



[pro]master®

200SL [*Speedlight*]

TTL Speedlight for Nikon



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Precautions

1. Do not attempt to disassemble, open, or repair this speedlight by yourself.
2. Always use batteries of the same type, brand, and age. Always replace all 4 batteries at the same time. Do not combine different types, brands, old, or new batteries. This could cause the batteries to overheat, leak, or explode.
3. This product is not water-resistant. Keep it away from rain, snow, and high humidity areas.
4. Install the batteries in proper orientation as indicated in the battery chamber. Installing the batteries incorrectly could cause them to overheat, leak, or explode.
5. If you change the batteries after a period of sustained continuous firing of the speedlight, the batteries may become warm or hot. This is normal, however you should be careful when handling these batteries.
6. Always switch the speedlight off before changing batteries.
7. Do not fire speedlight from a short distance directly into the eyes of people or animals. This can cause damage to the retina and may even lead to blindness .
8. Avoid corrosive or flammable substances when cleaning this speedlight.
9. To prevent overheating and damage to the flash head, do not fire more than 25 continuous flashes in rapid sequence at full power (1/1 level). In this case the overheating protection mode will be activated and the flash will shut down. Allow it to return to a normal operating temperature before using. This takes about 10 minutes.
10. Do not touch the speedlight with wet hands. This could cause an electrical shock.
11. Remove batteries from the unit before storing .

Foreword

Thank you for purchasing the **[pro]master 200SL**.

The ProMaster 200SL Speedlight is a high performance, feature-rich unit designed to work with your camera's automatic and advanced functions.

It can work as your primary on-camera flash, or as a master or slave unit in a wireless, multiple flash setup.

Here are some of the 200SL's features:

■ I-TTL Mode

In this Nikon Creative Lighting System TTL auto flash mode monitor pre-flashes are fired at all times, the subject is correctly exposed, and the overall exposure is less affected by challenging ambient light conditions.

■ Manual Mode

By setting the aperture and the flash output level, you can manually control exposure.

■ RPT Mode

The 200SL fires repeatedly to create stroboscopic multiple-exposure effects in RPT Mode. This is useful when shooting a fast-moving subject.

■ Advanced Wireless Lighting

In this mode, you can set slave units into three groups and control the mode and output level compensation values separately for each group.

■ FV Lock

Flash Value, or FV is the amount of flash exposure for a subject. Using FV Lock (with compatible cameras) you can lock-in the appropriate flash exposure for the main subject. The flash exposure becomes locked in even if you change the aperture, composition, or zoom the lens in and out.

■ Auto HSS High-Speed Sync

High-Speed synchronization occurs at the compatible camera's highest shutter speed. This is useful when you want to use a wider aperture to achieve shallow depth of field to blur the background or create a "stop-motion" effect in your photograph.

■ **Output level compensation / Exposure compensation**

Flash output level compensation is performed by modifying the flash output level for the flash illuminated subject only . Exposure compensation is performed by intentionally modifying the correct exposure to modify both the subject and background exposure.

■ **Rear-Curtain sync**

Rear-Curtain sync creates a picture in which the blur of a moving subject appears behind the subject rather than in front. In this mode the speedlight fires just before the rear shutter curtain starts to close.

■ **Bounce flash**

By tilting and/or rotating the flash head you can bounce the light off a ceiling or wall.

■ **Key lock**

The speedlight's control buttons can be locked to prevent them from being pressed accidentally.

■ **AF-Assist illuminator**

The 200SL emits an AF-Assist beam to help the camera properly auto focus in low light situations.

■ **LCD panel backlight**

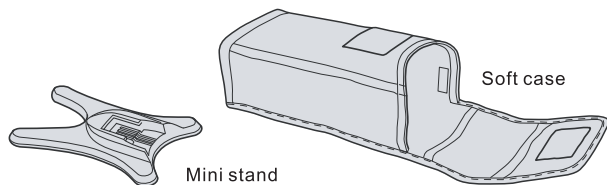
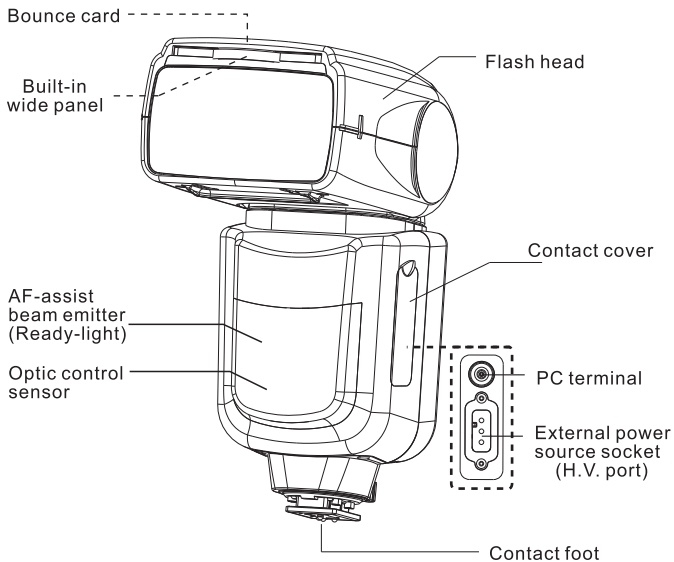
This function sets the LCD panel backlight to on or off.

