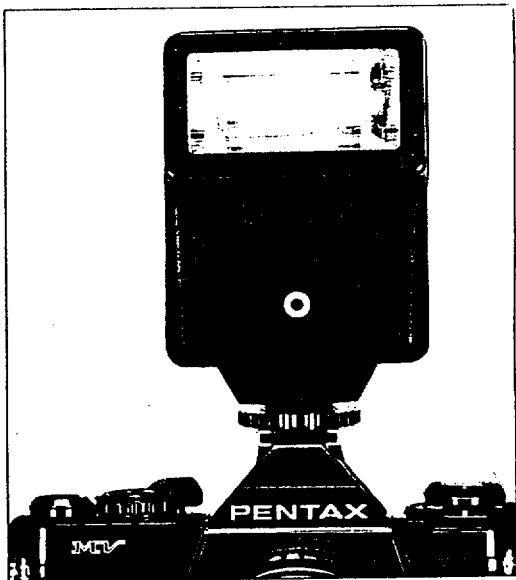


PENTAX

AF 200S

AUTOMATIC ELECTRONIC FLASH UNIT



FEATURES OF THE AF 200S

The AF 200S is a cordless-type automatic flash unit featuring manual override which may be used with all cameras featuring direct hotshoe contact. When used in the auto mode, it features an electronic "eye" which measures the light reflected from the subject and controls flash brilliance for correct exposures. Thus, anyone can use it to obtain perfect flash exposures easily and efficiently. Moreover, a high flash head helps to prevent "red-eye," and its functional design permits film rewind with the flash unit mounted to the camera.

AUTO FLASH CHARACTERISTICS

The AF 200S features two-way auto flash output selection. Even when you change the distance between the subject and the camera, as long as the subject remains within the effective flash range, correct exposure can be obtained without changing the f-number.

"DEDICATED" AUTO FLASH

While the AF 200S works equally as well with all cameras featuring standard "X" hotshoe synch, owners of the Pentax ME SUPER, ME-F, MV, MV-1 and other late model Pentax cameras have the additional advantage of "dedicated" flash. With these cameras, your AF-200S will synchronize automatically for flash on charging. In addition to the flash ready lamp on the back of the flash, an LED inside the camera viewfinder will light up to let you know your flash is ready without the need to remove your eye from the viewfinder. Check your camera's instruction manual to see if it offers the benefit of "dedicated" auto flash with the AF-200S.

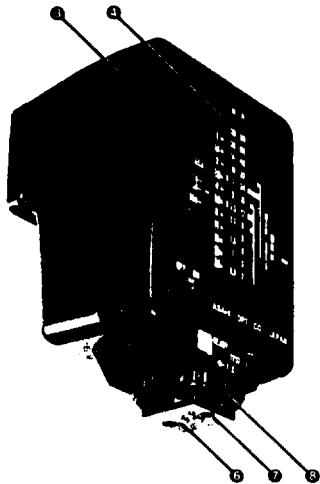
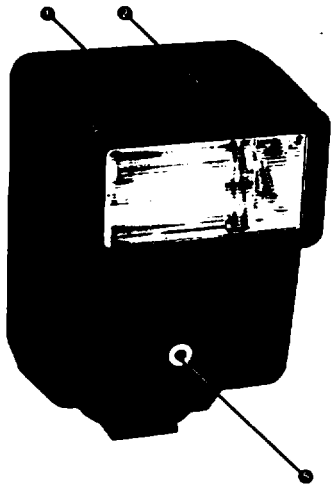
Cameras which do not offer "dedicated" flash operation with the AF-200S can be synchronized at the camera's standard flash synch speed in both Auto and Manual Flash Modes; the ready lamp on the back of the flash unit informs you when your flash has charged. Other aspects of flash operation for both types of cameras are identical.

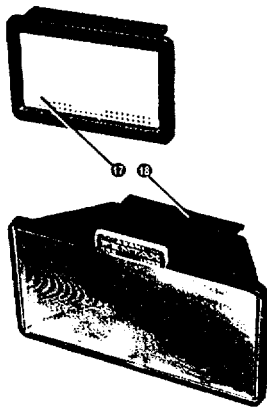
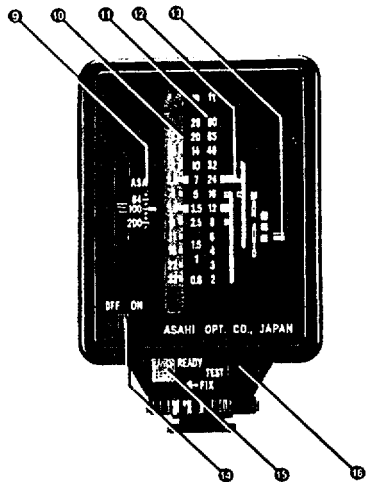
**ACCESSORY ADAPTORS PERMIT FULL, EVEN
FLASH COVERAGE WITH ALL LENSES.**

