

# ZONE VI

ENLARGER INSTALLATION MANUAL

Photo: Brooks Brown



*Please read this assembly instruction  
booklet prior to assemblage.*



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**The following accessories are available:****The Enlarger**

5 x 7 enlarger with 44" column .....	EN6047K
5 x 7 enlarger with 60" column .....	EN6063K
32" x 32" baseboard: adds 3" (76 mm) to column height .....	EN5420
Wall mount kit .....	EN5421

**Heads and Adapters**

5 x 7 variable contrast cold light head .....	EN6657
5 x 7 cold light head .....	EN6505
8 x 10 variable contrast cold light head .....	EN6680
8 x 10 cold light head .....	EN6508

**Negative Carriers**

35 mm .....	EN5735
6 x .5 cm .....	EN57645
6 x 6 cm .....	EN5766
6 x 7 cm .....	EN5767
6 x 9 cm .....	EN5769
6 x 12 cm .....	EN57612
6 x 17 cm .....	EN57617
4 x 5 .....	EN5745
4 x 5 stretch-out carrier .....	EN57455
5 x 7 .....	EN5757
5 x 7 glass anti-newton .....	AA0710

**Lens Boards**

39 mm drilled board .....	EN5539
52 mm drilled board .....	EN5550
58 mm drilled board .....	EN5555
70 mm drilled board .....	EN5566
75 mm drilled board .....	EN5572
81 mm drilled board .....	EN5577
Blank board .....	EN5500

## PACKING LIST

All of the major components of the Zone VI enlarger come in individually numbered boxes. The lenses, lens boards, negative carriers and wall mount kit arrive in a non-numbered box. The major components are numbered accordingly:

**Box #1**— Enlarger chassis

**Box #2**— The baseboard

**Box #3**— The column counterweight

**Box #4**— The enlarger column (either a 44" or 60")

**Box #5**— A light source

Upon opening each box, please check to see that all components have been received. The contents of each box are as follows:

**Box 1 contents:**

One enlarger chassis  
 Assembly instructions  
 Warranty registration card  
 Two adhesive-backed cable holders  
 One 5/64" Allen wrench (for removing the negative stops— 8 x 10 head only)  
 One 7/64" Allen wrench (for leveling the negative stage)  
 One 5/32" Allen wrench (for attaching the pulley block and baseboard)  
 One 5 mm Allen wrench (for attaching the elevating wheel handle)  
 One 3/32" Allen wrench (for adjusting the riser panel tilt)  
 One elevation wheel handle

**Box 2 contents:**

One baseboard  
 Two baseboard support beams  
 Four 1/4-20 x 2" BH screws  
 Four 1/4-20 nuts  
 Two 1/4-20 x 3/4" BH screws  
 Four 1/4-20 lock washers

**Box 3 contents:**

One lead column counterweight

**Box 4 contents:**

One enlarger column  
 A cable (for the column counterweight)  
 A pulley assembly  
 Four 10-32 x 1" cap screws  
 A column cap (attached to the top of the column)  
 One 10-24 nut (attached to the end of the weight cable)

**Box 5 contents:**

One light source  
 Two power cords  
 One control box (for variable contrast heads)

Other items needed to assemble the enlarger are a 7/16" or adjustable wrench (for baseboard assembly), a piece of thick glass 16" long for aligning purposes (a medicine cabinet shelf is fine), two dowels 24" long, and someone to help you lift it once it's assembled. The dowels and glass are for temporary alignment; for permanent alignment, we recommend the use of an alignment tool such as a laser alignment device. (Ask your sales rep for details!) Another item you might consider adding to your arsenal is a spanner wrench to mount your lenses.

## ASSEMBLING THE ENLARGER

### Baseboard to Column Assembly

As most of the enlargers we sell come complete with a baseboard, we will begin here. If you are wall mounting only, refer to the wall mount assembly section on page 4.

- 1 Unpack box #4 (the enlarger column). Take the column and lay it on the floor with the scale facing up. Prop up the open end of the column so that the back of the mounting plate lies flush to the floor.
- 2 Unpack box #2 (the baseboard). This is where your assistant becomes invaluable. Position the baseboard so that the four holes along one side of the finished surface align with the four holes on the bottom of the column's mounting bracket (black side of the baseboard faces the column). Insert one of the long screws through the column mounting plate, then through the baseboard, and then through the matching hole in one of the aluminum channels supplied with the baseboard box. Slip a lock washer onto the screw's end and then finger-tighten a nut in place to keep things intact. Follow the same procedure with the three remaining sets of fasteners.
- 3 Align the two holes at the top of the channels with the screw inserts on the bottom of the baseboard, and insert the two short screws and tighten.
- 4 Lastly, tighten the four previously finger-tightened screws with the 5/32" Allen wrench as you hold the nuts with a 7/16" wrench, a pair of pliers or an adjustable wrench. (The Allen wrenches are supplied in box #1—the enlarger chassis.)

