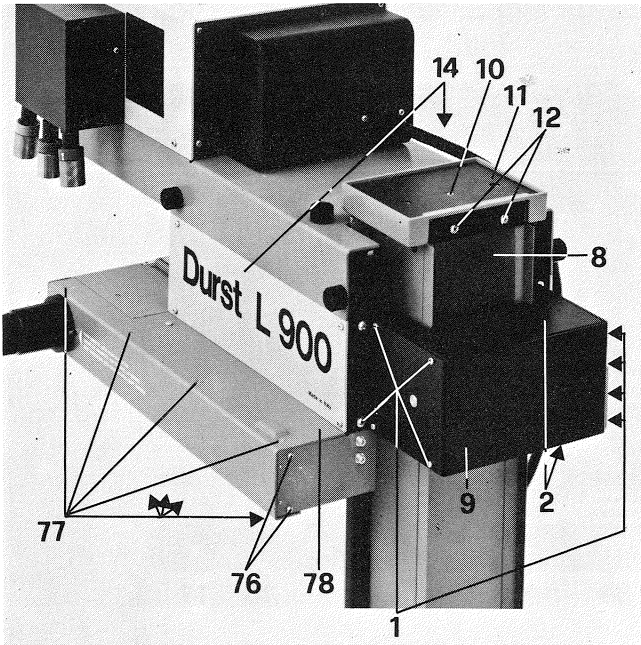
- 10. Pull off the lock ring (47) of the corresponding roller, raise a little the front of the enlarger head and lever up the faulty roller out of the shaft.
  - 11. Raise a little the enlarger head and push in the new roller.
- Bottom back rollers:**
- 12. Remove the illumination hood and slacken the counter-weight spring (8) according to the servicing instructions L 900 - 5, point 1 to point 5.
  - 13. Secure both spring drums according to the servicing instructions L 900 - 4, point 1 to point 6.
  - 14. Unscrew the screws (51), pull the helmet (52) out of the column and with an eye to the steel band set it on the negative carrier plane.
  - 15. Free the head by rotating with the control handle (6) from the brake action and lift fully out of the column.
  - 16. Pull off the faulty rollers and replace.
  - 17. The reassembly is effected in the reverse sequence.



Replacing a spring drum

1. Lock the enlarger head at middle height and remove the colour head.
2. Take off the side panels (14) and unscrew the appropriate lower cover plate (15).
3. Swing in the opposite lens, that is when changing the drum the 80 mm lens must be swung in for the 50 mm lens.
4. Unscrew the screws (16) and remove the appropriate came plate (17).  
  
**Important:** The nut (18) must not be unscrewed.
5. Loosen the corresponding set screw (19) and pull out the bolts (20).  
  
**Important:** On the inner surface of the focusing lever there is a washer affixed on the bolt (20), which must not be forgotten when re-assembling.
6. Unscrew the locking screw (21), pin up the special spanner on the drum and fix with the locking knob (23).
7. Wind up the spring by rotating the special spanner against the reaction power till both screws (24) become accessible. Tear off the covering bands (25).  
  
**N.B.:** Right-hand spring counter clockwise, left-hand spring clockwise.
8. Unscrew the screws (24) and slacken slowly the spring drum.  
  
**Important:** The locking knob (23) must not rotate with during the windig up. If need be stick a thin washer on the thread of the knob (23).

