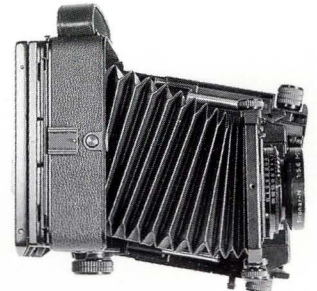
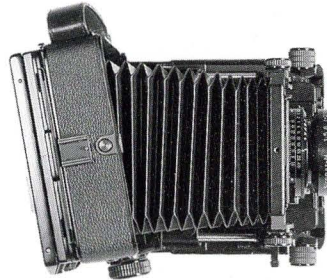
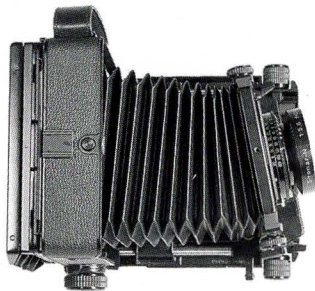
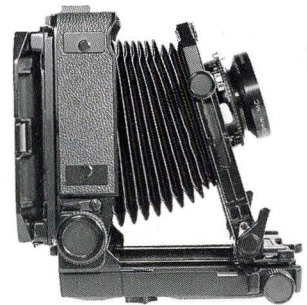
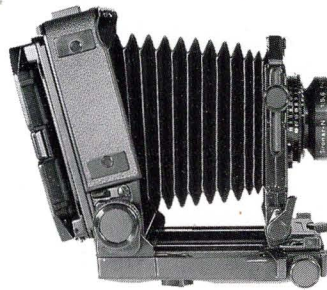
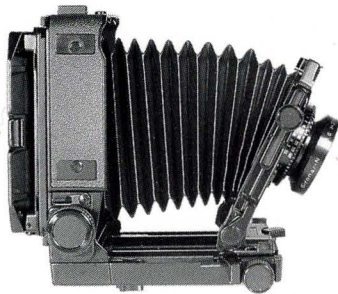
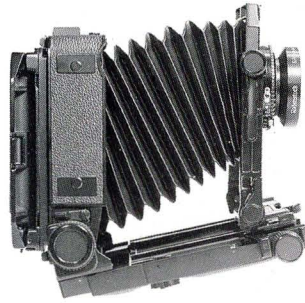
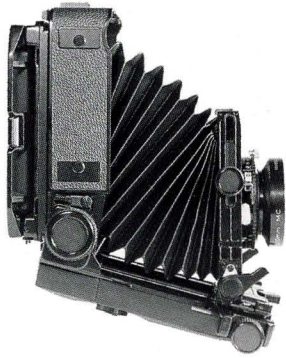


TOYO-FIELD 45AII TOYO-FIELD 45AX

Technical Field



EXPERIENCE SHARPNESS AND THE FINE ART OF COMPOSITION AS NEVER BEFORE.

Use of the large format camera inspires creation of an image as fine art. Where one can express a vision rather than merely take a picture. The ground glass image appears upside down and reversed, accentuating the forms of line, shape and tonality in an abstraction that clarifies. The large 4x5" viewing area invites the eye to scan the entire composition and note every detail and shade.

For those who require ultimate image quality and control, nothing compares with the results from a large format camera. Yielding an image over ten times greater than common 35mm film, a 4x5 folding field camera is the most convenient way to create the largest possible negative.

A great range of image control allows you to create the unusual from the ordinary. Movements such as tilt and swing allow ultimate control over perspective, subject shape and focus, including dramatic increase or decrease in depth of field. Parallel movements including rise, shift and revolving back allow for

freedom of composition without repositioning the camera.

The lack of automation and the simplicity of exposure setting emphasize technical excellence. The entire process brings the photographer to another level of concentration

that ultimately results in a more expressive and refined vision.



