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ASAHI
PENTAX

MOTOR DRIVE SYSTEM

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As you become acquainted with this advanced system, you will find that you can use it for an almost infinite variety of applications. Please read this manual carefully and operate the system in accordance with the instructions. It is recommended that you do not try to operate any of the equipment until you are fully familiar with the correct manner in which it should be handled.

"Asahi Pentax ES II Motor Drive," "Asahi Pentax Spotmatic F Motor Drive," and "Asahi Pentax KX Motor Drive" are the designations of the special Asahi Pentax camera models designed and built especially for use with the motor drive unit. The procedures for assembling these cameras is virtually the same. Only where different procedures are called for will they be discussed separately.

Please note that standard model Asahi Pentax ES II, Asahi Pentax Spotmatic F, and Asahi Pentax KX cameras may NOT be used with the motor drive unit.

1. Magazine back cover lock
2. Film cartridge locking knob (take-up side)
3. Bulk film magazine
4. Set button
5. Set lever
6. Motor drive camera
7. Film cartridge locking knob (rewind side)
8. Camera body retainer plate
9. Motor drive unit
10. Trigger button
11. Battery grip
12. Remote control socket
13. Magazine back cover
14. Bulb switch dial
15. Motor drive unit exposure counter
16. Film rewind button
17. Film magazine exposure counter
18. C/S (consecutive/single) dial
19. Kit bag for Set 36 (purchased separately)
20. Soft case for Set 36
21. Attache case for Set 250 (purchased separately)


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SET 36

Your Asahi Pentax motor drive system is the fruit of extensive research and development work by Asahi Pentax engineers — work that has been underway since as far back as 1960. The system has been designed and built for professionals and advanced amateurs alike, with capabilities for both automatic and remote control operation of the camera. Retaining the traditional ease of operation, precision, compact size, and light weight of the world-renowned Asahi Pentax cameras, the Asahi Pentax motor drive system is ideally suited for fast sequence photography, remote control photography, continuous copying, multiple simultaneous photography using two or more motor drive cameras, and for many industrial and scientific applications.

The Set 36 consists of one of the three camera types (Asahi Pentax ES II Motor Drive, Asahi Pentax Spotmatic F Motor Drive, or Asahi Pentax KX Motor Drive) plus an Asahi Pentax motor drive unit II, power cable (3m), battery grip II (with terminal cap), NiCad battery type 10/500 FZ, charge pack, and battery checker. Optional accessories include a relay pack, power pack, and timer.

SET 250

For cases where the capacity of 36 frames (of Set 36) is insufficient, Set 250 with its 250-frame capacity is available. In addition to the motor drive and assorted equipment, Set 250 includes the special bulk film magazine, a cartridge loader and a coupler. By attaching only the bulk film magazine (but not the motor drive) to the camera, up to 250 frames can be shot with manual film advance.
The bulk film magazine comes in two versions:

Model IIF ...for Asahi Pentax KX, Spotmatic F
Model IIE ...for Asahi Pentax ES II

Please note that the two models are not interchangeable.

SPECIFICATIONS

Camera

Asahi Pentax KX Motor Drive (Note 1)
or
Asahi Pentax Spotmatic F Motor Drive (Note 2)
or
Asahi Pentax ES II Motor Drive (Note 2)

Lens

Note 1 — SMC Pentax lens and all Takumar lenses
Note 2 — SMC Takumar and all other Takumar lenses

Film

35mm film (12, 20, and 36 exposure rolls)

Motor

High performance micromotor, 12V DC

Power sources

Type 10/500 FZ NiCad battery (housed in grip), provides 2,000 exposures at normal shooting speed. Use of battery loader enables use of standard penlight batteries (8 of them) which provide 1,500 exposures at normal shooting speed.
Other 12V DC batteries providing 0.4 amperes may be used.
With power pack, may also be operated on standard house current.

Exposures

Standard single-frame exposures or consecutive exposures (2.5 — 3 frames per second)

Single-frame exposures:
KX, Spotmatic F — 1 to 1/1000 sec, B
ES II — Auto: 8 to 1/1000 sec, B
Manual: 1/60 to 1/1000 sec, B
Consecutive exposures:
KX, Spotmatic F — 1/60 to 1/1000 sec
ES II — Auto: 1/30 to 1/1000 sec
Manual: 1/60 to 1/1000 sec

Film counter

Shows number of frames remaining; stops motor drive unit automatically at zero

Dimensions

(Equipped with 50mm f/1.4 lens)
KX Motor Drive — Width 143mm (5.6") x height 276mm (10.9") x depth 99mm 3.9")
Spotmatic F Motor Drive — Width 143mm (5.6") x height 276mm (10.9") x depth 99mm (3.9")
ES II Motor Drive — Width 143mm (5.6") x height 280mm (11") x depth 99mm (3.9")

Weight

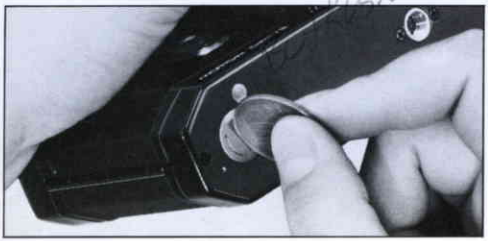
KX Motor Drive — 1,799 grams (3.96 lbs)
Spotmatic F Motor Drive — 1,792 grams (3.95 lbs)
ES II Motor Drive — 1,836 grams (4.04 lbs)

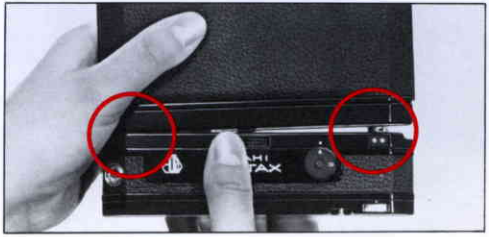
Motor drive unit

1.
Remove the threaded cover by turning it clockwise, in the direction of the arrow.

2.
Fit the upper end of the motor drive unit into the base of the camera, and secure it to the camera by the knob.

3.
Turn the rapid wind lever of the camera slowly to assure that the drive unit and film takeup mechanism are properly engaged. This will also cock the shutter release button, so the button should be depressed to release the shutter.





