

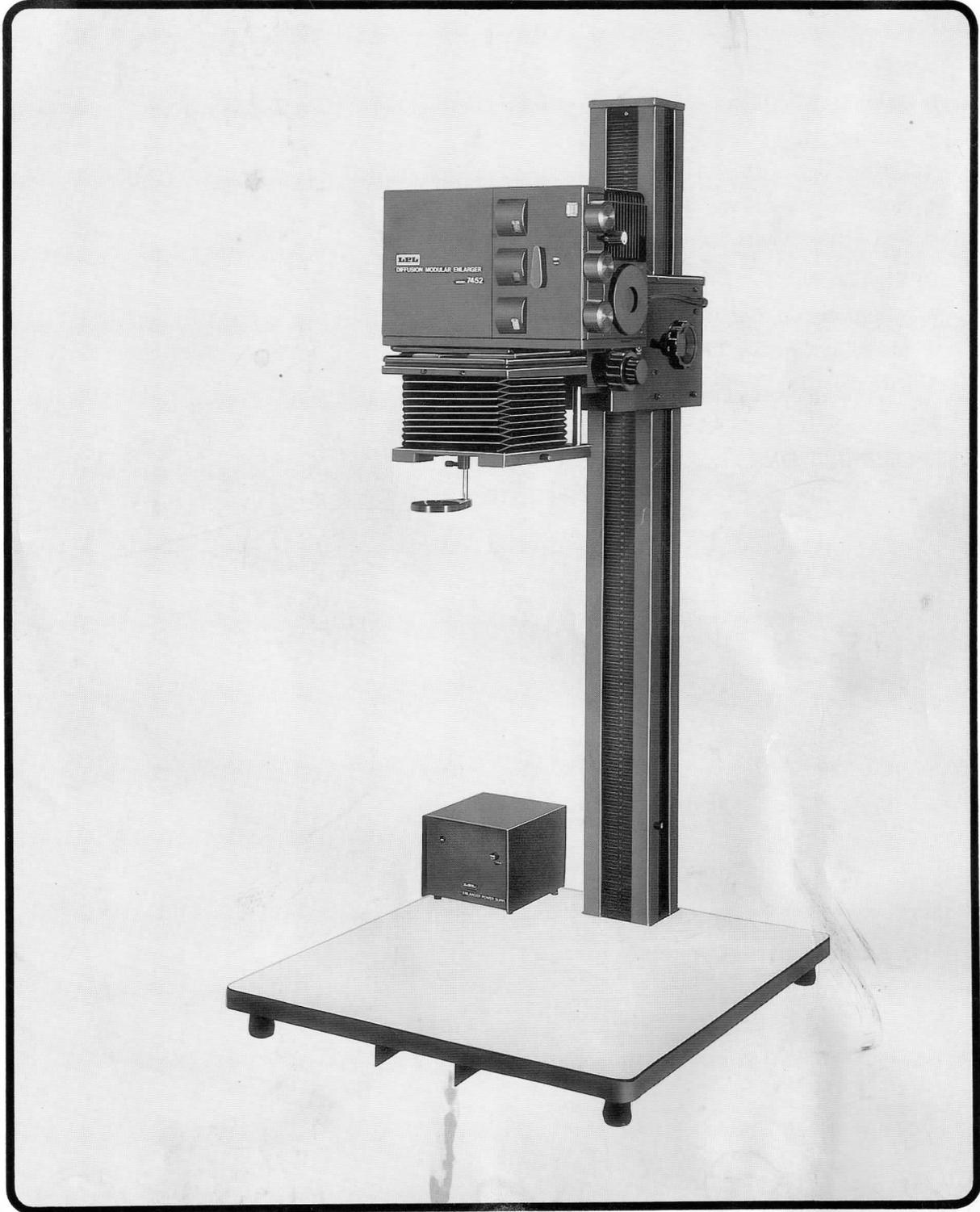


# DIFFUSION MODULAR ENLARGER

SAUNDERS 4550XL

MODEL **7452**

INSTRUCTION MANUAL



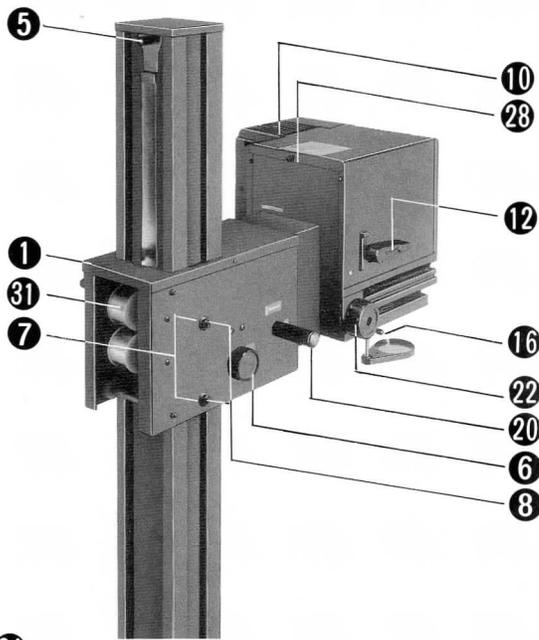
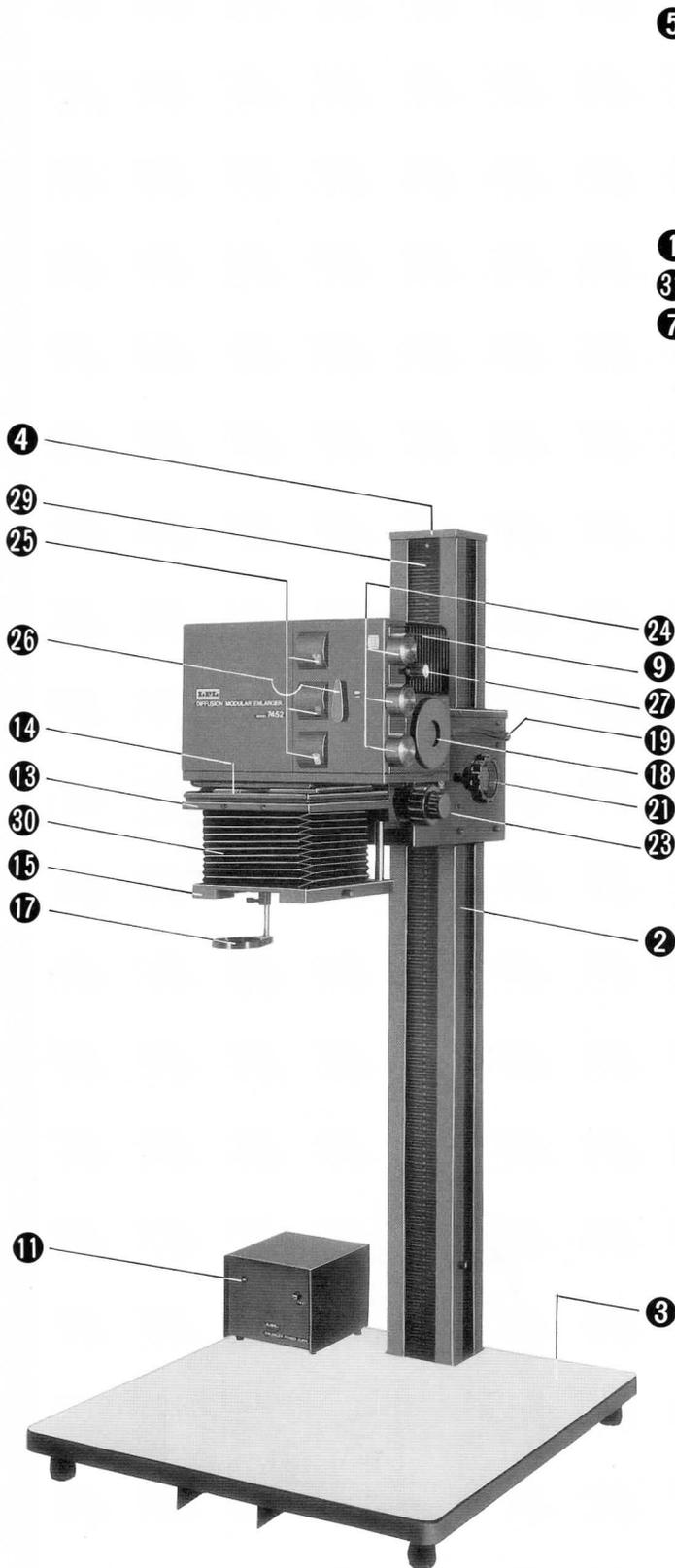
3684-0005

Thank you for your having selected an LPL enlarger. Please read this manual carefully before using the enlarger, and keep it for future reference.

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# DENOMINATION OF PARTS



No.	DENOMINATION OF PARTS
1	Head/Carriage Assembly
2	Column
3	Baseboard
4	Column Top
5	Counter-Balance Spring Screw
6	Carriage Lock Knob
7	Carriage-Adjust Nuts
8	Carriage-Adjust Screw
9	Lamp Chamber Cover
10	Lamp Chamber Cover Screw
11	Power Supply
12	Negative Carrier Holder Handle
13	Negative Stage Plate
14	Negative Carrier*
15	Lensboard
16	Red Filter Lock Screw
17	Red Filter
18	Cooling-Fan Air Outlet
19	Cord Clip
20	Elevation Handle Bar
21	Elevation Control
22	Focus Control
23	Fine Focus Control
24	Filtration Control (Color Module)