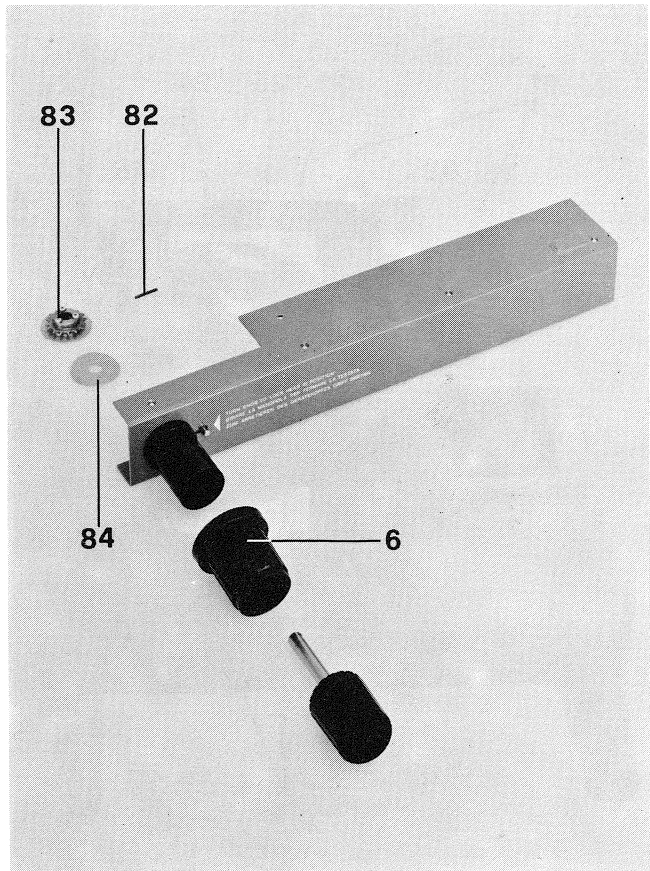
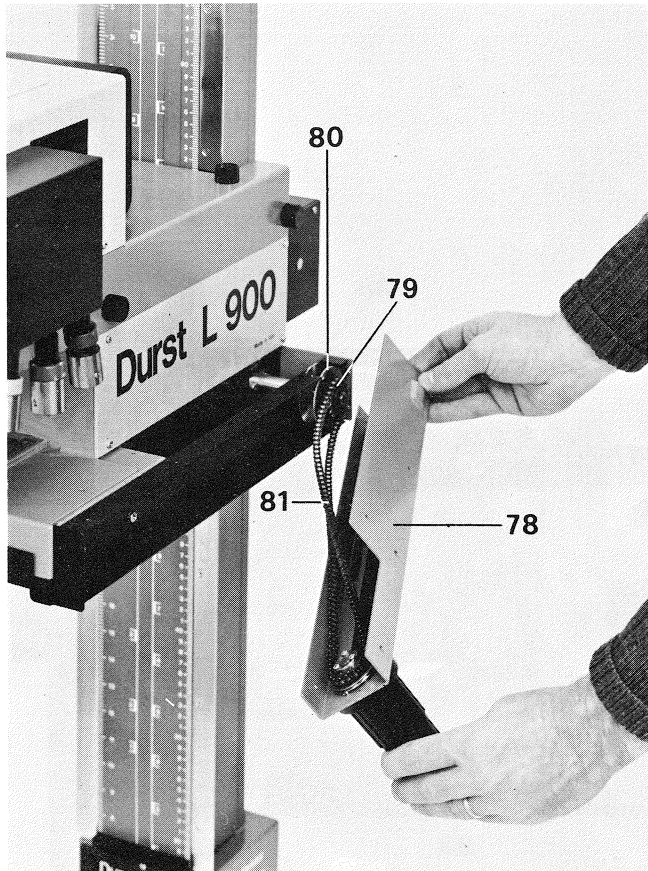
9. The axles (26) of the spring drum are connected through a socket head screw (27) which is accessible through the drill hole of the same axles. If the socket head screw (27) is not to be seen in the axle of the drum to be changed, unscrew the retaining screw (21) of the opposite drum and get at the socket head screw (27) through the drill hole of this axle.
10. Unscrew the socket head screw (27) (4 mm socket head spanner) and screw down the M 10 screw (28) in the axle of the drum to be replaced. Press the latter against the head housing and pull out fully the axle with the screw. Do not let go the spring drum yet. The washer in the axle seat must not get lost. The washer is not to be found in all units since it is enclosed only on request.
11. Remove the spring drum, this must be pull out first only so much that a screwdriver can be inserted behind it (29). With the help of this screwdriver the inner part of the spring winding (30) is loosened from the spring bolt (31). When pulling out the spring drum the inmost part (30) of the spring must not get jammed with the spring bolt (31), otherwise the spring (32) might suddenly spring out of the drum.
12. Fit in the new spring drum complete with spring. Push the inmost part of the spring hook (30) into the upper slot of the spring bolt (31). Re-assemble in the reverse sequence, whereby the spring — the enlarger head is halfway up the column — must be wound up about 3.5 spanner revolutions. Take care that the steel band after having been fixed comes to lie well on the drum.  
  
**N.B.** Wind up the right-hand spring counter- clockwise and the left-hand spring clockwise.



Replacing and adjusting the transport friction

- Should the transport friction no longer engage rightly, there is the possibility to adjust it by evenly screwing in the two stud bolts (76).
- For changing the clutch proceed as follows:
1. Unscrew the bottom cover panel (2) of the spring housing and hang the special hook (4) on the flexible spindle.
  2. Hook the quick release hook (5) in the base part of the column, move the unit upwards and at the same time

- connect the upper part of the quick release hook (5) to the special hook.
3. Unscrew the screws (77) and pull off sideways the right-hand control handle together with the spring housing (78).
  4. Pull out the back sprocket wheel (79), tear off the rubber covering (80) and stick a new one on.
  5. Re-assemble in the reverse sequence.