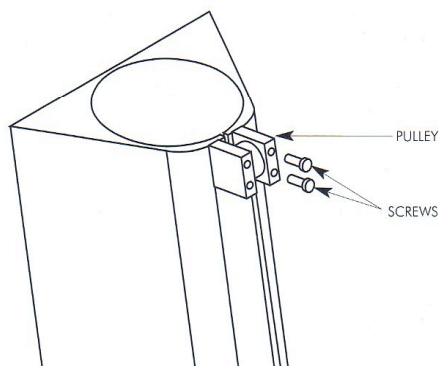


Figure 1

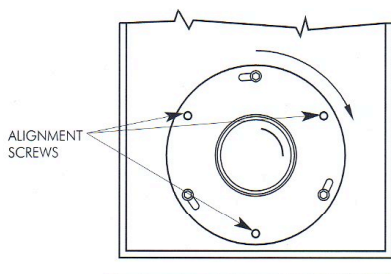


Figure 2

### Mounting the Chassis on the Column

- 1 Unpack box #1. Use extreme caution when removing the main chassis body. Once it's out of the box lay the chassis on its side; NEVER POSITION IT SO THAT THERE IS PRESSURE AGAINST THE LENS STAGE!
- 2 From the small bag of hardware (box #4, remove the cable and screw the threaded end about 1/4" into the threaded hole at the top rear of the chassis. Then tighten the jam nut (already on the cable) to hold the cable in position.
- 3 Stand the enlarger up on the floor. At the top of the column height scale is a small horizontal bar that clips on the column (column cap). Remove it by simply pushing up on it. This allows you free access to the gear track.
- 4 Slide the chassis over the top and down until the negative stage is about 18" from the bottom of the column. Tighten the locking knob (large knurled knob on bottom of the left side of the chassis as you face it) to hold the chassis in place.
- 5 Next remove the pulley and the four 10-32x1" cap screws from the hardware bag. Insert the four screws into the flat side of the pulley and attach the entire pulley assembly to the corresponding threaded holes at the rear of the column top. Tighten the screws to the point where they just come short of protruding into the inner wall of the column. If they're screwed in too far, the column counterweight will not be able to be put in place.

See Figure 1.

**IMPORTANT!** Rest the column back on the floor with the column height scale facing up! Using some of the packing materials from the column box, prop up the top of the column so that the baseboard is again perpendicular to the floor; this will make it easier to slide the counterweight down the column core when inserting it.

- 6 Unpack box #3 (the column counterweight). Place the counterweight into the top of the column, with the hooked handle protruding out of the top. Next, attach the cable end to the counterweight hook and push the counterweight down the column center, being sure to align the cable in the pulley wheel.
- 7 Slowly lift the enlarger to an upright position, being careful not to have any fingers in a position where the cable could cut them off. It is best to have the cable somewhat taught before lifting the enlarger upright; this can be done by simply pushing the weight down the hole with a broom handle or similar tool.) Replace the column cap and tighten the four pulley assembly screws.
- 8 To install the black handle on the large lifting wheel, turn the wheel so that the brass threaded insert is at the bottom. Take the 5 mm Allen wrench that fits into the hex at the end of the handle and insert it through the brass wheel insert from the inside of the wheel. Insert the Allen wrench into the hex at the end of the handle and tighten.
- 9 You may now set the assembled enlarger in its final placement.

### Installing the Lens

- 1 Mount each lens to an appropriate lens board and tighten the retaining rings. Use of a spanner wrench is recommended but not supplied.
- 2 To install the mounted lens on the enlarger, align the three lens board holes with the three thumb screws, press upward and then turn the lens board clockwise about 10°. Tighten the thumb screws gently until snug.

See Figure 2.



## ASSEMBLING THE ENLARGER CONT.

### Inserting the Negative Carrier

There are three types of negative carriers. For the smaller formats, there is a large base with a fitted window overlay that allows for easier handling of the negative. For the larger formats, we have a carrier that has windows with registration pins to hold the negatives in position. And lastly, we have what we call the "out-straight" carrier for large formats, which produces a flatter negative plane by stretching the negative flat.

When inserting the smaller format carrier, the window faces up. When inserting the large format carrier, the registration pins or the stretch window faces up. As you look at the outer shape of the carrier, you'll notice that one side of the length has three tiers and the opposite side has only two. After raising the head by pulling the lifter handle on the left side toward you and past the stop (small protrusion on the lower left side of the chassis toward the rear), you can rest the back of the lifter handle on the stop, leaving the head in an upright position. Then simply insert the negative carrier into the negative stage platform, with the three-tiered side first. There are two registration pins on the rear of the platform that will register the carrier into position.

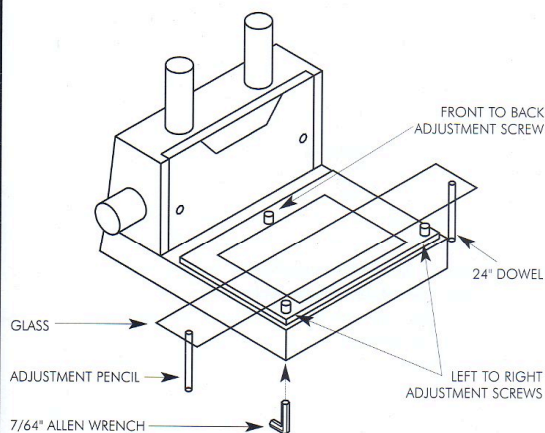


Figure 3

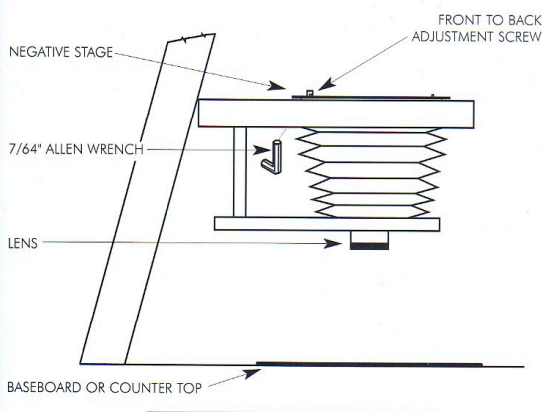


Figure 4

### Aligning the Enlarger

Even though the enlarger chassis is aligned at the factory prior to shipping, some shift may occur as a result of shipping. While it should not be necessary to align the chassis upon initial setup, the alignment should be periodically checked and fine-tuned if needed.

