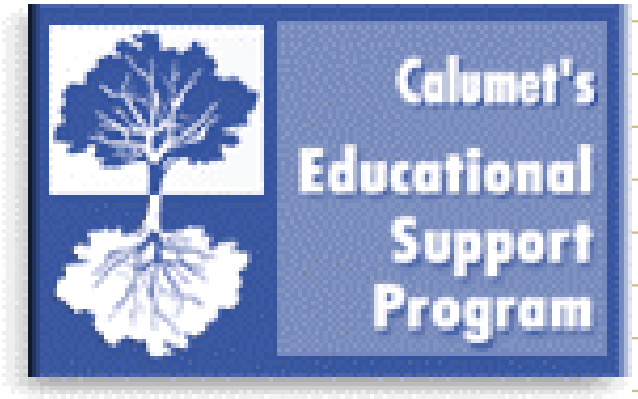
Calumet's Digital Guide To View Camera Movements



What you can expect to find inside

- ✓ Types of view cameras
- ✓ Necessary accessories
- ✓ An overview of view camera lens requirements
- ✓ Basic view camera movements
- ✓ The Scheimpflug Rule
- ✓ View camera movements demonstrated
- ✓ Creative options

There are two Basic types of View Cameras

- **Standard "Rail" type view camera advantages:**

✓ Maximum flexibility for final image control

✓ Largest selection of accessories

- **Field or press camera advantages**:

✓ Portability while maintaining final image control

✓ Weight

Useful and necessary Accessories

- ✓ An off camera meter, either an ambient or spot meter.
- ✓ A loupe to focus the image on the ground glass.
- ✓ A cable release to activate the shutter on the lens.
- ✓ Film holders for traditional image capture.
- ✓ A Polaroid back for traditional test exposures, to check focus or final art.

VIEW CAMERA LENSES ARE DIVIDED INTO THREE GROUPS, WIDE ANGLE, NORMAL AND TELEPHOTO

WIDE ANGLES LENSES WOULD BE FROM 38MM-120MM

FOCAL LENGTHS FROM 135-240 WOULD BE CONSIDERED NORMAL

TELEPHOTOS COULD RANGE FROM 270MM-720MM

FOR PRACTICAL PURPOSES THE FOCAL LENGTHS DISCUSSED ARE FOR 4X5” FORMAT

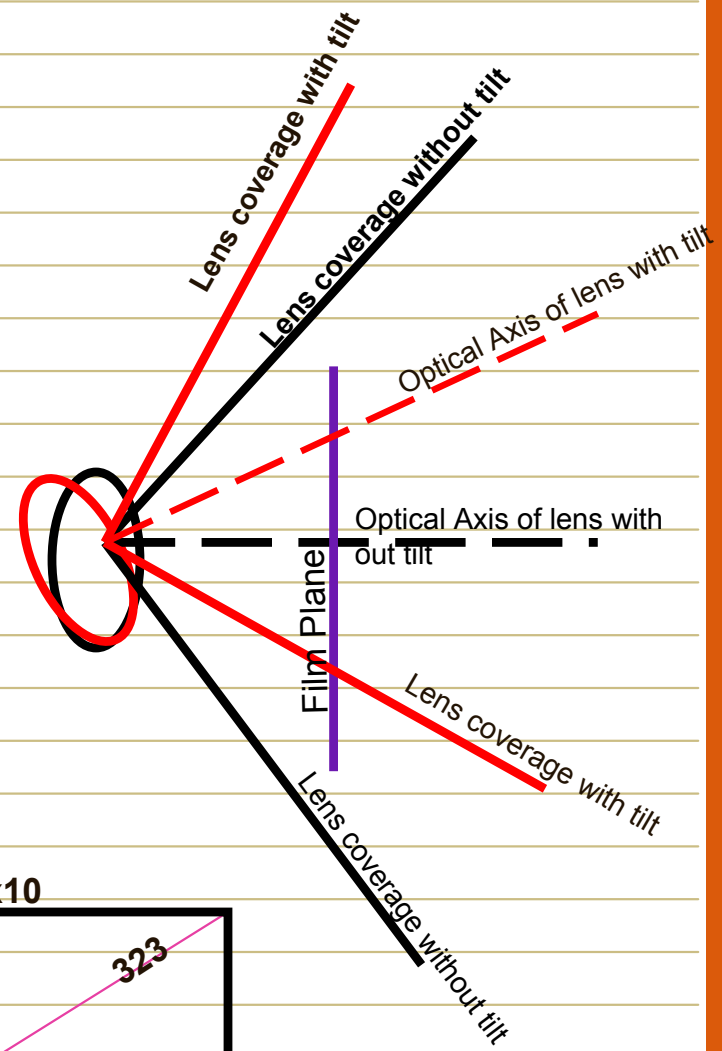
Image circle- The black lines are the lens with no tilt and the red lines show the change in lens coverage with the lens tilted. If you look at the film plane, you can see that the tilted lens does not cover the film plane, the image circle of the lens is too small with a tilt applied to the camera.

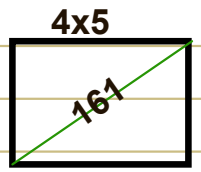
It's important to understand the "covering power" of a particular lens to be used on a view camera.. View camera lenses produce a circle which is called the image circle. For a lens to cover the piece of film entirely the image circle must be a certain size. Here are the sizes for the various formats:

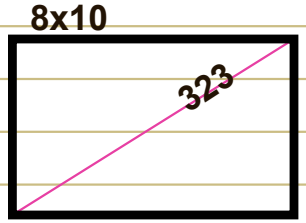
- •161mm for 4x5 film
- •219mm for 5x7 film
- •323 for 8x10 film

These numbers are the "minimum" image circle requirements for the appropriate film sizes. That means that no camera movements can be applied!

Wide angles lenses are used to include much more information on the film, (usually swings, tilts or rise/fall are applied to the camera when using wide angle lenses). When ever a "move" is used with the camera, the image circle needed to "cover" the film surface needs to be equal to the film size format plus the movement applied to the camera, remembering that the lens works on a axis.







View cameras have 3 basic movements to affect the final image

Horizontal and vertical movements of the lens-board or the camera back control the image placement on the ground glass.