Replacing the chain and the eccentric knob

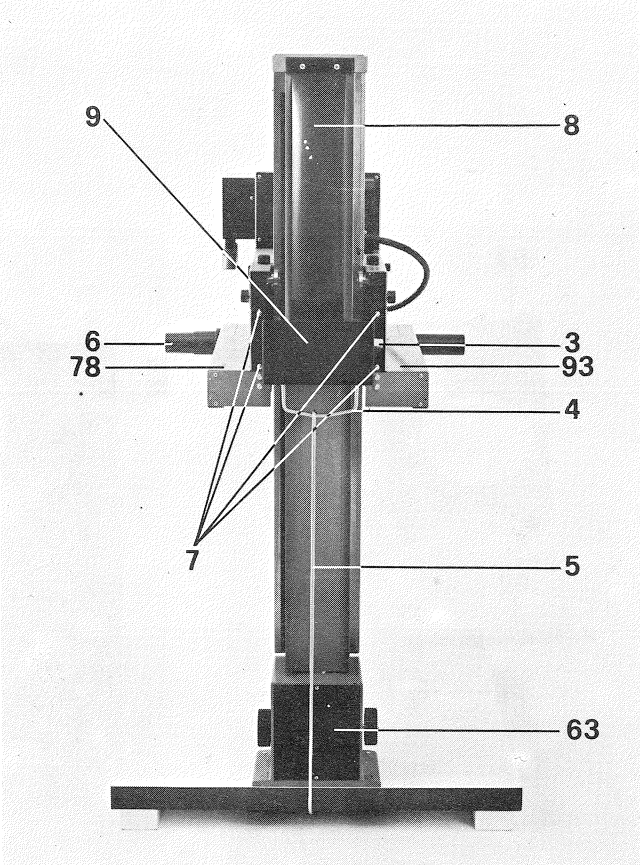
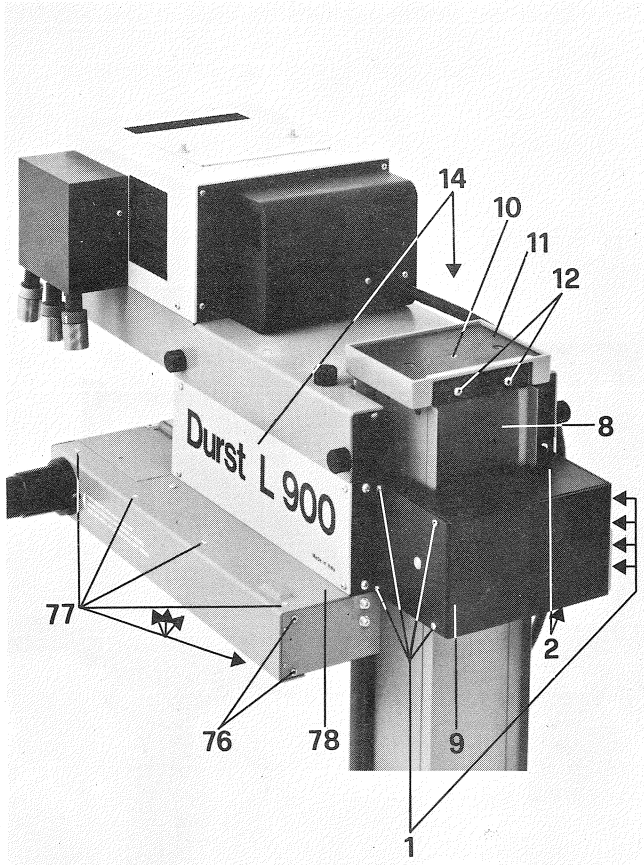
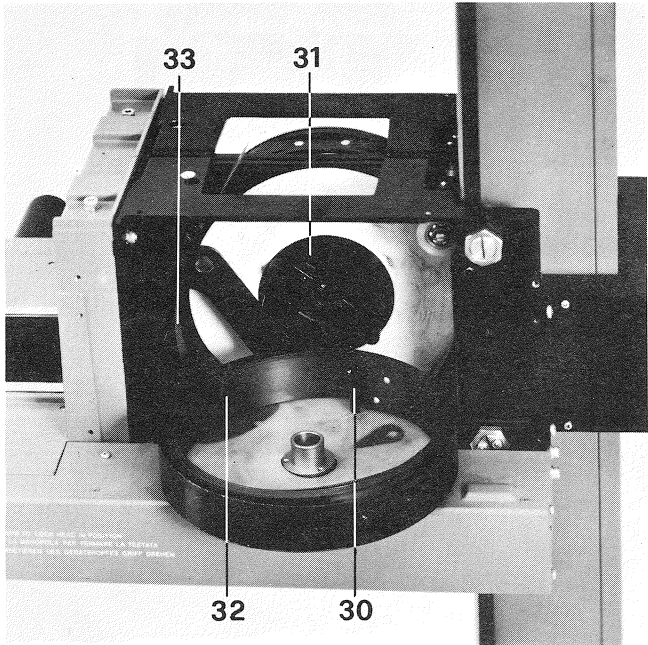
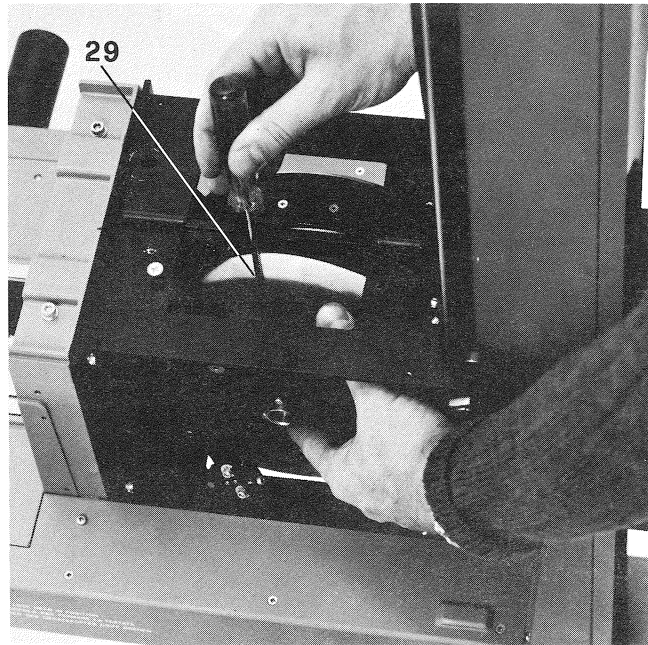
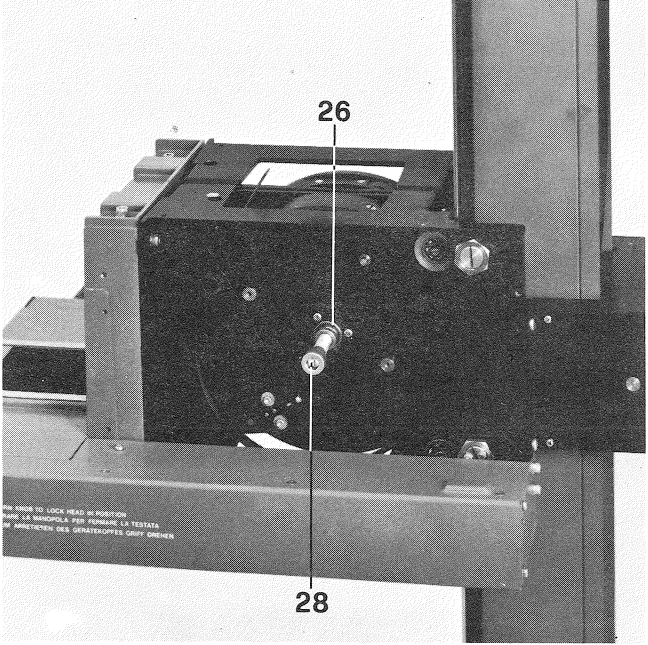
