# A SHORT GUIDE TO PHOTOGRAPHY

Photography can be a rewarding pursuit. It is a broad and disciplined field that can take years to master. But the pleasure in making photographs and the joy of capturing a magical moment cannot be compared. The guide is an introduction to some basic photographic principles.

The lens aperture controls not only exposure, but also depth of field; the area between the closest object in focus and the furthest object in focus. The larger the aperture value, the greater the depth of field. The smaller the aperture value, the shallower the depth of field. The required shutter speed for the exposure increases with the aperture value. Usually landscape photographs use a large depth of field (large aperture value) to keep the foreground and background in focus, and portraits use a shallow depth of field (small aperture value) to separate the subject from the background.

Depth of field also changes with focal length. The smaller the focal length, the greater the depth of field; the longer the focal length, the shallower the depth of field.
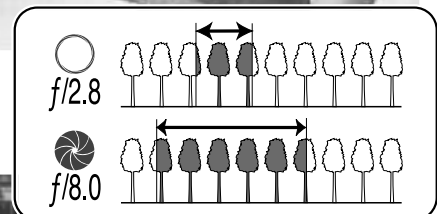
The shutter controls not only exposure, but also the ability to stop motion. Fast shutter speeds are used in sport photography to stop action. Slow shutter speeds can be used to show the flow of motion such as water cascading over a waterfall. The use of a tripod is recommended with slow shutter speeds.

The change in aperture and shutter speed is not apparent in the live image. Unlike film cameras, test photographs can be taken and immediately viewed. For critical work, take a test photograph at the set aperture or shutter speed and view the result in Quick View (p. 30). The image can be deleted if not acceptable and another test image can be taken at a different setting.
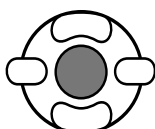
ADVANCED PLAYBACK

The basic functions in this mode are described in the basic playback section on pages 30 through 33. This section covers how to playback movie clips as well as the advanced function on the playback menu. Movie clips can be played back in Quick View.
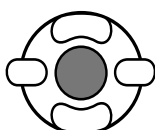
PLAYING BACK MOVIES
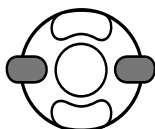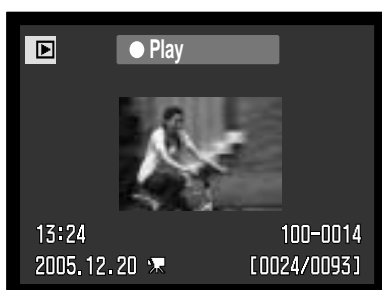
Use the left/right keys of the controller to display the movie.
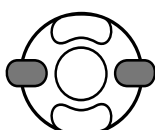
Press the center of the controller to play back the movie clip.

Press the controller to pause the movie playback; press the controller again to resume the playback.
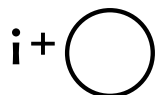
Press the display button to view the movie with or without the guidance bar.

During playback, the left/right keys rewind and fast forward the recording.

MENU   To cancel the playback, press the menu button.

CAPTURING A MOVIE FRAME

A single frame from a movie clip can be copied and saved as a still image. The copied image has the same image size as the original movie.
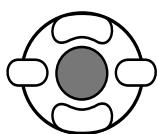
During playback, press the center button of the controller to pause the movie playback at the point to capture the frame. When the movie is paused, the left/right keys can be used to jog the clip to display the correct frame.
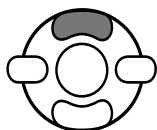
Press the up key of the controller to capture the frame. Before the frame is captured, a confirmation screen appears. Choosing "Yes" executes the operation, "No" cancels it.
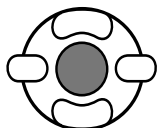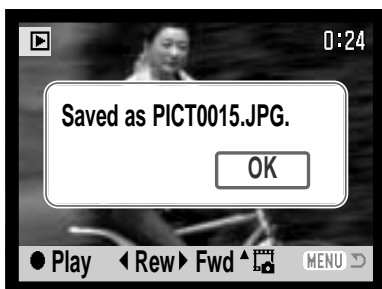
The file name of the captured image is displayed. Press the center button of the controller to complete the operation.

NAVIGATING THE PLAYBACK MENU

Pressing the menu button (1) turns the menu on and off. The four-way keys of the controller (2) move the cursor in the menu. Pressing the central button of the controller enters a setting.

MENU ( )   Activate the menu with the menu button.

Use the left/right keys of the controller to highlight the appropriate menu tab; the menu changes as the tabs are highlighted.

Use the up/down keys to scroll through the menu options. Highlight the option whose setting needs to be changed.

With the menu option highlighted, press the right controller key; the settings are displayed with the current setting highlighted. If "Enter" is displayed, press the center of the controller to continue.

Use the up/down keys to highlight the new setting.

Press the central button of the controller to select the highlighted setting.

Once a setting has been selected, the cursor will return to the menu options and the new setting will be displayed. To return to the playback mode, press the menu button.

▶1	2	3	🔧SETUP
⚠ Delete	–		
⚠ Format	–		
🔒 Lock	–		
Copy	–		
			MENU ⤵

To delete recorded images (p. 73).

To format the memory (p. 74).

To protect images from deletion (p. 75).

To copy files to the internal memory or memory card (p. 76).

1	▶2	3	🔧SETUP
Slide show	–		
└ Playback	–		
└ Duration	5 sec.		
└ Repeat	Off		
			MENU ⤵
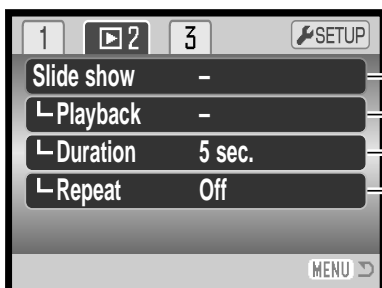
To play back images automatically (p. 80).

To select the images for the Slide Show (p. 80).

To specify how long each image is played back (p. 80).

To repeat the Slide Show presentation automatically (p. 80).

1	2	▶3	🔧SETUP
🖨 DPOF set	–		
└ Date imprint	Off		
└ Index print	–		
✉ E-mail copy	–		
			MENU ⤵
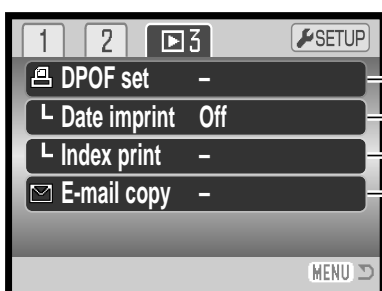
To select images for DPOF printing (p. 82).

To print the date with the DPOF images (p. 83).

To create an index print with the DPOF order (p. 83).

To copy and resize images to be e-mailed (p. 79).

Refer to the following sections for descriptions of the menu options.

FRAME-SELECTION SCREEN

When a marked-frames setting is chosen on a menu, the frame selection screen will appear. This screen allows multiple images to be chosen.
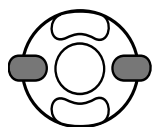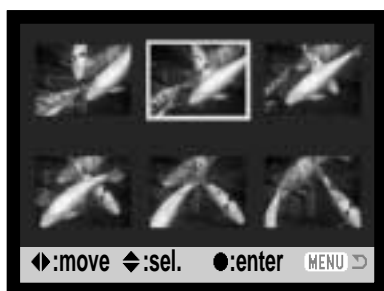
The left/right keys of the controller moves the yellow border to select the image.
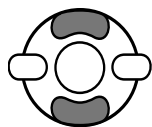
The up key of the controller selects the frame; when selected, an indicator appears next to the image. The down key deselects the image removing the indicator.

The garbage can indicates the image is selected for deletion.

The key indicates the image is locked or selected to be locked.

The printer icon indicates the image is selected for DPOF printing. The number of copies is shown on the right.

The check indicates the image is selected for the slide show or to be copied.
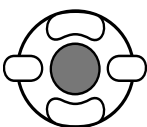
Press the central button of the controller to complete the operation.

MENU The menu button cancels the screen and any operation made.

Indicators may be displayed on the right of each index image to indicate movie and E-mail copy files.

Movie file

E-mail copy file

DELETE

⚠ Deleting permanently erases the file. Once deleted, a file cannot be recovered. Care should be taken when deleting images.

```
┌───┬───┬───┐          🔧SETUP
│ ▶1│ 2 │ 3 │
├───┴───┴───────────────────┤
│ ⚠ Delete        –         │
│ ⚠ Format        –         │
│ ⛔ Lock          –         │
│ Copy            –         │
│                           │
│                  MENU ⤵   │
└───────────────────────────┘
```

Single, multiple, or all files can be deleted in section 1 of the playback menu (p. 71). To delete images in the internal memory, remove the memory card from the camera. The delete option has three settings:

This frame	The file displayed or highlighted in the playback mode is deleted.
All frames	All unlocked files are deleted.
Marked frames	To delete multiple files. When this setting is chosen, the frame-selection screen is displayed. Use the left/right keys of the controller to highlight the first file to be deleted. Pressing the up key marks the thumbnail with the delete indicator. To deselect a file for deletion, highlight it with the yellow border and press the down key; the indicator disappears. Continue until all the files to be deleted are marked. Press the central button of the controller to continue (the confirmation screen appears), or press the menu button to cancel the operation and return to the playback menu. On the confirmation screen, highlighting and entering "Yes" deletes the marked files.

Before a file is deleted, a confirmation screen appears. Choosing "Yes" executes the operation, "No" cancels it.

