

Panasonic

Digital Video Camera

数码摄像机

Operating Instructions

使用说明书



Model No. **NV-GS30EN**



Mini **DV** PAL

Before use, please read these instructions completely.

使用前，请完整阅读本说明书。

安全注意事项

由于本设备使用时会变热，请在空气流通的地方进行操作，不要将此设备安置在狭窄的空间内，例如书柜或类似地方。

要降低起火、电击或产品损坏的危险，请勿将本设备暴露于雨中、潮湿、滴水或溅水的环境，并确保勿将盛满液体的物品（如花瓶）放在本设备上。

摄像机

- 标牌位于摄像机的下面。

AC 适配器

- 标牌位于 AC 适配器的下面。

■ 请仔细阅读使用说明书并正确使用摄像机。

- 由于未按照本使用说明书中说明的操作步骤进行操作，而导致的损害或材料损坏由用户负责。

试用摄像机。

在记录重要事件前，首先要试用一下摄像机，以保证其录像性能与各种功能能够正常使用。

制造商对于影像内容的损失不负任何责任。
制造商对于因该摄像机、其附件或磁带的故障或缺陷造成的任何损失概不负责。

请严格遵守版权法。

若非个人使用，复制先期录制的磁带、磁盘、其他出版物或播放材料都侵犯版权法。即使是个人使用，也严禁复制某些特定材料。

参照页

参照页页码两侧标有短划线，例如：-00-

■ 警告

请勿卸下机身的前盖（或后盖）；机身内没有用户可维修的部件。

需要维修时，请联系授权的维修人员。

建议仅使用推荐的附件。

目录

安全注意事项	2
--------------	---

用前须知

标准附件	4
可选附件	4
控件和部件	4
遥控器	7
电源	7
充电时间和可用摄录时间	8
单触自由式手持带	8
安装镜头盖	9
安装肩背带	9
插入磁带	9
打开摄像机并选择模式	10
使用取景器 / LCD 监视器	10
使用菜单屏幕	11
菜单列表	12
设置日期和时间	13
内部锂电池充电	13
LP 模式	14
音频录制模式	14

相机模式

拍摄	15
快速启动	16
拍照	16
自拍器拍摄	16
放大 / 缩小功能	17
数码变焦功能	17
影像稳定器功能	17
淡入 / 淡出功能	18
逆光补偿功能	19
夜视功能	19
消除风干扰功能	19
电影功能	19
特殊环境拍摄	20
自然色彩拍摄	20
手动调整白平衡	21
手动快门速度调节	22
手动光圈调节	22
手动焦距调节	22
数码特效功能	23

VCR 模式

回放	26
查找要回放的场景	26
慢动作回放	27
静态回放 / 静态前进回放	27
查找拍摄内容结尾	27
索引搜索功能	27
回放变焦功能	28
回放数码特效功能	28
在电视上回放	30
配音	30
复制到 S-VHS (或 VHS) 磁带	31
录制其它设备上的内容	31
使用 DV 电缆进行录制	32
个人计算机连接工具	32

其它内容

指示	33
所有者 ID	34
初始化模式	34
警告 / 报警指示	34
注意事项与提示	35
使用注意事项	38
要求修理前 (问题和解决方法)	41
术语解释	42

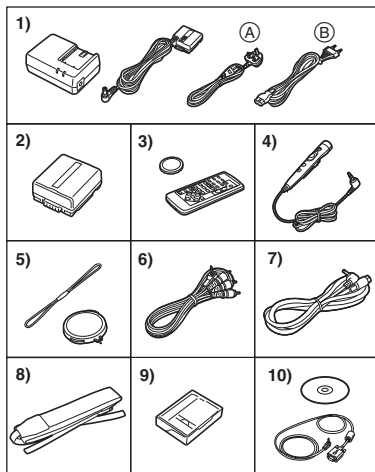
规格

规格	44
----------	----

用前须知

标准附件

图示为随摄像机一起提供的附件。



- 1) AC 适配器、DC 输入导线和 AC 电源线 -7-
 - (A) 中国香港特别行政区
 - (B) 中华人民共和国
 - (C) 中国香港特别行政区和中华人民共和国以外的地区
- 2) 电池组 -7-
- 3) 遥控器和纽扣型电池 -6-
- 4) 带麦克风的自由式遥控器 -6-
- 5) 镜头盖和镜头盖吊带 -9-
- 6) AV 电缆 -30-
- 7) S-Video 电缆 -30-
- 8) 肩背带 -9-
- 9) 数码摄像头清洁剂 -39-
- 10) 个人计算机连接工具 -32-

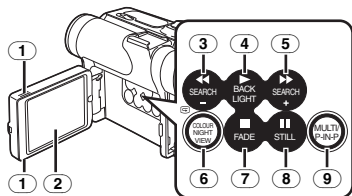
可选附件

- 1) AC 适配器 (VW-AD10E/B/GK)
- 2) 电池组 (锂 /CGA-DU07/680mAh)
- 3) 电池组 (锂 /CGA-DU14/1360mAh)
- 4) 电池组 (锂 /CGA-DU21/2040mAh)
- 5) 广角转换镜头 (VW-LW2707N2E)
- 6) 长焦转换镜头 (VW-LT2714N2E)
- 7) ND 滤镜 (VW-LND27E)
- 8) MC 保护镜 (VW-LMC27E)
- 9) 立体声麦克风 (VW-VMS2E)
- 10) 座式适配器 (VW-SK11E)
- 11) 三角架 (VZ-CT55E)
- 12) 雨雪护罩 (VW-SJGS50E)
- 13) 个人计算机连接工具 (VW-DTA30E/ VW-DTA29E)
- 14) DV 电缆 (VW-CD1E)
- 15) DV 编辑软件, 带 DV 接口卡 (VW-DTM21E)
- 16) DV 编辑软件, 带 DV 接口卡 (VW-DTM22E)

- 17) DV 编辑软件 (VW-DTM20E)
 - 18) 互联网电视电话软件 (VW-DTC1E)
- 在某些国家, 可能不提供某些可选附件。

控件和部件

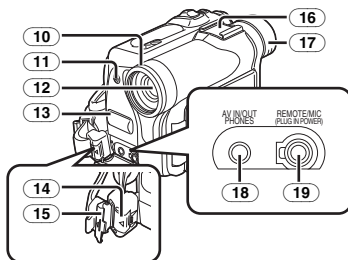
■ 摄像机



- 1) LCD 监视器打开旋钮 [OPEN▼] -10-
- 2) LCD 监视器 -10-, -40-

由于 LCD 生产技术所限, 在 LCD 监视器屏幕上会有一些微小的亮点或暗点。但这并非故障, 不会影响录制的图片。

- 3) 倒带 / 倒带搜索按钮 [◀◀] -26-
- 反向搜索按钮 [SEARCH-] -15-
- 录制检查按钮 [G] -15-
- 4) 播放按钮 [▶] -26-
- 逆光按钮 [BACK LIGHT] -19-
- 5) 快进 / 快进搜索按钮 [▶▶] -26-
- 向前搜索按钮 [SEARCH+] -15-
- 6) 彩色夜视按钮 [COLOUR NIGHT VIEW] -19-
- 7) 停止按钮 [■] -26-
- 淡化按钮 [FADE] -18-
- 8) 暂停按钮 [⏸] -27-
- 静态按钮 [STILL] -16-
- 9) 多画面按钮 [MULTI] -25-, -29-
- 画中画按钮 [P-IN-P] -24-



- 10) 镜头遮光罩 -41-
- 11) 拍摄灯 -15-
- 12) 镜头
- 13) 麦克风 (内置立体声) -17-, -19-
- 14) 锁定按钮 -8-

15 锁定盖 -8-

16 附件座

- 附件，例如立体声麦克风（VW-VMS2E，单卖品），都装入其中使用。

17 眼罩

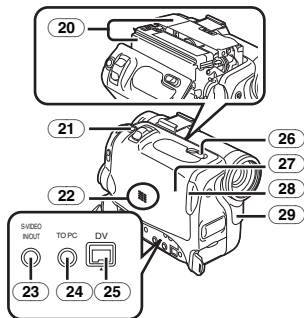
18 音频—视频输入 / 输出插孔 [AV IN/OUT] -30-
耳机插孔 [PHONES]

- 将 AV 电缆接入此插孔将启动摄像机的内置扬声器，但如果连接了耳机等，扬声器将停用。
- 将 AV 电缆的针式插头插入此插孔时，请尽量插到底。

19 带麦克风的自由式遥控器插孔 [REMOTE] -15-

麦克风孔 [MIC]

- 将外部麦克风或者音频设备连接到该插孔后，就不能使用内置麦克风。
- 将带麦克风的自由式遥控器连接到此插孔，然后按 [TALK] 按钮，内置麦克风将不可用。
- 将带麦克风的自由式遥控器的针式插头插入此插孔时，请尽量插到底。



20 磁带盒架

21 拍照按钮 [PHOTO SHOT] -16-

22 扬声器 -26-

23 S-Video 输入 / 输出插孔 [S-VIDEO IN/OUT] -30-

24 数码静态图片端子 [TO PC] -32-

25 DV 端子 [DV] -32-

- 可将该端子连接至数字视频设备

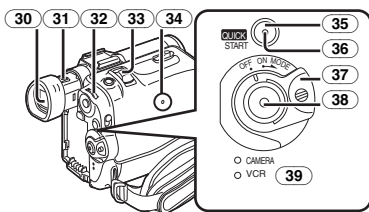
26 磁带弹出杆 [OPEN/EJECT] -9-

27 磁带盒盖 -9-

28 磁带盒架关闭按钮 [PUSH CLOSE] -9-

29 白平衡传感器 -21-

遥控传感器 -7-



30 取景器 -10-, -40-

由于 LCD 生产技术所限，在取景器屏幕上可能会有些微小的亮点或者暗点。但这并非故障，不会影响录制的图片。

31 目镜校正旋钮 -10-

32 多功能旋钮 [PUSH] -11-, -26-

33 变焦杆 [W/T] -17-

34 复位按钮 [RESET] -34-

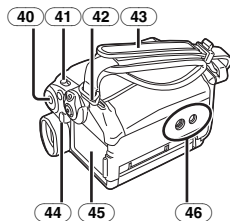
35 快速启动拍摄按钮 [QUICK START] -16-

36 快速启动拍摄灯 -16-

37 开 / 关模式选择器开关 [OFF/ON/MODE] -10-, -15-, -38-

38 拍摄开始 / 停止按钮 -15-

39 操作模式指示灯 [CAMERA/VCR] -10-, -15-, -26-



40 菜单按钮 [MENU] -11-

41 模式选择器开关 [AUTO/MANUAL/FOCUS] -15-, -20-

42 肩背带固定器 -9-

43 手执带（单触自由式手执带）-8-

44 电池弹出按钮 [PUSH BATT] -8-

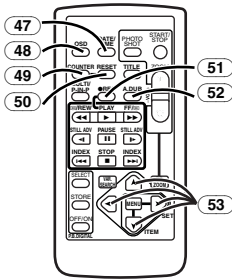
45 电池座

46 三脚架座

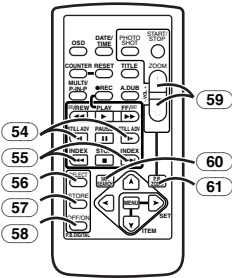
- 用于将摄像机安装在三角架（单卖品）上。

■ 遥控器

使用随摄像机提供的无线遥控器，可以距摄像机一定距离使用其大部分功能。

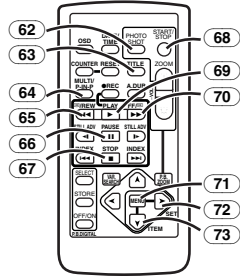


- ④7 日期 / 时间按钮 [DATE/TIME] -33-
- ④8 指示输出按钮 [OSD] -30-
- ④9 计数器指示切换按钮 [COUNTER] -33-
- ⑤0 复位按钮 [RESET] -43-
- ⑤1 录制按钮 [REC] -31-
- ⑤2 配音按钮 [A.DUB] -30-
- ⑤3 用于变速搜索功能的指针按钮 [▲, ▼] -27-
用于回放变焦功能的方向按钮 [▲, ◀, ▶, ▼] -28-



- ⑤4 慢动作 / 静态前进按钮 [◀, ▶] (◀: 向后, ▶: 向前) -27-
- ⑤5 索引搜索按钮 [◀◀, ▶▶] (◀◀: 向后, ▶▶: 向前) -28-
- ⑤6 选择按钮 [SELECT] -29-
- ⑤7 存储按钮 [STORE] -29-
- ⑤8 开 / 关按钮 [OFF/ON] -29-
- ⑤9 变焦/音量按钮 [ZOOM/VOL] -17-, -26-, -28-
- ⑥0 变速搜索按钮 [VAR. SEARCH] -27-
- ⑥1 回放变焦按钮 [P.B. ZOOM] -28-

下列按钮的功能与摄像机上相应按钮的功能相同。

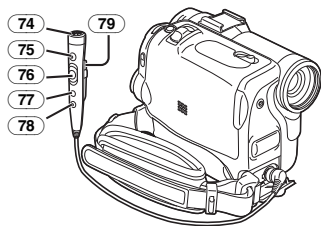


- ⑥2 拍照按钮 [PHOTO SHOT] -16-
- ⑥3 标题按钮 [TITLE]
 - 使用本按钮无法操作本机。
- ⑥4 多画面 / 画中画按钮 [MULTI/P-IN-P] -24-, -29-
- ⑥5 倒带 / 倒带搜索按钮 [◀◀] -26-
- ⑥6 暂停按钮 [⏸] -27-
- ⑥7 停止按钮 [■] -26-
- ⑥8 拍摄开始 / 停止按钮 [START/STOP] -15-
- ⑥9 播放按钮 [▶] -26-
- ⑦0 快进 / 快进搜索按钮 [▶▶] -26-
- ⑦1 菜单按钮 [MENU] -11-
- ⑦2 设置按钮 [SET] -11-
- ⑦3 项目按钮 [ITEM] -11-

■ 带麦克风的自由式遥控器

该控制器可让您由各种角度（由高至低）来拍摄场景，且在使用三脚架时也很便利。当您不打算使用该控制器时，将线夹连接到手执带上会很方便。

该控制器可让惯用左手的用户很方便地使用该机。



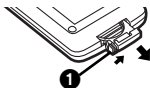
- ⑦4 麦克风 [MIC] -15-
- ⑦5 拍摄开始 / 停止按钮 [REC]
- ⑦6 变焦杆 [W/T]
 - 变焦速度的变化可分 2 个阶段。
- ⑦7 拍照按钮 [PHOTO SHOT]
- ⑦8 麦克风切换按钮 [TALK] -15-
 - 将带麦克风的自由式遥控器接到 [REMOTE] 插孔，然后按下 [TALK] 按钮，内置麦克风将不可用。
- ⑦9 线夹
 - 将插头插入 [REMOTE] 插孔时，应牢固地插到底。连接不牢会影响正常操作。

遥控器

■ 安装钮扣型电池

使用遥控器之前，请先安装好随付的钮扣型电池。

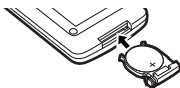
1 在按住止动钮 ① 的同时，取出电池座。



2 插入钮扣型电池，注意使有 (+) 印记的面朝上。



3 将电池座插入遥控器。



- 当钮扣型电池电力耗尽时，请换上新的 CR2025 电池。（电池在正常情况下可以使用大约 1 年。但具体使用时间取决于使用频率。）
- 安装电池时，要确保极性正确匹配。

注意

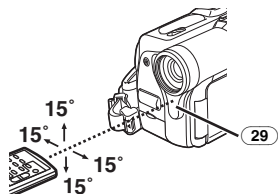
如果电池放置错误，有发生爆炸的危险。更换电池时，只能使用与原电池相同的电池或设备制造商建议使用的同等类型的电池。要按照制造商的说明，妥善处理用过的电池。

警告

火灾、爆炸和灼伤的风险。请勿重新给电池充电、分解电池、使其温度升高到 100°C 以上或者焚烧电池。请将钮扣型电池放置在儿童触及不到的地方。切勿将钮扣型电池放入口中。如果吞下电池，请立即就医。

■ 使用遥控器

1 将遥控器直接对准摄像机的遥控传感器 ②9 并按相应的按钮。



- 与摄像机的距离：大约 5 米之内
- 角度：离中轴线在垂直和水平方向约 15° 以内
- 上述操作范围仅限于室内。室外或者强光条件下，在上述操作范围里，摄像机可能无法正常工作。

- 在 1 米范围内，也可以在摄像机的 LCD 监视器的侧面使用遥控器。

选择遥控器模式

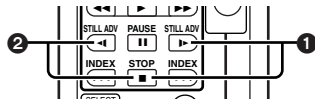
当同时使用 2 台摄像机时，可通过选择不同的遥控模式实现各自的操作。

- 如果摄像机的遥控模式和遥控器不匹配，会显示 [REMOTE] 指示。

设置摄像机：

将 [OTHER FUNCTIONS] 子菜单上的 [REMOTE] 设置为所需的遥控模式。(-J2-)

设置遥控器：



[VCR1]:

同时按下 [▶] 按钮和 [■] 按钮。①

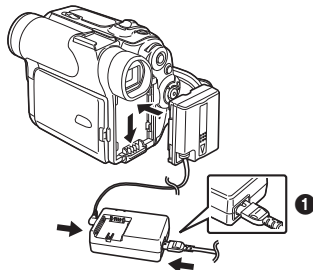
[VCR2]:

同时按下 [◀] 按钮和 [■] 按钮。②

- 更换遥控器中的电池后，其模式也自动复位到 [VCR1] 模式。

电源

■ 使用 AC 适配器



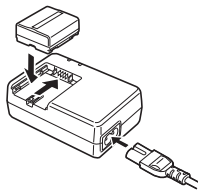
- 1 将 DC 输入导线连接到摄像机。
- 2 将 DC 输入导线连接到 AC 适配器。
- 3 将 AC 电源线连接到 AC 适配器和 AC 电源插孔。

- AC 电源线的插头不能完全插入 AC 适配器的插座。会留有如图 ① 所示的间隙。
- 在连接或者断开电源之前，将摄像机的 [OFF/ON/MODE] 开关设置为 [OFF] 并确认 [CAMERA/VCR] 指示灯未亮。

■ 使用电池

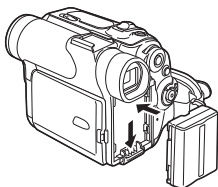
使用之前，请将电池完全充电。

1 将电池连接到 AC 适配器并充电。



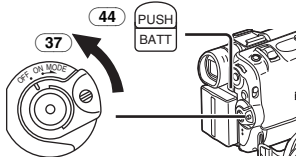
- 由于 DC 输入线与 AC 适配器连接时无法对电池充电，所以请断开它们。
- [POWER] 指示灯和 [CHARGE] 指示灯亮起，充电开始。
- 当 [CHARGE] 指示灯熄灭时，说明已完成充电。

2 将充过电的电池安装到摄像机上。



断开电源

将 [OFF/ON/MODE] 开关 (37) 设置为 [OFF]，在按住 [PUSH BATT] 按钮 (44) 的同时，向上滑动电池或者 DC 输入导线，以将其断开。



- 有关此项目的其它注释，请参阅 -35-。

充电时间和可用摄录时间

CGA-DU07	(A)	1h30min.
	(B)	2h15min.(1h35min.)
	(C)	1h10min.(50min.)
CGA-DU14	(A)	2h45min.
	(B)	4h30min.(3h10min.)
	(C)	2h15min.(1h35min.)
CGA-DU21	(A)	3h55min.
	(B)	6h45min.(4h45min.)
	(C)	3h25min.(2h25min.)

- (A) 充电时间
- (B) 最长连续摄录时间
- (C) 间断摄录时间
(间断摄录时间是指包含重复摄录和停止摄录在内的可用摄录时间。)

“1h10min.”表示 1 小时 10 分钟。

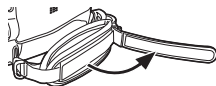
- 随附电池为 CGA-DU07。
- 表中所示时间为近似值。括弧中的数字表示使用 LCD 监视器时的摄录时间。在实际使用中，摄录时间可能会稍短。
- 表中所示的时间是指温度为 20°C，湿度为 60% 时的连续摄录时间。如果电池充电时温度高于或低于此值，则充电时间可能会更长。
- 当使用零照度夜视功能或向前旋转 LCD 监视器进行自拍时，如果同时使用取景器和 LCD 监视器，则可用摄录时间将变短。

单触自由式手执带

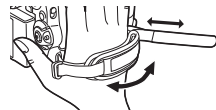
■ 用作手执带

可以根据手的大小来调节手执带的长度。

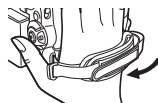
1 打开手执带。



2 滑动衬垫以获得最适宜的长度。



3 重新装好手执带。

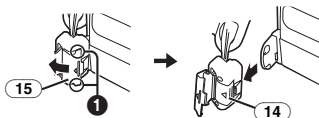


■ 用作手挂带

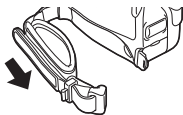
将手执带用作手挂带，更便于操作和携带摄像机。与带麦克风的自由式遥控器一起使用，将会更加便利。



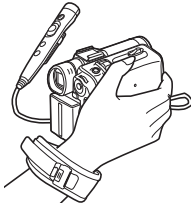
1 握住 ① 两侧的卡头，打开锁定盖 (15)，按下锁定按钮 (14)，然后卸下手执带。



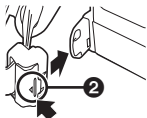
2 滑动手执带的衬垫。



3 将手执带绕在手腕上。



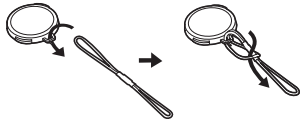
- 将手执带放回手执带接合部分，按锁定盖 ② 将其牢牢地锁定。



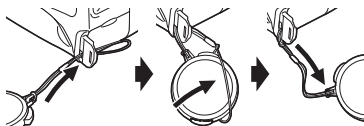
安装镜头盖

为保护镜头表面，请按上镜头盖。

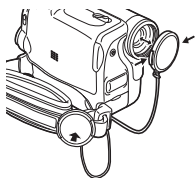
- 1 将镜头盖吊带的末端穿过镜头盖上的小眼。然后将吊带的另一末端穿过它自身结成的环圈，并拉紧。



- 2 将镜头盖吊带的末端穿过手执带接合部分的小孔，然后将镜头盖穿过镜头盖吊带。



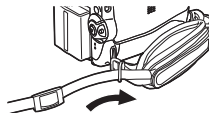
- 取下的镜头盖可以挂在手执带上。（当用作手执带时不能这样做。）
- 在不拍摄期间，为了保护镜头，请确保镜头盖盖在镜头上。