25	Filter Scale Windows (Color Module)
26	White-Light-Focus Lever (Color Module)
27	Light Attenuator Knob (Color Module)
28	Lamphouse Top-Plate Screw
29	Magnification Scale
30	Bellows
31	Counter-Balance Springs

\* The negative carrier may not be supplied with the enlarger, but will be selected as an option, in certain areas.

# PACKAGING

## 1. Head/Carriage Group

### 1. Lamphouse/Carriage/Bellows Assembly

(Diffusion Box, Filter Module)

#### 1C. Enlarging Lamp

#### 8A. Screw Driver

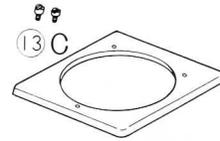
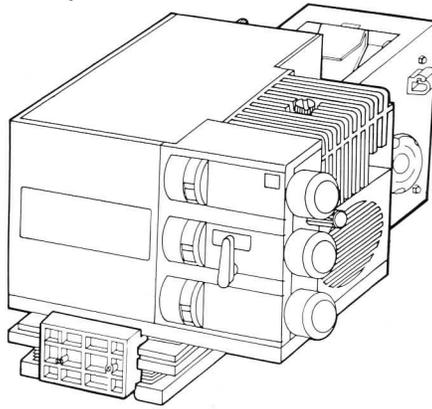
#### 13. Negative Stage Plate

#### 13C. Position Pins

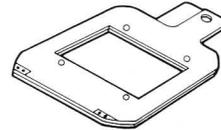
#### 14. Negative Carrier 4 x 5"

#### 15. Lensmount

#### 17. Red Filter

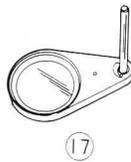


13



14

1



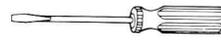
17



1C



15



8A

### ATTENTION!

HEAD/CARRIAGE AND COLUMN ARE CUSTOM-ALIGNED. MAKE SURE THEY HAVE SAME SERIAL NUMBER.