The delete function will only erase unlocked files. Locked files must be unlocked before they can be deleted.

```
┌───┬───┬───┐          🔧SETUP
│ ▶1│ 2 │ 3 │
├───┴───┴───────────────────┤
│ ⚠ Delete        –         │
│ ┌─────────────────────┐   │
│ │ ⚠ Delete this frame?│   │
│ │ ┌──────┐  ┌──────┐  │   │
│ │ │ Yes  │  │  No  │  │   │
│ │ └──────┘  └──────┘  │   │
│ └─────────────────────┘   │
│                  MENU ⤵   │
└───────────────────────────┘
```

FORMAT

⚠️ When a memory card or the camera's internal memory is formatted, all data is erased.

The formatting function is used to erase all data on a memory card or in the camera's internal memory. To format the internal memory, remove the memory card from the camera.

Before formatting, copy the data to a computer or storage device. Locking images will not protect them from being deleted when the memory is formatted. Always format the memory using the camera; never use a computer.

When the format option is selected and entered in section 1 of the playback menu (p. 71), a confirmation screen appears. Choosing "Yes" formats the memory, choosing "No" cancels the formatting operation. A screen appears to indicate the memory has been formatted.
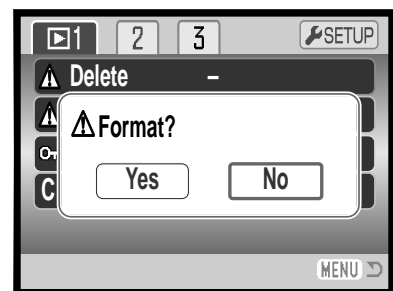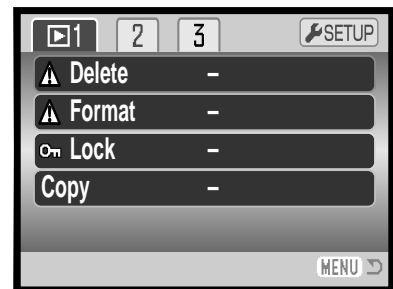
A memory card used in another camera may have to be formatted before being used. If the unable-to-use-card message appears, the card should be formatted with the camera. If the card-error message appears, press the central button of the controller to close the window; check the Konica Minolta web site for the latest compatibility information:

North America: http://kmpi.konicaminolta.us
Europe: http://www.konicaminoltaeurope.com/

LOCK

Single, multiple, or all files can be locked. To lock images in the internal memory, remove the memory card from the camera.

A locked file cannot be deleted by either the playback menu functions or the QV/delete button. However, the formatting function (p. 74) will erase all files whether locked or not. Important images should be locked. The lock function is in section 1 of the playback menu (p. 71). The lock option has four settings:

This frame	The file displayed or highlighted in the playback mode is locked.
All frames	All files on the memory card or in the internal memory are locked.
Marked frames	To lock or unlock multiple files. When this setting is chosen, the frame-selection screen is displayed. Use the left/right keys of the controller to highlight the file to be locked. Pressing the up key marks the file with the lock indicator. To unlock a file, highlight it with the yellow border and press the down key; the lock indicator disappears. Continue until all the files to be locked are marked. Press the central button of the controller to lock the marked thumbnails, or press the menu button to cancel the operation and return to the playback menu.
Unlock all	All files on the memory card or in the internal memory are unlocked.

COPY AND E-MAIL COPY

The copy function in section 1 of the playback menu (p. 71) makes exact copies of image or movie files and can store the copied data on another memory card or in the internal memory.

E-mail Copy in menu section 3 makes a standard 640 X 480 (VGA) JPEG copy of an original still image so that it may be easily transmitted by e-mail. E-mail copies can only be copied to the original memory source.
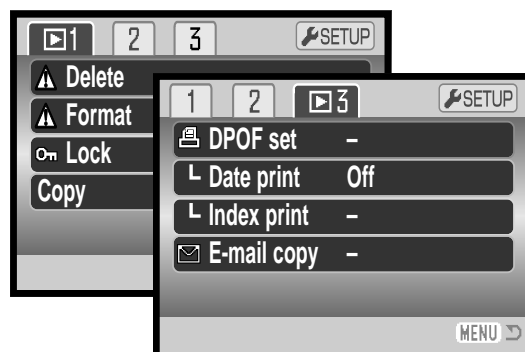
To copy or E-mail copy the images in the internal memory, remove the memory card from the camera. When a copy function is used, a folder is created for the files (p. 102); copy files are placed in a folder with a name ending in CP, and E-mail Copy images are placed in a folder ending in EM. The same folder is used to store copies until the number of images exceed 9,999. Copies of locked images are unlocked. DPOF information is not copied.

The copy function has three menu options and E-mail copy function has two:

This frame	To copy the file displayed or highlighted in the playback mode.
All frames	To copy all the files in the internal memory. (Copy function only)
Marked frames	To copy single or multiple files. When selected, the frame-selection screen will appear; highlight the file to be copied with the yellow border and then press the up key of the controller to mark it with the check indicator. To deselect a file to be copied, highlight the selected thumbnail and press the down key; the check disappears. Continue until all the files to be copied are marked. Press the central button of the controller to continue, or press the menu button to cancel the operation and return to the playback menu.

Up to approximately 13MB of data can be copied. If too many images have been selected, a warning will appear and the copy routine will be canceled. Divide the number of images into two or three batches. The amount of data can be converted into E-mail copies depends on the amount of free memory remaining.

Copy

When the image(s) to be copied are selected, a message screen is displayed. The appearance of the screen varies depending if a memory card is inserted or not. The messages are highlighted during the copying procedure.

When a memory card is inserted:

Copy
1 **Change card.**
Remove memory card to
copy to internal memory.
2 **Copying . . .**
3 **Copying completed.**
● **enter**   MENU ⤴
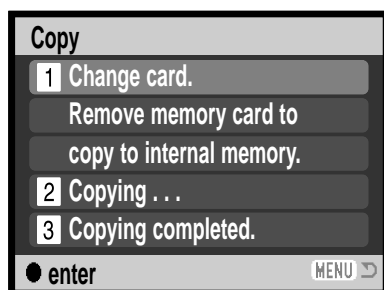
To copy from one memory card to another.
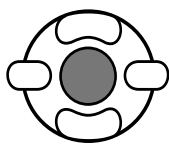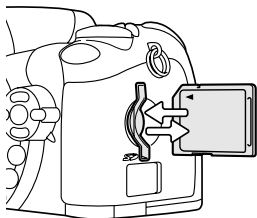
When the change-card message is highlighted, remove the camera's memory card and insert the card to which the image should be copied. Press the central button of the controller to continue or the menu button to cancel the copy operation.

To copy from a memory card to the internal memory.
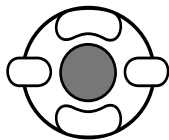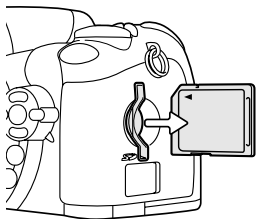
When the change-card message is highlighted, remove the camera's memory card. Press the central button of the controller to continue or the menu button to cancel the copy operation.

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When a memory card is not inserted:

```
Copy
 1  Insert memory card.
 2  Copying . . .
 3  Copying completed.


● enter                    MENU
```
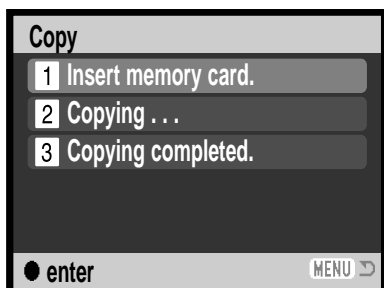
To copy from the internal memory to a memory card.
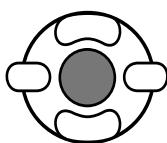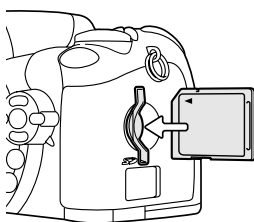
When the insert-memory-card message is highlighted, insert the memory card to which the image should be copied. Press the central button of the controller to continue or the menu button to cancel the copy operation.

Copied to 101KM_CP.

OK

After the copy-completed message is highlighted, a screen indicates the name of the folder containing the copied images; press the central controller button to return to the menu.

E-mail Copy

Copied to 102KM_EM.

OK
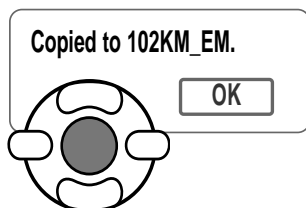
When the image(s) to be converted to an e-mail file are selected, the copy routine begins and a screen appears indicating the name of the folder containing the copied images; press the central button of the controller to return to the menu.

To copy captured movie frames, the image size must be equal to or smaller than the frame image size.

Camera Notes

The copy-unsuccessful message appears when one or all of the images could not be copied. Check the memory card or the internal memory to see which files were copied and then repeat the procedure for the uncopied images.

SLIDE SHOW

Section 2 of the playback menu controls the slide-show function. This function automatically displays all still images and movie clips on the memory card or in the camera's internal memory in order. The menu has the following options:

Slide show	**Enter**	To start the slide-show presentation. Highlight "Enter" and press the central button of the controller to start the slide show.
Playback	**All frames**	To select all the images on the memory card or in the internal memory to be displayed in the slide-show presentation.
	Marked frames	To select specific images to be displayed in the slide-show presentation. When this setting is chosen, the frame-selection screen is displayed. Use the left/right keys of the controller to highlight the image to be included in the presentation. Pressing the up key will mark the image with a check indicator. To deselect a marked image, highlight it with the yellow border and press the down key; the check disappears. Continue until all the images have been edited. Press the controller to set the marked frames, or press the menu button to cancel the operation and return to the playback menu.
Duration	**1 - 60s.**	To select the period each still image is displayed during the slide show.
Repeat	**On / Off**	Selecting "On" causes the slide show to repeat until it is canceled using the menu button. "Off" ends the slide show presentation and returns to the playback menu when all the images have been displayed once.

