

**MINOLTA**

**PROGRAM FLASH  
MAXXUM FLASH  
3600HS (D)**

**BASIC OPERATION**

**APPLICATIONS**

**APPENDIX**

**E INSTRUCTION MANUAL**

Printed in Malaysia  
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## FOR PROPER AND SAFE USE

Read and understand all warnings and cautions before using this product.

### **WARNING**

Batteries may become hot or explode due to improper use.

- Use only the batteries specified in this instruction manual.
- Do not install the batteries with the polarity (+/-) reversed.
- Do not subject batteries to fire or high temperatures.
- Do not attempt to recharge (except for rechargeable batteries), short, or disassemble.
- Do not mix batteries of different types, brands, or ages.
- Tape over lithium battery contacts to avoid short-circuit when disposing of batteries, and follow local regulations for battery disposal.

Keep batteries or things that could be swallowed away from young children. Contact a doctor immediately if an object is swallowed.

Immediately remove the batteries and discontinue use if...

- the product is dropped or subjected to an impact in which the interior is exposed.
- the product emits a strange smell, heat, or smoke.

Do not disassemble. Electric shock may occur if a high voltage circuit inside the product is touched. Take your flash to a Minolta Service Facility when repairs are required.

### **CAUTION**

Do not touch the flashtube during operation, it may become hot when the flash fires.

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This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation. Changes or modifications not approved by the party responsible for compliance could void the user's authority to operate the equipment. This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications.

However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and the receiver.
- Connect the equipment to an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

This Class B digital apparatus complies with Canadian ICES-003.

E3

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Thank you for purchasing our product and for taking time to read your owner's manual.

This flash unit is designed and manufactured solely for use with the Minolta Maxxum/Dynax series cameras. It cannot be attached to other Minolta cameras. Performance when used with cameras from other manufacturers cannot be guaranteed. Minolta takes no responsibility for accidents or malfunctions due to use with such cameras.

The information in this manual is relevant for products introduced before September 2000. Contact the nearest authorized Minolta Service Facility to obtain information for products released after this date.

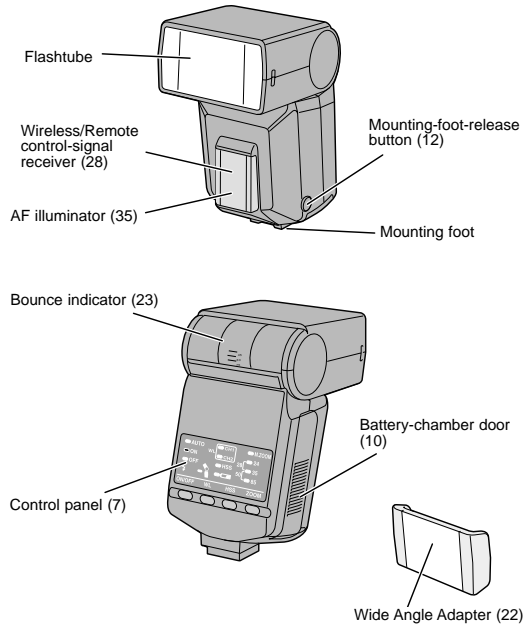


This mark below the flashtube certifies that this product meets the requirements of the EU (European Union) concerning interference causing equipment regulations. CE stands for conformité Européenne (European conformity).

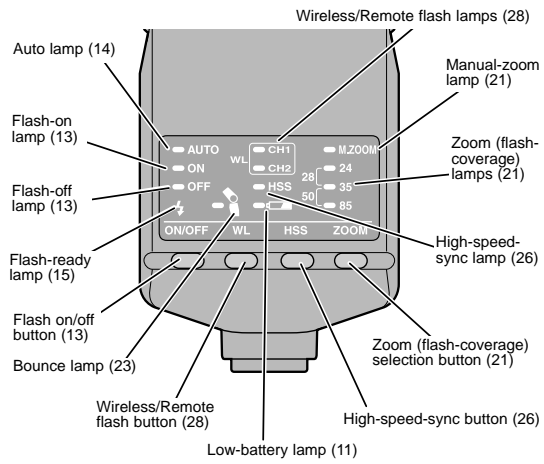
## NAMES OF PARTS

### Flash Unit Diagram

Please peel off the protective film on the front of the flash.



### Control Panel



Figures in brackets after each item indicate the relevant page.

This manual covers the PROGRAM/MAXXUM FLASH 3600HS (D) as attached to one of the following cameras.

**Maxxum**

9, 7, 800si, 700si, 600si, 400si, 300si, XTsi, HTsi, STsi, QTsi

**Dynax**

9, 7, 800si, 700si, 600si, 505si, 505siSuper, 500si, 500siSuper, 404si, 303si, 300si

When attaching to another Maxxum series camera, a Dynax series camera, a Vectis series camera, or a Dimâge series digital camera, read the main section of this manual while referring to 'Use in Combination with Other Products' on page 39.

## BASIC OPERATION

The section explains preparations for use of the flash, and the basic details of taking photos.

