

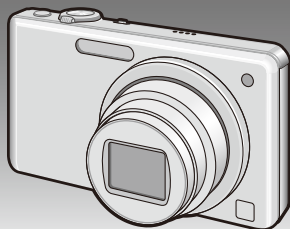
# Panasonic®

## Operating Instructions for advanced features

Digital Camera

Model No. **DMC-FH22**

**LUMIX**



Before connecting, operating or adjusting this product,  
please read the instructions completely.



VQT2P22-1

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## Quick Guide

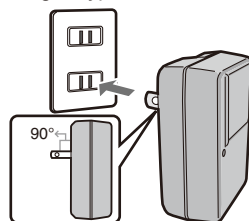
This is an overview of how to record and play back pictures with the camera. For each step, be sure to refer to the pages indicated in brackets.

**1**

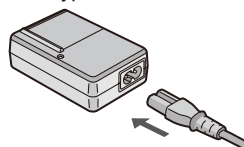
### Charge the battery. (P11)

- The battery is not charged when the camera is shipped. Charge the battery before use.

Plug-in type



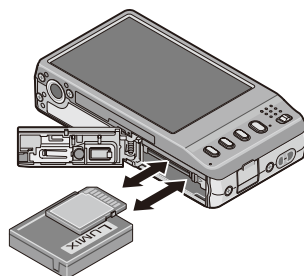
Inlet type



**2**

### Insert the battery and the card. (P15)

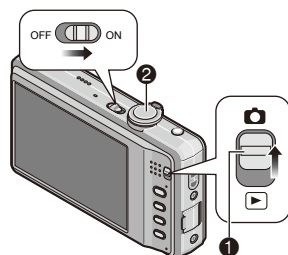
- When you do not use the card, you can record or play back pictures on the built-in memory. (P17) Refer to P18 when you use a card.



**3**

### Turn the camera on to take pictures.

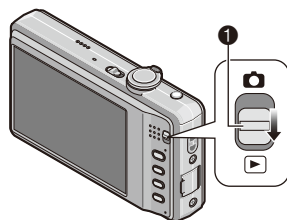
- 1 Slide the [REC]/[PLAYBACK] selector switch to [📷].
- 2 Press the shutter button to take pictures. (P35)



4

**Play back the pictures.**

- ❶ Slide the [REC]/[PLAYBACK] selector switch to [▶].
- ❷ Select the picture you want to view. (P44)



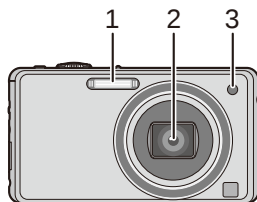
## Standard Accessories

Check that all the accessories are included before using the camera.

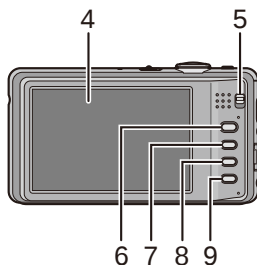
- The accessories and their shape will differ depending on the country or area where the camera was purchased.  
For details on the accessories, refer to Basic Operating Instructions.
- Battery Pack is indicated as **battery pack** or **battery** in the text.
- Battery Charger is indicated as **battery charger** or **charger** in the text.
- SD Memory Card, SDHC Memory Card and SDXC Memory Card are indicated as **card** in the text.
- **The card is optional.**  
**You can record or play back pictures on the built-in memory when you are not using a card.**
- If any accessories are lost, customers in the USA and Puerto Rico should contact Panasonic's parts department at 1 800 833-9626 and customers in Canada should contact 1 800 99-LUMIX (1-800-995-8649) for further information about obtaining replacement parts.

## Names of the Components

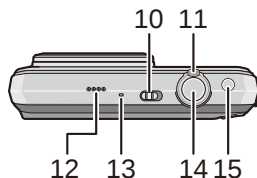
- 1 Flash (P50)
- 2 Lens (P140)
- 3 Self-timer Indicator (P57)  
AF Assist Lamp (P93)



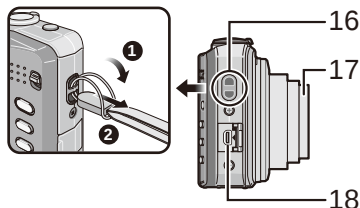
- 4 Touch Panel/LCD Monitor (P9, 49, 125, 140)
- 5 [REC]/[PLAYBACK] selector switch (P21)
- 6 [MODE] button (P33)
- 7 [DISPLAY] button (P49)
- 8 [MENU] button (P22)
- 9 [Q.MENU] (P24)/Delete (P47) button



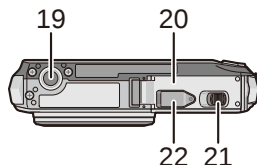
- 10 Camera ON/OFF switch (P19)
- 11 Zoom lever (P42)
- 12 Speaker (P101)
- 13 Microphone (P75)
- 14 Shutter button (P36, 75)
- 15 Intelligent auto button (P35)



- 16 Hand strap eyelet
  - Be sure to attach the hand strap when using the camera to ensure that you will not drop it.
- 17 Lens barrel
- 18 [AV OUT/DIGITAL] socket (P114, 117, 123)



- 19 Tripod receptacle
  - When you use a tripod, make sure the tripod is stable when the camera is attached to it.
- 20 Card/Battery door (P15, 16)
- 21 Release lever (P15)
- 22 DC coupler cover (P16)



- When using an AC adaptor, ensure that the Panasonic DC coupler (optional) and AC adaptor (optional) are used. For connection details, refer to P16.

## How to Use the Touch Panel

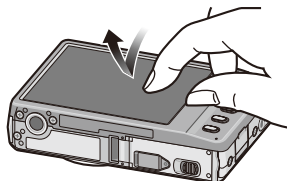
You can operate by directly touching the LCD Monitor (Touch Panel) with your finger.

### ■ Touch

To touch and release the Touch Panel.

It is used to select icon or picture.

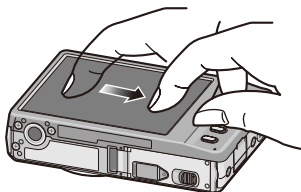
- It may not operate properly when multiple icons are touched simultaneously, so try to touch the center of the icon.



### ■ Drag

A movement performed without releasing the Touch Panel. It is used to forward or rewind the image during playback.

- Drag horizontally on the center area of the screen (See below).

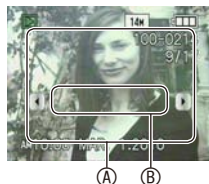


### About the touch area of the screen

When touching or dragging the Touch Panel, be sure to touch or drag the center area of the screen.

Touch Panel may fail to detect the operation if you touch or drag the edge of the screen that is out of the sensor area.

- Ⓐ Detection area of the sensor (approximation)
- Ⓑ The available area for drag operation (approximation)



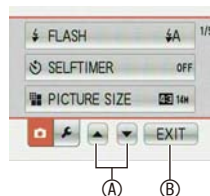
### ● Note

- This Touch Panel detects the electrical properties of the human body (capacitive touch panel). **Touch the panel directly with your bare finger.**
- Touch the panel with the clean and dry finger.
- The touch panel generally cannot be used:
  - with a commercially available stylus pen or a gloved hand.
  - with a wet hand or immediately after applying hand lotion
  - when you use a commercially available liquid crystal protection sheet (it may impair visibility and functionality.)
  - when both hands or more than one finger are on the Touch Panel at the same time
- Do not press on the LCD Monitor with hard pointed tips, such as ball point pens.
- Do not operate with your fingernails.
- Wipe the LCD Monitor with a dry soft cloth when it gets dirty.
- Do not scratch or press the LCD Monitor too hard.

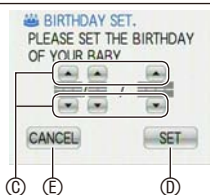
## General information for Touch Panel operation icons

With some knowledge about frequently appearing icons, Touch Panel operation will become easier. In addition, some of the buttons or controls on the camera can be used as well as the icons.

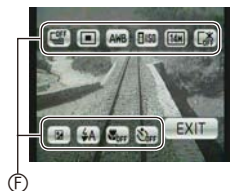
- Ⓐ Moves to the next or previous page for a menu screen etc. when it has multiple pages.
  - You can also use the zoom lever on the camera to move to next or previous page.
- Ⓑ Returns to the previous menu screen or closes the menu.



- Ⓒ Use these icons to change or adjust the value of a setting. You may see [◀]/[▶] instead of [▲]/[▼] on some screens.
  - Touch and release these icons repeatedly until the required value is obtained. The value does not change in succession when you keep touching the icons.
- Ⓓ After changing a value with [▲]/[▼]/[◀]/[▶], touch this icon to set the new value.
- Ⓔ Returns to the previous screen without changing any setting.
  - You can also use [🗑️] button on the camera to cancel.



- Ⓕ These icons are displayed on the Quick Menu (P24) or on the recording/playback screen, and provide useful functions for recording or playback.
  - Depending on the LCD status, the icons may disappear after a certain period of time when no operation is performed. In this case, touch any point of the screen to retrieve the icons.



### To cancel the Touch Panel operation

Pressing the shutter button halfway cancels the Touch Panel operation and retrieves the recording screen when the camera is in [REC] Mode.

## Charging the Battery

### ■ About batteries that you can use with this unit

**Supplied battery or dedicated optional batteries can be used with this camera.**

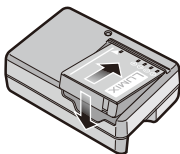
Refer to Basic Operating Instructions about the accessory number of the available optional batteries in your area.

It has been found that counterfeit battery packs which look very similar to the genuine product are made available to purchase in some markets. Some of these battery packs are not adequately protected with internal protection to meet the requirements of appropriate safety standards. There is a possibility that these battery packs may lead to fire or explosion. Please be advised that we are not liable for any accident or failure occurring as a result of use of a counterfeit battery pack. To ensure that safe products are used we would recommend that a genuine Panasonic battery pack is used.

- Use the dedicated charger and battery.
- The camera has a function for distinguishing batteries which can be used safely. The dedicated battery supports this function. The only batteries suitable for use with this unit are genuine Panasonic products and batteries manufactured by other companies and certified by Panasonic. (Batteries which do not support this function cannot be used.) Panasonic cannot in any way guarantee the quality, performance or safety of batteries which have been manufactured by other companies and are not genuine Panasonic products.
- The battery is not charged when the camera is shipped. Charge the battery before use.
- Charge the battery with the charger indoors.
- Charge the battery in a temperature between 10 °C to 35 °C (50 °F to 95 °F). (The battery temperature should also be the same.)

**1**

**Attach the battery paying attention to the direction of the battery.**

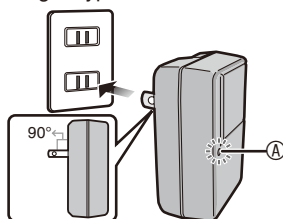


2

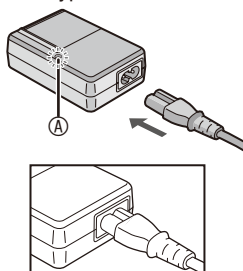
## Connect the charger to the electrical outlet.

- The AC cable does not fit entirely into the AC input terminal. A gap will remain as shown on the right.
- Charging starts when the [CHARGE] indicator ① lights green.

Plug-in type



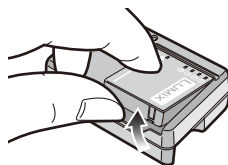
Inlet type



3

## Detach the battery after charging is completed.

- Charging is complete when the [CHARGE] indicator ① turns off.
- After charging is completed, be sure to disconnect the power supply device from the electrical outlet.



## ■ Charging

|                | Supplied battery | Optional battery |
|----------------|------------------|------------------|
| Charging time* | Approx. 100 min  | Approx. 130 min  |

\* with the supplied charger

- **The indicated charging time is for when the battery has been discharged completely. The charging time may vary depending on how the battery has been used. The charging time for the battery in hot/cold environments or a battery that has not been used for long time may be longer than normal.**

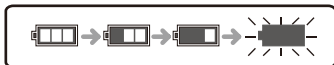
## ■ When the [CHARGE] indicator flashes

- The battery temperature is too high or too low. Please charge the battery again in a temperature between 10 °C to 35 °C (50 °F to 95 °F).
- The terminals of the charger or the battery are dirty. In this case, wipe them with a dry cloth.

## ■ Battery indication

The battery indication is displayed on the LCD monitor.

[It does not appear when you use the camera with the AC adaptor (optional) connected.]



- The indication turns red and blinks if the remaining battery power is exhausted. Recharge the battery or replace it with a fully charged battery.

## 🔧 Note

- The battery becomes warm after using it and during and after charging. The camera also becomes warm during use. This is not a malfunction.
- The battery can be recharged even when it still has some charge left, but it is not recommended that the battery charge be frequently topped up while the battery is fully charged. (Since characteristic swelling may occur.)
- **Do not leave any metal items (such as clips) near the contact areas of the power plug. Otherwise, a fire and/or electric shocks may be caused by short-circuiting or the resulting heat generated.**

## About the battery life and the playback time

### ■ The battery life (By CIPA standard in Normal Picture Mode)

|                               | Supplied battery     | Optional battery     |
|-------------------------------|----------------------|----------------------|
| Capacity                      | 740 mAh              | 940 mAh              |
| Number of recordable pictures | Approx. 300 pictures | Approx. 380 pictures |
| Recording time                | Approx. 150 min      | Approx. 190 min      |

### Recording conditions by CIPA standard

- CIPA is an abbreviation of [Camera & Imaging Products Association].
- Temperature: 23 °C (73.4 °F)/Humidity: 50% when LCD monitor is on.
- Using a Panasonic SD Memory Card (32 MB).
- Starting recording 30 seconds after the camera is turned on. (When the Optical Image Stabilizer function is set to [AUTO].)
- **Recording once every 30 seconds** with full flash every second recording.
- Rotating the zoom lever from Tele to Wide or vice versa in every recording.
- Turning the camera off every 10 recordings and leaving it until the temperature of the battery decreases.

The number of recordable pictures varies depending on the recording interval time. If the recording interval time becomes longer, the number of recordable pictures decreases. [e.g. When recording once every 2 minutes, the number of recordable pictures decreases to a quarter.]

|               | Supplied battery | Optional battery |
|---------------|------------------|------------------|
| Playback time | Approx. 280 min  | Approx. 360 min  |



### Note

- **The operating time and the number of recordable pictures vary depending on the camera's environment or using conditions.**

For example, the operating time and the recordable pictures are reduced when;

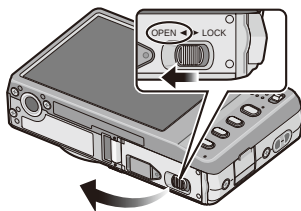
- you are in low temperature areas such as on ski slopes
- Auto Power LCD Mode, Power LCD Mode or High Angle Mode (P27) is used
- the flash or the zoom operation is frequently used.
- When the operating time of the camera becomes extremely short even after properly charging the battery, the life of the battery may have expired. Buy a new battery.

## Inserting and Removing the Card (optional)/the Battery

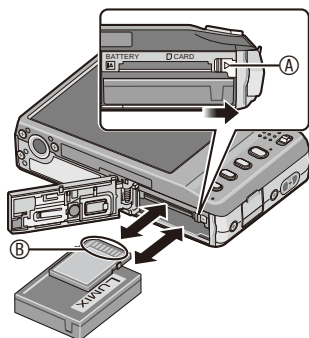
- Check that this unit is turned off.
- We recommend using a Panasonic card.

**1** Slide the release lever in the direction of the arrow and open the card/battery door.

- Always use genuine Panasonic batteries.
- If you use other batteries, we cannot guarantee the quality of this product.



**2** **Battery:** Insert until it is locked by the lever **(A)** being careful about the direction you insert it. Pull the lever **(A)** in the direction of the arrow to remove the battery.



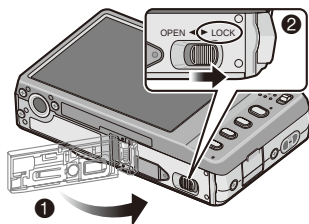
**Card:** Push it fully until it clicks being careful about the direction you insert it. To remove the card, push the card until it clicks, then pull the card out upright.

**(B)** : Do not touch the connection terminals of the card.

- The card may be damaged if it is not fully inserted.

**3** **①: Close the card/battery door.**  
**②: Slide the release lever in the direction of the arrow.**

- If the card/battery door cannot be completely closed, remove the card, check its direction and then insert it again.



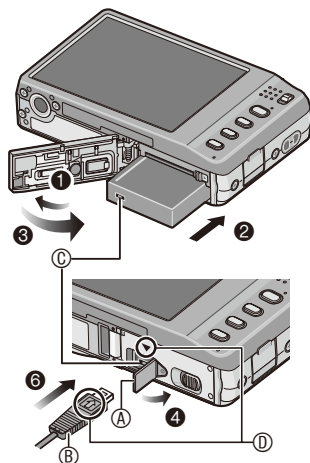
### Note

- Remove the battery after use. Store the removed battery in the battery case (supplied).
- Do not remove the battery until the LCD Monitor turns off as the settings on the camera may not be stored properly.
- The supplied battery is designed only for the camera. Do not use it with any other equipment.
- The battery will be exhausted if left for a long period of time after being charged.
- Before removing the card or battery, turn the camera off. (Otherwise, this unit may no longer operate normally and the card itself may be damaged or the recorded pictures may be lost.)

### ■ Using an AC adaptor (optional) and a DC coupler (optional) instead of the battery

**Ensure that the AC adaptor (optional) and DC coupler (optional) are purchased as a set. Do not use if sold separately.**

- ① Open the card/battery door.
- ② Insert the DC coupler, being careful of the direction.
- ③ Close the card/battery door.
  - Ensure that the card/battery door is closed.
- ④ Open the DC coupler cover **A**.
  - If it is difficult to open, push open the coupler cover from the interior with the card/battery door in an open state.
- ⑤ Plug the AC adaptor into an electrical outlet.
- ⑥ Connect the AC adaptor **B** to the [DC IN] socket **C** of the DC coupler.
- ⑦ Align the marks, and insert.
  - Ensure that only the AC adaptor and DC coupler for this camera are used. Using any other equipment may cause damage.



### Note

- Always use a genuine Panasonic AC adaptor (optional).
- When using an AC adaptor, use the AC cable supplied with the AC adaptor.
- Some tripods cannot be attached when the DC coupler is connected.
- This unit cannot stand upright when the AC adaptor is connected. When operating it on a flat surface, we recommend placing it on a soft cloth.
- Make sure to unplug the AC adaptor when you open the card/battery door.
- If the AC adaptor and DC coupler are not necessary, then remove them from the digital camera. Also, please keep the DC coupler cover closed.
- Also read the operating instructions for the AC adaptor and DC coupler.
- We recommend you use a battery with sufficient battery power or the AC adaptor when recording motion pictures.
- If while recording motion pictures using the AC adaptor the power supply is cut off due to a power cut or if the AC adaptor is disconnected etc., the motion picture being recorded will not be recorded.

## About the Built-in Memory/the Card

The following operations can be performed using this unit.

- **When a card has not been inserted: Pictures can be recorded in the built-in memory and played back.**
- **When a card has been inserted: Pictures can be recorded on the card and played back.**
- **When using the built-in memory**

 →  (access indication\*)

- **When using the card**

 (access indication\*)

- \* The access indication lights red when pictures are being recorded on the built-in memory (or the card).



### Built-in Memory

- **You can copy the recorded pictures to a card. (P113)**
- **Memory size: Approx. 40 MB**
- **Recordable motion pictures: QVGA (320 × 240 pixels) only**
- The built-in memory can be used as a temporary storage device when the card being used becomes full.
- The access time for the built-in memory may be longer than the access time for a card.

## Card

The following types of cards can be used with this unit.  
(These cards are indicated as **card** in the text.)

| Type of card                             | Remarks                                                                                                                                                                                                                                                                                                                                     |
|------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>SD Memory Card (8 MB to 2 GB)</b>     | You can use an SDHC Memory Card or an SDXC Memory Card in equipment that is compatible with those cards.<br>• Before using SDXC Memory Cards, check your computer and other devices support this type of card.<br><a href="http://panasonic.net/avc/sdcard/information/SDXC.html">http://panasonic.net/avc/sdcard/information/SDXC.html</a> |
| <b>SDHC Memory Card (4 GB to 32 GB)</b>  |                                                                                                                                                                                                                                                                                                                                             |
| <b>SDXC Memory Card (48 GB to 64 GB)</b> |                                                                                                                                                                                                                                                                                                                                             |

- If you use cards between 4 GB and 32 GB capacity, confirm SDHC logo on the card (indicating compliance with the SD standard).
- If you use cards between 48 GB and 64 GB capacity, confirm SDXC logo on the card (indicating compliance with the SD standard).
- Please confirm the latest information on the following website.  
<http://panasonic.jp/support/global/cs/dsc/>  
 (This Site is English only.)

### Note

- **Do not turn this unit off, remove its battery or card, or disconnect the AC adaptor (optional) when the access indication is lit [when pictures are being written, read or deleted, or the built-in memory or the card is being formatted (P31)]. Furthermore, do not subject the camera to vibration, impact or static electricity. The card or the data on the card may be damaged, and this unit may no longer operate normally. If operation fails due to vibration, impact or static electricity, perform the operation again.**
- When the Write-Protect switch ④ is set to the [LOCK] position, no further data writing, deletion or formatting is possible. The ability to write, delete and format data is restored when the switch is returned to its original position.
- The data on the built-in memory or the card may be damaged or lost due to electromagnetic waves, static electricity or breakdown of the camera or the card. We recommend storing important data on a PC etc.
- Do not format the card on your PC or other equipment. Format it on the camera only to ensure proper operation. (P31)
- Keep the Memory Card out of reach of children to prevent swallowing.

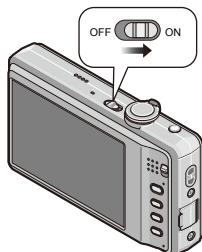


## Setting Date/Time (Clock Set)

- The clock is not set when the camera is shipped.

**1****Turn the camera on.**

- If the language select screen is not displayed, proceed to step 4.

**2****Touch the language select icon on the screen.****3****Select the language.**

- The [PLEASE SET THE CLOCK] message appears. (This message does not appear in [PLAYBACK] Mode.)

**4****Touch [CLOCK SET].**

5

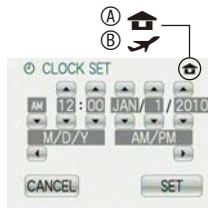
Touch [▲]/[▼]/[◀]/[▶] for each item to set year, month, day, hour, minute, display sequence or time display format, and touch [SET].

Ⓐ : Time at the home area

Ⓑ : Time at the travel destination (P81)

🗑️ : Cancel without setting the clock.

- Select either [24HRS] or [AM/PM] for the time display format.
- AM/PM is displayed when [AM/PM] is selected.
- When [AM/PM] is selected as the time display format, midnight is displayed as AM 12:00 and noon is displayed as PM 12:00. This display format is common in North America and elsewhere.



6

Touch [SET] to set.

- After completing the clock settings, turn the camera off. Then turn the camera back on, switch to Recording mode, and check that the display reflects the settings that were performed.
- When [SET] has been selected to complete the settings without the clock having been set, set the clock correctly by following the “Changing the clock setting” procedure below.

