H-2

How to operate your

HEILAND

PENTAX

H-2

35 MM Single Lens Reflex Camera

IMPORTANT---Read This First!

1 Focus only after cocking the rapid wind lever. (Because of the instant return mirror of the PENTAX, the position of the mirror varies sli :htly before and after winding the film and cocking the shutter.)

2 When advancing the film, be sure to stroke the rapid wind lever *all the way* until it stops.

3 *Do not touch the surface of the mirror.* If the mirror gets dusty, use a blower to dust it off, or dust lightly with a good camel's hair brush.

4 If your PENTAX should need repair, don't try to fix it yourself. Have your Heiland dealer send it to the factory. For holders of our warranty card, free repair service will be maintained for material and workmanship defects within a period of 18 months after date of your purchase.

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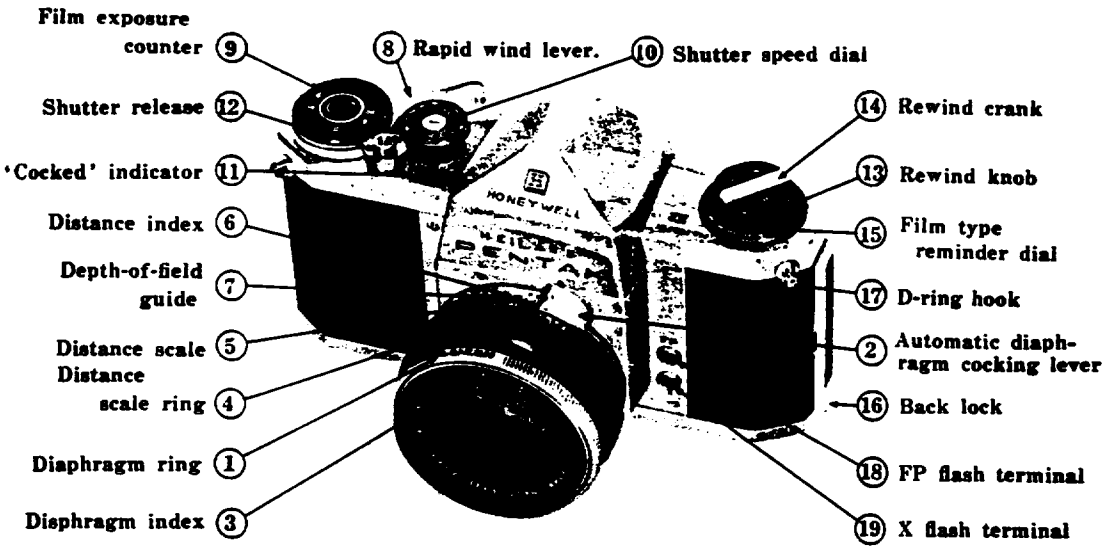
MAJOR WORKING PARTS OF PENTAX H-2



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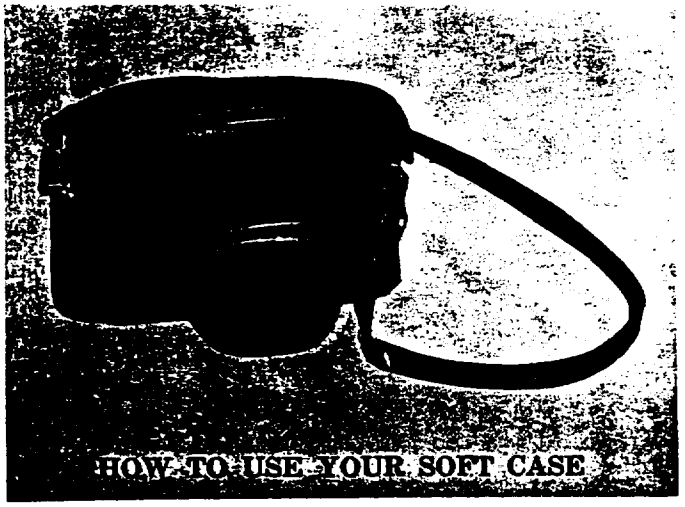

Attach the leather strap to the soft case as shown in this photograph. The cloth strap which you will find in the soft case may be attached to the D-rings on the camera. A lens-hood may be inverted over the lens as illustrated, and the camera with lenshood carried in the soft leather case.

(Horizontal position)

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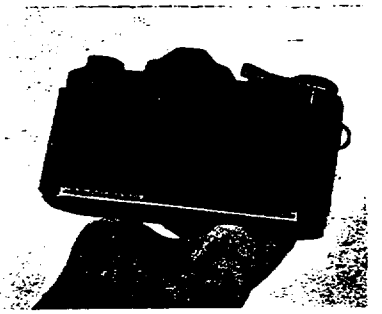
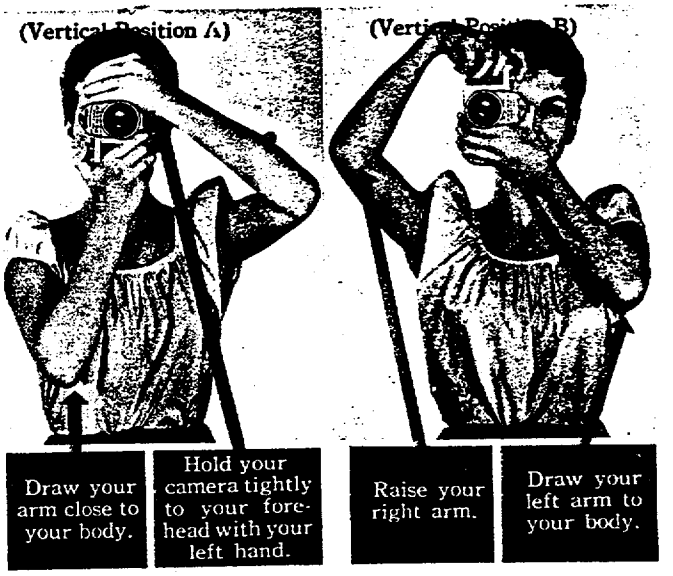
HOW TO HOLD YOUR CAMERA

As a general rule, your camera should be held more firmly by the left hand which does not release the shutter. If you hold your camera with the right hand—the hand which releases the shutter—it may cause movement. Very often, pictures which are not sharp are due to movement of the camera.

When you focus with the camera held horizontally, hold the lens barrel as illustrated in the photograph below. Put the camera on the root of your left hand thumb and little finger. Turn the distance scale ring with your thumb and index finger.



When holding the camera vertically, some people release the shutter with the thumb (Photo A), while others release it with the index finger (Photo B). Position B is more desirable for fast focusing and shooting. With the PENTAX, whether held vertically or horizontally, you can see your subject image through the taking lens, and this enables you to compose, focus and shoot faster than with any other type camera.



