



**PRINTMAKER 35**

**PRINTMAKER 67**

**PRINTMAKER DICHRO 67**

**enlarger/instruction manual**

The "Safeguards" statement reproduced below is in accordance with Underwriters Laboratories "Standard for Safety, UL 122, Photographic Equipment."

## IMPORTANT SAFETY INSTRUCTIONS

When using your photographic equipment, basic safety precautions should always be followed, including the following:

1. Read and understand all instructions before using.
2. Close supervision is necessary when any appliance is used by or near children. Do not leave appliance unattended while in use.
3. Care must be taken as burns can occur from touching hot parts.
4. Do not operate appliance with a damaged cord or if the appliance has been dropped or damaged---until it has been examined by a qualified serviceman.
5. Position the cord so that it will not be tripped over, pulled, or contact hot surfaces.
6. If an extension cord is necessary, a cord with a current rating at least equal to that of the appliance should be used. Cords rated for less amperage than the appliance may overheat.
7. Always unplug appliance from electrical outlet before cleaning and servicing and when not in use. Never yank cord to pull plug from outlet. Grasp plug and pull to disconnect.
8. Let appliance cool completely before putting away. Loop cord loosely around appliance when storing.
9. To reduce the risk of electric shock, do not immerse this appliance in water or other liquids.
10. To avoid electric shock hazard, do not disassemble this appliance, but take it to a qualified serviceman when some service or repair work is required. Incorrect reassembly can cause electric shock when the appliance is used subsequently.
11. The use of an accessory attachment not recommended by the manufacturer may cause a risk of fire, electric shock, or injury to persons.
12. Connect this appliance to a grounded outlet.
13. Disconnect this unit from its source of supply before replacing the projection lamp.

## SAVE THESE INSTRUCTIONS

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# I. INTRODUCTION

Congratulations! You have just purchased one of the finest enlargers available today. Your enlarger (and accessories available from your dealer) will enable you to make beautiful, high quality black and white or color prints.

This instruction manual contains information for both the Printmaker 67 as well as the Printmaker 35 enlargers with the condenser lamphouse and Printmaker Dichro 67 enlarger with the Dichro 67 lamphouse. Most instructions pertain to all models. Any differences will be noted and explained. Your new enlarger is easy to assemble and operate and requires virtually no maintenance. However, we suggest that you carefully read the contents of this manual in order to obtain optimum satisfaction from your enlarger. This manual will provide you with the necessary information to fully utilize the capabilities of the enlarger, and the time taken to read the manual will be well spent.

# SPECIFICATIONS

Height (Fully Extended): 39 1/4" (997mm)

Baseboard: 19" x 14" x 3/4" (483mm x 356mm x 19mm)

Lamp: Condenser Head

PH140, 75W, 120V (Cat. #8101)

PH1400, 75W, 220V (Cat. #8114)

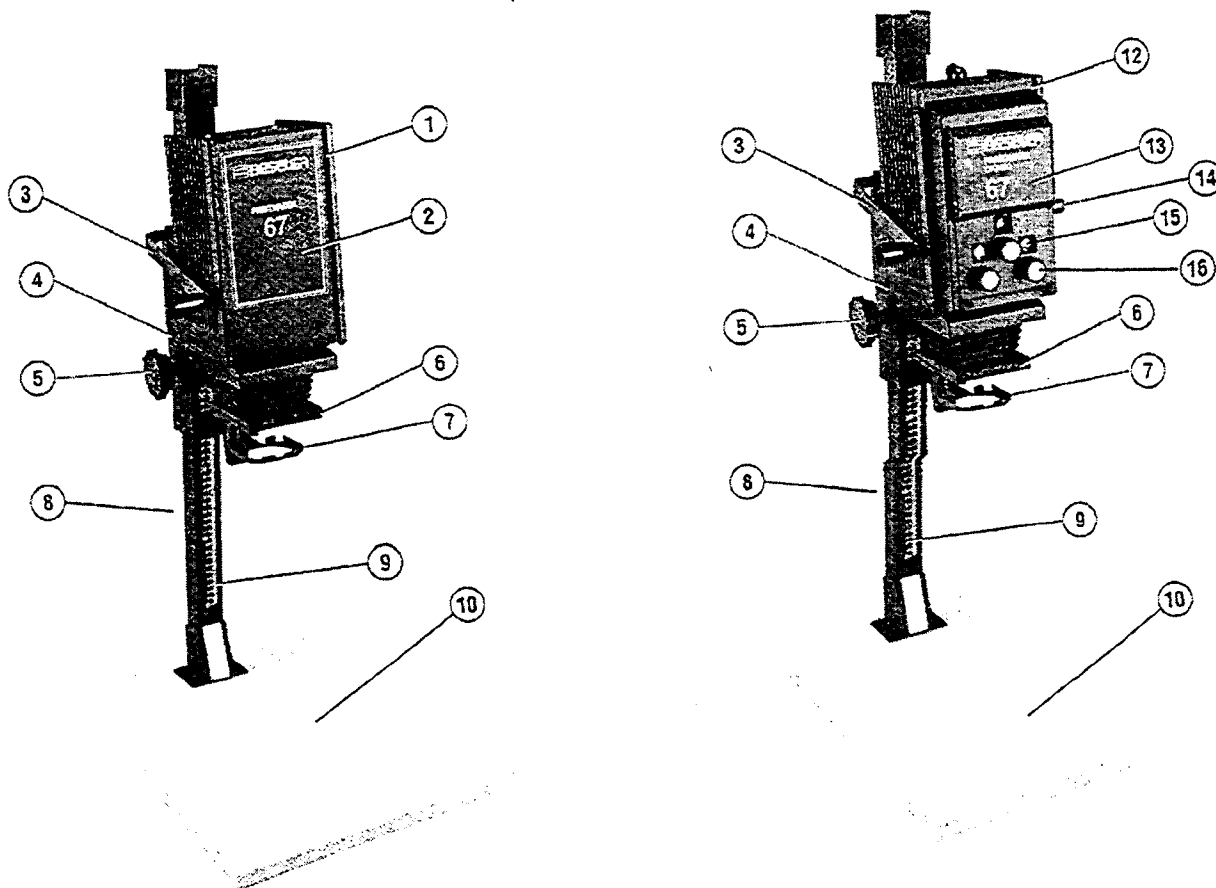
Dichroic Colorhead

ANSI ESJ, 85W, 82V (Cat. #6728)

Shipping Dimensions: 33 1/4" x 14 1/4" x 7 1/4"

(845mm x 362mm x 184mm)

Shipping Weight: 27 lbs. (12Kg)



Printmaker 67

Figure 1

Printmaker Dichro 67

- 1. Condenser Lamphouse
- 2. Lamphouse Door
- 3. Lamphouse Elevating Arm
- 4. Negative Stage
- 5. Focus Knob
- 6. Lens Stage

- 7. Accessory Filter Holder
- 8. Column
- 9. Elevation Scale
- 10. Baseboard
- 11. Elevation Lock Knob (Not Shown)
- 12. Dichro 67 Lamphouse

- 13. Lamp & Filter Assembly
- 14. White Light Lever
- 15. Filtration Windows
- 16. Filtration Knobs

## II. UNPACKING INSTRUCTIONS

A. Lift out the enlarger chassis and set aside.

**CAUTION: DO NOT LOOSEN ELEVATION LOCK KNOB.** The enlarger carriage is counterbalanced with the lamphouse in place. If the lock is released before this weight has been added, the carriage will rapidly move up the column.