It is not necessary for your enlarger baseboard to be level, but for ultimate print sharpness, the negative stage, the lens stage, and the baseboard must be parallel planes. Always start your alignment procedure with the lens and negative stage adjustments just barely snug. This way, you won't use up all the available adjustment travel before you reach the aligned position. The method of alignment described here is a "feeler gauge" approach, as it isn't so dependent on a level baseboard.

For precise alignment, Zone VI recommends the **parallel alignment tool** (part #AA0730, which includes complete and easy-to-understand instructions). The parallel is a laser alignment tool and provides easy and exacting alignment of your enlarger. If you choose not to use the Parallel, there is an alternative method described below.

#### ➤ Here's the procedure:

#### Aligning the Negative Stage (See Figure 3.)

- 1 Using the 16" piece of double weight glass, center the sheet on the negative stage so that you have equal amounts of glass extended beyond the negative stage platform edges. Raise the enlarger chassis to a height just above 24" (just above 19" on the scale). Place one of the dowels flush to the baseboard under one of the protruding ends of glass, and lower the chassis until it touches the sheet; lock the chassis in place. If when you place the other dowel under the opposite side you don't have enough room to seat it (opposite side is shorter), readjust the chassis by raising it until the dowel fits and lock it again. Use the left to right adjustment screws to get the two sides equidistant from the baseboard to the glass. These screws are at the front corners of the negative stage and are accessed by placing the 7/64" Allen wrench into two small holes under the lip of the chassis. You are now leveled left to right.
- 2 Next, turn the sheet of glass so that it extends from front to back. Because you can't extend the glass to the rear, use one of the dowels close to the negative stage first. Get it snug to the glass as before and then slide the dowel out to the end of the glass and adjust the rear adjustment screw as needed. The rear adjustment screw is located at the center rear of the negative stage and is accessed by sight or feel. Done!

#### Aligning the Lens Stage (See Figure 4.)

- 1 In aligning the lens stage it is helpful to have your assistant on hand again. First raise the chassis up the column to just above 26" on the column scale, lock in place, and extend the bellows about four inches. Place a lens board, with firmly mounted lens, into the enlarger. Next place the sheet of glass flush to the lens flange (the flange extends beyond the front element, so you don't have to worry about contact with the element). The glass should extend from front to back first—the opposite of the negative stage procedure (in figure 3). Take one of the dowels and place it directly under the optical axis, and using the bellows adjustment, bring the glass down until snug with the top of the dowel. With the second dowel, check opposite ends of the glass for level of height and make your adjustment with the adjustment screw at the front of the lens stage. This screw is accessed through the small hole at the front center of the mounted lens board.
- 2 To make your final adjustment, simply turn the sheet of glass left to right and repeat the procedure. The left to right adjustment screws are accessed through the two small holes at the back of the mounted lens board. See Figure 5.



## ASSEMBLING THE ENLARGER CONT.

### Wall Mounting Procedure

Before beginning, you will need some materials that are not included with the wall mount kit. Be sure to have all items on hand prior to starting.

One (but two are better) assistants to help lift and steady the enlarger

One 24" 2 x 6 board

One 36" 2 x 6 board

A power drill with an 1/8" bit and a 3/8" bit

Four #10 wood screws that are 1 1/4" long with washers  
(for mounting the brackets to the 2 x 6 boards)

Eight to twelve 3 1/2" wood screws (to attach the 2 x 6 boards to the wall)

Four 1/4 -20 bolts with washers and nuts— These are to be used to mount the base of the enlarger to the counter top and must be long enough to extend from the top of the column mounting bracket (Flat base section of column with four holes in it) through the counter top to the bottom of the counter at least 1/2".

