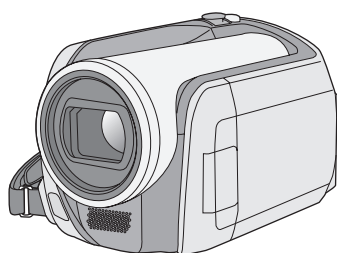


Panasonic®



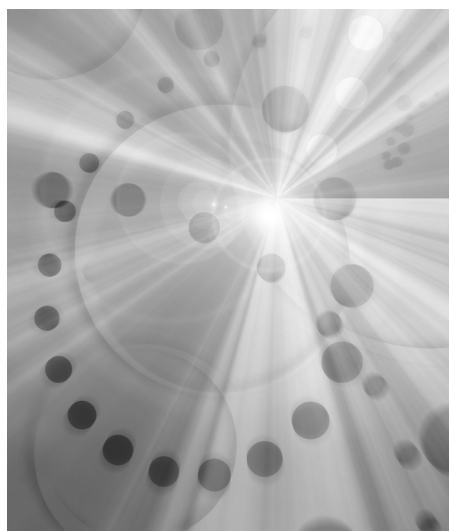
使用説明書 Operating Instructions

SD 卡／硬碟
攝錄放影機
SD Card/Hard Disk
Video Camera

Model No. **SDR-H250GC**
SDR-H21GC
SDR-H20GC

- 圖例說明的是 SDR-H250。
- SDR-H20 型沒有視頻照明。
- The illustration shows SDR-H250.
- SDR-H20 does not have a video light.

使用前，請完整閱讀本說明書。
Before use, please read these instructions completely.



LEICA
DICOMAR

LSQT1212 A

安全注意事項

警告：

若想降低起火、電擊或產品損壞的危險，

- 請勿將本設備暴露於雨中、潮濕、滴水或潑水的環境中，並且勿將盛滿液體的物體（如花瓶）放在本設備上。
- 請僅使用推薦的附件。
- 請勿卸下機身的前蓋（或後蓋）；機身內沒有用戶可維修的部件。需要維修時，請聯繫授權的維修人員。

注意！

- 請勿將此設備安置在書櫃、壁櫥或其他狹窄的地方。請確保本機通風良好。若想降低由於過熱而導致的電擊或火災的危險，請勿讓窗簾或其他物品遮住通風孔。
- 請勿用報紙、桌布、窗簾及類似物品遮住本機的通風孔。
- 請勿將明火放置在本機上，如點燃的蠟燭。
- 用環保的方式處理電池。

電源插座應當安置在本設備附近，並便於連接。
電源線的主要插頭應當保持隨時可以使用的狀態。
若想將本設備完全從 AC 電源斷開，請從 AC 插座上拔下電源線插頭。

產品列印標號位於機身的下面。

請僅使用推薦的附件。

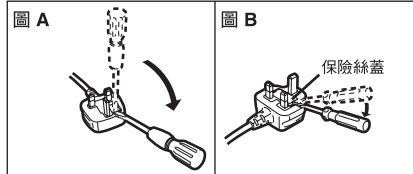
- 請勿使用除隨附 AV/S 電纜及 USB 電纜以外的任何其他電纜。
- 當您使用單獨購買的線纜時，使用線纜的長度一定要在 3 米之內。

■ 如何更換保險絲

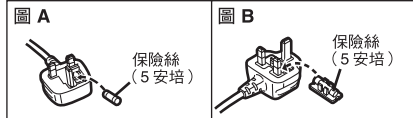
保險絲的位置根據 AC 電源線類型的不同而有所不同（圖 A 與 B）。
確保使用合適的 AC 電源線並遵照下列指示進行操作。

圖例可能與實際的 AC 電源線有所不同。

- 1) 用螺絲起子開啓保險絲蓋。



- 2) 更換保險絲並關上並合緊保險絲蓋。



- 如果看到此符號的話 -

歐盟以外國家的棄置資訊



本符號只適用於歐盟國家。
如欲丟棄本產品，請聯絡當地政府單位或經銷商，洽詢正確的棄置方法。

■ 關於拍攝內容的賠償

製造商對於因本機、其附件或可錄製的媒體的故障或缺陷造成的任何損失概不負責。

■ 請嚴格遵守版權法。

若非個人使用，複製先期錄製的錄影帶、磁碟、其他出版物或播放材料都侵犯版權法。即使是個人使用，也嚴禁複製某些特定的材料。

- SDHC 徽標是商標。
- miniSD 徽標是商標。
- 攝像機使用了版權保護技術，並且被日本和美國的專利技術和知識產權所保護。要想使用這些版權保護技術，必須得到 Macrovision 公司的授權。禁止分解或改裝攝像機。
- 由 Dolby Laboratories 授權製造。
杜比、Dolby 與雙 D 記號是 Dolby Laboratories 的商標。
- LEICA 是 Leica Microsystems IR GmbH 的註冊商標，DICOMAR 是 Leica Camera AG 的註冊商標。
- Microsoft®、Windows® 和 DirectX® 是 Microsoft Corporation 在美國和／或其他國家的註冊商標或商標。
- IBM 和 PC/AT 是美國 International Business Machines Corporation 的註冊商標。
- Celeron®、Intel® 和 Pentium® 是 Intel Corporation 在美國和其他國家的註冊商標或商標。
- AMD Athlon 和 AMD Duron 是 Advanced Micro Devices, Inc. 的商標。
- Sound Blaster 是 Creative Technology Ltd. 的商標。
- Microsoft 產品螢幕圖像的再版經 Microsoft Corporation 許可。
- 本說明書中提到的其他系統名稱和產品名稱通常是開發相應系統或產品的廠家的註冊商標或商標。

本使用說明書是為使用 SDR-H250、SDR-H21 和 SDR-H20 型設計的。圖片可能與原型略有不同。

- 本使用說明書中所用的圖例是以 SDR-H250 型號進行說明的，但是，部分說明也涉及到不同的型號。
- 根據型號不同，某些功能是不可用的。
- 特點可能也不同，所以請仔細閱讀。

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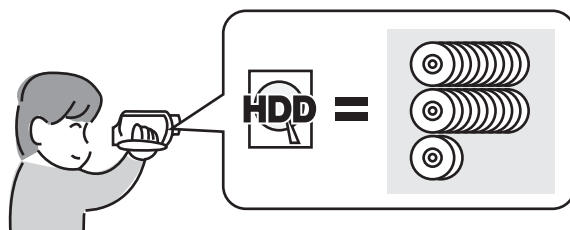
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使用之前

特點

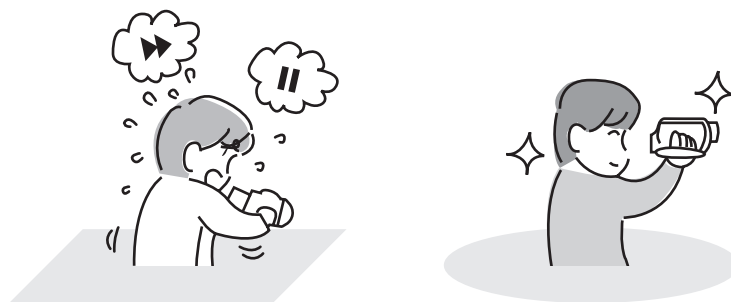
■ 長時間錄製！

可以在 30 GB 的內置硬碟上錄製約 22 張 8 cm DVD 光碟的相等量。
也可以在 SD 卡上錄製動態影像和靜態圖片。



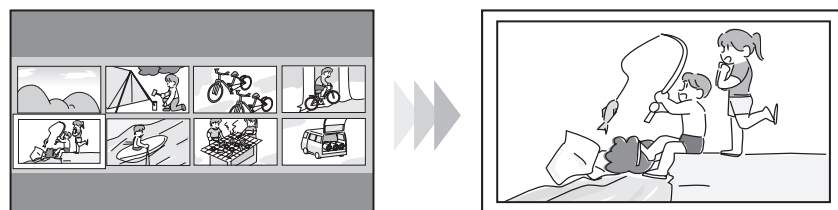
■ 易於拍攝！(→ 32)

無需搜索拍攝開始位置。
新拍攝內容不會覆蓋任何以前拍攝的場景。



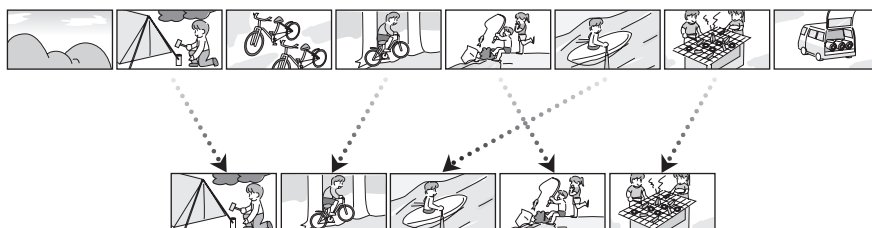
■ 易於重播！(→ 49)

拍攝的場景以螢幕畫面指引顯示。
可以很容易地搜索到想觀看的場景。



■ 編輯場景！ (→ 55, 56)

可以將錄製在硬碟上的喜歡場景集中起來新增一個原始視頻（播放列表）。

**■ 與計算機一起使用！ (→ 69)**

如果使用提供的軟體，只需用一個按鈕就可以新增在本機上錄製的場景的備份 DVD。也可以通過將場景輸出到計算機上後進行編輯來製作一張原始 DVD- 視頻。



使用之前

附件

使用本機前，請檢查附件。

SD 記憶卡 (512 MB)



電池組 (SDR-H250)



電池組 (SDR-H21/SDR-H20)



AC 適配器



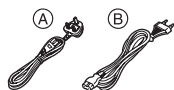
DC 電纜



AV/S 電纜



AC 電纜



- (A) 中國香港特別行政區以及沙特阿拉伯
 (B) 中國香港特別行政區以及沙特阿拉伯之外的地區

遙控器 (SDR-H250)



鈕扣型電池 (SDR-H250)



鏡頭蓋 (SDR-H21/SDR-H20)



USB 電纜



CD-ROM



可選附件

在某些國家，可能不提供某些可選附件。

AC 適配器 (VW-AD11E/EB)

電池組 (鋰電池 /CGR-DU06/640 mAh)
(SDR-H21/SDR-H20)

電池組 (鋰電池 /CGA-DU07/680 mAh)
(SDR-H21/SDR-H20)

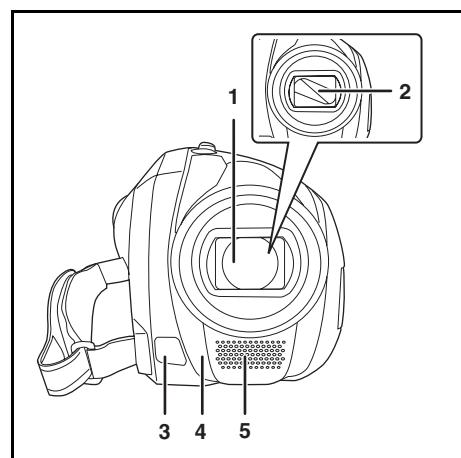
電池組 (鋰電池 /CGA-DU12/1150 mAh)

電池組 (鋰電池 /CGA-DU14/1360 mAh)

電池組 (鋰電池 /CGA-DU21/2040 mAh)

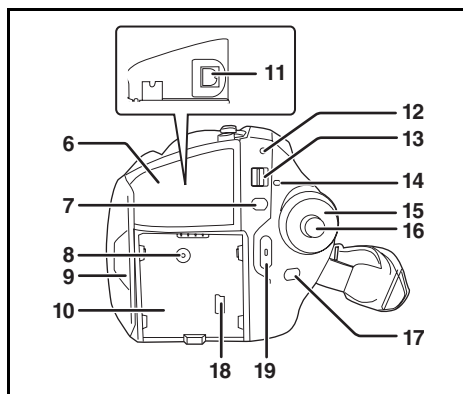
三腳架 (VW-CT45E)

部件的識別和操作

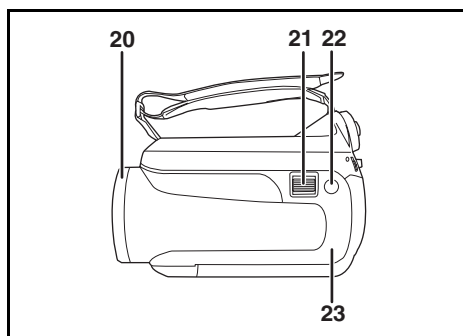


- 1 鏡頭 (LEICA DICOMAR) (SDR-H250)
鏡頭 (SDR-H21/SDR-H20)
● 請勿在本機上安裝轉換鏡頭或濾鏡，因為這樣會造成暈影。
- 2 鏡頭蓋 (SDR-H250)
- 3 視頻照明 (SDR-H250/SDR-H21) (→ 40)
- 4 白平衡感測器 (→ 47)
遙控感測器 (SDR-H250) (→ 12)
- 5 麥克風 (內置、立體聲)

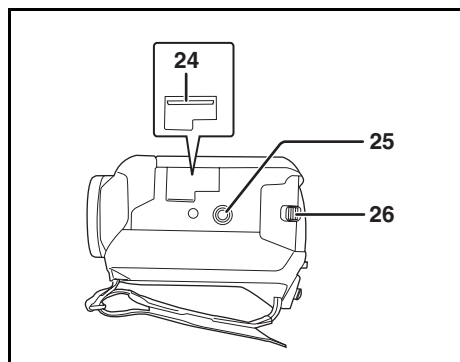
使用之前



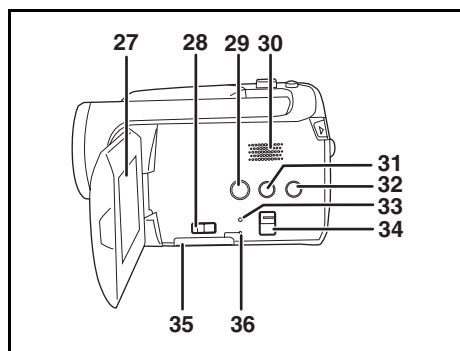
- 6 端子蓋
- 7 功能表按鈕 [MENU] (→ 26)
- 8 DC 輸入端子 [DC/C.C. IN] (→ 20)
- 9 LCD 顯示屏開啓部分 (→ 11)
- 10 電池座 (→ 17)
- 11 音頻視頻輸出端子 [A/V] (→ 65, 66)
- 12 狀態指示燈 (→ 20)
- 13 電源開關 [OFF/ON] (→ 20)
- 14 硬碟／計算機存取指示燈 [ACCESS/PC] (→ 15, 73)
- 15 模式轉盤 (→ 22)
- 16 操縱桿 (→ 22)
- 17 刪除按鈕 [⏻] (→ 55, 58, 59)
- 18 USB 端子 [↔] (→ 67, 73)
- 19 拍攝開始／停止按鈕 (→ 32)



- 20 鏡頭蓋開／關環 (SDR-H250) (→ 10)
- 21 拍攝時：變焦桿 [W/T] (→ 39)
- 重播時：音量桿 [-VOL+] (→ 51)
- 22 拍照按鈕 [⏻] (→ 35)
- 23 發光 LED (→ 82)



- 24 記憶卡插槽 (→ 21)
- 25 三腳架插座 (→ 11)
- 26 電池釋放手柄 [BATTERY] (→ 17)

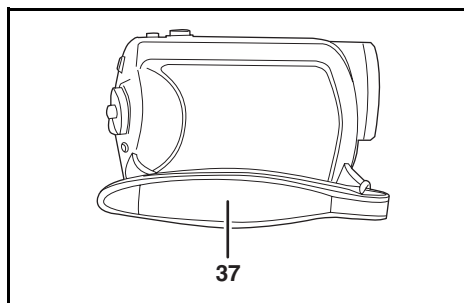


- 27 LCD 顯示屏 (→ 11)

由於 LCD 生產技術的限制，在 LCD 顯示螢幕上可能會有一些微小的亮點或者暗點。但這並非故障，不會影響拍攝的圖片。

- 28 記憶卡插槽開啓手柄 (→ 21)
- 29 DVD COPY 按鈕 [DVD COPY] (→ 75)
- 30 揚聲器
- 31 Power LCD plus 按鈕 [POWER LCD PLUS] (→ 29)
- 32 視頻照明按鈕 [LIGHT] (SDR-H250/SDR-H21) (→ 40)
- 33 重設按鈕 [RESET] (→ 92)
- 34 模式選擇開關 [AUTO/MANUAL/FOCUS] (→ 31, 45, 46)
- 35 記憶卡插槽蓋 [SD CARD] (→ 21)
- 36 記憶卡存取指示燈 [ACCESS] (→ 16, 73)

使用之前

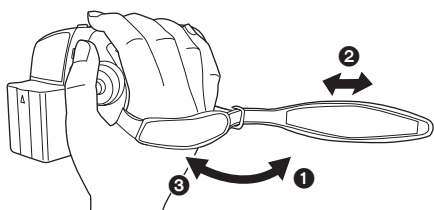


37 手持帶 (→ 10)

使用手持帶

調整帶子長度以適合手的尺寸。

調整帶子的長度和襯墊的位置。

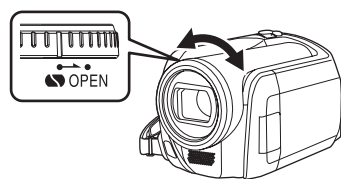


- ❶ 翻轉帶子。
- ❷ 調整長度。
- ❸ 將帶子放回原處。

使用鏡頭蓋 (SDR-H250)

為了保護鏡頭，當不使用時，請務必關閉鏡頭蓋。

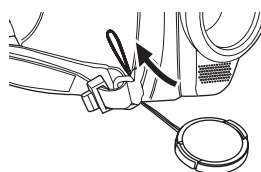
轉動鏡頭蓋開／關環。



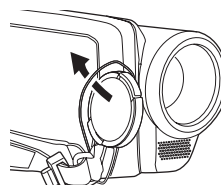
安裝鏡頭蓋 (SDR-H21/SDR-H20)

安裝鏡頭蓋以保護鏡頭的表面。

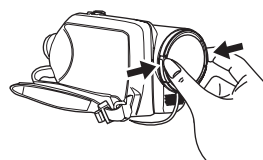
1 將鏡頭蓋連線的末端穿過手持帶。



2 將鏡頭蓋穿過線環。

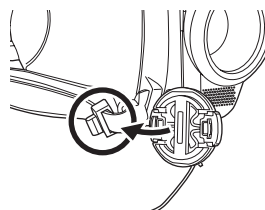


3 要安裝或取下鏡頭蓋，請用食指和大拇指的指尖捏住鏡頭蓋的兩端。



拍攝時

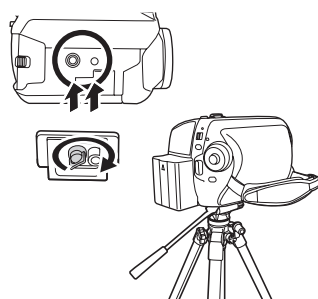
取下的鏡頭蓋可以安在鏡頭蓋固定物上。



使用之前

三腳架插座

這個凹洞用於將本機安裝到可選的三腳架上。
(關於如何將本機安裝到三腳架上，請仔細閱讀使用說明書。)

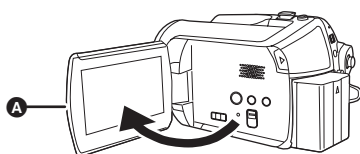


- 使用三腳架時，無法開啓記憶卡插槽蓋。將本機安裝到三腳架上之前，請插入 SD 卡。
(→ 21)

使用 LCD 顯示屏

可以在 LCD 顯示屏上一邊觀看影像，一邊進行拍攝。

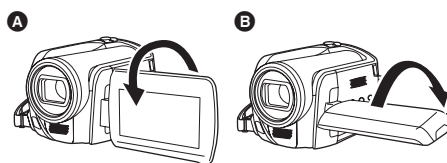
- 1 將手指放在 LCD 顯示屏開啓部分 **A** 上，然後朝箭頭方向拉出 LCD 顯示屏。



- LCD 顯示屏可開啓至 90°。

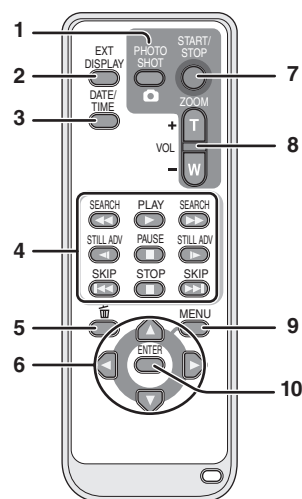
- 2 依照需要調整 LCD 顯示屏的角度。

- 顯示屏最多可以向鏡頭方向旋轉 180° **A** 或向相反方向旋轉 90° **B**。



- 可以從功能表調整 LCD 顯示屏的亮度和色彩級別。(→ 29)
- 如果強力開啓或旋轉 LCD 顯示屏，則可能會損壞本機，或者使本機發生故障。

使用遙控器 (SDR-H250)



- 1 拍照按鈕 [PHOTO SHOT,]*
- 2 螢幕顯示按鈕 [EXT DISPLAY] (→ 66)
- 3 日期/時間按鈕 [DATE/TIME] (→ 28)
- 4 重播操作按鈕 (→ 50)
- 5 刪除按鈕 []*
- 6 方向按鈕 [] (→ 27)
- 7 拍攝開始/停止按鈕 [START/STOP]*
- 8 變焦/音量按鈕 [ZOOM, VOL]*
- 9 功能表按鈕 [MENU]* (→ 27)
- 10 確定按鈕 [ENTER] (→ 27)

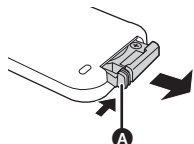
* 意味著這些按鈕的功能和本機上相應按鈕的功能相同。

使用之前

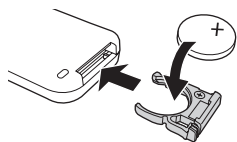
■ 安裝鈕扣型電池

使用前請將提供的鈕扣型電池安裝到遙控器內。

1 在按下檔頭 **A** 的同時，拉出電池座。



2 安裝鈕扣型電池時要使 (+) 標記朝上，然後再把電池座放回原處。



■ 關於鈕扣型電池

- 當鈕扣型電池的電量耗盡時，請用一塊新電池更換（部件號：CR2025）。電池在正常情況下大約可以使用一年，但是這依據本機的使用頻率而定。
- 使鈕扣型電池遠離兒童的接觸範圍。

注意

如果更換電池的操作方法不正確，會有發生爆炸的危險。更換時，只允許使用由製造商推薦的相同或同等型號的電池。請按照製造商的指導處理用過的電池。

警告

電池有發生火災、爆炸或者灼傷的危險。切勿對電池進行再充電、分解、加熱超過 60 °C 或焚燒電池。

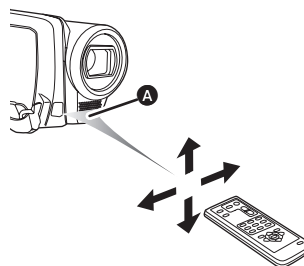
警告

使鈕扣型電池遠離兒童的接觸範圍。決不能把鈕扣型電池放到嘴裡。一旦吞食，請立即找醫生處理。

■ 遙控器可使用的範圍

遙控器與本機的遙控感測器 **A** 之間的距離：大約 5 m 以內

角度：大約向上 10°，向下，左，右 15°



- 遙控器僅限於室內使用。在室外或強光下使用時，即使遙控器處於可用範圍之內，本機也可能無法正常工作。

硬碟和 SD 卡

可以使用本機錄製動態影像和靜態圖片到內置硬碟和 SD 卡中。

關於內置硬碟和本機可以使用的記憶卡

	內置硬碟 (硬碟驅動器)	SD 記憶卡			SDHC 記憶卡
螢幕上的顯示					
本說明書中的指示	HDD	SD			
容量	30 GB*1	8 MB/ 16 MB	32 MB/ 64 MB/ 128 MB	256 MB/ 512 MB (提供) / 1 GB/2 GB	4 GB
功能					
錄製動態影像	●	-	●*2	●	
錄製靜態圖片	●			●	
新增播放列表	●		-		

●：可用 -：不可用

*1 30 GB 硬碟驅動器利用部分存儲空間用於格式化、檔案管理以及其他用途。30 GB 是 30,000,000,000 個字節。可用容量將會小一些。

*2 無法保證正常工作。

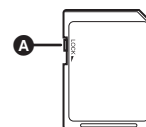
關於 SD 卡

本機兼容 SD 記憶卡和 SDHC 記憶卡。僅可以在兼容 SDHC 記憶卡的設備上使用 SDHC 記憶卡。無法在僅兼容 SD 記憶卡的設備上使用 SDHC 記憶卡。（在其他設備上使用 SDHC 記憶卡時，請務必閱讀該設備的使用說明書。）

- 本使用說明書中，SD 記憶卡和 SDHC 記憶卡都稱為“SD 卡”。
- 本機支持在 FAT12 系統和 FAT16 系統下格式化的，並且符合 SD 記憶卡規範的 SD 記憶卡，本機還支持在 FAT32 系統下格式化的 SDHC 記憶卡。
- 請使用本機格式化 SD 卡。如果在其他產品（如計算機）上格式化 SD 卡，則拍攝可能花費更長的時間，並且可能無法使用該 SD 卡。（→ 63）
- 使用一張多次寫入資料的 SD 卡時，用於錄製的剩餘時間可能會縮短。
- 讓記憶卡遠離兒童的接觸範圍，以防兒童吞食。
- 無法在本機上使用 MultiMediaCard。

使用之前

- 當 SD 卡上的寫保護開關 **A** 被鎖定時，無法在記憶卡上進行錄製、刪除或編輯。



■ 關於可以用於動態影像錄製的 SD 卡

推薦使用符合 SD 速度等級 **Class 2** 以上的 SD 卡或由 **Panasonic** 製造用於動態影像錄製的以下 SD 卡。（如果使用其他類型的 SD 卡，在動態影像錄製過程中，錄製可能會突然停止。）

	Pro High Speed SD 記憶卡	Super High Speed SD 記憶卡	High Speed SD 記憶卡	SDHC 記憶卡
256 MB	—	RP-SDH256	RP-SDR256	—
512 MB	RP-SDK512	RP-SDH512*	RP-SDR512	—
1 GB	RP-SDK01G RP-SDV01G	RP-SDH01G*	RP-SDQ01G* RP-SDR01G	—
2 GB	RP-SDK02G RP-SDV02G	—	RP-SDQ02G* RP-SDR02G RP-SDM02G	—
4 GB	—	—	—	RP-SDR04G RP-SDM04G RP-SDV04G

* 停止生產。

- 用下列 SD 卡，無法保證在動態影像錄製中正常工作。
 - 32 MB 至 128 MB 的 SD 卡
 - 除上面提到的 SD 卡以外的 256 MB 至 4 GB 的 SD 卡
- 請在以下網站上確認最新資訊。（本網站僅為英文。）
http://panasonic.jp/support/global/cs/e_cam

■ 操作注意事項

- 請勿觸摸記憶卡背面的端子。
- 請勿將記憶卡的端子暴露在水、污物或灰塵中。
- 請勿將記憶卡放置在下列地方：
 - 陽光直射處。
 - 積滿灰塵或潮濕的地方。
 - 加熱器附近。
 - 溫度變化劇烈的地方（會發生水汽凝結）。
 - 產生靜電或電磁波的地方。
- 為了保護記憶卡，當不使用時，請將其放回到袋子或盒子中。
- 電噪音、靜電、本機或 SD 卡的故障都可能會損壞或刪除存儲在 SD 卡上的資料。我們建議將重要資料保存到計算機上。

硬碟的操作注意事項

本機有內置硬碟。硬碟是一個精密裝置，因此請小心操作。

■ 請勿震動或撞擊本機。

可能無法再識別硬碟，或者可能無法再進行錄製或重播。特別要注意，請勿在錄製或重播過程中震動或撞擊本機。

■ 請勿跌落本機。

如果由於跌落等原因而使本機受到強烈撞擊，可能會損壞硬碟。

本機具有下墜感測功能，可在跌落本機時防止硬碟受到撞擊。在動態影像錄製過程中，如果此功能感測到本機下墜，可能會錄上硬碟保護操作音。如果此功能還感測到本機正在持續下墜，錄製或重播可能會停止。

■ 請注意本機的溫度

如果本機的溫度過高或過低，可能無法再進行錄製或重播。如果檢測出溫度異常，本機的 LCD 顯示屏上將出現一條警告訊息。(→ 85)

■ 請勿在低壓區使用本機

如果在海拔高度超過 3000 m 的地方使用本機，可能會損壞硬碟。

■ 請備份重要的錄製資料，以保護這些資料。

將錄製的資料定期保存到計算機、DVD 光碟等中進行備份。

如果硬碟出故障，則無法修復錄製的資料。

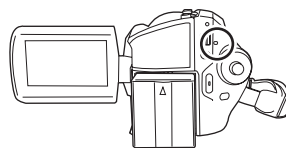
■ 關於錄製內容的賠償

對於由於任何類型的問題所導致的錄製或編輯內容的丟失及其造成的直接或間接的損壞，Panasonic 不承擔任何責任，如果錄製或編輯工作不正常，Panasonic 也不對任何內容提供保證。同樣，以上陳述也適用於對本機進行的任何類型的維修（包括任何其他非硬碟的相關部分）的情況。

存取指示燈

■ ACCESS/PC 指示燈

- 本機存取硬碟（讀取、拍攝、重播、擦除等）時，ACCESS/PC 指示燈點亮。
- 當 ACCESS/PC 指示燈點亮時，如果執行下列操作，則可能會損壞硬碟或已拍攝的資料，或者本機可能會發生故障。
 - 對本機造成強烈震動或撞擊
 - 操作 OFF/ON 開關或模式轉盤
 - 取出電池或斷開 AC 適配器



使用之前

■ 記憶卡存取指示燈

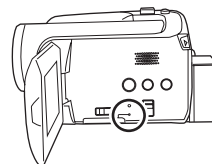
- 當本機存取 SD 卡（讀取、拍攝、重播、擦除等）時，存取指示燈點亮。
- 當存取指示燈點亮時，如果執行下列操作，則可能會損壞 SD 卡或已拍攝的資料，或者本機可能會發生故障。

－開啓記憶卡插槽蓋

－取出 SD 卡

－操作 OFF/ON 開關或模式轉盤

－取出電池或斷開 AC 適配器

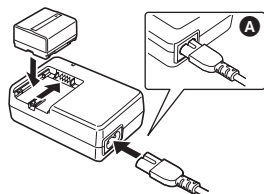


電源

給電池充電

購買本機時，電池是未充電的。在使用本機前，請給電池充電。

- 如果將 DC 電纜連接到 AC 適配器上，則電池不會充電。請從 AC 適配器上拔下 DC 電纜。



1 將 AC 電纜連接到 AC 適配器和 AC 插口上。

2 對准標記將電池放入到電池座上，然後將電源插頭牢牢地插進去。

- AC 電纜的輸出插頭沒有完全插入到 AC 適配器的插孔中。如 A 中所示，有一道縫隙。

■ 充電指示燈

點亮：正在充電

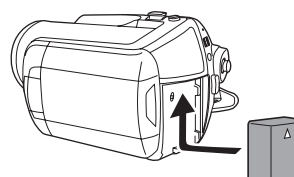
熄滅：充電完成

閃爍：電池過放電（放電過度）。過一會兒，指示燈將點亮，並開始正常充電。
當電池溫度過高或過低時，CHARGE 指示燈閃爍，充電時間將比正常的充電時間要長。

- 電池的充電時間 (→ 18)
- 推薦使用 Panasonic 電池。(→ 8)
- 如果使用其他品牌的電池，我們不能保證本產品的質量。

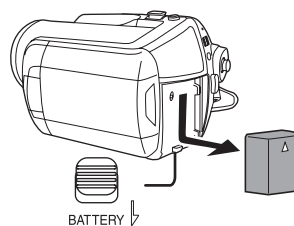
插入電池

把電池推靠到電池座中，並滑動電池，直到發出喀噠一聲。



取下電池

滑動 BATTERY 手柄的同時，請滑動電池以便將其取出。



- 請用手握住電池，以防掉到地上。
- 取出電池前，請務必將 OFF/ON 開關設定為 OFF 並檢查狀態指示燈是否已熄滅。

注意

如果更換電池的操作方法不正確，會有發生爆炸的危險。更換時，只允許使用由製造商推薦的相同或同等型號的電池。請按照製造商的指導處理用過的電池。

設定

充電時間和可拍攝時間

下表中所示的時間是指溫度為 25 °C，濕度為 60% 時的時間。如果溫度高於或低於 25 °C，則充電時間將會變長。

■ 充電時間

- 表中所示的充電時間為估計值。
- “2 h 25 min” 表示 2 小時 25 分鐘。

SDR-H250:

電池型號	電壓／容量	充電時間
提供的電池／ CGA-DU12（可選件）	7.2 V/1150 mAh	2 h 25 min
CGA-DU14（可選件）	7.2 V/1360 mAh	2 h 45 min
CGA-DU21（可選件）	7.2 V/2040 mAh	3 h 55 min

SDR-H21/SDR-H20:

電池型號	電壓／容量	充電時間
提供的電池／ CGR-DU06（可選件）	7.2 V/640 mAh	1 h 40 min
CGA-DU07（可選件）	7.2 V/680 mAh	1 h 30 min
CGA-DU12（可選件）	7.2 V/1150 mAh	2 h 25 min
CGA-DU14（可選件）	7.2 V/1360 mAh	2 h 45 min
CGA-DU21（可選件）	7.2 V/2040 mAh	3 h 55 min

■ 可拍攝時間

- 實際可拍攝時間是指，在重複開始／停止拍攝、開啓／關閉本機、移動變焦桿等時的可拍攝時間。
- “2 h 5 min” 表示 2 小時 5 分鐘。

SDR-H250:

電池型號	電壓／容量	錄製目的地	最大可連續 拍攝時間	實際可拍攝時間
提供的電池／ CGA-DU12 （可選件）	7.2 V/1150 mAh	HDD	2 h 5 min	55 min
		SD	2 h 20 min	1 h
CGA-DU14 （可選件）	7.2 V/1360 mAh	HDD	2 h 30 min	1 h 5 min
		SD	2 h 45 min	1 h 15 min
CGA-DU21 （可選件）	7.2 V/2040 mAh	HDD	3 h 45 min	1 h 40 min
		SD	4 h 10 min	1 h 50 min

SDR-H21/SDR-H20:

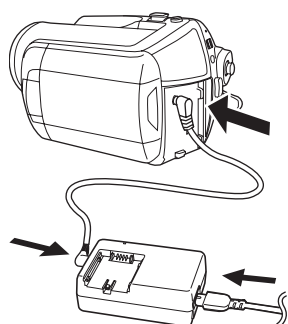
電池型號	電壓／容量	錄製目的地	最大可連續 拍攝時間	實際可拍攝時間
提供的電池／ CGR-DU06 (可選件)	7.2 V/640 mAh	HDD	1 h 35 min	40 min
		SD	1 h 45 min	45 min
CGA-DU07 (可選件)	7.2 V/680 mAh	HDD	1 h 40 min	45 min
		SD	1 h 55 min	50 min
CGA-DU12 (可選件)	7.2 V/1150 mAh	HDD	2 h 50 min	1 h 15 min
		SD	3 h 15 min	1 h 25 min
CGA-DU14 (可選件)	7.2 V/1360 mAh	HDD	3 h 25 min	1 h 30 min
		SD	3 h 50 min	1 h 40 min
CGA-DU21 (可選件)	7.2 V/2040 mAh	HDD	5 h 10 min	2 h 15 min
		SD	5 h 45 min	2 h 35 min

- 隨著電池容量降低，顯示如下變化。
。
 如果電池放電，那麼  () 將會閃爍。
- 根據使用情況不同，可拍攝時間也會有所不同。這些時間為估計值。使用本機且通過按 POWER LCD PLUS 按鈕點亮 LCD 顯示屏時，可拍攝時間將變短。
- 電池在使用後或充電後會變熱。本機在使用時也會變熱。這並非故障。
- 請注意，在低溫下電池的工作時間將會縮短。我們建議給備用電池充電，以備在拍攝時使用。

設定

連接到 AC 插口

連接 AC 適配器時，本機處於待機狀態。只要 AC 適配器連接到電源插座，一次回路就始終“帶電”。



1 將 AC 電纜連接到 AC 適配器和 AC 插口上。

2 將 DC 電纜連接到 AC 適配器上。

3 將 DC 電纜連接到本機上。

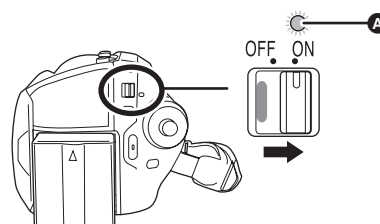
- 由於 AC 電纜是專為本機設計的，請勿將其用於任何其他設備。請勿將其他設備的 AC 電纜給本機使用。
- 將 DC 電纜連接到 AC 適配器上時，電池不會充電。

開啟／關閉本機

- (SDR-H250) 拍攝時，請在開機前開啟鏡頭蓋。(→ 10) 如果在鏡頭蓋關閉的情況下開啓本機，自動白平衡調整 (→ 96) 可能無法正常工作。
- (SDR-H21/SDR-H20) 拍攝時，請在開機前取下鏡頭蓋。
如果在鏡頭蓋未取下的情況下開啓本機，自動白平衡調整 (→ 96) 可能無法正常工作。

如何開啓電源

將 OFF/ON 開關設定為 ON。

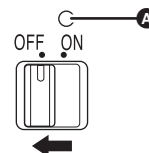


狀態指示燈 **A** 點亮，電源開啓。

- 第一次開啓本機時，將出現一條訊息，要求您設定日期和時間。選擇 [是]，然後設定日期和時間。(→ 27)
- 第一次開啓本機時，將出現一個選擇螢幕，用於選擇動態影像和靜態圖片的錄製目的地。請為各類圖片選擇 [硬碟] 或 [SD 記憶卡]，然後按下操縱桿。

如何關閉電源

將 OFF/ON 開關設定為 OFF。

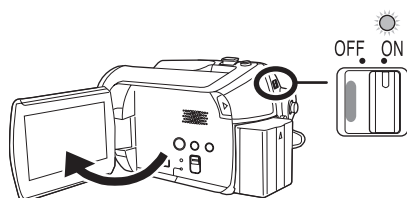


電源關閉時，狀態指示燈 **A** 熄滅。

如何用 LCD 顯示屏開啓及關閉電源

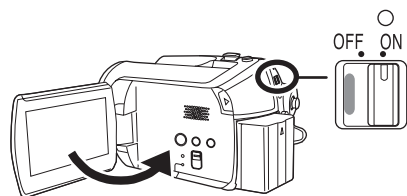
將 OFF/ON 開關設定為 ON 時，且當本機處於影片拍攝模式或相片拍攝模式時，可以用 LCD 顯示屏開啓及關閉電源。

■ 開啓電源 開啓 LCD 顯示屏。



狀態指示燈點亮，電源開啓。

■ 關閉電源 關閉 LCD 顯示屏。



狀態指示燈熄滅，電源關閉。

- 拍攝時，即使關閉 LCD 顯示屏，電源也不會關閉。

不使用本機時，請將 OFF/ON 開關設定為 OFF。

插入／取出 SD 卡

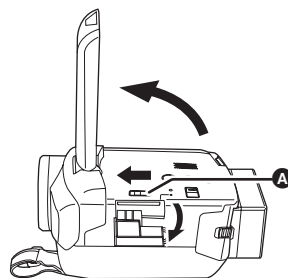
在插入／取出 SD 卡之前，請務必將 OFF/ON 開關設定為 OFF。

如果在 OFF/ON 開關設定為 ON 時插入或取出 SD 卡，則本機可能會發生故障，或者已錄製在 SD 卡上的資料可能會丟失。

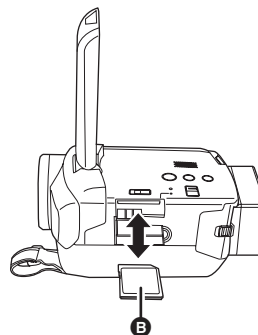
1 將 OFF/ON 開關設定為 OFF 關閉電源。

- 檢查狀態指示燈是否已熄滅。

2 開啓 LCD 顯示屏，然後滑動記憶卡插槽開啓手柄 A 開啓記憶卡插槽蓋。



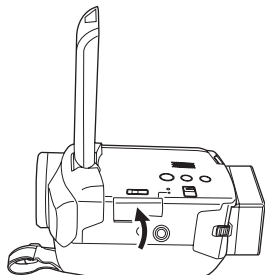
3 將 SD 卡插入記憶卡插槽，或從記憶卡插槽中取出。



- 當插入 SD 卡時，請將標籤面 B 朝上，平直推入至足夠深。
- 當取出 SD 卡時，請按著 SD 卡的中心部位，然後將其平直拉出。

設定

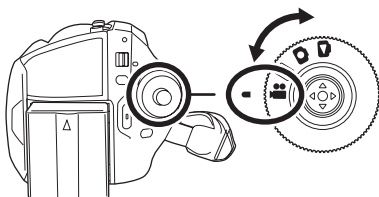
4 將記憶卡插槽蓋蓋嚴。



選擇一種模式

模式轉盤用於在錄製和播放模式之間進行切換。
緩慢而穩定地轉動模式轉盤。

轉動模式轉盤，並將想要的模式圖形設定到圖例中顯示的位置。



- | | |
|--|--------------------------------------|
| | 影片拍攝模式 (→ 32)
使用此模式拍攝動態影像。 |
| | 影片播放模式 (→ 49)
使用此模式重播動態影像。 |
| | 相片拍攝模式 (→ 35)
使用此模式拍攝靜態圖片。 |
| | 相片播放模式 (→ 53)
使用此模式重播靜態圖片。 |

- 請勿用力轉動轉盤。

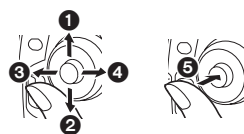
如何使用操縱桿

本機有一個用來選擇功能、執行操作等的操縱桿，因此便於用單手操作本機。

基本操作

功能表螢幕上的操作以及螢幕畫面指引檢視螢幕上檔案的選擇等。

上下左右移動操縱桿，選擇選項或場景，然後按下操縱桿選定。



- 1 通過向上移動選擇。
- 2 通過向下移動選擇。
- 3 通過向左移動選擇。
- 4 通過向右移動選擇。
- 5 按下操縱桿選擇選項。

- 功能表螢幕的操作 (→ 26)

拍攝時的操作

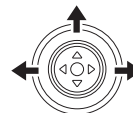
◇ 轉動模式轉盤選擇 或 .

- 1 按下操縱桿的中心部位，螢幕上將顯示出圖示。



- 再次按下操縱桿的中心部位時，該指示消失。
- 每次向下移動操縱桿，該指示都會改變。

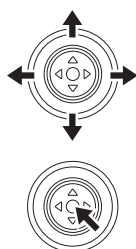
- 2 向上、左或右移動操縱桿，選擇一個選項。



重播時の操作

◇ 轉動模式轉盤選擇▶或▶。

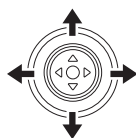
1 上下左右移動操縱桿，選擇要重播的場景，然後按下操縱桿。



選擇的場景以全螢幕重播。

- 操作圖示自動顯示在螢幕上。

2 上下左右移動操縱桿進行操作。



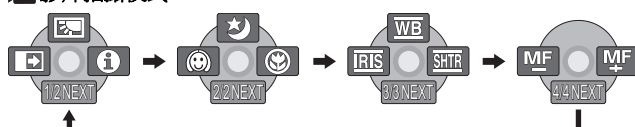
- 每次按下操縱桿的中心部位，操作圖示都會出現或消失。

設定

關於在每個模式中所顯示的操作圖示

關於自動模式和手動模式 (→ 31)

影片拍攝模式



圖示	方向	功能	頁碼
(1/2)		背光補償	41
		淡入淡出	41
		幫助模式	26
(2/2)		全彩夜視	42
		柔化肌膚模式	42
		遠攝微距 (SDR-H250)	42
在手動模式中 (3/3)		白平衡	46
		光圈或增益值	47
		快門速度	47
在手動對焦模式中 (4/4)		手動對焦調整	46

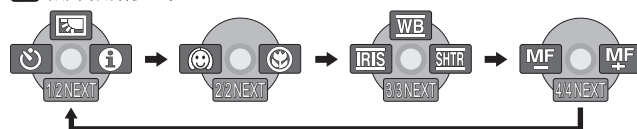
- 拍攝時，不顯示變暗的操作圖示。

影片播放模式



圖示	方向	功能	頁碼
		重播／暫停	49
		停止重播並顯示螢幕畫面指引	49
		跳躍	49
		快退	50
		慢退／幀重播（暫停時）	50
		跳躍	49
		快進	50
		慢進／幀重播（暫停時）	50

相片拍攝模式



圖示	方向	功能	頁碼
(1/2)		▲ 背光補償	41
		◀ 自拍計時器	43
		▶ 幫助模式	26
(2/2)		◀ 柔化肌膚模式	42
		▶ 遠攝微距 (SDR-H250)	42
在手動模式中 (3/3)		▲ 白平衡	46
		◀ 光圈或增益值	47
		▶ 快門速度	47
在手動對焦模式中 (4/4)		◀▶ 手動對焦調整	46

相片播放模式



圖示	方向	功能	頁碼
	▲	投影片播放開始／暫停	53
	▼	停止重播並顯示螢幕畫面指引	53
	◀	重播前一幅圖片（暫停時）	53
	▶	重播後一幅圖片（暫停時）	53

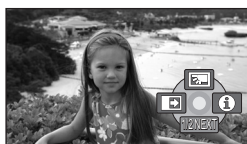
設定

■ 幫助模式

幫助模式對在影片 / 相片拍攝模式下，且 AUTO/MANUAL/FOCUS 開關設定為 AUTO 時所顯示的操作圖示進行說明。

◇ 轉動模式轉盤選擇  或 。

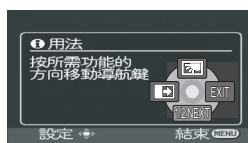
1 在拍攝暫停過程中，按操縱桿顯示圖示。



2 向右移動操縱桿，選擇 。



3 向上、左或右移動操縱桿選擇想要的圖示。

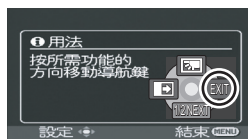


在螢幕上顯示出所選圖示的說明。

- 每次向下移動操縱桿，該指示都會改變。

退出幫助模式

按 MENU 按鈕或選擇 [EXIT]。

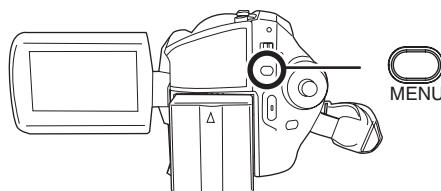


- 在使用幫助模式時，不能設定功能。
- 使用幫助模式時，不能錄製動態影像和靜態圖片。

轉換語言

可以轉換螢幕顯示或功能表螢幕上的語言。

1 按 MENU 按鈕後，選擇 [LANGUAGE]，然後按下操縱桿。

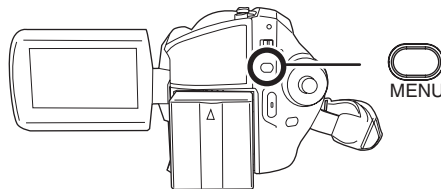


2 選擇 [中文]，並按下操縱桿。

使用功能表螢幕

有關功能表的資訊，請參閱“功能表列表” (→ 80)。

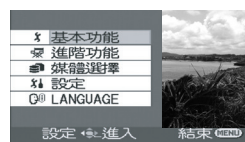
1 在停止時，按 MENU 按鈕。



根據模式轉盤的位置、所選媒體等的不同，顯示的功能表也會有所不同。

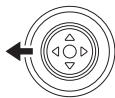
- 顯示功能表時，請勿切換模式轉盤。

2 上下移動操縱桿，選擇需要的總功能表。



3 向右移動操縱桿或按下操縱桿。**4 上下移動操縱桿，選擇子功能表選項。****5 向右移動操縱桿或按下操縱桿。****6 上下移動操縱桿，選擇需要的選項。****7 按下操縱桿確認選擇。****返回到上一螢幕**

向左移動操縱桿。

**退出功能表螢幕**

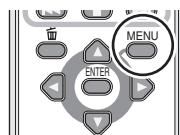
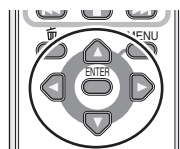
按 MENU 按鈕。



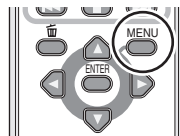
- 拍攝或播放時，不會顯示功能表螢幕。當顯示功能表螢幕時，不能開始其他操作。

用遙控器操作 (SDR-H250)

功能表螢幕的變化與使用主機上的按鈕時是一樣的。

1 按 MENU 按鈕。**2 選擇一個功能表項。**

- 使用方向按鈕 (▲, ▼, ◀, ▶) 和 ENTER 按鈕來代替主機上的操縱桿。

3 按 MENU 按鈕退出功能表螢幕。**設定日期和時間**

第一次開啓本機時，將出現一條訊息，要求您設定日期和時間。

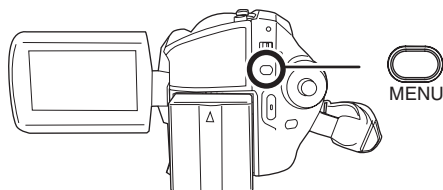
- 選擇 [是]，然後按下操縱桿。執行下面的步驟 2 和 3 設定日期和時間。

設定

如果螢幕顯示的日期和時間不正確，請進行調整。

◇ 轉動模式轉盤選擇  或 .