To display all the images recorded in the internal memory, remove the memory card from the camera.

The controller can be used to control the presentation during playback.
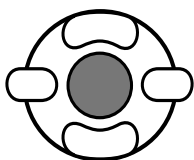
Press the central button of the controller to pause and restart the slide show presentation.
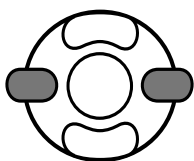
The left/right keys advance to the next still image or return to the previous one. During a movie, the keys forward or rewind the clip

MENU ◯ Press the menu button to cancel the presentation.

Camera Notes
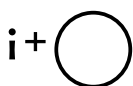
i⁺ ◯ The presentation can be viewed without image information. Before opening the playback menu, press the information (i⁺) button to turn off the information display.

1	▶2	3	⚙SETUP
Slide show		–	
└Playback		–	
└Duration		5 sec.	
└Repeat		Off	

MENU ⤵

▶

1600
FINE

13:24   100-0001
2005.12.19   [0022/0093]

1600 FINE

13:24   100-0002
2005.12.19   [0023/0093]

1600 FINE

▶

13:24   100-0003
2005.12.19   [0024/0093]

▶

13:24   100-0004
2005.12.19   [0025/0093]

▶

13:24   100-0005
2005.12.19   [0026/0093]

13:24   100-0006
2005.12.19   [0027/0093]

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ABOUT DPOF

This camera is supported by DPOF™ version 1.1. The DPOF (Digital Print Order Format) allows direct printing of still images from digital cameras. After the DPOF file is created, the memory card is simply taken to a photofinishing service or inserted into the memory-card slot of DPOF compatible printers. When a DPOF file is created, a misc. folder is automatically created to store it (p. 102).

DPOF SETUP

The DPOF-set menu option is used to create an order for standard prints from still images on the memory card or in the camera's internal memory. To select images in the internal memory, remove the memory card from the camera. Print orders are created in section 3 of the playback menu (p. 71). The orders set in this menu can be printed with PictBridge compatible printer (p.113). The print menu option has four settings:

This frame	To create a DPOF file for the displayed or highlighted image.
All frames	To create a DPOF file for all images on the memory card or in the internal memory.
Marked frames	To chose a group of images to be printed or when the number of copies of each image varies. When selected, the frame selection screen appears. Use the left/right keys of the controller to highlight an image to be printed. Pressing the up key will mark the image with the print indicator. The number next to the indicator shows the number of copies that will be printed. Pressing the up key increases the number of copies, pressing the down key decreases the number. A maximum of nine copies can be ordered. To deselect an image for printing, press the down key until the number of copies reaches zero and the print indicator disappears. Continue until all the images to be printed are marked. Press the central button of the controller to create the DPOF file, or press the menu button to cancel the operation and return to the playback menu.
Cancel all	To delete the DPOF file.

When the **this-frame** or **all-frames** setting is chosen, a screen appears requesting the number of copies of each image; a maximum of nine copies can be ordered. Use the up/down keys of the controller to set the required number of copies. If the **all-frames** setting was used to create a print order, any additional images recorded afterwards will not be included in the order.

DPOF files created with another camera will be canceled. After the pictures have been printed, the DPOF file will still remain on the memory card or in the internal memory and must be canceled manually.

DPOF information is not copied with images. To create a DPOF file for copied images, select the DPOF-set menu again.

DATE IMPRINT

To print the date of capture with each image with a DPOF compatible printer, turn the section 3 menu option on. To cancel date imprint, simply turn the option off. How and where the date is printed varies with the printer.

INDEX PRINT

To create an index print of all the images on the card or in the internal memory, select "On" in the index print option in section 3 of the playback menu. To cancel an index print, simply change the setting to "Off."

If an index-print order is created, any additional images saved afterwards will not be included in the index print. The number of images printed per sheet differs between printers. The information printed with the thumbnails can vary.

Camera Notes

DPOF files and images can be printed directly from the camera with a DPOF compatible PictBridge printer, see page 108.

VIEWING IMAGES ON A TELEVISION

It is possible to view camera images on your television. The camera has a video-out terminal to make the connection using the supplied Video cable VC-400. The camera is compatible with the NTSC and PAL standards. The video-output setting can be checked and set in section 4 of the setup menu (p. 96). To view images recorded in the internal memory, remove the memory card from the camera.
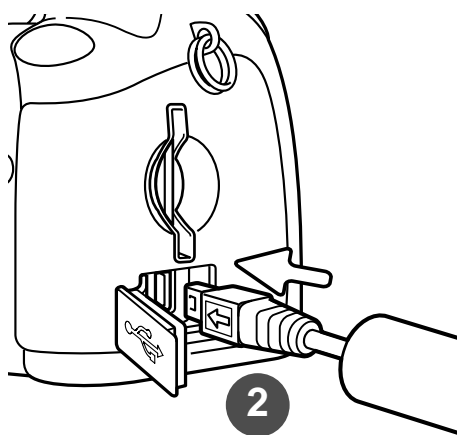
1. Turn off the television and the camera.

2. Insert the small plug of the video cable into the camera's video-out terminal. The arrow mark on the plug should face the back of the camera.

3. Plug the other end of the video cable into the video input terminal on the television.

4. Turn the television on.

5. Change the television to the video channel.

6. Turn the camera's mode dial to the playback position and turn on the camera. The camera's monitors will not activate when the camera is attached to a television. The playback-mode display will be visible on the television screen.

7. View images as described in the playback section.

SETUP MENU

The setup menu is used to control the camera's functions and operation. The navigating the setup menu section covers the operation of the menu. The section is followed by detailed descriptions of the settings.

OPENING THE SETUP MENU

The setup menu is opened from the other menus. It can be accessed from any of the recording or playback menus.
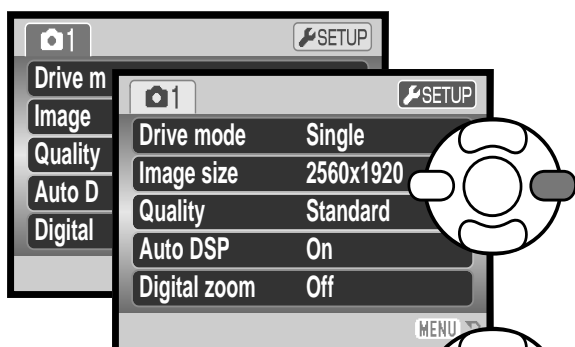
Use the right key of the controller to highlight setup tab at the top of the menu.
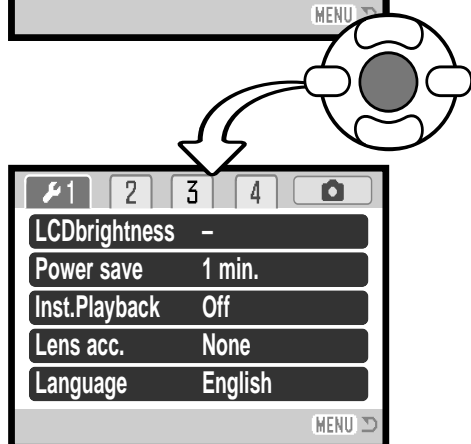
Press the central button of the controller to open the setup menu.

Reverse the procedure to return to the original menu. Pressing the menu button closes the menu and returns to the recording or playback modes.

Setup menu

NAVIGATING THE SETUP MENU

See page 85 on how to open the menu. The four-way keys of the controller (1) move the cursor in the menu. Pressing the central button of the controller enters a setting.

Use the left/right keys of the controller to highlight the appropriate menu tab; the menu changes as the tabs are highlighted.

Use the up/down keys to scroll through the menu options. Highlight the option whose setting needs to be changed.

With the menu option highlighted, press the right controller key; the settings are displayed with the current setting highlighted. If "Enter" is displayed, press the center of the controller to continue.

Use the up/down keys to highlight the new setting.

Press the central button of the controller to select the highlighted setting. Once a setting has been selected, the cursor will return to the menu options and the new setting will be displayed.

MENU   Close the menu with the menu button.

🔧1	2	3	4	📷
LCDbrightness	–			
Power save	1 min.			
Inst.Playback	Off			
Lens acc.	None			
Language	English			
				MENU ⊃
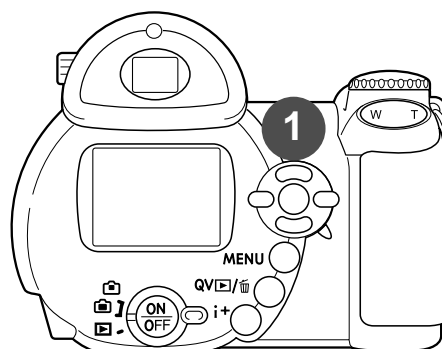
To set monitor brightness (p. 88).

To set the auto power save period (p. 88).

To play back a still image after it is recorded (p. 89).

Specified when using a lens accessory (p. 90).

To set the menu language (p. 19).

1	🔧2	3	4	📷
File # memory	Off			
Folder name	Std. form			
Date/Time set	–			
Date imprint	Off			
				MENU ⊃
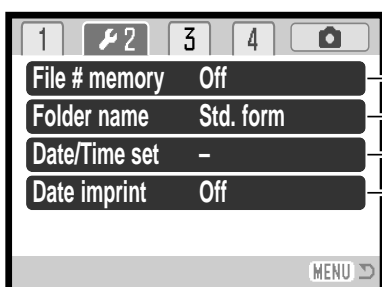
To activate file number memory (p. 91).

To select the folder name format (p. 92).

To set the camera's clock and calendar (p. 93, 18).

To activate date imprinting (p. 93).