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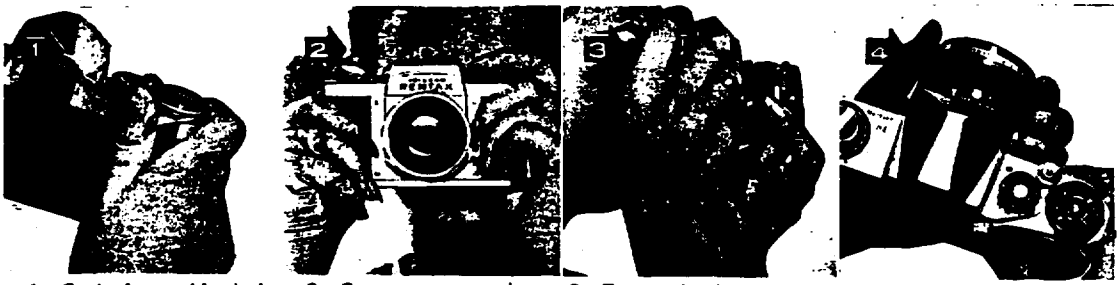
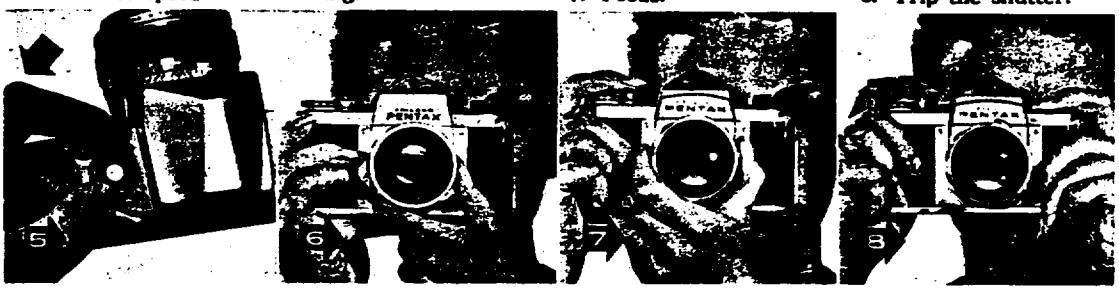
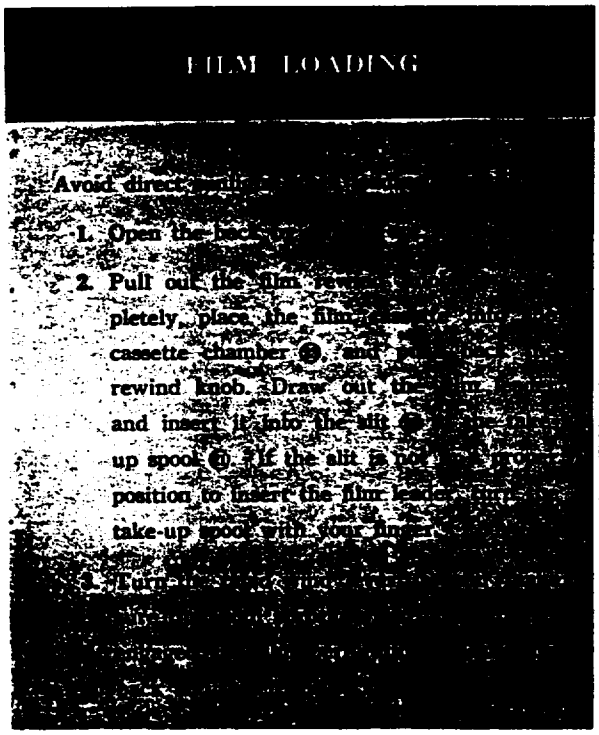


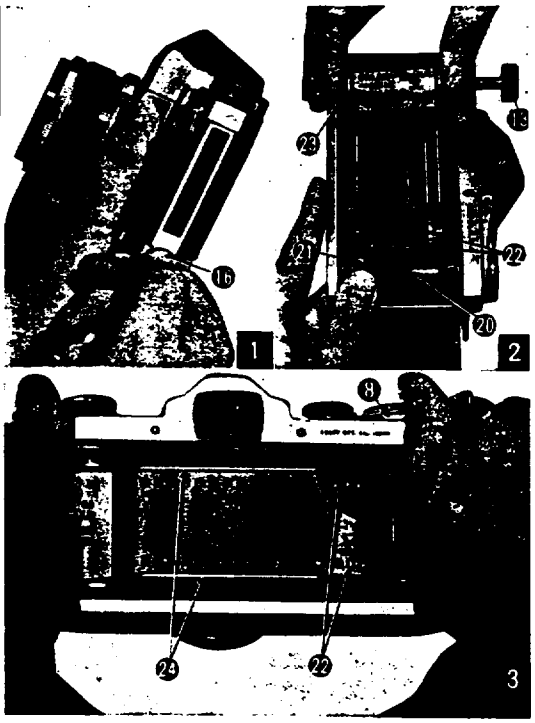
1. Cock the rapid wind lever.
2. Compose your picture.
3. For viewing exact depth of field at different apertures, view your subject while turning the diaphragm ring.
4. Select the f/stop you want by setting the diaphragm ring.

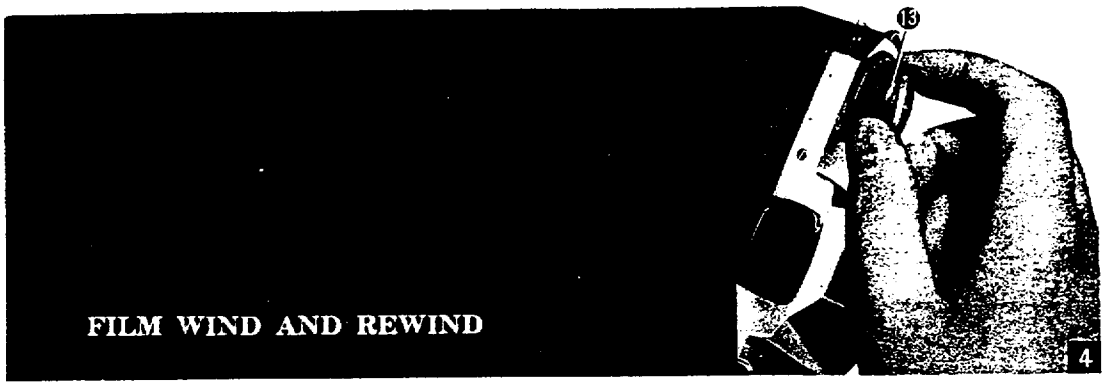
BEFORE TAKING PICTURES . . .

5. Set the proper shutter speed.
6. Cock the automatic diaphragm lever for full-aperture viewing.
7. Focus.
8. Trip the shutter.



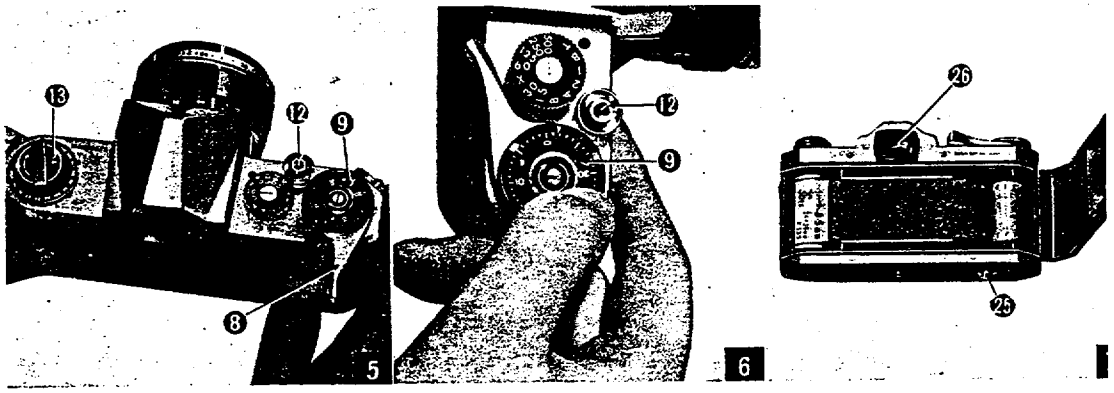






To wind the film . . .

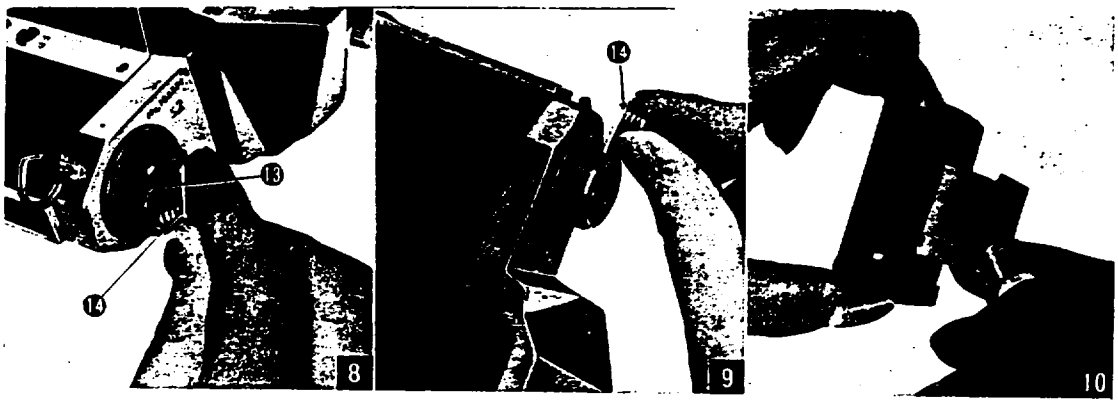
4. Before turning the rapid wind lever, slowly turn the film rewind knob clockwise until a slight resistance is felt. This prevents loosening or warping of the film.
5. The first portions of the film cannot be used for picture taking as they have already been exposed to light. Generally, two blank exposures should be made before taking your first picture. Cock the rapid wind lever until it stops. Watch to see that the film rewind knob automatically turns counter-clockwise, indicating that the film is moving from cassette to take-up spool. Trip the shutter and again cock the rapid wind lever. Set the exposure counter ⑨ to 0, and trip the shutter again. Your camera is now ready for the first pic-



ture. When cocking the rapid wind lever for the first picture, the exposure counter automatically turns to '1', indicating that the first picture is ready to be taken. ALWAYS COCK THE RAPID WIND LEVER COMPLETELY WITH A FULL STROKE.