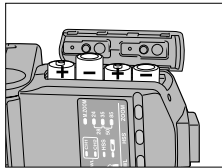
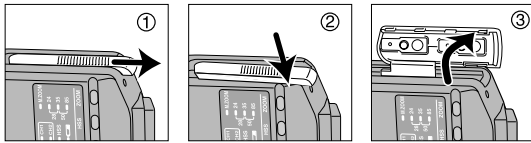
- Automatic flash generates a flash only as necessary. Fill flash generates a flash with each photo.

## INSTALLING BATTERIES

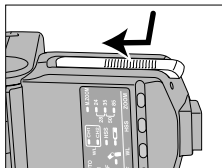
The 3600HS (D) may be powered by :

- Four AA-size alkaline batteries
  - Four AA-size lithium batteries
  - Four AA-size rechargeable nickel-metal hydride (Ni-MH) batteries
- Always ensure that rechargeable nickel-metal hydride batteries are charged in the specified charger unit.

### 1. Open the battery-chamber door as shown.



### 2. Insert the batteries according to the diagram in the battery chamber.




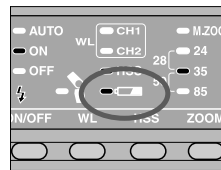
### 3. Close the battery-chamber door.


- The indicator lamps are lit on the control panel. Press the flash on/off button if it is not lit.

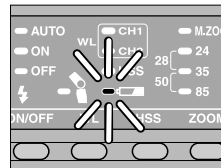
E10


### Checking Batteries

The low-battery lamp  will light or blink on the control panel when the batteries are low.



We recommend replacing the batteries. The low-battery lamp  at the rear of the unit is lit when batteries are low, but flash can be used.



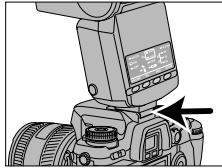
When the low-battery lamp  blinks at the rear of the unit, the batteries need to be replaced. Flash cannot be used. Insert new batteries.

- Check the orientation of the batteries if nothing glows when the flash on/off button is pressed.

E11

## ATTACHING AND REMOVAL

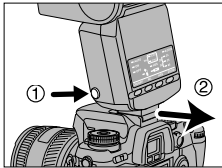
### Attaching To The Camera



**Push the mounting foot firmly onto the camera until it stops.**

- The flash is locked in place automatically.
- If the built-in flash in the camera is raised, lower it before fitting the flash unit.

### Removing From The Camera



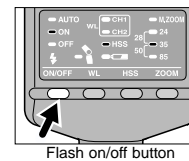
**While pressing the mounting-foot release button ①, remove the flash ②.**

## AUTO POWER ON/OFF AND FILM

### Auto Power On

Power is supplied to this flash automatically (auto power on) in the following situations.

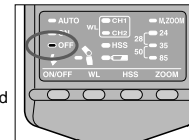
- When the camera is used with the flash attached.
- When the flash on/off button is pressed.



### Auto Power Off

Power is switched off and the indicator lamps turn off automatically to save the batteries when the camera or flash is not used for four minutes (auto power off).

- When the flash is switched off (right diagram), the indicator lamps turn off after eight seconds, or after 60 minutes in the case of wireless flash (p. 29).
- The time of auto power off may be changed or be disabled. (p. 36).



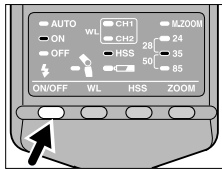
### Film

Do not use high-speed film (rating in excess of ISO 1000). Use of such film increases the exposure error.

- The low-speed film limit is the same as that for the films specified for the camera. See the camera manual for details.

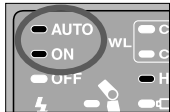
## P MODE FLASH: THE BASICS

1. Select the P mode on the camera.



2. Press the flash on/off button to glow the lamp [AUTO] [ON] or [ON].

3. Press the shutter-release button partway down.

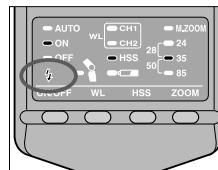


- The indicator lamps, [AUTO] and [ON] glow with automatic flash.




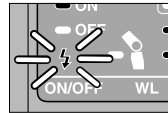
- Only the lamp [ON] glows with fill flash.

- With the Maxxum/Dynax 7, automatic flash is used with full-auto, and fill flash when the P mode is selected.
- With the Maxxum/Dynax 9 and 800si, fill flash is used when the P mode is selected (automatic flash may also be selected as a custom setting with the 800si).
- With other cameras, automatic flash is used when the P mode is selected. Fill flash may be selected in the same way as the built-in flash in the camera.





4. When the flash is charged, press the shutter-release button to take the photo.

- The flash is charged when the flash-ready lamp  on the rear of the unit and in the camera viewfinder are both lit.



When the correct exposure has been obtained for the photo just taken:

- The flash-ready lamp  blinks on the control panel.
- The indicator  blinks in the camera viewfinder.

- The photo will be under-exposed if taken before charging is complete.
- Press the shutter-release button after checking that charging is complete when using the flash with the self-timer.