While the AF-200S offers sufficient coverage from 120mm telephoto lenses down through 28mm wide-angle lenses even without attachment, wide-angle and telephoto flash head attachments are available which extend coverage to give even illumination with ultra-wide angle lenses and longer telephotos. The wide-angle adaptor also improves results with 28mm and 30mm wide-angles lenses.



DESCRIPTION OF PARTS





- ① Flash head
- ② Adaptor slots
(for wide-angle/tele adaptors)
- ③ Battery compartment cover
- ④ Control Panel
- ⑤ Flash sensor
- ⑥ Hotshoe contacts
- ⑦ Hotshoe bracket
- ⑧ Thumbscrew
- ⑨ ASA Film Speed Index
- ⑩ Aperture Scale
- ⑪ Distance Scale
- ⑫ Auto Mode Indexes
- ⑬ Auto/Manual Selector
- ⑭ Power Switch
- ⑮ Flash ready lamp
- ⑯ Test button
- ⑰ Wide-Angle Adaptor (AFW1)
- ⑱ Telephoto Adaptor (AFT1)

SPECIFICATIONS

TYPE	Clip-on, Two-way Auto Flash unit w/manual; energy-saving circuitry.	
MOUNTING	Direct to camera's with hotshoe (cordless mounting only); auto synch via hotshoe with Pentax dedicated flash units.	
AUTO OPERATION	Via AUTO/MANUAL selector	
Sensor Reception Angle:	18°	
Auto Modes:	Two: RED and GREEN (equivalent to high and low), via AUTO/MANUAL SELECTOR	
	Apertures on AUTO:	
	With ASA 100 f/2.8 (Red)	f/5.6 (Green)
	With ASA 400 f/5.6 (Red)	f/11 (Green)
Effective Range on AUTO:	RED – 1.4m ~ 7.1m	(4.6 ft. – 23.3 ft)
	GREEN – 0.6m ~ 3.5m	(2 ft. – 11.5 ft)
Auto Recycling Times:	Vary continuously based on mode and subject distance (virtually instantaneous at low output; 4 ~ 5 sec. at high output with fresh batteries).	
Number of Flashes on AUTO:	Undetermined due to variable output; minimum greatly exceeds number specified on Manual (see below) because of energy-saving circuitry.	
MANUAL OPERATION	Via white setting on AUTO/MANUAL Selector	
Guide Numbers:	20 in meters (ASA 100) 40 in meters (ASA 400)	
Recycling Times:	Alkaline Batteries: 6 sec.; Manganese Batteries: 8 sec.	
Number of Flashes:	250	60
	* Recycling times based on fresh batteries * Number of flashes based on	

	period that flash ready lamp continues to light within 30 sec. with fresh batteries
FLASH DURATION	1/30,000 sec. ~ 1/1500 sec.
COLOR TEMPERATURE	Equivalent to daylight
FLASH SYNCH	
Auto:	Automatically on charging at camera's designated synch speed with ME-SUPER, ME-F, MV, MV-1 and other Pentaxes with dedicated flash provision.
Manual:	At camera's specified synch speed.
ANGULAR SPREAD	50° vertical, 65° horizontal (for down to a 28mm wide-angle lens)
FLASH READY INDICATORS	With Pentax dedicated flash cameras: Two (flash unit's flash ready lamp; "X" LED ready indicator in finder). Other cameras: flash unit's ready lamp
TEST FLASH CONTROL PANEL	Via TEST button on flash unit AUTO/MANUAL selector (RED, GREEN, WHITE)
POWER SOURCE SIZE	ASA Film speed index—ASA 25—800 (by lever) Aperture scale: f/1—f/32, Distance scale: 0.6—28m (2.9—90 ft.), Auto mode index: RED, GREEN, Telephoto Adaptor (AFT1) index mark, Wide-Angle Adaptor (AFW1) index mark
ACCESSORIES	Four AA size penlight batteries (Alkaline, manganese or rechargeable NiCd) 105mm(H) x 67mm(W) x 60mm(D); 4.1 in.(H) x 2.6 in.(W) x 2.4 in.(D) 285 grams (10 ozs.) Standard: Case Optional: AFW1 Wide-Angle Lens Adaptor (for down to 24mm lens) AFT1 Tele Lens Adaptor (for up to 135mm lens)

