Nikon

Modulite Remote Control Set

ML-3

INSTRUCTION MANUAL

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FOREWORD

Thank you for purchasing the NIKON Modulite Remote Control Set ML-3. The Nikon ML-3 combines a transmitter and receiver for the remote control of F90-Series/N90 camera by infrared ray. Its maximum effective range is 8m (26.2 ft.).

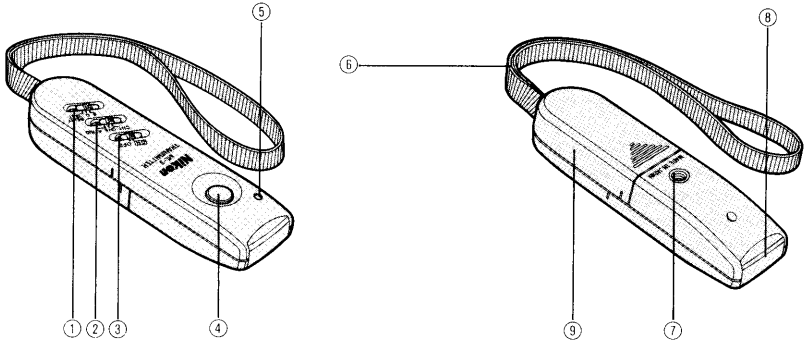
The ML-3 is designed so the transmission button operates the same way as the shutter release button on the camera. For example, lightly pressing the transmission button turns on the camera's exposure meter and starts autofocus detection. Changeover from single to continuous shutter release can be accomplished directly from the transmitter and, when set, continuous release is activated by pressing the transmission button. The ML-3 also offers a delay mode that releases the shutter release approximately three seconds after you press the transmission button. Since two channels can be selected for signal transmission using the above-mentioned functions, two ML-3 units can be used in the same location, at the same time. Also, the shutter is released without pressing the transmission button when the subject crosses the point between the transmitter and the receiver which manually focuses in advance using the auto trigger function. This is especially convenient when you want to take a picture, for example, of a small animal that is sensitive to human presence.

When the transmitter of the ML-2 is used with the receiver of the ML-3, the maximum operating distance is extended to 100m away from the receiver, and a number of F90-Series/N90 cameras can be operated simultaneously by using the ML-2's ALL mode.

For optimum results, read this manual and the instruction manual of your camera thoroughly.

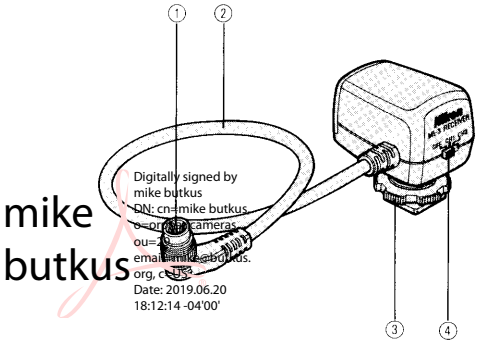
Infrared rays from the transmission head can cause eye damage. Do *not* look into the transmission head during transmission.

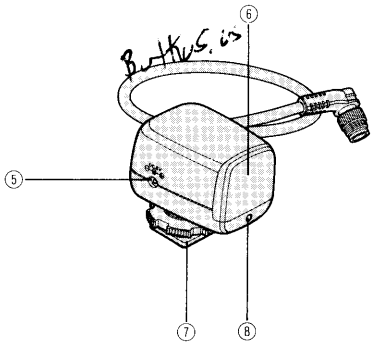
NOMENCLATURE



TRANSMITTER

① Shooting mode selector: S for single-frame shooting, C for continuous shooting, DELAY/TEST for delaying shutter release or checking transmitting conditions (with channel selector set to A. TRIG)
② Channel selector (see page 17)
③ Power switch
④ Transmission button: Lightly press to transmit the signal that activates the camera's exposure meter and autofocus functions; fully depress to transmit the signal that releases the shutter
⑤ Monitor light (battery check/transmission indicator LED): Lights up for a moment when power switch is set to ON or transmission button is lightly/fully pressed; blinks during A.TRIG operation or when battery power becomes weak
⑥ Wrist strap
⑦ Tripod socket
⑧ Transmission head: Do not cover or obstruct during transmission
⑨ Battery chamber: Accepts two AAA-type batteries (alkaline-manganese or manganese)