1 按 **MENU** 按鈕後，選擇 **[基本功能]** → **[時鐘設定]** → **[是]**，然後按下操縱桿。



2 左右移動操縱桿，選擇要設定的選項。然後，上下移動操縱桿，設定想要的值。



- 年份將按下列順序改變：
2000, 2001, ..., 2099, 2000, ...
- 顯示時間使用的是 24 小時制。

3 按下操縱桿確認選擇。

- 按下操縱桿時，時鐘功能從 [00] 秒開始啟動。
- 按 **MENU** 按鈕完成設定後，請檢查日期和時間顯示。

■ 改變日期和時間顯示類型

按 **MENU** 按鈕後，選擇 **[設定]** → **[日期/時間]** → 需要的顯示類型，然後按下操縱桿。

- 也可以通過反覆按遙控器上的 **DATE/TIME** 按鈕來顯示或改變日期和時間顯示。(SDR-H250)

[日期]

15.12.2007

[日期/時間]

15.12.2007 15:30

[關]

■ 改變顯示類型

按 **MENU** 按鈕後，選擇 **[設定]** → **[日期格式]** → 需要的顯示類型，然後按下操縱桿。

顯示類型	螢幕顯示
[年/月/日]	2007.12.15
[月/日/年]	12.15.2007
[日/月/年]	15.12.2007

- 日期和時間功能由內置鋰電池驅動。
- 拍攝前請務必檢查時間是否正確。
- 如果時間顯示變成 [- -]，則表明內置鋰電池電量已經耗盡。請用下列步驟給電池充電。充電後第一次開啓電源時，將出現一條訊息，要求您設定日期和時間。選擇 **[是]**，然後設定日期和時間。

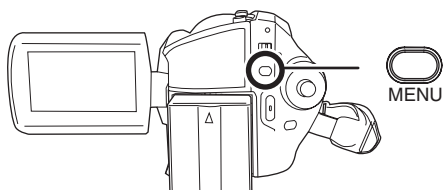
給內置鋰電池充電

將 **AC 適配器** 連接到本機或將電池裝入本機中，內置鋰電池將被充電。這樣放置本機約 **24 小時**，電池將會維持日期和時間運行約 **6 個月**。（即使將 **OFF/ON** 開關設定為 **OFF**，電池仍會被充電。）

調整 LCD 顯示屏

調整亮度及色彩級別

- 1 按 **MENU** 按鈕後，選擇 **[設定]** → **[LCD 設定]** → **[是]**，然後按下操縱桿。



- 2 上下移動操縱桿，選擇要調整的選項。然後，左右移動操縱桿進行調整。



滾動條顯示移動。

【亮度】:

LCD 顯示屏的亮度

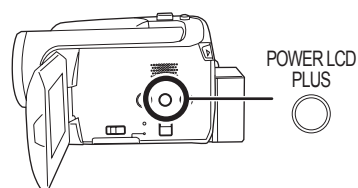
【色彩】:

LCD 顯示屏的色彩級別

- 當 LCD 顯示屏朝鏡頭方向旋轉 180° 時，無法調整 LCD 顯示屏的亮度和色彩級別。
- 這些設定將不會影響實際拍攝的影像。

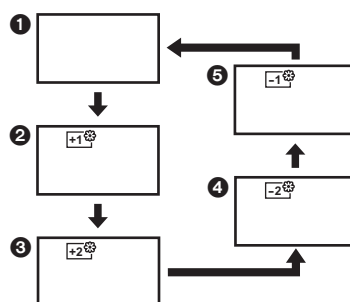
增加和降低整個 LCD 顯示屏的亮度

按 **POWER LCD PLUS** 按鈕。



每次按下此按鈕，會發生如下變化：

- 1 初始亮度
- 2 亮
- 3 更亮
- 4 更暗
- 5 暗

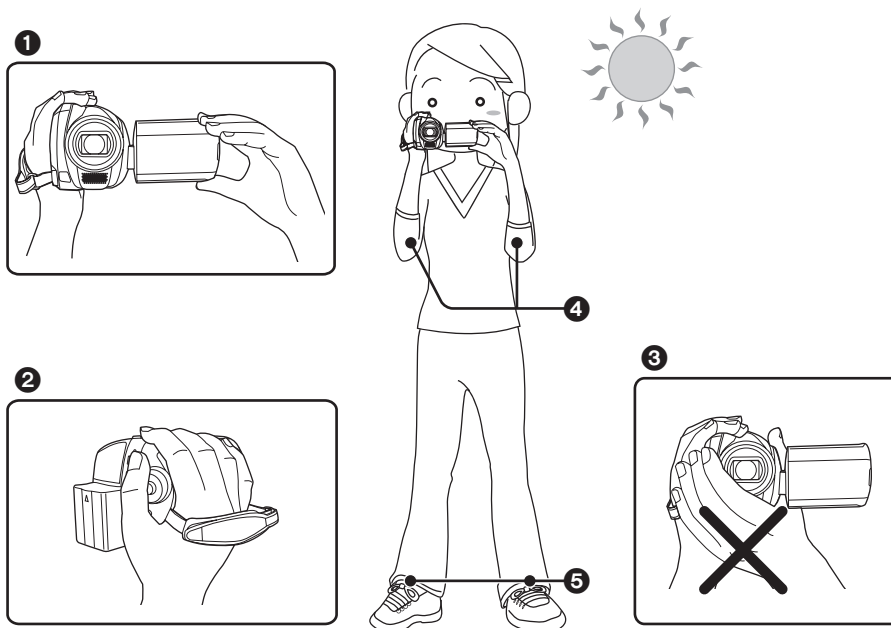


- 這不會影響到要拍攝的影像。
- 如果在使用 AC 適配器時開啓本機，此功能將自動為“亮”。
- (SDR-H250/SDR-H21) 視頻照明點亮時，LCD 顯示屏將會變得暗一些。

拍攝

拍攝之前

攝錄放影機的基本握持方法



- ❶ 用雙手握住攝錄放影機。
 - ❷ 將手穿過手持帶。
 - ❸ 請勿用手擋住麥克風或感測器。
 - ❹ 兩臂靠近身體。
 - ❺ 兩腿稍微分開。
- 在室外拍攝時，應順光拍攝。如果物體背光，在拍攝時將會變暗。
 - 拍攝時，請務必站穩，並確保沒有與其他人或物體發生碰撞的危險。

■ 關於自動模式

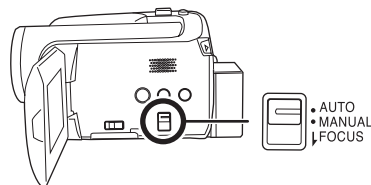
將 AUTO/MANUAL/FOCUS 開關設定為 AUTO，將會自動調整色彩平衡（白平衡）和對焦。

- －自動白平衡 (→ 96)
- －自動對焦 (→ 96)

根據物體的亮度等情況，為了獲得最佳亮度，會自動調整光圈和快門速度。

（設定為影片拍攝模式時：快門速度被調整到最大值 1/250。）

- 根據光源或場景的不同，可能無法自動調整色彩平衡和焦距。在這種情況下，請手動調整這些設定。
 - －場景模式 (→ 45)
 - －白平衡 (→ 46)
 - －快門速度 (→ 47)
 - －光圈／增益值 (→ 47)
 - －焦距 (→ 46)



■ 防止對地拍攝 (AGS) (SDR-H250)

當您忘記暫停拍攝而上下傾斜地帶著本機邊走邊拍時，本功能可以防止不必要的拍攝。

- 拍攝動態影像時，如果本機繼續從正常水平位置上下顛倒，則它會自動進入到拍攝暫停狀態。

◇ 轉動模式轉盤選擇。

按 **MENU** 按鈕後，選擇 [設定] → [AGS] → [開]，然後按下操縱桿。



- 如果正在拍攝您正上方或正下方的目標，則可能會啟動 AGS 功能，導致本機暫停拍攝。在這種情況下，請將 [AGS] 設定為 [關]，然後繼續拍攝。
- 請使用拍攝開始／停止按鈕暫停拍攝。AGS 功能僅是在您忘記暫停拍攝時的一種候補功能。
- 根據工作條件的不同，本機上下顛倒後進入到暫停拍攝所需要的時間也會不同。

拍攝

拍攝動態影像

HDD SD

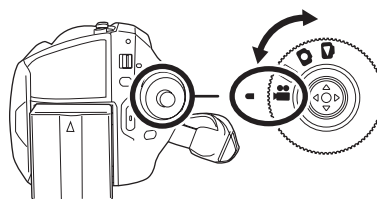
可以使用本機錄製動態影像到內置硬碟和 SD 卡中。(→ 13) 錄製前，請使用功能表選擇錄製目的地。(→ 下)

第一次開啓本機時，將出現錄製動態影像的媒體選擇螢幕。選擇 [硬碟] 或 [SD 記憶卡]，然後按下操縱桿。

- 在購買本機時，寬高比被設定為 [16:9]，以便錄製與寬銀幕電視相容的影像。
要在常規電視 (4:3) 上觀看影像，請在錄製影像前或者在所連接的電視上觀看時 (→ 65)，改變寬高比設定 (→ 44)。
 - (SDR-H250) 請在開機前開啓鏡頭蓋。
 - 如果在鏡頭蓋關閉的情況下開啓本機，自動白平衡調整可能無法正常工作。
 - (SDR-H21/SDR-H20) 請在開機前取下鏡頭蓋。
- 如果在鏡頭蓋未取下的情況下開啓本機，自動白平衡調整可能無法正常工作。

1 開啓本機。

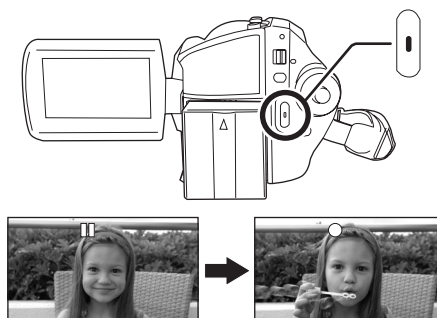
2 轉動模式轉盤選擇 .



3 開啓 LCD 顯示屏。

4 按 MENU 按鈕後，選擇 [媒體選擇] → [硬碟] 或 [SD 記憶卡] 選擇錄製目的地，然後按下操縱桿。

5 按拍攝開始/停止按鈕開始拍攝。

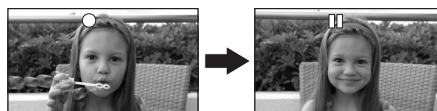


拍攝

結束拍攝

再次按拍攝開始／停止按鈕暫停拍攝。

- 拍攝時 [●] 和 [■] 是紅色的。在 [■] 變成綠色之前，請勿移動本機。



在按拍攝開始／停止按鈕開始拍攝和再次按此按鈕暫停拍攝之間所錄製的影像成爲一個場景。

但是，如果錄製目的地爲硬碟，當錄製資料超過 4 GB 時，會自動分割場景。（錄製不間斷。）

- 當處於拍攝暫停狀態且 5 分鐘內沒有進行任何操作時，本機會自動關閉，以防止電池電量耗盡。想使用本機時，請再次開啓。

此設定也可被設定爲 [關]。（→ 81, [節電]）

影片拍攝模式中的螢幕指示

- A 拍攝模式
- B 所選錄製目的地
- C 剩餘拍攝時間
（剩餘時間小於 1 分鐘時，[R 0h00m] 閃紅光。）
- D 已經耗用的拍攝時間



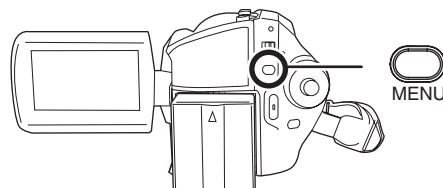
- 聲音由本機前面的內置立體聲麥克風錄製。注意不要擋住此麥克風。
- 如果 SD 卡上的寫保護開關被設定到 LOCK，則無法用於錄製。（→ 14）
- 每次本機進入拍攝暫停模式，計時器顯示就會被重設爲 “0h00m00s”。
- 正在進行動態影像拍攝時，即使關閉 LCD 顯示屏，拍攝也不會停止。
- 正在進行動態影像拍攝時，請勿斷開 AC 適配器或取出電池。如果這樣做，當再次開啓電源時，可能會顯示一條修復訊息。（→ 86, 關於恢復）

拍攝

適用動態影像的拍攝模式和可拍攝時間

改變動態影像的拍攝模式。

按 **MENU** 按鈕後，選擇 **[基本功能]** → **[拍攝模式]** → 想要的選項，然後按下操縱桿。



● 表中所示的可拍攝時間為估計值。

■ 硬碟

容量	拍攝模式		
	XP (高質量)	SP (標準)	LP (長時間播放)
30 GB	7 h	13 h 30 min	27 h

影像質量優先 ↔ 拍攝時間優先

■ SD 卡

容量	拍攝模式		
	XP (高質量)	SP (標準)	LP (長時間播放)
256 MB	3 min	6 min	12 min
512 MB (提供)	6 min	12 min	25 min
1 GB	12 min	25 min	50 min
2 GB	25 min	50 min	1 h 40 min
4 GB	50 min	1 h 40 min	3 h 20 min

影像質量優先 ↔ 拍攝時間優先

● 本機以 VBR 格式錄製。VBR 是 Variable Bit Rate (可變比特率) 的縮寫。VBR 錄製根據被攝目標自動改變比特率 (固定時間內的資料量)。這就意味著如果拍攝了劇烈運動的目標，則拍攝時間會縮短。

- 在下列情況下，在重播的影像上會出現馬賽克圖案的噪點。
 - －背景中有一個複雜的圖案時
 - －本機移動過多或過快時
 - －拍攝了劇烈運動的目標時
(尤其當影像已在 [LP] 模式錄製時。)
- 如果在硬碟或 SD 卡上錄製靜態圖片，適用動態影像的可錄製時間將會變短。

拍攝靜態圖片

HDD SD

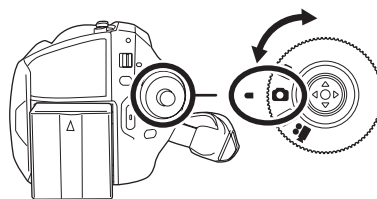
可以使用本機錄製靜態圖片到內置硬碟和 SD 卡中。(→ 13) 錄製前，請使用功能表選擇錄製目的地。(→ 下)

第一次開啓本機時，將出現錄製靜態圖片的媒體選擇螢幕。選擇 [硬碟] 或 [SD 記憶卡]，然後按下操縱桿。

- 在購買本機時，[圖片尺寸] 被設定為 [2M] (SDR-H250)/[0.2M] (SDR-H21/SDR-H20)，以便錄製與寬銀幕電視 (16:9) 相兼容的圖片。
要錄製寬高比為 4:3 的圖片，請在錄製前改變 [圖片尺寸] 設定 (→ 38)。
- (SDR-H250) 請在開機前開啓鏡頭蓋。
如果在鏡頭蓋關閉的情況下開啓本機，自動白平衡調整可能無法正常工作。
- (SDR-H21/SDR-H20) 請在開機前取下鏡頭蓋。
如果在鏡頭蓋未取下的情況下開啓本機，自動白平衡調整可能無法正常工作。

1 開啓本機。

2 轉動模式轉盤選擇 .



3 開啓 LCD 顯示屏。

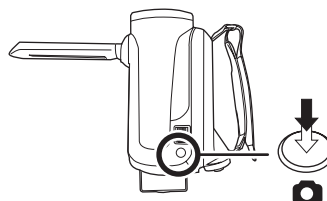
4 按 MENU 按鈕後，選擇 [媒體選擇] → [硬碟] 或 [SD 記憶卡] 選擇錄製目的地，然後按下操縱桿。

■ SDR-H250

5 半按拍照按鈕 ，以便調整焦距。 (僅適用於自動對焦)

快門速度和光圈／增益值是固定的，本機自動對物體對焦。

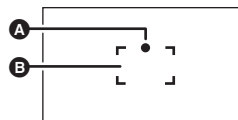
- 如果將 [光學防震功能] (→ 44) 設定為 [開]，當半按拍照按鈕  時，防震功能將變得更加有效。
(將顯示 [MEGA] (MEGA 光學防震功能)。)



拍攝

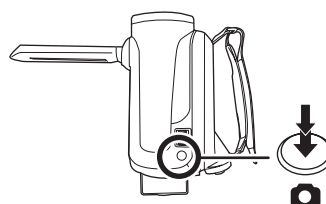
A 對焦指示

- （白色指示燈閃爍。）： 正在對焦中
- （綠色指示燈點亮。）： 已對準焦點
- 無標記： 對焦失敗。
- 未半按拍照按鈕  時，對焦指示將如下所示。請作為拍攝時的指南使用。
- （綠色指示燈點亮。）： 在已對準焦點並且能夠拍下優美的圖片時。
- （白色指示燈點亮。）： 差不多對準焦點



B 對焦區域

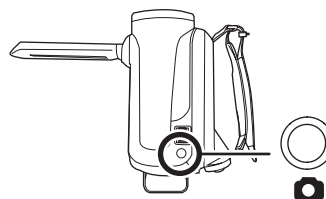
6 完全按下拍照按鈕 拍攝圖片。



■ SDR-H21/SDR-H20

5 按下拍照按鈕 。

本機自動對位於螢幕中心的物體對焦（選擇自動對焦時）。



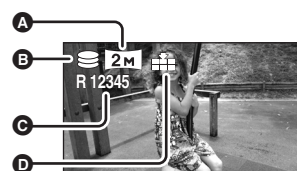
- 有關可拍攝靜態圖片數量的資訊 (→ 101)
- 無法錄製聲音。
- 如果 SD 卡上的寫保護開關被設定到 LOCK，則無法用於錄製。(→ 14)
- 不能半按遙控器上的拍照按鈕 。(SDR-H250)
- 如果將【圖片質量】設定為 ，則根據圖片的內容，在重播的影像上可能會出現馬賽克圖案的噪點。
- 其他產品可能會降低錄製的品質或者根本無法重播用本機拍攝的靜態圖片。

■ 清晰地拍攝靜態圖片

- 當用 4× 或更高的變焦放大率放大拍攝目標時，很難減少因手持本機而帶來的輕微抖動。我們建議減小變焦放大率，並在拍攝時接近被拍攝目標。
- 在拍攝靜態圖片時，請用雙手緊緊地握住本機，並使兩臂固定在體側以避免本機抖動。
- 通過使用三腳架和遙控器，可以拍攝到穩定無抖動的圖片。

相片拍攝模式中的螢幕指示

- **A** 靜態圖片的尺寸
- **B** 所選錄製目的地
- **C** 剩餘靜態圖片數量
(當顯示 [R 0] 時，此指示以紅色閃爍。)
- **D** 靜態圖片的質量



■ 關於對焦指示 (SDR-H250)

- 在手動對焦模式中，不出現對焦指示。
- 被拍攝目標難以對焦時，請手動對焦。
- 即使對焦指示不出現，也可以拍攝靜態圖片，但所拍攝的圖片可能沒有準確對焦。
- 在下列情況下，不出現或者難以顯示對焦指示。
 - 當變焦放大率很高時。
 - 當本機晃動時。
 - 當被拍攝目標正在移動時。
 - 當被拍攝目標位於光源前面時。
 - 當在同一場景上，既有近距離物體，又有遠距離物體時。
 - 當場景很暗時。
 - 當場景中有發光部分時。
 - 當在場景內僅充滿水平線時。
 - 當場景缺少對比時。

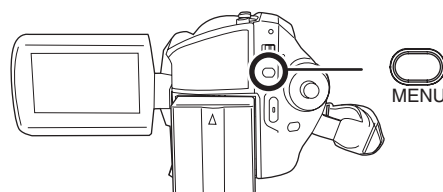
■ 關於對焦區域 (SDR-H250)

當在對焦區域內，在被拍攝目標的前面或後面有反差強烈的物體時，可能無法對被拍攝目標對焦。在這種情況下，請將反差強烈的物體從對焦區域中移出去。
當仍然難以對焦時，請手動調整焦距。

用快門操作效果拍攝

可以在拍攝靜態圖片時添加快門聲音。

按 **MENU** 按鈕後，選擇 **[進階功能]** → **[快門效果]** → **[開]**，然後按下操縱桿。



- 此功能的默認設定是 **[開]**。

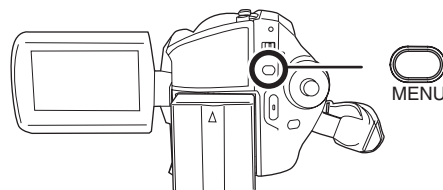
拍攝

靜態圖片拍攝的像素數和圖片質量

■【圖片尺寸】

改變拍攝的尺寸。

按 **MENU** 按鈕後，選擇 **【基本功能】** → **【圖片尺寸】** → 想要的選項，然後按下操縱桿。



SDR-H250:

圖示	寬高比	像素數
	4:3	2048×1512
	4:3	1280×960
	4:3	640×480
	16:9	1920×1080

SDR-H21/SDR-H20:

圖示	寬高比	像素數
	4:3	640×480
	16:9	640×360

- 在購買本機時，**【圖片尺寸】** 被設定為 **[[2M]]** (SDR-H250)/**[[0.2M]]** (SDR-H21/SDR-H20)。以 16:9 的寬高比錄製的圖片，可能會在列印時切掉邊緣。列印前，請仔細檢查。

■【圖片質量】

選擇圖片質量。

按 **MENU** 按鈕後，選擇 **【基本功能】** → **【圖片質量】** → 想要的選項，然後按下操縱桿。

: 拍攝具有較高圖片質量的靜態圖片。

: 優先考慮拍攝的靜態圖片數量。以標準圖片質量拍攝靜態圖片。

各種拍攝功能

放大／縮小功能

HDD SD

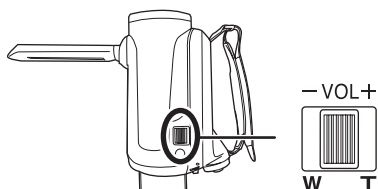
SDR-H250:

光學放大可達 10×。

SDR-H21/SDR-H20:

光學放大可達 32×。

◇轉動模式轉盤選擇 $\left[\begin{smallmatrix} \text{W} \\ \text{T} \end{smallmatrix} \right]$ 或 $\left[\begin{smallmatrix} \text{W} \\ \text{T} \end{smallmatrix} \right]$ 。
移動變焦桿。

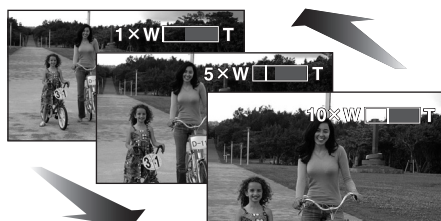


T側:

特寫拍攝 (放大)

W側:

廣角拍攝 (縮小)



- 當手持本機放大拍攝目標時，我們建議使用防震功能。(→ 44)
- 當拉近遠距離物體時，它們在約 1 m (SDR-H250)/1.3 m (SDR-H21/SDR-H20) 或更遠的距離被對焦。
- 變焦放大率為 1× 時，本機可以對距離鏡頭約 3.5 cm (SDR-H250)/2 cm (SDR-H21/SDR-H20) 遠的物體對焦。(微距功能)
- 變焦速度根據變焦桿移動的範圍而變化。(使用遙控器操作時，變焦速度不變。)
- 變焦速度很快時，被拍攝目標可能難以對焦。

- 在變焦操作過程中，如果手指離開變焦桿，則可能會錄下操作聲。將變焦桿返回原位置時，請靜靜地移動變焦桿。

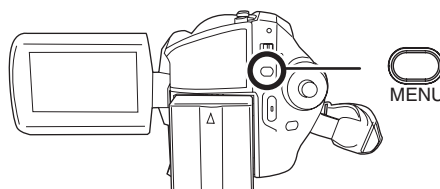
數位變焦功能

HDD SD

如果變焦放大率超過 10×(SDR-H250)/32×(SDR-H21/SDR-H20)，則將啟動數位變焦功能。可以切換由數位變焦提供的最大放大率。

◇轉動模式轉盤選擇 $\left[\begin{smallmatrix} \text{W} \\ \text{T} \end{smallmatrix} \right]$ 。

按 MENU 按鈕後，選擇 [進階功能] → [數位變焦] → 想要的選項，然後按下操縱桿。



SDR-H250:

[關]: 僅能光學變焦 (最高 10×)

[25×]: 最高 25×

[700×]: 最高 700×

- 如果選擇了 [25×] 或 [700×]，則在變焦時數位變焦範圍以藍色顯示。

SDR-H21/SDR-H20:

[關]: 僅能光學變焦 (最高 32×)

[50×]: 最高 50×

[1000×]: 最高 1000×

- 如果選擇了 [50×] 或 [1000×]，則在變焦時數位變焦範圍以藍色顯示。

- 數位變焦放大率越大，影像質量越差。
- 不能在相片拍攝模式中使用此功能。

使用變焦麥克風功能

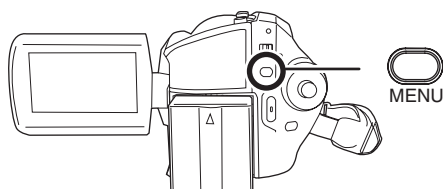
HDD SD

變焦麥克風與變焦操作相結合，因此用遠攝方式可以更加清晰地錄製遠處的聲音，用廣角拍攝方式可以更加清晰地錄製近處的聲音。

◇轉動模式轉盤選擇 $\left[\begin{smallmatrix} \text{W} \\ \text{T} \end{smallmatrix} \right]$ 。

拍攝

按 **MENU** 按鈕後，選擇 **[進階功能]** → **[變焦麥克風]** → **[開]**，然後按下操縱桿。

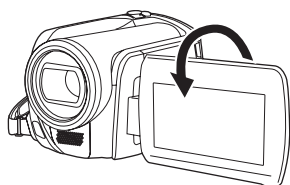


自拍

HDD SD

可以一邊看著 LCD 顯示屏，一邊進行自拍。

◇ 轉動模式轉盤選擇  或 。
朝鏡頭一側旋轉 LCD 顯示屏。



影像被水平翻轉，彷彿看到一個鏡像。（但是所拍攝的影像與正常拍攝時拍攝的影像一樣。）

- 當 LCD 顯示屏朝鏡頭一側旋轉時，即使按下操縱桿也不會顯示圖示。
- 螢幕上只會顯示一些指示。出現  時，請將 LCD 顯示屏的方向返回到正常位置，並檢查警告／報警指示。（→ 85）

用視頻照明 (SDR-H250/SDR-H21) 進行拍攝

此內置視頻照明用於在暗處拍攝。

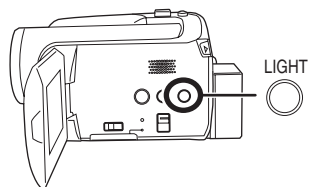
HDD SD

增益模式與視頻照明結合使用，以提高光線亮度及增亮場景中的自然色彩。

- (SDR-H250) 不能在相片拍攝模式中使用增益模式。

◇ 轉動模式轉盤選擇  或 .

按下 **LIGHT** 按鈕。

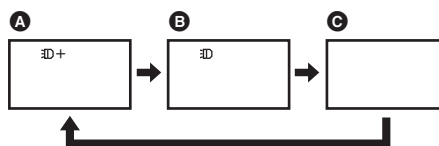


每次按下 **LIGHT** 按鈕，會發生如下變化：

- A 視頻照明和增益模式開 [(SDR-H250) 僅適用於影片拍攝模式]：**
比只開啓視頻照明時更亮，但會出現褪色的影像。
- B 視頻照明開：**
要消除褪色的影像，請使用此模式。
- C 視頻照明關**

SDR-H250:

- 影片拍攝模式

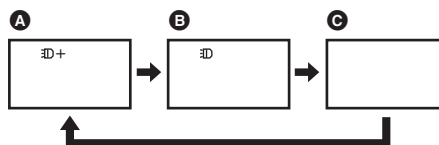


- 相片拍攝模式



SDR-H21:

- 影片拍攝模式／相片拍攝模式



- 被攝目標應距離本機 1.3 m 以內。
- 使用視頻照明會縮短電池的使用時間。
- 不使用視頻照明時，請將其設定為關。
- 請勿直接看向光線。
- 同時使用全彩夜視功能將使周圍環境更加明亮。

- 視頻照明能夠增亮在光線昏暗處拍攝的影像。我們也建議在明亮處使用視頻照明，以獲得高質量影像。
- 如果關閉電源或操作模式轉盤，視頻照明會關閉。

背光補償功能

此功能可防止背光目標變暗。

HDD SD

當光線從被拍攝目標後面發出，且被拍攝目標看起來很暗時，請使用此功能。

◇ 轉動模式轉盤選擇  或 .

- 1 按下操縱桿。然後，向下移動操縱桿顯示圖例中顯示的圖示。



- 2 向上移動操縱桿，選擇 .



螢幕上的影像將變得更亮。

恢復正常拍攝

再次選擇 .

- 如果關閉電源或操作模式轉盤，則將取消背光補償功能。

淡入／淡出功能

HDD SD

淡入：

影像和聲音漸漸出現。

淡出：

影像和聲音漸漸消失。

◇ 轉動模式轉盤選擇 .

- 1 按下操縱桿。然後，向下移動操縱桿顯示圖例中顯示的圖示。



- 2 向左移動操縱桿，選擇 .



- 3 按拍攝開始／停止按鈕。
開始拍攝。（淡入）



開始拍攝時，漸漸出現影像／聲音。

暫停拍攝。（淡出）



影像／聲音逐漸消失。在影像／聲音完全消失後，拍攝停止。

- 拍攝後，將取消淡入淡出設定。

取消淡入淡出

再次選擇 .

拍攝

選擇淡入／淡出的顏色

可以選擇在淡入淡出圖片中出現的顏色。

按 **MENU** 按鈕後，選擇 **[進階功能]** → **[淡入淡出]** → **[白色]** 或 **[黑色]**，然後按下操縱桿。

- 如果關閉電源，則會取消淡入淡出功能。
- 在選擇了淡入／淡出功能後，開始拍攝時，會花費幾秒鐘的時間來顯示影像。暫停拍攝也要花費幾秒鐘的時間。
- 使用淡入功能拍攝的場景的螢幕畫面指引會變黑（或變白）。

柔化肌膚模式

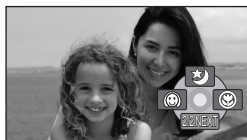
此模式使肌膚顏色看起來更柔和以使容貌更具吸引力。

HDD SD

如果靠近拍攝人物的上半身時，此模式更加有效。

◇ 轉動模式轉盤選擇  或 .

- 1 按下操縱桿。然後，向下移動操縱桿顯示圖例中顯示的圖示。



- 2 向左移動操縱桿，選擇 **[😊]**。



取消柔化肌膚模式

再次選擇 **[😊]**。

- 如果場景中的背景或其他任何東西有與肌膚顏色類似的色彩，則這些色彩也會變得柔和。
- 如果亮度不足，效果可能會不明顯。
- 拍攝遠距離的人物時，可能無法看清面部。在這種情況下，請取消柔化肌膚模式或者將臉部放大。

遠攝微距功能 (SDR-H250)

此模式用於僅對您想拍攝的目標對焦以拍攝特寫圖片。

HDD SD

只是在被拍攝目標上對焦，而使背景變得模糊，可使影像給人留下深刻的印象。
本機可以在約 50 cm 的距離上對目標進行對焦。

◇ 轉動模式轉盤選擇  或 .

- 1 按下操縱桿。然後，向下移動操縱桿顯示圖例中顯示的圖示。



- 2 向右移動操縱桿，選擇 **[🔍]**。



- 如果放大率是 10× 或更小，則它將自動設定為 10×。

取消遠攝微距功能

再次選擇 **[🔍]**。

- 如果得不到更準確的焦距，則請手動調整焦距。(→ 46)
- 在下列的情況下，會取消遠攝微距功能。
 - － 變焦放大率變得低於 10×。
 - － 關閉了電源或者操作了模式轉盤。

全彩夜視功能

此功能可以在暗處拍攝。

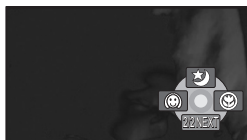
HDD SD

此功能可使您拍攝暗處的彩色物體，並使其從背景中突出出來。
將本機安裝到三腳架上，就可以無振動地拍攝影像。

- 最低照度：約 1 lx (SDR-H250) / 約 2 lx (SDR-H21/SDR-H20)
- 所拍攝的場景看起來好像沒有邊框。

◇ 轉動模式轉盤選擇 .

1 按下操縱桿。然後，向下移動操縱桿顯示圖例中顯示的圖示。



2 向上移動操縱桿，選擇 [☆]。



- 如果難以對焦，則請手動調整焦距。(→ 46)

取消全彩夜視功能

再次選擇 [☆]。

- 全彩夜視功能可使 CCD 的信號充入時間比平時長約 25×，所以暗處場景可以拍攝得很明亮。因此，可能會看到平常看不見的亮點，但這並非故障。
- 如果關閉電源或操作模式轉盤，則會取消全彩夜視功能。
- 如果在明亮處設定，則螢幕會變白一會兒。

自拍計時器拍攝

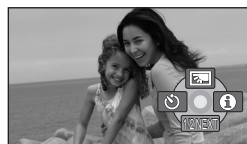
此功能也是用來進行自拍的。

HDD SD

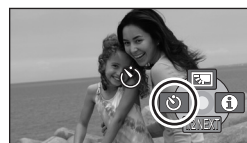
可以使用計時器拍攝靜態圖片。

◇ 轉動模式轉盤選擇 .

1 按下操縱桿。然後，向下移動操縱桿顯示圖例中顯示的圖示。



2 向左移動操縱桿，選擇 [☺]。



3 按拍照按鈕 [📷]。

[☺] 顯示閃爍約 10 秒後，將拍攝一張靜態圖片。

- 拍攝後，取消自拍計時器。
- 在自動對焦模式中，如果先半按拍照按鈕 [📷] 然後再完全按下，則在半按下此按鈕時對目標對焦。(SDR-H250)
- 在自動對焦模式中，完全按下拍照按鈕 [📷] 時，恰好在拍攝前對目標對焦。(SDR-H250)

中途停止計時器

按 MENU 按鈕。(取消自拍計時器設定。)

- 如果關閉電源，則會取消自拍計時器待機模式。
- 根據物體對焦用去時間的不同，拍攝所花費的時間可能比拍攝前設定的時間長。

構圖輔助線功能

檢查影像是否水平。

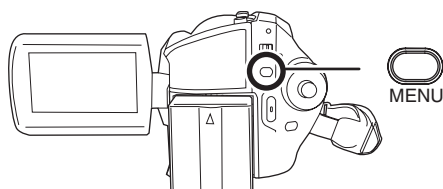
HDD SD

可以使用螢幕上顯示的線條檢查影像是否水平。

◇ 轉動模式轉盤選擇  或 .

拍攝

按 **MENU** 按鈕後，選擇 **[基本功能]** → **[構圖輔助線]** → **[開]**，然後按下操縱桿。



取消構圖輔助線功能

按 **MENU** 按鈕後，選擇 **[基本功能]** → **[構圖輔助線]** → **[關]**，然後按下操縱桿。

- 在實際拍攝的影像上不顯示構圖輔助線。
- 向前旋轉 LCD 顯示屏進行自拍時，不顯示構圖輔助線。

廣角模式

此模式用於在拍攝動態影像時選擇螢幕的寬高比。

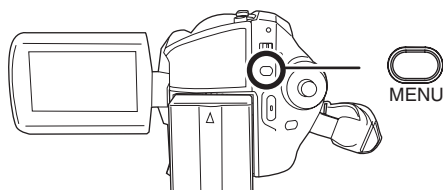
HDD SD

此功能允許您拍攝與寬銀幕電視（16:9）和常規電視（4:3）相兼容的影像。

■ 以 16:9 的寬高比錄製影像

◇ 轉動模式轉盤選擇 **[M]**。

按 **MENU** 按鈕後，選擇 **[基本功能]** → **[寬高比]** → **[16:9]**，然後按下操縱桿。



■ 以 4:3 的寬高比錄製影像

◇ 轉動模式轉盤選擇 **[M]**。

按 **MENU** 按鈕後，選擇 **[基本功能]** → **[寬高比]** → **[4:3]**，然後按下操縱桿。

- 默認設定是 [16:9]。

防震功能

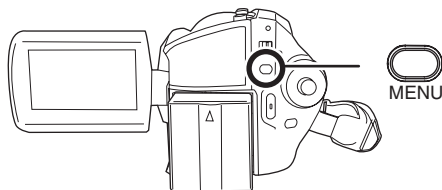
此功能用於在拍攝過程中降低影像的抖動。

HDD SD

可以減輕在拍攝時因手抖動而發生影像晃動的情況。

◇ 轉動模式轉盤選擇 **[M]** 或 **[C]**。

按 **MENU** 按鈕後，選擇 **[進階功能]** → **[光學防震功能]** → **[開]**，然後按下操縱桿。



取消防震功能

按 **MENU** 按鈕後，選擇 **[進階功能]** → **[光學防震功能]** → **[關]**，然後按下操縱桿。

- 此功能的默認設定是 **[開]**。
- 在相片拍攝模式中，半按拍照按鈕 **[C]**，加強防震功能的效果。（MEGA 光學防震功能）（SDR-H250）
- 在下列情況下，防震功能可能無法有效地工作。
 - 使用數位變焦時
 - 本機劇烈晃動時
 - 追蹤拍攝一個移動的目標時

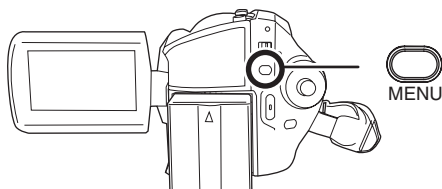
風聲噪音降低功能

此功能用於減少拍攝時進入麥克風的風聲噪音。

HDD SD

◇ 轉動模式轉盤選擇 **[M]**。

按 **MENU** 按鈕後，選擇 **[進階功能]** → **[消除風聲]** → **[開]**，然後按下操縱桿。



取消風聲噪音降低功能

按 **MENU** 按鈕後，選擇 **[進階功能]** → **[消除風聲]** → **[關]**，然後按下操縱桿。

- 此功能的默認設定是 **[開]**。
- 風聲噪音降低的效果取決於風力強弱。（如果在強風中啟動此功能，則會降低立體聲效果。當風力減弱時，立體聲效果將會恢復。）

手動拍攝功能

場景模式

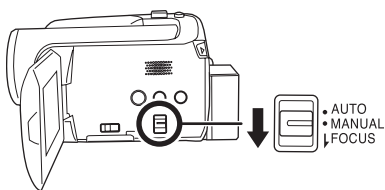
此模式用於在各種不同的環境下拍攝。

HDD | SD

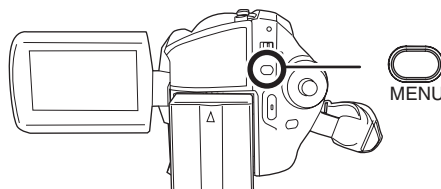
當您在不同環境下拍攝影像時，此模式會自動設定最佳的快門速度和光圈。

◇ 轉動模式轉盤選擇  或 。

1 將 **AUTO/MANUAL/FOCUS** 開關設定為 **MANUAL**。



2 按 **MENU** 按鈕後，選擇 **[基本功能]** → **[場景模式]** → 想要的選項，然後按下操縱桿。



運動

拍攝運動場景或有快速移動的場景

肖像

使人物突出於背景

低光

使暗處的場景更亮

聚光燈

使聚光燈下的物體看起來更引人注目

水上及雪地

用於在亮處拍攝影像，如滑雪場及海灘

取消場景模式功能

按 **MENU** 按鈕後，選擇 **[基本功能]** → **[場景模式]** → **[關]**，然後按下操縱桿。

- 也可以通過將 **AUTO/MANUAL/FOCUS** 開關設定為 **AUTO** 取消場景模式功能。

運動模式

- 對於所拍攝影像的慢動作重播或重播暫停，此模式有助於減少攝錄放影機的抖動。
- 在正常重播時，影像的移動可能看起來不流暢。
- 由於重播影像的顏色和亮度可能會有所改變，所以要避免在熒光燈、水銀燈或鈉燈下拍攝。
- 如果拍攝在強光照射下的物體或是高度反光的物體，則畫面上可能會出現垂直光線。
- 如果亮度不足，則運動模式不起作用。 顯示閃爍。
- 如果在室內使用此模式，螢幕可能會閃動。

肖像模式

- 如果在室內使用此模式，螢幕可能會閃動。在這種情況下，請將場景模式設定為 **[關]**。

低光模式

- 可能無法清晰地拍攝極暗的場景。

聚光燈模式

- 如果被拍攝目標極亮，則所拍攝的影像可能會發白，並且所拍攝影像的四周可能會變得極暗。

水上及雪地模式

- 如果物體極亮，則所拍攝的影像可能會發白。

拍攝

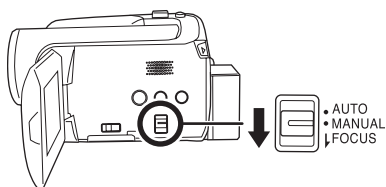
手動對焦調整

HDD SD

如果由於環境因素難以自動對焦，則可以手動對焦。

◇ 轉動模式轉盤選擇  或 。

1 將 **AUTO/MANUAL/FOCUS** 開關設定為 **MANUAL**。



2 向下移動開關，將其設定到 **FOCUS** 位置。

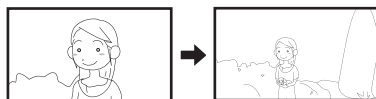


出現圖例中顯示的手動對焦指示 [MF] 和圖示。

3 左右移動操縱桿，使拍攝目標對焦。



● 如果採用廣角對焦，在物體放大時可能不能準確對焦。請先放大物體，然後再進行對焦。



恢復為自動調整

再次將 **AUTO/MANUAL/FOCUS** 開關向下按到 **FOCUS** 位置。

● 也可以通過將 **AUTO/MANUAL/FOCUS** 開關設定為 **AUTO** 恢復自動對焦。

白平衡

此功能用於以自然色彩拍攝。

HDD SD

根據場景或照明條件的不同，自動白平衡功能可能無法再現自然的色彩。在這種情況下，可以手動調整白平衡。

◇ 轉動模式轉盤選擇  或 。

1 將 **AUTO/MANUAL/FOCUS** 開關設定為 **MANUAL**。



自動顯示圖例中顯示的圖示。

2 向上移動操縱桿，選擇 **[WB]**。



3 左右移動操縱桿，選擇白平衡模式。



[AWB] 自動白平衡調整

[] 室內模式（適用於在白熾燈下拍攝）

- 白熾燈、鹵素燈

[] 室外模式

- 室外明朗的天空下

[] 手動調整模式

- 水銀燈、鈉燈、某些熒光燈
- 賓館的婚禮招待宴會上使用的燈光、劇場的舞台聚光燈
- 日出、日落等

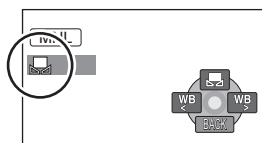
恢復為自動調整

將白平衡模式設定為 [AWB]。

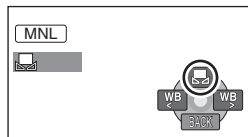
- 也可以通過將 AUTO/MANUAL/FOCUS 開關設定為 AUTO 恢復自動調整。

手動設定白平衡

1 選擇 []，並用白色物體填滿螢幕。



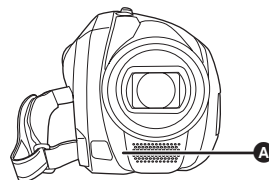
2 向上移動操縱桿，選擇 []。



當 [] 顯示從閃爍變成亮燈時，表示設定已完成。

- 當 [] 顯示繼續閃爍時，則表示由於場所太暗等原因而無法設定白平衡。在這種情況下，請使用自動白平衡。

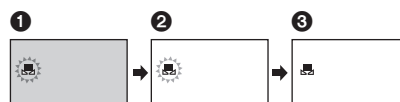
■ 關於白平衡感測器 A



白平衡感測器會在拍攝時探測光源的類型。拍攝時請勿遮蓋白平衡感測器，否則它可能無法正常工作。

■ 關於黑平衡調整 (SDR-H250)

這是 3CCD 系統功能之一，當在手動調整模式下設定白平衡時，自動調整黑色。當調整黑平衡時，螢幕將暫時變黑。（不能手動調整黑平衡。）



- 1 正在進行黑平衡調整。（閃爍。）
- 2 正在進行白平衡調整。（閃爍。）
- 3 調整完成。（點亮。）

- (SDR-H250) 在鏡頭蓋關閉的情況下開啓本機時，自動白平衡調整可能無法正常工作。請在開啓鏡頭蓋後開啓本機。
- (SDR-H21/SDR-H20) 在鏡頭蓋未取下的情況下開啓本機時，自動白平衡調整可能無法正常工作。請在取下鏡頭蓋後開啓本機。
- 當 [] 顯示閃爍時，預先調整的手動白平衡被保存起來。無論何時，只要拍攝條件發生變化，就要重新設定白平衡以進行正確的調整。
- 在同時設定白平衡和光圈／增益時，要先設定白平衡。

手動快門速度／光圈調整

HDD SD

快門速度：

當拍攝快速移動的目標時，請調整快門速度。

光圈：

當螢幕太亮或太暗時，請調整光圈。

◇ 轉動模式轉盤選擇  或 。

拍攝

1 將 AUTO/MANUAL/FOCUS 開關設定為 MANUAL。



自動顯示圖例中顯示的圖示。

2 左右移動操縱桿選擇 [IRIS] (光圈) 或 [SHR] (快門速度)。



3 左右移動操縱桿進行調整。



A 快門速度：

- 📷 1/50 至 1/8000
- 📹 1/25 至 1/2000 (SDR-H250)
- 1/50 至 1/500 (SDR-H21/SDR-H20)

- 快門速度越接近 1/8000 速度越快。

B 光圈／增益值：

CLOSE → (F16 至 F2.0) → OPEN → (0dB 至 18dB)

- 數值越接近 [CLOSE] 影像越暗。
- 值越接近 [18dB] 影像越亮。
- 當光圈值調整到比 [OPEN] 還要亮時，會變為增益值調整。

恢復為自動調整

將 AUTO/MANUAL/FOCUS 開關設定為 AUTO。

- 同時設定快門速度和光圈／增益值時，請先設定快門速度，然後再設定光圈／增益值。

■ 手動快門速度調整

- 由於重播影像的顏色和亮度可能會有所改變，所以要避免在熒光燈、水銀燈或鈉燈下拍攝。
- 如果手動增加快門速度，則增益值會根據感光度降低的情況自動增加，螢幕上的噪點可能也會增多。
- 重播很亮的發光物體或是高度反光物體的影像時，在重播影像上會出現垂直的光線，但這並非故障。
- 在正常重播時，影像的移動可能看起來不流暢。
- 在極亮的地方拍攝時，螢幕可能會改變色彩或閃動。在這種情況下，請手動將快門速度調整為 [1/50] 或 [1/100]。

■ 手動光圈／增益調整

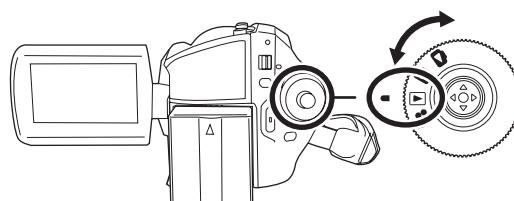
- 如果增益值增大，則螢幕上的噪點會增加。
- 根據變焦放大率的不同，有些光圈值不顯示。

動態影像重播

HDD SD

重播錄製在內置硬碟或 SD 卡中的動態影像。請用功能表選擇需要的重播媒體。(→ 下)

1 轉動模式轉盤選擇 .



2 按MENU按鈕後,選擇[媒體選擇]→[硬碟]或[SD記憶卡]選擇需要的媒體,然後按下操縱桿。

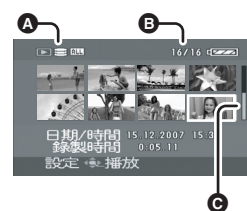
錄製在所選媒體上的動態影像以螢幕畫面指引的形式顯示。

3 選擇要重播的場景。

- A 所選媒體
- B 場景號碼
- C 滾動條顯示

選擇的場景將被黃框包圍。

- 拍攝了 9 個以上的場景時,通過移動操縱桿來顯示後(前)一頁。
- 如果按住操縱桿上下移動,可以快進或者快退頁面。此時,螢幕不會改變,但是場景號碼和滾動條顯示將會改變。當已經到達想顯示的場景所在頁時,請鬆開操縱桿。



4 按下操縱桿。

選擇的場景以全螢幕重播。
操作圖示自動顯示在螢幕上。



5 移動操縱桿進行操作。

- ▶/||: 重播/暫停
- ◀◀: 跳躍重播 (向後)
- ▶▶: 跳躍重播 (向前)
- : 停止重播並顯示螢幕畫面指引。

- 若不是正常重播時,將不會聽到聲音。
- 如果暫停播放持續 5 分鐘,則螢幕會返回到螢幕畫面指引。
- 場景上拍攝的時間很短時,可能無法重播。
- 在螢幕畫面指引顯示上,當場景顯示為 [!] 時,無法進行重播。
- 關閉 LCD 顯示屏時,電源不會關閉。

重播

- 在本機上重播用其他產品錄製在 SD 卡上的動態影像，或在其他產品上重播用本機錄製在 SD 卡上的動態影像時，影像質量會變差甚至可能無法播放。（會出現“不能播放。”訊息。）
- 重播用其他產品錄製在 SD 卡上的動態影像時，顯示的時間可能與錄製的時間不同，顯示螢幕畫面指引顯示可能要花費一些時間。

在重播時顯示拍攝日期

按 **MENU** 按鈕後，選擇 **[設定]** → **[日期/時間]** → **[日期/時間]** 或 **[日期]**，然後按下操縱桿。

- 也可以通過反復按遙控器上的 **DATE/TIME** 按鈕來顯示或改變日期和時間顯示。(SDR-H250)

- 重播用其他產品錄製在 SD 卡上的場景時，螢幕上不顯示錄製時間。

快進／快退重播

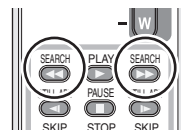
重播過程中，按住操縱桿向右移動，直到快進開始為止。
(按住操縱桿向左移動以快退。)

- 再次移動操縱桿以加快速度。
- 向上移動操縱桿時，恢復正常重播。



■ 用遙控器操作 (SDR-H250)

按 **◀◀** 或 **▶▶** 按鈕。



慢動作重播

1 重播時向上移動操縱桿以暫停重播。

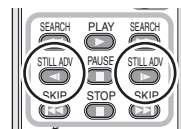
2 按住操縱桿向右移動。
(當按住操縱桿向左移動時，將會反向重播慢動作影像。)

- 向上移動操縱桿時，恢復正常重播。



■ 用遙控器操作 (SDR-H250)

按 **◀** 或 **▶** 按鈕。



重播

逐幀重播

動態影像每次前進一幀。

1 重播時向上移動操縱桿以暫停重播。

2 向右移動操縱桿。

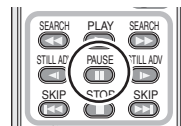
（當向左移動操縱桿時，每次將會反向前進一幀。）

- 向上移動操縱桿時，恢復正常重播。

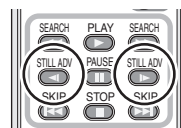


■ 用遙控器操作 (SDR-H250)

1 按 **II** 按鈕。



2 按 **◀** 或 **▶** 按鈕。



調整音量

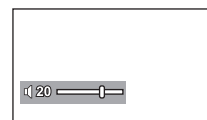
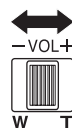
重播時調整揚聲器的音量。

移動音量桿，改變音量級別。

朝 “+” 方向：增加音量

朝 “-” 方向：減小音量

- 指示器 [] 越向右移動，音量變得越高。
- 調整結束後，音量設定顯示將消失。



按日期重播動態影像

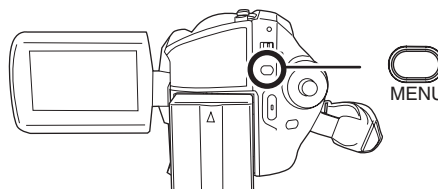
在本機上拍攝的場景按日期分組。

可以連續重播在同一天拍攝的場景。

1 按 **MENU** 按鈕後，選擇 [播放設定] → [播放模式] → [按日期]，然後按下操縱桿。

重播硬碟上的動態影像時，[按日期檢視] 螢幕按月份顯示。重播 SD 卡時，請繼續執行步驟 3。

- 將 [播放模式] 設定為 [全部檢視] 時，將連續重播所有拍攝的動態影像。



重播

- 2** (僅當重播硬碟上的動態影像時)
左右移動操縱桿選擇月份。



- 3** 上下移動操縱桿選擇重播的日期，然後按下操縱桿。
在同一天拍攝的場景以螢幕畫面指引的形式顯示。

4 選擇要重播的場景。

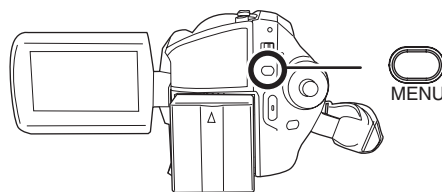
- 即使場景是在同一天拍攝的，當場景數量超過 99 時，也會單獨分組。

恢復上一重播

按 **MENU** 按鈕後，選擇 **[播放設定]** → **[恢復播放]** → **[開]**，然後按下操縱桿。

如果停止一個動態影像的重播，則在停止場景的螢幕畫面指引檢視上會出現 **[R]**。

- 會記憶硬碟和 SD 卡上的恢復位置。
- 在動態影像重播過程中，當 **[恢復播放]** 被設定為 **[關]** 時，如果在任意一點停止重播，則下次重播動態影像時，將從頭開始。



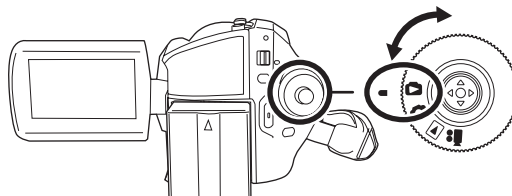
- 如果操作模式轉盤等，會清除所記憶的恢復位置。(**[恢復播放]** 設定保持不變。)
- 如果插入一張寫保護開關位於 **LOCK** 位置的 SD 卡， **[恢復播放]** 被設定為 **[關]**。(→ 14)

靜態圖片重播

HDD SD

重播錄製在內置硬碟或 SD 卡上的靜態圖片。請用功能表選擇需要的重播媒體。(→ 下)

1 轉動模式轉盤選擇 .



