

Color 20 5,25 Dia

major working parts of the

ASAHI PENTAX

SV and S1a



- Shutter speed dial
 Rapid wind lever
 Automatic re-setting film exposure counter
 Shutter release
 'Cocked' indicater
 Diaphragm ring
 Diaphragm and distance index

- Depth-of-field guide
 Distance scale
 Distance scale ring
 X flash terminal
 Ff flash terminal
 Back lock
 Preview lever



- D-ring for neck strap
 Film type reminder dial
 Rewind knob
 Rewind crank
 Self-timer cocking wheel
 Self-timer release button The standard lens of Sla is Super-Takumar 55mm 1/2, and its top shutter speed is 1/500 second. Unlike SV, Sla has no self-timer. Otherwise, the oper-ating parts of SV are same as those of Sla.

MAJOR FEATURES OF THE ASAHI PENTAX SV AND S1a

Here's why the Asahi Pentax cameras are the outstanding values in their field:

Film & picture size Standard lenses

Single-lens reflex

35mm film (20 or 36 exposures); 24mm × 36mm

SV - Super-Takumar SSmm 1/1.8 with fully automatic diaphragm Sla - Super-Takumar 55mm f/2 with fully automatic diaphragm



Shutter

thutter; single, non-rotating shutter speed dial. T (Time), B (Bulb), 1, 1/2, 1/4, 1/8, 1/15, 1/30, 1/60, 1/125, 1/250, 1/500 & 1/1000 sec. Sla - Same





Finder and focusing

Pentaprism finder with microprism Fresnel lens brightened ground glass. Life size image viewing and focusing with standard 55mm lens.

Instant return type.

Rapid film advance

Single-stroke rapid wind lever transports film and cocks shutter.

When shutter is cocked, a red disc appears in a small window alongside the shutter speed dial.

Film rewind

Rapid rewind crank speeds film take-up.

Double exposure

Coupled film wind and shutter cocking prevents double ex-

Lens mount

Threaded lens mount for interchangeable lenses. Adapter rings are available for use of Leica-type and Asahiflex lenses.

Flash synchronization

Film type dial

Colour coded film type reminder dial with ASA ratings for colour and black-and-white films.

FP and X flash terminals.

Accessory clip

Grooves located on both sides of the viewfinder window frame clip-on exposure meter, accessory clip, and 90° finder,

available as accessories.

Automatic re-sétting film exposure counter automatically counts Exposure counter the number of exposures made.

Tiny self-timer is built in SV body. Self-timer

MAINTENANCE OF YOUR CAMERA

Protect your camera from humidity, salty air and dust. Hot temperatures above $104^{\circ}F$ ($40^{\circ}C$) and low temperatures below $-4^{\circ}F$ ($-20^{\circ}C$) will affect the shutter performance. In extremely hot weather, try to keep your camera cool. Never put it in the glove compartment or on the rear window sill of your car. When extremely cold, try to keep the camera warm.

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.

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

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

Do not use Auto-Takumar 55mm f/1.8 lens with lens number smaller then 462500 with the SV and Sla camera bodies, for its automatic diaphragm will not work correctly due to modification and improvement of the Instant Return Mirror and automatic diaphragm mechanisms of these new models.

If your camera should need repair, do not try to fix it yourself. Take it to the dealer from whom you purchased it. Further refer to the Warrantly Policy described on the last page of this operating manual.



HOW TO HOLD YOUR CAMERA



the camera firmly with your left hand, and draw your arm close to your body.

your camera tightly to your forehead with your left hand, and draw your right arm close to your body.

In horizontal position. Hold In vertical position A. Hold In vertical position B. 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, hold the lens barrel as illustrated in photograph. Put the camera on the roof 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

BEFORE TAKING PICTURES

- Set the preview lever ® in 'A' (automatic) position for bright full-aperture viewing.
- Cock the rapid wind lever (6) all the way until it stops.
- Select the f stop you want by setting 3 the diaphragm ring (f).
- Set the proper shutter speed by turning 4 the shutter speed dial @ either way.
- Compose your picture through the view-5 finder. Get the clearest image of your subject
- 6 by turning the distance scale ring (). Then trip the shutter.

1

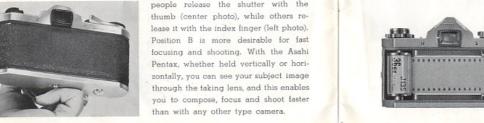
- To view exact depth of field at different
- apertures, move the preview lever (n) to 'M' (manual) position, and view your focused subject by turning the diaphragm ring (f).



FILM LOADING

Avoid direct sunlight when loading your film.

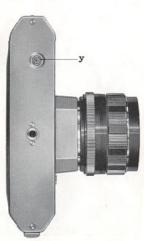
- 1 Open the back by pulling out the lock .
- 2 Pull out the film rewind knob © completely, place the film cassette chamber (I), and push back the rewind knob. Draw out the film leader and insert it that the list (I) and push back the rewind knob. into the slit (v) of the take-up spool (w). If the slit is not in a proper position to insert the film leader, turn the take-up spool with your finger.
- 3 Turn the rapid wind lever (b) and make sure that both sprockets (x) have properly engaged the film perforations. Close the back and fasten the lock (ii).