6. Turn the exposure counter dial ⑨ in the direction indicated by the arrow. DON'T TURN IT IN THE OPPOSITE DIRECTION.

   After the final picture on the roll (20 or 36 exposures) has been taken, the rapid wind lever will not turn all the way as you stroke it. This indicates that the final picture has been taken on your film.
7. After the final picture has been taken, DON'T open the back or ALL exposed frames will be ruined.



8. Unfold the film rewind crank ⑭.

9. Depress the film rewind release button ㉕ shown in photograph 7. Turn the rewind crank to rewind the film into the film cassette. The film rewind crank permits rewinding at a smooth, even rate. Under some atmospheric conditions, erratic or too rapid rewinding will cause static electricity marks on the film. You will feel the tension on the rewind crank lessen as the leader end of the film slips off the take-up spool.

   Stop rewinding when you feel this happen. AVOID DIRECT SUNLIGHT WHEN UNLOADING YOUR FILM. (The rewind release button ㉕ will return to normal position as you load your next film and turn the rapid wind lever.)

10. Open the back, pull out the film rewind knob ⑬ and remove the film cassette. Bend the leader end of the film to indicate that the film is exposed and ready for development.

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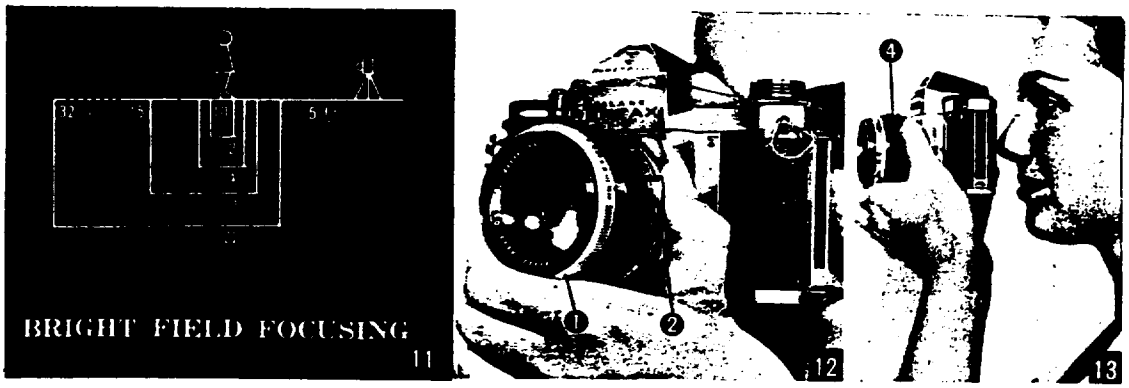

12. Cock the rapid wind lever ⑧, set the diaphragm ring ① at the desired f setting, cock the automatic diaphragm lever ② to fully open the diaphragm, and then start viewing and focusing through the finder window ㉖ shown on page 11.

13. Turn the distance scale ring ④ until your subject image is clearly in focus. It is not always necessary for you to view and focus with the diaphragm fully open. In the bright outdoors, you can easily focus with the diaphragm closed to f 5.6 or f 8, and still observe the depth-of-field. It is easier, however, to focus with the diaphragm fully open as the depth-of-field is then shallow and your subject image much brighter.

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As you look at the lens while closing down the diaphragm ring to f 22, you will note that the diaphragm consists of ten blades which make a small round aperture in its center. As the diaphragm ring is turned from f 2 to f 22, this round aperture becomes smaller. As the diaphragm is opened from f 22 to f 2, the lens brightness doubles at each setting. For instance, twice as much light enters at f 11 as at f 16.

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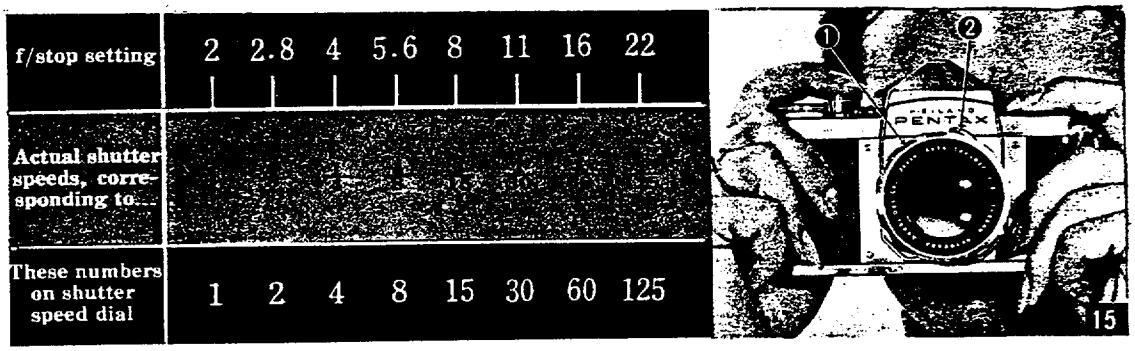
When you cock the automatic diaphragm lever, the diaphragm is fully opened no matter what aperture is set on the diaphragm ring. As you release the shutter, the diaphragm automatically stops down to the predetermined aperture and the shutter curtains start travelling instantly. This is called an automatic diaphragm. To fully open the diaphragm again, cock the automatic diaphragm lever each time before you trip the shutter. If you wish to take several pictures at the same aperture setting, you need not cock the automatic diaphragm lever between pictures. On the Auto-Takumar 55 mm f 2 lens, you will find intermediate f click stops on the diaphragm ring, which are useful when particularly critical exposures are required.

Note the following when you operate the automatic diaphragm:

1. You may turn the diaphragm ring and change the pre-selected aperture after cocking the automatic diaphragm lever. For example, you can change the diaphragm ring setting from f 5.6 to f 2.8 after cocking the diaphragm lever. . . the automatic diaphragm will stop down to f 2.8 when you trip the shutter.



2. You may cock the automatic diaphragm lever any time. before or after cocking the rapid wind lever. . . before or after setting the shutter speeds. before or afer focusing.
3. If you wish to observe the depth-of-field after cocking the diaphragm lever and fully opening the diaphragm, you may trip the shutter button if you have not yet cocked the rapid wind lever. If you have already cocked the rapid wind lever, depress the shutter button very slowly to close down the diaphragm only without releasing the shutter (The automatic diaphragm and the shutter operate with a double stroke to prevent vibration of the camera.)
4. When you do not intend to use your PENTAX for a lengthy period, (6 months to one year) turn the diaphragm ring to f/22 to protect the spring mechanism.

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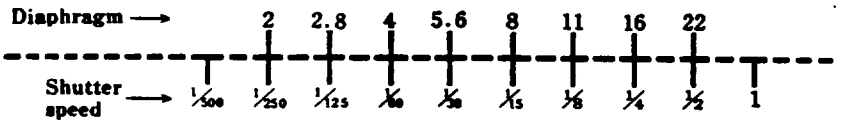
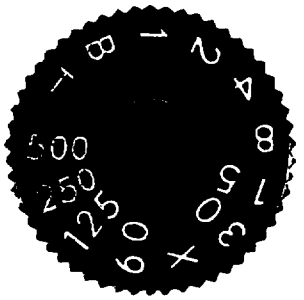
SHUTTER



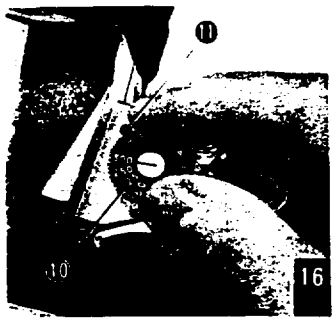


The PENTAX H-2 is equipped with shutter speeds: T, B, 1, 1/2, 1/4, 1/8, 1/15, 1/30, 1/60, 1/125, 1/250 and 1/500 second. On the shutter speed dial, only the figures 1, 2, 4, 8...appear. The above diagram shows combinations of diaphragm opening and shutter speed, with each combination giving the same exposure.