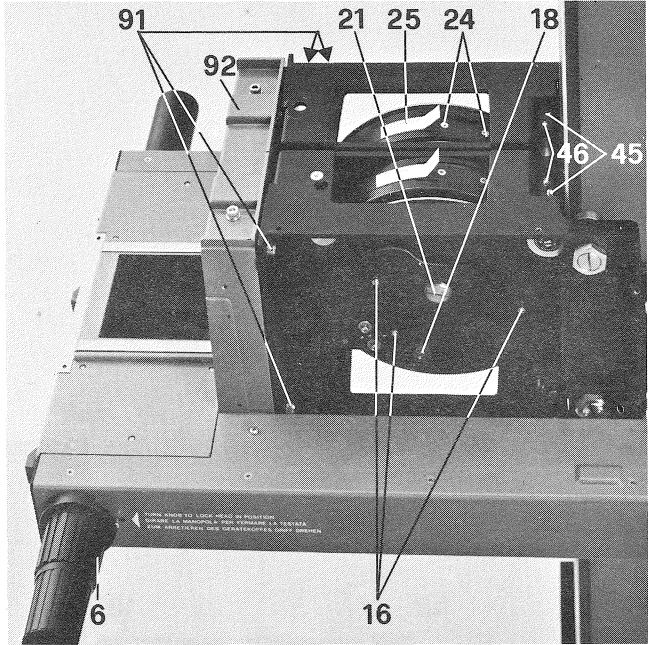
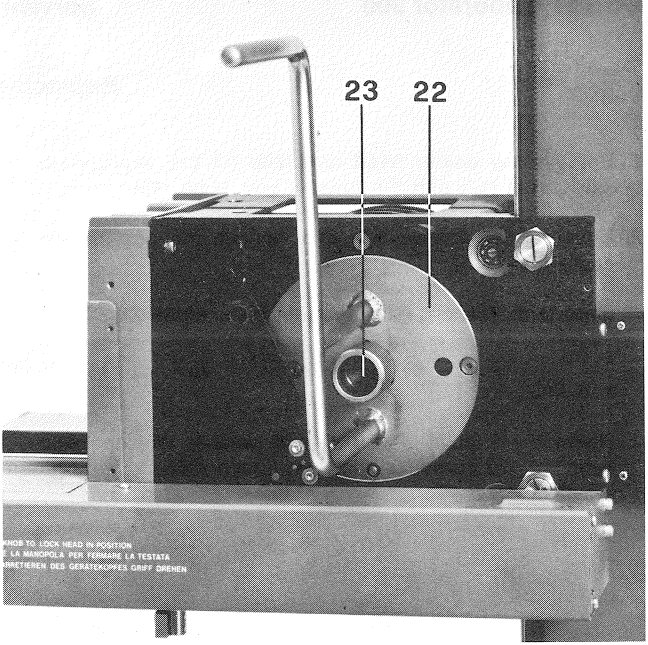
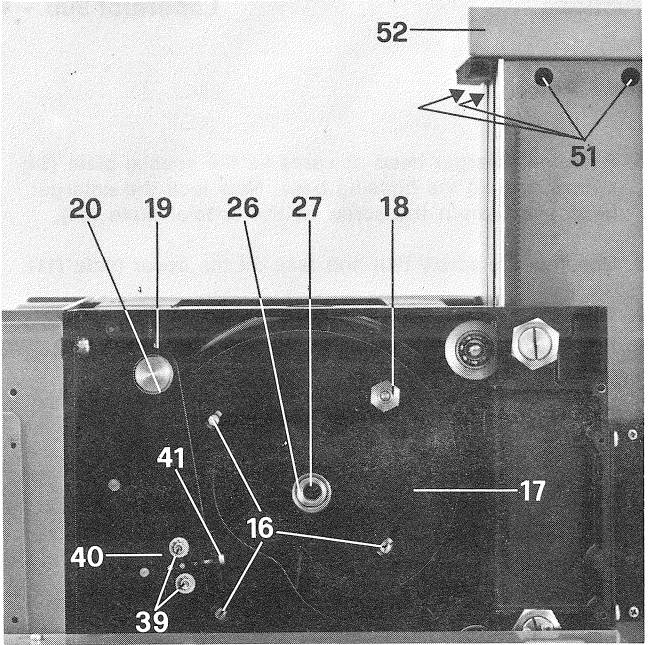
1. Unscrew the bottom cover sheet (2) of the spring housing and hang the special hook (4) on the flexible spindle.