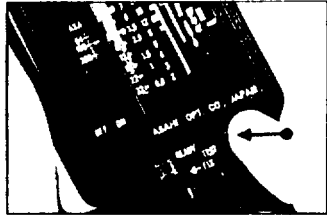
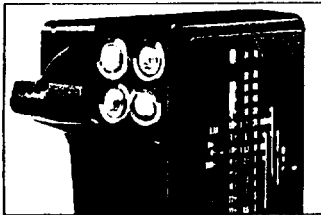
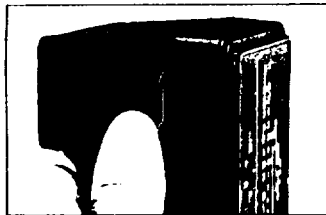
SETTING UP

INSERTING BATTERIES

1. Slide the ▲ mark on the battery compartment cover up with your thumb and open the cover all the way with your fingers from the top.
2. Insert four AA size penlight batteries into the battery compartment in accordance with the polarity symbols engraved on the sides of the battery compartment. Then, close the compartment cover until it snaps into place.

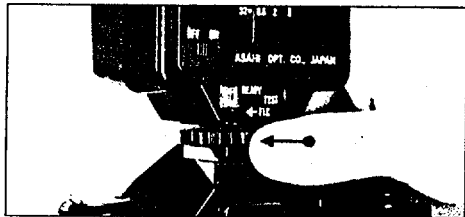
TEST FLASH

1. Before mounting, it is advisable to test the unit against flash failure. Turn the power switch on the back of the unit to ON; you will hear a faint whine which indicates the unit is charging. In a few seconds, after the flash ready lamp (READY) at the back of the unit near the hot-shoe bracket comes, press the TEST button.
 - If the ready light fails to light within 30 seconds, batteries may be inserted improperly, if new, or worn down, if old.



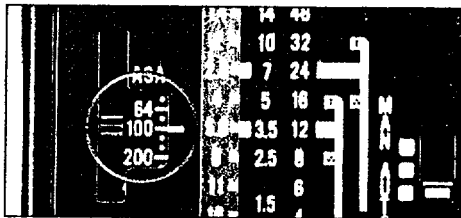
MOUNTING

1. Slide the unit's hotshoe bracket into the camera's hotshoe. (this is easier if you grasp the flash at the bottom near the bracket). When the bracket is inserted all the way into the hotshoe, tighten the thumbscrew above the bracket by turning it in the direction of the arrow (FIX) to secure the bracket.



INDEXING THE ASA FILM SPEED

1. Index the ASA film speed of the film loaded in your camera via the flash unit's control panel. This is done by sliding the ASA film speed index lever at the extreme left of the control panel until the ASA number aligns with the white line in the center of the ASA film speed scale.



BASIC OPERATING INSTRUCTIONS (for Pentax Cameras with "Dedicated" Flash Provision).

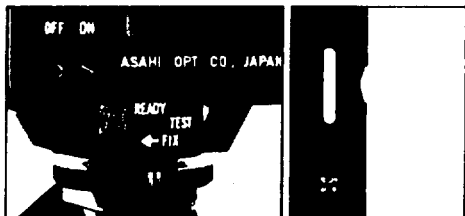
Certain late model Pentax cameras (the ME-SUPER, ME-F, MG, LX, MV, MV-1 and later models) feature "dedicated" flash with the AF-200S. With these cameras, a special contact in the hotshoe permits automatic flash synchronization on charging and flash ready indication inside the finder.

For "dedicated" flash operation:

1. Set the camera shutter dial to "AUTO". (With certain cameras other settings may also be used—see camera instruction manual).
2. Determine the flash mode (page 11-12).
3. Switch the flash unit on. Compose your picture and focus while the flash is charging. Depress the shutter button slightly to light the LED display in the viewfinder and check if the LED flash ready indicators light. When the indicators light, press the shutter button fully to take the picture.
4. The flash ready indicator goes out after you take the picture. If you do not plan to take any more photos turn the flash unit off immediately. If you plan to continue shooting, and continue making

exposures after the ready lamp comes on, turn the flash unit off after the last exposure.