P MODE FLASH



## P MODE FLASH: THE BASICS

- Following is the flash range that is recommended when using the 3600HS (D). When you need information in more detail, please see the page 42.

ISO100		focal length				
		24	28	35	50	85
aperture	2.8	1-7	1-8	1-9	1-10	1-13
	4	1-5	1-5.5	1-6	1-7	1-9
	5.6	1-3.5	1-4	1-4.5	1-5	1-6.5

(unit : m)

ISO400		focal length				
		24	28	35	50	85
aperture	2.8	1-14	1-16	1-18	1-20	1-26
	4	1-10	1-11	1-12.5	1-15	1-18
	5.6	1-7	1-8	1-9	1-10	1-13

(unit : m)

- When a photo is taken immediately after charging is complete while using slide film, it may be under-exposed near the farther limit of the flash range.

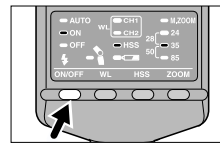
E16

## EXPOSURE MODES

This photography is only possible with cameras having the A, S and M modes.

### A Mode Flash

1. Select the A mode on the camera.



2. Press the flash on/off button to glow the lamp [ON].
  - Fill flash is selected.

3. Set the aperture and focus the subject.
  - Reduce the aperture (ie; increase the f-stop) to reduce the flash range, or open the aperture (ie; reduce the f-stop) to increase the flash range.
  - The shutter speed is automatically set.

4. Press the shutter-release button when charging is complete.

### S Mode Flash

1. Select the S mode on the camera.

2. Press the flash on/off button to glow the lamp [ON].
  - Fill flash is selected.

3. Set the shutter speed, and focus the subject.
  - A shutter speed faster than the sync speed cannot be selected with the Maxxum STsi and Dynax 404si.
  - The shutter speed is set automatically with the Dynax 500si, 500siSuper, and Maxxum 400si.

4. Press the shutter-release button when charging is complete.

E17

## EXPOSURE MODES

### M Mode Flash

1. Select the M mode on the camera.
2. Press the flash on/off button to glow the lamp [ON].
  - Fill flash is selected.
3. Set the aperture and shutter speed, and focus the subject.
  - Reduce the aperture (ie increase the f-stop) to reduce the flash range, or open the aperture (ie reduce the f-stop) to increase the flash range.
  - A shutter speed faster than the sync speed cannot be selected with the Maxxum STsi, 400si, and Dynax 500si, 500siSuper, and 404si.
4. Press the shutter-release button when charging is complete.

### FLASH SYNC SPEED

Flash photography is generally associated with a maximum shutter speed referred to as the flash sync speed. This restriction does not apply to cameras designed for high-speed sync (HSS) photography, since they allow flash photography at the maximum shutter speed of the camera. Sync speeds and high-speed sync for each camera are as follows.

- Maxxum/Dynax 9:  
1/300 sec, high-speed sync photography possible
- Maxxum/Dynax 7, 800si, 700si, 600si:  
1/200 sec, high-speed sync photography possible
- Maxxum XTsi, HTsi, and Dynax 505si, 505siSuper:  
1/125 sec, high-speed sync photography possible
- Maxxum STsi, QTsi, 400si, 300si, and Dynax 500si, 500siSuper, 404si, 303si, 300si:  
1/90 sec, high-speed sync photography impossible

E18

## APPLICATIONS

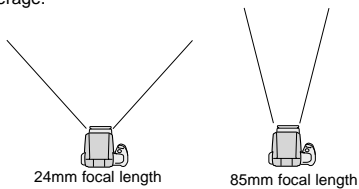
The section explains the various methods available to make full use of the flash unit.

E19

## ZOOM FLASH COVERAGE

### Auto Zoom

This flash unit employs auto zoom to cover a range of focal lengths from 24mm to 85mm. There is normally no need to manually adjust zoom coverage.



- Press the shutter-release button partway down.

When the coverage is 24mm, 35mm or 80mm, the lamp corresponding to its flash coverage is lit.

For example: 24mm



When the coverage is 28mm or 50mm, two lamps are lit.

For example: 28mm



- Automatic zoom coverage is set as follows:

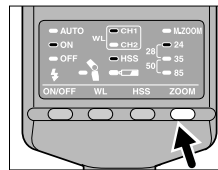
Focal length in use	Coverage
24 - 27mm	24mm
28 - 34mm	28mm
35 - 49mm	35mm
50 - 84mm	50mm
85mm	85mm

- The indicator lamp of [24mm] blinks when a lens having a focal length of less than 24mm is used with auto zoom. Use of the Wide Angle Adapter (p. 22) is recommended in this case to prevent darkening at the periphery of the image.

E20

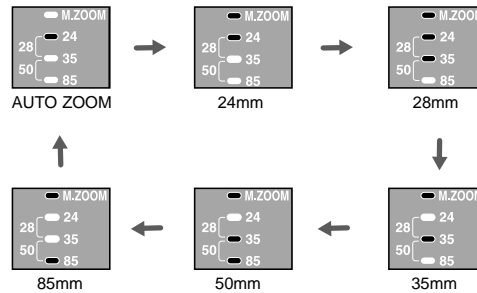
### Manual Zoom

Zoom may be set manually irrespective of the focal length currently in use.