B. Carefully remove the following components.

1. Baseboard
- 1 Condenser Lamphouse plus
  - 2 ea. 4" Mounted Condensers (Printmaker 67)
  - or
  - 1 ea. 2 1/4" Mounted Condensers (Printmaker 35)
- 1 Filter Holder
- or
- 1 Dichro 67 Lamphouse plus 6x7 Mixing Chamber
- 1 Accessory Filter Holder
- 1 Lamphouse Elevating Arm
- 1 Focus Knob
- 1 Red Safety Filter
- 1 Hardware Bag which contains:
  1. 4 Tee Nuts
  2. 4 Baseboard Pads
  3. 4 3/4" long 1/4 x 20 Machine Screws
  4. 1 1 3/4" long #6-32 machine Screws
  5. 1 1/2" long #8-32 machine Screw
  6. 1 Internal Tooth Lock Washer
  7. 1 Curved Washer
  8. 1 #8-32 hex Nut
  9. 2 3/8 long #10-32 Machine Screws
  10. 2 #10-32 Keps Nuts
  11. 2 #10-32 Wing Nuts
  12. 1 Lever Handle (Dichro Model Only)

## III. ASSEMBLY INSTRUCTIONS (PRINTMAKER 35, 67, or 67 Dichro)

Tools Required:

Hammer  
Phillips Head Screwdriver  
Slotted Head Screwdriver

- A. Place the baseboard with the smooth-textured side down on a suitable surface.
- B. Insert the four Tee Nuts into the holes in the baseboard and tap in with a hammer. The nuts do not have to be fully tapped into the bottom of the holes as they will be drawn up when you tighten the screws from the other side.
- C. Apply the four self-adhesive pads to the baseboard approximately 1/2" from each corner and turn the baseboard over.
- D. Place the enlarger chassis on top of the baseboard and align the holes in the column base with the baseboard holes.
- E. Secure the column to the baseboard using the four 3/4" long 1/4 x 20 machine screws. Insert all four screws loosely at first and then tighten each one.
- F. Slide the focus knob on either side of the focus shaft (for right or left hand use) until it seats and then secure with the 1 3/4" long #6-32 machine screw.
- G. Turn the focus knob to extend the bellows and attach the accessory filter holder beneath the lens stage using the shoulder screw, curved washer, toothed washer and hex nut as illustrated in Figure 2.
- H. Decide whether you want to position the lamphouse elevating arm for right or left hand use and secure on the lamphouse mounting bracket with the two 3/8" long #10-32 machine screws and two Keps nuts per Figure 3.
- I. Raise the lamphouse elevating arm and mount the lamphouse on the projection assembly using the two wing nuts shown in Figure 4.
- J. If you have the condenser lamphouse, remove the lamphouse door by sliding it up and out of its track. Install the condensers and filter holder as indicated in Figure 9 (for the Printmaker 67) or figure 5, p3 (for the Printmaker 35).
- K. If you have the Dichro 67 lamphouse, slide the lamp and filter assembly up slightly and remove the tag and the attached protective shipping pad. Lower the lamp and filter assembly. Press fit the White Light Lever Handle on to the shaft on the right side of the lamphouse.

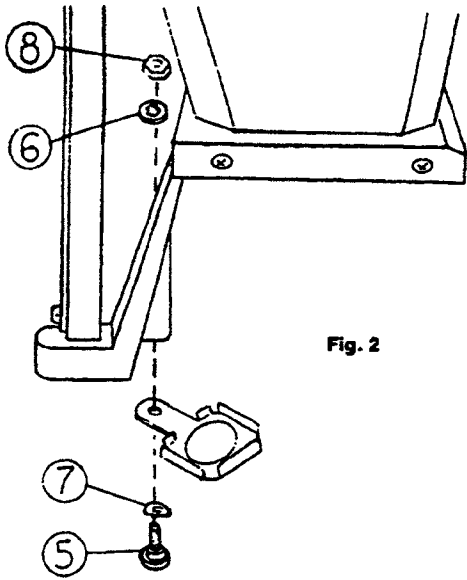


Fig. 2

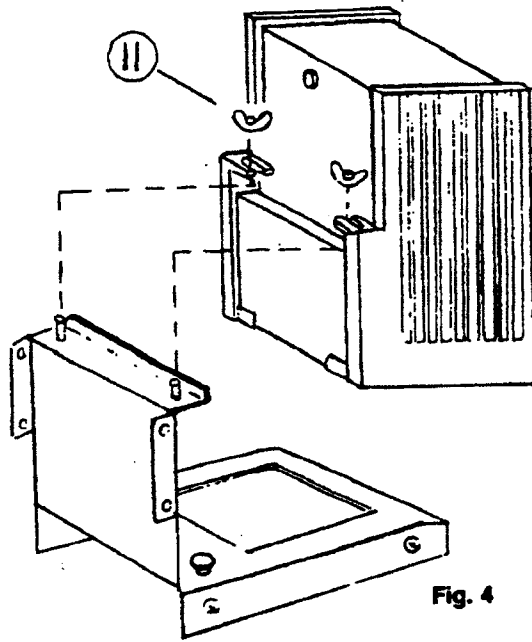


Fig. 4

### Instructions for the Printmaker 35 (# 6759) Installing the Condenser Assembly

Assembly and use of the Printmaker 35 (#6759) is similar to that of the Printmaker 67 and 67 Dichro. The parts which come with the Printmaker 35 will be the same as those listed on page except that a single 2 1/4 condenser assembly is provided.

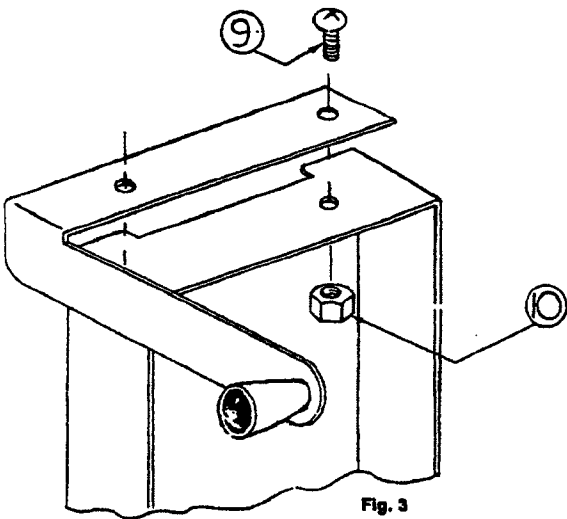


Fig. 3

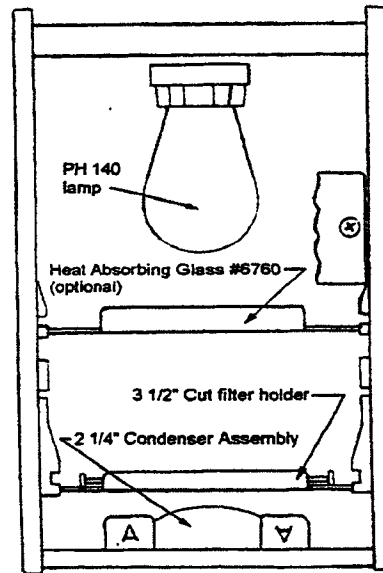


Fig. 5

To set up the Printmaker 35, follow the instructions on page 2 in section III, items A-I and item K. When installing the single 2 1/4" condenser assy (item J), insert it into the bottom of the lamphouse as shown in figure 5.