2 按MENU按鈕後,選擇[媒體選擇]→[硬碟]或[SD記憶卡]選擇需要的媒體,然後按下操縱桿。

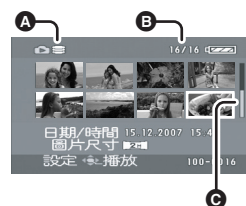
錄製在所選媒體上的靜態圖片以螢幕畫面指引的形式顯示。

3 選擇要重播的檔案。

- A 所選媒體
- B 檔案號碼
- C 滾動條顯示

選擇的檔案將被黃框包圍。

- 當拍攝了 9 個以上的檔案時,通過移動操縱桿來顯示後 (前) 一頁。
- 如果按住操縱桿上下移動,可以快進或者快退頁面。此時,螢幕不會改變,但是檔案號碼和滾動條顯示將會改變。當已經到達想顯示的檔案所在頁時,請鬆開操縱桿。



4 按下操縱桿。

選擇的檔案以全螢幕重播。
操作圖示自動顯示在螢幕上。



5 移動操縱桿進行操作。

- ▶/⏸: 投影片播放 (按數字順序重播靜態圖片) 開始/暫停。
- ◀: 重播前一幅圖片。
- ▶: 重播後一幅圖片。
- : 停止重播並顯示螢幕畫面指引。

■ 關於靜態圖片的兼容性

- 本機服從由 JEITA (Japan Electronics and Information Technology Industries Association) 建立的統一標準 DCF (Design rule for Camera File system)。
- 本機所支持的檔案格式為 JPEG。(並不能重播所有的 JPEG 格式的檔案。)
- 如果重播一個不符合規格的檔案,則可能不顯示資料夾/檔案號碼。

重播

- 本機可能會降低錄製的品質或者根本無法重播在其他產品上錄製或創建的資料，其他產品可能會降低錄製的品質或者根本無法重播在本機上錄製的資料。
- 請勿在投影片播放時操作模式轉盤。
- 當本機存取 SD 卡（存取指示燈點亮）時，請勿取出 SD 卡。
- 根據檔案的像素數的不同，顯示檔案需要一些時間。
- 在螢幕畫面指引顯示上，當檔案顯示為 [!] 時，無法進行重播。
- 如果試圖重播以不同格式錄製的檔案或檔案資料有缺陷的檔案，可能會出現一條錯誤訊息。
- 重播用其他產品錄製在 SD 卡上的靜態圖片時，顯示的時間可能與拍攝的時間不同，顯示螢幕畫面指引顯示可能要花費一些時間。
- 關閉 LCD 顯示屏時，電源不會關閉。

編輯場景

刪除場景

此功能用於刪除動態影像場景。

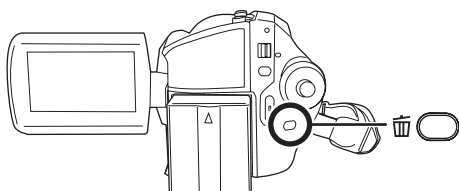
HDD SD

無法恢復已刪除的場景。

每次刪除一個場景

- ◇ 轉動模式轉盤選擇 .
- ◇ 在 [媒體選擇] 中選擇 [硬碟] 或 [SD 記憶卡]。

1 重播時按 按鈕。

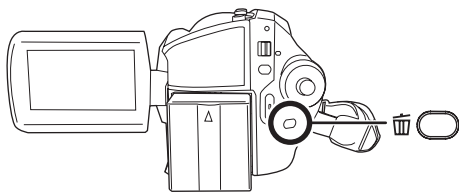


2 出現確認訊息時，選擇 [是]，然後按下操縱桿。

從螢幕畫面指引顯示中刪除多個場景

- ◇ 轉動模式轉盤選擇 .
- ◇ 在 [媒體選擇] 中選擇 [硬碟] 或 [SD 記憶卡]。

1 在螢幕畫面指引顯示中按 按鈕。



2 選擇 [全部] 或 [選擇]，並按下操縱桿。

- 當選擇 [全部] 時，將刪除下列的場景。繼續執行步驟 5。
- 將 [播放模式] 設定為 [全部檢視] 時：所選媒體上除被鎖定場景以外的全部場景
- 將 [播放模式] 設定為 [按日期] 時：按日期選擇的除被鎖定場景以外的全部場景

3 (僅當在步驟 2 中選擇 [選擇] 時) 選擇要刪除的場景，然後按下操縱桿。



選擇的場景被紅框包圍。

- 再次按下操縱桿時，將取消選擇的場景。
- 最多可以連續設定 50 個場景。

4 (僅當在步驟 2 中選擇 [選擇] 時) 按 按鈕。

5 出現確認訊息時，選擇 [是]，然後按下操縱桿。

(僅當在步驟 2 中選擇 [選擇] 時)

繼續刪除其他場景

重複步驟 3-5。

中途取消刪除

按 MENU 按鈕。

- 從螢幕畫面指引顯示上的最後一個場景開始刪除場景。無法恢復取消刪除時已經刪除的場景。

完成編輯

按 MENU 按鈕。

- 也可以通過按 MENU 按鈕，選擇 [刪除]，然後選擇 [全部] 或 [選擇] 來刪除場景。
- 選擇 [全部] 時，如果有很多場景，刪除可能要花費一些時間。
- 刪除時請勿關閉本機。
- 刪除場景時，請使用電量充足的電池或使用 AC 適配器。

編輯

- 刪除錄製在 SD 卡上的場景時，請勿開啓記憶卡插槽蓋。否則，刪除將停止。
- 無法刪除被鎖定的場景。

鎖定動態影像場景

此功能用於防止錯誤刪除動態影像場景。

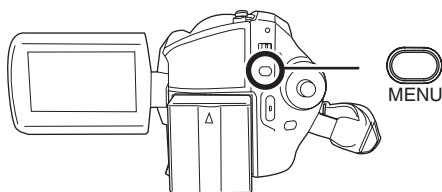
HDD SD

可以鎖定動態影像場景，因此就不會錯誤刪除場景。（但是，必須清楚：如果格式化媒體，將擦除媒體上的全部資料。）

◇ 轉動模式轉盤選擇 。

◇ 在 [媒體選擇] 中選擇 [硬碟] 或 [SD 記憶卡]。

1 按 MENU 按鈕後，選擇 [播放設定] → [鎖定設定] → [是]，然後按下操縱桿。



2 選擇要保護的場景，然後按下操縱桿。



出現 [On] 顯示，所選場景被鎖定。

- 再次按下操縱桿解除鎖定設定。
- 也可以連續選擇多個場景。

完成設定

按 MENU 按鈕。

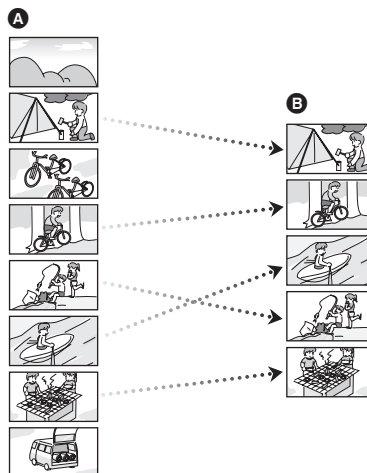
使用播放列表

什麼是播放列表？

可以從拍攝的場景中將您喜歡的場景集合起來新增一個播放列表。

由於播放列表不是通過複製資料新增的，因此新增播放列表只消耗一點容量。

- 如果新增或刪除播放列表，則將不會修改原始場景。在播放列表上編輯場景將不會影響原始場景。



- A 拍攝的場景
- B 播放列表

- 僅可以在硬碟上新增播放列表。無法在 SD 卡上新增播放列表。
- 硬碟上的最大項目數量
 - 播放列表：4
 - 播放列表場景：99
- 如果刪除原始場景，則用這些場景新增的播放列表部分也會被刪除。

新增一個新的播放列表

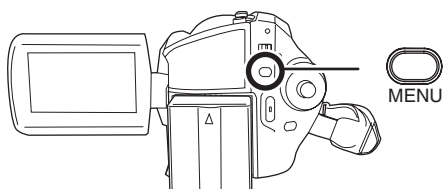
HDD

◇ 轉動模式轉盤選擇 。

◇ 在 [媒體選擇] 中選擇 [硬碟]。

編輯

- 1 按MENU按鈕後，選擇[播放設定]→[播放列表]→[新增]，然後按下操縱桿。



- 2 選擇要增加到播放列表中的場景，然後按下操縱桿。



選擇的場景被紅框包圍。

- 再次按下操縱桿時，將取消選擇的場景。
- 最多可以連續設定 50 個場景。
- 場景按照選擇的順序在播放列表中登記。新增播放列表後，可以用 [移動] 功能來改變播放列表中的場景順序。(→ 58)

- 3 按 MENU 按鈕。

- 4 出現確認訊息時，選擇 [是]，然後按下操縱桿。

顯示新增播放列表的螢幕畫面指引檢視螢幕。

向同一播放列表中增加另一個場景

選擇 [增加]。(→ 58)

重播播放列表

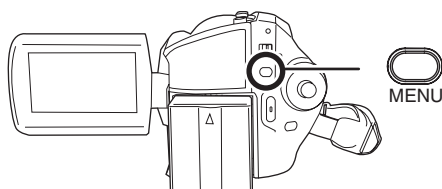
選擇要開始重播的場景，然後按下操縱桿。

重播播放列表

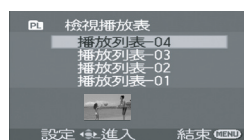
HDD

- ◇ 轉動模式轉盤選擇 []。
- ◇ 在 [媒體選擇] 中選擇 [硬碟]。

- 1 按MENU按鈕後，選擇[播放設定]→[播放列表]→[檢視列表]，然後按下操縱桿。



- 2 選擇要重播的播放列表，然後按下操縱桿。



所選播放列表中的場景以螢幕畫面指引顯示。

- 3 選擇要開始重播的場景，然後按下操縱桿。



選擇一個不同的播放列表

按 MENU 按鈕後，選擇 [檢視播放表]，然後按下操縱桿。

返回到顯示原始場景

按 MENU 按鈕後，選擇 [結束]，然後按下操縱桿。

編輯播放列表

HDD

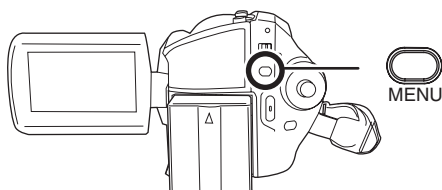
在播放列表上編輯場景將不會影響原始場景。

編輯

向播放列表增加場景

◇選擇播放列表重播模式。(→ 57, “重播播放列表”, 步驟 1 和 2)

1 按MENU按鈕後,選擇[編輯列表]→[增加]→[是],然後按下操縱桿。



2 選擇要增加的場景,然後按下操縱桿。



選擇的場景被紅框包圍。

- 再次按下操縱桿時,將取消選擇的場景。
- 最多可以連續設定 50 個場景。
- 場景按照選擇的順序增加到播放列表中。可以用 [移動] 功能改變播放列表中的場景順序。(→ 58)

3 按 MENU 按鈕。

4 出現確認訊息時,選擇[是],然後按下操縱桿。

顯示所增加場景的播放列表的螢幕畫面指引檢視螢幕。

繼續向播放列表中增加場景

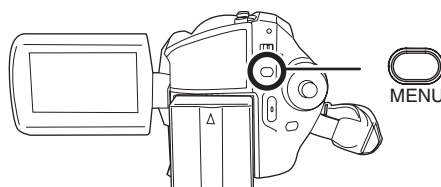
重複步驟 1-4。

移動場景

可以移動播放列表中的場景。

◇選擇播放列表重播模式。(→ 57, “重播播放列表”, 步驟 1 和 2)

1 按MENU按鈕後,選擇[編輯列表]→[移動]→[是],然後按下操縱桿。



2 選擇要移動的場景,然後按下操縱桿。



選擇的場景被紅框包圍,要插入的位置以黃色條顯示。

3 選擇要插入場景的位置,然後按下操縱桿。



繼續移動播放列表中的其他場景

重複步驟 2-3。

完成編輯

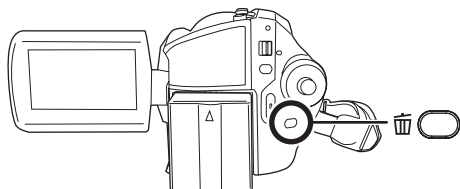
按 MENU 按鈕。

刪除場景

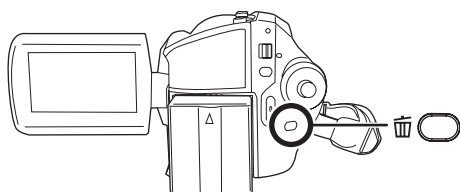
- 在播放列表上刪除場景將不會影響原始場景。

■ 每次刪除一個場景

◇選擇播放列表重播模式。(→ 57, “重播播放列表”, 步驟 1 和 2)

1 重播時按 $\square$ 按鈕。**2 出現確認訊息時，選擇[是]，然後按下操縱桿。****■ 從螢幕畫面指引顯示中刪除多個場景**

◇選擇播放列表重播模式。(→ 57，“重播播放列表”，步驟 1 和 2)

1 在螢幕畫面指引顯示中按 $\square$ 按鈕。**2 選擇[全部]或[選擇]，並按下操縱桿。**

- 當選擇[全部]時，將刪除選擇的播放列表。繼續執行步驟 5。

**3 (僅當在步驟 2 中選擇[選擇]時)
選擇要刪除的場景，然後按下操縱桿。**

選擇的場景被紅框包圍。

- 再次按下操縱桿時，將取消選擇的場景。
- 最多可以連續設定 50 個場景。

**4 (僅當在步驟 2 中選擇[選擇]時)
按 $\square$ 按鈕。****5 出現確認訊息時，選擇[是]，然後按下操縱桿。**

(僅當在步驟 2 中選擇[選擇]時)

繼續刪除其他場景

重複步驟 3-5。

中途取消刪除

按 MENU 按鈕。

- 從螢幕畫面指引顯示上的最後一個場景開始刪除場景。無法恢復取消刪除時已經刪除的場景。

完成編輯

按 MENU 按鈕。

- 也可以通過按 MENU 按鈕，選擇[編輯列表]→[刪除]後，選擇[全部]或[選擇]來刪除場景。
- 刪除播放列表上的場景將不會增加剩餘拍攝容量。
- 如果刪除播放列表中的所有場景，則也會刪除播放列表本身。
- 刪除一個播放列表時，其後的每個播放列表的號碼都會減一。

編輯靜態圖片**刪除靜態圖片檔案**

此功能用於刪除靜態圖片檔案。

HDD SD

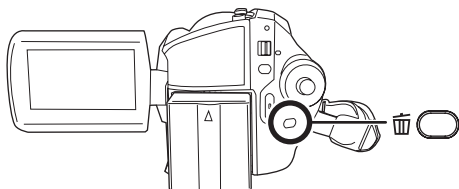
無法恢復已刪除的檔案。

每次刪除一個檔案

- ◇轉動模式轉盤選擇 $\blacktriangleright$ 。
- ◇在[媒體選擇]中選擇[硬碟]或[SD 記憶卡]。

編輯

1 重播時按下按鈕。



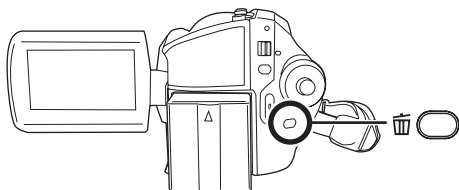
2 出現確認訊息時，選擇[是]，然後按下操縱桿。

從螢幕畫面指引顯示中刪除多個檔案

◇ 轉動模式轉盤選擇 。

◇ 在[媒體選擇]中選擇[硬碟]或[SD 記憶卡]。

1 在螢幕畫面指引顯示中按下按鈕。



2 選擇[全部]或[選擇]，並按下操縱桿。

- 選擇[全部]時，將擦除媒體上除被鎖定的檔案以外的全部檔案。請繼續執行步驟 5。

3 (僅當在步驟 2 中選擇[選擇]時)
選擇要刪除的檔案，然後按下操縱桿。

選擇的檔案被紅框包圍。

- 再次按下操縱桿時，將取消選擇的檔案。
- 最多可以連續設定 50 個檔案。

4 (僅當在步驟 2 中選擇[選擇]時)
按下按鈕。

5 出現確認訊息時，選擇[是]，然後按下操縱桿。

(僅當在步驟 2 中選擇[選擇]時)

繼續刪除其他檔案

重複步驟 3-5。

中途取消刪除

按 MENU 按鈕。

- 從螢幕畫面指引顯示上的最後一個檔案開始刪除檔案。無法恢復取消刪除時已經刪除的檔案。

完成編輯

按 MENU 按鈕。

■ 刪除用其他產品錄製在 SD 卡上的靜態圖片檔案

可以刪除無法在本機上重播的靜態圖片檔案（非 JPEG 格式的檔案）。

- 也可以通過按 MENU 按鈕，選擇[刪除]，然後選擇[全部]或[選擇]來刪除檔案。
- 選擇[全部]時，如果有很多檔案，刪除可能要花費一些時間。
- 刪除時請勿關閉本機。
- 刪除檔案時，請使用電量充足的電池或使用 AC 適配器。
- 刪除錄製在 SD 卡上的檔案時，請勿開啓記憶卡插槽蓋。否則，刪除將停止。
- 如果刪除符合 DCF 標準的檔案，則將刪除與該檔案有關的所有資料。

鎖定靜態圖片檔案

此功能用於防止錯誤刪除靜態圖片檔案。

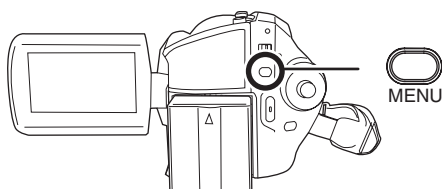
HDD SD

可以鎖定靜態圖片檔案，因此就不會錯誤刪除檔案。（但是，必須清楚：如果格式化媒體，將擦除媒體上的全部資料。）

◇ 轉動模式轉盤選擇 。

◇ 在[媒體選擇]中選擇[硬碟]或[SD 記憶卡]。

- 1 按MENU按鈕後，選擇[相片設定]→[鎖定設定]→[是]，然後按下操縱桿。



- 2 選擇要保護的檔案，然後按下操縱桿。



出現 [] 顯示，鎖定選擇的檔案。

- 再次按下操縱桿解除鎖定設定。
- 也可以連續選擇多個檔案。

完成設定

按 MENU 按鈕。

DPOF 設定

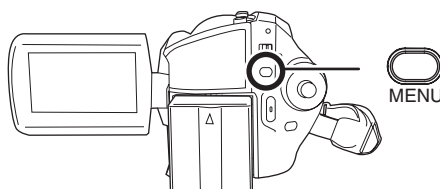
此功能用於在 SD 卡上寫入列印資料。

SD

可以將要列印的靜態圖片資料和列印數量（DPOF 資料）寫入到 SD 卡上。

- ◇ 轉動模式轉盤選擇 []。
- ◇ 在 [媒體選擇] 中選擇 [SD 記憶卡]。

- 1 按MENU按鈕後，選擇[相片設定]→[DPOF 設定]→[設定]，然後按下操縱桿。



- 2 選擇要設定的檔案，然後按下操縱桿。



顯示在 DPOF 中設定的列印數量。

- 3 上下移動操縱桿選擇列印的數量，然後按下操縱桿。

- 選擇範圍：0 至 999。（可以用支持 DPOF 的印表機列印所選的圖片數量。）
- 要取消設定，請將列印數量設定為 [0]。
- 也可以連續選擇多個檔案。

完成設定

按 MENU 按鈕。

取消所有 DPOF 設定

按 MENU 按鈕後，選擇 [相片設定]→

[DPOF 設定]→[全部取消]，然後按下操縱桿。

- 出現確認訊息時，選擇 [是]，然後按下操縱桿。

■ 什麼是 DPOF？

DPOF 指的是 Digital Print Order Format。它能夠將圖片列印資訊寫入到 SD 卡上，這樣就可以在一個支持 DPOF 的系統上使用。

- DPOF 設定最多可以建立 999 個檔案。
- 本機可能無法識別在其他設備上做成的 DPOF 設定。請在本機上進行 DPOF 設定。
- 無法用 DPOF 設定向要列印的圖片上增加拍攝日期。

編輯

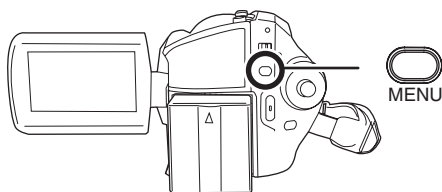
複製靜態圖片檔案

此功能用於將靜態圖片檔案從硬碟複製到 SD 卡中，反之亦然。

HDD SD

◇轉動模式轉盤選擇.

1 按 **MENU** 按鈕後，選擇[相片設定] → [複製] → 需要的複製方向，然後按下操縱桿。



 從硬碟複製到 SD 卡中

 從 SD 卡複製到硬碟中

2 選擇[選擇]或[全部]，並按下操縱桿。

- 選擇[全部]時，將複製硬碟或 SD 卡中的全部靜態圖片檔案。請繼續執行步驟 5。

3 (僅當在步驟 2 中選擇[選擇]時)
選擇要複製的檔案，然後按下操縱桿。



選擇的檔案被紅框包圍。

- 再次按下操縱桿時，將取消選擇的檔案。
- 最多可以連續設定 50 個檔案。
- 按照選擇檔案的順序複製檔案。

4 (僅當在步驟 2 中選擇[選擇]時)
按 **MENU** 按鈕。

5 出現確認訊息時，選擇[是]，然後按下操縱桿。

開始複製檔案。

(僅當在步驟 2 中選擇[選擇]時)

繼續複製其他檔案

重複步驟 3-5。

中途取消複製

按 **MENU** 按鈕。

完成編輯

按 **MENU** 按鈕。

- 所複製的檔案被錄製在複製目的地中的靜態圖片檔案之後。(檔案名稱或資料夾名稱將與原始檔案不同。)
- 無法複製檔案的鎖定狀態和 DPOF 設定。
- 選擇[全部]時，如果有很多檔案，複製可能要花費一些時間。
- 複製時，請勿關閉本機。
- 複製檔案時，請使用電量充足的電池或者使用 AC 適配器。
- 複製時，請勿開啓記憶卡插槽蓋。否則，複製將停止。

硬碟的管理

格式化硬碟

此功能用於初始化硬碟。

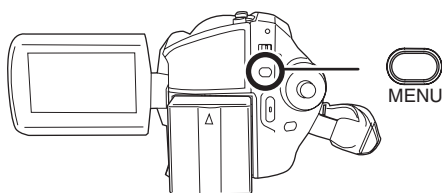
HDD

必須清楚：如果格式化硬碟，將擦除錄製在硬碟上的全部資料。請將重要資料保存到計算機等設備上。

◇ 轉動模式轉盤選擇 。

◇ 在 [媒體選擇] 中選擇 [硬碟]。

1 按 **MENU** 按鈕後，選擇 [設定] → [硬碟格式化] → [是]，然後按下操縱桿。



2 出現確認訊息時，選擇 [是]，然後按下操縱桿。

● 格式化完成後，按 **MENU** 按鈕退出訊息螢幕。

- 格式化時，請勿關閉本機。
- 格式化硬碟時，請使用電量充足的電池或 AC 適配器。
- 格式化過程中，請勿震動或撞擊本機。

顯示硬碟資訊

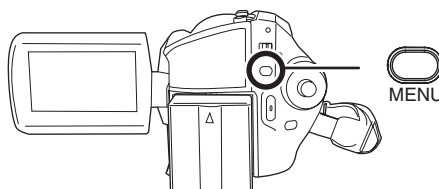
HDD

顯示關於硬碟上的已用空間和可用空間的資訊。

◇ 轉動模式轉盤選擇 。

◇ 在 [媒體選擇] 中選擇 [硬碟]。

按 **MENU** 按鈕後，選擇 [設定] → [資訊] → [是]，然後按下操縱桿。



退出資訊螢幕

按 **MENU** 按鈕。

- 30 GB 硬碟驅動器利用部分存儲空間用於格式化、檔案管理以及其他用途。30 GB 是 30,000,000,000 個字節。可用容量會小一些。

記憶卡的管理

格式化 SD 卡

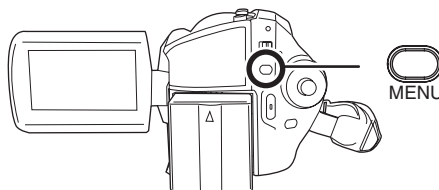
此功能用於初始化記憶卡。

SD

必須清楚：如果將 SD 卡格式化，則將刪除記憶卡上錄製的所有資料。請將重要資料保存到計算機等設備上。

◇ 在 [媒體選擇] 中選擇 [SD 記憶卡]。

1 按 **MENU** 按鈕後，選擇 [設定] → [記憶卡格式化] → [是]，然後按下操縱桿。



2 出現確認訊息時，選擇 [是]，然後按下操縱桿。

● 格式化完成後，按 **MENU** 按鈕退出訊息螢幕。

HDD 和記憶卡的管理

- 請使用本機格式化 SD 卡。如果在其他產品（如計算機）上格式化 SD 卡，則拍攝可能花費更長的時間，並且可能無法使用該 SD 卡。
- 根據使用的 SD 卡類型的情況，格式化可能需要一些時間。
- 格式化時，請勿關閉本機。
- 格式化 SD 卡時，請使用電量充足的電池或 AC 適配器。
- 格式化時，請勿開啓記憶卡插槽蓋。否則，格式化將停止。

與其他產品一起使用

與電視機一起使用

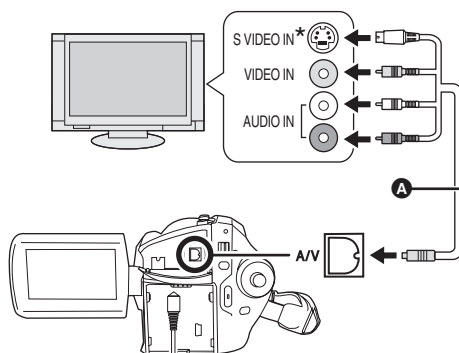
在電視機上重播

HDD SD

可以在電視機上重播用本機拍攝的動態影像和靜態圖片。

- 使用 AC 適配器可以免除電池用光的煩惱。

1 連接本機和電視機。



- A** AV/S 電纜（提供）
- 將插頭插入得足夠深。

* 如果電視機有 S 視頻端子，則還要将 S 視頻插頭插進去。這樣可使您欣賞到更加美麗的圖片。

2 開啓本機，然後轉動模式轉盤選擇 或 。

3 按MENU按鈕後，選擇[媒體選擇]→[硬碟]或[SD記憶卡]選擇需要的媒體，然後按下操縱桿。

4 改變電視機上的輸入頻道。

- 根據本機所連接的端子不同，頻道設定也將有所不同。

5 在本機上開始重播。

影像和聲音都輸出到電視機上。

- 如果影像或聲音沒有從本機輸出到電視機上
 - 請檢查插頭是否插得足夠深。
 - 請檢查連接的端子。
 - 請檢查電視機的輸入設定（輸入開關）。（有關更多資訊，請閱讀電視機的使用說明書。）

- 如果電視機有 SD 記憶卡插槽，也許可以在電視機上重播錄製在 SD 卡上的動態影像和靜態圖片。（有關電視機兼容性的詳情，請參閱電視機的使用說明書。）
- 如果影像在寬銀幕電視機上顯示不正確，則請調整電視機上的寬高比設定。（關於詳情，請參閱電視機的使用說明書。）如果在常規電視（4:3）上顯示的影像被水平壓縮，則請改變本機上的 [TV 高寬比] 設定。（→ 下）

■ 要在常規電視（4:3）上觀看 16:9 寬高比的影像

在寬高比為 4:3 的電視上重播以 16:9 的寬高比（[寬高比] 被設定為 [16:9]）錄製的動態影像或以 16:9 的寬高比（[圖片尺寸] 被設定為 [2M]）（SDR-H250）/[0.2M]（SDR-H21/SDR-H20）錄製的靜態圖片時，影像會被水平壓縮。在這種情況下，請改變功能表設定以使用初始寬高比重播影像。（根據電視機的設定情況，可能無法正確顯示影像。有關更多資訊，請閱讀電視機的使用說明書。）

按 MENU 按鈕後，選擇 [設定] → [TV 高寬比] → [4:3]，然後按下操縱桿。

常規電視（4:3）上寬高比為 16:9 的影像的例子

[TV 高寬比] 設定	
[16:9]	[4:3]

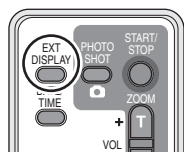
- 此功能的默認設定是 [16:9]。

與其他產品一起使用

■ 在電視機上顯示螢幕資訊 (SDR-H250)

可以在電視機上顯示螢幕上顯示的資訊（操作圖示和時間碼等）。

按遙控器上的 **EXT DISPLAY** 按鈕。



- 再次按下該按鈕消除資訊。
- 本機的螢幕將不會變化。

與 DVD 錄影機一起使用

將拍攝內容複製到 DVD 錄影機上

SD

如果 DVD 錄影機有 SD 記憶卡插槽，可以將用本機拍攝的影像複製到硬碟或 DVD 光碟上。有關您的 DVD 錄影機是否支持從 SD 卡中複製的資訊，請參閱此設備的使用說明書。

- 如果您的 DVD 錄影機不支持從 SD 卡中複製，或者您想複製本機硬碟上的影像，請用 AV/S 電纜（提供）連接本機和 DVD 錄影機，然後再複製。（→ 66）

將 SD 卡插入到 DVD 錄影機上的 SD 記憶卡插槽中，然後將內容複製到硬碟或光碟上。

- 有關如何複製影像的詳情，請參閱 DVD 錄影機的使用說明書。

如果從 SD 卡中直接複製影像或者連接 AV/S 電纜進行複製，然後在寬銀幕電視上重播，則影像可能會被水平壓縮。在這種情況下，請參閱影像所要複製到的設備的使用說明書，或者閱讀寬銀幕電視的使用說明書，並將寬高比的設定設定為 16:9（全屏）。

與 VCR 一起使用

將影像複製到其他視頻設備上

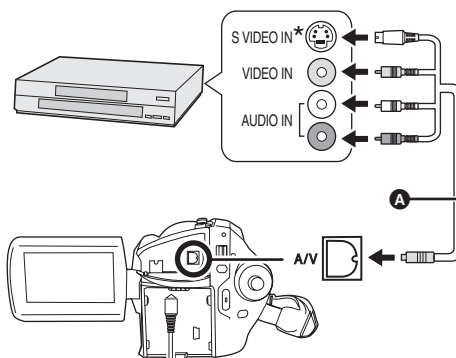
HDD SD

可以將在本機上重播的影像複製到其他視頻設備上。

可以將想要複製的硬碟上的場景集合起來新增一個播放列表，然後僅將此播放列表中的場景複製到其他設備上。（→ 56）

- 使用 AC 適配器可以免除電池用光的煩惱。

1 連接本機和視頻設備。



- **A** AV/S 電纜（提供）
- 將插頭插入得足夠深。

* 如果視頻設備有 S 視頻端子，則還將 S 視頻插頭插進去。這樣可使您欣賞到更加美麗的圖片。

2 開啓本機，然後轉動模式轉盤選擇



3 按MENU按鈕後，選擇[媒體選擇] → [硬碟]或[SD記憶卡]選擇需要的媒體，然後按下操縱桿。

4 改變視頻設備和電視機上的輸入頻道。

與其他產品一起使用

- 根據本機所連接的端子不同，頻道設定也將有所不同。

- 5 在本機上開始重播。**
然後開始所連接設備上的錄製。
- 有關詳情，請參閱視頻設備的使用說明書。

停止複製

停止所連接設備上的錄製。
然後在本機上停止重播。

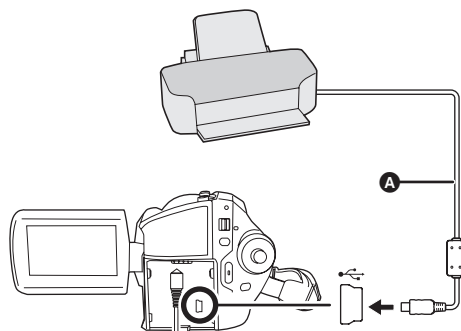
- 如果不需要日期和時間顯示及功能指示，請在複製前將其取消。(SDR-H250) (→ 28, 66)

與印表機 (PictBridge) 一起使用

HDD SD

直接將本機連接到印表機來列印圖片時，請使用兼容 PictBridge 的印表機。（請閱讀印表機的使用說明書。）

◇將連接本機到 AC 適配器後，開啓本機。

1 連接本機和印表機。

- A** USB 電纜（提供）
- 將插頭插入得足夠深。
 - 請勿使用除隨附 USB 電纜以外的任何其他 USB 電纜。（用其他任何 USB 電纜都將無法保證正常工作。）

會出現 USB 功能選擇螢幕。

2 選擇 [PictBridge] → [硬碟] 或 [SD 記憶卡]，然後按下操縱桿。

本機螢幕上出現 [PictBridge] 指示。

3 選擇一個要列印的檔案，然後按下操縱桿。

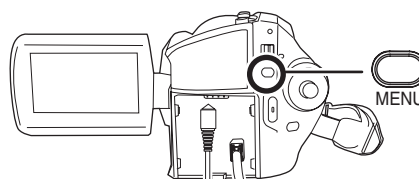


顯示設定的圖片數量。

4 上下移動操縱桿選擇需要的列印數量，然後按下操縱桿。

- 最多可以設定列印 9 張。
- 要取消設定，請將列印數量設定為 [0]。
- 重複步驟 3 和 4，最多可以連續設定顯示在一頁上的 8 個檔案。

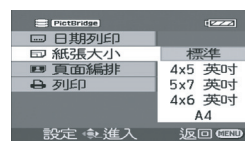
5 按 MENU 按鈕顯示 PictBridge 功能表。



6 在 [日期列印] 上選擇日期列印設定。

- 如果印表機不能列印日期，則此設定無效。

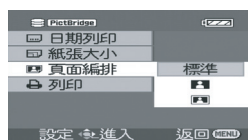
7 在 [紙張大小] 上選擇紙張大小設定。



- [標準]:** 印表機的尺寸規格
- [4×5 英吋]:** L 大小
- [5×7 英吋]:** 2L 大小
- [4×6 英吋]:** 名片大小
- [A4]:** A4 大小
- 不能設定印表機不支持的紙張尺寸。

與其他產品一起使用

8 在【頁面編排】上選擇編排設定。



【標準】: 印表機的編排規格

【】: 無邊框列印

【】: 有邊框列印

- 不能設定印表機不支持的頁面編排。

9 選擇【列印】→【是】，然後按下操縱桿。

列印圖片。

- 列印圖片後，以斷開 USB 電纜的方式退出 PictBridge。

想中途停止列印時

向下移動操縱桿。

出現一條確認訊息。如果選擇【是】，會取消設定的列印數量，螢幕會返回到步驟 3。如果選擇【否】，所有設定會保持不變，螢幕會返回到步驟 3。

- 請在列印過程中避免下列操作。這些操作會使正常列印無法完成。
 - －斷開 USB 電纜
 - －開啓記憶卡插槽蓋
 - －轉換模式轉盤
 - －關閉電源
- 檢查印表機的紙張大小、列印質量等的設定。
- 設定 [] (SDR-H250)/[] (SDR-H21/SDR-H20) 後錄製的圖片，可能會在列印時切掉兩邊。請在列印前檢查。
使用具有剪裁或無邊框列印功能的印表機時，請在列印前取消本功能。（有關詳情，請參閱印表機的使用說明書。）
- 可能無法列印用其他產品錄製的靜態圖片。
- 將本機直接連接到印表機時，不能使用 DPOF 設定。
- 將印表機直接連接到本機上。請勿使用 USB 集線器。

與計算機一起使用之前

可以用計算機做什麼

從提供的 CD-ROM 中安裝完 ImageMixer3 for Panasonic，並將計算機連接到本機時，可以執行下述操作。



- A** 可以在計算機上重播用本機拍攝的影像，或者可以將影像輸入到計算機上。
- B** 可以編輯已經輸入到計算機中的動態影像。
- C** 可以將用本機拍攝的影像輸入到 ImageMixer3 中，然後新增原創的 DVD- 視頻光碟。(→ 77)
也可以以 DVD-VR (DVD 影片拍攝) 格式將資料寫入到 DVD-RAM 或 DVD-RW 光碟中。
- D** 可以自動將錄製在本機的硬碟中的影像寫入到 DVD 中，並新增 DVD- 視頻光碟。(→ 75)
也可以從本機上新增的播放列表中製作 DVD- 視頻光碟。
- E** 可以退出 ImageMixer3 for Panasonic。
- F** 可以跳至軟體的支持網站。
- G** 可以顯示軟體幫助。(→ 72)

● 有關這些操作的更多詳情，請參閱軟體幫助。(→ 72)

● 如果使用其他非本機提供的軟體，我們無法保證本機正常工作。

與計算機一起使用

操作環境

- 安裝提供的軟體時，需要 CD-ROM 驅動器。
- 當計算機上連接了 2 個或 2 個以上的 USB 設備，或者通過 USB 集線器或用擴展電纜連接設備時，無法保證正常工作。
- 連接到計算機時，請使用提供的 USB 電纜。（用任何其他的 USB 電纜將無法保證正常工作。）

■ ImageMixer3 for Panasonic

硬體	IBM PC/AT 兼容的個人計算機
OS	Microsoft Windows 2000 Professional Service Pack 3 或 Service Pack 4 Microsoft Windows XP Home Edition Microsoft Windows XP Professional
CPU	Intel Pentium III 800 MHz 或更高、Pentium 4、Celeron 或相同性能的 AMD Athlon XP/Duron (Intel Pentium 4 1.7 GHz 或更高)
RAM	Windows 2000 Professional: 128 MB 或更高 (推薦 256 MB 或更高) Windows XP Home Edition/Professional: 256 MB 或更高 (推薦使用 512 MB 或更高)
顯示	增強色 (16 位) 或更高 桌面分辨率 1024×768 像素或更高 圖形加速器支持 DirectX 9.0c 或更新版本，並帶 4 MB 或更高的 VRAM
可用硬盤空間	安裝應用程式時：300 MB 或更高 新增光碟 (DVD- 視頻) 時： 工作資料夾為 14 GB 或更高 (在使用雙層光碟的情況下為 28 GB 或更高)
必要軟體	DirectX 9.0c
聲音	Sound Blaster 或等效設備
光碟驅動器	自 1997 年以後製造及銷售的並且可以新增 DVD 的光碟驅動器
介面	Hi-Speed USB (USB 2.0) — A 型
支持的語言	英語、法語、西班牙語、德語、義大利語和簡體中文

- 不能將 Panasonic DVD 攝錄放影機用作寫入設備。
- 即使全部滿足了本使用說明書中提到的系統需求，也無法使用某些計算機。
- 無法保證在非預先安裝的操作系統中正常工作。
- 在安裝提供的軟體過程中，將自動安裝 DirectX 9.0c。
- 無法保證在所有 DVD 驅動器上的操作正常。
- 無法保證用此軟體創作的 DVD 光碟可在所有 DVD 播放機上播放。
- 此軟體不兼容多 CPU 環境。
- 無法保證在 Microsoft Windows XP Media Center Edition、Tablet PC Edition 及 64 位操作系統上的操作。
- 根據計算機環境的不同，如果不支持 Hi-Speed USB (USB 2.0)，在重播錄製的影像時可能會發生例如幀丟失、聲音中斷或軟體運行緩慢等現象。
- 將顯示分辨率設定為 1024×768 (16 位色) 或更高。
選擇 [start] → ([Settings] →) [Control Panel] → ([Appearance and Themes] →) [Display] 後，選擇 [Settings] 欄，然後調整 [Screen resolution] 和 [Color quality]。
- 本機的 USB 端子只能讀取。不能用於將計算機中的資料寫入到本機中。

■ 使用內置的 SD 驅動器

硬體	IBM PC/AT 兼容的個人計算機
OS	Microsoft Windows 2000 Professional Microsoft Windows XP Home Edition Microsoft Windows XP Professional
CPU	Intel Pentium II 300 MHz 或更高
RAM	32 MB 或更高（推薦使用 64 MB 或更高）
介面	USB 1.1 或更新的版本 — A 型

- USB 設備需要在裝有標準驅動程式的操作系統下運行。

■ 可使用的光碟

下面表所列為提供的軟體可以使用的光碟的類型。

光碟類型	功能	
	新增光碟 (DVD- 視頻格式) / DVD COPY	新增光碟 (DVD-VR 格式)
DVD-R/+R	●	—
DVD-R DL/+R DL	●	—
DVD-RW/+RW	●	● (僅 DVD-RW)
DVD-RAM	—	●*

●：可用。

—：不可用。

- * 如果安裝了 DVD-RAM 驅動程式，可能無法使用 DVD-RAM 光碟。
- 根據計算機的不同，可能無法使用上表中所列出的某些 DVD 光碟。
- 有關可以在計算機上寫入的 DVD 光碟的詳情，請參閱計算機的使用說明書。
- 要重播使用 ImageMixer3 新增的 DVD 光碟，播放機必須支持該 DVD 光碟的重播。（請參閱播放機的使用說明書。）
- 請使用由可信賴的製造商生產的光碟。如果使用劣質光碟，可能無法正常錄製影像。

有關本軟體的技術諮詢，請訪問 PIXELA 支持網站。
網址：<http://www.pixela.co.jp/oem/panasonic/e/index.html>（本網站僅為英文。）

與計算機一起使用

安裝

安裝此軟體時，請以管理員或具有相同權限的用戶名登錄。（如果您沒有授權這麼做，請向管理員諮詢。）

- 在安裝開始之前，請關閉所有正在運行的軟體應用程式。
- 正在安裝此軟體時，請勿在計算機上執行任何操作。

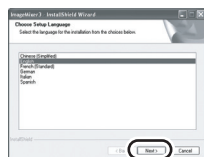
安裝 ImageMixer3 for Panasonic

1 將 CD-ROM 插入到計算機中。

出現設定語言選擇螢幕。

- 如果未出現設定語言選擇螢幕，請雙擊 [My Computer] 中的 CD-ROM 驅動器圖示。

2 選擇安裝的語言，單擊 [Next]。



3 單擊 [Next]。

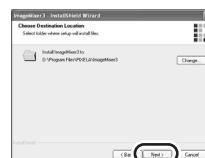
- 如果在任何一處取消安裝（例如，單擊 [Cancel]），軟體可能無法正常運行。

4 請仔細閱讀最終用戶許可協議，選上 [I accept the terms of the license agreement]，單擊 [Next]。



- 如果選上 [I do not accept the terms of the license agreement]，則無法安裝應用程式。

5 選擇應用程式的安裝位置，單擊 [Next]。



6 請將電視制式選為 [PAL]，單擊 [Next]。



7 單擊 [Install] 開始安裝過程。



8 單擊 [Finish]。

必須重新啟動計算機才能使應用程式運行。

- 根據操作環境的情況，可能需要安裝 DirectX 9.0c。在這種情況下，請單擊 [Yes]，然後進行安裝。
如果在不兼容 DirectX 9.0c 的計算機中安裝此軟體，計算機可能無法正常工作。如果不能確定計算機是否兼容，請聯繫計算機的製造商。

閱讀軟體幫助

有關如何使用此軟體的詳情，請閱讀幫助。

- 幫助使用的是 JavaScript。要瀏覽其內容，請使用瀏覽器設定啟動 JavaScript。

與計算機一起使用

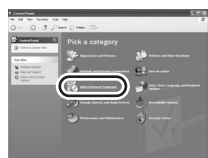
單擊 ImageMixer3 裝載螢幕中的  圖示。

- 也可以從功能表欄中選擇 [Help] → [ImageMixer3 Help] 以顯示幫助。

卸載軟體

如果不再需要此軟體，請按照下列步驟進行卸載。

- 1 選擇 [start] → ([Settings] →) [Control Panel] → [Add or Remove Programs (Applications)]。



- 2 選擇 [ImageMixer3]，然後單擊 [Remove]。



- 根據操作環境的不同，按鈕的名稱可能也會有所不同。（例如：[Change/Remove]）
- 請按照螢幕上的指示繼續卸載。
- 卸載軟體以後，請務必重新啟動計算機。

連接和識別

連接和識別步驟

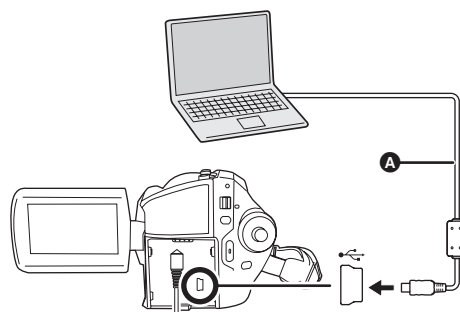
安裝軟體後，必須將本機連接到計算機上並被計算機正確識別。

- 請在安裝軟體後連接。

- 如果計算機中插入了提供的 CD-ROM，請取出。（如果安裝器設定正在運行，請等待直到運行結束為止，然後取出 CD-ROM。）
- 如果識別程式沒有正常完成，則將本機連接到計算機以後，無法進行操作。
- 如果本機正常操作失敗，則可能意味著您沒有正確進行安裝或識別步驟。

◇ 將本機連接到 AC 適配器後，開啓本機。

1 連接本機和計算機。



A USB 電纜（提供）

- 將插頭插入得足夠深。如果插頭沒有完全插入，則將無法正常操作本機和計算機。
- 除了提供的 USB 電纜以外，請勿使用任何其他的 USB 電纜。（用任何其他的 USB 電纜將無法保證正常工作。）

將出現 USB 功能選擇螢幕。

2 選擇[PC連接] → [硬碟]或[SD記憶卡]，然後按下操縱桿。

計算機會自動識別本機。

- 本機連接到計算機時，不能關閉本機的電源。在這種情況下，請斷開 USB 電纜（→ 74）。
- 計算機正在存取本機中的硬碟或記憶卡時，ACCESS/PC 指示燈或記憶卡存取指示燈點亮。（LCD 顯示屏上出現  或 。）請勿在存取硬碟或記憶卡的同時斷開 USB 電纜或 AC 適配器，因為這樣做可能會損壞資料。
- 不能同時存取硬碟和記憶卡。
- 第一次將本機連接到計算機以後，有必要重新啟動計算機。

與計算機一起使用

關於計算機的顯示

將本機連接到計算機時，它被作為外置設備識別。

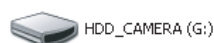
- 本機僅支持使用計算機讀出資料。計算機無法將資料寫入本機，或從本機中擦除資料。
- 根據計算機操作環境的不同，驅動器圖示的形狀和驅動器名稱（例如：E:）也將有所不同。

■ 驅動器圖示

此圖示顯示在 [My Computer] 中。

存取硬碟時

- Windows XP:

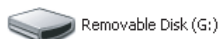


- Windows 2000:



存取記憶卡時

- Windows XP:

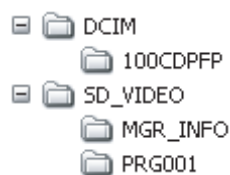


- Windows 2000:

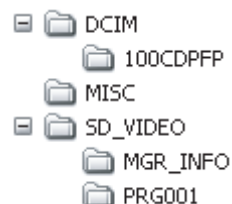


■ 資料夾結構的例子

硬碟



SD 卡



- SD- 視頻格式的動態影像存儲在 [PRG***] 資料夾中。（“***”表示以從 001 至 FFF 的 16（十六進制）個字符為基礎。）
- 在 [PRG***] 資料夾中最多可以錄製 99 個檔案。
- JPEG 格式的靜態圖片（IMGA0001.JPG 等）存儲在 [100CDPFP] 資料夾中。可以用支持 JPEG 圖片的圖像播放軟體開啓這些圖片。
- 在 [100CDPFP] 或其他這樣的資料夾中最多可以錄製 999 個檔案。
- DPOF 設定檔案錄製在 [MISC] 資料夾（僅 SD 卡）中。

- 請勿使用計算機刪除 SD 卡的資料夾。否則，本機再也無法讀取此 SD 記憶卡。
- 請務必使用本機格式化 SD 卡。
- 將本機不支持的資料錄製到計算機上後，本機可能無法識別這些資料。
- 可以使用 Windows Explorer 將靜態圖片檔案複製到計算機中。

安全地斷開 USB 電纜

1 雙擊任務欄中的 圖示。

出現硬件斷開對話框。

- 根據計算機的設定情況，可能不顯示此圖示。

2 選擇 [USB Mass Storage Device]，並單擊 [Stop]。

3 確認選擇了 [MATSHITA HDD Cam-USB Device] 或 [MATSHITA HDD Cam USB Device] 後，單擊 [OK]。

單擊 [Close]，可以安全地斷開電纜。

- 如果在 ACCESS/PC 指示燈或記憶卡存取指示燈亮著或在 LCD 顯示屏上出現  或  時斷開 USB 電纜，則會損壞資料。

在計算機上使用拍攝的影像

DVD COPY 功能

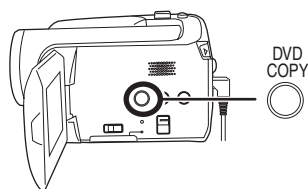
使用 ImageMixer3 時，可以通過按下本機的 DVD COPY 按鈕輕鬆地新增 DVD- 視頻光碟。在錄製到本機硬碟上的影像中，將自動識別尚未使用此功能複製到 DVD 中的那些場景，並將其寫入到 DVD 上。

可以在 DVD 播放機或其他設備上重播使用此功能新增的 DVD- 視頻光碟。

◇ 將本機連接到 AC 適配器後，開啓本機。

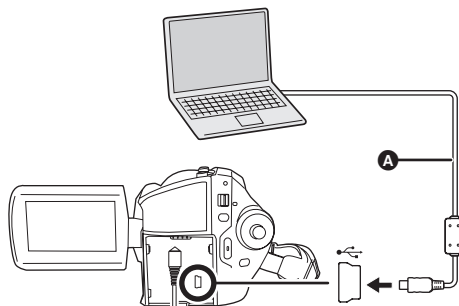
1 轉動模式轉盤選擇 或 .