安装肩背带

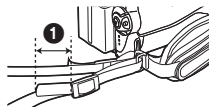
我们建议您在出门拍摄之前装上肩背带，以防止摄像机掉落。

- 1 将肩背带的一端穿过摄像机上的肩背带固定器。



- 2 折叠肩背带端头，然后将其穿过肩背带长度调节器，再拉出此端头。

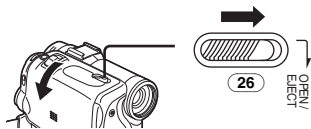
- 端头应拉出肩背带长度调节器 2 厘米 ① 以上，以防止其脱落。



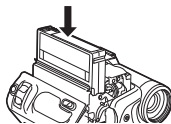
- 用同样的方法，将肩背带的另一端安装到另一个肩背带固定器内。

插入磁带

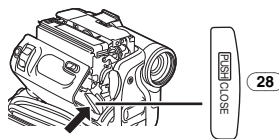
- 1 前滑并下拉 [OPEN/EJECT] 杆 (26)，打开磁带盒盖。



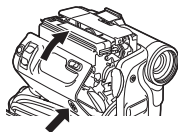
- 2 插入磁带。



- 3 按下 [PUSH CLOSE] 按钮 (28) 关闭磁带盒架。

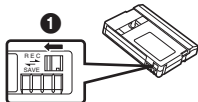


4 关闭磁带盒盖。



■ 防止意外删除

打开磁带上的意外删除保护滑块 ①（向 [SAVE] 箭头方向滑动滑块），以防止录制。要想录制，请关闭意外删除保护滑块（将其拨向 [REC] 箭头方向）。



●有关此项目的其它注释，请参阅 -35-。

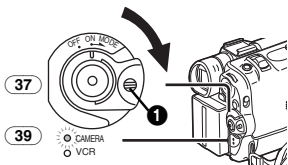
打开摄像机并选择模式

首先接通电源，然后选择模式。

■ 如何接通电源

1 在按下按钮 ① 的同时，将 [OFF/ON/MODE] 开关 (37) 设置为 [ON]。

●[CAMERA] 指示灯 (39) 亮起。



■ 如何切换模式

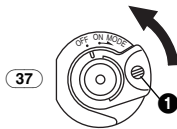
2 转动 [OFF/ON/MODE] 开关 (37)。

- 每转动一次，模式即发生改变。
- 相应的模式指示灯亮起。



■ 如何关闭电源

3 在按下按钮 ① 的同时，将 [OFF/ON/MODE] 开关 (37) 设置为 [OFF]。

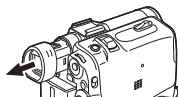


使用取景器 / LCD 监视器

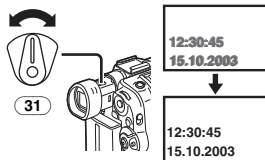
■ 使用取景器

在使用取景器之前，请调节视野，使取景器内的显示清晰可辨。

1 拉出取景器



2 转动目镜校正旋钮 (31) 进行调节。

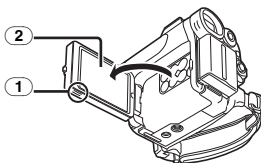


■ 使用 LCD 监视器

在 LCD 监视器打开时，可以边拍摄边查看。

1 按下 [OPEN▼] 按钮 (1)，并朝箭头方向拉出 LCD 监视器 (2) 约 90°。

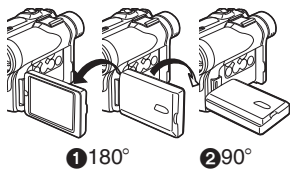
●取景器关闭。



2 根据所需拍摄角度，调整 LCD 监视器的角度。

- LCD 监视器从垂直位置向上的最大旋转角度为 180° ①，从垂直位置向下的最大旋转角度

为 90° ②。如果将 LCD 监视器旋转到这些范围之外，将损坏摄像机。

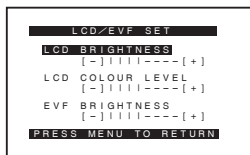


关闭 LCD 监视器

推动 LCD 监视器，直到牢牢地锁定为止。

■ 调整亮度和色彩级别

当 [DISPLAY SETUP] 子菜单上的 [LCD/EVF SET] 设置为 [YES] 时，将显示以下项目。



LCD 亮度 [LCD BRIGHTNESS]

用于调整 LCD 屏幕上影像的亮度。

LCD 色彩级别 [LCD COLOUR LEVEL]

用于调整 LCD 屏幕上影像的色彩饱和度。

取景器亮度 [EVF BRIGHTNESS]

用于调整取景器中影像的亮度。

调整影像的亮度

按 [PUSH] 旋钮，选择要调整的项目，然后转动 [PUSH] 旋钮，以增加或者减少条状指示中的竖条数量。

- 竖条数目越多，则表示亮度或色彩饱和度越高。

增加整个 LCD 监视器的亮度

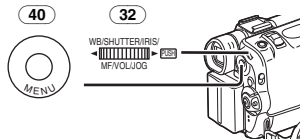
将 [DISPLAY SETUP] 子菜单上的 [LCD MODE] 设置为 [BRIGHT]。

- 这些调整不会影响所摄录的影像。
- 有关此项目的其它注释，请参阅 -40-。

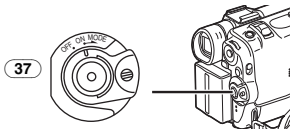
使用菜单屏幕

为便于选择所需的功能或设置，该款摄像机在菜单上显示出各种功能设置。

1 按下 [MENU] 按钮 ④0。



- 此时将显示一个菜单，此菜单与使用 [OFF/ON/MODE] 开关 ③7 选择的模式相对应。



2 转动 [PUSH] 旋钮 ③2，选择所需的子菜单。

- 转动 [PUSH] 旋钮 ③2，显示突出显示的项目。

3 按下 [PUSH] 旋钮 ③2，显示所选的子菜单。

4 转动 [PUSH] 旋钮 ③2，选择要设置的项目。

5 按下 [PUSH] 旋钮 ③2，将所选项目设置为所需模式。

- 每按一次 [PUSH] 旋钮，光标 [▶] 将移动到下一模式。不能和所选项目一起使用的菜单项以深蓝色显示。
- 当显示菜单时，不能进行摄录或回放。回放过程中可以显示菜单，但摄录过程中却不能。可以用遥控器上的 [MENU] 按钮、[SET] 按钮和 [ITEM] 按钮来完成上述操作。(-6)

退出菜单屏幕

再次按下 [MENU] 按钮。

关于菜单模式设置

即使摄像机关闭，在菜单上所选的设置也将得到保存。但是如果是在关闭摄像机之前断开电池或者 AC 适配器，则所选的设置可能不会得到保存。

(对于 [EFFECT2] (-23-) 的设置不会得到保存。)

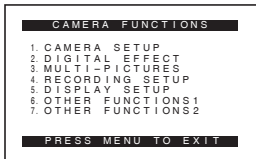
- 菜单操作流程在本文中见 >>。

菜单列表

菜单图示仅用于介绍，与实际菜单有所不同。

■ [CAMERA FUNCTIONS]

相机模式主菜单



1) [CAMERA SETUP]

相机设置子菜单

[PROG.AE]

自动曝光模式 -20-

[PROGRESSIVE]

渐进拍照模式 -16-

[SIS]

影像稳定器 -18-

[D.ZOOM]

数码变焦 -17-

[CINEMA]

类电影格式拍摄 -19-

[SELF TIMER]

自拍器拍摄 -17-

[RETURN]

返回主菜单

● 如果将 [RETURN] 设置为 [YES]，菜单将返回主菜单。

2) [DIGITAL EFFECT]

数码特效功能子菜单

[EFFECT1]

数码特效 1 -23-

[EFFECT2]

数码特效 2 -23-

3) [MULTI-PICTURES]

多画面模式子菜单

[SCAN MODE]

多画面模式 -24-

[SPEED]

频闪多画面速度 -24-

[SWING]

旋转模式 -24-

[P-IN-P]

普通图片内小图片的位置 -24-

4) [RECORDING SETUP]

录制设置子菜单

[REC SPEED]

录制速度模式 -14-

[AUDIO REC]

音频录制模式 -14-

[SCENE INDEX]

场景索引模式 -27-

[WIND CUT]

消除风干扰 -19-

[ZOOM MIC]

变焦麦克风 -17-

5) [DISPLAY SETUP]

显示设置子菜单

[DATE/TIME]

日期和时间指示 -33-

[C.DISPLAY]

计数器显示模式 -33-

[C.RESET]

计数器复位 -43-

● 可使计数器重设为零，但不能重设时间码。

[DISPLAY]

显示模式 -33-

[LCD MODE]

LCD 照明模式 -11-

[LCD/EVF SET]

LCD 和取景器调整 -11-

6) [OTHER FUNCTIONS1]

其它功能 1 子菜单

[REMOTE]

遥控器模式 -7-

[REC LAMP]

拍摄灯 -15-

[BEEP SOUND]

哔哔声 -35-

[SHTR EFFECT]

快门特效 -16-

[CLOCK SET]

日期和时间设置 -13-

[SELF REC]

自拍 -16-

[OWNER ID SET]

所有者 ID 设置 -34-

7) [OTHER FUNCTIONS2]

其它功能 2 子菜单

[DEMO MODE]

演示模式：

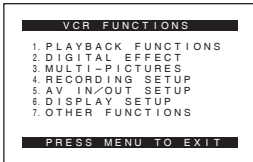
● 将 AC 适配器连接到摄像机并将 [OFF/ON/MODE] 开关设置为 [ON] 时，如果在大约 10 分钟后没有插入磁带，并且无任何操作，摄像机将自动进入演示模式，以介绍其功能。按下或操作任何按钮将退出演示模式。要启动演示模式，可将 [DEMO MODE] 设置为 [ON] 并退出菜单。要停止演示模式，可插入磁带或将 [DEMO MODE] 设置为 [OFF]。

[INITIAL SET]

初始设置模式 -34-

■ [VCR FUNCTIONS]

VCR 模式主菜单



1) [PLAYBACK FUNCTIONS]

回放功能子菜单

[BLANK SEARCH]

空白搜索 -27-

[SEARCH]

索引搜索模式 -28-

[12bit AUDIO]

音频选择器 -30-

[AUDIO OUT]

音频输出模式 -37-

[RETURN]

返回主菜单

2) [DIGITAL EFFECT]

回放数码特效功能子菜单

[EFFECT]

数码特效开 / 关 -29-

[EFFECT SELECT]

数码特效选择 -29-

3) [MULTI-PICTURES]

多画面模式子菜单

[SCAN MODE]

多画面模式 -29-

[SPEED]

频闪多画面速度 -29-

[SWING]

旋转模式 -29-

4) [RECORDING SETUP]

录制设置子菜单

[REC SPEED]

录制速度模式 -14-

[AUDIO REC]

音频录制模式 -14-

5) [AV IN/OUT SETUP]

音频 - 视频输入 / 输出设置子菜单

[AV JACK]

AV 插孔 -30-

[A.DUB INPUT]

配音输入 -30-

[DV OUT]

模数转换输出 -38-

6) [DISPLAY SETUP]

显示设置子菜单

- [DISPLAY SETUP] 子菜单上的所有项目均和 [CAMERA FUNCTIONS] 主菜单的 [DISPLAY SETUP] 子菜单中的各项相同。

7) [OTHER FUNCTIONS]

其它功能子菜单

[REMOTE]

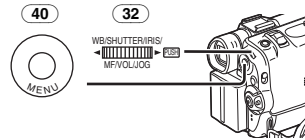
遥控器模式 -7-

[CLOCK SET]

日期和时间设置 -13-

设置日期和时间

由于摄像机的内部时钟不是特别精确，所以请务必在摄录前检查时间。



1 设置 [CAMERA FUNCTIONS] >>

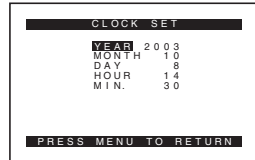
[OTHER FUNCTIONS] >> [CLOCK SET] >>

[YES].

或者设置 [VCR FUNCTIONS] >>

[OTHER FUNCTIONS] >> [CLOCK SET] >>

[YES].



2 按下 [PUSH] 旋钮 (32) 来选择 [YEAR]、

[MONTH]、[DAY]、[HOUR] 或者 [MIN.]，并转动它，将它设置为所需的值。

- 年份将按如下所示的顺序循环。
2000, 2001, ..., 2089, 2000, ...

3 按 [MENU] 按钮 (40) 完成日期和时间的设置。

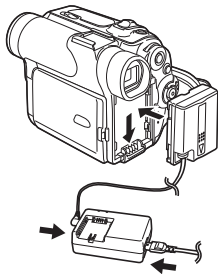
- 时钟将从 [00] 秒开始。
- 再次按 [MENU] 按钮时，菜单将消失。
- 如果内置电池电量不足，则 [🔋] 指示将闪烁。在这种情况下，请对内置电池充电。
- 时钟采用 24 小时制。

内部锂电池充电

内部锂电池维持时钟的运转。当 [🔋] 指示闪烁时，表示内部锂电池的电能将耗尽。



- 1 在将电源关闭的情况下，将 AC 适配器连接到摄像机，然后再连接到 AC 电源插座。



- 充电 4 小时后，内置锂电池可为时钟供电约 3 个月。

LP 模式

利用 [RECORDING SETUP] 子菜单上的 [REC SPEED]，可以选择所需的录制速度。

如果选择 LP 模式，则摄录时间将比 SP 模式长 1.5 倍。

虽然使用 LP 模式录制时影像质量不会下降，但回放时会出现马赛克干扰，或者某些正常功能受到限制。

- 用 LP 模式录制的内容与其它设备不能完全兼容。
- 用 LP 模式不能进行配音。(-30-)

音频录制模式

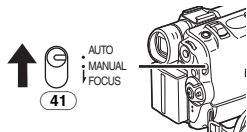
使用 [RECORDING SETUP] 子菜单上的 [AUDIO REC]，可以选择所录声音的音质。

使用“16 bit 48 kHz 2 track”（16 位 48 千赫兹 2 声道）模式时，可以实现高质量的录音。使用“12 bit 32 kHz 4 track”（12 位 32 千赫兹 4 声道）模式时，2 个声道用于将原声录制为立体声，另 2 个声道可用于录制配音。

相机模式

拍摄

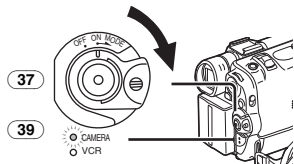
在拍摄时，如将 [AUTO/MANUAL/FOCUS] 开关 (41) 设置为 [AUTO]，摄像机将自动调整焦距和白平衡。在某些情况下不能进行自动调节，这时就需要手动调节。(-21-, -22-)



●在接通电源前，请取下镜头盖。如果在未取下镜头盖时打开电源，自动白平衡调整 (-21-) 可能无法正常工作。

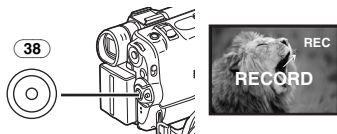
1 将 [OFF/ON/MODE] 开关 (37) 设置为 [ON]。

- [CAMERA] 指示灯 (39) 亮起。



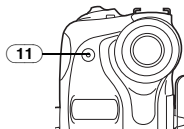
2 按拍摄开始 / 停止按钮 (38)。

- 录制开始。
- 在显示 [RECORD] 后，它将变为 [REC]。



拍摄灯（指示灯）

在录制时，拍摄灯 (11) 亮起，提示所录制内容正在录制中。



- 如果将 [OTHER FUNCTIONS1] 子菜单上的 [REC LAMP] 设置为 [OFF]，则拍摄灯不亮。

暂停拍摄

再次按拍摄开始 / 停止按钮 (38)。

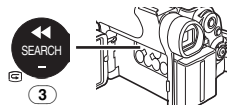
显示 [PAUSE] 指示。



- 如果拍摄暂停模式持续时间超过 6 分钟，电源会自动关闭，以保护磁带并节省电源。要从此状况下恢复制录，需先关闭电源，然后再打开电源。

检查拍摄

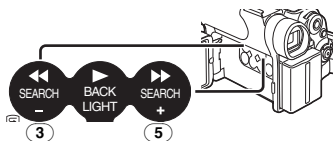
在拍摄暂停模式中，按 [SEARCH] 按钮 (3)，可以回放最后几秒钟拍摄的场景。



- 此时会出现 [CHK] 指示。检查完以后，摄像机将恢复拍摄暂停模式。

在拍摄暂停时查看拍摄的场景（相机搜索）

要查看拍摄的场景，可在拍摄暂停模式下按住 [SEARCH-] 按钮 (3) 或者 [SEARCH+] 按钮 (5)。



- 按下 [SEARCH-] 按钮，将反向回放影像。
- 按下 [SEARCH+] 按钮，将正向回放影像。

结束拍摄

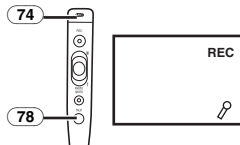
将 [OFF/ON/MODE] 开关 (37) 设置为 [OFF]。

- 有关此项目的其它注释，请参阅 -35-。

在录制时添加声音

将带麦克风的自由式遥控器连接到 [REMOTE] 插孔 (19)，可以在录制过程中添加解说。

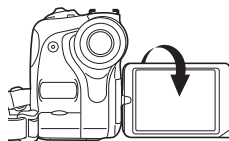
按下 [TALK] 按钮 (78)，此时将显示 [P] 指示，并将来自 [MIC] (74) 的声音录下来。



- 按下 [TALK] 按钮，内部麦克风将无法工作。

自拍

打开 LCD 监视器并将其向前转（向镜头一侧），可以在拍摄时使摄像机监视器前的对象成为拍摄目标。



- 当打开 LCD 监视器时，取景器自动停用。然而，当 LCD 监视器转向前面时，还可以在取景器中显示影像。
- 如果您喜欢在 LCD 监视器中取景，就好像是在镜子里看影像一样，请将

[OTHER FUNCTIONS1] 子菜单上的 [SELF REC] 设置为 [MIRROR]。这样，影像就被正常录制，不会出现左右互换。

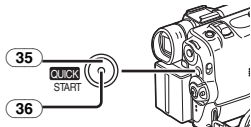
- 如果在自拍过程中使用了 [MIRROR]，则只显示拍摄指示 [●]、拍摄暂停指示 [●||] 和剩余电量电量指示 [▬] 等基本指示。
- 如果出现常规的警告/报警指示 [!]，请将 LCD 监视器转回原位置，以检查警告/报警指示中的详细内容。

快速启动

按 [QUICK START] 按钮 (35)，摄像机将在接通电源后约 1.3 秒内即做好拍摄准备。

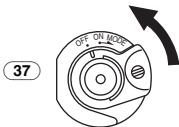
1 按下 [QUICK START] 按钮 (35)。

- 快速启动拍摄灯 (36) 将亮起。



2 将 [OFF/ON/MODE] 开关 (37) 设置为 [OFF]。

- 快速启动拍摄灯将一直亮起。



3 将 [OFF/ON/MODE] 开关 (37) 设置为 [ON]。

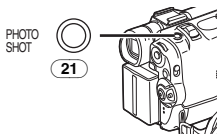
- 摄像机将在大约 1.3 秒内做好拍摄准备。

- 有关此项目的其它注释，请参阅 -35-。

拍照

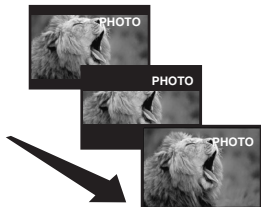
本摄像机可以拍摄大约 7 秒钟的、包含声音的静态图片。

1 在拍摄暂停模式中，。按 [PHOTO SHOT] 按钮 (21)。



- 摄像机拍摄了大约 7 秒钟的静态图片，然后切换回拍摄暂停模式。

- 如果将 [OTHER FUNCTIONS1] 子菜单上的 [SHTR EFFECT] 设置为 [ON]，便可以添加如同松开快门时的影像和声音。



渐进拍照

用渐进拍照功能，所拍摄的静态图片的分辨率比采用正常拍照功能时高很多。

- 将 [CAMERA SETUP] 子菜单上的 [PROGRESSIVE] 设置为 [ON] 或 [AUTO] 时，将会显示 [P] 指示。当 [P] 指示显示时，请在拍摄暂停模式中按下 [PHOTO SHOT] 按钮。



- 此功能可能不能与某些功能设置结合使用。

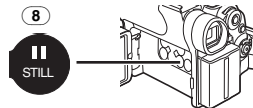
连续拍照

如果将 [OTHER FUNCTIONS1] 子菜单上的 [SHTR EFFECT] 设置为 [ON]，并且按住 [PHOTO SHOT] 按钮，摄像机将以 0.7 秒为间隔拍照静态图片，直到松开按钮。（但在使用渐进拍照时不能使用此功能。）

- 屏幕闪烁，同时录下快门的卡嗒声。

数码静态图片

当按下 [STILL] 按钮 (8) 时，影像将变成静态图片。再次按该按钮，可取消数码静态图片模式。



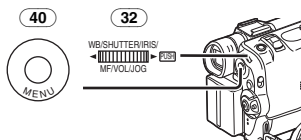
- 建议在希望录制图片的位置先按 [STILL] 按钮，以便进入数码静态图片模式，然后再按 [PHOTO SHOT] 按钮。

- 有关此项目的其它注释，请参阅 -35-。

自拍器拍摄

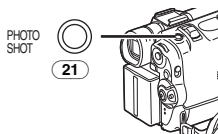
设置自拍器后 10 秒钟，就会自动将图片摄录到磁带。

1 设置 [CAMERA FUNCTIONS] >> [CAMERA SETUP] >> [SELF TIMER] >> [ON]。



●此时会出现 [☺] 指示。

2 按下 [PHOTO SHOT] 按钮 (21)。



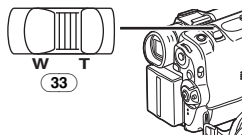
●拍摄灯 (11) 和 [☺] 指示闪烁起来，10 秒后启动拍照。

●有关此项目的其它注释，请参阅 -36-。

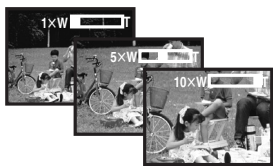
放大 / 缩小功能

通过近景或者广角拍摄，可以给图片造成特殊效果。

- 1 对于广角拍摄 (缩小)：
将 [W/T] 杆 (33) 推向 [W]。
对于特写镜头 (放大)：
将 [W/T] 杆推向 [T]。



●变焦放大率指示会显示数秒钟。



■ 拍摄小物体的特写镜头 (大特写镜头功能)

当变焦放大率为 1× 时，摄像机可以聚焦于距镜头约 20 毫米的物体。这时可以拍摄昆虫等小目标。

■ 使用变焦麦克风功能

使用变焦操作时，麦克风的的方向角度和灵敏度随着所录声音而变化。

- 设置 [CAMERA FUNCTIONS] >> [RECORDING SETUP] >> [ZOOM MIC] >> [ON]。(此时会出现 [Z.MIC] 指示。)

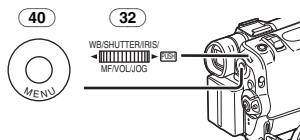


●有关此项目的其它注释，请参阅 -36-。

数码变焦功能

当要对处于 1× 到 10× 放大率的正常变焦范围之外的目标进行特写镜头拍摄时，可使用此功能。使用数码变焦功能，可以选择 20×、甚至 500× 的放大率。

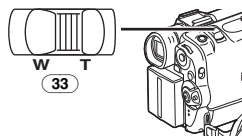
- 1 设置 [CAMERA FUNCTIONS] >> [CAMERA SETUP] >> [D.ZOOM] >> [20×] 或者 [500×]。



- 20×：数码变焦到 20×
- 500×：数码变焦到 500×



- 2 将 [W/T] 杆 (33) 推向 [W] 或者推向 [T]，进行放大或缩小。



取消数码变焦功能

设置 [CAMERA FUNCTIONS] >> [CAMERA SETUP] >> [D.ZOOM] >> [OFF]。

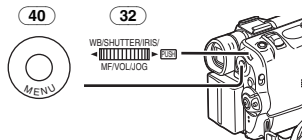
●有关此项目的其它注释，请参阅 -36-。

影像稳定器功能

如果摄像机在拍摄时发生晃动，可以修正影像中的相机晃动。

- 如果摄像机晃动幅度过大，此功能可能无法稳定影像。

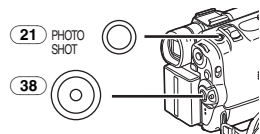
1 设置 [CAMERA FUNCTIONS] >> [CAMERA SETUP] >> [SIS] >> [ON]。



●此时会出现 [] 指示。



2 按拍摄开始/停止按钮 (38) 或 [PHOTO SHOT] 按钮 (21)，开始拍摄。



取消影像稳定器

设置 [CAMERA FUNCTIONS] >> [CAMERA SETUP] >> [SIS] >> [OFF]。

●有关此项目的其它注释，请参阅 -36-。

淡入 / 淡出功能

淡入

采用淡入功能，在一幕场景开始时，在黑屏幕上可逐渐显现影像并放出声音。

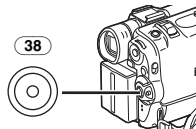


1 在拍摄暂停模式中，按住 [FADE] 按钮 (7)。



●影像渐渐淡出。

2 在影像完全消失后，按拍摄开始/停止按钮 (38) 开始拍摄。

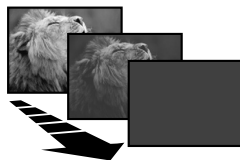


3 在开始录制后约 3 秒钟，松开 [FADE] 按钮 (7)。

●影像再次渐渐显现。

淡出

采用淡出功能，可使影像和声音逐渐消失，最终在一幕场景的末尾显现一个黑屏幕。

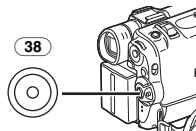


1 录制过程中，按住 [FADE] 按钮 (7)。



●影像渐渐淡出。

2 在影像完全消失后，按拍摄开始/停止按钮 (38) 停止拍摄。



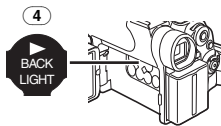
3 松开 [FADE] 按钮 (7)。

●静态图片不能淡入或淡出。

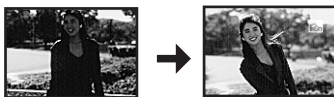
逆光补偿功能

此功能用于防止拍摄目标在逆光环境中拍摄得过于黑暗。(逆光是从拍摄目标背后面照过来的光线。)

1 按下 [BACK LIGHT] 按钮 (4)。



- [] 指示闪烁，然后显示。
- 整个屏幕将变得更亮。



恢复正常拍摄

按 [BACK LIGHT] 按钮。

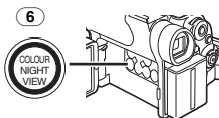
- 有关此项目的其它注释，请参阅 -36-。

夜视功能

彩色夜视功能

使用此功能，不用摄影闪光灯也能在黑暗处拍摄明亮的彩色图片。

1 按 [COLOUR NIGHT VIEW] 按钮 (6)，直到 [C.NIGHT VIEW] 指示出现。



零照度夜视功能

使用 LCD 监视器的光源，可以拍摄几乎为零照度的场景。

2 按 [COLOUR NIGHT VIEW] 按钮 (6)，直到出现 [0LUX NIGHT VIEW] 指示。



- 此时会出现 [REVERSE THE LCD MONITOR] 指示。

3 向前转动 LCD 监视器 (到镜头侧)。



- 屏幕变成白色，取景器打开。
- LCD 监视器的可用光照范围大约在 1 米以内。

取消夜视功能

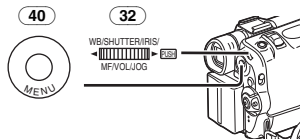
反复按 [COLOUR NIGHT VIEW] 按钮，直到 [C.NIGHT VIEW] 指示和 [0LUX NIGHT VIEW] 指示都消失。

- 有关此项目的其它注释，请参阅 -36-。

消除风干扰功能

此功能可以消除录制过程中风吹在麦克风上所造成的杂音。

1 设置 [CAMERA FUNCTIONS] >> [RECORDING SETUP] >> [WIND CUT] >> [ON]。



- 此时会出现 [WIND CUT] 指示。



取消消除风干扰功能

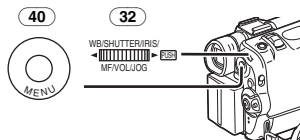
设置 [CAMERA FUNCTIONS] >> [RECORDING SETUP] >> [WIND CUT] >> [OFF]。

- 有关此项目的其它注释，请参阅 -36-。

电影功能

此功能用于以类似电影屏幕的样式拍摄影像。

1 设置 [CAMERA FUNCTIONS] >> [CAMERA SETUP] >> [CINEMA] >> [ON]。



- 在屏幕的上方和下方出现黑色遮幅。



取消电影模式

设置 [CAMERA FUNCTIONS] >> [CAMERA SETUP] >> [CINEMA] >> [OFF].