Adjustment of shutter speeds

Turn the shutter dial clockwise or counter-clockwise as you like, to the desired shutter speed. The shutter speed may be set either before or after cocking the rapid wind lever. As you cock the shutter by turning the rapid wind lever, the 'cocked' indicator ⓓ becomes red showing the shutter is cocked. (For the reason explained in paragraph 1, page 3, make sure the 'cocked' indicator shows red before you focus the lens.) The indicator window blacks out as you trip the shutter button. For use of the X setting on the shutter dial, refer to page 24.

With the shutter speed dial set on B (bulb) the shutter will stay open as long as you depress the shutter button. As you release your finger from the shutter button, the shutter closes. When a long exposure is desired while using the B setting, attach a shutter release cable with a locking device to the shutter button. This will permit a "Time Exposure."



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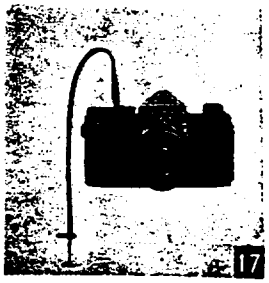

With the shutter speed dial set on T (time), the shutter stays open after the shutter button is released. To close the shutter, turn the shutter speed dial in either direction. Unless you turn the shutter speed dial, the shutter will not close.

CAUTIONS

1. At slow speeds—slower than 1/15—support your camera rigidly or use a tripod to prevent movement of your camera.
2. To protect the shutter mechanism, trip the shutter release before putting the camera out of use for any extended period. (6 months to one year or longer.)

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MAINTENANCE OF YOUR CAMERA

1. Protect your camera from humidity, salty air and dust. Hot temperatures above 120°f and low temperatures below —55°f will affect the shutter performance. In extremely hot weather, try to keep your camera cool. Never put it in the glove compartment or the rear window still of your car. When extremely cold, try to keep the camera warm.

2. To remove grit or dirt from the camera body, use a soft brush or a dry soft piece of cloth. For the lens, use only a spray of air, soft lens tissue, or a camel hair brush. For the reflex mirror, use a spray of air or a soft camel hair brush only. Never wipe the mirror or lens surface with cloth.

3. Never use oil in your camera and do not touch the shutter curtains.

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MAJOR FEATURES OF PENTAX H-2

Here's why the Heiland PENTAX H-2 is the world's best value in single-lens reflex cameras:

Type - - - - - - - - - Pentaprism single lens reflex with automatic diaphragm.
Film size - - - - - - - 35 mm film 20–36 exposures.
Picture size - - - - - 24 mm × 36 mm
Standard lens - - - Auto-Takumar 55 mm f 2 with automatic diaphragm, helicoidal lens barrel.
Shutter - - - - - - - Focal plane shutter; single non-rotating dial. Speeds: T (Time), B (Bulb), 1, ½, ¼, ⅛, 1/15, 1/30, 1/60, 1/125, 1/250 and 1/500 of a second.
Finder and Focusing - - - - - Pentaprism finder with microprism Fresnel lens brightened ground glass. Life size image viewing and focusing with standard lens.
Reflex mirror - - - - Instant return mirror.
Rapid film advance - - Single-stroke (90°) rapid wind lever transports film and cocks shutter.
'Cocked' indicator - - When shutter is cocked, a small window located by the shutter dial shows red.
Film rewind - - - - - Rapid rewind crank speeds film take-up.
Double Exposure - - Coupled film wind and shutter cocking prevents double exposure. (Should you wish to make a deliberate double exposure, depress the rewind button while stroking the film advance lever.)
Lens mount - - - - - Threaded lens mount for interchangeable lenses. An adaptor ring is available for use of Asahiflex lenses.
Flash Synchronization - FP and X terminals.
Film type reminder dial - - - - Color coded film type guide for ASA ratings for color, black & white and special film.
Accessory Clip - - - On both sides of finder window frame are grooves to accept accessory clip and 90° finder, furnished as accessories.

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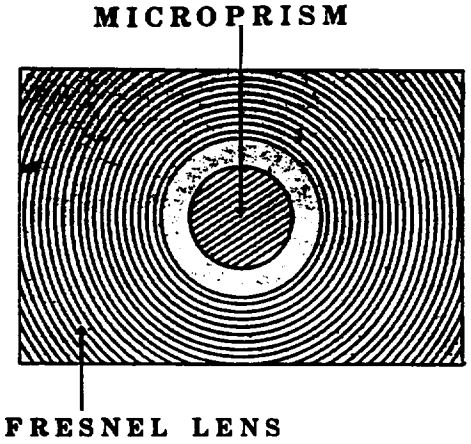

As shown on page 46, the Heiland PENTAX H-2 has a Fresnel lens with microprism center underneath the ground glass. As you look through the finder, you will see that the Fresnel lens consists of many concentric rings that provide the brightest possible image in the ground glass.

The microprism is the portion pointed out in this diagram. When your subject is in focus, the image at the center will be clear as elsewhere on the ground glass. But once your subject is out of focus, the image at the center will look greatly distorted, and you can easily see that your subject is not in focus. You can focus on your subject at any portion of the ground glass of the PENTAX.

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DEPTH-OF-FIELD

Depth of field is the range between the nearest and farthest distances that are in focus at different lens apertures. With the PENTAX, you can determine the depth of the field in advance by looking through the camera's taking lens.

DEPTH-OF-FIELD GUIDE

If you want to know how great the depth of field is at a certain aperture, look at the Depth-of-Field Guide ⑦. In figure 18, the distance scale is set at 10 feet. . . the lens is focused on a subject 10 feet away. The figures on each side of the distance scale index ⑥ correspond to the diaphragm setting and indicate the range of in-focus distance for different lens apertures. For example, if the lens opening of f 8 is to be used, the range on the distance scale ring covered within the figure 8 indicates the area in focus at that lens opening. You will note from this Depth-of-Field Guide that the range from 8 feet to 14 feet is in focus. Note that as the lens apertures change, the effective depth of field also changes. For the depth of field when using extension tubes, refer to page 25.

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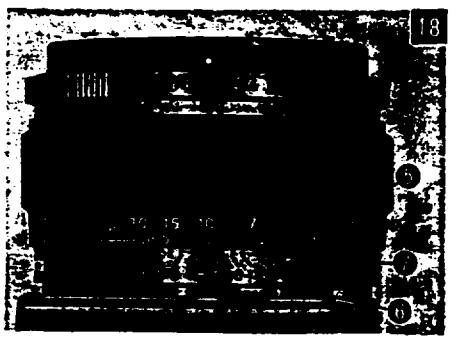
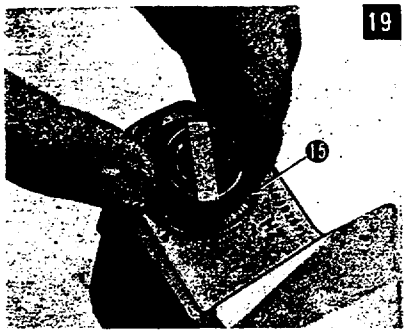
COMPOSITION OF PICTURES

Horizontally and vertically, the viewfinder of the PENTAX covers the actual picture size so closely that you can compose your picture to the full viewfinder format.