■ **Thermal Cut-off protection**

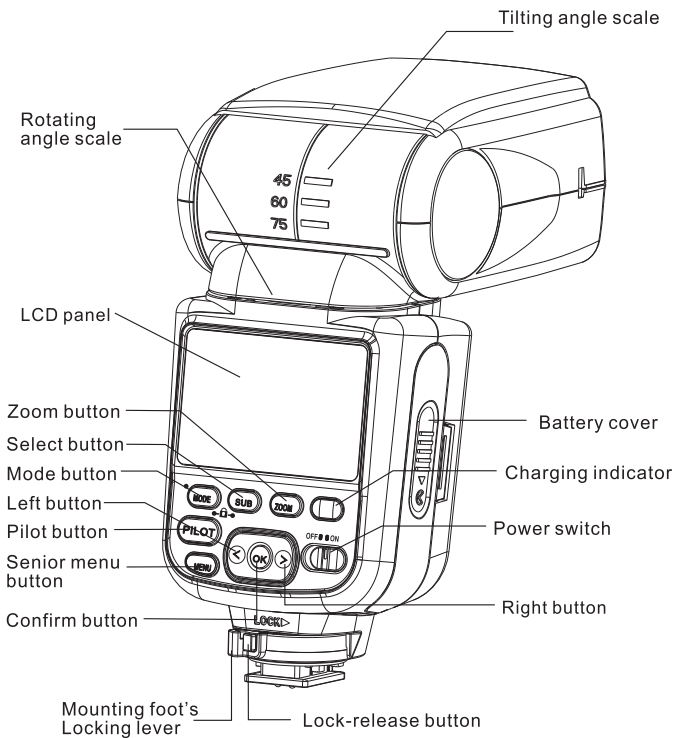
This function protects the 200SL from high operating temperatures. If the operating temperature of the unit rises to a certain level, the 200SL will switch to protective shutdown mode.

● Please read this manual while also referring to your camera's instruction manual.

PARTS IDENTIFICATION

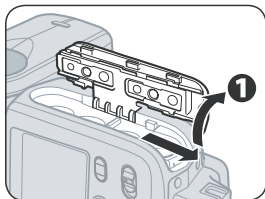


PARTS IDENTIFICATION



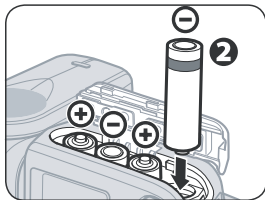
BASIC OPERATION

Inserting the Batteries



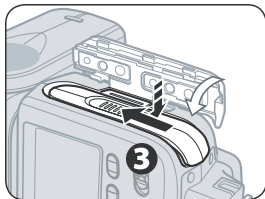
1 Open the cover.

Slide cover in the direction of the arrow and flip open.



2 Install the batteries.

Make sure the + and - battery contacts are properly oriented as shown inside the battery compartment.



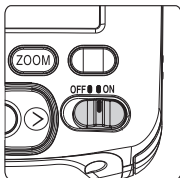
3 Close the cover.

Close the battery compartment cover by flipping it down, pressing, and sliding closed.

- Only use size-AA alkaline or Ni-Mh batteries.
- If you change the batteries after firing many continuous flashes, be aware that the batteries might be hot.
- Before changing the batteries, be sure to turn off the speedlight.

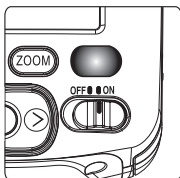
BASIC OPERATION

Turn On The Power



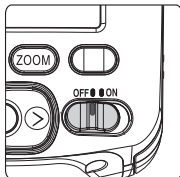
1 Turn on the power.

Turn the power switch to <ON>.



2 Check that the speedlight is ready.

The charging indicator is red while the speedlight is powering up. It will turn green and beep twice when the speedlight is ready to fire.



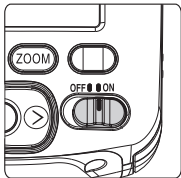
3 Turn off the power.

Turn the power switch to <OFF> when you are finished using the 200SL.

- If the charging indicator remains red and the low power icon is displayed replace the batteries with new ones.
- In order to conserve power, the speedlight will enter sleep mode after a specified time (this time can be adjusted by a custom setting). The LCD will shut off. Press the camera's shutter button halfway or the <Pilot> button on the speedlight to wake it up.
- It will not enter sleep mode in the Remote or F1/F2 modes.

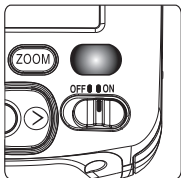
BASIC OPERATION

Turn On The Power



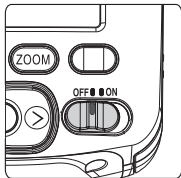
1 Turn on the power.