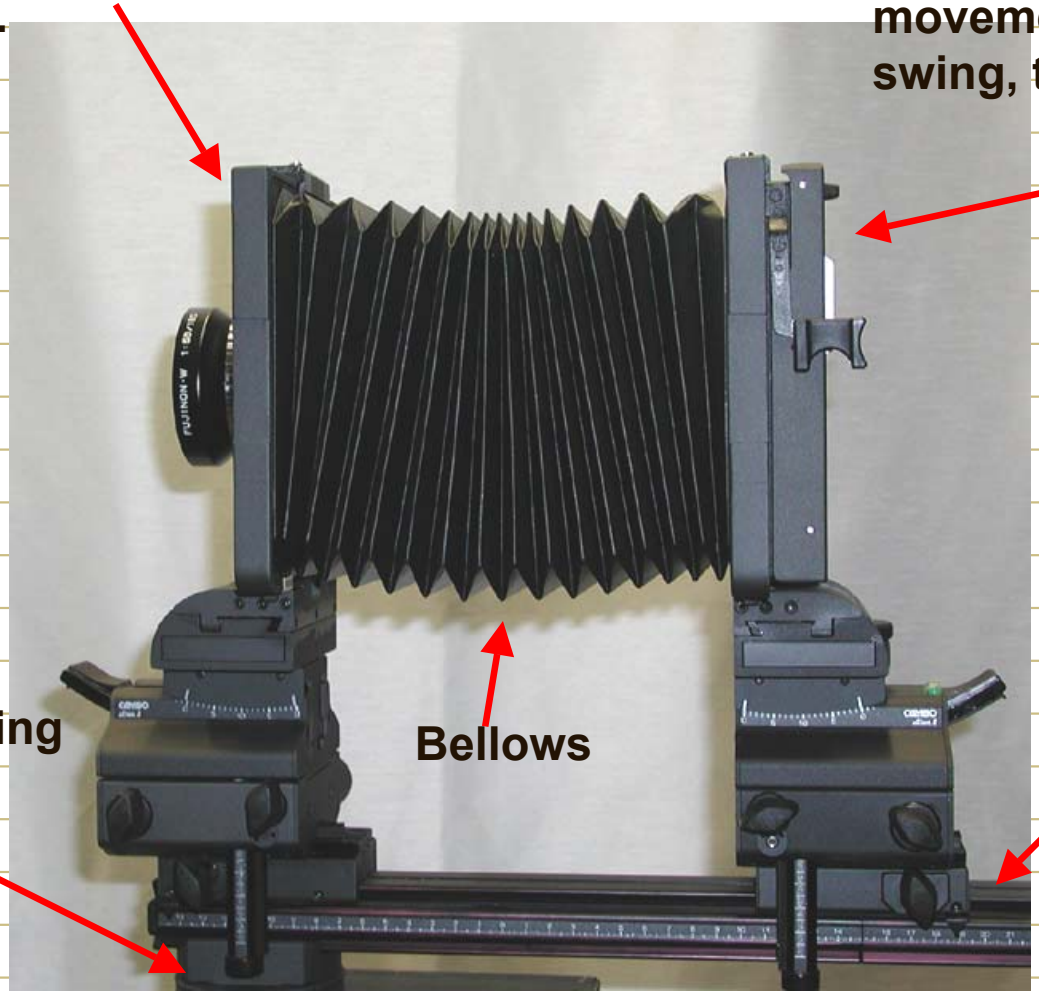
The swing or tilt of the camera back is used to correct the shape of the image, or to control perspective.

The swing or tilt of the lens-board helps to obtain sharp focus of the image when the principle plane of the subject and the camera back are not parallel.

These are the parts of a view camera

The front standard is where the lens attaches. The basic movements are rise, fall, swing, tilt and shift.

The back standard is where the film or digital back goes. The movements are rise, fall, swing, tilt and shift.



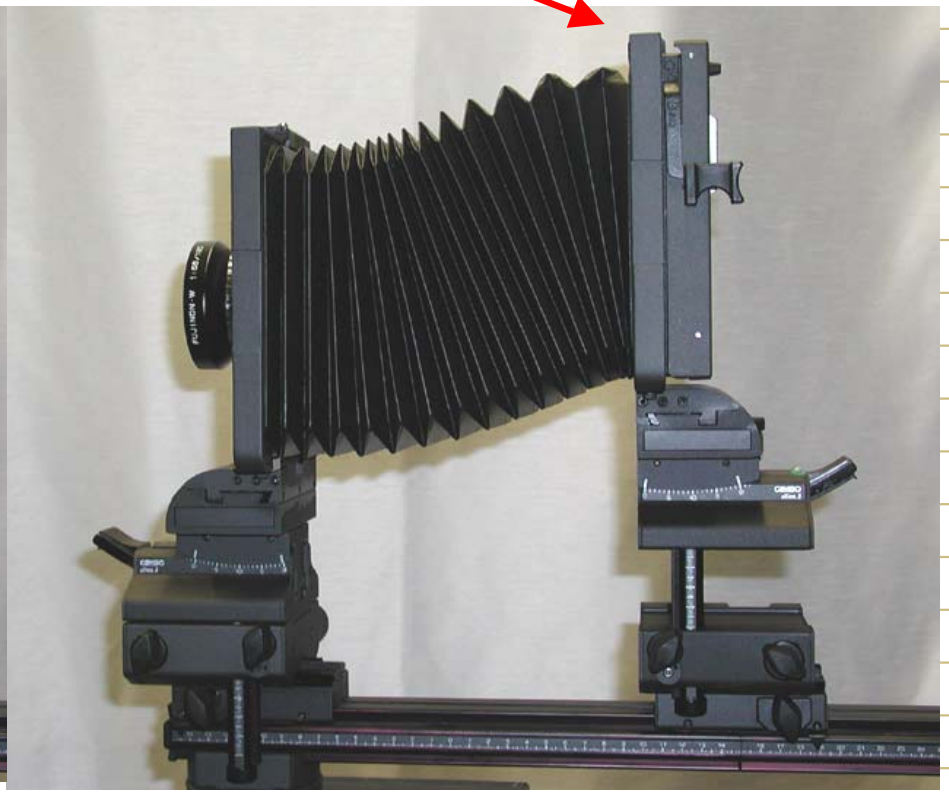
Tripod Mounting block

Bellows

Focus Rail

View cameras have several “movements”