### Changing the clock setting

Select [CLOCK SET] in the [REC] or [SETUP] menu. (P22)

- It can be changed in step 5 to set the clock.
- **The clock setting is maintained for 3 months using the built-in clock battery even without the battery. (Leave the charged battery in the unit for 24 hours to charge the built-in battery.)**



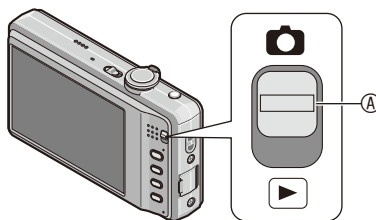
#### Note

- The clock is displayed when [DISPLAY] is pressed several times during recording.
- You can set the year from 2000 to 2099.
- If the clock is not set, the correct date cannot be printed when you stamp the date on the pictures with [TEXT STAMP] (P103) or order a photo studio to print the pictures.
- If the clock is set, the correct date can be printed even if the date is not displayed on the screen of the camera.

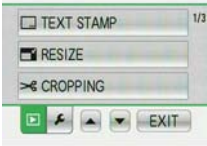
## Setting the Menu

The camera comes with menus that allow you to set the settings for taking pictures and playing them back just as you like and menus that enable you to have more fun with the camera and use it more easily.

In particular, the [SETUP] menu contains some important settings relating to the camera's clock and power. Check the settings of this menu before proceeding to use the camera.



Ⓐ [REC]/[PLAYBACK] selector switch

| <b>[REC] Mode menu (P83 to 93)</b>                                                                                                                                                                                                                                         | <b>[PLAYBACK] Mode menu (P103 to 113)</b>                                                                                                                                                                                         |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <ul style="list-style-type: none"> <li>This menu lets you set the Coloring, Sensitivity, White Balance, Number of pixels and other aspects of the pictures you are recording.</li> </ul>  | <ul style="list-style-type: none"> <li>This menu lets you set the protection, cropping or print settings, etc. of recorded pictures.</li> </ul>  |

| <b>[SETUP] menu (P25 to 32)</b>                                                                                                                                                                                                                                                                                                                                                             |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <ul style="list-style-type: none"> <li>This menu lets you perform the clock settings, select the operating beep tone settings and set other settings which make it easier for you to operate the camera.</li> <li>The [SETUP] menu can be set from either the [REC MODE] or [PLAYBACK MODE].</li> </ul>  |

### Note

Due to the camera's specifications, it may not be possible to set some of the functions or some functions may not work in some of the conditions under which the camera is used.

## Setting menu items

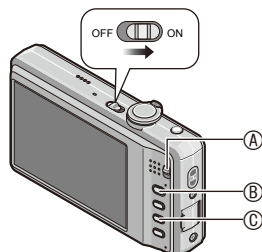
This section describes how to select the Normal Picture Mode settings, and the same setting can be used for the [PLAYBACK] menu and [SETUP] menu as well.

Example: Setting [AF MODE] from [□] to [人] in the Normal Picture Mode

1

### Turn the camera on.

- Ⓐ [REC]/[PLAYBACK] selector switch
- Ⓑ [MODE] button
- Ⓒ [MENU] button



2

### Slide the [REC]/[PLAYBACK] selector switch to [📷], and then press [MODE].

- When selecting the [PLAYBACK] Mode menu settings, set the [REC]/[PLAYBACK] selector switch to [▶], and proceed to step 4.

3

### Touch [NORMAL PICTURE].



4

### Press [MENU] to display the menu.

- You can switch menu screens from any menu item by rotating the zoom lever. (P10)



## Switching to the [SETUP] menu

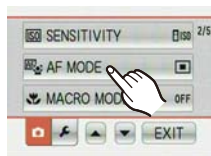
### Touch the [SETUP] menu icon.



5

**Touch [AF MODE].**

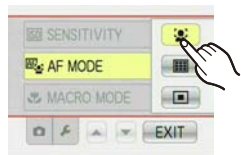
- Touch [▼] to move to the second screen. (P10)



6

**Touch [⦿].**

- Depending on the item, its setting may not appear or it may be displayed in a different way. (P10)



7

**Touch [EXIT] to close the menu.**

## Using the Quick Menu

By using the Quick Menu, some of the menu settings can be easily found. In addition, various useful functions for recording can be used from the Quick Menu screen.

- Some of the menu items cannot be set by the modes.

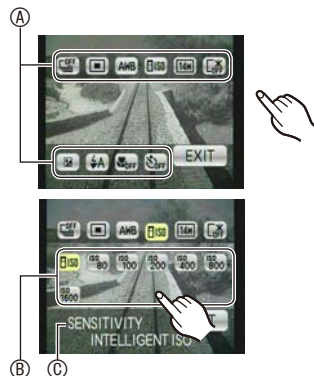
### 1 Press and hold [Q.MENU] when recording.

Q.MENU



### 2 Touch the icon and then touch the setting you want.

- Ⓐ Item
  - Ⓑ Settings
  - Ⓒ The items to be set and the settings are displayed.
- To exit the Quick Menu and retrieve the recording screen, touch [EXIT].



Perform these settings if you need to.

## About the Setup Menu

[CLOCK SET], [SLEEP MODE] and [AUTO REVIEW] are important items. Check their settings before using them.

- In the Intelligent Auto Mode, only [CLOCK SET], [WORLD TIME], [BEEP], [LANGUAGE] and [STABILIZER DEMO.] can be set.

For details on how to select the [SETUP] menu settings, refer to **P22**.

|                                                                                                     |                    |
|-----------------------------------------------------------------------------------------------------|--------------------|
|  <b>[CLOCK SET]</b> | Setting Date/Time. |
|-----------------------------------------------------------------------------------------------------|--------------------|

- Refer to **P19** for details.

|                                                                                                      |                                                                                                                                    |                                                                                                                    |
|------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------|
|  <b>[WORLD TIME]</b> | Set the time in your home area and travel destination.                                                                             |                                                                                                                    |
|                                                                                                      |  <b>[DESTINATION]:</b><br>Travel destination area |  <b>[HOME]:</b><br>Your home area |

- Refer to **P81** for details.

|                                                                                                       |                                                             |                                          |
|-------------------------------------------------------------------------------------------------------|-------------------------------------------------------------|------------------------------------------|
|  <b>[TRAVEL DATE]</b> | Set the departure date and the return date of the vacation. |                                          |
|                                                                                                       | <b>[TRAVEL SETUP]:</b><br><b>[OFF]/[SET]</b>                | <b>[LOCATION]:</b><br><b>[OFF]/[SET]</b> |

- Refer to **P78** for details.

|            |                                                                |                                                              |
|------------|----------------------------------------------------------------|--------------------------------------------------------------|
| ■)) [BEEP] | This allows you to set the beep and shutter sound.             |                                                              |
|            | ■)) [BEEP LEVEL]:<br>[  ] (Muted)<br>[  ] (Low)<br>[  ] (High) | [SHUTTER VOL.]:<br>[  ] (Muted)<br>[  ] (Low)<br>[  ] (High) |
|            | [BEEP TONE]:<br>[ 1 ]/[ 2 ]/[ 3 ]                              | [SHUTTER TONE]:<br>[ 1 ]/[ 2 ]/[ 3 ]                         |

|               |                                                      |
|---------------|------------------------------------------------------|
| [  ] [VOLUME] | Adjust the volume of the speaker to any of 7 levels. |
|---------------|------------------------------------------------------|

- When you connect the camera to a TV, the volume of the TV speakers does not change.

|                                                                                                    |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
|----------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|  <b>[LCD MODE]</b> | <p>These menu settings make it easier to see the LCD monitor when you are in bright places or when you are holding the camera high above your head.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
|                                                                                                    | <p><b>[OFF]</b></p> <p> <b>[AUTO POWER LCD]:</b><br/>The brightness is adjusted automatically depending on how bright it is around the camera.</p> <p> <b>[POWER LCD]:</b><br/>The LCD monitor becomes brighter and easier to see even when taking pictures outdoors.</p> <p> <b>[HIGH ANGLE]:</b><br/>The LCD monitor is easier to see when taking pictures with the camera held high above your head.</p> |

- High Angle Mode is also canceled if you turn the camera off or [SLEEP MODE] is activated.
- The brightness of the pictures displayed on the LCD monitor is increased so some subjects may appear differently from actuality on the LCD monitor. However, this does not affect the recorded pictures.
- The LCD Monitor automatically returns to normal brightness after 30 seconds when recording in Power LCD Mode. Press any button to make the LCD monitor bright again.
- If the screen is difficult to see because of light from the sun etc. shining on it, use your hand or another object to block the light.
- The number of recordable pictures decreases in Auto Power LCD Mode, Power LCD Mode and High angle Mode.
- [AUTO POWER LCD] and [HIGH ANGLE] cannot be selected in Playback mode.

|                                                                                                      |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
|------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|  <b>[FOCUS ICON]</b> | <p>Change the focus icon.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
|                                                                                                      | <p>[        ]</p> |

|                                                                                                      |                                                                                                                                                       |
|------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------|
|  <b>[SLEEP MODE]</b> | You can conserve the battery life.                                                                                                                    |
|                                                                                                      | The camera is automatically turned off if the camera has not been used for the time selected on the setting.<br><b>[OFF]/[2MIN.]/[5MIN.]/[10MIN.]</b> |

- Press the shutter button halfway or turn the camera off and on to cancel [SLEEP MODE].
- [SLEEP MODE] is set to [5MIN.] in the Intelligent Auto Mode.
- [SLEEP MODE] does not work in the following cases.
  - When using the AC adaptor
  - When connecting to a PC or a printer
  - When recording or playing back motion pictures
  - During a slide show
  - [AUTO DEMO]

|                                                                                                       |                                                                                                                                    |
|-------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------|
|  <b>[AUTO REVIEW]</b> | Set the length of time that the picture is displayed after taking it.                                                              |
|                                                                                                       | <b>[OFF]</b><br><b>[1SEC.]</b><br><b>[2SEC.]</b><br><b>[HOLD]:</b> The pictures are displayed until one of the buttons is pressed. |

- [AUTO REVIEW] is activated regardless of its setting when using [HI-SPEED BURST] (P70), [FLASH BURST] (P71) and [PHOTO FRAME] (P74) in Scene Mode and [BURST] (P90).
- In Intelligent Auto Mode, the Auto Review function is fixed to [2SEC.].
- [AUTO REVIEW] does not work in Motion Picture Mode.

|                                                                                                 |                                                                       |
|-------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------|
|  <b>[RESET]</b> | The [REC] or [SETUP] menu settings are reset to the initial settings. |
|-------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------|

- When the [RESET] setting is selected during recording, the operation that resets the lens is also performed at the same time. You will hear the sound of the lens operating but this is normal and not indicative of malfunctioning.
- When [REC] menu settings are reset, the following settings are also reset.
  - The setting and registration for My Scene Mode (P61)
- When [SETUP] menu settings are reset, the following settings are also reset. In addition, [FAVORITE] (P109) in [PLAYBACK] Mode menu is set to [OFF], and [ROTATE DISP.] (P108) is set to [ON].
  - The birthday and name settings for [BABY1]/[BABY2] (P68) and [PET] (P69) in Scene Mode
  - The settings of [TRAVEL DATE] (P78) (departure date, return date, location)
  - The [WORLD TIME] (P81) setting
- The folder number and the clock setting are not changed.

|                                                                                                    |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
|----------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|  <b>[USB MODE]</b> | Select the USB communication system after or before connecting the camera to your PC or your printer with the USB connection cable (supplied).                                                                                                                                                                                                                                                                                                                                                                                                                        |
|                                                                                                    |  <b>[SELECT ON CONNECTION]:</b><br>Select either [PC] or [PictBridge(PTP)] if you connected the camera to a PC or a printer supporting PictBridge.<br> <b>[PictBridge(PTP)]:</b><br>Set after or before connecting to a printer supporting PictBridge.<br> <b>[PC]:</b><br>Set after or before connecting to a PC. |

- When [PC] is selected, the camera is connected via the “USB Mass Storage” communication system.
- When [PictBridge(PTP)] is selected, the camera is connected via the “PTP (Picture Transfer Protocol)” communication system.

|                                                                                                      |                                                                                                        |
|------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------|
|  <b>[VIDEO OUT]*</b> | Set to match the color television system in each country.<br>(Playback Mode only)                      |
|                                                                                                      | <b>[NTSC]:</b> Video output is set to NTSC system.<br><b>[PAL]:</b> Video output is set to PAL system. |

- This will work when the AV cable is connected.

\* PAL video out is not available on the version DMC-FH22P sold in the U.S. and the version DMC-FH22PC sold in Canada.

|                                                                                                     |                                                                                                         |
|-----------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------|
|  <b>[TV ASPECT]</b> | Set to match the type of TV.<br>(Playback Mode only)                                                    |
|                                                                                                     | <b>[16:9]:</b> When connecting to a 16:9 screen TV<br><b>[4:3]:</b> When connecting to a 4:3 screen TV. |

- This will work when the AV cable (P123) is connected.

|                      |                                                                     |
|----------------------|---------------------------------------------------------------------|
| Ver. [VERSION DISP.] | It is possible to check which version of firmware is on the camera. |
|----------------------|---------------------------------------------------------------------|

|                                                                                           |                                                                                                                                        |
|-------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------|
|  [FORMAT] | The built-in memory or card is formatted. Formatting irretrievably deletes all the data so check the data carefully before formatting. |
|-------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------|

- Use a battery with sufficient battery power or the AC adaptor (optional) and DC coupler (optional) when formatting. Do not turn the camera off during formatting.
- If a card has been inserted, only the card is formatted. To format the built-in memory, remove the card.
- If the card has been formatted on a PC or other equipment, format it on the camera again.
- It may take longer to format the built-in memory than the card.
- If the built-in memory or the card cannot be formatted, consult your nearest Service Center.

For USA and Puerto Rico assistance, please call: 1-800-211-PANA (7262) or, contact us via the web at:  
<http://www.panasonic.com/contactinfo>

For Canadian assistance, please call:  
 1-800-99-LUMIX (1-800-995-8649) or  
 send e-mail to:  
[lumixconcierge@ca.panasonic.com](mailto:lumixconcierge@ca.panasonic.com)

|                                                                                                  |                                           |
|--------------------------------------------------------------------------------------------------|-------------------------------------------|
|  <b>[LANGUAGE]</b> | Set the language displayed on the screen. |
|--------------------------------------------------------------------------------------------------|-------------------------------------------|

- If you set a different language by mistake, select [  ] from the menu icons to set the desired language.

|                         |                                                                                                                                                                                                                                                                                                                                                                                                                               |
|-------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| DEMO <b>[DEMO MODE]</b> | <p>Displays the amount of jitter the camera has detected ([STABILIZER DEMO.])<br/>The camera's features are displayed as Slide Shows. ([AUTO DEMO])</p> <p><b>[STABILIZER DEMO.]</b><br/>           ④ Amount of jitter<br/>           ⑤ Amount of jitter after correction</p> <p><b>[AUTO DEMO]:</b><br/> <b>[OFF]</b><br/> <b>[ON]</b></p>  |
|-------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|

- The stabilizer function is switched between [ON] and [OFF] every time [STABILIZER] is touched during the [STABILIZER DEMO.].
- In Playback Mode, [STABILIZER DEMO.] cannot be displayed.
- [STABILIZER DEMO.] is an approximation.
- Touch [EXIT] to close [STABILIZER DEMO.].
- [AUTO DEMO] has no TV output capability even when it is in Playback Mode.
- Touch any point of the screen to close [AUTO DEMO].

## Mode switching

## Selecting the [REC] Mode

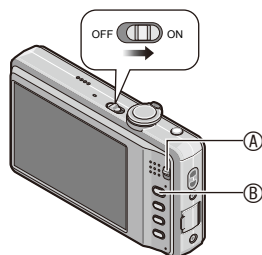
When the [REC] Mode is selected, the camera can be set to the Intelligent Auto Mode in which the optimal settings are established in line with the subject to be recorded and the recording conditions, or to the Scene Mode which enables you to take pictures that match the scene being recorded.

**IA Intelligent Auto Mode (P35)**

The subjects are recorded using settings automatically selected by the camera.

**■ To select a [REC] Mode from the [REC] Modes list**

- 1 **Turn the camera on.**
  - Ⓐ [REC]/[PLAYBACK] selector switch
  - Ⓑ [MODE] button
- 2 **Slide the [REC]/[PLAYBACK] selector switch to [📷].**
- 3 **Press [MODE].**
- 4 **Touch the Mode.**



## ■ List of [REC] Modes



### Normal Picture Mode (P39)

The subjects are recorded using your own settings.



### My Scene Mode (P61)

Pictures are taken using previously registered recording scenes.



### Scene Mode (P62)

This allows you to take pictures that match the scene being recorded.



### Motion Picture Mode (P75)

This mode allows you to record motion pictures with audio.



### Note

- When the mode has been switched from [PLAYBACK] Mode to [REC] Mode, the previously set [REC] Mode will be set.

[REC] Mode: **iA**

## Taking Pictures Using the Automatic Function

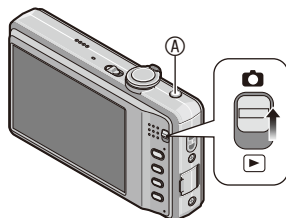
(**iA** : Intelligent Auto Mode)

The camera will set the most appropriate settings to match the subject and the recording conditions so we recommend this mode for beginners or those who want to leave the settings to the camera and take pictures easily.

- The following functions are activated automatically:

– Scene Detection/[STABILIZER]/Face Detection/Motion detection/Backlight Compensation/Digital Red-Eye Correction

Ⓐ [**iA**] button



**1** Slide the [REC]/[PLAYBACK] selector switch to [].

**2** Press [**iA**].

- When the Intelligent Auto Mode is selected, [**iA**] icon or an icon that is identified with the Scene Detection function (**P37**) appears on the top left of the screen.
- Pressing [**iA**] again takes you back to the previous mode.

**3** Hold the camera gently with both hands, keep your arms still at your side and stand with your feet slightly apart.

Ⓑ Flash

Ⓒ AF Assist Lamp



4

**Press the shutter button halfway to focus.**

- The focus indication ① (green) lights when the subject is focused.
- The AF area ② is displayed around the subject's face by the Face Detection function. In other cases, it is displayed at the point on the subject which is in focus.
- The focus range is 5 cm (0.17 feet) (Wide)/ 1.0 m (3.28 feet) (Tele) to  $\infty$ .
- The maximum close-up distance (the shortest distance at which the subject can be taken) differs depending on the zoom magnification.



5

**Press the shutter button fully (push it in further), and take the picture.**

- The access indication (P17) lights red when pictures are being recorded on the built-in memory (or the card).

**Note**

- Be careful not to move the camera when you press the shutter button.
- Do not cover the flash or the AF Assist Lamp with your fingers or other objects.
- Do not touch the front of the lens.

**■ When taking pictures using the flash (P50)**

- When [iA] is selected, [iA], [iA⊙], [iS⊙] or [iS] is set depending on the type of subject and brightness.
- When [iA⊙] or [iS⊙] is set, Digital Red-Eye Correction is activated.
- The shutter speed becomes slower during [iS⊙] or [iS].

**■ When taking pictures using the zoom (P42)**

## Scene Detection

When the camera identifies the optimum scene, the icon of the scene concerned is displayed in blue for 2 seconds, after which its color changes to the usual red.

|                                                                                     |                                                                                                      |                              |
|-------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------|------------------------------|
|  → |  [i-PORTRAIT]       | • Only when [iA] is selected |
|                                                                                     |  [i-SCENERY]        |                              |
|                                                                                     |  [i-MACRO]          |                              |
|                                                                                     |  [i-NIGHT PORTRAIT] |                              |
|                                                                                     |  [i-NIGHT SCENERY]  |                              |
|                                                                                     |  [i-SUNSET]         |                              |

- [iA] is set if none of the scenes are applicable, and the standard settings are set.
- When [iP] or [iN] is selected, the camera automatically detects a person's face, and it will adjust the focus and exposure (Face Detection) (P86).
- If a tripod is used, for instance, and the camera has judged that camera shake is minimal when the Scene Mode has been identified as [iN], the shutter speed will be set to a maximum of 8 seconds. Take care not to move the camera while taking pictures.
- Most appropriate scene is selected for the touched subject during Touch AF Area Selection (P58).

### Note

- Due to conditions such as the ones below, a different scene may be identified for the same subject.
  - Subject conditions: When the face is bright or dark, the size of the subject, the distance to the subject, the color of the subject, the contrast of the subject, when the subject is moving
  - Recording conditions: Sunset, sunrise, under low brightness conditions, when the camera is shaken, when zoom is used
- For the best results, it is recommended that you take pictures in the appropriate Recording Mode.

### • The Backlight Compensation

Backlight refers to when light comes from the back of a subject.

In this case, the subject will become dark, so this function compensates the backlight by brightening the whole of the picture automatically.

## Settings in Intelligent Auto Mode

- Only the following functions can be set in this mode.

### [REC] Mode menu

– [FLASH] (P50)/[SELFTIMER] (P57)/[PICTURE SIZE]\* (P83)/[BURST] (P90)/[COLOR MODE]\* (P91)

\* The settings which can be selected are different from when other [REC] Modes are used.

### [SETUP] menu

– [CLOCK SET]/[WORLD TIME]/[BEEP]/[LANGUAGE]/[STABILIZER DEMO.]

- The settings of the following items are fixed.

| Item                    | Settings                                      |
|-------------------------|-----------------------------------------------|
| [SLEEP MODE] (P28)      | [5MIN.]                                       |
| [AUTO REVIEW] (P29)     | [2SEC.]                                       |
| [FLASH] (P50)           | iA/☺                                          |
| [SENSITIVITY] (P85)     | [ISO]                                         |
| [WHITE BALANCE] (P88)   | [AWB]                                         |
| [AF MODE] (P86)         | ☺ (Set to [ ] when a face cannot be detected) |
| [STABILIZER] (P92)      | [AUTO]                                        |
| [AF ASSIST LAMP] (P93)  | [ON]                                          |
| [RED-EYE REMOVAL] (P93) | [ON]                                          |

- The following functions cannot be used.  
– [EXPOSURE]/[DIGITAL ZOOM]
- The other items on the [SETUP] menu can be set in a mode such as the Normal Picture Mode. What is set will be reflected in the Intelligent Auto Mode.

[REC] Mode: 

## Taking Pictures with Your Favorite Settings

(: Normal Picture Mode)

The camera automatically sets the shutter speed and the aperture value according to the brightness of the subject.

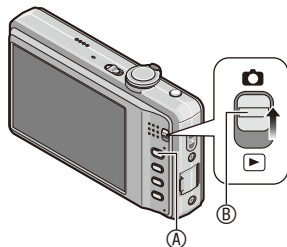
You can take pictures with greater freedom by changing various settings in the [REC] menu.

1

**Slide the [REC]/[PLAYBACK] selector switch to [, and then press [MODE].**

Ⓐ [MODE] button

Ⓑ [REC]/[PLAYBACK] selector switch



2

**Touch [NORMAL PICTURE].**

- To change the setting while taking pictures, refer to “Using the [REC] Mode Menu” (P83).

3

**Aim the AF area at the point you want to focus on.**

4

**Press the shutter button halfway to focus.**

- The focus indication (green) lights when the subject is focused.
- The focus range is 50 cm (1.64 feet) (Wide)/ 2.0 m (6.57 feet) (Tele) to  $\infty$ .
- If pictures are to be taken at an even closer range, refer to “Taking Close-up Pictures” (P55).



5

**Press the halfway pressed shutter button fully to take a picture.**

- The access indication lights (P17) red when pictures are being recorded on the built-in memory (or the card).