2 按 DVD COPY 按鈕。



- 本機的 LCD 顯示屏上出現 “請連接 USB 線。”。出現此訊息時，請連接 USB 電纜。如果此訊息消失，請再次按 DVD COPY 按鈕。

3 連接本機和計算機。



A USB 電纜（提供）

- 將插頭插入得足夠深。如果插頭沒有完全插入，則將無法正常操作本機和計算機。
- 除了提供的 USB 電纜以外，請勿使用任何其他的 USB 電纜。（用任何其他的 USB 電纜將無法保證正常工作。）

出現 DVD COPY 準備螢幕。



4 將 DVD 光碟插入到 DVD 驅動器中。

- 推薦使用嶄新的 DVD 光碟。



開始在光碟上寫入資料。

- 向光碟寫入完畢後，光碟將從驅動器中彈出。
- 根據資料量的情況，向光碟寫入可能要花費一些時間。
- 請勿在寫入資料過程中震動本機。否則，寫入過程可能會被中止。
- 如果無法將全部資料寫入到一張 DVD 光碟，將會寫入到第二張（或第三張等）光碟上。完成在第一張光碟上的寫入後，將出現一條訊息，請插入另一張與第一張光碟相同類型的光碟。

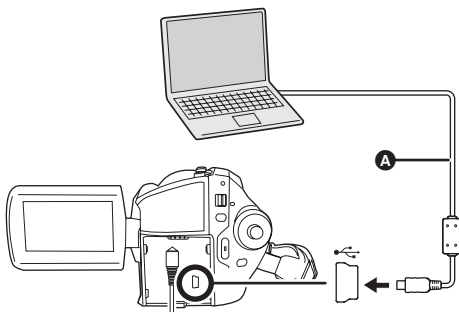
與計算機一起使用

- 靜態圖片被轉換成動態影像，並被寫入到 DVD 光碟上。
- 請檢查是否可以在 DVD 播放機或其他播放機設備上正常播放新增的 DVD- 視頻光碟。
如果無法正常播放光碟，請按照“用所選的影像新增 DVD- 視頻光碟”中的步驟新增 DVD- 視頻光碟。(→ 77)
- 無法將影像存儲在計算機中。
- 無法用計算機編輯錄製在新增的 DVD- 視頻光碟上的影像。要編輯這些影像，請將影像輸入到計算機中。
- 播放新增的 DVD- 視頻光碟時，場景之間將有幾秒鐘的暫停。
- 無法使用 DVD COPY 功能將錄製在 SD 卡上的影像複製到光碟上。將影像輸入到計算機中，然後將其寫入到 DVD 光碟上。(→ 77)
- 影像保存的歷史紀錄存儲在每個計算機用戶帳號中。因此，即使已經將影像複製到 DVD 光碟上，在使用不同的用戶帳號時，也會再次將影像複製到 DVD 光碟上。
- 不能將 Panasonic DVD 攝錄放影機用作寫入設備。

重播和輸入影像

◇ 將本機連接到 AC 適配器後，開啓本機。

1 連接本機和計算機。



- A** USB 電纜（提供）
- 將插頭插入得足夠深。如果插頭沒有完全插入，則將無法正常操作本機和計算機。
 - 除了提供的 USB 電纜以外，請勿使用任何其他的 USB 電纜。（用任何其他的 USB 電纜將無法保證正常工作。）

將出現 USB 功能選擇螢幕。

2 選擇 [PC 連接] → [硬碟] 或 [SD 記憶卡]，然後按下操縱桿。

計算機將自動識別本機，ImageMixer3 將自動啓動。

如果 ImageMixer3 自動啓動失敗，請採用以下步驟啓動。

選擇 [start] → [All Programs (Programs)] → [PIXELA] → [ImageMixer3 for Panasonic] → [ImageMixer3 for Panasonic]。

3 單擊 [Playback/Import Video]。



顯示瀏覽器螢幕。

4 在 [Source] 中選擇 [SDR-H250]/[SDR-H21]/[SDR-H20]（硬碟）或 [Removable Disk]（SD 卡）。



顯示錄製在硬碟或 SD 卡上的內容。

- 動態影像
- 靜態圖片

5 （要重播場景）單擊需要的場景，單擊 [Playback] (A)。

（要將影像輸入到計算機中）

單擊需要的場景，然後單擊 **[Import] (B)**。



- 可以通過單擊 **[Library]** 選上輸入的影像。
- 可以使用 ImageMixer3 編輯輸入的影像。有關詳情，請參閱軟體幫助。(→ 72)
- 可以通過從功能表欄中選擇 **[Settings] → [Preferences] → [Library destination settings:]** 來改變將要保存輸入影像的位置。

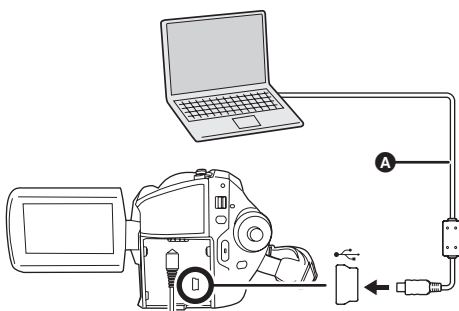
用所選的影像新增 DVD- 視頻光碟

使用 ImageMixer3 輸入用本機拍攝的，想要寫入到 DVD 光碟中的影像，然後新增 DVD- 視頻。可以在 DVD 播放機或其他設備上重播使用此功能新增的 DVD- 視頻光碟。

- 可以編輯動態影像或增加喜歡的功能表。有關詳情，請參閱軟體幫助。(→ 72)

◇將本機連接到 AC 適配器後，開啓本機。

1 連接本機和計算機。



- A** USB 電纜（提供）
- 將插頭插入得足夠深。如果插頭沒有完全插入，則將無法正常操作本機和計算機。
- 除了提供的 USB 電纜以外，請勿使用任何其他的 USB 電纜。（用任何其他的 USB 電纜將無法保證正常工作。）

將出現 USB 功能選擇螢幕。

2 選擇**[PC連接]** → **[硬碟]**或**[SD記憶卡]**，然後按下操縱桿。

計算機將自動識別本機，ImageMixer3 將自動啟動。

如果 ImageMixer3 自動啟動失敗，請採用以下步驟啟動。

選擇 **[start] → [All Programs (Programs)] → [PIXELA] → [ImageMixer3 for Panasonic] → [ImageMixer3 for Panasonic]**。

3 單擊 **[Create DVD-Video]**。



4 單擊 **[Create New DVD]**。



5 選擇適當的項目設定，並單擊 **[OK]**。

與計算機一起使用

- 6** 選擇 [SDR-H250]/[SDR-H21]/[SDR-H20]（硬碟）或 [Removable Disk]（SD 卡）後，單擊 [Import]。



顯示錄製在硬碟或 SD 卡上的內容。

- 7** 單擊需要的資料夾 (A)，選擇場景 (B)，通過拖放方式將其增加到列表 (C) 中。

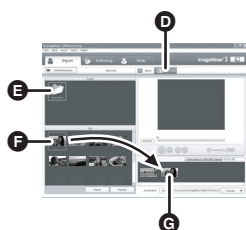
- 也可以將資料夾本身增加到列表中。



■ 要輸入靜態圖片

- 單擊 [Still image] (D)。
- 單擊需要的資料夾 (E)，選擇檔案 (F)，通過拖放方式將其增加到列表 (G) 中。

- 也可以將資料夾本身增加到列表中。



- 靜態圖片被轉換成動態影像，並被寫入到 DVD 光碟上。

- 8** 單擊 [Authoring] 欄。

- 9** 單擊 [Theme] 後，單擊需要的 DVD 功能表螢幕。



- 10** 單擊 [Source]，通過拖放方式將場景增加到功能表螢幕中。

- 如果它不是檔案資料夾，則無法將靜態圖片增加到功能表中。有關詳情，請參閱軟體幫助。(→ 72)



- 11** 將 DVD 光碟插入到 DVD 驅動器中，單擊 [Write] 欄。

- 推薦使用嶄新的 DVD 光碟。



- 12** 選擇適當的寫入設定，單擊 [Write]。



13 檢查寫入設定，並單擊 [OK]。

開始向光碟寫入。

- 向光碟寫入完畢後，光碟將從驅動器中彈出。
 - 根據資料量的情況，向光碟寫入可能要花費一些時間。
-
- 不能將 Panasonic DVD 攝錄放影機用作寫入設備。

其他

功能表

功能表列表

動態影像拍攝功能表

基本功能	
SCN 場景模式	關
構圖輔助線	關
拍攝模式	STD
寬高比	16:9
時鐘設定	否
設定 進入 結束	

■ [基本功能]

[場景模式] (→ 45)
 [構圖輔助線] (→ 43)
 [拍攝模式] (→ 34)
 [寬高比] (→ 44)
 [時鐘設定] (→ 27)

■ [進階功能]

[數位變焦] (→ 39)
 [光學防震功能] (→ 44)
 [淡入淡出] (→ 42)
 [消除風聲] (→ 44)
 [變焦麥克風] (→ 39)

■ [媒體選擇]

[硬碟] (→ 32)
 [SD 記憶卡] (→ 32)

■ [設定]

[顯示] (→ 81)
 [日期/時間] (→ 28)
 [日期格式] (→ 28)
 [記憶卡格式化]² (→ 63)
 [節電] (→ 81)
 [AGS] (SDR-H250) (→ 31)
 [操作音] (→ 82)
 [LCD 設定] (→ 29)
 [初始設定] (→ 82)
 [發光] (→ 82)
 [示範模式] (→ 82)

■ [LANGUAGE] (→ 26)

靜態圖片拍攝功能表

基本功能	
SCN 場景模式	關
構圖輔助線	關
圖片尺寸	[2x]
圖片質量	+
時鐘設定	否
設定 進入 結束	

■ [基本功能]

[場景模式] (→ 45)
 [構圖輔助線] (→ 43)
 [圖片尺寸] (→ 38)
 [圖片質量] (→ 38)
 [時鐘設定] (→ 27)

■ [進階功能]

[光學防震功能] (→ 44)
 [快門效果] (→ 37)

■ [媒體選擇]

[硬碟] (→ 35)
 [SD 記憶卡] (→ 35)

■ [設定]

[顯示] (→ 81)
 [日期/時間] (→ 28)
 [日期格式] (→ 28)
 [記憶卡格式化]² (→ 63)
 [節電] (→ 81)
 [操作音] (→ 82)
 [LCD 設定] (→ 29)
 [初始設定] (→ 82)
 [發光] (→ 82)
 [示範模式] (→ 82)

■ [LANGUAGE] (→ 26)

動態影像重播功能表

播放設定	
播放模式	全部時視
恢復播放	關
鎖定設定	否
播放列表	新增
設定 進入 結束	

■ [刪除]

[全部] (→ 55)
 [選擇] (→ 55)

■ [播放設定]

[播放模式] (→ 51)

【恢復播放】(→ 52)
 【鎖定設定】(→ 56)
 【播放列表】*1 (→ 56, 57)

■ [媒體選擇]

【硬碟】(→ 49)
 【SD 記憶卡】(→ 49)

■ [設定]

【顯示】(→ 81)
 【日期/時間】(→ 28)
 【日期格式】(→ 28)
 【記憶卡格式化】*2 (→ 63)
 【節電】(→ 81)
 【操作音】(→ 82)
 【LCD 設定】(→ 29)
 【TV 高寬比】(→ 65)
 【發光】(→ 82)
 【硬碟格式化】*1 (→ 63)
 【資訊】*1 (→ 63)

■ [LANGUAGE] (→ 26)

(在播放列表重播模式中)

■ [編輯列表]

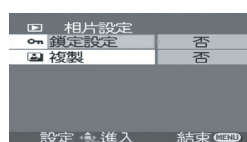
【增加】(→ 58)
 【移動】(→ 58)
 【刪除】(→ 58)

■ [新增] (→ 56)

■ [檢視播放表] (→ 57)

■ [結束] (→ 57)

靜態圖片重播功能表



■ [刪除]

【全部】(→ 60)
 【選擇】(→ 60)

■ [相片設定]

【鎖定設定】(→ 60)
 【DPOF 設定】*2 (→ 61)
 【複製】(→ 62)

■ [媒體選擇]

【硬碟】(→ 53)

【SD 記憶卡】(→ 53)

■ [設定]

【顯示】(→ 81)
 【日期/時間】(→ 28)
 【日期格式】(→ 28)
 【記憶卡格式化】*2 (→ 63)
 【節電】(→ 81)
 【操作音】(→ 82)
 【LCD 設定】(→ 29)
 【TV 高寬比】(→ 65)
 【發光】(→ 82)

■ [LANGUAGE] (→ 26)

*1 僅當將【媒體選擇】設定為【硬碟】時

*2 僅當將【媒體選擇】設定為【SD 記憶卡】時

其他功能表

■ [顯示]

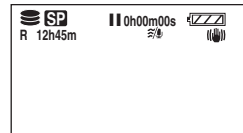
● [關] ● [開]

選擇的螢幕指示如下面圖例中所示。

【關】



【開】



■ [節電]

● [關] ● [5 分鐘]

【關】

不啟動節電功能。

【5 分鐘】

若 5 分鐘內沒有進行任何操作，則自動關閉本機，以防止電池電量耗盡。使用本機時，請再次開啓。

- 在下列情況下，即使此功能設定為 [5 分鐘]，可能也不會關閉本機。
 - 使用 AC 適配器時
 - 用 USB 電纜將本機連接到計算機或印表機上時

其他

■【操作音】

- 【關】
- 【開】

可以使操作（如開始拍攝和結束拍攝）通過操作音來發出信號。

若設定為【關】，當進行開始拍攝或結束拍攝這樣的操作時，聽不到操作音。

1 聲操作音

開始拍攝時

開啓電源時

計算機或印表機等設備識別到本機時

2 聲操作音

暫停拍攝時

關閉電源時

2 聲操作音 4 次

發生錯誤（例如拍攝沒有開始）時。請檢查螢幕上顯示的句子。（→ 85）

■【初始設定】

- 【是】
- 【否】

由於啓動了其他功能或模式而無法選擇功能表時，設定為【是】可將功能表設定恢復到出廠時的初始狀態。

（語言設定無法恢復到出廠時的初始狀態。）

■【發光】

- 【關】
- 【開】

可以通過本機頂部發光 LED 的照明來用信號表示操作。

閃爍 1 次

開啓電源時

（在拍攝模式中時：呈橙色）

（在重播模式中時：呈藍色）

閃爍 2 次

將模式切換到拍攝模式時（呈橙色）

將模式切換到重播模式時（呈藍色）

點亮

動態影像拍攝過程中（呈橙色）

重播過程中，以及連接到計算機、印表機等設備時（呈藍色）

持續閃爍

格式化、複製、刪除等時（呈橙色）

■【示範模式】

- 【關】
- 【開】

此選項用於開始本機的示範。

（僅當使用 AC 適配器且模式轉盤在  或  位置時）

如果將此項設定為【開】，而未插入 SD 卡，本機會自動設定為示範模式，介紹其功能。如果按下任何按鈕或進行任何操作，都將取消示範模式。

如果在約 10 分鐘內未進行任何操作，會自動開始示範模式。要終止示範模式，請插入一張 SD 卡，或將此項設定為【關】。正常使用時，請將此功能設定為【關】。

指示

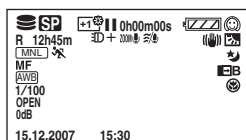
指示

■ 媒體指示

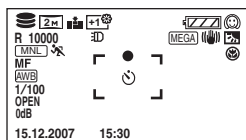
	選擇硬碟時
	選擇 SD 卡時

■ 拍攝指示

動態影像拍攝



靜態圖片拍攝



	剩餘電池電量
R 0h00m	剩餘拍攝時間
0h00m00s	已耗用的拍攝時間
15.12.2007 15:30	日期／時間指示
●/II (紅色)	錄製／寫入到媒體
II (綠色)	拍攝暫停
16:9	廣角模式
AUTO	自動模式
MNL	手動模式
MF	手動對焦
2×	變焦放大率指示
	背光補償模式
	防震功能
1/100	快門速度
OPEN, F2.0	F 值
0dB	增益值
	柔化肌膚模式

	遠攝微距 (SDR-H250)
	淡入淡出 (白色)、淡入淡出 (黑色)
	全彩夜視功能
	視頻照明 (SDR-H250/ SDR-H21)
	變焦麥克風
	風聲噪音降低
	增亮 LCD 改進功能
	動態影像拍攝模式
	運動模式
	肖像模式
	低光模式
	聚光燈模式
	水上及雪地模式
	自動白平衡
	室內模式 (在白熾燈下拍攝)
	室外模式
	手動調整模式
○ (白色) ● (綠色)	對焦指示 (SDR-H250)
	自拍計時器拍攝
	MEGA 光學防震功能 (SDR-H250)
	靜態圖片的拍攝像素數
	SDR-H250: 2048×1512
	1920×1080
	1280×960
	640×480
	SDR-H21/ SDR-H20: 640×480
	640×360
	
	可以拍攝到記憶卡
	正在識別記憶卡
	正在拍攝／存取記憶卡
	靜態圖片質量
R 10000	剩餘靜態圖片數量

其他

■ 重播指示

動態影像重播



靜態圖片重播



	重播
	暫停
	快進／快退
	最後一個／第一個場景暫停
	跳躍重播
	慢動作重播
	逐幀重播
0h00m00s	動態影像重播時間
	播放模式 顯示媒體上的全部場景
	顯示在所選日期拍攝的場景
	顯示在所選播放列表中的場景
No.10	場景號碼
	音量調整
R	恢復重播
100-0001	靜態圖片資料夾／檔案號碼顯示
	連接兼容 PictBridge 的印表機時
	正存取硬碟或記憶卡（連接到計算機時）
	DPOF 已經設定 （1 張以上）
	被鎖定的動態影像和靜態圖片

靜態圖片的拍攝像素數	
SDR-H250:	
	2048×1512
	1920×1080
	1280×960
	640×480
SDR-H21/ SDR-H20:	
	640×480
	640×360
不顯示某些靜態圖片的尺寸，這些靜態圖片是用其他產品拍攝的並與上面所示的圖片尺寸有所不同。	

■ 確定的指示

	內置電池電量低。(→ 28)
	LCD 顯示屏轉向鏡頭一側時，會出現警告／報警指示。將 LCD 顯示屏的方向返回到正常位置，並檢查警告／報警指示。
	沒插入 SD 卡／不可用的記憶卡。
	因為下墜感測功能已經感測到本機的下墜，因此無法存取硬碟。 如果此功能感測出本機正在持續下墜，拍攝可能會停止。

訊息

無資料	媒體上無錄製的影像。
不能錄製。硬碟已滿。	硬碟已滿或者場景數量已達到最大上限，因此無法再繼續錄製資料。先將硬碟上的資料備份到計算機等設備中，然後刪除不需要的場景或格式化硬碟。(→ 55, 59, 63)
不能錄製。場景數量超過最大上限。備份硬碟後格式化。	
建議定期備份資料。	硬碟的容量有限。我們建議定期將重要的錄製資料備份到計算機等設備中，以保護這些資料。此訊息不表示本機有問題。
建議把硬碟內容備份。	硬碟可能有問題。立即將硬碟上的資料複製到計算機等設備中，然後請找人維修本機。
無法在視頻模式中錄製此記憶卡。	在影片拍攝模式中，插入了一張 8 MB 或 16 MB 的 SD 卡。
檢查記憶卡	此記憶卡不兼容或者不能被本機識別。
記憶卡被鎖定	SD 卡上的寫保護開關被設定為 LOCK。(→ 14)
記憶卡已滿	SD 卡已滿或者場景數量已達到最大上限，因此無法再繼續錄製資料。請刪除不需要的場景(→ 55, 59)或者插入一張新的 SD 卡。
場景數量已滿。	
記憶卡蓋已開啓。	記憶卡插槽蓋是開著的。請將其關閉。
發生錯誤。錄製停止。	● 使用可以用於動態影像錄製的 SD 卡時(→ 14)出現此訊息時，建議將正在使用的 SD 卡格式化。(→ 63) 格式化 SD 卡時，將刪除錄製在記憶卡上的全部資料。格式化 SD 卡之前，請將 SD 卡上的資料備份到計算機等設備上。 ● 使用任何其他記憶卡時請使用可用於錄製動態影像的 Panasonic SD 卡或其他 SD 卡。(→ 14)
AGS 模式下無法拍攝	啓動了 AGS 功能。(→ 31)
更改為手動模式	正試圖使用不能同時使用的功能。
取消夜視模式	
關閉視頻照明	
因感測到正在下墜本操作失敗。請過一會兒再試。	本機感測到正在下墜，因此操作已停止。
機身溫度太高，不能操作。請關機及稍候片刻。	本機的內部溫度很高，因此無法操作。請關閉電源，等待直到溫度降低為止，然後再次開啓電源。
因為低溫無法操作。	本機的內部溫度極低，因此無法操作。如果在此訊息後出現“請稍等。”，請稍後片刻，且不要關閉本機。在可以使用本機之前，可能要花費一些時間。

其他

請按重設鍵	檢測出本機有異常。請取出 SD 卡，然後按 RESET 按鈕重新開啓本機。(→ 92)
斷開 USB 電纜	本機無法與計算機或印表機建立正確的連接。請斷開 USB 電纜再重新連接後，再次選擇所需的 USB 功能。
USB 連接時無法操作。	將本機連接到計算機時，無法關閉本機的電源。

關於恢復

系統可能不能正常地完成檔案寫入，例如，在拍攝或編輯過程中，當電源由於某種原因關閉時。如果在存取硬碟或記憶卡時發現故障管理資訊，可能會出現下列訊息之一。請務必按照訊息操作。（根據錯誤的情況，修復可能要花費一些時間。）

檢測出硬碟錯誤。正在修復資料。
檢測出記憶卡錯誤。正在修復資料。

- 修復資料時，請使用電量充足的電池或 AC 適配器。即使關閉電源不修復資料，也可以在重新開啓電源時修復資料。
- 根據資料的情況，可能無法完成資料修復工作。
- 請勿修復在其他設備上錄製過的記憶卡。這樣可能會導致資料丟失或者記憶卡受損。

不能同時使用的功能

由於本機規格的原因，可能無法使用或不能選擇本機中的某些功能。下表所示為受各種條件限制的功能的例子。

功能	使功能失效的條件
數位變焦	● 在相片拍攝模式中
淡入淡出	
全彩夜視	● 拍攝時（無法設定或取消） ● 在相片拍攝模式中 ● 視頻照明開啓時（增益模式）
背光補償	● 使用全彩夜視功能時 ● 視頻照明開啓時（增益模式） ● 設定光圈／增益時
柔化肌膚模式（設定和取消）	● 拍攝時
遠攝微距（設定和取消）	
幫助模式	
視頻照明開啓（增益模式）	● 在相片拍攝模式中
場景模式	● 將 AUTO/MANUAL/FOCUS 開關設定為 AUTO 時 ● 使用全彩夜視功能時 ● 視頻照明開啓時（在影片拍攝模式中時）
白平衡的改變	● 使用數位變焦時 ● 使用全彩夜視功能時 ● 視頻照明開啓時（增益模式）
調整快門速度、光圈／增益	● 使用全彩夜視功能時 ● 視頻照明開啓時（增益模式） ● 使用場景模式時

其他

常見問題解答

？ 本機上可以使用哪種記憶卡？

💡 可以使用 SD 記憶卡和 SDHC 記憶卡。(→ 13)

？ 能否在 SD 卡上錄製動態影像？

💡 是的，可以錄製。
要錄製動態影像，推薦使用符合 SD 速度等級 Class 2 或更高，容量從 256 MB 至 4 GB 的 SD 卡。

？ 能否從硬碟連續錄製到 SD 卡，或從 SD 卡連續錄製到硬碟？

💡 不，不能連續錄製。
請使用功能表上的 [媒體選擇] 切換錄製目的地。(→ 32, 35)

？ 是否可以用本機複製硬碟和 SD 卡上的資料？

💡 可以複製靜態圖片。(→ 62)
不可以複製動態影像。

？ 是否可以在其他產品上重播用本機錄製的 SD 卡？

💡 動態影像：
可以在支持基於 SD-Video 標準，MPEG-2 視頻格式及 MPEG-1 Audio Layer 2 的音頻格式的動態影像的任何設備上重播。
靜態圖片：
可以在支持 DCF (Design rule for Camera File system) 的任何設備上重播。

？ 硬碟已滿時，應該做什麼？

💡 請使用提供的軟體將資料備份到計算機或 DVD 光碟上。
也可以用 AV/S 電纜 (提供) 連接到 DVD 錄影機或 VCR 上，然後複製資料。(→ 66)
之後，請刪除不需要的場景或格式化硬碟。(→ 55, 59, 63)

？ 能否使用除隨附軟體以外的軟體？

💡 有關來自其他公司的軟體資訊，請聯繫此軟體的製造商。

? 能否將計算機中的資料寫入到本機的硬碟或 SD 卡中？

💡 不，不能。
本機的 USB 端子只能讀取。

? 能否在計算機上重播？

💡 請使用 ImageMixer3。

? 能否在計算機上編輯？

💡 請使用 ImageMixer3。
● 可以編輯已保存到 ImageMixer3 庫中的動態影像。

? 是否也可以使用 DVD COPY 功能複製靜態圖片？

💡 是的，可以。
首先動態影像被錄製到光碟上，然後靜態圖片被轉換成動態影像，並被錄製在動態影像之後。原始靜態圖片檔案 (JPEG 檔案) 也被錄製到 DVD 光碟上。

? 是否也可以使用 DVD COPY 功能將錄製在 SD 卡上的動態影像複製到 DVD 光碟上？

💡 不，不能。
使用 DVD COPY 功能只可以複製錄製在硬碟上的影像。

? 能否向寫有資料的 DVD 光碟上添加資料？

💡 以 DVD-VR 格式將資料錄製到 DVD-RAM 或 DVD-RW 光碟上時，可以添加。
如果以 DVD- 視頻格式將資料錄製到寫有資料的 DVD-RW 或 +RW 光碟上，將出現一條訊息，要求您確認是否要擦除光碟上的內容。不擦除光碟上的內容就無法向此光碟寫入添加的資料。

其他

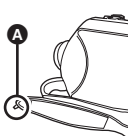
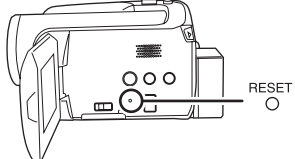
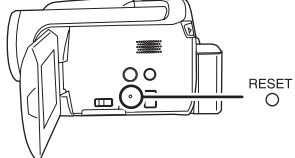
故障排除

問題	檢查點
無法開啓本機。	● 電池是否完全充電？ → 請使用 AC 適配器給電池充電。(→ 17) ● 可能啓動了電池的保護電路。請將電池裝入 AC 適配器 5 至 10 秒鐘。如果仍不能使用本機，則說明電池已經失效了。 ● 是否開啓了 LCD 顯示屏？
自動關機。	● 如果 5 分鐘內沒有使用本機，則電源會自動關閉以保存電池電量。要恢復拍攝，請再開啓電源。 將節電功能 (→ 81) 設定爲【關】時，將不會自動關閉電源。
本機的待機時間不夠長。	● 是否電池電量低？ → 如果剩餘電池電量指示閃爍或出現“電量不足”訊息，則表明電池已經耗盡。請給電池充電。(→ 17)
關閉電源時聽到喀噠聲。	● 這是鏡頭移動的聲音，並非故障。
電池電量很快耗盡。	● 電池是否完全充電？ → 請用 AC 適配器給電池充電。(→ 17) ● 是否是在極冷的地方使用電池？ → 電池受環境溫度的影響。在寒冷的地方，電池的操作時間將會變短。 ● 是否電池壽命已到？ → 電池有一定的壽命。如果即使在電池完全充電後，操作時間仍然很短，則表明電池壽命已到，不能再繼續使用。
儘管本機已開啓，也不能操作本機。 不能正常操作本機。	● 如果不開啓 LCD 顯示屏，就無法操作本機。 ● 請取出 SD 卡，然後按 RESET 按鈕。(→ 92) 如果還是無法恢復到正常情況，請取下電池或斷開 AC 適配器，等待約 1 分鐘，然後再次撞上電池或連接 AC 適配器。然後，約 1 分鐘後，重新開啓電源。 (在存取指示燈點亮時進行上述操作，可能會損壞硬碟或記憶卡上的資料。)
螢幕突然變化。	● 是否啓動了示範？ → 在影片拍攝模式或相片拍攝模式中，如果將【示範模式】設定爲【開】而未插入記憶卡，則本機自動設定爲示範模式，介紹其功能。通常，應該將此項設定爲【關】。按 MENU 按鈕後，選擇【設定】→【示範模式】→【關】，然後按下操縱桿。
遙控器不工作。	● 遙控器上鈕扣型電池的電量是否已耗盡？ → 請更換一塊新的鈕扣型電池。(→ 12)
不顯示功能指示，如剩餘時間指示或已耗用的時間指示等。	● 如果設定【設定】→【顯示】→【關】，則只顯示警告和日期指示。

其他

問題	檢查點
儘管本機通電，但也不開始拍攝。	● 是否將 SD 卡的寫保護開關設定為 LOCK？ → 寫保護開關設定為 LOCK 時，無法進行拍攝。(→ 14) ● 是否硬碟或記憶卡的存儲量已滿？ → 如果硬碟或記憶卡上沒有可用存儲量，可以通過刪除不需要的場景 (→ 55, 59) 釋放一些存儲量，或使用一張新的記憶卡。 ● 是否將本機設定為影片拍攝模式或相片拍攝模式？ → 除非模式轉盤處於  或  位置，否則無法進行拍攝。 ● 記憶卡插槽蓋是否開著？ → 如果蓋子開著，本機可能無法正常工作。請關閉記憶卡插槽蓋。
拍攝開始，但又立即停止。 重播的影像中斷片刻。	● 本機很熱。請按照顯示的訊息操作。 → 要再次使用本機，請關閉本機，並擱置一會兒。
本機隨意停止拍攝。	● 是否啟動了 AGS 功能？ → 在正常水平位置拍攝或者將 [AGS] 設定為 [關]。(→ 31) ● SD 卡是否可以用於動態影像錄製？ → 請使用可以用於動態影像錄製的 SD 卡。(→ 14)
操作任意停止。	● 啟動了下墜感測功能以保護硬碟。 → 操作本機時，請勿跌落或震動本機。
在記憶卡上錄製動態影像時，錄製突然停止。	● 使用一張多次寫入資料的並且資料寫入速度已降低的 SD 卡時，在動態影像錄製過程中，錄製可能會突然停止。 → 請使用一張推薦的適合於動態影像錄製的記憶卡。(→ 14) 如果即使在使用適合的 SD 卡時錄製仍會停止，請將記憶卡上的資料備份到計算機等設備中，然後格式化該記憶卡。(→ 63)
拍攝的靜態圖片不清晰。	● 是否在 [圖片質量] 設定處於  時試著拍攝很小或精小細緻的物體？ → 如果在 [圖片質量] 設定處於  時試著拍攝很小或精小細緻的物體，則影像可能會分解成馬賽克圖案。在 [圖片質量] 設定改為  時拍攝。(→ 38)
自動對焦功能不工作。	● 是否選擇了手動對焦模式？ → 將 AUTO/MANUAL/FOCUS 開關設定為 AUTO。 ● 是否試著拍攝在自動對焦模式中難以對焦的場景？ → 有一些拍攝的物體和環境使自動對焦不能正常工作。(→ 96) 在這種情況下，請使用手動對焦模式調整焦距。(→ 46)
不能從本機的內置揚聲器重播聲音。	● 音量是否太低？ → 重播時，移動音量桿顯示音量指示並進行調整。(→ 51)
儘管正確連接了本機與電視機，仍不能看到重播的影像。 重播的影像被水平壓縮。	● 是否在電視機上選擇了視頻輸入？ → 請閱讀電視機的使用說明書，並選擇與連接所使用的輸入相匹配的頻道。 ● [TV 高寬比] 設定是否正確？ → 改變設定以匹配電視機的寬高比。 按 MENU 按鈕後，選擇 [設定] → [TV 高寬比] → [16:9] 或 [4:3]，然後按下操縱桿。

其他

問題	檢查點
無法刪除或編輯場景或檔案。	• 是否場景或檔案被鎖定？ → 無法刪除被鎖定的場景或檔案。請解除鎖定設定。(→ 56, 60) • 可能無法刪除在螢幕畫面指引顯示中顯示為 [!] 的場景。如果不需要場景，請格式化硬碟或記憶卡以擦除資料。(→ 63) 必須清楚：如果格式化硬碟或記憶卡，將擦除錄製在硬碟或記憶卡上的全部資料。 • 如果將 SD 卡的寫保護開關設定到 LOCK，則無法刪除。(→ 14)
SD 卡上的影像看起來不正常。	• 資料可能被損壞。可能是被靜電或電磁波損壞的。最好將重要資料保存到計算機或其他產品上。
即使已格式化硬碟或記憶卡，還是無法使用。	• 本機或記憶卡可能已受損。請向經銷商諮詢。 • 請在本機上使用 8MB 至 4GB 的 SD 卡。(→ 13)
指示消失。 螢幕凍結。 不能進行任何操作。	• 是否將本機連接到了計算機？ → 將本機連接到計算機時，不能在本機上執行任何操作。 • 請關閉本機的電源。如果無法關閉電源，請先取出 SD 卡，然後按 RESET 按鈕，或者取出電池或斷開 AC 適配器，然後重新裝上。之後，重新開啓電源。如果仍未恢復正常的操作，請斷開電源連接，並向您購買本機時的經銷商諮詢。
顯示“請按重設鍵”。	• 本機已自動檢測出錯誤。請取出 SD 卡，然後按 RESET 按鈕重新開啓本機。 → (SDR-H250) 用手持帶的突出部分 A 按壓 RESET 按鈕。   → (SDR-H21/SDR-H20) 用鏡頭蓋的突出部分 B 按壓 RESET 按鈕。   • 如果不按 RESET 按鈕，則本機的電源將在約一分鐘後自動關閉。 • 即使按下 RESET 按鈕後，指示仍然重複出現。在這種情況下，需要維修本機。請斷開電源連接，並向銷售本機的經銷商諮詢。請勿嘗試自己維修設備。
將 SD 卡插入到本機中時，不識別此卡。	• 是否插入了在計算機上格式化的 SD 卡？ → 請使用本機格式化 SD 卡。必須清楚：如果格式化 SD 卡，將擦除錄製在記憶卡上的全部資料。(→ 63)
如果 SD 卡插入其他設備，則不能識別。	• 請檢查設備與您插入的 SD 卡 (SD 記憶卡 / SDHC 記憶卡) 的容量或型號是否兼容。 → 關於詳情，請參閱設備的使用說明書。

其他

與計算機一起使用

問題	檢查點
即使用 USB 電纜連接，計算機也無法識別本機。	• 如果在顯示功能表螢幕時連接 USB 電纜，不會出現 USB 功能選擇螢幕。 → 在連接 USB 電纜之前，請關閉功能表螢幕。 • 請選擇計算機上的另一個 USB 端子。 • 請檢查操作環境。(→ 70) • 請斷開 USB 電纜，關閉本機再開啓，然後重新連接 USB 電纜。
啓動 ImageMixer3 時，卻不出現已錄製的影像。	• 如果有多個驅動器，可能選擇了本機以外的驅動器。 → 硬碟：從 [Source] 中選擇 [SDR-H250]、[SDR-H21] 或 [SDR-H20]。 SD 卡：從 [Source] 中選擇 [Removable Disk]。
斷開 USB 電纜時，計算機上出現一條錯誤訊息。	• 爲了安全地斷開 USB 電纜，請雙擊任務欄中的  圖示，然後按螢幕上的提示進行操作。
即使按 DVD COPY 按鈕，也不啓動 DVD COPY 功能。	• 要使用 DVD COPY 功能新增 DVD-視頻光碟，需要在計算機上安裝提供的 CD-ROM 中的 ImageMixer3 for Panasonic。(→ 72) • 在影片拍攝模式或相片拍攝模式中，不能使用 DVD COPY 功能。 → 請轉動模式轉盤選擇  或 ，然後按 DVD COPY 按鈕。
無法使用 DVD COPY 功能複製影像。	• 是否已使用 DVD COPY 功能複製過那些影像？ → 已使用 DVD COPY 功能複製過一次的影像，不能再一次或更多次複製。 將影像輸入到 ImageMixer3 中，然後將其寫入到 DVD 光碟上。 (→ 77)
新增 DVD 花費很長時間。	• 動態影像檔案的大小太小時，新增 DVD 可能要花費一些時間。
即使將影像備份到計算機或 DVD 光碟中，硬碟或 SD 卡上的可用空間量也不增加。	• 即使已使用 ImageMixer3 將影像輸入到計算機或 DVD 光碟上，也不會自動刪除本機的影像資料。 → 要增加硬碟或 SD 卡上的可用空間量，請刪除錄製在本機上的不需要的影像。(→ 55, 59)
DVD 播放機無法重播使用 ImageMixer3 新增的光碟。	• 要重播使用 ImageMixer3 新增的 DVD 光碟，播放機必須支持該 DVD 光碟的重播。(請參閱播放機的使用說明書。)
無法識別 DVD-RAM 光碟。	• 如果計算機中安裝了 DVD-RAM 驅動程式，請將其卸載。

其他

使用時的注意事項

關於本機

- 長時間操作後，本機和記憶卡會變熱，但這並非故障。

盡可能使 SD 卡／硬碟攝錄放影機遠離磁化設備（如微波爐、電視機、視頻遊戲機等）。

- 如果在電視機的上方或附近使用 SD 卡／硬碟攝錄放影機，則 SD 卡／硬碟攝錄放影機上的圖片或聲音可能會受到電磁波輻射的干擾。
- 請勿在手機附近使用 SD 卡／硬碟攝錄放影機，因為這樣做可能會導致噪點的產生，從而對圖片和聲音帶來不利的影響。
- 揚聲器或大型發動機產生的強大的磁場效應可能會損壞拍攝的內容，或者圖片可能會變形。
- 微處理器產生的電磁波輻射，可能會給 SD 卡／硬碟攝錄放影機帶來不利的影響，導致圖片和聲音受到干擾。
- 如果 SD 卡／硬碟攝錄放影機受到磁化設備的不利影響而停止正常運行，請關閉 SD 卡／硬碟攝錄放影機，並取下電池或斷開 AC 適配器。然後重新插入電池或重新連接 AC 適配器後，開啓 SD 卡／硬碟攝錄放影機。

請勿在無線電發射機或高壓線附近使用 SD 卡／硬碟攝錄放影機。

- 如果在無線電發射機或高-壓線附近拍攝圖片，可能會對拍攝的圖片和聲音產生不利的影響。

請務必使用提供的接線和電纜。如果使用可選附件，請使用隨之提供的接線和電纜。

請勿拉伸接線和電纜。

請勿向本機噴灑殺蟲劑或揮發性化學藥品。

- 如果用此類化學藥品噴灑本機，則可能會損壞機體，表面漆可能也會脫落。
- 請勿使橡膠或塑料製品與本機長時間接觸。

如果在沙地或塵土較多的地方，例如在沙灘上使用本機時，請勿使沙子或細小的灰塵進入到機體和本機的端子。

此外，還要使本機遠離海水。

- 沙子或塵土可能會損壞本機。（插入及取出記憶卡時務必小心。）
- 如果海水濺到本機上，請用擰乾的布擦去。然後，用一塊乾布重新擦拭本機。

攜帶本機時，請勿使其掉落或受到碰撞。

- 強烈的撞擊可能會打破本機的外殼，使其發生故障。

請勿使用汽油、塗料稀釋劑或酒精清潔本機。

- 清潔前，請取下電池或從 AC 插口上拔掉 AC 電纜。
- 攝錄放影機機身可能會褪色，表面漆可能也會剝落。
- 請使用乾軟布擦拭本機以去除表面的灰塵和手印。為去除頑固的污漬，可將布在加水稀釋後的中性洗滌劑中浸濕，徹底擰乾後擦拭本機。之後，再用一塊乾布擦幹本機。
- 使用化學除塵布時，請按照該布隨附的說明書進行操作。

請勿將本機用於監視用途或其他商業用途。

- 如果長時間使用本機，其內部熱量會增大，這有可能會導致故障。
- 本機並非設計用於工業用途。

打算長時間不使用本機時

- 將本機存放在衣櫃或櫥櫃中時，建議放入一些乾燥劑（硅膠）。

關於電池

本機內使用的電池為可充電的鋰離子電池。此電池易受濕度和溫度的影響，並且溫度上升或下降越多，影響越大。在寒冷的地方，可能不會出現完全充電指示，或者可能會在開始使用約 5 分鐘後出現低電量指示。在高溫環境下，可能會啓動保護功能，這將導致無法使用本機。

請務必在使用完畢後取下電池。

- 如果仍將電池裝在本機上，則即使關閉本機的電源，也會有微量電流繼續流動。本機保持此狀態可能會導致電池過度放電。這會導致電池即使在充電後也無法使用了。
- 應將電池保存在乙烯塑料袋中，這樣金屬物就不會接觸到電極。
- 應將電池存放在涼爽乾燥的地方，並應儘可能使溫度保持恒定。（推薦的溫度：15 °C 至 25 °C，推薦的濕度：40% 至 60%）
- 過高或過低的溫度都將縮短電池的使用壽命。
- 如果電池被置於溫度高、濕度大或充滿油煙的環境中，可能會導致電池電極鏽蝕並產生故障。

- 如果長時間存儲電池，我們建議您每年充一次電，並在將充過的電量完全消耗以後重新存儲。
- 應除去附著在電池電極上的灰塵和其他雜質。

外出拍攝時，請準備好備用電池。

- 請準備足夠維持您想要拍攝的時間的3倍至4倍的電池。在寒冷的地方，如滑雪場，可拍攝時間會縮短。
- 外出旅行時，請記得帶上 AC 適配器，這樣您就可以在抵達目的地後為電池充電。

如果不小心跌落電池，請檢查電池的電極是否損壞。

- 安裝電極損壞的電池可能會損壞本機或 AC 適配器。

請勿將廢棄的舊電池擲入火中。

- 加熱電池或將其擲入火中有可能會引起爆炸。
- 如果即使在電池重新充電後，其工作時間仍然很短，則電池的使用壽命已到。請購買一塊新的電池。

關於 AC 適配器

- 如果電池發熱，充電時間會比平時長。
- 如果電池的溫度極高或極低，CHARGE 指示燈會持續閃爍，電池可能沒有被充電。請等到恢復適當的溫度以後再給電池重新充電。如果電池仍不能充電，則可能電池或 AC 適配器出了問題。請與經銷商聯繫。
- 如果在收音機附近使用 AC 適配器，則可能會對收音機的接收產生干擾。請使 AC 適配器與收音機保持 1 m 以上的距離。
- 使用 AC 適配器時，可能會聽到嗡嗡聲。但是，這是正常現象。
- 使用後，請務必斷開 AC 適配器。（如果保持連接，則會損耗微量電流。）
- 請始終確保 AC 適配器和電池的電極的清潔。

請將本機放在電源插座附近，便於連接斷路裝置（插頭）。

關於 SD 卡

- SD 卡標籤上標出的存儲容量是版權保護和進行管理的容量總和，此容量可以在本機、計算機等設備上使用。
- 長時間使用時，本機的表面和 SD 卡都會輕微變熱。這是正常現象。

插入或取出 SD 卡時，通常將 OFF/ON 開關設定為 OFF。

本機存取 SD 卡（正在顯示  /  / 存取指示燈點亮）時，請勿開啓記憶槽蓋及取出 SD 卡、操作模式轉盤、關閉電源、震動或撞擊本機。

■ 關於 miniSD 卡

- 使用前，一定要將 miniSD 卡插入到專用的卡轉換器中。不用轉換器而將卡直接插入到本機中則可能會損壞本機或卡。
- 請勿將空的卡轉換器插入到本機中。插入或取出 miniSD 卡時，請勿將轉換器留在本機中。這樣做可能會導致本機發生故障。

LCD 顯示屏

- LCD 顯示屏變髒後，請用軟乾布擦拭。
- 處於溫度急劇變化的環境中時，LCD 顯示屏上會出現水汽凝結。請用軟乾布擦拭乾淨。
- 本機溫度很低時，比如由於存放在寒冷的地方時，在電源剛剛開啓後，LCD 顯示屏會比平時稍微暗些。當本機內部的溫度升高時，LCD 顯示屏將恢復到正常的亮度。

LCD 顯示屏螢幕的製造採用了極高的精密技術，總像素約達到 123,000。約有超過 99.99% 的像素為有效像素，僅有約 0.01% 的像素不亮或總是亮著。但這並非故障，不會影響拍攝的圖片。

關於水汽凝結

如果本機上形成水汽凝結，鏡頭會霧化，硬碟可能會受損，並且本機可能無法正常工作。應盡最大努力保證不要形成水汽凝結。如果確實形成了水汽凝結，請採取下述措施。

水汽凝結的原因

當周圍溫度或濕度像下列情況那樣變化時，會發生水汽凝結。

- 將本機從寒冷的地方（如滑雪場）帶到溫暖的房間時。
- 將本機從開著空調的車內拿到車外時。
- 寒冷的房間很快變熱時。
- 來自空調的冷風直接吹向本機時。
- 夏日午後陣雨過後。

其他

- 本機處於空氣中水汽很重的非常潮濕的地方時。（例如，熱的游泳池）

將本機帶到溫差很大的地方（比如，從冷地方到熱地方）時。

例如，如果在滑雪場使用本機進行拍攝，且又將其拿到很熱的房間時，請將本機裝在塑料袋中，儘可能去除袋中的空氣，然後將袋子密封。將本機放置在房間裡約 1 個小時，使得本機的溫度與房間的環境溫度接近，然後再使用。

如果鏡頭霧化，該怎麼處理。

請取下電池或 AC 適配器，放置本機約 1 小時。當本機溫度接近環境溫度時，霧化自然消失。

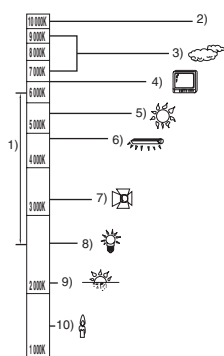
名詞解釋

自動白平衡

自動白平衡調整可以識別光線的色彩並進行調整，以確保白色成為真正純淨的白色。本機測定透過鏡頭和白平衡感測器射入的光線的色調，從而判斷拍攝的條件並選擇最接近的色調設定。

這被稱為自動白平衡調整。

然而，由於本機只存儲了某些光源下的白色光資訊，因此在其他光源下自動白平衡調整無法正常工作。



上圖所示為自動白平衡起作用的範圍。

- 1) 本機上自動白平衡調整的有效範圍
- 2) 藍天
- 3) 陰天（雨天）
- 4) 電視螢幕
- 5) 陽光
- 6) 白色熒光燈
- 7) 鹵素燈
- 8) 白熾燈

9) 日出或日落

10) 燭光

在自動白平衡調整的有效範圍外時，影像可能會變得偏紅或偏藍。即使在自動白平衡調整的有效範圍內時，如果出現多個光源，自動白平衡調整也可能無法正常工作。光線超出自動白平衡調整的有效範圍時，請使用手動白平衡調整模式。

白平衡

本機所拍攝的影像受某些光源的影響，可能會變得偏藍或偏紅。為避免這種現象，請調整白平衡。

白平衡調整將測定不同光源下的白色。通過識別陽光下的白色和在熒光燈下的白色，本機可以調整其他顏色間的平衡。

由於白色是所有色彩（組成光線）的基準，所以如果本機能夠識別出基準白色，它就可以用一種自然的色調拍攝影像。

自動對焦

自動前後移鏡頭，使焦點對準拍攝目標。

自動對焦有下列特性。

- 調整焦距，使被攝目標的垂直線更為清晰。
- 對較高對比度的目標進行對焦。
- 僅在螢幕中央對焦。

根據這些特性，在下列情況下，自動對焦無法正常工作。請在手動對焦模式下拍攝。

同時拍攝遠處和近處的目標

由於本機對螢幕中央的所有物體對焦，所以當近處目標的焦點對準時，會難以對準背景的焦點。在拍攝背景中有遠處群山的人物時，不能同時對近處目標和遠處目標同時對焦。

拍攝位於髒的或布滿灰塵的窗戶後的目標時

由於焦點在髒窗戶上，所以不能對窗戶後的目標進行對焦。

類似地，在拍攝車輛很多的馬路對面的目標時，可能會對恰巧經過的車輛對焦。

拍攝被光亮表面的物體或者高反光物體圍繞著的目標

由於對發光或閃光物體對焦，所以很難對所拍攝的目標對焦。在海灘上、在夜景中或者在有煙花或特殊燈光的場景中拍攝目標時，焦點會變模糊。

拍攝暗處的目標

由於透過鏡頭射入的光線資訊大量減少，本機無法正確對焦。

拍攝快速移動的目標

由於內部的對焦鏡頭是機械移動的，它無法與快速移動的目標保持一致。

例如，當拍攝有快速移動物體的運動事件時，對焦可能會失去銳度。

拍攝對比度非常小的目標

很容易使對比強烈的目標或垂直線條或條紋對準焦點。由於本機是根據影像的垂直線條進行對焦，這就意味著一個對比度非常小的物體，如一面白牆，可能會變得非常模糊。

SD 速度等級 Class 2**CLASS 2**

此標記表示由 SD 卡協會針對 SD 兼容產品和 SD 記憶卡之間高速寫入所制定的高速標準（SD 速度等級）中的 Class 2 等級。

如果在 SD 兼容產品中使用兼容 SD 速度等級的 Class 2 記憶卡，可以通過使用符合 Class 2 或更高的 SD 卡獲得穩定的錄製。

其他

規格

SD 卡／硬碟攝錄放影機

安全注意事項

電源：	DC 7.9 V/7.2 V
電流功率：	拍攝時 5.7 W (SDR-H250)/4.7 W (SDR-H21)/4.4 W (SDR-H20)