Press the zoom button to display the desired zoom coverage.

- Zoom coverage is changed in the following order. The manual-zoom lamp [M.ZOOM] is lit above the zoom (flash-coverage) lamps when zoom is set manually.



- The periphery of the image darkens when a zoom coverage less than the focal length currently in use is set.

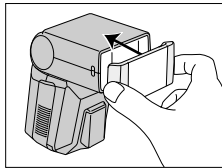
E21

ZOOM FLASH

## ZOOM FLASH COVERAGE

### Wide Angle Adapter (17mm zoom angle)

Put the wide-angle adapter on for the 17mm zoom angle.



#### Put the wide angle adapter on the flashtube.

- Push the wide angle adapter directly downward to the flashtube until it holds.
- When taking off the wide angle adapter, pull one side of the adapter first to make removal easier.

- Do not set the zoom coverage except for 24mm on the control panel, when using wide angle adapter.
- When flat subjects are photographed from the front with very wide-angle lenses such as the 17-35mm f/3.5G lens at the wide-angle setting, the distance between the lens and the center and periphery varies so that the amount of light from the periphery is slightly reduced.
- Keep the high-speed-sync lamp off when using Wide-Angle Adapter.

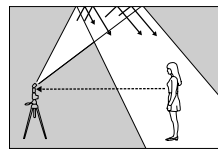
• See the table below about the flash range when using the wide angle adapter.

	ISO100	ISO400
2.8	1 - 4	1 - 8
4	1 - 2.8	1 - 5.6
5.6	1 - 2	1 - 4

(unit : m)

E22

## BOUNCE FLASH



Strong shadows appear when flash is used with a wall directly behind the subject. In such cases the flash is directed at the ceiling etc. so that the subject is illuminated with reflected light, and the intensity of the shadows are reduced to produce a softer light in the photograph.



Bounce flash

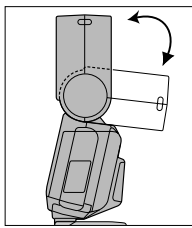


Normal flash

BOUNCE FLASH

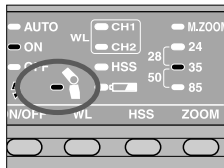
E23

## BOUNCE FLASH



### Rotate the flash towards the ceiling.

- The flash may be set to the following angles: 45°, 60°, 75°, 90°.



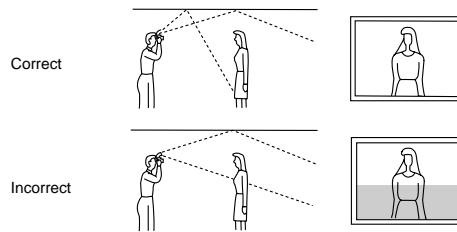
- The bounce lamp glows on the control panel.

- High-speed sync (p. 26) is cleared when employing bounce flash.
- Use a white ceiling or wall to reflect the flash. A colored surface may color the light. High ceilings or highly reflective surfaces such as glass are not recommended.

### Adjusting Bounce Angle

An unsightly photo results when both direct light and bounced light from the flash are used simultaneously.

Determine the bounce angle in reference to the distance to the reflective surface, the distance from the camera to the subject, and the focal length of the lens etc.



Determine the angle in relation to the table at right.

Focal length of lens	Bounce angle
70mm minimum	45°
28~70mm	60°
28mm maximum	75°, 90°

BOUNCE FLASH

## HIGH-SPEED SYNC [HSS]



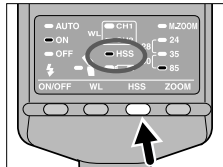
High-speed sync



Normal flash

High-speed sync eliminates the restrictions of flash sync speed, and allows you to use flash over the entire shutter speed range of the camera. The selectable aperture range is increased, allowing portrait shots with flash in which the aperture is opened to leave backgrounds out of focus and thus accentuate the human subject.

- The Maxxum STsi, QTsi, 400si, 300si and Dynax 500si, 500siSuper, 404si, 303si, 300si do not support this function, and high-speed sync therefore cannot be used.



### Press the high-speed-sync button.

- The high-speed-sync lamp glows on the control panel.

- High-speed sync is cleared when the high-speed-sync button is pressed again, and a shutter speed faster than the sync speed can no longer be set.
- It is recommended that photos be taken in bright locations.
- The flash range with high-speed sync is less than for normal flash photography. Check that the subject is within the flash range before taking the photo.

It is possible to figure out the accurate flash range with high-speed sync by using the table of HSS flat flash (ISO100) on the page 46. Divide the guide number by the aperture. This is the maximum distance of the flash range.

For example, when applying the shutter speed of 1/500, with a 28mm focal length, the guide number is 8 according to the table. Divide 8 (the guide number) by 4 (the aperture), which equals 2. The flash range would be 2 m in this case.

The number will be doubled, when using ISO400 film.