Front and back rise



These are the front <u>shifts</u> and <u>swings</u>

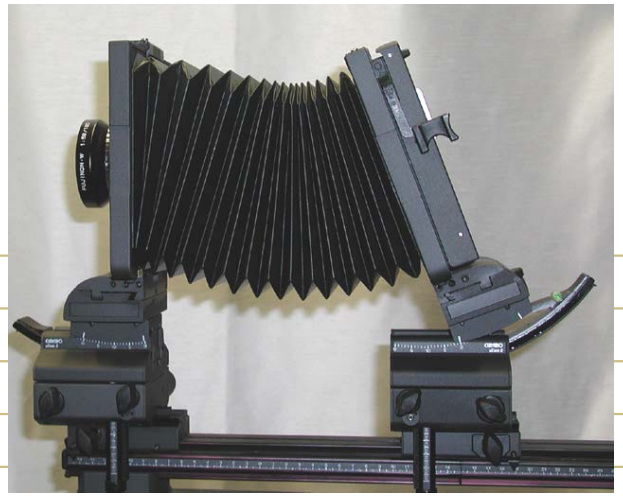
Shift Right
Swing Right

Camera centered

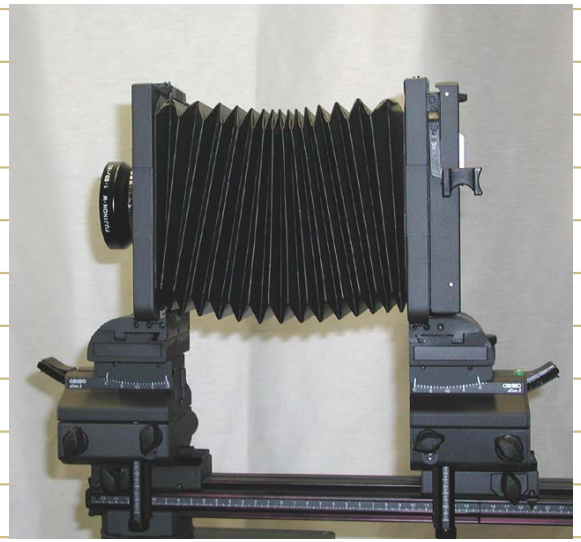
Shift Left
Swing Left

These are the <u>tilt</u> movements of the front and rear standards

Front tilt forward



Back tilt forward



Camera centered

Front tilt back

Back tilt back

These are the <u>swing</u> and <u>shift</u> movements of the camera back

Shift Left

Shift Right

Camera centered

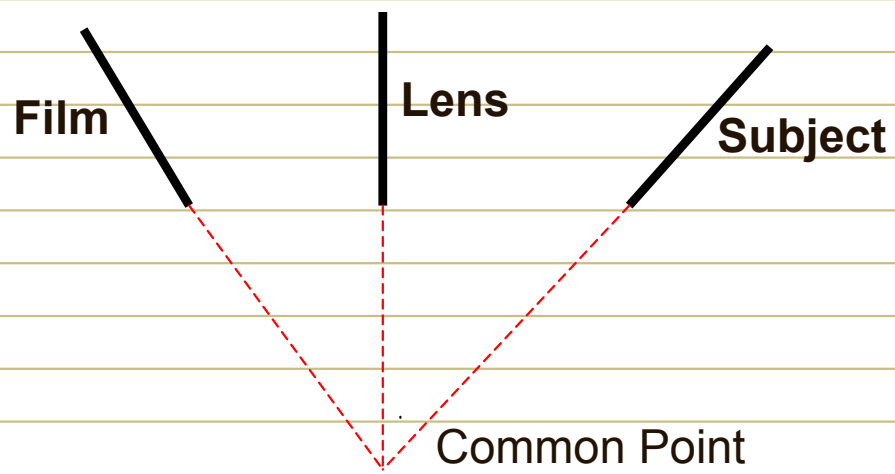
Swing left

Swing right

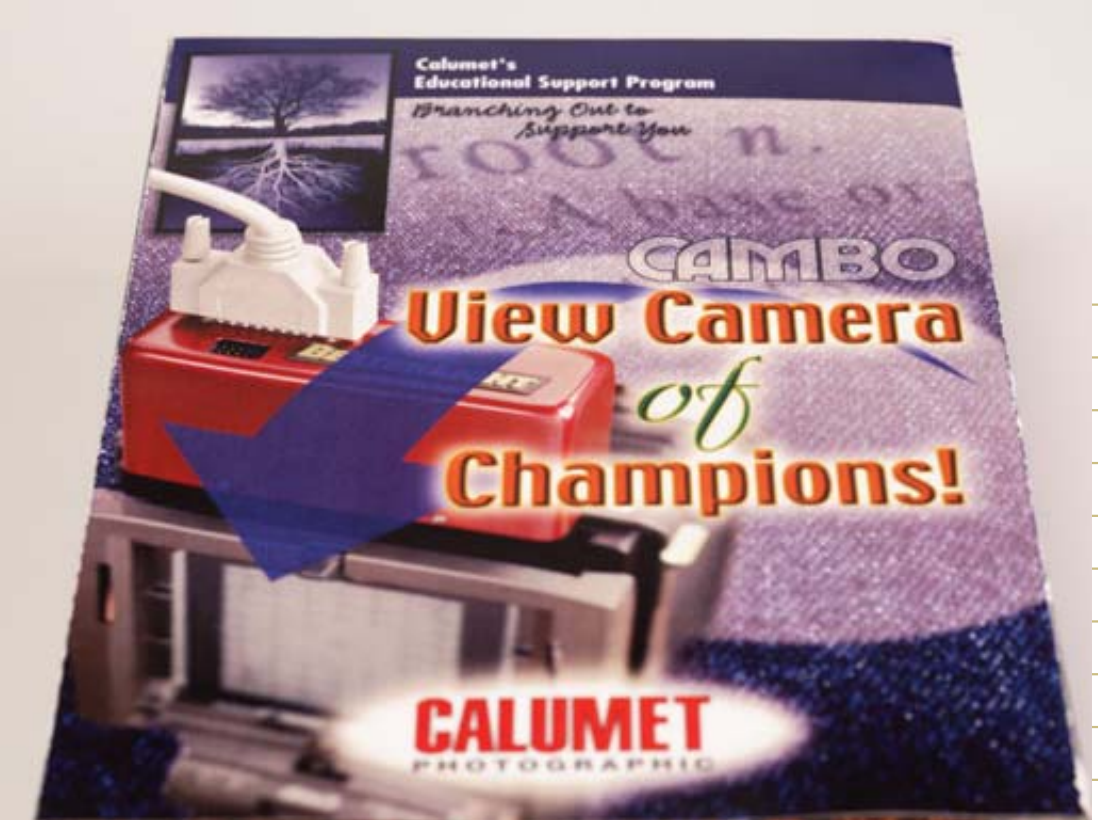
The Scheimpflug Rule

The Scheimpflug rules summarizes the principles of corrective camera movements. The rules states *a subject will be rendered with the greatest sharpness when lines drawn from the plane of the* ***subject****, the* ***plane of the film*** *and the* ***plane of the lens*** *all meet at a common point.*

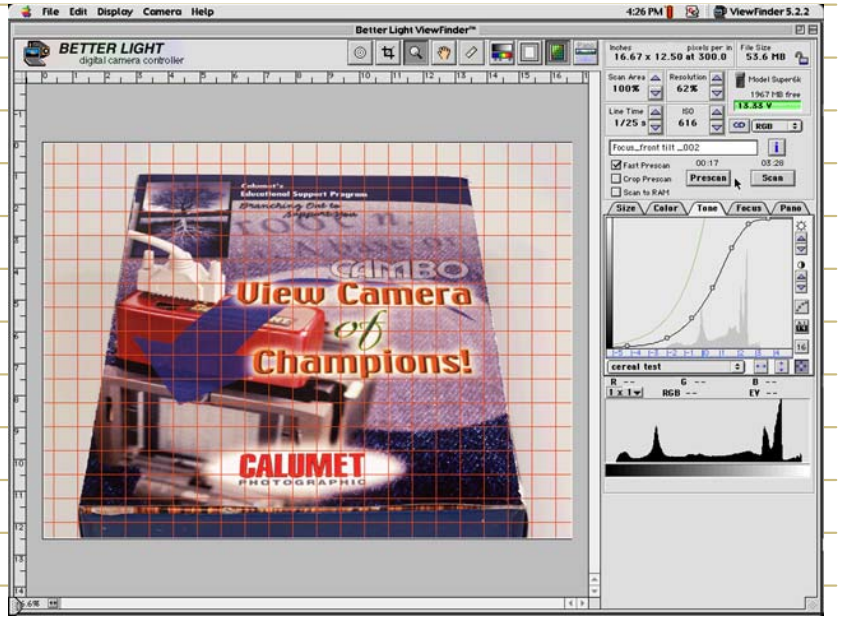
The practical application of this helps the photographer use the movements of the view camera to achieve greater sharpness in the final image without being restricted by using small apertures. By rotating the front and back of the view camera, the planes all meet at a common point



Here's the camera set up with no movements, the camera is tilted down.