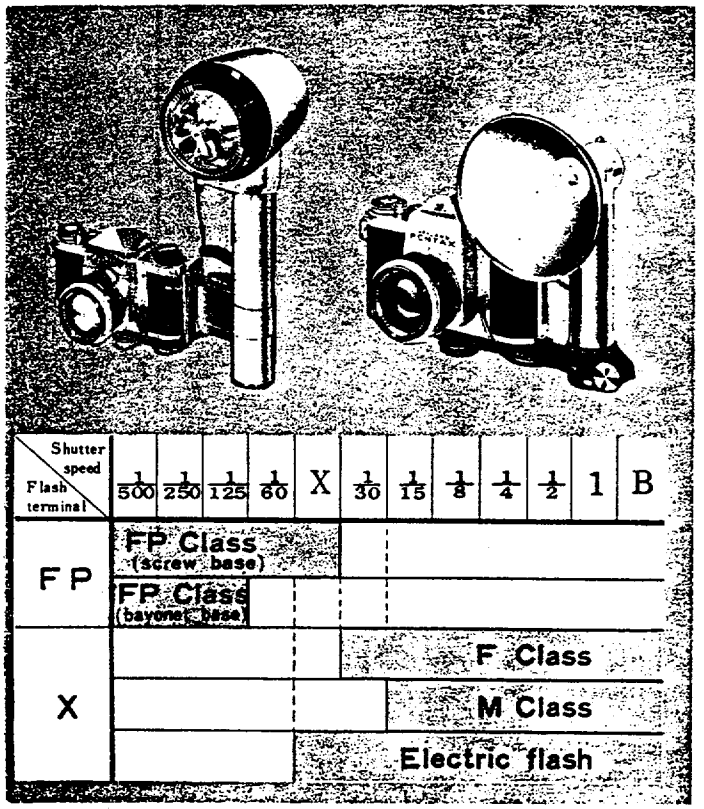


FILM TYPE REMINDER DIAL

The ASA film speed rating of all 35 mm films is given in the data sheet packed with each roll of film. As the ASA number increases, the sensitivity of the film also increases. For example, for two films of ASA 50 and ASA 200, the ASA 50 film requires 4 times more exposure than the ASA 200 film.



Use the film type dial (located beneath the rewind knob) to show what type of film is in your camera. Simply set the ASA number of the film you are using opposite the pointer. Use white figures for black and white film; red figures for color film; and green figures for special film, such as positive film, copying film, etc. To check whether the camera is loaded, turn the film rewind knob clockwise. If it turns freely, the camera is not loaded.



FLASH SYNCHRONIZATION

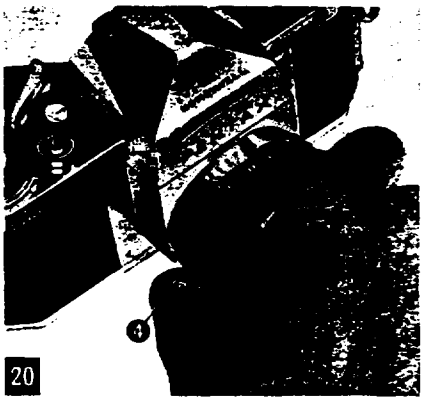
The PENTAX has two sets of terminals—FP and X. The table at the left shows which flash contacts, which shutter speed and which flash bulb may be combined for maximum lamp efficiency Unless these combinations are rigidly followed, there will be a failure in flash synchronization. Note the "X" setting between 60 and 30 on the shutter speed dial **The speed of this X setting is 1/50 of a second, and this indicates the highest shutter speed at which Heiland Strobonars or other electronic flash units may be used.**

DEPTH OF FIELD TABLE FOR AUTO-TAKUMAR 55mm F2 LENS

Distance scale / F setting	Ext. tubes 1, 2, 3; scale set at 1.8 ft.	Ext. tubes 1,2; scale set at 1.8 ft.	Ext. tube 1, scale set at 1.8 ft.	1.8 ft.	2.6 ft.	4.9 ft.	9.8 ft.	16.4 ft.	32.8ft.
	in.	in.	in.	ft.	ft.	ft.	ft.	ft.	ft.
F 2	3.39 ~3.39	5.43 ~5.47	9.45 ~9.53	1-19/24 ~1-5/6	2-21/36 ~2-2/3	4-5/8 ~5	9-1/3 ~10-1/2	14-11/12 ~18-1/6	27-3/12 ~41
F 2.8	3.39 ~3.39	5.43 ~5.47	9.45 ~9.53	1-19/24 ~1-5/6	2-7/12 ~2-17/24	4-2/3 ~5-1/6	9-1/12 ~10-3/4	14-1/3 ~19-1/4	25-1/4 ~46-11/12
F 4	3.39 ~3.39	5.43 ~5.47	9.41 ~9.53	1-19/24 ~1-5/6	2-13/24 ~2-17/24	4-7/12 ~5-1/4	8-3/4 ~11-1/4	13-7/12 ~20-5/6	23 ~57-3/12
F 5.6	3.39 ~3.39	5.43 ~5.47	9.41 ~9.57	1-3/4 ~1-5/6	2-19/36 ~2-13/18	4-1/2 ~5-5/12	8-1/3 ~11-11/12	12-2/3 ~23-1/3	20-1/2 ~82-2/3
F 8	3.39 ~3.39	5.39 ~5.51	9.33 ~9.61	1-3/4 ~1-5/6	2-1/2 ~2-3/4	4-5/12 ~5-7/12	7-5/6 ~13-1/8	11-7/12 ~28-7/12	17-1/4 ~ ∞
F 11	3.39 ~3.43	5.39 ~5.51	9.29 ~9.65	1-17/24 ~1-5/6	2-5/12 ~2-5/6	4-1/4 ~5-11/12	7-1/2 ~15	10-5/12 ~39-2/3	15-1/12 ~ ∞
F 16	3.35 ~3.43	5.35 ~5.55	9.21 ~9.76	1-2/3 ~1-11/12	2-1/3 ~2-11/12	4 ~6-1/2	6-1/12 ~19-11/12	8-11/12 ~114-1/8	12-1/6 ~ ∞
F 22	3.35 ~3.43	5.35 ~5.55	9.13 ~9.88	1-15/24 ~2	2-1/24 ~3-1/12	3-2/3 ~7-5/12	5-5/6 ~32-1/2	7-2/3 ~ ∞	9-1/12 ~ ∞

When using extension tubes, the subject's distance is measured from the front frame of the lens. When extension tubes are not used, the subject's distance is measured from the film plane. In the above table, the figures 2.39 ~ 2.39 mean that the depth of field is less than 0.01 in. 25

Auto-Takumar 55 mm F 2



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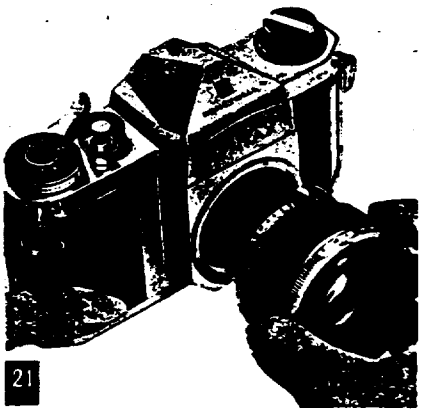

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INTERCHANGEABLE LENSES

The PENTAX offers many interchangeable lenses. All are being used by leading photographers. Takumar lenses are widely respected by professional and amateur photographers for their fine resolution. The photographic coverage of the various Takumar lenses is illustrated on the next page. With focal lengths longer than 83 mm, the subject imege is seen through the viewfinder larger than its life size. Regardless of the lens selected for the PENTAX, there is never need for an accessory viewfinder, ordinarily required for rangefinder type cameras.

When interchanging lenses, hold the lens by the distance scale ring ④ as shown in photograph 20. When attaching a lens, filter, or lenshood, do not screw it too tightly, as you may find it difficult to unscrew.

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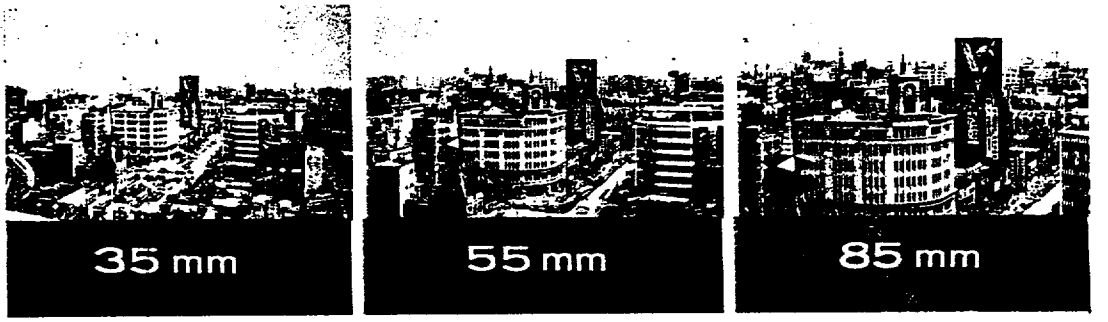

DIFFERENCE OF ANGLE OF TAKUMAR LENSES

All photographs were taken from the same location and distance from the subject.