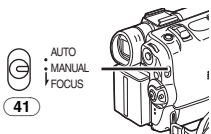
- 有关此项目的其它注释，请参阅 -36-。

特殊环境拍摄

(程序自动曝光)

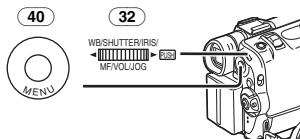
在特殊拍摄条件下，可以选择最佳自动曝光。

1 将开关 [AUTO/MANUAL/FOCUS] (41) 置于 [MANUAL].

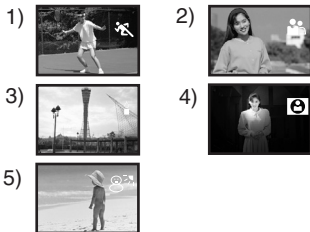


- 此时会出现 [MNL] 指示

2 设置 [CAMERA FUNCTIONS] >> [CAMERA SETUP] >> [PROG.AE] >> 所需的模式 ([运动]、[人像]、[人像]、[人像] 或 [聚光])。



- 此时会出现所选模式的指示。



- 1) [运动] 运动模式
 - 适于拍摄体育运动等涉及快速移动的场景。
- 2) [人像] 肖像模式
 - 适于使人物肖像清晰地显示在背景上。
- 3) [人像] 低照度模式
 - 适于将黑暗的场景拍摄得更亮些。
- 4) [聚光] 聚光灯模式

- 适于拍摄宴会、剧场等场合中聚光灯下的目标。

5) [聚光] 海滩及雪地模式

- 适于在滑雪场、海滩等耀眼环境中拍摄。

取消程序自动曝光功能

将开关 [AUTO/MANUAL/FOCUS] 置于 [AUTO]。或将子菜单 [CAMERA SETUP] 上的 [PROG.AE] 设置为 [OFF].

- 有关此项目的其它注释，请参阅 -36-。

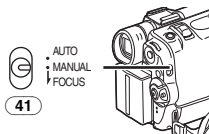
自然色彩拍摄

(白平衡)

由于场景或光线条件所限，自动白平衡调节模式可能无法实现自然色彩。在这种情况下，可以手动调节白平衡。

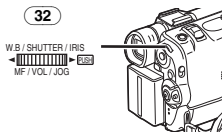
如果在镜头盖未取下的情况下打开摄像机，可能无法正常使用自动白平衡调节功能。请在取下镜头盖之后再打开摄像机。

1 将开关 [AUTO/MANUAL/FOCUS] (41) 置于 [MANUAL].



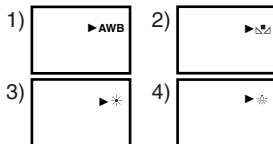
- 此时会出现 [MNL] 指示。

2 按下 [PUSH] 旋钮 (32)。



- 此时会出现 [AWB] 指示。

3 转动 [PUSH] 旋钮 (32)，设定所需的白平衡模式。



- 1) 自动白平衡调节 [AWB]
- 2) 先前手动设置的白平衡设置 [自定义]
- 3) 户外模式 [太阳]
- 4) 室内模式 (在白炽灯下拍摄) [杂色]

恢复自动调节

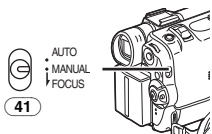
转动 [PUSH] 旋钮直到出现 [AWB] 指示。或将开关 [AUTO/MANUAL/FOCUS] 置于 [AUTO]。

手动调整白平衡

白平衡调节能够识别光线色彩并进行调节，使白色变为纯白。该款摄像机可以确定通过镜头和白平衡传感器所接收的光线色调，并由此判断拍摄条件，进而选择最接近的色调设置值。此功能称为自动白平衡调节。

对于超出自动白平衡调节范围的光线，请使用手动白平衡调节模式进行调节。

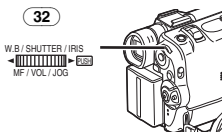
1 将开关 [AUTO/MANUAL/FOCUS] (41) 置于 [MANUAL]。



●此时会出现 [MNL] 指示。

2 将摄像机对准使整屏为白色的目标。

3 按下 [PUSH] 旋钮 (32)。



●此时会出现 [AWB] 指示。

4 转动 [PUSH] 旋钮 (32) 直到出现 [MNL] 指示。



5 按住 [PUSH] 旋钮 (32)，直到 [MNL] 指示停止闪烁。

恢复自动调节

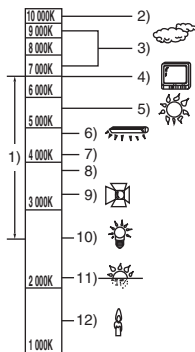
转动 [PUSH] 旋钮，直到出现 [AWB] 指示。或将开关 [AUTO/MANUAL/FOCUS] 置于 [AUTO]。

关于白平衡传感器

白平衡传感器 (29) 在拍摄过程中测定光源的特性。



- 拍摄中请勿用手遮挡白平衡传感器。否则，白平衡传感器将无法正常工作。
- 来自拍摄灯 (11) 的红光将会在手上或目标上反射，因此可能造成白平衡传感器工作失常和改变颜色。



在超出自动白平衡调节的有效范围时，影像将显得偏红或偏蓝。即使在自动白平衡调节的有效范围内，如果有一个以上光源，自动白平衡调节也可能无法正常工作。在这种情况下，请手动调节白平衡。

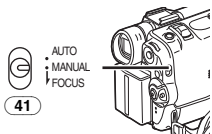
- 1) 此摄像机的自动白平衡调节的有效范围
- 2) 蓝天
- 3) 阴天（下雨）
- 4) 电视机屏幕
- 5) 太阳光
- 6) 白色荧光灯
- 7) 日出后 2 小时或日落前 2 小时
- 8) 日出后 1 小时或日落前 1 小时
- 9) 卤光灯
- 10) 白炽灯
- 11) 日出或日落
- 12) 烛光

●有关此项目的其它注释，请参阅 -37-。

手动快门速度调节

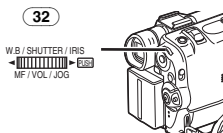
此功能在拍摄快速移动物体时很有用。

- 1 将开关 [AUTO/MANUAL/FOCUS] (41) 置于 [MANUAL]。



●此时会出现 [MNL] 指示。

- 2 按下 [PUSH] 旋钮 (32)，直到出现快门速度指示。



- 3 转动 [PUSH] 旋钮 (32) 来调节快门速度。

快门速度调节的范围

1/50–1/8000 秒

标准快门速度为 1/50 秒。

选择的速度越接近 [1/8000]，快门速度越快。

恢复自动调节

将开关 [AUTO/MANUAL/FOCUS] 置于 [AUTO]。

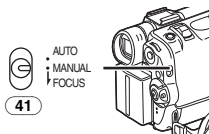
●有关此项目的其它注释，请参阅 -37-。

手动光圈调节

(F 值)

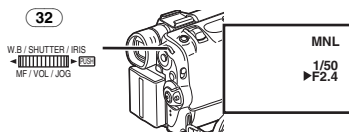
当屏幕太亮或太暗时，可以使用此功能。

- 1 将开关 [AUTO/MANUAL/FOCUS] (41) 置于 [MANUAL]。



●此时会出现 [MNL] 指示。

- 2 按下 [PUSH] 旋钮 (32) 直到出现光圈指示。



- 3 转动 [PUSH] 旋钮 (32) 来调节光圈。

光圈调节的范围

CLOSE (关闭), F16, ..., F2.0,

OP (打开) +0dB, ..., OP+18dB

选择的数值越接近 [CLOSE]，影像将变得越暗。
选择的数值越接近 [OP+18dB]，影像将变得越亮。

+dB 前的数值表示增亮值。如果此数值太大，影像质量会下降。

恢复自动调节

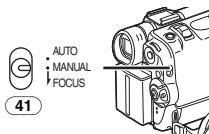
将开关 [AUTO/MANUAL/FOCUS] 置于 [AUTO]。

●有关此项目的其它注释，请参阅 -37-。

手动焦距调节

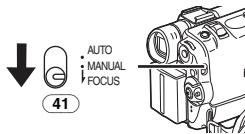
在自动调焦不能正常工作的情况下，可以手动调节焦距。

- 1 将开关 [AUTO/MANUAL/FOCUS] (41) 置于 [MANUAL]。



●此时会出现 [MNL] 指示。

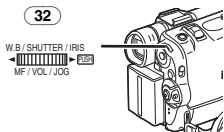
2 将 [AUTO/MANUAL/FOCUS] 开关 (41) 置于 [FOCUS]。



●此时会出现 [▶MF] 指示 (手动调焦模式)。



3 旋转 [PUSH] 旋钮 (32)，调节焦距。



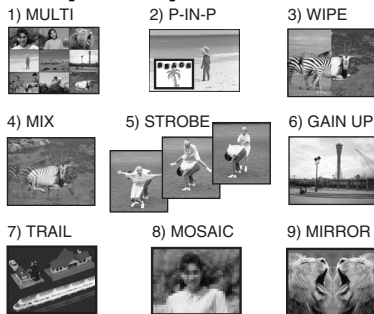
恢复自动调节

将开关 [AUTO/MANUAL/FOCUS] 置于 [AUTO]。

数码特效功能

摄像机具有数码特效功能，可以给场景添加特殊效果。

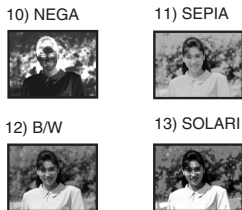
数码特效 1 [EFFECT1]



- 1) 多画面模式 [MULTI]
- 2) 画中画模式 [P-IN-P]
- 3) 擦去模式 [WIPE]
- 4) 混合模式 [MIX]
- 5) 频闪模式 [STROBE]
 - 以这种模式拍摄的影像具有频闪效果。
- 6) 增亮模式 [GAIN UP]
 - 此模式以电子方式加亮影像。
 - 使用此模式时，请手动调节焦距。(-22-)

- 7) 拖曳效果模式 [TRAIL]
 - 以这种模式拍摄的影像具有拖曳效果。
- 8) 马赛克模式 [MOSAIC]
 - 生成马赛克式的影像。
- 9) 镜像模式 [MIRROR]
 - 右半部分影像成为左半部分影像的镜像。

数码特效 2 [EFFECT2]



- 10) 负片模式 [NEGA]
 - 所拍摄影像的色彩都被颠倒为相反的颜色，就像是一个负片。
- 11) 褐色模式 [SEPIA]
 - 拍摄的场景泛褐色，产生老照片的效果。
- 12) 黑白模式 [B/W]
 - 拍摄的影像为黑白片。
- 13) 白化模式 [SOLARI]
 - 以这种模式拍摄的影像具有绘画效果。

选择所需的数码特效

设置 [CAMERA FUNCTIONS] >> [DIGITAL EFFECT] >> [EFFECT1] 或 [EFFECT2] >> 所需的数码特效。

取消数码特效

设置 [CAMERA FUNCTIONS] >> [DIGITAL EFFECT] >> [EFFECT1] 或 [EFFECT2] >> [OFF]。

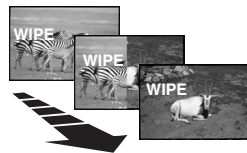
●如果关闭摄像机，则取消 [EFFECT2] 设置。

●有关此项目的其它注释，请参阅 -37-。

擦去模式和混合模式

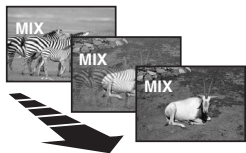
擦去模式：

象拉窗帘一样，上次摄录场景的静态图片逐渐变为新场景的动态影像。

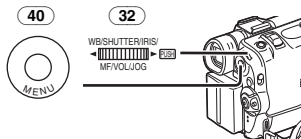


混合模式：

当新场景中的动态影像渐现时，上次摄录场景的静态影像渐隐。

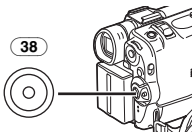


- 1 设置 [CAMERA FUNCTIONS] >> [DIGITAL EFFECT] >> [EFFECT1] >> [WIPE] 或 [MIX]。



●此时出现 [WIPE] 或 [MIX] 指示。

- 2 按下拍摄开始 / 停止按钮 (38) 开始拍摄。



- 3 按下拍摄开始 / 停止按钮 (38) 暂停拍摄。

●最后一个场景保存在存储器中。[WIPE] 或 [MIX] 指示变为 [WIPE] 或 [MIX]。

- 4 按下拍摄开始 / 停止按钮 (38) 重新开始拍摄。

●上一场景的最后影像逐渐变为新场景。

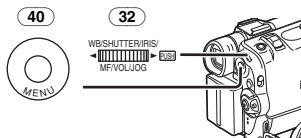
●有关此项目的其它注释，请参阅 -37-。

■ 画中画模式



可以在屏幕中显示一个子屏幕（静态图片）。

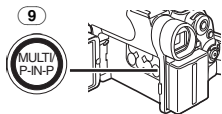
- 1 设置 [CAMERA FUNCTIONS] >> [DIGITAL EFFECT] >> [EFFECT1] >> [P-IN-P]。



- 2 设置 [CAMERA FUNCTIONS] >> [MULTI-PICTURES] >> [P-IN-P] >> 要插入一个小静态图片的位置 (1、2、3、4)。

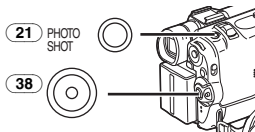


- 3 将摄像机对准要捕捉的场景，然后按下 [P-IN-P] 按钮 (9) 插入一个小静态图片。



- 在正常画面中将出现一个小静态图片。
- 如果再次按下 [P-IN-P] 按钮，则会清除小的静态图片。

- 4 按拍摄开始 / 停止按钮 (38) 或 [PHOTO SHOT] 按钮 (21)，可用磁带进行拍摄。



●有关此项目的其它注释，请参阅 -37-。

■ 多画面模式

频闪多画面模式：



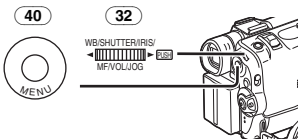
可以捕捉和拍摄 9 幅小的连续静态图片。

手动多画面模式：



可以手动捕捉和拍摄 9 幅小的静态图片。

- 1 设置 [CAMERA FUNCTIONS] >> [DIGITAL EFFECT] >> [EFFECT1] >> [MULTI]。



- 2 设置 [CAMERA FUNCTIONS] >> [MULTI-PICTURES] >> [SCAN MODE] >> [STROBE] 或 [MANUAL]。

选择 [STROBE] 后：

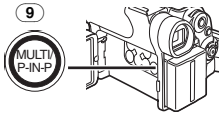
- 将 [SPEED] 设置为所需的频闪速度。在 [FAST] 设置下，9 幅连续静态图片将在约 1 秒钟内捕捉完毕，而在 [NORMAL] 设置下约需 2 秒钟，在 [SLOW] 设置下约需 3 秒钟。
- 如果将 [SWING] 设置为 [ON]，则在拍摄这 9 幅静态图片的相邻两幅图片时，在旋转频闪周期的开头和结尾的时间间隔要长于在旋转频

闪周期中间的时间间隔。此功能对于分析体育等活动中的旋转动作非常有用

选择 **[MANUAL]** 后：

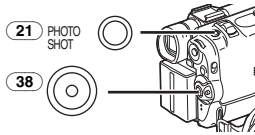
- 可以每次选择 1 个需要的场景，最多有 9 幅小画面。

3 按下 [MULTI] 按钮 (9)。



- 如果选择 **[MANUAL]**，请对要捕捉的每个场景按下 **[MULTI]** 按钮。

4 按拍摄开始 / 停止按钮 (38) 或 [PHOTO SHOT] 按钮 (21)，可用磁带进行拍摄。



删除所有已捕捉的多画面

在显示 9 幅多画面时，按下 **[MULTI]** 按钮。

- 如果已选择 **[MANUAL]**，请在显示 9 幅画面后，按下 **[MULTI]** 按钮。

再次显示多画面

按下 **[MULTI]** 按钮 1 秒钟或更长时间。

逐幅删除多画面

(在 **[MANUAL]** 模式下捕捉图片时)

在显示静态图片时，按下 **[MULTI]** 按钮 1 秒钟或更长时间，将依次删除上次捕捉的各个画面。

- 静态图片被逐幅删除后，将无法再显示。

- 有关此项目的其它注释，请参阅 -37-。

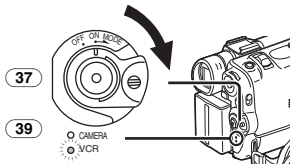
VCR 模式

回放

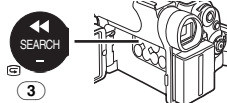
拍摄之后可以立即回放拍摄的场景。

1 旋转 [OFF/ON/MODE] 开关 (37)，将摄像机设置为 VCR 模式。

● [VCR] 指示灯 (39) 亮起。



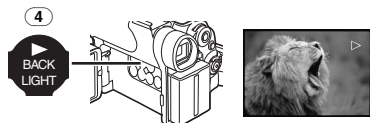
2 按下 [◀◀] 按钮 (3)，倒转磁带。



- 将磁带倒回要开始回放的地方。
- 当磁带到达开头时，倒带会自动停止。

3 按下 [▶] 按钮 (4)，开始回放。

● [▷] 指示出现。



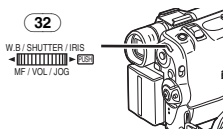
停止回放

按下 [■] 按钮 (7)。



■ 调节音量

请按住 [PUSH] 旋钮 (32)，直到 [VOLUME] 指示出现。然后旋转 [PUSH] 旋钮，调节音量。调节完成后，按下 [PUSH] 旋钮，使 [VOLUME] 指示消失。



要使用遥控器调节音量，请按下 [T] 或 [W] 按钮来显示 [VOLUME] 指示。按下 [T] 按钮可增大音

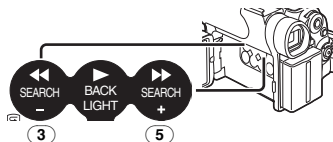
量，或按下 [W] 按钮可减小音量。调节结束后，[VOLUME] 指示在几秒钟内会自动消失。



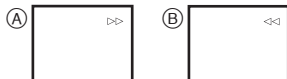
- 在回放变焦模式下，不能使用遥控器调节音量。(-28-)
- 如果被拍摄的磁带有权保护信号，画面会呈马赛克状失真。
- 有关此项目的其它注释，请参阅 -37-。

查找要回放的场景

■ 快速搜索 / 倒带搜索回放



如果在回放中按下 [▶▶] 按钮 (5) 或 [◀◀] 按钮 (3)，将变为快速搜索回放 (A) 或倒带搜索回放 (B)。



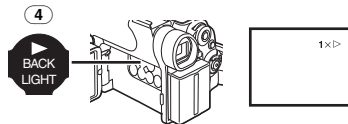
- 如果按住此按钮不放，则变为快速搜索回放或倒带搜索回放，直到松开为止。

■ 变速搜索功能

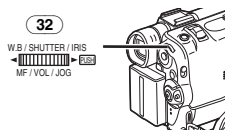
可以改变快速搜索回放或倒带搜索回放的速度。

1 回放过程中，按下 [▶] 按钮 (4)。

● 会出现 [1×▶] 指示。



2 转动 [PUSH] 旋钮 (32)，选择所需的搜索速度。



变速搜索功能在快速和倒带两个方向上均可使用以下 6 种回放速度：

1/5×（慢动作回放，仅限 SP 模式）、1/3×（慢动作回放，仅限 LP 模式）、1×、2×、5×、10× 和 20×。

●按下遥控器上的 [VAR. SEARCH] 和 指针按钮 ([▲, ▼])，也可完成此功能。(6-)

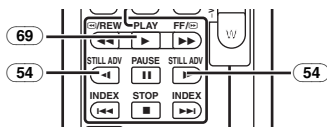
恢复正常回放

请按下 [▶] 按钮 (4)。

- 在快进搜索回放或倒带搜索回放时，快速移动的影像可能会出现马赛克状干扰。
- 搜索中没有声音。

慢动作回放

此摄像机可以进行慢速回放。



- 1 请按下 [▶] 按钮 (69)。
- 2 按下遥控器上的 [◀] 按钮或 [▶] 按钮 (54)。
 - 会出现 [▶] 或 [◀] 指示。



- 按下 [◀] 按钮后，慢动作回放向后退方向行进。按下 [▶] 按钮时，慢动作回向前进方向行进。

以 SP 模式拍摄的场景在回放时速度大约为正常值的 1/5。

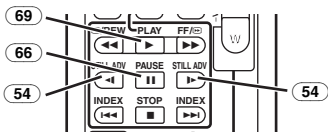
以 LP 模式拍摄的场景回放时的速度大约为正常值的 1/3。

恢复正常回放

请按下 [▶] 按钮 (69)。

静态回放 / 静态前进回放

摄像机可以进行静态图片回放和逐帧向前回放。



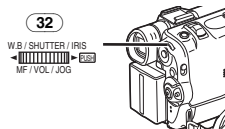
- 1 请按下 [▶] 按钮 (69)。
- 2 请按下 [▶▶] 按钮 (66)。
 - 在静态回放模式下停止回放影像。
- 3 按下遥控器上的 [◀] 按钮或 [▶] 按钮 (54)。
 - 每按一次 [◀] 按钮，静态图片向后退方向行进。每按一次 [▶] 按钮，静态图片向前进方向行进。如果连续按其中任一按钮，静态图片将连续地每次行进 1 帧，直到松开此按钮。