信號系統	CCIR: 625 線，50 場 PAL 彩色信號
錄製格式	SD 卡：基於 SD-Video 標準 硬碟：單獨的標準
影像感測器	SDR-H250: 1/6" 3CCD 影像感測器 總計：800 K×3 有效像素： 動態影像：630 K×3 (4:3), 540 K×3 (16:9) 靜態圖片：710 K×3 (4:3), 540 K×3 (16:9) SDR-H21/SDR-H20: 1/6" CCD 影像感測器 總計：800 K 有效像素： 動態影像：400 K (4:3), 540 K (16:9) 靜態圖片：410 K (4:3), 550 K (16:9)
鏡頭	SDR-H250: 自動光圈，F1.8 至 F2.8 焦距： 3.0 mm 至 30.0 mm 微距（全範圍 AF） SDR-H21/SDR-H20: 自動光圈，F1.8 至 F3.7 焦距： 2.3 mm 至 73.6 mm 微距（全範圍 AF）
變焦	SDR-H250: 10× 光學變焦，25/700× 數位變焦 SDR-H21/SDR-H20: 32× 光學變焦，50/1000× 數位變焦
顯示屏	2.7" 寬 LCD 顯示屏（約 123 K 像素）
麥克風	立體聲（帶變焦功能）
揚聲器	1 個球形揚聲器 Ø 20 mm
標準照度	1,400 lx
最低照度	12 lx（低光模式，1/50） [用全彩夜視功能，約 1 lx (SDR-H250) / 約 2 lx (SDR-H21/SDR-H20)]

其他

視頻輸出標準	1.0 Vp-p, 75 Ω
S 視頻輸出標準	Y: 1.0 Vp-p, 75 Ω C: 0.3 Vp-p, 75 Ω
音頻輸出標準（線路）	316 mV, 600 Ω
USB	記憶卡讀取功能（無版權保護支持） 硬碟讀取功能 兼容 Hi-Speed USB (USB 2.0) 兼容 PictBridge
尺寸 （不包括突出部分）	70.1 mm（寬）× 73.0 mm（高）× 120.8 mm（深）
重量 （不包括電池和鏡頭蓋）	SDR-H250: 約 450 g SDR-H21/SDR-H20: 約 430 g
工作溫度	0 °C 至 40 °C
工作濕度	10% 至 80%
工作高度	海拔低於 3000 m

動態影像

錄製媒體	SD 記憶卡： 32 MB*1/64 MB*1/128 MB*1/256 MB/512 MB/1 GB/2 GB（可移動型）（兼容 FAT12 及 FAT16 格式） SDHC 記憶卡： 4 GB（可移動型）（兼容 FAT32 格式） 硬碟：30 GB*2（固定型）
壓縮	MPEG-2
拍攝模式和傳輸率	XP: 10 Mbps (VBR) SP: 5 Mbps (VBR) LP: 2.5 Mbps (VBR)
可拍攝時間	請參閱第 34 頁。
音頻壓縮	SD 卡：MPEG-1 Audio Layer 2，16 位 (48 kHz/2 ch) 硬碟：Dolby Digital，16 位 (48 kHz/2 ch)
可錄製的資料夾及場景的最大數量	SD 卡：99 個資料夾 × 99 個場景（9801 個場景） 硬碟：999 個資料夾 × 99 個場景（98901 個場景） （更改日期時，即使原資料夾中的場景數量尚未達到 99，也會新增一個新資料夾，並且場景錄製在該新資料夾中。）

*1 無法保證正常工作。

*2 30 GB 硬碟驅動器利用部分存儲空間用於格式化、檔案管理以及其他用途。30 GB 是 30,000,000,000 個字節。可用容量會小一些。

其他

靜態圖片

錄製媒體	SD 記憶卡： 8 MB/16 MB/32 MB/64 MB/128 MB/256 MB/512 MB/1 GB/2 GB（可移動型）（兼容 FAT12 及 FAT16 格式） SDHC 記憶卡： 4 GB（可移動型）（兼容 FAT32 格式） 硬碟：30 GB*（固定型）
壓縮	JPEG (Design rule for Camera File system，基於 Exif 2.2 標準)，兼容 DPOF
圖片尺寸	SDR-H250: 2048×1512, 1920×1080 (16:9), 1280×960, 640×480 SDR-H21/SDR-H20: 640×480, 640×360 (16:9)
可拍攝的圖片數量	請參閱第 101 頁。

* 30 GB 硬碟驅動器利用部分存儲空間用於格式化、檔案管理以及其他用途。30 GB 是 30,000,000,000 個字節。可用容量會小一些。

AC 適配器：VSK0651

安全注意事項

電源：	AC 110 V 至 240 V, 50/60 Hz
電流功率：	19 W
DC 輸出：	DC 7.9 V, 1.4 A（本機工作時） DC 8.4 V, 0.65 A（電池充電時）

尺寸	61 mm（寬）× 32 mm（高）× 91 mm（深）
重量	約 110 g

規格變更恕不通知。

其他

硬碟或 SD 卡上的可拍攝的圖片數量

SDR-H250:

圖片尺寸		3.1M (2048×1512)		2M (1920×1080)	
圖片質量					
HDD	30 GB	19160	29950	24960	39230
SD	8 MB	2	4	3	6
	16 MB	7	12	10	16
	32 MB	18	28	23	37
	64 MB	38	61	50	80
	128 MB	75	120	98	155
	256 MB	155	250	210	320
	512 MB	310	490	410	640
	1 GB	630	990	820	1290
	2 GB	1280	2010	1670	2630
	4 GB	2520	3950	3290	5170

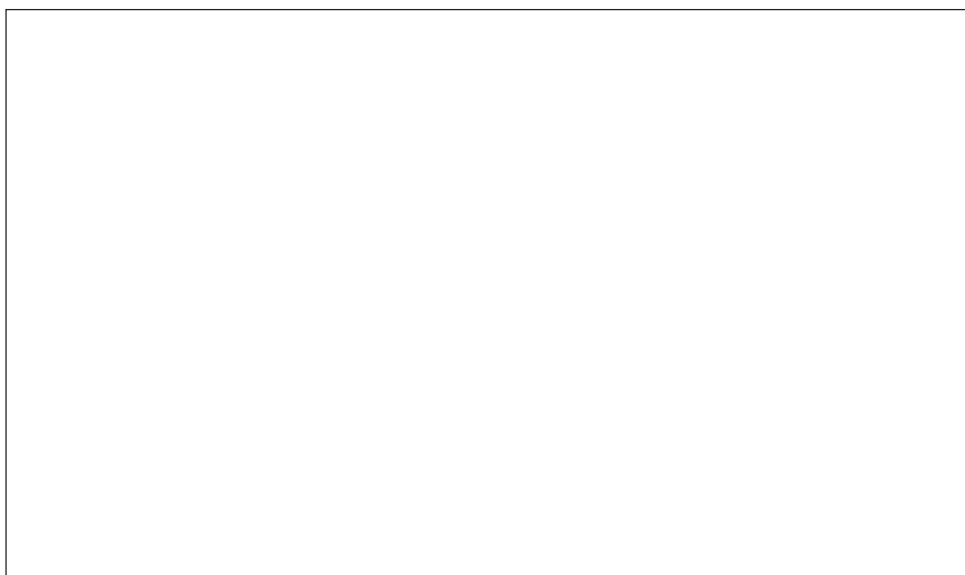
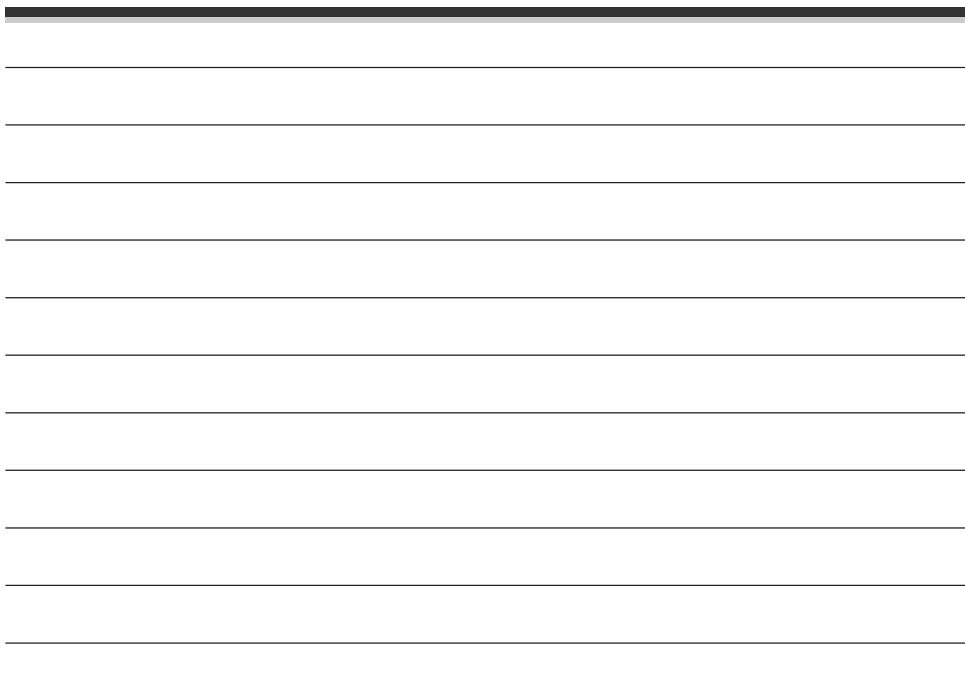
圖片尺寸		1M (1280×960)		0.3M (640×480)	
圖片質量					
HDD	30 GB	47070	74890	99999	99999
SD	8 MB	7	12	37	75
	16 MB	20	32	92	185
	32 MB	45	73	200	410
	64 MB	96	155	430	850
	128 MB	185	300	820	1640
	256 MB	390	620	1710	3410
	512 MB	770	1230	3390	6780
	1 GB	1550	2470	6790	13580
	2 GB	3160	5030	13820	27640
	4 GB	6200	9870	27150	54290

其他

SDR-H21/SDR-H20:

圖片尺寸		0.3μ (640×480)		0.2μ (640×360)	
圖片質量					
HDD	30 GB	99999	99999	99999	99999
SD	8 MB	37	75	37	75
	16 MB	92	185	92	185
	32 MB	200	410	200	410
	64 MB	430	850	430	850
	128 MB	820	1640	820	1640
	256 MB	1710	3410	1710	3410
	512 MB	3390	6780	3390	6780
	1 GB	6790	13580	6790	13580
	2 GB	13820	27640	13820	27640
	4 GB	27150	54290	27150	54290

- 可拍攝的圖片數量取決於是否同時使用 [] 和 []，以及所拍攝目標的情況。
- 表中所列的數值為估計值。
- 如果在硬碟或 SD 卡上錄製動態影像，可錄製的靜態圖片數量將會變少。



Information for Your Safety

WARNING:

TO REDUCE THE RISK OF FIRE,
ELECTRIC SHOCK OR PRODUCT
DAMAGE,

- DO NOT EXPOSE THIS APPARATUS TO RAIN, MOISTURE, DRIPPING OR SPLASHING AND THAT NO OBJECTS FILLED WITH LIQUIDS, SUCH AS VASES, SHALL BE PLACED ON THE APPARATUS.
- USE ONLY THE RECOMMENDED ACCESSORIES.
- DO NOT REMOVE THE COVER (OR BACK); THERE ARE NO USER SERVICEABLE PARTS INSIDE. REFER SERVICING TO QUALIFIED SERVICE PERSONNEL.

CAUTION!

- DO NOT INSTALL OR PLACE THIS UNIT IN A BOOKCASE, BUILT-IN CABINET OR IN ANOTHER CONFINED SPACE. ENSURE THE UNIT IS WELL VENTILATED. TO PREVENT RISK OF ELECTRIC SHOCK OR FIRE HAZARD DUE TO OVERHEATING, ENSURE THAT CURTAINS AND ANY OTHER MATERIALS DO NOT OBSTRUCT THE VENTILATION VENTS.
- DO NOT OBSTRUCT THE UNIT'S VENTILATION OPENINGS WITH NEWSPAPERS, TABLECLOTHS, CURTAINS, AND SIMILAR ITEMS.
- DO NOT PLACE SOURCES OF NAKED FLAMES, SUCH AS LIGHTED CANDLES, ON THE UNIT.
- DISPOSE OF BATTERIES IN AN ENVIRONMENTALLY FRIENDLY MANNER.

The socket outlet shall be installed near the equipment and easily accessible.
The mains plug of the power supply cord shall remain readily operable.
To completely disconnect this apparatus from the AC Mains, disconnect the power supply cord plug from AC receptacle.

Product Identification Marking is located on the bottom of units.

Use only the recommended accessories.

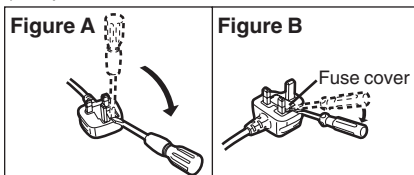
- Do not use any other AV/S cables and USB cables except the supplied one.
- When you use the cable which are sold separately, please make sure to use the one whose length is less than 3 meters.

■ How to replace the Fuse

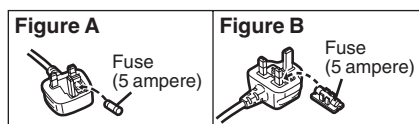
The location of the fuse differ according to the type of AC mains plug (figures A and B). Confirm the AC mains plug fitted and follow the instructions below.

Illustrations may differ from actual AC mains plug.

1) Open the fuse cover with a screwdriver.



2) Replace the fuse and close or attach the fuse cover.

**-If you see this symbol-****Information on Disposal in other Countries outside the European Union**

This symbol is only valid in the European Union.

If you wish to discard this product, please contact your local authorities or dealer and ask for the correct method of disposal.

■ Indemnity concerning recording content

The manufacturer shall in no event be liable for the loss of recordings due to malfunction or defect of this unit, its accessories or recordable media.

■ Carefully observe copyright laws

Recording of pre-recorded tapes or discs or other published or broadcast material for purposes other than your own private use may infringe copyright laws. Even for the purpose of private use, recording of certain material may be restricted.

- SDHC Logo is a trademark.
- miniSD Logo is a trademark.
- The Movie Camera uses copyright-protected technologies and is protected by the patented technologies and intellectual properties of Japan and the U.S. To use these copyright-protected technologies, authorization of the Macrovision Company is required. It is prohibited to disassemble or modify the Movie Camera.
- Manufactured under license from Dolby Laboratories.
Dolby and the double-D symbol are trademarks of Dolby Laboratories.
- LEICA is a registered trademark of Leica Microsystems IR GmbH and DICOMAR is a registered trademark of Leica Camera AG.
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- IBM and PC/AT are registered trademarks of International Business Machines Corporation of the U.S.
- Celeron®, Intel® and Pentium® are the registered trademarks or trademarks of the Intel Corporation in the United States and other countries
- AMD Athlon and AMD Duron are trademarks of Advanced Micro Devices, Inc.
- Sound Blaster is a trademark of Creative Technology Ltd.
- Microsoft product screen shot(s) reprinted with permission from Microsoft Corporation.

- Other names of systems and products mentioned in these instructions are usually the registered trademarks or trademarks of the manufacturers who developed the system or product concerned.

These operating instructions are designed for use with models SDR-H250, SDR-H21 and SDR-H20. Pictures may be slightly different from the original.

- The illustrations used in these operating instructions show model SDR-H250, however, parts of the explanation refer to different models.
- Depending on the model, some functions are not available.
- Features may vary, so please read carefully.

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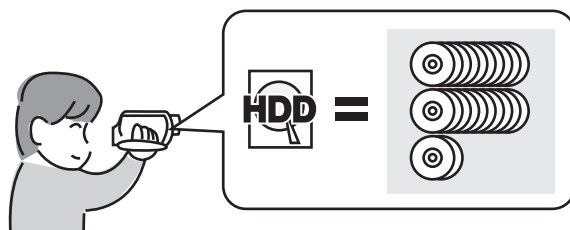
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on the HDD or an SD card	212

Before using

Features

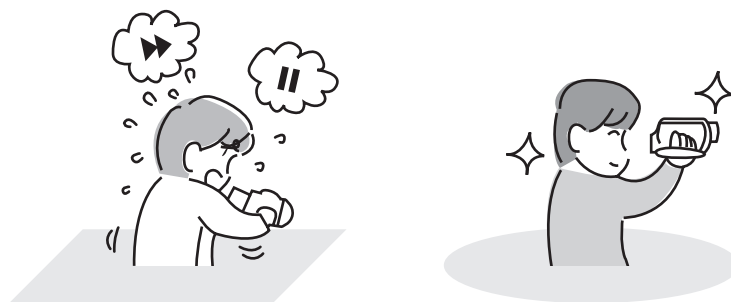
■ Extended recording!

You can record the equivalent of approximately twenty-two 8 cm DVD discs on the 30 GB internal HDD. You can also record motion pictures and still pictures on an SD card.



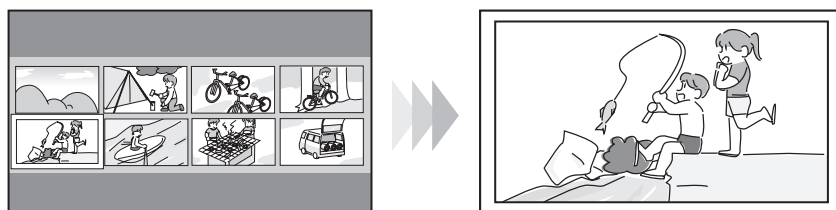
■ Easy recording! (→ 137)

No need to search for the recording start position. The new recording will not overwrite any previously recorded scene.



■ Easy playback! (→ 156)

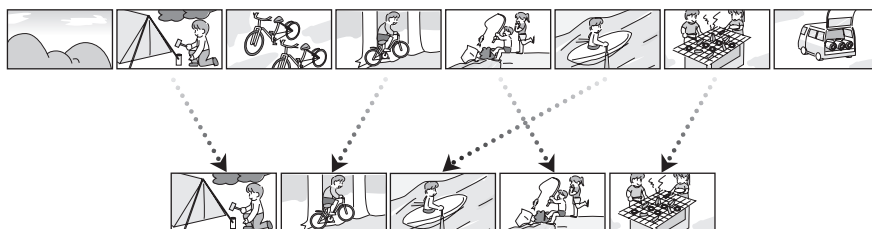
Recorded scenes are displayed as thumbnails. You can easily search for the scenes you want to watch.



Before using

■ Editing scenes! (→ 162, 163)

You can create an original video (playlist) by collecting together your favourite scenes recorded on the HDD.



■ Using with a computer! (→ 178)

If you use the supplied software, you can create a backup DVD of the scenes recorded on this unit with just one button.

You can also make an original DVD-Video by exporting the scenes to a computer and then editing them.



Before using

Accessories

Check the accessories before using this unit.

SD Memory Card (512 MB)

Battery pack
(SDR-H250)Battery pack
(SDR-H21/SDR-H20)

AC adaptor



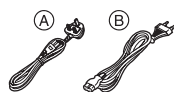
DC cable



AV/S cable



AC cable



- (A) Hong Kong Special Administrative Region of China and Saudi Arabia
 (B) Areas Other than Hong Kong Special Administrative Region of China and Saudi Arabia

Remote control
(SDR-H250)Button-type battery
(SDR-H250)Lens cap
(SDR-H21/SDR-H20)

USB cable



CD-ROM

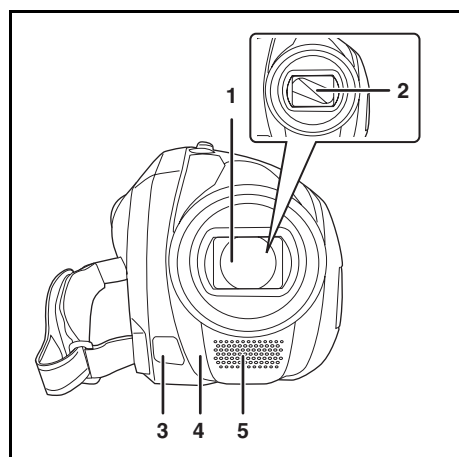


Optional accessories

Some optional accessories may not be available in some countries.

AC adaptor (VW-AD11E/EB)
Battery pack (lithium/CGR-DU06/640 mAh) (SDR-H21/SDR-H20)
Battery pack (lithium/CGA-DU07/680 mAh) (SDR-H21/SDR-H20)
Battery pack (lithium/CGA-DU12/1150 mAh)
Battery pack (lithium/CGA-DU14/1360 mAh)
Battery pack (lithium/CGA-DU21/2040 mAh)
Tripod (VW-CT45E)

Parts identification and handling



- 1 Lens (LEICA DICOMAR) (SDR-H250)
 Lens (SDR-H21/SDR-H20)

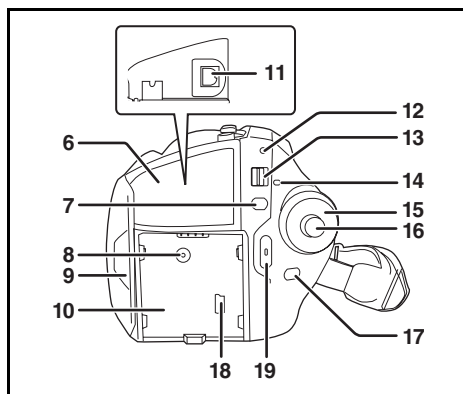
- Do not attach a conversion lens or a filter to this unit as it will cause vignetting.

- 2 Lens cover (SDR-H250)

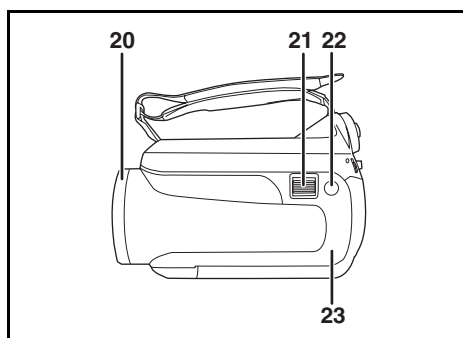
- 3 Video light (SDR-H250/SDR-H21) (→ 145)

Before using

- 4 White balance sensor (→ 153)
- Remote control sensor (SDR-H250) (→ 116)
- 5 Microphone (built-in, stereo)



- 6 Terminal cover
- 7 Menu button [MENU] (→ 130)
- 8 DC input terminal [DC/C.C. IN] (→ 124)
- 9 LCD monitor open part (→ 114)
- 10 Battery holder (→ 121)
- 11 Audio-video output terminal [A/V] (→ 173, 174)
- 12 Status indicator (→ 124)
- 13 Power switch [OFF/ON] (→ 124)
- 14 HDD/computer access lamp [ACCESS/PC] (→ 119, 183)
- 15 Mode dial (→ 126)
- 16 Joystick (→ 126)
- 17 Delete button [] (→ 162, 166, 167)
- 18 USB terminal [] (→ 175, 182)
- 19 Recording start/stop button (→ 137)

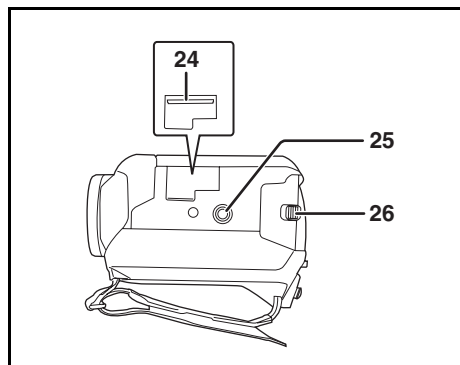


- 20 Lens cover open/close ring (SDR-H250) (→ 113)

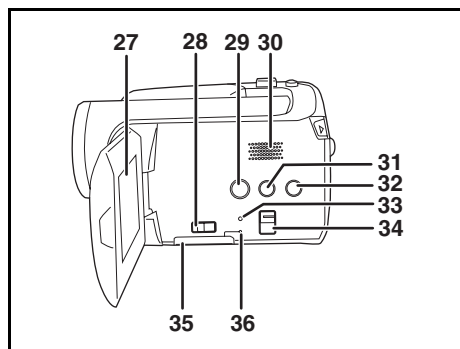
- 21 When recording: Zoom lever [W/T] (→ 144)

When playing back: Volume lever [-VOL+] (→ 158)

- 22 Photoshot button [] (→ 140)
- 23 Illumination LED (→ 191)



- 24 Card slot (→ 125)
- 25 Tripod receptacle (→ 114)
- 26 Battery release lever [BATTERY] (→ 121)



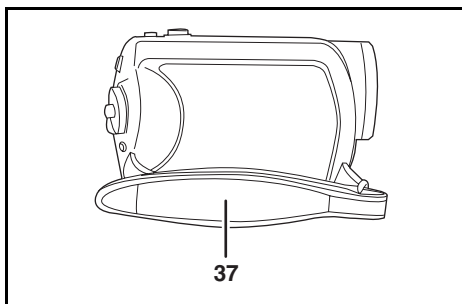
- 27 LCD monitor (→ 114)

Due to limitations in LCD production technology, there may be some tiny bright or dark spots on the LCD monitor screen. However, this is not a malfunction and does not affect the recorded picture.

- 28 Card slot open lever (→ 125)
- 29 DVD COPY button [DVD COPY] (→ 184)
- 30 Speaker
- 31 Power LCD plus button [POWER LCD PLUS] (→ 133)
- 32 Video light button [LIGHT] (SDR-H250/SDR-H21) (→ 145)

Before using

- 33 Reset button [RESET] (→ 202)
- 34 Mode select switch [AUTO/MANUAL/ FOCUS] (→ 136, 151, 152)
- 35 Card slot cover [SD CARD] (→ 125)
- 36 Card access lamp [ACCESS] (→ 120, 183)

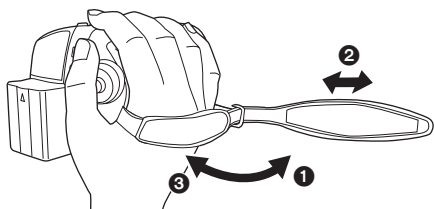


37 Grip belt (→ 113)

Using grip belt

Adjust the belt length so it fits your hand.

Adjust the belt length and the pad position.

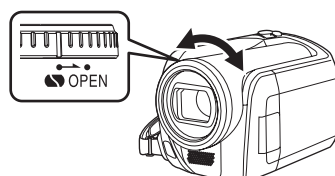


- ① Flip the belt.
- ② Adjust the length.
- ③ Replace the belt.

Using the lens cover (SDR-H250)

For the lens protection, be sure to close the lens cover when not in use.

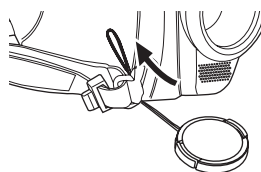
Rotate the lens cover open/close ring.



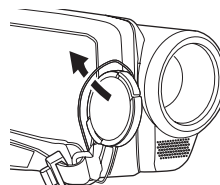
Attaching the lens cap (SDR-H21/SDR-H20)

Attach the lens cap to protect the surface of the lens.

- 1 Pass the end of the lens cap cord through the belt.**

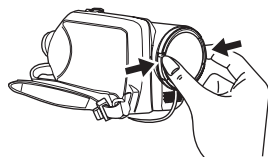


- 2 Pass the lens cap through the loop.**



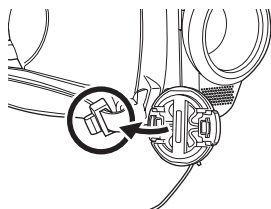
Before using

- 3 To attach or remove the lens cap, hold both sides of the lens cap with the tips of your finger and thumb.**



During recording

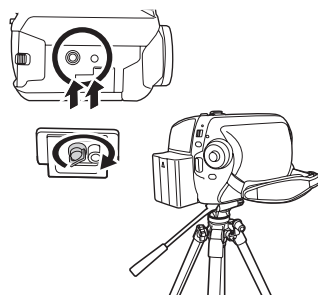
The removed lens cap can be attached to the lens cap fixture.



Tripod receptacle

This is a hole for attaching the unit to the optional tripod.

(Please carefully read the operating instructions for how to attach the unit to the tripod.)

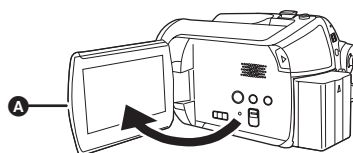


- When the tripod is used, the card slot cover cannot be opened. Insert an SD card before attaching this unit to the tripod. (→ 125)

Using the LCD monitor

You can record the image while viewing it on the LCD monitor.

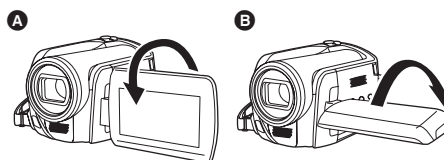
- 1 Place your finger on the LCD monitor open part **A** and pull the LCD monitor out in the direction of the arrow.**



- It can open up to 90°.

- 2 Adjust the angle of the LCD monitor as desired.**

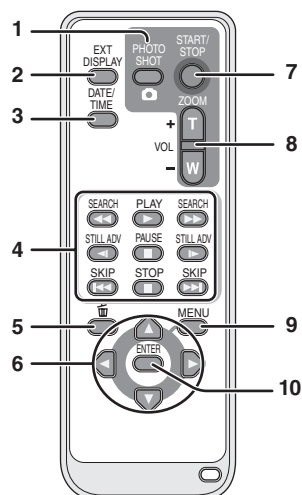
- It can rotate up to 180° **A** towards the lens or 90° **B** towards the opposite direction.



- The brightness and colour level of the LCD monitor can be adjusted from the menu. (→ 133)
- The unit may be damaged or fail if the LCD monitor is forcibly opened or rotated.

Before using

Using the remote control (SDR-H250)



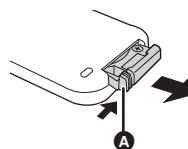
- 1 Photoshot button [PHOTO SHOT,]*
- 2 On-screen display button [EXT DISPLAY] (→ 174)
- 3 Date/time button [DATE/TIME] (→ 132)
- 4 Playback operation buttons (→ 157)
- 5 Delete button []*
- 6 Direction buttons [, , ,] (→ 131)
- 7 Recording start/stop button [START/STOP]*
- 8 Zoom/volume buttons [ZOOM, VOL]*
- 9 Menu button [MENU]* (→ 131)
- 10 Enter button [ENTER] (→ 131)

* means that these buttons function in the same manner as the corresponding buttons on the unit.

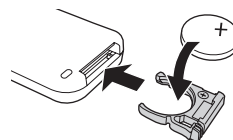
■ Install a button-type battery

Install the supplied button-type battery in the remote control before using it.

- 1 While pressing the stopper **A**, pull out the battery holder.



- 2 Set the button-type battery with its (+) mark facing upward and then put the battery holder back in place.



■ Concerning the button-type battery

- When the button-type battery runs down, replace it with a new battery (part number: CR2025). The battery should normally last about 1 year, however this depends on how frequently the unit is used.
- Keep the button-type battery out of the reach of children.

CAUTION

Danger of explosion if battery is incorrectly replaced. Replace only with the same or equivalent type recommended by the manufacturer. Dispose of used batteries according to the manufacturer's instructions.

Warning

Risk of fire, explosion and burns. Do not recharge, disassemble, heat above 60 °C or incinerate.

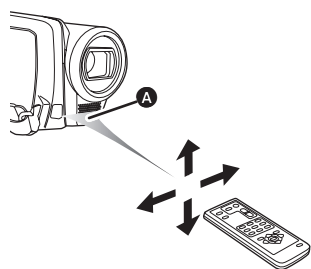
Warning

Keep the Button-Type battery out of the reach of children. Never put Button-Type battery in mouth. If swallowed call your doctor.

Before using**■ Remote control usable range**

The distance between the remote control and the unit's remote control sensor **A**: Within approx. 5 m

Angle: Approx. 10° up and 15° down, left, and right



- The remote control is intended for indoor operation. Outdoors or under strong light, the unit may not operate properly even within the usable ranges.

Before using

HDD and SD card

This unit can be used for recording motion pictures and still pictures to the internal HDD and an SD card.

Concerning the internal HDD and cards that can be used on this unit

	Internal HDD (Hard Disk Drive)	SD Memory Card			SDHC Memory Card
Display on the screen					
Indication in these instructions	HDD	SD			
Capacity	30 GB*1	8 MB/ 16 MB	32 MB/ 64 MB/ 128 MB	256 MB/ 512 MB (supplied)/ 1 GB/2 GB	4 GB
Functions					
	Recording motion pictures	●	—	●*2	●
	Recording still pictures	●	●		
	Creating playlists	●	—		

●: available —: not available

*1 The 30 GB hard drive utilizes a portion of the storage space for formatting, file management and other purposes. 30 GB is 30,000,000,000 bytes. Usable capacity will be less.

*2 Cannot be guaranteed in operation.

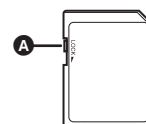
Concerning SD cards

This unit is compatible with both SD Memory cards and SDHC Memory cards. You can only use SDHC Memory cards on devices that are compatible with them. You cannot use SDHC Memory cards on devices that are only compatible with SD Memory cards. (When using an SDHC Memory card on another device, be sure to read the operating instructions for that device.)

- For the purposes of these operating instructions, SD Memory Card and SDHC Memory Card are referred to as the "SD card".
- This unit supports SD Memory Cards formatted in FAT12 system and FAT16 system based on SD Memory Card Specifications and SDHC Memory Cards formatted in FAT32 system.

Before using

- Use this unit to format SD cards. If an SD card is formatted on other products (such as a computer), the time spent for recording may become longer and you may not be able to use the SD card. (→ 171)
- When using an SD card on which data has been written many times, the remaining time left for recording may be reduced.
- Keep the Memory Card out of reach of children to prevent swallowing.
- A MultiMediaCard cannot be used on this unit.
- When the write-protect switch **A** on SD card is locked, no recording, deletion or editing will be possible on the card.



About SD cards that you can use for motion picture recording

We recommend using SD cards conforming to Class 2 or higher of the SD Speed Class Rating or the following SD cards made by Panasonic for motion picture recording. (If another kind of SD card is used, the recording may suddenly stop during motion picture recording.)

	Pro High Speed SD Memory Card	Super High Speed SD Memory Card	High Speed SD Memory Card	SDHC Memory Card
256 MB	—	RP-SDH256	RP-SDR256	—
512 MB	RP-SDK512	RP-SDH512*	RP-SDR512	—
1 GB	RP-SDK01G RP-SDV01G	RP-SDH01G*	RP-SDQ01G* RP-SDR01G	—
2 GB	RP-SDK02G RP-SDV02G	—	RP-SDQ02G* RP-SDR02G RP-SDM02G	—
4 GB	—	—	—	RP-SDR04G RP-SDM04G RP-SDV04G

* No longer made.

- Operation in motion picture recording is not guaranteed with the following SD cards.
 - SD cards from 32 MB to 128 MB
 - SD cards from 256 MB to 4 GB other than the ones mentioned above
- Please confirm the latest information on the following website. (This website is in English only.)
http://panasonic.jp/support/global/cs/e_cam

Handling precautions

- Do not touch the terminals on the back of the card.
- Do not expose the terminals of the card to water, garbage or dust.
- Do not place the card in the following areas:
 - In direct sunlight.
 - In very dusty or humid areas.
 - Near a heater.
 - Locations susceptible to significant difference in temperature (condensation can occur).
 - Where static electricity or electromagnetic waves occur.
- Put the card back in its bag or case for protection when not using it.
- Electrical noise, static electricity or failure of this unit or the SD card may damage or erase the data stored on the SD card. We recommend saving important data on a computer.

Before using

HDD handling precautions

This unit has an internal HDD. The HDD is a precision instrument so take care when handling it.

■ Do not cause any vibrations or impacts to this unit.

The HDD may no longer be recognised or recording or playback may no longer be possible. In particular, do not cause any vibrations or impacts during recording or playback.

■ Do not drop this unit.

The HDD may be damaged if this unit receives a strong impact due to being dropped etc. This unit has a drop detection function to protect the HDD from impact if this unit is dropped. If it detects that this unit has been dropped during motion picture recording, the HDD protection operation sound may be recorded. Also if it detects that the unit is being continuously dropped, recording or playback may stop.

■ Take note of the temperature of this unit

It may no longer be possible to record or playback if the temperature of this unit is too high or low. A warning message will appear on this unit's LCD monitor if an irregularity in the temperature is detected. (→ 194)

■ Do not use the unit in a low pressure area

The HDD may be damaged if you use this unit where the altitude is more than 3000 m.

■ Back up important recorded data to protect it.

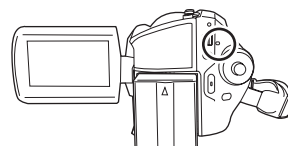
Save recorded data periodically on a computer, DVD disc, etc. for backup purposes. If the HDD fails, the recorded data cannot be repaired.

■ Indemnity concerning recorded content

Panasonic does not accept any responsibility for damages directly or indirectly due to any type of problems that result in loss of recording or edited content, and does not guarantee any content if recording or editing does not work properly. Likewise, the above also applies in a case where any type of repair is made to the unit (including any other non-HDD related component).

Access lamp**■ ACCESS/PC lamp**

- When this unit accesses the HDD (reading, recording, playback, erasing, etc.), the ACCESS/PC lamp lights up.
- If the following operations are performed when the ACCESS/PC lamp is lit, then the HDD or the recorded data may be damaged or this unit may malfunction.
 - Causing strong vibrations or impacts to this unit
 - Operating the OFF/ON switch or the mode dial
 - Removing the battery or disconnecting the AC adaptor

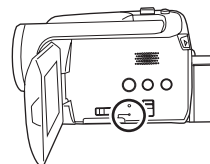


Before using

■ Card access lamp

- When this unit accesses the SD card (reading, recording, playback, erasing, etc.), the access lamp lights up.
- If the following operations are performed when the access lamp is lit, then the SD card or the recorded data may be damaged or this unit may malfunction.

- Opening the card slot cover
- Removing the SD card
- Operating the OFF/ON switch or the mode dial
- Removing the battery or disconnecting the AC adaptor

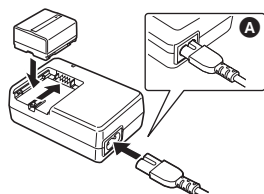


Power supply

Charging the battery

When this unit is purchased, the battery is not charged. Charge the battery before using this unit.

- If the DC cable is connected to the AC adaptor, then the battery will not be charged. Remove the DC cable from the AC adaptor.



- 1 Connect the AC cable to the AC adaptor and the AC outlet.

- 2 Put the battery on the battery mount by aligning the mark, and then securely plug it in.

- The output plug of the AC cable is not completely connected to the AC adaptor socket. As shown in A, there is a gap.

■ Charging lamp

Lights up: Charging

Goes off: Charging completed

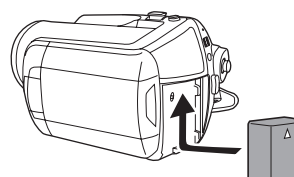
Flashing: The battery is over discharged (discharged excessively). In a while, the lamp will light up and normal charging will start.

When the battery temperature is excessively high or low, the CHARGE lamp flashes and the charging time will be longer than normal.

- Battery charging time (→ 122)
- We recommend using Panasonic batteries. (→ 111)
- If you use other batteries, we cannot guarantee the quality of this product.

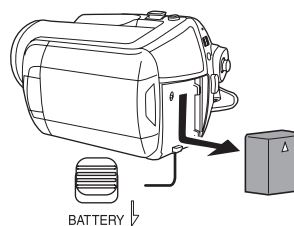
Inserting the battery

Push the battery against the battery holder and slide it until it clicks.



Removing the battery

While sliding the BATTERY lever, slide the battery to remove it.



- Hold the battery with your hand so it does not fall.
- Before removing the battery, be sure to set the OFF/ON switch to OFF and check that the status indicator is off.

CAUTION

Danger of explosion if battery is incorrectly replaced. Replace only with the same or equivalent type recommended by the manufacturer. Dispose of used batteries according to the manufacturer's instructions.

Setup

Charging time and recordable time

The times shown in the tables below are for when the temperature is 25 °C and the humidity is 60%. If the temperature is higher or lower than 25 °C, the charging time will become longer.

■ Charging time

- The charging time shown in the table are approximations.
- “2 h 25 min” indicates 2 hours 25 minutes.

SDR-H250:

Battery model number	Voltage/capacity	Charging time
Supplied battery/ CGA-DU12 (optional)	7.2 V/1150 mAh	2 h 25 min
CGA-DU14 (optional)	7.2 V/1360 mAh	2 h 45 min
CGA-DU21 (optional)	7.2 V/2040 mAh	3 h 55 min

SDR-H21/SDR-H20:

Battery model number	Voltage/capacity	Charging time
Supplied battery/ CGR-DU06 (optional)	7.2 V/640 mAh	1 h 40 min
CGA-DU07 (optional)	7.2 V/680 mAh	1 h 30 min
CGA-DU12 (optional)	7.2 V/1150 mAh	2 h 25 min
CGA-DU14 (optional)	7.2 V/1360 mAh	2 h 45 min
CGA-DU21 (optional)	7.2 V/2040 mAh	3 h 55 min

■ Recordable time

- The actual recordable time refers to the recordable time when repeatedly starting/stopping recording, turning the unit on/off, moving the zoom lever, etc.
- “2 h 5 min” indicates 2 hours 5 minutes.

SDR-H250:

Battery model number	Voltage/capacity	Recording destination	Maximum continuously recordable time	Actual recordable time
Supplied battery/ CGA-DU12 (optional)	7.2 V/1150 mAh	HDD	2 h 5 min	55 min
		SD	2 h 20 min	1 h
CGA-DU14 (optional)	7.2 V/1360 mAh	HDD	2 h 30 min	1 h 5 min
		SD	2 h 45 min	1 h 15 min
CGA-DU21 (optional)	7.2 V/2040 mAh	HDD	3 h 45 min	1 h 40 min
		SD	4 h 10 min	1 h 50 min

Setup

SDR-H21/SDR-H20:

Battery model number	Voltage/capacity	Recording destination	Maximum continuously recordable time	Actual recordable time
Supplied battery/ CGR-DU06 (optional)	7.2 V/640 mAh	HDD	1 h 35 min	40 min
		SD	1 h 45 min	45 min
CGA-DU07 (optional)	7.2 V/680 mAh	HDD	1 h 40 min	45 min
		SD	1 h 55 min	50 min
CGA-DU12 (optional)	7.2 V/1150 mAh	HDD	2 h 50 min	1 h 15 min
		SD	3 h 15 min	1 h 25 min
CGA-DU14 (optional)	7.2 V/1360 mAh	HDD	3 h 25 min	1 h 30 min
		SD	3 h 50 min	1 h 40 min
CGA-DU21 (optional)	7.2 V/2040 mAh	HDD	5 h 10 min	2 h 15 min
		SD	5 h 45 min	2 h 35 min

- The display changes as the battery capacity reduces.

 →  →  →  → .

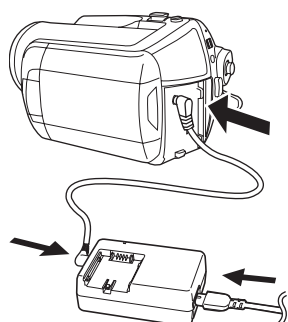
If the battery discharges, then  () will flash.

- The recordable times will vary depending on the status of use. These times are approximations. The recordable time will become shorter when you use this unit with the LCD monitor lit up by pressing the POWER LCD PLUS button.
- The batteries heat up after use or charging. This unit will also heat up while being used. This is not a malfunction.
- Be aware that the operating time of the battery will become shorter in low temperatures. We recommend charging a spare battery for use when recording.

Setup

Connecting to the AC outlet

The unit is in the standby condition when the AC adaptor is connected. The primary circuit is always "live" as long as the AC adaptor is connected to an electrical outlet.



1 Connect the AC cable to the AC adaptor and the AC outlet.

2 Connect the DC cable to the AC adaptor.

3 Connect the DC cable to this unit.

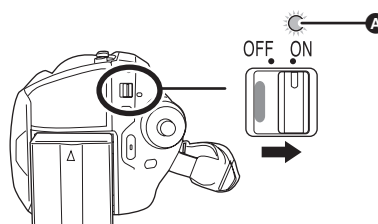
- Do not use the AC cable with any other equipment as it is designed only for this unit. Do not use the AC cable from other equipment with this unit.
- While the DC cable is connected to the AC adaptor, the battery will not be charged.

Turning the unit on/off

- (SDR-H250) When recording, open the lens cover before turning the unit on. (→ 113) If the unit is turned on with the lens cover closed, the automatic white balance adjustment (→ 206) may not function properly.
- (SDR-H21/SDR-H20) When recording, remove the lens cap before turning the unit on. If the unit is turned on with the lens cap attached, the automatic white balance adjustment (→ 206) may not function properly.

How to turn on the power

Set the OFF/ON switch to ON.

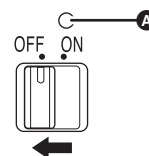


The status indicator **A** lights and the power turns on.

- When the unit is turned on for the first time, a message asking you to set the date and time will appear. Select [YES] and set the date and time. (→ 132)
- When the unit is turned on for the first time, a selection screen will appear to select the recording destination for motion pictures and still pictures. Select [HDD] or [SD CARD] for each type of picture and then press the joystick.

How to turn off the power

Set the OFF/ON switch to OFF.



The status indicator **A** goes off when the power turns off.

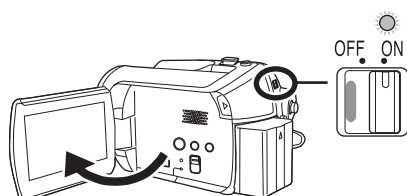
How to turn the power on and off with the LCD monitor

When the OFF/ON switch is set to ON, the power can be turned on and off with the LCD monitor when the unit is in video recording mode or picture recording mode.

Setup

■ To turn on the power

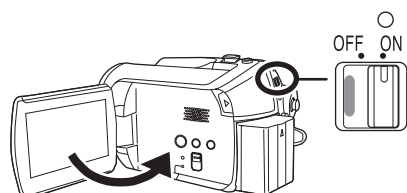
Open the LCD monitor.



The status indicator lights and the power turns on.

■ To turn off the power

Close the LCD monitor.



The status indicator goes off and the power turns off.

- The power will not turn off while recording even if the LCD monitor is closed.

Set the OFF/ON switch to OFF when the unit is not being used.

Inserting/removing an SD card

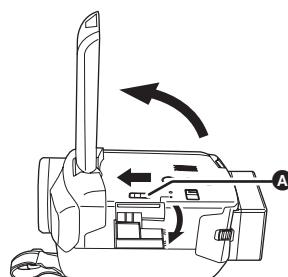
Before inserting/removing an SD card, be sure to set the OFF/ON switch to OFF.

If the SD card is inserted or removed while the OFF/ON switch is set to ON, this unit may malfunction or the data recorded on the SD card may be lost.

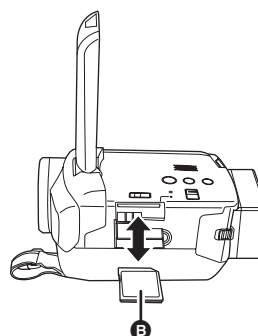
1 Set the OFF/ON switch to OFF to turn off the power.

- Check that the status indicator has gone off.

2 Open the LCD monitor and then slide the card slot open lever **A** to open the card slot cover.



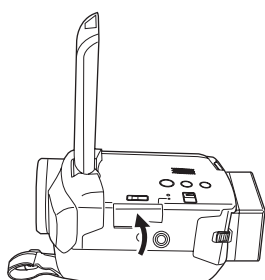
3 Insert/remove the SD card into/from the card slot.



- When inserting an SD card, face the label side **B** upwards and press it straight in as far as it goes.
- When removing the SD card, press the centre of the SD card and then pull it straight out.

Setup

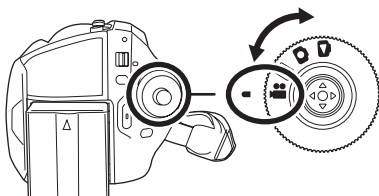
4 Securely close the card slot cover.



Selecting a mode

The mode dial is used to switch between recording and playback modes.
Rotate the mode dial slowly but surely.

Rotate the mode dial, and set the desired mode pictograph to the position shown in the illustration.



	Video recording mode (→ 137) Use this to record motion pictures.
	Video playback mode (→ 156) Use this to play back motion pictures.
	Picture recording mode (→ 140) Use this to record still pictures.
	Picture playback mode (→ 160) Use this to play back still pictures.

- Do not forcefully rotate the dial.

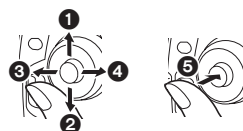
How to use the joystick

This unit has a joystick for selecting functions, performing operations, etc. so it is easy to operate this unit with one hand.

Basic operations

Operations on the menu screen and selection of files on the thumbnail view screen, etc.

Move the joystick up, down, left, or right to select an item or scene, and then press the joystick to set it.



- 1 Select by moving up.
 - 2 Select by moving down.
 - 3 Select by moving left.
 - 4 Select by moving right.
 - 5 Press the joystick to select the item.
- Menu screen operations (→ 130)

Operations during recording

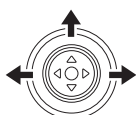
- ◇ Rotate the mode dial to select or .

- 1 Press the centre of the joystick, and icons will be displayed on the screen.



- The indication disappears when the centre of the joystick is pressed again.
- The indication changes each time the joystick is moved down.

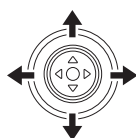
2 Move the joystick up, left or right to select an item.



Operations during playback

- ◇ Rotate the mode dial to select or .

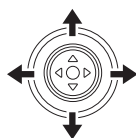
1 Move the joystick up, down, left or right to select the scene to be played back and press the joystick.



The selected scene is played back on the full screen.

- The operation icon is automatically displayed on the screen.

2 Move the joystick up, down, left or right to operate.



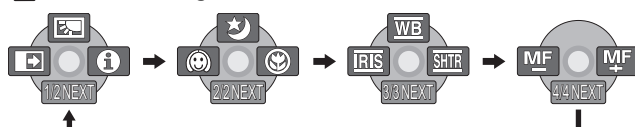
- The operation icon appears or disappears each time the centre of the joystick is pressed.

Setup

About the operation icons displayed in each mode

About auto mode and manual mode (→ 136)

Video recording mode



Icon	Direction	Function	Page
(1/2)		Backlight compensation	146
		Fade	146
		Help mode	130
(2/2)		Colour night view	148
		Soft skin mode	147
		Tele macro (SDR-H250)	148
In manual mode (3/3)		White balance	152
		Iris or gain value	154
		Shutter speed	154
In manual focus mode (4/4)		Manual focus adjustment	152

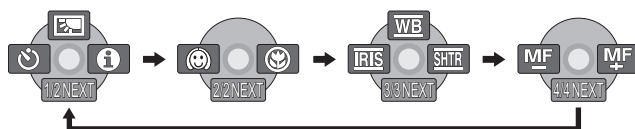
- The shaded operation icons are not displayed while recording.

Video playback mode



Icon	Direction	Function	Page
	▲	Playback/pause	156
	▼	Stop playback and show thumbnails	156
	◀	Skip	156
		Rewind	157
		Reverse slow/frame playback (during pause)	157
	▶	Skip	156
		Fast forward	157
		Forward slow/frame playback (during pause)	157

Setup

 Picture recording mode


Icon	Direction	Function	Page
(1/2)		▲ Backlight compensation	146
		◀ Self timer	149
		▶ Help mode	130
(2/2)		◀ Soft skin mode	147
		▶ Tele macro (SDR-H250)	148
In manual mode (3/3)		▲ White balance	152
		◀ Iris or gain value	154
		▶ Shutter speed	154
In manual focus mode (4/4)		◀▶ Manual focus adjustment	152

 Picture playback mode


Icon	Direction	Function	Page
	▲	Slide show start/pause	160
	▼	Stop playback and show thumbnails	160
	◀	Playback previous picture (during pause)	160
	▶	Playback next picture (during pause)	160

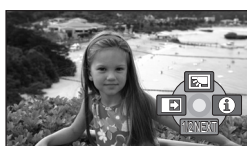
Setup

■ Help mode

The help mode explains the operation icons that are displayed when the AUTO/MANUAL/FOCUS switch is set to AUTO in video/picture recording mode.