Battery grip

When attaching the battery grip to the motor drive unit, the C/S (Consecutive/Single) switch MUST ALWAYS BE AT THE OFF POSITION, which is the position indicated with a green dot.

Fit the top of the battery grip against the base of the motor drive unit. Insert the threaded portion of the knob into the tripod receptacle and insert the electrical contact point into its socket. Secure the grip to the motor drive unit by screwing in the knob.

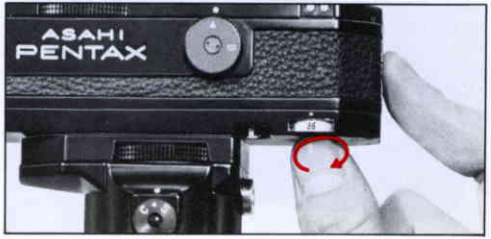
See page 14 for instructions on how to fit the battery loader or a NiCad battery into the battery grip.

Exposure counter

Load the camera in the usual manner and make two blank exposures. When you cock the rapid wind lever to make these blank exposures, make sure that the film rewind knob of the camera is turning in a counter-clockwise direction; this indicates that the film is being taken up properly on the take-up spool. Now set the exposure counter. You may either set it to the number of exposures you wish to take (that is, at any number less than the total number of exposures possible with the film you are using) or to the total number of exposures possible with the film. In the former case, the motor drive unit will automatically stop when the preset number of exposures have been made. In the latter case, the motor drive unit will automatically stop when the entire roll of film has been exposed. To set the exposure counter, turn the disc in the base of the motor drive unit so that desired number is indicated on the counter.

Shutter release

To release the shutter, first set the C/S switch at either the C (for consecutive) or S (for single) positions, and depress the trigger button of the battery grip. With the C/S switch set at the S position, when you depress the trigger button, the motor drive unit will release the shutter,



when you remove your finger from the trigger button, the motor drive unit will automatically advance the film one frame in preparation for the next exposure and will automatically cock the shutter.
See page 11 for operating the camera with the C/S switch at the C position.

Film rewind

After the film has been exposed completely, depress the film rewind release button of the motor drive unit and rewind the film in the usual manner, using the rewind knob of the camera. Although this film rewind release button on the **motor drive unit** will pop out again when you release the button, the rewind release button of the **camera** will stay down in the rewind release position, and so there is no need to keep on holding the button down.

For single-frame exposures, first set the two switches on the rear (the bulb switch on the rear of the motor drive unit and the C/S switch on the rear of the battery grip) to the positions indicated on the charts which follow, in accordance with the shutter speed to be employed.
As stated earlier, with a motor drive unit, the camera is always cocked, so for single-frame exposures, all you have to do is keep your eyes open for a good shot. When the trigger button is depressed, one frame is exposed; when you remove your finger from the trigger button, the motor drive unit advances the film to the next frame and cocks the shutter.
The trigger button should be depressed gently, just as you would depress the shutter button of any camera.
Please note that when shooting with either the Spotmatic F Motor Drive or KX Motor Drive at slow shutter speeds, you must keep your finger on the trigger button until the exposure is completed. If you release the trigger button while the shutter is still open, the film will be advanced.
When shooting on Automatic with the ES II, when the trigger button is depressed slightly, the exposure meter needle will be activated. When the trigger button is depressed all the way, the exposure will be made at the shutter speed indicated by the needle. Usable shutter speeds range from 8 to 1/1000 sec.

ES II dial combinations

Shutter speed	Automatic 8 to 1/1000 sec	Manual 1/60 to 1/1000 sec
Shutter dial	◂ □ symbol	1/60 to 1/1000 sec
Bulb switch	▲ symbol	▲ symbol
C/S switch	S	S

When using the ES II at either Bulb (B) or Time (T) settings, the dial combinations are the same as those for the Spotmatic F.

B (Bulb) exposures
When the trigger button is depressed with the switches set as shown in the above chart, the shutter will remain open as long as the trigger button is depressed, and close when it is released.

Spotmatic F, KX dial combinations

Shutter speed	**1** to 1/1000 sec	**B**	**T**
Shutter dial	1 to 1/1000 sec	B	B
Bulb switch	▲ symbol	B	B
C/S switch	S	S	S → • → S

C = consecutive S = single

Time (Time) exposures
If the shutter is first opened at the B setting and then the C/S switch is moved to the OFF position, the shutter will remain open even if the finger is removed from the trigger button. Returning the C/S switch from the OFF position to the S position will close the shutter and complete the exposure. When returning the C/S switch to the S position from the OFF position, there is no need to depress the trigger button.

CONSECUTIVE EXPOSURES

Shutter dial of ES II

Shutter dial of KX

Shutter dial of Spotmatic F

Bulb switch

C/S switch

In consecutive shooting, the film will be exposed and advanced, frame by frame, automatically as long as the trigger button is held down. When the trigger button is released, the film will be advanced to the next frame and the motor drive unit will then come to a stop with the shutter cocked for the next exposure. If you do not anticipate using the camera for a number of days after completing a day's shooting, release the cocked shutter by depressing the shutter button of the camera proper. This will relieve pressure on the shutter mechanism components and protect the springs.

The speed at which exposures are made in consecutive shooting is 2.5 to 3 frames per second. However, if the voltage of the power source has dropped below 12 volts, consecutive shooting speed will be slowed down somewhat.