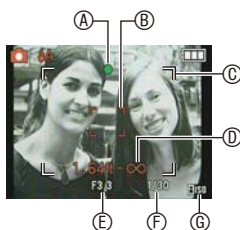


■ To adjust the exposure and take pictures when the image appears too dark (P60)

■ To adjust the colors and take pictures when the image appears too red (P88)

## Focusing

Aim the AF area at the subject, and then press the shutter button halfway.



| Focus            | When the subject is focused | When the subject is not focused |
|------------------|-----------------------------|---------------------------------|
| Focus indication | On                          | Blinks                          |
| AF area          | White→Green                 | White→Red                       |
| Sound*2          | Beeps 2 times               | Beeps 4 times                   |

- Ⓐ Focus indication
- Ⓑ AF area (normal)
- Ⓒ AF area (when using the Digital Zoom or when it is dark)
- Ⓓ Focus range
- Ⓔ Aperture value\*1
- Ⓕ Shutter speed\*1
- Ⓖ ISO sensitivity

\*1 If correct exposure cannot be achieved, it will be displayed in red.  
(However, it will not be displayed in red when the flash is used.)

\*2 Sound volume can be set in [SHUTTER VOL.] (P26)

### When the subject is not in focus (such as when it is not in the center of the composition of the picture you want to take)

- 1 Aim the AF area at the subject, and then **press the shutter button halfway** to fix the focus and exposure.
  - 2 **Press and hold the shutter button halfway** while moving the camera as you compose the picture.
- You can repeatedly retry the actions in step 1 before pressing the shutter button fully.



We recommend that you use the Face Detection function when taking pictures of people. (P86)

#### ■ Subject and recording conditions which are difficult to focus in

- Fast-moving subjects, extremely bright subjects or subjects without contrast
- When the recordable range display has appeared in red
- When recording subjects through windows or near shiny objects
- When it is dark or when jitter occurs
- When the camera is too close to the subject or when taking a picture of both distant and near subjects

## Preventing jitter (camera shake)

When the jitter alert [  ] appears, use [STABILIZER] (P92), a tripod or the self-timer (P57).

- Shutter speed will be slower particularly in the following cases. Keep the camera still from the moment the shutter button is pressed until the picture appears on the screen.

We recommend using a tripod.

- Slow sync./Red-Eye Reduction
- In [NIGHT PORTRAIT], [NIGHT SCENERY], [PARTY], [CANDLE LIGHT], [STARRY SKY] or [FIREWORKS] in Scene Mode (P62)

## Direction Detection Function

Pictures recorded with the camera held vertically are played back vertically (rotated).

(Only when [ROTATE DISP.] (P108) is set to [ON])

- The Direction Detection function may not operate correctly if recording is performed with the camera aimed up or down.
- Motion pictures taken with the camera held vertically are not displayed vertically.

[REC] Mode: MS SCN

## Taking Pictures with the Zoom

### Using the Optical Zoom/Using the Extended Optical Zoom (EZ)/ Using the Digital Zoom

You can zoom-in to make people and objects appear closer or zoom-out to record landscapes in wide angle. To make subjects appear even closer (maximum of 16.9×), set the picture size to 10M or less.

Even higher levels of magnification are possible when [DIGITAL ZOOM] is set to [ON] in [REC] menu.

To make subjects appear closer use (Tele)

Rotate the zoom lever towards Tele (T).



To make subjects appear further away use (Wide)

Rotate the zoom lever towards Wide (W).



#### ■ Types of zooms

| Feature               | Optical Zoom     | Extended Optical Zoom (EZ)                       | Digital Zoom                                                                     |
|-----------------------|------------------|--------------------------------------------------|----------------------------------------------------------------------------------|
| Maximum magnification | 8×               | 16.9×*                                           | 32× (including Optical Zoom 8×)<br>67.5× (including Extended Optical Zoom 16.9×) |
| Picture quality       | No deterioration | No deterioration                                 | The higher the magnification level, the greater the deterioration.               |
| Conditions            | None             | [PICTURE SIZE] with <b>EZ</b> (P83) is selected. | [DIGITAL ZOOM] (P91) on the [REC] menu is set to [ON].                           |
| Screen display        |                  | <br>A [EZ] is displayed.                         | <br>B The Digital Zoom range is displayed.                                       |

• When using the Zoom function, an estimate of the focus range will appear in conjunction with the zoom display bar. (Example: 1.64 ft – ∞)

\* The magnification level differs depending on [PICTURE SIZE] setting.

## ■ Extended Optical Zoom mechanism

When you set the picture size to **[3M]** (3 million pixels), the 14M (14.1 million pixels) CCD area is cropped to the center 3M (3 million pixels) area, allowing a picture with a higher zoom effect.

### Note

- **The Digital Zoom cannot be set when  has been selected.**
- The indicated zoom magnification is an approximation.
- “EZ” is an abbreviation of “Extended optical Zoom”.
- The Optical Zoom is set to Wide (1x) when the camera is turned on.
- If you use the Zoom function after focusing on the subject, focus on the subject again.
- The lens barrel extends or retracts according to the zoom position. Take care not to interrupt the motion of the lens barrel while the zoom lever is rotated.
- When using the Digital Zoom, [STABILIZER] may not be effective.
- When using the Digital Zoom, we recommend using a tripod and the self-timer (P57) for taking pictures.
- The Extended Optical Zoom cannot be used in the following cases.
  - In Macro Zoom Mode
  - In [TRANSFORM], [HIGH SENS.], [HI-SPEED BURST], [FLASH BURST] or [PHOTO FRAME] in Scene Mode
  - In Motion Picture Mode
- [DIGITAL ZOOM] cannot be used in the following cases:
  - In [TRANSFORM], [HIGH SENS.], [HI-SPEED BURST], [FLASH BURST], [FILM GRAIN] or [PHOTO FRAME] in Scene Mode

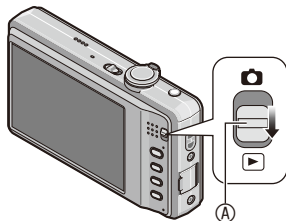
[PLAYBACK] Mode: 

## Playing Back Pictures ([NORMAL PLAY])

1

**Slide the [REC]/[PLAYBACK] selector switch  to [  ].**

- Normal playback is set automatically in the following cases.
  - When the mode was switched from [REC] to [PLAYBACK]
  - When the camera was turned on while the [REC]/[PLAYBACK] selector switch was at [  ].



2

**Forward or rewind the image by dragging **(P9)** the screen horizontally.**

**Forward: drag from left to right**

**Rewind: drag from right to left**

- It is also possible to forward or rewind the image by touching [  ]/[  ].

ⓑ File number

ⓒ Picture number

- Speed of picture forwarding/rewinding changes depending on the playback status.



## Using the Playback Zoom

1

**Rotate the zoom lever towards [ Q ] (T).**

1×→2×→4×→8×→16×



2

**Move the position to be displayed by touching [▲]/[▼]/[◀]/[▶].**

- When you move the position to be displayed, the zoom position indication ㉠ appears for about 1 second.
- Picture will return to the original size (1×) by touching [ Q×1.0].
- The magnification changes by touching [ Q ] or [ Q ]. Also, the zoom lever can be used.



㉠

**Note**

- This camera complies with the DCF standard “Design rule for Camera File system” established by JEITA “Japan Electronics and Information Technology Industries Association” and with Exif “Exchangeable Image File Format”. Files which do not comply with the DCF standard cannot be played back.
- The lens barrel retracts about 15 seconds after switching from [REC] Mode to [PLAYBACK] Mode.
- If you want to save the enlarged picture, use the Cropping function. (P107)
- The Playback Zoom may not operate if pictures have been recorded with other equipment.
- Playback Zoom cannot be used during Motion Picture Playback.

## Switching the [PLAYBACK] Mode

- 1 Press [MODE] during playback.
- 2 Touch the mode.

**[NORMAL PLAY] (P44)**

All the pictures are played back.

**[SLIDE SHOW] (P95)**

The pictures are played back in sequence.

**[CATEGORY PLAY] (P98)**

The pictures grouped together in categories are played back.

**[FAVORITE PLAY] (P100)\***

Your favorite pictures are played back.

\* [FAVORITE PLAY] is not displayed when [FAVORITE] has not been set.

**[CALENDAR] (P97)**

Pictures are played back by the date recorded.

**[MULTI PLAYBACK] (P46)**

Multiple pictures are played back on one screen.



## Displaying multiple pictures ([MULTI PLAYBACK])

- 1 Slide the [REC]/[PLAYBACK] selector switch to [▶], and then press [MODE].

- 2 Touch [MULTI PLAYBACK].

- Ⓐ Number of the selected picture and the total number of recorded pictures
- You can also turn the zoom lever several times toward [ ] (W) to switch to multiple screen.

- 3 Touch the picture to select.

- The screen can be switched to 9 screens by touching [ ] and to 18 screens by touching [ ].
- Pictures are not rotated for display.
- Pictures displayed [ ] cannot be played back.



[PLAYBACK] Mode: 

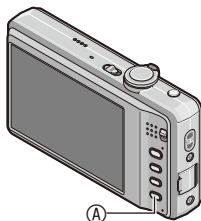
## Deleting Pictures

**Once deleted, pictures cannot be recovered.**

- Pictures on the built-in memory or the card, which are being played back will be deleted.

### To delete a single picture

- 1** Select the picture to be deleted, and then press .  
 (A)  button



- 2** Touch [DELETE SINGLE].

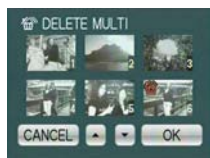


- 3** Touch [YES].



## To delete multiple pictures (up to 50) or all the pictures

- 1** Press [  ].
- 2** Touch [DELETE MULTI] or [DELETE ALL].
  - [DELETE ALL] → step 5.
- 3** Touch the picture to be deleted.  
(repeat this step)
  - [  ] appears on the selected pictures. Touching again cancels the setting.
- 4** Touch [OK].
- 5** Touch [YES].



### ■ When [DELETE ALL] has been selected with the [FAVORITE] (P109) setting

The selection screen is displayed again. Select [DELETE ALL] or [ALL DELETE EXCEPT ★ ], select [YES] and delete the pictures. ([ALL DELETE EXCEPT ★ ] cannot be selected if no pictures have been set as [FAVORITE].)

### Note

- Do not turn the camera off while deleting. Use a battery with sufficient battery power or the AC adaptor (optional) and DC coupler (optional).
- If you touch [CANCEL] while deleting pictures using [DELETE MULTI], [DELETE ALL] or [ALL DELETE EXCEPT ★ ], the deleting will stop halfway.
- Depending on the number of pictures to be deleted, it may take some time to delete them.
- If pictures do not conform to the DCF standard or are protected (P112), they will not be deleted even if [DELETE ALL] or [ALL DELETE EXCEPT ★ ] is selected.

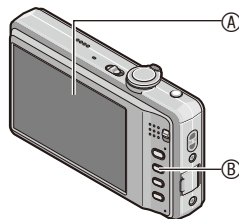
## About the LCD Monitor

### Press [DISPLAY] to change.

Ⓐ LCD monitor

Ⓑ [DISPLAY] button

- When the menu screen appears, the [DISPLAY] button is not activated. During Playback Zoom (P45), while playing back motion pictures (P101) and during a slide show (P95), you can only select “Normal display Ⓐ” or “No display Ⓐ”.

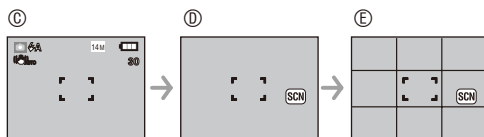


### In Recording Mode

Ⓒ Normal display

Ⓓ No display\*

Ⓔ No display (Recording guideline)\*

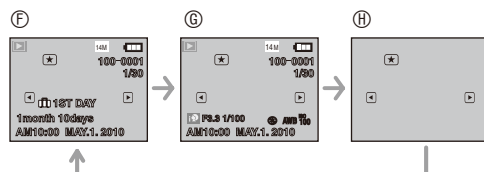


### In Playback mode

Ⓕ Normal display

Ⓖ Display with recording information

Ⓖ No display\*



\* If no operation is performed for a certain period of time, the touch icon may disappear.

### Note

- In [NIGHT PORTRAIT], [NIGHT SCENERY], [STARRY SKY] and [FIREWORKS] in Scene Mode, the guideline is gray. (P61)
- In [PHOTO FRAME] in Scene Mode, the guideline is not displayed. (P61)

### ■ Recording guideline

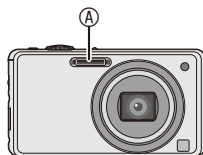
When you align the subject on the horizontal and vertical guidelines or the cross point of these lines, you can take pictures with well-designed composition by viewing the size, the slope and the balance of the subject.

This is used when dividing the entire screen into 3×3 for taking pictures with a well-balanced composition.



[REC] Mode:   MS SCN

## Taking Pictures Using the Built-in Flash



### A Photo flash

Do not cover the flash with your fingers or other objects.

## Switching to the appropriate flash setting

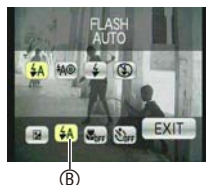
Set the flash to match the recording.

**1** Press and hold [Q.MENU] (P24).

**2** Touch the icon <sup>Ⓑ</sup>.

**3** Touch the item.

- For information about flash settings that can be selected, refer to “Available flash settings by Recording Mode”. (P52)
- Touch [EXIT] to close the Quick Menu. You can also press the shutter button halfway to finish.



| Item                                                                              | Description of settings                                                                                                                                                                                                                                                                                                                                                                                                     |
|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>⚡A : AUTO</b>                                                                  | The flash is automatically activated when the recording conditions make it necessary.                                                                                                                                                                                                                                                                                                                                       |
| <b>⚡A👁 :<br/>AUTO/Red-Eye<br/>Reduction*</b>                                      | <p>The flash is automatically activated when the recording conditions make it necessary.</p> <p>It is activated once before the actual recording to reduce the red-eye phenomenon (eyes of the subject appearing red in the picture) and then activated again for the actual recording.</p> <ul style="list-style-type: none"> <li>Use this when you take pictures of people in low lighting conditions.</li> </ul>         |
| <b>⚡ :<br/>Forced Flash ON<br/>👁👁 :<br/>Forced ON/<br/>Red-Eye<br/>Reduction*</b> | <p>The flash is activated every time regardless of the recording conditions.</p> <ul style="list-style-type: none"> <li><b>Use this when your subject is back-lit or under fluorescent light.</b></li> <li><b>The flash setting is set to [👁👁] only when you set [PARTY] or [CANDLE LIGHT] in Scene Mode. (P61)</b></li> </ul>                                                                                              |
| <b>⚡S👁 :<br/>Slow sync./<br/>Red-Eye<br/>Reduction*</b>                           | <p>If you take a picture with a dark background landscape, this feature will slow the shutter speed when the flash is activated so that the dark background landscape will become bright. Simultaneously it reduces the red-eye phenomenon.</p> <ul style="list-style-type: none"> <li><b>The flash setting is set to [⚡S👁] only when you set [NIGHT PORTRAIT], [PARTY], [CANDLE LIGHT] in Scene Mode (P61).</b></li> </ul> |
| <b>🚫 :<br/>Forced Flash<br/>OFF</b>                                               | <p>The flash is not activated in any recording conditions.</p> <ul style="list-style-type: none"> <li><b>Use this when you take pictures in places where the use of the flash is not permitted.</b></li> </ul>                                                                                                                                                                                                              |

- \* The flash is activated twice. The subject should not move until the second flash is activated. Interval until the second flash depends on the brightness of the subject.
- [RED-EYE REMOVAL] (P93) on the [REC] Mode menu is set to [ON], [🔧] appears on the flash icon.

### ■ About the Digital Red-Eye Correction

When [RED-EYE REMOVAL] (P93) has been set to [ON] and Red-Eye Reduction ([⚡A👁], [👁👁], [⚡S👁]) is selected, Digital Red-Eye Correction is performed whenever the flash is used. The camera automatically detects red-eye and corrects the picture. (Only available when [AF MODE] is set to [👤]) and Face Detection is active)

- Under certain circumstances, red-eye cannot be corrected.
- In the following cases, Digital Red-Eye Correction does not work.
  - When the flash setting is set to [⚡A], [👁👁] or [🚫]
  - When [RED-EYE REMOVAL] is set to [OFF]
  - When [AF MODE] is set to anything except [👤]

## ■ Available flash settings by Recording Mode

The available flash settings depend on the Recording Mode.

(○: Available, —: Not available, ●: Scene Mode initial setting)

|  | ○* | — | — | — | — | ○ |
|--|----|---|---|---|---|---|
|  | ○  | ○ | ○ | — | — | ○ |
|  | ○  | ● | ○ | — | — | ○ |
|  | ○  | ● | ○ | — | — | ○ |
|  | ○  | ● | ○ | — | — | ○ |
|  | ○  | ● | ○ | — | — | ○ |
|  | ○  | ● | ○ | — | — | ○ |
|  | —  | — | — | — | — | ● |
|  | ●  | — | ○ | — | — | ○ |
|  | —  | — | — | ● | — | ○ |
|  | —  | — | — | — | — | ● |
|  | ○  | — | ○ | — | — | ● |
|  | —  | — | — | ● | ○ | ○ |
|  | —  | — | — | ○ | ○ | ● |
|  | ○  | ● | ○ | — | — | ○ |
|  | ○  | ● | ○ | — | — | ○ |

|  | ○ | ● | ○ | — | — | ○ |
|--|---|---|---|---|---|---|
|  | ○ | — | ○ | — | — | ● |
|  | — | — | — | — | — | ● |
|  | ○ | — | ○ | — | — | ● |
|  | — | — | — | — | — | ● |
|  | — | — | — | — | — | ● |
|  | — | — | ● | — | — | — |
|  | — | — | — | — | — | ● |
|  | — | — | — | — | — | ● |
|  | — | — | ● | — | — | ○ |
|  | ● | — | ○ | — | — | ○ |
|  | — | — | — | — | — | ● |
|  | ● | — | ○ | — | — | ○ |
|  | ● | ○ | ○ | — | — | ○ |
|  | — | — | — | — | — | ○ |

\* When [iA] is selected, [iA], [iA<sup>o</sup>] or [iA<sup>o</sup>] is set depending on the type of subject and brightness.

- The flash setting may change if the Recording Mode is changed. Set the flash setting again if necessary.
- The flash setting is memorized even if the camera is turned off. However, the Scene Mode flash setting is reset to the initial setting when the Scene Mode is changed.

## ■ The available flash range to take pictures

- The available flash range is an approximation.

| ISO sensitivity                                                                       | Available flash range                    |                                         |
|---------------------------------------------------------------------------------------|------------------------------------------|-----------------------------------------|
|                                                                                       | Wide                                     | Tele                                    |
|  ISO | 60 cm (1.97 feet) to 5.8 m (19.03 feet)  | 1.0 m (3.28 feet) to 3.2 m (10.49 feet) |
| <b>ISO80</b>                                                                          | 60 cm (1.97 feet) to 1.3 m (4.27 feet)   | *                                       |
| <b>ISO100</b>                                                                         | 60 cm (1.97 feet) to 1.4 m (4.60 feet)   | *                                       |
| <b>ISO200</b>                                                                         | 60 cm (1.97 feet) to 2.0 m (6.57 feet)   | 1.0 m (3.28 feet) to 1.1 m (3.60 feet)  |
| <b>ISO400</b>                                                                         | 60 cm (1.97 feet) to 2.9 m (9.52 feet)   | 1.0 m (3.28 feet) to 1.6 m (5.24 feet)  |
| <b>ISO800</b>                                                                         | 80 cm (2.63 feet) to 4.1 m (13.46 feet)  | 1.0 m (3.28 feet) to 2.3 m (7.54 feet)  |
| <b>ISO1600</b>                                                                        | 1.15 m (3.78 feet) to 5.8 m (19.03 feet) | 1.0 m (3.28 feet) to 3.2 m (10.49 feet) |

\* The flash is effective for pictures recorded with zoom magnification of up to 3x. Pictures recorded with Tele may be darker than normal.

- In [HIGH SENS.] (P69) in Scene Mode, the ISO sensitivity automatically switches to between [ISO1600] and [ISO6400] and the available flash range also differs.

Wide:

Approx. 1.15 m (3.78 feet) to approx. 11.6 m (38.06 feet)

Tele:

Approx. 1.0 m (3.28 feet) to approx. 6.5 m (21.32 feet)

- In [FLASH BURST] (P71) in Scene Mode, the ISO sensitivity automatically switches to between [ISO100] and [ISO3200] and the available flash range also differs.

Wide:

Approx. 60 cm (1.97 feet) to approx. 3.4 m (11.16 feet)

Tele:

Approx. 1.0 m (3.28 feet) to approx. 1.9 m (6.23 feet)

## ■ Shutter speed for each flash setting

| Flash setting | Shutter speed (Sec.) |
|---------------|----------------------|
|               | 1/30 to 1/1600       |
|               |                      |
|               |                      |

| Flash setting | Shutter speed (Sec.)             |
|---------------|----------------------------------|
|               | 1 or 1/8 to 1/1600* <sup>1</sup> |
|               | 1 or 1/4 to 1/1600* <sup>2</sup> |

\*<sup>1</sup> The shutter speed changes depending on the [STABILIZER] (P92) setting.

\*<sup>2</sup> When [SENSITIVITY] (P85) is set to [ISO].

- \*<sup>1</sup> \*<sup>2</sup>: The shutter speed becomes a maximum of 1 second in the following cases.
  - When the Optical Image Stabilizer is set to [OFF].
  - When the camera has determined that there is little jitter when the Optical Image Stabilizer is set to [MODE1], [MODE2] or [AUTO].
- In Intelligent Auto Mode, shutter speed changes depending on the identified scene.
- In Scene Mode, shutter speed will be different from the above table.

### Note

- If you bring the flash too close to an object, the object may be distorted or discolored by the heat or lighting from the flash.
- When you take a picture beyond the available flash range, the exposure may not be adjusted properly and the picture may become bright or dark.
- When the flash is being charged, the flash icon blinks red, and you cannot take a picture even when you press the shutter button fully.
- The white balance may not be properly adjusted if the flash level is insufficient for the subject.
- When the shutter speed is fast, the flash effect may not be sufficient.
- It may take time to charge the flash if you repeat taking a picture. Take a picture after the access indication disappears.
- The Red-Eye Reduction effect differs between people. Also, if the subject was far away from the camera or was not looking at the first flash, the effect may not be evident.

[REC] Mode:  

## Taking Close-up Pictures

**1** Press and hold [Q.MENU] (P24).

**2** Touch the icon .

**3** Touch the item.

- Touch [EXIT] to close the Quick Menu. You can also press the shutter button halfway to finish.

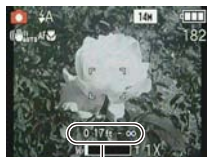


A

**4** Press the shutter button halfway to focus and then press it fully to take the picture.

 Focus range

-  is displayed during AF Macro Mode and  is displayed during Macro Zoom Mode.
- To cancel, select [OFF] in step 3.
- Zoom range, focus range, and zoom magnification are displayed during zooming.