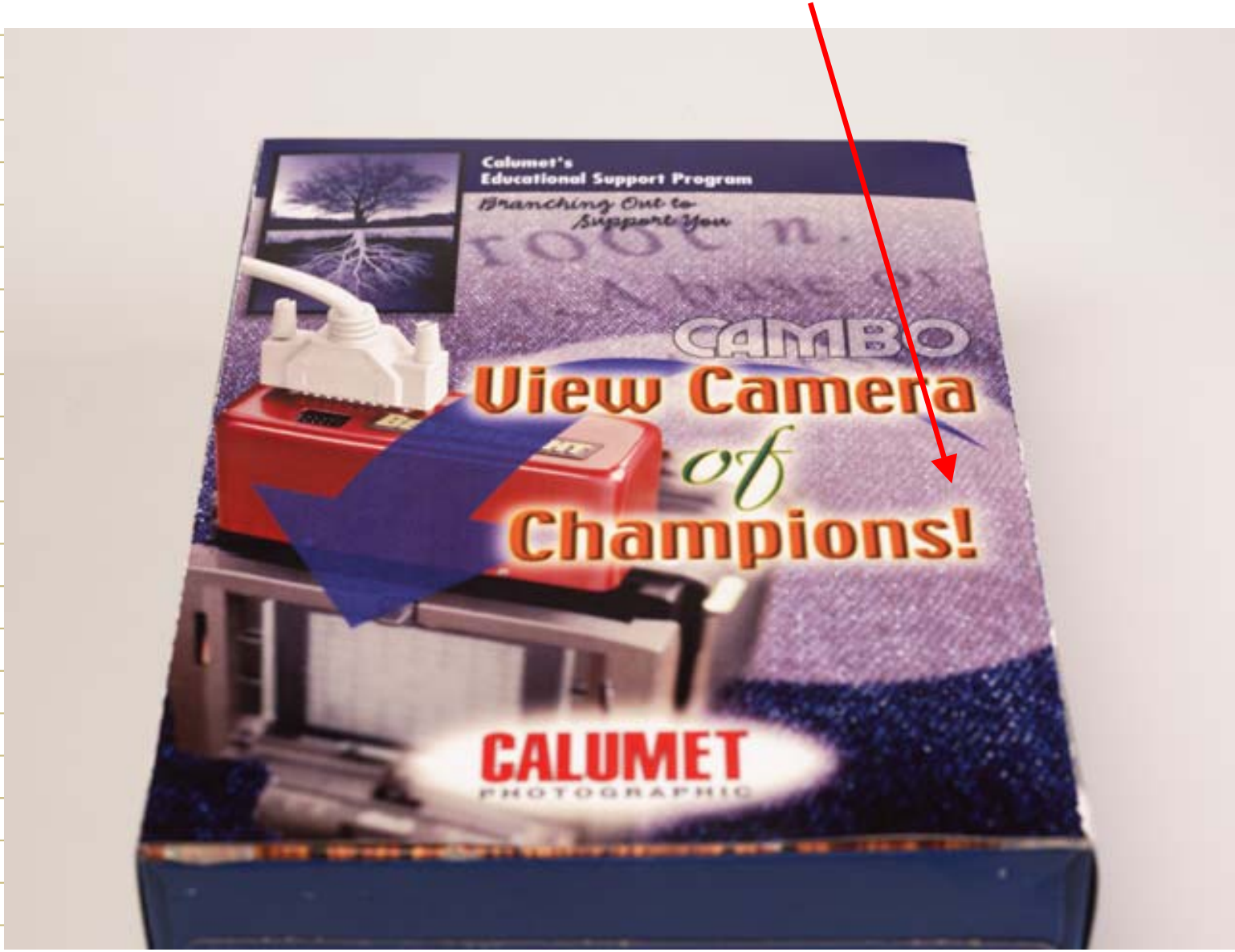


For this illustration no corrections were used on the camera. You can see that only the center of the box is in focus, with the top and the bottom of the box being out of focus.

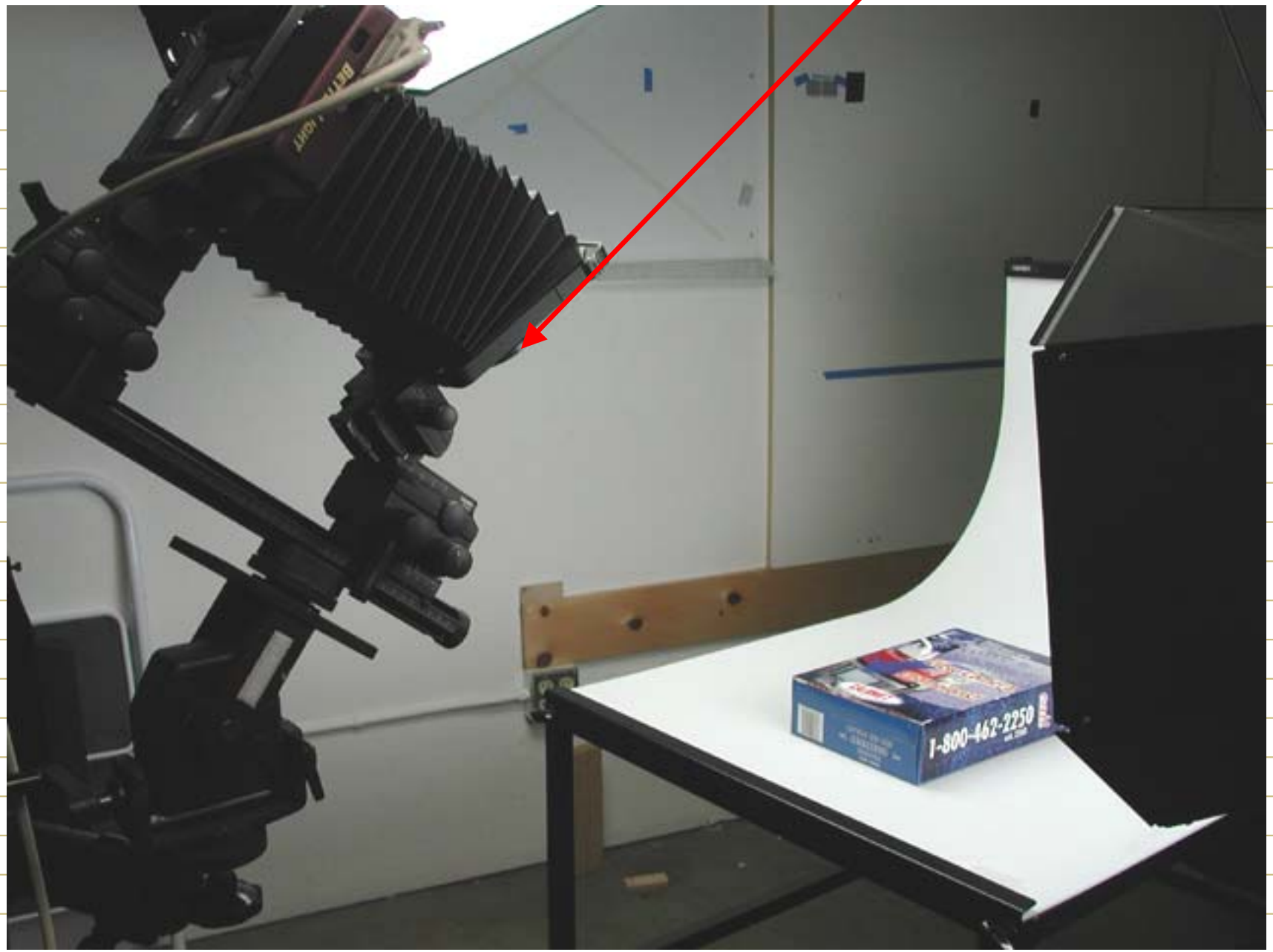


This is a full screen example with no corrections applied to the camera.

