# ASAH PENTAXSE

## ASAHI PENTAX

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### ASAHI **PENTAX** SP

Your Asahi Pentax Spotmatic is the finest photographic instrument on the market. The "Super-Multi-Coating" on the Takumar lens, developed by Pentax and available only on Takumars, reduces flare and boosts contrast to a degree far beyond what was previously possible in optical technology. It is a tougher coating than is available on any competitive lenses and results in pictures with more detail and richer colours than is possible with any other system at any price.

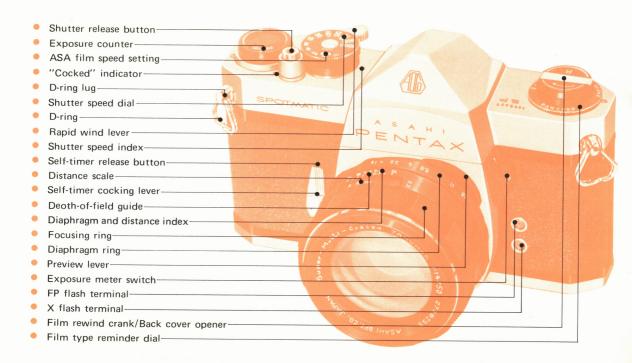
The latest Spotmatic is an outgrowth and refinement of the original Spotmatic which introduced through-the-lens metering to the world of photography. Its stopped-down metering system is the most accurate method for perfect exposure determination. It also automatically gives you a depth-of-field preview. It is an averaging system

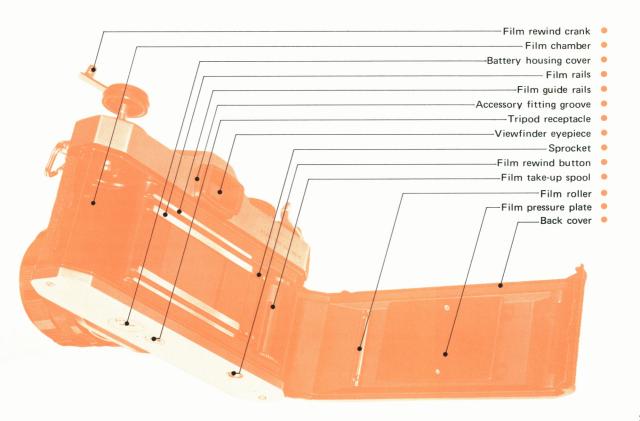
for the easiest and most dependable exposures in typical picture-taking situations. This metering system has been refined and improved each year in the Spotmatic to a degree of accuracy unmatched in the industry.

The original Spotmatic was the most compact 35mm SLR made. The Spotmatic retains that same traditional compactness and classic feel. It also is designed for use with the accessories from the Pentax system, including all of the superb Takumar lens ranging from the ultra-wide-angle 17mm Takumar up to the super-telephoto 1000 mm Takumar. The Pentax system can grow with you as your interests develop in any direction.

We are very proud of the Pentax Spotmatic. We are sure you will be, too.

#### **NOMENCLATURE**











#### **SPECIFICATIONS**

Type: 35mm single-lens reflex with built-in light meter.

Film and Picture Size: 35mm film (20 or 36 exposures). 24mm x 36mm;

**Standard Lenses:** Super-Multi-Coated Takumar 50mm f/1.4 or 55mm f/1.8 with fully automatic diaphragm. Filters and lenshood size: 49mm. Equipped with diaphragm preview lever which affords visual check of depth of field. Distance scale: 45cm (18") to infinity.

**Shutter:** Focal plane shutter, with single non-rotating dial. Speeds: B, 1-1/1000 sec. Film speed (ASA) setting dial and window on shutter speed dial. Built-in self-timer releases shutter in 5-13 seconds. Shutter curtains of special rubberized silk.

Warning Signal: The index of shutter speeds turns to red when the shutter and film speed settings are off the meter's measurability range. Refer to page 27.

**Finder:** Pentaprism finder with microprism Fresnel lens for instant focusing; 0.88x magnification with 50mm lens and approximately life-size with 55mm lens.

Focusing: Turn the distance scale ring until the subject image on the ground glass comes into focus.

Reflex Mirror: Instant return type with special shock absorbers for minimum vibration.