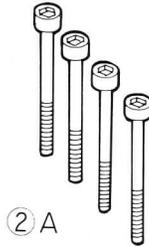
## 2. Column Group

### 2. Column

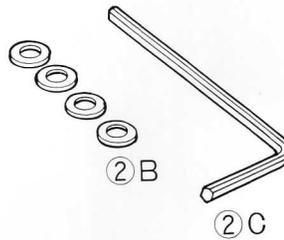
#### 2A. Fixing Bolts

#### 2B. Washers

#### 2C. Wrench



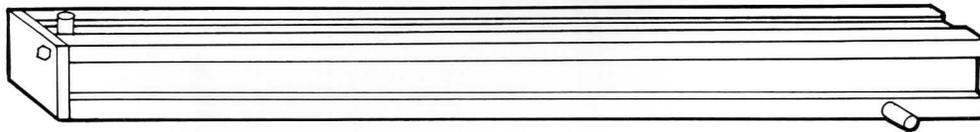
2A



2B

2C

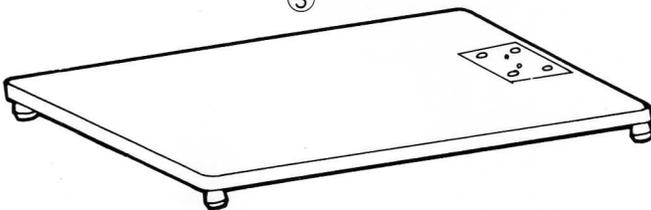
2



## 3. Baseboard

### 3. Baseboard

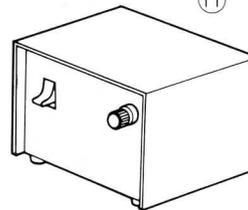
3

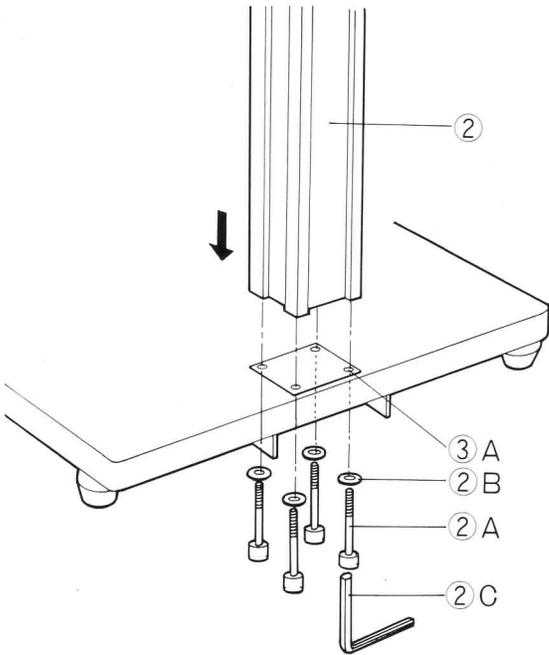


## 4. Power Supply

### 11. Power Supply

11



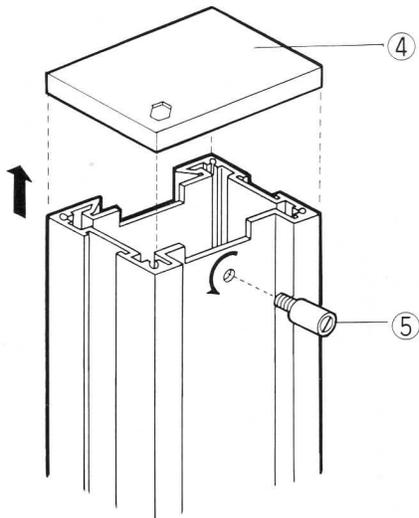


**1. Mounting the column:**

Stand the column (2) on the baseboard as shown.

Put a fixing bolt (2A) and a washer (2B) as shown through the hole in the baseboard (3A). Tighten the bolt thoroughly with the wrench (2C).