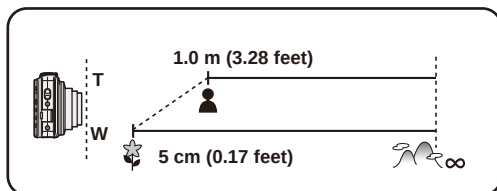
B

### [AF MACRO]

This mode allows you to take close-up pictures of a subject, e.g. when taking pictures of flowers. You can take pictures of a subject as close as 5 cm (0.17 feet) from the lens by rotating the zoom lever upmost to Wide (1×).

#### ■ Focus range in AF Macro Mode

\* The focus range changes in steps.



**[MACRO ZOOM]**

You can take a picture with the Digital Zoom up to 3× while maintaining the distance to the subject for the extreme Wide position [5 cm (0.17 feet)].

- Focus range will be 5 cm (0.17 feet) to  $\infty$  during Macro Zoom Mode regardless of the zoom position.
- Zoom range will be displayed in blue. (Digital Zoom range ©)
- The image quality is poorer than during normal recording.
- The following function is not activated.
  - Extended Optical Zoom



 **Note**

- We recommend using a tripod and the self-timer.
- We recommend setting the flash to [  ] when you take pictures at close range.
- If the distance between the camera and the subject is beyond the focus range of the camera, the picture may not be properly focused even if the focus indication lights.
- When a subject is close to the camera, the effective focus range is significantly narrowed. Therefore, if the distance between the camera and the subject is changed after focusing on the subject, it may become difficult to focus on it again.
- Macro Mode gives priority to a subject close to the camera. Therefore, if the distance between the camera and the subject is far, it takes longer to focus on it.
- When you take pictures at close range, the resolution of the periphery of the picture may decrease slightly. This is not a malfunction.

[REC] Mode:   MS SCN

## Taking Pictures with the Self-timer

**1** Press and hold [Q.MENU] (P24).

**2** Touch the icon .

**3** Touch the item.

- Touch [EXIT] to close the Quick Menu. You can also press the shutter button halfway to finish.



**4** Press the shutter button halfway to focus and then press it fully to take the picture.

- The self-timer indicator  blinks and the shutter is activated after 10 seconds (or 2 seconds).
- If you touch [CANCEL] while the self-timer is set, the self-timer setting is canceled.



### Note

- When using a tripod etc., setting the self-timer to 2 seconds is a convenient way to avoid the jitter caused by pressing the shutter button.
- When you press the shutter button once fully, the subject is automatically focused just before recording. In dark places, the self-timer indicator will blink and then may turn on brightly operating as an AF assist lamp (P93) to allow the camera to focus on the subject.
- We recommend using a tripod when recording with the self-timer.
- The number of pictures which can be taken in [BURST] is fixed to 3.
- The number of pictures which can be taken in [FLASH BURST] in Scene Mode is fixed to 5.
- Self-timer cannot be set to 10 seconds in [SELF PORTRAIT] in Scene Mode.
- Self-timer cannot be used while in [HI-SPEED BURST] in Scene Mode.

[REC] Mode:   MS SCN

## Taking Pictures with the Touched Area in Focus (Touch AF Area Selection)

It is possible to set the focus area on the touched point of the screen.

- 1 Touch the subject on the screen where you want to focus.**

Ⓐ Touch AF Area Selection

- AF area will be displayed when the area is recognized.



- 2 Press the shutter button halfway to focus and then press it fully to take the picture.**

- To cancel the Touch AF Area Selection, touch the icon Ⓑ.



 **Note**

- The most appropriate scene is selected for the touched area in the Intelligent Auto Mode.
- Touch AF Area Selection will not work in the following cases.
  - [STARRY SKY]/[FIREWORKS] in Scene Mode
  - In Motion Picture Mode

[REC] Mode:  MS SCN 

## Compensating the Exposure

Use this function when you cannot achieve appropriate exposure due to the difference in brightness between the subject and the background. Look at the following examples.

**Underexposed**



Compensate the exposure towards positive.

**Properly exposed**



**Overexposed**



Compensate the exposure towards negative.

**1** Press and hold [Q.MENU] (P24).

**2** Touch the icon .

**3** Compensate the exposure by touching []/[].

- Select [0 EV] to return to the original exposure.



**4** Touch [EXIT].

- Touch [EXIT] to close the Quick Menu. You can also press the shutter button halfway to finish.

### Note

- EV is an abbreviation of [Exposure Value]. It refers to the amount of light given to the CCD by the aperture value and the shutter speed.
- The exposure compensation value appears on the lower left of the screen.
- The set exposure value is memorized even if the camera is turned off.
- The compensation range of the exposure will be limited depending on the brightness of the subject.
- Exposure compensation cannot be used when in [STARRY SKY] in Scene Mode.

[REC] Mode: MS SCN

## Taking Pictures That Match the Scene Being Recorded (Scene Mode)

When you select a Scene Mode to match the subject and recording situation, the camera sets the optimal exposure and hue to obtain the desired picture.

### Registering scenes in Scene Mode (MS : My Scene Mode)

In [MY SCENE MODE], you can register the Scene Mode you use most frequently as one of the Recording Modes.

**1** Slide the [REC]/[PLAYBACK] selector switch to [📷], and then press [MODE].

**2** Touch [MY SCENE MODE].

- If you have already registered My Scene Mode, the icon for the registered Scene Mode will be displayed, rather than [MY SCENE MODE].



**3** Touch the Scene Mode to select.

- The menu screen is switched to the recording screen in the selected Scene Mode.
- The selected Scene Mode is registered as My Scene Mode, so that the next time you are recording, you can select it from [REC MODE].



#### ■ About the information feature ⓘ

- If [ⓘ] is highlighted, explanations about the selected Scene Mode will be displayed when the Scene Mode is touched in step 3.



#### ■ Changing My Scene Mode

- 1 Touch [SCN] in the My Scene Mode recording screen.
- 2 Touch the Scene Mode.

## Selecting the Scene Mode for each recording ( SCN : Scene Mode)

In [SCENE MODE], you can select the Scene Mode each time you make a recording.

**1 In step 2 (P61), touch [SCENE MODE].**

**2 Touch the Scene Mode.**

- The recording screen for the selected Scene Mode will be displayed.
- Touching the [SCN] in the recording screen of the Scene Mode will return to the menu screen of the Scene Modes.



### Note

- The Scene Mode flash setting is reset to the initial setting when the Scene Mode is changed.
- When you take a picture with a Scene Mode that is not adequate for the purpose, the hue of the picture may differ from the actual scene.
- The following items cannot be set in Scene Mode because the camera automatically adjusts them to the optimal setting.
  - [SENSITIVITY]
  - [COLOR MODE]
- Touch AF Area Selection can be used except for the following Scene Modes.
  - [STARRY SKY]/[FIREWORKS]
- Shutter speed for Scene Modes, except [SPORTS], [NIGHT PORTRAIT], [NIGHT SCENERY], [CANDLE LIGHT], [BABY1]/[BABY2], [PET], [FLASH BURST], [STARRY SKY], [FIREWORKS] and [SNOW] will be from 1/8th of a second to 1/1600th of a second.

**[PORTRAIT]**

When taking pictures of people outdoors during the day, this mode allows you to improve their appearance and make their skin tones look healthier.

### ■ Technique for Portrait Mode

To make this mode more effective:

- ❶ Rotate the zoom lever as far as possible to Tele.
- ❷ Move close to the subject.

### Note

- The initial setting for [AF MODE] is [  ].

**[SOFT SKIN]**

When taking pictures of people outdoors during the daytime, this mode enables the texture of their skin to appear even softer than with [PORTRAIT]. (It is effective when taking pictures of people from the chest up.)

### ■ Technique for Soft Skin Mode

To make this mode more effective:

- ❶ Rotate the zoom lever as far as possible to Tele.
- ❷ Move close to the subject.

### Note

- If a part of the background etc. is a color close to skin color, this part is also smoothed.
- This mode may not be effective when there is insufficient brightness.
- The initial setting for [AF MODE] is [  ].

## [TRANSFORM]

Subject can be recorded either slim or stretched, and at the same time, skin can appear smoother.

### 1 Touch the level of transform.

- It can be set from the Quick Menu (P24).

### 2 Take pictures.



### Note

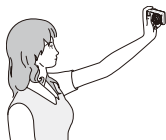
- Picture size is fixed as given below.  
– [3M] for [4:3], [25M] for [6:2] and [2M] for [16:9]
- You can take pictures suitable for 4"×6"/10×15 cm printing.
- The initial setting for [AF MODE] is [ : ].
- Transform Mode cannot be used without notifying the copyright owner, except for personal use.
- Do not use the material against the public order and morals, or to offend someone.
- Do not use the material against the object's interest.

## [SELF PORTRAIT]

Select this to take pictures of yourself.

### ■ Technique for Self Portrait Mode

- Press the shutter button halfway to focus. The self-timer indicator lights up when you are brought into focus. Making sure you hold the camera still, press the shutter button fully to take the picture.
- The subject is not focused when the self-timer indicator is blinking. Make sure to press the shutter button halfway again to focus.
- The recorded picture automatically appears on the LCD monitor for reviewing.
- If the picture is blurry due to the slow shutter speed, we recommend using the 2 second self-timer.



### Note

- The focus range is about 30 cm (0.99 feet) to 1.2 m (3.93 feet) (Wide).
- The zoom magnification is automatically moved to Wide (1×).
- The self-timer can only be set to off or 2 seconds. If it is set to 2 seconds, this setting will remain until the camera is turned off, the Scene Mode is changed or [REC] Mode or [PLAYBACK] Mode is selected.
- The Stabilizer Function Mode is fixed to [MODE2]. (P92)
- The initial setting for [AF MODE] is [ : ].

**[SCENERY]**

This allows you to take pictures of a wide landscape.

 **Note**

- **The flash setting is fixed to [  ].**
- The focus range is 5 m (16.41 feet) to  $\infty$ .

**[SPORTS]**

This mode allows you to take pictures of sports scenes or other fast-moving events.

 **Note**

- When the camera is set to [STABILIZER] and there is very little jitter, or if [STABILIZER] is set to [OFF], the shutter speed becomes a maximum of 1 second.
- This mode is suitable for taking pictures of subjects at distances of 5 m (16.4 feet) or more.
- [ISO] is activated, and maximum ISO sensitivity level becomes [ISO1600].

**[NIGHT PORTRAIT]**

This allows you to take pictures of a person and the background with near real-life brightness.

**■ Technique for Night Portrait Mode**

- **Use the flash. (You can set to [  ].)**
- Ask the subject not to move while taking a picture.
- We recommend rotating the zoom lever to Wide (1 $\times$ ) and being about 1.5 m (4.92 feet) from the subject when taking a picture.

 **Note**

- The focus range is 60 cm (1.97 feet) (Wide)/1.2 m (3.94 feet) (Tele) to 5 m (16.4 feet).
- We recommend using a tripod and the self-timer for taking pictures.
- When the camera is set to [STABILIZER] and there is very little jitter, or if [STABILIZER] is set to [OFF], shutter speed may slow down up to 8 seconds.
- The shutter may remain closed (max. about 8 sec.) after taking the picture because of signal processing. This is not a malfunction.
- Noise may become visible when you take pictures in dark places.
- The initial setting for [AF MODE] is [  ].

**[NIGHT SCENERY]**

This allows you to take vivid pictures of the nightscape.

 **Note**

- **The flash setting is fixed to [  ].**
- The focus range is 5 m (16.41 feet) to  $\infty$ .
- We recommend using a tripod and the self-timer for taking pictures.
- When the camera is set to [STABILIZER] and there is very little jitter, or if [STABILIZER] is set to [OFF], shutter speed may slow down up to 8 seconds.
- The shutter may remain closed (max. about 8 sec.) after taking the picture because of signal processing. This is not a malfunction.
- Noise may become visible when you take pictures in dark places.

**[FOOD]**

This mode allows you to take pictures of food with a natural hue without being affected by the ambient light in restaurants etc.

 **Note**

- The focus range is 5 cm (0.17 feet) (Wide)/1.0 m (3.28 feet) (Tele) to  $\infty$ .

**[PARTY]**

Select this mode when you want to take pictures at a wedding reception, an indoor party etc. This allows you to take pictures of people and the background with near real-life brightness.

### ■ Technique for Party Mode

- **Use the flash.** (You can set to [  ] or [  ].)
- We recommend using a tripod and the self-timer for taking pictures.
- We recommend rotating the zoom lever to Wide (1×) and being about 1.5 m (4.92 feet) from the subject when taking pictures.

### Note

- The initial setting for [AF MODE] is [  ].

**[CANDLE LIGHT]**

This mode allows you to take pictures with a candle-lit atmosphere.

### ■ Technique for Candle Light Mode

- This is more effective when taking pictures without using the flash.

### Note

- The focus range is 5 cm (0.17 feet) (Wide)/1.0 m (3.28 feet) (Tele) to ∞ .
- We recommend using a tripod and the self-timer for taking pictures.
- When the camera is set to [STABILIZER] and there is very little jitter, or if [STABILIZER] is set to [OFF], the shutter speed becomes a maximum of 1 second.
- The initial setting for [AF MODE] is [  ].

## [BABY1] / [BABY2]

This takes pictures of a baby with a healthy complexion. When you use the flash, the light from it is weaker than usual.

It is possible to set different birthdays and names for [BABY1] and [BABY2]. You can select to have these appear at the time of playback, or have them stamped on the recorded image using [TEXT STAMP] (P103).

### ■ Birthday/Name setting

#### 1 Touch [SET] of [AGE] or [NAME].

#### 2 Enter the birthday or name.

Birthday: Touch [▲]/[▼] for each item to set year/month/day, and touch [SET].

Name: For details on how to enter characters, read the “Entering Characters” section on P94.

- When the birthday or name is set, [AGE] or [NAME] is automatically set to [ON].
- If [ON] is selected when the birthday or name has not been registered, the setting screen appears automatically.

#### 3 Touch [EXIT] to finish.



### ■ To cancel [AGE] and [NAME]

Select the [OFF] setting in step 1 of the “Birthday/Name setting” procedure.

### ● Note

- The age and name can be printed out using the “PHOTOfunSTUDIO” bundled software on the CD-ROM (supplied).
- If [AGE] or [NAME] is set to [OFF] even when the birthday or name has been set, the age or name will not be displayed. Before taking pictures, set [AGE] or [NAME] to [ON].
- The focus range is 5 cm (0.17 feet) (Wide)/1.0 m (3.28 feet) (Tele) to ∞.
- When the camera is set to [STABILIZER] and there is very little jitter, or if [STABILIZER] is set to [OFF], the shutter speed becomes a maximum of 1 second.
- [ISO] is activated, and maximum ISO sensitivity level becomes [ISO1600].
- If the camera is turned on with [BABY1]/[BABY2] set, the age and name are displayed at the lower left of the screen for about 5 seconds, along with the current date and time.
- If the age is not properly displayed, check the clock and birthday settings.
- The birthday setting and name setting can be reset with [RESET].
- The initial setting for [AF MODE] is [AF-ON].

**[PET]**

Select this mode when you want to take pictures of a pet such as a dog or a cat. You can set your pet's birthday and name. You can select to have these appear at the time of playback, or have them stamped on the recorded image using [TEXT STAMP] (P103).

For information about [AGE] or [NAME], refer to [BABY1]/[BABY2] on P68.

 **Note**

- The initial setting for the AF Assist Lamp is [OFF].
- The initial setting for [AF MODE] is [  ].
- Refer to [BABY1]/[BABY2] for other information about this mode.

**[SUNSET]**

Select this mode when you want to take pictures of a sunset view. This allows you to take vivid pictures of the red color of the sun.

 **Note**

- **The flash setting is fixed to [  ].**
- ISO sensitivity is fixed to [ISO80].

**[HIGH SENS.]**

This mode minimizes the jitter of the subjects, and enables you to take pictures of these subjects in dimly lit rooms. (Select this for high-sensitivity processing. The sensitivity automatically switches to between [ISO1600] and [ISO6400].)

**■ Picture size and aspect ratio****1 Touch the picture size and aspect ratio to select.**

- 3M (4:3), 2.5M (3:2) or 2M (16:9) is selected as the picture size.

**2 Take pictures.** **Note**

- You can take pictures suitable for 4~x6~/10x15 cm printing.
- The focus range is 5 cm (0.17 feet) (Wide)/1.0 m (3.28 feet) (Tele) to ∞.

**[HI-SPEED BURST]**

This is a convenient mode for shooting rapid movement or a decisive moment.

■ **Picture size and aspect ratio**

**1 Touch the picture size and aspect ratio to select.**

- 3M (4:3), 2.5M (3:2) or 2M (16:9) is selected as the picture size.

**2 Take pictures.**

- Still pictures are taken continuously while the shutter button is pressed fully.

|                                      |                                                                                 |
|--------------------------------------|---------------------------------------------------------------------------------|
| <b>Maximum Burst speed</b>           | approx. 4.6 pictures/second                                                     |
| <b>Number of recordable pictures</b> | approx. 15 (built-in memory)/approx. 15 to 100* (card)<br>* the maximum is 100. |

- The Burst speed changes according to the recording conditions.
- The number of Burst recording pictures are limited by the picture-taking conditions and the type and/or status of the card used.
- The number of Burst recording pictures increases immediately after formatting.

 **Note**

- **The flash setting is fixed to [  ].**
- You can take pictures suitable for 4"×6"/10×15 cm printing.
- The focus range is 5 cm (0.17 feet) (Wide)/1.0 m (3.28 feet) (Tele) to ∞.
- The focus, zoom, exposure, White Balance, shutter speed and ISO sensitivity are fixed to the settings for the first picture.
- The ISO sensitivity automatically switches to between [ISO500] and [ISO800]. However, the ISO sensitivity is increased to make the shutter speed become high-speed.
- Depending on the operating conditions, it may take time to take the next picture if you repeat taking a picture.

**[FLASH BURST]**

Still pictures are taken continuously with flash. It is convenient to take continuous still pictures in dark places.

■ **Picture size and aspect ratio**

**1 Touch the picture size and aspect ratio to select.**

- 3M (4:3), 2.5M (3:2) or 2M (16:9) is selected as the picture size.

**2 Take pictures.**

- Still pictures are taken continuously while the shutter button is pressed fully.

|                                      |                 |
|--------------------------------------|-----------------|
| <b>Number of recordable pictures</b> | max. 5 pictures |
|--------------------------------------|-----------------|

 **Note**

- You can take pictures suitable for 4"×6"/10×15 cm printing.
- The shutter speed becomes 1/30th of a second to 1/1600th of a second.
- The focus range is 5 cm (0.17 feet) (Wide)/1.0 m (3.28 feet) (Tele) to ∞.
- The focus, zoom, exposure, shutter speed, ISO sensitivity, and flash level are fixed to the settings for the first picture.
- [ISO] is activated, and maximum ISO sensitivity level becomes [ISO3200].
- See the Note on **P54** when using the flash.

## [STARRY SKY]

This allows you to take vivid pictures of a starry sky or a dark subject.

### ■ Setting the shutter speed

Select a shutter speed of [15 SEC.], [30 SEC.] or [60 SEC.].

#### 1 Touch the number of seconds to select.

- It is also possible to change the number of seconds using the Quick Menu. (P24)

#### 2 Take pictures.

- Press the shutter button fully to display the countdown screen. Do not move the camera after this screen is displayed. When countdown finishes, [PLEASE WAIT...] is displayed for the same length of time as the set shutter speed for signal processing.
- Touch [CANCEL] to stop taking the picture while the countdown screen is displayed.



### ■ Technique for Starry Sky Mode

- The shutter opens for 15, 30 or 60 seconds. Be sure to use a tripod. We also recommend taking pictures with the self-timer.

#### Note

- The flash setting is fixed to [⊕].
- The Optical Image Stabilizer function is fixed to [OFF].
- ISO sensitivity is fixed to [ISO80].

## [FIREWORKS]

This mode allows you to take beautiful pictures of fireworks exploding in the night sky.

### ■ Technique for Fireworks Mode

- Since the shutter speed becomes slower, we recommend using a tripod.

#### Note

- The flash setting is fixed to [⊕].
- This mode is most effective when the subject is 10 m (32.8 feet) or more away.
- The shutter speed becomes the following.
  - When [OFF] is set on the Optical Image Stabilizer function: Fixed to 2 seconds
  - When [AUTO], [MODE1] or [MODE2] is set on the Optical Image Stabilizer function: 1/4th of a second or 2 seconds (The shutter speed becomes 2 seconds only when the camera has determined that there is little jitter such as when using a tripod etc.)
  - You can change the shutter speed by compensating the exposure.
- The AF area is not displayed.
- ISO sensitivity is fixed to [ISO80].

**[BEACH]**

This allows you to take even more vivid pictures of the blue color of the sea, sky etc. It also prevents underexposure of people under strong sunlight.

**Note**

- The initial setting for [AF MODE] is [ ].
- Do not touch the camera with wet hands.
- Sand or seawater will cause the camera to malfunction. Make sure that sand or seawater does not get into the lens or the terminals.
- Problems caused by sand or seawater are not covered by the product warranty.

**[SNOW]**

This allows you to take pictures that show the snow as white as possible at a ski resort or a snow-covered mountain.

**[AERIAL PHOTO]**

This mode allows you to take pictures through an airplane window.

**■ Technique for Aerial Photo Mode**

- We recommend using this technique if it is difficult to focus when taking pictures of clouds etc. Aim the camera at something with high contrast, press the shutter button halfway to fix the focus and then aim the camera at the subject and press the shutter button fully to take the picture.

**Note**

- **The flash setting is fixed to [ ].**
- The focus range is 5 m (16.41 feet) to  $\infty$ .
- **Turn the camera off when taking off or landing.**
- **When using the camera, follow all instructions from the cabin crew.**
- Be careful about the reflection from the window.

## [FILM GRAIN]

Picture is taken with a grainy texture as though blasted with sand.

### **Note**

- ISO sensitivity is fixed to [ISO1600].
- The focus range is 5 cm (0.17 feet) (Wide)/1.0 m (3.28 feet) (Tele) to  $\infty$ .

## [PHOTO FRAME]

Record the image with a frame around it.

### ■ **Setting the frame**

#### **1 Touch the frame to select.**

- The number of pixels is fixed to 2M (4:3).

#### **2 Take pictures.**

### **Note**

- [AUTO REVIEW] is fixed to [2SEC.].
- The color of the frame displayed on the screen and the color of the frame around the actual image may differ, but this is not a malfunction.

[REC] Mode: 

## Motion Picture Mode

1

Slide the [REC]/[PLAYBACK] selector switch to [  ], and then press [MODE].

2

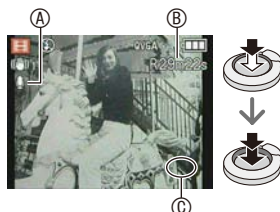
Touch [MOTION PICTURE].

3

**Press the shutter button halfway to focus and then press it fully to start recording.**

Ⓐ Audio recording

- The available recording time Ⓑ is displayed on the top right and the elapsed recording time Ⓒ is displayed on the bottom right of the screen.
- After pressing the shutter button fully, release it straight away.
- When the subject is focused, the focus indication lights.
- The focus and zoom are fixed to the setting when recording starts (the first frame).
- The audio is also recorded simultaneously from the built-in microphone on this unit. (Motion pictures cannot be recorded without audio.)



4

**Press the shutter button fully to stop recording.**

- If the built-in memory or the card becomes full in the middle of recording, the camera stops recording automatically.