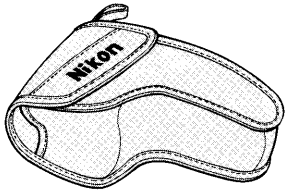




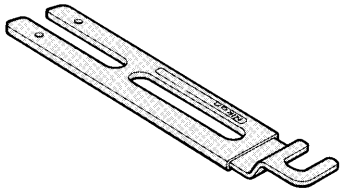
RECEIVER

① Camera plug
② Remote cord
③ Mounting foot lock screw: Be sure to tighten firmly when attaching receiver to the camera or bracket
④ Power/channel selector switch: OFF — power is off; for A. TRIG, CH1 and CH2, see page 14
⑤ External power socket for 6V power source (EIAJ RC-5320)
⑥ Reception sensor
⑦ Rotatable shoe foot: Rotates a full 360°
⑧ Reception indicator LED

ACCESSORIES



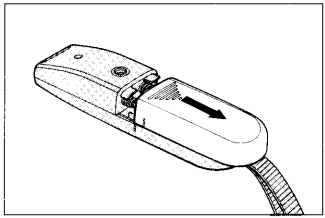
Soft case (provided)



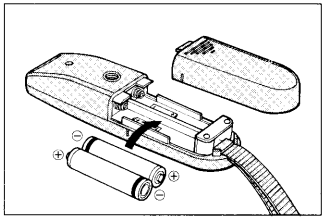
Bracket (optional): For use when receiver cannot be mounted on the camera.

Transmitter

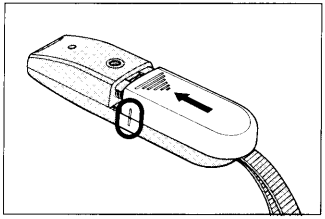
Installing batteries and checking battery power



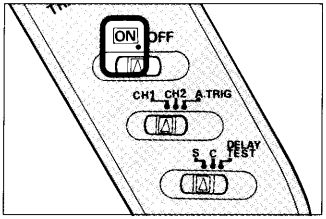
1. Open the battery chamber by sliding the battery chamber lid.
   - Be sure the transmitter's power switch is set to OFF position.

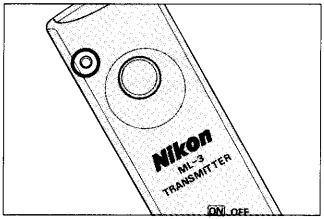


2. Load two AAA-type batteries into the chamber. Be sure to install batteries as shown in the battery chamber.



3. Close the battery lid by sliding it back into place.



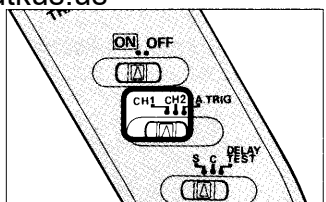


4. Set power switch to ON.
If the monitor light comes on for a moment, batteries have sufficient power.

If it blinks, batteries may be weak.*

* *Only with the channel selector set to CH1 or CH2.*

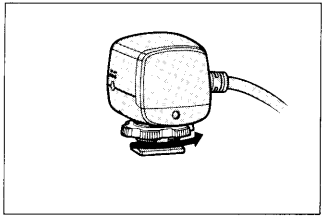
If it does not come on, check battery installation or replace batteries with a fresh set.



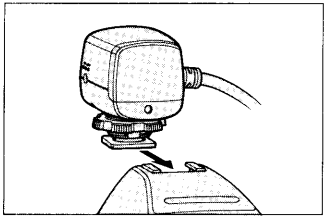
5. Set the channel selector to CH1 or CH2.

Receiver

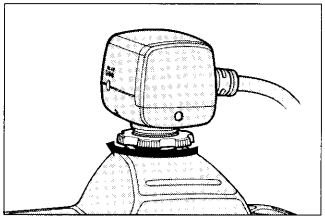
Connecting the receiver to a camera



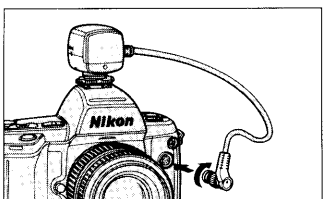
1. Using gentle finger pressure, loosen the mounting foot lock screw as far as it goes without applying force.