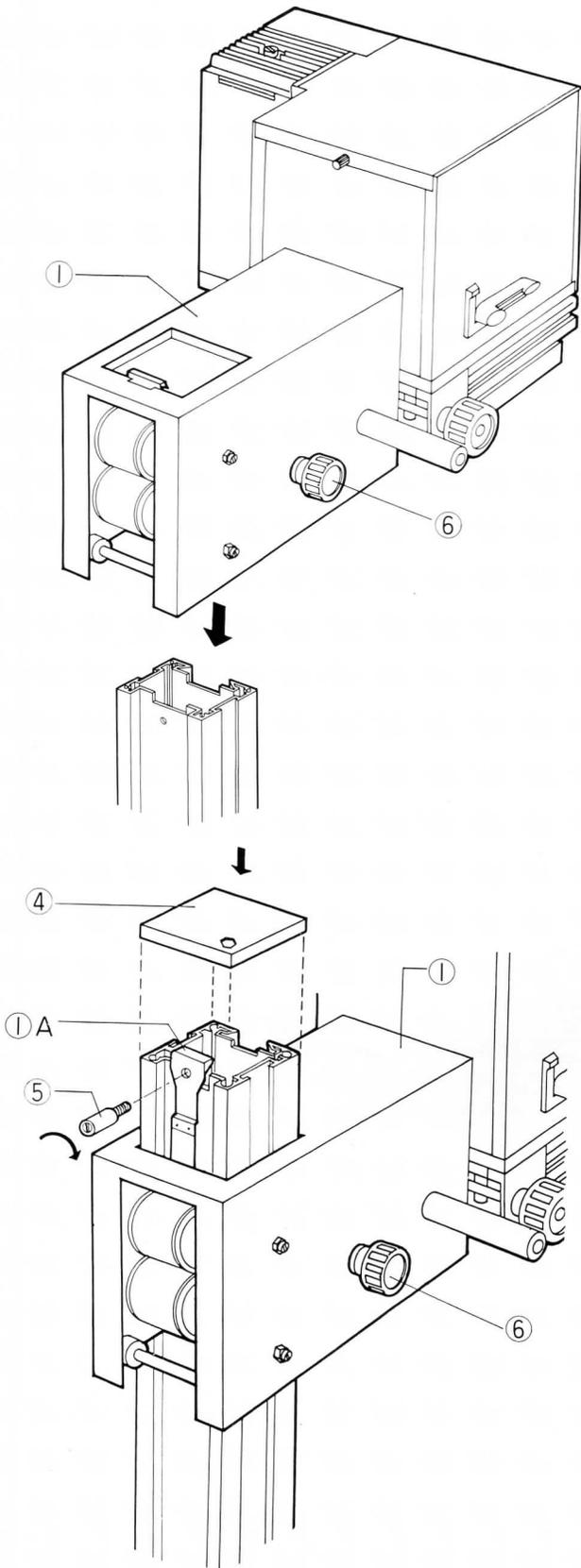
Fix the other three bolts too.



**2. Mounting the head/carriage/bellows assembly**  
(The head, carriage and bellows are already put together before leaving the factory.)

Pull off the column top (4) and remove the counter-balance spring screw (5) as shown.

## ASSEMBLY

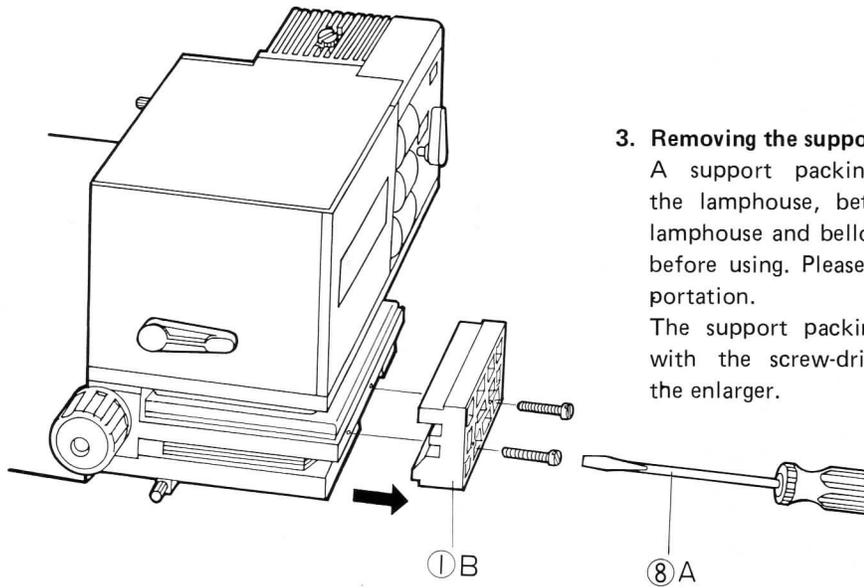


Loosen the carriage lock knob (6) by turning it counter-clockwise. Lift the entire head assembly as shown, matching the column and the opening of the carriage, and put the assembly over the column.

The counter balance springs end in a hook (1A). Put it over an edge of the column as shown. Lower the head assembly a little along the column, and tighten the carriage lock knob (6)\*. Put the counter-balance spring screw (5) back into position through the hole in the hook as shown. Replace the column top (4).

### Note:

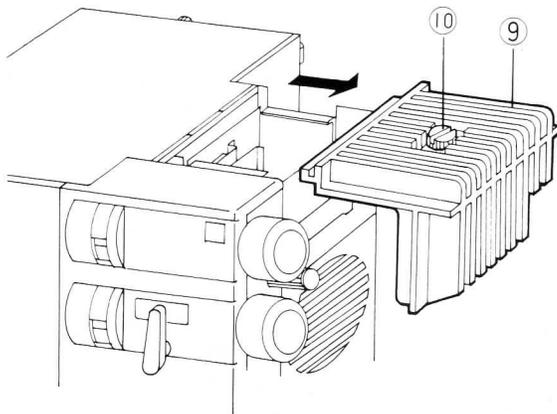
The head assembly is counter-balanced so that it will stay in position along the column without being locked. However, it is always recommendable to use the carriage lock knob (6) to prevent an unintentional move of the carriage.



**3. Removing the support packing**

A support packing is placed underneath the lamphouse, between front ends of the lamphouse and bellows. It has to be removed before using. Please keep it for future transportation.

The support packing (1B) will be removed with the screw-driver (8A) provided with the enlarger.