FILM WIND AND REWIND

- 1 Before turning the rapid wind lever ⑤, slowly turn the film rewind knob ⑥ clockwise until a slight resistance is felt. This prevents loosening or warping of the film.
- 2 The first portions of the film can not 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 and trip the shutter again. Your camera is now ready for the first picture. 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.
- 3 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, and that the film must be rewound. DON'T open the back of the camera, or all exposed frames will be ruined.
- 4 Unfold the film rewind crank (F.





Depress the film rewind release button

①. 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
simospheric conditions, erratic or teo
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 will return to normal position as you load your next film and turn the rapid wind lever.)

6 Open the back, pull out the film rewind knob (1), and remove the film cassette. Bend the leader end of the film to indicate that the film is exposed and ready for development.





Little Jewel

This gem-like object is a pentaprism—nearly two solid ounces of finest optical glass. Ground and polished to extremely fine tolerances, it contains 25 distinct surfaces and is a thing of beauty, yet it dwells out of sight within the innards of Asahi Pentax cameras.—

BRIGHT FIELD FOCUSING

- You can start viewing and focusing before and after cocking the rapid wind lever. When the preview lever (1) is in 'A' (automatic) position, the diaphragm is fully open except for the moment of exposure.
- 2 Turn the distance scale ring ① 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 the diaphragm closed to 1/5.6 or 1/8, 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 letter 'M' appears beside the lever (B), the lens is in manual position; when 'A' appears, it's in automatic position.



MICROPRISM

Asahi Pentax cameras have a Fresnel lens with a microprism centre 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 possible image on the ground glass.

The microprism is the centre 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 SV's microprism will break the image up into many small dots, much like an engraver's screen, while a number of parallel diagonal lines will appear in the microprism of the Sla also breaking up your subject's image. You can focus on your subject at any portion of the ground glass.



AUTOMATIC DIAPHRAGM

When the preview lever (i) is in "A" (automatic) position, the fully automatic diaphragm is at its largest aperture at all times, except for the instant of exposure, no matter what aperture is set on the diaphragm ring. When you release the shutter, the diaphragm automatically stops down to the predetermined aperture and the shutter curtains start traveling instantly. When the exposure is completed, the diaphragm reopens to maximum aperture completely automatically, and you are ready to compose, focus, and shoot your next picture. If you wish to visually check exact depth of field before making the exposure, move the preview lever to "M" (manual) position. This stops the diaphragm to the aperture selected and shows you exactly how much depth of field will appear in your picture. The preview lever may be moved back to "A" (automatic) position before or after making your exposure, or, if you are making pictures in bright sunlight, it may be left in manual position, which permits a constant check of depth of field.







IN FOCUS

SHUTTER



Turn the shutter speed dial (a) 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 (b) becomes red showing that the shutter is cocked. The indicator window blacks out as you trip the shutter button. For use of the X setting on the shutter speed dial, refer to page 14.

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.

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

- At slow speeds—slower than 1/30—support your camera rigidly or use a tripod to prevent movement of your camera.
- To protect the shutter mechanism, trip the shutter release before putting the camera out of use for any extended period.

DEPTH - OF - FIELD GUIDE



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

If you want to know how great the depth of field is at a certain aperture, look at the depth-of-field guide **(h)**. In the above photograph, the distance scale is set at 15 feet... the lens is focused on a subject 15 feet away. The calibrations on each side of the distance index **(c)** correspond to the diaphragm setting and indicate the range of in-focus distance for different lens apertures. For example, if the lens opening of 1/8 is to be used, the range on the distance scale ring covered within the figure 8 on the depth-of-field guide indicates the area in focus at that lens opening. You will note from the depth-of-field guide in the above photograph that the range from 10 to 25 feet is in focus. Note that as the lens apertures change, the effective depth of field also changes. For the depth of fields at different apertures and distances, refer to page 13.

FILM TYPE REMINDER DIAL



The ASA film speed rating of all 35mm 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 diel to show what type of film is in your camera. Simply move the nipple ③ and set the ASA number of your film opposite the red pointer. Use white figures for black-and-white film and green figures for colour and other special films. To check whether the camera is loaded, turn the film rewind knob clockwise. If it turns freely, the camera is not loaded.

For ASA-DIN film speed conversion, refer to page 33.