Lens Mount: 42mm threaded lens mount.

NOTICE: Features of Pentax products sold in Japan may differ from those of the export models sold outside of Japan.

Film Advance: Ratchet-type rapid wind lever (for film advance and shutter cocking). 10° pre-advancing and 160° advancing angle.

"Cocked" Indicator: A red disk appears in a small window alongside the shutter release button when the shutter is cocked, and blacks out when it is released.

Film Exposure Counter: Automatic re-set type.

**Flash Synchronization:** Equipped with FP and X flash terminals. Electronic synchronization at 1/60 sec.

**Exposure Meter:** Built-in meter measures the brightness of the ground glass, and couples directly to shutter and film speed settings. Film speed (ASA) setting ranges from 20 to 3200 (LV1-18 for ASA-100 film with standard lens.) Meter is powered with a mercury battery.

**Film Rewind:** Rapid rewind crank for speedy film take-up. Film rewind release button on bottom of camera body rotates while film is being rewound.

**Loaded Film Indicator:** Loaded film reminder dial underneath film rewind knob is marked "PANCHRO" (black-and-white), "COLOR" and "EMPTY."

Dimension: Width 5.6'' (143mm) x height 3.6'' (92mm) x thickness 3.4'' (88mm).

Weight: 868 grams (1 lb. 14 oz.) with standard lens. Body alone: 621 grams (1 lb. 6 oz.)







#### **HOW IT WORKS**



 After loading your film, set the ASA rating in the ASA window. A mercury battery is packed separately. Be sure to insert it into the battery housing before operating the camera. For insertion, refer to page 8.



2. Set the shutter speed.



3. Compose and focus by turning the focusing ring.





5. Rotate the diaphragm ring, and stop when the meter needle matches the index.



6. Release the shutter.

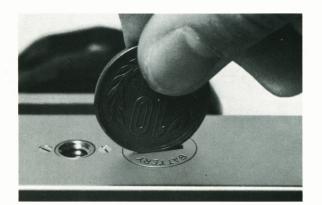




#### **BATTERY INSERTION AND CHECK**



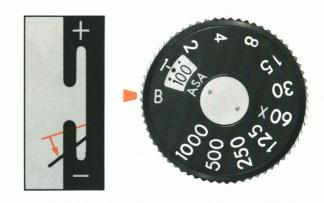
DANGER! A serious accident has been reported of a small child who has put a mercury battery into his mouth and has been hospitalized for serious gripes and stomach inflammation. Please always keep a mercury battery from the reach of small children



#### How to insert

Open the battery housing cover on the bottom cover plate with a coin. Insert the battery with (+) side toward the top of the camera. For replacement, use Mallory PX-400 or RM-400-R or equivalent.

**CAUTION:** The mercury battery is like a phonograph record. It can be damaged by skin acids. Handle by the edges with a dry cloth only. Be sure the battery is cleaned with the cloth before insertion into the camera. The battery is not rechargeable.

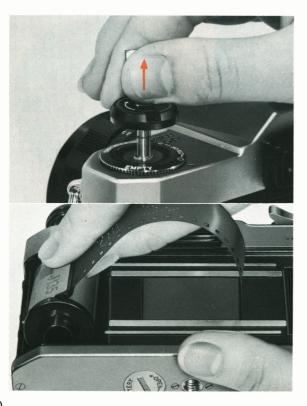


# 1. Set the shutter speed dial to B (bulb) position. Look at the meter's needle through the viewfinder. If

#### How to check

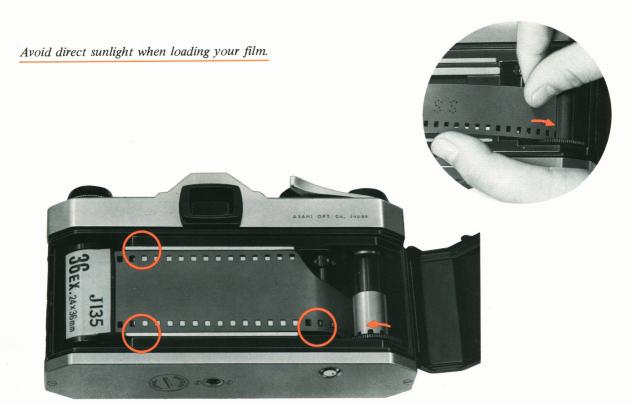
- 2. Turn the ASA dial to ASA100.
- 3. Push the meter switch to "on" position.