# IV. OPERATING INSTRUCTIONS

## A. Lens Selection and Mounting

You will need to use a lens of the appropriate focal length for the negative format from which you will be printing, which you attach to the lensboard to mount on the enlarger. Remove jam nut from lens, insert lens through board and firmly screw in jam nut.

Note that the bottom of the lens stage contains two retaining strips. With the back edge of the lensboard tilted upward, insert it into the groove above the rear retaining strip. Push the lensboard back into the groove and raise the front edge until the board is level. A leaf spring in the rear groove will push the lensboard into the groove above the front retaining strip and hold it in position. Be sure the lensboard is securely held at the front and rear of the lens stage. To remove the lensboard, reverse the procedure. See Fig. 7.

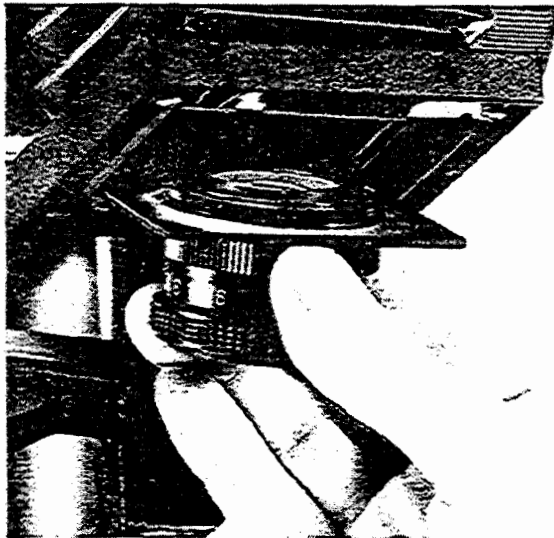


Fig. 7

The table below indicates which lenses are required for various formats and the range of magnification which can be obtained with each.

**Printmaker 35/67 MAGNIFICATION\* CHART**  
(ALL DIMENSIONS ARE APPROXIMATE)

Film	Lens	Min. Mag.**	Print Size (in.)	Max. Mag.	Print Size (in.)
6x7 cm	90mm	1.75X	3¾ x 4½	5.75X	12½ x 15
6x6 cm	75mm	1.25X	2¾ x 2¾	7X	15½ x 15½
35mm	50mm	1.50X	1¼ x 2	12X	11¼ x 16½
110	35mm	4X	2 x 2¾	19X	9¾ x 12¾
disc	35mm	4X	1¼ x 1½	19X	5¾ x 7¼

\*Magnifications on baseboard (without easel).

\*\*Smaller magnifications are possible by elevating easel from baseboard.

## B. Inserting the Negative (Fig. 8)

The negative is placed in the negative carrier, with the emulsion side down, by sliding it under the pins on the lower plate. A spring in the carrier hinge will keep the upper plate slightly raised to facilitate inserting a negative and/or moving a strip of negatives through the carrier.

To position the negative carrier in the enlarger, raise the lamphouse elevating arm. It will automatically lock in an open position.

Place the negative carrier on the negative stage and push in until the carrier slots engage the locating pins at the rear of the stage. Gently lower the lamphouse elevating arm, so that the lamphouse comes to rest on top of the negative carrier.

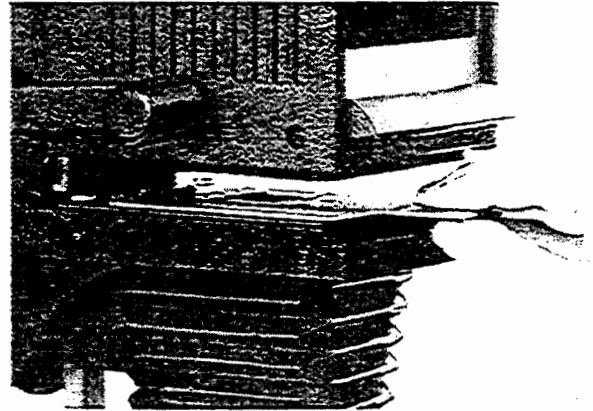


Fig. 8

## C. Accessory Filter Holder

The accessory filter holder, attached below the lens stage, accommodates the standard red safety filter, optional variable contrast and special effect (e.g. soft focus) filters and light integrators. The red safety filter may be used when checking composition and position of the projected image while there is enlarging paper in the easel. (This filter should not be used when working with color or panchromatic black and white papers, as these materials are sensitive to red light.) The accessory holder must be positioned directly under the lens or fully swung to the left, to avoid partially blocking the projected image.

When printing with variable contrast filters in the holder, *it is important to focus with the filter in the optical path* to avoid a shift in focus, which can occur when the filter is introduced.

## D. Elevation and focus.

After the negative has been positioned in the enlarger, the focus may be adjusted by turning the focusing knob. To change magnification, turn the elevation lock knob counterclockwise until you can freely move the enlarger carriage up and down the column to the desired height. The counterbalance spring will help hold the enlarger head in place while you make critical adjustments for focus and elevation. When the projected image is the correct size and sharply focused, turn the elevation lock knob clockwise and firmly tighten to lock in the height. An elevation reference scale is provided on the column to enable you to record the height and to repeat your selected image size at a later date.

## E. Oversize Prints

When an extreme degree of enlargement is desired (greater than can be achieved on the baseboard), the enlarger can be mounted to the baseboard in a reversed position to enable you to project images onto an easel placed on the floor. Remember to counterbalance the weight of the enlarger with several heavy objects on the baseboard or securely clamp the baseboard to a table before reversing. Then simply remove the four screws at the base, turn the enlarger 180° and reassemble.

## V. CONDENSER LAMPHOUSE

### A. The Condenser System

The condenser system in the condenser lamphouse consist of either one or two condensers depending on which printmaker model you've purchased. The condensers may be removed for cleaning or lamp changing by lifting the front edge slightly and pulling straight out. To replace the condenser, insert the back edge into the slot and push toward the back of the enlarger, until the front edge of the condenser drops behind the small lip at the front of the slot.

### B. Filter Holder

A two-piece filter holder is located above the condenser. To remove the holder, lift the front edge slightly and pull straight out. The filter holder in the condenser lamphouse has a spring-loaded top frame designed to hold 3½" color printing (CP), variable contrast or neutral density filters securely. To insert filter, swing up the frame and insert the filter until it touches the pivot point of the frame. Bow the filter slightly until it sits in and rests against the two filter stops, then close the filter frame. The holder is reinserted by placing it in its slot and sliding it back until the front edge drops behind the lip at the front of the slot.

### C. Heat Absorbing Glass

A slot is provided in the condenser lamphouse for inserting the optional heat absorbing glass (Cat. #6760) which is highly recommended. The glass aids in protecting the negative from the heat of the enlarging lamp, minimizing any negative buckling, and also protects the dyes in color negatives and transparencies.