- If you press the shutter button before the ready lamp comes on, normal non-flash auto exposure will be made as the flash unit will not flash (most likely underexposure or blur will result).
- Once you switch the power switch to OFF, the flash unit no longer interlocks with the camera's auto exposure system. It may conveniently be left mounted on the camera until need again.
- When the "X" flash ready indicator lights, disregard other LED indicators.



AUTO FLASH EXPOSURES

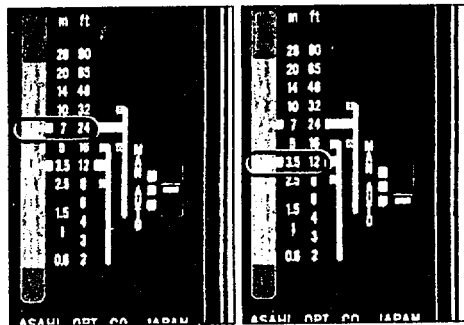
1. Set the AUTO/MANUAL selector either to the RED or GREEN AUTO setting in accordance with subject distance as indicated in the following chart. (Note: "T" and "W" index lines apply only when the accessory telephoto and wide-angle adaptors are used.)

Setting	For subjects between:
RED	3.5 and 7.1 meters (11.5 and 23.3 ft.)
RED or GREEN	1.4 and 3.5 meters (4.6 and 11.5 ft.) Generally, when the subject is closer to the minimum distance GREEN is used.
GREEN	0.6 and 1.4 meters (2 and 4.6 ft.) Always use this setting for the minimum range.

Note: As these distances are easily determined, it is usually sufficient to make a rough mental estimate of them. When in doubt, however, focus

on the subject with the lens, and check your estimation against the lens' distance scale.

2. After making sure that you have properly indexed the ASA film speed (see page 7), set the lens to agree with the aperture indicated at the top of the main RED or GREEN index line, depending upon which mode you have selected.

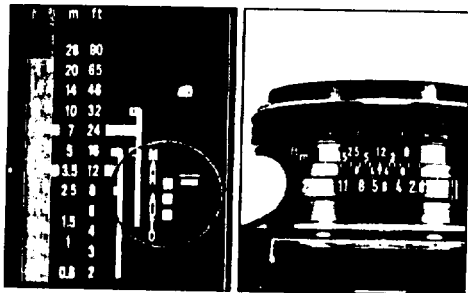


MANUAL FLASH EXPOSURES

The AF 200S also features manual flash for special shooting situations when it is necessary to override the auto flash sensor. Moreover, because full flash output is always used for manual flash, it permits use of a smaller lens aperture when the subject is near, which is especially useful for close-up shooting requiring maximum depth of field.

1. Set the AUTO/MANUAL selector to the white (MAN) setting.
2. After focusing on your subject, determine the subject distance on the lens' distance scale. Then, look up the corresponding figure on the distance scale of the flash unit's control panel, and set the lens' aperture ring to agree with the f-number opposite the subject distance on the control panel.
3. Switch the flash unit on and take the picture after the ready lamp lights. Flash charge is indicated by the flash ready lamp on the back of the flash unit only.

The indications on the control panel are painted on. They will rub off if you clean the unit with harsh cleaning solutions. Thus, wipe the control panel frequently with a soft dry cloth so that wet cleaning is unnecessary. Avoid cleaning the unit with cleaning solutions such as alcohol, thinner, household cleaners, etc.



FLASH PHOTOGRAPHY WITH OTHER CAMERAS

The AF-200S also offers automatic and manual flash exposures with cameras featuring cordless flash synch that do not have "dedicated" flash provision. In this instance, the camera is synchronized for flash at the standard "X" flash synch setting.

Flash Synch:

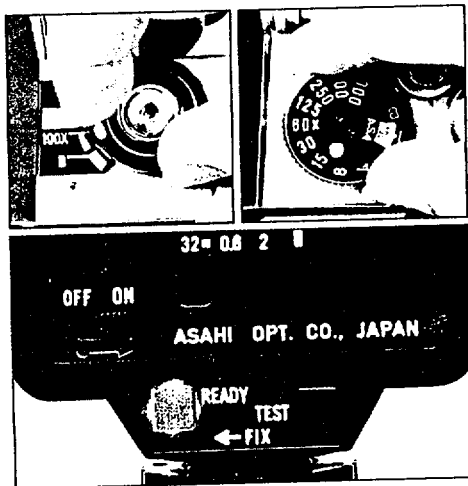
With the Pentax ME: Set the shutter dial to "100X"

With the Pentax MX: Set the shutter dial to "60".