Turn the power switch to <ON>.



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The charging indicator is red while the speedlight is powering up. It will turn green and beep twice when the speedlight is ready to fire.



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Turn the power switch to <OFF> when you are finished using the 200SL.

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- In order to conserve power, the speedlight will enter sleep mode after a specified time (this time can be adjusted by a custom setting). The LCD will shut off. Press the camera's shutter button halfway or the <Pilot> button on the speedlight to wake it up.
- It will not enter sleep mode in the Remote or F1/F2 modes.





LCD PANEL

LCD Panel

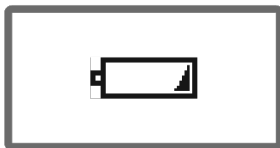
Icons in the LCD show the status of various settings. Displayed icons will change according to the selected flash modes and settings.

200SL General Status Icons



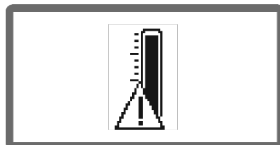
	AF-assist illumination
	Thermal Cut-out on
	Sound on
	Communicating with a CLS compatible camera

Low battery power indicator



When battery power is low this icon appears on the LCD and the 200SL may stop working. Replace the batteries.

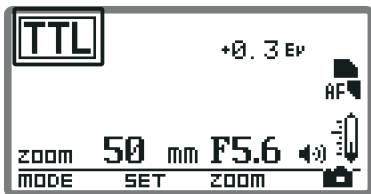
Temperature warning indicators



If the temperature of the unit becomes too high, this icon shown will appear in the LCD screen. You will hear short beeps for 15 seconds as the unit locks-up for thermal protection. Please turn off the speedlight for 10 minutes until it cools down.

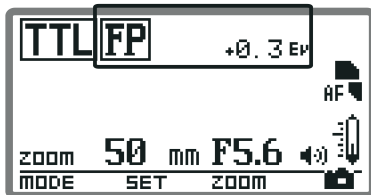
Mode Icons

Press the <MODE> button to select a flash mode.



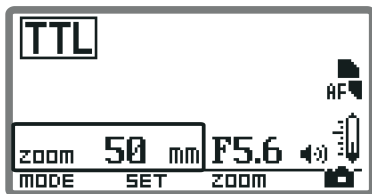
TTL	TTL mode
M	Manual flash
RPT	Repeating flash

Examples Of LCD Displays In TTL Mode



FP	High-speed sync
+0.3EV	Flash exposure compensation amount

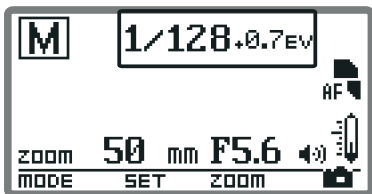
Zoom position



50MM

Zoom position

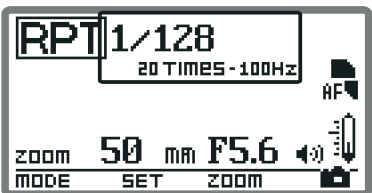
Examples Of LCD Displays In Manual Mode



1/128+0.7EV

Flash output level
at manual mode

Examples Of LCD Displays In RPT Mode



1/128

Flash output level

20 TIMES

Number of flashes

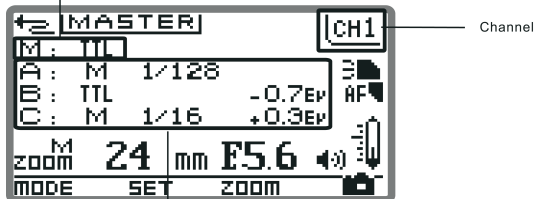
100Hz

Frequency

Examples Of LCD Displays In Wireless Multiple Flash Shooting

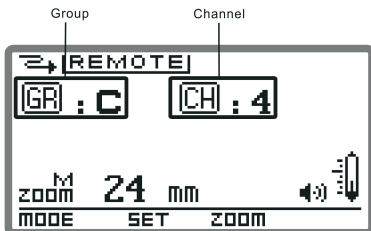
Master Mode

Flash mode , flash output level compensation

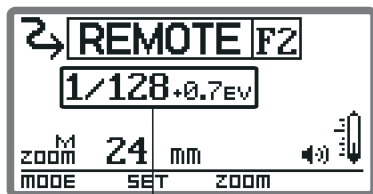
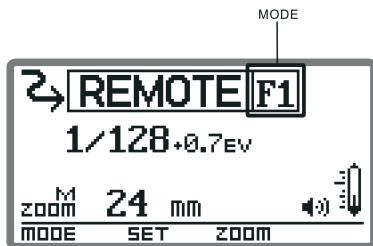


Flash mode , flash output level compensation , amount of light at manual setting from A , B or C group

Remote Mode



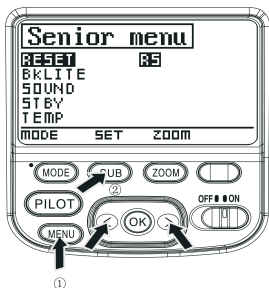
Remote Mode



Flash output level at F2 mode

Custom Settings

You can customize the speedlight features to suit your shooting preferences with Custom settings.