DEPTH-OF-FIELD TABLE SUPER-TAKUMAR 55mm LENS

Distance Scale Setting	Est Tubes 2,3 (§ 1,5 h)	Err Totes 2 @ 1.5 fr	Est Tubes E E I S It	13 %.	IJК	28.	2.25 ft.	23 Ft.	38.	23 %.	48.	18.	28.	10 %.	11 FL	30 Ft.
F/1.8	0.72 ~0.72	0.80	0.94 ~0.94	1,47 ~1.47	1.69	1.98	2.23 ~7.27	2.47 ~2.53	2.95 ~3.05	3.44 ~3.57	3.91 ~4.09	4.86 ~5.15	672 ~7.30	9,4 ~10.6	13.7 ~16.5	25.3 ~36.9
F/2	0.72	0.80 ~0.80	0.94 ~0.94	1,47 ~1,47	1.68	1.98	2.22 ~2.28	2.47 ~2.54	2.95 ~3.05	3.43 ~3.57	3.90 ~4.10	4.85	6.70 ~7.33	9.4 ~10.7	13.6 ~16.7	24.8 ~37.9
F/2.8	0.72 ~0.72	0.80	0.94 ~0.94	1.47 ~1.47	1.68	1.07	2.21 ~2.29	2.45 ~2.55	2.93 ~3.07	3.40 ~3.61	3.87 ~4.14	4.79. ~5.23	6.58 ~7.45	9.1 ~11.0	13.1 ~17.5	23.2 ~42.3
F/4	0.72 ~0.72	0.80 ~0.80	0.94 ~0.95	1,44 ~1.50	1.67	1.96	2:20 ~2:31	2.43 ~2.57	2.90 ~3.11	3.36 ~3.65	3.81 ~4.21	4.70 ~5.34	6.42 ~7.70	8.8 ~11.5	12.5 ~18.9	21.2 ~51.4
F/5.6	0.72	0.80	0.98	1.44 ~1.50	1.66 ~1.74	1.94 ~2.05	2.18 ~2.33	2,41 ~2.60	2.86 ~3.15	3.51 ~3.72	3.75 ~4.29	4.50 ~5.48	6.21 ~8.03	8.4 ~12.3	11 <i>7</i> ~21.0	19.0 ~72.1
F/8	0.72	0.80	0,93	1,44 ~1,50	1.65	1.92	2.15 ~2.35	2.37 ~2.65	2.81 ~3.22	3.23 ~3.82	3.65 ~4.43	4,44 ~5,72	5.93 ~8.57	7.9 ~13.7	10.7 ~25.4	16.4
F/11	0.72 ~0.73	0.79	0.93	1,41	1.63	1,89	2.11 ~2.41	2.32 ~2.71	2.74 ~3.32	3.14 ~3.96	3.53 ~4.62	4.27 ~5.05	5.61 ~9.35	7.3 ~15.9	9.6 ~34.5	14.1 ~ 10
F/16	0.72	0.79	0.92	1,41	1.60	1.85	2.05	2.25	2,64 ~3.49	3.00	3.35 ~4.98	4.00	5.14 ~11.8	6.5 ~21.7	8.3 ~85.3	11.3

Distance Scale F setting	Ext. Tubes 2, 3 @43cm	Ext. Tube 2 @45cm	Est. Tube 1 @45cm	0.45	0.8	1.5	3	5	10
F 1.8	22.0 ~ 22.0	cm. 24.4 ~24.5	em. 28.8 ~28.9	0.45 ~0.45	0.79 ~0.81	1.46 ~1.54	2.84 ~3.19	4.55 ~5.54	8.35 ~12.5
F 2	22.0	24.4	28.8	0.45	0.79	1.46	2.84	4.55	8.35
	~22.0	~24.5	~28.9	~0.45	~0.81	~1.54	~3.19	~5.54	~12.5
F 2.8	22.0 ~22.0	24.4 ~24.5	28.7 ~28.9	0.45 ~0.45	0.79 ~0.82	1,44 ~1.57	2.76 ~3.29	4.36 ~ 5.87	7.69 ~14.3
F 4	22.0	24.4	28.7	0.44	0.78	1,42	2.67	4.13	7.0
	~22.0	~24.5	~ 29.0	~0.46	~0.82	~1,60	~3.43	~6.35	~17.5
F 5.6	22.0	24.4	28.6	0.44	0,77	1.38	2,55	3.86	6.26
	~22.0	~24.6	~29.0	~0.46	~0.83	~1.65	~3.64	~7.12	~ 25.2
F 8	21.9	24.3	28.5	0.44	0.76	1.34	2.40	3.52	5.4
	~22.1	~24.6	~ 29.1	~0.46	~0.85	~1.71	~4.01	~8.71	~ 00
F11	21.9	24.2	28.4	0.43	0.74	1.29	2.24	3.17	4.6
	~22.1	~24.7	~29.3	~0.47	~0.87	~1.80	~4.59	~12.1	~ 00
F 16	21.9	24,2 ~24,8	28.2 ~29.5	0.43 ~0.48	0.72 ~0.90	1.21 ~1.98	2.00 ~6.07	2.72 ~34.8	3.7

When using extension tubes, the distance is measured from the front ring of the lens; otherwise, the distance is measured from the film plans.



SELF-TIMER

Turn the self-timer cocking wheel ® clockwise as indicated by the arrow mark until it stops. When you depress the self-timer release ①, the shutter will release in about 10 seconds. If you depress the release button after turning the wheel ® about 50 degrees, the shutter will release in about 5 seconds. The cocking wheel can be turned before or after you cock the rapid wind lever of the camera. Remember that the shutter will release when the "V" mark on the side of the wheel ® comes to the front. So, you always know when the shutter releases when taking your own self-portraits. The self-timer is built in the SV model only.

FLASH SYNCHRONIZATION

The Asahi Pentax has two sets of terminals—FP and X. The table below 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 about 1/50 of a second, and this indicates the highest shutter speed at which electronic flash units may be used.