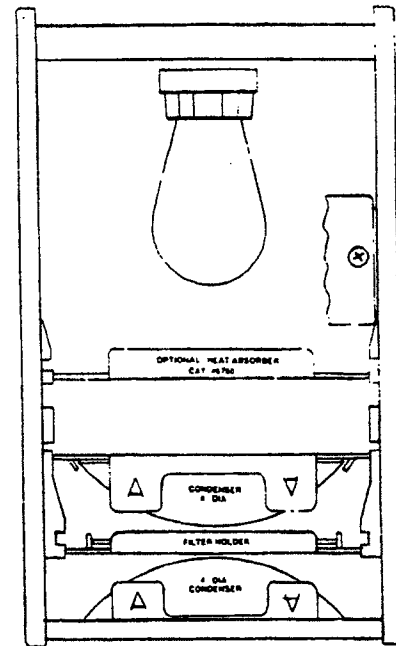


Fig. 9

## VI. DICHRO 67 LAMPHOUSE

### A. Electrical Connections

The Dichro 67 operates off of standard household current and may be plugged into the "Enlarger" receptacle on your enlarging timer. If the colorhead is being used in the vicinity of major appliances such as central air conditioners, clothes dryers or electric ranges, fluctuations in the line voltage may result in undesirable color density shifts on your prints.

### B. Components

The Dichro 67 lamphouse is composed of three assemblies - the housing, the lamp and filter assembly and the mixing chamber. The lamp and filter assembly is removed from the housing by sliding it up and out of the grooves on either side of the housing. Then you have access to the mixing chamber. The interchangeable mixing chamber is designed to automatically lock into place within the colorhead. The standard 6x7 mixing chamber is already in the colorhead when you receive it.

### C. Filtration

By turning the appropriate knob on the Dichro 67 lamphouse, any desired amount of cyan, magenta or yellow filtration may be introduced into the light path. The windows above the knobs are color-coded to the color of filtration they control, and show the value of filtration selected for that color. Ultraviolet and Infrared filtration are built into the system. Supplemental filtration of any type may be placed in the accessory holder below the lens, but this filtration must be of optical quality glass, gelatin or plastic.

### D. White Light Lever

In order to facilitate focusing or composing, it is often desirable to temporarily remove filtration from the light path. This can be done with the Dichro 67 lamphouse without disturbing the filter setting by using the white light lever on the right side of the colorhead. Pulling the lever towards you will remove the filters from the light path. Pushing the lever back will restore filtration to the values indicated on the dials. Be certain to return the filters to the light path before exposing your print.

### E. Color Printing

The objective in color printing is usually to reproduce the colors in a photograph to match, as nearly as possible, the colors of the original subject. In order to accomplish this, it is almost always necessary to make adjustments to the color of the light source used to expose the color paper. A color analyzer can help determine the correct filtration and exposure time for a well-balanced print from color negative or slide. See your dealer or check the accessory section of the manual for more details.

Once you have determined your filtration values and exposure time, the Dichro 67 lamphouse lets you simply dial in the proper filtration and expose your print, without having to handle conventional CP filters that can get easily scratched or dirty.

The Correction Table shows what adjustments are necessary to color-correct prints made from negatives or slides. Experience will show how much of an adjustment is necessary for prints requiring varying degrees of correction and what starting filter pack to use in making a first print. (Color paper manufacturers usually suggest a starting filter pack for use with their paper).

Note that there are two possibilities for each correction on the table. Do not make a correction which results in more than two filters being used at any one time. If all three filters are used at the same time, they will cancel out each other, resulting in neutral density filtration and loss of illumination.

If you have just started color printing, it is a good idea to save those prints with which you are not satisfied. On the back of these prints, mark the filtration and exposure with which they were made and compare them to your final prints. This is the best method of learning the effects of changing filtration (and exposure) on your Dichro 67 lamphouse.

### COLOR CORRECTION TABLE

If first print made from a negative is too:	Or the first print made from a slide is too:	Make this correction before exposing the next print:
Yellow	Blue	Add Yellow or Subtract Cyan and Magenta
Magenta	Green	Add Magenta or Subtract Cyan and Yellow
Cyan	Red	Add Cyan or Subtract Yellow and Magenta
Blue	Yellow	Subtract Yellow or Add Cyan and Magenta
Green	Magenta	Subtract Magenta or Add Cyan and Yellow
Red	Cyan	Subtract Cyan or Add Yellow and Magenta

### F. Black and White Printing

Your Dichro 67 lamphouse can be used as a diffusion black and white printing system by setting the filtration knobs at zero or retracting the filters with the white light lever. Diffusion enlargers, when used for black and white, produce a somewhat less contrasty print and minimize graininess. They also tend to conceal dust and scratches on the negative, and are essential when retouching has been done directly on the negative.

It is generally desirable to set all filtration dials to get readouts as close as possible to "000" during black and white printing. When printing with variable contrast papers, the colorhead can be used to control the contrast, without the need of an additional set of filters. The tables below show what filtration settings will approximate various paper grades on Agfa Multicontrast, Ilford Multigrade, or Kodak Polycontrast papers.

Paper Grade	Multicontrast Filtration	Multigrade Filtration	Polycontrast Filtration
0	80Y	80Y	75Y
1/2	70Y	55Y	50Y
1	65Y	30Y	25Y
1 1/2	50Y	15Y	10Y
2	30Y	0	10M
2 1/2	15Y	25M	25M
3	20M	40M	40M
3 1/2	30M	65M	55M
4	45M	100M	70M
4 1/2	70M	150M	120M
5	130M	200M	170M

## VII. ADJUSTMENTS

Your enlarger has been fully adjusted and aligned at the factory and should require no further adjustments. If it does become necessary to make adjustments to the enlarger in the future, refer to the appropriate section below.

### A. Focusing Mechanism

If the focusing mechanism is too stiff, it will be difficult to critically focus. If it is too loose, slippage may occur. To adjust the focusing mechanism, use a 1/4" open end wrench and loosen or tighten the hex head screws at the bottom of each focusing spring as needed (see Fig. 10). Try not to have one spring much tighter or looser than the other.



**REAR VIEW OF STAGES & BELLWS ASSEMBLY**  
(Shown Removed From Carriage)

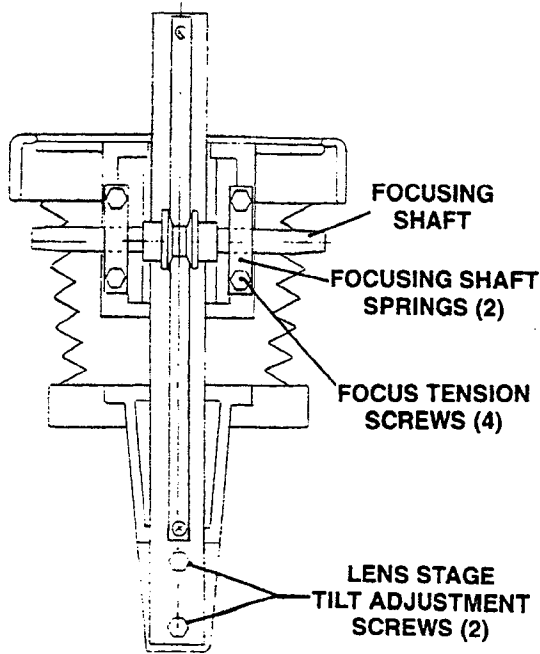


Fig. 10

**B. Alignment of Negative Stage**

In order to ensure flatness of field, it is important that the negative stage and lens stage be parallel to the baseboard. To adjust the negative stage, loosen (do not remove) the two Phillips head screws on each side of the negative stage (see Fig. 11). The entire negative stage/lens stage assembly may then be tilted from side to side and front to back until the required conditions are met.

Place a small sheet of glass or other suitable absolutely flat surface in the negative stage for use as a reference point for comparison measurements with the baseboard.

Check your adjustment(s) with a carpenter's square or triangle to make sure both sides and front and back of the negative stage are equally distant from the baseboard. Tighten the screws to secure the assembly in this position.