## Changing the settings for the recording quality

**1** Press [MENU].

**2** Touch [REC QUALITY].



**3** Touch the item.

| Item   | Picture size      | fps | Aspect ratio |
|--------|-------------------|-----|--------------|
| HD *   | 1280 × 720 pixels | 30  | 16:9         |
| WVGA * | 848 × 480 pixels  | 30  |              |
| VGA *  | 640 × 480 pixels  | 30  | 4:3          |
| QVGA   | 320 × 240 pixels  | 30  |              |

\* Cannot be recorded in the built-in memory.

**4** Touch [EXIT] to close the menu.

- You can also press the shutter button halfway to close the menu.

 **Note**

- **The flash setting is fixed to [  ].**
- It is recommended to use a card with SD Speed Class\* with “Class 6” or higher when recording motion pictures.
  - \* The SD Speed Class Rating is the speed standard for successive writes.
- Refer to **P148** for information about the available recording time.
- The available recording time displayed on the screen may not decrease regularly.
- Depending on the type of the card, the card access indication may appear for a while after recording motion pictures. This is not a malfunction.
- When motion pictures recorded with the camera are played back on other equipment, the quality of the picture and sound may deteriorate and it may not be possible to play them back. Also the recording information may not be displayed correctly.
- This camera has improved sound quality so motion pictures recorded on this camera cannot be played back on a Panasonic Digital Camera (LUMIX models) that was sold in July 2008 or before. (However, motion pictures recorded on previous models can be played back on this camera.)
- In Motion Picture Mode, Direction Detection function cannot be used.
- In the Motion Picture Mode, [AF MODE] is fixed to [  ] and [STABILIZER] to [MODE1].
- [DIGITAL ZOOM] and [AF ASSIST LAMP] cannot be set in Motion Picture Mode. Setting of other Recording Mode will be reflected.
- Compared to still pictures, motion pictures may have a narrow angle of view.
- We recommend you use a battery with sufficient battery power or the AC adaptor when recording motion pictures.
- If while recording motion pictures using the AC adaptor the power supply is cut off due to a power cut or if the AC adaptor is disconnected etc., the motion picture being recorded will not be recorded.
- The sound of the button operation may be recorded when it is operated during the recording of a motion picture.

[REC] Mode: MS SCN

## Useful Functions at Travel Destinations

### Recording which Day of the Vacation You Take the Picture

For details on the [SETUP] menu settings, refer to **P22**.

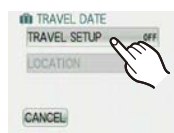
If you set the departure date or the travel destination of the vacation in advance, the number of days that have passed since the departure date (which day of the vacation it is) is recorded when you take the picture. You can display the number of days that have passed when playing back the pictures and stamp it on the recorded pictures with [TEXT STAMP] (**P103**).

- The number of days that have passed since the departure date can be printed out using the “PHOTOfunSTUDIO” bundled software on the CD-ROM (supplied).
- Select [CLOCK SET] to set the current date and time in advance. (**P19**)

**1** Select [TRAVEL DATE] from the [SETUP] menu.



**2** Touch [TRAVEL SETUP].



**3** Touch [SET].



**4** Touch [▲]/[▼] for each item to set the departure date (year/month/day), and touch [SET].



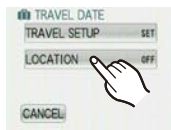
**5** Touch [▲]/[▼] for each item to set the return date (year/month/day), and touch [SET].

- If you do not want to set the return date, touch [SET] while the date bar is displayed.



6

Touch [LOCATION].



7

Touch [SET].



8

Enter the location.

- For details on how to enter characters, read the “Entering Characters” section on **P94.**

9

Touch [CANCEL].

- Touch [EXIT] to close the menu.

10

Take a picture.

- The number of days that have passed since the departure date is displayed for about 5 seconds if this unit is turned on etc. after setting the travel date or when the travel date is set.
- When the travel date is set, [  ] appears on the lower right of the screen.

#### ■ Canceling the travel date

The travel date is automatically canceled if the current date is after the return date. If you want to cancel the travel date before the end of the vacation, select [OFF] on the screen shown in step 3 or 7. If the [TRAVEL SETUP] is set to [OFF] in step 3, [LOCATION] will be also set to [OFF].

 **Note**

- The travel date is calculated using the date in the clock setting and the departure date you set. If you set [WORLD TIME] (P81) to the travel destination, the travel date is calculated using the date in the clock setting and the travel destination setting.
- The travel date setting is memorized even if the camera is turned off.
- If [TRAVEL DATE] is set to [OFF], the number of days that have passed since the departure date will not be recorded. Even if [TRAVEL DATE] is set to [SET] after taking the pictures, the day of the vacation you took them on is not displayed.
- If you set a departure date and then take a picture on a date before this departure date, [-] (minus) is displayed in orange and the day of the vacation that you took the picture is not recorded.
- If the travel date is displayed as [-] (minus) in white, there is a time difference that involves date change between the [HOME] and [DESTINATION]. (It will be recorded)
- [LOCATION] cannot be recorded when taking motion pictures.
- [TRAVEL DATE] cannot be set in the Intelligent Auto Mode. Setting of other recording mode will be reflected.

## Recording Dates/Times at Overseas Travel Destinations (World Time)

For details on the [SETUP] menu settings, refer to **P22**.

You can display the local times at the travel destinations and record them on the pictures you take.

- Select [CLOCK SET] to set the current date and time in advance. (**P19**)

**1**

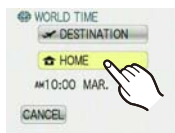
Select [WORLD TIME] from the [SETUP] menu.

- When first using the camera after purchasing it, the [PLEASE SET THE HOME AREA] message appears. Set the home area on the screen in step 3.



**2**

Touch [HOME].



**3**

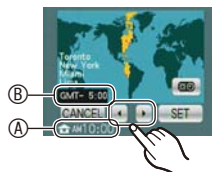
Touch [◀] or [▶] to select the home area, and touch [SET].

Ⓐ Current time

Ⓑ Time difference from GMT (Greenwich Mean Time)

- If daylight saving time [☀] is used at the home area, touch [☀]. Touch [☀] again to return to the original time.

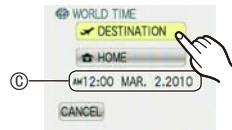
- The daylight saving time setting for the home area does not advance the current time. Advance the clock setting by one hour.



4

**Touch [DESTINATION].**

- Ⓒ Depending on the setting, the time at the travel destination area or the home area is displayed.



5

**Touch [◀] or [▶] to select the area that the travel destination is in, and touch [SET].**

- Ⓓ Current time of the destination area  
Ⓔ Time difference
- If daylight saving time [☀] is used at the travel destination, touch [☀]. (The time advances by one hour.) Touch [☀] again to return to the original time.



6

**Touch [EXIT] to close the menu.****Note**

- Return the setting to [HOME] when the vacation is finished by performing steps 1, 2 and 3.
- If [HOME] is already set, change only the travel destination, and use.
- If you cannot find the travel destination in the areas displayed on the screen, set by the time difference from the home area.
- The travel destination icon [✈] appears when playing back pictures taken at the travel destination.

## Using the [REC] Mode Menu

### [FLASH]

Refer to **P50** for details.

### [SELFTIMER]

Refer to **P57** for details.

### [PICTURE SIZE]

**For details on [REC] Mode menu settings, refer to P22.**

Set the number of pixels and aspect ratio of the pictures. The higher the number of pixels, the finer the detail of the pictures will appear even when they are printed onto large sheets.

**Applicable modes:**   MS SCN

|                                                                                                                                                                                                                                                        |                    |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------|
|                                                                                       | 4320 × 3240 pixels |
|    * | 3648 × 2736 pixels |
|      | 2560 × 1920 pixels |
|    * | 2048 × 1536 pixels |
|      | 640 × 480 pixels   |
|                                                                                       | 4320 × 2880 pixels |
|                                                                                       | 4320 × 2432 pixels |

\* This item cannot be set in the Intelligent Auto Mode.

[]: Aspect ratio of a 4:3 TV

[]: Aspect ratio of a 35 mm film camera

[]: Aspect ratio of a high-definition TV, etc.

- If [] is highlighted, an explanation about the picture size (suitable print size, etc.) is shown when an item is touched.

# Note

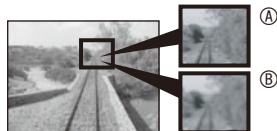
- “EZ” is an abbreviation of “Extended optical Zoom”.
- A digital picture is made of numerous dots called pixels. The higher the number of pixels, the finer the picture will be when it is printed on a large piece of paper or displayed on a PC monitor.

Ⓐ Many pixels (Fine)

Ⓑ Few pixels (Rough)

\* These pictures are examples to show the effect.

- The Extended Optical Zoom does not work when [MACRO ZOOM] is set or in [TRANSFORM], [HIGH SENS.], [HI-SPEED BURST], [FLASH BURST] and [PHOTO FRAME] in Scene Mode so the picture size for [ **EZ** ] is not displayed.
- Pictures may appear mosaic depending on the subject and the recording conditions.
- Refer to **P146** for information about the number of recordable pictures.



## [REC QUALITY]

Refer to **P76** for details.

**[SENSITIVITY]**

For details on [REC] Mode menu settings, refer to **P22**.

This allows the sensitivity to light (ISO sensitivity) to be set. Setting to a higher number enables pictures to be taken even in dark places without the resulting pictures coming out dark.

Applicable modes: 

[ISO]/[80]/[100]/[200]/[400]/[800]/[1600]

| ISO sensitivity                     | 80  1600 |                 |
|-------------------------------------|-------------------------------------------------------------------------------------------|-----------------|
| Recording location<br>(recommended) | When it is light (outdoors)                                                               | When it is dark |
| Shutter speed                       | Slow                                                                                      | Fast            |
| Noise                               | Less                                                                                      | Increased       |

 **Note**

- When setting to [ISO], the camera detects movement of the subject (motion detection) and then sets the optimal ISO sensitivity and shutter speed according to the movement and brightness of the subject. ISO sensitivity is automatically adjusted to a maximum of [ISO800] according to the brightness. (It can be adjusted to a maximum of [ISO1600] when using the flash.)
- To avoid picture noise, we recommend that you either reduce the maximum ISO sensitivity level or set [COLOR MODE] to [NATURAL], and then take pictures. (P91)

## [AF MODE]

**For details on [REC] Mode menu settings, refer to P22.**

This allows the focusing method that suits the positions and number of the subjects to be selected.

**Applicable modes:**  MS SCN

|                                                                                                        |                                                                                                                                                                                  |
|--------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| [  ]: Face Detection  | The camera automatically detects the person's face. The focus and exposure can then be adjusted to fit that face no matter what portion of the picture it is in. (max. 15 areas) |
| [  ]: 9-area-focusing | The camera focuses on any of 9 focus areas. This is effective when the subject is not in the center of the screen.                                                               |
| [  ]: 1-area-focusing | The camera focuses on the subject in the AF area on the center of the screen.                                                                                                    |

### Note

- The camera is focusing on all the AF areas when multiple AF areas (max. 9 areas) light at the same time in [  ]. If you want to determine the focus position to take pictures, switch the AF Mode to [  ].
- If the AF Mode is set to [  ], the AF area is not displayed until the picture is brought into focus.
- The camera may detect subjects other than a person as the face. In this case, switch the AF Mode to any modes other than [  ] and then take a picture.
- The AF Mode cannot be set in [FIREWORKS] in Scene Mode.
- It is not possible to set [  ] in the following cases.
  - In [NIGHT SCENERY], [FOOD], [STARRY SKY] and [AERIAL PHOTO] in Scene Mode.

### ■ About [ ] (Face Detection)

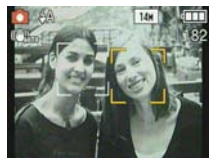
The following AF area frames are displayed when the camera detects the faces.

Yellow:

When the shutter button is pressed halfway, the frame turns green when the camera is focused.

White:

Displayed when more than one face is detected. Other faces that are the same distance away as faces within the yellow AF areas are also focused.



- Under certain picture-taking conditions including the following cases, the Face Detection function may fail to work, making it impossible to detect faces. [AF MODE] is switched to [  ].
  - When the face is not facing the camera
  - When the face is at an angle
  - When the face is extremely bright or dark
  - When there is little contrast on the faces
  - When the facial features are hidden behind sunglasses, etc.
  - When the face appears small on the screen
  - When there is rapid movement
  - When the subject is other than a human being
  - When the camera is shaking
  - When Digital Zoom is used

#### [MACRO MODE]

Refer to **P55** for details.

**[WHITE BALANCE]**

**For details on [REC] Mode menu settings, refer to P22.**

In sunlight, under incandescent lights or in other such conditions where the color of white takes on a reddish or bluish tinge, this item adjusts to the color of white which is closest to what is seen by the eye in accordance with the light source.

**Applicable modes:**  MS SCN 

**[AWB]** : Automatic adjustment

 : When taking pictures outdoors under a clear sky

 : When taking pictures outdoors under a cloudy sky

 : When taking pictures outdoors in the shade

 : When taking pictures under incandescent lights

 : Value set by using [SET]

SET : Set manually

 **Note**

- The optimal White Balance will differ depending on the type of halogen lighting being recorded under so use [AWB] or [SET].
- The White Balance setting is memorized even if the camera is turned off. (However, the White Balance setting for a Scene Mode returns to [AWB] when the Scene Mode is changed.)
- In the Scene Modes listed below, White Balance is fixed to [AWB]:  
 –[SCENERY]/[NIGHT PORTRAIT]/[NIGHT SCENERY]/[FOOD]/[PARTY]/  
 [CANDLE LIGHT]/[SUNSET]/[FLASH BURST]/[STARRY SKY]/[FIREWORKS]/  
 [BEACH]/[SNOW]/[AERIAL PHOTO]/[FILM GRAIN]

## Auto White Balance

Depending on the conditions when pictures are taken, the pictures may take on a reddish or bluish tinge. Furthermore, when a multiple number of light sources are being used or there is nothing with a color close to white, Auto White Balance may not function properly. In this case, set the White Balance to a mode other than [AWB].

1 Auto white balance will work within this range.

2 Blue sky

3 Cloudy sky (Rain)

4 Shade

5 TV screen

6 Sunlight

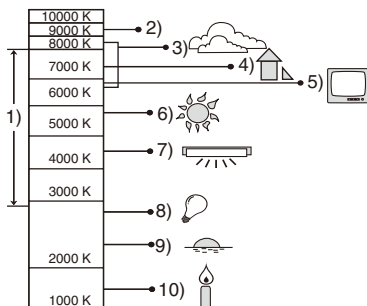
7 White fluorescent light

8 Incandescent light bulb

9 Sunrise and sunset

10 Candlelight

K=Kelvin Color Temperature



## Setting the White Balance manually

1 Select [ SET ].

2 Aim the camera at a sheet of white paper or other white object so that the frame in the center is filled by the white object only, and touch [SET].

- If the subject is too bright or too dark, the white balance cannot be set properly. In this case, improve ambient light and set it again.



## [EXPOSURE]

Refer to **P60** for details.

**[BURST]**

For details on [REC] Mode menu settings, refer to **P22**.

Pictures are taken continuously while the shutter button is pressed.

Select the ones you really like from the pictures you have taken.

**Applicable modes:**   MS SCN

[OFF]/

|                                      |                                                                |
|--------------------------------------|----------------------------------------------------------------|
| <b>Burst speed (pictures/second)</b> | approx. 1.5                                                    |
| <b>Number of recordable pictures</b> | Depends on the remaining capacity of the built-in memory/card. |

- The Burst speed values given above apply when the shutter speed is 1/60 or faster.

 **Note**

- The Burst speed becomes slower halfway.** The exact timing of this depends on the type of card, the picture size and the quality.
- You can take pictures until the capacity of the built-in memory or the card is full.
- The focus is fixed when the first picture is taken.
- The exposure and the White Balance are adjusted each time you take a picture.
- When the self-timer is used, the number of recordable pictures in Burst Mode is fixed to 3.
- If you are following a moving subject while taking pictures in a place indoors, outdoors (landscape) etc. where there is a large difference between the light and shade, the exposure may not become optimal.
- The Burst speed (pictures/second) may become slower depending on the recording environment such as in dark places, if the ISO sensitivity is high etc.
- Burst Mode is not canceled when the camera is switched off.
- If you take pictures in Burst Mode with the built-in memory, it will take time to write the picture data.
- [] is set for the flash when Burst is set.**
- Burst cannot be used in [TRANSFORM], [HI-SPEED BURST], [FLASH BURST], [STARRY SKY], [FILM GRAIN] or [PHOTO FRAME] in Scene Mode.

**[DIGITAL ZOOM]**

**For details on [REC] Mode menu settings, refer to P22.**

This can enlarge subjects even more than the Optical Zoom or Extended Optical Zoom.

**Applicable modes:**  MS SCN

**[OFF]/[ON]**

 **Note**

- Refer to **P42** for details.
- If camera shake (jitter) is a problem during zooming, it is recommended that [STABILIZER] be set to [AUTO] or [MODE1].
- The setting is fixed to [ON] in Macro Zoom Mode.
- [DIGITAL ZOOM] cannot be set in Motion Picture Mode. Setting of other Recording Mode will be reflected.

**[COLOR MODE]**

**For details on [REC] Mode menu settings, refer to P22.**

Using these modes, the pictures can be made sharper or softer, the colors of the pictures can be turned into sepia colors or other color effects can be achieved.

**Applicable modes:**   

**[STANDARD]** : This is the standard setting.

**[NATURAL]** : The picture becomes softer.

**[VIVID]** : The picture becomes sharper.

**[B/W]** : The picture becomes black and white.

**[SEPIA]** : The picture becomes sepia.

**[COOL]** : The picture becomes bluish.

**[WARM]** : The picture becomes reddish.

 **Note**

- When you take pictures in dark places, noise may become visible. To avoid noise, we recommend setting to [NATURAL].
- You cannot set [NATURAL], [VIVID], [COOL] or [WARM] in Intelligent Auto Mode.
- In Intelligent Auto Mode, you can set this mode separately.

**[STABILIZER]**

**For details on [REC] Mode menu settings, refer to P22.**

Using one of these modes, jitter during picture taking is detected, and the camera automatically compensates for the jitter, enabling jitter-free images to be taken.

**Applicable modes:**  MS SCN

**[OFF]**

**[AUTO]** : The optimum jitter compensation is selected depending on the condition.

**[MODE1]** : Jitter is always compensated during [REC] Mode.

**[MODE2]** : Jitter is compensated for when the shutter button is pressed.



**Note**

- The Stabilizer function may not be effective in the following cases.
  - When there is a lot of jitter.
  - When the zoom magnification is high.
  - In Digital Zoom range.
  - When taking pictures while following a moving subject.
  - When the shutter speed becomes slower to take pictures indoors or in dark places.
 Be careful of camera jitter when you press the shutter button.
- The setting is fixed to [MODE2] with [SELF PORTRAIT] in Scene Mode and to [OFF] in [STARRY SKY] in Scene Mode.
- The setting is fixed to [MODE1] in Motion Picture Mode.

## [AF ASSIST LAMP]

**For details on [REC] Mode menu settings, refer to P22.**

Illuminating the subject makes it easier for the camera to focus when recording in low light conditions that make focusing difficult.

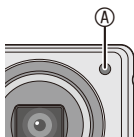
**Applicable modes:** MS SCN

**[OFF]** : The AF Assist Lamp does not turn on.

**[ON]** : When taking pictures in dark places, the AF Assist Lamp lights while the shutter button is pressed halfway. (Larger AF areas are now displayed.)

**Note**

- The effective range of the AF Assist Lamp is 1.5 m (4.92 feet).
- When you do not want to use the AF Assist Lamp (e.g. when taking pictures of animals in dark places), set the [AF ASSIST LAMP] to [OFF]. In this case, it will become more difficult to focus on the subject.
- [AF ASSIST LAMP] is fixed to [OFF] in [SELF PORTRAIT], [SCENERY], [NIGHT SCENERY], [SUNSET], [FIREWORKS] and [AERIAL PHOTO] in Scene Mode.
- [AF ASSIST LAMP] cannot be set in Motion Picture Mode. Setting of other Recording Mode will be reflected.



## [RED-EYE REMOVAL]

**For details on [REC] Mode menu settings, refer to P22.**

When the flash is used with the Red-Eye Reduction ([], [], []) selected, it will automatically detect and correct the red-eye in the image data.

**Applicable modes:** MS SCN

**[OFF]/[ON]**

**Note**

- It may not be able to correct the red-eye depending on the recording conditions.
- When the Digital Red-Eye Correction is set to [ON], [] appears on the flash icon.
- Refer to P51 for details.

## [CLOCK SET]

**For details on [REC] Mode menu settings, refer to P22.**

To set the year, month, day and time.

It functions in exactly the same way as [CLOCK SET] (P19) in the [SETUP] menu.

## Entering Characters

Names set in [BABY1]/[BABY2] and [PET] in Scene Mode or [LOCATION] in travel date are also recorded as the titles. (Only alphabetical characters and symbols can be entered.)

1

### Display the text entry screen.

- For name setting in [BABY1]/[BABY2] or [PET] in Scene Mode (P61)
- For [LOCATION] setting in Travel Date (P78)

2

### Enter characters.

- To enter the letter “E”, for example, touch [DEF] twice.
- Touch [  ] to switch text between [A] (capitals), [a] (small case), [1] (numbers) and [&] (special characters).
- The cursor at the entry position can be moved to the left by touching [  ], and to the right by touching [  ].
- To enter a blank, touch [  ], or to delete an entered character, touch [DELETE].
- To stop editing at any time during text entry, touch [CANCEL].
- A maximum of 30 characters can be entered.



3

### Touch [SET].

- Display will return to the appropriate setting screen.



### Note

- Text can be scrolled if all of the registered text does not fit on the screen.

[PLAYBACK] Mode: 

## Playing Back Pictures in Sequence (Slide Show)

You can play back the pictures you have taken in synchronization with music, and you can do this in sequence while leaving a fixed interval between each of the pictures.

Furthermore, you can play back the pictures grouped together by category or play back only those pictures you have set as favorites as a Slide Show.

This playback method is recommended when you have connected the camera to a TV to view the pictures.

**1** Slide the [REC]/[PLAYBACK] selector switch to , and then press [MODE].

**2** Touch [SLIDE SHOW].



**3** Touch the item.

[ALL]:

All pictures.

[CATEGORY SELECTION]: Touch the category to be played.

[FAVORITE]:

Pictures with [★]

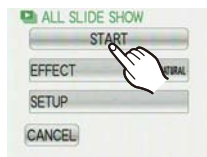
(favorites). [FAVORITE]

can be selected only when

[FAVORITE] (P109) on the [PLAYBACK] menu is [ON] and there are pictures already set as favorites.



**4** Touch [START].



**5** Touch  to finish the Slide Show.

- Normal Playback resumes after the Slide Show finishes.

## ■ Operations performed during slide show

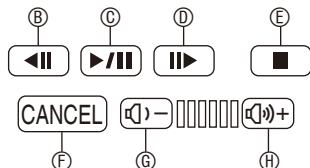
### 1 Display control panel by touching screen.

- If no operation is done for 2 seconds, it will return to original status.

Ⓐ Control panel



### 2 Operate control panel by touching.



Ⓑ Back to previous picture\*

Ⓒ Play/Pause

Ⓓ Forward to next picture\*

Ⓔ Exit Slide show

Ⓕ Return to slide show set screen

Ⓖ Reduce volume level

Ⓗ Increase volume level

\* These operations can be performed only in the Pause Mode.

## ■ Changing the Slide Show settings

You can change the settings for Slide Show Playback by selecting [EFFECT] or [SETUP] on the Slide Show menu screen.