THE TOYO FIELD **45AII AND 45AX** offer the best of

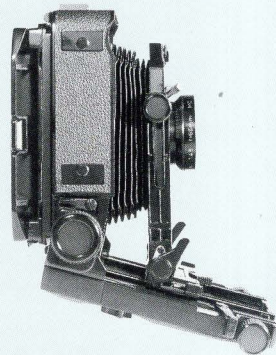
possibilities with exceptional value in full featured, portable, rugged and lightweight 4x5 technical field cameras. Weighing approximately 6 lbs., and folding to a compact 4.2" x 7.4" x 8.2", they combine modern alloy durability with classic design. They perform with the precision and convenience of a refined camera system for demanding pros as well as discriminating fine art photographers. Using hand craftsmanship, and over forty years of manufacturing expertise, Toyo achieves unparalleled precision and stability for rock-solid performance with the 45AII and 45AX. They offer a full range of camera movements, and unique features such as polymer coated parts for precision smoothness—and Toyo's 360° revolving back on the deluxe 45AII. The 45AX camera body is identical to the classic Toyo Field 45AII, except equipped with a standard, reversible 4x5 Graflock back in place of the 45AII's deluxe revolving back, to economize on weight and cost. The 45AII and 45AX share many versatile accessories with the complete line of Toyo modular studio monorail cameras.

MOVEMENTS FOR CREATIVE IMAGE CONTROL

The 45AII offers creative image control ideal for field use, as well as many studio applications. The front standard offers rise, swing, tilt and shift. The rear offers tilt and swing. With these controls, correction of distortion, adjustment of depth of field, and manipulation of selective focus are all possible.

DROP BED DESIGN FOR WIDE ANGLE LENSES

Convenient operation is an essential advantage when considering a field camera. The 45AII and 45AX offer a unique design combining compact frame, tapered bellows and drop bed displacement. This combination allows convenient use of wide angle lenses with a full range of movement.



Unlike many other view cameras, the popular 90mm wide angle focal length can be used on a flat lens board offering easy access to all lens controls. The built-in tapered bellows eliminates the need for interchanging with wide angle bellows — an operation that can be a nuisance in the field, inviting dust and dirt inside the camera. The drop bed design allows unrestricted use of all wide angle lenses down to 45mm without unsightly obstruction of the camera's front edge in the picture.

TELEPHOTO AND MACRO EXTENSION

The 45AII and 45AX's double extension bed and track are polymer coated for smooth, precise action and long-life regardless of shooting conditions. The micro-fine rack and pinion focusing front bed provides silky smooth focusing even with a heavy lens. The rear extension

rides on two rails that can be easily adjusted to maintain a stable position for use with telephotos or long extensions. Control knobs are all metal with rubber covering for easy grip with or without gloves.

The camera's full 324mm (321mm with the 45AX) extension allows use of 150mm lenses for 1:1 life size macro work, or wide angle lenses for greater than 2x life size. A standard 210mm lens can be focused to 3.5 feet (1/2x life size) for exceptional portraits and close-ups. Even a telephoto design 360mm, or standard design 300mm can be focused to ten feet for complete versatility in landscape work.

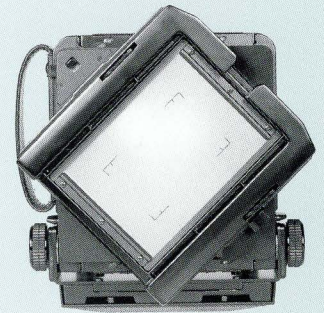
When extreme close-ups are required, or an extreme telephoto lens is used, an optional 100mm extension back is available. It offers rock-solid extension and comfortable balance with heavier telephoto lenses.

45AII WITH REVOLVING BACK FOR FUNCTION AND CONVENIENCE

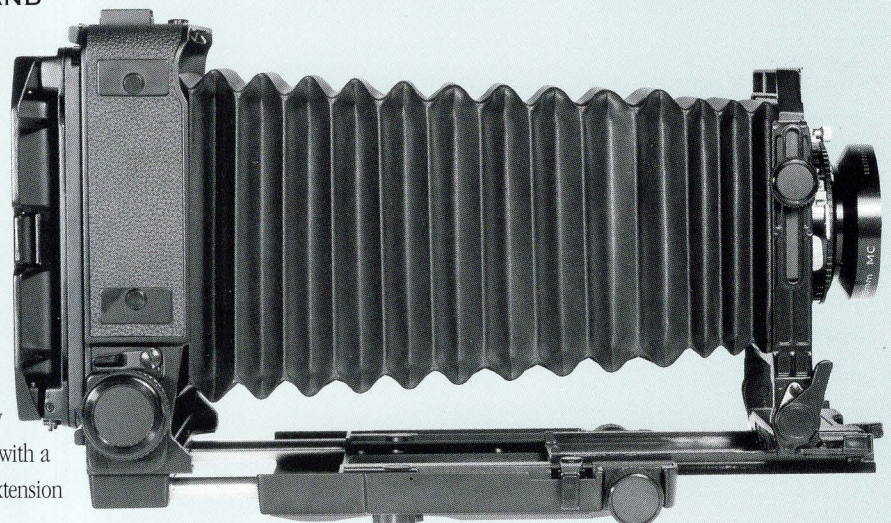
Changing from vertical to horizontal framing is a breeze with Toyo's 360° revolving back. No worry of dropping a conventional reversible back, or allowing outside elements to enter the camera when changing position. An easy-lift bail arm allows fast and secure insertion of sheet film,