The mirror of the camera viewfinder functions normally even during consecutive shooting. Therefore, regardless of the type of lens you are using—and even if shooting moving objects — exposures can be made while observing the subject through the viewfinder. When shooting on Automatic with the ES II Motor Drive, any shutter speed from 1/30 to 1/1000 sec may be used. On Manual, speeds of 1/60 to 1/1000 sec may be used. The two switches on the rear of the mtor drive unit and shutter dial are set as indicated in the following chart.

ES II dial combinations

Shutter dial	AUTOMATIC ◂ □ symbols	Manual 1/60 – 1/1000 sec
Bulb switch	▲ symbol	▲ symbol
C/S switch	C	C

Shutter dial of ES II

Shutter dial of KX

When using either the Spotmatic F or KX cameras, you may use only those speeds between 1/60 and 1/1000 sec. The two switches on the rear of the motor drive unit and shutter dial are set as indicated in the following chart.

Shutter dial of Spotmatic F

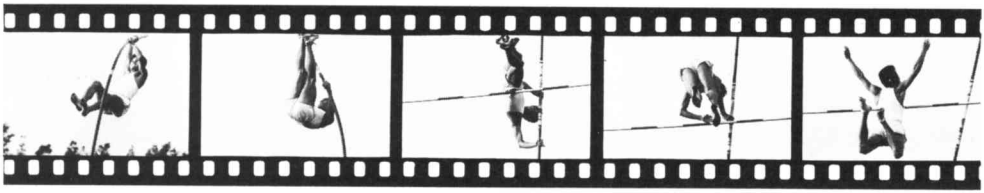
Spotmatic F, KX dial combinations

Shutter dial	1/60 – 1/1000 sec
Bulb switch	▲ symbol
C/S switch	C

Bulb switch

C/S switch

When using the KX Motor Drive, when the black needle of the exposure meter (seen in the viewfinder) is aligned with the blue needle which indicates shutter speed, the camera is set for the correct exposure. In consecutive shooting, the black needle will move each time a frame is exposed, but when the rapid wind lever of the camera is fully closed, the needle will cease to move. Closing the rapid wind lever serves to switch off the exposure meter; once the correct exposure has been obtained and the camera set accordingly, it is better to switch off the exposure meter in this manner to protect it from undue wear. With the KX Motor Drive, consecutive shooting is possible even with the viewfinder mirror locked in the raised position.



Battery loader

The battery loader takes 8 standard penlight batteries (size AA or UM-3) which are readily available in most countries around the world. Fit the batteries into the loader in the manner indicated on the loader, taking care not to get the positive and negative ends of the batteries mixed up. Insert the loader into the battery grip; secure the loader by turning it clockwise until it stops. Subject to the characteristics of the batteries used, one set of batteries will last for about 1,500 exposures. However, this can be affected by shooting speeds, so it is advisable to carry a set of spare batteries with you.

NiCad battery

If you use a Nicad battery, it should be inserted into the battery grip with the (+) or positive end facing downwards, that is, with the (—) or negative end in contact with the end cap of the battery grip. A fully-charged NiCad battery will normally provide around 2,000 exposures, but again, this figure is affected by the shooting speed. Bear in mind that a NiCad battery can lose its charge by spontaneous discharge. The motor drive unit may not function properly when the battery voltage drops below 10V. The battery should then be recharged as described in the section on battery charging (page 17).

Note:
The end cap for the battery grip for use with a NiCad battery is supplied separately.

Any of the following NiCad batteries or their equivalents may be used with your motor drive unit: YUASA 10/500 FZ (Japan); EVEREADY 10/BH-500 (U.S.A.); DEAC 10/500DKZ (Germany).

In extremely cold weather, the battery grip should be detached from the motor drive unit and kept warm in your pocket. By use of the extension cable shown, the camera, with the motor drive unit attached, may be mounted on a tripod and operated from a distance of up to 33 feet (10m). The use of a longer cable is not recommended, because of the possibility of a drop in voltage which might result from the increased resistance of a longer cable. If you wish to control the motor drive unit from distances exceeding 33 feet (10m), use the relay pack or power pack. (pages 29 to 31).

Because of its temperature sensitivity the capacity of a NiCad battery will drop when the temperature falls below 0°C (32°F). In extremely cold weather, detach the battery grip from the motor drive unit, connect it with the motor drive unit with a connector cable, and keep the grip containing the battery in your pocket to keep it warm.

When the battery has been exposed to a low temperature for a considerable length of time, the motor drive unit may not function properly; however, when it is warmed up, it will be restored to its normal capacity. When warming up the battery, do so slowly, do not warm it up rapidly. If its temperature is changed rapidly, i.e., by taking it from the cold outdoors into a warm room, condensation could form on the components of the motor drive unit, and this might result in rust. Try to keep all components dry.

CAUTION !

Always keep your NiCad battery dry. Before inserting it into the battery grip, wipe it thoroughly using a clean, dry cloth. Do not throw a worn-out NiCad battery into a fire – it may explode. Remove the battery from the battery grip whenever you do not anticipate using the unit for some time.

Keep mercury batteries used in the Spotmatic F camera out of the reach of small children. And be sure to read the cautions noted in the Spotmatic F operating manual.

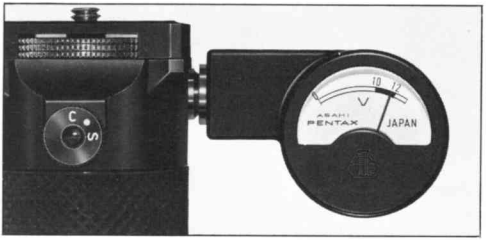
Battery checker

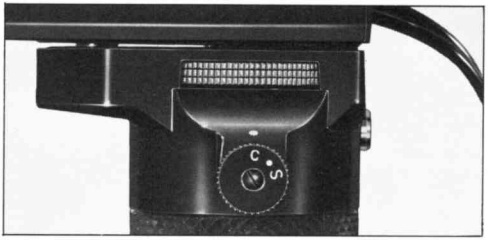
Insert the plug of the battery checker into the socket on the side of the battery grip with the C/S switch set to the C position. If the pointer of the checker swings to the black section of the scale, the battery is still usable.