Shutter speed Flash terminal	1000 SV	<u>1</u> 500	1 250	<u>1</u> 125	1 60	Х	1 30	1/15	1 8	1 4	1 2	1	В
			FP	Class									1
FP		FF (bay	Cla	SS ase)			-		7				
	-								F	Cla	ss		
Х									М	Cla	ss		
								Ele	ctron	ic fl	ash		

INTERCHANGEABLE LENSES

The Asahi Pentax offers many interchangeable lenses, all of which are widely respected by professional and amateur photographers for their fine resolution. The photographic overage of the various Takumar lenses is illustrated on page 16. With focal length longer than 55mm, the subject image is seen through the viewfinder larger than its life size. Regardless of the lens selected for your Asahi Pentax, there is never need for an accessory viewfinder, ordinarily required for rangefinder type cameras.

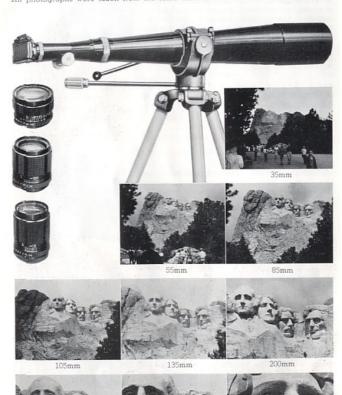
When interchanging lenses, hold the lens by the distance scale ring (). When attaching a lens, filter, or lenshood, do not screw it too tightly, as you may find it difficult to unscrew.





DIFFERENCE OF ANGLE OF TAKUMAR LENSES

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



Super-Takumar 28mm f/3.5

A new super-wide-angle lens of 7 elements, designed and produced to meet the most exacting of the professional requirements, this is the lens you professionals and advanced amateurs need to shoot more artistic photographs. Equipped with fully automatic diaphragm; ideal for architecture, fast-action and artistic photography.

Lens element
Minimum aperture
Minimum distance 1.3 ft. (40 cm)
Angle of view
Weight

Auto-Takumar 35mm 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 element						
Minimum aperture						
Minimum distance		-		 		1.5 ft. (45 cm)
Angle of view						
Weight						11 ozs. (310 gr.)

Super-Takumar 35mm f/3.5

A medium speed lens with extremely high resolving power, this is an excellent general purpose wide-angle optic which will prove highly useful for scenic, industrial, and architectural photography. Compact and light in weight.

Lens elen	nent																	!	5
Minimum	aperture	,	,	,		 				,		,	,		,			f/2	2
Minimum	distance					 			1		i	f	t.	1	4	45	j.,	cm	0
Angle of	view			,														63	Ö
Weight							5	1		_	7	e		11	10	51	9	cer	١













Super-Takumar 55mm f/1.8

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. Equipped with fully-automatic diaphragm.

Lens elen																					
Minimum	ape	rtur	e							,						 		+	f/	16	
Minimum																					
Angle of																					
Weight .				 -							7	6	0)2	S.	()	6	4	g	r.)	

Super-Takumar 55mm f/2

Razor-sharp, fully corrected, high-speed standard lens, using rare-earth glass, designed by top lens designers. Bright f/2 aperture makes viewing and focusing extremely easy. Razor-like and brilliant resolution is widely acclaimed by professional and discriminating amateur alike. Equipped with fully automatic diaphragm.

Minimum	ape	rti	ır	е								٠,	4								f/16
Minimum	dist	an	c	e.	ĸ						,				1.	.5	ft		(45	cm
Angle of	viev	7							,												43
Weight			ļ.					, .					1	1.6	ò	02	s.	(1	64	gr.

Auto-Takumar 85mm f/1.8

A new, ultra-fast 5-element lens which produces an image slightly larger than the standard lens. Perfect for available light portraiture, nature studies, and sports coverage. Used as a standard, general purpose lens by many photographers. Equipped with semi-automatic diaphragm.

ens elen	ient .					 		i	 											. 5	
Minimum	aper	ture						,												f/16	
Minimum	dista	nce				 				٠.	ı,			3	f	ŧ.	- (8	5	cm)	
Angle of	view.				,	 		×					,							29°	
Weight .							ď				1	2	3	02	zs.	-	(3	34	0	gr.)	

Super-Takumar 105mm f/2.8

A quality medium telephoto lens of 5 elements, with well corrected aberrations. Light-weight design for portability and easy handling. Recommended for scenery, portrait, news photos, other moderate telephoto effects. Equipped with fully automatic diaphragm; supplied with special lenshood.

Lens elen	nent					-								,							5
Minimum	aperture																			1/2	2
Minimum	distance		-											4	1	ít.	(1	.2	n	1)
Angle of	view					į.	į.													23	30
Weight .									1	0	.2	2	o	Z	S.	. 1	2	90	0	gr	.)





Takumar 105mm f/2.8

Exactly same as Super-Takumar 105mm; except this is equipped with pre-set diaphragm. The pre-set diaphragm ring ① is set at a desired aperture before focusing. Turn the actual diaphragm ring ② to f/2.8 to focus with the diaphragm fully open. After accurate focusing has been achieved, turn the diaphragm ring @ which automatically stops at the preselected aperture setting. Supplied with special lenshood.