Polaroid® and many roll film holders without disturbance of camera settings or removal of the ground glass frame. For complete versatility, the 45AII back also features Graflock fittings for use with any type of film holder.

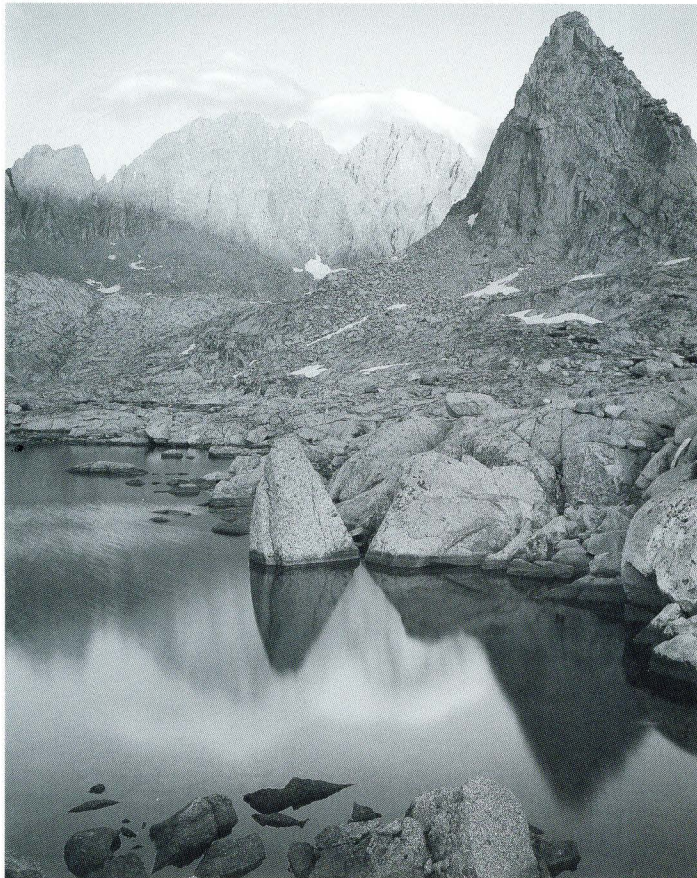
Toyo's own acid-etched ground glass reveals translucent centimeter grid lines and discreet reference markings for 6x7cm and 6x9cm roll film formats. This permits critical composition and freedom from distracting black lines common on most 4x5 screens. The grids and markings even simplify composition with creative 6x12cm panoramic format.



The 45AII revolving back includes a precision factory-installed Toyo Super-Brite fresnel lens in front of the ground glass. This enables even illumination and consistent precision focusing. This combination also allows full corner-to-corner viewing, unlike most other camera screens that cut out the corners of the picture area.



EXPLORE NEW PHOTOGRAPHIC HORIZONS WITH A VIEW CAMERA



© FRED HIRSCHMAN 1996

EXPLORING 4X5 CAMERA TECHNIQUE

4x5 view camera technique fosters creation of exceptionally expressive and well thought out individual images. In part, this is due to the photographer's desire to be more involved with the entire photographic process. Experimenting with a 4x5 field camera is easy, fun and inspiring. In fact, many photographers find that working in the 4x5 format improves their creative concentration and technical understanding of photography in general. The principles involved are timeless, straightforward and can be universally applied.

VISUALIZATION

Before setting your camera on the tripod, stop to think about the image you are going to create. This part of the process is called visualization. It sounds simple, but many photographers are automatically tuned into the speed of picking up a 35mm camera and just shooting away, only to find a few good images later. Because you are carefully considering the composition in your mind, you will also find that two lenses – a normal and wide angle – will serve most of your needs.