恢复正常回放

请按下 [▶] 按钮 (69)。

逐帧回放

在静态回放模式中，旋转摄像机的逐帧回放旋钮 ([PUSH] 旋钮) (32)，可以使静态图片每次向前或向后行进一帧。



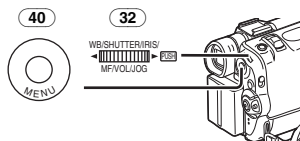
- 如果摄像机保持静态回放模式的时间超过 6 分钟，摄像机将切换到停止模式，以防止摄像头过度磨损。

查找拍摄内容结尾

(空白搜索功能)

空白搜索功能有助于快速找到磁带上所拍摄内容的结尾处。

- 1 设置 [VCR FUNCTIONS] >> [PLAYBACK FUNCTIONS] >> [BLANK SEARCH] >> [YES]。



- 在空白搜索过程中，会出现 [BLANK] 指示。
- 在最后一次拍摄场景结束前约 1 秒钟，摄像机将切换到静态回放模式。
- 如果磁带中已没有空白，摄像机在磁带结尾处停止。

在完成前取消空白搜索

按 [■] 按钮。

索引搜索功能

为了便于搜索所需场景，该款摄像机会在拍摄中自动记录索引信号。具体过程如下：

拍照索引信号

在用拍照模式拍摄静态图片时，将自动记录这些信号。(16-) 拍照索引信号不能记录在以连续拍照模式拍摄的静态图片上。

场景索引信号

在插入磁带并开始拍摄后，将自动开始记录场景索引信号。

- 如果 [CAMERA FUNCTIONS] 主菜单上的 [RECORDING SETUP] 子菜单的 [SCENE INDEX] 设置为 [2HOUR]，当拍摄在 2 小时或更长时间后重新开始时，将记录一个索引信号。如果设置为 [DAY]，则自上次拍摄以来

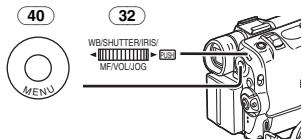
日期改变后重新开始记录索引信号。(在记录索引信号时, [INDEX] 指示会闪烁数秒钟。)



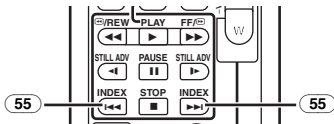
- 如果摄像机从 VCR 模式切换到相机模式, 或日期和时间在拍摄前已设定, 则不记录索引信号。

■ 拍照索引搜索

- 1 设置 [VCR FUNCTIONS] >> [PLAYBACK FUNCTIONS] >> [SEARCH] >> [PHOTO]。



- 2 按下遥控器上的 [▶▶▶] 按钮或 [◀◀◀] 按钮 (55)。



- 每按一次上述按钮, 都会搜索在拍照模式下拍摄的静态图片。
- 声音可回放约 4 秒钟。

■ 场景索引搜索

- 1 设置 [VCR FUNCTIONS] >> [PLAYBACK FUNCTIONS] >> [SEARCH] >> [SCENE]。

- 2 按下遥控器上的 [▶▶▶] 按钮或 [◀◀◀] 按钮 (55)。

- 每按一次上述按钮, [S 1] 指示都会出现, 并开始搜索标有索引信号的后续场景。场景索引搜索开始后, 每按一次按钮, 所显示的指示将从 [S 2] 一直变到 [S 9], 并开始搜索对应于所选号码的场景。

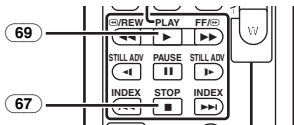


- 最多可以选择 9 个场景号。

连续索引搜索

如果按下 [▶▶▶] 按钮或 [◀◀◀] 按钮 (55) 2 秒或更长时间, 则搜索连续进行, 相邻搜索间间隔数秒。

(要取消连续索引搜索, 请按下 [▶] 按钮 (69) 或 [■] 按钮 (67)。)

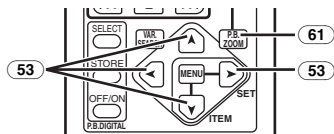


- 有关此项目的其它注释, 请参阅 -37-。

回放变焦功能

在回放中, 影像的一部分最大可放大 10 倍。

- 1 回放时, 请按下遥控器上的 [P.B. ZOOM] 按钮 (61)。

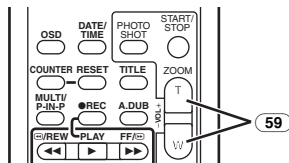


- 影像的中心部分可放大约 2 倍。



更改放大比例

- 2 按下遥控器上的 [W] 按钮或 [T] 按钮 (59), 更改放大比例。



更改影像的放大区域

- 3 按下遥控器上对应于要放大区域的箭头按钮 (▲、◀、▶、▼) (53)。

取消回放变焦功能

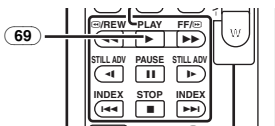
按下遥控器上的 [P.B. ZOOM] 按钮 (61)。

- 有关此项目的其它注释, 请参阅 -37-。

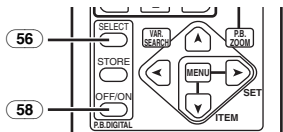
回放数码特效功能

回放中, 可以向已拍摄的图片添加数码特效。可以获得与拍摄中所使用的数码特效 1 和 2 相同的效果。

- 1 请按下 [▶] 按钮 (69)。



2 按下遥控器上的 [SELECT] 按钮 (56)，选择所需的数码特效。



- 重复按 [SELECT] 按钮，将改变数码特效的选择。
- 使用 [VCR FUNCTIONS] 主菜单上的 [DIGITAL EFFECT] 子菜单，也可实现相同的设置。

暂停回放数码特效

按下 [OFF/ON] 按钮 (58)，可暂停或重新启用数码特效。当暂时停用数码特效时，所选效果的指示会闪烁。

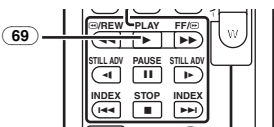
取消数码特效

按下遥控器上的 [SELECT] 按钮 (56)，然后清除数码特效指示。

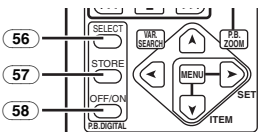
- 有关此项目的其它注释，请参阅 -37-。

■ 擦去模式和混合模式

1 请按下 [▶] 按钮 (69)。



2 请按下遥控器上的 [SELECT] 按钮 (56)，然后选择 [WIPE] 或 [MIX]。



3 要将影像作为静态图片保存时，请按下 [STORE] 按钮 (57)。

- 此时会出现 [WIPE] 或 [MIX] 指示，影像被保存。

4 在需要使用擦去或混合效果的场景中，按下 [OFF/ON] 按钮 (58)。

- 场景由于擦去或混合效果而发生变化。
- 擦去或混合功能只能在回放中通过遥控器使用。
- 正在使用擦去或混合特效时，如果按下 [OFF/ON] 按钮 (58)，特效将在此时暂停。再次按下 [OFF/ON] 按钮 (58) 可重现此特效。

■ 用多画面模式进行回放

频闪多画面模式 [STROBE]

可以从回放视频捕捉 9 幅连续的静态图片。

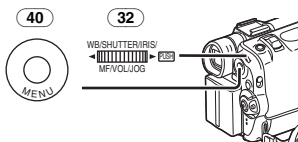
手动多画面模式 [MANUAL]

每次选择一幅所需的静态图片，可捕捉 9 幅图片。

索引多画面模式 ([PHOTO], [SCENE])

可以捕捉已附有索引信号的 9 个屏幕的画面。

1 设置 [VCR FUNCTIONS] >> [DIGITAL EFFECT] >> [EFFECT SELECT] >> [MULTI]。

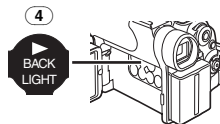


2 设置 [VCR FUNCTIONS] >> [MULTI-PICTURES] >> [SCAN MODE] >> [STROBE]、[MANUAL]、[PHOTO] 或 [SCENE]。

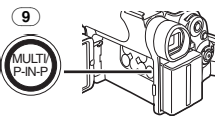
选择 [STROBE] 后：

- 将 [SPEED] 设置为所需的频闪速度。在 [FAST] 设置下，9 幅连续静态图片将在约 1 秒钟内捕捉完毕，而在 [NORMAL] 设置下约需 2 秒钟，在 [SLOW] 设置下约需 3 秒钟。
- 如果将 [SWING] 设置为 [ON]，则在拍摄这 9 幅静态图片的相邻两幅图片时，在旋转频闪周期的开头和结尾的时间间隔要长于在旋转频闪周期中间的时间间隔。此功能对于分析体育等活动中的旋转动作非常有用

3 回放磁带。



4 按下 [MULTI] 按钮 (9)。



如果选择了 [STROBE]：

- 从按下按钮处开始，自动捕捉 9 个屏幕。

如果选择了 [MANUAL]：

- 在要捕捉的每个场景，按下 [MULTI] 按钮。当捕捉完 9 个屏幕后，磁带会停止。

如果选择了 [PHOTO] 或 [SCENE]：

- 从按下 [MULTI] 按钮处，将按回放方向，捕捉附有索引信号的画面的 9 个屏幕。捕捉完 9 个屏幕后，磁带会停止，但是如果捕捉 8 个或更少的画面，磁带会在结尾处停止。

删除所有已捕捉的多画面

显示已捕捉的多画面时，按下 [MULTI] 按钮 (9)。

- 如果已选择 [MANUAL]，请在显示 9 幅画面后，按下 [MULTI] 按钮。

再次显示多画面

按下 [MULTI] 按钮 (9) 1 秒钟或更长时间。

逐幅删除多画面

(当以手动模式捕捉这些画面时)

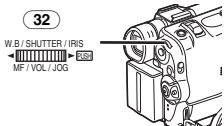
在显示静态图片时, 按下 [MULTI] 按钮 (9) 1 秒钟或更长时间, 将删除最后捕捉的画面。如果继续按下此按钮, 将连续删除画面。

- 静态图片被逐幅删除后, 将无法再显示。

取消捕捉画面 (当以索引模式捕捉这些画面时) 按 [■] 按钮。

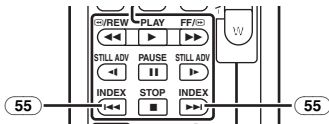
在 9 个屏幕所显示的回放画面中, 搜索需要的画面的磁带位置

- 1 在以多画面模式显示画面后, 旋转 [PUSH] 旋钮 (32), 选择位于要搜索磁带位置的影像。



- 所选图片标有图框。

- 2 按下遥控器上的 [◀◀] 或 [▶▶] 按钮 (55)。



- 在所选图片处回放静态图片。

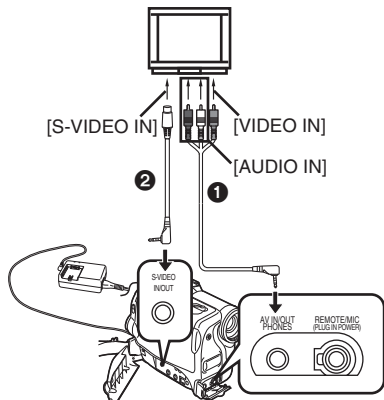
- 有关此项目的其它注释, 请参阅 -37-。

在电视上回放

将摄像机连接到电视机, 可以从电视屏幕上观看所拍摄的场景。

- 连接前, 请务必切断摄像机和电视机的电源。

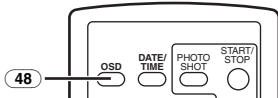
- 1 将摄像机的 插座连接到电视机的视频和音频输入插孔中。



- 使用 AV 电缆 (1), 与电视相连。如果电视有 S-Video 插座, 请同时连接 S-Video 电缆 (2)。
- 将 AV 缆线的针式插头插入 插座时, 需尽量将其插到底。

使指示出现在电视屏幕上

按下遥控器上的 [OSD] 按钮 (48)。



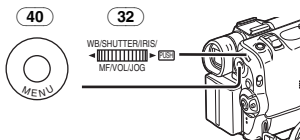
- 有关此项目的其它注释, 请参阅 -38-。

配音

可以在拍摄的磁带中添加音乐或解说。

- 如果以 [16bit] 模式拍摄的磁带用配音功能进行配音, 原始声音将被抹掉。(如果希望保留原始声音, 在拍摄时请使用 [12bit] 模式。)
- 在 LP 模式下拍摄, 不能使用配音。(-14-)

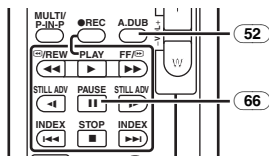
- 1 设置 [VCR FUNCTIONS] >> [AV IN/OUT SETUP] >> [AV JACK] >> [IN/OUT]。



- 2 继续上述的设置, 选择 [A.DUB INPUT] >> [MIC] 或 [AV IN]。

- 使用外部设备时, 设置为 [AV IN]; 使用外部或内置麦克风时, 设置为 [MIC]。

- 3 在需要添加新声音的地方, 按下遥控器上的 [■] 按钮 (66)。



- 4 按下遥控器上的 [A.DUB] 按钮 (52)。

- 5 要开始配音, 请按下遥控器上的 [■] 按钮 (66)。

取消配音

按下遥控器上的 [■] 按钮 (66)。摄像机再次回到静态回放模式。

回放 12 位配音录制的声音

设置 [VCR FUNCTIONS] >> [PLAYBACK FUNCTIONS] >> [12bit AUDIO] >> [ST2] 或 [MIX]。

ST1: 只回放原始声音。

ST2: 只回放配音。

MIX: 同时回放原始声音和配音。

在听取预先录制的声音时配音

暂停配音时，将 [PLAYBACK FUNCTIONS] 子菜单上的 [12bit AUDIO] 设置到 [ST2]，这样即可检查预先录制的声音。

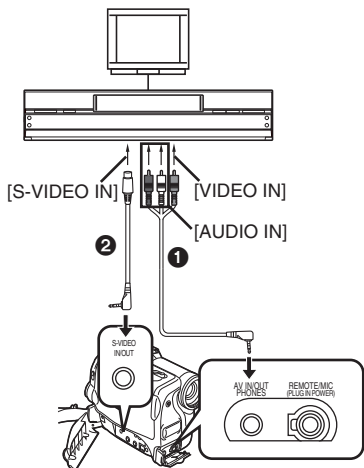
使用麦克风进行配音时，请在配音中，使用耳机听取预先录制的声音。（使用耳机时，将 [AV IN/OUT SETUP] 子菜单上的 [AV JACK] 设置到 [OUT/PHONES]。）当使用线路输入时，可以一边从扬声器听取预先录制的声音，一边进行配音。

●有关此项目的其它注释，请参阅 -38-。

复制到 S-VHS (或 VHS) 磁带

(配音复制)

按照说明将摄像机与 VCR 连接后，执行以下步骤。



① AV 电缆

② S-Video 电缆

●确认在复制前按下了遥控器上的 [OSD] 按钮 (-6-)，这样就看不到任何指示。否则，所显示的磁带计数器和功能指示也会同时被复制。

摄像机：

1 插入已录制的磁带。

VCR：

2 插入带有删除保护的未录制磁带。

●如果要求不同的步骤（如外部输入、磁带速度等），请参阅 VCR 的使用说明书。

摄像机：

3 按下 [▶] 按钮，开始回放。

VCR：

4 开始录制。

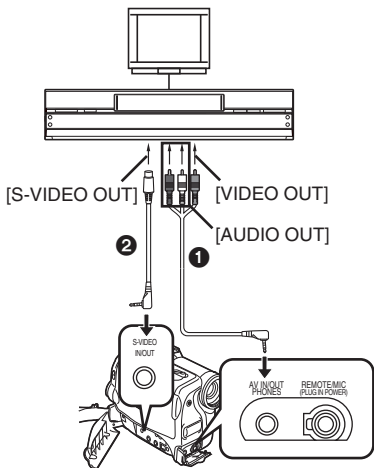
5 按暂停或停止按钮，停止录制。

摄像机：

6 按下 [■] 按钮，开始回放。

录制其它设备上的内容

将摄像机与其它设备如插图所示连接，然后执行以下步骤。

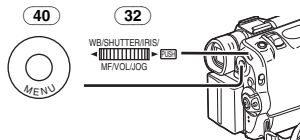


① AV 电缆

② S-Video 电缆

摄像机：

1 设置 [VCR FUNCTIONS] >> [AV IN/OUT SETUP] >> [AV JACK] >> [IN/OUT]。



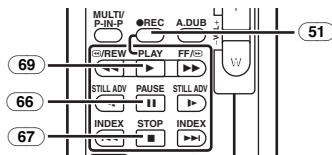
2 插入一个未录制的磁带。

其它设备：

3 插入一个已经录制的磁带，开始回放。

摄像机：

4 按下 [REC] 按钮 (51) 的同时，按下 [PLAY] 按钮 (69)。



5 按下 [■] 按钮 (66) 或 [■] 按钮 (67)，停止录制。

其它设备：

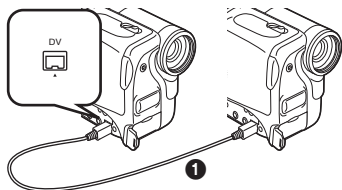
6 按下停止按钮，停止回放。

●有关此项目的其它注释，请参阅 -38-。

使用 DV 电缆进行录制

（数码配音复制）

使用数码视频电缆 VW-CD1E（选购件）①，可以将摄像机与其它有 DV 输入 / 输出终端的数码视频设备进行连接，以便以数码格式进行配音复制。

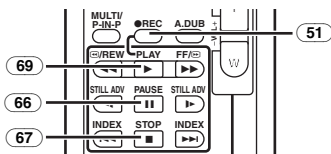


播放机 / 摄像机：

1 插入磁带并设置为 VCR 模式。

播放机：

2 按下 [▶] 按钮 (69)，开始回放。



摄像机：

3 按下 [REC] 按钮 (51) 的同时，按下 [PLAY] 按钮 (69)。

- 录制开始。

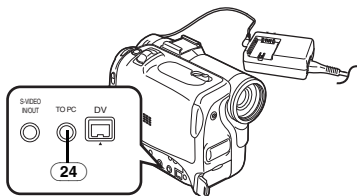
停止配音

按下 [||] 按钮 (66) 或 [■] 按钮 (67)。

- 有关此项目的其它注释，请参阅 -38-。

个人计算机连接工具

使用随附的个人计算机连接工具，可以将静态图片导入个人计算机中。


















- 使用随附的个人计算机连接工具时，请使用数码静态图片端子 [TO PC] (24)。
- 录制期间，注意请勿切断从磁带开始就有的时间码。
- 有关操作环境、连接和步骤的详细信息，请参阅个人计算机连接工具的使用说明。

其它内容

指示

屏幕上显示出摄像机的各种功能和状态。

- : 剩余电量
- 电量降低时, 指示会发生变化。电池完全耗尽时,  () 指示即开始闪烁。
- RO:45: 磁带剩余时间
- 以分钟为单位指示磁带剩余时间。(磁带剩余时间不足 3 分钟时, 指示开始闪烁。)
- CINEMA: 电影模式 -19-
- D.ZOOM: 数码变焦 -17-
- MULTI: 多画面模式 -23-
- P-IN-P: P-IN-P 模式 -23-
- WIPE: 擦去模式 -23-
- MIX: 混合模式 -23-
- STROBE: 频闪模式 -23-
- GAIN UP: 增亮模式 -23-
- TRAIL: 拖曳效果模式 -23-
- MOSAIC: 马赛克模式 -23-
- MIRROR: 镜像模式 -23-
- NEGA: 负片模式 -23-
- SEPIA: 褐色模式 -23-
- B/W: 黑白模式 -23-
- SOLARI: 白化模式 -23-
- PB ZOOM: 回放变焦 -28-
- SP: 标准模式 (录制速度模式) -14-
- LP: 长时间播放模式 (录制速度模式) -14-
- INDEX: 索引信号录制 -28-
- S 1: 搜索号码 -28-
- 5x: 变焦放大率指示 -17-
- AUTO: 自动模式 -15-
- MNL: 手动模式 -20-
- : 影像稳定器 -18-
- MIC、AV IN: 配音输入显示 -30-
- 12 bit、16 bit: 音频录制模式 -14-
- MF: 手动调焦 -23-
- : 逆光模式 -19-
- : 运动模式 (程序自动曝光) -20-
- : 肖像模式 (程序自动曝光) -20-
- : 低照度模式 (程序自动曝光) -20-
- : 聚光灯模式 (程序自动曝光) -20-
- : 海滩及雪地模式 (程序自动曝光) -20-
- REC: 录制 -15-
- PAUSE: 暂停录制 -15-
- : 自拍器拍摄 -17-
- : 将带麦克风的自由式遥控器接到 [REMOTE] 插孔, 然后按下 [TALK] 按钮, 此时即出现该指示。-15-
- ▷: 回放 -26-/ 向前相机搜索 -15-
- ◁: 反向相机搜索 -15-
- ||: 静态回放 -27-

- ▷▷: 快进 / 快进搜索回放 -26-
- ◁◁: 倒带 / 倒带搜索回放 -26-
- ◁||, ||▷: 慢动作回放 -27-
- ◁|||, |||▷: 静态前进播放 -27-
- ◁◁, ▷▷: 索引搜索 -27-
- CHK: 拍摄检查 -15-
- A.DUB ▷: 配音 -30-
- A.DUB |||: 暂停配音 -30-
- PHOTO: 拍照模式录制 -16-
- BLANK: 空白搜索 -27-
- R ▷: 重复回放 -37-
- 2x▷▷: 变速搜索 -26-
- 1/500: 手动调节快门速度时, 出现此指示。-22-
- F2.4: 手动调节帧数时, 出现此指示。-22-
- : 白平衡设置模式 -20-
- : 户外模式 -20-
- : 室内模式 (在白炽灯下拍摄) -20-
- C.NIGHT VIEW: 彩色夜视功能 -19-
- 0LUX NIGHT VIEW: 零照度夜视功能 -19-
- Z.MIC: 变焦麦克风 -17-
- WIND CUT: 消除风干扰 -19-
- [P]: 渐进拍照模式 -16-
- VOLUME: 音量调节 -26-
- 15:30:45: 日期 / 时间指示 -33-

更改计数器显示模式

通过更改 [DISPLAY SETUP] 子菜单上的 [C.DISPLAY], 用户可以将计数器显示模式改为磁带计数器指示 [COUNTER] (0:00.00)、存储计数器指示 [MEMORY] (M0:00.00) 和时间码指示 [TIMECODE] (0h00m00s00f)。(-12-) 重复按遥控器上的 [COUNTER] 按钮, 可更改计数器显示模式。

显示日期 / 时间指示

要显示日期 / 时间指示, 请在 [DISPLAY SETUP] 子菜单上的 [DATE/TIME] 中设置相应的日期 / 时间。(-12-)

还可重复按遥控器的 [DATE/TIME] 按钮, 显示或更改日期 / 时间指示。

更改显示模式

通过更改 [DISPLAY SETUP] 子菜单上的 [DISPLAY], 可将显示模式更改为全部功能显示 [ALL], 部分显示 [PARTIAL] 和最小化显示 [OFF]。(-12-)

所有者 ID

可以将您的名称和地址在本摄像机中注册，以识别所有者。

1 设置 [CAMERA FUNCTIONS] >> [OTHER FUNCTIONS1] >> [OWNER ID SET] >> [YES]。

- 出现 [OWNER ID] 菜单。

2 转动 [PUSH] 旋钮 (32) 来选择 [PIN NUMBER]，然后按 [PUSH] 旋钮 (32)，输入所要的号码。

3 转动 [PUSH] 旋钮 (32) 来选择号码，然后按下 [PUSH] 旋钮 (32) 进行输入。

- 一定要输入 4 位数。否则将不能注册。

4 按 [■] 按钮。

5 重复步骤 2-4，输入 [NAME] 和 [POSTCODE]。

- [NAME] 中最多可输入 12 个字符，[POSTCODE] 中最多可输入 11 字符。

6 按下 [■] 按钮，完成设置。

确认所有者 ID

按住 [■] 按钮约 5 秒钟。

更改内容

如果已设置了所有者 ID，执行步骤 1 将在屏幕中显示 [INPUT PIN NUMBER]。输入选定的个人识别号。如果号码不正确，屏幕将不发生变化。如果号码正确，将显示设置内容。（通过重复步骤 2 到 4，用户可更改这些内容。）