**4. Installing the enlarging lamp**

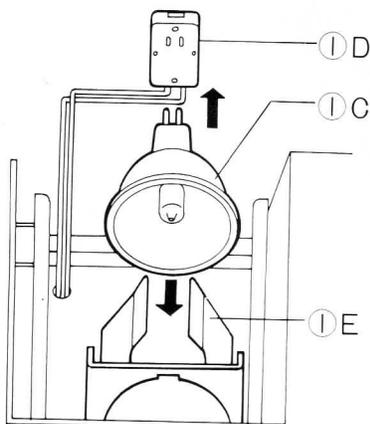
Loosen the lamp-chamber cover screw (10) with a coin, and let the lamp-chamber cover (9) slide off as shown.

Note:

The procedure will be reversed after mounting a lamp.

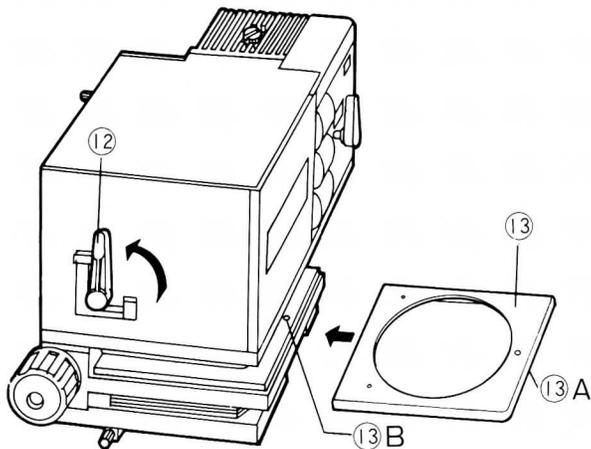
**CAUTION:**

The cover will be hot after the enlarger has been in use. Let it cool off when replacing a lamp.



Pull the lamp socket (1D) out of the chamber. Put the enlarging-lamp (1C) in the socket, and put the lamp in the lamp-holder frame (1E) inside the chamber as shown.

## ASSEMBLY

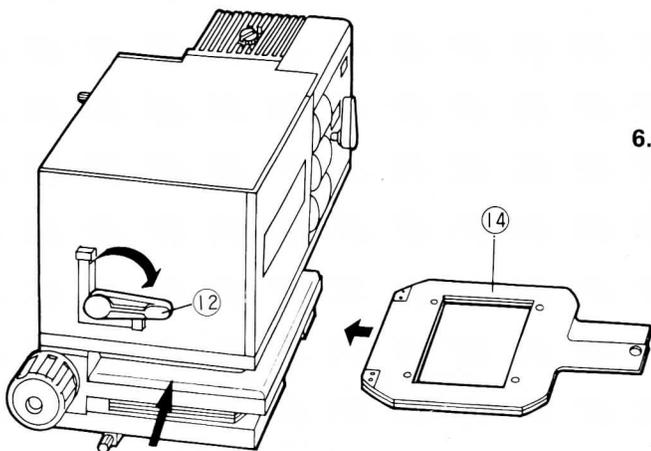


### 5. Installing the negative stage plate

Push up the negative carrier holder handle\* (12) and insert the negative stage plate (13) as shown. The stage will fit over the top part of the bellows. See that the position pin (13A) of the plate will match the hole in the top part of the bellows.

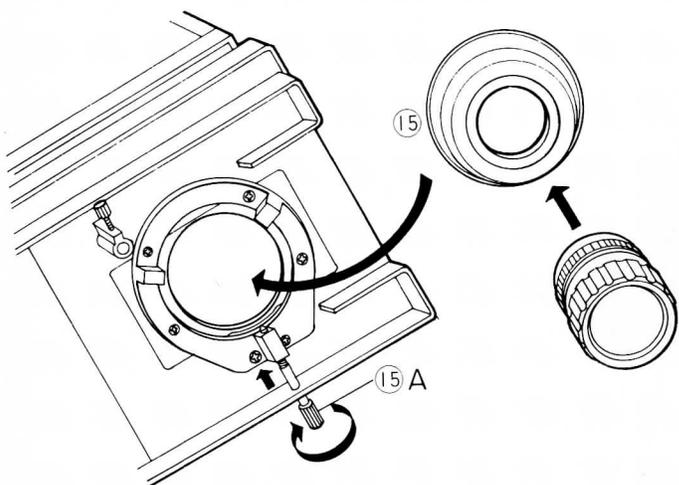
Note:

The negative carrier holder (12) is linked to the negative carrier holder inside the lamphouse, which goes up to let a negative carrier in, and come down to hold the carrier tightly in position.



### 6. Inserting the negative carrier

Insert a negative carrier (14) as shown. It may be inserted from the side as well. Pull down the negative carrier holder handle (12) as shown.

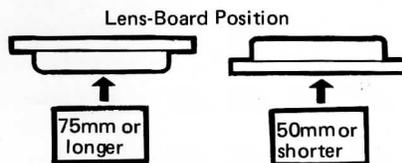


### 7. Mounting enlarging lens (lensmount)

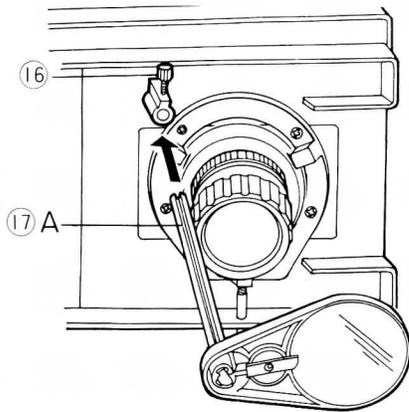
Enlarging Lenses are not provided with the enlarger.

A 39mm lensmount is supplied with the enlarger. Lensmount of different threads are also available as options.