◇ Rotate the mode dial to select  or .

1 Press the joystick to display the icon during the recording pause.



2 Move the joystick right to select [i].



3 Move the joystick up, left or right to select the desired icon.



An explanation of the selected icon is displayed on the screen.

- The indication changes each time the joystick is moved down.

To exit the help mode

Press the MENU button or select [EXIT].

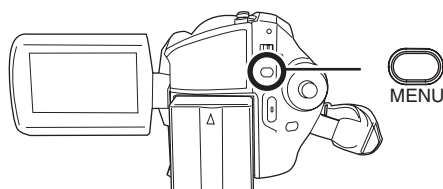


- When the help mode is used, functions cannot be set.
- When the help mode is used, motion pictures and still pictures cannot be recorded.

Switching the language

You can switch the language on the screen display or the menu screen.

1 Press the MENU button, then select [LANGUAGE] and press the joystick.

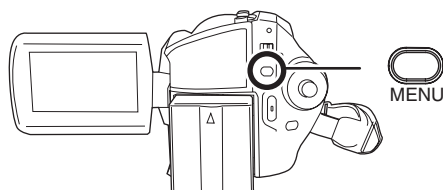


2 Select [English] and press the joystick.

Using the menu screen

Refer to "Menu list" (→ 189) for information about the menus.

1 While stopped, press the MENU button.



The menu displayed differs depending on the position of the mode dial, the selected medium, etc.

Setup

- Do not switch the mode dial when the menu is displayed.

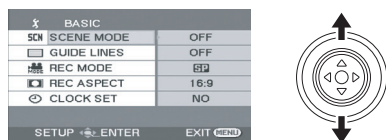
2 Move the joystick up or down in order to select the desired top menu.



3 Move the joystick right or press the joystick.



4 Move the joystick up or down in order to select the submenu item.



5 Move the joystick right or press the joystick.



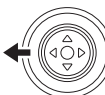
6 Move the joystick up or down in order to select the desired item.



7 Press the joystick to enter the selection.



To get back to the previous screen
Move the joystick left.



To exit the menu screen
Press the MENU button.

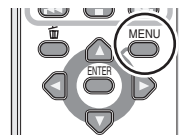


- The menu screen does not appear during recording or playing. You cannot start other operations while the menu screen appears.

Operating with remote control (SDR-H250)

The menu screen transition is the same as when the buttons on the main unit are used.

1 Press the MENU button.



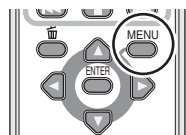
Setup

2 Select a menu item.



- Use the direction buttons (▲, ▼, ◀, ▶) and ENTER button in place of the joystick on the main unit.

3 Press the MENU button to exit the menu screen.



Setting date and time

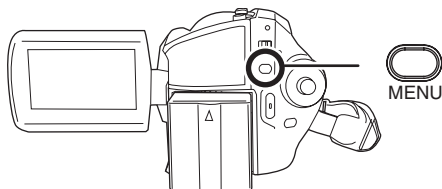
When the unit is turned on for the first time, a message asking you to set the date and time will appear.

- Select [YES] and press the joystick. Perform steps 2 and 3 below to set the date and time.

If the screen shows the incorrect date and time, then adjust it.

- ◇ Rotate the mode dial to select or .

- 1 Press the MENU button, then select [BASIC] → [CLOCK SET] → [YES] and press the joystick.



- 2 Move the joystick left or right to select the item to be set. Then, move the joystick up or down to set the desired value.



- The year will change as follows: 2000, 2001, ..., 2099, 2000, ...
- The 24-hour system is used to display the time.

3 Press the joystick to enter the selection.

- The clock function starts at [00] seconds when the joystick is pressed.
- After pressing the MENU button to finish the setting, check the date and time display.

■ Changing the date and time display style

Press the MENU button, then select [SETUP] → [DATE/TIME] → desired display style and press the joystick.

- You can also show or change the date and time display by repeatedly pressing the DATE/TIME button on the remote control. (SDR-H250)

[DATE]	[D/T]
15.12.2007	15.12.2007 15:30
[OFF]	

■ Changing the display style

Press the MENU button, then select [SETUP] → [DATE FORMAT] → desired display style and press the joystick.

Setup

Display style	Screen display
[Y/M/D]	2007.12.15
[M/D/Y]	12.15.2007
[D/M/Y]	15.12.2007

- The date and time function are driven by a built-in lithium battery.
- Make sure to check the time before recording.
- If the time display becomes [- -], the built-in lithium battery has run down. Use the following steps to charge the battery. When you turn on the power for the first time after charging, a message asking you to set the date and time will appear. Select [YES] and set the date and time.

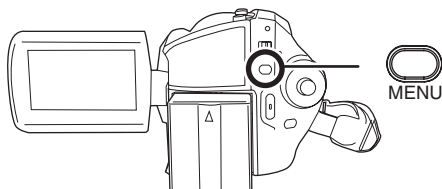
To recharge the built-in lithium battery

Connect the AC adaptor or attach the battery to the unit, and the built-in lithium battery will be recharged. Leave the unit as it is for approx. 24 hours and the battery will save the date and time for approx. 6 months. (Even if the OFF/ON switch is set to OFF, the battery is still being recharged.)

Adjusting the LCD monitor

Adjusting the brightness and colour level

- 1 Press the MENU button, then select [SETUP] → [LCD SET] → [YES] and press the joystick.



- 2 Move the joystick up or down to select the item to be adjusted. Then, move the joystick left or right to make the adjustment.



The bar display moves.

[BRIGHTNESS]:

Brightness of the LCD monitor

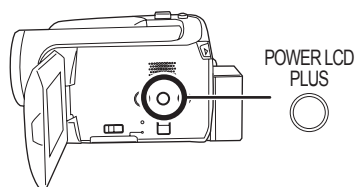
[COLOUR]:

Colour level of the LCD monitor

- When the LCD monitor is rotated by 180° towards the lens, the brightness and colour level of the LCD monitor cannot be adjusted.
- These settings will not affect the images actually recorded.

Increasing and decreasing the brightness of the entire LCD monitor

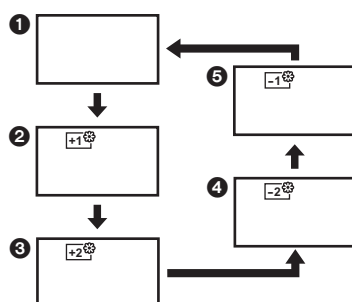
Press the POWER LCD PLUS button.



Setup

Each time you press the button:

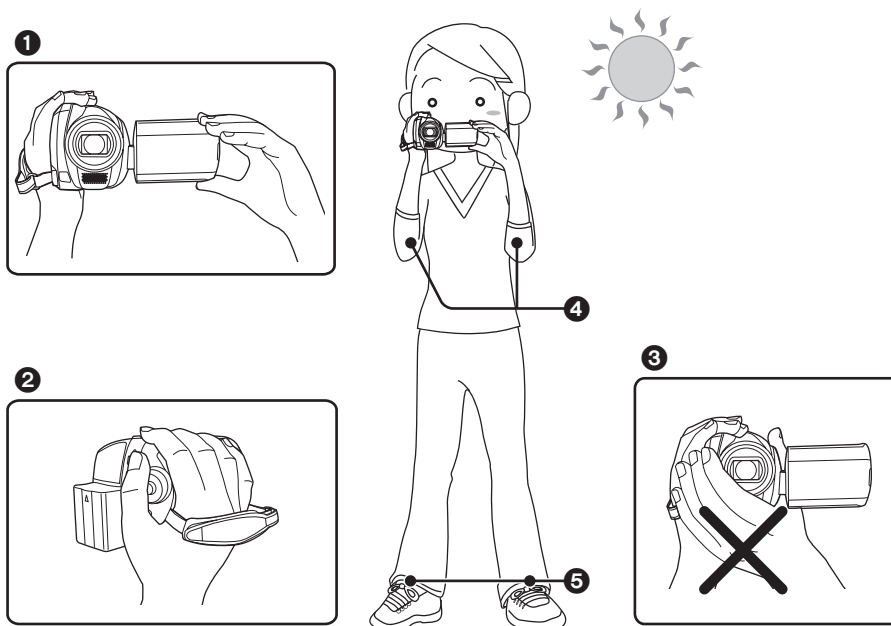
- ❶ Original brightness
- ❷ Bright
- ❸ Brighter
- ❹ Darker
- ❺ Dark



- This will not affect the images to be recorded.
- If you turn on the unit when the AC adaptor is used, this function will automatically be "Bright".
- (SDR-H250/SDR-H21) The LCD monitor will become a little darker when the video light is lit.

Before recording

Basic camera positioning



- ❶ Hold the camera with both hands.
 - ❷ Put your hand through the grip belt.
 - ❸ Do not cover the microphones or sensors with your hands.
 - ❹ Keep your arms near your body.
 - ❺ Slightly open your legs.
- When you are outdoors, record pictures with the sunlight behind you. If the subject is backlit, it will become dark in the recording.
 - When recording, make sure your footing is stable and there is no danger of colliding with another person or an object.

Recording

■ About auto mode

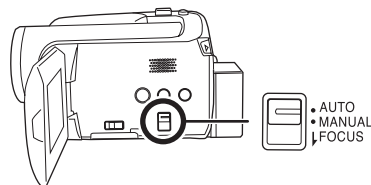
Set the AUTO/MANUAL/FOCUS switch to AUTO, and colour balance (white balance) and focusing will be adjusted automatically.

- Auto white balance (→ 206)
- Auto focusing (→ 207)

Depending on the brightness of the subject etc., the aperture and shutter speed are automatically adjusted for optimum brightness.

(When set to the video recording mode: The shutter speed is adjusted to a maximum of 1/250.)

- Colour balance and focus may not be adjusted automatically depending on light sources or scenes. If so, manually adjust these settings.
 - Scene mode (→ 151)
 - White balance (→ 152)
 - Shutter speed (→ 154)
 - Iris/gain value (→ 154)
 - Focus (→ 152)



■ Anti-Ground-Shooting (AGS) (SDR-H250)

This function prevents unnecessary recording when you forget to pause recording and walk with the unit tilted upside down while recording continues.

- If the unit continues to be tilted upside down from the normal horizontal position while recording motion pictures, it is automatically set to recording pause.

◇ Rotate the mode dial to select .

Press the MENU button, then select [SETUP] → [AGS] → [ON] and press the joystick.



- The AGS function may activate and cause the unit to pause the recording if you are recording a subject right above or right below you. In these cases, set [AGS] to [OFF] then continue the recording.
- Use the recording start/stop button to pause the recording. The AGS function is only a backup function for when you forget to pause the recording.
- The time it takes the unit to be put into recording pause after being tilted upside down varies depending on the operating conditions.

Recording motion pictures

HDD SD

This unit can be used for recording motion pictures to the internal HDD and an SD card. (→ 117) Before recording, use the menu to select the recording destination. (→ below)

When the unit is turned on for the first time, the media select screen for recording motion pictures will appear. Select [HDD] or [SD CARD] and press the joystick.

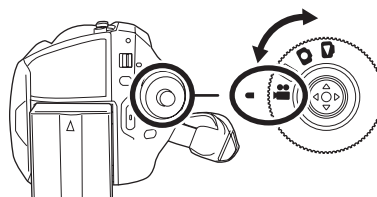
- When the unit is purchased, the aspect ratio is set to [16:9] for recording images compatible with a wide-screen TV.

To watch images on a regular TV (4:3), change the aspect ratio setting (→ 150) before recording the images or when watching them on the connected TV (→ 173).

- (SDR-H250) Open the lens cover before turning the unit on.
If the unit is turned on with the lens cover closed, the automatic white balance adjustment may not function properly.
- (SDR-H21/SDR-H20) Remove the lens cap before turning the unit on.
If the unit is turned on with the lens cap attached, the automatic white balance adjustment may not function properly.

1 Turn the unit on.

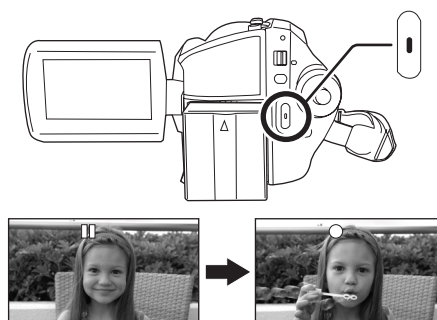
2 Rotate the mode dial to select .



3 Open the LCD monitor.

4 Press the MENU button, then select [MEDIA SELECT] → [HDD] or [SD CARD] to select the recording destination and press the joystick.

5 Press the recording start/stop button to start recording.

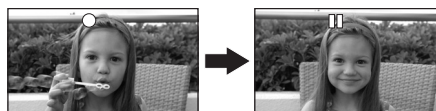


Recording

To end the recording

Press the recording start/stop button again to pause recording.

- [●] and [■] are red during recording. Do not move this unit until [■] is green.



The images recorded between pressing the recording start/stop button to start recording and pressing it again to pause recording become one scene.

However if the recording destination is the HDD, the scene is automatically divided when the recorded data exceeds 4 GB. (The recording will continue.)

- When about 5 minutes have passed without any operation in recording pause, the unit automatically turns off to prevent the battery from running down. When you want to use the unit, turn it on again. This setting can also be set to [OFF]. (→ 190, [POWER SAVE])

Screen indications in the video recording mode

- A Recording mode**
- B Selected recording destination**
- C Remaining time left for recording**
(When the remaining time is less than 1 minute, [R 0h00m] flashes red.)
- D Recording time elapsed**



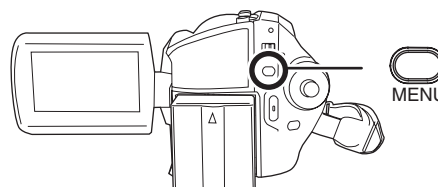
- Sound is recorded from the internal stereo microphone on the front of the unit. Take care not to block this microphone.
- If the write protection switch on the SD card is set to LOCK, it cannot be used for recording. (→ 118)
- Each time the unit enters the recording pause mode, the counter display will be reset to "0h00m00s".
- While motion picture recording is in progress, the recording will not stop even if the LCD monitor is closed.
- While motion picture recording is in progress, do not disconnect the AC adaptor or remove the battery. If you do, a repair message may be displayed when the power is turned back on. (→ 195, About recovery)

Recording

Recording modes and recordable time available for the motion picture

Changing the recording mode of the motion picture.

Press the MENU button, then select [BASIC] → [REC MODE] → desired item and press the joystick.



- The recordable time shown in the table are approximations.

■ HDD

Capacity	Recording mode		
	XP (High quality)	SP (Normal)	LP (Long play)
30 GB	7 h	13 h 30 min	27 h

Image quality prioritized ↔ Recording time prioritized

■ SD card

Capacity	Recording mode		
	XP (High quality)	SP (Normal)	LP (Long play)
256 MB	3 min	6 min	12 min
512 MB (supplied)	6 min	12 min	25 min
1 GB	12 min	25 min	50 min
2 GB	25 min	50 min	1 h 40 min
4 GB	50 min	1 h 40 min	3 h 20 min

Image quality prioritized ↔ Recording time prioritized

- This unit records in VBR. VBR is an abbreviation for Variable Bit Rate. VBR recording automatically varies the bit rate (amount of data in a fixed time) depending on the subject being recorded. This means if a subject with sharp movements is recorded, the recording time is reduced.

- Mosaic-pattern noise may appear on a playback image in the following cases.

- When there is a complicated pattern in the background
- When the unit is moved too much or too fast
- When a subject with sharp movements has been recorded
(Particularly if it has been recorded in [LP] mode.)

- If you record still pictures on the HDD or an SD card, the recordable time available for the motion picture will become shorter.

Recording

Recording still pictures

HDD SD

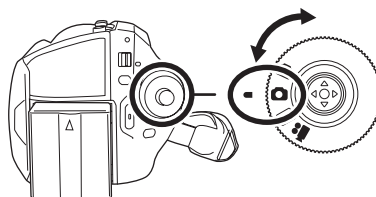
This unit can be used for recording still pictures to the internal HDD and an SD card. (→ 117) Before recording, use the menu to select the recording destination. (→ below)

When the unit is turned on for the first time, the media select screen for recording still pictures will appear. Select [HDD] or [SD CARD] and press the joystick.

- When this unit is purchased, [PICTURE SIZE] is set to [2M] (SDR-H250)/[0.2M] (SDR-H21/SDR-H20) for recording pictures compatible with a wide-screen TV (16:9). To record pictures with a 4:3 aspect ratio, change the [PICTURE SIZE] setting before recording (→ 143).
- (SDR-H250) Open the lens cover before turning the unit on.
If the unit is turned on with the lens cover closed, the automatic white balance adjustment may not function properly.
- (SDR-H21/SDR-H20) Remove the lens cap before turning the unit on.
If the unit is turned on with the lens cap attached, the automatic white balance adjustment may not function properly.

1 Turn the unit on.

2 Rotate the mode dial to select .



3 Open the LCD monitor.

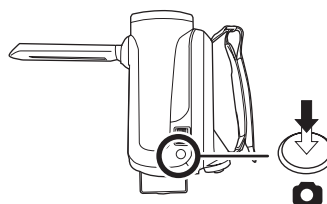
4 Press the MENU button, then select [MEDIA SELECT] → [HDD] or [SD CARD] to select the recording destination and press the joystick.

■ SDR-H250

5 Press the Photoshot button halfway in order to adjust focusing. (For auto focusing only)

The shutter speed and the iris/gain value are fixed and the unit focuses on the subject automatically.

- If [O.I.S.] (→ 150) is set to [ON], the image stabilizer function will become more effective when the Photoshot button  is pressed halfway.
([MEGA] (MEGA optical image stabilizer) will be displayed.)



Recording

A Focus indication

○ (The white lamp flashes.): Focusing

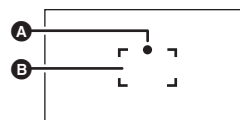
● (The green lamp lights up.): When in focus

No mark: When focusing is unsuccessful.

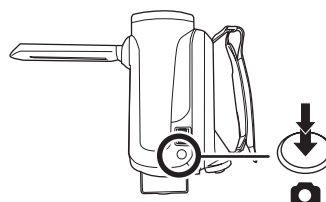
- The focus indication is indicated as follows when the Photoshot button [] is not pressed halfway. Please use it as a guide for recording.

- (The green lamp lights up.): When in focus and a good picture can be recorded.

○ (The white lamp lights up.): Almost in focus

B Focus area

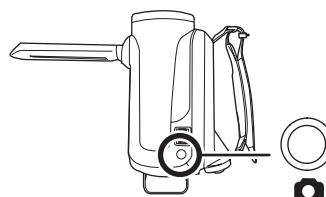
6 Press the Photoshot button [] fully to take the picture.



■ SDR-H21/SDR-H20

5 Press the Photoshot button [].

The unit automatically focuses on the subject at the centre of screen (when auto focus is selected).



- For information about the number of recordable still pictures (→ 212)
- The sound cannot be recorded.
- If the write protection switch on the SD card is set to LOCK, it cannot be used for recording. (→ 118)
- The Photoshot button [] on the remote control cannot be pressed halfway. (SDR-H250)
- If the [PICT. QUALITY] is set to [], mosaic-pattern noise may appear on a playback image depending on the picture content.
- Other products may degrade or not play back still pictures recorded with this unit.

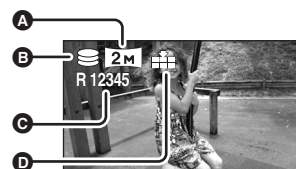
■ To record still pictures clearly

- When zooming in on the subject with a magnification of 4× or higher, it is difficult to reduce the slight shaking from holding this unit by hand. We recommend decreasing the zoom magnification and approaching the subject when recording.
- When recording still pictures, hold the unit firmly with your hands and keep your arms stationary at your side so as not to shake the unit.
- You can record stable pictures without shaking by using a tripod and the remote control.

Recording

Screen indications in picture recording mode

- A** Size of still pictures
- B** Selected recording destination
- C** Remaining number of still pictures
(Flashes in red when [R 0] appears.)
- D** Quality of still pictures



■ About the focus indication (SDR-H250)

- The focus indication does not appear in manual focus mode.
- Focus on a subject manually when it is not easily focused.
- You can record still pictures even if the focus indication does not appear, but pictures may be recorded without being focused.
- The focus indication does not appear or has difficulty displaying in the following cases.
 - When the zoom magnification is high.
 - When the unit is shaken.
 - When the subject is moving.
 - When the subject stands in front of a light source.
 - When close subjects and far subjects are included in the same scene.
 - When the scene is dark.
 - When there is a bright part in the scene.
 - When the scene is filled with only horizontal lines.
 - When the scene lacks contrast.

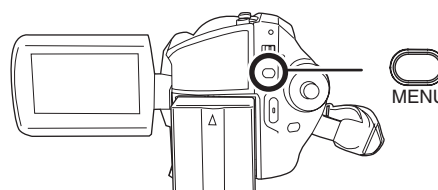
■ Concerning the focusing area (SDR-H250)

When there is a contrasting object ahead or behind the subject in the focus area, the subject may not be focused. If so, move the contrasting object out of the focus area. Even when it is still difficult to focus, adjust the focus manually.

Recording with a shutter operation effect

You can add a shutter sound when recording still pictures.

Press the MENU button, then select [ADVANCED] → [SHTR EFFECT] → [ON] and press the joystick.



- This function's default setting is [ON].

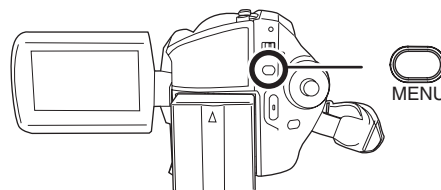
Recording

Number of pixels and picture quality for still picture recording

■ [PICTURE SIZE]

Changing the recording size.

Press the **MENU** button, then select **[BASIC]** → **[PICTURE SIZE]** → desired item and press the joystick.



SDR-H250:

Icon	Aspect	Number of pixels
	4:3	2048×1512
	4:3	1280×960
	4:3	640×480
	16:9	1920×1080

SDR-H21/SDR-H20:

Icon	Aspect	Number of pixels
	4:3	640×480
	16:9	640×360

- When this unit is purchased, [PICTURE SIZE] is set to **[2M]** (SDR-H250)/**[0.2M]** (SDR-H21/SDR-H20). The sides of pictures recorded with a 16:9 aspect ratio may be cut at printing. Check before printing.

■ [PICT. QUALITY]

Selecting the picture quality.

Press the **MENU** button, then select **[BASIC]** → **[PICT. QUALITY]** → desired item and press the joystick.

- : Still pictures with a high picture quality are recorded.
- : Priority is given to the number of still pictures recorded. Still pictures are recorded in normal picture quality.

Recording

Various recording functions

Zoom in/out function

HDD SD

SDR-H250:

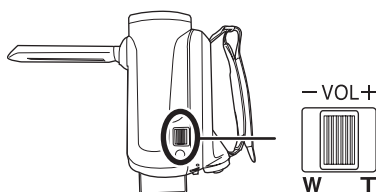
You can zoom in up to 10× optically.

SDR-H21/SDR-H20:

You can zoom in up to 32× optically.

◇ Rotate the mode dial to select  or .

Move the zoom lever.

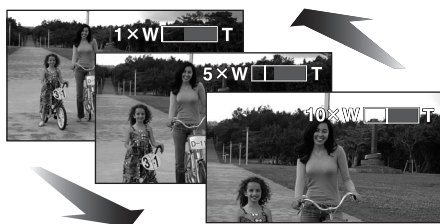


T side:

Close-up recording (zoom in)

W side:

Wide-angle recording (zoom out)



- When zooming in while holding this unit by hand, we recommend using the image stabilizer function. (→ 150)
- When distant subjects are brought closer, they are focused at about 1 m (SDR-H250)/1.3 m (SDR-H21/SDR-H20) or more.
- When the zoom magnification is 1×, this unit can focus on a subject approx. 3.5 cm

(SDR-H250)/2 cm (SDR-H21/SDR-H20) away from the lens. (Macro function)

- The zoom speed varies depending on the range over which the zoom lever is moved. (The zoom speed does not vary when operating with the remote control.)
- When the zoom speed is high, the subject may not be focused easily.
- If you take your finger off the zoom lever during zoom operation, the operation sound may be recorded. When returning the zoom lever to the original position, move it quietly.

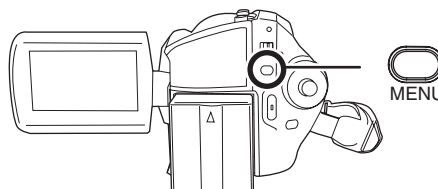
Digital zoom function

HDD SD

If the zoom magnification exceeds 10× (SDR-H250)/32× (SDR-H21/SDR-H20), then the digital zoom function will be activated. The maximum magnification provided by the digital zoom can be switched.

◇ Rotate the mode dial to select .

Press the MENU button, then select [ADVANCED] → [D.ZOOM] → desired item and press the joystick.



SDR-H250:

[OFF]: Optical zoom only (Up to 10×)

[25×]: Up to 25×

[700×]: Up to 700×

- If [25×] or [700×] is selected, the digital zoom range is displayed in blue while zooming.

SDR-H21/SDR-H20:

[OFF]: Optical zoom only (Up to 32×)

[50×]: Up to 50×

[1000×]: Up to 1000×

- If [50×] or [1000×] is selected, the digital zoom range is displayed in blue while zooming.

- The larger the digital zoom magnification, the more the image quality is degraded.

Recording

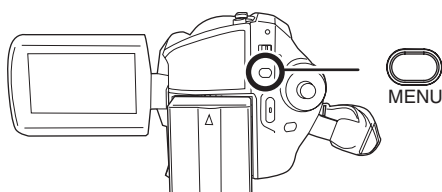
- This function cannot be used in picture recording mode.

To use the zoom microphone function

HDD SD

The zoom microphone is linked to the zooming operation so that far-away sounds with a tele-shot and close-up sounds with a wide-angle shot are recorded more clearly.

- ◇ Rotate the mode dial to select .
- Press the **MENU** button, then select **[ADVANCED]** → **[ZOOM MIC]** → **[ON]** and press the joystick.

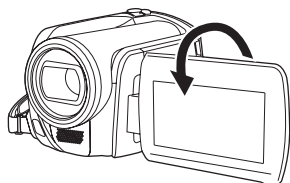


Recording yourself

HDD SD

You can record yourself while viewing the LCD monitor.

- ◇ Rotate the mode dial to select or .
- Rotate the LCD monitor towards the lens side.



The image is horizontally flipped as if you see a mirror image. (However the image recorded is the same as a normal recording.)

- When the LCD monitor is rotated towards the lens side, the icon will not be displayed even if you press the joystick.
- Only some indications will appear on the screen. When appears, return the direction of the LCD monitor to normal position and check the warning/alarm indication. (→ 194)

Recording with the video light (SDR-H250/SDR-H21)

This built-in video light is for recording in dark places.

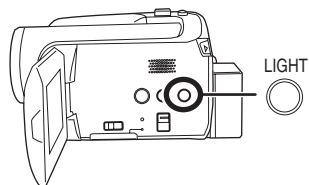
HDD SD

Gain up mode works with the video light to enhance the light's brightness and brighten the natural colours in a scene.

- (SDR-H250) Gain up mode cannot be used in picture recording mode.

- ◇ Rotate the mode dial to select or .

Press the **LIGHT** button.



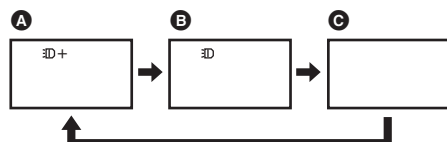
Each time you press the **LIGHT** button:

- Video light and gain up mode on [(SDR-H250) video recording mode only]:**
Brighter than when only the video light is on, but washed out images will appear.
- Video light on:**
To eliminate washed out images, use this mode.
- Video light off**

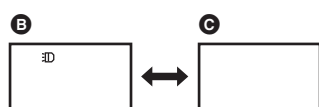
Recording

SDR-H250:

- Video recording mode

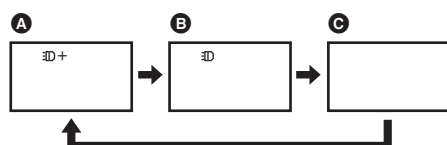


- Picture recording mode



SDR-H21:

- Video recording mode/Picture recording mode



- The subject should be within 1.3 m of the unit.
- Using the video light reduces battery time.
- Set the video light to off when not in use.
- Do not look directly into the light.
- Using the colour night view function at the same time will make conditions even brighter.
- The video light enables brightening of the images taken in a dimly-lit place. We also recommend using it in a bright place to obtain high quality images.
- If you turn off the power or operate the mode dial, the video light is turned off.

Backlight compensation function

This is for protecting a backlit subject from being darkened.

HDD SD

Use this function when the light is emanating from behind the subject and the subject appears dark.

- ◇ Rotate the mode dial to select or .

- 1 Press the joystick. Then move the joystick down to display the icon shown in the illustration.



- 2 Move the joystick up to select .



The image on the screen will become brighter.

To return to normal recording

Select again.

- If you turn off the power or operate the mode dial, the backlight compensation function is cancelled.

Fade in/fade out function

HDD SD

Fade in:

The image and audio gradually appear.

Fade out:

The image and audio gradually disappear.

- ◇ Rotate the mode dial to select .

- 1 Press the joystick. Then move the joystick down to display the icon shown in the illustration.



Recording

2 Move the joystick left to select [B].**3 Press the recording start/stop button.**

Start recording. (Fade in)



When you start recording, the image/audio gradually appears.

Pause recording. (Fade out)



The image/audio gradually disappears. After the image/audio completely disappears, recording stops.

- After recording, the fade setting is cancelled.

To cancel fading

Select [B] again.

To select the colour for fade in/out

The colour which appears in fading pictures can be selected.

Press the MENU button, then select [ADVANCED] → [FADE COLOUR] → [WHITE] or [BLACK] and press the joystick.

- If you turn off the power, the fade function is cancelled.
- While the fade in/fade out function is selected, it takes several seconds to display the image when you start recording. It also takes several seconds to pause recording.
- The thumbnails of scenes recorded using fade in become black (or white).

Soft skin mode

This makes skin colours appear softer for a more attractive appearance.

HDD SD

This is more effective if you record a person closely from the torso up.

- ◇ Rotate the mode dial to select  or .

1 Press the joystick. Then move the joystick down to display the icon shown in the illustration.**2 Move the joystick left to select [Soft skin mode icon].****To cancel the soft skin mode**

Select [Soft skin mode icon] again.

Recording

- If the background or anything else in the scene has colours similar to the skin colour, they will also be smoothed.
- If the brightness is insufficient, the effect may not be clear.
- You may not be able to see the face clearly when recording a distant person. In this case, cancel soft skin mode or zoom in on the face.

Tele macro function (SDR-H250)

This is for bringing only what you want to record into focus to take close-ups.

HDD SD

By focusing only on the subject and blurring the background, the image can be impressive. The unit can focus on the subject at a distance of approx. 50 cm.

- ◇ Rotate the mode dial to select  or .

- 1 Press the joystick. Then move the joystick down to display the icon shown in the illustration.**



- 2 Move the joystick right to select [🌙].**



- If the magnification is 10× or less, then it is automatically set to 10×.

To cancel the tele macro function

Select [🌙] again.

- If a sharper focus cannot be achieved, adjust the focus manually. (→ 152)
- In the following cases, the tele macro function is cancelled.
 - The zoom magnification becomes lower than 10×.
 - The power is turned off or the mode dial is operated.

Colour night view function

This allows recording in dark locations.

HDD SD

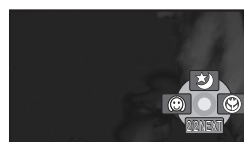
This function allows you to record colour subjects in dark locations to stand out against the background.

Attach this unit to a tripod, and you can record images free from vibration.

- Minimum required illumination: approx. 1 lx (SDR-H250)/approx. 2 lx (SDR-H21/SDR-H20)
- Recorded scene is seen as if frames were missed.

- ◇ Rotate the mode dial to select .

- 1 Press the joystick. Then move the joystick down to display the icon shown in the illustration.**



- 2 Move the joystick up to select [🌙].**



- If it is difficult to focus, adjust the focus manually. (→ 152)

Recording

To cancel the colour night view function

Select [★] again.

- The colour night view function makes the signal charging time of CCD up to approximately 25× longer than usual, so that dark scenes can be recorded brightly. For this reason, bright dots that are usually invisible may be seen, but this is not a malfunction.
- If you turn off the power or operate the mode dial, the colour night view function is cancelled.
- If set in a bright place, the screen may become whitish for a while.

Self-timer recording

This is for recording shots of yourself as well.

HDD SD

You can record still pictures using the timer.

◇ Rotate the mode dial to select .

1 Press the joystick. Then move the joystick down to display the icon shown in the illustration.



2 Move the joystick left to select .



3 Press the Photoshot button .

After the  display flashes for approx.

10 seconds, a still picture will be recorded.

- After recording, the self-timer is cancelled.
- If you press the Photoshot button  halfway and then fully in auto focus mode, the subject

is focused when the button is pressed halfway. (SDR-H250)

- When you press the Photoshot button  fully in auto focus mode, the subject is focused just before recording. (SDR-H250)

To stop the timer midway through

Press the MENU button. (The self-timer setting is cancelled.)

- If you turn off the power, the self-timer standby mode is cancelled.
- Depending on the time taken to bring the subject into focus, the recording may take longer than the set time before the picture is taken.

Recording guideline function

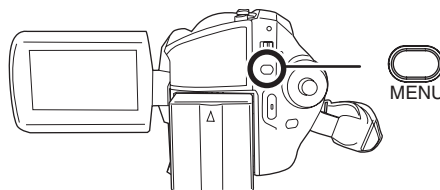
Checking if the image is level.

HDD SD

You can check if the image is level while recording by using the lines displayed on the screen.

◇ Rotate the mode dial to select  or .

Press the MENU button, then select [BASIC] → [GUIDE LINES] → [ON] and press the joystick.

**To cancel the Recording guideline function**

Press the MENU button, then select [BASIC] → [GUIDE LINES] → [OFF] and press the joystick.

- The guidelines do not appear on the images actually recorded.
- The guidelines are not displayed while rotating the LCD monitor frontward to record yourself.

Recording

Wide mode

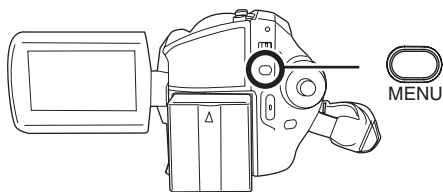
This is for selecting the screen's aspect ratio when recording motion pictures.

HDD SD

This allows you to record images compatible with wide-screen TVs (16:9) and regular TVs (4:3).

■ Recording images with a 16:9 aspect ratio

◇ Rotate the mode dial to select . Press the MENU button, then select [BASIC] → [REC ASPECT] → [16:9] and press the joystick.



■ Recording images with a 4:3 aspect ratio

◇ Rotate the mode dial to select . Press the MENU button, then select [BASIC] → [REC ASPECT] → [4:3] and press the joystick.

- The default setting is [16:9].

Image stabilizer function

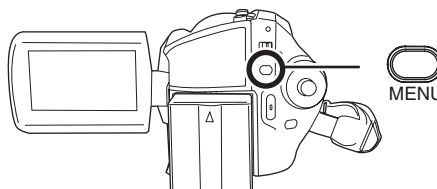
This is for reducing image shakes during recording.

HDD SD

Reduces the image shaking due to hand movement when recording.

◇ Rotate the mode dial to select  or .

Press the MENU button, then select [ADVANCED] → [O.I.S.] → [ON] and press the joystick.



To cancel the image stabilizer function

Press the MENU button, then select [ADVANCED] → [O.I.S.] → [OFF] and press the joystick.

- This function's default setting is [ON].
- In the picture recording mode, pressing the Photoshot button  halfway increases the effect of the image stabilizer function. (MEGA optical image stabilizer) (SDR-H250)
- In the following cases, the image stabilizer function may not work effectively.
 - When the digital zoom is used
 - When the unit is shaken greatly
 - When you record a moving subject while tracking it

Wind noise reduction function

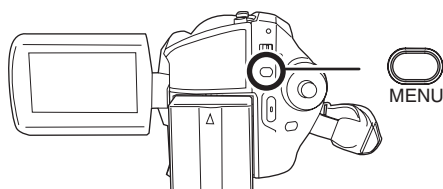
This is for reducing the wind noise coming into the microphone when recording.

HDD SD

◇ Rotate the mode dial to select .

Recording

Press the MENU button, then select [ADVANCED] → [WIND CUT] → [ON] and press the joystick.



To cancel the wind noise reduction function

Press the MENU button, then select [ADVANCED] → [WIND CUT] → [OFF] and press the joystick.

- This function's default setting is [ON].
- The wind noise reduction depends on the wind strength. (If this function is activated in strong winds, the stereo effect may be reduced. When the wind weakens, the stereo effect will be restored.)

Manual recording functions

Scene mode

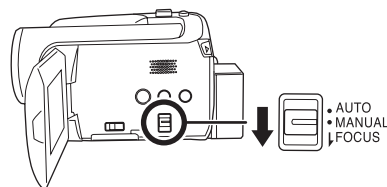
This is for recording in various situations.

HDD SD

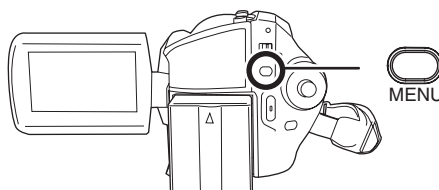
When you record images in different situations, this mode automatically sets optimum shutter speeds and apertures.

- ◇ Rotate the mode dial to select  or .

1 Set the AUTO/MANUAL/FOCUS switch to MANUAL.



2 Press the MENU button, then select [BASIC] → [SCENE MODE] → desired item and press the joystick.



[] Sports

To record sports scenes or scenes where there are quick motions

[] Portrait

To make people stand out against the background

[] Low light

To make the scene brighter in dark conditions

[] Spotlight

To make the subject under a spotlight look more attractive

[] Surf & snow

To record images in bright places such as ski slopes and beaches

To cancel the scene mode function

Press the MENU button, then select [BASIC] → [SCENE MODE] → [OFF] and press the joystick.

- You can also cancel the scene mode function by setting the AUTO/MANUAL/FOCUS switch to AUTO.

Sports mode

- For slow-motion playback or playback pause of recorded pictures, this mode helps diminish camera shake.

Recording

- During normal playback, the image movement may not look smooth.
- Avoid recording under fluorescent light, mercury light or sodium light because the colour and brightness of the playback image may change.
- If you record a subject illuminated with strong light or a highly reflective subject, vertical lines of light may appear.
- If the brightness is insufficient, the sports mode does not function. The [] display flashes.
- If this mode is used indoors, the screen may flicker.

Portrait mode

- If this mode is used indoors, the screen may flicker. If so, change the scene mode setting to [OFF].

Low light mode

- Extremely dark scenes may not be able to be recorded finely.

Spotlight mode

- If the recording subject is extremely bright, the recorded image may become whitish and the periphery of the recorded image extremely dark.

Surf & snow mode

- If the subject is extremely bright, the recorded image may become whitish.

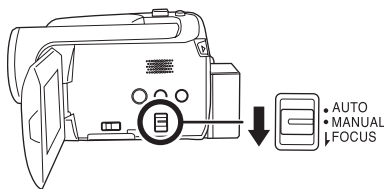
Manual focus adjustment

HDD SD

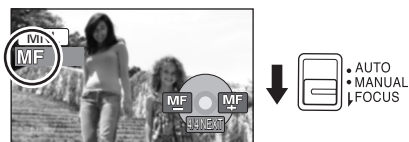
If auto focusing is difficult due to the conditions, then manual focusing is available.

- ◇ Rotate the mode dial to select  or .

1 Set the AUTO/MANUAL/FOCUS switch to MANUAL.



2 Move the switch down and set it to FOCUS position.

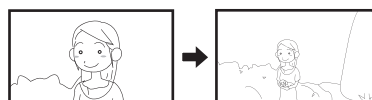


The manual focus indication [MF] and the icon shown in the illustration appear.

3 Move the joystick left or right to bring the subject into focus.



- The subject may not be in focus when zoomed in if focusing with a wide angle. First, zoom in on the subject, and then focus on it.



To restore to the automatic adjustment

Press the AUTO/MANUAL/FOCUS switch down again to the FOCUS position.

- You can also restore the auto focusing by setting the AUTO/MANUAL/FOCUS switch to AUTO.

White balance

This is for recording in natural colours.

HDD SD

The automatic white balance function may not reproduce natural colours depending on the scenes or lighting conditions. If so, you can adjust the white balance manually.

- ◇ Rotate the mode dial to select  or .

Recording

1 Set the AUTO/MANUAL/FOCUS switch to MANUAL.

The icon shown in the illustration is displayed automatically.

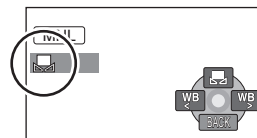
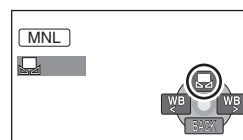
2 Move the joystick up to select [WB].**3 Move the joystick left or right to select the white balance mode.**

- [AWB] **Auto white balance adjustment**
- [☀] **Indoor mode (for recording under incandescent lamps)**
- Incandescent lights, halogen lamps
- [☀] **Outdoor mode**
- Outdoors under a clear sky
- [📺] **Manual adjustment mode**
- Mercury-vapor lamps, sodium lamps, some fluorescent lights
 - Lights used for wedding receptions at hotels, stage spotlights in theatres
 - Sunrise, sunset, etc.

To restore to the automatic adjustment

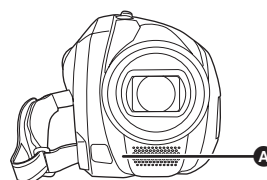
Set the white balance mode to [AWB].

- You can also restore the automatic adjustment by setting the AUTO/MANUAL/FOCUS switch to AUTO.

To set the white balance manually**1 Select [📺], and fill the screen with a white subject.****2 Move the joystick up to select [📺].**

When the [📺] display changes from flashing to on, setting is complete.

- When the [📺] display continues flashing, the white balance cannot be set because the place is dark etc. In this case, use the automatic white balance.

■ About the white balance sensor A

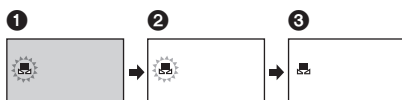
The white balance sensor detects the type of light source during recording.

Do not cover the white balance sensor during recording, or it may not function properly.

Recording

■ About the black balance adjustment (SDR-H250)

This is one of the 3CCD system functions that automatically adjusts the black when the white balance is set in the manual adjustment mode. When the black balance is adjusted, the screen will temporarily be black. (The black balance cannot be adjusted manually.)



- ① Black balance adjustment in progress. (Flashes.)
- ② White balance adjustment in progress. (Flashes.)
- ③ Adjustment completed. (Lights up.)

- (SDR-H250) When the unit is turned on with the lens cover closed, the automatic white balance adjustment may not function properly. Please turn the unit on after opening the lens cover.
- (SDR-H21/SDR-H20) When the unit is turned on with the lens cap attached, the automatic white balance adjustment may not function properly. Please turn the unit on after removing the lens cap.
- When the [WB] display flashes, the manual white balance previously adjusted is stored. Whenever recording conditions change, re-set the white balance for correct adjustment.
- When setting both the white balance and the iris/gain, set the white balance first.

Manual shutter speed/aperture adjustment

HDD SD

Shutter Speed:

Adjust it when recording fast-moving subjects.

Aperture:

Adjust it when the screen is too bright or too dark.

◇ Rotate the mode dial to select or .

1 Set the AUTO/MANUAL/FOCUS switch to MANUAL.



The icon shown in the illustration is displayed automatically.

2 Move the joystick left or right to select [IRIS] (aperture) or [SHTR] (shutter speed).



3 Move the joystick left or right to make the adjustment.



A Shutter speed:

- 1/50 to 1/8000
- 1/25 to 1/2000 (SDR-H250)
- 1/50 to 1/500 (SDR-H21/SDR-H20)

- The shutter speed closer to 1/8000 is faster.

B Iris/Gain value:

CLOSE → (F16 to F2.0) → OPEN → (0dB to 18dB)

- Value closer to [CLOSE] darken the image.
- Value closer to [18dB] brighten the image.
- When the iris value is adjusted to brighter than [OPEN], it changes to the gain value.

To restore to automatic adjustment

Set the AUTO/MANUAL/FOCUS switch to AUTO.

Recording

- When setting both the shutter speed and the iris/gain value, set the shutter speed and then set the iris/gain value.

■ Manual shutter speed adjustment

- Avoid recording under fluorescent light, mercury light or sodium light because the colour and brightness of the playback image may change.
- If you increase the shutter speed manually, the gain value will increase automatically depending on how much the sensitivity lowers and the noise on the screen may increase.
- You may see vertical lines of light in the playback image of a brightly shining subject or highly reflective subject, but this is not a malfunction.
- During normal playback, image movement may not look smooth.
- When recording in an extremely bright place, the screen may change colour or flicker. If so adjust the shutter speed manually to [1/50] or [1/100].

■ Manual iris/gain adjustment

- If the gain value is increased, the noise on the screen increases.
- Depending on the zoom magnification, there are iris values that are not displayed.

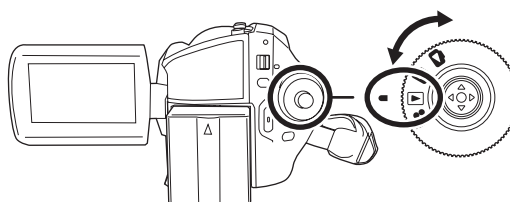
Playback

Motion picture playback

HDD SD

Play back the motion pictures recorded on the internal HDD or SD card. Use the menu to select the desired playback medium. (→ below)

1 Rotate the mode dial to select .



2 Press the MENU button, then select [MEDIA SELECT] → [HDD] or [SD CARD] to select the desired medium and press the joystick.

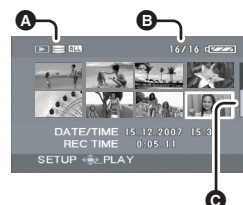
The motion pictures recorded on the selected medium are displayed as thumbnails.

3 Select the scene to be played back.

- A** Selected medium
- B** Scene number
- C** Scroll bar display

The selected scene will be encircled by a yellow frame.

- When 9 or more scenes have been recorded, the next (or previous) page is displayed by moving the joystick.
- If you move and hold the joystick up or down, you can fast forward or fast rewind the pages. The screen will not change at this time, but the scene numbers and scroll bar display will change. Release the joystick when you have arrived at the page with the scene you want to display.



4 Press the joystick.

The selected scene is played back on the full screen.

The operation icon is automatically displayed on the screen.



5 Move the joystick to operate.

- : Playback/Pause
- : Skip playback (backward)
- : Skip playback (forward)
- : Stops the playback and shows the thumbnails.

- No sound will be heard except during normal playback.
- If pause play is continued for 5 minutes, the screen returns to the thumbnails.

Playback

- When the amount of time recorded on the scene is short, playback may not be possible.
- When a scene is displayed as [!] on the thumbnail display, playback is not possible.
- The power will not turn off when the LCD monitor is closed.
- When playing back motion pictures recorded on an SD card with other products on this unit or playing back motion pictures recorded on an SD card with this unit on other products, the picture quality may deteriorate and they may be unplayable. (The message "CANNOT PLAY." appears.)
- The time displayed may be different from the recording time and it may take time to display the thumbnail display when playing back motion pictures recorded on an SD card with other products.

To display the recording date during playback

Press the **MENU** button, then select **[SETUP] → [DATE/TIME] → [D/T] or [DATE]** and press the joystick.

- You can also show or change the date and time display by repeatedly pressing the DATE/TIME button on the remote control. (SDR-H250)
- The recording time is not displayed on the screen during playback of scenes recorded on an SD card with other products.

Fast forward/rewind playback

Move and hold the joystick right during playback until fast-forward starts.

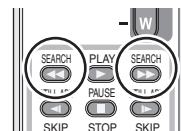
(Move and hold the joystick left to rewind.)

- Move the joystick again to increase the speed.
- Normal playback is restored when you move the joystick up.



■ Operating with the remote control (SDR-H250)

Press the ◀◀ or ▶▶ button.



Slow-motion playback

1 Move the joystick up during playback to pause the playback.

2 Move and hold the joystick right.
(Slow-motion pictures will be played back in reverse when you move and hold the joystick left.)

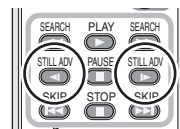
- Normal playback is restored when you move the joystick up.



Playback

■ Operating with the remote control (SDR-H250)

Press the ◀ or ▶ button.



Frame-by-frame playback

The motion picture is advanced one frame at a time.

1 Move the joystick up during playback to pause the playback.

2 Move the joystick right.
(The frames will be advanced one at a time in the reverse direction when you move the joystick left.)

- Normal playback is restored when you move the joystick up.

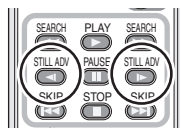


■ Operating with the remote control (SDR-H250)

1 Press the || button.



2 Press the ◀ or ▶ button.



To adjust the volume

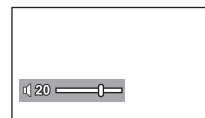
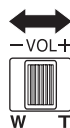
Adjust the speaker volume during playback.

Move the volume lever to change the volume level.

Towards “+”: increases the volume

Towards “-”: decreases the volume

- The further the [] indicator moves to the right, the higher the volume level becomes.
- When the adjustment is completed, the volume setting display will disappear.



Playing back motion pictures by date

Recorded scenes are grouped by date on this unit.

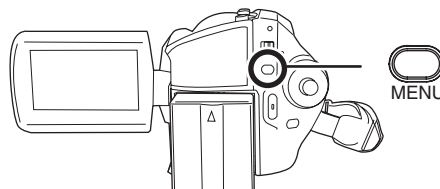
Playback

Scenes recorded on the same day can be played back in succession.

- 1 Press the MENU button, then select [PLAY SETUP] → [PLAY MODE] → [BY DATE] and press the joystick.**

The [VIEW BY DATE] screen is displayed by month when playing back motion pictures on the HDD. Proceed to step 3 when playing back an SD card.

- When [PLAY MODE] is set to [VIEW ALL], all recorded motion pictures will be played back in succession.



- 2 (When playing back motion pictures on the HDD only)
Move the joystick left or right to select the month.**



- 3 Move the joystick up or down to select the date for playback, then press the joystick.**

The scenes recorded on the same day are displayed as thumbnails.