### [EFFECT]

This allows you to select the screen effects or music effects when switching from one picture to the next.

[NATURAL], [SLOW], [SWING], [URBAN], [OFF], [AUTO]

- When [URBAN] has been selected, the picture may appear in black and white as a screen effect.
- [AUTO] can be used only when [CATEGORY SELECTION] has been selected. The pictures are played back with the recommended effects in each category.

### [SETUP]

[DURATION] or [REPEAT] can be set.



| Item       | Settings                |
|------------|-------------------------|
| [DURATION] | 1SEC./2SEC./3SEC./5SEC. |
| [REPEAT]   | OFF/ON                  |
| [MUSIC]    | OFF/ON                  |

- [DURATION] can be set only when [OFF] has been selected as the [EFFECT] setting.
- [MUSIC] cannot be selected when [OFF] has been selected as the [EFFECT] setting.

### Note

- Motion pictures cannot be played back as a Slide Show. When the motion picture in [CATEGORY SELECTION] has been selected, the beginning image of each motion picture is played back.
- It is not possible to add new music effects.

[PLAYBACK] Mode: [▶]

## Displaying Pictures by Recording Date ([CALENDAR])

You can display pictures by recording date.

**1** Slide the [REC]/[PLAYBACK] selector switch to [▶], and then press [MODE].

**2** Touch [CALENDAR].

- You can also rotate the zoom lever several times towards [ ] (W) to display the calendar screen.

**3** Touch [▲]/[▼]/[◀]/[▶] to select the date to be played back and touch [SET].

- If there were no pictures recorded during a month, the month is not displayed.
- The multi playback screen will appear by touching [ ].



**4** Touch the picture to select.

- The calendar screen will be retrieved by touching [CAL].



### Note

- The recording date of the picture selected in the playback screen becomes the date selected when the calendar screen is first displayed.
- If there are multiple pictures with the same recording date, the first picture recorded on that day is displayed.
- You can display the calendar between January 2000 and December 2009.
- If the date is not set in the camera, the recording date is set as January 1st, 2010.
- If you take pictures after setting the travel destination in [WORLD TIME], the pictures are displayed by the dates at the travel destination in Calendar Mode.

[PLAYBACK] Mode: 

## Selecting Pictures and Playing them Back

([CATEGORY PLAY]/[FAVORITE PLAY])

### [CATEGORY PLAY]

This mode allows you to search images by Scene Mode or other categories (such as [PORTRAIT], [SCENERY] or [NIGHT SCENERY]) and sort the pictures into each of the categories. You can then play back the pictures in each category.

1

**Slide the [REC]/[PLAYBACK] selector switch to [  ], and then press [MODE].**

2

**Touch [CATEGORY PLAY].**

3

**Touch the category to playback.**

- A category can be played back only if it contains a picture.
- It may take time to search the picture files if there are a lot on the card or the built-in memory.
- If you touch [CANCEL] during searching, it will stop halfway.
- Pictures are sorted into the categories as follows.



| [CATEGORY]                                                                        | Recording information<br>e.g. Scene Modes                                                                                                       |
|-----------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------|
|  | [PORTRAIT],<br>[i-PORTRAIT],<br>[SOFT SKIN],<br>[TRANSFORM],<br>[SELF PORTRAIT],<br>[NIGHT PORTRAIT],<br>[i-NIGHT PORTRAIT],<br>[BABY1]/[BABY2] |
|  | [SCENERY],<br>[i-SCENERY],<br>[SUNSET],<br>[i-SUNSET],<br>[AERIAL PHOTO]                                                                        |
|  | [NIGHT PORTRAIT],<br>[i-NIGHT PORTRAIT],<br>[NIGHT SCENERY],<br>[i-NIGHT SCENERY],<br>[STARRY SKY]                                              |

| [CATEGORY]                                                                        | Recording information<br>e.g. Scene Modes                                                   |
|-----------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------|
|  | [SPORTS], [PARTY],<br>[CANDLE LIGHT],<br>[FIREWORKS],<br>[BEACH], [SNOW],<br>[AERIAL PHOTO] |
|  | [BABY1]/[BABY2]                                                                             |
|  | [PET]                                                                                       |
|  | [FOOD]                                                                                      |
|  | [TRAVEL DATE]                                                                               |
|  | [MOTION PICTURE]                                                                            |

**[FAVORITE PLAY]**

You can play back the pictures you have set as [FAVORITE] (P109) (Only when [FAVORITE] is set to [ON] and there are pictures which have been set to [FAVORITE]).



**Slide the [REC]/[PLAYBACK] selector switch to [  ], and then press [MODE].**



**Touch [FAVORITE PLAY].**

**Note**

- You can use only [ROTATE DISP.], [PRINT SET] or [PROTECT] in the [PLAYBACK] menu.

[PLAYBACK] Mode: [▶]

## Playing Back Motion Pictures

Select motion picture [📺] and touch [▶] to play back.

Ⓐ Motion picture icon

Ⓑ Motion picture playback icon

Ⓒ The motion picture recording time

- After playback starts, the elapsed playback time is displayed on the upper right of the screen.

For example, 8 minutes and 30 seconds is displayed as [8m30s].

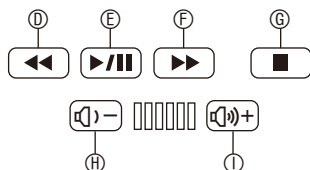


### ■ Operations performed during motion picture playback

#### 1 Display control panel by touching screen.

- If no operation is performed for 2 seconds, it will return to original status.

#### 2 Operate control panel by touching.



Ⓓ Fast rewind, Frame-by-frame rewind\*

Ⓔ Play/Pause

Ⓕ Fast forward, Frame-by-frame forward\*

Ⓖ Stop

Ⓗ Reduce volume level

Ⓘ Increase volume level

\* These operations can be performed only in the Pause Mode.

### Fast forward/Fast rewind during playback

Fast forward or fast rewind starts when you touch [▶▶] or [◀◀] during playback. When you touch [▶▶] or [◀◀] again, the fast forward/rewind speed increases and [▶▶] changes to [▶▶▶] (or [◀◀] to [◀◀◀]).

Touch [▶/||] to resume normal playback speed.

 **Note**

- Sound can be heard through the speaker. Refer to [VOLUME] (P26) for information about how to adjust the volume in the [SETUP] menu.
- The file format that can be played back with this camera is QuickTime Motion JPEG.
- Please note that the bundled software includes QuickTime to play back motion picture files created with the camera on the PC.
- Some QuickTime Motion JPEG files recorded by a PC or other equipment may not play back on the camera.
- If you play back motion pictures that have been recorded with other equipment, the picture quality may deteriorate or the pictures may not play back.
- When using a high capacity card, it is possible that fast rewinding may be slower than usual.

[PLAYBACK] Mode: ▶

## Using the [PLAYBACK] Mode Menu

You can use various functions in Playback Mode to rotate pictures, set protection for them etc.

- With [TEXT STAMP], [RESIZE] or [CROPPING], a new edited picture is created. A new picture cannot be created if there is no free space on the built-in memory or the card so we recommend checking that there is free space and then editing the picture.

### [TEXT STAMP]

You can stamp the recording date/time, name, age, location or Travel Date onto the recorded pictures. It is suitable for regular size printing. (Pictures with a Picture Size larger than [3M]) will be resized when stamping the date etc. on them.)

**1** Select [TEXT STAMP] on the [PLAYBACK] Mode menu (P22).

**2** Touch [SINGLE] or [MULTI].

**3** Select the picture(s) to be stamped.

[☑] is shown on the picture if it has been stamped with text before.

**[SINGLE] setting**

**1** Touch [◀]/[▶] to select the picture.

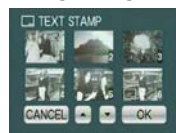
**2** Touch [SET].

**[MULTI] setting**

**1** Touch the image to select the picture.

**2** Touch [OK].

- Repeat touching to select other pictures.
- Up to 50 pictures can be selected at once.
- Selection will be canceled by touching the same picture again.



**4** Touch [SHOOTING DATE], [NAME], [LOCATION] or [TRAVEL DATE] to set each item by touching it.

**[SHOOTING DATE]**

**[W/O TIME]:** Stamp the year, month and date.

**[WITH TIME]:** Stamp the year, month, day, hour and minutes.

**[NAME] (P68)**

[NAME] in [BABY1]/[BABY2] or [PET] in Scene Mode is stamped on the pictures.

**[LOCATION]**

If this is set to [ON], [LOCATION] in Travel Date is stamped on the pictures.

**[TRAVEL DATE]**

If this is set to [ON], [TRAVEL DATE] is stamped on the pictures.

**5****Touch [SET].**

- If you set [TEXT STAMP] for a picture with a picture size larger than [3M], the picture size will become smaller as shown below.

| Aspect ratio | Picture size        |
|--------------|---------------------|
| 4:3          | 14M / 10M / 5M → 3M |
| 3:2          | 12.5M → 2.5M        |
| 16:9         | 10.5M → 2M          |

- When the [NAME] is selected in step 4, the screen appears to ask if the [AGE] should be stamped along with the name.

**6****Touch [YES].****7****Touch [CANCEL] to return to the menu screen.**

- The menu screen is automatically restored when [MULTI] is selected.
- Touch [EXIT] to close the menu.

**Note**

- When you print pictures stamped with text, the date will be printed over the stamped text if you specify printing of the date at the photo shop or on the printer.
- Depending on the printer being used, some characters may be cut at printing. Check before printing.
- When text is stamped onto the [0.3M] pictures, it is difficult to read it.
- Text and dates cannot be stamped on the pictures in the following cases.
  - Motion pictures
  - Pictures recorded without setting the clock
  - Pictures that were previously stamped with [TEXT STAMP]
  - Pictures recorded with other equipment

## [RESIZE] Reducing the picture size (number of pixels)

You can reduce the size of the recorded picture(s) to attach them to an e-mail or use them on a website.

**1** Select **[RESIZE]** on the **[PLAYBACK]** Mode menu (**P22**).

**2** Touch **[SINGLE]** or **[MULTI]**.



**3** Select the picture(s) and the size(s).

**[SINGLE] setting**

**1** Touch **[◀]/[▶]** to select the picture, and touch **[SET]**.

**2** Touch the picture size.

- Only the sizes to which the picture can be resized are displayed.



**[MULTI]**

**[MULTI] setting**

**1** Touch the picture size.

**2** Touch the image to select the picture.

- Repeat the step to set more than 2 images.
- Up to 50 pictures can be selected at once.
- Selection will be canceled by touching the same picture again.
- Selection of all pictures will be canceled by touching **[CANCEL]**.



**3** Touch **[OK]**.

- If **[i]** is highlighted, an explanation about resizing (suitable print size, etc.) is shown when an item is touched.

4

**Touch [YES].**

5

**Touch [CANCEL] to return to the menu screen.**

- The menu screen is automatically restored when [MULTI] is selected.
- Touch [EXIT] to close the menu.

 **Note**

- The picture quality of the resized picture will deteriorate.
- It may not be possible to resize pictures recorded with other equipment.
- Motion pictures and pictures stamped with [TEXT STAMP] cannot be resized.

**[CROPPING]**

You can enlarge and then crop the important part of the recorded picture.

**1** Select **[CROPPING]** on the **[PLAYBACK]** Mode menu (**P22**).

**2** Touch **[◀]/[▶]** to select the picture, and touch **[SET]**.



**3** Select the part to be cropped.

Touch **[Q]**: Enlarge

Touch **[Q]**: Reduce

Touch **[▲]/[▼]/[◀]/[▶]**: Move

- The zoom lever can also be used.

Reduction



Enlargement



Move the position



**4** Touch **[SET]**.

**5** Touch **[YES]**.



**6** Touch **[CANCEL]** to return to the menu screen.

- Touch **[EXIT]** to close the menu.

**Note**

- Depending on the cut size, the picture size of the cropped picture may become smaller than that of the original picture.
- The picture quality of the cropped picture will deteriorate.
- It may not be possible to crop pictures recorded with other equipment.
- Motion pictures and pictures stamped with **[TEXT STAMP]** cannot be cropped.

**[ROTATE DISP.]**

This mode allows you to automatically display pictures vertically if they were recorded holding the camera vertically.

**1**

Select **[ROTATE DISP.]** on the **[PLAYBACK]** Mode menu. **(P22)**

**2**

Touch **[ON]**.

- The pictures are displayed without being rotated when you select **[OFF]**.
- Refer to **P44** for information about how to play back pictures.

**3**

Touch **[EXIT]** to close the menu.

**Note**

- When you play back pictures on a PC, they cannot be displayed in the rotated direction unless the OS or software is compatible with Exif. Exif is a file format for still pictures which allows recording information etc. to be added. It was established by "JEITA (Japan Electronics and Information Technology Industries Association)".
- It may not be possible to rotate pictures that have been recorded with other equipment.
- The display is not rotated during Multi Playback Mode **(P46)** or Calendar Mode **(P97)**.
- Pictures recorded with the camera upside down will not be displayed rotated.

**[FAVORITE]**

You can do the following if a mark has been added to pictures and they have been set as favorites.

- Play back only the pictures set as favorites. ([FAVORITE PLAY])
- Play back the pictures set as favorites only as a slide show.
- Delete all the pictures not set as favorites. ([ALL DELETE EXCEPT ★ ])

## **1 Select [FAVORITE] on the [PLAYBACK] Mode menu. (P22)**

## **2 Touch [ON].**

- You cannot set pictures as favorites if [FAVORITE] is set to [OFF]. Also [ ★ ] will not appear when [FAVORITE] is set to [OFF] even if it was previously set to [ON].



## **3 Touch [EXIT] to close the menu.**

## **4 Touch [◀]/[▶] to select the picture, and touch [ ★ ].**

- Repeat the above procedure.
- If [ ★ ] is touched again, the favorite setting is canceled.



### **■ Canceling all the [FAVORITE] settings**

#### **1 Touch [CANCEL] in step 2.**

#### **2 Touch [YES].**

- You cannot select [CANCEL] if not even one picture has been set as a favorite.

### **Note**

- You can set up to 999 pictures as favorites.
- When printing pictures at a photo printing store, [ALL DELETE EXCEPT ★ ] (P48) is useful so only the pictures you want to be printed remain on the card.
- You may not be able to set pictures taken with other equipment as favorites.

**[PRINT SET]**

DPOF "Digital Print Order Format" is a system that allows the user to select which pictures to print, how many copies of each picture to print and whether or not to print the recording date on the pictures when using a DPOF compatible photo printer or photo printing store.

For details, ask at your photo printing store.

When you want to use a photo printing store to print pictures recorded on the built-in memory, copy them to a card (P113) and then set the print setting.

For more information visit:

[http://panasonic.jp/dc/dpof\\_110/white\\_e.htm](http://panasonic.jp/dc/dpof_110/white_e.htm)

**1** Select **[PRINT SET]** on the **[PLAYBACK]** Mode menu. (P22)

**2** Touch **[SINGLE]** or **[MULTI]**.



**3** Select the picture to be printed.

**[SINGLE] setting**

Touch **[◀/▶]** to select the picture, and touch **[SET]**.

**[MULTI] setting**

Touch the image to select the picture.

**[SINGLE]**



**[MULTI]**



**4** Touch **[▲]/[▼]** to set the number of prints, and touch **[SET]**.

- To print the recording date on the picture, touch **[DATE]**. Touching **[DATE]** again cancels the date print setting.
- When **[MULTI]** has been selected, repeat steps **3** and **4** for each picture. (It is not possible to use the same setting for a multiple number of pictures.)

**5** Touch **[EXIT]** to return to the menu screen.

- Touch **[EXIT]** to close the menu.

#### ■ Canceling all the **[PRINT SET]** settings

**1** Select **[CANCEL]** on the screen shown in step 2.

**2** Touch **[YES]**.

**3** Touch **[EXIT]** to close the menu.

- You cannot select **[CANCEL]** if not even one picture has been set for printing.

### ■ To print the date ([DATE] setting)

- When you go to a photo printing store for digital printing, be sure to order the printing of the date additionally if required.
- Depending on the photo printing store or the printer, the date may not be printed even if you set to print the date. For further information, ask at your photo printing store or refer to the operating instructions for the printer.
- The date cannot be printed on pictures stamped with text.



### Note

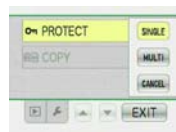
- The number of prints can be set from 0 to 999.
- With a printer supporting PictBridge, the date print settings of the printer may take precedence so check if this is the case.
- It may not be possible to use the print settings with other equipment. In this case, cancel all the settings, and reset the settings.
- If the file is not based on the DCF standard, the print setting cannot be set.

**[PROTECT]**

You can set protection for pictures you do not want to be deleted by mistake.

**1** Select **[PROTECT]** on the **[PLAYBACK]** Mode menu **(P22)**.

**2** Touch **[SINGLE]** or **[MULTI]**.



**3** Select the picture(s) to be protected.

**[SINGLE] setting**

Touch **[◀/▶]** to select the picture, and touch **[SET]**.

- Setting is canceled by selecting protected picture and touching **[CANCEL]**.

**[MULTI] setting**

Touch the image to select the picture.

- Repeat touching to select other pictures.
- Setting is canceled by touching the same picture again.

**[SINGLE]**



**[MULTI]**



**4** Touch **[EXIT]**.

- Touch **[EXIT]** to close the menu.

■ **Canceling all the [PROTECT] settings**

- 1 Touch **[CANCEL]** in step 2.
- 2 Touch **[YES]**.

**Note**

- The protect setting may not be effective on other equipment.
- Even if you protect pictures in the built-in memory or a card, they will be deleted if the built-in memory or the card is formatted.
- Even if you do not protect pictures on a card, they cannot be deleted when the card's Write-Protect switch is set to **[LOCK]**.

## [COPY] Copying pictures from the built-in memory to a card

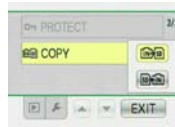
You can copy the data of the pictures you have taken from the built-in memory to a card or from a card to the built-in memory.

**1** Select **[COPY]** on the **[PLAYBACK]** Mode menu. **(P22)**

**2** Touch the copy destination to select.

 **[SD]** : All the picture data in the built-in memory are copied onto the card at one time. → step 4.

 **[IN]** : One picture at a time is copied from the card to the built-in memory. → step 3.



**3** Touch **[◀/▶]** to select the picture, and touch **[SET]**.

**4** Touch **[YES]**.

- If you touch **[CANCEL]** while copying pictures from the built-in memory to the card, the copying will stop halfway.
- Do not turn the camera off at any point during the copying process.



**5** Touch **[CANCEL]** to return to the menu screen.

- Touch **[EXIT]** to close the menu.
- If you copy from the built-in memory to a card, all the pictures are copied and then the screen automatically returns to the playback screen.

### Note

- If you copy picture data from the built-in memory to a card which does not have sufficient free space, the picture data will only be copied halfway. We recommend using a card which has more free space than the built-in memory (about 40 MB).
- If a picture exists with the same name (folder number/file number) as the picture to be copied in the copy destination when **[IN+SD]** is selected, a new folder is created and the picture is copied. If a picture exists with the same name (folder number/file number) as the picture to be copied in the copy destination when **[SD+IN]** is selected, that picture is not copied. **(P135)**
- It may take time to copy the picture data.
- Only pictures recorded with a Panasonic digital camera (LUMIX) will be copied. (Even if the pictures were recorded with a Panasonic digital camera, you may not be able to copy them if they were edited with a PC.)
- Print settings or Protect settings on the original picture data will not be copied. Set the settings again after copying is finished.

## Connecting to a PC

You can acquire recorded pictures to a PC by connecting the camera and the PC.

- If the pictures are recorded on a card you can also use it by means of inserting directly to an SD Memory Card slot of your PC. For details, refer to the operating instructions of the PC.
- If your computer does not support SDXC Memory Cards, a message will be displayed requesting you to format the card. (Do not format the card. This will erase recorded pictures.)

If the card is not recognized, refer to the following support website.

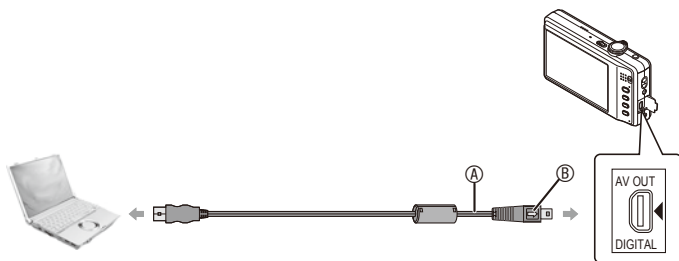
<http://panasonic.net/avc/sdcard/information/SDXC.html>

- You can easily print out or e-mail the pictures you have imported. Use of the "PHOTOfunSTUDIO" bundled software on the CD-ROM (supplied) is a convenient way of doing this.
- Read the separate operating instructions for the supplied software for more information about the software in the CD-ROM (supplied) and how to install it.

Preparations:

Turn on the camera and the PC.

Remove the card before using the pictures in the built-in memory.



Ⓐ USB connection cable (supplied)

- Check the directions of the connectors, and plug them straight in or unplug them straight out. (Otherwise the connectors may be bent out of shape which will cause a malfunction.)
  - Ⓑ Align the marks, and insert.
  - Use a battery with sufficient battery power or the AC adaptor (optional) and DC coupler (optional). If the remaining battery power becomes low while the camera and the PC are communicating, the alarm beeps.
- Refer to "Disconnecting the USB connection cable safely" (P115) before disconnecting the USB connection cable. Otherwise, data may be destroyed.

1

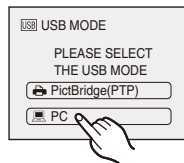
**Connect the camera to a PC via the USB connection cable ① (supplied).**

- Do not use any other USB connection cables except the supplied one.  
Use of cables other than the supplied USB connection cable may cause a malfunction.

2

**Touch [PC].**

- If [USB MODE] (P30) is set to [PC] in the [SETUP] menu in advance, the camera will be automatically connected to the PC without displaying the [USB MODE] selection screen. Since there is no need to set this each time you connect to the PC, it is convenient.
- When the camera has been connected to the PC with [USB MODE] set to [PictBridge(PTP)], a message may appear on the PC's screen. Select [Cancel] to close the screen, and disconnect the camera from the PC. Then set [USB MODE] to [PC] again.



3

**Double-click on [Removable Disk] in [My Computer].**

- When using a Macintosh, the drive is displayed on the desktop. ("LUMIX", "NO\_NAME" or "Untitled" is displayed.)

4

**Double-click [DCIM] folder.**

5

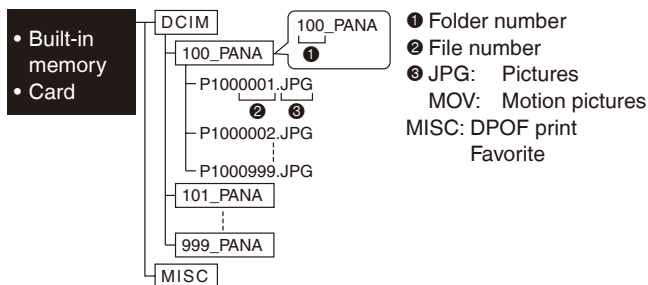
**Using a drag-and-drop operation, move the pictures you want to acquire or the folder storing those pictures to any different folder on the PC.****■ Disconnecting the USB connection cable safely**

- Proceed with the hardware removal using "Safely Remove Hardware" on the task tray of the PC. If the icon is not displayed, check that [ACCESS] is not displayed on the LCD monitor of the digital camera before removing the hardware.