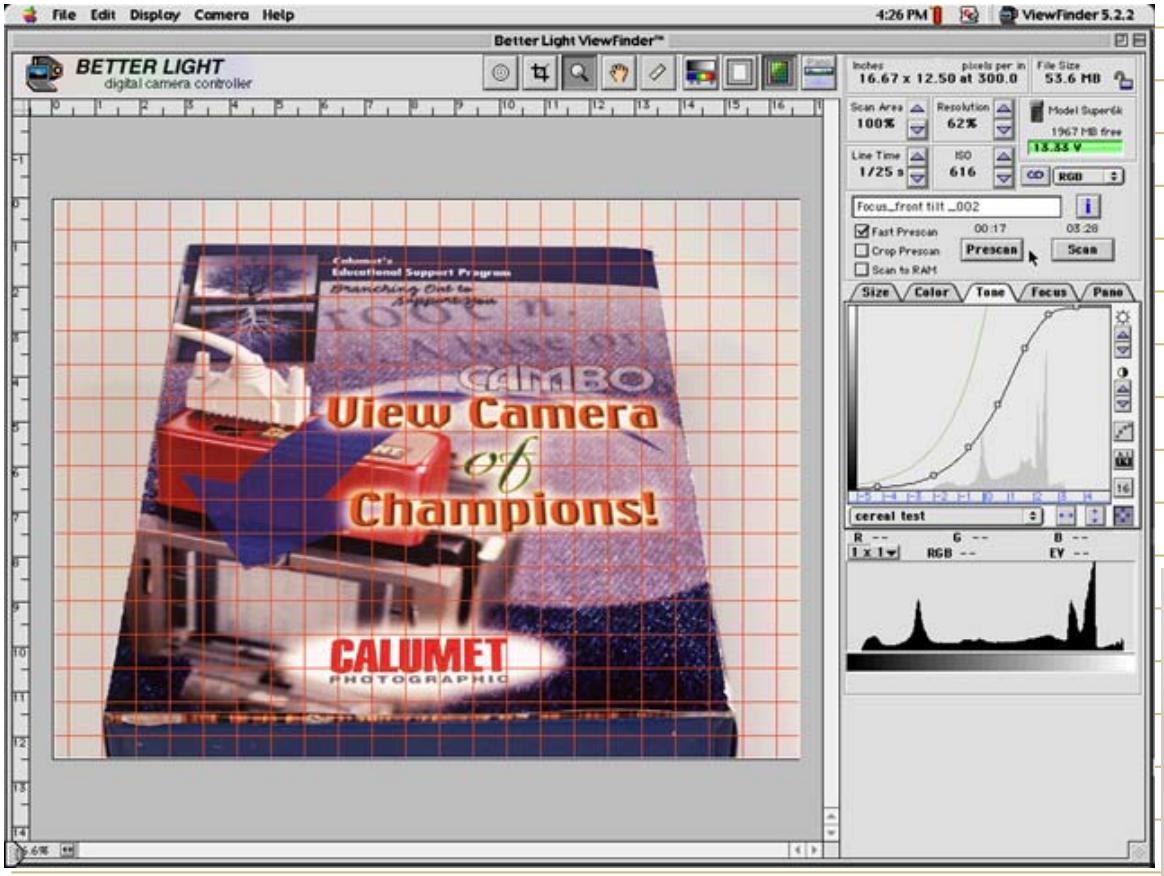
This is the focus point.

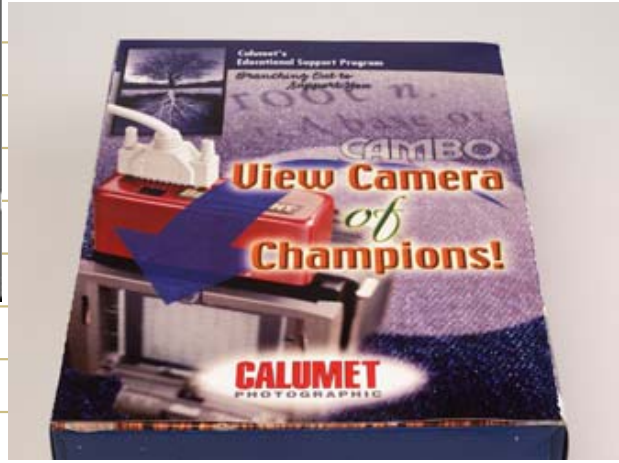


Here’s the camera set up with the lens tilted

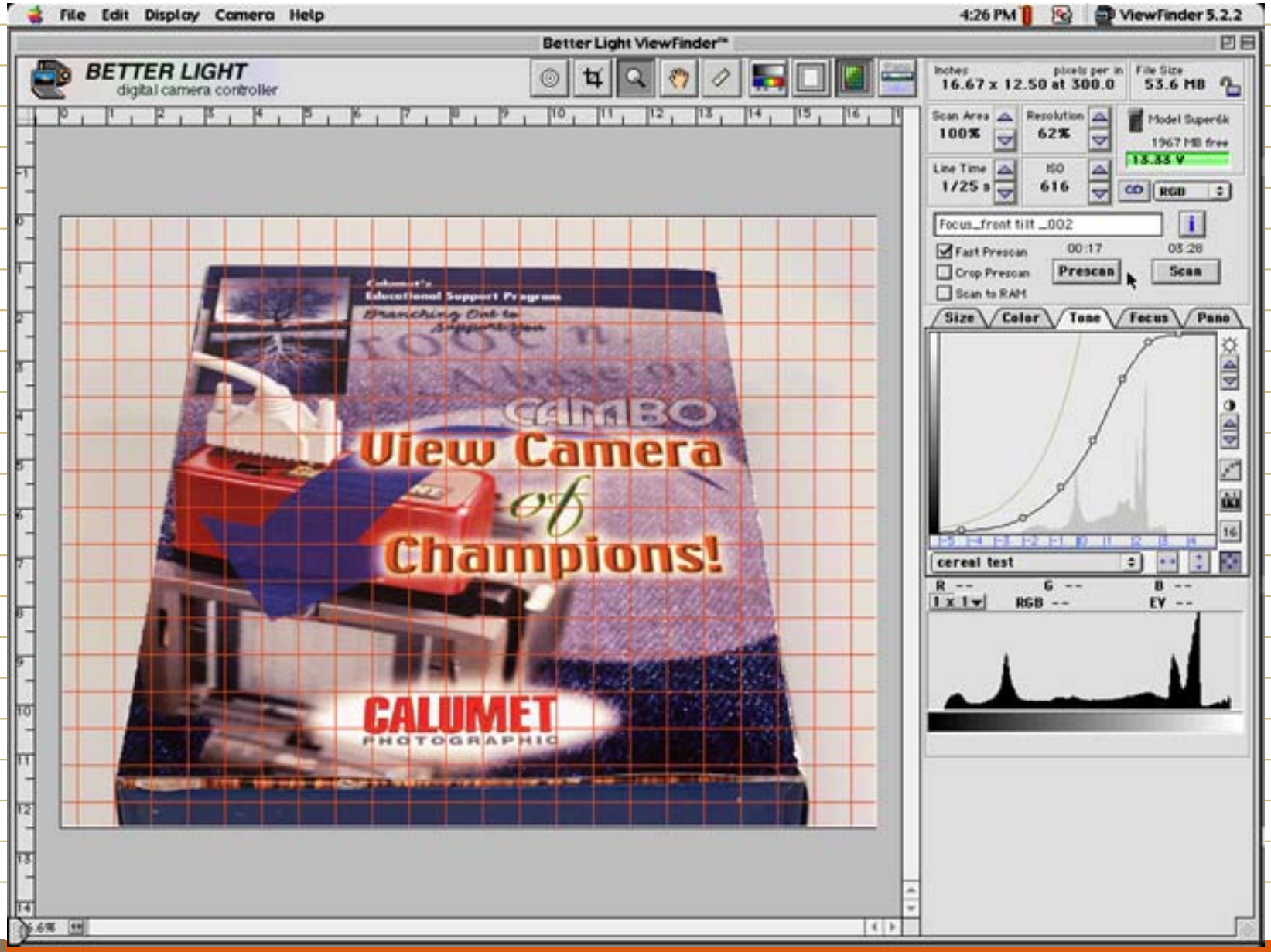


This is an example of controlling focus by tilting the lens on the camera.





This full screen example shows the result of tilting the camera lens forward to control focus.