1	2	🔧3	4	📷
Reset default	–			
Audio signals	1			
Focus signal	1			
Shutter FX	1			
				MENU ⊃
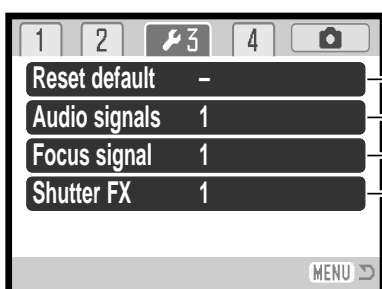
To reset camera functions (p. 94).

To change or turn off audio signals (p. 95).

To change or turn off the focus signal (p. 96).

To change or turn off the shutter sound effect (p. 96).

1	2	3	🔧4	📷
Video output	NTSC			
Transfer mode	Data storage			
Self-timer	10 sec.			
				MENU ⊃
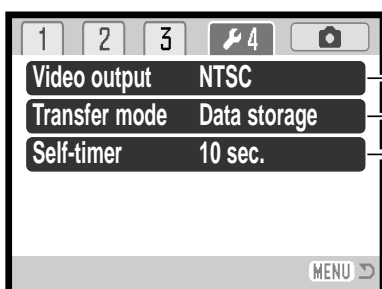
To switch video output between NTSC and PAL (p. 96).

To specify camera use with a computer or printer (p. 96).

To change the selt-timer delay period (p. 96).

LCD MONITOR BRIGHTNESS

Monitor brightness can be adjusted in 11 levels. Brightness can be set individually for viewfinder and direct viewing in the recording mode. Turn the mode switch to the appropriate position before opening the brightness option in section 1 of the setup menu (p. 87). Also see page 28.
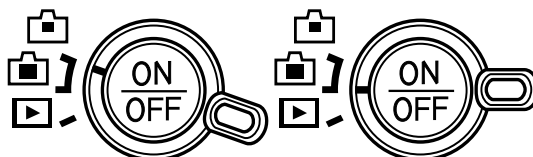
Use the left/right keys of the controller to adjust brightness, the monitor image changes accordingly. Press the central button of the controller to set the level.

Set LCD brightness

Low – ▪▪▪▪ | ▪▪▪▪ + **High**

◆ :adjust   ● :enter   MENU ⤴
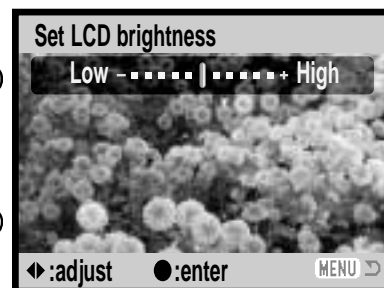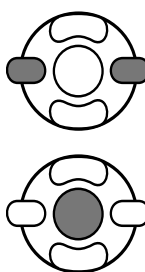
AUTO POWER SAVE

To conserve battery power, the camera will shut down if no operation is made within a certain period. The length of the auto-power-save period can be changed to 1, 3, 5, or 10 minutes. When the camera is connected to a computer, the auto-power-save period is fixed at ten minutes. Auto power save is set in section 1 of the setup menu (p. 87).

INSTANT PLAYBACK

An image can be displayed on the monitor after it is captured. When used with the continuous-advance or progressive-capture drive modes (p. 47, 48), the images in the series are played back in a six-frame index display. Instant playback is activated section 1 of the setup menu (p. 87). A playback period of two or ten seconds can be selected. To cancel the playback and save the image before the end of the playback period, press the shutter-release button partway down.

Camera Notes

Single still images can be previewed immediately after being captured without instant playback active. Simply continue to hold the shutter-release button down after taking the picture to display the image. Release the shutter button to end the playback.
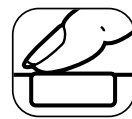
LENS ACCESSORY

This camera is compatible with the optional Wide-angle Converter ZCW-200. This 0.7X wide-angle converter reduces the focal length of the zoom lens' wide-angle position giving it the equivalent of a 26mm lens on a 35mm camera.

When the converter is mounted, the lens accessory option in section 1 of the setup menu should be set to "WideConvertr." An indicator (**W**) appears in the top left corner of the monitor as a warning. The optical zoom is automatically set to the wide-angle position. The optical zoom is disabled.
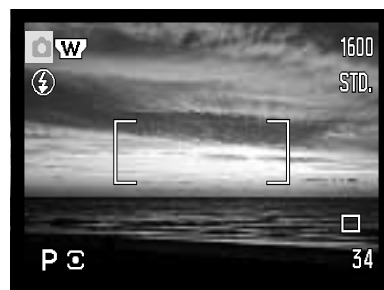
LANGUAGE

The language used in the menus can be changed in section 1 of the setup menu.

FILE NUMBER (#) MEMORY

If file number memory is selected, when a new folder is created or a new memory card or memory location is used, the next image recorded will have a file number one greater than the last file saved. If the new card contains an image with a greater file number, the new image will be assigned a file number one greater than the greatest on the card.

If the file number memory is disabled, the image file number is reset to 0001 when saved in a new folder, card or memory location. File number memory is activated in section 2 of the setup menu.

1	🔧 2	3	4	📷
File # memory	Off			
Folder name	Std. form			
Date/Time set	–			
Date imprint	Off			
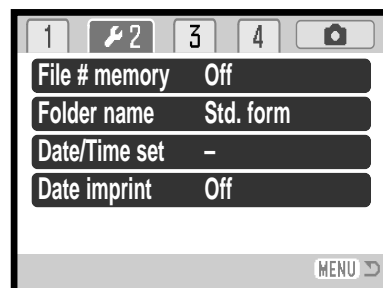
MENU ⊃

FOLDER NAME

All recorded images are stored in folders on the memory card or in the camera's internal memory. Two folder-name formats are available in section 2 of the setup menu, standard and date.

100KM027
(Standard)

Standard folders have an eight character name. The initial folder is named 100KM027. The first three digits are the folder's serial number, which will increase by one each time a new folder is created. The next two letters refer to Konica Minolta, and the last three numbers indicate the camera used; 027 indicates a DiMAGE Z20.

10150325
(Date)

A date folder name also starts with the three digit serial number and is followed by one register for the year, two register for the month, and two registers for the day: 101YMMDD. The folder 10150325 was created in 2005 on March 25th.

With the date folder format selected, when an image is recorded, a new folder with the day's date is created. All images recorded that day are placed in that folder. Images recorded on a different day are placed in a new folder with the corresponding date. If the file number memory function is off (p. 91), when a new folder is created, the serial number in the image-file name is reset to 0001. If file number memory function is on, the serial number in the image-file is one greater than the last image saved. For more information on folder organization and file names, see page 102.

DATE AND TIME SETUP

It is important to accurately set the clock. When a still image or a movie clip is recorded, the date and time of the recording are saved with the image and are displayed during playback or can be read with the supplied DiMAGE Viewer software. The date format that is displayed or imprinted can be changed: YYYY/MM/DD (year, month, day), MM/DD/YYYY (month, day, year), DD/MM/YYYY (day, month, year). See page 18 for instructions on how to set the clock and calendar.

DATE IMPRINTING

The date of recording can be printed directly on the image. The imprinting function must be activated in section 2 of the setup menu (p. 87) before the image is taken. Once activated, the date will continue to be imprinted until the function is reset; a yellow bar is displayed behind the frame counter to indicate the imprinting function is active.
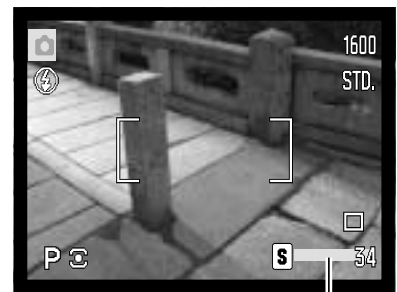
Date-imprinting indicator

The date is imprinted in the lower right corner of the image when viewed horizontally. It is printed directly on the photograph writing over the image information. The date can be imprinted in three formats: year / month / day, month / day / year, and day / month / year. The date and date format are set in section 2 of the setup menu (p. 87).

Camera Notes

Every time a still image is recorded, it is stored with an exif tag that contains the date and time of recording as well as shooting information. This information can be viewed with the camera in the Quick View or playback mode, or on a computer with the DiMAGE Viewer software.

RESET DEFAULT

This function affects all modes. When selected, a confirmation screen appears; choosing "Yes" resets the following functions and settings, "No" cancels the operation.

Recording mode		
Focus area	Wide frames	p. 42
Monitor display	Standard	p. 28
Exposure compensation	0.0	p. 41
Flash mode	Autoflash (Fill-flash in A, S, M modes)	p. 26
Drive mode	Single-frame advance	p. 45
Image size	2560 X 1920	p. 51
Image quality	Standard	p. 51
Auto Digital Subject Selection	On (Auto recording mode)	p. 23
Digital zoom	Off	p. 53
Focus mode	Autofocus / Single-shot AF	p. 54
White balance	Auto	p. 55
Custom key function	Flash mode	p. 62
Full-time AF	Off	p. 57
Flash compensation	0.0	p. 57
Metering mode	Multi segment	p. 58
Camera sensitivity (ISO)	Auto	p. 59
Color mode	Natural color	p. 60
Sharpness	Normal	p. 61
Contrast	Normal	p. 61

Movie menu		
Image size	320 X 240	p. 64
Frame rate	15 fps	p. 64
White balance	Auto	p. 55
Movie mode	Standard movie	p. 65
Focus mode	Continuous AF	p. 54
Color mode	Natural color	p. 60

Playback menu		
Playback (Slide Show)	All frames	p. 80
Duration (Slide Show)	5 seconds	p. 80
Repeat (Slide Show)	Off	p. 80
Date imprint	Off	p. 83
Index print	Off	p. 83

Setup menu		
LCD brightness	Normal	p. 88
Auto-power-save period	1 minute	p. 88
Instant playback	Off	p. 89
Lens accessory	None	p. 90
File number (#) memory	Off	p. 91
Folder name	Standard	p. 92
Date imprinting	Off	p. 93
Audio signals	1	p. 95
Focus signals	1	p. 96
Shutter FX	1	p. 96
Transfer mode	Data storage	p. 96
Self-timer	10 sec.	p. 96

AUDIO SIGNALS

Every time a button is pressed, an audio signal gives a positive confirmation of the operation. The audio signals can be turn off in section 3 of the setup menu (p. 87). The tone of the signal can also be changed.