初始化模式


可以将菜单设置改回为发运时状态。


1 设置 [CAMERA FUNCTIONS] >> [OTHER FUNCTIONS2] >> [INITIAL SET] >> [YES]。

- 初始化需要一定的时间。
- 初始化完成后，出现 [COMPLETED] 指示，同时伴有哔哔声。
- 初始化不会删除所有者 ID 设置和已调整过的时钟设置 (-13-)。

警告 / 报警指示

如果以下指示中有任何一个亮起或闪烁，请检查摄像机的状况。


: 发生水汽凝结。-39-

: 所插入磁带上的意外删除保护滑块被打开（即设置为 [SAVE]）。


试图对磁带的未录制（空白）部分进行配音。

未插入磁带。-9-

: 电量太低。请重新充电。-7-

: 内置电池电量太低。-13-

: 摄像头有污垢。-39-

END: 录制中磁带已到头。

REMOTE: 选择了错误的遥控器模式。-7-

UNPLAYABLE TAPE

(OTHER FORMAT):

试图回放采用不同电视制式录制的磁带。

UNABLE TO A. DUB

(LP RECORDED):

由于原始内容以 LP 模式录制，所以不能进行配音。

INCOMPATIBLE TAPE:

此磁带不兼容。

PLEASE RE-OPERATE

AFTER PUSHING

RESET BUTTON:

检测到系统紊乱。按下 [RESET] 按钮 (-5-)。这样可解决问题。

TO SERVICE:

出现故障。

COPY INHIBITED:

由于媒体受复制保护，无法正常录制影像。

注意事项与提示

■ 关于电源

- 长时间使用本机后，机体会发热，这并非故障。
- 在电池已与 AC 适配器连接而 [CHARGE] 灯不亮时，要先将电池拆下，然后再与适配器重新连接。

■ 插入 / 取出磁带

- 在使用以前录制的磁带时，可使用相机搜索功能查找要继续录制的位置。
- 如果插入新磁带，录制前应将磁带倒至开头处。
- 插入磁带时，应首先确认方向正确，然后将其推入到位。
- 磁带盒架在运动中时，除 [PUSH CLOSE] 按钮外，勿碰任何位置。
- 关闭磁带盒盖时，切勿将任何物品卡在其中，如立体声麦克风的电缆。

■ 警报声

当将 [CAMERA FUNCTIONS] 主菜单的 [OTHER FUNCTIONS1] 子菜单中的 [BEEP SOUND] 设置为 [ON] 时，发出的确认 / 报警音如下。

1 声哔哔音

- 开始录制时
- 将 [OFF/ON/MODE] 开关从 [OFF] 置为 [ON] 时
- 2 声哔哔音
- 暂停录制时
- 2 声哔哔音，重复 4 次
- 录制前或录制过程中执行了错误的操作

■ 录制检查

- 要进行录制检查，录制速度模式 (SP/LP) 必须与录制所用的模式相同。如果不同，回放的影像将会变形。

■ 相机搜索

- 在相机搜索模式下，影像中可能会出现马赛克干扰。此现象是数码视频的特征，不是故障。
- 如果以前录制内容与新录制内容所用的录制速度模式 (SP/LP) 不同，回放的影像也会变形。

■ 快速启动

- 在快速启动待机模式过程中，会少量耗电。
- 如果摄像机保持拍摄暂停模式 6 分钟，即进入快速启动待机模式。要再次打开摄像机，请将 [OFF/ON/MODE] 开关设置到 [OFF] 后，再将其设置为 [ON]。（这将恢复快速启动模式。）
- 如果没有插入磁带，即使快速启动拍摄灯亮起，也不能启用此功能：
- 下列情况下，设置快速启动模式将暂时取消快速启动。再次设置相机模式，将恢复快速启动模式。
 - 设置为 VCR 模式
 - 电池已更换
- 快速启动待机模式下，如果按住 [QUICK START] 按钮约 2 秒钟，指示灯将熄灭，并能够彻底关闭摄像机。
- 在快速启动拍摄灯亮起时，如果未操作摄像机约 30 分钟，指示灯将熄灭，并彻底关闭摄像机。
- 在自动白平衡模式下，拍摄开始时拍摄的色彩可能会不自然。
- 在快速启动待机模式下和开始录制时的变焦放大率不同。

■ 拍照

- 拍照录制的影像质量会稍差一些。

■ 渐进拍照功能

- 静态图片会录制在按 [PHOTO SHOT] 按钮时的磁带位置稍前的位置。
- 改为静态图片模式时，会听到咔哒声。这是光圈关闭的声音，并不是故障。
- 当将摄像机设置为程序自动曝光 (-20-) 时，如果以渐进拍照模式拍摄静态图片，影像的亮度会发生变化。
- 使用夜视功能取消渐进拍照功能。

关于 [PROGRESSIVE] 设置

- 当显示 [[P] 指示时，您可以使用渐进拍照功能。

将 [PROGRESSIVE] 设置为 [ON] 时：

可随时使用渐进拍照功能。但在此情况下，不能使用以下功能。

- [EFFECT1] 中的数码特效模式 -23-
- 数码变焦 [D.ZOOM] -17-
- 1/750 秒或更快的快门速度 -22-

将 [PROGRESSIVE] 设置为 [AUTO] 时

在以下情况下无法使用渐进拍照功能。

- 变焦放大率约为 10× 或更高时
- 快门速度为 1/750 秒或更快时
- 将 [EFFECT1] 设置为 [WIPE], [MIX], [STROBE], [GAIN UP], [TRAIL], [MOSAIC], [MIRROR] 时
- 图片显示在多画面中时

■ 自拍器拍摄

- 将 [CAMERA FUNCTIONS] 主菜单上的 [OTHER FUNCTIONS1] 子菜单上的 [BEEP SOUND] 设置为 [ON] 时，将发出哔哔声，自拍器拍摄待机模式的拍摄灯同时开始闪烁。
- 通过操作 [OFF/ON/MODE] 开关，取消自拍器待机模式。

■ 放大 / 缩小功能

- 对远处目标进行变焦时，如果拍摄目标距摄像机 1.2 米或更远，就能实现更精确的对焦。

■ 变焦麦克风功能

- 如果环境噪声太大，可能难以有效使用变焦麦克风功能。
- 它不能与外部麦克风一起使用。

■ 数码变焦功能

- 影像质量随数码变焦放大率的增加而下降。
- 无法在数码变焦范围中设置白平衡。

■ 影像稳定器功能

- 在阴暗处，不能使用影像稳定器功能。在此情况下，[] 指示会闪烁。
- 在荧光灯下，影像亮度会发生变化，或色彩看起来不自然。
- 此时会出现修正后的影像。
- 使用三角架时，建议关闭影像稳定器。
- 在数码变焦范围内或使用配备的转换镜头进行摄录时，可能难以有效使用影像稳定器功能。

■ 逆光补偿功能

- 手动设置光圈时，不能使用逆光补偿功能。
- 通过操作 [OFF/ON/MODE] 开关，取消逆光补偿功能。

■ 夜视功能

- 在亮处（如户外），摄录的图片可能会发白。
- 在暗处，所摄录的图片会以类似于延时动态影像的方式显现。
- 手动调节焦距。
- 自动关闭渐进拍照功能。
- 无法使用连续拍照功能。
- 无法设置白平衡。
- 无法调节快门速度。
- 无法设置 [EFFECT1] 中的影像稳定器、程序自动曝光或数码特效模式。
- 使用夜视功能摄录时，建议使用三角架。
- 夜视功能最多可将 CCD 的信号充入时间延长为通常情况下的 25 倍，所以，肉眼看不见的暗景可以明亮地录制下来。由于这一原因，可能会出现一些亮点，但这并非故障。

■ 消除风干扰功能

- 此功能不适用于带麦克风的自由式遥控器上的麦克风和外部麦克风。
- 将其设置为 [ON] 时，将根据风的强度来调整麦克风的指向，以减少风的干扰。

■ 电影功能

- 使用电影模式并不会加宽拍摄角度。
- 如果在宽屏（16:9）格式的电视机上回放电影模式录制的磁带，会自动调整回放影像的大小，以适应电视机的屏幕格式。有关详细信息，请参考电视机的使用说明书。
- 在电视机屏幕上显示这些影像时，某些情况下将不显示日期/时间指示。
- 根据电视机的不同，图片质量可能会有所下降。
- 使用电影模式时不能使用 [EFFECT1] 的 [MULTI] 和 [P-IN-P]。
- 根据所用的软件，导入的电影图片可能不会正确显示。

■ 程序自动曝光

- 如果选择了任何程序自动曝光模式，则无法调节快门速度 (-22-) 或光圈 (-22-)。
- 增亮模式 [GAIN UP] 下，无法使用运动、肖像或低照度模式。
- 在使用运动、肖像或低照度模式时，如果使用夜视功能，则取消此模式。

运动模式

- 在常规回放过程中，影像的运动看上去可能不是很流畅。
- 因为回放影像的色彩和亮度会变化，所以请避免在荧光灯、汞灯或钠灯下进行拍摄。
- 如果拍摄强光照射或高度反光目标，影像可能会出现竖向亮线。
- 如果光照不足，则 [] 指示将闪烁。

运动模式 / 肖像模式

- 如果用渐进拍照模式摄录静态图片，所摄录的静态图片的亮度和色调可能会变得不稳定。
- 如果在室内使用此模式，回放的影像可能会产生颤动。

低照度模式

- 过暗场景可能难以处理得足够亮。

聚光灯模式

- 使用此模式摄录的影像可能会过暗。
- 如果摄录目标过亮，则摄录的影像可能会发白。


海滩及雪地模式

- 如果摄录目标过亮，则摄录的影像可能会发白。

■ 白平衡

下列情况下，不能改变白平衡：

- 将 [CAMERA FUNCTIONS] 主菜单的 [DIGITAL EFFECT] 子菜单上的 [EFFECT1] 设置为 [GAIN UP]，或将 [EFFECT2] 设置为 [SEPIA] 或 [B/W] 时。
- 将变焦放大率约设置为 10× 或更高时
- 在数码静态图片模式下
- 显示某个菜单时
- 使用夜视模式时

在以下情况下， 指示将闪烁：

- 闪烁说明仍保留着以前设置的白平衡。此设置会一直保留，直到再次设置白平衡。
- 弱光下可能难以手动实现正确的白平衡调节。

■ 手动快门速度调节

- 回放强光照射或高度反光目标的影像时，会看到一些竖向亮线。
- 常规回放过程中，影像的运动看上去可能不是很流畅。
- 因为回放时影像的色彩和亮度会不稳定，所以请避免在荧光灯、汞灯或钠灯下进行拍摄。
- 如使用增亮模式 (-23-)、程序自动曝光模式 (-20-) 或夜视模式 (-19-)，则无法调节快门速度。

■ 手动光圈调节

- 根据变焦放大率的不同，可能不会显示某些光圈值。
- 如果正在使用夜视模式 (-19-) 或程序自动曝光模式 (-20-)，则不能调节光圈。
- 如果在设置光圈后调节快门速度，则会取消为光圈所设置的值。




■ 数码特效功能

- 无法将 [EFFECT1] 的 [MULTI]、[P-IN-P]、[WIPE]、[MIX] 或 [TRAIL] 与 [DIGITAL EFFECT] 子菜单中的 [EFFECT2] 同时使用。
- 如果将 [EFFECT2] 设置为 [B/W] 或 [SEPIA]，就不能更改所选的白平衡。(-20-)
- 如果设置了电影模式，就不能使用画中画模式和多画面模式。

在下列情况下，无法使用 [DIGITAL EFFECT] 子菜单上的 [EFFECT1]。

- 将 [PROGRESSIVE] 设置为 [ON] (-16-) 时
- 将夜视模式设置为 (-19-) 时

选定 [GAIN UP] 时，出现如下情况。

- 手动调焦模式
- 无法调节快门速度和白平衡。
- 不能使用运动模式 []、肖像模式 [] 和低照度模式 []。

擦去模式和混合模式

如果执行下列任一操作，将删除所存储影像，而且不能使用擦去和混合功能。

- 使用相机搜索功能
- 按 [STILL] 按钮

画中画模式

- 如果操作了 [OFF/ON/MODE] 开关，较小的图片将会消失。

多画面模式

- 如果在使用自拍镜像模式 (-15-) 时按下 [MULTI] 按钮，静态图片将从屏幕的右上角显示出来，但图片实际上是从左上角正常拍摄的。
- 多画面模式在数码静态图片模式下无法使用。
- 多幅影像的质量会稍微下降。
- 多画面的上方和下方会被稍微切除。

■ 回放

重复回放

如果持续按下 [▶] 按钮 5 秒钟或更长时间，摄像机将切换到重复回放模式，并且出现 [R ▷] 指示。（要取消重复回放模式，请将 [OFF/ON/MODE] 开关设置为 [OFF]。）

用耳机欣赏播放的声音

如果要使用耳机欣赏播放的声音，请将 [AV IN/OUT SETUP] 子菜单上的 [AV JACK] 设置为 [OUT/PHONES]，并将耳机接入摄像机上 [PHONES] 插孔 (-5-)。在此情况下，摄像机的内置扬声器不会产生任何声音（包括警告声和快门声音）。

回放中选择声音

使用 [PLAYBACK FUNCTIONS] 子菜单上的 [AUDIO OUT] 设置，可以选择声音。

STEREO: 立体声（主声和次声）
L: 左声道声音（主声）
R: 右声道声音（次声）

- 在为 [12bit]（在 [RECORDING SETUP] 子菜单上的 [AUDIO REC] 选择）录制的磁带配音时，如果将 [12bit AUDIO] 设置为 [MIX]，其回放声音则变成立体声，无论 [AUDIO OUT] 设置是什么。

■ 索引搜索功能

- 在磁带开头可能无法进行索引搜索。
- 由于以连续拍照模式拍摄的静态图片中没有记录拍照索引信号，所以不能对这些静态图片使用拍照索引搜索功能。
- 如果 2 个场景索引信号之间的时间间隔短于 1 分钟，场景索引搜索可能不会正常进行。

■ 回放变焦功能

- 在回放变焦模式下不能用遥控器调节音量。
- 如果关闭摄像机电源，或从 VCR 模式切换至相机模式，则自动取消回放变焦模式。
- 即使使用了回放变焦功能，从 DV 端子 (-5-) 或数码静态图片端子 (-32-) 输出的影像也不会被放大。
- 放大影像时，影像质量会下降。
- 在回放变焦过程中，不能用遥控器更改变速搜索功能。

■ 回放数码特效功能

- 回放过程中添加了数码特效的影像信号无法从 DV 端子 (-5-) 或数码静态图片端子 (-32-) 输出。

- 回放磁带的未录制部分时，不能使用擦去或混合功能。

多画面模式（VCR 模式）

- 多幅影像的质量会稍微下降。
- 回放多画面模式屏幕无法通过 DV 端子 (-5-) 或数码静态图片端子 (-32-) 输出。
- 如果存在来自 DV 端子的输入信号，则无法创建多画面屏幕。
- 如果将摄像机从多画面模式切换到相机模式，则 [CAMERA FUNCTIONS] 主菜单的 [MULTI-PICTURES] 子菜单上的 [SCAN MODE] 将自动设置为 [STROBE]。

在电视上回放

- 如果将 [AV IN/OUT SETUP] 子菜单上的 [AV JACK] 设置为 [IN/OUT]，则仅在回放过程中电视屏幕上才会显示内容。
- 在带 [B/W] 或 [SEPIA] 回放数码特效的宽屏幕电视机上回放电影图片时，所显示图片的大小可能会有所不同。

配音

- 不能对磁带的空白部分配音。
- 不能用通过 DV 端子发送的声音来配音。
- 如果在配音时磁带上存在未录制的部分，那么在回放这一部分的磁带时，影像和声音可能会受到干扰。
- 如果在要停止配音的位置将磁带计数器设置为 0，以使用记忆停止功能 (-43-)，那么，磁带来达此位置时将自动终止配音。
- 使用某些 PC 软件程序将带有配音的数据导入 PC 时，根据软件程序可能只能导入原始声音 (ST1)。

录制其它设备上的内容

模数转换

- 摄像机与其它数码影像设备通过 DV 端子连接时，可通过 DV 端子将其外部设备以模拟形式录制的影像输出到数码影像设备。
- 要从 DV 端子输出其它设备发送的模拟影像信号，请将 [AV IN/OUT SETUP] 子菜单上的 [DV OUT] 设置为 [ON]。（通常情况下请将 [DV OUT] 设置为 [OFF]。如果将其设置为 [ON]，可能会影响质量。）

使用 DV 电缆进行录制（数码配音复制）

- 无论设置如何，数码配音复制将自动进行，方式与回放一侧磁带的音频录制模式相同。
- 录制一侧的监视器上的图像可能会受到干扰，但不影响所录制的影像。
- 即使已经使用了回放数码特效或回放变焦，这些效果也不会从 DV 端子输出。
- 即使使用了配有 DV 端子（如 IEEE1394）的设备，某些情况下可能仍无法执行数码配音复制。
- 如果所连接设备的软件不支持相应显示功能，则不能显示应显示的日期或其它信息。

使用注意事项

■ 使用后

- 1 取出磁带。（-9-）
- 2 将 [OFF/ON/MODE] 开关设置为 [OFF]。
- 3 断开电源，收回取景器或 LCD 监视器。（-7-, -10-）
- 4 盖上随机配备的镜头盖以保护镜头。

■ 使用注意事项

在雨雪天或海滩使用摄像机时，切勿使水进入本机。

- 进水会造成摄像机或磁带发生故障。（可能会出现无法修复的故障。）
- 如果海水溅到摄像机上，请用自来水浸湿一块软布，拧干，并用它小心擦拭机体。然后再用一块干软布彻底擦拭一遍。

摄像机需远离磁场设备（例如微波炉、电视机、视频游戏设备等）。

- 如果在电视机上或电视机附近使用摄像机，影像和声音可能会由于电磁波的辐射而受到干扰。
- 请勿在手机附近使用本机，否则会影响影像和声音质量。
- 由扬声器或大的电机产生的强磁场环境，会使录制在磁带上的数据损坏，或影像失真。
- 由微处理器产生的电磁波辐射，会影响摄像机，导致影像和声音受到干扰。
- 如果摄像机受有磁设备影响而不能正常工作时，请关闭摄像机的电源，拆下电池或 AC 适配器，然后再装上电池或 AC 适配器。最后，打开摄像机电源。

切勿在无线电发射器或高压线附近使用摄像机。

- 如果在无线电发射器或高压线旁进行摄录，摄录的影像或声音会受到不良影响。

请勿将本机用于监视或其它商业用途。

- 如果长时间使用本机，机体内的温度会升高，并会因此而导致故障。

- 本摄像机不是为商业用途设计的。

在沙滩或类似的地方使用摄像机时，请勿让沙粒或细小的灰尘进入机体。

- 沙粒或灰尘可能会损坏摄像机或磁带。（插入或取出磁带时要特别小心。）

请勿向摄像机喷洒杀虫剂或挥发性化学物质。

- 如果摄像机上喷洒了此类化学物质，机体可能会变形，表面漆层可能会剥落。

- 请勿将橡胶或塑料制品与摄像机长时间接触。

请勿使用汽油、稀释剂或酒精清洁摄像机。

- 否则机体可能会受到损坏，表面漆层会剥落。
- 清洁前，请拆下电池或将 AC 电源线从 AC 电源插座中拔出。
- 用干软布擦拭摄像机。要祛除顽固的污渍，可以用软布蘸少许稀释后的清洁剂进行擦拭，最后再用干布擦拭一遍。
- 存放或携带摄像机时，请将它放在带软衬垫的包或箱子里，以防止机体的镀层受到磨损。

使用后，请确保取出磁带，拆除电池，或将 AC 电源线从 AC 电源插座中拔出。

- 如果将磁带留在摄像机中，磁带会松弛并老化。

- 如果将电池长时间留在摄像机中，其电压会大幅下降，即使重新充电也不能正常使用。

■关于 AC 适配器

- 如果电池温度过高或过低，[CHARGE] 灯会持续闪烁，则不会充电。电池温度降低或升高到一定程度后，充电会自动开始。如果电池温度降至或升至正常范围，但 [CHARGE] 灯仍然闪烁，则表明电池或 AC 适配器可能有问题。在这种情况下，请与经销商联系。
- 如果电池发热，充电时间会较长。
- 如果在无线电设备附近使用 AC 适配器，则会干扰无线电接收。请将 AC 适配器放在离无线电设备至少 1 米远的地方。
- 当使用 AC 适配器时，会发出沙沙声。这是正常现象。
- 使用后，确保将 AC 电源线从 AC 电源插座中拔出。（如果保持连接，则会少量耗电。）
- 请保持 AC 适配器和电池电极的清洁。

■水汽凝结

如果打开摄像机后水汽凝结指示闪烁，则说明摄像机中有水汽凝结。在这种情况下，摄像机会在约 1 分钟自动关闭电源。

请遵照以下步骤：

1 取出磁带。

- 请勿操作其它功能。根据水汽凝结量的大小，取出磁带可能会比较困难。如果发生这种情况，请等待 2 至 3 小时再取出磁带。

2 打开磁带盒盖，并等待 2 至 3 小时。

- 等待的时间取决于水汽凝结量和环境温度。

3 2 至 3 小时后，打开摄像机的电源并检查是否显示水汽凝结指示。

- 即使未显示水汽凝结指示，为保险起见，请等待 1 小时后再使用摄像机。

即使在显示水汽凝结指示之前还要注意观察水汽凝结情况。

- 由于水汽凝结是逐渐形成的，所以在本机内发生水汽凝结的头 10 至 15 分钟可能不会显示水汽凝结指示。
- 在过冷的环境中，水汽凝结会冻结并形成霜。在这种情况下，霜首先融化，因此造成水汽凝结，这是就再需要 2 至 3 小时才能消除水汽凝结。

镜头被雾化时：

请将 [OFF/ON/MODE] 开关设置为 [OFF]，并在此状态下保持约 1 小时。镜头温度接近环境温度时，雾气会自然消失。

■摄像头污染和维护

如果磁头（与磁带接触的部分）不干净，回放影像中会出现马赛克杂斑，或整个屏幕变黑。如果磁头过脏，摄录性能也会下降，甚至根本无法摄录。

磁头污染的原因

- 空气中的大量灰尘
- 高温度和高湿度环境
- 已损坏的磁带
- 长时间使用

使用 Mini-DV 格式数码摄像头清洁剂

1 像插入磁带一样将磁头清洁剂插入摄像机。

2 按下 [▶] 按钮，约 20 秒钟后，再按下 [■] 按钮。（请勿倒带。）

3 取出磁头清洁剂。插入磁带，开始录制。然后回放磁带，检查录制的影像。

4 如果影像仍不清晰，请重复步骤 1 到 3。（请勿连续使用磁头清洁剂 3 次以上。）

注意：

- 使用磁头清洁剂时，切勿倒带。只能在清洁带到头时才能倒带，然后按照前面的方式从开始处再次使用。
- 如果磁头清洁后又很快变脏，则可能是磁带已损坏。在这种情况下，请立即停止使用此磁带。
- 请勿过频清洁磁头。（过频清洁会造成磁头过度磨损。如果磁头磨损，即使在清洁磁头后，也将无法回放影像。）
- 如果不能用磁头清洁剂清洁污渍损坏磁头，则需在送维修中心进行清洁。请与经销商联系。
- 摄像头清洁剂可从维修中心购买。
- 因磁头变脏而进行的磁头清洁不是本产品的故障。它不在保修范围之内。

定期检查

为了保持最佳的影像质量，建议在使用约 1000 小时后更换磁头等磨损部件。（这取决于温度、湿度、灰尘等操作环境。）

■ 电池的最佳使用方式

电池性能

本电池是可充电的锂离子电池。它基于内部化学反应产生能量。这种反应易受环境温度和湿度的影响。如果温度太高或太低，则电池的工作时间都会缩短。如果在过冷环境中使用本电池，则可能只能使用约 5 分钟。如果电池变得过热，则启用保护功能，此时电池将暂时不可用。

确保使用后取出电池

确保使用后从摄像机中取出电池。（如果将电池留在摄像机中，即使关闭了摄像机的电源，仍会少量耗电。）如果将电池长时间留在摄像机中，则会发生过放电。重新充电后，电池可能无法使用。