**Note**

- This unit cannot stand upright when the AC adaptor is connected. When operating it on a flat surface, we recommend placing it on a soft cloth.
- Turn the camera off before connecting or disconnecting the AC adaptor (optional).
- Before inserting or removing a card, turn the camera off and disconnect the USB connection cable. Otherwise, data may be destroyed.

## ■ Viewing the contents of the built-in memory or card using the PC (folder composition)



A new folder is created when pictures are taken in the following situations.

- When a card containing a folder with the same folder number has been inserted (Such as when pictures were taken using another maker of camera)
- When there is a picture with file number 999 inside the folder

## ■ Connection in the PTP Mode (Windows® XP, Windows Vista®, Windows® 7 and Mac OS X only)

Set [USB MODE] to [PictBridge(PTP)].

Data can now be read only from the card into the PC.

- When there are 1000 or more pictures on a card, the pictures may not be imported in the PTP Mode.

[PLAYBACK] Mode: ▶

## Printing the Pictures

If you connect the camera to a printer supporting PictBridge, you can select the pictures to be printed and instruct that printing be started on the camera's LCD Monitor.

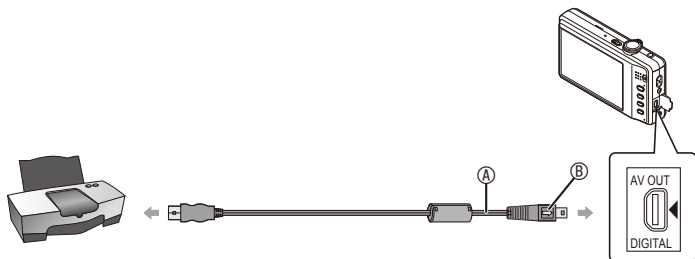
- If the pictures are recorded on a card you can also use it by means of inserting directly to an SD Memory Card slot of your printer. For details, refer to the operating instructions of the printer.

Preparations:

Turn on the camera and the printer.

Remove the card before printing the pictures in the built-in memory.

Perform the print quality and other settings at the printer before printing the pictures.



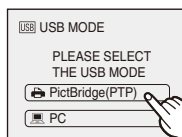
Ⓐ USB connection cable (supplied)

- Check the directions of the connectors, and plug them straight in or unplug them straight out. (Otherwise the connectors may be bent out of shape which may cause malfunction.)
- Ⓑ Align the marks, and insert.
- Use a battery with a sufficient battery power or the AC adaptor (optional) and DC coupler (optional). If the remaining battery power becomes low while the camera and the printer are connected, the status indicator blinks and the alarm beeps. If this happens during printing, stop printing at once. If not printing, disconnect the USB connection cable.

### 1 Connect the camera to a printer via the USB connection cable Ⓐ (supplied).

- When the camera is connected to the printer, the cable disconnect prohibit icon [  ] appears. Do not disconnect the USB cable while [  ] is displayed.

### 2 Touch [PictBridge(PTP)].



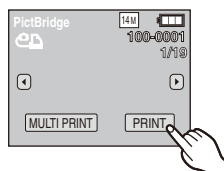
## Note

- This unit cannot stand upright when the AC adaptor is connected. When operating it on a flat surface, we recommend placing it on a soft cloth.
- Do not use any other USB connection cables except the supplied one.  
Use of cables other than the supplied USB connection cable may cause malfunction.
- Turn the camera off before connecting or disconnecting the AC adaptor (optional).
- Before inserting or removing a card, turn the camera off, and disconnect the USB connection cable.
- You cannot switch between the built-in memory and the card while the camera is connected to the printer. Disconnect the USB connection cable, insert (or remove) the card and then connect the USB connection cable to the printer again.

## Selecting a single picture and printing it

### 1

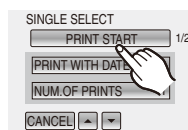
Touch [◀/▶] to select the picture, and touch [PRINT].



### 2

Touch [PRINT START].

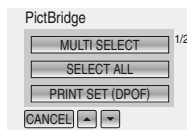
- Refer to "Print Settings" (P120) for the items which can be set before starting to print the pictures.
- Press shutter button halfway to cancel printing halfway.
- Disconnect the USB connection cable after printing.



## Selecting multiple pictures and printing them

**1** Touch [MULTI PRINT].

**2** Touch an item to select.

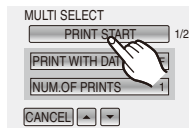


| Item               | Description of settings                                                                                                                                                                                                                                                                                    |
|--------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| [MULTI SELECT]     | Multiple pictures are printed at one time.<br><ul style="list-style-type: none"> <li>• Touch the pictures and [  ] appears on the pictures to be printed. (When the selected picture is touched again, the setting is canceled.)</li> <li>• After the pictures have been selected, touch [SET].</li> </ul> |
| [SELECT ALL]       | Prints all the stored pictures.                                                                                                                                                                                                                                                                            |
| [PRINT SET (DPOF)] | Prints the pictures set in [PRINT SET] only. (P110)                                                                                                                                                                                                                                                        |
| [FAVORITE]*        | Prints the pictures set as favorites only. (P109)                                                                                                                                                                                                                                                          |

\* Only when [FAVORITE] is at [ON] and when there are pictures set as favorites. (P109)

**3** Touch [PRINT START].

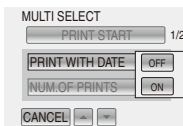
- Refer to “Print Settings” (P120) for the items which can be set before starting to print the pictures.
- Press shutter button halfway to cancel printing halfway.
- Disconnect the USB connection cable after printing.



## Print Settings

Select and set the items both on the screen in step 2 of the “Selecting a single picture and printing it” and in step 3 of the “Selecting multiple pictures and printing them” procedures.

- When you want to print pictures in a paper size or a layout which is not supported by the camera, set [PAPER SIZE] or [PAGE LAYOUT] to [ ] and then set the paper size or the layout on the printer. (For details, refer to the operating instructions of the printer.)
- When [PRINT SET (DPOF)] has been selected, the [PRINT WITH DATE] and [NUM. OF PRINTS] items are not displayed.



### [PRINT WITH DATE]

| Item  | Description of settings |
|-------|-------------------------|
| [OFF] | Date is not printed.    |
| [ON]  | Date is printed.        |

- If the printer does not support date printing, the date cannot be printed on the picture.
- Since the printer's settings may take precedence over the Print With Date setting, check the printer's Print With Date setting as well.
- When printing images with a Text Stamp, please remember to set Print With Date to [OFF] or the date will print on top.

### Note

#### When asking the photo shop to print the pictures

- By stamping the date using [TEXT STAMP] (P103) or setting date printing in [PRINT SET] (P110) before going to a photo shop, the dates can be printed at the photo shop.

### [NUM. OF PRINTS]

You can set the number of prints up to 999.

**[PAPER SIZE]**

| Item                                                                             | Description of settings                  |
|----------------------------------------------------------------------------------|------------------------------------------|
|  | Settings on the printer are prioritized. |
| [L/3.5" × 5"]                                                                    | 89 mm × 127 mm                           |
| [2L/5" × 7"]                                                                     | 127 mm × 178 mm                          |
| [POSTCARD]                                                                       | 100 mm × 148 mm                          |
| [16:9]                                                                           | 101.6 mm × 180.6 mm                      |
| [A4]                                                                             | 210 mm × 297 mm                          |
| [A3]                                                                             | 297 mm × 420 mm                          |
| [10 × 15cm]                                                                      | 100 mm × 150 mm                          |
| [4" × 6"]                                                                        | 101.6 mm × 152.4 mm                      |
| [8" × 10"]                                                                       | 203.2 mm × 254 mm                        |
| [LETTER]                                                                         | 216 mm × 279.4 mm                        |
| [CARD SIZE]                                                                      | 54 mm × 85.6 mm                          |

- Paper sizes not supported by the printer will not be displayed.

**[PAGE LAYOUT] (Layouts for printing that can be set with this unit)**

| Item                                                                              | Description of settings                 |
|-----------------------------------------------------------------------------------|-----------------------------------------|
|  | Settings on the printer are prioritized |
|  | 1 picture with no frame on 1 page       |
|  | 1 picture with a frame on 1 page        |
|  | 2 pictures on 1 page                    |
|  | 4 pictures on 1 page                    |

- An item cannot be selected if the printer does not support the page layout.

### ■ Layout printing

#### When printing a picture several times on 1 sheet of paper

For example, if you want to print the same picture 4 times on 1 sheet of paper, set [PAGE LAYOUT] to [] and then set [NUM. OF PRINTS] to 4 for the picture that you want to print.

#### When printing different pictures on 1 sheet of paper

For example, if you want to print 4 different pictures on 1 sheet of paper, set [PAGE LAYOUT] to [] and then set [NUM. OF PRINTS] to 1 for each of the 4 pictures.

### Note

- The camera is receiving an error message from the printer when the [] indication lights orange during printing. After finishing printing, make sure there are no problems with the printer.
- If the number of prints is high, the pictures may be printed several times. In this case, the remaining number of prints indicated may differ from the number set.

[PLAYBACK] Mode: ▶

## Playing Back Pictures on a TV Screen

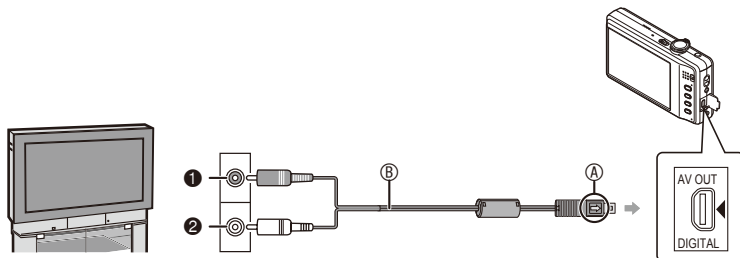
### Playing back pictures using the AV cable

Please use the supplied AV cable.

Preparations:

Set the [TV ASPECT]. (P30)

Turn this unit and the TV off.



❶ Yellow: To the video input socket

❷ White: To the audio input socket

❶ Align the marks, and insert.

❷ AV cable (supplied)

- Check the directions of the connectors, and plug them straight in or unplug them straight out. (Otherwise the connectors may be bent out of shape which may cause malfunction.)

**1** Connect the AV cable ❷ (supplied) to the video input and the audio input sockets on the TV.

**2** Connect the AV cable to the [AV OUT] socket on the camera.

**3** Turn the TV on and select external input.

**4** Turn the camera on.

 **Note**

- Depending on the aspect ratio, black bands may be displayed on the top and bottom or the left and right of the pictures.
- Do not use any other AV cables except the supplied one.
- Read the operating instructions for the TV.
- When you play back a picture vertically, it may be blurry.
- You can view pictures on TVs in other countries (regions) which use the NTSC or PAL system when you set [VIDEO OUT] in the [SETUP] menu. (PAL video out is not available on the version DMC-FH22P sold in the U.S. and the version DMC-FH22PC sold in Canada.)
- You cannot operate if you touch the Touch icon displayed on the TV screen.

### Playing back pictures on a TV with an SD Memory Card slot

Still pictures recorded on an SD Memory Card can be played back on a TV with an SD Memory Card slot.

 **Note**

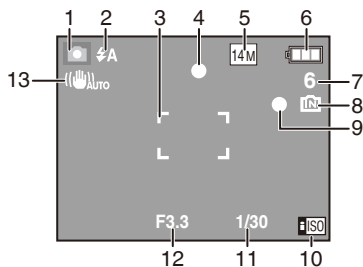
- Depending on the TV model, pictures may not be displayed on the full screen.
- Motion pictures cannot be played back. To play back motion pictures, connect the camera to the TV with the AV cable.
- You cannot play back pictures on SDHC cards or SDXC cards if the TV does not support these cards.

## Screen Display

### ■ In recording

#### Recording in Normal Picture Mode [ ] (Initial setting)

- 1 Recording Mode
- 2 Flash Mode (P50)
- 3 AF area (P40)
- 4 Focus (P40)
- 5 Picture Size (P83)
- 6 Battery indication (P13)
- 7 Number of recordable pictures (P146)
- 8 Built-in memory (P17)
- 9  : Card (P17) (displayed only during recording)
- 9 Recording state
- 10 ISO sensitivity (P85)
- 11 Shutter speed (P40)
- 12 Aperture value (P40)
- 13 Optical Image Stabilizer (P92)/  : Jitter alert (P41)



## ■ In recording (after settings)

14 Touch AF Area Selection (P58)

AF  : AF Macro Mode (P55)

 : Macro Zoom Mode (P56)

15 White Balance (P88)

16 ISO sensitivity (P85)

17 Color Mode (P91)

18 Recording quality (P76)

19 Available recording time (P75): R8m30s

20 Name\*1 (P68)

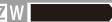
21 Age\*1 (P68)

Location\*2 (P78)

22 Travel Date (P78)

23 Elapsed recording time (P75)

24 Current date and time/  : Travel destination setting\*2 (P81)

Zoom/Extended Optical Zoom (P42)/  W  T  : Digital Zoom (P42, 91)

25 Exposure Compensation (P60)

26 High Angle Mode (P27)

 : Power LCD (P27)

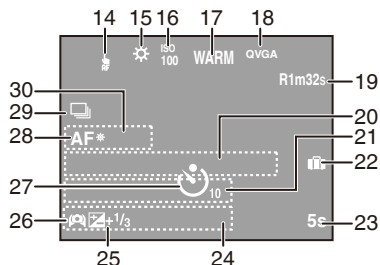
 : Auto Power LCD (P27)

27 Self-timer Mode (P57)

28 AF Assist Lamp (P93)

29 Burst (P90)/  : Audio recording (P75)

30 Number of days that have passed since the departure date (P78)

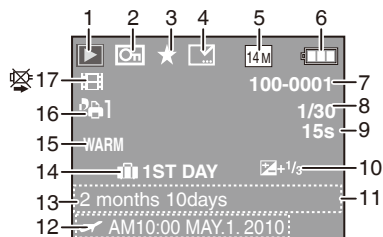


\*1 This is displayed for about 5 seconds when this unit is turned on in [BABY1]/[BABY2] or [PET] in Scene Mode.

\*2 This is displayed for about 5 seconds when the camera is turned on, after setting the clock and after switching from Playback Mode to Recording Mode.

## ■ In playback

- 1 Playback Mode (P44)
- 2 Protected picture (P112)
- 3 Favorites (P109)
- 4 Stamped with text indication (P103)
- 5 Picture Size (P83)
- 6 Battery indication (P13)
- 7 Folder/File number (P116)
- Built-in memory (P17)
- Elapsed playback time (P101): 8m30s
- 8 Picture number/Total pictures
- 9 Motion picture recording time (P101): 8m30s
- 10 Exposure Compensation (P60)
- 11 Recording information
- 12 Recorded date and time/Travel destination setting (P78, 81)
- Name (P68)
- 13 Age (P68)
- 14 Number of days that have passed since the departure date (P78)
- 15 Color Mode (P91)
- 16 Number of prints (P120)
- 17 Motion picture playback (P101)
- Cable disconnection warning icon (P117)



## Cautions for Use

### Optimal use of the camera

#### ■ Care of the camera

- **Do not touch the lens or the sockets with dirty hands. Also, be careful not to allow liquids, sand and other foreign matter to get into the space around the lens, buttons etc.**
- **Do not strongly shake or bump the camera by dropping or hitting it. Do not subject to strong pressure.**

The camera may malfunction, recording pictures may become impossible, or the lens, the LCD monitor or the external case may be damaged.

- We strongly recommend you do not leave the camera in your trousers pocket when you sit down or forcefully insert it into a full or tight bag etc. Damage to the LCD monitor or personal injury may result.
- Do not attach any other items to the hand strap that's included with your camera. While being stored, that item can rest against the LCD monitor and damage it.
- **Be particularly careful in the following places as they may cause this unit to malfunction.**
  - Places with a lot of sand or dust.
  - Places where water can come into contact with this unit such as when using it on a rainy day or on a beach.
- **This camera is not waterproof. If water or seawater splashes on the camera, use a dry cloth to wipe the camera body carefully.**
- **If the unit does not operate normally, please contact the dealer where you purchased the camera or the repair service center.**



#### ■ About Condensation (When the lens is fogged up)

- Condensation occurs when the ambient temperature or humidity changes. Be careful of condensation since it causes lens stains, fungus and camera malfunction.
- If condensation occurs, turn the camera off and leave it for about 2 hours. The fog will disappear naturally when the temperature of the camera becomes close to the ambient temperature.

**Keep the camera as far away as possible from electromagnetic equipment (such as microwave ovens, TVs, video games etc.).**

- If you use the camera on top of or near a TV, the pictures and sound on the camera may be disrupted by electromagnetic wave radiation.
- Do not use the camera near cell phones because doing so may result in noise adversely affecting the pictures and sound.
- Recorded data may be damaged, or pictures may be distorted, by strong magnetic fields created by speakers or large motors.
- Electromagnetic wave radiation generated by microprocessors may adversely affect the camera, disturbing the pictures and sound.
- If the camera is adversely affected by electromagnetic equipment and stops functioning properly, turn the camera off and remove the battery or disconnect AC adaptor (optional). Then reinsert the battery or reconnect AC adaptor and turn the camera on.

**Do not use the camera near radio transmitters or high-voltage lines.**

- If you record near radio transmitters or high-voltage lines, the recorded pictures and sound may be adversely affected.

**Always use the supplied cords and cables. If you use optional accessories, use the cords and the cables supplied with them.**

**Do not extend the cords or the cables.**

**Do not spray the camera with insecticides or volatile chemicals.**

- If the camera is sprayed with such chemicals, the body of the camera may be damaged and the surface finish may peel off.
- Do not keep rubber or plastic products in contact with the camera for a long period of time.

### Cleaning

**Before cleaning the camera, remove the battery or the DC coupler (optional), or disconnect the power plug from the outlet. Then wipe the camera with a dry soft cloth.**

- When the camera is soiled badly, it can be cleaned by wiping the dirt off with a wrung wet cloth, and then with a dry cloth.
- Do not use solvents such as benzine, thinner, alcohol, kitchen detergents, etc., to clean the camera, since it may deteriorate the external case or the coating may peel off.
- When using a chemical cloth, be sure to follow the accompanying instructions.

### About the LCD monitor

- Do not press the LCD monitor with excessive force. Uneven colors may appear on the LCD monitor and it may malfunction.
- If the camera is cold when you turn it on, the picture on the LCD monitor will be slightly darker than usual at first. However, the picture will return to normal brightness when the internal temperature of the camera increases.

Extremely high precision technology is employed to produce the LCD monitor screen. However there may be some dark or bright spots (red, blue or green) on the screen. This is not a malfunction. The LCD monitor screen has more than 99.99% effective pixels with a mere 0.01% of the pixels inactive or always lit. The spots will not be recorded on pictures on the built-in memory or a card.

### About the Lens

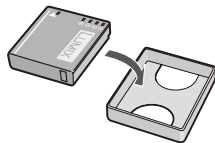
- Do not press the lens with excessive force.
- Do not leave the camera with the lens facing the sun as rays of light from the sun may cause it to malfunction. Also, be careful when placing the camera outside or near a window.

## Battery

The battery is a rechargeable lithium ion battery. Its ability to generate power comes from the chemical reaction that takes place inside it. This reaction is susceptible to the surrounding temperature and humidity. If the temperature is too high or too low, the operating time of the battery will become shorter.

### Always remove the battery after use.

- Store the removed battery in the battery case (supplied).



### If you drop the battery accidentally, check to see if the body of the battery and the terminals are damaged.

- Inserting a damaged battery in the camera will damage the camera.

### Bring charged spare batteries when going out.

- Be aware that the operating time of the battery becomes shorter in low temperature conditions such as at a ski resort.
- When you travel, do not forget to bring the battery charger (supplied) so that you can charge the battery in the country that you are traveling in.

### Dispose of unusable battery.

- The battery has a limited life.
- Do not throw the battery into fire because it may cause an explosion.
- The unusable battery should be discarded in accordance with battery recycling laws. Call the RBRC hotline at 1-800-822-8837 for information.

### Do not allow battery terminals to come into contact with metal objects (such as necklaces, hairpins etc.).

- This can cause short circuiting or heat generation and you may be badly burned if you touch a battery.

## Charger

- If you use the battery charger near a radio, the radio reception may be disturbed.
- Keep the charger 1.0 m (3.28 feet) or more away from radios.
- The charger may generate whirring sounds when it is being used. This is not a malfunction.
- After use, be sure to disconnect the power supply device from the electrical outlet. (A very small amount of current is consumed if it is left connected.)
- Keep the terminals of the charger and battery clean.

## Card

**Do not leave the card where the temperature is high, where electromagnetic waves or static electricity are easily generated or exposed to direct sunlight.**

**Do not bend or drop the card.**

- The card may be damaged or the recorded content may be damaged or deleted.
- Put the card in the card case or the storage bag after use and when storing or carrying the card.
- Do not allow dirt, dust or water to get into the terminals on the back of the card and do not touch the terminals with your fingers.

**Notice for when transferring to another party, or disposing of the memory card**

- “Format” or “delete” using the camera or a PC will only modify the file management information, and it will not erase the data in the memory card completely.

It is recommended to physically destroy the memory card or use the commercially available computer data deletion software to completely erase the data in the memory card before transferring to another party or disposing.

Management of data in the memory card is the responsibility of the user.

## About the personal information

Personal information is included in the recorded image when the name or birthday is set in [BABY1]/[BABY2] in Scene Mode.

### Disclaimer

- Information including personal information may be altered or vanish due to erroneous operation, effect of static electricity, accident, malfunction, repair, or other handlings. Please note in advance that Panasonic is not liable in any way for any direct or indirect damage from the alteration or vanishing of information or personal information.

**When requesting a repair, transferring to another party or disposing**

- Reset the settings to protect the personal information. (P29)
- If there are pictures stored in the built-in memory, copy them into the memory card (P113) before formatting the built-in memory (P31) as needed.
- Remove the memory card from the camera when requesting a repair.
- Built-in memory and settings may return to factory default when camera is repaired.
- Please contact the dealer where you purchased the camera or your nearest Service Center if above operations are not possible due to malfunction.

**When transferring to another party, or disposing of the memory card, please refer to “Notice for when transferring to another party, or disposing of the memory card” on P132.**

### **When not using the camera for a long period of time**

- Store the battery in a cool and dry place with a relatively stable temperature:  
[Recommended temperature: 15 °C to 25 °C (59 °F to 77 °F), Recommended humidity: 40% to 60%]
- Always remove the battery and the card from the camera.
- If the battery is left inserted in the camera, it will discharge even if the camera is turned off. If the battery continues to be left in the camera, it will discharge excessively and may become unusable even if charged.
- When storing the battery for a long period of time, we recommend charging it once a year. Remove the battery from the camera and store it again after it has completely discharged.
- We recommend storing the camera with a desiccant (silica gel) when you keep it in a closet or a cabinet.

### **About the picture data**

- Recorded data may be damaged or lost if the camera breaks down due to inappropriate handling. Panasonic will not be liable for any damage suffered due to loss of recorded data.

### **About tripods or unipods**

- When you use a tripod, make sure the tripod is stable when this unit is attached to it.
- You may not be able to remove the card or the battery when using a tripod or unipod.
- Make sure that the screw on the tripod or unipod is not at an angle when attaching or detaching the camera. You may damage the screw on the camera if you use excessive force when turning it. Also, the camera body and the rating label may be damaged or scratched if the camera is attached too tightly to the tripod or unipod.
- Read the operating instructions for the tripod or unipod carefully.
- Some tripods or unipods cannot be attached when the DC coupler (optional) and AC adaptor (optional) are connected.