For other Cameras: Set as specified in the camera's instruction manual.

For Auto Flash Operation: Choose the auto flash mode (RED or GREEN) in accordance with the subject distance in the chart on page 11 and set the lens aperture as indicated. Take the picture after the flash ready lamp on the back of the flash lights. Switch the flash unit off when no longer needed.

Manual Flash Operation: See adjacent page.

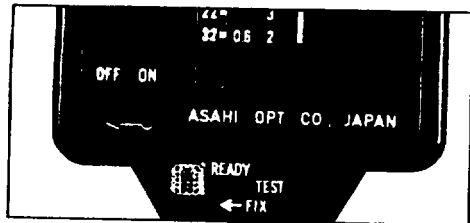


PRECAUTIONS

POWER SWITCH

When not using the AF 200S for long intervals, turn off the power switch to save batteries. If the power switch is left on, battery energy will be used constantly to restore the flash charge to its peak.

Moreover, batteries will drain if you forget to turn the switch to OFF after putting the flash unit away. Always make it a point turn the switch off when storing the unit; remove batteries when you do not intend to use the unit again within a few days.



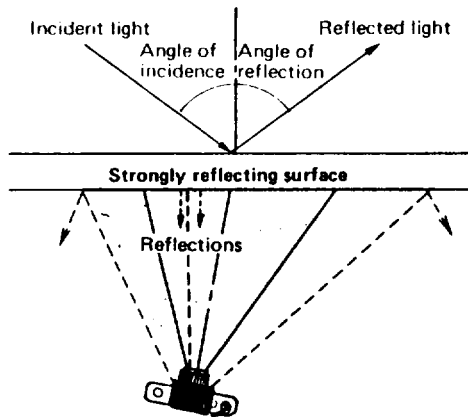
FLASH READY LAMP

The flash ready lamp comes on when the flash capacitor has reached 80% of its charge. This presents no problem in the GREEN auto mode, and most of the RED mode, as less than 80% charge is required. In the manual mode, however, and in the RED auto mode when the subject is located beyond 5.07 meters (16.6 ft.), wait an additional 2–3 seconds after the ready lamp comes on before taking the picture to assure sufficient flash if batteries are new. When batteries are low and charging requires near the 30 sec. maximum, wait an additional 5 sec. before taking the picture.

BATTERY PRECAUTIONS

- Remove batteries when not using the flash unit for long periods of time. Batteries tend to leak if left too long in the unit and may cause serious damage.
- When the ready lamp no longer lights within 60 sec. after a test flash on Manual (approx. 30 sec. on auto), it is time to replace batteries. Replace batteries earlier when shorter recycling is desired. Although the ready lamp will still light after the test times, flash is usually insufficient for correct exposure.
- Battery performance tends to deteriorate when batteries are used that have been left lying around for long periods of time. Make it a point to use batteries that are fairly new.
- Batteries are very sensitive to cold and performance tends to deteriorate at temperatures near freezing. Performance is restored to normal as soon as batteries are subjected to room temperatures. Keep a set of warm spare batteries in your pocket when shooting in freezing weather to substitute when the others become cold.
- Battery performance tends to differ depending upon brand and type. Best results are obtained when high-performance alkaline batteries are used. Rechargeable Ni-Cd (nickel-cadmium) batteries offer the advantage of shorter initial recycling times and rechargeability, but give less number of flashes per charge.

GENERAL POINTERS



GUARD AGAINST UNEXPECTED REFLECTIONS

The direction in which light is reflected off an object is shown in the illustration. It is not always possible to actually see these reflections, but precautions can be taken against them. Do not shoot directly into highly reflective surfaces as the reflections will be picked up by the lens. Even when shooting at an angle, care should be taken to reduce reflections. Non-white and non-glare backgrounds are suitable for direct flash, while backgrounds such as glass windows and white walls will produce a high-glare. For beautiful prints without glare, angle your camera so that the flash doesn't rebound into the lens.

LIGHT QUALITY (COLOR TEMPERATURE)


The color 'cast' or temperature of the AF 200S is 5,800° K (Kelvin) which is compatible with that of normal daylight. Tungsten light bulbs have a temperature of 2,800° and the evening sun is 3,200° K. Thus, electronic flash has a higher

temperature than tungsten bulbs and can be used freely with daylight films in rooms lit by tungsten bulbs without producing a reddish cast.