2. Hook the safety hook (5) in the base part of the column, move the unit upwards and at the same time connect the upper part of the safety hook (5) to the special hook (4).

3. Unscrew the screws (77) and pull off sideways the right-hand control handle with the chain housing (78).
4. Lift off the chain (81) and replace.

5. Push through the clamping sleeve (82), lift off the sprocket wheel (83) and the washer (84) and replace the eccentric knob (6).

6. The re-assembly is effected in the reverse sequence.



Replacing the steel band

- 1. Remove the colour head and take off the appropriate side panel (14) and the lower cover plate (15).
- 2. Unscrew the screws (16) and remove the appropriate came plate (17).
- Important:** The nut (18) must not be unscrewed.
- 3. Set the enlarger head at about 45 cm of the column scale and lock.
- 4. Screw the special plate (34) with washer (35) and with supplied M 3 screw on the rivet punch (36). Do not tighten the M 3 screw yet.

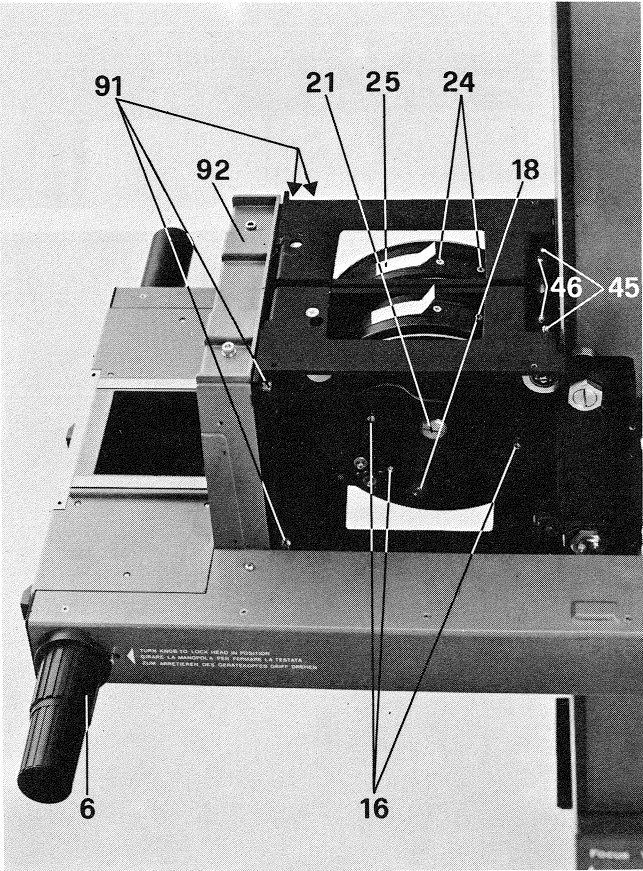
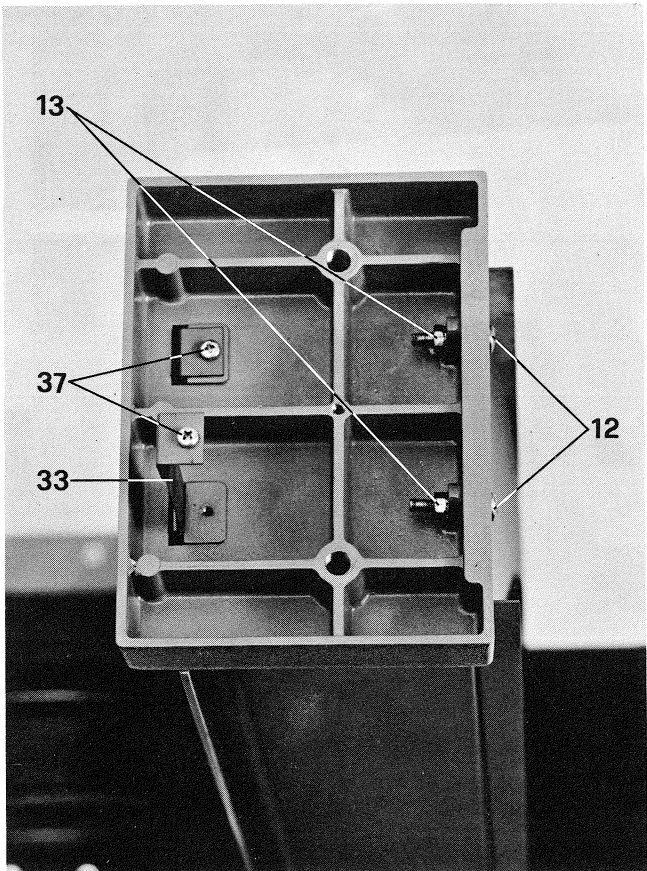
- 5. Push the enlarger head upwards till the special plate (34) strikes against the housing base. Now lock the enlarger head and tighten the screw of the special plate (34).
- 6. Unscrew the screw (10) and take off the cover plate (11).
- 7. Tear off the corresponding covering bands (25), loosen the screws (24) and (37), pull out the steel band (33) upwards and replace it.
- 8. Re-assemble in the reverse sequence.