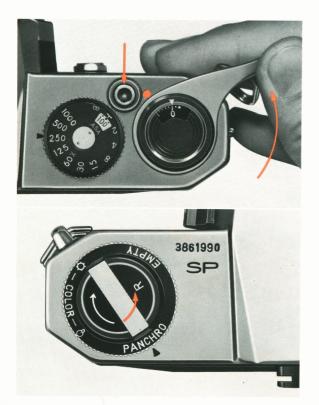
the needle rapidly drops, the meter battery has sufficient capacity; if it does not, replace the mercury battery.



#### FILM LOADING

- 1. Open the back by pulling out the rewind knob until back cover snaps open.
- 2. Place the film cassette into the cassette chamber, and push back the rewind knob. Draw out the film leader and insert it into slot of the take-up spool.
- 3. Advance the film by alternately turning the rapid wind lever and releasing the shutter until both sprockets have properly engaged the film perforations. Close the back by pressing it firmly.
- 4. If the film is properly loaded, the rewind knob will turn counter-clockwise when you advance the film by turning the rapid wind lever.





#### FILM WINDING

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. Cock 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

#### SETTING ASA FILM SPEED

The ASA film speed rating of all 35mm films is given in the data sheet packed with each roll of film. The higher the ASA number, the more sensitive the film. Lift the outer ring of the shutter speed dial and rotate it until the ASA number of your film is opposite the red index mark.

Be sure to set your film speed on the shutter speed dial because the dial is connected to the exposure meter system.



ASA	1600	1250	1000	800	500	400	320	250		160	125	100	80	64	50	40	32	25	20
DIN				30		27			24			21			18			15	

#### FILM TYPE REMINDER DIAL

Use the film type dial to show what type of film is in your camera. Simply turn the dial so that the type of film in the camera is opposite the  $\triangle$  mark. To check whether the camera is loaded, turn the film rewind knob clockwise. If it turns freely, the camera is not loaded.

#### PANCHRO . . .

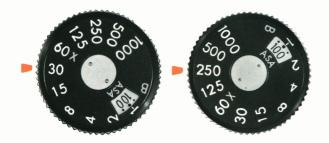
For daylight type color film  $\delta$ 

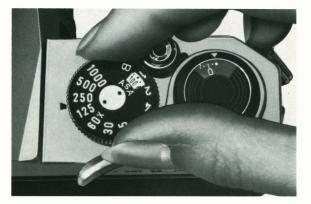
For tungsten type color film **EMPTY** . . .

When the film is not loaded.



#### SET SHUTTER SPEED





Turn the shutter speed dial and set the speed you wish to use to the index. When outdoors, set the speed at 1/125 sec. or faster, depending upon the lighting. When indoors, set it at 1/30, or in its neighbourhood. Change the shutter speed later, when neccessary.

#### **COMPOSE AND FOCUS**

While viewing through the viewfinder, turn the focusing ring until your subject image comes into sharp focus.

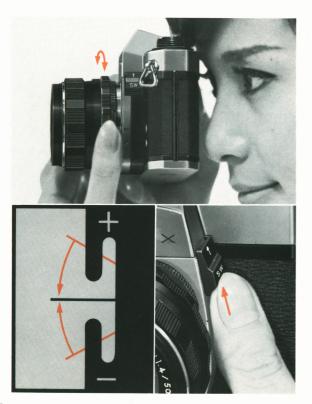
Pentax cameras have a Fresnel lens with a microprism center underneath the ground glass. As you look through the finder, you will see that the Fresnel lens consists of many concentric rings which provide the brightest image on the ground glass.

The microprism is the center portion of this diagram. When your subject is in focus, the image in the microprism will be sharp and perfectly clear. If your subject is not in focus, the microprism will break the image into many small dots, much like an engraver's screen. You can focus your subject on any portion of the ground glass.



