BESELER

23CIII-XL

enlarger/instruction manual

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

IMPORTANT SAFETY INSTRUCTIONS

Caution: Your 23CIII-XL Chassis utilizes two powerful counterbalance springs to insure smooth elevation during use. Failure to follow instructions when changing or removing the lamphouse will cause the carriage to jump up at a rapid rate and could cause damage to the enlarger and possible injury to the operator. Before removing or changing the modular lamphouse be sure to:

- Raise carriage assembly to maximum elevation
- Secure carriage in place using the elevation lock (item 15 in parts illustration).

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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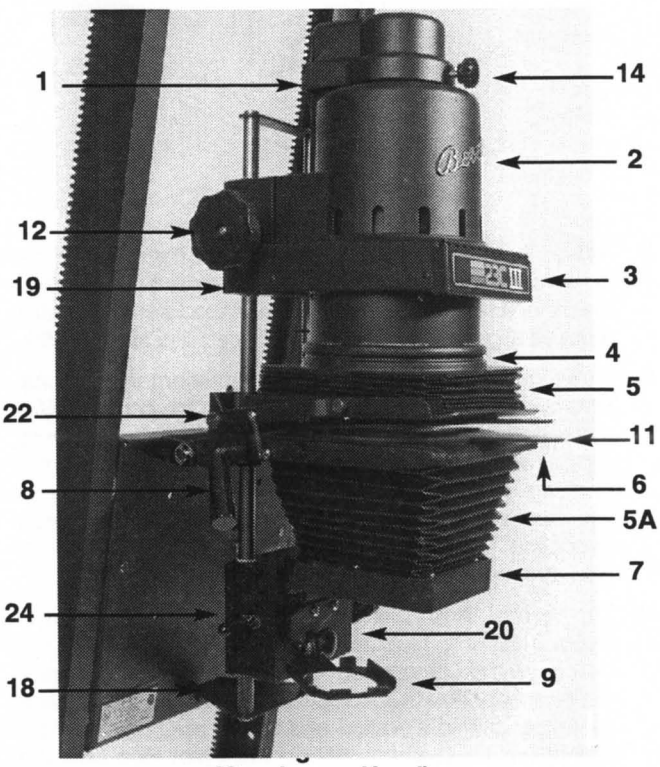
(Contents and specifications subject to change without notice.)

I. INTRODUCTION

Congratulations. You have just purchased one of the finest enlargers available today. Your Beseler 23C III-XL is backed by over 100 years of Beseler experience and quality.

The Beseler 23C III-XL can handle negatives in sizes up to 6 x 9cm. It's easy to use and requires virtually no maintenance.

Your Beseler 23C III-XL is designed and constructed to provide years of dependable and precise service. 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 23C III-XL, and the time taken to read the manual will be well spent.



(Condenser Head)

PARTS ILLUSTRATION

1. Lamp House Cap
2. Lamp House
3. Filter Compartment
4. Condenser Housing
5. Upper Bellows
5A. Lower Bellows
6. Negative Stage
7. Lens Stage
8. Negative Stage Lever
9. Accessory Filter Holder
10. Elevation Handle
11. Negative Carrier (Accessory)
12. Condenser Stage Adjustment
13. Negative Size Indicator
14. Lamp House Cap Locking Screw
15. Elevation Lock

SPECIFICATIONS

Height (Fully Extended): Condenser 57" (1448mm)
Variable Contrast Head and Colorhead 56½" (1435mm)
Baseboard: 25½" x 16" x 1¼"
(648mm x 406mm x 32mm)
Lamp: PH 140, 75W, 120V (Cat. #8101) Condenser Head
PH 1400, 75W, 220V (Cat. #8114) Condenser Head
ANSI ESJ, 85W, 82V (Cat. #6728) Colorhead and Variable Contrast Head
Shipping Dimensions: 46" x 18½" x 12"
(1168mm x 470mm x 305mm)
Shipping Weight: 60 lbs. (27 Kg)

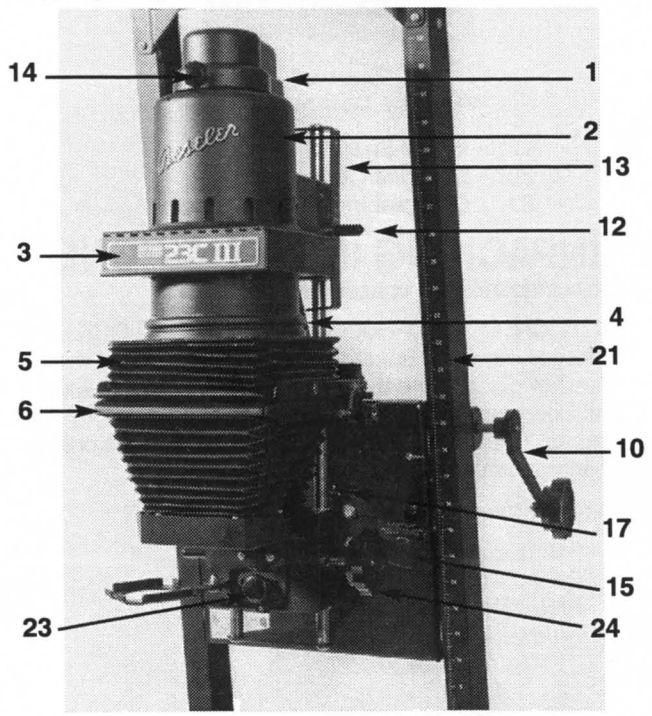


Figure 2
(Condenser Head)

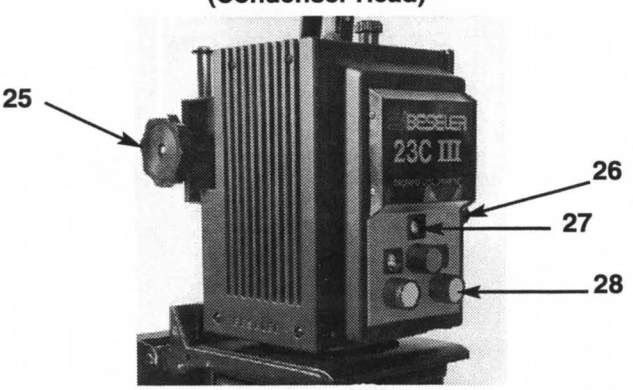


Figure 3 (Colorhead)

17. Horizontal Lock Release
18. Vertical Adjustment Screw
19. Upper Housing
20. Lower Housing
21. Elevation Scale
22. Horizontal Lock
23. Lens Tilt Lock
24. Focus Knob
25. Lamphouse Elevating Knob
26. White Light Lever
27. Filtration Windows
28. Filtration Knobs

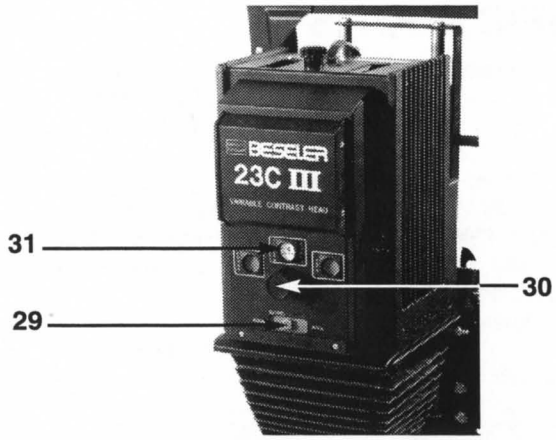


Figure 4
(Variable Contrast Head)

29. Paper Selector Lever
30. Contrast Control Knob
31. Contrast Indicator Windows

II. UNPACKING INSTRUCTIONS

A. Lift out the enlarger chassis and set aside

CAUTION: DO NOT LOOSEN ELEVATION LOCK. 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. This could cause serious damage to the enlarger and possible injury to the operator.

B. Carefully remove the following components.

1 Frame and Carriage Assembly
1 Baseboard
1 Projection Assembly
1 Hardware Bag which contains:
1. 8 Tee Nuts
2. 1 Dowel
3. 4 Baseboard Pads
4. 8 7/8" long 1/4 x 20 Machine Screws
5. 1 Elevation Crank Assembly
6. 1 3/4" long #8-32 Machine Screw
7. 1 Red Safety Filter
8. 1 Hexagonal Key

III. ASSEMBLY INSTRUCTIONS

Tools Required:
Hammer
Phillips Head Screwdriver
Slotted Head Screwdriver

A. Place the baseboard with the white smooth-textured side down on a suitable surface.

B. Insert the eight Tee Nuts into the recessed holes in the baseboard. Use the wooden dowel with a hammer to help tap the Tee Nuts into the recessed holes. 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 chassis base with the baseboard.

E. Secure the chassis to the baseboard using the eight 7/8" long 1/4 x 20 machine screws. Insert all eight screws loosely at first and then tighten each one.

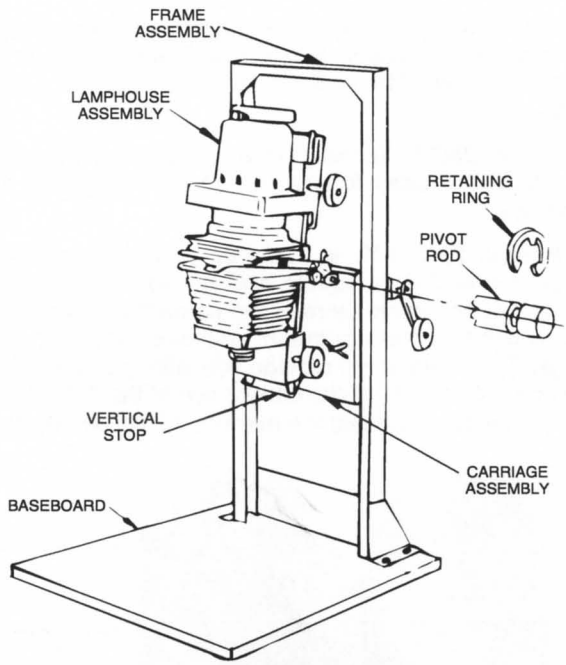


Figure 5

F. Attach the elevation crank assembly to the shaft on the right side of the enlarger carriage using the 3/4" long #8-32 machine screw. (Note: The wedge-shaped slot in the crank must be aligned with the wedge-shaped end of the shaft.)