## Message Display

Confirmation messages or error messages will be displayed on the screen in some cases. The major messages are described below as examples.

### [THIS MEMORY CARD IS WRITE-PROTECTED]

- The Write-Protect switch on the card is moved to [LOCK]. Move the switch back to unlock it. (P18)

### [NO VALID PICTURE TO PLAY]

- Record a picture or insert a card with a recorded picture and then play it.

### [THIS PICTURE IS PROTECTED]

- Delete the picture after canceling the protect setting. (P112)

### [THIS PICTURE CANNOT BE DELETED]/[SOME PICTURES CANNOT BE DELETED]

- Pictures not based on the DCF standard cannot be deleted.
  - If you want to delete some pictures, format the card after saving necessary data on a PC etc. (P31)

### [NO ADDITIONAL SELECTIONS CAN BE MADE]

- The number of pictures, which can be set at one time when [MULTI] has been selected for [DELETE MULTI] (P48), [FAVORITE] (P109), [TEXT STAMP] (P103) or [RESIZE] (P105) has been exceeded.
  - Reduce the number of pictures set, and then repeat the operation.
- More than 999 favorites have been set.

### [CANNOT BE SET ON THIS PICTURE]

- [TEXT STAMP] or [PRINT SET] cannot be set for pictures not based on the DCF standard.

### **[NOT ENOUGH SPACE ON BUILT-IN MEMORY]/[NOT ENOUGH MEMORY ON THE CARD]**

- There is no space left on the built-in memory or the card.
  - When you copy pictures from the built-in memory to the card (batch copy), the pictures are copied until the capacity of the card becomes full.

### **[SOME PICTURES CANNOT BE COPIED]/[COPY COULD NOT BE COMPLETED]**

- The following pictures cannot be copied:
  - When a picture with the same name as the picture to be copied exists in the copy destination. (Only when copying from a card to the built-in memory.)
  - Files not based on the DCF standard.
- Pictures recorded or edited by other equipment may not be copied.

### **[BUILT-IN MEMORY ERROR FORMAT BUILT-IN MEMORY?]**

- This message will be displayed when you format the built-in memory on a PC.
  - Format the built-in memory on the camera again. (P31) The data on the built-in memory will be deleted.

### **[MEMORY CARD ERROR FORMAT THIS CARD?]**

- This card has a format which is not recognized by the camera.
  - Format the card again with the camera after saving necessary data on a PC etc. (P31)

### **[PLEASE TURN CAMERA OFF AND THEN ON AGAIN]/[SYSTEM ERROR]**

- This message appears when the camera is not operating properly.
  - Turn the camera off and on. If the message persists, contact the dealer or your nearest Service Center.

### **[MEMORY CARD PARAMETER ERROR]/[THIS MEMORY CARD CANNOT BE USED]**

- Use a card compatible with this unit. (P18)
  - SD Memory Card (8 MB to 2 GB)
  - SDHC Memory Card (4 GB to 32 GB)
  - SDXC Memory Card (48 GB to 64 GB)

### **[INSERT SD CARD AGAIN]/[TRY ANOTHER CARD]**

- An error has occurred accessing the card.
  - Insert the card again.
  - Insert a different card.

### **[READ ERROR/WRITE ERROR PLEASE CHECK THE CARD]**

- It has failed to read or write data.
  - Remove the card after turning the power [OFF]. Insert the card again, turn the power on, and try to read or write the data again.
- The card may be broken.
  - Insert a different card.

### **[MOTION RECORDING WAS CANCELLED DUE TO THE LIMITATION OF THE WRITING SPEED OF THE CARD]**

- It is recommended to use a card with SD Speed Class\* with “Class 6” or higher when recording motion pictures.  
\* The SD Speed Class Rating is the speed standard for successive writes.
- In the event that it stops even after using a “Class 6” card or higher, the data writing speed has deteriorated so it is recommended to make a backup and then format (P31).
- Depending on the type of card, motion picture recording may stop in the middle.

### **[A FOLDER CANNOT BE CREATED]**

- A folder cannot be created because there are no remaining folder numbers that can be used. (P116)  
→ Format the card after saving necessary data on a PC etc. (P31)

### **[PICTURE IS DISPLAYED FOR 4:3 TV]/[PICTURE IS DISPLAYED FOR 16:9 TV]**

- The AV cable (P123) is connected to the camera.  
→ Press [MENU] if you want to delete this message at once.  
→ Select [TV ASPECT] in the [SETUP] menu if you want to change the TV aspect. (P30)
- This message also appears when the USB connection cable is connected to the camera only. In this case, connect the other end of the USB connection cable to a PC or a printer. (P114, 117)

### **[PRINTER BUSY]/[PLEASE CHECK THE PRINTER]**

- The printer cannot print.  
→ Check the printer.

### **[NO BATTERY POWER REMAINS]**

- The remaining battery power is low.  
→ Charge the battery.

### **[THIS BATTERY CANNOT BE USED]**

- The battery cannot be recognized by the camera.  
→ Use a genuine Panasonic battery. If this message is displayed even when a genuine Panasonic battery is used, contact the dealer or your nearest Service Center.
- The battery cannot be recognized as its terminal is dirty.  
→ Remove any dirt etc. from the terminal.

## Troubleshooting

First, try out the following procedures (P137 to 145).

If the problem is not resolved, it may be improved by selecting [RESET] (P29) on the [SETUP] menu when taking pictures.

### Battery and power source

#### The camera cannot be operated even when it is turned on.

- The battery is not inserted correctly. (P15)
- The battery is exhausted.

#### The LCD monitor turns off while the camera is turned on.

- Is [SLEEP MODE] (P28) Mode active?  
→ Press the shutter button halfway to cancel this mode.
- The battery is exhausted.

#### The camera turns off immediately after it is turned on.

- The battery is exhausted.
- If you leave the camera on, the battery will be exhausted.  
→ Turn the camera off frequently by using the [SLEEP MODE] Mode etc. (P28)

#### The [CHARGE] lamp flashes.

- Is the temperature of the battery excessively high or low? If it is, it will take longer than usual to charge the battery or charging may remain incomplete.
- Are the terminals of the charger or battery dirty?  
→ Wipe off the dirt using a dry cloth.

## Recording

### The picture cannot be recorded.

- Is the [REC]/[PLAYBACK] selector switch at the [  ] setting? (P33)
- Is there any memory remaining on the built-in memory or the card?  
→ Delete the pictures which are not necessary to increase the available memory. (P47)

### The recorded picture is whitish.

- The picture can become whitish if there is dirt e.g. fingerprints on the lens.  
→ If the lens is dirty, turn on the camera, eject the lens barrel (P8) and gently wipe the lens surface with a soft dry cloth.

### The area around where the pictures were taken becomes dark.

- Was this picture taken with the flash at the close range when the zoom is near [W] (1x)?  
→ Zoom in a little, and then take the pictures. (P42)

### The recorded picture is too bright or dark.

- Check that the exposure is correctly compensated. (P60)

### 2 or 3 pictures are taken at one time.

- Set [HI-SPEED BURST] (P70), [FLASH BURST] (P71) in Scene Mode or [BURST] (P90) of the [REC] Mode menu to [OFF].

### The subject is not focused properly.

- The focus range varies depending on the Recording Mode.  
→ Set to the proper mode for the distance to the subject.
- The subject is beyond the focus range of the camera. (P39)
- There is camera shake (jitter) or the subject is moving slightly. (P41)

### The recorded picture is blurred. The Optical Image Stabilizer is not effective.

- The shutter speed becomes slower when pictures are taken in dark places so hold the camera firmly with both hands to take the pictures. (P35)
- When taking pictures at a slow shutter speed, use the self-timer. (P57)

### The recorded picture looks rough. Noise appears on the picture.

- Is the ISO sensitivity high or the shutter speed slow?  
(ISO sensitivity is set to [ISO] when the camera is shipped. Therefore, when taking pictures indoors etc. noise will appear.)  
→ Decrease the ISO sensitivity. (P85)  
→ Set [COLOR MODE] to [NATURAL]. (P91)  
→ Take pictures in bright places.
- Has [HIGH SENS.] or [HI-SPEED BURST] in the Scene Mode been set? If so, the resolution of the recorded picture decreases slightly because of high sensitivity processing, but this is not a malfunction.

### The brightness or the hue of the recorded picture is different from the actual scene.

- If recording under fluorescent light, the brightness or the hue may change slightly when the shutter speed becomes fast. This occurs due to the characteristics of fluorescent light. It is not a malfunction.

### While picture-taking or when the shutter button is pressed halfway, a reddish vertical line (smear) appears on the LCD monitor or a part or the whole of the screen has a tinge of red.

- This is a characteristic of CCDs, and it appears when the subject has a bright part. Some unevenness may occur in the surrounding areas, but this is not a malfunction.  
It is recorded in motion pictures but is not recorded on still pictures.
- It is recommended that you take pictures while taking care not to expose the screen to sunlight or any other source of strong light.



### Motion picture recording stops in the middle.

- Depending on the type of the card, recording may stop in the middle.  
→ It is recommended to use a card with SD Speed Class\* with "Class 6" or higher when recording motion pictures.  
\* The SD Speed Class Rating is the speed standard for successive writes.
- In the event that it stops even after using a "Class 6" card or higher, the data writing speed has deteriorated so it is recommended to make a backup copy of the data and then format the card in this unit (P31).

## Lens

### **Recorded image may be warped, or nonexistent color is surrounding the subject.**

- It is possible that the subject may be warped slightly, or the borders get colored, depending on the zoom magnification, due to the characteristics of the lens. Also, the peripherals of the image might look warped because the perspective is enhanced when the wide angle is used. This is not a malfunction.

## LCD monitor

### **The LCD monitor turns off although the camera is turned on.**

- The LCD monitor turns off when [SLEEP MODE] (P28) is activated.  
[This does not happen when using the AC adaptor (optional).]  
If the remaining battery power is low, it may take longer for the flash to be charged, and the time during which the LCD monitor is turned off may become longer.

### **The LCD monitor becomes darker or brighter for a moment.**

- This phenomenon appears when you press the shutter button halfway to set the aperture value and does not affect the recorded pictures.
- This phenomenon also appears when the brightness changes when the camera is zoomed or when the camera is moved. This is because of operation of the automatic aperture of the camera, and it is not a malfunction.

### **The LCD monitor flickers indoors.**

- The LCD monitor may flicker for a few seconds after turning the camera on indoors under fluorescent light. This is not a malfunction.

### **The LCD monitor is too bright or dark.**

- [POWER LCD] or [HIGH ANGLE] is activated. (P27)

### **Black, red, blue and green dots appear on the LCD monitor.**

- This is not a malfunction.  
These pixels do not affect the recorded pictures.

### **Noise appears on the LCD monitor.**

- In dark places, noise may appear to maintain the brightness of the LCD monitor. This does not affect the pictures you are recording.

## Flash

**The flash is not activated.**

- Is the flash setting set to [  ]?  
→ Change the flash setting. (P50)
- Flash Mode is not available when [BURST] (P90) in [REC] Mode menu has been set.

**Flash is activated several times.**

- The flash is activated twice when Red-Eye Reduction (P51) has been set.
- Has [FLASH BURST] (P71) in Scene Mode been set?

## Playback

**The picture being played back is rotated and displayed in an unexpected direction.**

- [ROTATE DISP.] (P108) is set to [ON].

**The picture is not played back.**

- Is the [REC]/[PLAYBACK] selector switch set to [  ]? (P44)
- Is there a picture on the built-in memory or the card?  
→ The pictures on the built-in memory appear when a card is not inserted. The picture data on the card appears when a card is inserted.
- Is this a picture whose file name has been changed in the PC? If it is, it cannot be played back by this unit.

**The recorded pictures are not displayed.**

- Has [CATEGORY PLAY] or [FAVORITE PLAY] been set for playback?  
→ Change to [NORMAL PLAY]. (P44)

**The folder number and the file number are displayed as [—] and the screen turns black.**

- Is this a non-standard picture, a picture which has been edited using a PC or a picture which was taken by another maker of digital camera?
- Did you remove the battery immediately after picture-taking or did you take the picture using a battery with a low remaining charge?  
→ Format the data to delete the pictures mentioned above. (P31)  
(Other pictures will be deleted as well and it will not be possible to restore them. Therefore, check well before formatting.)

**With a Calendar Search, pictures are displayed on dates differing from the actual dates on which the pictures were taken.**

- Is the clock in the camera set properly? (P19)
- When pictures edited using a PC or pictures taken by other equipment are searched, they may be displayed on dates differing from the actual dates on which the pictures were taken.

**White round spots like soap bubbles appear on the recorded picture.**

- If you take a picture with the flash in a dark place or indoors, white round spots may appear on the picture caused by the flash reflecting particles of dust in the air. This is not a malfunction. A characteristic of this is that the number of round spots and their position differ in every picture.



**Red part of the recorded image has changed color to black.**

- While the Digital Red-Eye Correction is used with a flash setting of the Red-Eye Reduction ([  ], [  ], [  ]), if you take a picture of a subject with red color surrounded by skin tone color, the red part may be corrected to black by the Digital Red-Eye Correction function.  
→ It is recommended to take the picture with Flash Mode set to [  ], [  ], or [  ], or [RED-EYE REMOVAL] on the [REC] Mode menu set to [OFF]. (P93)

**[THUMBNAIL IS DISPLAYED] appears on the screen.**

- Is it a picture that has been recorded with other equipment? In such cases, these pictures may be displayed with a deteriorated picture quality.

**A clicking sound is recorded in the motion pictures.**

- This unit automatically adjusts the aperture during motion picture recording. At such times, a clicking sound is heard, and this sound may be recorded on the motion pictures. This is not a malfunction.

## TV, PC and printer

### The picture does not appear on the television.

- Is the camera connected to the TV correctly?  
→ Set the TV input to External Input Mode.

### The display areas on the TV screen and the camera's LCD Monitor are different.

- Depending on the TV model, the pictures may be extended horizontally or vertically or they may be displayed with their edges cut off.

### The motion pictures cannot be played back on a TV.

- Are you trying to play back the motion pictures by directly inserting the card in the card slot of the TV?  
→ Connect the camera to the TV with the AV cable and then play back the pictures on the camera. (P123)

### The picture is not displayed fully on the TV.

- Check [TV ASPECT] setting. (P30)

### The picture cannot be transferred when the camera is connected to a PC.

- Is the camera connected to the PC correctly?
- Is the camera recognized by the PC correctly?  
→ Set to [PC] in [USB MODE]. (P30, 114)

### The card is not recognized by the PC. (The built-in memory is recognized.)

- Disconnect the USB connection cable. Connect it again while the card is inserted in the camera.

### The SDXC Memory Card is not recognized by the PC.

- Check if your computer supports SDXC Memory Cards.  
<http://panasonic.net/avc/sdcard/information/SDXC.html>
- Do not format the card if you see the message that encourages formatting the card that may appear when connecting the camera to the PC.
- If the [ACCESS] on the LCD Monitor does not disappear, turn the camera off, and then disconnect the USB connection cable.

### The picture cannot be printed when the camera is connected to a printer.

- Pictures cannot be printed using a printer which does not support PictBridge.  
→ Set to [PictBridge(PTP)] in [USB MODE]. (P30, 117)

### The ends of the pictures are cut at printing.

- When using a printer with a cropping or borderless printing function, cancel this function before printing. (For details, refer to the operating instructions for the printer.)
- When you order photo studios to print pictures, ask the photo studio if the 16:9 pictures can be printed.

## Others

### **An unreadable language was selected by mistake.**

- Press [MENU], select the [SETUP] menu icon [  ] and then select the [  ] icon to set the desired language. (P32)

### **A red lamp sometimes turns on when the shutter button is pressed halfway.**

- In dark places, the AF Assist Lamp (P93) lights red to make it easier to focus on a subject.

### **The AF Assist Lamp does not turn on.**

- Is [AF ASSIST LAMP] on the [REC] Mode menu set to [ON]? (P93)
- The AF Assist Lamp does not turn on in bright places.

### **The camera becomes warm.**

- The surface of the camera may become warm during use. This does not affect the performance or quality of the camera.

### **The lens clicks.**

- When the brightness changes due to zoom or camera movement etc., the lens may click and the picture on the screen may drastically change. However, the picture is not affected. The sound is caused by the automatic adjustment of the aperture. This is not a malfunction.

### **The clock is reset.**

- If you do not use the camera for a long time, the clock may be reset.  
→ When the message [PLEASE SET THE CLOCK] appears, set the clock again.

### **When pictures are taken using the zoom, they are slightly distorted and the areas around the subject contain colors which are not actually present.**

- It is possible that the subject may be warped slightly, or the borders get colored, depending on the zoom magnification, due to the characteristics of the lens, but this is not a malfunction.

### **Zooming stops instantaneously.**

- When using the Extended Optical Zoom, the zooming action will stop temporarily in the middle. This is not a malfunction.

### **Zoom does not go up to maximum magnification.**

- Is the camera set to Macro Zoom Mode? (P56)  
Maximum zoom during Macro Zoom Mode is 3× digital zoom.

**The file numbers are not recorded consecutively.**

- When you perform an operation after taking a certain action, the pictures may be recorded in folders with different numbers from the ones used prior to the operation. (P116)

**The file numbers are recorded in ascending order.**

- If the battery was inserted or removed without first turning the camera's power off, the folder and file numbers for the pictures taken will not be stored in the memory. When the power is then turned back on and pictures are taken, they may be stored under file numbers which should have been assigned to previous pictures.

**[AGE] is not displayed correctly.**

- Check the clock (P20) and birthday settings (P68).

**The lens barrel is retracted.**

- The lens barrel retracts about 15 seconds after switching from [REC] Mode to [PLAYBACK] Mode.

**When the camera is left alone, the slide show is suddenly displayed.**

- This is the [AUTO DEMO] to introduce the features of the camera. Touch any point of the screen to return the camera to the original screen.

**Touch Panel operation cannot be done.**

- This may occur when you keep touching the screen for a long period of time. In this case, keep your finger away from the screen for about 10 seconds and try again.

## Number of Recordable Pictures and Available Recording Time

- The number of recordable pictures and the available recording time are an approximation. (These vary depending on the recording conditions and the type of card.)
- The number of recordable pictures and the available recording time varies depending on the subjects.
- When the number of recordable pictures exceeds 99999, it is displayed as “+99999” on the screen.

### ■ Number of recordable pictures

| Aspect ratio                       |        | 4:3   |             |            |            |              |
|------------------------------------|--------|-------|-------------|------------|------------|--------------|
| Picture size                       |        | 14M   | 10M ( 1/2 ) | 5M ( 1/2 ) | 3M ( 1/2 ) | 0.3M ( 1/2 ) |
| Built-in Memory<br>(Approx. 40 MB) |        | 8     | 12          | 20         | 27         | 200          |
| Card                               | 256 MB | 48    | 68          | 110        | 150        | 1080         |
|                                    | 512 MB | 97    | 135         | 220        | 300        | 2150         |
|                                    | 1 GB   | 195   | 270         | 440        | 600        | 4310         |
|                                    | 2 GB   | 390   | 550         | 900        | 1220       | 8780         |
|                                    | 4 GB   | 780   | 1080        | 1770       | 2410       | 17240        |
|                                    | 6 GB   | 1190  | 1650        | 2690       | 3660       | 26210        |
|                                    | 8 GB   | 1590  | 2210        | 3610       | 4910       | 35080        |
|                                    | 12 GB  | 2400  | 3330        | 5440       | 7400       | 52920        |
|                                    | 16 GB  | 3200  | 4450        | 7260       | 9880       | 70590        |
|                                    | 24 GB  | 4650  | 6460        | 10550      | 14350      | 102500       |
|                                    | 32 GB  | 6430  | 8930        | 14570      | 19820      | 141620       |
|                                    | 48 GB  | 9330  | 13000       | 21420      | 28020      | 182140       |
|                                    | 64 GB  | 12670 | 17650       | 29070      | 38020      | 247160       |

| Aspect ratio                       |        | 3:2   | 16:9  |
|------------------------------------|--------|-------|-------|
| Picture size                       |        | 12.5" | 10.5" |
| Built-in Memory<br>(Approx. 40 MB) |        | 9     | 11    |
| Card                               | 256 MB | 54    | 65    |
|                                    | 512 MB | 105   | 125   |
|                                    | 1 GB   | 210   | 250   |
|                                    | 2 GB   | 440   | 520   |
|                                    | 4 GB   | 880   | 1030  |
|                                    | 6 GB   | 1330  | 1580  |
|                                    | 8 GB   | 1790  | 2110  |
|                                    | 12 GB  | 2700  | 3190  |
|                                    | 16 GB  | 3600  | 4250  |
|                                    | 24 GB  | 5230  | 6180  |
|                                    | 32 GB  | 7230  | 8540  |
|                                    | 48 GB  | 10400 | 12560 |
|                                    | 64 GB  | 14120 | 17040 |

## ■ Available recording time (when recording motion pictures)

| Recording quality setting                 |        | HD          | WVGA        | VGA         | QVGA        |
|-------------------------------------------|--------|-------------|-------------|-------------|-------------|
| <b>Built-in Memory</b><br>(Approx. 40 MB) |        | —           | —           | —           | 1 min 26 s  |
| <b>Card</b>                               | 256 MB | 59 s        | 2 min 35 s  | 2 min 40 s  | 7 min 50 s  |
|                                           | 512 MB | 2 min 00 s  | 5 min 10 s  | 5 min 20 s  | 15 min 40 s |
|                                           | 1 GB   | 4 min 00 s  | 10 min 20 s | 10 min 50 s | 31 min 20 s |
|                                           | 2 GB   | 8 min 20 s  | 21 min 20 s | 22 min 10 s | 1 h 4 min   |
|                                           | 4 GB   | 16 min 30 s | 41 min 50 s | 43 min 40 s | 2 h 5 min   |
|                                           | 6 GB   | 25 min 10 s | 1 h 3 min   | 1 h 6 min   | 3 h 11 min  |
|                                           | 8 GB   | 33 min 40 s | 1 h 25 min  | 1 h 28 min  | 4 h 15 min  |
|                                           | 12 GB  | 50 min 50 s | 2 h 8 min   | 2 h 14 min  | 6 h 26 min  |
|                                           | 16 GB  | 1 h 8 min   | 2 h 52 min  | 2 h 59 min  | 8 h 35 min  |
|                                           | 24 GB  | 1 h 38 min  | 4 h 9 min   | 4 h 19 min  | 12 h 27 min |
|                                           | 32 GB  | 2 h 16 min  | 5 h 45 min  | 5 h 59 min  | 17 h 13 min |
|                                           | 48 GB  | 3 h 20 min  | 8 h 27 min  | 8 h 48 min  | 25 h 18 min |
|                                           | 64 GB  | 4 h 29 min  | 11 h 22 min | 11 h 50 min | 34 h 3 min  |

\* Motion pictures can be recorded continuously up to 2 GB.

The maximum available recording time for up to 2 GB only is displayed on the screen.



### Note

- The number of recordable pictures and the available recording time displayed on the screen may not decrease in order.
- The Extended Optical Zoom does not work when [MACRO ZOOM] is set or in [TRANSFORM], [HIGH SENS.], [HI-SPEED BURST], [FLASH BURST] and [PHOTO FRAME] in Scene Mode so the picture size for [ ] is not displayed.

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