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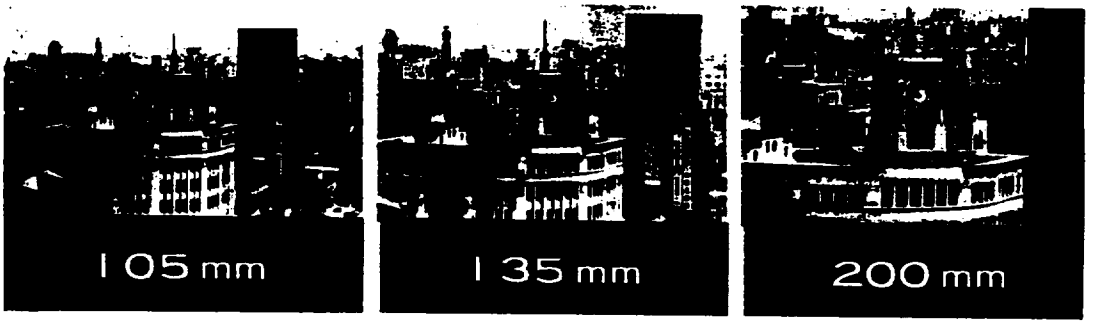
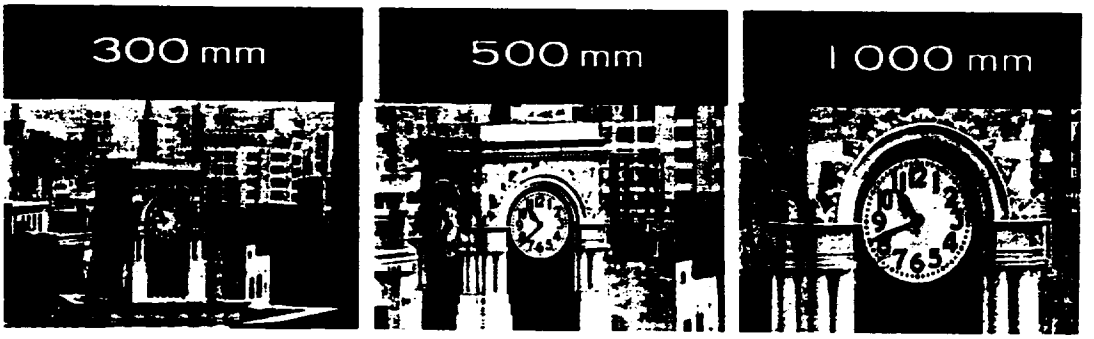




TAKUMAR 35 mm f 4

Same size as the standard lens; can be put into the camera case together with the PENTAX. Light in weight; easy to use. You do not usually need an aperture brighter than f4 for general daylight outdoor picture taking.

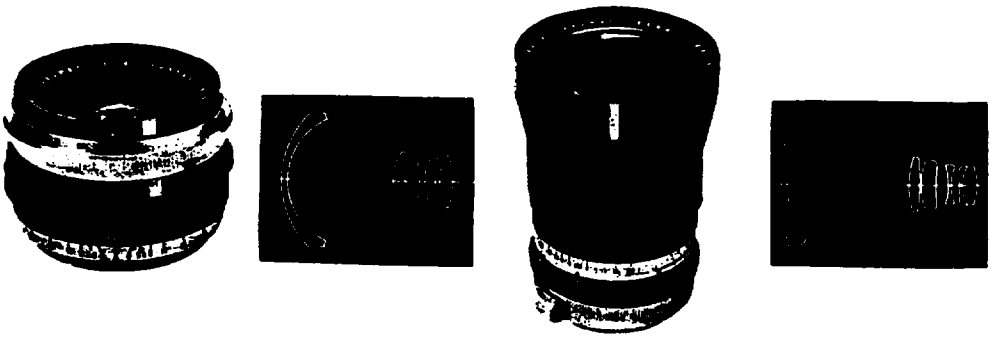
Lens elements ...5
Minimum aperture f22
Minimum distance ...1.5 ft.
Angle of view ...63°
Weight .....4.8 ozs.

Helicoidal lens barrel; without pre-set diaphragm ring.

AUTO-TAKUMAR 35 mm f 2.3

One of the world's brightest retrofocus wide angle lenses for single lens reflex cameras. Edge-to-edge sharp resolution at full aperture; unique lens design without distortion; suitable for architectural photography.

Lens elements ... 6
Minimum aperture f22
Minimum distance ...1.5 ft.
Angle of view ...63°
Weight ..... 11 ozs.



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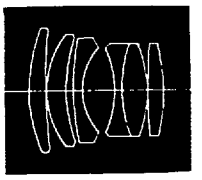
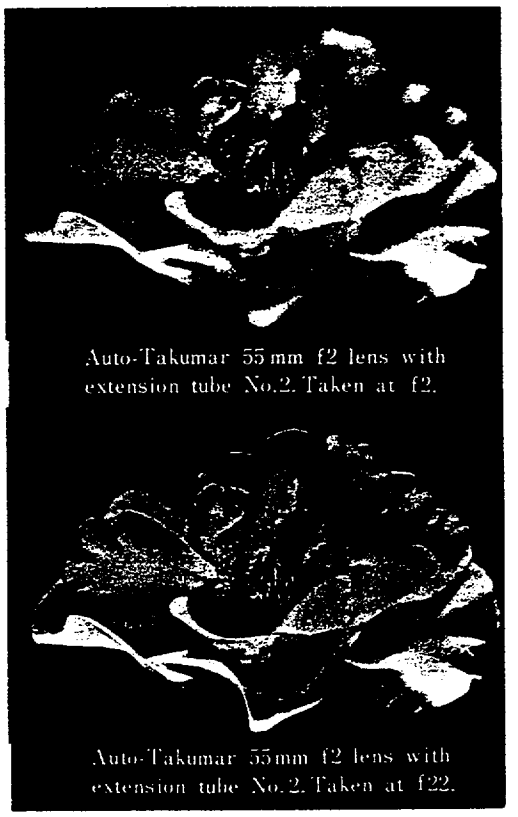
AUTO-TAKUMAR 55 mm f 2

Newest high-speed 6-element lens, utilizing latest optical glass advances. High resolving power combines with outstanding brightness for easiest focusing. Ideal for exceptional results indoors or at night.

Lens elements ... 6
Minimum aperture f22
Minimum distance ... 1.8 ft.
Angle of view ...43°
Weight .....5.8 ozs.





Auto-Takumar 55 mm f2 lens with extension tube No.2. Taken at f2.

Auto-Takumar 55mm f2 lens with extension tube No.2. Taken at f22.

AUTO-TAKUMAR 105 mm f 2.8

Same lens barrel as Takumar 83 mm. A quality medium telephoto lens of 4 elements, with well corrected aberrations. Light weight design for portability and easy handling. Recommended for scenery, portrait, news photos, other moderate telephoto effects.

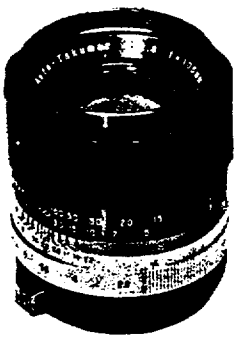
Lens elements ... 4
Minimum aperture f22
Minimum distance .....4 ft.
Angle of view ...23°
Weight .....9.9 ozs.

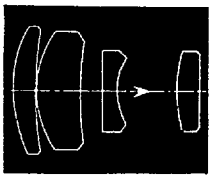
Automatic diaphragm; helicoidal lens barrel.