2. While firmly holding the receiver, position the shoe foot to the camera's accessory shoe and slide it in as far as it goes.



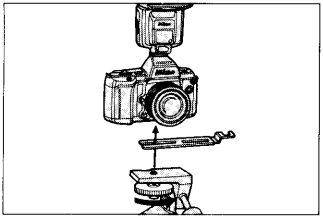
3. Using finger pressure only, gently but firmly tighten the lock screw



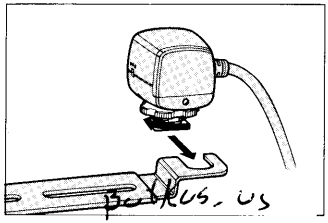
4. Insert the camera plug with the Δ symbol on the plug pointing upwards into the remote terminal of the camera. Then screw the threaded ring into the terminal.
   - Make sure the remote cord does not obstruct the camera lens or the reception sensor on the receiver.
   - To conserve battery power, detach the remote cord from the camera when not in use.

Attaching receiver to bracket (optional)

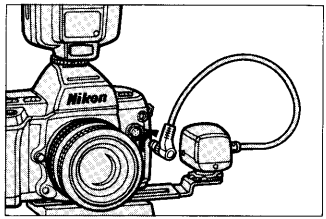
When shooting with a Speedlight attached to the camera's accessory shoe, attach the receiver by using the bracket.



1. Insert the bracket between the tripod head and the camera. Then, screw the tripod's lock nut firmly to secure the assembly.

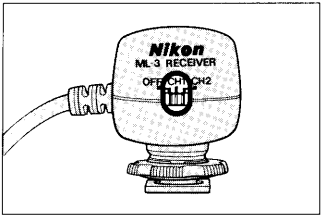


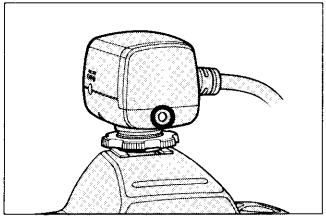
2. Insert the receiver into the bracket and tighten the lock screw.
   - *Make sure the receiver and/or bracket is not visible in the viewfinder.*

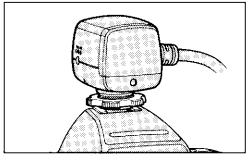


3. Insert the camera plug with the Δ symbol on the plug pointing upwards into the remote terminal of the camera. Then screw the threaded ring into the terminal.
   - *Make sure the remote cord does not obstruct the camera lens or the receiver's reception sensor.*

Battery check

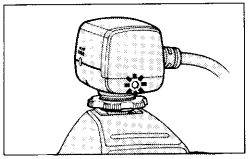






1. Set the power/channel selector switch to CH1 or CH2 according to the channel selector setting on the transmitter. (Receiver operates with either CH1 or CH2 setting when the channel selector setting on the transmitter is at A. TRIG.)
   If the reception indicator LED lights up for a moment, the camera's batteries have sufficient power.

If it does not come on, check camera's battery installation or replace camera's batteries with a fresh set.



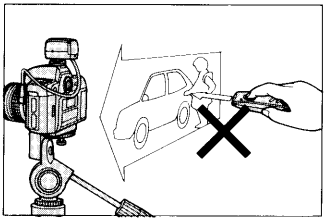
You should also replace batteries if the LED starts blinking after it lights up.

Notes:

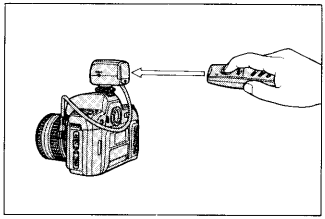
- Power/channel selector switch setting on the receiver must coincide with the channel selector setting on the transmitter. Otherwise, power does not turn on. (The receiver operates in either CH1 or CH2 setting when the channel selector setting on the transmitter is at A. TRIG.)
- As both transmitter and receiver are controlled by microprocessors, sometimes they may fail to operate even with fresh, correctly installed batteries. In this case, turn the power switch OFF for a few seconds, then ON again.