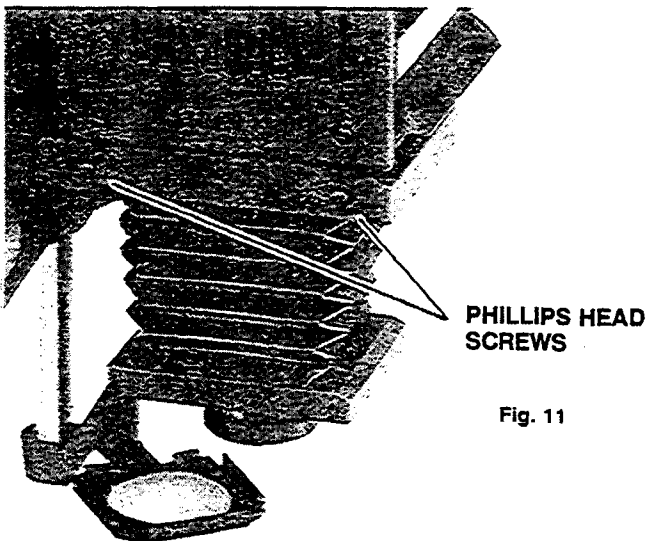


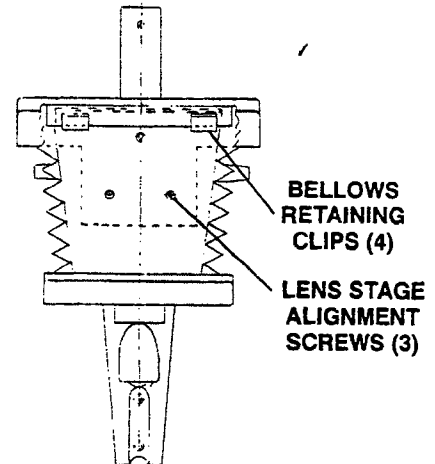
Fig. 11

**C. Alignment of the Lens Stage**

Once the negative stage is adjusted and parallel with the baseboard, the lens stage should be checked. Insert a blank lensboard in the lens stage and check front to back and side to side alignment with respect to the baseboard. To adjust for front to back alignment use a 1/16" Allen wrench and locate the three lens stage alignment screws behind the bellows (see Fig. 12). It may be more convenient to unhook the four bellows retaining clips attaching the bellows to the negative stage while making this adjustment. The two lower screws should be adjusted equally together and opposite in relation to the adjustment required to the upper screw. The two lower screws by themselves will adjust centering of the lens left to right. Reconnect the bellows when you are finished.

To adjust for side to side alignment, use a 1/4" open end wrench and loosen the two lens stage tilt adjustment screws at the bottom of the rear of the focus rail (see Fig. 10). Tighten the lower screw slightly before adjusting alignment. Once aligned, retighten both screws to lock.

**FRONT VIEW OF STAGES & BELLWS ASSEMBLY**  
(Only Outline of Bellows Shown)



**VIII. MAINTENANCE**

Your Beseler enlarger is designed to give years of trouble-free service; maintenance is minimal. Your enlarger should be kept free of dust to ensure high quality, clean prints. Should any dust settle on the enlarger, wipe it off with an anti-static cloth.

**A. Lamp Replacement**

**CAUTION:** Be certain that the lamp has cooled sufficiently for handling before attempting to remove. Disconnect power cord from AC source.

**1. Condenser Lamphouse**

When the lamp in your condenser head burns out, replace with a PH140 lamp, 75W, 117V (Beseler Cat. #8101) or, for 220 volt versions, a PH1400, 75W lamp (Beseler Cat. #8114).

To replace the lamp, slide the lamphouse door off and remove the upper Condenser and the filter holder to assure easy access. Unscrew the old lamp and screw in the new lamp. Replace filter holder, upper condenser and lamphouse door.

## 2. Dichro 67 Lamphouse

When the lamp in your colorhead burns out, replace with an ESJ lamp, 80W, 82V (Beseler Cat. #6728).

To replace the lamp, slide the lamp and filter assembly from the housing. Pushing the relamping on the side of the lamp toward the base of the lamp will extract the lamp from the socket. The lamp may then be pulled from its holder. When replacing lamps, be careful not to touch the bulb or the inside of the reflector, as this may lead to scorching and premature lamp failure. If you should accidentally touch the bulb, wipe clean with a soft cloth and alcohol. Slide the new lamp into the holder as far as it will go so that the pins at the lamp base fully engage the socket. Slide the assembly back into the housing.

### B. Condenser Cleaning

Be sure the condenser is free of dirt and dust. Clean regularly with a blower brush or filtered compressed air such as Beseler Dust Gun. If necessary, the condenser may be removed and cleaned with lens cleaning tissue or a soft cloth.

### C. Lubrication

Most moving surfaces in your enlarger are made of self-lubricating materials. However, it is advisable to lubricate moving parts with a small amount of Lubriplate or a medium weight oil every six months.

## IX. ACCESSORIES

**6730 Dichro 675 Solid State Colorhead** - Beseler's newest 6x7 colorhead features 0-200 continuous dichroic filtration, white light focusing, integral solid state power supply and interchangeable metal-clad mixing chambers.

### Negative Carriers (Glassless)

**6737** for 35mm (24 x 36mm)

**6740** for 1 $\frac{5}{8}$ " x 2 $\frac{1}{4}$ " (6 x 4.5cm)

**6741** for 2 $\frac{1}{4}$ " x 2 $\frac{1}{4}$ " (6x6cm)

**6742** for 2 $\frac{1}{4}$ " x 2 $\frac{3}{4}$ " (6x7cm)

**6746** for 35mm mounted slides (2" x 2")

## Lensboards

**6723** 39mm Lensboard (Leica mount)

## Beslar Lenses

Coated and color-corrected optical glass elements. Iris diaphragm has click stops. 39mm Leica thread. Includes jam nut.

Catalog #		Film Format
<b>8670</b>	Beslar 50mm, f/3.5 to f/16	35mm (24x36mm)
<b>8680</b>	Beslar 75mm, f/3.5 to f/22	2 $\frac{1}{4}$ " x 2 $\frac{1}{4}$ " (6x6cm)
<b>6770</b>	Beslar Lens Kit Consists of 50mm f/3.5 Beslar lens (8670) with lensboard (6723) and 35mm negative carrier (6737)	

## Lamps

**6728** 85W, 82V for colorhead

**8101** 75W, 120V for condenser head

**8114** 75W, 220V for condenser head

## Accessories

**8177** Audible /Repeating Enlarging Timer

**8187** Digi-Timer Enlarger Timer

**8040** Red Safety Filter (replacement)

**6760** Heat-Absorbing Glass (mounted)

**6797** 6x7 Upgrade Kit for Printmaker 35

Allows for easy conversion from a 35mm enlarger to a 6x7 enlarger by the addition of 2 oversized 4" condensers to the condenser lamphouse.

## **Beseler Audible Enlarging Timer #8177**

If you often make enlargements which require dodging, burning-in, masking or other forms of manipulation, this professional quality timer is a must. In addition to



all the standard functions of an electronic enlarging timer, it can produce an audible

“beep” at precise 1-second intervals. 0.1 to 110

seconds range, with

luminous controls and enlarger-safelight outlets

with a professional 500-watt

capacity. The Beseler timer has

a special protective circuit allowing it

to work with a variety of cold light sources.