Takumar 135mm f/3.5mm

Produces a brilliant image in all corners of the picture even with the diaphragm fully open. Indis-pensable for distant subject matter and for portrait. Ideal for close-ups of enimals or plants even at a distance. Recommended as the ideal long telephoto lens for hand-held camera operation. Equipped with pre-set diaphragm.

Lens elen	nent	,	 			 									,			,					5
Minimum	aperture					 																1/2	2
Minimum	distance																	6	f	t.	(2 m	1)
Angle of	view			į	i										,					. ,		18	30
Weight .				,		 	.,	,	,	,		10	D.	6	¢	02	s		(30	Ó	gr	.)





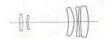
Super-Takumar 135mm f/3.5



Identically same as Takumar 135mm f/3.5 lens in its specifications; except this is equipped with fully automatic diaphragm and weighs 12.1 ozs. (343 gr.). As explained on page 10, turn the diaphragm ring (f) and match the desired f/setting to the index (g). The diaphragm closes down to this preselected aperture and reopens automatically when the lever (i) is in 'A' (automatic) position. Turn the lever (ii) to 'M' (manual) position to visually check the data to it field at a depth of field at different apertures.

Takumar 200mm f/5.6





Small, compact and light weight . . . that's the new Takumar 200mm f/5.6 lens. It weight only slightly more than Super-Takumar 135mm. Still it produces professional quality resolution in hand-held telephotography. Equipped with pre-set diaphragm; supplied with special lenshood.

Lens elen	nent					,		,												
Minimum	aperture				,		_					-						,		1/2
Minimum	distance													9	f	t.	((2	.5	m
Angle of	view		 . ,																	12
Weight										l.	3.	.1	0	Z	5,	(3	70)	gr

Takumar 200mm f/3.5



A bright 4-element telephoto lens for hand-held shooting. New optical glass used with recently advanced theory of design. Ideal for extraordinary snapshots, stage, sports and news photos with exceptionally fescinating telephotographic effects. Equipped with pre-set diaphragm; supplied with special lenshood.

Lens elen	nent.		 	,				 						·		4
Minimum	aper	ture			٠,											f/22
Minimum	dista	nce										. 9	f)		(2.5	m
Angle of	view		 													12
Weight									2	ô.	5	02	s.	(900	gr.

TAKUMAR 1000mm f/8

Takumar 300mm f/4





Light enough for hand-held picture taking, this lens is considered to be the most ideal 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. Equipped with manual diaphragm; supplied with special lenshood.

Lens elem	ent								,		,	,		,		3
Minimum	aperture		,	,	,									i	12	2
Minimum	distance						,	2	5	1	ŧ		1	7	m)

Angle of	view										8°
Weight .			,			,	4	8	ozs.	(1.36)	kg.)

Takumar 500mm f/5



Perfect ultra-telephoto lens for sports, scenic and wildlife photography. Bright 1/5 image simplifies aiming and focusing. Produces edge-to-edge coverage of high resolution. Comparatively light and small for its performance. Equipped with manual diaphragm; supplied with special lenshood.

Lens elem	ent	 ,				٠,	1	ï			ı			.2
Minimum														
Minimum	distance				,		3	5	f	ŧ.	(10) ;	m)

	view			
Weight .		6 lbs.	5 ozs.	(2.85 kg.)

Photographs subjects which are too far away to be seen by the naked eye. The ultimate in fine optics for the photographer who specializes in news, sports, scientific or wildlife photography. Fast, accurate focus-ing with manual diaphragm. Furnished with built-on lenshood, rigid metal tripod and in wooden cases. Lens element..... . f/22 Minimum aperture 16.5 lbs. (7.5 kg.) Weight of lens

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 Ipm (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 camera movement. 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 f/11.

LENSES	DIAPHRAGM	LENS ELEMENT	MINIMUM APERTURE		TANCE	ANGLE	WEIGH	T	FILTER	LENSHOOD SIZE
A. A. C. A. A. C. A. C.		- 3	5 11 15	Feet	Meters	Degrees	Ozs.	Gr.	mm	mm
Super-Takumer 28 mm f/3.5	Fully automatic	7 :	1/22	1.3	0.40	75	9.2	260	58	60
Auto-Tekumer 35mm (/2.3	Semi-automatic	6	1/22	1.5	0.45	63	. 11	310	65	65
Super-Takumar 35mm f/3.5	Fully automatic	5 1	f/22	1.5	0.45	. 63	5.4	152	49	49
Super-Takumar 55mm 1/2	Fully automatic	- 6	1/16	1.5	0.45	43	7.6	164	49	49
Super-Takumar 55mm I/1.8	Fully automatic	6	1/16	1.5	0.45	43	7.6	164	49	49
Auto-Takumar 85mm t/1.8	Semi-automatic	5	1/16	3	0.85	. 29	12.0	340	95	88
Takumar 105mm (/28	Pre-set	5	1/22	4	1.2	23	10.2	290	49	49*
Super-Takumar 105mm 1/2.8	Fully automatic	5	1/22	4	1.2	23	10.2	290	49	49*
Tekumer 135mm t/3.5	Pre-set	5	1/22	6	2.0	18	10.6	300	49	49*
Super-Takumar 135mm (/3.5	Fully automatic	5	1/22	8	1.5	18	12.1	343	49	49*
Tekumer 200mm (/5.6	Pre-set	5	1/22	9	25	- 12	13.1	- 370	49	49*
Takumar 200mm f/3.5	Pre-set	- 4	1/22	9	2.5	12	26.5	900	67	
Takumar 300mm f/4	Manual	3	1/22	25	7.0	8	48.0	1360	82	
Takumar 500mm f/5	Manual	2	1/22	35	10.0	5	6 lbs. 5 ons.	2850	45	
Takumar 1000mm t/8 ≅	Manual	- 3	1/22	98	30.0	2.5	42 lbs.	19000	46	