### Materials Included With the Wall Mount Kit

One template for drilling holes

Two brackets for attaching the rods to the wall

Two short threaded rods

Two long threaded rods

Two nuts

Two turnbuckles

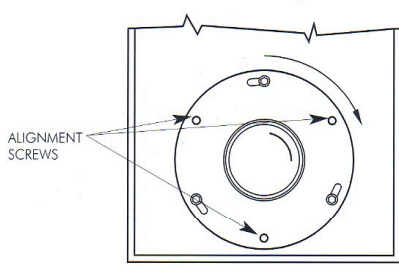


Figure 5

### Installation

- 1 For wall mounting, the key to stability is that the two 2 x 6 boards are securely fastened to rigid studs within the wall. Therefore your first priority is to find the appropriate wall studs that will give you as even an amount of support as possible. You don't want to find yourself with one end of the board anchored and the other end "floating." Find a space where you can center the column to the center of the boards once mounted.
- 2 Mount the 24" 2 x 6 board to the wall abutting the counter top. Mount the 36" 2 x 6 board to the wall at a height where the middle of the 6" dimension is level with the two threaded holes at the back of the enlarger column and the center of the 36" dimension is centered with the column. Use the 3 1/2" wood screws to secure the boards to the wall studs.
- 3 Remove the column from box #4. Position the column where it will sit after installation, with the back of the base abutting the installed 2 x 6. Trace the "footprint" around the base on the baseboard and the wall, and mark the eight screw holes located in the base on the counter and wall as well.
- 4 Drill the four holes where you marked the 2 x 6 at the base with the 1/8" bit. For the countertop four holes, use a 3/8" bit.
- 5 At this point, refer back to the instructions on how to mount the chassis on the column. You will need assistance here to assemble the column and chassis. Follow the directions down to step 9, starting with "You may now set the assembled enlarger..." Do not install the cold light head!
- 6 Keeping the column upright, mount the long threaded rods to the two holes at the top rear of the enlarger column with the supplied nuts. Just insert the rods slightly into the column core and attach a nut to the end of each to hold it in place (screw the nut on so that it's flush to the end of the rod).
- 7 Mount the turnbuckles to the other end of the long threaded rods.
- 8 Mount the short rods with the supplied nuts to the brackets.
- 9 Thread the opposite ends of the short rods into the turnbuckle. Let the entire assembled wall mount "wings" hang for a moment.
- 10 Lift and place into position the entire enlarger and screw into place the eight screws that will hold the base to the wall and countertop. (Keep supporting the top of the column until the wall mount "wings" have been anchored to the wall.)
- 11 Evenly spread the "wings" until they reach a comfortable mounting spot for the mounts themselves. Attach each bracket to the upper 2 x 6, being sure the rod/turnbuckle assembly is not tight, as you will need room to make your tightening adjustment. Use #10 wood screws and washers to attach the wall mounts to the wall.
- 12 Tighten the turnbuckle until the column is in the correct upright position. The negative stage should be parallel to the baseboard. Be sure you don't overtighten, as you will pull the column back too close to the wall.
- 13 Align your enlarger as described in the aligning section.



## THE ZONE VI 5 x 7 COLD LIGHT HEADS

### Mounting the 5 x 7 Cold Light Heads

Mounting a 5 x 7 cold light head is easy. There is a flange at the rear of the cold light head that fits into a corresponding slot on the chassis. Raise the cold light head above the negative stage and lower the flange into the slot. Done!

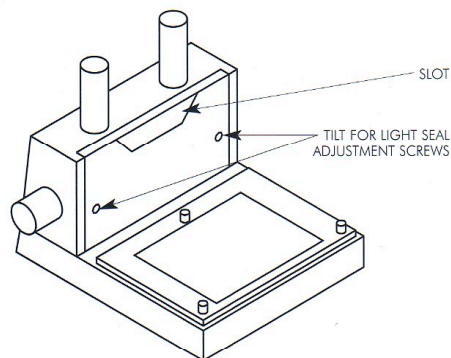


Figure 6

There is also an adjustment to correct any front-to-back light leaks when the head is lowered onto the negative holder. By unscrewing the two tilt adjustment screws, you will raise the front of the head.

### The Standard 5 x 7 Cold Light Head

#### Connecting the Head to the Timer

First, be sure that the power switch on the timer is in the off position. Take one of the power cords supplied with the light source and plug it into the outlet on the top of the head marked "Timer." Plug the other end into the receptacle marked "lamp" or "enlarger" on your timer.

If you are using a compensating timer type device, also plug the photo-cell connector into the three pronged pin-jack just in front of the power cord receptacles on the top of the head.

#### Connecting the Head to the AC Power Main

- 1 Using the remaining power cord, plug one end into the receptacle marked "Power" on the top of the head, and the other end into an AC household outlet.
- 2 There are two gray P-shaped hooks that are used to hold the power cords out of the way. These are installed by removing the adhesive protectors from their backs and placing one at the top of the chassis on the angled section that wraps around the back of the column on the right side, and the second one below it (behind the crank wheel). When installing the cords into the clips, allow yourself a strain relief at the top of about five" (an upward bow between the top P-clip and the cord receptacles).

### Basic Operations with the Cold Light Controls

On the face of the head, on the upper right hand side, you'll find the power switch. To turn on the unit, simply rock the switch to the on position. (The switch will light up red.) It is normal for the head to flicker once as you power it up and once as you turn it off.

Just to the left of the power switch is a small green "stabilized" indicator light. An important concept to understand is that this indicator light only functions when the timer is actually timing an exposure. It is therefore important that the head be pre-warmed to ensure stability. To do so, you simply turn your timer onto the focus mode and let the lamp stay on for a period of five minutes prior to your printing session.

**IMPORTANT:** If you leave the head off for a period of more than seven minutes, you should check your stability before continuing your printing session. To do so, just make a "blank" exposure, keeping an eye on the green "stabilized" indicator light to make sure it stays lit. If not, warm the head up again by turning on the lamp with the focus switch on your timer.

### The 5 x 7 Variable Contrast Cold Light Head

Connecting the head to the timer and connecting the head to the AC power main are the same as for the standard graded head. See directions at left.

#### Connecting the Control Box

To attach the control box, simply insert the large telephone-style jack into the receptacle on the back of the control box.

There are two gray P-shaped hooks that are used to hold the power cords out of the way. These are installed by removing the adhesive protectors from their backs and placing one at the top of the chassis on the angled section that wraps around the back of the column on the right side, and the second one below it (behind the crank wheel). When installing the cords into the clips, allow yourself a strain relief at the top of about 5" (an upward bow between the top P-clip and the cord receptacles).

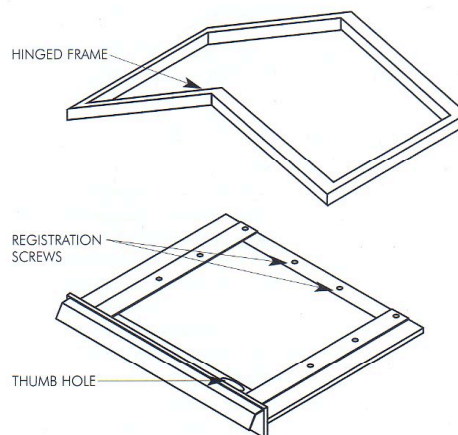


Figure 7



## THE ZONE VI 8 x 10 COLD LIGHT HEADS

There are two things the 8 x 10 cold light heads share—the “stretch-out” negative carriers and the mounting procedure. We will cover these first and then we will discuss the specific features of the two heads separately.