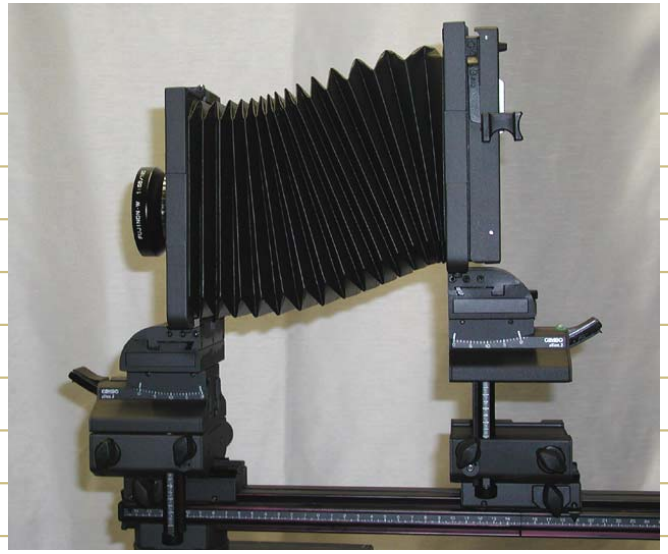
Crafting an image in camera is not simple a matter of pointing the camera.

To create an image that appears to be centered and correct in the final product, camera movements are applied.

This image has the camera back raised.

Using the <u>rise</u> and <u>fall</u> on the front and back standards, helps the photographer position the image correctly in the camera

This is the image with no camera movements applied



This is the effect with back rise

This is what front rise does to the image

By using the shift on the front or back of the camera the photographer can control the image in the camera, with out moving the camera.