Supplied with rigid metal tripod.)

(*Special lenshoods supplied with these lenses.)



Taken with Asahi Pentax. At f/8, 1/60 sec. Extension tube No. 2.

24

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 3564 inches from the front of 55mm 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: \$1,\$2 and \$3; 9.5mm, 19.0mm and 28.5mm respectively. These rings may be used in combination as desired. Ring \$1 is suited for moderate close-up work as in copying documents. When all extension tubes are used simultaneously with 55mm lens, the subject may be enlarged on the film to a magnification of 1.04 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 viewlinder as is ordinarily required for rangefinder type cameras.

BELLOWS UNIT

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







MICROSCOPE ADAPTER

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



COPY STAND

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 (I), extension poles (2), and pantographic camera mount with microadjusting knob (3). With this unit, titles for colour slides, microphotography, identification photos of small objects and other useful copying work are easily performed.



ASAHI PENTAX COPIPOD

This new portable copying stand fits all models of the Asahi Pentax and can be used anywhere for copying documents, artwork, photographs, stamps, etc. The Copipod consists of a lens board complete with adapter rings for 46mm and 49mm sizes, and four calibrated telescoping legs. It can be set up in seconds, and when disassembled, fits neatly into a pouch-type case which occupies very little space. Lightweight, yet extremely rigid, the Copipod is a practical accessory which will fill a need for many Asahi Pentax owners.

LEICA MOUNT ADAPTER

ADAPTER 'A' - For use of Leica-mount lenses on the Asahi Pentax camera body. Leica-mount lenses may be used on the Asahi Pentax camera body with this adapter ring ONLY for close-up photography. The following table illustrates the film plane-to-subject distance that can be covered by Leica-mount lenses when using this adapter.

ADAPTER 'B' - For use of Takumar lenses on Leica-mount camera bodies. Primarily for use with Leica lens mount enlargers.

enlargers.

Focal length of Leica mount lens	Film-to-s distar		Size of a photog	
50mm	10 15 64 in.	26cm	$2^{61}_{64} \times 3^{15}_{16}$ in	6.7×10cm
85mm	227 ₁₆ in.	57cm	$4^{11}_{64} \times 6^{19}_{64}$ in	10.6×16cm
105mm	32°32 in.	83cm	$5^{15}_{64}\times7^{7}_{8}$ in	13.3×20cm
135mm	48 53 64 in.	124cm	$6^{11}_{16}\times 10^{1}_{32}$ in	. 17.0×25.5cm



LENS MOUNT CAP

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



 \mathbf{B}

BODY CAP

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



LENS LEATHER CASE

for standard lenses



When using an accesso lens on your camera body, put your standard lens in this leather case for protection.

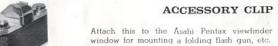
FILM MAGAZINE

For use in loading bulk film



90° FINDER (Refconverter)

A convenient accessory viewfinder to be attached to the viewfinder frame of the Asahi Pentax, for low-angle close-up, photo-micrography, etc.



MAGNIFIER

2-power magnification. Most convenient for critical focusing in close-ups, macro-photography, copying works, etc.

CABLE RELEASE

Use a cable release to prevent camera movement.

SPOT EXPOSURE METER

A new concept in reflected light meters. Has own optical reflex viewing system and offers unsurpassed selectivity and accuracy. Light unsurpassed selectivity and accuracy. Light sensitive element (CdS) covers an angle of only 3°, defined in the centre of a viewing screen with a 21° of view. Light intensity is read directly on the viewing screen, and exposure is calculated on movable rings on the lens barrel. Operates for a full year on one 1.3v mercury battery and one 22.5v dry cell. cell.

ASAHI PENTAX CdS CLIP-ON METER



- A Film speed calibration
- B Film speed index
- C Shutter speed dial
- Shutter speed index
 L" (low) switch setting (E)
- © "OFF" mark
 © "H" (high) switch setting
- Battery check point
 Switch index
- (1) Low light diaphragm calibration
- (red figures)
- High light diaphragm calibration (black figures)



- (i) Battery checker mark
- M Guide scale
 N Switch ring
- @ Zero point
- P Needle
- Q Light input window B Slide legs

- Sero adjust screw
 Shutter speed coupling pin
- Support cover
 Mercury battery cover
- W Mercury battery replacement

How the Asahi Pentax CdS Clip-on Meter helps you take better pictures...