- High-speed sync cannot be used with ratio flash, or bounce flash.
- When using a flash meter or color meter, high-speed sync cannot be used because it interferes with the proper exposure.
- High-speed sync lamp of the flash might be lit even with a camera which does not have high-speed sync. In that case, high-speed sync does not work.

HIGH-SPEED SYNC

## WIRELESS/REMOTE FLASH MODE [WL]



Normal flash



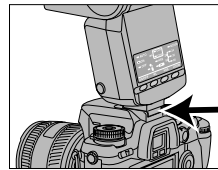
Wireless flash



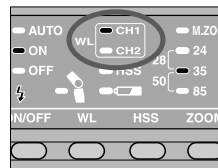
Wireless ratio flash

Photographs taken with the flash attached to the camera are flat as shown in photo ①. In such cases, remove the flash from the camera and position it to obtain a more three-dimensional effect as shown in photo ②.

Photo ③ was taken using the camera's built-in flash and the flash located separately from the camera, with a light intensity of 1:2 respectively to produce a soft gradation between light and dark, and natural shadows (p.34). When taking this type of photograph with a single lens reflex camera, the camera and the flash unit are most commonly connected by cable. This flash eliminates the need for a cable to transmit signals to the flash unit by using the light of the flash itself as a signal. This type of flash control is referred to as 'wireless (remote) flash'. The proper exposure is determined automatically by the camera.



1. Attach the flash to the camera and switch the flash and camera power supplies on.



2. Set the camera to wireless flash.

- The method used for the setting varies with the camera. See the camera manual for details.
- When the camera is set to wireless the flash is also set to wireless automatically.
- The lamp of the wireless/remote flash, channel 1 [CH1] is lit when settings are done properly. When channel 2 is selected, lamp channel 2 [CH2] is lit. See the page 33 for details to change the channel settings.

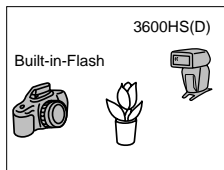


3. Remove the flash from the camera and raise the built-in flash.

- The high-speed-sync lamp at the rear of the flash is lit.

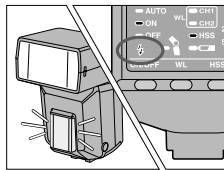
WIRELESS FLASH

**WIRELESS/REMOTE FLASH MODE**



**4. Set up the camera and the flash.**

- Photograph in dark locations indoors.
- See the next page to set-up.



**5. Check that the built-in flash and 3600HS (D) are fully charged.**

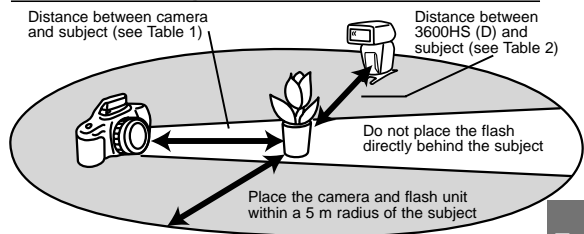
- $\frac{1}{2}$  is lit in the viewfinder on camera when the built-in flash is fully charged.
- The AF illuminator on the front of flash blinks, and  $\frac{1}{2}$  on the rear is lit, when the 3600 HS (D) is fully charged.

**6. Use test flash to check the 3600HS (D) flash.**

- The method used for test flash differs with the camera used (eg. press the AE lock button, or spot AE lock button). See the camera manual for details.
- If the test flash doesn't fire, change the position of the camera, flash and subject.

**7. Check again that the built-in flash and the 3600HS (D) are fully charged, and press the shutter-release button to take the photo.**

**Wireless Flash Range**



The wireless flash uses a light signal from the built-in flash as a trigger to operate the off-camera flash unit. Follow the points above when positioning the camera, flash, and subject. Check the distance with the table below.

Shutter speed Aperture	Distance camera-subject (Table 1)	Distance 3600HS (D) - subject (Table 2)					
		Other than HSS		HSS			
		Maximum 1/60 sec	1/60~1/200 sec	1/250 sec	1/500 sec	1/1000 sec	1/2000 sec
2.8	1.4 - 5	1.4 - 5	1 - 5	1 - 4	1 - 3	1 - 2	1 - 1.5
4	1 - 5	1 - 3.5	1 - 5	1 - 3	1 - 2	1 - 1.5	-
5.6	1 - 5	1 - 2.5	1 - 3.5	1 - 2	1 - 1.5	-	-

Units: m

- The distances in the above table assume the use of ISO 100 film. If ISO 400 film is used the distances must be multiplied by a factor of two (assume a limit of 5 m).

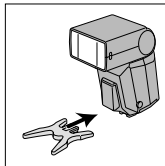
WIRELESS FLASH



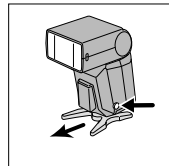
## WIRELESS/REMOTE FLASH MODE

### Notes On Wireless Flash

The MS-2 mini-stand is useful when the flash unit is off the camera. The mini-stand has a tripod configuration with a threaded hole to attach the flash unit.