G. Refer to Fig. 5 for Lamphouse attachment instructions. Remove the Pivot Rod from the yoke in the carriage. With a screwdriver, gently pry from the rod one of the Retaining Rings, and then slide the rod from the yoke. Hold the Lamphouse Assembly against the Carriage Assembly so that the flanges on the back of the Lamphouse Assembly match the holes in the yoke on the carriage. Reinsert Pivot Rod and replace Retaining Ring.

H. The Vertical Stop is assembled in a shipping position to facilitate packing. To place it in its operational position, it is best to set the Lamphouse Assembly in the horizontal projection mode. This is accomplished by locking the carriage assembly at mid-elevation and slowly pivoting the entire Lamphouse Assembly 90° on the Pivot Rod until the Horizontal Lock is engaged. Remove the two screws on the Vertical Stop and reattach the stop as shown in Fig. 1, item 18. To return Lamphouse Assembly to vertical mode, push Horizontal Lock Release to the right and slowly pivot Lamphouse Assembly back to vertical.

IV. 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 lensboard 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.

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

23C III-XL MAGNIFICATION* CHART
(ALL DIMENSIONS ARE APPROXIMATE)

Film	Lens	Lens-board***	Min. Mag.**	Print Size (in.)	Max Mag.	Print Size (in.)
6x9	105mm	#8029	1.6X	(3.5x5.25)	8X	(18x26)
6x7	90mm	#8023	1.2X	(2.75x3.25)	10X	(22.5x27.5)
6x6	80mm	#8023	1.1X	(2.5x2.5)	11X	(24.75x24.75)
	75mm	#8023	1X	(2.75x2.25)	12X	(27x27)
35mm	50mm	#8021	2.5X	(2.5x3.75)	19X	(19x28.5)
disc	35mm	#8022	8X	(2.5x3.15)	27X	(8.5x10.6)

*Magnifications on baseboard (without easel).

**Smaller magnifications are possible by elevating easel and using an extension cone.

***Lensboards listed for lenses with 39mm mount.

V. OPERATING INSTRUCTIONS CONDENSER MODEL

A. Inserting the Negative (Fig. 6)

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.

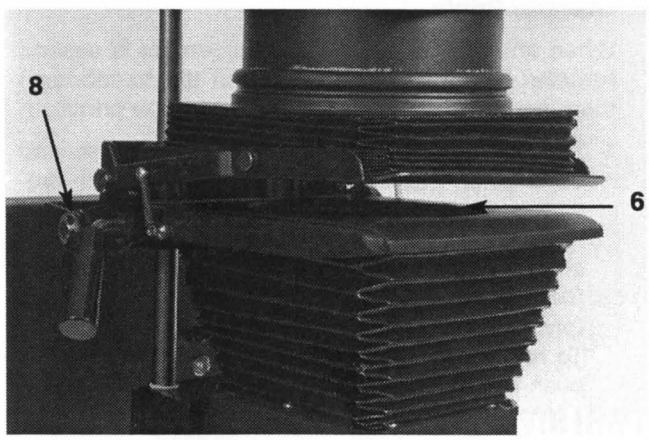


Figure 6

The negative stage consists of a flat platform (6) that divides the upper and lower bellows. It is opened by pulling the negative stage lever (8) forward. The negative stage will remain open as long as the lever is forward. Push the lever back to allow the negative stage to close.

NOTE: The upper bellows is used only with the condenser lamphouse. It is removed when using the Dichro or V.C. Lamphouses.

When the negative stage is open, insert the negative carrier into it, with the ring on the under side. This ring places the negative carrier into the proper optical position on the negative stage and serves to guide the carrier as it is rotated to the desired point.

B. Positioning the Condenser Stage (Fig. 7)

Any size negative up to 2¼" x 3¼" (6 x 9cm) may be used in the Beseler 23C III-XL enlarger without changing the condenser unit. This is accomplished by raising or lowering the condenser stage to the appropriate point for your selected negative. When the condenser is positioned at the appropriate height, it provides complete light coverage of the negative area.

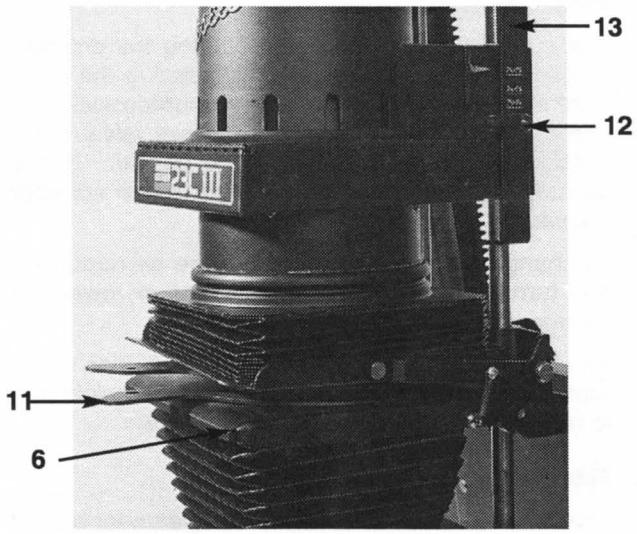


Figure 7

Use the Condenser Stage Adjustment Knob (12) to select the proper setting on the Negative Size Indicator (13). Four positions are inscribed on the indicator. Follow the chart below for selection of the proper setting.

Negative Size Indicator Setting	Negative Size
2¼" x 3¼"	2¼" x 3¼" negatives 6 x 9cm negatives
2¼" x 2¾"	2¼" x 2¾" negatives 6 x 7cm negatives
2¼" x 2¼"	2¼" x 2¼" negatives 2" x 2" negatives 6 x 4.5cm negatives
8, 16, 35 mm	35mm negatives Instamatic® 110 & 126 16mm negatives 8mm (Minox) negatives Disc negatives

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.

A special lock is provided for securing the enlarger carriage. The lock is operated by rotating the knob clockwise. Turning it completely counterclockwise releases its braking mechanism. Always release this knob before changing the carriage position. *If only partially released, the gears on the carriage will wear prematurely.*

To change magnification, release the carriage lock and turn the elevating crank to raise or lower the enlarger carriage to the desired height.

An elevation scale is provided on the right side of the enlarger frame to enable you to record the height and to repeat that magnification at a later date.

E. Filter Compartment

The lamphouse contains a filter compartment behind the hinged nameplate door (Fig. 1, Item 3). A filter holder inside is designed to hold 5½" color printing (CP), variable contrast or neutral density filters.

F. Heat Absorbing Glass

A slot is provided above the filter holder for inserting the optional heat absorbing glass (Cat. #8042) 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.

G. Color Printing

Color printing requires the use of color filtration in order to obtain the proper color balance. With the 23C III-XL you can either insert filters into the Filter Compartment or add the 23C II-XL Dichro Lamphouse (crt. # 8132) which has continuously variable color filtration built-in and available at the twist of as knob.

H. Negative Distortion Control

Distortion corrections, such as converging parallel lines in architectural photographs, can be readily made with the 23C III-XL enlarger. You can get a sharply focused image throughout the picture area or create special distorted effects by using the distortion control adjustments.

In order to control (or create) the distortion and achieve overall image focus, the negative stage, the lens stage and the easel must be arranged in such a way that their surface planes cast imaginary lines that would converge at a common point. You could use three very long straightedges to adjust the angles so that the lines from the three planes converge, but the method outlined below is probably the most practical.

1. Set the magnification and roughly focus the projected image.
2. Tilt the easel until the desired degree of distortion or control is achieved. Slide a support under the easel to hold it in this position.
3. Release the lens tilt lock and simultaneously pivot the lens stage while adjusting the focus knob to bring the corrected image into focus, then tighten the lock.
4. Since the lens stage may only be tilted from left to right, the easel should only be tilted in the same direction. In other words, the easel should not be tilted from front to back to correct for distortion. If the projected image on the easel is not oriented properly for distortion correction, the negative carrier may be rotated in the negative stage to the desired position. Remember that opposite ends of the image will be at different magnifications, and you will need to either burn in the area furthest from the lens or dodge the area closest to the lens.
5. Once you have finished printing distortion controlled images, you should return the lens stage and the easel to their original positions. The lens stage has an indicator mark which will permit you to locate the original position. Realignment of the lens stage may be necessary.

I. Oversize Prints

When an extreme degree of enlargement is desired (greater than can be achieved on the baseboard) there are two simple ways to make oversize prints.

1. The entire projection assembly (lamphouse and bellows) can be easily rotated to permit wall projection. Make sure the pointer arrow on the carriage is set to #9 on the Elevation Scale to ensure clearance between the lamphouse and frame. Slowly pivot the Lamphouse Assembly on its axis (pivot rod) 90° until the Horizontal Lock is engaged. To return the lamphouse to the vertical position, push the Horizontal Lock Release to the right and slowly pivot the lamphouse back to vertical.
2. 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 screws holding the enlarger to the base, turn the enlarger 180° and reassemble. (**Note:** When enlarger is rotated you will only be securing the frame using the four outermost screws.)