1	2	✦3	4	◻
Reset default	**–**			
Audio signals	**1**			
Focus signal	**1**			
Shutter FX	**1**			
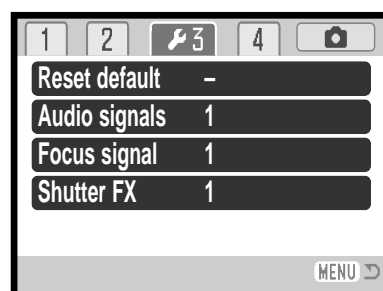
MENU ⟲

FOCUS SIGNAL

When the shutter-release button is pressed partway down, an audio signal confirms the AF system has focused. The focus signals can be changed or turned off in section 3 of the setup menu (p. 87). Two tones are available.

SHUTTER FX

When the shutter is released, a shutter sound effect gives a positive confirmation a still image is recorded. The sound effect can be turn off in section 3 of the setup menu (p. 87). Two shutter effects are available.

VIDEO OUTPUT

Camera images can be displayed on a television (p. 84). The video output can be changed between NTSC and PAL in section 4 of the setup menu. North America uses the NTSC standard and Europe uses the PAL standard. Check which standard is used in your region to play back images on your television set.

TRANSFER MODE

The data-transfer mode must be specified depending on whether images are transferred to a computer or printed directly. The data-storage option must be selected to transfer data from the camera to a computer or when using the DiMAGE Viewer software. The PictBridge option allows images to be printed directly from the camera with a PictBridge compatible printer (p. 108).

SELF-TIMER

The self-timer delay period can be changed in section 4 of the setup menu (p. 87). Two delay periods are available, 10 seconds and 2 seconds.

DATA-TRANSFER MODE

Read this section carefully before connecting the camera to a computer. Instructions on using and installing the DiMAGE Viewer software are found in the supplied software manual. The DiMAGE manuals do not cover the basic operation of computers or their operating systems; please refer to the manual supplied with your computer.

SYSTEM REQUIREMENTS

For the camera to be connected directly to the computer and used as a mass-storage device, the computer must be equipped with a USB port as a standard interface. Both the computer and the operating system must be guaranteed by their manufacturers to support USB interface. The following operating systems are compatible with the camera:

Windows 98, 98SE, Me, 2000 Professional, and XP home and professional editions.

Mac OS 9.0 ~ 9.2.2 and Mac OS X v.10.1.3 - 10.1.5, v.10.2.1 ~ 10.2.8, v.10.3 ~10.3.6.

Check the Konica Minolta web site for the latest compatibility information:
North America: http://kmpi.konicaminolta.us
Europe: http://www.konicaminoltaeurope.com/software/pi_customer.html

Users with Windows 98 or 98 Second Edition will need to install the driver software on the included DiMAGE Viewer CD-ROM (p. 99). No special driver software is required for other Windows or Macintosh operating systems.

Customers who have bought a previous DiMAGE digital camera and have installed the Windows 98 driver software must repeat the installation procedure. The updated version of the driver software included on the supplied DiMAGE Viewer CD-ROM is required for the operation of the DiMAGE Z20 with a computer. The new software will have no affect on the performance of older DiMAGE cameras.

A remote camera driver is supplied in the Windows edition of the DiMAGE Viewer CD-ROM. The driver is not compatible with this camera.

CONNECTING THE CAMERA TO A COMPUTER

Confirm the battery has sufficient power before connecting the camera to a computer; the full-battery indicator should be displayed on the monitor. The use of the AC adapter (sold separately) is recommended over the use of the battery. For users with Windows 98 or 98 Second Edition, read the section on page 99 on how to install the necessary USB driver before connecting the camera to a computer.
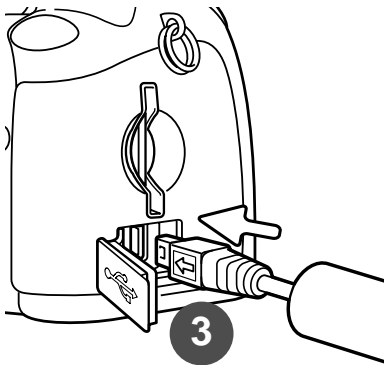
1. Start up the computer. The computer must be on before connecting the camera.

2. To transfer images from a memory card, insert the memory card into the camera. To transfer images from the camera's internal memory, remove the memory card from the camera. To insert or remove the memory card while the camera is connected to a computer, see page 106.

3. Open the USB port/Video-out terminal cover. Attach the smaller plug of the USB cable to the camera. The arrow mark on the plug should face the back of the camera. Make sure the plug is firmly attached.
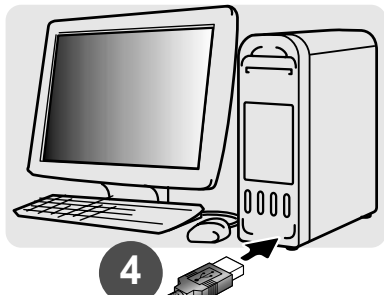
4. Attach the other end of the USB cable to the computer's USB port. Make sure the plug is firmly attached. The camera should be connected directly to the computer's USB port. Attaching the camera to a USB hub may prevent proper operation.

5. Press the main switch to turn on the camera. The USB connection is made automatically; a screen appears to indicate the operation. The monitor turns off when the connection has been made. If the USB connection is not made, disconnect the camera and restart the computer. Repeat the connection procedure above.

Initializing USB connection.

When the USB connection is completed, a drive icon, or volume, appears in My Computer or the desktop; the name varies with memory card. When using Windows®XP or Mac OS X, a window may open requesting instructions on what to do with the image data; follow the directions in the window.

Windows XP

Windows

Mac OS

Mac OS X

Removable Disk (H:)

untitled

CONNECTING TO WINDOWS 98 AND 98 SE

The driver needs only to be installed once. If the driver cannot be installed automatically, it can be installed manually with the operating system's add-new-hardware wizard; see the instructions on the following page. During installation, if the operating system requests the Windows®98 CD-ROM, insert it into the CD-ROM drive and follow the accompanying instructions on the screen. No special driver software is required for other Windows® or Macintosh operating systems.

Automatic Installation

Before connecting the camera to the computer, place the DiMAGE Viewer CD-ROM in the CD-ROM drive. The DiMAGE installer menu should automatically activate. To automatically install the Windows®98 USB driver, click on the starting-up-the-USB-device-driver-installer button. A window appears to confirm that the driver should be installed; click "Yes" to continue.

When the driver has been successfully installed, a window appears. Click "OK." Restart the computer and connect the camera (p. 98) to complete the operation.

Starting up the DiMAGE Viewer installer

Starting up the USB device driver installer

Starting up the DiMAGE remote camera driver installer

Starting up the QuickTime installer

To access the CD-ROM

Finish

Manual Installation

To install the Windows®98 driver manually, follow the instructions in the connecting-the-camera-to-a-computer section on page 98.

When the camera is plugged into the computer, the operating system will detect the new device and the add-new-hardware-wizard window opens. Place the DiMAGE Viewer CD-ROM in the CD-ROM drive. Click "Next."
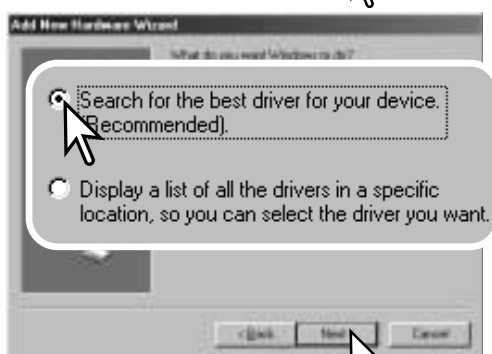
Choose the recommended search for a suitable driver. Click "Next."

Choose to specify the location of the driver. The browse window can be used to indicate the driver location. The driver should be located in the CD-ROM drive at :\Win98\USB. When the location is shown in the window, click "Next."

The add new hardware wizard will confirm the location of the driver. The letter designating the CD-ROM drive will vary between computers. Click "Next" to install the driver in the system.

One of three drivers may be located: MNLVENUM.inf, USBPDR.inf, or USBSTRG.inf.

The last window confirms the driver has been installed. Click "Finish" to close the add new hardware wizard. Restart the computer.


When the my-computer window is opened, a new removable-disk icon is displayed. Double click on the icon to access the camera's memory card or internal memory; see page 102.

FOLDER ORGANIZATION

Drive Icon

Once the camera is connected to the computer, image files can be accessed by double clicking on icons. Image folders are located in the DCIM folder. The misc. folder contains DPOF print files (p. 82).
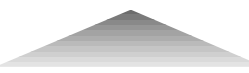
Files and folders on the memory card can be deleted using the computer. Files and folders in the camera's internal memory cannot be deleted from the computer. Never format the memory card or the internal memory from the computer; always use the camera for formatting. Only files recorded by the camera should be stored on the memory card or in the internal memory.

Dcim   Misc

100KM027 10150325 102KM_CP 103KM_EM

From left to right: standard folder, date folder, copy folder, e-mail copy folder.
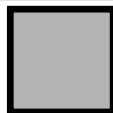
PICT0001.JPG
Still image

PICT0002.MOV
Movie clip

Image-file names begin with "PICT" followed by a four-digit file number and a .jpg or .mov extension. To copying images, simply drag and drop the file icon into a location in the computer.