不可用电池的处置

- 电池的寿命是有限的。
- 请勿将电池扔进火中，因为这样可能导致爆炸。

请保持电池端子清洁

防止电池端子被脏物、灰尘或其它物质阻塞。如果不小心将电池掉在地上，请检查电池及其端子是否变形。

如果将损坏的电池装入摄像机或 AC 适配器，则可能会损坏摄像机或 AC 适配器。

■ 存放时的注意事项

存放摄像机前，请取出磁带和电池。

所有部件均应存放在干燥且温度相对稳定的地方。（建议温度：15 到 25°C，建议湿度：40 到 60%）

摄像机

- 用软布包裹摄像机以防灰尘落入机内。
- 请勿将摄像机存放在温度过高的地方。

电池

- 温度过高或过低都会缩短电池的寿命。
- 如果将电池存放在有烟雾或灰尘的地方，电池端子可能会生锈，因而导致无法正常工作。
- **请勿将电池端子与金属物体（例如项链、发夹等）接触。这样可能导致短路或产生热量，如果在这种情况下触摸电池，可能会被严重烧伤。**
- 电池应在完全放电的状态下保存。长时间存放电池时，建议每年充一次电，并且每次都应将电耗尽后再存放起来。

磁带

- 存放磁带前，请将磁带倒回开始处。如果将中途停止的磁带存放 6 个多月，磁带就会松弛（取决于存放条件）。请务必倒回开始处。
- 请在磁带盒中存放磁带。灰尘、直射阳光（紫外线）或潮气都会损坏磁带。含有硬性矿物微粒的灰尘和被污染的磁带会损坏摄像机的镜头和其它部件。要养成将磁带放回磁带盒的习惯。
- 最好每半年都将磁带快进到末尾，再倒至开头一次。如果磁带 1 年或更长时间没有快进或倒带，则由于膨胀、收缩等原因，温度和湿度的变化可能会造成磁带变形。损坏的磁带会自己粘在一起。
- 请勿将磁带放在高磁性物质或设备附近。
- 磁带表面覆盖着一层极微细的磁性粒子，信号即录制在这些粒子上。带磁性的项链、玩具等具有超乎想象的磁力，它们可能会删除录制的内容，或对影像和声音造成干扰。

■ LCD 监视器 / 取景器 / 镜头遮光罩

LCD 监视器

- 在温度变化很大的地方，LCD 监视器上可能会形成水汽凝结。可以用干软布将它擦掉。
- 打开电源时，如摄像机过凉，LCD 监视器上的影像开始时会比通常稍暗。但是，随着内部温度的升高，会恢复正常的亮度。

制造 LCD 监视器屏幕时采用了尖端精密技术，其总的像素大约为 113,000。99.99% 的像素有效，仅有 0.01% 的像素不可用或总是亮的。但这并非故障，不会影响录制的图片。

取景器

- 请勿将取景器或镜头直接对着太阳。否则会严重损坏内部部件。

- 当摄像机使用大容量电池（CGA-DU21；单卖品）时，从电池后面看取景器并不实用。

制造取景器屏幕时采用了尖端精密技术，其总的像素大约为 113,000。99.99% 的像素有效，仅有 0.01% 的像素不可用或总是亮的。但这并非故障，不会影响录制的图片。

镜头遮光罩

- 请勿将其它转换镜头安装在镜头遮光罩前面，没有适合这种安装的装置。
- 安装长焦转换镜头（VW-LT2714N2E；单卖品）、广角转换镜头（VW-LW2707N2E；单卖品）、MC 保护镜（VW-LMC27E；单卖品）或 ND 滤镜（VW-LND27E；单卖品），首先要逆时针旋转镜头遮光罩，然后将其卸下。如果使用 MC 保护镜和 ND 滤镜，镜头遮光罩可以安装在滤镜上。
- 如果将滤镜或转换镜头安装到摄像机上，则在拍摄过程中，如果将 [W/T] 杆推向 [W] 方向，则影像的 4 个角将会变暗（渐晕）。详细信息，请参考附件的使用说明书。
- 确保镜头遮光罩装接在摄像机上，以遮挡不需要的光线。

要求修理前（问题和解决方法）

电源

1: 不能接通摄像机电源。

- 电源连接正确吗？(-7-)

2: 摄像机电源自动关闭。

- 如果拍摄暂停模式持续时间超过 6 分钟以上，电源会自动关闭，以保护磁带并节省电池电量。(-15-)

3: 摄像机的电源不能长久足够电力。

- 电池电量低吗？对电池充电或装入已完全充电的电池。(-7-)
- 出现了水汽凝结吗？等待，直至水汽凝结指示消失。(-39-)

电池

1: 电池耗电太快。

- 电池是否已完全充电？用 AC 适配器充电。(-7-)
- 是在过冷环境中使用电池吗？在冷环境中，电池的使用时间将缩短。(-40-)
- 电池已报废了吗？电池完全充电后，如果使用时间仍然太短，则表明电池已报废。

2: 电池不能充电。

- 如果将 DC 输入导线接到 AC 适配器，则将不能进行充电。请断开 DC 输入导线。

常规拍摄

1: 虽然摄像机已通电并正确插入了磁带，但仍不能开始录制。

- 磁带上的意外删除保护滑块是否被打开？如果被打开（设置为 [SAVE]），则不能录制。(-10-)
- 磁带是否到达木尾？插入新磁带。(-9-)
- 摄像机的电源是否打开？(-15-)
- [CAMERA] 灯是否亮起？如果 [CAMERA] 灯没亮，则不能操作录制功能。(-15-)
- 出现了水汽凝结吗？等待，直至水汽凝结指示消失。(-39-)

其它录制

1: 自动调焦功能不可用。

- 选择了手动调焦模式吗？如果选定自动调焦模式，将自动调节焦距。(-22-)
- 存在着一些摄录目标和摄录环境，使自动调焦功能不能正常使用。在这种情况下，请使用手动调焦模式来调节焦距。(-42-)

编辑

1: 不能进行配音。

- 磁带上的意外删除保护滑块是否被打开？如果被打开（设置为 [SAVE]），则不能录制。(-10-)
- 是否是对以 LP 模式录制的磁带部分进行编辑？LP 模式下不允许配音操作。(-14-)

指示

1: 时间码变得不准确。

- 在慢动作回放模式下，时间码指示计数器可能反向不是常数，但这并不是故障。

2: 磁带剩余时间指示消失。

- 在拍照模式下摄录静态图片时，磁带剩余时间指示会暂时消失。但正常录制时会再次出现。

3: 磁带剩余时间指示与实际磁带剩余时间不一致。

- 如果连续录制了不足 15 秒钟的场景，则不能正确显示磁带剩余时间。
- 在有些情况下，磁带剩余时间指示所显示的时间比实际要短 2 至 3 分钟。

回放（图片）**1: 即使按下了 [▶] 按钮也不能回放图片。**

- [VCR] 灯是否亮起？如果 [VCR] 灯没亮，就不能使用回放功能。(-26-)

2: 在快进搜索、倒带搜索或慢动作回放过程中，影像上出现马赛克杂斑。

- 这种现象是数码视频系统的固有特征。这并不是故障。

3: 虽然摄像机已与电视机正确连接，但看不到回放影像。

- 在电视机上选择了“视频输入”吗？请阅读电视机的使用说明书，然后选择与连接所用的输入插孔相对应的频道。

4: 回放图片不清晰。

- 摄像机的磁头是否变脏？如果磁头变脏，回放影像则无法清晰。(-39-)

回放（声音）**1: 摄像机的内置扬声器或耳机中没有回放出声音。**

- 音量太低吗？回放过程中，按住 [PUSH] 旋钮，直至出现 [VOLUME] 指示。然后旋转 [PUSH] 旋钮，调节音量。(-26-)

2: 同时再生了不同的声音。

- 已经将 [VCR FUNCTIONS] 主菜单的 [PLAYBACK FUNCTIONS] 子菜单上的 [12bit AUDIO] 设置为 [MIX]。结果，原始声音和通过配音录制的声音被一起回放出来。各种声音可以分别再生。(-30-)

3: 进行配音时删除了原始声音。

- 如果对 [16bit] 模式下录制的内容配音，将删除原始声音。如果要保留原始声音，请确保在录制时选择了 [12bit] 模式。

4: 声音不能回放。

- 虽然所播放的磁带没有配音，是否将 [VCR FUNCTIONS] 主菜单的 [PLAYBACK FUNCTIONS] 子菜单上的 [12bit AUDIO] 设置为 [ST2]？要回放没有配音的磁带，必须将 [12bit AUDIO] 设置为 [ST1]。(-30-)
- 正在执行变速搜索功能吗？按 [▶] 按钮取消变速搜索功能。(-26-)

其它内容**1: 带麦克风的自由式遥控器不能正常使用。**

- 如果未插牢，就不能正常使用。

2: 晃动摄像机时会发出咔嚓声。

- 这是镜头移动的声音，并不是故障。

术语解释**■ 数码视频系统**

数码视频系统中，影像和声音被转换成数码信号，然后录制在磁带中。这一完全数码录制过程能够以最小的失真来录制和回放影像和声音。

此外，它能够自动将时间码和日期 / 时间等数据录制为数码信号。

与 S-VHS 或 VHS 磁带的兼容性

由于本机采用了数码系统来录制影像或声音数据，所以它不兼容使用模拟录制系统的常规 S-VHS 或 VHS 设备。

磁带的尺寸和形状也不同。

与输出信号的兼容性

由于从 AV 信号输出插孔输出的 AV 信号是模拟信号（与常规视频系统相同），所以，本机可与 S-VHS、VHS 或电视连接来进行回放。

■ 焦距**自动焦距调节**

自动调焦系统通过前后移动摄像机中的调焦镜头，可将目标拉进焦距范围内，从而看到清晰的目标。但是，自动调焦系统不能正常用于下列拍摄目标或摄录环境。

此时请使用手动调焦模式。

1) 拍摄一端距摄像机近而另一端距摄像机远的目标时

- 由于自动调焦在影像的中心调整焦距，因而无法对既有前景又有背景的目标准确对焦。

2) 摄录不干净或有灰尘的玻璃后的目标时

- 由于焦点在不干净的玻璃上，因而不能对玻璃后的目标对焦。

3) 拍摄黑暗环境中的目标

- 由于透过镜头的光信号减少很多，因而摄像机不能正确对焦。

4) 拍摄四周有表面光滑或高度反光物体的目标时

- 由于摄像机将焦点定在光滑表面或高度反光物体上，所以拍摄目标就会变得相对模糊。

5) 拍摄快速移动的目标

- 由于内部对焦镜头的移动为机械运动，所以不能跟上快速移动的目标。

6) 拍摄反差较小的目标

- 由于摄像机是根据目标的垂直线确定焦距的，因此，对于白色的墙体这样反差较小的目标，拍摄效果可能会比较模糊。

■ 时间码

时间码信号是以小时、分钟、秒和帧（每秒 25 帧）为单位指示时间的数据。如果录制内容中含有这种数据，就会为磁带上的每个影像分配一个地址。

- 每次录制时，时间码自动作为子代码的一部分而被录制。

- 插入新磁带（以前录制的）后，时间码自动从零开始。如果插入了已录制的磁带，时间码将从上次所录制的场景处开始。（在这种情况下，插入磁带后会出现零显示 [0h00m00s00f]，但时间码却从上一个值开始。）

- 不能将时间码重置为零。
- 除非从磁带的开头连续录制时间码，否则将不能进行准确的编辑。要确保录制的时间码没有中断，建议在录制新场景前，使用相机搜索功能 (-15-) 或空白搜索功能 (-27-)。

■ 记忆停止功能

记忆停止功能对以下操作非常有用。

将磁带倒带或快进至一个所需位置时

- 1 设置 [DISPLAY SETUP] >> [C.DISPLAY] >> [MEMORY]。
- 2 在稍后开始回放时的磁带位置，将磁带计数器重新设置为零。(-6-, -12-)
- 3 开始回放或录制。
- 4 回放或录制完成后：
转动 [OFF/ON/MODE] 开关并将摄像机设置为 VCR 模式。
 - [VCR] 指示灯亮起。
- 5 倒转磁带。
 - 磁带自动停在计数器设置为零的位置附近。

配音过程中自动停止编辑

- 1 设置 [DISPLAY SETUP] >> [C.DISPLAY] >> [MEMORY]。
- 2 在要停止编辑的位置将磁带计数器重置为零。
- 3 在要开始配音的位置回放静态图片。
- 4 开始配音。(-30-)
 - 配音会在计数器设置为零的位置自动停止。

规格

规格

数码摄像机

安全注意事项

电源:

DC 7.9/7.2 V

功耗:

拍摄

2.1 W (使用取景器时)

3.0 W (使用 LCD 监视器时)

拍摄格式:

Mini DV (用户使用数码视频 SD 格式)

所用磁带:

6.35 mm 数码视频磁带

拍摄 / 回放时间:

SP: 80 分钟; LP: 120 分钟 (使用 DVM80 时)

视频

录制系统:

数码部件

电视系统:

CCIR: 625 行, 50 帧 PAL 彩色信号

音频

录制系统:

PCM 数码录制

16 位 (48 kHz/2ch), 12 位 (32 kHz/4ch)

影像传感器:

1/6 英寸 CCD 影像传感器

镜头:

自动光圈, F1.8, 焦距: 2.3–23 mm, 微距 (全范围 AF)

滤镜直径:

27 mm

变焦:

10:1 电动变焦

监视器:

2.5 - 英寸 LCD

取景器:

彩色电子取景器

麦克风:

立体声

扬声器:

1 个环绕扬声器 \varnothing 20 mm

标准照亮度:

1,400 lx

最低照亮度:

1 lx (彩色夜视模式)

视频输出电平:

1.0 Vp-p, 75 ohm

S-Video 输出电平:

Y 输出: 1.0 Vp-p, 75 ohm

C 输出: 0.3 Vp-p, 75 ohm

音频输出电平 (线路):

316 mV, 600 ohm

视频输入电平:

1.0 Vp-p, 75 ohm

S-Video 输入电平:

Y 输入: 1.0 Vp-p, 75 ohm

C 输入: 0.3 Vp-p, 75 ohm

音频输入电平 (线路):

316 mV, 10 kohm 或更高

麦克风输入:

麦克风灵敏度 -50 dB (0 dB=1 V/Pa, 1 kHz) (立体声微型插孔)

数码静态图片 (TO PC):

数码静态图片输出, 控制信号输入 / 输出 (传输率: max. 115 kbps)

数码接口:

DV 输入 / 输出端子 (IEEE1394, 4-pin)

尺寸:

约 66 (宽) \times 83 (高) \times 110 (长) mm

重量:

约 430 g (不包括电池和 DV 磁带)

约 490 g (包括 CGA-DU07、DVM60)

工作温度:

0°C–40°C

工作湿度:

10%–80%

AC 适配器

安全注意事项

电源:

AC 110–240 V, 50/60 Hz

功耗:

19 W

DC 输出:

DC 7.9 V, 1.4 A (摄像机工作时)

DC 8.4 V, 0.65 A (电池充电时)

尺寸:

61 (宽) \times 32 (高) \times 91 (长) mm

重量:

约 105 g

重量和尺寸为近似值。

规格变更, 恕不另行通知。

Information for Your Safety

As this equipment gets hot during use, operate it in a well-ventilated place; do not install this equipment in a confined space such as a bookcase or similar unit.

To reduce the risk of fire, electric shock or product damage, do not expose this equipment to rain, moisture, dripping or splashing and ensure that no objects filled with liquids, such as vases, shall be placed on the equipment.

Movie Camera

- **The rating plate is on the surface of the Movie Camera.**

AC Adaptor

- **The rating plate is on the underside of the AC Adaptor.**

■ Carefully read the Operating Instructions and use the Movie Camera correctly.

- **Injury or material damage resulting from any kind of use that is not in accordance with the operating procedures explained in these Operating Instructions are the sole responsibility of the user.**

Try out the Movie Camera.

Be sure to try out the Movie Camera before recording your first important event and check that it records properly and functions correctly.

The manufacturer is not liable for loss of recorded contents.

The manufacturer shall in no event be liable for the loss of recordings due to malfunction or defect of this Movie Camera, its accessories or cassettes.

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.

Pages for reference

Pages for reference are indicated by dashes either side of a number, for example: -00-

■ WARNING

Do not remove the cover (or back); there are no user serviceable parts inside.

Refer servicing to qualified service personnel.

Use only the recommended accessories.

The socket outlet shall be installed near the equipment and easily accessible or the mains plug or an appliance coupler shall remain readily operable.

Contents

Information for Your Safety	45
-----------------------------------	----

Before Use

Standard Accessories	47
Optional Accessories.....	47
Controls and Components.....	47
The Remote Controller.....	50
Power Supply	51
Charging Time and Available Recording Time	52
The One Touch Free Style Grip Belt ..	52
Attaching the Lens Cap	53
Attaching the Shoulder Strap	53
Inserting a Cassette	53
Turning on the Movie Camera and Selecting Modes	54
Using the Viewfinder/LCD Monitor	54
Using the Menu Screen.....	55
List of Menus	56
Setting Date and Time.....	57
Internal Lithium Battery Recharge.....	58
LP Mode	58
Audio Recording Mode.....	58

Camera Mode

Recording	59
Quick Start.....	60
Photoshot	60
Self-timer Recording.....	61
Zoom In/Out Functions	61
Digital Zoom Function	62
Image Stabilizer Function.....	62
Fade In/Out Functions.....	62
Backlight Compensation Function.....	63
Night View Functions.....	63
Wind Noise Reduction Function	64
Cinema Function	64
Recording in Special Situations.....	64
Recording in Natural Colours	65
Adjusting White Balance Manually	66
Manual Shutter Speed Adjustment.....	67
Manual Iris Adjustment.....	67
Manual Focus Adjustment.....	67
Digital Effect Functions.....	68

VCR Mode

Playing Back	71
Finding a Scene You Want to Play Back 71	
Slow Motion Playback.....	72
Still Playback/Still Advance Playback	72
Finding the End of Recording	73
Index Search Functions	73
Playback Zoom Function	74
Playback Digital Effect Functions.....	74
Playing Back on Your TV	76
Audio Dubbing	76
Copying on an S-VHS (or a VHS) Cassette	77
Recording the Contents of Other Equipment	78
Using the DV Cable for Recording.....	78
Personal Computer Connection Kit....	79

Others

Indications.....	80
Owner ID.....	81
Initializing the Modes	81
Warning/Alarm Indications	81
Notes and Hints	82
Cautions for Use	86
Before Requesting Repair (Problems and Solutions)	89
Explanation of Terms	91

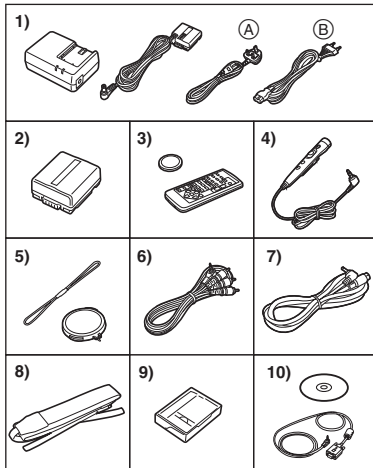
Specifications

Specifications.....	93
---------------------	----

Before Use

Standard Accessories

Illustrated are accessories supplied with the Movie Camera.



1) AC Adaptor, DC Input Lead and AC Mains Lead -51-

- (A) Hong Kong Special Administrative Region of China
- (B) The People's Republic of China
- (C) Areas Other than Hong Kong Special Administrative Region of China and the People's Republic of China

2) Battery Pack -51-

3) Remote Controller and Button-Type Battery -49-

4) Free Style Remote Controller with Mic -50-

5) Lens Cap and Lens Cap Cord -53-

6) AV Cable -76-

7) S-Video Cable -76-

8) Shoulder Strap -53-

9) Digital Video Head Cleaner -88-

10) Personal Computer Connection Kit -79-

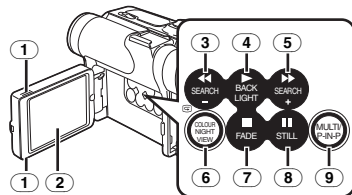
Optional Accessories

- 1) AC Adaptor (VW-AD10E/B/GK)
- 2) Battery Pack (Lithium/CGA-DU07/680mAh)
- 3) Battery Pack (Lithium/CGA-DU14/1360mAh)
- 4) Battery Pack (Lithium/CGA-DU21/2040mAh)
- 5) Wide Conversion Lens (VW-LW2707N2E)
- 6) Tele Conversion Lens (VW-LT2714N2E)
- 7) ND Filter (VW-LND27E)
- 8) MC Protector (VW-LMC27E)
- 9) Stereo Microphone (VW-VMS2E)
- 10) Shoe Adaptor (VW-SK11E)
- 11) Tripod (VZ-CT55E)
- 12) Snow & Rain Jacket (VW-SJGS50E)

- 13) Personal Computer Connection Kit (VW-DTA30E/VW-DTA29E)
 - 14) DV Cable (VW-CD1E)
 - 15) DV Editing Software with DV Interface Board (VW-DTM21E)
 - 16) DV Editing Software with DV Interface Card (VW-DTM22E)
 - 17) DV Editing Software (VW-DTM20E)
 - 18) Internet Videophone Software (VW-DTC1E)
- Some optional accessories may not be available in some countries.

Controls and Components

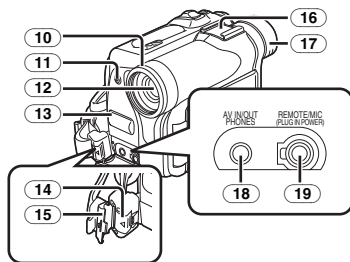
Movie Camera



- 1) LCD Monitor Open Knob [OPEN▼] -54-
- 2) LCD Monitor -54-, -89-

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.

- 3) Rewind/Review Button [◀◀] -71-
Reverse Search Button [SEARCH-] -59-
Recording Check Button [Ⓜ] -59-
- 4) Play Button [▶] -71-
Backlight Button [BACK LIGHT] -63-
- 5) Fast Forward/Cue Button [▶▶] -71-
Forward Search Button [SEARCH+] -59-
- 6) Colour Night View Button [COLOUR NIGHT VIEW] -63-
- 7) Stop Button [■] -71-
Fade Button [FADE] -63-
- 8) Pause Button [||] -72-
Still Button [STILL] -61-
- 9) Multi Button [MULTI] -70-, -75-
Picture-in-Picture Button [P-IN-P] -69-



- 10 Lens Hood -89-
- 11 Recording Lamp -59-
- 12 Lens
- 13 Microphone (built-in, stereo) -62-, -64-
- 14 Lock Button -52-
- 15 Lock Cover -52-
- 16 Accessory Shoe

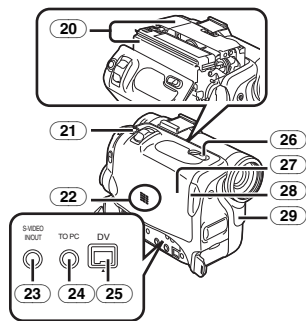
- Accessories, such as a stereo microphone (VW-VMS2E; optional), are attached here.

- 17 Eyecup
- 18 Audio-Video Input/Output Socket [AV IN/OUT] -76-
Headphone Socket [PHONES]

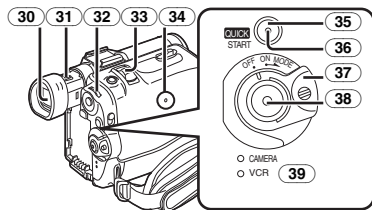
- Connecting an AV Cable to this socket activates the Movie Camera's built-in speaker, but connecting a headphone, etc. deactivates it.
- When plugging the pin plug of the AV Cable to this socket, plug it in as far as it goes.

- 19 Socket for Free Style Remote Controller with Mic [REMOTE] -60-
Microphone Socket [MIC]

- When connecting an external microphone or audio equipment to this socket, the built-in microphone does not operate.
- When connecting the Free Style Remote Controller with Mic to this socket and the [TALK] Button is pressed, the built-in microphone does not operate. -60-
- When plugging the pin plug of the Free Style Remote Controller with Mic to this socket, plug it in as far as it goes.