If the pointer does not swing as far as the black section, replace or recharge the batteries. Do not keep the battery checker plugged in for more than 10 seconds — this would cause it to overheat.

Battery charging

A NiCad battery may be charged without removing it from the battery grip. Set the C/S switch of the battery grip to the OFF position, i.e., to the green dot. Screw the fastening knob of the battery grip into the threaded hole of the charger pack, making sure that the electrical contacts of the battery grip are properly connected to the receptacle of the charger pack. Now, plug the charger pack cord into an AC outlet and turn the C/S switch to the C position. The charger pack pilot lamp will go on and the pack will start charging the battery. About 14 hours is required for a full charge. Charging may continue for more than 14 hours without any damage to the battery, but must not continue for more than 24 hours. The voltage of a fully charged battery may exceed 12V. This is quite in order; the motor drive unit will not be harmed. A NiCad battery of the type used in this system is capable of going through 100 full-charge/discharge cycles. The battery may be used even

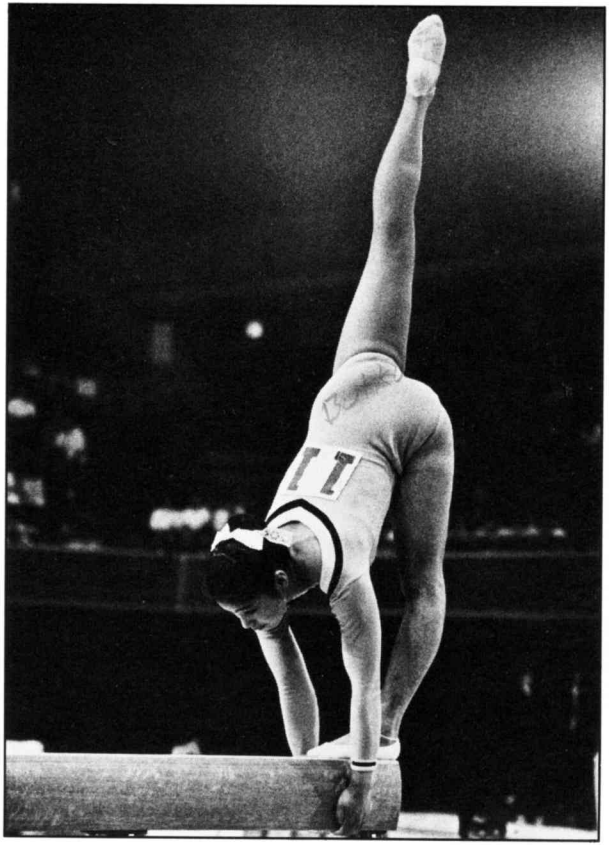




before it is fully charged; however, the operating speed of the motor drive unit may then be somewhat slower. Wherever possible, the battery should be charged under normal temperature conditions – never below freezing temperatures, nor above 40°C (104°F).

Other power sources

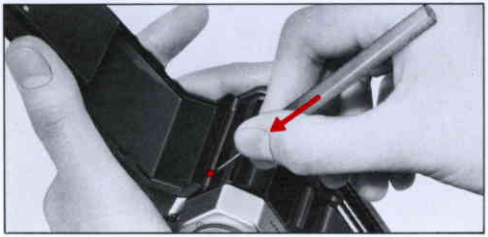
As mentioned earlier, the standard operating DC power source of the motor drive unit is 12V, 0.4A. In addition to the battery loader with penlight batteries or the NiCad battery, it may also be operated on other 12V DC sources – such as an automobile battery – through the relay pack or the power pack. It may also be operated off your AC house current through the power pack.

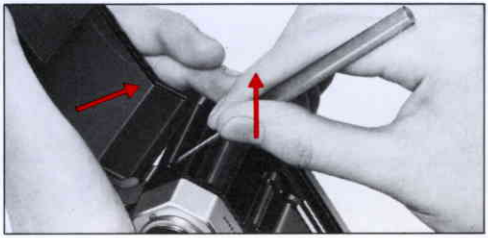


Back cover removal

1.
Fully open the back of the Motor Drive camera. Insert the small screwdriver (supplied with the bulk film magazine) between the back cover hinge and the light seal at the spot indicated with a dot in the photograph. Push the screwdriver towards the camera's base plate to disengage the front shaft of the hinge.

2.
After detaching the top portion of the back cover as shown in the photograph, detach the bottom portion by sliding it toward the camera's base plate. (When re-installing the back cover, reverse the above procedure.)



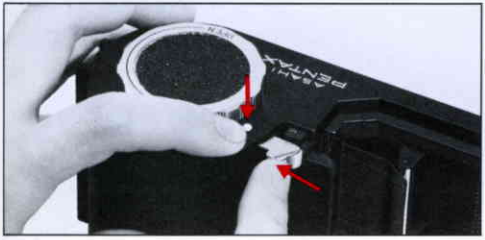


Attaching bulk film magazine

3.
Fully turn the film cartridge locking knob to the OPEN position. While depressing the set button, push the set lever (with white plastic roller), and erect the camera body retainer plate.

4.
Place the film take-up side of the camera to the film take-up side of the magazine, making sure that the light seal edges of the magazine are properly set in the grooves of the camera body.

WARNING!
Do not touch the thin film guide plate located over the film roller.