Replacing the bellows

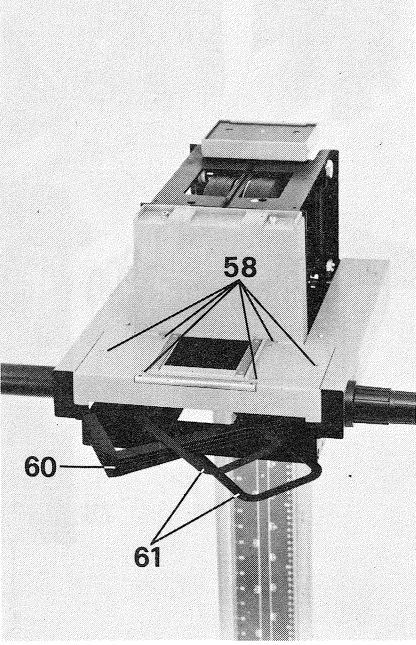
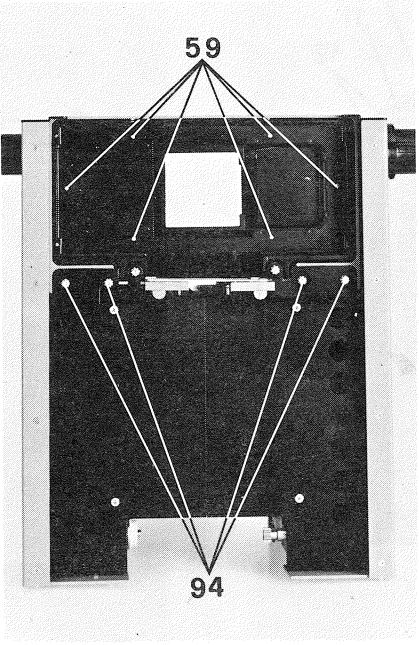
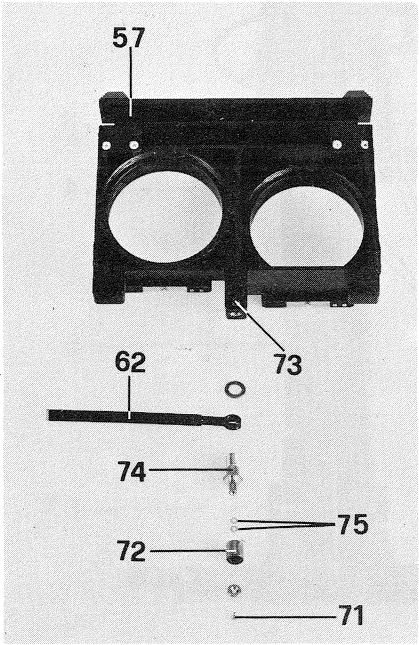
- 1. Remove the illumination hood and unscrew the right-hand side panel (14).
- 2. Swing in a 80 mm lens. Remove the 80 mm came plate after loosening the screws (16) and push the enlarger head fully upwards.
- Important:** The nut (18) must not be unscrewed.
- 3. Remove the lens, loosen the stud bolts (54) and push through the shaft (55) and pull out.
- 4. Press the lens carrier upwards (56) and remove the lens standard (57).

- 5. Unscrew the screws (58) and (59), press together the bellows (60) and pull them off keeping them inclined.
- 6. Put the bellows frame (61) in the new bellows and fasten the whole part with the screws (58) and (59). But do not yet tighten the screws (58) and (59). After mounting the bellows push the lens carrier (56) fully upwards so that the bellows are folded up. Now tighten the screws (58) and (59).
- Important:** When mounting the lens standard mind that the edge or the plastic cap of the swivel spring (62) is set in its seat.