Copy images (p. 76) are placed in a folder with a name ending in "CP." E-mail Copy images are placed in a folder ending in "EM." When a new folder is created, the first three digits in the folder name is one greater than the largest folder number on the card or in the internal memory. When the index number in the image file name exceeds 9,999, a new folder is created with a number one greater than the greatest folder number on the memory card or in the internal memory: e.g. from 100KM027 to 101KM027.

The number in the image file name may not correspond to the frame number of the image. As images are deleted in the camera, the frame counter will adjust itself to show the number of images on the card and reassign the frame numbers accordingly. The serial numbers used with image files will not change when an image is deleted. When a new image is recorded, it will be assigned a number one greater than the largest serial number in the folder. File serial numbers can be controlled with the file-number-memory function in section 2 of the setup menu (p. 91).

Image files contain Exif tag data. This data includes the time and date the image was recorded as well as the camera settings used. This data can be viewed with the camera or the DiMAGE Viewer software.

If a camera image is opened in an image-processing application that does not support Exif tags, and then the image is saved overwriting the original data, the Exif tag information is erased. Some Exif compatible applications rewrite the Exif data preventing the DiMAGE Viewer from reading it. When using software other than the DiMAGE Viewer, always make a backup copy of the image files to protect the Exif tag data.

To view images correctly on your computer, the monitor's color space may need to be adjusted. Refer to your computer manual on how to calibrate the display to the following requirements: sRGB, with a color temperature of 6500K, and a gamma of 2.2. Changes made to the captured image with the camera's contrast controls will affect any color-matching software in use.

AUTO POWER SAVE - DATA-TRANSFER MODE

When connected to a computer or printer, if the camera does not receive a read or write command within ten minutes, it will shut down to save power. When the camera shuts down, an unsafe-removal-of-device warning may appear on the computer monitor. Click "OK." Neither the camera or computer will be damaged in this operation. Turn off the camera with the main switch. Remake the USB connection by turning the camera on.

DISCONNECTING THE CAMERA

Never disconnect the camera when the access lamp is red - the data or memory card may permanently be damaged.

Windows 98 / 98 Second Edition

Confirm that the access lamp is not lit. Turn off the camera and then disconnect the USB cable.

Windows Me, 2000 Professional, and XP

To disconnect the camera, click once on the unplug-or-eject-hardware icon located on the task bar. A small window will open indicating the device to be stopped.

Stop USB Mass Storage Device - Drive(H:)

3:45 PM

Click on the small window to stop the device. The safe-to-remove-hardware window will open. Close the window, turn the camera off, and then disconnect the USB cable.

Safe To Remove Hardware

The 'USB Mass Storage Device' device can now be safely removed from the system.

OK
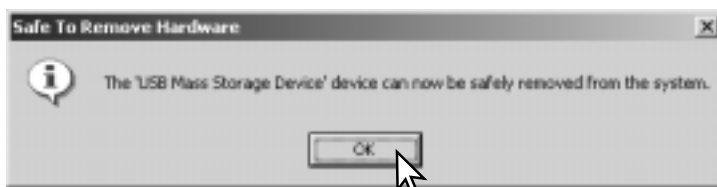
When more than one external device are connected to the computer, repeat the procedure above except right click on the unplug-or-eject-hardware icon. This will open the unplug-or-eject-hardware window after clicking on the small window indicating the unplug-or-eject-hardware routine.

Unplug or eject hardware

3:43 PM

The hardware devices to be stopped will be displayed. Highlight the device by clicking on it then click "Stop."

A confirmation screen will appear to indicate the devices to be stopped. Clicking "OK" will stop the device.

A third and final screen will appear to indicate the camera can be safely disconnected from the computer. Close the window, turn the camera off, and then disconnect the USB cable.

Mac OS

Confirm that the access lamp is not lit and then drag the mass-storage device icon and drop it into the trash. Turn the camera off, and then disconnect the USB cable.

CHANGING THE MEMORY CARD

Never remove or insert a card when the access lamp is red - the data or memory card may permanently be damaged.

Windows®98 and 98 Second Edition

1. Turn off the camera.
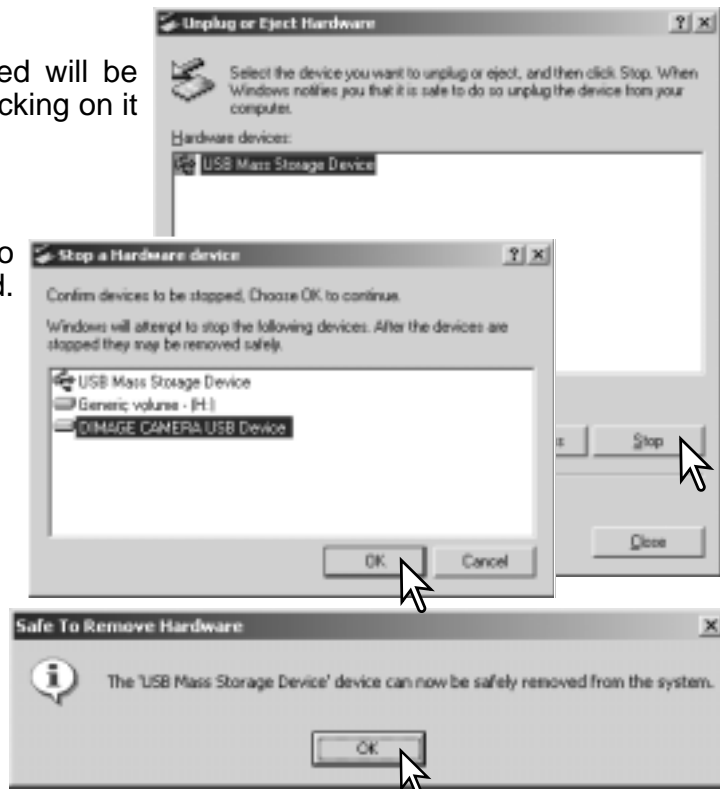2. Remove, insert, or replace the memory card.
3. Turn on the camera to remake the USB connection.

Windows®Me, 2000 Professional, and XP

1. Stop the USB connection using the unplug-or-eject-hardware routine (p. 104).
2. Turn off the camera.
3. Remove, insert, or replace the memory card.
4. Turn on the camera to remake the USB connection.

Mac OS

1. Stop the USB connection by dragging the drive icon into the trash (p. 105).
2. Turn off the camera.
3. Remove, insert, or replace the memory card.
4. Turn on the camera to remake the USB connection.

UNINSTALLING THE DRIVER SOFTWARE - WINDOWS

1. Connect the camera to the computer with the USB cable. Other devices must not be connected to the computer during this procedure.

2. Right click on the My-computer icon. Select "properties" from the drop-down menu.

Windows®XP: from the start menu go to the control panel. Click on the performance and maintenance category. Click "System" to open the system properties window.

3. Windows®2000 and XP: select the hardware tab in the properties window and click the device-manager button.

Windows®98 and Me: click the device-manager tab in the properties window.

4. The driver file will be located in the universal-serial-bus-controller or other-devices location of the device manager. Click on the locations to display the files. The driver should be indicated with the camera name. Under certain conditions, the driver name may not contain the camera name. However, the driver will be indicated by either a question mark or exclamation point.

5. Click on the driver to select it.

*6. Windows®2000 and XP: click on the action button to display the drop-down menu. Select "uninstall." A confirmation screen will appear. Clicking "Yes" will remove the driver from the system.*

Windows®98 and Me: click the remove button. A confirmation screen will appear. Clicking "Yes" will remove the driver from the system.

7. Disconnect the USB cable and turn off the camera. Restart the computer.

PictBridge

Confirm the transfer-mode option in section 4 of the setup menu is set to PictBridge. To print the images in the camera's internal memory, remove the memory card from the camera. Connect the camera to a PictBridge compatible printer using the camera's USB cable. The larger plug on the cable is connected to the printer. Open the USB port/Video-out terminal cover and insert the smaller plug of the cable into the camera. Turn the camera on; the PictBridge screen is displayed automatically.
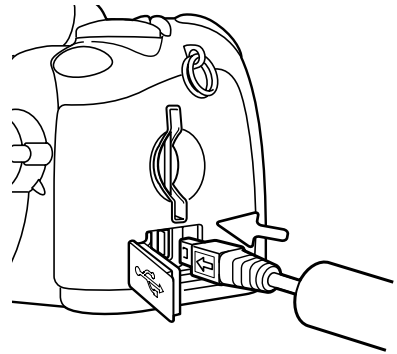
Individual still images can be selected for printing on the PictBridge screen. For other printing options, see the menu navigation section on page 110.

The information (i+) button switches between the single frame and index playback formats on the PictBridge screen. Enlarged playback, activated with the zoom lever, can be used to examine image files on the screen.

Total number of prints

Number of copies
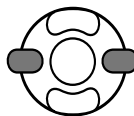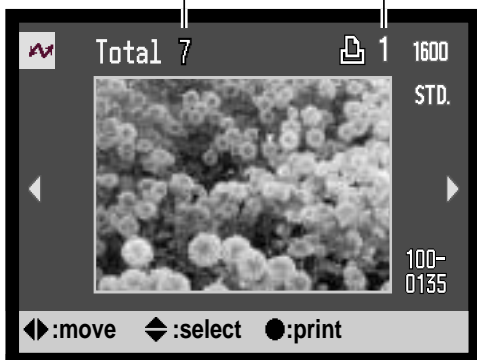
Use the left/right keys of the controller to display the image to be printed.
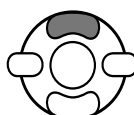
Press the up key to select the number of copies to be printed. To deselect an image for printing, press the down key until the number of copies reaches zero.

Repeat the previous steps until all the images to be printed are selected. Press the central button of the controller to continue.