5.

Push the film rewind side of the camera body to the other side of the magazine – the camera body will lock onto with the magazine with a snap. Finally return the locking knob to the CLOSE position to completely lock the magazine to the camera body.

When removing the camera body from the magazine, reverse the above operation.

1– Open the film cartridge locking knobs.

2– Push the set lever while depressing the set button to erect the camera body retainer plate.

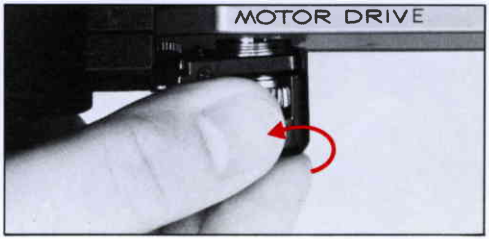
3– Lift the film rewind knob of the camera body and disengage the film rewind side of the camera body from the magazine.

6.

If you wish to use the film magazine and the Motor Drive camera without the Motor Drive Unit, attach the coupler to the base of the camera body.

Insert the threaded portion of the coupler into the receptacle, properly meshing the coupler's small gear with the gear of the magazine. Fasten the coupler by turning its knurled knob **counter-clockwise.** Use the camera's rapid wind lever for shutter cocking and film transport:

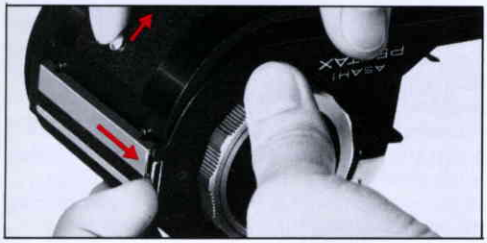
(It is unnecessary to use the coupler when using the Motor Drive Unit.)

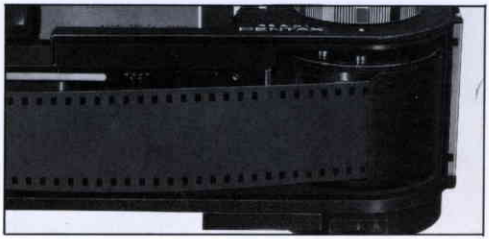


Film cartridge—removal, disassembly and insertion

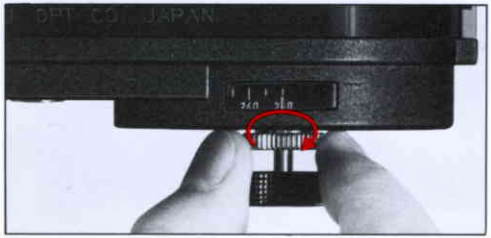
Turn the locking knobs to the OPEN position, pull out the magazine back lock with a fingernail and pull the back cover away with the nipple. Please be careful not to drop the magazine back cover as it is completely detachable. Pull out the release knobs and remove the film cartridges from the film chambers.

For disassembly, depress the round release button, and turn the inner tube until the cut edge comes under the protrusion. You can then disassemble the cartridge into three parts: film take-up spool, inner tube and outer tube.





For assembly, insert the take-up spool into the inner tube and place them into the outer tube. Turn the inner tube in either direction until it locks with the outer tube.
For inserting film cartridges, drop them into the film chambers with the protrusion down. Turn the cartridges – usually toward the camera body side – so that the other two protrusions will properly drop into the cut. Push back the release knobs, and re-install the magazine back – reverse the procedure for magazine back removal. Turn the locking knobs to the CLOSE position.
For inserting a loaded cartridge, place it into the film chamber, and push back the release knob. Take out the film leader end into the slit of the take-up spool of the other cartridge. (The leader end must be properly cut for easy insertion into the slip of the take-up spool.)



Wind the film on the take-up spool about 3 turns with the emulsion side facing the spool. After making sure that the film will not come off, assemble the cartridge. Insert the cartridge into the other film chamber, making sure that the sprocket gears of the camera body properly engage with the film perforations. Push back the release knob; re-install the magazine back.

Film magazine exposure counter
After inserting the loaded cartridges and closing the magazine back cover, make 5 blank exposures manually with the camera's rapid wind lever. Cock the rapid wind lever again for the 6th exposure position. Pull out the release knob, and turn the exposure counter knob clockwise until the index points the number of exposures you wish to make. If the film loaded or remaining in the cartridge contains less than 36 exposure frames, you can set the counter dial of the Motor Drive Unit at 0.

Film transport check
If both release knobs of the film magazine turn clockwise when you cock the camera's rapid wind lever or with the Motor Drive Unit, the film is correctly moving from the loaded cartridge onto the take-up spool of the other cartridge. If not, re-open the magazine back cover, and attach the film leader end securely to the take-up spool.

After exposure

If you wish to have the exposed portion of the film developed while part of the film is still unexposed, make at least 5 blank exposures to move the exposed portion of the film still into the take-up cartridge.

After the release knob has stopped turning, you can still make two more exposures even after the exposure counter has reached 0.