FRAMING THE SUBJECT

Practice framing the subject before you set-up the camera. Buy a 4x5 cut-out black presentation mat to use as a "viewing frame," and a small ruler. Hold the frame about 6 inches from your eye and you will see the approximate area that a 150mm lens "sees." Bring it about 3½ inches from your eye and you now have simulated the area viewed by a 90mm lens.

In seconds, you can use this simple device to visualize any scene and select the best angle before you take the camera out of its case.

STUDY THE SCENE

Once you set-up the camera, you will see that viewing, focusing and composing on a 4x5 ground glass reveals exactly what you record on film. The image is projected directly through the lens onto the focusing screen. It appears upside down, and reversed from right to left. While at first, this may seem awkward, this abstraction is actually an aid to better composition.

With experience, your eye will train itself to notice light, shade, form, shape and tonality more carefully. You will be less

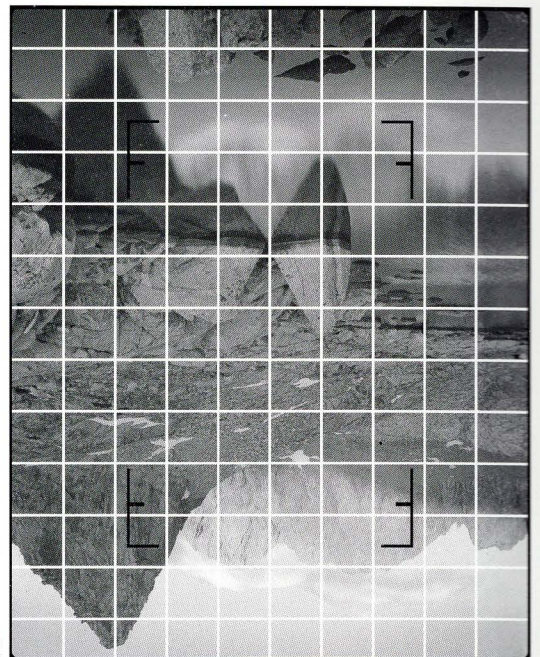
distracted by the world outside of your composition. You will learn to concentrate your mind's-eye on the large 4x5 area and to observe the direct result of changing focus, depth-of-field, and control of all the camera movements. All of this leads you to greater attention to detail, and a more refined sense of composition.

SHOOT A POLAROID

Polaroid instant materials are superb teaching and creative tools, used by beginners and pros alike. The resulting prints can be a valuable learning tool allowing you to



instantly judge composition, lighting, focus and many filter effects. You can also use them to keep a log book of your experimentation with different camera movements.

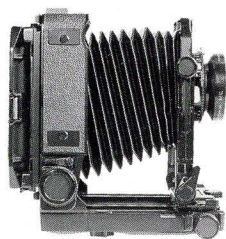


GROUND GLASS SHOWN
68% ACTUAL SIZE

GETTING STARTED WITH IMAGE CONTROL AND CAMERA MOVEMENTS: CREATIVE CHALLENGES AND SIMPLE SOLUTIONS

CONTROLLING PERSPECTIVE AND PARALLEL LINES

Challenge: You want to photograph a building, or a stand of trees, yet keep all lines parallel even though you must angle the camera upwards to encompass the scene.

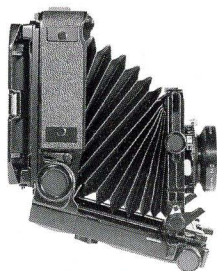


FRONT RISE

Solution: RISE. First, align the camera back parallel to the subject. Then, by using the rise movement, the lens' point of view is moved above eye level, thereby keeping vertical lines parallel. Rise, fall and shift are all parallel movements that move the lens up, down and sideways relative to the center of the camera back.

INCREASED CONTROL OF PERSPECTIVE AND PARALLEL LINES

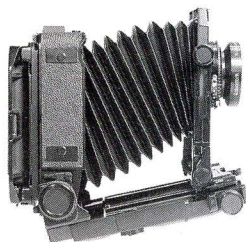
Challenge: You need more control of perspective than you can achieve with front rise, fall and shift.



DROP BED

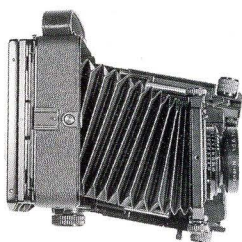
Solution: DROP BED — Front and rear are tilted backward at the same degree and thereby kept parallel, giving the effect of increased FRONT FALL.