Positioning the transmitter and receiver

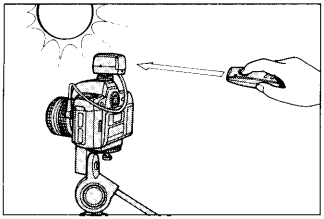
When positioning the transmitter and receiver, check the following to ensure effective transmission.



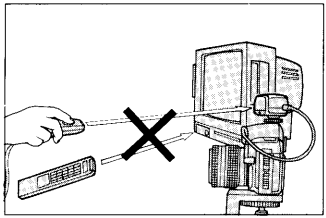
- There are no obstacles that interfere with transmission.



- The receiver's reception sensor directly faces the transmitter head.



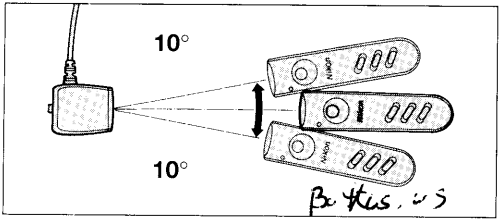
- The receiver's reception sensor faces away from the sun.



- When using the ML-3 at the same time as video recording equipment, do not point the video's remote commander in the direction of the ML-3 reception sensor; it could cause a malfunction.

- Harsh conditions, such as bad weather, obstructions, etc., may shorten the effective distance range.

Distance range



- If the transmitter is not pointed directly at the receiver (if the angle is askew), the range changes as follows:
  0° — approx. 8m (26.2 ft.)
  0-10° — approx. 6m (19.7 ft.)

Channel selector setting

Set each corresponding transmitter/receiver pair to the same channel. Up to two ML-3 sets can be used in the same area without interference.

Camera settings

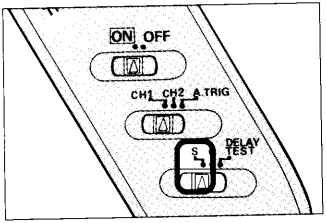
Be sure to adjust the camera settings before operation.
Recommended camera settings are:
Focus modes: C or M
Film advance modes: $\square_{\text{L}}$ or $\square^{\text{H}}$
Exposure modes: Programmed auto (*P*/P_S), Aperture-Priority Auto or Shutter-Priority Auto (see F90-Series/N90 camera's instruction manual on pp.49 ~ 52) exposure mode.

Note:
When exposure is set to auto mode, use the eyepiece shutter to prevent incorrect exposure caused by light leaking through the finder.

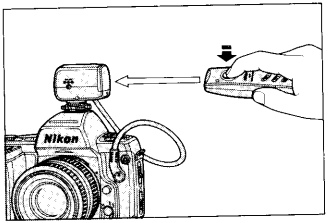
OPERATION

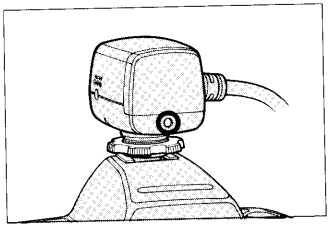
The ML-3 offers a choice of shooting modes:
- S: Single release mode
- C: Continuous release mode
- DELAY/TEST: Delay mode
- DELAY/TEST (in A.TRIG operation): Test mode

Single frame shooting (S)

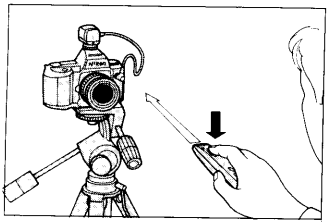


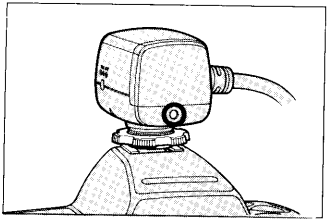
1. Set shooting mode selector on the transmitter to S.
   - If the camera's focus mode is set to S, the camera may not focus correctly when the transmission button is pressed lightly.
     Be sure to set the camera's focus mode to C.
   - Depending on the shooting situation, set the camera's focus mode to M. In this case, be sure to adjust focus *manually* before shooting.





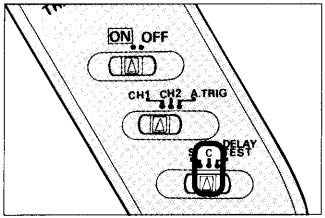
2. Point the transmitter in the direction of the reception sensor and lightly press the transmission button. The monitor light on the transmitter will light up for a moment. Then, the reception indicator LED also lights up for a moment and the camera's exposure meter turns on. In the autofocus mode, focus detection starts immediately.
   If a connected Speedlight is set at STBY (standby), it also turns on.