### The “Stretch-out” Negative Carrier

- 1 Remove the negative carrier from the funnel-shaped adapter unit (8 x 10 base). Pull on the door handle until the latch releases, then the carrier will slide out easily.
- 2 To remove the upper hinged frame from the base, simply press up from the bottom of the frame through the oval-shaped finger holes. Put it aside for now.
- 3 To insert the negative into the carrier, place the negative emulsion side down and orient the negative so that the bottom of the image abuts the positioning stops. The hinged upper frame is positioned by two stops that must line up with two counter-bored holes in the frame's bottom. When the frame is properly aligned with the stops by lining up the rear corners with the side support bars, it will click into place when extended to its flat position.
- 4 Because different films do actually come in slightly different sizes, our film guide stops are fully adjustable; just loosen the screws of the stops and side bars and simply reposition them to the appropriate dimensions. The rubber pressure points must be returned to their original position to maintain pressure against the hinged frame.

See Figure 7.

### Mounting 8 x 10 Cold Light Heads

- 1 Lower the chassis as low as you can without hitting the lens to the base-board, and remove the negative carrier (pull on the “door handle” until the latch releases, then the carrier will slide out easily). Set it aside for a moment.
- 2 Remove the 5 x 7 head and negative carrier from the chassis, or color head adapter if that is being used, leaving the negative stage frame bare and accessible.
- 3 Remove the two negative holder stops at the rear of the negative stage with the 5/64” Allen wrench included in the hardware kit.
- 4 Set the large funnel-shaped adapter unit (from which the negative holder has been removed) onto the negative stage, with the negative holder door slot facing you. Reach down into the adapter and align the three thumbscrews with the three open-threaded holes in the top of the negative stage and tighten.
- 5 Place the lamp housing on top of the adapter with the on/off switch facing you. There is nothing to fasten as the head is held in place by gravity.

## The Standard 8 x 10 Cold Light Head

### Connecting the Head to the Timer

First, be sure that the power switch on the timer is in the off position. Take one of the power cords supplied with the light source and plug it into the outlet on the top of the head marked “Timer.” Plug the other end into the receptacle marked “lamp” or “enlarger” on your timer.

If you are using a compensating timer type device, also plug the photo-cell connector into the three pronged pin-jack just in front of the power cord receptacles on the top of the head.

### Connecting the Head to the AC Power Main

Using the remaining power cord, plug one end into the receptacle marked “Power” on the top of the head, and the other end into an AC household outlet.

There are two gray P-shaped hooks that are used to hold the power cords out of the way. These are installed by removing the adhesive protectors from their backs and placing one at the top of the chassis on the angled section that wraps around the back of the column on the right side, and the second one below it (behind the crank wheel). When installing the cords into the clips, allow yourself a strain relief at the top of about 5” (an upward bow between the top P-clip and the cord receptacles).

### Basic Operations with the Cold Light Controls

On the face of the head, on the upper right hand side, you'll find the power switch. To turn on the unit, simply rock the switch to the on position. (The switch will light up red.) It is normal for the head to flicker once as you power it up and once as you turn it off.

Just to the left of the power switch is a small green “stabilized” indicator light. An important concept to understand is that this indicator light only functions when the timer is actually timing an exposure. It is therefore important that the head is pre-warmed to ensure stability. To do so, you simply turn your timer onto the focus mode and let the lamp stay on for a period of five minutes prior to your printing session.

**IMPORTANT:** If you leave the head off for a period of more than seven minutes, you should check your stability before continuing your printing session. To do so, just make a “blank” exposure, keeping an eye on the green “stabilized” indicator light to make sure it stays lit. If not, warm the head up again by turning on the lamp with the focus switch on your timer.

## The 8 x 10 Variable Contrast Cold Light Head

Connecting the head to the timer and connecting the head to the AC power main are the same as for the standard graded head. See directions on page 5.

### Connecting the Head to the AC Power Main

Using the remaining power cord, plug one end into the receptacle marked “Power” on the top of the head, and the other end into an AC household outlet.

### Connecting the Control Box

To attach the control box, simply insert the large telephone-style jack into the receptacle on the back of the control box.

There are two gray P-shaped hooks that are used to hold the power cords out of the way. These are installed by removing the adhesive protectors from their backs and placing one at the top of the chassis on the angled section that wraps around the back of the column on the right side, and the second one below it (behind the crank wheel). When installing the cords into the clips, allow yourself a strain relief at the top of about 5” (an upward bow between the top P-clip and the cord receptacles).



## USING THE ZONE VI COLD LIGHT HEADS

### Using the Standard Head (Single Tube Configuration for Graded and VC Paper)

The Zone VI standard cold light head was designed for use with graded paper. Basically, you simply predetermine the grade of paper you wish to use and follow standard printing procedures.

You can, however, use filters and print with variable contrast papers. The concept to understand relates to how the paper emulsion reacts to various colors of light. Our graded paper has a bromide emulsion that is very sensitive to blue light. As our original cold lights were designed for this type of emulsion, they have a bluish tint to them. Variable contrast papers have two emulsions, which are responsive to blue and green light, respectively. One layer is responsible for highlights (green layer) and the other for shadows and dark values (blue layer). Our cold lights that are designed for variable contrast, therefore, have a green tube and a blue tube to correspond to the appropriate layers' sensitivities. You might ask why variable contrast filters are yellow and magenta—think in terms of opposites (magenta-green and yellow-blue). Because the standard single tube head is blue, it is only activating the high contrast layer and thus giving you only the highest grade values this combination of paper and light can give; generally about a grade 4 1/2.