- 20 Cassette Holder
- 21 Photoshot Button [PHOTO SHOT] -60-
- 22 Speaker -71-
- 23 S-Video Input/Output Socket [S-VIDEO IN/OUT] -76-
- 24 Digital Still Picture Terminal [TO PC] -79-
- 25 DV Terminal [DV] -78-
• Connect this to the digital video equipment.
- 26 Cassette Eject Lever [OPEN/EJECT] -53-
- 27 Cassette Compartment Cover -53-
- 28 Cassette Holder Close Button [PUSH CLOSE] -53-
- 29 White Balance Sensor -66-
Remote Control Sensor -50-

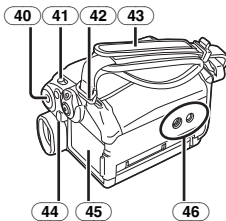


- 30 Viewfinder -54-, -89-

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

- 31 Eyepiece Corrector Knob -54-
- 32 Multi-Function Dial [PUSH] -55-, -71-
- 33 Zoom Lever [W/T] -61-
- 34 Reset Button [RESET] -81-
- 35 Quick Start Recording Button [QUICK START] -60-
- 36 Quick Start Recording Lamp -60-

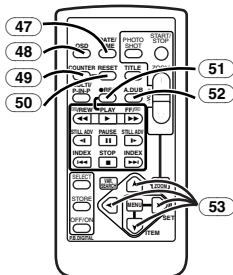
- 37 Off/On Mode Selector Switch [OFF/ON/MODE] -54-, -59-, -86-
- 38 Recording Start/Stop Button -59-
- 39 Operation Mode Lamps [CAMERA/VCR] -54-, -59-, -71-



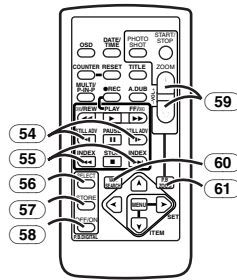
- 40 Menu Button [MENU] -55-
- 41 Mode Selector Switch [AUTO/MANUAL/FOCUS] -59-, -64-
- 42 Shoulder Strap Holders -53-
- 43 Grip Belt (One Touch Free Style Grip Belt) -52-
- 44 Battery Eject Button [PUSH BATT] -51-
- 45 Battery Holder
- 46 Tripod Receptacle
 - Used for mounting the Movie Camera on an optional tripod.

Remote Controller

Using the wireless Remote Controller that is supplied with the Movie Camera, most of the Movie Camera functions can be operated from a distance.

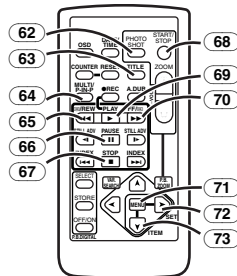


- 47 Date/Time Button [DATE/TIME] -81-
- 48 Indication Output Button [OSD] -76-
- 49 Counter Indication Shift Button [COUNTER] -80-
- 50 Reset Button [RESET] -92-
- 51 Recording Button [REC] -78-
- 52 Audio Dubbing Button [A.DUB] -76-
- 53 Cursor Buttons for Variable Speed Search Function [▲, ▼] -72-
Direction Buttons for Playback Zoom Function [▲, ◀, ▶, ▼] -74-



- 54 Slow Motion/Still Advance Buttons [◀, ▶] (◀: reverse, ▶: forward) -72-
- 55 Index Search Buttons [◀◀, ▶▶] (◀◀: reverse, ▶▶: forward) -73-
- 56 Selection Button [SELECT] -74-
- 57 Store Button [STORE] -75-
- 58 Off/On Button [OFF/ON] -74-
- 59 Zoom/Volume Button [ZOOM/VOL] -61-, -71-, -74-
- 60 Variable Speed Search Button [VAR. SEARCH] -72-
- 61 Playback Zoom Button [P.B. ZOOM] -74-

The following buttons function in the same manner as the corresponding buttons on the Movie Camera.

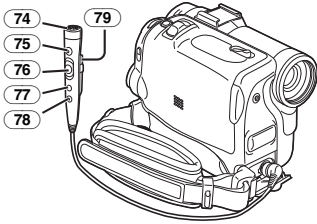


- 62 Photoshot Button [PHOTO SHOT] -60-
- 63 Title Button [TITLE]
 - This Movie Camera cannot be operated with this button.
- 64 Multi-Picture/Picture-in-Picture Button [MULTI/P-IN-P] -69-, -75-
- 65 Rewind/Review Button [◀◀] -71-
- 66 Pause Button [⏸] -72-
- 67 Stop Button [■] -71-
- 68 Recording Start/Stop Button [START/STOP] -59-
- 69 Play Button [▶] -71-
- 70 Fast-forward/Cue Button [▶▶] -71-
- 71 Menu Button [MENU] -55-
- 72 Set Button [SET] -55-
- 73 Item Button [ITEM] -55-

Free Style Remote Controller with Mic

This controller allows the scene to be shot in various angles, high to low and is also convenient when the Tripod is used. When you do not use this controller, attach the clip to the Grip Belt for convenience.

This controller allows the Movie Camera to be used more conveniently by a left-handed user.



- 74 Microphone [MIC] -60-
- 75 Recording Start/Stop Button [REC]
- 76 Zoom Lever [W/T]
 - Zoom speed changes in 2 stages.
- 77 Photoshot Button [PHOTO SHOT]
- 78 Microphone Switch Button [TALK] -60-
 - When connecting the Free Style Remote Controller with Mic to [REMOTE] Socket and the [TALK] Button is pressed, the built-in microphone does not operate.
- 79 Clip

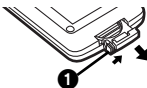
- Insert the plug securely into the [REMOTE] Socket as far as it will go. A loose connection will spoil normal operation.

The Remote Controller

Inserting a Button-type Battery

Before using the Remote Controller, insert the supplied button-type battery.

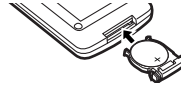
- 1 While pressing the Stopper ❶, pull out the Battery Holder.



- 2 Insert the button-type battery with the (+) marking facing upward.



- 3 Insert the Battery Holder into the Remote Controller.



- When the button-type battery is exhausted, replace it with a new CR2025 battery. (A battery is normally expected to last about 1 year. However, it depends on operation frequency.)
- Make sure to match the poles correctly when inserting the battery.

CAUTION

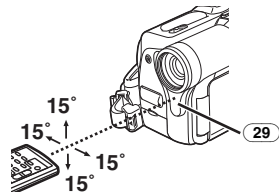
Danger of explosion if battery is incorrectly replaced. Replace only with the same or equivalent type recommended by the equipment manufacturer. Discard used batteries according to manufacturer's instructions.

WARNING

Risk of fire, explosion and burns. Do not recharge, disassemble, heat above 100°C or incinerate. Keep the Button-Type battery out of the reach of children. Never put Button-Type battery in mouth. If swallowed call your doctor.

Using the Remote Controller

- 1 Direct the Remote Controller to the Remote Control Sensor ❷ of the Movie Camera and press an appropriate button.



- Distance from the Movie Camera: Within approximately 5 metres
- Angle: Within approximately 15° in the vertical and horizontal directions from the central axis
- The above operative ranges are for indoor use. Outdoors or under strong light, the Movie Camera may not operate properly even within the above ranges.
- Within a 1-metre range, you can also use the Remote Controller on the LCD Monitor side of the Movie Camera.

Selecting Remote Controller Modes

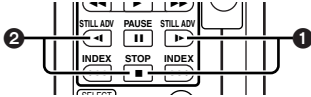
When 2 Movie Cameras are used simultaneously, they can be operated individually by selecting different Remote Controller Modes.

- If the Remote Controller Mode of the Movie Camera and that of the Remote Controller do not match, [REMOTE] Indication is displayed.

Setup on the Movie Camera:

Set [REMOTE] on the [OTHER FUNCTIONS] Sub-Menu to the desired Remote Controller Mode. (-56-)

Setup on the Remote Controller:



[VCR1]:

Press the [▶] Button and [■] Button simultaneously. ①

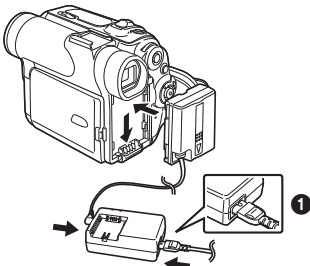
[VCR2]:

Press the [◀] Button and [■] Button simultaneously. ②

- When the battery in the Remote Controller is replaced, the mode is automatically reset to [VCR1] Mode.

Power Supply

Using the AC Adaptor

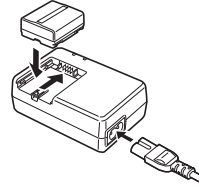


- 1 Connect the DC Input Lead to the Movie Camera.
 - 2 Connect the DC Input Lead to the AC Adaptor.
 - 3 Connect the AC Mains Lead to the AC Adaptor and the AC mains socket.
 - The AC Mains Lead's outlet plug does not fit entirely into the AC Adaptor socket. A gap will remain as shown ①.
- Before connecting or disconnecting the power supply, set the [OFF/ON/MODE] Switch on the Movie Camera to [OFF] and make sure that [CAMERA/VCR] Lamps are not lit.

Using the Battery

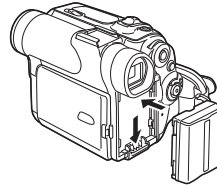
Before use, fully charge the Battery.

1 Attach the Battery to the AC Adaptor and charge it.



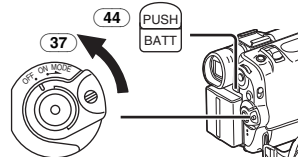
- Since the Battery will not be charged when the DC Input Lead is connected to the AC Adaptor, disconnect it from the AC Adaptor.
- The [POWER] Lamp and [CHARGE] Lamp lights up, and charging starts.
- When the [CHARGE] Lamp goes off, charging is completed.

2 Attach the charged Battery to the Movie Camera.



Disconnecting the Power Source

Set the [OFF/ON/MODE] Switch (37) to [OFF] and, while pressing the [PUSH BATT] Button (44), slide the Battery or DC Input Lead upward to disconnect it.



- For other notes concerning this item, see -82-.

Charging Time and Available Recording Time

CGA-DU07	(A)	1h30min.
	(B)	2h15min.(1h35min.)
	(C)	1h10min.(50min.)
CGA-DU14	(A)	2h45min.
	(B)	4h30min.(3h10min.)
	(C)	2h15min.(1h35min.)
CGA-DU21	(A)	3h55min.
	(B)	6h45min.(4h45min.)
	(C)	3h25min.(2h25min.)

- (A) Charging Time
 (B) Maximum Continuous Recording Time
 (C) Intermittent Recording Time
 (Intermittent Recording Time is the available recording time with repeated recording and stopping actions.)

"1h10min." indicates 1 hour and 10 minutes.

- Battery CGA-DU07 is supplied.
- The times shown in the table are approximate times. The numbers in parentheses indicate the recording time when the LCD Monitor is used. In actual use, the available recording time may be shorter.
- The times shown in the table are for continuous recording at a temperature of 20°C and humidity of 60%. If the Battery is charged at a higher or lower temperature, the charging time may be longer.
- The available recording time becomes shorter if you use both of Viewfinder and LCD Monitor simultaneously when using the 0 Lux Night View function or rotating the LCD Monitor frontward to record yourself.

The One Touch Free Style Grip Belt

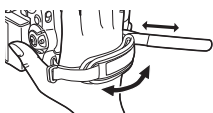
To Use as a Grip Belt

Adjust the length of the Grip Belt to the size of your hand.

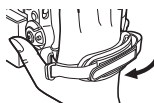
- 1 Detach the tip of the Grip Belt.**



- 2 Slide the pad to obtain the optimum length.**



- 3 Reattach the Grip Belt.**

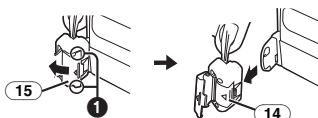


To Use as a Hand Strap

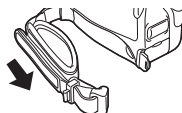
Using the Grip Belt as the hand strap makes it easier to handle and carry the Movie Camera. It is more convenient to use with the Free Style Remote Controller with Mic.



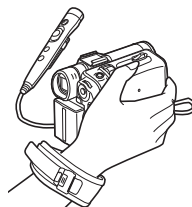
- 1 Open the Lock Cover (15) by holding the tabs on both sides (1), press the Lock Button (14) and detach the Grip Belt.**



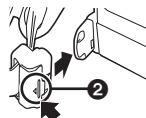
- 2 Slide the pad of the Grip Belt.**



- 3 Attach the Grip Belt around your wrist.**



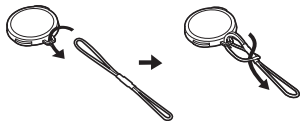
- When putting the Grip Belt back to the Grip Belt Attachment part, press on the Lock Cover (2) to be securely locked.



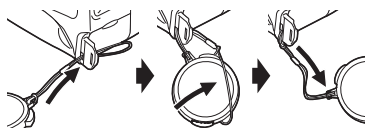
Attaching the Lens Cap

To protect the Lens surface, attach the Lens Cap.

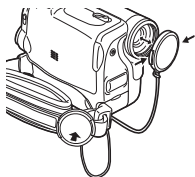
- 1 Pass one end of the Lens Cap Cord through the attached eye on the Lens Cap. Then pass the other end through the loop made by itself and pull tight.



- 2 Pass the end of the Lens Cap Cord through the hole in the Grip Belt Attachment part and the Lens Cap through the Lens Cap Cord.



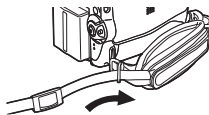
- The removed Lens Cap can be hooked onto the Grip Belt. (It is not possible when using as a hand strap.)
- When you are not recording, be sure to keep the Lens Cap attached to the Lens for protection.



Attaching the Shoulder Strap

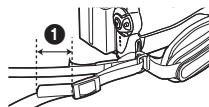
We recommend that you attach the Shoulder Strap before going out of doors to record so as to avoid dropping the Movie Camera.

- 1 Pull the end of the Shoulder Strap through the Shoulder Strap Holder on the Movie Camera.



- 2 Fold the tip of the Shoulder Strap, run it through the Shoulder Strap Length Adjuster, and pull it.

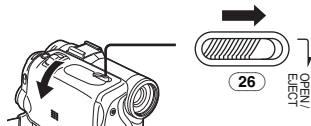
- Pull it out more than 2 cm (1) from the Shoulder Strap Length Adjuster so that it cannot slip off.



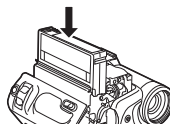
- Attach the other end of the Shoulder Strap to the other Shoulder Strap Holder as the same way.

Inserting a Cassette

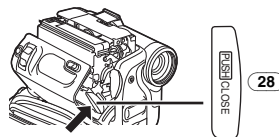
- 1 Slide the [OPEN/EJECT] Lever (26) toward the front and pull down to open the Cassette Compartment Cover.



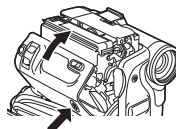
- 2 Insert a Cassette.



- 3 Close the Cassette Holder by pressing the [PUSH CLOSE] Button (28).

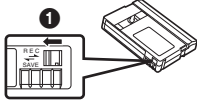


- 4 Close the Cassette Compartment Cover.



Accidental Erasure Prevention

Opening the accidental erasure prevention slider **1** on the cassette (by sliding it in the [SAVE] arrow direction) prevents recording. To enable recording, close the accidental erasure prevention slider (by sliding it in the [REC] arrow direction).



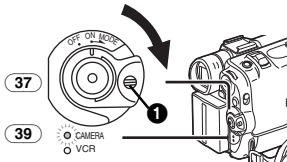
• For other notes concerning this item, see -82-.

Turning on the Movie Camera and Selecting Modes

Turn on the power first and then select modes.

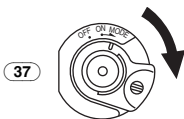
How to Turn on the Power

- 1 Set the [OFF/ON/MODE] Switch **37** to [ON] while pressing the button **1**.
 - The [CAMERA] Lamp **39** lights up.



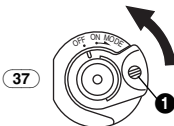
How to Switch Modes

- 2 Rotate the [OFF/ON/MODE] Switch **37**.
 - With each rotate, the Mode changes.
 - The appropriate Mode Lamp lights up.



How to Turn off the Power

- 3 Set the [OFF/ON/MODE] Switch **37** to [OFF] while pressing the button **1**.

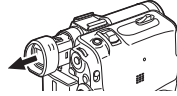


Using the Viewfinder/LCD Monitor

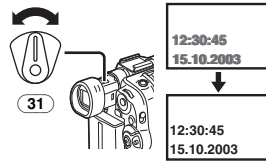
Using the Viewfinder

Before using the Viewfinder, adjust the field of view so that the displays inside the Viewfinder become clear and easy to read.

- 1 Pull the Viewfinder.



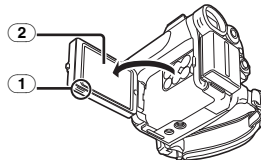
- 2 Adjust by turning the Eyepiece Corrector Knob **31**.



Using the LCD Monitor

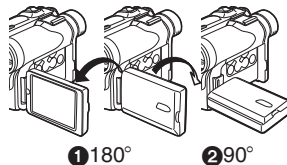
With the LCD Monitor open, you can also record the picture while watching it.

- 1 Put a finger on the [OPEN▼] Knob **1** and pull the LCD Monitor **2** out about 90° in the direction of the arrow.
 - The Viewfinder goes off.



- 2 Adjust the LCD Monitor angle according to the desired recording angle.

- The LCD Monitor can rotate a maximum of 180° **1** from the vertical position to the upward direction and a maximum of 90° **2** to the downward direction. Forcefully rotating the LCD Monitor beyond these ranges will damage the Movie Camera.

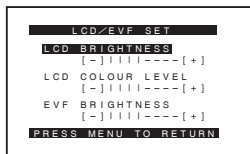


Closing the LCD Monitor

Push the LCD Monitor until it is securely locked.

■ Adjusting Brightness and Colour Level

When [LCD/EVF SET] on the [DISPLAY SETUP] Sub-Menu is set to [YES], the following items are displayed.



LCD Brightness [LCD BRIGHTNESS]

It adjusts the brightness of the image on the LCD screen.

LCD Colour Level [LCD COLOUR LEVEL]

It adjusts the colour saturation of the image on the LCD screen.

Brightness of the Viewfinder [EVF BRIGHTNESS]

It adjusts the brightness of the image in the Viewfinder.

To Adjust

Press the [PUSH] Dial and select the item to be adjusted, and then turn the [PUSH] Dial to raise or lower the number of vertical bars in the Bar Indication.

- A larger number of vertical bars indicates stronger brightness or colour saturation.

To Increase the Brightness of the Entire LCD Monitor

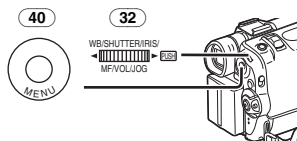
Set the [LCD MODE] on the [DISPLAY SETUP] Sub-Menu to [BRIGHT].

- These adjustments do not affect the recorded images.
- For other notes concerning this item, see -89-.

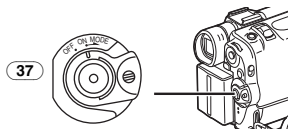
Using the Menu Screen

To facilitate the selection of a desired function or setup, this Movie Camera displays various function setups on Menus.

1 Press the [MENU] Button (40).



- The Menu corresponding to the Mode selected by using the [OFF/ON/MODE] Switch (37) is displayed.



2 Turn the [PUSH] Dial (32) to select a desired Sub-Menu.

- Turn the [PUSH] Dial (32) to display the highlighted item.

3 Press the [PUSH] Dial (32) to display the selected Sub-Menu.

4 Turn the [PUSH] Dial (32) to select the item to be set.

5 Press the [PUSH] Dial (32) to set the selected item to a desired mode.

- With each press of the [PUSH] Dial, the cursor [▶] moves to the next mode. Menu items that cannot be used in combination with the selected item are displayed in dark blue.
- While a Menu is displayed, you cannot record or play back. Menus can be displayed during playback but not during recording. The above operations can be done using the [MENU] Button, [SET] Button and [ITEM] Button on the Remote Controller. (-49-)

To Exit the Menu Screen

Press the [MENU] Button again.

About the Menu Mode Setting

The setting selected on the Menu will be retained even when the Movie Camera is turned off. However, if the Battery or AC Adaptor is disconnected before turning off the Movie Camera, the selected setup may not be retained. (But, the setups of [EFFECT2] (-68-) are not retained.)

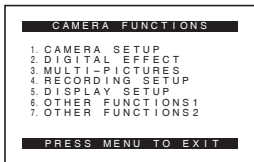
- Menu operation flow is shown in this text by >>.

List of Menus

The figures of the Menus are for explanation purposes only, and they are different from the actual Menus.

■ [CAMERA FUNCTIONS]

Camera Mode Main-Menu



1) [CAMERA SETUP]

Camera Setup Sub-Menu

[PROG.AE]

Auto Exposure Mode -65-

[PROGRESSIVE]

Progressive Photoshot Mode -61-

[SIS]

Image Stabilizer -62-

[D.ZOOM]

Digital Zoom -62-

[CINEMA]

Cinema-like Format Recording -64-

[SELF TIMER]

Self-timer Recording -61-

[RETURN]

Returning to the Main-Menu

- If you set [RETURN] to [YES], the menu changes back to the Main-Menu.

2) [DIGITAL EFFECT]

Digital Effect Functions Sub-Menu

[EFFECT1]

Digital Effects 1 -68-

[EFFECT2]

Digital Effects 2 -68-

3) [MULTI-PICTURES]

Multi-Picture Mode Sub-Menu

[SCAN MODE]

Multi-Picture Mode -70-

[SPEED]

Strobe Multi-Picture Speed -70-

[SWING]

Swing Mode -70-

[P-IN-P]

Position of Small Picture inside Normal Picture -69-

4) [RECORDING SETUP]

Recording Setup Sub-Menu

[REC SPEED]

Recording Speed Mode -58-

[AUDIO REC]

Audio Recording Mode -58-

[SCENE INDEX]

Scene Index Mode -73-

[WIND CUT]

Wind Noise Reduction -64-

[ZOOM MIC]

Zoom Microphone -62-

5) [DISPLAY SETUP]

Display Setup Sub-Menu

[DATE/TIME]

Date and Time Indication -81-

[C.DISPLAY]

Counter Display Mode -80-

[C.RESET]

Counter Reset -92-

- It resets the counter to zero. However, it cannot reset the Time Code.

[DISPLAY]

Display Mode -81-

[LCD MODE]

LCD Lighting Mode -55-

[LCD/EVF SET]

LCD and Viewfinder Adjustment -55-

6) [OTHER FUNCTIONS1]

Other Functions 1 Sub-Menu

[REMOTE]

Remote Controller Mode -51-

[REC LAMP]

Recording Lamp -59-

[BEEP SOUND]

Beep Sound -82-

[SHTR EFFECT]

Shutter Effect -61-

[CLOCK SET]

Date and Time Setting -57-

[SELF REC]

Recording Yourself -60-

[OWNER ID SET]

Owner ID Setting -81-

7) [OTHER FUNCTIONS2]

Other Functions 2 Sub-Menu

[DEMO MODE]

Demonstration Mode

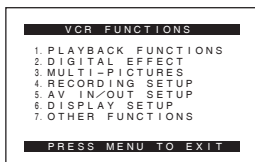
- If no operation takes place for approximately 10 minutes after the AC Adaptor was connected to the Movie Camera and the [OFF/ON/MODE] Switch was turned to [ON] without inserting a Cassette, the Movie Camera is automatically set to Demonstration Mode for introducing its functions. If any button is pressed or operated, the Demonstration Mode is cancelled. The Demonstration Mode can be started by setting [DEMO MODE] to [ON] and by exiting the Menu. To terminate the Demonstration Mode, insert a Cassette or set the [DEMO MODE] to [OFF].

[INITIAL SET]

Initial Setting Mode -81-

[VCR FUNCTIONS]

VCR Mode Main-Menu

**1) [PLAYBACK FUNCTIONS]**

Playback Functions Sub-Menu

[BLANK SEARCH]

Blank Search -73-

[SEARCH]

Index Search Mode -73-

[12bit AUDIO]

Audio Selector -77-

[AUDIO OUT]

Audio Output Mode -85-

[RETURN]

Returning to the Main-Menu

2) [DIGITAL EFFECT]

Playback Digital Effect Functions Sub-Menu

[EFFECT]

Digital Effect On/Off -74-

[EFFECT SELECT]

Digital Effect Selection -74-

3) [MULTI-PICTURES]

Multi-Picture Mode Sub-Menu

[SCAN MODE]

Multi-Picture Mode -75-

[SPEED]

Strobe Multi-Picture Speed -75-

[SWING]

Swing Mode -75-

4) [RECORDING SETUP]

Recording Setup Sub-Menu

[REC SPEED]

Recording Speed Mode -58-

[AUDIO REC]

Audio Recording Mode -58-

5) [AV IN/OUT SETUP]

Audio-Video Input/Output Setup Sub-Menu

[AV JACK]

AV Socket -76-

[A.DUB INPUT]

Audio Dubbing Input -76-

[DV OUT]

Analog-Digital Conversion Output -86-

6) [DISPLAY SETUP]

Display Setup Sub-Menu

- All of the items on the [DISPLAY SETUP] Sub-Menu are the same as those on the [DISPLAY SETUP] Sub-Menu of the [CAMERA FUNCTIONS] Main-Menu.