- ① Press the <MENU> button for approx. two seconds to display the custom menu.
- ② Press the <SUB> button to highlight a setting.
 - Press the right key to enter in the secondary menu for that setting.
 - If you want to return to previous menu, press navigation left key.
- ③ Press the <MENU> button for approx. two seconds to return to the normal display.

RESET	Reset custom setting
RS	RS: Reset to factory settings
BkLITE	Backlight
OFF ON	OFF: Turn off ON: Turn on
SOUND	Sound monitor
OFF ON	OFF: Turn off ON: Turn on
STBY	Standby function
NORMAL LONG SHORT OFF	NORMAL: 3Minutes LONG: 10Minutes SHORT: 1Minutes OFF: Function canceled
It will not sleep in slave mode.	

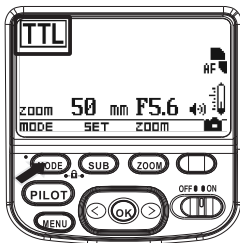
TEMP	Thermal Cut-out
OFF ON	OFF: Turn off ON: Turn on
Warning: If you turn off the Thermal Cut-out, you can damage the 200SL by overheating the unit.	
RMT INDEX	Ready light
OFF ON	OFF: Turn off ON: Turn on
This turns the blinking ready light on or off when the 200SL is in slave mode	
VER	Version of firmware
	Displays the version of your speedlight's firmware.

- Standby controls the length of time before the 200SL enters sleep mode.

Flash Modes

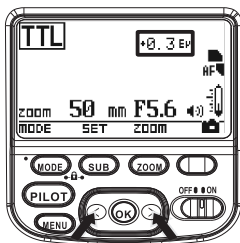
I-TTL Mode

In this mode information obtained by monitor pre-flashes and by exposure control information are combined in-camera to automatically adjust flash output levels.



- 1 Press the <MODE> button and set the flash mode to TTL .

- The default exposure compensation is 0.



- 2 Set the exposure compensation.

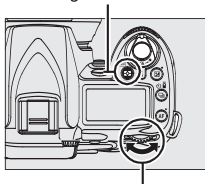
- Press the left/right buttons to decrease/increase the flash exposure compensation.
- The flash exposure compensation will change in 1/3 steps from -3.0 to +3.0

Flash Modes

Flash Value Lock(FV Lock)

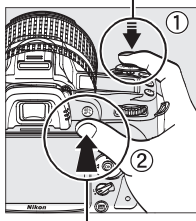
Using FV Lock , you can lock in the appropriate flash exposure , while keeping the subject illumination constant even if you change the composition.

Metering method button



Main command dial

Shutter-release button



AE-L/AF-L button

- 1 Select mode P,S, or A and choose center-weighted or spot metering.

- 2 Focus the subject, and press the AE-L/AF-L button.

- 3 Keeping the AE-L/AF-L button pressed, recompose the photograph and shoot.

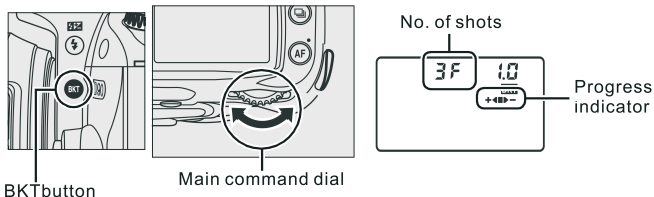


Flash Modes

Flash Exposure Bracketing

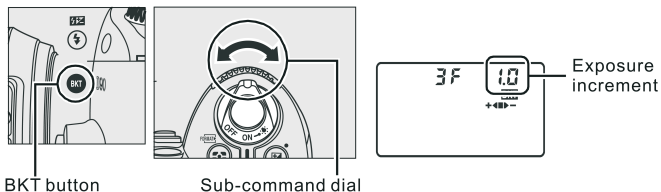
1 Choose the number of shots.

Press the BKT button on the camera and rotate the main command dial to choose the number of shots in the bracketing sequence.



2 Select an exposure increment.

Press the BKT button and rotate the sub-command dial to choose the exposure increment from values between 0.3EV and 2.0EV.

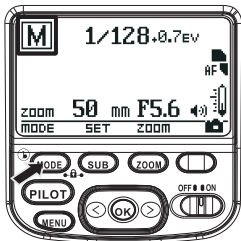


- To cancel bracketing, press the BKT button and rotate the main command dial until the number of shots in the bracketing sequence is 0.

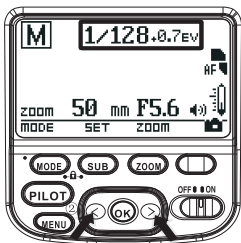
Flash Modes

M Mode

You can set the flash to manual mode and choose a power level between 1/1 and 1/128.



- 1 Press the <MODE> button and set the flash mode to M.