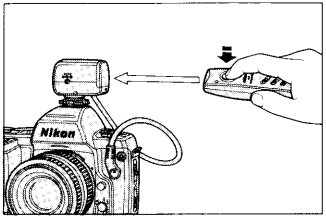


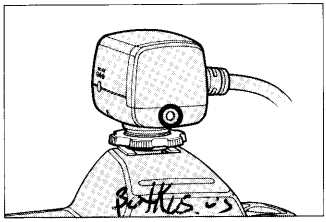


3. Fully depress the transmission button.
The reception indicator LED will light up for a moment and one picture will be taken. Avoid changing the direction of the transmitter while shooting.

Continuous frame shooting (C)

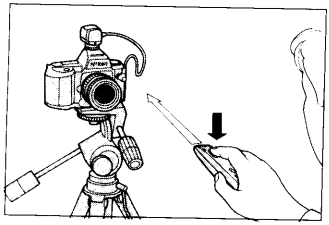


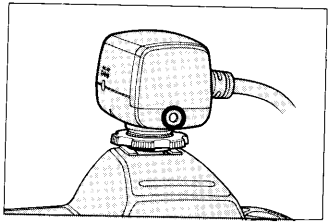


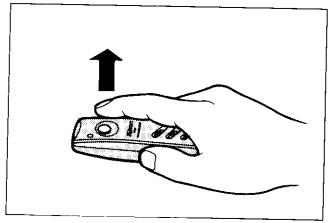


1. Set the transmitter's shooting mode selector to C.
   - If the camera's focus mode is set to S, the camera may not focus correctly when the transmission button is pressed lightly.
     Be sure to set the camera's focus mode to C.
   - Depending on the shooting situation, set the camera's focus mode to M. In this case, be sure to adjust focus *manually* before shooting.

2. Point the transmitter in the direction of the reception sensor and lightly press the transmission button. The monitor light on the transmitter will light up for a moment. Then, the reception indicator LED also lights up for a moment and the camera's exposure meter turns on. In the autofocus mode, focus detection starts immediately.
   If a connected Speedlight is set at STBY (standby), it also turns on.





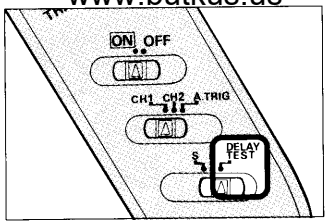


3. Fully depress the transmission button. Pictures are taken continuously as long as the transmission button is fully depressed. The reception indicator LED also lights up continuously to indicate that pictures are being taken. Avoid changing the direction of the transmitter while shooting.

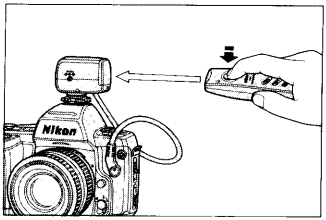
4. To stop taking pictures, remove your finger from the transmission button.

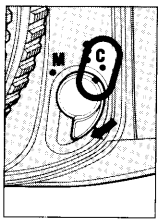
Delay triggering

In this mode, shutter release occurs approx. 3 seconds after you fully depress the transmission button so you can include yourself in the picture or change positions, or recompose the picture.

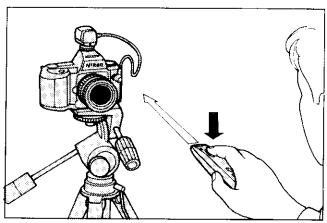


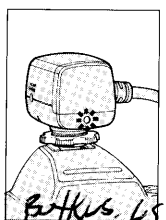
1. Set the shooting mode selector to DELAY/TEST.
   - If the camera's focus mode is set to S, the camera may not focus correctly when the transmission button is pressed lightly. Be sure to set the camera's focus mode to C.
   - Depending on the shooting situation, set the camera's focus mode to M. In this case, be sure to adjust focus *manually* before shooting.