Attach

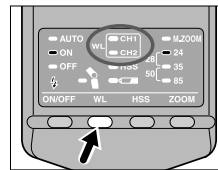


Remove

- Pre-flash fires when wireless/remote flash mode is selected. A flash meter and color meter cannot be used.
- Shutter speed is 1/60 or 1/45 of a second or less (this differs between cameras). Use with high-speed sync is possible only with the Maxxum/Dynax 7 in normal wireless mode (not ratio).
- The zoom position for the 3600HS (D) is automatically set to 24mm.
- When slow sync is used with wireless flash, press the AE lock button to generate a test flash and take the photo while holding down the AE lock button.

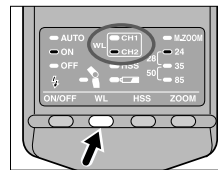
### Changing the channel setting

When another wireless flash is being used nearby, your flash might fire with a light signal from the built-in flash of other cameras. In this case, the channel can be changed to prevent your settings from interference.



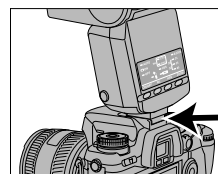
1. **Make sure that the wireless/remote flash lamp, both [CH1] and [CH2] are not lit.**

- Press the wireless/remote flash button [WL], in case that they are lit.



2. **Press the wireless/remote flash button for three seconds.**

- The channel settings will be changed and so will the channel indicator lamp.



3. **Attach the flash to the camera and press the shutter-release button partway down.**

- This operation transmits the information of channel settings to the camera.

WIRELESS FLASH

## WIRELESS/REMOTE FLASH MODE

### Setting Wireless/Remote Flash By Flash Only

If you keep using the same camera and the flash combination without changing the wireless channel, it will not be necessary to attach the flash to the camera the next time.

- Camera's setting : See the camera manual for details.
- 3600HS (D)'s setting : Press the wireless/remote flash button so that the indicator lamp, channel 1 [CH1] or 2 [CH2] is lit.
- This procedure is not available with the Maxxum QTsi, 400si, 300si and the Dynax 500siSuper, 500si, 303si, 300si.

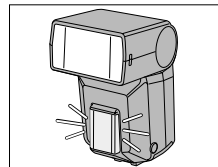
### Ratio Flash Control Using The Built-In Flash

The built-in flash and 3600HS (D) may be controlled to a flash intensity of 1 and 2 respectively. See photo ③ on page 28.

The method used differs with the camera. See the camera manual for details.

- Set shutter speed to 1/60 of a second or less (low shutter speed). Wireless/Remote high-speed sync photography cannot be used.
- Ratio flash control cannot be used with the Maxxum QTsi, 300si, and Dynax 303si, 300si.

## AF ILLUMINATOR



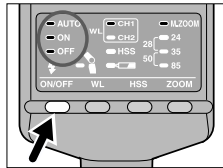
In low-light or when subject contrast is low, pressing the shutter-release button partway down for autofocus lights the red lamp on the front of the flash unit. This is the AF illuminator used as an aid in autofocusing.

- The AF illuminator operates even when the flash is off.
- The camera AF illuminator does not operate while the flash AF illuminator is operating.
- The AF illuminator does not operate when continuous AF is used in the focusing mode (when continually focusing on a moving subject).
- The AF illuminator may not operate when the focal length of the lens is greater than 300mm. It will not operate when the flash is off-camera, or when the AF macro-zoom 3X-1X lens is used.

AF ILLUMINATOR

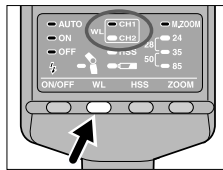
## TIME TO AUTO POWER OFF

It is possible to change the settings of the time to auto power off.



**1. Press the flash on/off button for 3 seconds until three lamps glow at the same time; auto lamp, flash-on lamp, off lamp.**

• This shows that now you are in the mode for changing the settings.



**2. Press the wireless/remote flash button to select the items. On this flash, the following two items are available.**

• Channel 1 [CH1] the auto power off setting is provided.

• Channel 2 [CH2] the auto power off setting in wireless flash is provided.

**3. Press the zoom selection button to select the desired setting time to auto power off. Available options will be changing as following:**

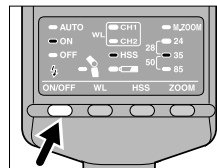
• Channel 1 [CH1] auto power off

options	4 minutes	15 minutes	60 minutes	none
	<input checked="" type="radio"/> M.ZOOM	<input type="radio"/> M.ZOOM	<input type="radio"/> M.ZOOM	<input type="radio"/> M.ZOOM
lamps	28 <input type="checkbox"/> 24 50 <input type="checkbox"/> 35 85	28 <input type="checkbox"/> 24 50 <input type="checkbox"/> 35 85	28 <input type="checkbox"/> 24 50 <input type="checkbox"/> 35 85	28 <input type="checkbox"/> 24 50 <input type="checkbox"/> 35 85
	[ M.ZOOM ]	[ 24mm ]	[ 35mm ]	[ 85mm ]

• Channel 2 [CH2] auto power off in wireless flash mode

options	60 minutes	none
	<input checked="" type="radio"/> M.ZOOM	<input type="radio"/> M.ZOOM
lamps	28 <input type="checkbox"/> 24 50 <input type="checkbox"/> 35 85	28 <input type="checkbox"/> 24 50 <input type="checkbox"/> 35 85
	[ M.ZOOM ]	[ 24mm ]

TIME TO AUTO POWER OFF



**4. Press the flash on/off button in order to return to the original mode that you can take photos.**

• The selected settings are maintained even when the flash unit is switched off, or the battery is removed.