As you can see, this is not an appropriate place to start when trying to reach a grade less than 4 1/2; we've gone far past a middle ground starting position. The reason 40cc yellow filtration is always given as the magic cure-all is that with this amount of yellow filtration, a green that is suitable to produce about a grade 2 is created, getting us back to that middle ground. One can add magenta filtration from here to build up contrast or use more yellow filtration to lower your contrast. The filters that you have previously used will not be calibrated to the grade that they have listed, as the balancing yellow filtration disrupts the progression, but with a little testing you will be able to determine approximate grades. We find that using just a set of yellow cc filters is a better alternative, as you're not elongating your printing times when you wish to increase your contrast. In fact you'd be decreasing it, simply because your filter densities become less as you decrease the amount of yellow. It's also a little easier to keep track of; it's simple—with no filtration you're at your highest grade, and the more yellow you add, the lower the resulting contrast.

### Using the Variable Contrast Head (Two Tube Configuration)

**Important note:** When using any of the variable contrast heads it is recommended that the brightness control on the box be set at about 5 1/2. This will ensure a window of stability long enough to run your print through the chemistry and get back to the enlarger for further printing.

The Zone VI variable contrast cold light head was designed to fully utilize the wonderful capabilities that modern VC papers inherently possess. There are basically two methods to printing. It's up to you to determine which process works best for the style of printing you do.

#### Single Exposure Printing

The first method is the method you've grown up with, whereby you make a single exposure with the light source at a predetermined light mix to give you a specific grade. As a result of the two-tube technology addressing the individual sensitivities of the papers' emulsions, you are able to throw the old concept of "grades" out the window. A single exposure can produce an image with rich black shadows and delicately soft highlights.

Because of the infinite range of grade possibilities capable with the Zone VI VC heads, we can only give you a rough estimate as to where to find given grades. They of course will vary depending on the type of paper and chemistries used. For the purposes of copying an exact grade replication, one must test what combination of light will create a matching grade. To do so, you must first make prints on the graded paper you're looking to match in all grades, then follow the guidelines for estimated grades and tweak the light balance to nail down the specifics. To give a print more contrast you add more hard (blue) light or subtract some soft (green) light. To get an idea of what's possible from any given negative, we suggest making three prints from the negative—the first using only the hard (blue tube) light, the second using only the soft (green tube), and the last using a setting that represents about a grade 2 print (hard max–soft max on the VC control box).

#### Guidelines for Estimated Paper Grades

The highest grade obtainable is about a 4 1/2. This is found when the soft light is off totally and the hard light is on maximum. The lowest grade obtainable is about a 00. This is found when the hard light is off totally and the soft light is on maximum. To obtain a grade 2 print, set the controls on the control box to any like value (both soft and hard controls at maximum). To find grade 3, set your hard light on maximum and pull back on the soft light to the letter "D" or "E." Grade 1, conversely, is found with your soft light on maximum and the hard light value lessened to the letter "D." By adjusting the tube controls up and down you will be able to find virtually any grade between the two extremes—00 to 4 1/2. A helpful hint here is that the paper's emulsion is much more sensitive to the blue hard light than it is to the green soft light, so the more blue balanced your contrast setting is, the shorter the exposure time will be, and the more green balanced, the longer your exposure time will be.

#### Split Printing

The second procedure for printing is called split printing. We here at Zone VI strongly recommend this procedure as it allows you to actually see more of the options a given paper can produce. Split printing is a method of printing that allows you to selectively adjust contrast to any given image. In effect, one is able to maintain deep rich shadow values while, at the same time, having smooth soft highlight renderings. It permits one to orchestrate the best image possible from any negative. The procedure listed is based on use of the Zone VI Variable Contrast Head, but substitute filtering will achieve the same results.

#### ➤ Here's the procedure:

- 1 With the soft light (green tube) in the off position, make a series of test strips on a blank 8 x 10 sheet of paper with the hard light (blue tube) on maximum. Be sure to use a light output–f/stop combination that allows you a proper amount of strips to determine an accurate time.
- 2 After processing, determine the strip that produces an "almost" black in the low values. (You will gain a small amount of tonal density when the soft filtration is added later.)
- 3 On a fresh sheet of paper, expose the entire negative at the determined time value and process, remembering to use the same timing sequence and not a cumulative time (four 3-second exposures, not one 12-second exposure). This will allow you to check for evenness of values across the entire image and make adjustments where you feel necessary.
- 4 With a fresh sheet, expose the entire negative with the hard light values that you determined above. Leaving the sheet in place on the easel, turn off the hard light and turn the soft light to maximum. On top of the hard light filtration exposure, lay in a series of test strip exposures using the soft light, and process.



## USING THE ZONE VI COLD LIGHT HEADS CONT.

- 5 Determine what the proper combination of times is by simply looking at the strips. If you have two combinations that remain unclear as to which is the better, make a print of each. This will further help you determine the values wanted for the final printing.
- 6 In your final appraisal of the image, simply dodge areas that you determine to be too dark, while exposing the hard light. If a highlight appears too hot, simply add a little more exposure time to the hot spot while exposing your soft light values.

**Note:** When making your exposures, it is important that you follow the procedure exactly as was done when making the initial test strips. You must still make separate exposures with both the hard and soft lights and they must still be exposed with the same timing increments used when doing the initial test—three 3-second exposures are not the same as one 9-second exposure.

### Warning:

This unit is designed to be used with 110V AC, 50/60 Hz only.

To prevent shock and fire hazards, do not use any other power source.