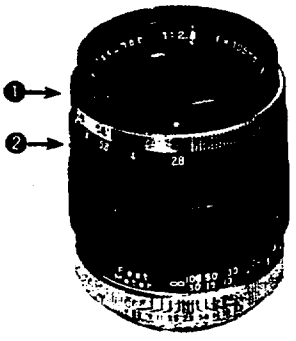
TAKUMAR 105 mm f 2.8

Exactly same as Auto-Takumar 105 mm; except this is equipped with pre-set disphragm, weight 8.8 ounces.

The pre-set diaphragm ring ① is set at a desired aperture before focusing. Turn the actual diaphragm ring ② to f2.8 to focus with the diaphragm fully open. After accurate focusing has been achieved, turn the diaphragm ring ② which automatically stops at the pre-selected aperture setting.







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TAKUMAR 135 mm f3.5

Produces a brilliant image in all corners of the photo even with the diaphragm fully open. Indispensable for distant subject matter and for portraits. Ideal for close-ups of animals or plants even at a distance. Recommended as the ideal long telephoto lens for handheld camera operation.

Lens elements ... 5
Minimum aperture f22
Minimum distance .....6 ft.
Angle of view ...18°
Weight.....10.6 ozs.

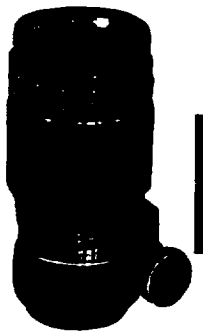
Pre-set diaphragm; helicoidal lens barrel.

TAKUMAR 200 mm f3.5

A bright 4-element telephoto lens for handheld shooting. New optical glass used with recently advanced theory of design. Ideal for extraordinary snapshots, stage, sports and news photos with exceptionally fascinating telephotographic effects.

Lens elements ... 4
Minimum aperture f22
Minimum distance ..... 9 ft.
Angle of view...12°
Weight ... 26.5 ozs.

Pre-set diaphragm; helicoidal lens barrel.



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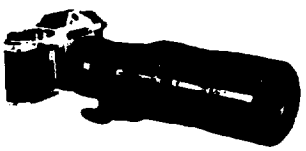
TAKUMAR 300 mm f4

The light weight of the lens enables hand-held picture taking, and is considered to be the most ideal telephoto lens for spectacular telephotographic effects. Even with the diaphragm fully open, the aberrations are corrected to the greatest extent possible. Gives needle-sharp resolution to every corner of the picture.

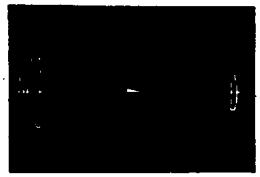
Lens elements.....3
Minimum aperture.....f22
Minimum distance ..... 25 ft.
Angle of view ..... 8°
Weight ..... 48.0 ozs.

Built-on lenshood; helicoidal lens barrel; without pre-set diaphragm ring.



TAKUMAR

Perfect ultra-telephoto lens for sports, scenic and wildlife photography. Bright f5 image simplifies aiming and focusing. Produces edge-to-edge coverage of high resolution. Comparatively light and small for its performance.



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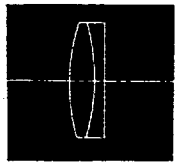
500 mm f5

Lens elements.....2
Minimum aperture.....f22
Minimum distance .....35 ft.
Angle of view ..... 5°
Weight.....6 lbs. 5 ozs.

Built-on lenshood; rack and pinion focusing; without pre-set diaphragm ring.

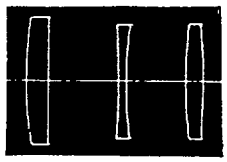


TAKUMAR 1000 mm f8

Longest telescopic lens of 1000 mm! Best for wildlife, sports and news photography. Mostly used by sports and news photographers.

Lens elements.....3
Minimum aperture.....f22
Minimum distance..... 98 ft.
Angle of view.....2.5°
Weight of lens 16 lbs. 9 ozs.
Weight of tripod 29 lbs. 15 ozs.

Built-on lenshood; rack and pinion focusing; without pre-set diaphragm ring.



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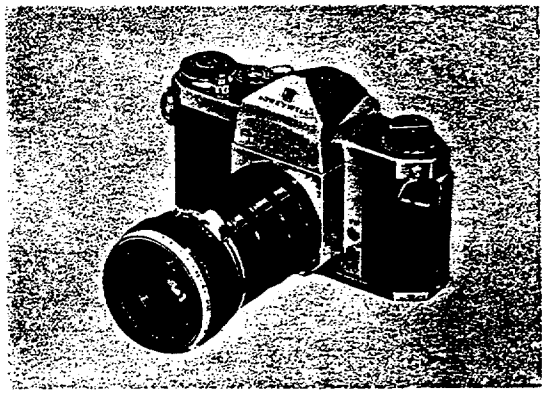

EXTENSION TUBES

By inserting any or all of the extension tubes between the camera body and the Takumar lens, close-ups of the subjects (as close as $3\text{-}^{35}/_{64}$ inches from the front element of the Auto-Takumar 55 mm lens) may be photographed. By adding more extension tubes, close-ups as close as the focal length of the lens may be easily and simply photographed.

The extension tube set consists of 3 rings: No. 1, No. 2 and No. 3; 7.5 mm, 15 mm, and 30 mm long respectively. These rings may be used in combination as desired. Ring No. 1 is suited for moderate close-up work as in copying documents. When all extension tubes are used simultaneously with the Auto-Takumar 55 mm lens, the subject may be enlarged on the film to a magnification of 1.07 of the life size. Such extreme close-up photography is a special advantage of the single lens reflex camera because there is no parallax problem and you do not need an accessory viewfinder as is ordinarily required for rangefinder type cameras.

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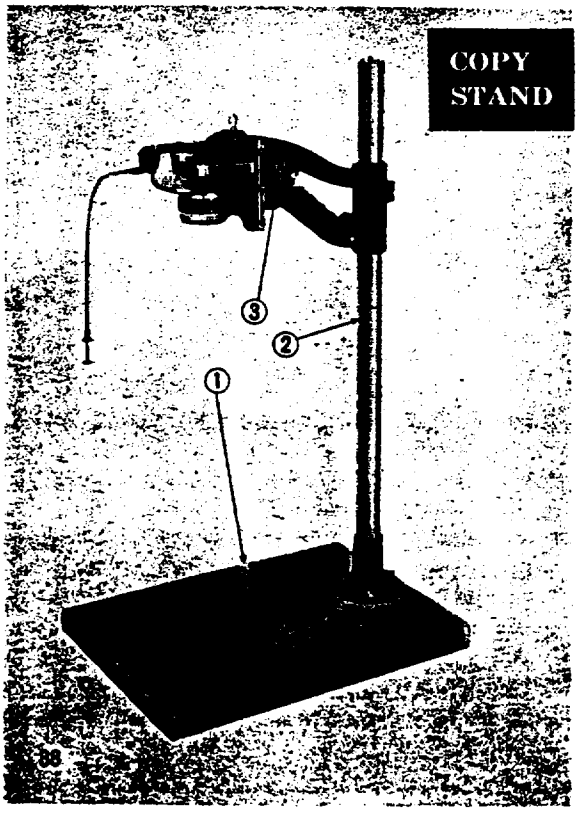
← BELLOWS UNIT

An extremely flexible accessory for ultra-close-up photography. Permits use of the camera's own lens with a special calibrated gear shaft.

MICROSCOPE ADAPTOR →

By inserting this adaptor between the camera body of the PENTAX and the microscope tube, photomicrography can be easily and simply accomplished with the optics of the microscope.



For exact and accurate copying with the single lens reflex camera. Maintains precise parallel camera position while providing close-up performance impossible with a tripod or other camera stand.

The copy stand is equipped with a copying base ①, extension poles ②, and pantographic camera mount with micro-adjusting knob ③. With this unit, titles for color slides, microphotography, identification photos of small objects and other useful copying work are easily performed.

LEICA MOUNT ADAPTOR

A B

ADAPTOR 'A' — For use of Leica mount lenses on the PENTAX camera body. Because the distance between the lens mount of the PENTAX and the film plane is approximately 17 mm longer than normal with Leica type lenses, Leica mount lenses may be used on the PENTAX camera body with the adaptor ring **ONLY for closeup photography**. The above table illustrates the film plane-to-subject distance that can be covered by Leica-mount lenses with use of the Leica Mount Adaptor A.