**OUT OF FOCUS** 

IN FOCUS



#### ROTATE DIAPHRAGM RING

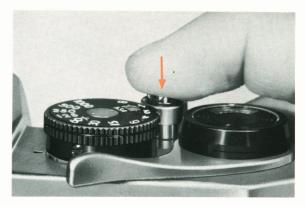
The needle moves up and down with the turn of the diaphragm ring. When the needle rests at the centre, you will get correct exposure. If the needle does not come to the centre no matter how far you turn the diaphragm ring, change the shutter speed. When the needle is off centre and close to the (+) mark, you will get over-exposure: change the shutter speed to a faster setting. If the needle is closer to the (-) mark, you will get under-exposure: change the shutter speed to a slower setting.

#### SHUTTER RELEASE

At slow speeds — slower than 1/30 — support your camera rigidly or use a tripod to prevent movement of your camera.



Hold your camera firmly and trip the shutter. When the shutter is released, the meter switch will automatically turn off, and the needle will remain fixed off and underneath the centre. The diaphragm will reopen to its full aperture and the overall image will look brighter. Cock the rapid wind lever for the next picture. (When taking a series of pictures under the same lighting conditions, it is not necessary to repeat instructions 4 and 5 on page 6.)



#### **CAMERA HOLDING**



In horizontal position A.
Hold the camera firmly with your left hand, and draw your arm close to your body.



In vertical position B. Hold your camera tightly to your forehead with your left hand, and draw your right arm close to your body.



In vertical position C.
Hold your camera tightly to your forehead with
your left hand, raise your right arm and draw
your left arm to your body.

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 camera movement. Very often, pictures which are not sharp are due to movement of the camera. When you focus with the camera held horizontally (Position A), hold the lens barrel as illustrated. Cradle the camera with your left hand thumb and little finger. Turn the

distance scale ring with your thumb and index finger. When hloding the camera vertically, some people release the shutter with the thumb (position B), while others release it with the index finger (Position C). Position C is more desirable for fast focusing and shooting. With the Asahi Pentax, whether held vertically or horizontally, you see your subject image through the taking lens, enabling you to compose, focus and shoot with a minimum of time and effort.

#### **BRIGHT FIELD FOCUSING**

You can start viewing and focusing before and after cocking the rapid wind lever. When the preview lever is in "AUTO" (automatic) position, and the meter is at "OFF", the diaphragm is fully open except for the moment of exposure.

Turn the distance scale ring 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 bright sunlight, you can easily focus with 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 your subject image is much brighter.

When the letters "MAN" appears beside the lever, the lens is in manual position; when "AUTO" appears, it is in automatic position.



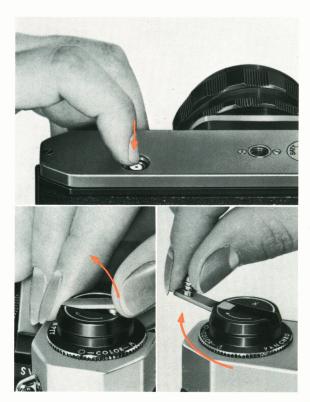


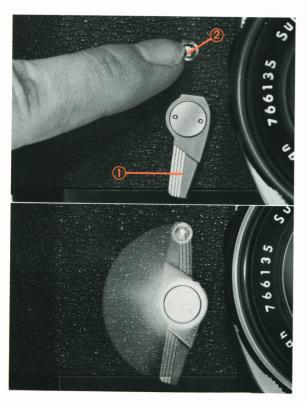
#### FILM UNLOADING

After the final picutre on the roll has been taken, the rapid wind lever will not turn, indicating that the film must be rewound.

Unfold the rewind crank. Depress the film rewind release button and turn the rewind crank as indicated to rewind the film into the film cassette. Rewind until the tension on the crank lessens, indicating that the leader end of the film has been released from the take-up spool.

Pull out the film rewind knob (the back will open automatically), and remove the film cassette. AVOID DIRECT LIGHT WHEN LOADING OR UNLOADING THE FILM.





#### **SELF-TIMER**

Depending upon how far down you turn the self-timer cocking lever ①, it will release the shutter in 5-13 seconds. When operating the self-timer, always depress the self-timer release button ② to release the shutter. Do not depress the shutter button . . . it will immediately release the shutter without delayed action. The self-timer cocking lever should be turned down at least 90° or the release button will not operate.