VI. OPERATING INSTRUCTIONS COLORHEAD AND VARIABLE CONTRAST MODELS

Light source adjustment and diffusion heads.

Note: When using the Variable Contrast or Dichro Colorhead, no upper bellows assembly is required. These light sources are 'diffusion' type light sources. Diffusion heads, unlike condenser light sources, are not adjusted for the format you are printing (see section V-b on page 3). Because of this, once you have installed the negative carrier, simply turn the light source adjustment knob so that the light source rests on the negative carrier. Once adjusted properly, the foam seal on the bottom of the lamp house will prevent light leaks from between the lamp house and the upper negative carrier.

A. Inserting the Negative (Fig. 5)

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, turn the lamphouse elevating knob (Fig. 1 #12). It will automatically stay in an open position.

When the negative stage is open, insert the negative carrier into it, with the ring on the underside. This ring places the negative carrier into the proper optical position on the negative stage and serves to guide the carrier as it is rotated to the desired point. Lower the lamphouse.

B. 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. 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 the 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.

C. Elevation and Focus

After the negative has been positioned in the enlarger, the image focus may be adjusted by turning the focusing knob on either side.

A special lock is provided for securing the enlarger carriage. The lock is operated by rotating the knob clockwise. Turning it completely counterclockwise releases its braking mechanism. Always release this knob before changing the carriage position. If only partially released, the gears on the carriage will wear prematurely.

To change magnification, release the carriage lock and turn the elevating crank to raise or lower the enlarger to the desired height.

An elevation scale is provided on the right side of the enlarger frame to enable you to record the height and to repeat that magnification at a later date.

D. Negative Distortion Control

Distortion corrections, such as converging parallel lines in architectural photographs, can be readily made with the 23C III-XL enlarger. You can get a sharply focused image throughout the picture area or create special distorted effects by using the distortion control adjustments.

In order to control (or create) the distortion and achieve overall image focus, the negative stage, the lens stage and the easel must be arranged in such a way that their surface planes cast imaginary lines that would converge at a common point. You could use three very long straightedges to adjust the angles so that the lines from the three planes converge, but the method outlined below is probably most practical.

1. Set the magnification and roughly focus the projected image.
2. Tilt the easel until the desired degree of distortion or control is achieved. Slide a support under the easel to hold it in this position.
3. Release the lens tilt lock and simultaneously pivot the lens stage while adjusting the focus knob to bring the corrected image into focus, then tighten the lock.
4. Since the lens stage may only be tilted from left to right, the easel should only be tilted in the same direction. In other words, the easel should not be tilted from front to back to correct for distortion. If the projected image on the easel is not oriented properly for distortion correction, the negative carrier may be rotated in the negative stage to the desired position. Remember that opposite ends of the image will be at different magnifications, and you will need to either burn in the area furthest from the lens or dodge the area closest to the lens.
5. Once you have finished printing distortion controlled images, you should return the lens stage and the easel to their original positions. The lens stage has an indicator mark which will permit you to locate the original position. Realignment of the lens stage may be necessary.

E. Oversize Prints

When an extreme degree of enlargement is desired (greater than can be achieved on the baseboard) there are two simple ways to make oversize prints.

1. The entire projection assembly (lamphouse and bellows) can be easily rotated to permit wall projection. Make sure the pointer arrow on the carriage is set to No. 9 on the elevation scale to insure clearance between the lamphouse and frame. Slowly pivot the lamphouse assembly on its axis (pivot rod) 90° until the horizontal lock is engaged. To return the lamphouse to the vertical position, push the horizontal lock release to the right and slowly pivot the lamphouse back to vertical position.

2. 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 screws holding the enlarger to the base, turn the enlarger 180° and reassemble. (**NOTE:** When enlarger is rotated you will only be securing the frame using the four outermost screws).

VII. 23C III-XL DICHRO LAMPHOUSE

A. Electrical Connections

The 23C III-XL Dichro operates off of standard household current and may be plugged directly 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 shift on your prints. To protect against these fluctuations, a line voltage stabilizer is available for use with the colorhead. The colorhead plugs directly into the stabilizer (Cat. #6731) which, in turn, is plugged into the enlarging timer.

B. Components

The 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 chambers.

The interchangeable mixing chamber is designed to automatically lock into place within the color head. The standard 6x9 mixing chamber is already in the colorhead when you receive it.

Lift the front edge of the chamber slightly to clear the bottom lip. Then pull the mixing chamber straight out. Insert the other mixing chamber and push straight back. The chamber will drop in and locate in place. Slide the lamp and filter assembly back into the colorhead housing.

C. Filtration

By turning the appropriate knob on the Dichro lamphouse, any desired amount of cyan, magenta or yellow filtration may be introduced into the light path. The windows above the knobs are colorcoded to the color of filtration they control, and show the value of filtration selected for that color. Supplementary 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 lamphouse without disturbing the filter settings by using the white light lever on the right side of the colorhead. Pulling the lever toward 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 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 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 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 table below shows what filtration settings will approximate various paper grades on Agfa Multicontrast, Ilford, Multigrade, or Kodak Polymax papers.

Paper Grade	Multicontrast Filtration	Multigrade Filtration	Polymax 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

VIII. 23CIII-XL Variable Contrast Lamphouse

A. 23CIII-XL Connections

The 23CIII VC Lamphouse operates off of standard household current and may be plugged directly into the "Enlarger" receptacle on our enlarging timer. If the enlarger is being used in the vicinity of major appliances such as air conditioners, clothes dryers or electric ranges, fluctuations in line voltage may result in an undesirable contrast shift in your prints. To guard against these fluctuations, a line voltage stabilizer (Cat. #6731 which, in turn, is plugged into the enlarging timer.

B. Components

The lamphouse is composed of three assemblies—the housing, the lamp and filter assembly and the mixing chamber. The lamp and filter assembly is removed by sliding it up and out of the grooves on either side of the housing. You now have access to the mixing chamber.

The interchangeable mixing chamber is designed to automatically lock into place within the housing. The 6x9 mixing chamber is already in the lamphouse when you receive it.

C. Selecting the proper paper contrast control.

The 23CIII Variable Contrast Lamphouse is calibrated to offer proper filtration for the three major manufacturers of variable contrast paper. Adjust the paper selector lever until the window corresponding to the paper you are using is open.

D. Selecting the proper contrast.

Rotate the contrast control knob until the desired contrast number is visible through the window. The contrast number should be bisected by the reference line in the window. Intermediate grades can be chosen by turning the knob appropriately. **Note:** As manufacturers may make minor changes in their papers in their papers from time to time, these values should be considered as recommended starting points. You may wish to make your own tests.

IX. ADJUSTMENTS

Beseler enlargers are engineered to provide accurate, smooth and dependable performance, even under severe working conditions. Occasionally, adverse conditions or a need for moving the enlarger may disturb the alignment of the one of its working parts. The following hints for their correction will help the owner avoid loss of time.

Use of the Beseler Bilateral Alignment Tool (#8139) will greatly aid in the alignment process.

A. Alignment of the Negative Stage

Place a sheet of glass or a suitable absolutely flat surface on the lower negative stage so that it extends beyond the casting. Close the negative stage.

Technique #1 – Place one side of a carpenter's square on the baseboard and the opposite end in contact with the underside of the glass in the negative stage (see Fig. 8).

Technique #2 – Place a bubble level on the baseboard parallel to the sides of the baseboard. Note the position of the bubble. This will be the reference point for front to back alignment. Turn the level until it is now parallel to the front of the base board. Again note the position of the bubble. This will be your reference for side to side alignment. You will now measure alignment by placing the level on the glass parallel to the side (for front to back alignment) and parallel to the front (for side to side alignment).

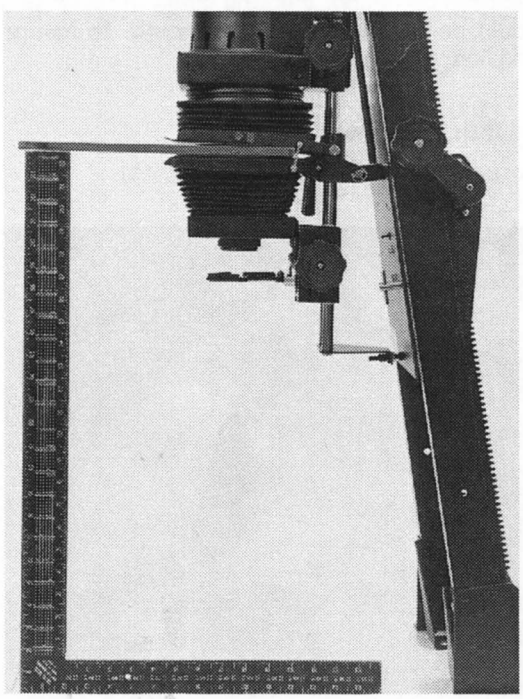


Figure 8

Front to Back Alignment.

1. Loosen the lock nut and turn the vertical adjustment screw (see Fig. 9) until a level condition is achieved.
2. Tighten lock nut while being careful not to turn the vertical adjustment screw.

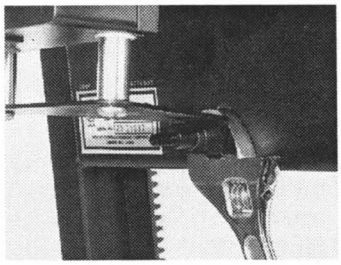


Figure 9

Side to Side Alignment.

1. Loosen the hex socket head screw on the back of the carriage just enough to be able to turn the eccentric nut that holds the horizontal bracket to the carriage. (Use the hexagonal key provided with the unit.)2. Turn the eccentric nut slowly in the appropriate direction until the level of the negative stage matches the reference point on your bubble level.
3. Tighten the hex socket head screw while holding the eccentric nut to prevent it from turning.