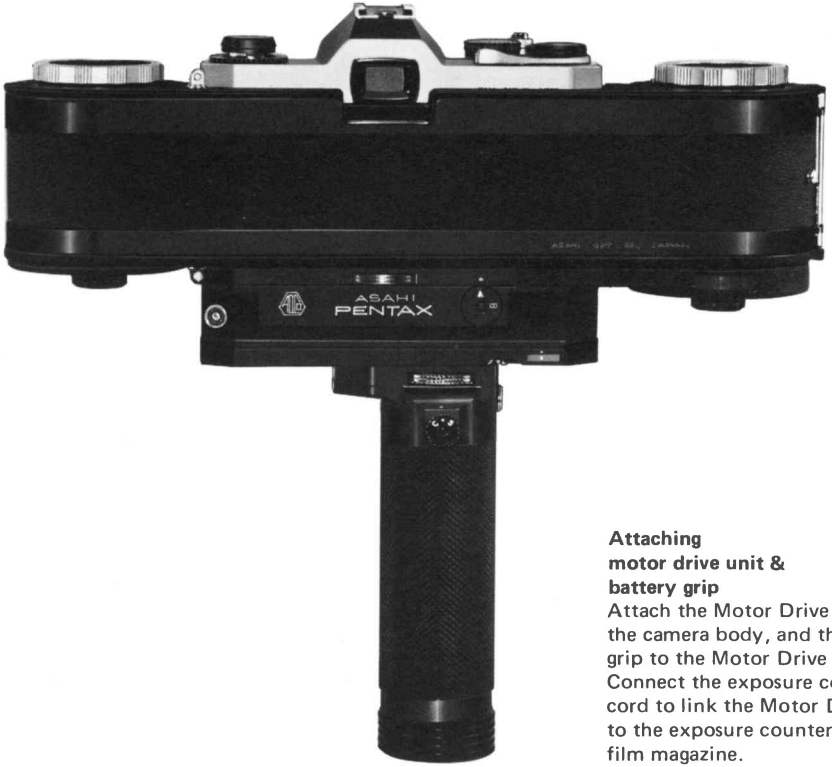
Do not open the magazine back cover or detach the camera body from the magazine unless you are absolutely sure that the exposed portion of the loaded film has been wound up into the take-up catridge.

Please do not forget to mark the cartridge properly to indicate the type of loaded film, whether it is exposed, etc.

Automatic switch-off

The film roller in the film magazine, near the take-up cartridge, also functions as an automatic switch for the Motor Drive Unit. After all film has passed over this roller, this roller automatically switches off the Motor Drive Unit. Therefore, if the magazine is not loaded – if the roller is not pressed by the loaded film – the Motor Drive Unit will not operate more than the number of times of the figure set in the exposure counter of the Motor Drive Unit. If the exposure counter of the Motor Drive Unit rests at 0 and if the magazine is empty, the Motor Drive Unit will not operate because it is completely switched off.

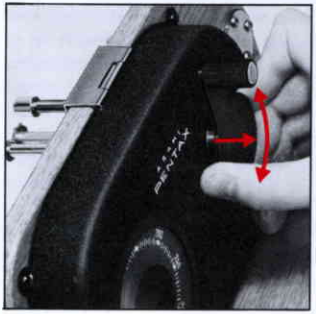
● *For film loading, please see page 27.*

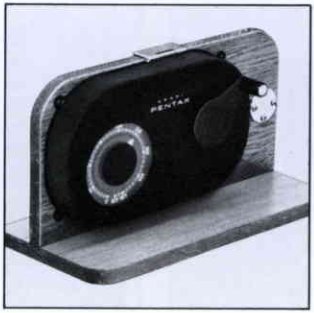


Attaching
motor drive unit &
battery grip
Attach the Motor Drive Unit to the camera body, and the battery grip to the Motor Drive Unit. Connect the exposure counter cord to link the Motor Drive Unit to the exposure counter of the film magazine.

Cartridge loader—dark-room film loading

With this loader you can load up to about 33 ft. (10m), equivalent to 250 exposures of film into the cartridge from a 100 ft. (30m) 35mm bulk roll. Pull out the loader handle and turn it to set the dial at the number of exposures you wish to load into the cartridge. Then start turning the handle. The handle will be automatically locked and will stop when the dial reaches the figure 0 — when you have wound the film for that number of exposures into the cartridge.
(DIAL: For visibility in darkness, the positions for the figures 0, 250 and 420 are marked yellow, and the positions for 50, 100, 150, 200, 250, 300, 350, 400 and the triangle index are marked green, with a luminous paint.)
In the darkroom, take the bulk film out of its can and place the film onto the reel as shown in photograph.



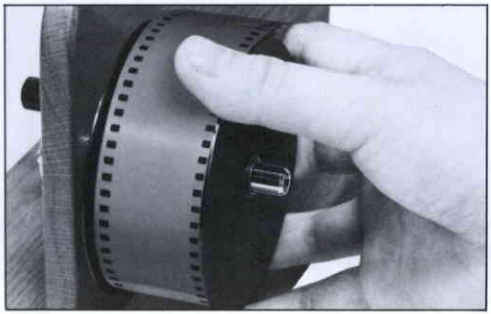


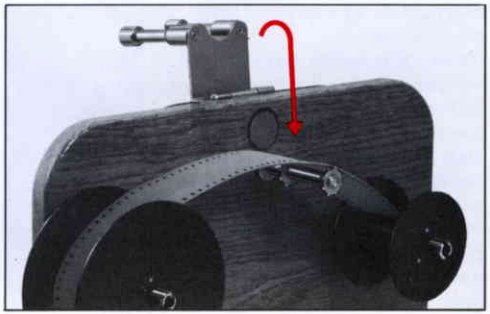
(To detach one of the rims of the reel, turn it counter-clocwise while holding the other other rim.) Place this reel onto the shaft of the winder, and place the take-up spool of the cartridge onto the other shaft. Erect the film holder and let if fall to the other side. Pull the film over the sprocket gears, and insert the leader end of the film into the slit of the take-up spool. Cut the leader end properly, if it is not already cut, for easy insertion into the slit.

Do not attach the film leader end onto the take-up spool with adhesive tape! When using these cartridges, you never rewind the film – one cartridge keeps taking up the film from the other loaded cartridge. Therefore, if you attach the film end onto the take-up spool with adhesive tape, you will have difficulty when you wind the film into the other cartridge after completing exposure.

Put down the film holder to hold the film perforations engaged with the sprocket gears. The magnetic button keep the film holder down in its working position.