DISTANCE/LIGHT INTENSITY

Brightness (light intensity) drops off as distance from the lighting source increases. As brightness drops off with the square of the distance from the light source to the subject, light intensity at

a distance of 2 meters from the camera will only be 1/4 of the value it is at a 1 meter. Thus, all else being equal, objects two meters from the camera will require four times the exposure as those 1 meter from the camera.

LIGHT SOURCE	3" 1m	6" 2m	(DISTANCE)
	1	1/4	(INTENSITY)

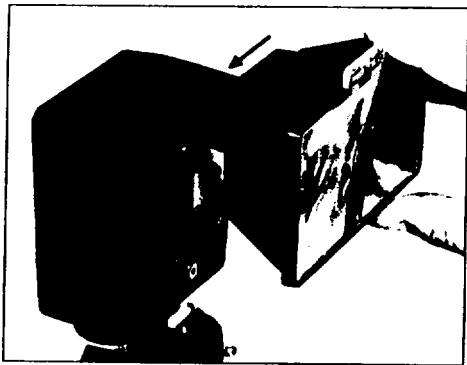
ASA	25	32	64	100	125	160	200	400	800	1600	3200
G. No. $\frac{m}{ft}$	10	11	16	20	22	25	28	40	56	80	113
	30	33	48	60	66	75	84	120	168	240	339

GUIDE NUMBERS: The guide number is the measure of the brightness of the flash in relation to the subject distance. Guide numbers vary depending upon the ASA rating of the film being used. To calculate the guide number in meters, multiply the distance in meters by the f-number. For the guide number in feet, multiply the distance in feet by the f-number. Although all the practical exposure data needed for operating the AF 200S is provided on the control panel, manual guide numbers as well as some additional ASA speeds are listed above.

WIDE-ANGLE/TELEPHOTO LENS ADAPTORS

HOW TO ATTACH THE ADAPTORS

Slide either adaptor into the slots at the top and bottom of the flash head, making sure to push it all the way in until it is centered over the flash head.

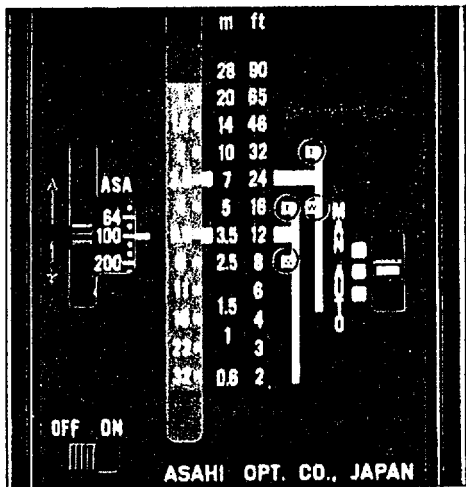


WIDE-ANGLE ADAPTOR (AFW1)

Designed principally for ultra-wide-angle lenses down to 24mm, this adaptor also offers improved results with 28mm and 30mm lenses.

Auto Flash: When the wide-angle adaptor is employed maximum auto flash range is reduced to 5 meters (16.4 ft.) at the RED auto setting and 2.5 meters (8.2 ft.) at the GREEN auto setting. Index the ASA film speed as for normal auto exposures, but use the respective "W" index line of both RED and GREEN auto modes to determine the f-number.

Manual Flash: To compensate for manual flash exposures with the wide-angle adaptor index, halve the ASA film speed on the ASA film speed index on the flash unit's control panel (if you are using ASA 100 film, for example, align the number 50 with the white index line). Then, choose the f-number opposite the subject distance in the same manner as with manual flash when the adaptor is not used.



TELEPHOTO ADAPTOR (AFT1)

The Telephoto Adaptor improves results with telephoto lenses up to 135mm by offering more concentrated light output.

Auto Flash: When the Telephoto Adaptor is used flash ranges increases to 10 meters (32.8 ft.) at the RED auto setting and 5 meters (16.4 ft.) at the GREEN auto setting. As with the wide angle adaptor, index the ASA film speed in the same manner as with normal auto exposures, but use the respective "T" index for both RED and GREEN auto modes to determine the f-number.

Manual Flash: Compensate for manual flash with the telephoto adaptor by doubling the ASA film speed setting of the ASA film speed index on the control panel (with ASA 100 film, for example, align the number 200 with the white index line. Then, choose the f-number opposite the subject distance in the same manner as with manual flash exposures without the adaptor.



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