March 1976



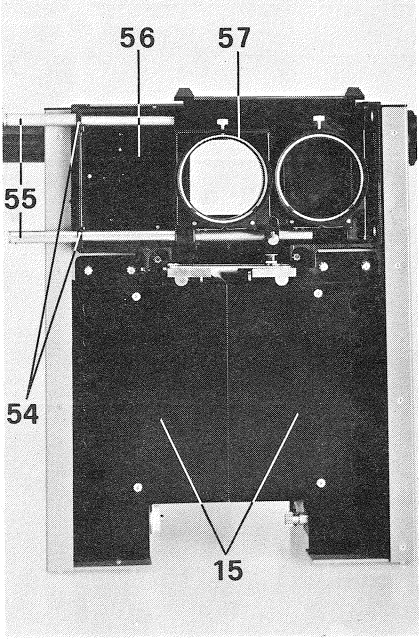
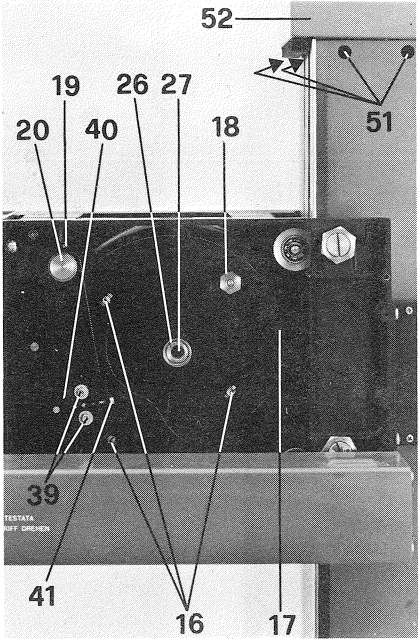
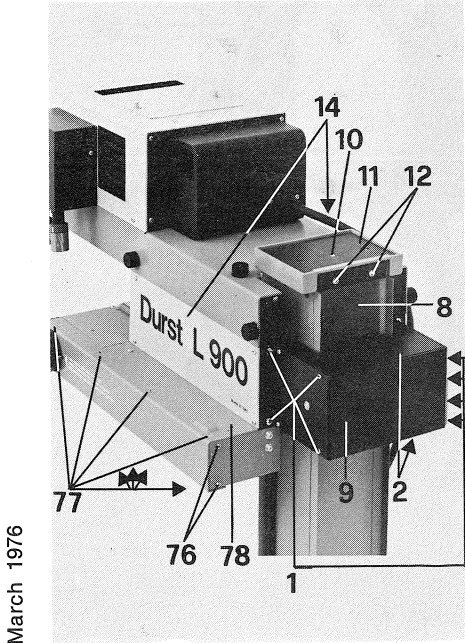
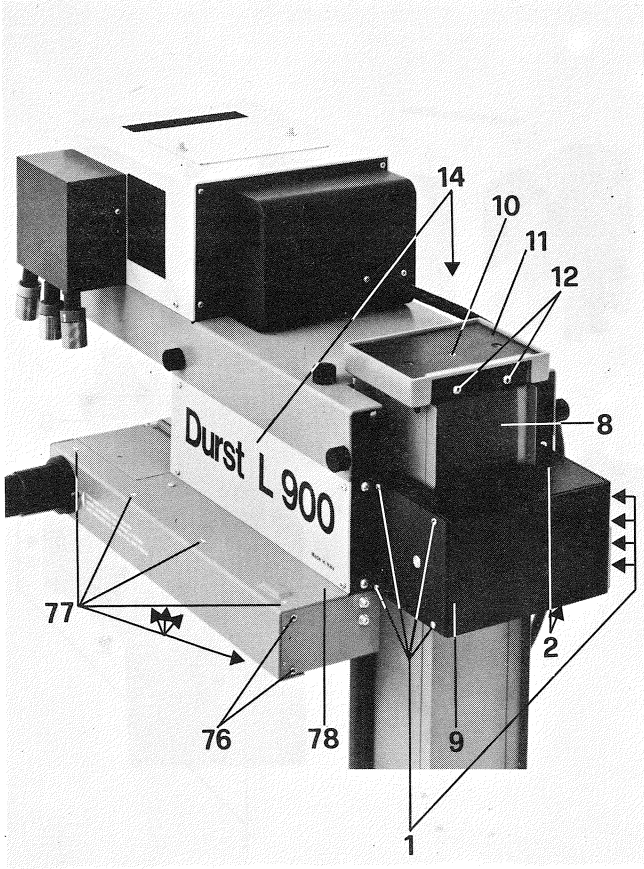
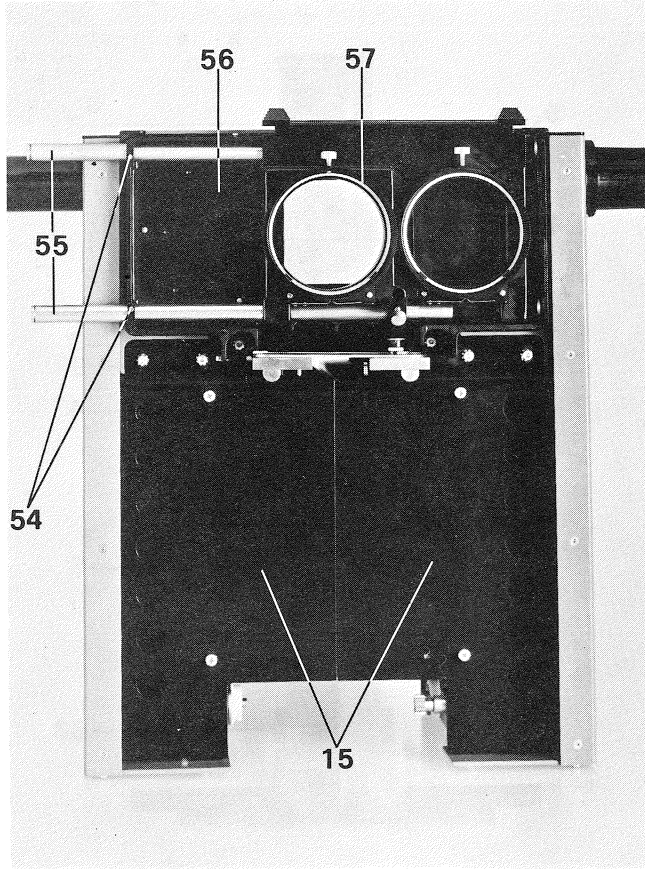
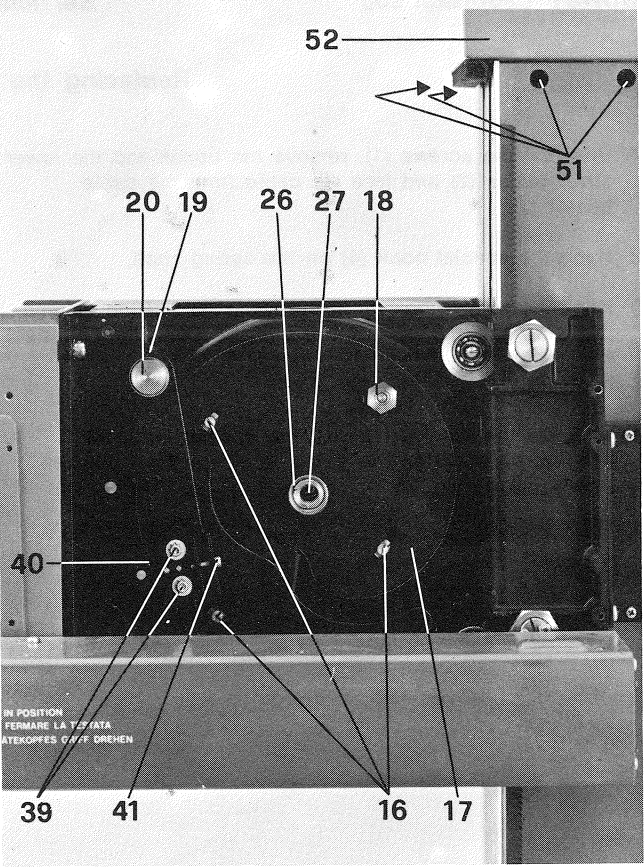
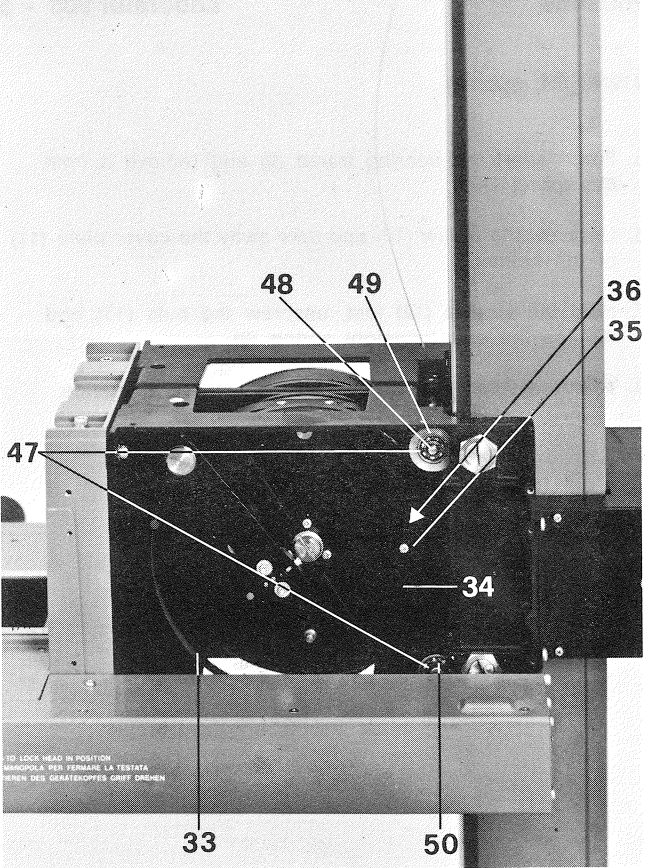
March 1976