INCLINE BED — Front and rear are tilted forward at the same degree and kept parallel, giving the effect of increased FRONT RISE.



INCLINE BED

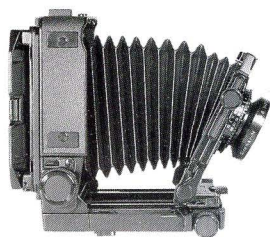
SHIFT BED — Front and rear are swung in the same direction to the same degree, giving the same effect as Shift, but with dramatically increased control.



SHIFT BED

INCREASING DEPTH OF FIELD

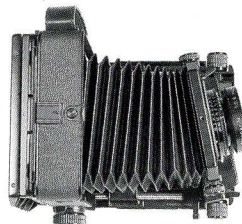
Challenge: You see a vast landscape with a field of flowers and distant mountains. You want to have both the flowers near the camera and the distant mountain in focus at the same time. Even if you used the smallest aperture on your lens, you might still need greater depth-of-field.



FRONT TILT - FORWARD

Solution: FRONT TILT. Tilting the lens forward will extend the plane of focus far beyond the effect of using a small lens aperture and allow you to get near and far objects in focus at the same time. Front tilt is usually combined with using a small aperture such as f/16 or f/22. It does not replace using a small aperture, but rather enhances the effect over a greater subject plane.

Challenge: Imagine focusing on a white picket fence, running from near to far, diagonally through your composition. With ordinary cameras you can either focus on the beginning, middle, or end of the fence, use a small aperture, and hope to get most of it in focus.

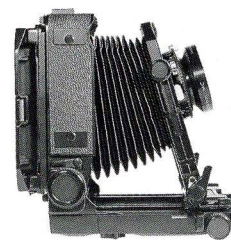


FRONT SWING

Solution: FRONT SWING. With a field camera, you can swing your lens to position it roughly parallel to the fence. This will allow you to get the fence in sharp focus from beginning to end, even with a wide open aperture.

SELECTIVE FOCUS

Challenge: You want to focus on just one leaf or flower and leave everything else in the scene a soft blur. Or, you want to recreate an effect you may have seen in a fashion magazine where only the model's eyes are sharp, and all the clothes are softly blurred.

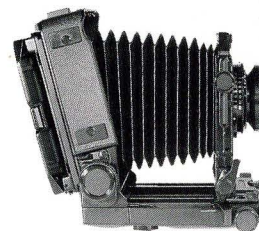


FRONT TILT - BACKWARD

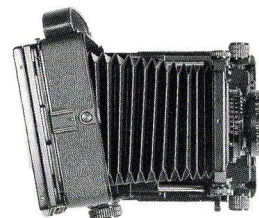
Solution: FRONT TILT-BACKWARD can be used to accomplish these selective focus effects with ease. Front swing can be used for a similar effect with objects to the left or right of your composition center. Swinging in either direction will bring objects in or out of focus.

CORRECT OR DISTORT THE SHAPE OR SIZE OF AN OBJECT

Challenge: You want to emphasize a large rock, or other visual element in the foreground of a landscape.



REAR TILT



REAR SWING

Solution: REAR TILT. By tilting the back away from the lens, you will notice that the size and shape of objects in the foreground become exaggerated. Similarly, REAR SWING will pivot the back from side to side, manipulating the shape of objects to the right or left of the composition.

TOYO SYSTEM ACCESSORIES

The Toyo Field 45AII and 45AX 4x5 technical field cameras accept many precision-made modular accessories designed for all Toyo 4x5 folding field and studio monorail cameras. The accessory system contains many professional tools to solve specific challenges and adds to the cameras' versatility and convenient operation. In addition, the 45AII and 45AX accept a wide variety of state-of-the-art digital backs for electronic imaging.

VIEWING ACCESSORIES

Image sharpness and ease-of-composition can be enhanced by using a variety of viewing and focusing aids.

TOYO PROFESSIONAL FOCUSING CLOTH #180-302

The traditional solution to viewing the ground glass image. 36x48" washable black polyester cloth has white side for reflecting heat while shading the camera.



TOYO 3.6X FOCUSING MAGNIFIER WITH NECK STRAP #180-301

The Toyo 3.6x focusing magnifier is placed directly on the ground glass for critical focusing. The long tubular design offers a comfortable distance for viewing and has a rubber base to protect the ground glass.