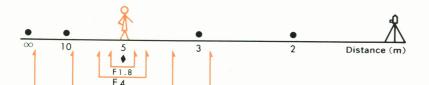
#### FLASH SYNCHRONIZATION

The Asahi Pentax has two terminals — FP and X. The table below shows which flash contact, 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 is exactly at the 60 marked on the speed dial. This indicates the highest shutter speed at which electronic flash units may be used.



	Flash Speed Termina	1/1000	1/500	1/250	1/125	1/60X	1/30	1/15	1/8	1/4	1/2	1	В
ELECTRONIC FLASH	X												
FLASH BULB	FP		F	P Class									
PLASH BULB	Х								N	, MF &	& FP C	lasses	

#### **DEPTH-OF-FIELD GUIDE**



Depth of field is the range between the nearest and farthest distances which are in acceptable focus at different lens apertures.



F 8 F 1 6

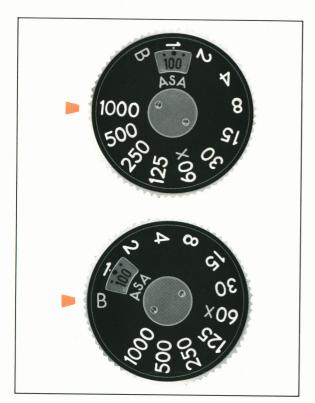
> If you want to know how great the depth of field is at a certain aperture, look at the depth-of-field guide. In the above photograph, the distance scale is set at 5 meters . . . the lens is focused on a subject 5 meters away. The calibrations on each side of the distance index correspond to the diaphragm 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 between the figures 8 on that depth-of-field guide indicates the area in focus at the lens opening. You will note from the depth-of-field guide in the photograph that the range from approximately 10 to 25 feet is in focus. Note that as the lens aperture change, the effective depth of field also changes. For the depth of fields at different apertures and distances, refer to the next page.

#### AND TABLE



Distance Scale F Setting	0.45	0.6	] m.	1.5	2	5	10	∞
F/1.4	0.45 ~ 0.453	0.59 ~ 0.61	0.98 ~ 1.02	1.46 ~ 1.54	1.93 ~ 2.07	4.57 ~ 5.52	8.40 ~ 12.36	51.75 ~∞
F/2	0.45 ~ 0.454	0.59 ~ 0.61	0.98 ~ 1.02	1.45 ~ 1.56	1.90 ~ 2.11	4.41 ~ 5.78	7.86 ~ 13.75	36.24 ~∞
F/2.8	0.44 ~ 0.46	0.59 ~ 0.61	0.97 ~ 1.03	1.43 ~ 1.58	1.87 ~ 2.16	4.21 ~ 6.16	7.24 ~ 16.19	25.90 ~∞
F/4	0.44 ~ 0.46	0.59 ~ 0.62	0.95 ~ 1.05	1.40 ~ 1.62	1.81 ~ 2.23	3.94 ~ 6.84	6.48 ~ 22.05	18.14 ~∞
F/5.6	0.44 ~ 0.46	0.58 ~ 0.62	0.94 ~ 1.07	1.36 ~ 1.68	1.75 ~ 2.34	3.64 ~ 8.03	5.68 ~ 42.68	12.97 ~ ∞
F/8	0.44 ~ 0.47	0.57 ~ 0.63	0.91 ~ 1.11	1.24 ~ 1.89	1.66 ~ 2.52	3.26 ~ 10.87	4.80 ~∞	9.10 ~∞
F/11	0.43 ~ 0.47	0.56 ~ 0.65	0.88 ~ 1.15	1.30 ~ 1.77	1.56 ~ 2.80	2.88 ~ 19.53	4.02 ~∞	6.63 ~∞
F/16	0.42 ~ 0.48	0.54 ~ 0.67	0.84 ~ 1.24	1.16 ~ 2.16	1.42 ~ 3.42	2.42 ~∞	3.16 ~∞	4.57 ~∞