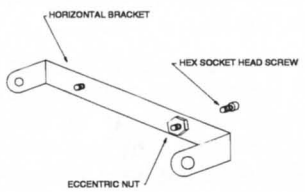


Figure 10

B. Alignment of Lens Stage

In normal operation, the lens stage in "zero" position should be parallel to the baseboard. To insure this condition, proceed as follows:

Side to Side Alignment.

1. Loosen the Lens Tilt Lock (see Fig. 11).

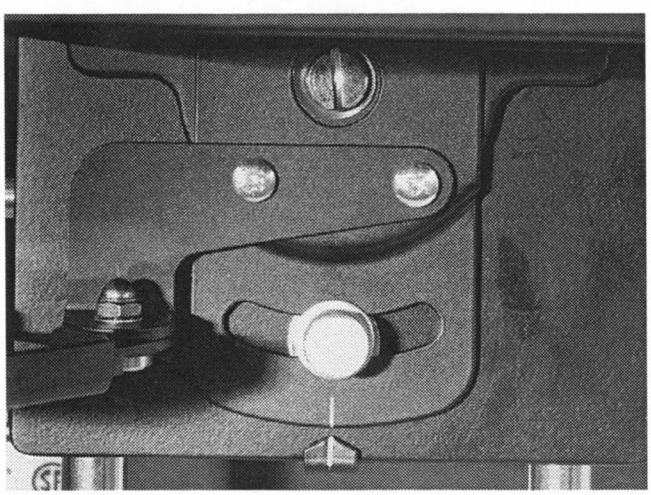


Figure 10

2. Place a bubble level or carpenter's square in contact with the underside of the lens stage casting (see Fig. 12). Level by moving the lens stage from side to side. The lens stage should be parallel to the baseboard.
3. Tighten the Lens Tilt Lock.

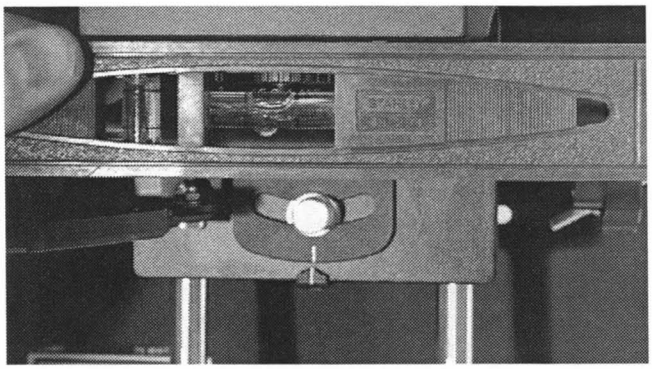


Figure 12

4. If necessary, readjust lower indicator by loosening the mounting screw and aligning with the upper indicator.

Front to Back Alignment. (see Fig. 13)

1. Loosen the Phillips head screw which holds the Alignment Screw Locking Plate. Slide the plate out of the way and retighten the Phillips head screw.

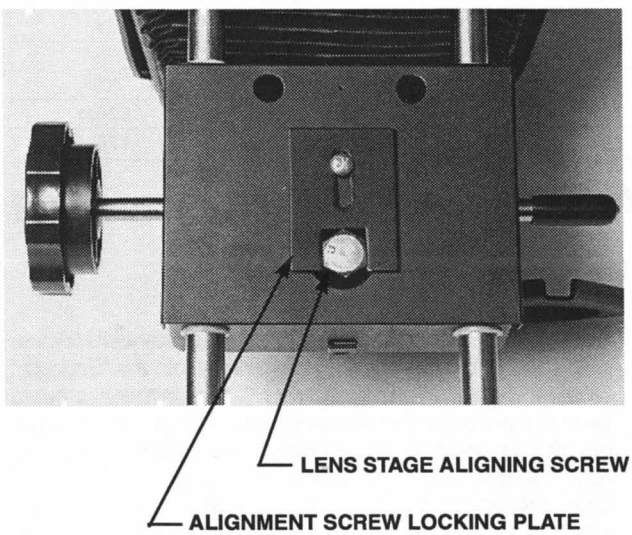


Figure 13

2. Loosen the Lens Tilt Lock (see Fig. 11).
3. Place the bubble level or carpenter's square in contact with the underside of the lens stage casting in a front to back position.
4. Turn the Lens Stage Aligning Screw as necessary.
5. Retighten the Lens Tilt Lock and check the alignment. **The alignment must be checked only after the Lens Tilt Lock has been tightened.**
6. If the lens stage is not aligned, repeat steps 2-5 until successful.
7. Loosen the Phillips head screw holding the Alignment Screw Locking Plate. Slide the plate down to its original position and retighten the Phillips head screw.
8. At this point, you should recheck side to side alignment.

C. Aligning Carriage in Frame

If the carriage should ever need to be realigned (that is, if either gear on the carriage should jump a tooth on the track), correct it as follows:

1. Remove the two screws and nuts holding the right-hand guard (Pt. No. 10-07680-03, reference number 101 on exploded view - p.13).
2. Pull the guard away from the frame and push the elevating shaft toward the back of the enlarger. This will disengage the right gear from the track and it may be engaged in the correct position.
3. Replace the guard and the two screws and nuts.

D. Adjustment for Condenser or Focus Setting

The upper housing adjustment is located directly behind the lamphouse and the lower housing adjustment (Focus) directly behind the lens stage assembly.

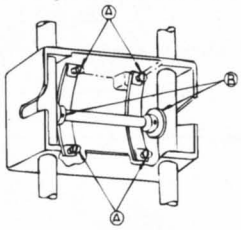


Figure 14

1. Pry the sheet metal cover from the enlarger and expose the two tension springs. (See Fig. 14).
2. Tighten the screws (A) by turning them clockwise to increase tension.
3. If friction wheel (B) is slipping on focus shaft, tighten the set screws on the wheel.
4. Replace sheet metal cover.

NOTE: Minor adjustments of the spring tension is possible via the two 3/8" diameter holes located on the rear of the cover. These may eliminate the need to remove the entire cover under some circumstances. (See Fig. 13).

X. CHANGING LAMPHOUSES

Important Safety Instructions

CAUTION: Your 23CIII-XL Chassis utilizes two powerful counterbalance springs to insure smooth elevation during use. Failure to follow these instructions when changing the lamphouse will cause the carriage to jump up at a rapid rate and could cause damage to the enlarger and possible injury to the operator.

Before removing or changing the modular lamphouse, be sure to:

1. Raise carriage assembly to maximum elevation.
2. Secure carriage in place using the elevation lock (Item 15 in parts illustration Figure 2).

A. Removing Condenser Head Assembly

1. Unhook lower end of left and right springs from studs (see Fig. 15).
2. Loosen and remove the mounting screw on the back of the Upper Housing.
3. When replacing the Condenser Lamphouse with either the Dichro or V.C. Lamphouses it is necessary to remove the stage opening lever. Loosen the two set screws on the righthand cam (fig. 16) and remove the cam. Pull the shaft out from the left.
4. Remove the two shoulder screws holding the Upper Bellows Assembly to the negative stage.
5. Carefully pull the Condenser Head Assembly off the enlarger.

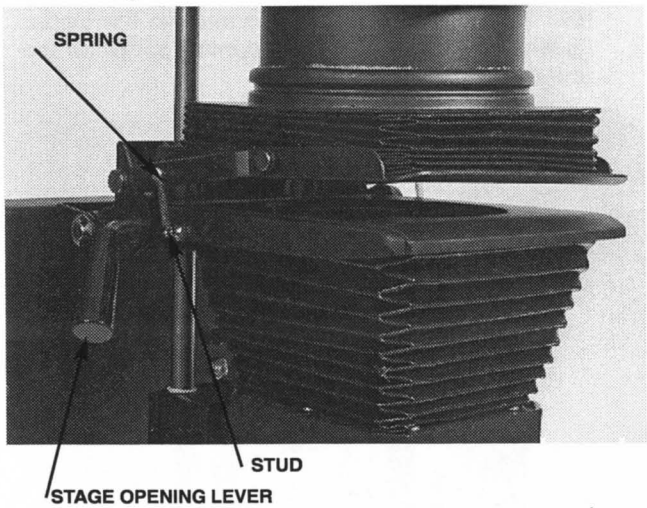


Figure 15

B. Removing Colorhead and Variable Contrast Head

1. Loosen and remove the mounting screw on the back of the Upper Housing.
2. Carefully pull the Lamphouse Assembly off the enlarger.

C. Installing Condenser Head Assembly

(See Figs. 15 and 16)

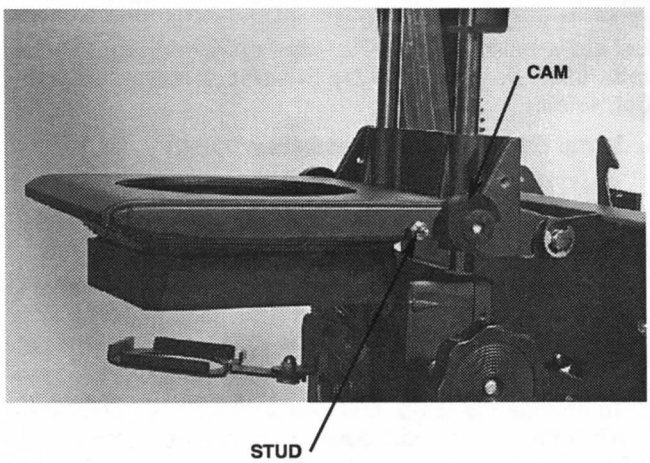


Figure 16

1. Install one stud on each side of the Negative Stage.
2. Install the Stage Opening Lever and the Plastic Cam. Tighten the two set screw on the cam with the Hex Key supplied.
3. Place Condenser Head Assembly on top of the Negative Stage.
4. Line up the holes on the back of the lamphouse with the two alignment pins on the Upper Housing (see Fig. 17). Secure the lamphouse to the Upper Assembly by tightening the mounting screw on the rear of the Upper Housing.
5. Secure the Upper Bellows Assembly to the negative stage using the shoulder screw and bow washers supplied.