FOCUSING HOODS

Focusing hoods eliminate the need for focusing cloths. In the field, where wind and other elements can pose problems, focusing hoods are highly effective and convenient. Toyo offers several solutions. Interchangeable on all Toyo 4x5 cameras, all Toyo focusing hoods feature a fast attaching spring-loaded pin and lock design. They also swing away from the ground glass for easy access to the entire focusing screen when using a focusing magnifier or loupe.

TOYO 4x5 FOLDING FOCUSING HOOD #180-808

The Folding Focusing Hood is a valuable accessory which is included with the 45AII. It conveniently protects the ground glass while backpacking and eliminates the need for a focusing cloth in most lighting situations.



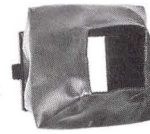
TOYO 4x5 MONOCULAR FOCUSING HOOD #180-809

The Monocular Focusing Hood has a single 1.5x magnifying eyepiece mounted atop a flexible rubber hood for light-weight and compact packing. It eliminates all extraneous light and can be used for corner-to-corner viewing of the ground glass. When detached from the camera, it can also be used as a magnifier for viewing an entire 4x5 transparency or negative on a light box.



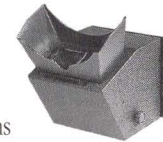
4x5 BALLOON FOCUSING HOOD #180-841

Compact and folding Balloon Focusing Hood uses bag bellows material to provide easy access and viewing of the ground glass.



TOYO 4x5 REFLEX VIEWING HOOD #180-812

The Reflex Viewing Hood eases eye strain and allows convenient right-side-up viewing. The image remains reversed from right to left. The Reflex Viewing Hood features a special swing-away mounting frame. The frame has twin slide locks that allow fast and easy attachment of the Reflex Viewing Hood in vertical or horizontal position. In addition, it has a removeable 1.5x twin magnifying eyepiece.

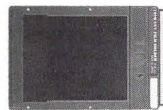


SHEET AND ROLL FILM HOLDERS

To match the precision of the all-metal Toyo Field cameras, Toyo manufactures their own precision sheet and roll film holders. They also accept other brands of sheet and roll film holders including 6x12cm panoramic backs, Polaroid® Instant Proofing Holders, Kodak Readyload® and Fuji Quickload® film holders.

TOYO PRECISION 4x5 DOUBLE CUT FILM HOLDERS TWIN PACK #180-903

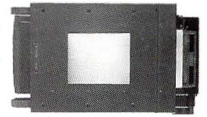
With precision metal septum, durable construction and exacting film plane tolerances within 0.003". Dark slides slip in and out smoothly without ever disturbing holder position. Wide flap opening permits easy film loading.



Toyo 4x5 dark slide (replacement) #180-910

TOYO 45 SERIES ROLL FILM HOLDERS

These are designed with a 4x5 mounting plate for easy and direct insertion into Toyo 4x5 camera backs without removal of the ground glass. May also be attached to any brand view camera with Graflock back.



Toyo 6x7cm 67/45
120 Roll Film Holder #180-725

Toyo 6x9cm 69/45
120 Roll Film Holder #180-726

TOYO SLIDING BACK ADAPTER #180-719

Allows quick, sliding change between 6x9cm ground glass focusing screen and roll film back. Installs in place of 4x5 ground glass frame.



Built-in dark slide mechanism automatically engages when ground glass is in place. Accepts Toyo standard roll film backs, Mamiya™ RB67 roll film backs, and other brand Graflock style 6x7cm and 6x9cm roll film backs.

Toyo 6x7cm Roll Film Holder for Sliding Back Adapter #180-727

Toyo 6x9cm Roll Film Holder for Sliding Back Adapter #180-728

Monocular Viewing Hood for Sliding Back Adapter #180-811

Folding Focusing Hood for Sliding Back Adapter #180-810

POLAROID® FILM HOLDERS

Polaroid 545 Holder uses Polaroid 4x5 sheet films. Polaroid 405 Holder uses Polaroid 2-1/4x2-3/4 pack films.



LENS ACCESSORIES

TOYO PRO COMPENDIUM LENS HOOD #180-623

A lens hood is essential for the elimination of extraneous light and flare, which can seriously deteriorate image contrast and sharpness. It is particularly important when working in the outdoors where sun and bright skies can cause flare in even the finest multi-coated lenses. The Toyo Pro Compendium Lens Hood works with a wide variety of lens brands and focal lengths, and



flexibly adjusts regardless of the lens position or camera movement used. It also features a swing-up mount for easy access to shutter controls. Since large format cameras accept a wide selection of lenses from many manufacturers, you might need a variety of filter sizes. The Toyo Pro Compendium Lens Hood provides an elegant solution with the use of standard gel filter holders, both 3" and 4". Additionally, optional Extension Rods (#180-604) can be used with the built-in mount frame to extend the hood out further for very long lenses.