Distance Scale F Setting	1′6″	2′	3′	5′	10′	15′	30′	$\infty$
F/1.4	1′ 6.12″	1'11.8"	2'11.5"	4'10.4"	9′ 5.6″	13′ 9.7″	25′ 6.6″	169′ 9.2″
	1′ 6.13″	2' 0.2"	3' 0.6"	5' 1.7"	10′ 7.2″	16′ 4.9″	36′ 4.2″	~∞
F/2	1′ 5.9″	1'11.6"	2'11.3"	4′ 9.8″	9′ 3.1″	13' 4.3"	24′ 0.2″	118′ 3.5″
	1′ 6.1″	2' 0.4"	3' 0.8"	5′ 2.4″	10′10.6″	17' 1.2"	39′11.8″	~∞
F/2.8	1′ 5.8″	1'11.5"	2′10.9″	4′ 9″	8'11.9"	12′ 9.6″	22′ 3″	84′11.6″
	1′ 6.2″	2' 0.5"	3′ 1.1″	5′ 3.4″	11' 3.2"	18′ 1.4″	46′ 1.4″	~∞
F/4	1′ 5.6″	1'11.4"	2'10.6"	4' 7.7"	8′ 7.4″	12′. 0.6″	20′ 0.4″	59′ 6.4″
	1′ 6.4″	2' 0.6"	3' 1.7"	5' 5"	11′11.2″	19′11″	59′11.6″.	~∞
F/5.6	1′ 5.5″	1'11.2"	2'10"	4' 6.2"	8′ 1.9″	11′ 2″	17′ 8.3″	42′ 6.8″
	1′ 6.5″	2' 1"	3' 2.3"	5' 7.2"	12′11.2″	22′10.7″	100′ 1.3″	~∞
F/8	1′ 5.4″	1'10.8"	2′ 9.1″	4′ 4.1″	7′ 6.8″	10′ 1″	15′ 0.7″	29′10.2″
	1′ 6.6″	2' 1.3"	3′ 3.4″	5′10.9″	14′ 9.5″	29′ 7.2″	~∞	~∞
F/11	1′ 5.2″	1′10.4″	2′ 8.2″	4' 1.6"	6′11.3″	8'11.8"	12′ 8.4″	21′ 9″
	1′ 7″	2′ 1.9″	3′ 4.8″	6' 4.2"	18′ 0.6″	46' 9.7"	~∞	~∞
F/16	1′ 4.8″ 1′ 7.3″	1′ 9.7″ 2′ 2.9″	2′ 6.7″ 3′ 7.6″	3′10″ 7′ 3″	6′ 1.2″ 28′ 7.6″	7′ 7.2″ ~∞	10′ 1″ ~∞	15′ ~∞



#### RANGE OF LIGHT MEASUREMENT

The exposure meter of the Spotmatic measures the brightness of the ground glass. Therefore, the meter should be turned on *after* you have focused your subject on the ground glass. The following table shows the range of the meter's light measurement, and should not be interpreted as the camera's total range of f/stop-shutter speed combinations. As you will note from the table on the next page, with an ASA100 film, you may use any shutter speed from 1 sec. to 1/1000 sec. in combination with any aperture that will bring the meter needle to the midpoint in the viewfinder.

The total range of the aperture settings is, of course, determined by the minimum and maximum apertures of the lens being used. For example, with the 50mm f/1.4 lens and ASA100 film, and aperture from f/1.4 (the maximum aperture of this lens) to f/16 (the minimum aperture) may be used with any shutter speed from 1 sec. to 1/1000 sec. that will bring the meter needle to midpoint.

ASA Speed	В	1	1/2	1/4	1/8	1/15	1/30	1/60	1/125	1/250	1/500	1/1000
20												
. (25)												
32												
. (40)												
. (50)												
64												
. (80)												
100												
. (125)						,		<b>\</b>				
. (160)								1				
200												
. ( 250)												
. (320)												
400												
. (500)												
. (640)												-
800												
. (1000)	<b>排焊</b>											
. (1250)	30	100 71										
1600	10000000000000000000000000000000000000											

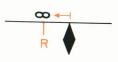
The area A indicates the reading range of the meter. The area B indicates that although the shutter speed index is black and the meter needle moves, the meter is NOT operating properly.

When the meter needle is centered with the shutter speed dial set at B using ASA20-50 films, this indicates that the exact shutter speed required is 2 seconds. Please expose your picture for 2 seconds.