D. Installing Colorhead and Variable Contrast Head

1. Place Lamphouse and on top of the Negative Stage.
2. Line up the holes on the back of the Colorhead with the two alignment pins on the Upper Housing (see Fig. 17). Secure the Colorhead to the Upper Assembly by tightening the mounting screw on the rear of the Upper Housing.

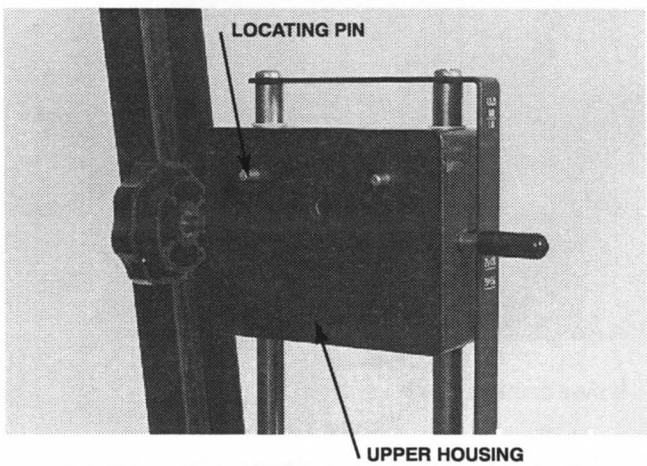


Figure 17

XI. MAINTENANCE

The Beseler 23C III-XL is designed to give years of trouble-free service; maintenance is minimal. The 23C III-XL should be kept free of dust to ensure high quality, clean prints. A heavy Pliofilm, transparent dust cover (Cat. #8047) is available from your Beseler dealer. Should any dust settle on the 23C III-XL, wipe off with an anti-static cloth, such as the Color by Beseler Anti-Static Cloth (Cat. #8956).

A. Lamp Replacement (Condenser Head)

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

When the lamp in your 23C III-XL 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 change the lamp, first unplug the power cord and allow the lamp to cool down. Remove the Lamphouse Cap (Fig. 2, Item 1) by loosening the Locking Screw (14) and lifting the cap straight up. To remove the lamp, hold the Lamphouse and turn the lamp counterclockwise. To insert the new lamp, place the lamp in the socket and turn clockwise. Replace Lamphouse Cap.

B. Lamp Replacement (Color and Variable Contrast Heads)

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

When the lamp in your colorhead burns out, replace with an ESJ lamp, 85W, 82V (Beseler Cat. #6728).

To replace the lamp, slide the lamp and filter assembly up from the housing. Pushing the relamping lever (see Fig. 18) 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. Return the relamping lever back to its original position then 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 down into the lamphousing assembly.

Figure 18

C. Condenser Cleaning

Be sure the condensers are free of dirt and dust. Clean regularly with a blower brush or filtered compressed are such as Beseler Dust Gun. If necessary, the condensers may be removed and cleaned with lens cleaning tissue or a soft cloth such as the Color by Beseler Anti-Static Cloth (Cat. #8956). Refer to the exploded view for details of the condenser chamber construction. (**Note:** The two condensers are not the same, the upper condenser is thinner than the lower condenser.)

D. 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.

E. Gear Replacement

The gears in the 23C III-XL elevating mechanism should not need replacement under normal operating conditions. Extreme gear wear is due to failure to release the Elevation Lock prior to lowering or raising the lamphouse. If the gears should become excessively worn, requiring replacement, order a gear replacement kit (Part No. 7002) from your authorized Beseler dealer. The replacement procedure is as follows:

Tools required:
#2 Phillips head screwdriver
1/8" drift punch
hammer

1. Position carriage to approximately mid-elevation and lock securely with elevation lock.
2. From rear of enlarger, remove left guard (Item no. 101 on Exploded View) by unscrewing two Phillips head screws. Remove bow washer and flat washer and place aside.
3. Using a small drift punch (approximately 1/8") and hammer, drive roll pin (Item no. 84) out of shaft. Use new pin in kit.
4. Remove gear.
5. Replace new gear by lining up hole in gear with hole in shaft and driving in the roll pin. Replace washers – flat washer first, then bow washer with rounded side against flat washer.
6. Replace gear guard and both screws.
7. The procedure for replacing the right gear is the same, except that the elevation crank must be removed prior to removing the guard. Simply unscrew the Phillips head screw holding the crank in place and pull from shaft. After the right gear and guard are replaced, place crank on shaft and tighten Phillips head screw.
8. Check alignment and correct, if needed, by following the alignment procedure described in the previous section.

XII. ACCESSORIES

Negative Carriers (Glassless)
8053 for 35mm (24 x 36mm)
8055 for 35mm (full format 25 x 37mm)
8048 for 1 5/8" x 2 1/4" (6 x 4.5cm)
8060 for 2 1/4" x 2 1/4" (6 x 6cm)
8070 for 2 1/4" x 2 3/4" (6 x 7cm)
8062 for 2 1/4" x 3 1/4" (6 x 9cm)
8054 for 35mm mounted slides (2" x 2")

Special Negative Carriers
8072 Universal Anti-Newton Glass Carrier for all films up to 2 1/4" x 3 1/4" (6 x 9cm)

8074 Universal Glass Carrier for all films up to 2 1/4" x 3 1/4" (6 x 9cm)

8066 Anti-Newton Glass Carrier for 35mm negatives

Negatrans®
The Beseler Negatrans® is a patented carrier that effortlessly transports film in roll, strip or single frame format into and out of your 23C III-XL enlarger. Once the Negatrans® is inserted into the negative stage, it need not be removed nor the stage opened to insert, advance or remove the negative.

One Negatrans® **(8081)** is available for handling 35mm film and is a glassless carrier. The other **(8082)** handles 2 1/4" x 2 1/4" and 2 1/4" x 2 3/4" film and contains a single pressure glass for flattening the film. Adapter **(8092)** for 6 x 4.5cm is available.

Lensboards (for 39mm mount lenses)
8022 for lenses from 35mm – 40mm
8021 for lenses from 50mm – 60mm
8023 for lenses from 53mm – 90mm
8029 for lenses from 100mm – 105mm

Special Lensboards
8016 Center-drilled lensboards, pilot hole 1/4" diameter. Requires boring by customer.

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

Catalog #		Film Format
8670	Beslar 50mm, f/3.5 to f/16	35mm (24x36mm)
8680	Beslar 75mm, f/3.5 to f/22	2 1/4" x 2 1/4" (6x6cm)
8682	Beslar 90mm, f/4.5 to f/22	2 1/4" x 2 3/4" (6x7cm)
8684	Beslar 105mm, f/4.5 to f/22	2 1/4" x 3 1/4" (6x9cm)
9170	Beslar Lens Kit Consists of 50mm f/3.5 Beslar lens (8670) with lensboard (8021) and 35mm negative carrier (8053)	

Beseler-HD Lenses
State-of-the-art 6 element lenses feature illuminated aperture, pre-set diaphragm and removable full and half stop detents. Includes lens cap and jam nut.