ADAPTOR 'B' — For use of PENTAX-Takumar lenses on Leica-mount camera bodies. FOR CLOSE-UPS ONLY. Primarily for use with Leica lens mount enlargers. Takumar lenses make the finest enlarging lenses with this adaptor.

Focal length of Leica mount lens	Film-to-subject distance	Size of area to be photographed
50 mm	10-15/64 inches	2-61/64 × 3-15/16 in.
85 mm	22-7/16 inches	4-11/64 × 6-19/64 in.
105 mm	32-9/32 inches	5-15/64 × 7-7/8 in.
135 mm	48-53/64 inches	6-11/16 × 10-1/32 in.

(When lens is focused at infinity).

ASAHI MOUNT ADAPTOR

For use of old Asahiflex Takumar lenses on the PENTAX camera body. This adaptor is available for owners of the Asahiflex-Takumar lenses and PENTAX camera body.

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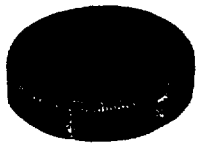
In Brussels, Belgium. Auto-Takumar 55mm f1.8, taken at f11, 1/125 sec.

LENS MOUNT CAP



For use with all Takumar lenses. When your lenses are not on the PENTAX camera body, use this cap to avoid dust.

PENTAX BODY CAP

Use this body mount cap when you do not have a lens on your PENTAX camera body.

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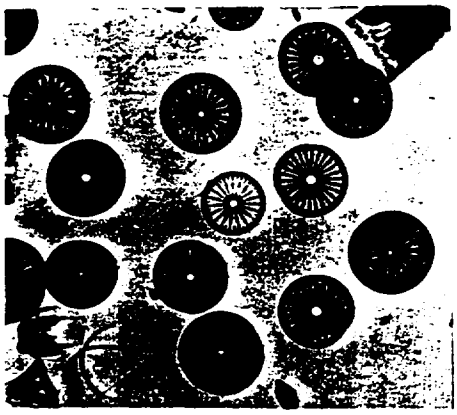

Photomicrographed diatoms on spider web.

Close up with Auto-Takumar 55 mm f 2 lens. Exposure: f 11, 4 sec., by reflected daylight and two 100 W lamps, using extension tubes; exposed on copying film.

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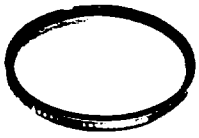
LENSHOODS

Recommended for use whenever possible to avoid off-angle rays and when shooting against the light. Takumar 105 mm pre-set, 135 mm and standard 55 mm lenses use the same 46 mm size lenshood; 83 mm and automatic 105 mm lenses use same 49 mm size lenshoods; special lenshoods are available for 35 mm f4 and 35 mm f2.3 lenses. 200 mm, 300 mm, 500 mm and 1000 mm lenses are supplied with lenshood.

FILTERS



	(Exposure Factor)
UV (Ultraviolet; haze-cut)	1
Y-47 (light yellow)	2
O-53 (light orange)	3

Available in the following sizes:

LENSES	FILTER SIZE
35 mm f 4	46 mm—screw-on
35 mm f 2.3 auto.	65 mm—clip-on
55 mm f 2 auto.	46 mm—screw-on
83 mm f 1.9	49 mm—screw-on
105 mm f 2.8 auto.	49 mm—screw-on
105 mm f 2.8 preset	46 mm—screw-on
135 mm f 3.5	46 mm—screw-on
200 mm f 3.5	67 mm—screw-on
300 mm f 4	83 mm—screw-on
500 mm f 5	46 mm (To be mounted behind lens.)
1000 mm f 8	46 mm (To be mounted behind lens.)

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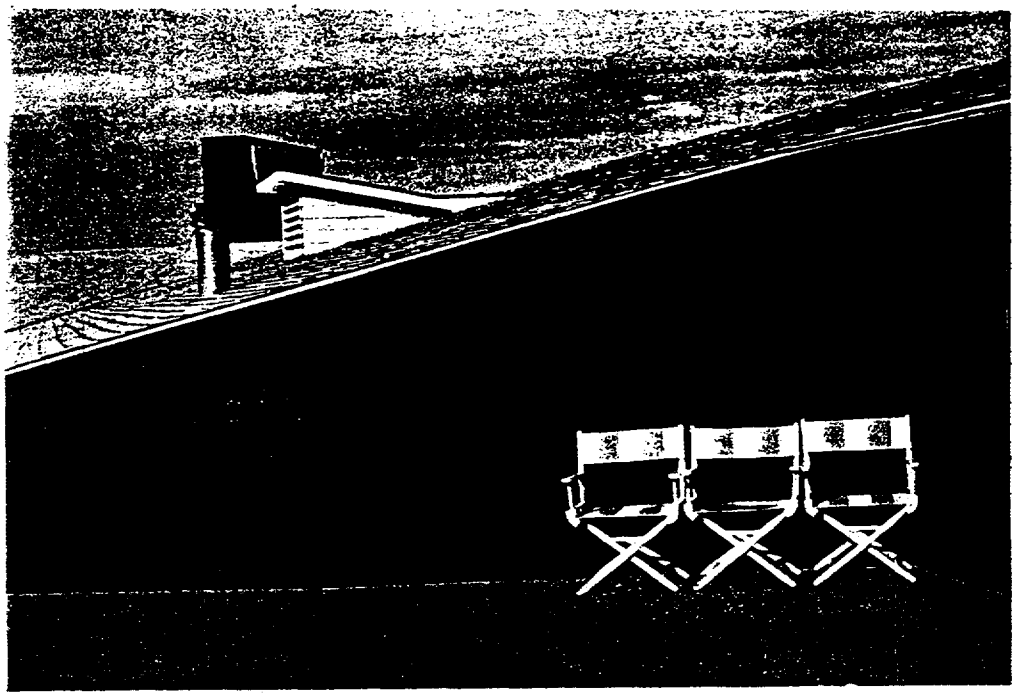

In Denver, Colorado. Auto-Takumar 55mm f2, taken at f11, 1/60 sec.

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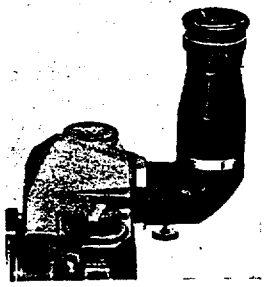
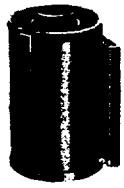
90° FINDER



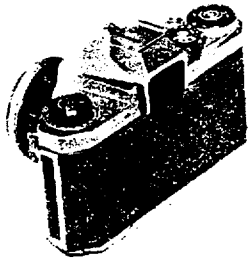
A convenient accessory viewfinder to be attached to the viewfinder frame of the PENTAX H-2. For low-angle close-up, photomicrography, etc.

FILM MAGAZINE



For use in loading bulk film.

ACCESSORY CLIP



Attach this to the PENTAX viewfinder window for mounting a folding flash gun (like the Heiland Tilt-A-Mite), miniature exposure meter, etc.

LEATHER CASE FOR STANDARD LENSES

When using an accessory lens on your PENTAX, put your standard lens in this leather case for protection.

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RESOLVING POWER OF TAKUMAR LENSES

Resolving power of all Takumar lenses is factory-tested by skilled engineers. There are three types of tests: microscopic aerial test, projection test and photographed film test. Resolving power of a lens shown by lpm (lines per mm) varies depending upon the method of resolution test. Takumar lenses have been tested for resolving power to conform to Asahi standards, which are higher than those set by JIS (Japan Industrial Standards). All Takumar lenses bear the seal of the Japan Camera Inspection Institute which insures the performance standards.

When testing your lens performance. . .

Use a slow-speed fine grain film. Generally, high speed films are grainy and are not suitable for resolution test. Support your camera on a good tripod. Use a shutter release cable to prevent movement of the camera. The definition of the picture on the negative film may decrease if exposure and developing time are not proper. Time your exposure and development correctly.

If you do your own developing and enlarging, see that your enlarger uses a fine quality enlarger lens. If it is not of a fine quality, your pictures can never be sharp no matter what superb lenses are mounted on your camera. Usually, the diaphragm of the enlarger should be closed down to f 8 or f11.