LENS BOARDS AND ADAPTERS

To accommodate the wide variety of lenses available, Toyo offers an array of lens boards and lens board adapters for the 45AII and 45AX. Recessed lens boards allow short focal length lenses greater movement capability.

FLAT LENS BOARDS, 110MM SQUARE

Un-drilled. Can be drilled for any shutter size opening #180-629
Pre-drilled for 90mm to 180mm with #0 shutter #180-621
Pre-drilled for 180mm-270mm with #1 shutter #180-622

12.5MM RECESSED LENS BOARD, 110MM SQUARE

Pre-drilled for 58mm to 90mm with #0 shutter #180-640

45MM RECESSED LENS BOARD, 110MM SQUARE

Un-drilled for 45mm to 90mm #180-630
Pre-drilled for 45mm to 65mm with #0 shutter #180-639

ANGLE CABLE RELEASE ADAPTER

These allow easy installation of standard cable releases to view camera lens shutters, especially when mounted on a recessed lens board. #180-641 for #0
#180-642 for #1

LENS BOARD ADAPTERS

Adapts Linhof Technika style board to Toyo Field camera:
Linhof to 110mm square Toyo Field #180-635
Linhof style lens board, un-drilled #180-638
Adapts round corner Graflex lens boards to Toyo Field:
Graflex to 110mm square Toyo Field #180-636
Graflex lens board (#0) #180-637
Adapts Toyo Field lens boards to Toyo Monorail cameras:
Toyo Field to Toyo Monorail #180-631

SET OF 3" AND 4" GEL FILTER HOLDERS, REPLACEMENT #180-609
for Compendium Hood.

EXTENSION RODS #180-604
Extends Compendium Hood for use with long lenses.

OTHER ACCESSORIES

100MM (4") EXTENSION BACK #180-730

100mm Extension Back attaches easily between camera body and back for stable added extension for close-up or telephoto applications. Up to two extension backs may be added.



TOYO LENS WRENCH #180-625

Spanner wrench specifically designed to secure lenses with #0 or #1 shutters on drilled lens boards.

TOYO INFINITY STOPS #180-715

Allows fast set-up of lens to preset infinity position. Several sets can be installed for use with a variety of focal length lenses.

TOYO ACID ETCHED GROUND GLASS, REPLACEMENT #180-814

Features corner-to-corner viewing, with translucent, acid-etched centimeter grid lines. Printed reference corners for 6x7cm and 6x9cm roll film formats.



TOYO SUPER-BRITE™ FRESNEL LENS, REPLACEMENT #180-818

Fits under ground glass for bright, even illumination with all lenses from wide angle to telephoto.

TOYO COMPACT CARRY CASE #180-887

Aluminum case fits Toyo Field camera with two lenses and film holders. Measures: 18 x 7 x 10 1/2". Weight: 7 lbs.



SELECTING FIELD CAMERA LENSES

LENS SELECTION - FOCAL LENGTH

Choosing a lens for your view camera is easy because you will most likely find that only two lenses, a wide angle and normal, will cover most of your field camera needs. Here are a few hints that may help you decide.

For a standard lens, a 150mm lens is the most versatile for 4x5 field camera work. It gives a natural perspective, and is useful for any subject from landscape and portraiture to still life. It is also an excellent choice for close-up and macro photography in the field, because you can achieve life size reproduction (1:1) without extra accessories. The slightly longer 210mm focal length, common in 4x5 studio camera work, is also widely used with field cameras as a normal lens. The 90mm lens is the most popular and versatile 4x5 wide angle lens, and is useful for a wide range of subjects from capturing vast landscapes to architectural subjects.

APPROXIMATE EQUIVALENTS OF LENS FOCAL LENGTH

This chart equates lenses for 35mm format to 4x5 format.