Front shift Left

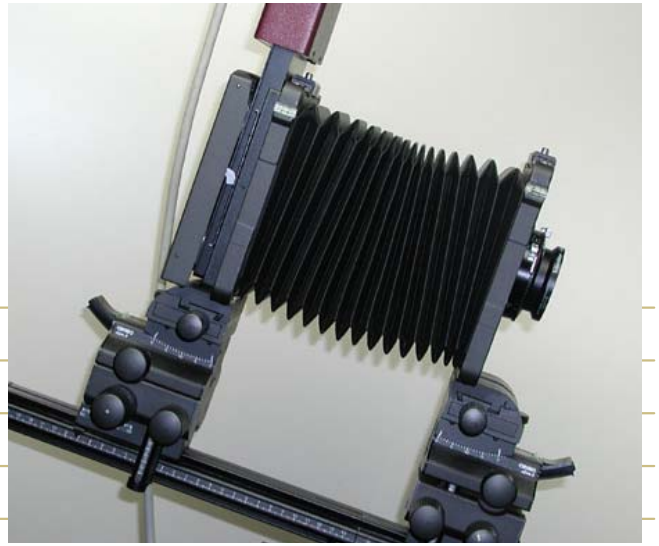
Image centered in camera

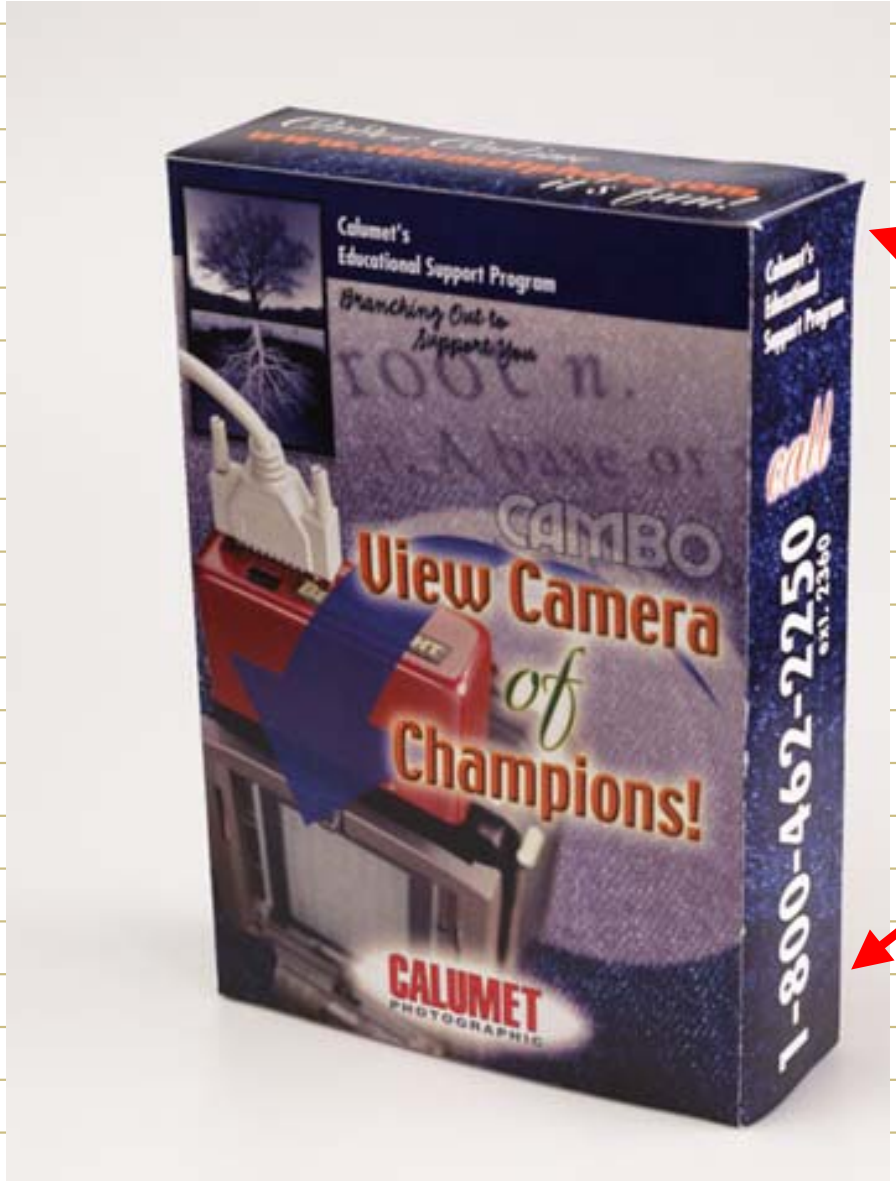
Front shift right

Camera front shifted left

Rear shift right

No corrections are applied with the responding results

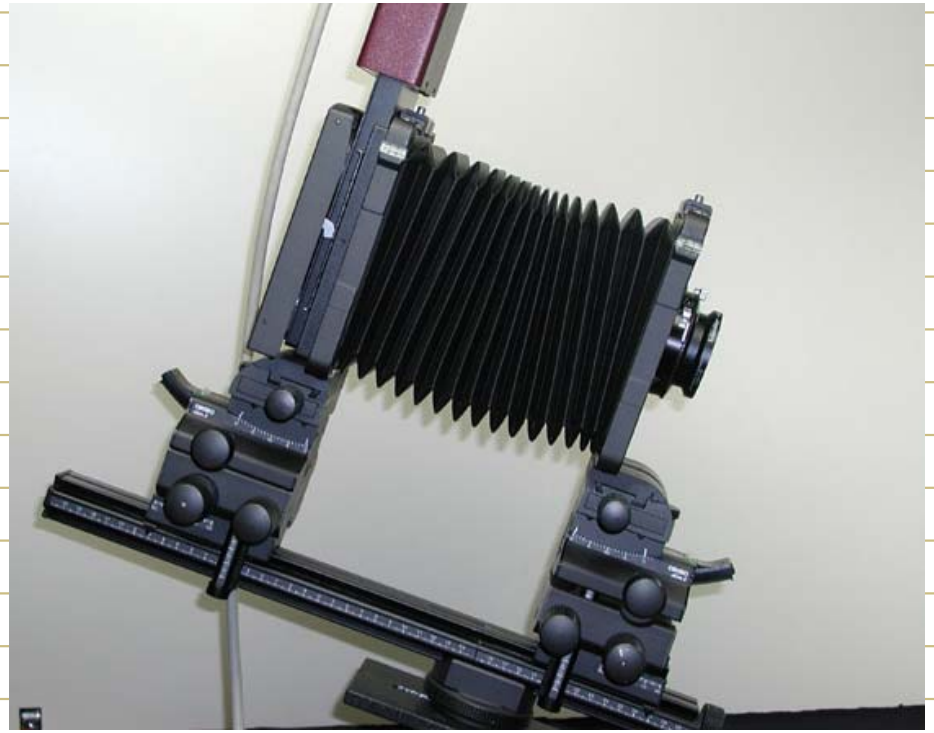




Note box top and bottom

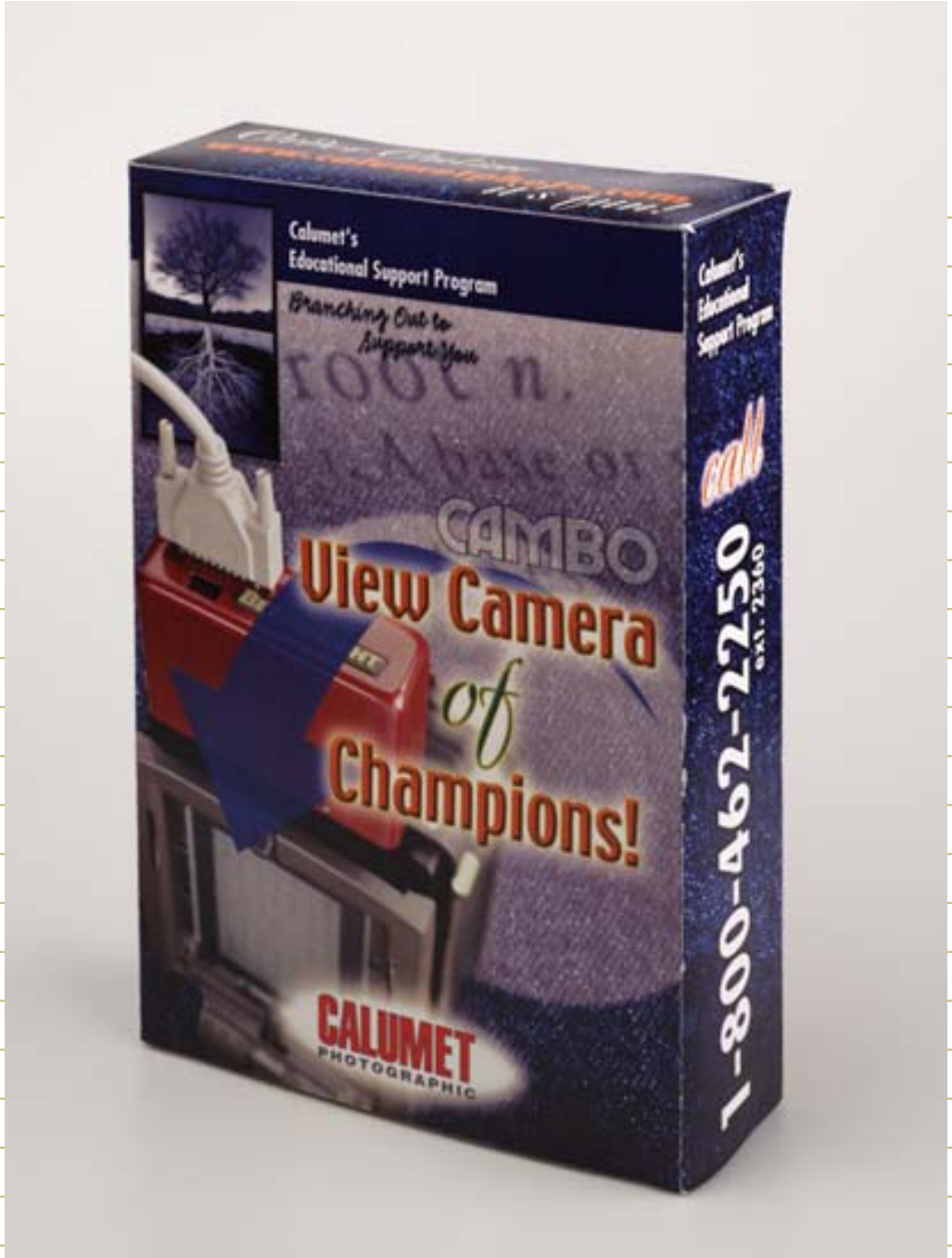
With the box standing up and the camera pointed down the box looks bigger on the top.

No camera movements



Tilting the back makes the box equal on the top and the bottom, the focus still needs work.