No. of prints:	7
Print size:	Printer setup
Layout:	Printer setup
Print quality:	Printer setup
Data print:	Printer setup

●:Start   MENU ⤶

The number of prints in the print run are displayed as well as the print parameters selected with the menu. See the menu navigation section for m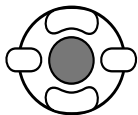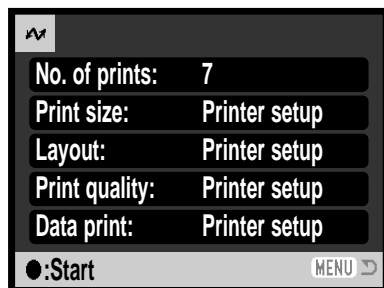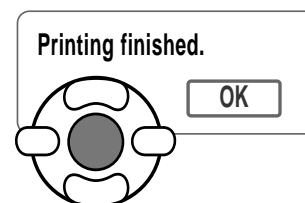ore information (p. 110). Press the central button of the controller to begin printing, or press the menu button to return to the PictBridge screen.

Printing finished.

OK

Once printing begins, the operation can be canceled by pressing the center of the controller. The printing-finished message indicates the end of the operation; turn the camera off to end the routine.

NOTES ON PRINTING ERRORS

If the battery is exhausted before the print run is complete, printing is canceled. Use a fully-charged battery or the optional AC adapter.

If a minor problem occurs during printing, such as the paper runs out, follow the procedure recommended for the printer; no action is required for the camera. If a major printer error occurs, press the center of the controller to end the routine. Refer to the printer manual for the correct procedure for the printer problem. Check the printer settings before starting again and deselect the images that were printed.

NAVIGATING THE PictBridge MENU

Pressing the menu button (1) turns the menu on and off. The four-way keys of the controller (2) move the cursor in the menu. Pressing the central button of the controller enters a setting.

MENU ( )   Activate the menu with the menu button.
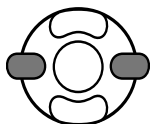
Use the left/right keys of the controller to highlight the appropriate menu tab; the menu changes as the tabs are highlighted.
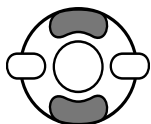
Use the up/down keys to scroll through the menu options. Highlight the option whose setting needs to be changed.

With the menu option highlighted, press the right controller key; the settings are displayed with the current setting highlighted. If "Start" is displayed, press the center of the controller to continue.
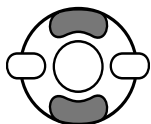
Use the up/down keys to highlight the new setting.
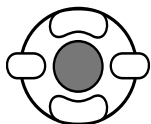
Press the central button of the controller to select the highlighted setting.

Once a setting has been selected, the cursor will return to the menu options and the new setting will be displayed. To return to the playback mode, press the menu button. Read the following sections on information on the menu options.

~1	2	3	
Batch print	–		
Index print	–		
			MENU

1	~2	3	
Paper size	**Printer setup**		
Layout	**Printer setup**		
Print quality	**Printer setup**		
Data print	**Printer setup**		
		MENU	

1	2	~3	
DPOF print	–		
			MENU
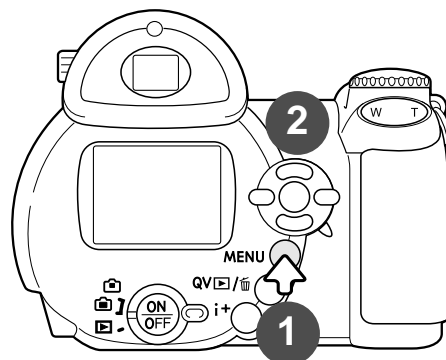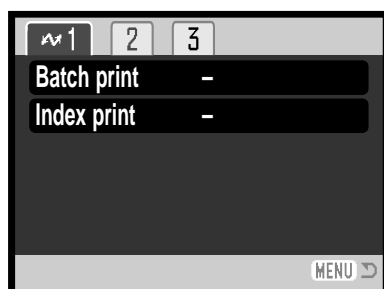
Index to menu functions

Batch print, (p.111)

Index print, (p.111)
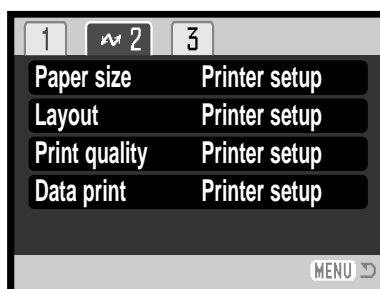
Paper size, (p.112)

Layout, (p.112)

Print quality, (p.113)

Data print, (p.113)

DPOF print, (p.113)

Batch print

Batch print in section 1 selects all still images on the memory card or in the camera's internal memory for printing. Two options are available:

All-frames - to print all images on the card or the internal memory. A screen opens so the number of copies of each image can be specified. A maximum number of fifty images can be printed.

Reset - to cancel changes made with the batch print option or with the print selection screen.

Index print

An index print of all still images on the memory card or in the camera's internal memory can be made. The quality and size of the print can be specified with the camera menu. The number of images per page varies with the printer. The print-setup confirmation screen is displayed before the print routine starts.

1	～ 2	3	
Paper size	**Printer setup**		
Layout			
Print quality			
Data print			
●:enter			MENU

Paper size	
Printer setup	2" X 3" card
L	100mmX150mm
Postcard	4" X 6"
2L	8" X 10"
A4	Letter
⬍▶:sel ●:enter	MENU
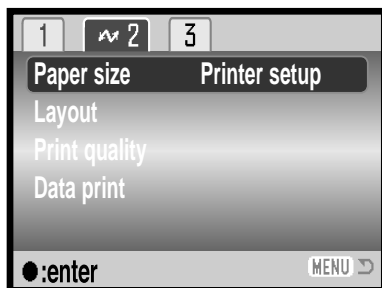
Paper size

The paper size of the print can be specified in section 2 of the PictBridge menu. The printer-setup option uses the size set with the printer.
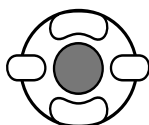
Highlight the current size setting in the menu and press the central button of the controller to open the paper-size screen.
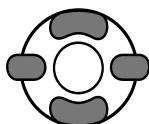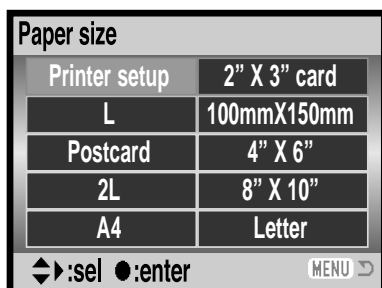
Use the four-way key of the controller to highlight the new paper size.
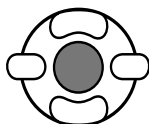
Press the central button of the controller to set the paper-size.

Printing Notes

The following are the dimensions for postcard, L, and 2L paper sizes in both millimeters and inches for your reference:

Postcard	100 X 148mm	3.9 X 5.9 in.
L	89 X 127mm	3.5 X 5.0 in.
2L	127 x 178mm	5.0 X 7.0 in.

Layout

The layout of the print can be set in section 2 of the PictBridge menu. The printer-setup option uses the layout parameters of the printer. Borderless printing can be specified with the camera as well as the number of images per page.

Print quality

The print quality can be set in section 2 of the PictBridge menu. The printer-setup option uses the quality set with the printer. The fine quality can be specified with the camera.

Data print

Data can be printed with the image. The printer-setup option uses the options set with the printer. The date of capture and the file name can be selected for printing. Data printing can also be disabled with the menu.

DPOF print

DPOF print in section 3 of the PictBridge menu allows still images and an index print selected with the DPOF printing options in section 3 of the playback menu to be printed from a DPOF compatible PictBridge printer. Simply select the start option from the menu to begin the routine.

No. of prints:	7
Print size:	Printer setup
Layout:	Printer setup
Print quality:	Printer setup
Data print:	Printer setup
●:Start	MENU ⊃
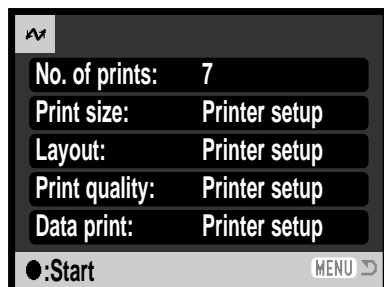
The number of prints in the print run are displayed; an index print is counted as one. Press the central button of the controller to begin printing, or press the menu button to return to the PictBridge menu.

Once printing begins, the operation can be canceled by pressing the center of the controller. The printing-finished message indicates the end of the operation; press the center of the controller and turn the camera off to end the routine.

Printing finished.

OK
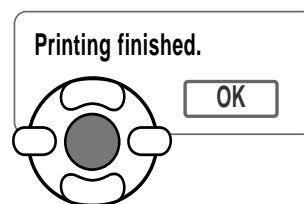
APPENDIX
TROUBLESHOOTING

The section covers minor problems with basic camera operation. For major problems or damage, or if a problem continues to reoccur frequently, contact a Konica Minolta service facility.

Problem	Symptom	Cause	Solution
This camera will not work.	Nothing displayed on the monitors.	The batteries are dead.	Replace batteries (p. 13)
		AA Ni-MH batteries are inserted incorrectly.	Reinsert the batteries taking care that the negative and positive terminals are oriented as indicated on the inside of the battery chamber door (p. 13).
		The AC adapter is not connected properly.	Check that the adapter is connected to the camera and a live electrical outlet (p. 15).
Shutter will not release.	"000" is displayed on the frame counter.	Memory is full and unable to store an image at the image-quality or image-size setting on the camera.	Insert a new memory card (p. 16), delete some images (p. 31), or change the image-quality or image-size setting (p. 51).