Never open the cold light source or the control box. There are no user-serviceable parts. All servicing must be done by Zone VI Studios. Any tampering voids the service warranty.

Do not connect the power plug into the wall outlet until all other connections are completed.

### For the technically curious.

The electronic driver circuit is one-of-a-kind, state-of-the-art electronics. We use a "two-step" safety fuse design. In the first step, we fuse both of the incoming power lines in the power entry modules. In the second step, we fuse the electronic circuit board itself and use opti-coupling to protect the timer relay. The power supply for the tube is a state-of-the-art high voltage transformer. It was specially designed and fine-tuned for our tube. A closed-loop circuit gets its input from the tube. This is the only way to ensure stable light output. A shielded sensor is watching the tube. It constantly monitors the light output. The sensor translates its reading into electronic signal. In case of light output variance, the sensor signal changes the high voltage transformer output to the light source. When the tube is turned off, it starts cooling off. It is possible that the tube cools down to a point where the circuitry can not stabilize the light output. The green "ready" indicator light will then go off and the tubes need to be warmed up again by turning them on. The tubes must be on for the circuitry to determine if the light output is stable.

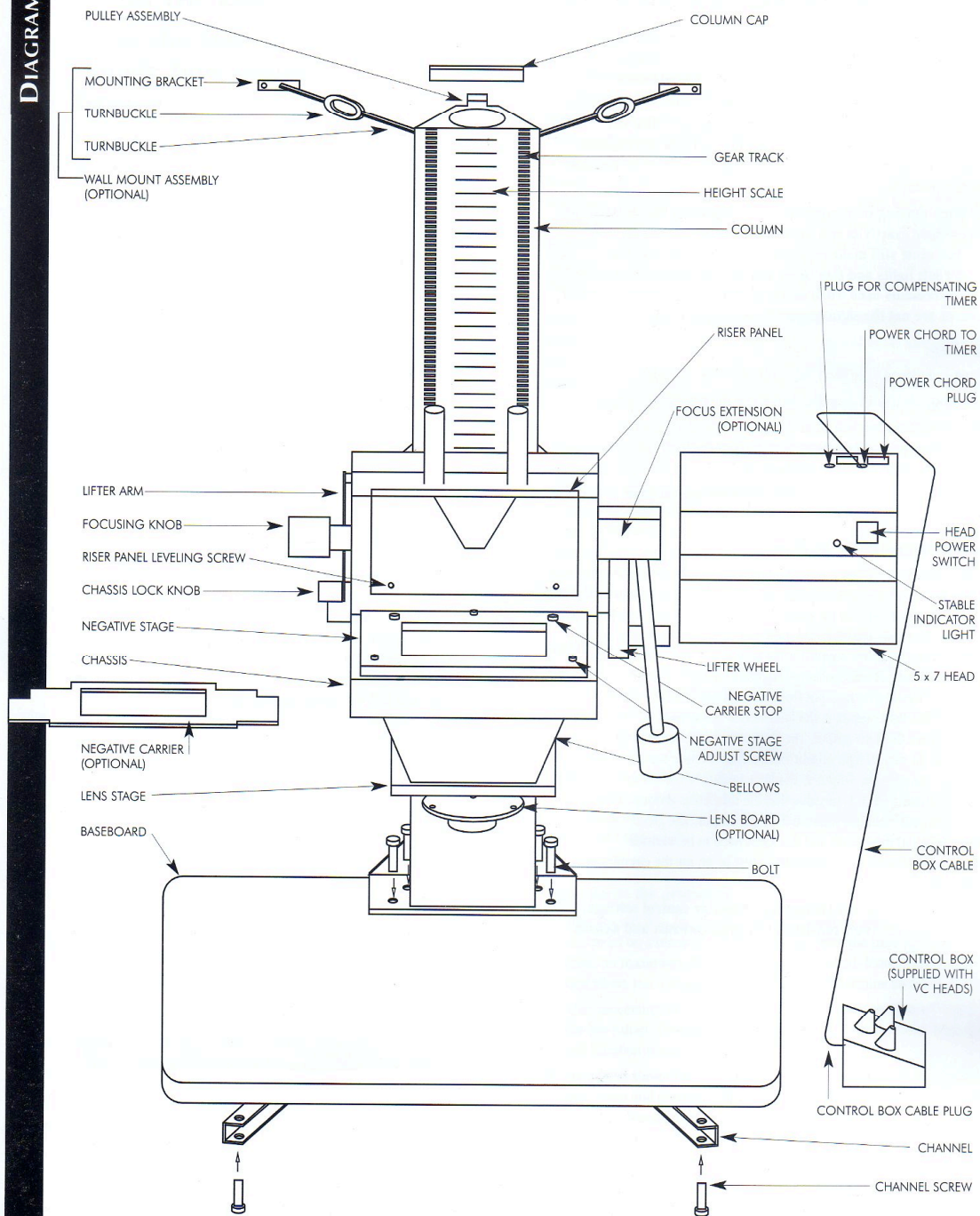
**Summation:** If you do not change your timer or control settings, you will always get 100% consistency in print contrast and density.