2. Point the transmitter in the direction of the reception sensor and lightly press the transmission button. The monitor light will light up for a moment.
The reception indicator LED lights up for a moment and the camera's exposure meter turns on. If the camera's focus mode is set to C, focus detection starts immediately.





3. Fully depress the transmission button. It takes approx. 3 seconds to take a picture.
The reception indicator LED starts blinking rapidly and continues blinking until a picture is taken.
- To cancel operation during a delayed-shooting interval, set the receiver's power/channel selector switch to OFF.

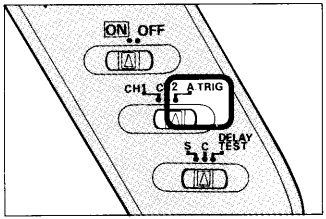
Pre-shooting focus detection: A focus detection signal is not sent during the delayed-shooting interval. Be sure to lightly press the transmission button to secure focus before actual shooting.

Auto triggering

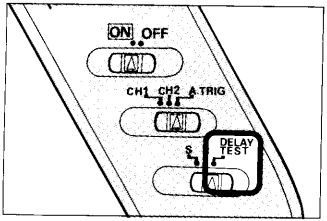
In this mode, the shutter is released when the subject enters the area directly between the transmitter and the receiver, without the transmission button being pressed. This mode is useful when you want to take a picture, for example, of a wild animal that is sensitive to human presence.

Test mode

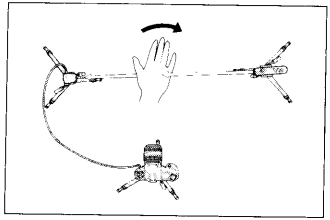
Before Auto Triggering operation, shooting in the Test mode, which verifies transmitter-to-receiver communication, is recommended.



1. Set the transmitter's channel selector to A. TRIG.
   - In the Test mode, always mount the receiver on the camera or a tripod.



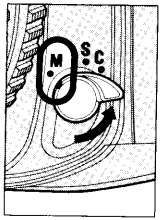
2. Set the shooting mode selector to DELAY/TEST.

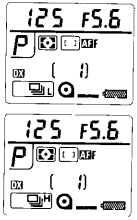


3. Point the transmitter toward the receiver and block infrared ray with your hand. If the reception indicator LED lights up for a moment, the units are working correctly.

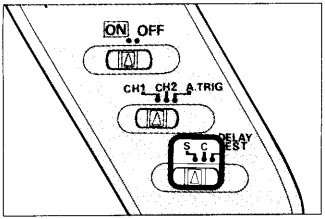
- If the reception indicator LED blinks after lighting up, battery power is exhausted. Replace camera batteries.

Auto triggering operation

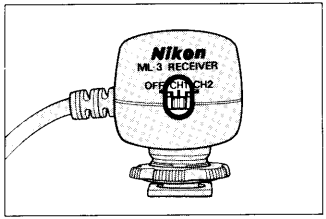




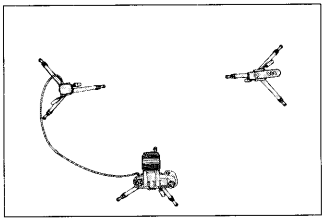
1. Set the camera's focus mode to M and the film advance mode to $\square_{L}$ or $\square_{H}$.



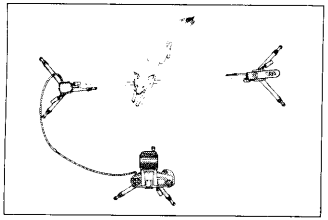
2. Set the transmitter's shooting mode to S or C.

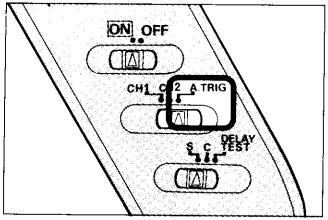


3. Set the receiver's power/channel selector switch to CH 1 or CH2.



4. Set camera, transmitter and receiver on tripods as illustrated.
   - Use optional Extension Cord MC-21 (3m or 9.8 ft.) to extend the connection between the camera and ML-3. Up to three MC-21 cords can be joined together.





5. Adjust focus manually according to estimated subject position between the transmitter and receiver.

- To ensure clearly focused picture(s): (1) adjust focus (and depth of field if possible), to cover the area where subject will cross the infrared ray, (2) choose an appropriate shutter speed to freeze subject motion, (3) consider the subject's shape and movement when positioning the camera and ML-3 units.