Start winding the film with the winding handle until it stops automatically. Cut the film. Put any remaining bulk film back into its can. Remove the loaded take-up spool and assemble the cartridge.





RELAY PACK

When using the loaded battery grip with the Relay Pack, connect the "BATT" (battery) Ⓓ socket with the remote-control socket of the battery grip with an extension cord. Then connect the "MOTOR" socket Ⓕ with the remote-control socket of the Motor Drive Unit. You can depress either the trigger button Ⓐ of the Relay Pack or of the battery grip: the Relay Pack activates the Motor Drive Unit when a trigger button is depressed, or when the remote-control terminals Ⓔ are short-circuited, whichever occurs first.

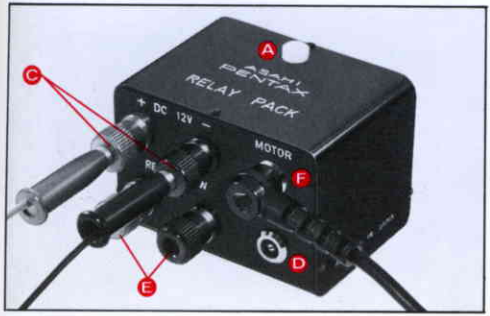
Use the DC input terminals Ⓒ when working with another 12V DC source such as an automobile battery, etc.

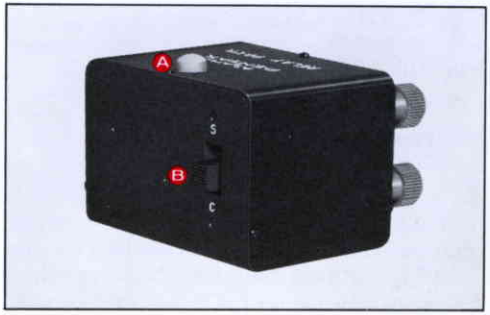
You can activate the Motor Drive Unit by short-circuiting the remote-control terminals Ⓔ. This can be used for trick photographs: connect these terminals with extension cords with a door, window or a stepping board so that when somebody opens the door or window, or steps upon the stepping board, the Relay Pack will trigger the Motor Drive Unit.

Always make sure that the C/S switch Ⓑ is set correctly.

Operate the C/S switch and the trigger button in the same way as C/S switch and the trigger button of the battery grip.

Ⓐ Trigger button
Ⓑ C/S switch
Ⓒ DC input
Ⓓ Connection with battery grip
Ⓔ Remote-control terminals
Ⓕ Connection with remote-control socket of Motor Drive Unit





Operate the C/S switch and the trigger button in the same way as the C/S switch and the trigger button of the battery grip.

- Ⓐ Trigger button
- Ⓑ C/S switch
- Ⓒ Connection with remote-control socket of Motor Drive Unit
- Ⓓ Connection with battery grip
- Ⓔ Connection with radio control
- Ⓕ Connection with FP terminal
- Ⓖ DC input
- Ⓗ AC input
- Ⓘ Pilot lamp
- Ⓙ Remote control terminals
- Ⓚ Fuse
- Ⓛ Power switch

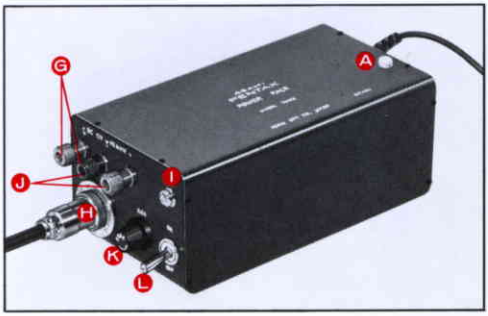
• *Please be sure that the C/S switch is set correctly.*

Applications

1. As relay pack

The Power Pack also works as the Relay Pack; if you have a Power Pack, it is unnecessary to obtain a Relay Pack.

- Connect the DC input terminals Ⓖ with an external 12V DC source; or connect the "BATT" socket Ⓓ with the loaded battery grip. Connect the "MOTOR" socket Ⓒ with the loaded battery grip. Connect the "MOTOR" socket Ⓒ with the remote-control socket of the Motor Drive Unit. Depress the trigger button Ⓐ of the Power Pack or of the battery grip. (Use the remote-control terminals Ⓙ in the same way as you use the remote-control terminals of the Relay Pack.)

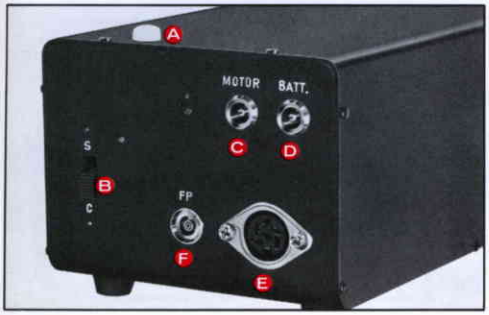


- *When using the DC input terminals G connected with other 12V DC source, keep the AC input and "BATT" socket H D unplugged.*

- When attaching the loaded battery grip to the Power Pack, keep its switch **OFF**; when using the Power Pack with another 12V DC source, you can keep its switch either ON or OFF. In either case, the pilot lamp does not light.

2. As AC pack

The Power Pack also works on one of the following AC mains voltages, 100V, 110V, 120V, 200V, 220V and 240/50 – 60 cycles. When ordering, please specify the AC voltage on which you will operate the Power Pack.
Connect the AC input socket with an AC outlet.



Connect the "MOTOR" socket with the remote-control socket of the Motor Drive Unit. When you turn on the Power Pack switch, the pilot lamp lights, indicating that the Power Pack is in operation. Depress the trigger button or short-circuit the remote-control terminals for activating the Motor Drive Unit.