Replacing the swivel spring and the guide roller of the lens standard

- 1. Remove the right-hand side panel (14).
- 2. Swing in a 80 mm lens. Remove the came plate after loosening the screws (16) and push the enlarger head fully upwards.
- Important:** The nut (18) must not be unscrewed.
- 3. Remove the lens, loosen the set screws (54) and push through the spindle and pull it off.
- 4. Push the lens carrier (56) upwards and remove the lens standard (57).
- 5. Unscrew the screw (71) and pull off the roller (72).
- 6. Loosen the socket head screw (73), unscrew the bearing spindle (74) and change the swivel spring (62).

- Important:** When mounting the lens carrier (57) mind that the edge of the swivel spring (62) is set in its seat.
- 7. The edge of the swivel spring must be sharpened very well. Unpleasant cracking when swinging the lens standard can be caused by the blunting of this edge. In units with series number 6691 a plastic cap has been set on the edge of the spring (62) to avoid unpleasant noises. All subsequent series will be provided with this plastic cap by the factory.
  - 8. A part of the units with the series number 6691 are equipped with slide bearing instead of roller bearing (72). Sliding bearing can be exchanged for roller bearing, if two small washers (75) are additionally set on the bearing shaft (74).



Replacing the counterweight spring

1. Unscrew the screws (1), remove the upper and the lower cover plates (2) and free the cable from the cable bearer (3).

2. Hang the special hook (4) on the spring shaft.

3. Hook the safety hook (5) in the lower part of the column, push the enlarger upwards and at the same time connect the upper part of the safety hook (5) to the special hook (4).

4. Unscrew the screws (7), pull the special hook (4) downwards and free the safety hook (5). Now slacken slowly the spring (8).
5. Force apart the bearing frame (9) and remove it from the spring shaft.

6. Unscrew the screw (10) and take away the cover plate (11) of the helmet.

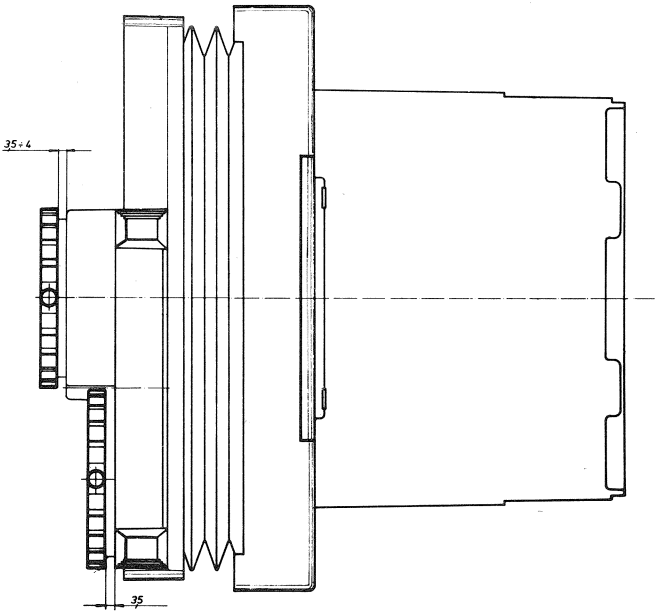
7. Hold the screws (12) fast, unscrew the nuts (13) and replace the counterweight spring (8).

8. The re-assembly is effected in the reverse sequence.

Replacing the lens tubes

1. Remove the lens and the retaining screw (85). Unscrew the screw of the appropriate stop spring (87) and take it off.

2. Unscrew the faulty tube and replace.
- Important:** The tube must be so screwed that in the stop position the following clearance between the lens carrier base and the upper edge of the knurling is ensured:



Tube for 50 mm lens = 3.5 mm distance  
Tube for 80 mm lens = 3.5 mm - 4 mm distance  
These measures are achieved by screwing the tube again and again with a different thread beginning.