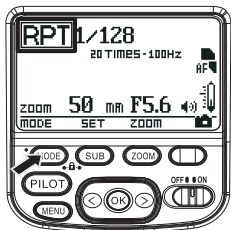
- 2 Set the flash output level.
 - Press the left/right key to decrease /increase the flash output level.
 - The flash output level changes in 1/3 steps between 1/128 and 1/1.

Flash Modes

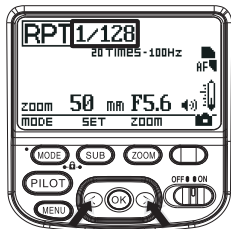
Repeat Mode

In Repeat mode, the 200LS fires repeatedly during a single exposure, creating stroboscopic multiple-exposure effects. This operation is useful when shooting fast-moving subjects.

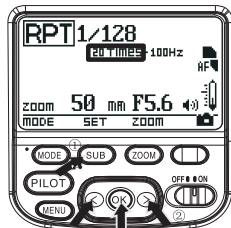
You can set the firing frequency (number of flashes per sec. expressed as Hz), the number of flashes, and the flash output.



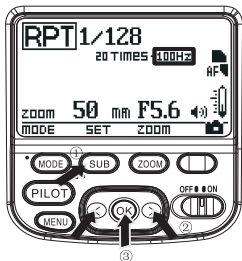
- 1 Press the <MODE> button and set the flash mode to RPT.



- 2 Set the flash output level.
 - Press the left/right key to decrease/increase the flash output level.
 - The flash output level changes between 1/128 and 1/8 power.

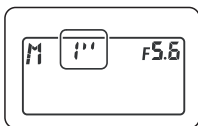


- 3 Set the number of flashes.
 - ① Press the <SET> button to highlight the number.
 - ② Press the left/right key to decrease/increase the number.
 - ③ Press the <OK> button to confirm.



4 Set the firing frequency.

- Press the <SET> button to highlight the frequency.
- Press the left/right key to decrease/increase the number.
- Press the <OK> button to confirm.



5 Set the shutter speed.

Use the following equation to determine the shutter speed. Then set your camera to a shutter speed slower than the calculated number.

Shutter speed = Number of flashes per frame / Frequency of flash (Hz).

- For example, if the number of flashes per frame is 10 and the frequency is 5Hz, divide 10 by 5 to get a shutter speed of 2 seconds or slower (Set shutter speeds of slower than 2 seconds).

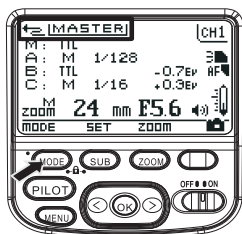
- Using a tripod, a remote switch, and external power source is recommended.
- To avoid overheating and deteriorating the flash head, don't use stroboscopic flash more than 10 times in succession. After 10 times, allow the speedlight to rest for at least 15 min.
- The maximum flash firing number is a function of output level, and frequency. See the appendix for more details.

Wireless Modes

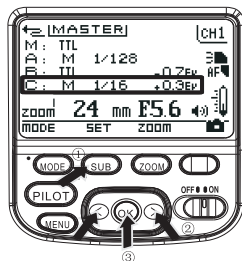
Master Mode

The 200SL can be used as a master unit in the CLS system. In this mode you can divide the slave units into three groups and set the flash mode and flash output level compensation values separately for each group as well as the master unit.

Wireless TTL flash



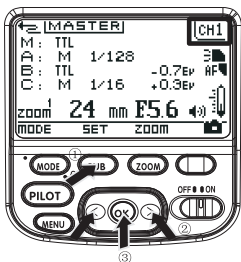
- 1 Press the <MODE> button and set the flash mode to Master.



- 2 Set flash mode for each group.

- 1 Press the <SUB>button . Group M will highlight.
- 2 Press the <MODE> button to choose flash mode.
- 3 Press the left/right button to choose compensation value.
- 4 Press the <OK> button to confirm.

- The following four flash modes are available: i-TTL mode, Manual mode, Auto Aperture flash mode, Flash canceled (-) .
- In Flash Canceled mode, the group will be closed to avoid unnecessary interference.



③ Set Channel.

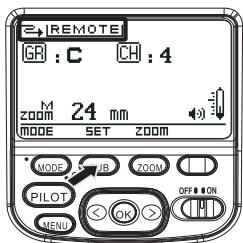
- Press the <SUB> button to highlight channel.
- Press the left/right button to decrease/increase the number.
- Press the <OK> button to confirm.

- Select channel number between 1 and 4.
- If another photographer is using a similar type of wireless flash setup nearby, your slave flash units may accidentally fire in sync with that photographer's master flash unit. To avoid this use a different channel number.
- The 200SL can control Nikon the SB-600/700/800/900/ and 910 in non-Auto Aperture (A) flash mode (for slave unit).

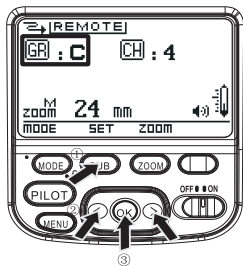
Wireless Modes

Slave(Remote) Mode

As a slave unit, the 200SL can receive signals from another 200SL(master), Nikon SB-700/800/900/910 and Nikon camera commander function. In this mode, you can divide the slave units into three groups and set the flash mode and flash output level compensation values separately for each group as well as the master flash unit.