## **Borderless Easels**

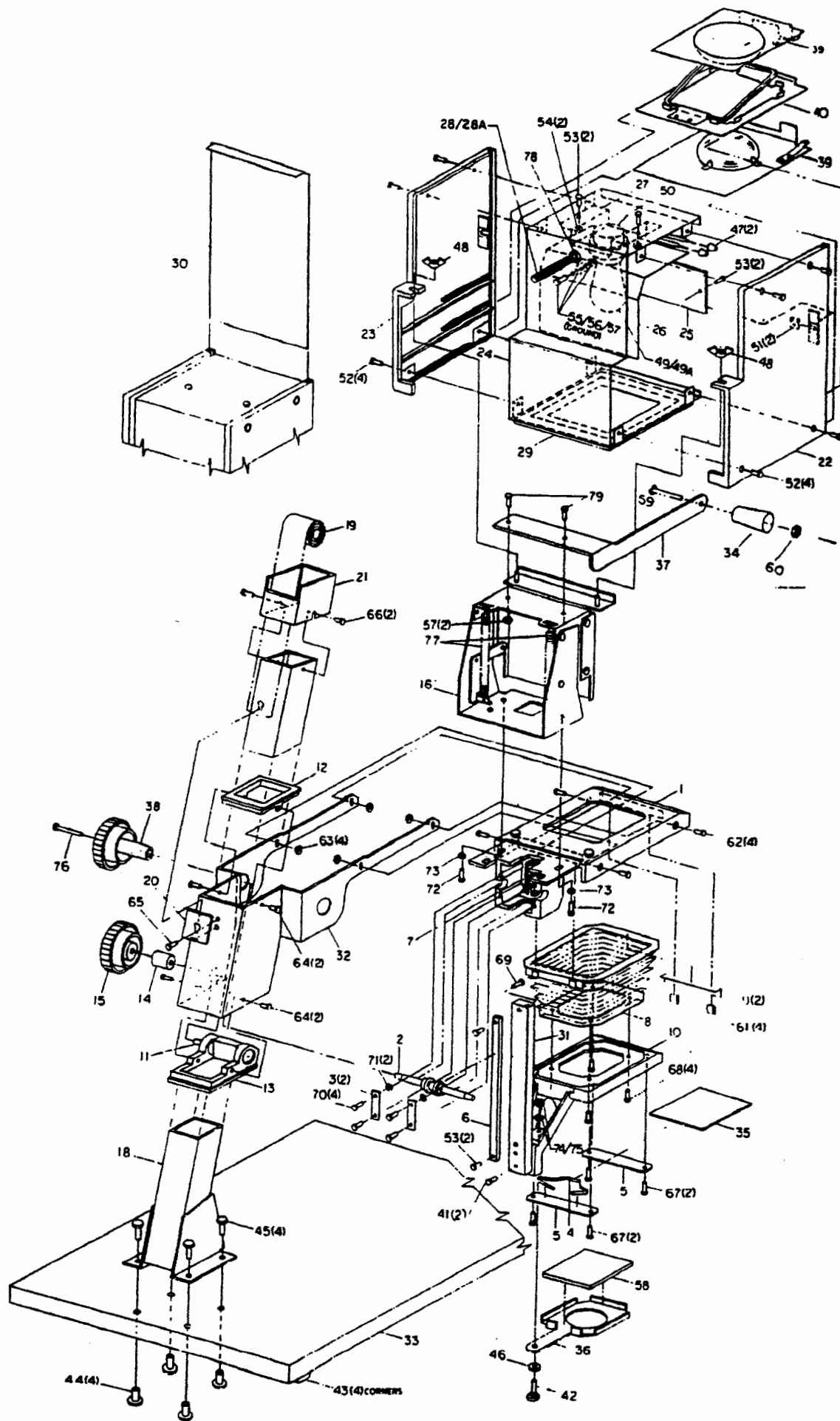
Designed with special “finger-lift” notches for removing paper the easels feature black anodized paper guides and two adjustable paper holders. The non-reflective, high-tech black finish is as functional as it is aesthetic.

# PRINTMAKER 35/67 ENLARGER REPLACEMENT PARTS LIST

NOTE: All chassis parts are common with the Printmaker Dichro 35.

REF. NO.	DESCRIPTION	PART NO.	REF. NO.	DESCRIPTION	PART NO.
1	Negative Stage	10-42019-22	41	Hex Head Tap Screw #10-32x3/4	538-23-24-07
2	Focusing Shaft	10-42024	42	Shoulder Screw	540-30-52
3	Focusing Shaft Spring	10-42027	43	Pad-Baseboard	10-42018
4	Lens Board Spring	10-42032	44	Tee Nut 1/4 - 20	546-40-15
5	Lens Board Retainer	10-42033	45	Hex Slot Mach. Screw 1/4-20x3/4	527-24-41-06
6	Spline	10-42037	46	Bow Washer 17/64x9/16x1/16 High	549-20-19
7	Bearing Pad	10-42041	47	Wire Connector	600-25-22
8	Bellows	10-42045	48	Wing Nut 10-32	546-20-13
9	Bellows Retaining Angle	10-42052	49	Enlarger Lamp 120v	cat. #8101
10	Lens Stage	10-42182	49A	Enlarger Lamp 240v	cat. #8114
11	Carriage Lock Stud	10-45934	50	Lamp Socket	625-82-07
12	Carriage Upper Bearing	10-45937	51	Speed Nut 6-32 "U" Type	555-05-03
13	Carriage Lower Bearing	10-45938	52	Pan Head Tap Screw 6Bx5/16	538-19-10-12
14	Carriage Locking Spacer	10-45939	53	Pan Head Mach. Screw 6-32x5/16	519-10-02-01
15	Carriage Lock Knob	10-45932	54	Hex Lock Nut 6-32	546-55-04
16	Elevator	10-45964	55	Pan Head Mach. Screw 10-32x3/8	524-12-02-01
17	Bottom Filter Holder	10-42103	56	Lockwasher #10	549-47-08
18	Column	10-45955	57	Hex Locknut 10-32	546-55-08
19	Carriage Spring	10-45931	58	Red Safety Filter	cat. #8040
20	Carriage Spring Clamp	10-45940	59	Screw, Mach. 8-32 x 1 1/4	521-40-02-01
21	Carriage Spring Housing	10-45936	60	Nut, Lock #8-32	546-57-08
22	Lamphouse Left Side	10-42091-01	61	"U" Type Clip	555-42-23
23	Lamphouse Right Side	10-42091-02	62	Pan Head Lock Screw 6-32x3/8	540-60-73
24	Lamphouse Wraparound	10-42092-04	63	Hex Nut 6-32	545-19-20-01
25	Front Heat Shield	10-42093	64	Pan Head Tap Screw 8BTx1/4	538-21-08-29
26	Rear Heat Shield	10-42153	65	Pan Head Tap Screw 8BTx5/16	538-21-10-08
27	Lamp Socket Bracket	10-42155	66	Pan Head Tap Screw 6BTx3/8	538-19-12-44
28	Power Cord 120v	10-42164	67	Pan Head Tap Screw 4Bx3/16	538-13-06-16
28A	Power Cord 240v	10-42169	68	Pan Head Tap Screw 4Bx1/4	538-13-08-32
30	Lamphouse Door	10-50726	69	Pan Head Mach. Screw 6-32x1/8	519-04-02-01
31	Focusing Bar	10-45979	70	Hex Head Mach. Screw 6-32x5/16	519-10-40-01
32	Carriage	10-45951	71	Plain Washer #6	548-18-07
33	Enlarger Base Board	10-45960	72	Hex Head Lock Screw 10-32x3/8	540-60-20
34	Knob, Recess	568-40-10	73	Plain Washer #10	548-24-04
35	Lens Board (Accessory)	cat #6723	74	Hex Nut 8-32	545-21-20-01
36	Safe Filter Holder	10-42040	75	Lock Washer #8	549-45-08
37	Elevating Arm	10-45923	76	Fan Head Mach. Screw 6-32x1-3/4	519-56-02-02
38	Focusing Knob	10-45933	77	Extension Spring	562-70-64
39	4" Condenser Assy	10-42098	78	Power Cord Bushing	600-82-30
39a	2 1/4" condenser assembly (1 ea)-Printmaker 35*	10-45907	79	Pan Head Mach. Screw 10-32x3/8	524-12-02-01
40	Filter Holder Assy	10-47824	80	2-1/4" Condenser (not shown)	10-45907