Loosen the lensmount lock-screw (15A) and remove the lensmount (15). Put an enlarging lens in the lensmount (15)\*. Put the lensmount (with the lens) back, and tighten the lock-screw (15A).



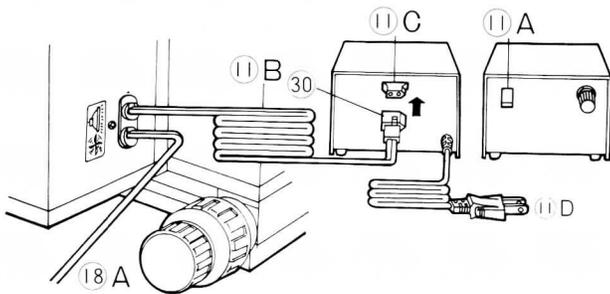
## ASSEMBLY



### 8. Installing red filter (safety filter)

The red filter provided with the enlarger is effective only with the papers for monochrome printing.

Loosen the red filter lock screw (16). Insert the red filter shaft (17A) from below, matching the groove on the shaft and the lock screw (16). Tighten the lock screw (16).



### 9. Connecting the power supply and cooling fan.\*

Make sure that the power switch (11A) of the power supply (11) is in OFF position. Connect the power-cord of the enlarger (11B) and the power supply (11C). Then connect the power cord of the power supply (11D) and a house main.

Connect the power cord of the cooling fan (18A) directly to a house main.

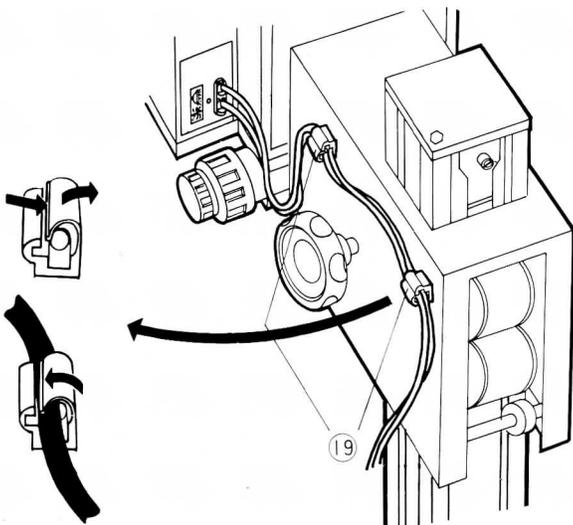
#### Note:

Type of the power supply and the connectors may be different in different areas. Shown here is a standard example.

#### CAUTION:

Always keep the cooling fan in operation while the enlarger is in use.

Use only the power supply provided with the enlarger.

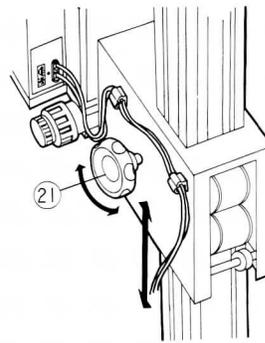
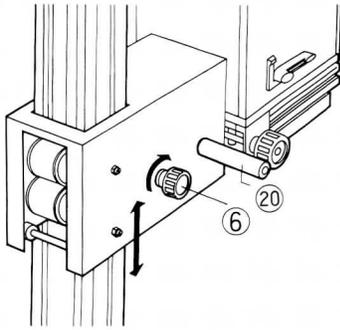


### 10. Cord Clip.

Put the power cords through the cord clip (19) to keep them tidy.

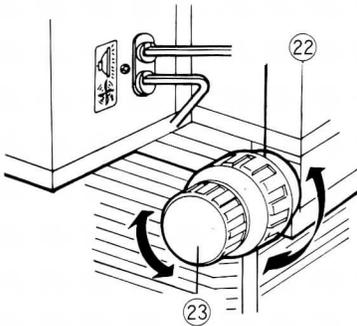
THE ENLARGER IS NOW ASSEMBLED AND READY FOR USE.

## OPERATION



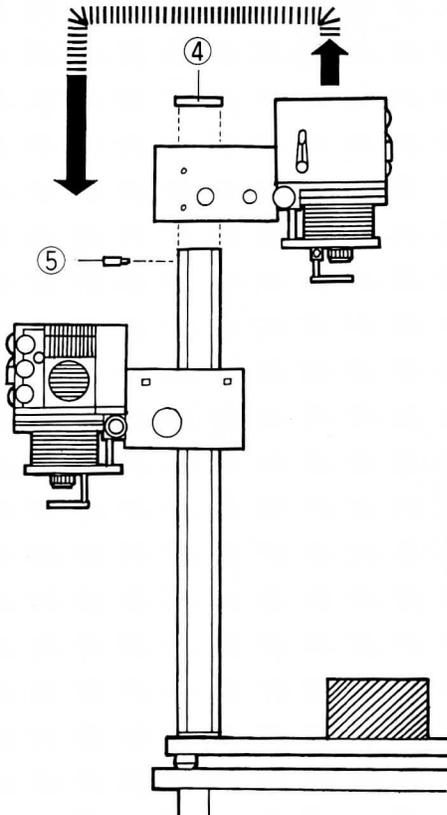
### 1. Magnification/Elevation Control

When the carriage lock knob (6) is loose, the head will travel freely up and down along the column. Use the elevation handle bar (20) for swift up/down. Use Elevation Control (21) for slow lifts. Lock the head by tightening the carriage lock screw (6) when the position of the head is determined.



### 2. Focus Controls

Use one of the focus controls (22) on either sides of the bellows. A fine focus control (1 : 5) is also provided on the right side focus control.