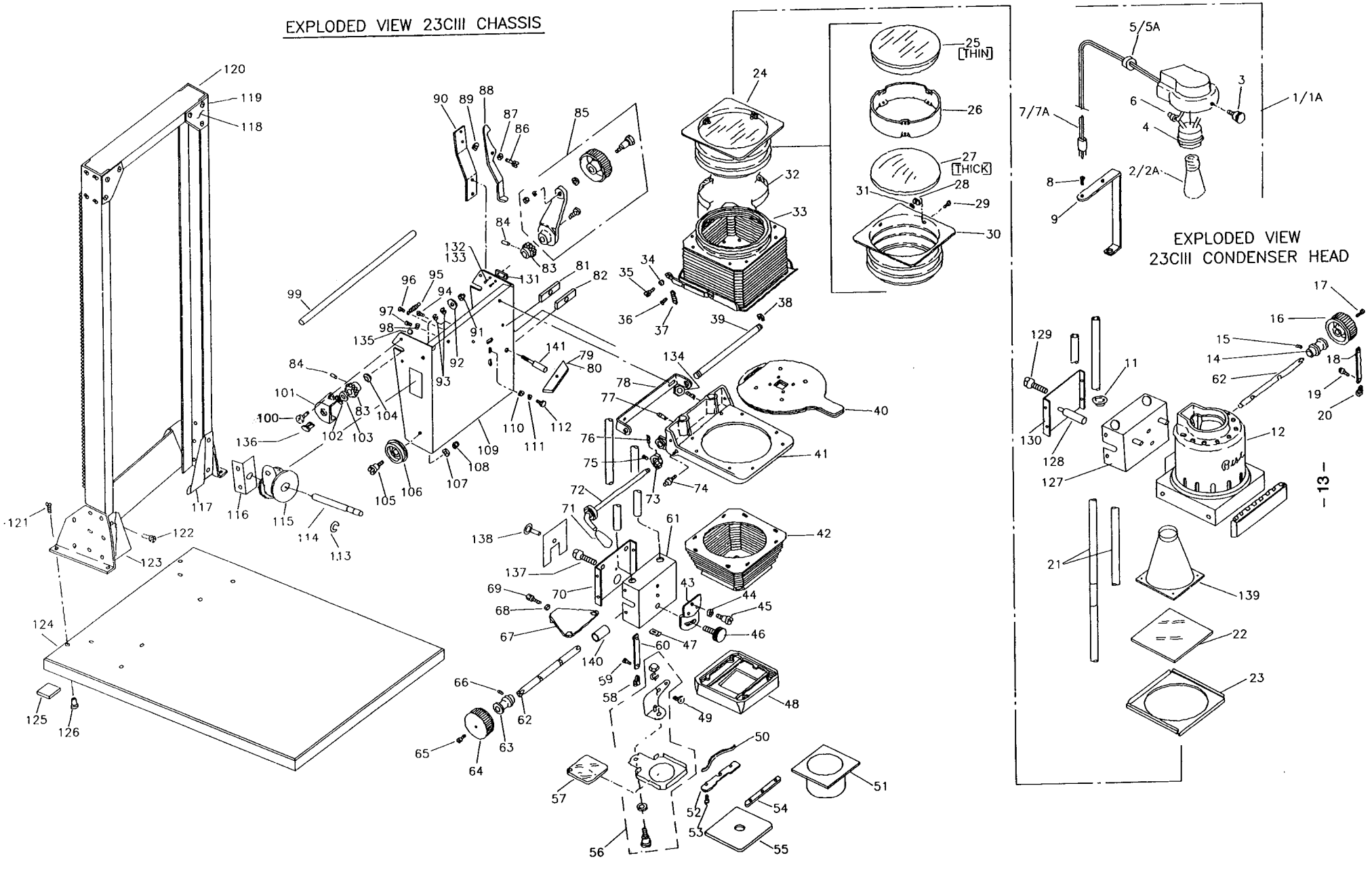
Catalog #		Film Format
8640	Beseler-HD 50mm, f/2.8 to f/16	35mm (24x36mm)
8641	Beseler-HD 80mm, f/4 to f/22	2 1/4" x 2 1/4" (6x6cm)
8642	Beseler-HD 105mm, f/5.6 to f/22	2 1/4" x 3 1/4" (6x9cm)
9170	Beseler-HD Lens Kit Consists of 50mm f/2.8 Beseler-HD lens (8640) with lensboard (8021) and 35mm negative carrier (8053)	

Lamps
8101 75W 120V for condenser head
8114 75W 220V for condenser head
6728 85W 82V for color and variable contrast heads

Accessories
8047 Dust cover for 23 Series enlargers
8040 Red Safety Filter (replacement)
8038 Tempguard Filter
8042 Heat-Absorbing Glass
8163 Light Integrator
8177 Audible/Repeating Enlarging Timer
8187 Digital/Audible Enlarging Timer
8179 Footswitch to use with Enlarging Timers

23C III-XL PARTS LIST

REF. NO.	DESCRIPTION	PART/CAT. NO.
1	Lamp Cap Assembly	10-43755-15
1A	Lamp Cap Assembly (240V)	10-43755-20
2	Lamp, PH140	8101
2A	Lamp, PH1400 (240V)	8114
3	Knob	568-20-05
4	Lamp Socket	625-82-07
5	Strain Relief	600-82-30
5A	Strain Relief (240V)	600-82-25
6	Wire Nut	600-25-22
7	Cord Set	10-43748
7A	Cord Set (240V)	10-43743
8	Screw, Machine 1/4-20x3/8 Lg.	527-12-02-01
9	Indicator, Negative Size	10-07684
10	Cover	10-07686
11	Bushing, Snap .562 Mount	570-50-33
12	Lamp Housing Assembly	10-54642
13	Shaft	10-07690
14	Friction Wheel	10-07651
15	Set Screw, Headless 8-32x3/16	540-20-60
16	Knob	568-05-07
17	Screw, Machine 6-32x1/2 Lg.	519-16-02-01
18	Tension Spring	10-07650
19	Screw, Machine 6-32x3/4 Lg.	519-24-02-01
20	Speed Nut, U-Type 6-32 Tinn	555-05-31
21	Guide, Rod	10-44057-01
22	Heat Absorber Glass (Accessory)	8042
23	Filter Holder	10-07685
24	Condenser Assembly	10-07662
25	Condenser, Upper	680-14-45
26	Spacer	10-07664
27	Condenser, Lower	680-22-07
28	Pad	10-07665
29	Screw, Tapp 4Bx3/8 Lg.	538-13-12-30
30	Condenser Housing	10-07663
31	Speed Nut, Flat 4Z Tinn	555-01-03
32	Light Seal	10-07661
33	Upper Bellows Assembly	10-07659
34	Bow Washer, 1/4IDx1/2ODx3/32H	549-20-17
35	Shoulder Screw, 10-24x.406 Lg.	540-30-46
36	Screw, Tapp 6Bx1/4 Lg.	538-19-08-37
37	Spring, Wire Ext. .173OD	562-70-09
38	Retaining Ring, E Type 3/8 Shaft	555-26-14
39	Shaft	10-07679
40	Negative Carrier	Accessory
41	Lower Negative Stage	10-07642
42	Lower Bellows	10-07653
43	Tilt Plate	10-07627
44	Bow Washer, 21/64IDx9/16ODx1/8H	549-20-25
45	Shoulder Screw, 1/4-20x.642 Lg.	540-30-57
46	Knob	568-20-31
47	Indicator	10-07628
48	Lens Stage	10-44052
49	Screw, Machine 6-32x5/16 Lg.	521-10-02-01
50	Spring	10-04543
51	Lens Extension	Accessory
52	Rear Retainer	10-04542
53	Screw, Tapp 4BTx3/8 Lg.	538-13-12-31
54	Forward Retainer	10-44056
55	Lensboard	Accessory
56	Filter Holder Assembly	10-43758
57	Filter, Safety	8040
58	Speed Nut, U-Type 6-32 Tinn	555-05-31
59	Screw, Mach 6-32x3/4	519-24-02-01
60	Tension Spring	10-07650
61	Lower Housing	10-07649-03
62	Shaft	10-07652
63	Friction Wheel	10-07651
64	Knob	568-05-07
65	Screw, Mach 6-32x1/2 Lg.	519-16-02-01
66	Set Screw, Headless 8-32x3/16	540-20-60
67	Vertical Stop	10-07645
68	Nut, Hex 1/4-20	545-27-20-01
69	Screw, Machine 1/4-20x1-1/2 Lg.	527-48-40-45
70	Cover	10-54624
71	Knob	568-40-06
72	Stage Opening Lever	10-07630
73	Cam	7000
74	Stud	10-04613-01
75	Set Screw, Headless 6-32x3/16	540-20-13
76	Set Screw, Headless 6-32x3/8	540-20-17
77	Set Screw, Headless 1/4-20x5/16	540-22-52
78	Bracket	10-59628
79	Knob	568-99-01
80	Set Screw #8-32x3/16	540-22-79
81	Bar, Clamping	10-53790-01
82	Bar, Clamping	10-53790-02
83	Gear }	Gear Replacement
84	Roll Pin }	Kit 7002
85	Elevating Handle Assembly	7003
86	Shoulder Screw, 10-24x.380 Lg.	540-30-12
87	Bow Washer 17/64IDx9/16ODx1/16H	549-20-18
88	Latch	10-07612
89	Washer, 10x1/2OD	548-24-09
90	Stop	10-07609
91	Lock Nut, Hex 10-32	546-57-13
92	Washer, 10x3/4OD	548-24-29
93	Lockwasher, #10	549-40-15
94	Screw, Tapp 6Bx3/16 Lg.	538-19-06-08
95	Spring, Wire .218OD	562-70-14
96	Screw, Machine 10-32x3/16 Lg.	524-06-02-01
97	Screw, Machine 10-32x3/8 Lg.	524-12-02-01
98	Lockwasher, #10	549-40-15
99	Shaft	10-44051
100	Screw, #8-32x1/2 Lg.	521-16-02-05
101	Guard	10-07680-03
102	Bow Washer, 25/64IDx5/8ODx3/32H	549-20-27
103	Washer, .377IDx.792ODx.031	548-46-16
104	Washer, 25/64IDx3/4ODx1/16 (2 pcs.)	548-48-13
105	Shoulder Screw, 10-32x53/64	540-30-28
106	Roller	10-07606
107	Washer, 10x1/2OD	548-24-09
108	Nut, Lock Hex 10-32	546-57-13
109	Cross Carriage	10-07626
110	Washer, 10x1/2OD	548-24-09
111	Lockwasher #10	549-40-15
112	Screw, 10-24x3/8 Lg.	523-12-60-02
113	Retaining Ring, E Type	555-26-14
114	Shaft, Spring Drum	10-43722
115	Constant Force Spring Assembly	10-43718
116	Bracket, Spring Drum Mounting	10-43723
117	Gusset, Lower Frame (R. H.)	10-43726-02
118	Gusset, Upper Frame	10-07746
119	Screw, Tapp 8Bx3/8 Lg.	538-21-12-06
120	Frame Assembly	10-43717
121	Screw, Machine 1/4-20x7/8 Lg.	527-28-32-01
122	Screw, Tapp 10Bx5/16 Lg.	538-23-10-02
123	Gusset, Lower Frame (L. H.)	10-43726-01
124	Baseboard	10-43728-02
125	Pad, Baseboard	10-42018
126	Tee Nut, Propeller 1/4-20	546-40-15
127	Upper Housing	10-54635
128	Spacer	557-21-53
129	Screw 5/16-18x2 1/2	527-80-40-02
130	Cover	10-54645-02
131	Block	10-54629
132	Screw #8-32F	538-21-16-23
133	Washer #8	548-22-02
134	Eccentric Nut	546-80-10
135	Nut #8-32	546-55-06
136	Bearing	560-50-40
137	Alignment Screw	540-80-15
138	Screw, #8-32x5/16 Lg.	521-10-02-01
139	Baffle-Light	10-07672-02
140	Cap	570-42-71
141	Clamp Screw	10-54638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23C III-XL COLORHEAD REPLACEMENT PARTS LIST