- 4 Select the scene to be played back.**

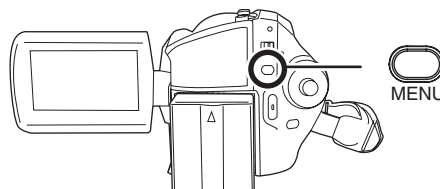
- Even if scenes are recorded on the same day, they are grouped separately when the number of scenes exceeds 99.

Resuming the previous playback

- Press the MENU button, then select [PLAY SETUP] → [RESUME PLAY] → [ON] and press the joystick.**

If playback of a motion picture is stopped, [R] appears on the thumbnail view of the stopped scene.

- The resume position on the HDD and the SD card is memorised.
- If playback is stopped at any point during a motion picture while [RESUME PLAY] is set to [OFF], the next time the motion picture is played back, it will be from the beginning.
- The resume position memorised is cleared if you operate the mode dial, etc. (The [RESUME PLAY] setting is kept.)
- [RESUME PLAY] is set to [OFF] if an SD card with the write protection switch at the LOCK position is inserted. (→ 118)



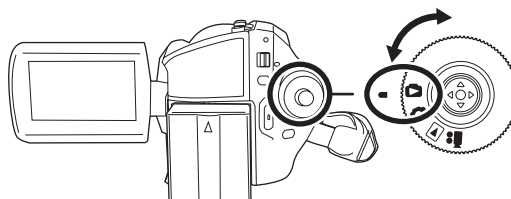
Playback

Still picture playback

HDD **SD**

Play back the still pictures recorded on the internal HDD or SD card. Use the menu to select the desired playback medium. (→ below)

- 1 Rotate the mode dial to select .**



- 2 Press the MENU button, then select [MEDIA SELECT] → [HDD] or [SD CARD] to select the desired medium and press the joystick.**

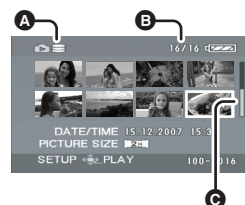
The still pictures recorded on the selected medium are displayed as thumbnails.

- 3 Select the file to be played back.**

- A** Selected medium
- B** File number
- C** Scroll bar display

The selected file will be encircled by a yellow frame.

- When 9 or more files have been recorded, the next (or previous) page is displayed by moving the joystick.
- If you move and hold the joystick up or down, you can fast forward or fast rewind the pages. The screen will not change at this time, but the file numbers and scroll bar display will change. Release the joystick when you have arrived at the page with the file you want to display.



- 4 Press the joystick.**

The selected file is played back on the full screen.

The operation icon is automatically displayed on the screen.



- 5 Move the joystick to operate.**

▶/||: Slide show (playback of the still pictures in numerical order) start/pause.

◀: Plays back the previous picture.

▶: Plays back the next picture.

■: Stops the playback and shows the thumbnails.

■ About still picture compatibility

- This unit is compliant with the unified standard DCF (Design rule for Camera File system) established by JEITA (Japan Electronics and Information Technology Industries Association).

Playback

- The file format supported by this unit is JPEG. (Not all JPEG formatted files will be played back.)
 - If a non-standard file is played back, the folder/file number may not be displayed.
 - This unit may degrade or not play back data recorded or created on another product and another product may degrade or not play back data recorded on this unit.
-
- Do not operate the mode dial during the slide show.
 - While this unit accesses the SD card (the access lamp is lit), do not remove the SD card.
 - It takes time to display the file depending on the number of pixels of the file.
 - When a file is displayed as [!] on the thumbnail display, playback is not possible.
 - If you attempt to play back a file recorded in a different format or file data is defective, an error message may appear.
 - The time displayed may be different from the recording time and it may take time to display the thumbnail display when playing back still pictures recorded on an SD card with other products.
 - The power will not turn off when the LCD monitor is closed.

Editing

Editing scenes

Deleting scenes

This is for deleting motion picture scenes.

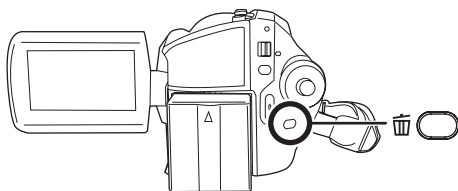
HDD SD

The deleted scenes cannot be restored.

Deleting scenes one at a time

- ◇ Rotate the mode dial to select .
- ◇ Select [HDD] or [SD CARD] in [MEDIA SELECT].

- 1 Press the  button during playback.**

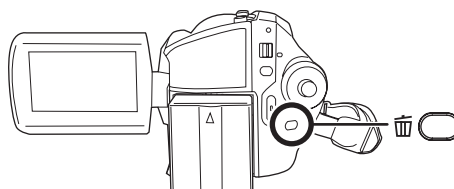


- 2 When the confirmation message appears, select [YES], then press the joystick.**

Deleting multiple scenes from the thumbnail display

- ◇ Rotate the mode dial to select .
- ◇ Select [HDD] or [SD CARD] in [MEDIA SELECT].

- 1 Press the  button in the thumbnail display.**



- 2 Select [ALL] or [SELECT] and press the joystick.**

- When [ALL] is selected, the following scenes will be deleted. Proceed to step 5.
 - When [PLAY MODE] is set to [VIEW ALL]: All the scenes on the selected medium except the locked scenes
 - When [PLAY MODE] is set to [BY DATE]: All the scenes selected by date except the locked scenes

- 3 (Only when [SELECT] is selected in step 2) Select the scene to be deleted, then press the joystick.**



The selected scene is encircled by a red frame.

- When the joystick is pressed again, the selected scene will be cancelled.
- Up to 50 scenes can be set in succession.

- 4 (Only when [SELECT] is selected in step 2) Press the  button.**

- 5 When the confirmation message appears, select [YES], then press the joystick.**

(Only when [SELECT] is selected in step 2)

To continue deleting other scenes

Repeat steps 3-5.

Editing

To cancel deleting halfway

Press the MENU button.

- Scenes are deleted from the last scene on the thumbnail display. The scenes that have already been deleted when the deletion is cancelled cannot be restored.

To complete editing

Press the MENU button.

- You can also delete scenes by pressing the MENU button, selecting [DELETE] and then selecting [ALL] or [SELECT].
- In case of [ALL], the deletion may take time if there are many scenes.
- Do not turn off this unit while deleting.
- When you delete scenes, use a battery with sufficient battery power or use the AC adaptor.
- Do not open the card slot cover while deleting scenes recorded on an SD card. The deletion will stop.
- The locked scenes cannot be deleted.

Locking motion picture scenes

This is for preventing motion picture scenes from being deleted by mistake.

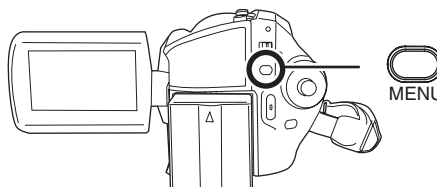
HDD SD

Motion picture scenes can be locked so that they are not deleted by mistake. (However, please be aware that if a medium is formatted, then all the data on the medium will be erased.)

- ◇ Rotate the mode dial to select .
- ◇ Select [HDD] or [SD CARD] in [MEDIA SELECT].

- 1 Press the MENU button, then select [PLAY SETUP] → [LOCK**

SET] → [YES] and press the joystick.



- 2 Select the scene to be protected, then press the joystick.**



[] display appears and the selected scene is locked.

- Press the joystick again to release the lock setting.
- You can also select multiple scenes in succession.

To complete the settings

Press the MENU button.

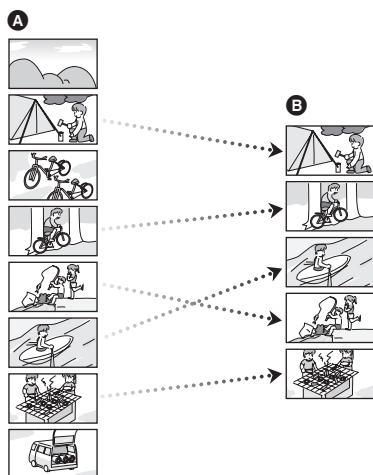
Using playlists**What is a playlist?**

You can create a playlist by gathering your favourites from the recorded scenes.

Since the playlist is not created by copying data, you will consume little of the capacity by making a playlist.

Editing

- If you create or delete playlists, the original scenes will not be modified. Editing scenes on a playlist will not affect the original scenes.



- A** Recorded scenes
B Playlist

- You can create a playlist on the HDD only. You cannot create a playlist on an SD card.
- The maximum number of items on the HDD
 - Playlists: 4
 - Playlist scenes: 99
- If original scenes are deleted, the portion of playlists created with these scenes is also deleted.

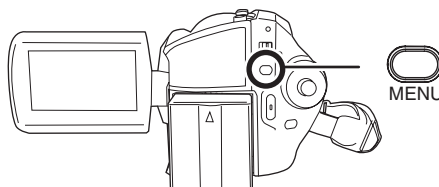
Creating a new playlist

HDD

- ◆ Rotate the mode dial to select .
- ◆ Select [HDD] in [MEDIA SELECT].

1 Press the MENU button, then select [PLAY SETUP] →

[PLAYLIST] → [CREATE] and press the joystick.



2 Select the scene to be added to the playlist, then press the joystick.



The selected scene is encircled by a red frame.

- When the joystick is pressed again, the selected scene will be cancelled.
- Up to 50 scenes can be set in succession.
- The scenes are registered in the playlist in the order that they were selected. After creating a playlist, the order of the scenes in it can be changed with the [MOVE] function. (→ 166)

3 Press the MENU button.

4 When the confirmation message appears, select [YES], then press the joystick.

The thumbnail view screen of the created playlist is displayed.

To add another scene to the same playlist

Select [ADD]. (→ 165)

To play back a playlist

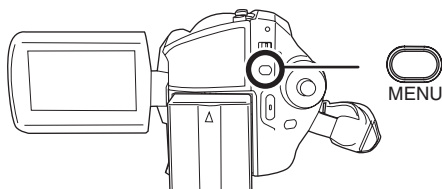
Select the scene to start playback, then press the joystick.

Playing back a playlist

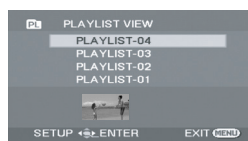
HDD

- ◇ Rotate the mode dial to select .
- ◇ Select [HDD] in [MEDIA SELECT].

- 1 Press the MENU button, then select [PLAY SETUP] → [PLAYLIST] → [VIEW LIST] and press the joystick.

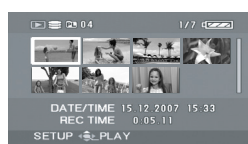


- 2 Select the playlist to be played back, then press the joystick.



Scenes in the selected playlist are displayed as thumbnails.

- 3 Select the scene to start playback, then press the joystick.



To select a different playlist

Press the MENU button, then select [PLAYLIST VIEW] and press the joystick.

To return to showing the original scenes

Press the MENU button, then select [END] and press the joystick.

Editing a playlist

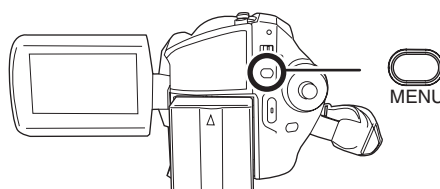
HDD

Editing scenes on a playlist will not affect the original scenes.

Adding scenes to playlist

- ◇ Select playlist playback mode. (→ 165, “Playing back a playlist”, steps 1 and 2)

- 1 Press the MENU button, then select [EDIT] → [ADD] → [YES] and press the joystick.



- 2 Select the scene to be added, then press the joystick.



The selected scene is encircled by a red frame.

- When the joystick is pressed again, the selected scene will be cancelled.
- Up to 50 scenes can be set in succession.
- The scenes are added to the playlist in the order that they were selected. The order of the scenes in the playlist can be changed by [MOVE] function. (→ 166)

- 3 Press the MENU button.

- 4 When the confirmation message appears, select [YES], then press the joystick.

Editing

The thumbnail view screen of the playlist that scenes were added to is displayed.

To continue adding scenes to the playlist

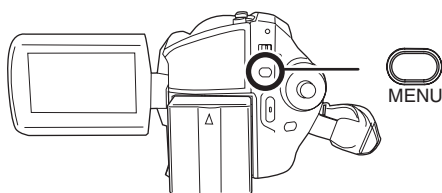
Repeat steps 1-4.

Moving scenes

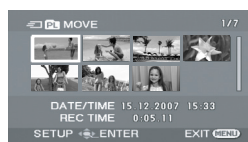
The scenes in a playlist can be moved.

- ◇ Select playlist playback mode. (→ 165, "Playing back a playlist", steps 1 and 2)

- 1** Press the MENU button, then select [EDIT] → [MOVE] → [YES] and press the joystick.

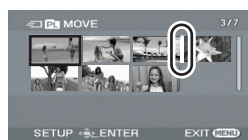


- 2** Select the scene to be moved, then press the joystick.



The selected scene is encircled by a red frame, and the position to insert is shown by a yellow bar.

- 3** Select the position to insert the scene, then press the joystick.



To continue moving other scenes in the playlist

Repeat steps 2-3.

To complete editing

Press the MENU button.

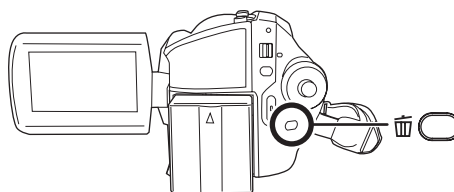
Deleting scenes

- Deleting scenes on a playlist will not affect the original scenes.

Deleting scenes one at a time

- ◇ Select playlist playback mode. (→ 165, "Playing back a playlist", steps 1 and 2)

- 1** Press the  button during playback.

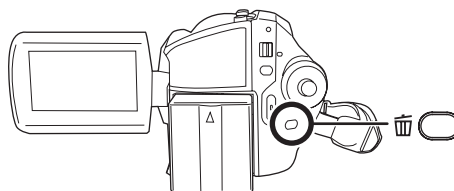


- 2** When the confirmation message appears, select [YES], then press the joystick.

Deleting multiple scenes from the thumbnail display

- ◇ Select playlist playback mode. (→ 165, "Playing back a playlist", steps 1 and 2)

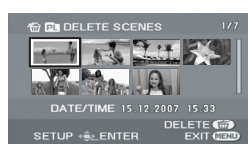
- 1** Press the  button in the thumbnail display.



Editing

2 Select [ALL] or [SELECT] and press the joystick.

- When [ALL] is selected, the selected playlist will be erased. Proceed to step 5.

3 (Only when [SELECT] is selected in step 2) Select the scene to be deleted, then press the joystick.

The selected scene is encircled by a red frame.

- When the joystick is pressed again, the selected scene will be cancelled.
- Up to 50 scenes can be set in succession.

4 (Only when [SELECT] is selected in step 2) Press the button.**5 When the confirmation message appears, select [YES], then press the joystick.**

(Only when [SELECT] is selected in step 2)

To continue deleting other scenes

Repeat steps 3-5.

To cancel deleting halfway

Press the MENU button.

- Scenes are deleted from the last scene on the thumbnail display. The scenes that have already been deleted when the deletion is cancelled cannot be restored.

To complete editing

Press the MENU button.

- You can also delete scenes by pressing the MENU button, selecting [EDIT] → [DELETE] and then selecting [ALL] or [SELECT].
- Deleting scenes on a playlist will not increase the remaining capacity for recording.
- The playlist itself is deleted if you delete all the scenes in it.

- When a playlist is deleted, the number of each subsequent playlist decreases by one.

Editing still pictures**Deleting still picture files**

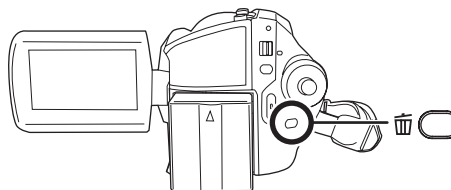
This is for deleting still picture files.

HDD SD

The deleted files cannot be restored.

Deleting files one at a time

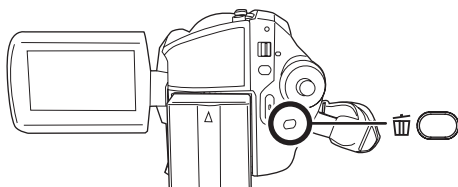
- ◇ Rotate the mode dial to select .
- ◇ Select [HDD] or [SD CARD] in [MEDIA SELECT].

1 Press the button during playback.**2 When the confirmation message appears, select [YES], then press the joystick.****Deleting multiple files from the thumbnail display**

- ◇ Rotate the mode dial to select .
- ◇ Select [HDD] or [SD CARD] in [MEDIA SELECT].

Editing

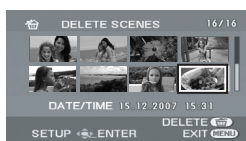
1 Press the button in the thumbnail display.



2 Select [ALL] or [SELECT] and press the joystick.

- When [ALL] is selected, all files on the medium except the locked files will be erased. Proceed to step 5.

3 (Only when [SELECT] is selected in step 2) Select the file to be deleted, then press the joystick.



The selected file is encircled by a red frame.

- When the joystick is pressed again, the selected file will be cancelled.
- Up to 50 files can be set in succession.

4 (Only when [SELECT] is selected in step 2) Press the button.

5 When the confirmation message appears, select [YES], then press the joystick.

(Only when [SELECT] is selected in step 2)

To continue deleting other files

Repeat steps 3-5.

To cancel deleting halfway

Press the MENU button.

- Files are deleted from the last file on the thumbnail display. The files that have already

been deleted when the deletion is cancelled cannot be restored.

To complete editing

Press the MENU button.

■ Deleting still picture files recorded on an SD card by other products

A still picture file (other than JPEG) that cannot be played back on this unit may be erased.

- You can also delete files by pressing the MENU button, selecting [DELETE] and then selecting [ALL] or [SELECT].
- In case of [ALL], the deletion may take time if there are many files.
- Do not turn off this unit while deleting.
- When you delete files, use a battery with sufficient battery power or use the AC adaptor.
- Do not open the card slot cover while deleting files recorded on an SD card. The deletion will stop.
- If files conforming to DCF standard are deleted, all the data related to the files will be deleted.

Locking still picture files

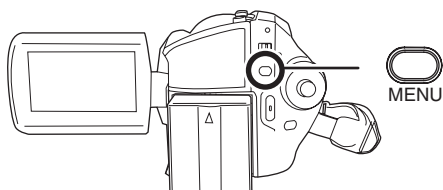
This is for preventing still picture files from being deleted by mistake.

HDD SD

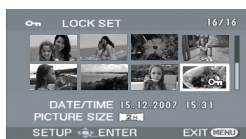
Still picture files can be locked so that they are not deleted by mistake. (However, please be aware that if a medium is formatted, then all the data on the medium will be erased.)

- ◇ Rotate the mode dial to select .
- ◇ Select [HDD] or [SD CARD] in [MEDIA SELECT].

- 1 Press the MENU button, then select [PHOTO SETUP] → [LOCK SET] → [YES] and press the joystick.



- 2 Select the file to be protected, then press the joystick.



[On] display appears and the selected file is locked.

- Press the joystick again to release the lock setting.
- You can also select multiple files in succession.

To complete the settings

Press the MENU button.

DPOF setting

This is for writing the printing data on an SD card.

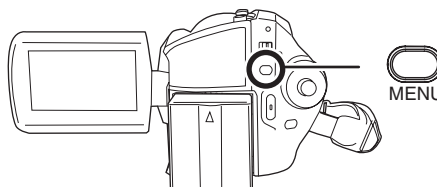
SD

You can write the data of the still pictures to be printed and the number of prints (DPOF data) onto the SD card.

- ◇ Rotate the mode dial to select .
- ◇ Select [SD CARD] in [MEDIA SELECT].

- 1 Press the MENU button, then select [PHOTO SETUP] →

[DPOF SET] → [SET] and press the joystick.



- 2 Select the file to be set, then press the joystick.



The number of prints set to be in DPOF is displayed.

- 3 Move the joystick up or down to select the number of prints, then press the joystick.

- You can select from 0 to 999. (The selected number of pictures can be printed with the printer supporting DPOF.)
- To cancel the setting, set the number of prints to [0].
- You can also select multiple files in succession.

To complete the settings

Press the MENU button.

To cancel all DPOF settings

Press the MENU button, then select [PHOTO SETUP] → [DPOF SET] → [CANCEL ALL] and press the joystick.

- When the confirmation message appears, select [YES], then press the joystick.

■ What is DPOF?

DPOF stands for Digital Print Order Format. This enables picture printing information to be written onto an SD card so that it can be used on a system supporting DPOF.

Editing

- The DPOF setting can be established for up to 999 files.
- DPOF setting made on other devices may not be recognised by this unit. Please perform the DPOF settings on this unit.
- You cannot add the recording date to pictures to be printed with the DPOF settings.

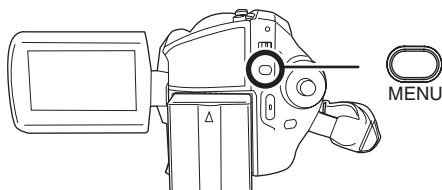
Copying still picture files

This is for copying still picture files from the HDD to an SD card or vice versa.

HDD SD

◇ Rotate the mode dial to select .

1 Press the MENU button, then select [PHOTO SETUP] → [COPY] → desired direction and press the joystick.

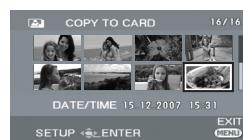


-  Copying from the HDD to an SD card
-  Copying from an SD card to the HDD

2 Select [SELECT] or [ALL] and press the joystick.

- When [ALL] is selected, all still picture files in the HDD or SD card will be copied. Proceed to step 5.

3 (Only when [SELECT] is selected in step 2)
Select the file to be copied, then press the joystick.



The selected file is encircled by a red frame.

- When the joystick is pressed again, the selected file will be cancelled.
- Up to 50 files can be set in succession.
- The files are copied in the order that they were selected.

4 (Only when [SELECT] is selected in step 2)
Press the MENU button.

5 When the confirmation message appears, select [YES], then press the joystick.

Copying of the file starts.

(Only when [SELECT] is selected in step 2)

To continue copying other files

Repeat steps 3-5.

To cancel copying halfway

Press the MENU button.

To complete editing

Press the MENU button.

- The copied files are recorded after the still picture files in the copy destination. (The file names or the folder names will differ from the original file.)
- The lock and DPOF settings of the file cannot be copied.
- In case of [ALL], the copy may take time if there are many files.
- Do not turn off this unit while copying.
- When you copy files, use a battery with sufficient battery power or use the AC adaptor.
- Do not open the card slot cover while copying. The copying will stop.

HDD management

Formatting HDD

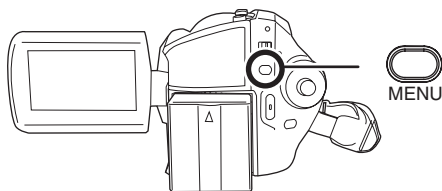
This is for initializing HDD.

HDD

Please be aware that if the HDD is formatted, then all the data recorded on the HDD will be erased. Store important data on a computer, etc.

- ◇ Rotate the mode dial to select .
- ◇ Select [HDD] in [MEDIA SELECT].

- 1** Press the MENU button, then select [SETUP] → [FORMAT HDD] → [YES] and press the joystick.



- 2** When the confirmation message appears, select [YES], then press the joystick.

- When formatting is complete, press the MENU button to exit the message screen.
- During formatting, do not turn this unit off.
- When you format the HDD, use a battery with sufficient battery power or the AC adaptor.
- During formatting, do not cause any vibrations or impacts to this unit.

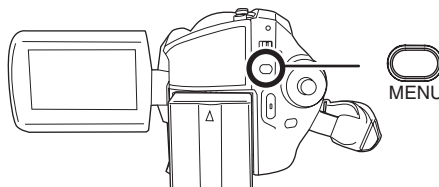
Displaying HDD information

HDD

Information concerning the space used and remaining on the HDD is displayed.

- ◇ Rotate the mode dial to select .
- ◇ Select [HDD] in [MEDIA SELECT].

Press the MENU button, then select [SETUP] → [HDD STATUS] → [YES] and press the joystick.



To exit the information screen

Press the MENU button.

- The 30 GB hard drive utilizes a portion of the storage space for formatting, file management and other purposes. 30 GB is 30,000,000,000 bytes. Usable capacity will be less.

Card management

Formatting an SD card

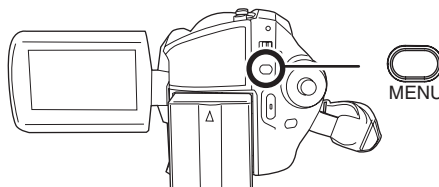
This is for initializing cards.

SD

Please be aware that if an SD card is formatted, then all the data recorded on the card will be erased. Store important data on a computer, etc.

- ◇ Select [SD CARD] in [MEDIA SELECT].

- 1** Press the MENU button, then select [SETUP] → [FORMAT CARD] → [YES] and press the joystick.



HDD and card management

2 When the confirmation message appears, select [YES], then press the joystick.

- When formatting is complete, press the MENU button to exit the message screen.
-
- Use this unit to format SD cards. If an SD card is formatted on other products (such as a computer), the time spent for recording may become longer and you may not be able to use the SD card.
 - Depending on the type of SD card being used, it may take time to format.
 - During formatting, do not turn this unit off.
 - When you format the SD card, use a battery with sufficient battery power or the AC adaptor.
 - Do not open the card slot cover while formatting. The formatting will stop.

With other products

With a TV

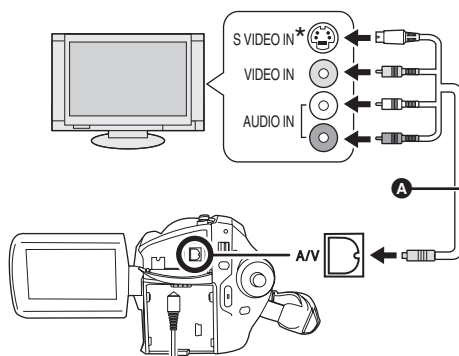
Playback on TV

HDD SD

The motion pictures and still pictures recorded by this unit can be played back on a TV.

- Use the AC adaptor to free you from worrying about the battery running down.

1 Connect this unit and a TV.



A AV/S cable (supplied)

- Insert the plugs as far as they will go.

* If the TV has an S Video terminal, also connect the S Video plug to it. This allows you to enjoy more beautiful pictures.

2 Turn on this unit, then rotate the mode dial to select or .

3 Press the MENU button, then select [MEDIA SELECT] → [HDD] or [SD CARD] to select the desired medium and press the joystick.

4 Change the input channel on the TV.

- The channel set will differ depending on the terminal to which the unit is connected.

5 Start playback on this unit.

The image and audio are output on the TV.

■ If the image or audio from this unit is not output on the TV

- Check that the plugs are inserted as far as they go.
- Check the connected terminal.
- **Check the TV's input setting (input switch).** (For more information, please read the operating instructions for the TV.)

- If you have a TV with an SD card slot, the motion pictures and still pictures recorded on an SD card may be played back on the TV. (Refer to the operating instructions of the TV for details about TV compatibility.)
- If the images are not displayed correctly on a wide-screen TV, adjust the aspect setting on the TV. (Refer to the operating instructions of the TV for details.) If the pictures are displayed squeezed horizontally on a regular TV (4:3), change the [TV ASPECT] setting on this unit. (→ below)

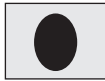
■ To watch images with a 16:9 aspect ratio on a regular TV (4:3)

When playing back motion pictures recorded with a 16:9 aspect ratio ([REC ASPECT] was set to [16:9]) or still pictures recorded with a 16:9 aspect ratio ([PICTURE SIZE] was set to []) (SDR-H250)/[] (SDR-H21/SDR-H20)) on a TV with a 4:3 aspect ratio, the images may be squeezed horizontally. In this case, change the menu setting to play back the pictures in the original aspect ratio. (Depending on the TV setting, the pictures may not be displayed correctly. For more information, please read the operating instructions of your TV.)

Press the MENU button, then select [SETUP] → [TV ASPECT] → [4:3] and press the joystick.

Example of images with a 16:9 aspect ratio on a regular TV (4:3)

With other products

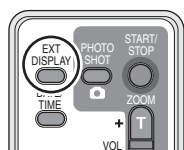
[TV ASPECT] setting	
[16:9]	[4:3]
	

- This function's default setting is [16:9].

■ To display the on-screen information on the TV (SDR-H250)

The information displayed on the screen (operation icon and time code, etc.) can be displayed on the TV.

Press the EXT DISPLAY button on the remote control.



- Press the button again to erase the information.
- The screen on this unit will not change.

With a DVD recorder

Dubbing recordings onto a DVD recorder

SD

If you have a DVD recorder with an SD card slot, images recorded by this unit can be dubbed onto the hard disk or a DVD disc.

Refer to the operating instructions of your DVD recorder for information about whether or not it supports dubbing from an SD card.

- If your DVD recorder does not support dubbing from an SD card or you want to dub images on the HDD of this unit, connect this unit and the

DVD recorder with the AV/S cable (supplied) and then dub. (→ below)

Insert the SD card into the SD card slot on the DVD recorder, then dub the contents onto the hard disk or a disc.

- For details on how to dub the images, refer to the operating instructions of the DVD recorder.

If you dub images directly from the SD card or with the AV/S cable and then play them back on a wide-screen TV, they may be squeezed horizontally. In this case, refer to the operating instructions of the device you are dubbing to or read the operating instructions of the wide-screen TV and set the aspect setting to 16:9 (Full).

With a VCR

Dubbing images onto other video devices

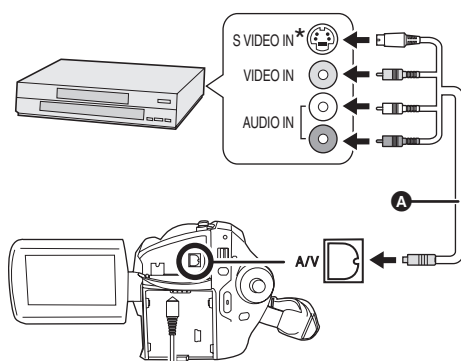
HDD SD

You can dub images played back on this unit onto other video devices.

You can create a playlist by gathering the scenes on the HDD that you want to dub, then dub the scenes in this playlist only to other devices. (→ 164)

- Use the AC adaptor to free you from worrying about the battery running down.

With other products

1 Connect this unit and a video device.

A AV/S cable (supplied)

- Insert the plugs as far as they will go.

* If the video device has an S Video terminal, also connect the S Video plug into it. This allows you to enjoy more beautiful pictures.

2 Turn on this unit, then rotate the mode dial to select .**3 Press the MENU button, then select [MEDIA SELECT] → [HDD] or [SD CARD] to select the desired medium and press the joystick.****4 Change the input channel on the video device and TV.**

- The channel set will differ depending on the terminal to which the unit is connected.

5 Start playback on this unit. Then start recording on the connected device.

- See the operating instructions of the video device for details.

To stop dubbing

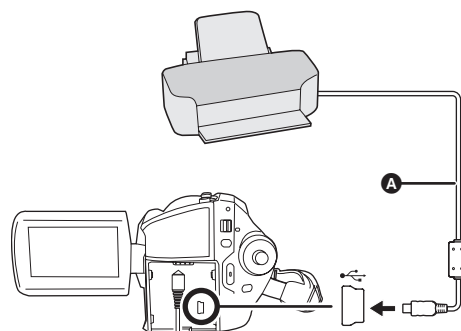
Stop recording on the connected device.
Then stop playback on this unit.

- If the date and time display and function indication are unnecessary, cancel them before dubbing. (SDR-H250) (→ 132, 174)

With a printer (PictBridge)**HDD SD**

To print pictures by directly connecting this unit to the printer, use a printer compatible with PictBridge. (Read the operating instructions for the printer.)

- ◆ Connect this unit to the AC adaptor and turn on the unit.

1 Connect this unit and a printer.

A USB cable (supplied)

- Insert the plugs as far as they will go.
- Do not use any other USB cables except the supplied one. (Operation is not guaranteed with any other USB cables.)

The USB function selection screen will appear.

2 Select [PictBridge] → [HDD] or [SD CARD] and press the joystick.

The [**PictBridge**] indication appears on this unit's screen.

With other products

3 Select a file to be printed, then press the joystick.

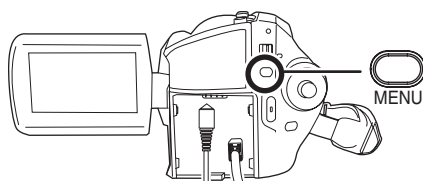


The number of pictures set is displayed.

4 Move the joystick up or down to select the desired number of prints, then press the joystick.

- You can set up to 9 prints.
- To cancel the setting, set the number of prints to [0].
- Up to 8 files displayed on a page can be set in succession by repeating steps 3 and 4.

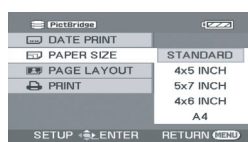
5 Press the MENU button to display the PictBridge menus.



6 Select the date print setting on [DATE PRINT].

- If the printer is not capable of date printing, this setting is unavailable.

7 Select the paper size setting on [PAPER SIZE].



[STANDARD]: Size specific to the printer

[4×5 INCH]: L size

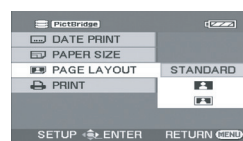
[5×7 INCH]: 2L size

[4×6 INCH]: Postcard size

[A4]: A4 size

- You cannot set paper sizes not supported on the printer.

8 Select the layout setting on [PAGE LAYOUT].



[STANDARD]: Layout specific to the printer

[]: No frame print

[]: Frame print

- You cannot set page layouts not supported on the printer.

9 Select [PRINT] → [YES] and press the joystick.

The pictures are printed.

- Exit PictBridge by disconnecting the USB cable after the pictures have been printed.

When you want to stop printing halfway

Move the joystick down.

A confirmation message appears. If [YES] is selected, the number of prints set is cancelled and the screen returns to step 3. If [NO] is selected, all the settings are kept and the screen returns to step 3.

- Avoid the following operations during printing. These operations disable proper printing.
 - Disconnecting the USB cable
 - Opening the card slot cover
 - Switching the mode dial
 - Turning off the power
- Check the settings for the paper size, quality of print, etc. on the printer.
- The sides of pictures recorded when [2M] (SDR-H250)/[0.2M] (SDR-H21/SDR-H20) is set may be cut at printing. Check before printing.

When using a printer with a trimming or borderless printing function, cancel this function before printing. (Refer to the operating instructions of the printer for details.)

With other products

- You may not be able to print still pictures recorded with other products.
- When the unit is connected directly to the printer, the DPOF settings cannot be used.
- Connect the printer directly to this unit. Do not use a USB hub.

With a computer

Before using with a computer

What you can do with a computer

When you have installed ImageMixer3 for Panasonic from the supplied CD-ROM and connected your computer to the unit, you can perform the operations described below.



- A** You can play back the images recorded by this unit on your computer or import the images to your computer.
- B** You can edit the motion pictures you have imported to your computer.
- C** You can import the images recorded by this unit to ImageMixer3 and then create original DVD-Video discs. (→ 187)
You can also write data in the DVD-VR (DVD Video Recording) format on DVD-RAM or DVD-RW discs.
- D** You can automatically write the images recorded on this unit's HDD to DVDs and create DVD-Video discs. (→ 184)
You can also make DVD-Video discs from the playlists you have created on the unit.
- E** You can exit ImageMixer3 for Panasonic.
- F** You can jump to the software support site.
- G** You can display the software help. (→ 182)

• For further details on these operations, refer to software help. (→ 182)

• We cannot guarantee proper operation of this unit if you use software other than that supplied.

With a computer

Operating environment

- A CD-ROM drive is necessary to install the supplied software.
- When 2 or more USB devices are connected to a computer, or when devices are connected through USB hubs or by using extension cables, proper operation is not guaranteed.
- Use the supplied USB cable when connecting to the computer. (Operation is not guaranteed with any other USB cables.)

■ ImageMixer3 for Panasonic

Hardware	IBM PC/AT compatible personal computer
OS	Microsoft Windows 2000 Professional Service Pack 3 or Service Pack 4 Microsoft Windows XP Home Edition Microsoft Windows XP Professional
CPU	Intel Pentium III 800 MHz or higher, Pentium 4, Celeron, or AMD Athlon XP/ Duron of equivalent performance (Intel Pentium 4 1.7 GHz or higher recommended)
RAM	Windows 2000 Professional: 128 MB or more (256 MB or more recommended) Windows XP Home Edition/Professional: 256 MB or more (512 MB or more recommended)
Display	High Colour (16 bit) or more Desktop resolution of 1024×768 pixels or more Graphic accelerator supporting DirectX 9.0c or later and with 4 MB or more of VRAM
Free hard disk space	For installing the application: 300 MB or more When creating discs (DVD-Video): 14 GB or more for the work folder (28 GB or more in the case of dual layer discs)
Necessary software	DirectX 9.0c
Sound	Sound Blaster or equivalent
Disc drive	Disc drive which has been manufactured and marketed since 1997 and which is capable of creating DVDs
Interface	Hi-Speed USB (USB 2.0) — A type
Languages supported	English, French, Spanish, German, Italian and Simplified Chinese

- You cannot use a Panasonic DVD Video Camera as a device for writing.
- Even if the system requirements mentioned in these operating instructions are fulfilled, some computers cannot be used.
- Operation on an OS other than the one pre-installed is not guaranteed.
- DirectX 9.0c will be installed automatically during installation of the supplied software.
- Operation cannot be guaranteed on all DVD drives.
- DVD discs authored with this software are not guaranteed to play in all DVD players.
- This software is not compatible with a multi-CPU environment.
- Operation on Microsoft Windows XP Media Center Edition, Tablet PC Edition and 64-bit operating system is not guaranteed.

With a computer

- Depending upon the environment of your computer, if it does not support Hi-Speed USB (USB 2.0), for example, frame dropout may occur, the audio may be intermittent, or the software may run slowly when you play back recorded images.
- Set the display resolution to 1024×768 (16 bits colour) or higher.
Select [start] → ([Settings] →) [Control Panel] → ([Appearance and Themes] →) [Display] and select [Settings] tab, and then adjust [Screen resolution] and [Color quality].
- This unit's USB terminal is read only. It cannot be used to write data to the unit from the computer.

■ Using Built-in SD Drive

Hardware	IBM PC/AT compatible personal computer
OS	Microsoft Windows 2000 Professional Microsoft Windows XP Home Edition Microsoft Windows XP Professional
CPU	Intel Pentium II 300 MHz or higher
RAM	32 MB or more (64 MB or more recommended)
Interface	USB 1.1 or later — A type

- The USB equipment operates with the driver installed as standard in the OS.

■ Usable discs

The table below lists the types of DVD discs which can be used by the supplied software.

Disc type	Function	
	For creating discs (DVD-Video format)/ DVD COPY	For creating discs (DVD-VR format)
DVD-R/+R	●	—
DVD-R DL /+R DL	●	—
DVD-RW/+RW	●	● (DVD-RW only)
DVD-RAM	—	●*

●: Can be used.

—: Cannot be used.

* If a DVD-RAM driver is installed, it may not be possible to use DVD-RAM discs.

- Depending on your computer, it may not be possible to use some of the DVD discs listed in the table above.
- Refer to the operating instructions of your computer for details about the DVD discs which can be written to on the computer.
- To playback a DVD disc created using ImageMixer3, the player must support playback of that DVD disc. (Refer to the operating instructions of the player.)
- Use discs made by a trustworthy manufacturer. It may not be possible to record images properly if you use low-quality discs.

For technical inquiries about this software, contact the PIXELA support website.

Website: <http://www.pixela.co.jp/oem/panasonic/e/index.html> (This website is in English only.)

With a computer

Installation

When installing the software, log on to your computer as the Administrator or with a user name with equivalent authorization. (If you do not have authorization to do this, consult your manager.)

- Before starting the installation, close any other software applications which are running.
- Do not perform any other operations on your computer while the software is being installed.

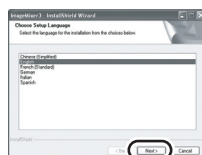
Installing ImageMixer3 for Panasonic

1 Insert the CD-ROM into the computer.

The setup language selection screen appears.

- If the setup language selection screen does not appear, double-click the CD-ROM drive icon in [My Computer].

2 Select the language for the installation and click [Next].

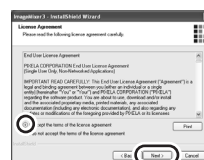


3 Click [Next].

- The software may not run properly if you cancel the installation at any point (e.g. by clicking [Cancel]).

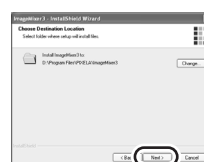
4 Read carefully through the End User License Agreement, check

[I accept the terms of the license agreement], and click [Next].



- You cannot install the application if you check [I do not accept the terms of the license agreement].

5 Select where the application is to be installed, and click [Next].



6 Select [PAL] for the TV system, click [Next].



7 Click [Install] to start the installation process.



8 Click [Finish].

With a computer

The computer must be rebooted for the application to work.

- Depending on the operating environment, you may be required to install DirectX 9.0c. If so, click [Yes], and install it.
If you install the software in a computer that is not compatible with DirectX 9.0c, the computer may not work properly. If you are unsure whether or not your computer is compatible, contact the maker of your computer.

Reading the software help

For details on how to use the software, read the help.

- Help uses JavaScript. To view its contents, activate JavaScript using the browser settings.

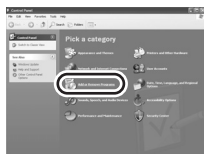
Click the  icon in the ImageMixer3 launcher screen.

- You can also select [Help] → [ImageMixer3 Help] from the menu bar to display the help.

Software uninstallation

Follow the steps below to uninstall the software if it is no longer required.

- 1 Select [start] → ([Settings] →) [Control Panel] → [Add or Remove Programs (Applications)].



- 2 Select [ImageMixer3], then click [Remove].



- Depending on the operating environment, the name of the buttons may differ. (Example: [Change/Remove])
- Proceed with the uninstallation by following the on-screen instructions.
- After uninstalling the software, be sure to reboot the computer.

Connection and recognition

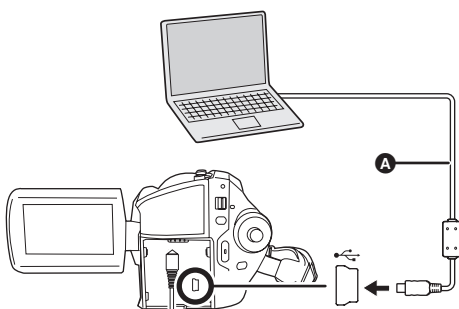
Connection and recognition procedures

After the software is installed, the unit must be connected to the computer and be correctly recognised by the computer.

- Connect after installing the software.
- If the supplied CD-ROM is inserted in the computer, remove it. (If the installer setup is running, wait until it finishes, then remove the CD-ROM.)
- If the recognition procedure is not accomplished properly, operation will not be possible after connecting the unit to the computer.
- If the unit fails to operate normally, it may mean that you have not conducted the installation or recognition procedure properly.

◇ Connect this unit to the AC adaptor and turn on the unit.

With a computer

1 Connect this unit and a computer.**A** USB cable (supplied)

- Insert the plugs as far as they will go. The unit and computer will not operate properly if the plugs are not inserted fully.
- Do not use any other USB cables except the supplied one. (Operation is not guaranteed with any other USB cables.)

The USB function selection screen will appear.

2 Select [PC CONNECT] → [HDD] or [SD CARD] and press the joystick.

This unit is automatically recognised by the computer.

- **When the unit is connected to a computer, its power cannot be turned off.**
In this case, disconnect the USB cable (→ 184).
- When a computer is accessing the HDD or card in this unit, the ACCESS/PC lamp or card access lamp lights. (or appears on the LCD monitor.) Do not disconnect the USB cable or AC adaptor while the HDD or card is being accessed as it may damage the data.
- The HDD and card cannot be accessed simultaneously.
- It may be necessary to reboot the computer after connecting this unit to it for the first time.

About the computer display

When the unit is connected to a computer, it is recognised as an external drive.

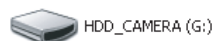
- This unit supports only the readout of data using the computer. The computer cannot write data to the unit, or erase data from the unit.
- Depending on the operating environment of the computer, the shape of the drive icon and the drive name (Example: E:) will differ.

■ Drive icons

The icon is displayed in [My Computer].

When accessing the HDD

- Windows XP:



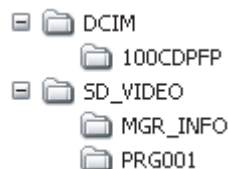
- Windows 2000:

**When accessing the card**

- Windows XP:

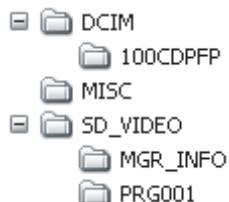


- Windows 2000:

**■ Example folder structure****HDD**

With a computer

SD card



- SD-Video format motion pictures are stored in the [PRG***] folder. ("***" denotes base-16 (hexadecimal) characters from 001 to FFF.)
- Up to 99 files can be recorded in the [PRG***] folder.
- JPEG format still pictures (IMGA0001.JPG etc.) are stored in the [100CDPFP] folder. These can be opened with picture playback software that supports JPEG pictures.
- Up to 999 files can be recorded in the [100CDPFP] or other such folder.
- The DPOF setting files are recorded in the [MISC] folder (SD card only).

- Do not use the computer to delete the SD card's folders. Otherwise, it may no longer be possible for this unit to read the SD card.
- Always use this unit to format SD cards.
- When data not supported by this unit has been recorded on a computer, it will not be recognised by this unit.
- You can use Windows Explorer to copy still picture files to a computer.

To disconnect USB cable safely

1 Double click the icon in task tray.

Hardware disconnect dialogue appears.

- Depending on your computer's settings, this icon may not be displayed.

2 Select [USB Mass Storage Device] and click [Stop].

3 Verify [MATSHITA HDD Cam-HDD USB Device] or [MATSHITA HDD

Cam USB Device] is selected and click [OK].

Click [Close], and you can safely disconnect the cable.

- If you disconnect the USB cable while the ACCESS/PC lamp or card access lamp is on or while  or  appears on the LCD monitor, it may damage the data.

Using the recorded images on a computer

DVD COPY function

When ImageMixer3 is used, you can easily create DVD-Video discs by pressing the unit's DVD COPY button.

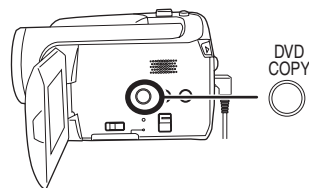
Among the images recorded on the unit's HDD, those scenes which have not yet been copied to the DVD using this function will be automatically identified and written onto the DVD.

DVD-Video discs created using this function can be played back on a DVD player or other device.

◆ Connect this unit to the AC adaptor and turn on the unit.

1 Rotate the mode dial to select or .

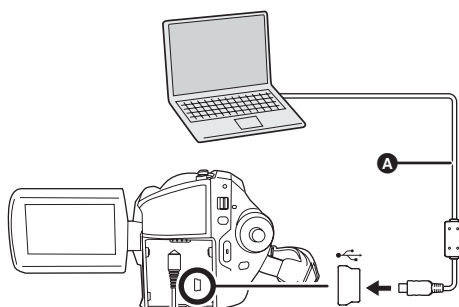
2 Press the DVD COPY button.



- "PLEASE CONNECT USB CABLE." appears on this unit's LCD monitor. Connect the USB cable while this message appears. Press the DVD COPY button again if the message disappears.

With a computer

3 Connect this unit and a computer.



A USB cable (supplied)

- Insert the plugs as far as they will go. The unit and computer will not operate properly if the plugs are not inserted fully.
- Do not use any other USB cables except the supplied one. (Operation is not guaranteed with any other USB cables.)

The DVD COPY preparation screen appears.



4 Insert a DVD disc into the DVD drive.

- It is recommended that you use a brand-new DVD disc.



Data writing on the disc starts.

- When writing to the disc is finished, the disc will be ejected from the drive.
- Depending on the amount of data, writing to the disc may take time.
- Do not subject the unit to vibration while data is being written. Otherwise, the writing process may be aborted.

- If all of the data cannot be written onto one DVD disc, it will be written onto a second (or third, etc.) disc. When the writing on the first disc is completed, a message will appear so insert another disc of the same type as the first.

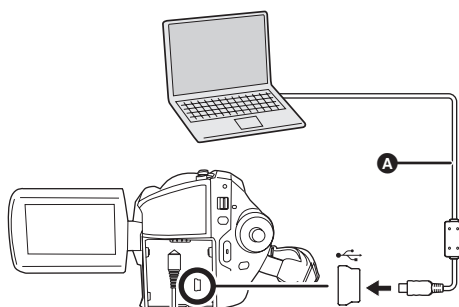
- Still pictures are converted to motion pictures and written onto the DVD disc.
- Check on the DVD player or other player device whether the DVD-Video disc you have created can be played properly. If the disc cannot be played properly, create the DVD-Video disc by following the steps in "Creating DVD-Video discs with the selected images". (→ 187)
- The images cannot be stored in the computer.
- The images recorded on the DVD-Video disc you have created cannot be edited by the computer. To edit them, import the images to the computer.
- When playing a DVD-Video disc you have created, there will be a pause of several seconds between scenes.
- The images recorded on SD cards cannot be copied onto discs using the DVD COPY function. Import the images to your computer and then write them on the DVD disc. (→ 187)
- The image saving history is stored for each computer user account. For this reason, even if images have already been copied onto a DVD disc, they will be copied onto the DVD disc again when a different user account is used.
- You cannot use a Panasonic DVD Video Camera as a device for writing.

Playing back and importing images

- ◆ **Connect this unit to the AC adaptor and turn on the unit.**

With a computer

1 Connect this unit and a computer.



A USB cable (supplied)

- Insert the plugs as far as they will go. The unit and computer will not operate properly if the plugs are not inserted fully.
- Do not use any other USB cables except the supplied one. (Operation is not guaranteed with any other USB cables.)

The USB function selection screen will appear.

2 Select [PC CONNECT] → [HDD] or [SD CARD] and press the joystick.

This unit will be automatically recognised by the computer and ImageMixer3 will start automatically.

If ImageMixer3 fails to start automatically, take the following steps to start it.

Select [start] → [All Programs (Programs)] → [PIXELA] → [ImageMixer3 for Panasonic] → [ImageMixer3 for Panasonic].

3 Click [Playback/Import Video].



The browser screen is displayed.

4 Select [SDR-H250]/[SDR-H21]/[SDR-H20] (HDD) or [Removable Disk] (SD card) in [Source].



The contents recorded on the HDD or SD card are displayed.

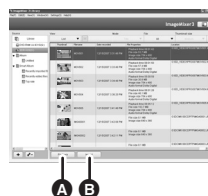
Motion pictures

Still pictures

5 (To play back the scenes) Click the desired scene and click [Playback] (A).

(To import images to your computer)

Click the desired scene and click [Import] (B).



- Imported images can be checked by clicking [Library].

- Imported images can be edited using ImageMixer3. For details, refer to software help. (→ 182)
- You can change the location where imported images will be saved by selecting from the menu bar [Settings] → [Preferences] → [Library destination settings:].