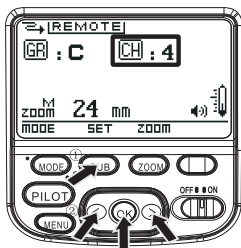
- 1 Press the <MODE> button for 2 sec. to choose slave mode.



2 Set Group.

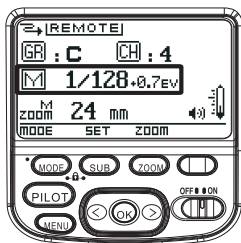
- 1 Press the <SUB> button to highlight GR (group).
- 2 Press the left/right button to choose A, B, or C group.
- 3 Press the <OK> button to confirm.

- For slave flash units where the flash mode and flash output level compensation values are to be set identically, place these flash units into the same group.



3 Set Channel.

- ① Press the <SUB> button to highlight Channel.
 - ② Press the left/right button to choose a channel between 1 and 4.
 - ③ Press the <OK> button to confirm.
- Be sure to choose the same channel number as set on the master flash unit.



4 Parameter display.

- When the slave receives a TTL signal from the master, the <TTL> icon will appear in the LCD. This happens after the first remote TTL firing of the slave flash.
- If the master is set to fire the slave in M or RPT, the slave will display the appropriate icon and settings after the first remote firing.

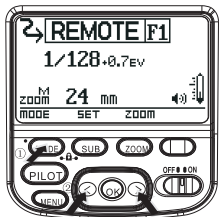
- As a slave unit the 200SL is compatible with Nikon TTL and M wireless flash modes, without support for Auto aperture flash and Repeating flash mode.

Wireless Modes

Slave Mode(F1/F2)

The F1 mode is used in a manual flash environment. The F2 mode is used in a TTL flash environment.

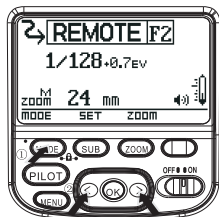
F1 mode



- ① First press the <MODE> button for 2 seconds to display the slave mode. Then press the <MODE> button to choose F1 mode.
- ② Set the flash output level.
 - Press the left/right key to decrease /increase the flash output level.
 - The flash output level changes in 1/3 steps between 1/128 and 1/1.

- When the flash is in F1 mode, it will fire in-sync. with the master flash, similar to a radio slave setup. To use this mode correctly, the master flash should be set as a manual flash and the TTL flash system with pre-flash and red-eye reduction modes should not be used.
- Press the Navigation key to set the flash output level.(P20)

F2 mode



- ① First press the <MODE> button for 2 seconds to display the slave mode. Then press the <MODE> button to choose F2 mode.
- ② Set the flash output level.
 - Press the left/right key to decrease /increase the flash output level.
 - The flash output level changes in 1/3 steps between 1/128 and 1/1.

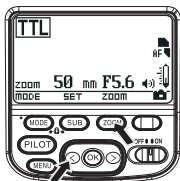
- When the flash is in F2 mode it can support the master flash in TTL mode.
- Press the Navigation key to set the flash output level.(P20)

Advanced Applications

Power zoom function

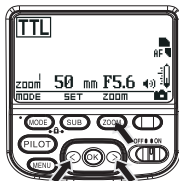
The power zoom function automatically adjusts the flash zoom head positioning to match the lens focal length. Zoom positions can be adjusted between 24mm and 180mm. You can also adjust the flash zoom head position manually.

Auto zoom



Press the <ZOOM> button. Then press the left and right keys until <M> disappears. Now zoom the lens and watch as the flash matches the zoom setting.

Manual zoom



Press the <ZOOM> button, then press the left and right keys to indicate <M> on the LCD. Continue pressing the left/right buttons to decrease/increase the zoom position manually.

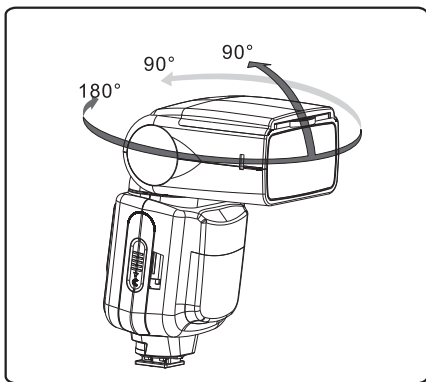
- If you set the flash zoom manually, make sure it covers the lens focal length so that the picture will not have a dark periphery.
- If you use a commercially-available sync cord to connect the camera to speedlight's PC terminal, set the flash zoom manually.

Advanced Applications

AF assist beam emitter

In low light conditions the AF assist light will automatically emit a red colored beam and illuminate the subject so the camera can easily focus.