Pictures are not sharp.	Focus signal is red.	Subject is too close.	Make sure the subject is within the autofocus range (p. 24) or use the macro mode (p. 35).
		The camera is in macro mode.	Cancel the macro mode setting (p. 35).
		A special situation is preventing the autofocus system from focusing (p. 25).	Use the focus-lock function to focus on an object at the same distance as the subject (p. 24) or use manual focus (p. 54).
	Pictures are taken indoors or in low-light situations without flash.	Slow shutter speeds result in blurred images when the camera is hand-held.	Use a tripod, change the camera sensitivity to a higher setting (p. 59), or use the flash (p. 26).
While using flash, the pictures are too dark.	The subject is beyond the flash range (p. 27, 59).		Move closer to the subject or change the camera sensitivity to a higher setting (p. 59).

The camera temperature rises with extended periods of use. Care should be taken to avoid burns when handling the camera, batteries, or memory card.

If the camera does not function normally or the system error message appears, turn the camera off, remove and reinsert the batteries, or unplug and reconnect the AC adapter. If the camera has become hot with extended use, wait for it to cool before removing or disconnecting the power supply. Always turn the camera off using the main switch otherwise the memory card may be damaged and the camera reset.

This manual contains information on products and accessories available at the time of printing. To obtain compatibility information on products not contained in this manual, contact a Konica Minolta service facility.

CARE AND STORAGE

Read this section in its entirety to get the best results from your camera. With proper care, your camera will provide years of service.

Camera care
• Do not subject the camera to shock or impact.
• Turn off the camera when transporting.
• This camera is neither waterproof nor splashproof. Inserting or removing batteries or the memory card, or operating the camera with wet hands may damage the camera.
• When at the beach or near water, take care not to expose the camera to water or sand. Water, sand, dust, or salt can damage the camera.
• Do not leave the camera under direct sunlight. Do not point the lens directly at the sun; the CCD may be damaged.

Storage
• Store in a cool, dry, well-ventilated area away from dust and chemicals. For long periods of disuse, store the camera in an airtight container with a silica-gel drying agent.
• Remove the batteries and memory card from the camera when not in use for extended periods.
• Do not store the camera in an area with naphthalene or mothballs.
• During long periods of storage, operate the camera occasionally. When taking the camera out of storage, check that the camera is functioning properly before using.

Cleaning
• If the camera or the outside of the lens or flash surface is dirty, gently wipe it with a soft, clean, dry cloth. If the camera or lens comes in contact with sand, gently blow away loose particles. Wiping may scratch the surface.
• To clean the lens surface, first blow away any dust or sand, then gently wipe the lens with a cloth or tissue designed for optics. Use lens-cleaning fluid if necessary.
• Never use organic solvents to clean the camera.
• Never touch the lens or flash surface with your fingers.

LCD monitor care
- The LCD monitor is manufactured using high-precision technology and more than 99.99% of the pixels operate properly. Less than 0.01% of the monitor pixels are displayed as color or bright points; this is not monitor defect and does not affect the recorded image.
- Do not apply pressure to the surface of the LCD monitor; it may be permanently damaged.
- In cold temperatures, the LCD monitor may become temporarily dark. When the camera warms up, the display will function normally.
- If fingerprints are on the LCD monitor, gently wipe with a soft, clean, dry cloth.

Batteries
- Battery performance decreases with temperature. In cold environments, we recommend keeping spare batteries in a warm place, such as the inside of a coat. Batteries can recover their power when they warm up.
- If batteries have been exhausted when used in the camera, do not reload them even if their charge seems to recover over time. These batteries will interfere with normal camera operation.
- A special built-in long-life battery supplies power to the clock and memory when the camera is off. If the camera resets each time it is turned off, the battery is exhausted. The battery must be replaced at a Konica Minolta service facility.

Operating temperatures and conditions
- This camera has been designed for use in temperatures from 0°C to 40°C (32°F to 104°F).
- Never leave the camera exposed to extreme high temperatures, such as in a car parked in the sun, or to extreme humidity.
- When taking the camera from a cold to a warm environment, place it in a sealed plastic bag to prevent condensation from forming. Allow the camera to come to room temperature before removing it from the bag.

Memory cards

SD Memory Cards and MultiMediaCards are manufactured with precision electronic components. The following may cause data loss or damage:

• Improper use of the card.
• Bending, dropping, or subjecting the card to impact.
• Heat, moisture, and direct sunlight.
• Static electrical discharge or electromagnetic fields near the card.
• Removing the card or interrupting the power supply while the camera or a computer is accessing the card (reading, writing, formatting, etc.).
• Touching the electrical contacts of the card with your fingers or metal objects.
• Using the card beyond its life. Purchasing a new card periodically may be necessary.

The response time is longer with MultiMediaCards compared with SD Memory Cards. This is not a defect, but rather due to the specifications of the cards. When using large capacity cards, some operations like deletion may take longer.

SD Memory Cards have a write-protect switch to prevent image data from being deleted. By sliding the switch to the bottom of the card, the data will be protected. Images cannot be recorded when the card is protected. If an attempt is made to record or delete an image with the camera, the card-locked message will appear on the monitor.

Write-protect switch

Lock position

Memory cards should not be used to permanently store image data. Always make a copy of camera files on an appropriate storage device or recording media. Konica Minolta has no responsibility for any loss or damage to data.
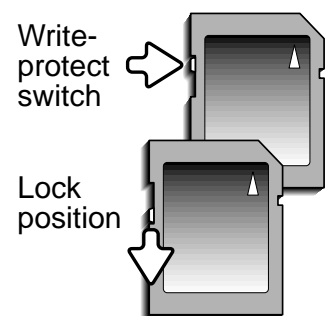
Before important events and journeys
• Check the camera's operation; take test pictures and purchase spare batteries.
• Konica Minolta has no responsibility for any damage or loss incurred by equipment malfunction.

Copyright
• TV program, films, video tapes, photographs, and other materials may be copyrighted. Unauthorized recording or duplication of such material may be contrary to copyright laws. Taking pictures or images of performances, exhibitions, etc., is prohibited without approval and can infringe on copyright. Images protected by copyright can only be used under the provisions within the copyright laws.

Questions and service
• If you have questions about your camera, contact your local camera dealer or write to the Konica Minolta distributor in your area.
• Before shipping your camera for repair, please contact a Konica Minolta Service Facility.

QUICKTIME SYSTEM REQUIREMENTS

IBM PC / AT Compatible
Pentium® processor-based PC or compatible computer
Windows®98, Me, 2000, or XP
128MB or more of RAM

QuickTime™ is used for playing back movies. To install QuickTime, follow the instructions in the installer. QuickTime is not supplied with the camera in all sales regions. Users can download the latest version of QuickTime free of charge from the Apple Computer web site at http://www.apple.com.

C E This mark on your camera certifies that this camera meets the requirements of the EU (European Union) concerning interference causing equipment regulations. CE stands for Conformité Européenne (European Conformity).

FCC Compliance Statement
Declaration on Conformity

Responsible Party: Konica Minolta Photo Imaging U.S.A. Inc.
Address: 725 Darlington Avenue, Mahwah, NJ 07430

Digital Camera: DiMAGE Z20

FC Tested To Comply
With FCC Standards

FOR HOME OR OFFICE USE

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

This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

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

Do not remove the ferrite cores from the cables.

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

TECHNICAL SPECIFICATIONS

CCD:	1/2.5-type interline primary-color CCD
Number of effective pixels:	5.0 million
Total number of pixels:	5.2 million
Camera sensitivity (ISO):	Auto and 50, 100, 200, 320 ISO equivalents.
Aspect ratio:	4:3
Lens construction:	11 elements in 9 groups
Maximum aperture:	f/3.2 - f/3.4
Focal length:	6 - 48 mm (35mm equivalent: 36 - 290 mm)
Focusing range (from the CCD):	0.57 m - ∞ / 1.87 ft - ∞ (wide-angle position)
	1.57 m - ∞ / 5.15 ft - ∞ (telephoto position)
	0.08 - 1.07 m / 0.26 - 3.51 ft in Macro mode
Autofocusing system:	Rapid AF using passive AF and Video AF
Focus modes:	Single-shot AF, Continuous AF with Predictive Focus Control, Full-time AF
Shutter:	CCD electronic shutter and mechanical shutter
Shutter speeds:	1/2000 - 4s
Built-in flash recycling time:	5s (approx.)
Monitor LCD:	1.5 inch low-temperature polysilicon TFT color
Monitor field of view:	100% (approx.)
Viewfinder field of view:	98% (approx.)
A/D conversion:	10 bit
Recording media:	SD Memory cards, MultiMediaCards and Internal Storage (approximately 14.5MB)
File formats:	JPEG, Motion JPEG (mov, without audio). DCF 2.0 and DPOF compliant.
Printing output control:	Exif print, PRINT Image Matching III, PictBridge
Menu languages:	Japanese, English, German, French, Spanish, Italian, Swedish and Chinese (Simplified)
Video output:	NTSC and PAL

Batteries:	Four AA alkaline or Ni-MH batteries.
Battery performance (recording):	Approximately 450 frames based on the CIPA standard with alkaline batteries, LCD monitor on, full-size images (2560x1920), standard image quality, no instant playback, no full-time AF, flash used with 50% of the frames.
Battery performance (playback):	Approx. continuous playback time: 700 minutes with alkaline batteries.
Optional external power source:	AC Adapter AC-11
Dimensions:	109 (W) X 82 (H) X 94 (D) mm
	4.29 (W) X 3.23 (H) X 3.70 (D) in.
Weight:	Approximately 300g / 10.6 oz.
	(without batteries or memory card)
Operating temperature:	0° - 40°C / 32° - 104°F
Operating humidity:	5 - 85% (noncondensing)

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

KONICA MINOLTA

KONICA MINOLTA PHOTO IMAGING, INC.

9222-2804-11 P-B412
Printed in Japan

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