3. As battery charger

You can use the Power Pack to charge your NiCd battery in the battery grip. Connect the NiCd battery-loaded grip with the "BATT" socket of the Power Pack – connect the AC input socket with an AC main outlet – turn on the switch – the pilot lamp lights – charging starts. The full-charge time will be about 14 hours; however, it greatly depends upon the characteristics of the NiCd batteries. While charging a NiCd battery, you can still operate the Motor Drive Unit with the Power Pack.

(FUSE: If the pilot lamp does not light when you connect the Power Pack to an AC outlet and turn on the switch, check the fuse by removing the "FUSE" cover.)

If you wish to control the Motor Drive Unit from a distance of more than 32.8 feet (10m):

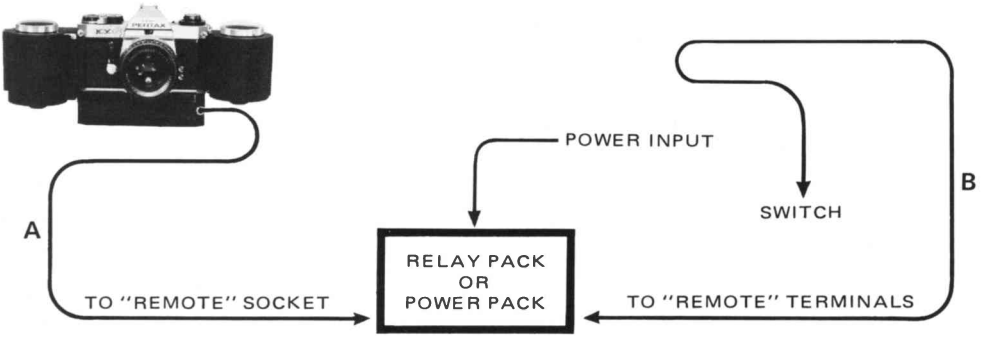
1. Connect the Motor Drive Unit to the Relay Pack or Power Pack with the extension cord Ⓐ.
2. Connect the Relay Pack or Power Pack with the battery grip, other DC sources, or AC main using the Power Pack.
3. Connect the remote-control terminals of the Relay Pack or Power Pack with the extension cord Ⓑ. By attaching a small switch at the end of this extension, or by short-circuiting this end, you can control the Motor Drive Unit.

Extension Ⓐ should be shorter than 32.8 feet (10m); if longer, the voltage will go down slightly due to the increased resistance of the extension cord. (Page 15)

Since the extension Ⓑ constitutes a relay switch circuit, the length of this extension can be as long as 19,685 feet (6000m) depending upon the type of extension cord used. Since the operating current of the micro relay of the Relay Pack and Power Pack is 16 mA (DC), and its coil resistance is 385Ω, the maximum permissible resistance of the extension Ⓑ can be obtained from the following formula:

$$R = \frac{E}{I} - 385 \quad (E = \text{voltage}; I = \text{current})$$

The maximum permissible resistance of the extension Ⓑ is 365Ω.



WIRELESS REMOTE CONTROL

A Radio Control Unit is available for the Asahi Pentax Motor Drive System. It consists of a transmitter and receiver; the receiver is connected with the radio control terminals of the Power Pack. The Radio Control terminals of the Power Pack. The Radio Control Unit enables you to operate the Motor Drive Unit, change the C/S switch of the Power Pack and check whether the camera shutter is working properly — the pilot lamp of the transmitter lights whenever the focal-plane FP contact of the camera closes. The maximum outdoor operating distance of the Radio Control Unit is 1,640 feet (500m) on flat land.

TIMER

The AC-powered Timer, connected with the remote-control terminals of the Relay Pack or Power Pack, automatically activates the Motor Drive Unit at a desired pre-set time interval.

There are three kinds of Timers:

1. Second-Timer for time intervals between 2 and 60 seconds.
2. Minute-Timer for time intervals between 2 and 60 minutes.
3. Hour-Timer for time intervals between 1 and 24 hours.

When ordering, please specify the working AC voltage and whether you want the Second-, Minute- or Hour-Timer.

The Timer has two scales: one for 50 cycles and another for 60 cycle. Remember to set the needle of the dial at the correct calibration of the scale depending upon the cycles of the AC power.

On the back of the Timer is an AC outlet for powering a flood light or for other illumination purposes. The maximum output of the AC outlet is 600W.

The rotary switch Ⓐ operates as follows:

1. At position 1, only the AC outlet in the back of the Timer is switched on. The Timer is not yet switched on.
2. At position 2, both the AC outlet and the Timer are switched on. By setting the needle of the Timer dial at a certain calibration of the scale, the remote-control terminals in the back of the Timer are short-circuited, activating the Motor Drive Unit, when the dial needle reaches the calibration 0 after each lapse of the pre-set time.
   When you turn the switch from position 1 to 2, the remote-control terminals are short-circuited first, and from then on, they are short-circuited at the pre-set time intervals. Therefore, whenever you wish to activate the Motor Drive Unit before the needle reaches 0, turn the switch from position 1 to 2.
3. At position 3, the Timer is switched on; the AC outlet will be switched on two seconds before shutter release. The AC outlet is switched off when the remote-control terminals are opened.
   At this position, you can have flood lights automatically switch on just before each shutter release and switched off after each exposure.

The pilot lamp Ⓑ lights when the AC outlet is switched on; the pilot lamp Ⓒ lights when the Timer is switched on.

When you wish to reset the needle to the pre-set calibration of the scale before it reaches 0 during th the operation of the Timer, depress the RESET button Ⓓ .

WEIGHT: 241 kg. (5.3 lbs.)


ASAHI
PENTAX
OFF
LIGHT
TIMER
RESET
A
B
C
D


10A
FUSE
REMOTE
AC OUT
600 VA
ASAHI OPT. CO. JAPAN