Bounce flash operation



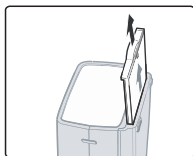
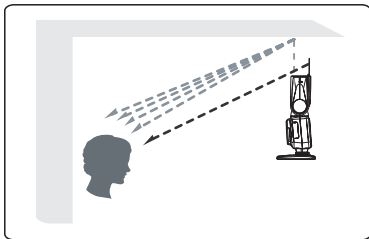
Tilt or rotate the 200SL's flash head to bounce the light off a ceiling or walls, providing more natural-looking pictures of people with softer shadows.

- If the wall or ceiling is too far away, the bounced flash might be too weak and result in underexposure.
- If color photography, select white or highly reflective surfaces to bounce the light off of. Otherwise, your pictures will come out with an unnatural color cast similar to that of the reflecting surface.

Advanced Applications

Using the bounce card

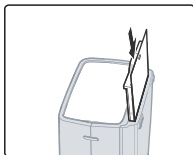
You can use the 200SL's built-in bounce card to create a highlight in the subject's eyes.



1 Point the flash head upward by 90°.

2 Pull out the wide panel.

The bounce panel will slide out at the same time.



3 Push the wide panel back in.

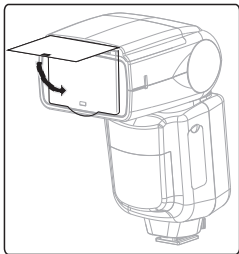
Push in only the wide panel.

- Point the flash head straight ahead and then upward by 90°. The catch light will not work if you swing the flash head left or right.
- For the best catchlight effect, stay with 1.5m (4.9ft) of the subject.

Advanced Applications

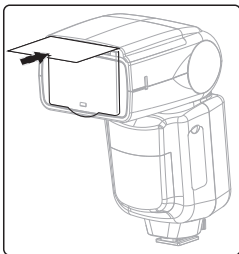
Using the wide panel.

When the distance between the camera and subject is less than approx 2m, you can take more natural-looking close-up pictures using the wide panel (the zoom position is automatically set at 18mm when the built-in wide panel is attached.)



① Pull out the wide panel.

Slowly pull out the wide panel all the way, and position it over the flash head.



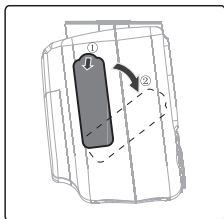
② Push the bounce card back in.

- Slowly pull out the wide panel all the way, and position it over the flash head.

Advanced Applications

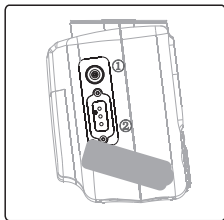
Additional Interfaces

The 200SL can be connected to external devices using its PC-sync. and/or H.V. port.



① To connect to an external power source and/or PC sync.

Pull on tab at the top of the rubber cover and swing it down to expose the H.V. port and PC sync port. This is located on the side of the speedlight opposite the battery compartment.



② Connecting.

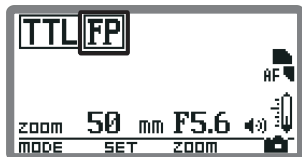
- ① PC Sync: Speedlight firing syncs with camera.
- ② H.V. port is used to connect an external power source for extended shooting.

- External power source: Using an external power source provides a stable power supply, increases the number of flashes and shortens recycling time. Be sure to have AA batteries installed while using an H.V. pack. The AAs must not be depleted for the H.V. power to work.

Advanced Applications

High-speed Sync

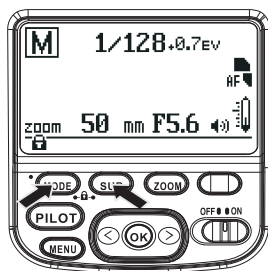
With high-speed sync (FP flash), the speedlight can synchronize with all camera shutter speeds. This is convenient when you want to use aperture priority for fill-flash portraits.



When you turn on auto FP flash from the camera menu, <FP> appears on the LCD of 200SL.

- With FP flash, the faster the shutter speed, the shorter the effective flash range will be.
- To return to normal flash firing, please turn off the <FP> function on your camera.
- Set this function on the camera. It can not be set on the **200SL** directly.
- Some camera models do not have high speed synchronous function, for example: D60, D5000 etc.. To use this feature, be sure to select a camera with this feature.

Key Lock



Pressing the **MODE** button and **SET** button simultaneously locks the control buttons.

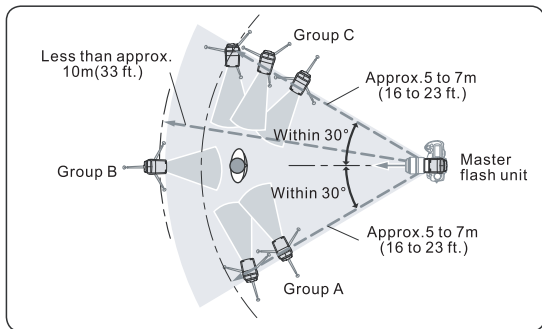
- The power ON-OFF switch and the test firing buttons remain unlocked.
- A key icon is displayed on the LCD while buttons are locked.