6. Set the transmitter's channel selector to A. TRIG. The monitor light starts blinking and the shutter is released automatically when the subject enters the preset focused point.

- To cancel operation at any time, set the transmitter's channel selector to CH2 or the receiver's power/channel selector switch to OFF.

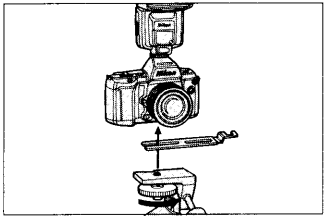
- Unclear pictures may result from one or more factors related to subject movement, such as crossing the infrared ray too fast, crossing at an unfocused area or from an unexpected direction, etc.
- With the transmitter's shooting mode selector set to C, 2-second-continuous shooting is possible.
- With the MF-26's Auto-Sequence Shooting function, 2-second-continuous shooting is possible.

Transmitter, receiver and camera indications

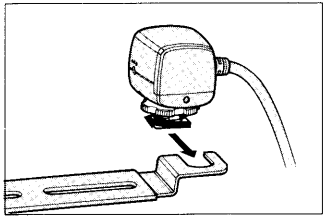
Transmitter			Receiver	Camera
Channel selector	Shooting mode	Transmission button selector/Monitor light	LED	
CH1 or CH2	S	Lightly pressed	Lights up for a moment	Exposure meter on; focus detection on
		Fully depressed	Lights up for a moment	Single release
	C	Lightly pressed	Lights up for a moment	Exposure meter on; focus detection on
		Fully depressed	Lights up continuously	Continuous shooting
	DELAY	Lightly pressed	Lights up for a moment	Exposure meter on; focus detection on
		Fully depressed	Blinks for 3 sec. and lights up for 0.4 sec. after shutter releases	Single release after approx. 3 sec.
A. TRIG	S	Monitor light continuously blinks	Lights up for a moment	Single release when subject enters prefocused position
	C	Monitor light continuously blinks	Lights up for 2 sec	Continuous release when subject enters prefocused position
	TEST	Monitor light continuously blinks	Lights up for a moment	None

WIRELESS FLASH OPERATION

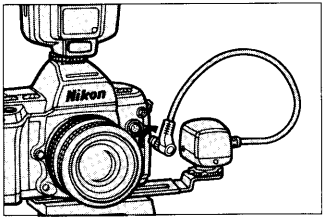
When preparing for shooting, turn Speedlight power on by lightly pressing the transmission button. For extended operation, speedlights with standby positions (SB-25, 24, 23, 22 and 20) are recommended.



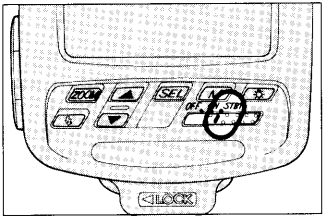
1. Attach the Speedlight to the camera. Then, attach camera to the tripod with the bracket in between.



2. Attach the receiver to the bracket.



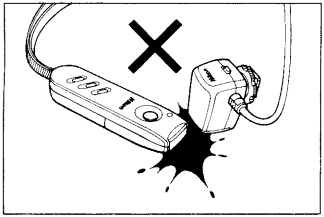
3. Connect the receiver's camera plug to camera's remote terminal.



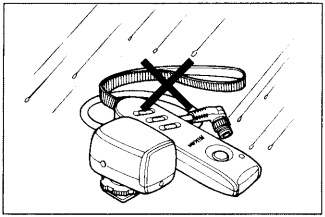
4. Set the Speedlight's power switch to STBY. Start shooting. For details on flash shooting, see Speedlight instruction manual.

- Be sure to lightly press the transmission button a few seconds before triggering to allow for Speedlight power recharge.
- In continuous shooting, make sure the Speedlight's firing intervals are brief.

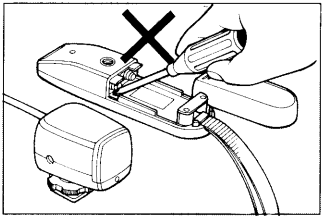
TIPS ON CARE



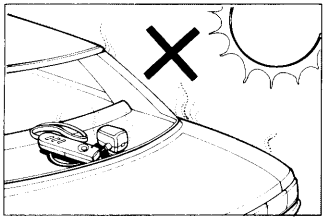
• Avoid external shock.



