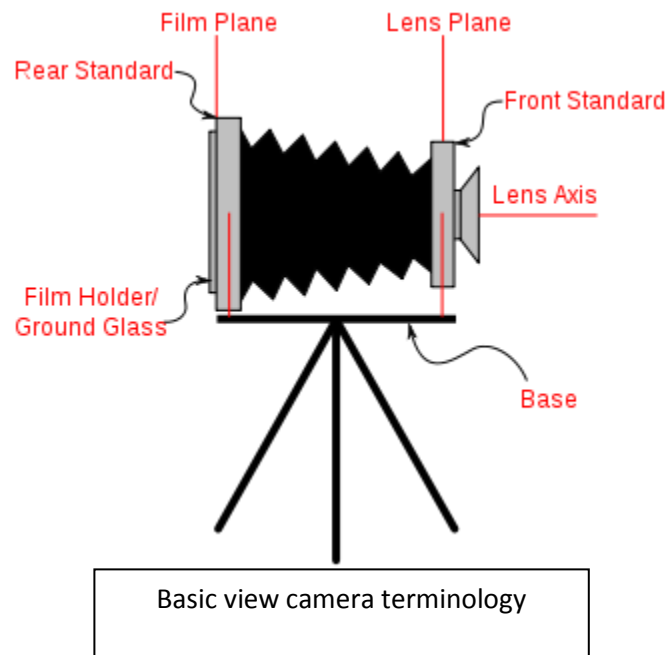


The view camera is a type of camera first developed in the era of the daguerreotype (1840s-'50s) and still in use today, though with many refinements. It comprises a flexible bellows that forms a light-tight seal between two adjustable standards, one of which holds a lens, and the other a viewfinder or a photographic film holder.

The bellows is a flexible, accordion-pleated box. It encloses the space between the lens and film, and flexes to accommodate the movements of the standards. The front standard is a board at the front of the camera that holds the lens and, usually, a shutter.

At the other end of the bellows, the rear standard is a frame that holds a ground glass, used for focusing and composing the image before exposure—and is replaced by a holder containing the light-sensitive film, plate, or image sensor for exposure. The front and rear standards can move in various ways relative to each other, unlike most other camera types. This provides control over focus, depth of field, and perspective. The camera is usually used on a tripod or other support.



Types of view camera

Several types of view cameras are used for different purposes, and provide different degrees of movement and portability. They include:

Monorail camera - This is the most common type of studio view camera, with front and rear standards mounted to a single rail that is fixed to a camera support. This design gives the greatest range of movements and flexibility, with both front and rear standards able to tilt, shift, rise, fall, and swing in similar proportion. These are generally made of metal with leather or synthetic bellows, and are difficult to pack for travel.

Field camera - These have the front and rear standard mounted on sliding rails fixed to a hinged flat bed that is fixed to a camera support (tripod, etc.). These cameras are usually made of wood, or sometimes lightweight and strong composites such as carbon fiber. With bellows fully retracted, the flat bed folds up, reducing the camera to a relatively small, light, and portable box. The price for this portability is that the standards are not as mobile or as adjustable as on a monorail design. The rear standard in particular may be fixed and offer no movement. These large format but transportable cameras are popular with landscape photographers. Tachihara and Wisner are examples of modern field cameras at opposite ends of the price scale.

Studio and salon cameras are similar to field cameras, but do not fold up for portability.

Press and technical cameras are true view cameras, as almost all of them have a ground glass integral to the film-holder mechanism that allows critical focus and full use of the sometimes limited movements. More expensive examples had a wide array of movements, as well as focusing and compositing aids like rangefinders and viewfinders. They are most often made of metal, designed to fold up quickly for portability, used by press photographers before and during the world war II.

Advantages

The ability to skew the plane of critical focus: In a camera without movements the film plane is always parallel to the lens plane. A camera with tilts and swings let the photographer skew the plane of focus away from the parallel in any direction, which in many cases can bring the image of a subject that is not parallel to the lens plane into near-to-far focus without stopping down the aperture excessively. Both standards can be tilted through the horizontal or swung through the vertical axes to change the plane of focus. Tilts and swings of the front standard alone do not alter or distort shapes or converging lines in the image; tilts and swings of the rear standard do affect these things, as well as the plane of focus: if the plane of focus must be skewed without altering shapes in the image, front movements alone must be used.

The ability to distort the shape of the image by skewing the film plane: This is most often to reduce or eliminate, or deliberately exaggerate, convergence of lines that are parallel in the subject. If a camera with parallel film and lens planes is pointed at an angle to a plane subject with parallel lines, the lines appear to converge in the image, becoming closer to each other the further away from the camera they are. With a view camera the rear standard can be swung toward the wall to reduce this convergence. If the standard is parallel to the wall, convergence is

entirely eliminated. Moving the rear standard this way skews the plane of focus, which can be corrected with a front swing in the same direction as the rear swing.

Improved image quality for a print of a given size: The larger a piece of film is, the less detail is lost at a given print size because the larger film requires less enlargement for the same size print. In other words, the same scene photographed on a large-format camera provides a better-quality image and allows greater enlargement than the same image in a smaller format. Additionally, the larger a piece of film is, the more subtle and varied the tonal palette and gradations are at a given print size. A large film size also allows same-size contact printing.

Shallow depth of field: view cameras require longer focal length lenses than smaller format cameras, especially for the larger sizes, with shallower depth of field, letting the photographer focus solely on the subject. Smaller apertures can be used: much smaller apertures can be used than with smaller format cameras before diffraction becomes significant for a given print size.

Disadvantages

Lack of automation: most view cameras are fully manual, requiring time, and allowing even experienced photographers to make mistakes. Some cameras, such as Sinar, have some degree of automation with self-cocking shutters and film-plane metering.

Steep learning curve: In addition to needing the knowledge required to operate a fully manual camera, view camera operators must understand a large number of technical matters that are not an issue to most small format photographers. They must understand, for example, view camera movements, bellows factors, and reciprocity. A great amount of time and study is needed to master those aspects of large format photography, so learning view camera operation requires a high degree of dedication.

Large size and weight: monorail view cameras are unsuitable for handheld photography and are in most cases difficult to transport. A folding bed field camera like a Linhof Technika with a lens-coupled range finder system even allows action photography.

Shallow depth of field: view cameras require longer focal length lenses than smaller format cameras, especially for the larger sizes, with shallower depth of field.

Small maximum aperture: it is not feasible to make long focal length lenses with the wide maximum apertures available with shorter focal lengths.

High cost: there is limited demand for view cameras, so that there are no economies of scale and they are much more expensive than mass-produced cameras. Some are handmade. Even though the cost of sheet film and processing is much higher than rollfilm, fewer sheets of film are exposed, which partially offsets the cost.

Some of these disadvantages can be viewed as advantages. For example,

1. Slow setup and composure time allow the photographer to better visualize the image before making an exposure.
2. The shallow depth of field can be used to emphasize certain details and deemphasize others, especially combined with camera movements.
3. The high cost of film and processing encourages careful planning. Because view cameras are rather difficult to set up and focus, the photographer must seek the best camera position, perspective, etc. before exposing.
4. Beginning 35 mm photographers are even sometimes advised to use a tripod specifically because it slows down the picture-taking process.