To cancel the key lock function, press the two buttons again for two seconds.

Advanced Applications

Advanced Wireless Flash

The 200SL supports multiple wireless flash setups .



- 200SL supports the Nikon CLS system.
- 200SL can be used as the master or slave flash.
- Be sure to test the wireless flash operation before shooting.
- When used as a slave confirm the unit(s) can receive a good optical signal.
- As a basic guide, the effective shooting distance between the master and slave units is approx. 10m (33 ft.) or less in the front position , and approx. 7m (23 ft.) at the sides . These ranges vary slightly depending on the ambient light.
- Indoors , the wireless signal can also bounce off a wall, so there is more leeway in positioning the slave units.
- Be sure to place all slave units that are set in the same group close together.
- Avoid placing obstacles between the master unit and slave units. Obstacles can block the transmission of wireless signals.

Troubleshooting Guide

The Speedlight Does Not Fire

Possible cause: The batteries are installed in the wrong orientation.
Solution: Reinstall the batteries in the correct orientation.

Possible cause: The batteries are exhausted.
Solution: Replace the batteries.

Possible cause: The speedlight is not attached securely to the camera.
Solution: Attach the speedlight's mounting foot securely to the camera.

Possible cause: The electrical contacts of the speedlight and camera are dirty.
Solution: Clean the contacts.

■ The Slave Unit Does Not Fire

Possible cause: The slave's mode is set wrong.

Solution: Please set it to the same wireless flash mode, group, and channel as the master unit.

Possible cause: The slave unit(s) is not positioned properly.

Solution: Place the slave unit within the master unit's transmission range.

Specifications

Type:	On-camera , I-TTL autoflash speedlight
Guide No.:	GN 60(at 180mm focal length , ISO 100)
Flash coverage:	24 ~ 180mm
wireless mode:	<ul style="list-style-type: none">● Auto/Manual zoom● Nikon wireless flash mode (master&slave modes)● F1/F2 mode
Audible:	Yes (can be turned on or off)
Voice:	Beep
Display type:	LCD Dot Matrix Screen & LED back light
Protection type:	Thermal Cut-out (can be turned on or off)
Power supply:	4×AA size batteries(Alkaline & Ni-Mh)
Flash time:	1/800~1/20000S
Recycle time:	approx 0.27s-5.2s (AA alkaline cell use) approx 0.15s-3s (AA Ni-Mh cell use)
Color temperature:	5600K
Flash control:	22 Levels light quantity output control(1/1 ~1/128,14 levels of fine tuning); I-TTL autoflash ; Repeat flash
Power saving:	Customizable via standby function
Vertical rotation angle:	-7°~90°
Horizontal rotation angle:	Right 0°~180° / Left 0°~90°
Dimensions:	7 3/4" x 3 1/16" x 2 5/16" (198.5mm × 77.8mm × 58.5mm)
Net weight:	425g(without batteries)

Appendix

Guide No.(at ISO 100 , in meters/feet)

Flash output level	Zoom position(mm)									
	24	28	35	50	70	85	105	120	135	180
1/1	30.5	33.5	37.7	43	47.2	50	53.3	56.3	58	60
1/2	21.6	23.7	26.7	30.4	33.4	35.4	37.7	39.8	41	42.4
1/4	15.3	16.8	18.9	21.5	23.6	25	26.7	28.2	29	30
1/8	10.8	11.9	13.4	15.2	16.7	17.7	18.9	19.9	20.5	21.2
1/16	7.7	8.4	9.5	10.8	11.8	12.5	13.4	14.1	14.5	15
1/32	5.4	6	6.7	7.6	8.4	8.9	9.5	10	10.3	10.6
1/64	3.9	4.2	4.8	5.4	5.9	6.3	6.7	7.1	7.3	7.5
1/128	2.7	3	3.4	3.8	4.2	4.5	4.8	5	5.2	5.3

Appendix

Maximum number of repeating flashes per frame

Referring to the table below, set the flash output level, the frequency, and the number of repeating flashes separately for each picture.

Frequency	Flash output level				
	M1/8	M1/16	M1/32	M1/64	M1/128
1Hz	14	30	60	90	90
2Hz					
3Hz	14	30	60	90	90
4Hz	12	20	50	80	80
5Hz	10	20	40	70	70
6Hz	8	20	32	56	56
7Hz	6	20	28	44	44
8Hz	6	20	24	36	36
9Hz	5	10	22	32	32
10Hz	5	10	20	28	28
20Hz	4	8	12	24	24
30Hz					
40Hz					
50Hz					
60Hz					
70Hz					
80Hz					
90Hz					
100Hz					

One Year Unconditional Warranty

If for any reason, this ProMaster product fails within ONE YEAR of the date of purchase, return this product to your ProMaster dealer and it will be exchanged for you at no charge. ProMaster products are guaranteed for ONE FULL YEAR against defects in workmanship and materials. If at any time after one year, your ProMaster product fails under normal use, we invite you to return it to ProMaster for evaluation.

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