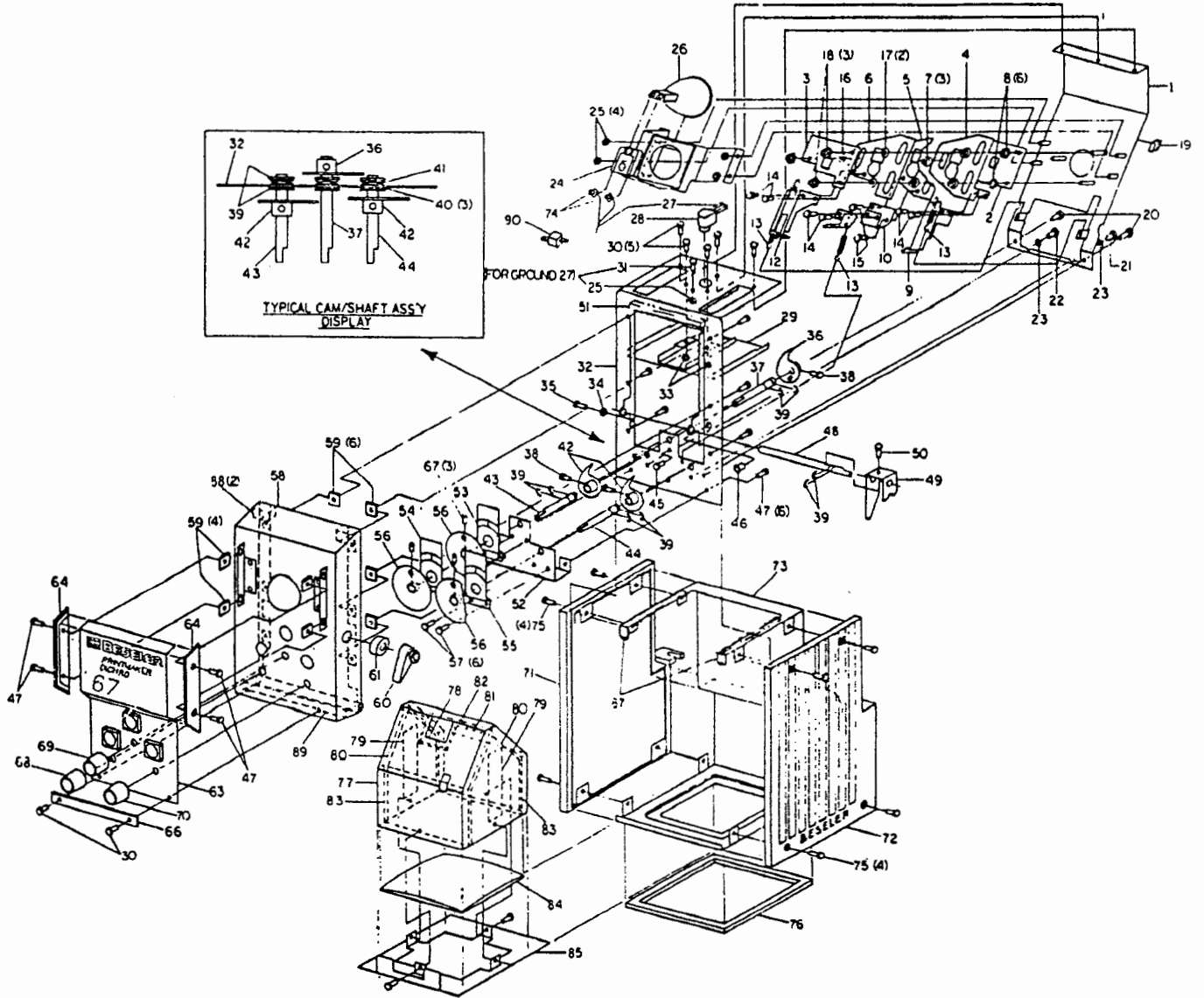
\* Same placement in light source as lower 4" condenser lens (#39).