35MM	4x5
20mm	65mm
27mm	90mm
28mm	105mm
35mm	135mm
45mm	150mm
52mm	180mm
63mm	210mm
90mm	300mm
105mm	360mm
145mm	500mm

LENS SELECTION - MAXIMUM APERTURE

Most 4x5 field camera lenses have maximum apertures of f/4.5 or f/5.6, which are excellent for viewing and focusing brightness. In some instances you will have a choice of the same focal length lens in two different maximum apertures. The f/4.5 lens will be brighter and easier to focus than a comparable lens with f/8.0 maximum aperture, but will be larger, heavier and more expensive. In actual picture taking, you will probably be using either lens at f/16 and image quality may be comparable.

GET THE BIG PICTURE WITH

TOYO-VIEW

MAMIYA AMERICA CORPORATION

8 WESTCHESTER PLAZA, ELMSFORD, NY 10523 914.347.3300

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TOYO 45AII AND 45AX TECHNICAL FIELD CAMERAS

GENERAL

- Compact Folding Design
- Rugged, precision all-metal alloy construction
- Rack and pinion, geared, fine-focus front bed
- Rigid double extension bed for stable mounting of long lenses
- Drop bed capability with 90° and 15° positive stops for use of lenses to 45mm
- Built-in accessory shoe
- Includes one pair of adjustable infinity stops
- Includes interchangeable 1/4" and 3/8" tripod sockets
- Accepts many Toyo 4x5 system accessories

45AII ONLY

- 360° Revolving Back
- Toyo acid-etched, centimeter grid ground glass
- Factory-installed Toyo Super-Brite™ Fresnel Lens
- Extension allows focusing of 300mm or 360mmT lens
- Includes 4x5 folding focusing hood

CAMERA BACK

- International standard with Graflock fitting
- Accepts all 4x5 cut film holders, Kodak Readyload®, Polaroid® 4x5, and all roll film holders - 6x7cm, 6x9cm, 6x12cm with Graflock fitting
- 45AII ONLY • Bail Arm Loading with wide-gap opening
- 360° Revolving Back allows fast and easy change from vertical to horizontal with independent lock for intermediate revolved positions.
- 45AX ONLY • 4x5 Reversible Graflock Back

FOCUSING SCREEN

- Full corner-to-corner coverage for critical focusing
- 45AII ONLY • Toyo exclusive ground glass for extraordinary brightness
- Acid-etched centimeter grid screen with 6x7cm & 6x9cm markings
- Factory installed Fresnel Lens under ground glass, for precise, consistent focusing
- 45AX ONLY • Toyo acid-etched, centimeter grid ground glass
- Factory-installed Toyo Super-Brite™ Fresnel Lens

BELLOWS

- Toyo Flexilast™ material resists cracking for long life
- Tapered Bellows allows use of lenses from wide angle to telephoto with no need to change to wide angle bellows

SPECIFICATIONS

Base Tilt	Front 90° +15°	Rear 90° +15°
Swing	Front 8° +8°	Rear 8° +8°
Rise/Fall	Front 20.5mm/23.5mm	
Rise-Incline Bed/Fall-Drop Bed	84mm/65mm ¹	
Shift	Front 7mm + 7mm	
Shift Bed	Front 40mm + 40mm ¹	
Geared Focusing	Front Bed 91.5mm	
Minimum Extension	45mm with recessed lens board	
	70mm with flat lens board	
Maximum Extension	45AII 324mm with flat lens board	
	424mm with addition of optional 100mm Extension Back	
	45AX 321mm with flat lens board	
	421mm with addition of optional 100mm Extension Back	
Size (folded)	4.2 x 7.4 x 8.2"	
Weight	45AII 6.1 lbs.	
	45AX 5.8 lbs.	

MINIMUM FOCUSING DISTANCES AND MAGNIFICATION (APPROX.)

Lens ³	Minimum Distance (Lens-to-subject)	Magnification
58mm XL	0.2 ft.	4.4x
65mm SW	0.2 ft.	3.9x
90mm SW	0.4 ft.	2.5x
135mm W	0.8 ft.	1.4x
150mm W	0.9 ft.	1.2x
180mm W	1.3 ft.	0.8x
210mm W	1.9 ft.	0.5x
240mm W	2.7 ft.	0.4x
300mm M	9.7 ft.	0.1x
270mm T	2.6 ft.	0.5x
360mm T	7.9 ft.	0.2x
500mm T	12.7 ft. ²	0.1x

¹ Maximum movement indicated. Varies with focal length used.

² Extension Back required.

³ Specifications may vary with lens manufacturers.