## APPENDIX

### USE IN COMBINATION WITH OTHER PRODUCTS

Read this manual in combination with the relevant manual when any of the following products are used in combination with the 3600HS (D).

#### Using xi Series Single Lens Reflex Cameras

(Maxxum/Dynax 9xi, 7xi, 5xi, 3xi, SPxi, 2xi)

- Flash is automatic in the P mode with the 9xi, 7xi, 5xi and 3xi. Fill flash may also be selected. See the camera manual for details.
- Flash is automatic in the P mode with the SPxi and 2xi. Fill flash cannot be selected.
- The shutter speed is set automatically in the S mode with the 7xi, 5xi, 3xi, SPxi, and 2xi.
- High-speed sync cannot be used.
- As the 9xi has no built-in flash, when employing wireless flash, use optional Wireless Flash Remote Control or 5600HS(D), which is sold separately. Use the AE lock button for test flash.
- Test flash for the wireless flash cannot be used while Eye-start is in use.
- Select Channel 1 when using wireless flash with the 3xi.
- Wireless flash cannot be used with the SPxi and 2xi.

#### Using i Series Single Lens Reflex Cameras

(Maxxum/Dynax 8000i, 7000i, 5000i, 3000i)

- Flash is automatic in the P mode. Fill flash may also be selected with the 8000i. See the camera manual for details.
- Flash is automatic in the S mode, and the shutter speed is set automatically.
- High-speed sync and wireless flash cannot be used.
- As the proper exposure may not be obtained with the 5000i and 3000i, off-camera ratio flash control cannot be used.

COMBINATION

## USE IN COMBINATION WITH OTHER PRODUCTS

### Using Early AF Series Single Lens Reflex Cameras

(Maxxum/Minolta 9000, 7000, 5000)

- The optional flash shoe adapter FS-1200 is necessary. See the FS-1200 manual for details.

### Using APS Single Lens Reflex Cameras

(Vectis S-1, S-100)

- Flash is automatic in the P mode. Fill flash may be selected with the flash-mode button on the camera.
- The shutter speed is set automatically in the S mode.
- High-speed sync cannot be used.
- As the S-100 is not equipped with an auto lock accessory shoe, the flash unit cannot be attached to the camera. Use with wireless flash. Ratio-flash control cannot be used. Set to Channel 1.
- APS film (new system) differs in size from 35mm film, so that the flash coverage differs at the same focal length. This flash unit is designed for a flash coverage of 24mm with a focal length for 35mm film, so that when used with APS film focal length flash coverage is 19mm. For example, when the V Zoom 22-80mm f/4-5.6 lens is used the full flash coverage is available.

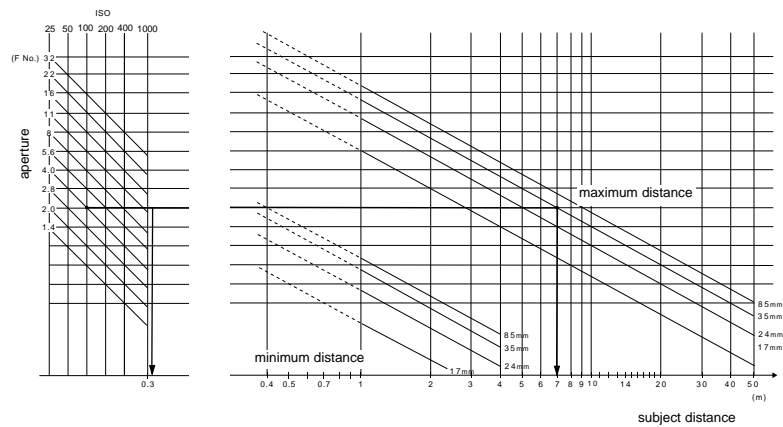
### Using Minolta Digital Cameras

(Dimâge RD3000, Digital camera RD-175)

- Flash is automatic in the P mode. Fill flash is used when a photo is taken while the manual fill-flash button on the camera is pressed.
- The shutter speed is set automatically in the S mode.
- High-speed sync cannot be used.
- As the RD3000 has no built-in flash, when employing wireless flash, use optional Wireless Flash Remote Control or 5600HS, which is sold separately. Use the spot button for test flash.

## FLASH RANGE

Flash range is the appropriate range that provides you for a correct exposure. To determine the flash range for the film and aperture being used, refer to the graph shown.