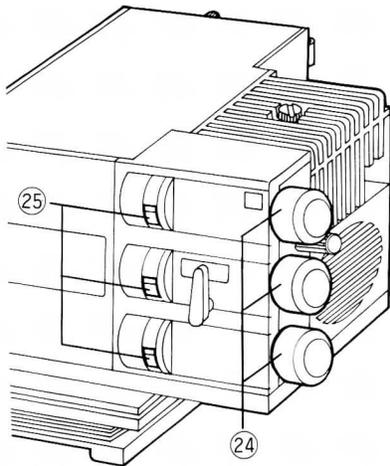


### 3. Floor Projection

For making extra-large prints off the baseboard, "floor projection" will be possible. To do it, the entire head/carriage/bellows assembly will be drawn off the column, turned round 180° and put back onto the column again as shown. The counter-balance springs will be hooked and fixed on the other side of the column, an extra screw-hole is provided in the front side of the column for this purpose. The column top (4) and the counter-balance spring screw will have to be removed and replaced in the shift process. Please refer to "mounting the head/carriage/bellows assembly in page 4.

#### Note:

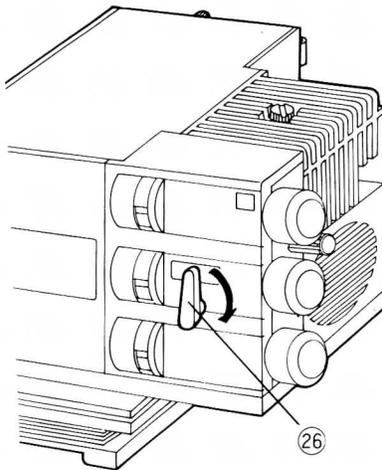
Put sufficient counter-weight on the baseboard when the floor projection is carried out.



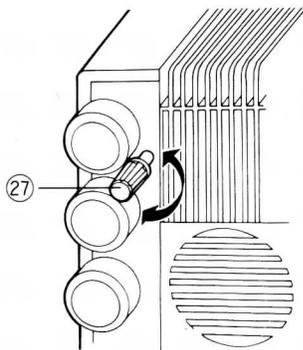
**4. Color (dichroic) filter module**

Filters with fade-free, hard metallic coating are used in the color filter module. Filters are valued according to density ratio. (Yellow & Cyan 0 - 200 cc, Magenta 0 - 170 cc)

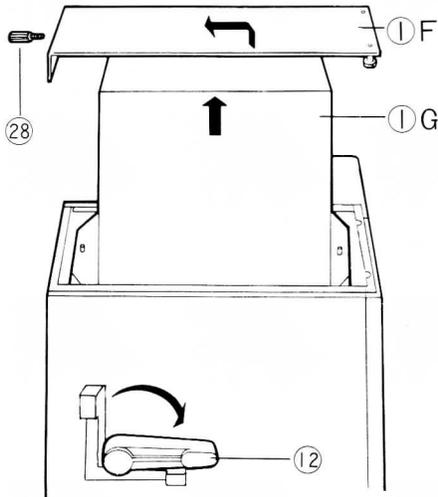
Three filtration controls (24) are provided for each of yellow, cyan and magenta filter. Scales are seen in the filter scale windows (25).



The white-light-focus lever (26), when turned to horizontal position, takes the filters out of the light-path without changing the set values, for easy focusing.



The light attenuator knob (27), when turned fully clockwise, brings the attenuator into the light-path, reducing the light to approximately 1/4 (two f-stops). Use it to extend exposure time when desired.



**5. Changing the diffusion box**

A diffusion box is provided with the enlarger. It is already placed inside the head as the enlarger leaves the factory. However, it may become necessary to replace it after many hours of use, as the foam lining turns yellowish.

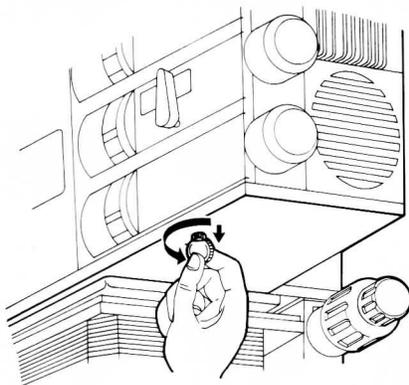
Remove the lamphouse top-plate screw (28), and slide the top-plate (1F) to the direction of the arrow as shown, off the lamphouse.

Place the negative-carrier holder handle (12) in horizontal position, and take out the diffusion box (1G).

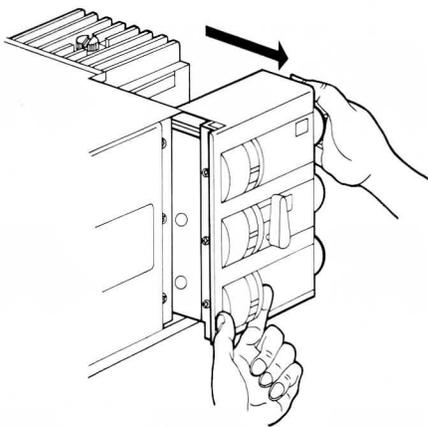
Reverse the procedure after replacing the diffusion box.

**6. Changing filter modules**

Filter modules of this enlarger is interchangeable. Besides the color filter module, VCCE (variable contrast constant exposure) module is also available for use with variable contrast papers. For use with ordinary monochrome papers, B/W module or a blind lid may be used. Separate manual is provided for VCCE filter module.