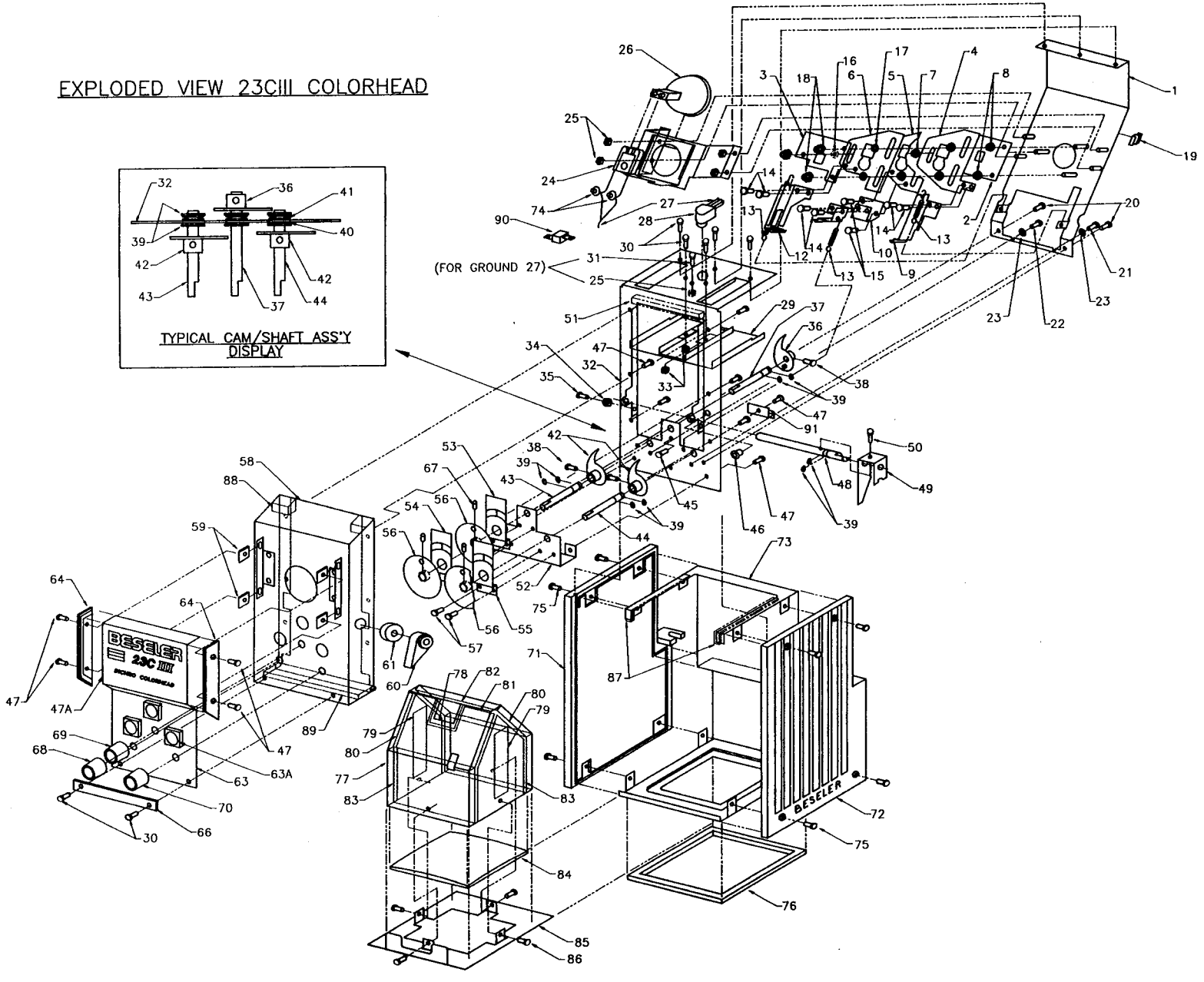
REF. NO.	DESCRIPTION	PART/CAT. NO.
1	Rear Chassis Plate	10-42627
2	Bottom Aperture Plate	10-42661-01
3	Top Aperture Plate	10-42661-02
4	Bottom Blade (Cyan) Assembly	10-42624
5	Center Blade (Magenta) Assembly	10-42623
6	Top Blade (Yellow) Assembly	10-42622
7	Blade Spacer	10-42658
8	Blade Guide Spacer	10-42657
9	Bottom Blade Follower	10-42667
10	Center Blade Adapter	10-42687
11	Center Blade Follower	10-42686
12	Top Blade Follower	10-42666
13	Filter Blade Spring	10-35755
14	Machine Screw 2-56x3/32 Pan	509-03-01-01
15	Machine Screw 2-56x1/8 Flat	509-04-90-01
16	Flat Washer #6x3/8	548-18-07
17	Flat Washer #6x1/2	548-18-18
18	Locknut 6-32	546-57-07
19	Wire Clip	555-40-08
20	Sems Screw 6-32	540-60-48
21	Machine Screw 4-40x7/16 Pan	515-14-02-01
22	Machine Screw 4-40x5/16 Pan	515-10-02-01
23	Lockwasher #4	549-47-02
24	Lamp Holder/Bracket	10-46183-91
25	Keps Nut 4-40	546-55-04
26	Enlarger Lamp 85W/82V	Cat. #6728
27	Power Cord	10-46186
28	Power Cord Bushing	600-82-28
29	Light Trap	10-42672
30	Machine Screw 4-40x1/4 Pan	515-08-02-06
31	Machine Screw 6-32x1/4 Pan	519-08-02-01

REF. NO.	DESCRIPTION	PART/CAT. NO.
32	Front Chassis Plate	10-51622
33	Keps Nut 4-40	546-55-02
34	Plain Nut 4-40	545-15-20-01
35	Machine Screw 4-40x3/8 Fill.	515-12-11-40
36	Center Cam	10-42711-02
37	Center Cam Shaft	10-42665
38	Sems Screw 4-40x1/4 Pan Slot	540-60-27
38A	Clip, Holddown	10-42736
39	Retaining Ring "E" Type 1/4	555-26-10
40	Flat Washer #14x1/2	548-32-07
41	Bow Washer 17/64ID	549-20-34
42	Side Cam	10-42711-01
43	Left Cam Shaft	10-42664-01
44	Right Cam Shaft	10-42664-02
45	Sems Screw 4-40x1/4 Pan	540-60-47
46	Bullet Catch 1/4 Dia.	570-10-17
47	Tap Screw #4Bx3/8 Pan	538-13-12-30
47A	Nameplate	10-54665
48	White Light Shaft	10-42681
49	White Light Actuator Lever	10-42676
50	Cap Screw 4-40x1/2 Pan	515-16-53-01
51	Light Trap Top Cushion	10-42706
52	Shaft Support Bracket	10-42654
53	Index Holder (Magenta)	10-42617
54	Index Holder (Yellow)	10-42618
55	Index Holder (Cyan)	10-42619
56	Dial	10-42634
57	Sems Screw 2-56x1/8 Pan	540-60-55
58	Front Cover	10-42638
59	Speed Nut "U" Type #4B	555-05-23

REF. NO.	DESCRIPTION	PART/CAT. NO.
60	White Light Handle	568-32-08
61	Light Trap Actuator Cushion	10-42705
63	Front Plate	10-51614
63A	Bezel	10-42729
64	Side Panel	10-42653
66	Front Plate Bar	10-42689
67	Set Screw 4-40x3/32 Oval	540-20-62
68	Dial Knob (Yellow)	568-01-83
69	Dial Knob (Magenta)	568-01-84
70	Dial Knob (Cyan)	568-01-85
71	Lamphouse Side (Left)	10-42091-01
72	Lamphouse Side (Right)	10-42091-02
73	Lamphouse Wraparound Assembly	10-54647
74	Wire Connector	600-25-22
75	Tap Screw #6Bx6/16 Pan	538-19-10-12
76	Lamphouse Cushion	10-42124
77	Mix Chamber	10-42614-20
78	Heat Filter	10-42685
79	Tape (Both Ends)	10-42713
80	Liner (Both Ends)	10-51624-01, -02
81	Liner (Filter Side/Top)	10-42678-01
82	Liner (Side/Top)	10-42678-02
83	Liner (Both Sides/Bottom)	10-42678-03
84	Diffuser	10-51626
85	Bottom Plate	10-51625
86	Tap Screw #4Bx1/4 Pan	538-13-06-32
87	Light Trap Frame Cushion	10-42716
88	Corner Cushion	10-42704
89	Bottom Cushion	10-42707
90	Rectifier	635-70-22