The best-planned picture can be ruined by poor exposure. Bracketing your exposures may give you one usable negative or transparency out of four or five, but it is a needless waste of film—needless when you realize that an accurate exposure meter, properly used, will help you to obtain consistently good exposures under all but the most impossible lighting conditions.

The Asahi Pentax Clip-on Meter is an accurate exposure meter, and it is easy to use properly. It is extremely sensitive and highly selective. As its name implies, the Clip-on Meter is made in the sense of t expose your film.

In front of the Clip-on Meter's CdS cell is a lens which allows the meter to measure light at a 40° angle; approximate to the angle of view of your standard lens. Because of this correct angle system, your Clip-on Meter will accurately measure exposure without being affected by peripheral light which could cause a false reading. You are assured of a perfect exposure every time!



Specifications

Weight: 4.2 ozs. (120 gr.) Angle of measurement: 40° Light sensitive element: Cadmium sulfide (size: 7 × 10mm)

Coupling system: Couples with shutter speed dial; Coupling system: Couples with shutter speed dial; gives reading for diaphragm setting. Film speed range: ASA 6 - 1600.

Shutter speed range: B, 1 - 1/1000 sec. Diaphragm range: f/1.4 - 1/22.

Power source: 1.3v mercury battery.

Equipped with easy-to-use battery checker; supplied with compact soft leather case.



How to attach the meter to your camera

Raise the support cover ① on the back of the meter Raise the support cover ① on the back of the meter and slide the meter's legs ⑥ into the grooves on your camera's viewfinder frame. Lower the support cover to lock the meter to your camera. Then, turn the meter's shutter speed dial ② in either direction to engage the coupling pin in the slot in the camera's shutter speed dial. When the pin is engaged, turning the meter's speed dial will also turn the shutter speed dial ③ your camera. dial of your camera.

Battery checker



To check whether the mercury battery of your Clip-on To check whether the mercury battery of your Clip-on Meter still has sufficient capacity, or whether it should be replaced with a new one, turn the switch ring (s) and set the index (f) to the battery check point (f). If the meter's needle reaches the green coloured battery checker mark (f) on the guide scale (s) of the meter, the battery still has sufficient capacity; if it does not reach the green mark, the battery should be scalered. be replaced.

LEAVING THE METER SWITCHED ON WHEN NOT IN USE WILL RAPIDLY EXHAUST THE BATTERY: ALWAYS SWITCH THE METER OFF WHEN NOT ACTUALLY TAKING READINGS!

Using your meter

Line up the ASA number of your film with the film speed index. If you are outdoors and the light level is high, turn the switch ring and set its index ① to 'H'. Then, turn the meter's shutter speed dial and set the shutter speed you wish to use opposite the shutter speed index. Compose your picture—then lower your camera to see the meter's needle. Be certain to keep the meter in approximately the same position as when you composed the picture. The diaphragm setting in black which lines up with the meter's needle is the correct aperture for your combination of film and shutter speed. If the needle does not indicate the black diaphragm setting, turn the shutter speed dial to a higher speed.

For pictures indoors using available light, or outdoors in dim light or deep shade, it will usually be necessary to use the meter's low range. Turn the switch ring and set its index to 'L'. Follow the same procedure as before, but be certain to use the red diaphragm calibrations.

If you wish to use a certain aperture—a wide one for example, to render the background blurred—take your reading and line up the selected diaphragm calibration with the needle by turning the shutter speed dial. When the diaphragm calibration lines up with the needle, the shutter speed opposite the shutter speed index is the proper one to use. Always remember to use the black diaphragm calibrations when the switch is in the 'H' position, and red calibrations when it is set on 'L'.

ALWAYS KEEP YOUR METER SWITCHED OFF WHEN NOT IN USE!

Just as there are different ways of taking pictures, there are different ways of using your Clip-on Meter to determine proper exposure. Here are several methods -

AT THE CAMERA POSITION

For distant scenes, or when you do not want to move in closer, point your meter slightly downward to exclude excessive sky light which can inflate the meter reading and cause you to underexpose your subject. Where shadow detail is important, open up one full stop for black-and-white and negative colour film, and a half stop for reversal colour.

AT THE SUBJECT'S POSITION

For extremely critical exposures, move in close and take your reading directly from the subject. Hold your meter about six or eight inches from the subject (you may find it convenient to remove the meter from your camera), making certain that no shadows are cast by your hand or the meter on the area being measured. This method is particularly effective for relatively small main subject areas such as a person's face, set against a much darker or lighter background, when full exposure of the main subject only is important.

SUBSTITUTE HAND METHOD

When it is not practical to take a close-up reading, try a substitute reading by using the palm of your hand. Hold the meter six to eight inches away, being careful that no shadows are east on the palm.

TAKE SEVERAL READINGS

It is often best to take readings from different areas of your subject, using the average exposure to obtain detail in both light and dark picture areas. This is practical if no more than a six-stop difference in high and low readings exists with black-and-white film, or a three-stop difference with colour.

ZERO ADJUSTMENT

If the meter's needle does not indicate the zero point when the switch is OFF, turn the zero adjust screw to either direction until the needle rests exactly on the zero point.