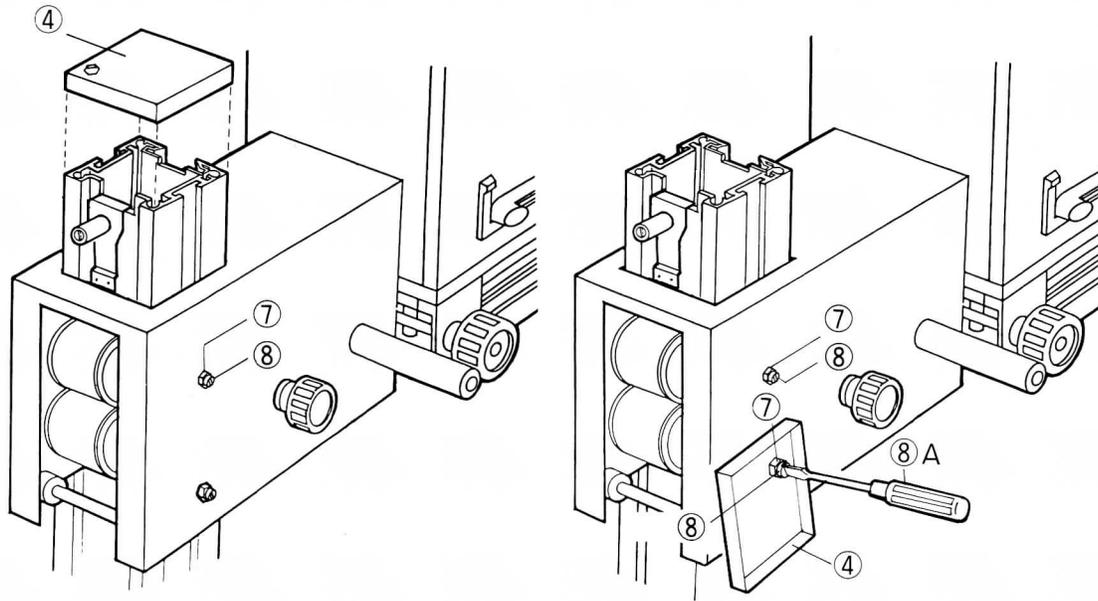
Loosen the screw on the bottom as shown.



Let the module slide forward as shown, off the lamphouse.

Put another module in, and tighten the screw.

## REMARKS



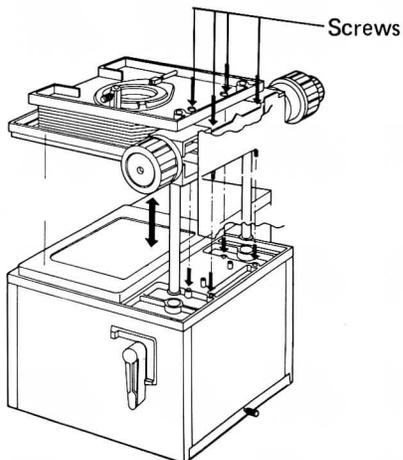
### ADJUSTMENT OF THE CARRIAGE

The carriage/column fitting is custom-adjusted to ensure smooth movement. However, means of slight adjustment is also provided, to readjust plays and feel.

Loosen the carriage adjust nuts (7) using the column-top (4) as a wrench. Let the head travel up and down, while tightening or loosening the carriage adjust screws (8) with the screw-driver (8A) searching for the best feel. When the screws (8) are adjusted, hold the screw with the driver so that it will not turn, and tighten the relative nut (7) with the wrench (column top).

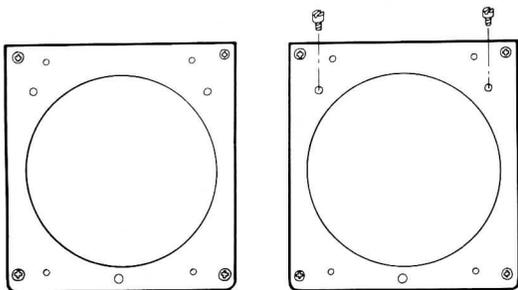
### DISMANTLING THE LAMPHOUSE

The lamphouse, if desired, can be dismantled through the following procedures:



Place the head assembly upside down and loosen the four screws with the screwdriver.

## REMARKS



### **FIXING THE NEGATIVE STAGE PLATE:**

The negative stage plate is kept loose for the convenience of replacing it with optional stage plate with masking blades. However, when you prefer to have it tightly fixed, it may be screwed down after having dismantled the lamphouse, as explained in the foregoing paragraph.

The negative stage further provided with a pair of extra position pins and holes, for use with negative carriers of other makes in the market.

## SPECIFICATIONS

Format Size:	36 x 24mm ~ 4 x 5"
Lens Mount:	Disc type
Illumination:	Diffusion type
Light Source:	Quartz Halogen Lamp 250W (24V or 82V) w/dichroic mirror
Cooling System:	Built-in cooling fan
Elevation Control:	Spring counter-balanced, over-sized friction knob
Focusing Control:	Friction, double-rail, dual-knob w/fine focus control (1 : 5)
Filter Modules:	Interchangeable, Dichroic color (Y.M.C.), Variable Contrast Constant Exposure Black & White (Blind)
Negative Carrier:	36 x 24mm ~ 4 x 5", single-size, sandwich type
Maximum Print Size: (on Baseboard)	approx. 56 x 60cm*
Baseboard:	60 x 60cm, steel reinforced
Overall Height:	1,332 mm
Column Height:	1,260 mm
Weight:	approx. 26.7 kg.

\* Note: Maximum print size differs according to lenses and formats.

Manufactured by **LPL CO., LTD.** TOKYO·JAPAN