Back tilt applied

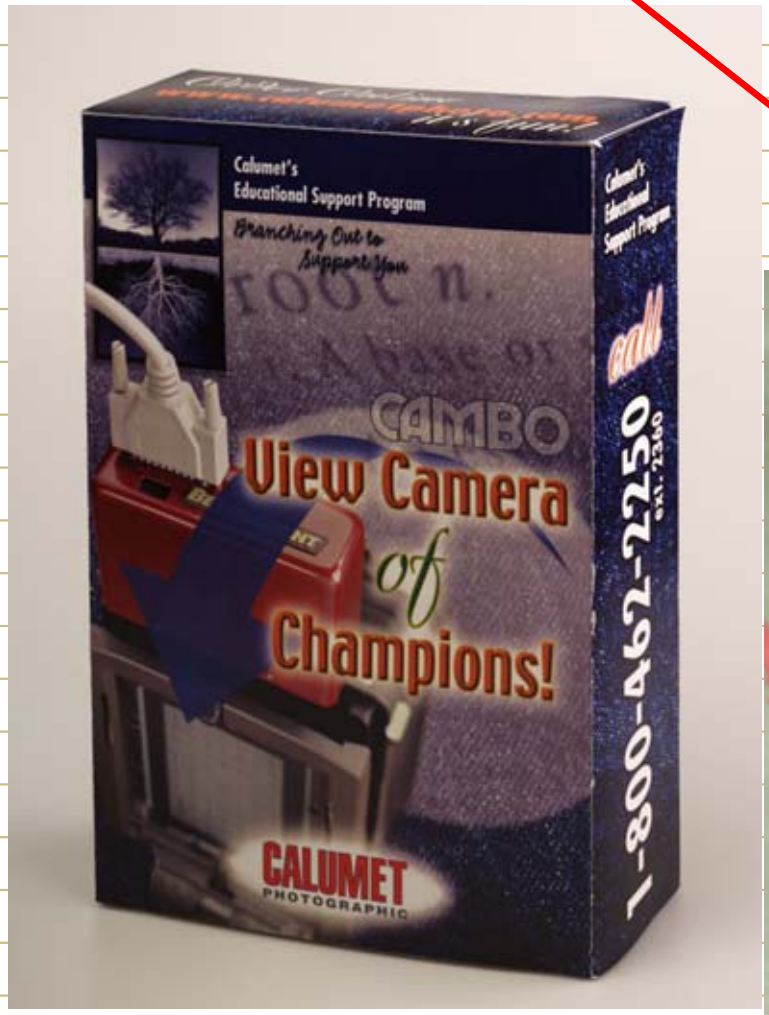


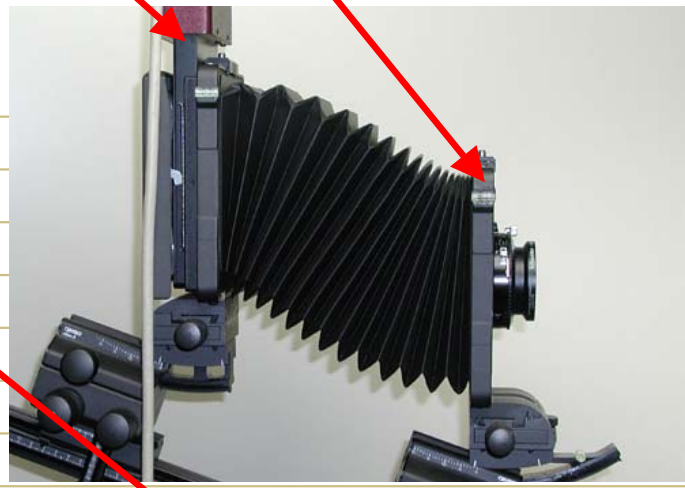
Front and back tilt

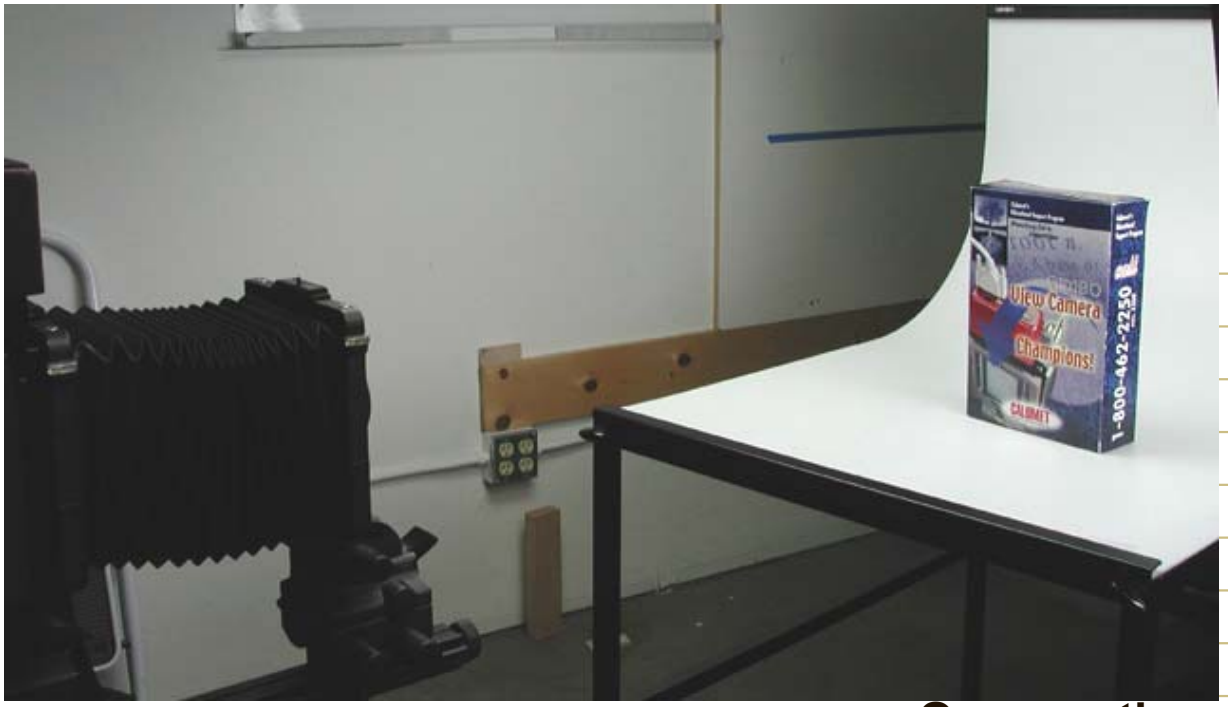
Box is now equal at the top and the bottom with the camera back and the lens board tilted to parallel with the box.

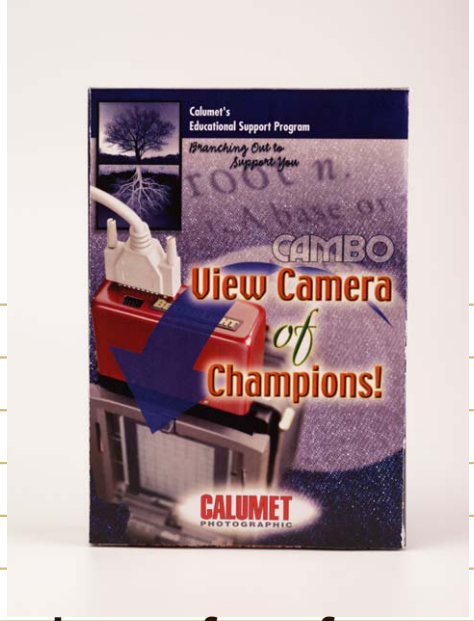
The box is in proper perspective with the correct back and front tilts, and both the lens and back swung to be on the same plane as the box.

The Scheimpflug rule in effect!

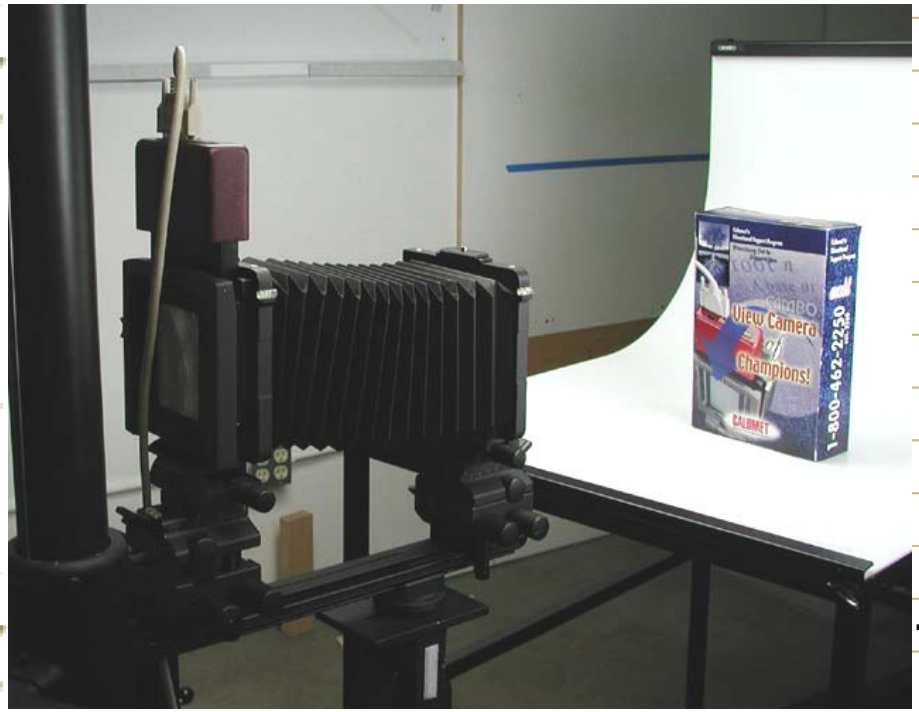




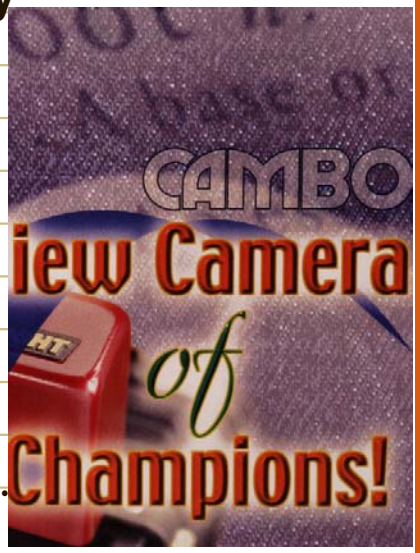




The image from far.



One creative advantage of using a view camera is when you want to take a close-up there is no need to change lenses. Simply move the camera closer and extend the bellows (you will also increase the exposure).



The resulting close up.

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