1. Find the selected lens aperture on the vertical line for the appropriate film speed (ISO).
2. Imagine a horizontal line drawn across the graph from this point.
3. The minimum and maximum subject distances are indicated by the points where this line intersects the lower and upper set of diagonal lines, respectively.

E42

- For example, the bold line drawn on the graph shows how to determine the flash range using ISO 100 film, a 35mm focal length setting at  $f/4$ ; in this case the flash range would be 0.3-7 m ( 0.9 - 23ft ).
- If the subject is closer than 1m, use an off-camera flash with cable.

FLASH RANGE




E43

## CAUTIONS WHILE HANDLING

### During Photography


- This flash unit generates strong light, and should therefore not be used in front of the eyes.

### Batteries

- Do not store the flash unit with the alkaline batteries inside it. Leakage from the batteries may damage the battery chamber.
- Due to the characteristics of alkaline batteries, temperature, and storage conditions, the battery level displayed on the data panel may be lower than the actual battery capacity. The displayed battery level will be restored to the correct value after the flash has been used a few times. When the lamp  blinks to indicate that the flash cannot be used, pressing the flash on/off button in number of times may result in recovery of the battery. Replace the battery if it does not recover.
- When using the lithium batteries, if the batteries become hot due to high temperature or successive use, the lamp  may blink and the flash may not be able to use for a while. Wait until the batteries become cold before using the flash again.
- Nickel-metal hydride batteries can lose power suddenly. If the lamp  starts to glow or flash can no longer be used while taking pictures, change or recharge the batteries.
- Depending on the time elapsed since manufacture of the battery, the flash frequency and number of flashes for new batteries may differ from the values shown in the table.

### Temperature

- The flash unit may be used over a temperature range of  $-20^{\circ}\text{C}$  to  $50^{\circ}\text{C}$ .
- Do not leave the flash unit exposed extremely high temperatures (eg. direct sunlight inside motor vehicles), or in conditions of high humidity.

- The response of the data panel becomes slower as temperature decreases, and it becomes darker at high temperatures. Restore it to normal temperature if these problems occur.
- To prevent condensation from forming, place the flash in a sealed plastic bag when bringing it from cold environment to a warm environment. Allow it to come to room temperature before removing it from the bag.
- Battery capacity decreases at colder temperatures. Keep your flash and spare batteries in a warm inside pocket when shooting in cold weather. The lamp  may glow even when there is some power left in the batteries in cold weather. Batteries will regain some of their capacity when warmed to normal operating temperature.
- This flash unit is not waterproof. Care is therefore required to ensure that it does not come into contact with water or sand when used near water. Contact with water, sand, dust, or salt content may result in a malfunction.

### Maintenance

- Clean by wiping with a soft, clean cloth. If the flash has been in contact with sand, wiping will damage the surface, and it should therefore be cleaned gently using a blower.
- Do not use cleaners containing organic solvents (eg. thinners or benzene) under any circumstances.

### Questions and Service

- If you have questions about your flash, contact your local camera dealer or write to the Minolta distributor in your area.
- Before shipping your flash for repair, please contact an authorized Minolta Service Facility for details.

## PERFORMANCE

### Guide number Normal flash (ISO 100)

Flash coverage	17*	24	28	35	50	85
GN	11	20	22	25	29	36

(\*When using Wide Angle Adapter)

### Wireless flash (ISO 100)

Flash coverage	17*	24	28	35	50	85
GN	8.5	14	15	19	22	28

(\*When using Wide Angle Adapter)

### HSS flat flash (flash with HSS, ISO 100)

	Flash Coverage Setting (mm)					
Shutter speed	24	28	35	50	85	
1/250	10	11	13	15	18	
1/500	7	8	9	11	13	
1/1000	5	5.6	6.5	7.5	9	
1/2000	3.5	4	4.6	5.3	6.4	
1/4000	2.5	2.8	3.2	3.8	4.5	
1/8000	1.7	2	2.3	2.6	3.2	
1/12000	1.2	1.4	1.6	1.8	2.2	

### Frequency Repetition

	Alkaline	Lithium	Nickel hydride
Frequency (sec)	0.2 - 6	0.2 - 6	0.2 - 5
Repetition (times)	200 - 4000	500 - 10000	150 - 3000

- Repetition is the approximate number of times that are achieved before a new battery is completely flat.

### Flash coverage

	Flash Coverage Setting (mm)					
Flash coverage	17*	24	28	35	50	85
Top-bottom (°)	115	60	53	45	34	23
Left-right (°)	125	78	70	60	46	31

(\*When using Wide Angle Adapter)

### Continuous flash performance

40 continuous cycles of 5 flashes per second (Normal flash, GN6, 85mm, nickel-metal hydride battery)

### AF illuminator

Automatic flash at low contrast and low brightness  
Approximate operating range (with Maxxum/Dynax 7)  
AF mid 3 areas: 0.7 - 7m (24 - 105mm)

### Flash control

Flash control using pre-flash, TTL direct metering

### Size

68 (W) x 122(H) x 89 (D) mm

### Weight

260g (without batteries)

Specifications are based on the latest information available at the time of printing and are subject to change without notice.



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