### A NOTE ABOUT ENLARGING TIMERS:

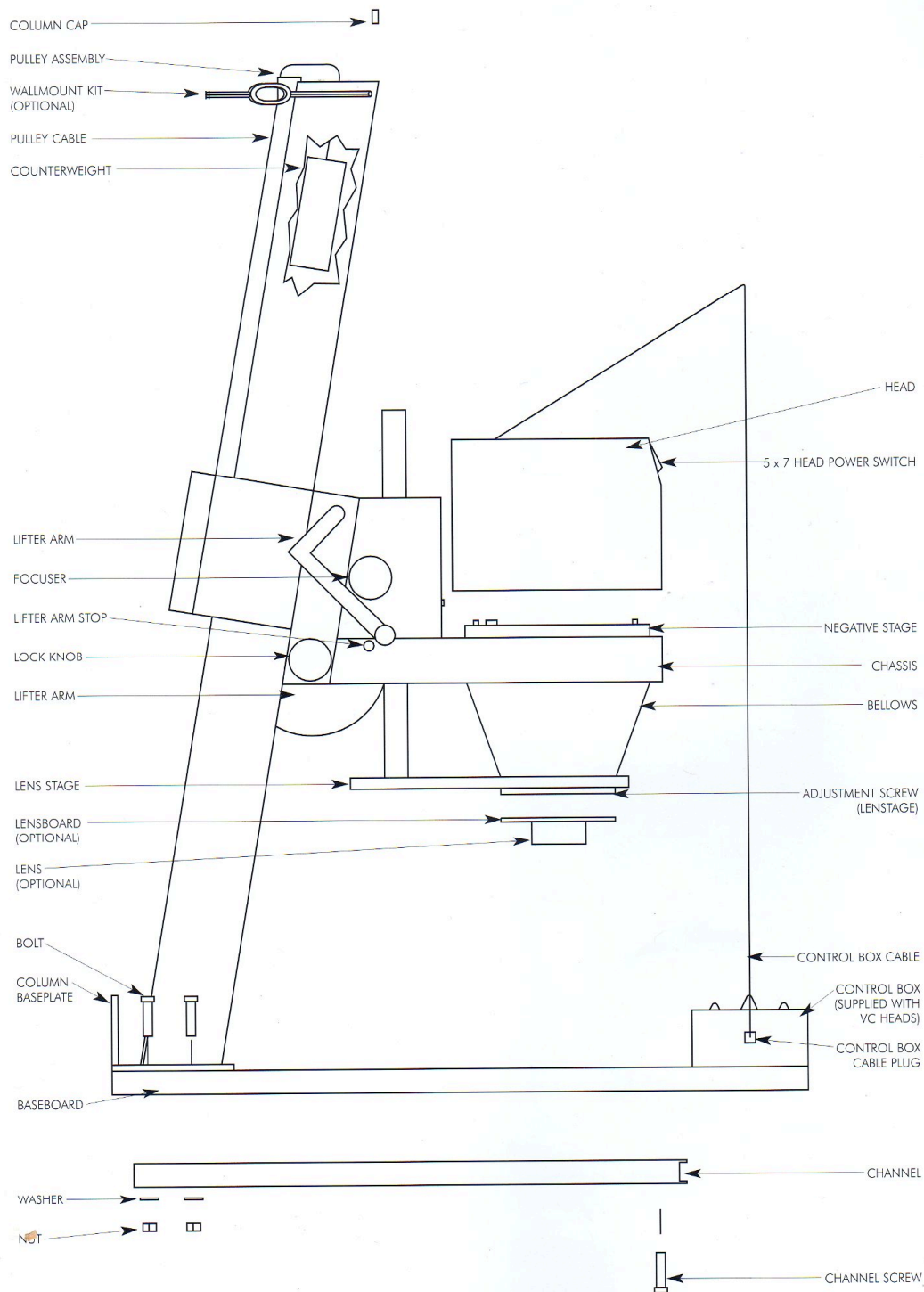
For the VC light sources, we have found in our testing here at Zone VI, that by using our compensating enlarging timer (ZN5615), the photocell already installed in your Zone VI enlarging light source will allow you to effectively "speed match" the highlight areas of your prints. No matter where the contrast controls are set, the compensating enlarging timer will lengthen or shorten the exposure accordingly. You will find this extremely useful if you choose to burn selected areas of your prints at different contrast settings.

This option will allow you to create prints that have "split printing characteristics" without having to change your exposure times.





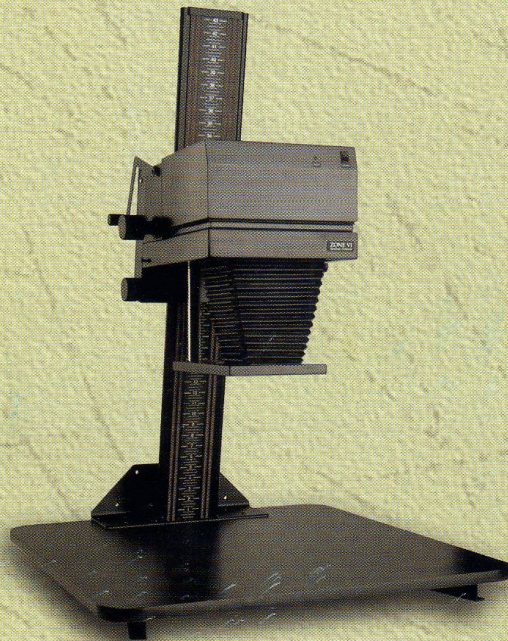






The Zone VI Enlarger: built for the specific demands of today's foremost black and white printers. It is the only enlarger made that is explicitly designed from the baseboard up, to maximize the potential of the acknowledged quality that only a cold light head can achieve.

*Congratulations on your purchase and thank you!*



*Design: Rapid Eye Design*

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ZONE VI  
BRATTLEBORO  
VERMONT, USA

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If you have any other specific questions about this or any other Zone VI product, please contact your nearest distributor.

*In the United States: Calumet Photographic at 1.800.CALUMET (225.8638)*

*In Asia and South America: ICI International at 415.643.6261*

*In Europe: ICI Europe 011.31.38.426.0300*