## DICHRO 67 COLORHEAD REPLACEMENT PARTS LIST

REF. NO.	DESCRIPTION	PART NO.	REF. NO.	DESCRIPTION	PART NO.
1	Rear Chassis Plate .....	10-42627	48	White Light Shaft .....	10-42681
2	Bottom Aperture Plate .....	10-42661-01	49	White Light Actuator Lever .....	10-42676
3	Top Aperture Plate .....	10-42661-02	50	Cap Screw 4-40 x 1/2 Pan .....	515-16-53-01
4	Bottom Blade (Cyan) Assy. ....	10-42624	51	Light Trap Top Cushion .....	10-42706
5	Center Blade (Magenta) Assy. ....	10-42623	52	Shaft Support Bracket .....	10-42654
6	Top Blade (Yellow) Assy. ....	10-42622	53	Index Holder (Magenta) .....	10-42617
7	Blade Spacer .....	10-42658	54	Index Holder (Yellow) .....	10-42618
8	Blade Guide Spacer .....	10-42657	55	Index Holder (Cyan) .....	10-42619
9	Bottom Blade Follower .....	10-42667	56	Dial .....	10-42634
10	Center Blade Adapter .....	10-42687	57	Sems Screw 2-56 x 1/8 Pan .....	540-60-55
11	Center Blade Follower .....	10-42686	58	Front Cover .....	10-42638
12	Top Blade Follower .....	10-42666	59	Speed Nut "U" Type #4B .....	555-05-23
13	Filter Blade Spring .....	10-35755	60	White Light Handle .....	568-32-08
14	Mach. Screw - 2-56 x 3/32 Pan .....	509-03-01-01	61	Light Trap Actuator Cushion .....	10-42705
15	Mach. Screw - 2/56 x 1/8 Flat .....	509-04-90-01	63	Front Plate .....	10-50727
16	Flat Washer #6 x 3/8 .....	548-18-07	64	Side Panel .....	10-42653
17	Flat Washer #6 x 1/2 .....	548-18-18	66	Front Plate Bar .....	10-42689
18	Locknut 6-32 .....	546-57-07	67	Set Screw 4-40 x 3/32 Oval .....	540-20-62
19	Wire Clip .....	555-40-08	68	Dial Knob (Yellow) .....	568-01-83
20	Sems Screw 6-32 .....	540-60-48	69	Dial Knob (Magenta) .....	568-01-84
21	Mach. Screw - 4-40 x 7/16 Pan .....	515-14-02-01	70	Dial Knob (Cyan) .....	568-01-85
22	Mach. Screw - 4-40 x 5/16 Pan .....	515-10-02-01	71	Lamphouse Side (Left) .....	10-42091-01
23	Lockwasher #4 .....	549-47-02	72	Lamphouse Side (Right) .....	10-42091-02
24	Lamp Holder/Bracket .....	10-46183-91	73	Lamphouse Wraparound .....	10-42092-03
25	Keps Nut 4-40 .....	546-55-04	74	Wire Connector .....	600-25-22
26	Enlarger Lamp 85W/82V .....	Cat. #6728	75	Tap Screw #6B x 6/16 Pan .....	538-19-10-12
27	Power Cord .....	10-46186	76	Lamphouse Cushion .....	10-42124
28	Power Cord Bushing .....	600-82-28	77	Mix Chamber .....	10-42620
29	Light Trap .....	10-42672	78	Heat Filter .....	10-42685
30	Mach. Screw 4-40 x 1/4 Pan .....	515-08-02-06	79	Tape (Both Ends) .....	10-42713
31	Mach. Screw 6-32 x 1/4 Pan .....	519-08-02-01	80	Liner (Both Ends) .....	10-42678-04
32	Front Chassis Plate .....	10-42650	80A	Liner/Reflector (Ends-35) .....	10-42742/10-42744
33	Keps Nut 4-40 .....	546-55-02	81	Liner (Filter Side/Top) .....	10-42678-01
34	Plain Nut 4-40 .....	545-15-20-01	82	Liner (Side/Top) .....	10-42678-02
35	Mach. Screw 4-40 x 3/8 Fill. ....	515-12-11-40	82A	Liner/Reflector (Front-35) .....	10-42741/10-42745
36	Center Cam .....	10-42711-02	83	Liner (Both Sides/Bottom) .....	10-42678-03
37	Center Cam Shaft .....	10-42665	83A	Liner/Reflector (Rear-35) .....	10-42743/10-42745
38	Sems Screw 4-40 x 1/4 Pan Slot ..	540-60-47	84	Diffuser .....	10-42652
39	Retaining Ring "E" Type 1/4 .....	555-26-10	84A	Diffuser (35) .....	10-35889
40	Flat Washer #14 x 1/2 .....	548-32-07	85	Bottom Plate .....	10-42669
41	Bow Washer 17/64 I.D. ....	549-20-34	85A	Bottom Plate (35) .....	10-42669
42	Side Cam .....	10-42711-01	87	Light Trap Frame Cushion .....	10-42716
43	Left Cam Shaft .....	10-42664-01	88	Corner Cushion .....	10-42704
44	Right Cam Shaft .....	10-42664-02	89	Bottom Cushion .....	10-42707
45	Sems Screw 4-40 x 1/4 Pan .....	540-60-47	90	Rectifier .....	635-70-22
46	Bullet Catch 1/4 Dia. ....	570-10-17			
47	Tap Screw #4B x 3/8 Pan .....	538-13-12-30			

# DICHO 67 COLORHEAD EXPLODED VIEW



## LIMITED ONE YEAR WARRANTY

(Applicable in U.S.A., outside U.S.A. see local distributor)

Charles Beseler Company, Stroudsburg, Pennsylvania warrants its products (with the exception of lamps), to the original purchaser only, to be free from defects in materials and workmanship for a period of one (1) year from the date of purchase.

This Warranty does not apply to our products which show evidence of accidental damage, misuse or abuse. The Warranty also does not apply to our products which are damaged by tampering or attempted repair by an unauthorized agent. **All in-warranty repairs must be performed by Beseler. No third party repairs are authorized.**

Beseler exclusively limits the Warranty to repair or to replace (at Beseler's option) the defective part of its product. If you decide to return the product to Beseler to repair, you must insure the product and prepay all transportation expenses. Beseler will not be liable for damages caused in the course of shipping the product to you. You must allow at least six (6) weeks for correction of the defect.

ANY IMPLIED WARRANTIES OF FITNESS FOR USE, OR MERCHANTABILITY, THAT MAY BE CREATED BY OPERATION OF LAW ARE LIMITED THE ONE (1) YEAR WARRANTY PERIOD.

Some states do not allow limitations on how long an implied warranty lasts, so the above limitation may not apply to you.

NO LIABILITY IS ASSUMED FOR EXPENSES OF DAMAGES RESULTING FROM INTERRUPTION IN OPERATION OF EQUIPMENT, DAMAGE TO FILM OF PAPER, OR FOR INCIDENTAL, DIRECT OR CONSEQUENTIAL DAMAGES OF ANY NATURE.

Some states do not allow the exclusion or limitation of incidental or consequential damages, so the above limitation or exclusion may not apply to you.

In the event there is any defect in materials or workmanship of our product you may contact our Technical Service Department at (800) 237-3537 or forward the product directly to our repair department at Charles Beseler Company, 2018 West Main Street, P.O. Box 431 Stroudsburg, P.A. 18360.

This Warranty gives you specific legal rights, and you may also have other rights which vary from state to state. You may also have implied warranty rights. In the event of a problem with warranty service or performance, you may be able to go to a Small Claims Court, a State Court or a Federal District Court.

**IMPORTANT:**

THIS WARRANTY SHALL NOT BE VALID AND BESELER SHALL NOT BE BOUND BY THIS WARRANTY IF OUR PRODUCT IS NOT OPERATED IN ACCORDANCE WITH BESELER'S WRITTEN INSTRUCTIONS.

You must prove the date of purchase by producing a dated sales receipt indicating that you are the original purchaser

### IMPORTANT! KEEP THIS INFORMATION HANDY FOR FUTURE REFERENCE

#### KEEP YOUR SALES RECEIPT!

#### SERVICE INFORMATION:

(Applicable in U.S.A., outside U.S.A. contact local distributor)

Should you need service for your BESELER photographic equipment, please follow these steps:

**PACK** the product in the original packaging material to protect it in transit.

**ENCLOSE** complete information showing your name and address, what is wrong with the equipment, and the return shipping address. Tape the information to the equipment to be sure it does not get thrown out with the packing material.

**ADDRESS** the package to BESELER SERVICE MANAGER, 2018 West Main Street, P.O. Box 431, Stroudsburg, P.A. 18360.

**PREPAY FREIGHT CHARGE AND INSURE** the package against damage or loss in transit.

**IN-WARRANTY SERVICE.** There is no charge for service performed during the warranty period. Proof of Purchase is required and must be inclosed with the return. Terms of the warranty are explained above.

#### OUT OF WARRANTY SERVICE:

**ESTIMATES.** We will gladly provide estimates upon request. There is a flat estimate charge of \$25.00 payable in advance. The estimate charge will be credited towards the cost of the repair. Any repair found to exceed this estimate will be re-estimated and held for your approval before work is begun. No work will be undertaken or billed until written approval of the estimate is received.

**PAYMENT.** Your check for \$25.00 must accompany your request for an estimate, alternatively, you may charge your VISA or MASTER CHARGE account. Repairs must be paid in full prior to return to owner. Personal checks or VISA/MASTER CHARGE accepted. (If you pay by VISA or MASTER CHARGE, please give the account number and expiration date.)

**OBSELETE EQUIPMENT.** Beseler reserves the right to refuse to repair equipment that has been discontinued for five (5) years.

# BESELER

Engineered to Perform ... Designed to Endure

Charles Beseler Company, 2018 West Main Street, P.O. Box 431  
Stroudsburg, P.A. 18360, 800-237-3537

Specifications subject to change without notice.