#### INFRA-RED PHOTOGRAPHY





If you intend to take infra-red photographs, remember to use the infra-red index marked with an orange line or a small "R" on the depth-of-field guide.

First, focus your lens on your subject. Determine the lens-to-subject distance from the distance scale. Then match your lens-to-subject distance to the infrared index by turning the distance scale accordingly. For instance, if your subject is in focus at infinity, turn the distance ring and move the infinity ( $\infty$ ) mark to the index. The index marking on the Takumar lenses is based on the lens setting at infinity.

#### **MULTIPLE EXPOSURE**

For deliberate multiple exposures, make the first exposure in the normaly way. Then tighten the film by turning the rewind knob (1), and keep hold of the rewind knob. Depress the film rewind release button (2) and cock the rapid wind lever. This tensions the shutter without advancing the film. Finally, release the shutter to make the second exposure. Then make one blank exposure, before taking the next picture, to avoid overlapping.



#### **IMPORTANT NOTES**



Always keep the meter switched off when not actually taking readings. Leaving the meter switched on will rapidly exhaust the battery. It is also necessary to keep the meter switched off when mounting a Super-Takumar or SMC Takumar lens on the Spotmatic II camera body. If it is switched on, the tip of the automatic diaphragm release pin of the lens will hit the pin release plate inside the camera body and it may get damaged.

When the index of the shutter speeds turns to red, it indicates that the shutter and film speed settings are off the meter's measurability range. Change the shutter speed setting to a faster or slower setting. Refer to page 27.

When the meter is the switched on, the lens (any Super-Takumar or SMC Takumar lens) is in its manual position even when the diaphragm preview lever is in "AUTO" (automatic) position. When the meter is switched off manually, or automatically after shutter release, the lens returns to its automatic position when it is set in "AUTO" position.

Exposure increase factors which apply when taking pictures with filters, close-ups, macro- and micro-photos, do not apply to the Spotmatic.

Primarily made for use with the Spotmatic, the SMC Takumar 50mm f/1.4 lens can also be used with the Pentax models ES, SL and SP 500. Further, it can be used with only two other cameras: Asahi Pentax SV and S1a with an orange-coloured R marking on the film rewind knob. Use with any other camera will damage the rear element lens.

The length of the tripod's screw should not exceed the normal length of 3/16" (4.5mm). Do not extend it longer than this length when mounting your camera on tripod. Forcing longer screws into the tripod socket of the camera will damage the mechanism.

4

#### **Exposure Factor**

No!

x1.63 x1.96

x3.20

x4.80

x5.46

5



6





All Asahi Pentax cameras purchased through authorized bona fide photographic distribution channels are guaranteed against defects of material or workmanship for a period of twelve months from date of purchase. Service will be rendered and defective parts will be replaced without cost to you within that period, provided the equipment has not been abused, altered, or operated contrary to instruction. Because the tolerances, quality, and design compatibility of lenses other than Pentax-Takumar lenses are beyond our control, damage caused by use of such lenses will not be covered by this warranty policy. The manufacturer shall not be liable for any repair or alternations except those made with its written consent and shall not be liable for damages from delay or loss of use or from other indirect or consequential damages of any kind, whether caused by defective material or workmanship or otherwise; and it is expressly agreed that the liability of the manufacturer under all guarantees or warranties, whether expressed or implied, is strictly limited to the replacement of parts as herein before provided.

#### PROCEDURE FOR REPAIR SERVICE

Should any Asahi Pentax Spotmatic (SP) prove defective, it should be returned to Asahi Optical Company, Tokyo, Japan, with postage prepaid, or to any one of the authorized service stations listed in the International Guarantee Card. If the equipment is covered by warranty, repairs will be made and parts replaced free of charge, and the equipment will be returned to the owner upon completion of servicing. If it is not covered by warranty, regular repair charges will apply. Shipping Charges and customs clearance fees, if any, shall be borne by the owner. Due to certain customs regulations of Japan, extra time will be required in importing and re-exporting such equipment. To prove the date of your original purchase, when required, please keep the receipts or bills covering the purchase of your Pentax equipment for at least a year. When returning your Pentax equipment for repair service, be sure that a clearly written description of the difficulty encountered plus special servicing instruction, if any, should accompany such equipment to be serviced.



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