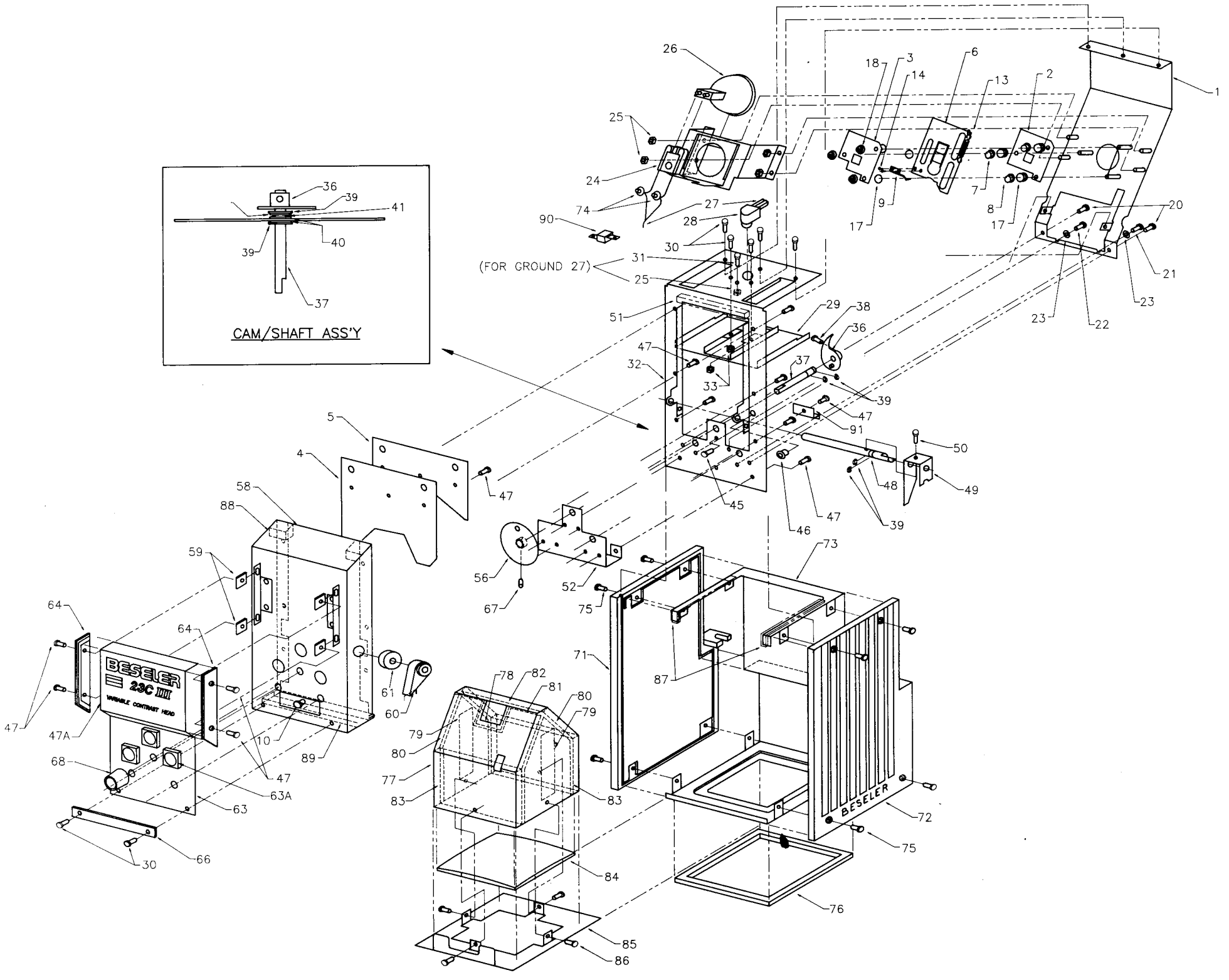
EXPLODED VIEW 23CIII COLORHEAD

TYPICAL CAM/SHAFT ASS'Y DISPLAY



23C III-XL V.C. HEAD REPLACEMENT PARTS LIST

REF. NO.	DESCRIPTION	PART/CAT. NO.
1	Rear Chassis Plate	10-54710
2	Bottom Aperture Plate	10-54715-01
3	Top Aperture Plate	10-54715-02
4	Filter-Windows	10-42624
5	Holder-Filter	10-42623
6	Filter Blade Assembly	10-42622
7	Blade Spacer	10-42658
8	Blade Guide Spacer	10-42657
9	Blade Follower	10-42667
10	Knob	10-42687
13	Filter Blade Spring	10-42686
14	Machine Screw 2-56x3/32 Pan	509-03-01-01
15	Machine Screw 2-56x1/8 Flat	509-04-90-01
16	Flat Washer #6x3/8	548-18-07
17	Flat Washer #6x1/2	548-18-18
18	Locknut 6-32	546-57-07
19	Wire Clip	555-40-08
20	Sems Screw 6-32	540-60-48
21	Machine Screw 4-40x7/16 Pan	515-14-02-01
22	Machine Screw 4-40x5/16 Pan	515-10-02-01
23	Lockwasher #4	549-47-02
24	Lamp Holder/Bracket	10-46183-91
25	Keps Nut 4-40	546-55-04
26	Enlarger Lamp 85W/82V	Cat. #6728
27	Power Cord	10-46186
28	Power Cord Bushing	600-82-28
29	Light Trap	10-42672
30	Machine Screw 4-40x1/4 Pan	515-08-02-06
31	Machine Screw 6-32x1/4 Pan	519-08-02-01
32	Front Chassis Plate	10-51622
33	Keps Nut 4-40	546-55-02
34	Plain Nut 4-40	545-15-20-01
35	Machine Screw 4-40x3/8 Fill.	515-12-11-40
36	Cam Ass'y.	10-54666
37	Cam Shaft	10-54684
38	Sems Screw4-40x1/4 Pan Slot	540-60-27
38A	Clip, Holddown	10-42736
39	Retaining Ring "E" Type 1/4	555-26-10
40	Flat Washer #14x1/2	548-32-07
41	Bow Washer 17/64 ID	549-20-34
45	Sems Screw 4-40x1/4 Pan	540-60-47
46	Bullet Catch 1/4 Dia.	570-10-17
47	Tap Screw #4Bx3/8 Pan	538-13-12-30
48	WhiteLight Shaft	10-42681
49	White Light Actuator Lever	10-42676
50	Cap Screw 4-40x1/2 Pan	515-16-53-01
51	Light Trap Top Cushion	10-42706
52	Shaft Support Bracket	10-42654
56	Dial Ass'y.	10-54685
57	Sems Screw 2056x1/8 Pan	540-60-55
58	Front Cover-Sub-Ass'y.	10-54669
59	Speed Nut "U" Type #4B	555-05-23
60	White Light Handle	568-32-08
61	Light Trap Actuator Cushion	10-42705
63	Front Plate	10-54680
63A	Bezel	10-42729
64	Side Panel	10-42653
66	Front Plate Bar	10-42689
67	Set Screw 4-40x3/32 Oval	540-20-62
68	Dial Knob	568-01-83
71	Lamphouse Side (Left)	10-42091-01
72	Lamphouse Side (Right)	10-42091-02
73	Lamphouse Wraparound Assembly	10-54647
74	Wire Connector	600-14-22
75	Tap Screw #6Bx6/16 Pan	538-19-10-12
76	Lamphouse Cushion	10-42124
77	Mix Chamber	10-42614-20
78	Heat Filter	10-42685
79	Tape (Both Ends)	10-42713
80	Liner (Both Ends)	10-51624-01, -02
81	Liner (Filter Side/Top)	10-42678-01
82	Liner (Side/Top)	10-42678-02
83	Liner (Both Sides/Bottom)	10-42678-03
84	Diffuser	10-51626
85	Bottom Plate	10-51625
86	Tap Screw #4B1/4	538-13-06-32
87	Light Trap Frame Cushion	10-42716
88	Corner Cushion	10-42704
89	Bottom Cushion	10-42707
90	Rectifier	635-70-22


CAM/SHAFT ASS'Y
(FOR GROUND 27)
BESELER
23C
VARIABLE CONTRAST HEAD
BESELER

LIMITED ONE YEAR WARRANTY

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

Charles Beseler Company 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.

The Warranty does not apply to our products which show evidence of accidental damage, misuse or abuse by you. The Warranty also does not apply to our products which are defective or damaged by tampering or attempted repair by an unauthorized Beseler agent.

Beseler exclusively limits this Warranty to repair or replace (at Beseler's option) the defective part of its product. If you decide to send our product to our authorized repair outlet, 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 lease 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 TO 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 OR DAMAGES RESULTING FROM INTERRUPTION IN OPERATION OF EQUIPMENT, DAMAGE TO FILM OR PAPER, OR FOR INCIDENTAL, DIRECT OR CONSEQUENTIAL DAMAGES OF ANY NATURE.

Some states do not allow the exclusion of 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 and workmanship of our product you may contact our Customer Service Department at Charles Beseler Company, 1600 Lower Road, Linden, N.J. 07036. 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 sales receipt indicating that you are the original purchaser.

Note: All "in-warranty" repairs must be performed by Beseler. Beseler does not authorize any repair work by third parties.
(Terms and specifications subject to change without notice.)

IMPORTANT! KEEP THIS INFORMATION HANDY FOR FUTURE REFERENCE

KEEP YOUR SALES RECEIPT!

SERVICE IMFORMATION:

(Applicable in U.S.A., Outside U.S.A. See Local Distributor)

Should you need service for your BESELER photographic equipment after the warranty has expired, 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, 1600 Lower Road, Linden, N.J. 07036.

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

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. No work will be undertaken or billed until written approval of the estimate is received.

CHARGES. Your local Beseler dealer has a list of current price ranges to service Beseler photographic equipment. Any repair likely to exceed the maximum recommended service price will be estimated and held for your approval before work is begun.

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.)

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

IN-WARRANTY SERVICE. There is no charge for service performed during the warranty period. PROOF OF PURCHASE is required for warranty service and must be enclosed with the return. Terms of the warranty are explained above.

BESELER

Engineered to Perform ... Designed to Endure.

Charles Beseler Company, 1600 Lower Road, Linden, N.J. 07036-6514, (908) 862-7999

Specifications subject to change without notice.