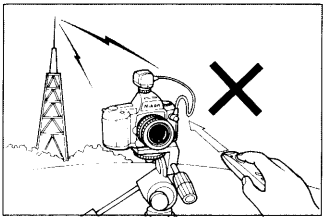
• Avoid water.



• Do not disassemble.



• Avoid leaving in a hot or humid place.



• Avoid using where strong magnetic or electric waves are discharged (e.g., near TV tower). Malfunction may result.

Cleaning:

- Clean with a soft, clean cloth or blower brush.
- After use near the sea, wipe equipment first with a water-moistened soft cloth. Do not use benzine or thinner.

Storage:

- When the transmitter is not in use, turn it off. If you do not plan to use it soon, remove the batteries.
- Protect from rust and mold by storing equipment in a cool, dry place. Also, do not store in direct sunlight, and keep it away from naphthalene or camphor. In a humid environment, store equipment in a vinyl bag with a desiccant to keep out dust, moisture and salt.
- Keep equipment away from other electrical equipment such as radios or TV sets.

ABOUT BATTERIES

New batteries

Puchase the freshest batteries possible.

Battery brand

Do not mix battery brands or use batteries with different model numbers. Avoid mixing new and old batteries.

Temperature

Battery life ratings are based on operation at around 20°C (68°F). At other temperatures battery life and shooting range will be shortened. Have spare batteries on hand if you anticipate using the equipment at low temperatures.

Continuous frame shooting

For optimum results in continuous frame shooting, always use fresh batteries. Alkaline-manganese batteries are recommended.

Storage

To minimize power drainage, store batteries in a cool, dry place with a temperature below 20°C (68°F). Keep batteries out of children's reach. If someone accidentally swallows batteries, call a doctor immediately.

Disposal

Do not dispose of batteries by burning, and never disassemble them.

SPECIFICATIONS

Transmitter and receiver

Modulation system	Infrared communication
Range (Single-frame shooting)	Approx. 8m (26.2 ft.)along the optical axis Approx. 6m (19.7 ft.) with a light reception angle of 10°
Number of control output channels	Two channels available — CH1, CH2
Shooting modes	S for single-frame shooting C for continuous shooting DELAY for 3 sec. delayed shooting TEST for operation check in A. TRIG mode
Operating temperature	–20°C ~ 60°C (–4°F ~ 140°F)

Transmitter

Continuous standby time	Approx. 72 hours with in A.TRIG mode (alkaline-manganese battery)
Transmission	Infrared rays
Number of output channels	Three channels (CH1, CH2 and A. TRIG)
Shooting modes	S, C, DELAY/TEST
Transmission button	Lightly pressing the button activates the camera's exposure meter and autofocus operation; fully depressing the button releases the shutter
Battery power check	With sufficient battery power, monitor light comes on for a moment With weak battery power and channel selector set to CH1 or CH2, monitor light blinks
Power source	Two AAA-type alkaline-manganese or high-rate manganese batteries
Others	Tripod mounting socket (1/4 in.), wriststrap
Dimensions	117(W) x 22(H) x 30(D)mm 4.6(W) x 0.9(H) x1.2(D)in.
Weight (excluding batteries)	40g (1.4oz.)

Receiver

Power/channel switch	CH1 or CH2 and OFF
Number of input channels	Two channels (CH1 and CH2)
Power source	Supplied from F90-Series/N90 camera body; 6V external power source socket provided (for EIAJ RC-5320)
Remote cord	Approx. 28cm (11in.)
Shoe foot	Rotates 360°
Battery power check (F90-Series/N90 camera)	With sufficient battery power, reception indicator LED lights up for a moment With weak battery power, reception indicator LED blinks
Compatibility with ML-2	Accepts ML-2's CH1, CH2, ALL, TEST and DELAY mode signals
Dimensions	50(W) x 36(H) x 47(D)mm 2.0(W) x 1.4(H) x 1.9(D)in.
Weight	51g (1.8oz.)

All specifications apply when fresh alkaline batteries are used, at normal temperature (20°C or 68°F).
Specifications and designs are subject to change without notice.