BATTERY REPLACEMENT

Mercury batteries of the type used in the Clip-on Meter have an extremely good shelf life. A battery will give a constant current during its life, and when it dies, the current lowers repidly. It will last for approximately one year, depending upon frequency of use. When the meter's battery is exhausted, the needle of your meter will move slowly, or not at all. To be certain, check the battery with the convenient battery checker.

To replace the battery, simply slide the replacement lever ® out of the way and remove the battery cover. The battery will lift out easily and a new one can be put in its place. Insert the battery with the positive ⊕ side in contact with the battery cover. Replacement batteries are available from most photographic shops. Ask for Mallory RM62SR.

Caution

- 1 Keep the battery dry. Don't touch it with your finger unnecessarily. Wipe its surface completely with dry cloth before inserting it into the battery housing.
- 2 Don't measure the short current. Don't try to charge the battery. It will deteriorate.
- 3 Don't throw a used battery into fire! Don't short the battery! It may explode.
- 4 Keep the battery out of the meter when you do not intend to use it for a lengthy period of time.



Battery Cover

Mercury Battery. Insert with ⊕ side up.





ASA-DIN FILM SPEED CONVERSION TABLE

ASA	DIN	Exposure	
800			1
640			1.3
500			1,6
400	27°		2
320			2.5
250	**************************************		3.2
200	74°		4
160			5
125			6.3
100	21		8
80	25"		10
64	19"		13
. 50	18°		16
40	17"		20
32			75
25			32
20			
16	13° ····		50
12			63
10			80
. 8	10°		
6			
5			
4			
3			
2.5			

ASA = American Standards Association DIN = Deutsche Industrie Normen

FEET-METER CONVERSION TABLE

Feet/inche	s to metric units	Metric units	Metric units to feet/inches									
Vi in.	0.32 cm,	0.5 cm.	His in.									
% in.	0.64 cm.	- 1 cm.	36 In.									
56 in.	1.27 cm.	2 cm.	13/16 in.									
1 in.	2.54 cm.	3 cm.	1 %ie in.									
2 in.	5.08 cm.	4 cm.	1 Vie in-									
- 3 in.	7.62 cm.	5 cm.	1 15% in.									
4 in.	10.2 cm.	6 cm.	2 % in:									
5 in.	12.7 cm.	7 cm.	2 % in.									
d in	15.2 cm.	B cm.	3 1/6 it.									
7 in.	17.8 cm.	9 cm.	3 1/2 its									
8 in.	20.3 cm.	10 cm.	31% in.									
9 in.	22.9 cm.	12 cm.	4 % in.									
10 in.	25.4 cm.	15 cm,	5 % in.									
11 in.	27.9 cm.	20 cm.	7 % in.									
1.6.	20.5 cm.	25 cm,	9 13/4 in.									
2 11.	61.0 cm.	30 cm.	11 34 in.									
3 ft.	91,4 cm,	40 cm.	15 34 in.									
4 ft.	1.22 m.	50 cm.	19 % in.									
5 11.	1.52 m.	60 cm.	23 % in.									
6 ft.	1.83 m,	80 cm.	31 1/2 in.									
7 ft.	2.13 m,	100 cm.	39 1/2 in.									
8 ft.	2.44 .n.	1.5 m.	4 ft. 11 in.									
9 ft.	2.74 m.	2 п.	4 ft. 7 in.									
10 H.	3.05 m.	2.5 m.	8 ft. 3 in.									
15 fr.	4.57 m.	3 m.	9 ft. 10 in.									
20 ft.	6.10 m.	4 m.	13 fr. 2 in.									
30 ft.	9.14 m.	5 m.	16 ft. 5 in.									
40 ft.	12.20 m.	10 m.	33 fr. 0 in.									
50 ft.	15.24 m.	15 m.	49 ft. 2 in.									
100 fr.	30.48 m.	20 m.	66 fr. 0 in.									



ARRANTY POLICY

All Asahi Pentax cameras 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 instructions. The manufacturer or its authorized representatives shall not be liable for any repair or alterations 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 or its representatives under all guarantees or warranties, whether expressed or implied, is strictly limited to the replacement of parts as hereinbefore provided.

PROCEDURE DURING 12-MONTH WARRANTY PERIOD.

Any Asahi Pentax which proves defective during the 12-month warranty period should be returned to the dealer from whom you purchased the equipment or to the manufacturer. If there is no representative of the manufacturer in your country, send the equipment to the manufacturer, with postage prepaid. In this case, it will take a considerable length of time before the equipment can be returned to you owing to the complicated customs procedures required in Japan in importing and re-exporting photographic equipment. If the equipment is covered by warranty, repairs will be made and parts replaced free of charge, and the equipment will be returned to you upon completion of servicing. If the equipment is not covered by warranty, regular charges of the manufacturer or of its representatives will apply. If your Asahi Pentax was purchased outside of the country where you wish to have it serviced during the warranty period, minimum handling and servicing fees may be charged by the manufacturer's representatives in that country. Notwithstanding this, your Asahi Pentax returned to the manufacturer will be serviced free of charge according to this procedure and warranty policy.

All models, prices and specifications are subject to change without notice.