With a computer

Creating DVD-Video discs with the selected images

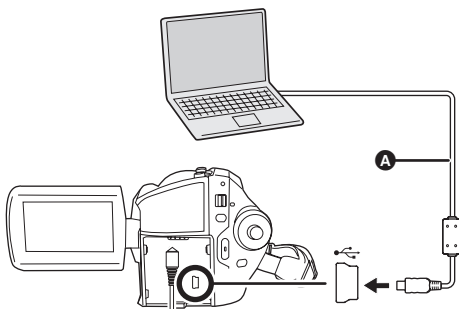
Use ImageMixer3 to import the images recorded by this unit that you want to write to a DVD disc and then create a DVD-Video.

DVD-Video discs created using this function can be played back on a DVD player or other device.

- You can edit motion pictures or add your favourite menus. For details, refer to software help. (→ 182)

◇ **Connect this unit to the AC adaptor and turn on the unit.**

1 Connect this unit and a computer.



A USB cable (supplied)

- Insert the plugs as far as they will go. The unit and computer will not operate properly if the plugs are not inserted fully.
- Do not use any other USB cables except the supplied one. (Operation is not guaranteed with any other USB cables.)

The USB function selection screen will appear.

2 Select [PC CONNECT] → [HDD] or [SD CARD] and press the joystick.

This unit will be automatically recognised by the computer and ImageMixer3 will start automatically.

If ImageMixer3 fails to start automatically, take the following steps to start it.

Select [start] → [All Programs (Programs)] → [PIXELA] → [ImageMixer3 for Panasonic] → [ImageMixer3 for Panasonic].

3 Click [Create DVD-Video].



4 Click [Create New DVD].



5 Select the appropriate project settings and click [OK].

6 Select [SDR-H250]/[SDR-H21]/[SDR-H20] (HDD) or [Removable Disk] (SD card) and click [Import].



The contents recorded on the HDD or SD card are displayed.

7 Click the desired folder (A), select the scene (B) and add it to the list (C) by drag and drop.

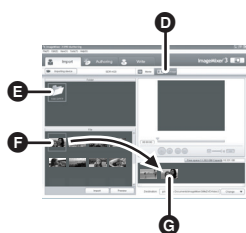
With a computer

- The folder itself can also be added to the list.



■ To import still pictures

- 1 Click [Still image] (D).
 - 2 Click the desired folder (E), select the file (F) and add it to the list (G) by drag and drop.
- The folder itself can also be added to the list.



- Still pictures are converted to motion pictures and written onto the DVD disc.

8 Click [Authoring] tab.

9 Click [Theme] and click the desired DVD menu screen.



10 Click [Source], and add the scene to the menu screen by drag and drop.

- You cannot add a still picture to the menu if it is not a file folder. For details, refer to software help. (→ 182)



11 Insert a DVD disc into the DVD drive and click [Write] tab.

- It is recommended that you use a brand-new DVD disc.



12 Select the appropriate write settings and click [Write].



13 Check the write settings and click [OK].

Writing to the disc starts.

- When writing to the disc is finished, the disc will be ejected from the drive.
- Depending on the amount of data, writing to the disc may take time.

- You cannot use a Panasonic DVD Video Camera as a device for writing.

Menus

Menu list

Motion picture recording menus

BASIC		
SCN	SCENE MODE	OFF
	GUIDE LINES	OFF
	REC MODE	STD
	REC ASPECT	16:9
	CLOCK SET	NO
SETUP  ENTER EXIT 		

■ [BASIC]

[SCENE MODE] (→ 151)
 [GUIDE LINES] (→ 149)
 [REC MODE] (→ 139)
 [REC ASPECT] (→ 150)
 [CLOCK SET] (→ 132)

■ [ADVANCED]

[D.ZOOM] (→ 144)
 [O.I.S.] (→ 150)
 [FADE COLOUR] (→ 147)
 [WIND CUT] (→ 150)
 [ZOOM MIC] (→ 145)

■ [MEDIA SELECT]

[HDD] (→ 137)
 [SD CARD] (→ 137)

■ [SETUP]

[DISPLAY] (→ 190)
 [DATE/TIME] (→ 132)
 [DATE FORMAT] (→ 132)
 [FORMAT CARD]^{*2} (→ 171)
 [POWER SAVE] (→ 190)
 [AGS] (SDR-H250) (→ 136)
 [BEEP SOUND] (→ 191)
 [LCD SET] (→ 133)
 [INITIAL SET] (→ 191)
 [ILLUMINATION] (→ 191)
 [DEMO MODE] (→ 191)

■ [LANGUAGE] (→ 130)

Still picture recording menus

BASIC		
SCN	SCENE MODE	OFF
	GUIDE LINES	OFF
	PICTURE SIZE	[2:1]
	PICT. QUALITY	
	CLOCK SET	NO
SETUP  ENTER EXIT 		

■ [BASIC]

[SCENE MODE] (→ 151)
 [GUIDE LINES] (→ 149)
 [PICTURE SIZE] (→ 143)
 [PICT. QUALITY] (→ 143)
 [CLOCK SET] (→ 132)

■ [ADVANCED]

[O.I.S.] (→ 150)
 [SHTR EFFECT] (→ 142)

■ [MEDIA SELECT]

[HDD] (→ 140)
 [SD CARD] (→ 140)

■ [SETUP]

[DISPLAY] (→ 190)
 [DATE/TIME] (→ 132)
 [DATE FORMAT] (→ 132)
 [FORMAT CARD]^{*2} (→ 171)
 [POWER SAVE] (→ 190)
 [BEEP SOUND] (→ 191)
 [LCD SET] (→ 133)
 [INITIAL SET] (→ 191)
 [ILLUMINATION] (→ 191)
 [DEMO MODE] (→ 191)

■ [LANGUAGE] (→ 130)

Motion picture playback menus

PLAY SETUP		
	PLAY MODE	VIEW ALL
	RESUME PLAY	OFF
	LOCK SET	NO
	PLAYLIST	CREATE
SETUP  ENTER EXIT 		

■ [DELETE]

[ALL] (→ 162)
 [SELECT] (→ 162)

■ [PLAY SETUP]

[PLAY MODE] (→ 158)

Others

[RESUME PLAY] (→ 159)
[LOCK SET] (→ 163)
[PLAYLIST]*¹ (→ 164, 165)

■ [MEDIA SELECT]

[HDD] (→ 156)
[SD CARD] (→ 156)

■ [SETUP]

[DISPLAY] (→ 190)
[DATE/TIME] (→ 132)
[DATE FORMAT] (→ 132)
[FORMAT CARD]*² (→ 171)
[POWER SAVE] (→ 190)
[BEEP SOUND] (→ 191)
[LCD SET] (→ 133)
[TV ASPECT] (→ 173)
[ILLUMINATION] (→ 191)
[FORMAT HDD]*¹ (→ 171)
[HDD STATUS]*¹ (→ 171)

■ [LANGUAGE] (→ 130)

(In playlist playback mode)

■ [EDIT]

[ADD] (→ 165)
[MOVE] (→ 166)
[DELETE] (→ 166)
■ [CREATE] (→ 164)
■ [PLAYLIST VIEW] (→ 165)
■ [END] (→ 165)

Still picture playback menus



■ [DELETE]

[ALL] (→ 167)
[SELECT] (→ 167)

■ [PHOTO SETUP]

[LOCK SET] (→ 168)
[DPOF SET]*² (→ 169)
[COPY] (→ 170)

■ [MEDIA SELECT]

[HDD] (→ 160)

[SD CARD] (→ 160)

■ [SETUP]

[DISPLAY] (→ 190)
[DATE/TIME] (→ 132)
[DATE FORMAT] (→ 132)
[FORMAT CARD]*² (→ 171)
[POWER SAVE] (→ 190)
[BEEP SOUND] (→ 191)
[LCD SET] (→ 133)
[TV ASPECT] (→ 173)
[ILLUMINATION] (→ 191)

■ [LANGUAGE] (→ 130)

*1 Only when [MEDIA SELECT] is set to [HDD]

*2 Only when [MEDIA SELECT] is set to [SD CARD]

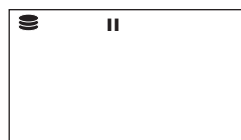
Other menus

■ [DISPLAY]

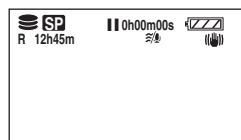
● [OFF] ● [ON]

The screen indications are selected as shown in the illustration below.

[OFF]



[ON]



■ [POWER SAVE]

● [OFF] ● [5 MINUTES]

[OFF]

The power saving function is not activated.

[5 MINUTES]

When about 5 minutes have passed without any operation, this unit automatically turns off to prevent the battery from running down. When you use this unit, turn it on again.

Others

- In the following cases, the unit may not turn off even when you set this to [5 MINUTES].
 - When using the AC adaptor
 - When connecting the unit to a computer or printer via the USB cable

■ [BEEP SOUND]

- [OFF] ● [ON]

This allows operations such as starting and ending recording to be signaled by a beep. When [OFF] is set, no beep is heard when an operation such as recording is started or ended.

1 Beep

When you start recording

When you turn on the power

When this unit is recognised by the computer or the printer, etc.

2 Beeps

When you pause recording

When you turn off the power

2 Beeps for 4 times

When an error occurs e.g. recording not starting.

Check the sentence displayed on the screen.

(→ 194)

■ [INITIAL SET]

- [YES] ● [NO]

When there is a menu that cannot be selected due another function or mode being activated, set to [YES] for changing the menu settings back to the initial shipping condition.

(The language setting cannot be changed back to the initial shipping condition.)

■ [ILLUMINATION]

- [OFF] ● [ON]

This allows operations to be signaled by the lighting of the illumination LED on the top of the unit.

1 Flash

When you turn on the power

(When in a recording mode: in orange)

(When in a playback mode: in blue)

2 Flashes

When you switch the mode to a recording mode (in orange)

When you switch the mode to a playback mode (in blue)

Lights

During motion picture recording (in orange)

During playback and while connected to a computer, a printer, etc. (in blue)

Flashes continuously

While formatting, copying, deleting, etc. (in orange)

■ [DEMO MODE]

- [OFF] ● [ON]

This item is used to start the unit demonstration.

(Only when using the AC adaptor and the mode dial is at the  or  position)

If you set this to [ON] without inserting an SD card, this unit is automatically set to the demonstration mode for introducing its functions.

If any button is pressed or operated, the demonstration mode is cancelled. If no operations take place for approx. 10 minutes, the demonstration mode automatically starts. To terminate the demonstration mode, insert an SD card, or set this to [OFF]. For normal use, set this function to [OFF].

Others

Indications

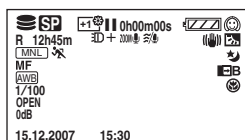
Indications

Media indications

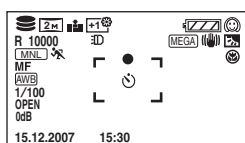
	HDD is selected
	SD card is selected

Recording indications

Motion picture recording



Still picture recording



	Remaining battery power
R 0h00m	Remaining time for recording
0h00m00s	Elapsed recording time
15.12.2007 15:30	Date/time indication
●/II (Red)	Recording/writing to the medium
II (Green)	Recording pause
16:9	Wide mode
AUTO	Auto mode
MNL	Manual mode
MF	Manual focus
2×	Zoom magnification indication
	Back light compensation mode
	Image stabilizer
1/100	Shutter speed
OPEN, F2.0	F number
0dB	Gain value

	Soft skin mode
	Tele macro (SDR-H250)
W, B	Fade (White), Fade (Black)
	Colour night view function
3D	Video light (SDR-H250/SDR-H21)
ZOOM	Zoom microphone
	Wind noise reduction
+1, +2, -1, -2	Power LCD plus function
XP, SP, LP	Motion picture recording mode
	Sports mode
	Portrait mode
	Low light mode
	Spotlight mode
	Surf & snow mode
AWB	Auto white balance
	Indoor mode (recording under incandescent lamp)
	Outdoor mode
	Manual adjustment mode
○ (White)	Focus indication (SDR-H250)
● (Green)	
	Self-Timer recording
MEGA	MEGA OIS (SDR-H250)
SDR-H250:  2048×1512  1920×1080  1280×960  640×480	
SDR-H21/SDR-H20:  640×480  640×360	
	Card can be recorded to
	
	Recording/accessing the card
	Still picture quality
R 10000	Remaining number of still pictures

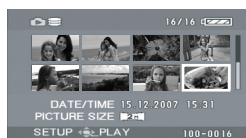
Others

■ Playback indications

Motion picture playback



Still picture playback



	Playback
	Pause
	Fast forward/rewind
	Last/first scene paused
	Skip playback
	Slow motion playback
	Frame-by-frame playback
0h00m00s	Motion picture playback time
	Play mode All scenes on the media displayed
	Scenes recorded on the selected date displayed
	Scenes in the selected playlist displayed
No.10	Scene number
	Volume adjustment
R	Resume playback
100-0001	Still picture folder/file number display
	When a printer compatible with PictBridge is connected
	Accessing the HDD or a card (When connected to a computer)
	DPOF already set (to more than 1)

	Locked motion pictures and still pictures
SDR-H250: 	Number of recording pixels for still pictures 2048×1512 1920×1080 1280×960 640×480
SDR-H21/ SDR-H20: 	640×480 640×360
The picture size is not displayed for still pictures recorded with other products that have different picture sizes from the sizes shown above.	

■ Confirmatory indications

-- (Time display)	The built-in battery is low. (→ 133)
	The warning/alarm indication appears when LCD monitor is rotated towards the lens side. Return the direction of the LCD monitor to normal position and check the warning/alarm indication.
	No SD card is inserted/ unusable card.
	The HDD cannot be accessed as the drop detection function has detected that the unit was dropped. If it detects that the unit is being continuously dropped, recording may stop.

Others

Messages

NO DATA.	There are no images recorded on the media.
CAN NOT RECORD. HDD IS FULL.	The HDD is full or the number of scenes has reached the maximum limit so no further data can be recorded. Back up the data on the HDD to a computer, etc. and then delete unnecessary scenes or format the HDD. (→ 162, 167, 171)
CAN NOT RECORD. THE NUMBER OF SCENES HAS EXCEEDED THE MAXIMUM LIMIT. BACKUP HDD THEN FORMAT.	
RECOMMEND DATA BACK UP PERIODICALLY.	The capacity of the HDD is limited. We recommend backing up important recorded data periodically to a computer etc. to protect it. This message does not indicate that there is a problem with this unit.
HDD BACKUP RECOMMENDED.	There is a possible problem with the HDD. Immediately copy the data on the HDD to a computer etc. and then have the unit repaired.
THIS CARD CANNOT RECORD IN VIDEO MODE.	An 8 MB or 16 MB SD card has been inserted in video recording mode.
CHECK CARD.	This card is not compatible or it cannot be recognised by the unit.
CARD LOCKED.	The write protection switch on the SD card is set to LOCK. (→ 118)
CARD FULL.	The SD card is full or the number of scenes has reached the maximum limit so no further data can be recorded. Delete unnecessary scenes (→ 162, 167) or insert a new SD card.
SCENE NUMBER IS FULL.	
CARD DOOR OPENED.	The card slot cover is open. Close it.
ERROR OCCURRED. RECORDING IS STOPPED.	• When using an SD card that can be used for motion picture recording (→ 118) When this message appears, it is recommended that you format the SD card being used. (→ 171) When an SD card is formatted, all the data recorded on it will be deleted. Back up the data on the SD card to a computer, etc. before formatting the SD card. • When using any other card Use a Panasonic SD card or another SD card which can be used to record motion pictures. (→ 118)
CANNOT RECORD IN AGS MODE.	The AGS function is activated. (→ 136)

Others

CHANGE TO MANUAL MODE.	You are attempting to use a function that cannot be used simultaneously.
CANCEL NIGHT VIEW MODE.	
TURN OFF THE VIDEO LIGHT.	
OPERATION FAILED. EXCESSIVE SHOCK DETECTED. PLEASE TRY AGAIN AFTER A WHILE.	The unit has detected that it is being dropped so the operation has stopped.
INTERNAL TEMPERATURE TOO HIGH. PLEASE TURN UNIT OFF AND WAIT A WHILE.	The internal temperature of this unit is high so it cannot be operated. Turn off the power, wait until the temperature falls and then turn on the power again.
OPERATION STOPPED. TEMPERATURE TOO LOW.	The internal temperature of this unit is extremely low so it cannot be operated. If "Please Wait." appears after this message, wait a while without turning the unit off. It may take time until the unit can be used.
PUSH THE RESET SWITCH.	An irregularity in the unit has been detected. Remove the SD card then press the RESET button to restart the unit. (→ 202)
DISCONNECT USB CABLE.	The unit cannot correctly establish the connection to the computer or printer. Disconnect and reconnect the USB cable and then select the desired USB function again.
CANNOT OPERATE WHILE USB CONNECTED.	The unit's power cannot be turned off when the unit is connected to the computer.

About recovery

It is possible that the system cannot complete writing of a file normally when, for example, power is turned off for some reason during recording or editing.

If faulty management information is found when the HDD or a card is accessed, one of the following messages may appear. Be sure to follow the messages. (Repairing may take time depending on the error.)

HDD ERROR DETECTED. NOW REPAIRING DATA.
CARD ERROR DETECTED. NOW REPAIRING DATA.

- When you repair the data, use a battery with sufficient battery power or the AC adaptor. Even if the power is turned off without repairing the data, you can repair the data when you turn the power on again.
- Depending on the condition of the data, it may not be possible to completely repair the data.
- Do not repair a card that has been recorded on another device. This may cause the loss of data or the card.

Others

Functions that cannot be used simultaneously

Some functions in this unit are disabled or cannot be selected due to the unit's specifications. The table below shows examples of functions restricted by various conditions.

Functions	Conditions which disable the functions
Digital zoom	• In picture recording mode
Fade	
Colour night view	• While recording (Cannot set or cancel) • In picture recording mode • When the video light is on (gain up mode)
Backlight compensation	• When the colour night view function is used • When the video light is on (gain up mode) • When the iris/gain is set
Soft skin mode (Set and cancel)	• While recording
Tele macro (Set and cancel)	
Help mode	
Video light on (gain up mode)	• In picture recording mode
Scene mode	• When setting the AUTO/MANUAL/FOCUS switch to AUTO • When the colour night view function is used • When the video light is on (When in video recording mode)
Change of white balance	• When digital zoom is used • When the colour night view function is used • When the video light is on (gain up mode)
Adjusting the shutter speed, iris/gain	• When the colour night view function is used • When the video light is on (gain up mode) • When the scene mode is used

Frequently asked questions

? What kind of cards can be used on this unit?

 SD Memory Cards and SDHC Memory Cards can be used. (→ 117)

? Can motion pictures be recorded on an SD card?

 Yes, they can be recorded.
To record motion pictures, we recommend using SD cards from 256 MB to 4 GB that conform to Class 2 or higher of the SD Speed Class Rating.

? Can I record continuously from the HDD to an SD card or vice versa?

 No, you cannot record continuously.
Use [MEDIA SELECT] on the menu to switch the recording destination. (→ 137, 140)

? Is it possible to copy data on the HDD and an SD card with this unit?

 Copying still pictures is possible. (→ 170)
Copying motion pictures is not possible.

? Is it possible to play back an SD card recorded with this unit on other products?

 Motion pictures:
These can be played back on any device which supports motion pictures based on the SD-Video standard, the MPEG-2 video format and the MPEG-1 Audio Layer 2 audio format.
Still pictures:
These can be played on any device which supports DCF (Design rule for Camera File system).

? What should I do when the HDD is full?

 Use the supplied software to back up the data to a computer or a DVD disc.
You can also connect to a DVD recorder or a VCR with the AV/S cable (supplied) and then dub the data. (→ 174)
After that, delete unnecessary scenes or format the HDD. (→ 162, 167, 171)

? Can software other than that supplied be used?

 For information about software from other companies, contact the makers of the software.

Others

? Can I write data from a computer onto the unit's HDD or SD card?

 No, you cannot.
This unit's USB terminal is read only.

? Is playback possible on a computer?

 Use ImageMixer3.

? Is editing possible on a computer?

 Use ImageMixer3.
• Motion pictures that have been saved to the ImageMixer3 library can be edited.

? Can I use the DVD COPY function to copy still pictures as well?

 Yes, you can.
The motion pictures are recorded first onto the disc and then the still pictures are converted to motion pictures and recorded after the motion pictures. Original still picture files (JPEG files) are also recorded onto the DVD disc.

? Can I use the DVD COPY function to copy motion pictures recorded on SD cards onto DVD discs as well?

 No, you cannot.
You can use the DVD COPY function to copy only the images recorded on the HDD.

? Can I make additions to a DVD disc on which data has already been written?

 You can when you record data in the DVD-VR format onto a DVD-RAM or DVD-RW disc. If you record data in the DVD-Video format onto a DVD-RW or +RW disc on which data has already been written, a message asking you to confirm whether the disc contents are to be erased will appear. You cannot write additional data on the disc without erasing its contents.

Troubleshooting

Problem	Check points
This unit cannot be turned on.	• Is the battery fully charged? → Charge the battery using the AC adaptor. (→ 121) • The battery protection circuit may have operated. Attach the battery to the AC adaptor for 5 to 10 seconds. If the unit still cannot be used, the battery is faulty. • Is the LCD monitor opened?
This unit is turned off automatically.	• If you do not use the unit for approximately 5 minutes, the power is automatically turned off to conserve the battery charge. To resume recording, turn the power back on. The power will not turn off automatically when the power save function (→ 190) is set to [OFF].
This unit does not stay on long enough.	• Is the battery low? → If the remaining battery power indication is flashing or the message "LOW BATTERY." is displayed, the battery has run down. Charge the battery. (→ 121)
A clicking sound is heard when the power is turned off.	• This is the sound of the lens moving and is not a malfunction.
Battery runs down quickly.	• Is the battery fully charged? → Charge it with the AC adaptor. (→ 121) • Are you using the battery in an extremely cold place? → The battery is affected by ambient temperature. In cold places, the operating time of the battery becomes shorter. • Has the battery worn out? → The battery has a limited life. If the operating time is still too short even after the battery is fully charged, the battery has worn out and can no longer be used.
This unit cannot be operated though it is turned on. This unit does not operate normally.	• The unit cannot be operated unless you open the LCD monitor. • Remove the SD card then press the RESET button. (→ 202) If normal conditions are not restored yet, remove the battery or AC adaptor, wait about 1 minute and then reconnect the battery or AC adaptor. Then about 1 minute later, turn on the power again. (Conducting the above operation when the access lamp is on may destroy the data on the HDD or card.)
The screen has changed suddenly.	• Has the demonstration started? → If you set [DEMO MODE] to [ON] without inserting a card in video recording mode or picture recording mode, the unit is automatically set to the demonstration mode for introducing its functions. Normally this should be set to [OFF]. Press the MENU button, then select [SETUP] → [DEMO MODE] → [OFF] and press the joystick.

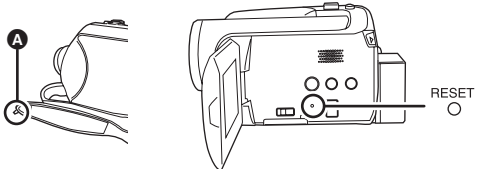
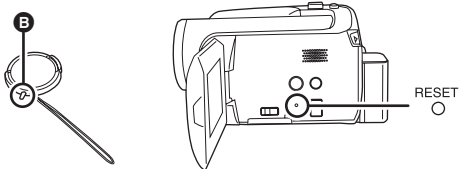
Others

Problem	Check points
The remote control does not function.	• Has the button-type battery of the remote control run out? → Replace it with a new button-type battery. (→ 115)
A function indication such as the remaining time indication or the elapsed time indication is not shown.	• If you set [SETUP]→[DISPLAY]→[OFF], indications other than warnings and date indications disappear.
Recording does not start although power is supplied to this unit.	• Has the SD card's write protect switch been set to LOCK? → No recording is possible while the write protect switch is set to LOCK. (→ 118) • Is the memory of the HDD or card full? → If the HDD or card has no more available memory, free up some memory by deleting unnecessary scenes (→ 162, 167) or use a new card. • Is the unit set to the video recording mode or picture recording mode? → No recording is possible unless the mode dial is at  or . • Is the card slot cover open? → If the cover is open, this unit may not operate normally. Close the card slot cover.
Recording starts but stops immediately. The playback picture breaks up for a moment.	• The unit is hot. Follow the messages on the display. → To use the unit again, turn the unit off and leave it for a while.
The unit arbitrarily stops recording.	• Is the AGS function activated? → Record in the normal horizontal position or set [AGS] to [OFF]. (→ 136) • Can the SD card be used for motion picture recording? → Use an SD card that can be used for motion picture recording. (→ 118)
The operation arbitrarily stops.	• The drop detection function has activated to protect the HDD. → Do not drop or shake this unit while operating it.
Recording stops suddenly during motion picture recording on a card.	• When using an SD card on which data has been written many times and the data writing speed has reduced, the recording may suddenly stop during motion picture recording. → Use a card recommended as suitable for motion picture recording. (→ 118) If the recording stops even when a suitable SD card is used, back up the data on the card to a computer, etc. and then format the card. (→ 171)

Others

Problem	Check points
Recorded still pictures are not clear.	• Are you trying to record small or finely detailed objects with [PICT. QUALITY] set at []? → If you try to record small or finely detailed objects with [PICT. QUALITY] set at [], the images may break up into a mosaic-like pattern. Record with [PICT. QUALITY] set at [] instead. (→ 143)
Auto focus function does not work.	• Is manual focus mode selected? → Set the AUTO/MANUAL/FOCUS switch to AUTO. • Are you trying to record a scene which is hard to bring into focus in auto focus mode? → There are some recording subjects and surroundings for which the auto focus does not operate correctly. (→ 207) If so, use the manual focus mode to adjust the focus. (→ 152)
Sound is not played back from the built-in speaker of this unit.	• Is the volume too low? → During playback, move the volume lever to display the volume indication and adjust it. (→ 158)
Although this unit is correctly connected to a TV, playback images cannot be seen. The playback images are squeezed horizontally.	• Have you selected video input on the TV? → Please read the operating instructions of your TV and select the channel that matches the input used for the connection. • Is the [TV ASPECT] setting correct? → Change the setting to match the aspect ratio of the TV. Press the MENU button, then select [SETUP] → [TV ASPECT] → [16:9] or [4:3] and press the joystick.
Scenes or files cannot be deleted or edited.	• Are the scenes or the files locked? → Locked scenes or files cannot be deleted. Release the lock setting. (→ 163, 168) • It may not be possible to delete scenes that are displayed as [] on the thumbnail display. If the scenes are unnecessary, format the HDD or card to erase the data. (→ 171) Please be aware that if the HDD or a card is formatted then all the data recorded on the HDD or the card will be erased. • If the SD card's write protect switch is set to LOCK, then deletion is disabled. (→ 118)
The images on the SD card do not look normal.	• The data may be destroyed. It may have been destroyed by static or electromagnetic waves. Store important data on a computer or other products as well.
Even if HDD or a card is formatted, it cannot be used.	• Either this unit or the card may be damaged. Please consult a dealer. • Use an SD card from 8 MB to 4 GB with this unit. (→ 117)

Others

Problem	Check points
The indication disappears. The screen is frozen. No operation can be performed.	• Is this unit connected to a computer? → No operation can be performed on this unit when it is connected to a computer. • Turn off the power to this unit. If the power cannot be turned off, remove the SD card then press the RESET button, or remove the battery or AC adaptor and then reattach it. After that, turn on the power again. If normal operation is still not restored, detach the power connected, and consult the dealer who you purchased this unit from.
“PUSH THE RESET SWITCH.” is displayed.	• The unit has automatically detected an error. Remove the SD card then press the RESET button to restart the unit. → (SDR-H250) Press the RESET button with the projecting part of the grip belt A.  → (SDR-H21/SDR-H20) Press the RESET button with the projecting part of the lens cap B.  • If you do not press the RESET button, the power to this unit is turned off automatically about 1 minute later. • Even after you press the RESET button, the indication may still appear repeatedly. If so, this unit needs repair. Detach the power connected, and consult the dealer who you purchased this unit from. Do not attempt to repair the appliance by yourself.
If the SD card is inserted in this unit, it is not recognised.	• Is the SD card formatted on a computer inserted? → Use this unit to format SD cards. Please be aware that if an SD card is formatted, then all the data recorded on the card will be erased. (→ 171)
If the SD card is inserted in another device, it is not recognised.	• Check that the device is compatible with the capacity or type of SD card (SD Memory Card/SDHC Memory Card) that you inserted. → Refer to the operating instructions of the device for details.

Others

With a computer

Problem	Check points
Even if connected by the USB cable, this unit is not recognised by the computer.	• The USB function selection screen does not appear if the USB cable is connected while the menu screen is displayed. → Close the menu screen before connecting the USB cable. • Select another USB terminal on the computer. • Check the operating environment. (→ 179) • Disconnect the USB cable, turn the unit off then on and then reconnect the USB cable.
An image that should have been recorded does not appear when ImageMixer3 is started.	• If there are multiple drives, a drive other than this unit may be selected. → HDD: Select [SDR-H250], [SDR-H21] or [SDR-H20] from [Source]. SD card: Select [Removable Disk] from [Source].
When the USB cable is disconnected, an error message will appear on the computer.	• To disconnect the USB cable safely, double-click the  icon in the task tray and follow the instructions on the screen.
The DVD COPY function will not start even when I press the DVD COPY button.	• To create DVD-Video discs using the DVD COPY function, you need to install ImageMixer3 for Panasonic from the supplied CD-ROM to your computer. (→ 181) • The DVD COPY function cannot be used in the video recording mode or picture recording mode. → Rotate the mode dial to select  or , then press the DVD COPY button.
I cannot copy images using the DVD COPY function.	• Have you already copied those images using the DVD COPY function? → Once images have been copied using the DVD COPY function, they cannot be copied a second or subsequent time. Import the images into ImageMixer3, and then write them on the DVD disc. (→ 187)
It takes a long time to create a DVD.	• Creating a DVD may take some time when the size of the motion picture files are small.
The amount of free space on the HDD or SD card does not increase even when the images are backed up on the computer or DVD discs.	• The unit's image data is not automatically deleted even when you have imported images to your computer or onto DVD discs using ImageMixer3. → To increase the amount of free space on the HDD or SD card, delete unnecessary images recorded on this unit. (→ 162, 167)
The DVD player cannot play back the discs I have created using ImageMixer3.	• To playback a DVD disc created using ImageMixer3, the player must support playback of that DVD disc. (Refer to the operating instructions of the player.)
The DVD-RAM disc cannot be recognised.	• If a DVD-RAM driver is installed in your computer, uninstall it.

Others

Cautions for use

About this unit

- The unit and card become warm after long operation, but this is not a malfunction.

Keep the SD Card/Hard Disk Video Camera as far away as possible from electromagnetic equipment (such as microwave ovens, TVs, video games etc.).

- If you use the SD Card/Hard Disk Video Camera on top of or near a TV, the pictures and sound on the SD Card/Hard Disk Video Camera may be disrupted by electromagnetic wave radiation.
- Do not use the SD Card/Hard Disk Video 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 SD Card/Hard Disk Video Camera, disturbing the pictures and sound.
- If the SD Card/Hard Disk Video Camera is adversely affected by electromagnetic equipment and stops functioning properly, turn the SD Card/Hard Disk Video Camera off and remove the battery or disconnect AC adaptor. Then reinsert the battery or reconnect AC adaptor and turn the SD Card/Hard Disk Video Camera on.

Do not use the SD Card/Hard Disk Video 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.

Make sure to 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 and the cables.

Do not spray insecticides or volatile chemicals onto the unit.

- If the unit is sprayed with such chemicals, its body may be marred and the surface finish may peel off.
- Do not leave rubber or plastic products in contact with the unit for a long time.

When you use the unit in a sandy or dusty place such as a beach, do not let sand or fine dust get into the body and terminals of the unit.

Also, keep the unit away from sea water.

- Sand or dust may damage the unit. (Care should be taken when inserting and removing a card.)
- If sea water splashes onto the unit, wipe off the water with a well wrung cloth. Then wipe the unit again with a dry cloth.

When carrying the unit, do not drop or bump it.

- A strong impact can break the unit's casing, causing it to malfunction.

Do not use benzine, paint thinner or alcohol for cleaning the unit.

- Before cleaning, detach the battery or pull out the AC cable from the AC outlet.
- The camera body may be discoloured and the surface finish may peel off.
- Wipe the unit with a soft dry cloth to remove dust and fingerprints. To remove stubborn stains, thoroughly wring a cloth that has been soaked in a neutral detergent diluted with water and wipe the unit with it. Afterwards, wipe it with a dry cloth.
- When you use a chemical dust cloth, follow the instructions that came with the cloth.

Do not use the unit for surveillance purposes or other business uses.

- If you use the unit for a long time, heat will build up inside it and this may cause a malfunction.
- This unit is not intended for industrial use.

When you are not going to use the unit for an extended time

Others

- When storing the unit in a cupboard or cabinet, it is recommended that you place a desiccant (silica gel) in with it.

About the battery

The battery used in this unit is a rechargeable lithium-ion battery. It is susceptible to humidity and temperature and the effect increases the more the temperature rises or falls. In cold areas, the full charge indication may not appear or the low battery indication may appear for about 5 minutes after starting use. At high temperatures, the protection function may be triggered, making it impossible to use the unit.

Be sure to detach the battery after use.

- If the battery is left attached, a minute amount of current continues to flow even if the unit's power is off. Keeping the unit in this state may result in over discharge of the battery. This may result in you not being able to use the battery even after it is charged.
- The battery should be stored in the vinyl bag so metal does not come into contact with the terminals.
- The battery should be stored in a cool place free from humidity, with as constant temperature as possible. (Recommended temperature: 15 °C to 25 °C, Recommended humidity: 40% to 60%)
- Extremely high temperatures or low temperatures will shorten the life of the battery.
- If the battery is kept in high-temperature, high-humidity, or oily-smoky places, the terminals may rust and cause malfunctions.
- To store the battery for a long period of time, we recommend you charge it once every year and store it again after you have completely used up the charged capacity.
- Dust and other matter attached to the battery terminals should be removed.

Prepare spare batteries when going out for recording.

- Prepare batteries enough to last for 3 to 4 times the period during you want to record pictures in. In cold places such as a ski resort, the period during which you can record pictures is shortened.

- When you travel, do not forget to bring an AC adaptor so that you can recharge the batteries at your destination.

If you drop the battery accidentally, check to see if the terminals are damaged.

- Attaching a battery with damaged terminals can damage the unit or AC adaptor.

Do not throw old battery into fire.

- Heating a battery or throwing it into a fire may result in an explosion.
- If the operating time is very short even after the battery has been recharged, the battery has worn out. Please purchase a new battery.

About the AC adaptor

- If the battery is warm, charging requires more time than normal.
- If the temperature of the battery is extremely high or extremely low, the CHARGE lamp may continue flashing, and the battery may not be charged. Wait until the appropriate temperature is restored before charging the battery again. If the battery still fails to charge, something may be wrong with the battery or AC adaptor. Contact your dealer.
- If you use the AC adaptor near a radio, radio reception may be disturbed. Keep the AC adaptor 1 m or more away from the radio.
- When using the AC adaptor, it may generate whirring sounds. However, this is normal.
- After use, be sure to disconnect the AC adaptor. (If it is left connected, a minute amount of current is consumed.)
- Always keep the electrodes of the AC adaptor and battery clean.

Put this unit near the outlet to make it easy for the interrupting device (plug) to reach it.**About the SD card**

- The memory capacity indicated on the label of an SD card is the total of the capacity for copyright protection and management and the capacity which can be used on the unit, a computer etc.

Others

- During prolonged use, the unit's surfaces and the SD card will heat up slightly. This is normal.

When inserting or removing the SD card, always set the OFF/ON switch to OFF.

While this unit accesses the SD card (while  /  is being displayed/the access lamp is lit), do not open the card slot cover and remove the SD card, operate the mode dial, turn off the power or shake or impact the unit.

■ About the miniSD Card

- Be sure to insert miniSD Cards in the dedicated card adaptor before use. Inserting a card in this unit without the adaptor may damage the unit or the card.
- Do not insert an empty card adaptor in this unit. Do not leave the adaptor in this unit while inserting or removing miniSD Cards. This may cause the unit to malfunction.

LCD monitor

- When the LCD monitor gets dirty, wipe it with a dry soft cloth.
- In a place with drastic temperature changes, condensation may form on the LCD monitor. Wipe it with soft dry cloth.
- When the unit has become very cold, for example due to storage in a cold area, its LCD monitor will be slightly darker than usual immediately after the power is turned on. The normal brightness will be restored when the unit's internal temperature rises.

Extremely high precision technology is employed to produce the LCD Monitor screen featuring a total of approximately 123,000 pixels. The result is more than 99.99% effective pixels with a mere 0.01% of the pixels inactive or always lit. However, this is not a malfunction and does not affect the recorded picture.

About condensation

If condensation forms on the unit, the lens will cloud up, the HDD may be damaged and the unit

may not work properly. Make every effort to ensure that condensation does not form. If it does form, take the actions described below.

Causes of condensation

Condensation takes place when the ambient temperature or humidity is changed as follows.

- When this unit is brought inside from the cold (e.g. a ski slope) to a warm room.
- When this unit is moved from an air-conditioned car to outside.
- When a cold room has been warmed up quickly.
- When cool wind from an air conditioner is directly blown onto this unit.
- After summer afternoon showers of rain.
- When this unit is in a very humid place where the air is thick with steam. (e.g. a heated swimming pool)

When this unit is taken to a location with a significant temperature difference such as from a cold place to a hot place.

If, for example, you have used this unit for recording on a ski slope and are taking it into a heated room, place the unit inside a plastic bag, remove as much of the air from inside the bag as possible, then seal the bag. Leave the unit for about an hour in the room so the temperature of the unit is close to the ambient temperature of the room, then use it.

What to do if the lens is fogged up.

Remove the battery or AC adaptor and leave the unit for about 1 hour. When the unit becomes close to the ambient temperature, the fog disappears naturally.

Explanation of terms

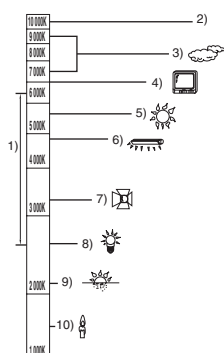
Automatic white balance

White balance adjustment recognises the colour of light and adjusts so the white colour will become a purer white. The unit determines the hue of light that comes through the lens and white balance sensor, thereby judging the recording condition, and selects the closest hue setting.

Others

This is called automatic white balance adjustment.

However, since the unit only stores white colour information under certain light sources, automatic white balance adjustment does not function normally under other light sources.



The illustration above shows the range over which the auto white balance functions.

- 1) The effective range of automatic white balance adjustment on this unit
- 2) Blue sky
- 3) Cloudy sky (rain)
- 4) TV screen
- 5) Sunlight
- 6) White fluorescent lamp
- 7) Halogen light bulb
- 8) Incandescent light bulb
- 9) Sunrise or sunset
- 10) Candlelight

Outside of the effective range of automatic white balance adjustment, the image will become reddish or bluish. Even within the effective range of automatic white balance adjustment, the automatic white balance adjustment may not function properly if there is more than one light source. For light outside the functional automatic white balance adjustment range, use the manual white balance adjustment mode.

White balance

The images recorded by the unit may become bluish or reddish under the influence of certain light sources. To avoid such phenomena, adjust the white balance.

White balance adjustment determines the white colour under different light sources. By recognising which is the white colour under sunlight and which is the white colour under a fluorescent light, the unit can adjust the balance among the other colours.

Since the white colour is the reference for all the colours (that make up light), the unit can record pictures in a natural hue if it can recognise the reference colour white.

Auto focus

The lens is moved forward or backward automatically to bring the subject into focus.

Auto focus has the following characteristics.

- Adjusts the focus so that the vertical lines of a subject are seen more clearly.
- Attempts to bring an object with higher contrast into focus.
- Focuses on the screen centre only.

Due to these characteristics, auto focus does not work correctly in the following situations. Record pictures in the manual focus mode.

Recording distant and close-up objects at the same time

Since the unit focuses on whatever is at the centre of the screen, it is difficult to bring the background into focus when close-up objects are placed in focus. When recording people with distant mountains in the background, you cannot focus on both the subject which is close-up and the objects which are in the distance.

Recording a subject behind dirty or dusty window

The subject behind the window will not be focused because the focus is on the dirty window.

Similarly, when recording something on the opposite side of a road with heavy traffic, a vehicle that happens to pass by may be brought into focus.

Recording a subject that is surrounded by objects with glossy surfaces or by highly reflective objects

Since whatever is shiny or glistens is brought into focus, it is hard to focus on the subject to be

Others

recorded. The focus may become blurry when recording subjects at the beach, at night views or in scenes involving fireworks or special lights.

Recording a subject in dark surroundings

The unit cannot focus correctly because the light information that comes through the lens decreases considerably.

Recording a fast-moving subject

As the focus lens-inside moves mechanically, it cannot keep up with a fast-moving subject. When, for example, recording a sports event with fast moving subjects, the focus may lose its sharpness.

Recording a subject with little contrast

It is easy to bring subjects with a sharp contrast or vertical lines or stripes into focus. This means that a subject with little contrast, such as a white wall, may become blurry because the unit achieves focus based upon the vertical lines of an image.

SD Speed Class Rating Class 2

CLASS②

This indicates a Class 2 rating in the high speed standards (SD Speed Class) stipulated by the SD Card Association for high speed writing between SD compatible products and SD Memory cards.

If you use a Class 2 card compatible with the SD Speed Class in an SD compatible product, you can obtain stable recording by using a SD card conformed with Class 2 or more.

Specifications

SD Card/Hard Disk Video Camera

Information for your safety

Power source:	DC 7.9 V/7.2 V
Power consumption:	Recording 5.7 W (SDR-H250)/4.7 W (SDR-H21)/4.4 W (SDR-H20)

Signal system	CCIR: 625 lines, 50 fields PAL colour signal
Recording format	SD card: Based on the SD-Video standard HDD: Independent standard
Image sensor	SDR-H250: 1/6" 3CCD image sensor Total: 800 K×3 Effective pixels: Moving picture: 630 K×3 (4:3), 540 K×3 (16:9) Still picture: 710 K×3 (4:3), 540 K×3 (16:9) SDR-H21/SDR-H20: 1/6" CCD image sensor Total: 800 K Effective pixels: Moving picture: 400 K (4:3), 540 K (16:9) Still picture: 410 K (4:3), 550 K (16:9)
Lens	SDR-H250: Auto Iris, F1.8 to F2.8 Focal length: 3.0 mm to 30.0 mm Macro (Full range AF) SDR-H21/SDR-H20: Auto Iris, F1.8 to F3.7 Focal length: 2.3 mm to 73.6 mm Macro (Full range AF)
Zoom	SDR-H250: 10× optical zoom, 25/700× digital zoom SDR-H21/SDR-H20: 32× optical zoom, 50/1000× digital zoom
Monitor	2.7" wide LCD monitor (approx. 123 K pixels)
Microphone	Stereo (with a zoom function)
Speaker	1 round speaker Ø 20 mm
Standard illumination	1,400 lx
Minimum required illumination	12 lx (Low light mode, 1/50) [approx. 1 lx (SDR-H250)/approx. 2 lx (SDR-H21/SDR-H20) with the colour night view function]

Others

Video output level	1.0 Vp-p, 75 Ω
S Video output level	Y: 1.0 Vp-p, 75 Ω C: 0.3 Vp-p, 75 Ω
Audio output level (Line)	316 mV, 600 Ω
USB	Card reader function (No copyright protection support) HDD reader function Hi-Speed USB (USB 2.0) compliant PictBridge-compliant
Dimensions (excluding the projecting parts)	70.1 mm (W) $\times$ 73.0 mm (H) $\times$ 120.8 mm (D)
Mass (without battery and lens cap)	SDR-H250: Approx. 450 g SDR-H21/SDR-H20: Approx. 430 g
Operating temperature	0 $^{\circ}$ C to 40 $^{\circ}$ C
Operating humidity	10% to 80%
Operating altitude	Less than 3000 m above sea level

Motion pictures

Recording media	SD Memory Card: 32 MB*1/64 MB*1/128 MB*1/256 MB/512 MB/1 GB/2 GB (removable type) (FAT12 and FAT16 format corresponding) SDHC Memory Card: 4 GB (removable type) (FAT32 format corresponding) HDD: 30 GB*2 (fixed type)
Compression	MPEG-2
Recording mode and transfer rate	XP: 10 Mbps (VBR) SP: 5 Mbps (VBR) LP: 2.5 Mbps (VBR)
Recordable time	Refer to page 139.
Audio compression	SD card: MPEG-1 Audio Layer 2, 16 bit (48 kHz/2 ch) HDD: Dolby Digital, 16 bit (48 kHz/2 ch)
Maximum number of recordable folders and scenes	SD card: 99 folders $\times$ 99 scenes (9801 scenes) HDD: 999 folders $\times$ 99 scenes (98901 scenes) (When the date changes, a new folder is created and scenes are recorded in this new folder even if the number of scenes in the old folder has not reached 99.)

*1 Cannot be guaranteed in operation.

*2 The 30 GB hard drive utilizes a portion of the storage space for formatting, file management and other purposes. 30 GB is 30,000,000,000 bytes. Usable capacity will be less.

Others

Still pictures

Recording media	SD Memory Card: 8 MB/16 MB/32 MB/64 MB/128 MB/256 MB/512 MB/1 GB/2 GB (removable type) (FAT12 and FAT16 format corresponding) SDHC Memory Card: 4 GB (removable type) (FAT32 format corresponding) HDD: 30 GB* (fixed type)
Compression	JPEG (Design rule for Camera File system, based on Exif 2.2 standard), DPOF corresponding
Picture size	SDR-H250: 2048×1512, 1920×1080 (16:9), 1280×960, 640×480 SDR-H21/SDR-H20: 640×480, 640×360 (16:9)
Number of recordable pictures	Refer to page 212.

* The 30 GB hard drive utilizes a portion of the storage space for formatting, file management and other purposes. 30 GB is 30,000,000,000 bytes. Usable capacity will be less.

AC adaptor: VSK0651

Information for your safety

Power source:	AC 110 V to 240 V, 50/60 Hz
Power consumption:	19 W
DC output:	DC 7.9 V, 1.4 A (Unit operation) DC 8.4 V, 0.65 A (Battery charging)

Dimensions	61 mm (W) × 32 mm (H) × 91 mm (D)
Mass	Approx. 110 g

Specifications may change without prior notice.

Others

Number of recordable pictures on the HDD or an SD card

SDR-H250:

Picture size		3.1M (2048×1512)		2M (1920×1080)	
Picture quality					
HDD	30 GB	19160	29950	24960	39230
SD	8 MB	2	4	3	6
	16 MB	7	12	10	16
	32 MB	18	28	23	37
	64 MB	38	61	50	80
	128 MB	75	120	98	155
	256 MB	155	250	210	320
	512 MB	310	490	410	640
	1 GB	630	990	820	1290
	2 GB	1280	2010	1670	2630
	4 GB	2520	3950	3290	5170

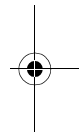
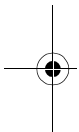
Picture size		1M (1280×960)		0.3M (640×480)	
Picture quality					
HDD	30 GB	47070	74890	99999	99999
SD	8 MB	7	12	37	75
	16 MB	20	32	92	185
	32 MB	45	73	200	410
	64 MB	96	155	430	850
	128 MB	185	300	820	1640
	256 MB	390	620	1710	3410
	512 MB	770	1230	3390	6780
	1 GB	1550	2470	6790	13580
	2 GB	3160	5030	13820	27640
	4 GB	6200	9870	27150	54290

Others

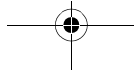
SDR-H21/SDR-H20:

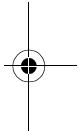
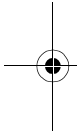
Picture size		0.3μ (640×480)		0.2μ (640×360)	
Picture quality					
HDD	30 GB	99999	99999	99999	99999
SD	8 MB	37	75	37	75
	16 MB	92	185	92	185
	32 MB	200	410	200	410
	64 MB	430	850	430	850
	128 MB	820	1640	820	1640
	256 MB	1710	3410	1710	3410
	512 MB	3390	6780	3390	6780
	1 GB	6790	13580	6790	13580
	2 GB	13820	27640	13820	27640
	4 GB	27150	54290	27150	54290

- The number of recordable pictures depends on whether [] and [] are used together and on the subject being recorded.
- The numbers shown in the table are approximations.
- If you record motion pictures on the HDD or an SD card, the number of recordable still pictures will become smaller.

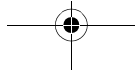
This image shows a single sheet of white paper with horizontal ruling lines. The lines are evenly spaced and extend across the width of the page. There is no handwriting or other markings on the paper.

Case No.	Case Name	Case Address	Case City	Case State	Case Zip	Case Phone	Case Email	Case Date	Case Time	Case Status	Case Notes
1	John Doe	123 Main St	New York	NY	10001	212-555-1234	john.doe@example.com	2023-10-27	14:30	Completed	Initial assessment and data collection.
2	Jane Smith	456 Elm St	Los Angeles	CA	90001	310-555-5678	jane.smith@example.com	2023-10-28	10:00	In Progress	Interview with subject and review of records.
3	Robert Johnson	789 Oak St	Chicago	IL	60601	312-555-9012	robert.johnson@example.com	2023-10-29	09:00	Pending	Awaiting further information from the client.
4	Maria Garcia	101 Pine St	San Francisco	CA	94101	415-555-3456	maria.garcia@example.com	2023-10-30	11:00	Completed	Final report and recommendations provided.
5	David Lee	202 Birch St	Seattle	WA	98101	206-555-7890	david.lee@example.com	2023-10-31	13:00	In Progress	Conducting follow-up interviews and analysis.
6	Sarah Brown	303 Cedar St	Portland	OR	97201	503-555-2345	sarah.brown@example.com	2023-11-01	15:00	Pending	Waiting for data from external sources.
7	Michael White	404 Maple St	Denver	CO	80201	303-555-6789	michael.white@example.com	2023-11-02	10:30	Completed	Analysis complete, report drafted.
8	Emily Green	505 Elm St	Phoenix	AZ	85001	602-555-0123	emily.green@example.com	2023-11-03	12:00	In Progress	Reviewing findings and preparing final report.
9	James Black	606 Oak St	San Diego	CA	92101	619-555-4567	james.black@example.com	2023-11-04	14:00	Pending	Final review and approval process.
10	Alice Johnson	707 Pine St	San Jose	CA	95101	408-555-8901	alice.johnson@example.com	2023-11-05	16:00	Completed	Project closed, all data archived.



This image shows a single sheet of white paper with horizontal blue or grey ruling lines. The lines are evenly spaced and run across the width of the page. There is no handwriting or other markings on the paper.

Case No.	Case Name	Case Address	Case City	Case State	Case Zip	Case Phone	Case Email	Case Date	Case Time	Case Status	Case Notes
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7	Michael White	404 Maple St	Denver	CO	80201	303-555-6789	michael.white@example.com	2023-11-02	10:30	Completed	Analysis complete, report drafted.
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Matsushita Electric Industrial Co., Ltd.

Web site: <http://panasonic.net>

松下電器産業株式會社
日本國大阪