7) [OTHER FUNCTIONS]

Other Functions Sub-Menu

[REMOTE]

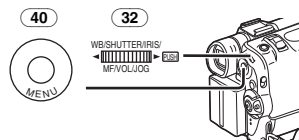
Remote Controller Mode -51-

[CLOCK SET]

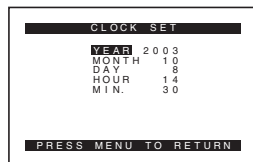
Date and Time Setting -57-

Setting Date and Time

Since the internal clock of the Movie Camera has a slight imprecision, make sure to check the time before recording.



- 1 Set **[CAMERA FUNCTIONS]** >> **[OTHER FUNCTIONS1]** >> **[CLOCK SET]** >> **[YES]**.
Or set **[VCR FUNCTIONS]** >> **[OTHER FUNCTIONS]** >> **[CLOCK SET]** >> **[YES]**.



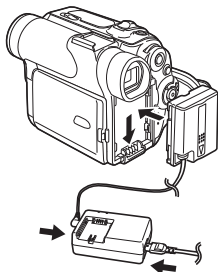
- 2 Press the **[PUSH] Dial (32)** to select **[YEAR]**, **[MONTH]**, **[DAY]**, **[HOUR]** or **[MIN.]** and turn to set it to a desired value.
 - Year will cycle in the order shown below.
2000, 2001, ..., 2089, 2000, ...
- 3 Press the **[MENU] Button (40)** to finish setting the date and time.
 - The clock operation starts from [00] second.
 - The Menu will disappear when the [MENU] Button is pressed again.
 - If the built-in battery is weak, the [BATT] Indication flashes. In this case, charge the built-in battery.
 - The clock employs the 24-hour system.

Internal Lithium Battery Recharge

The internal lithium battery sustains the operation of the clock. When the [] Indication flashes, the internal lithium battery is near exhaustion.



- 1 **Connect the AC Adaptor to the Movie Camera with the power turned off and then connect to the AC Mains socket.**



- After charging for 4 hours, the built-in lithium battery can power the clock for approximately 3 months.

LP Mode

A desired recording speed can be selected with [REC SPEED] on the [RECORDING SETUP] Sub-Menu.

If LP Mode is selected, the recording time becomes 1.5 times longer than that of SP Mode.

Although the image quality does not decrease with the LP Mode recording, mosaic-pattern noise may appear on a playback image, or some normal functions may be restricted.

- The contents that are recorded in LP Mode are not completely compatible with other equipment.
 - Audio dubbing is not possible with LP Mode.
- (-76-)

Audio Recording Mode

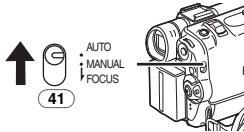
The sound quality of the recorded sound can be selected with [AUDIO REC] on the [RECORDING SETUP] Sub-Menu.

High sound-quality recording is possible with “16 bit 48 kHz 2 track” Mode. With the “12 bit 32 kHz 4 track” Mode, the original sound can be recorded on 2 tracks in stereo, while the other 2 tracks can be used for Audio Dubbing.

Camera Mode

Recording

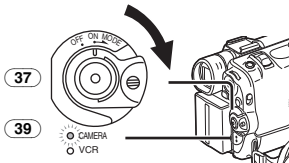
When recording with the [AUTO/MANUAL/FOCUS] Switch (41) set to [AUTO], the Movie Camera automatically adjust the focus and white balance. In some cases, they cannot be adjusted automatically and need to be adjusted manually. (-66-, -67-)



- Before turning on the power, remove the Lens Cap. If the Lens Cap is still attached when the power is turned on, Automatic White Balance Adjustment (-66-) may not function correctly.

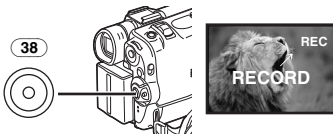
1 Set the [OFF/ON/MODE] Switch (37) to [ON].

- The [CAMERA] Lamp (39) lights up.



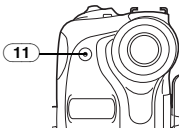
2 Press the Recording Start/Stop Button (38).

- Recording starts.
- After the [RECORD] is displayed, it changes to [REC].



Recording Lamp (Tally Lamp)

The Recording Lamp (11) lights up during recording and alerts those being recorded that recording is in progress.



- The Recording Lamp does not light up if the [REC LAMP] on the [OTHER FUNCTIONS1] Sub-Menu is set to [OFF].

To Pause the Recording

Press the Recording Start/Stop Button (38) again.

The [PAUSE] Indication is displayed.



- If the Recording Pause Mode continues for more than 6 minutes, the power is turned off automatically for tape protection and power conservation. To resume recording from this condition, turn off, then turn on the power again.

To Check the Recording

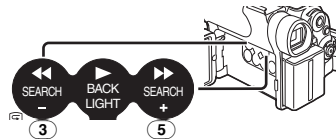
By pressing the [SEARCH] Button (3) briefly in the Recording Pause Mode, you can play back the last few seconds of the recorded scene.



- The [CHK] Indication is displayed. After checking, the Movie Camera resumes the Recording Pause Mode.

To View the Recorded Scene while the Recording Is Paused (Camera Search)

The recorded scene can be viewed by keep pressing the [SEARCH-] Button (3) or [SEARCH+] Button (5) in the Recording Pause Mode.



- When the [SEARCH-] Button is pressed, images are played back in the reverse direction.
- When the [SEARCH+] Button is pressed, images are played back in the forward direction.

To Finish the Recording

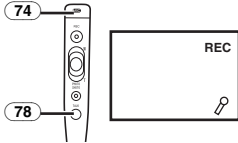
Set the [OFF/ON/MODE] Switch (37) to [OFF].

- For other notes concerning this item, see -82-.

■ To Add a Sound while Recording

With the supplied Free Style Remote Controller with Mic connected to the [REMOTE] Socket (19), you can add a narration while recording is in progress.

While the [TALK] Button (78) is pressed, the [P] Indication is displayed and the sound is recorded from [MIC] (74).



- While the [TALK] Button is pressed, the built-in microphone does not operate.

■ Recording Yourself

By opening the LCD Monitor and rotating it frontward (to the lens side), you can let the subject in front of the Movie Camera monitor the shot while recording is in progress.



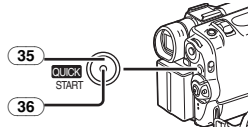
- When the LCD Monitor is opened, the Viewfinder is disabled automatically. However, when the LCD Monitor is rotated frontward, the image is also shown in the Viewfinder.
- If you prefer to have the image on the LCD Monitor to look like an image in a mirror, set [SELF REC] on the [OTHER FUNCTIONS1] Sub-Menu to [MIRROR]. Images are recorded normally and no left and right reversal occurs.
- If [MIRROR] is used during self-recording, only the basic indications, such as the Recording Indication [●], Recording Pause Indication [●||] and Remaining Battery Power Indication [▬▬▬], are displayed.
- If a general Warning/Alarm Indication [!] appears, return the LCD Monitor to the original position in order to check the specific content of the Warning/Alarm Indication.

Quick Start

By pressing the [QUICK START] Button (35), and the Movie Camera will be ready for recording in approximately 1.3 seconds after the Movie Camera is turned on.

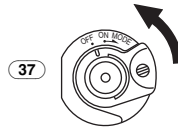
1 Press the [QUICK START] Button (35).

- The Quick Start Recording Lamp (36) lights up.



2 Set the [OFF/ON/MODE] Switch (37) to [OFF].

- The Quick Start Recording Lamp remains lit.



3 Set the [OFF/ON/MODE] Switch (37) to [ON].

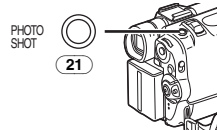
- The Movie Camera will be ready for recording in approximately 1.3 seconds.

- For other notes concerning this item, see -82-.

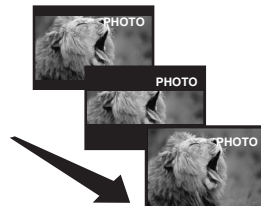
Photoshot

This Movie Camera can take approximately 7 seconds still pictures containing sound.

1 Press the [PHOTO SHOT] Button (21) in the Recording Pause Mode.



- The Movie Camera records a still picture for about 7 seconds and then switches back to the Recording Pause Mode.
- If you set [SHTR EFFECT] on the [OTHER FUNCTIONS1] Sub-Menu to [ON], you can add an image and a sound like releasing the shutter.



Progressive Photoshot

With the Progressive Photoshot Function, you can record still pictures with higher resolution than with the normal Photoshot Function.

- When [PROGRESSIVE] on the [CAMERA SETUP] Sub-Menu is set to [ON] or [AUTO], the [P] Indication is displayed. When the [P] Indication is displayed, press the [PHOTO SHOT] Button in the Recording Pause Mode.



- This function may not work with some function setups.

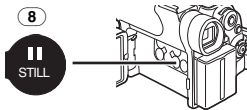
Continuous Photoshot

If you set [SHTR EFFECT] on the [OTHER FUNCTIONS1] Sub-Menu to [ON] and keep the [PHOTO SHOT] Button pressed, the Movie Camera will continuously record still pictures in approximately 0.7 seconds intervals until the button is released. (However, this does not operate when using Progressive Photoshot.)

- The screen blinks and, at the same time, a shutter clicking sound is recorded.

Digital Still Picture

When the [STILL] Button (8) is pressed, images become still pictures. When the button is pressed again, the Digital Still Picture Mode is cancelled.

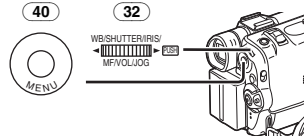


- We recommend that you press the [STILL] Button first at the position where you wish to record the picture so as to enter the Digital Still Picture Mode and then press the [PHOTO SHOT] Button.
- For other notes concerning this item, see -82-.

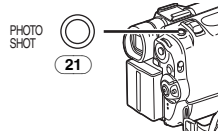
Self-timer Recording

When you set the self-timer, the still pictures are automatically taken after 10 seconds, on the Tape.

- 1 Set [CAMERA FUNCTIONS] >> [CAMERA SETUP] >> [SELF TIMER] >> [ON].



- The [☺] Indication appears.
- 2 Press the [PHOTO SHOT] Button (21).

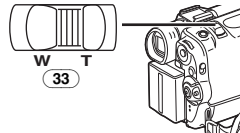


- The Recording Lamp (11) and the [☺] Indication flash and the Photoshot is activated after 10 seconds.
- For other notes concerning this item, see -83-.

Zoom In/Out Functions

It gives special effects to the picture by recording objects close by or with wide-angle shot.

- 1 For wide-angle shots (zoom out):
Push the [W/T] Lever (33) towards [W].
For close-ups (zoom in):
Push the [W/T] Lever towards [T].



- Zoom Magnification Indication is displayed for a few seconds.



■ To Take Close-up Shots of Small Subjects

(Macro Close-up Function)

When the zoom magnification is 1×, the Movie Camera can focus on a subject that is as close as approximately 20 mm from the Lens. With this, small subjects like insects can be recorded.

■ To Use the Zoom Microphone Function

Along with the zooming operation, the microphone's directional angle and sensitivity are varied for recording sounds.

- Set [CAMERA FUNCTIONS] >> [RECORDING SETUP] >> [ZOOM MIC] >> [ON]. (The [Z.MIC] Indication is displayed.)

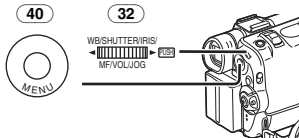


- For other notes concerning this item, see -83-.

Digital Zoom Function

This function is useful when you want to record close-up shots of subjects located beyond a normal zoom range of 1× to 10× magnification. With the Digital Zoom Function, you can select a magnification of 20× or even to 500×.

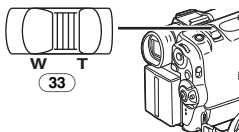
- 1 Set [CAMERA FUNCTIONS] >> [CAMERA SETUP] >> [D.ZOOM] >> [20×] or [500×].



- 20×: Digital zooming to 20×
- 500×: Digital zooming to 500×



- 2 Push the [W/T] Lever (33) towards [W] or towards [T] to zoom in or out.



To Cancel the Digital Zoom Function

Set [CAMERA FUNCTIONS] >> [CAMERA SETUP] >> [D.ZOOM] >> [OFF].

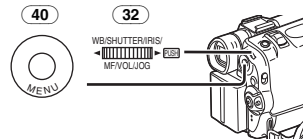
- For other notes concerning this item, see -83-.

Image Stabilizer Function

If the Movie Camera might be shaken while recording, the camera shake in the image can be corrected.

- If the Movie Camera shakes too much, this function may not be able to stabilize images.

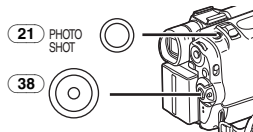
- 1 Set [CAMERA FUNCTIONS] >> [CAMERA SETUP] >> [SIS] >> [ON].



- The [] Indication appears.



- 2 Press the Recording Start/Stop Button (38) or [PHOTO SHOT] Button (21) to start recording.



To Cancel Image Stabilizer

Set [CAMERA FUNCTIONS] >> [CAMERA SETUP] >> [SIS] >> [OFF].

- For other notes concerning this item, see -83-.

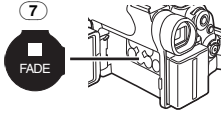
Fade In/Out Functions

Fade In

Fade In brings out images and sounds gradually from a black screen at the beginning of a scene.

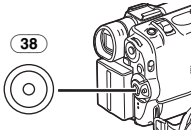


1 Keep pressing the [FADE] Button (7) during the Recording Pause Mode.



- The image fades out gradually.

2 When the image is completely gone, press the Recording Start/Stop Button (38) to start recording.

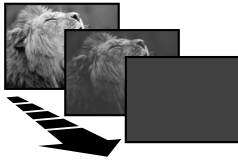


3 Release the [FADE] Button (7) about 3 seconds after starting recording.

- The image reappears gradually.

Fade Out

Fade Out causes images and sounds to disappear gradually, leaving a black screen at the end of a scene.

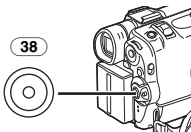


1 Keep pressing the [FADE] Button (7) while recording.



- The image fades out gradually.

2 When the image is completely gone, press the Recording Start/Stop Button (38) to stop recording.



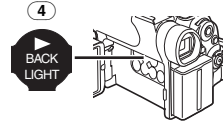
3 Release the [FADE] Button (7).

- The still picture cannot fade in or fade out.

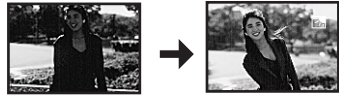
Backlight Compensation Function

This prevents a recording subject from being recorded darker in backlight. (Backlight is the light that shines from behind a recording subject.)

1 Press the [BACK LIGHT] Button (4).



- The [B.L.] Indication flashes and then is displayed.
- The entire screen becomes brighter.



To Resume Normal Recording

Press the [BACK LIGHT] Button.

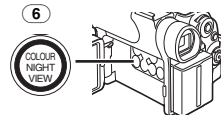
- For other notes concerning this item, see -83-.

Night View Functions

Colour Night View Function

This function allows you to record colour images brightly in a dark place without lighting the Video Flash.

1 Press the [COLOUR NIGHT VIEW] Button (6) until the [C.NIGHT VIEW] Indication appears.



0 Lux Night View Function

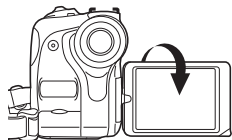
Using the LCD Monitor light, a dark scene of almost 0 lux can be recorded.

2 Press the [COLOUR NIGHT VIEW] Button (6) until the [0LUX NIGHT VIEW] Indication appears.



- The [REVERSE THE LCD MONITOR] Indication appears.

3 Rotate the LCD Monitor forward (to the lens side).



- The screen becomes white and the Viewfinder turns on.
- The available range of the LCD Monitor light is within approximately 1 metre.

To Cancel the Night View Functions

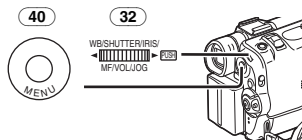
Press the [COLOUR NIGHT VIEW] Button repeatedly until neither the [C.NIGHT VIEW] Indication nor the [OLUX NIGHT VIEW] Indication appears.

- For other notes concerning this item, see -83-.

Wind Noise Reduction Function

This function reduces the sound of a wind hitting the microphone when recording.

- 1 Set [CAMERA FUNCTIONS] >> [RECORDING SETUP] >> [WIND CUT] >> [ON].



- The [WIND CUT] Indication appears.



To Cancel the Wind Noise Reduction Function

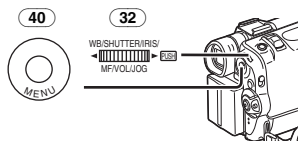
Set [CAMERA FUNCTIONS] >> [RECORDING SETUP] >> [WIND CUT] >> [OFF].

- For other notes concerning this item, see -83-.

Cinema Function

This function is for recording in a cinema-like screen.

- 1 Set [CAMERA FUNCTIONS] >> [CAMERA SETUP] >> [CINEMA] >> [ON].



- Black bars appear at the top and bottom of the screen.



To Cancel the Cinema Mode

Set [CAMERA FUNCTIONS] >> [CAMERA SETUP] >> [CINEMA] >> [OFF].

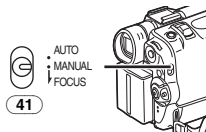
- For other notes concerning this item, see -83-.

Recording in Special Situations






(Programme AE)

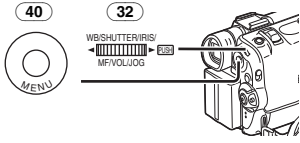
You can select optimal automatic exposures under specific recording situations.

- 1 Set the [AUTO/MANUAL/FOCUS] Switch (41) to [MANUAL].

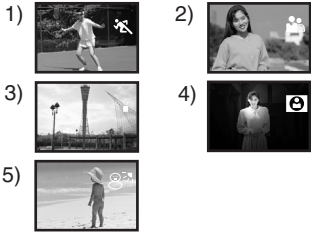







- The [MNL] Indication appears.

2 Set [CAMERA FUNCTIONS] >> [CAMERA SETUP] >> [PROG.AE] >> a desired mode ([, [, [, [] or []).



•The Indication of the selected Mode appears.



- 1) [] **Sports Mode**
•For recording scenes involving quick movements, such as sports scenes.
- 2) [] **Portrait Mode**
•For bringing up people clearly from the background.
- 3) [] **Low Light Mode**
•For recording a dark scene brighter.
- 4) [] **Spotlight Mode**
•For recording a subject under spotlight in a party, theatre, etc.
- 5) [] **Surf & Snow Mode**
•For recording in a glaring surrounding, such as skiing grounds, beaches, etc.

To Cancel the Programme AE Function

Set the [AUTO/MANUAL/FOCUS] Switch to [AUTO]. Or, set the [PROG.AE] on the [CAMERA SETUP] Sub-menu to [OFF].

•For other notes concerning this item, see -84-.

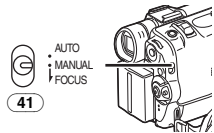
Recording in Natural Colours

(White Balance)

Depending on the scene or light condition, the Automatic White Balance Adjustment Mode may not be able to bring out natural colours. In such a case, the white balance can be adjusted manually.

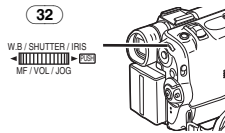
When the Movie Camera is turned on with the Lens Cap on, the Automatic White Balance Adjustment may not function properly. Please turn on the Movie Camera after removing the Lens Cap.

1 Set the [AUTO/MANUAL/FOCUS] Switch (41) to [MANUAL].



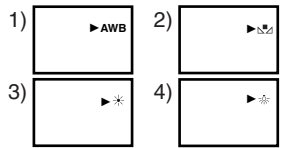
•The [MNL] Indication appears.




2 Press the [PUSH] Dial (32).



•The [AWB] Indication appears.

3 Turn the [PUSH] Dial (32) to set a desired White Balance Mode.



- 1) Automatic White Balance Adjustment [AWB]
- 2) The white balance setting that was previously set manually []
- 3) Outdoor Mode []
- 4) Indoor Mode (recording under incandescent lamp) []

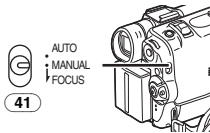
To Resume Automatic Adjustment

Turn the [PUSH] Dial until the [AWB] Indication appears. Or, set the [AUTO/MANUAL/FOCUS] Switch to [AUTO].

Adjusting White Balance Manually

White Balance Adjustment recognizes the colour of light and makes adjustment so that the white colour will become pure white. The Movie Camera determines the hue of light that it receives through the Lens and White Balance Sensor, thereby judging the recording condition, and selects the closest hue setting. This function is called Automatic White Balance Adjustment. For light outside the functional Auto White Balance Adjustment range, use the Manual White Balance Adjustment Mode.

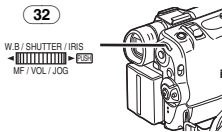
1 Set the [AUTO/MANUAL/FOCUS] Switch (41) to [MANUAL].



•The [MNL] Indication appears.

2 Point the Movie Camera at a full-screen white subject.

3 Press the [PUSH] Dial (32).



•The [AWB] Indication appears.

4 Turn the [PUSH] Dial (32) until the [MNL] Indication is displayed.



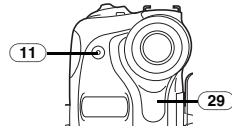
5 Keep pressing [PUSH] Dial (32) until the [MNL] Indication stops flashing.

To Resume Automatic Adjustment

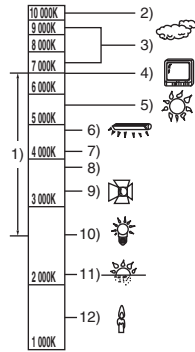
Turn the [PUSH] Dial until the [AWB] Indication is displayed. Or, set the [AUTO/MANUAL/FOCUS] Switch to [AUTO].

About White Balance Sensor

The White Balance Sensor (29) determines the nature of the light source during recording.



- Do not cover the White Balance Sensor with your hand during recording. Otherwise, White Balance will not function normally.
- The red light from the Recording Lamp (11) will be reflected off your hand or object, possibly causing the White Balance sensor to operate incorrectly and changing the colouring.



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. In this case, adjust the White Balance.

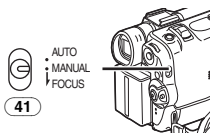
- 1) The effective range of Automatic White Balance Adjustment on this Movie Camera
- 2) Blue sky
- 3) Cloudy sky (Rain)
- 4) TV screen
- 5) Sunlight
- 6) White fluorescent lamp
- 7) 2 hours after sunrise or before sunset
- 8) 1 hour after sunrise or before sunset
- 9) Halogen light bulb
- 10) Incandescent light bulb
- 11) Sunrise or sunset
- 12) Candlelight

•For other notes concerning this item, see -84-.

Manual Shutter Speed Adjustment

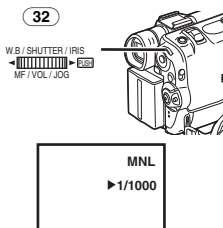
It is useful for recording fast-moving subjects.

- 1 Set the [AUTO/MANUAL/FOCUS] Switch (41) to [MANUAL].



- The [MNL] Indication appears.

- 2 Press the [PUSH] Dial (32) until the Shutter Speed Indication appears.



- 3 Turn the [PUSH] Dial (32) to adjust the shutter speed.

Range of Shutter Speed Adjustment

1/50–1/8000 s

The standard shutter speed is 1/50 s.

Selecting a speed closer to [1/8000] causes the shutter speed to be faster.

To Resume Automatic Adjustment

Set the [AUTO/MANUAL/FOCUS] Switch to [AUTO].

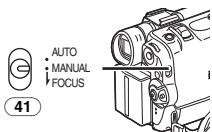
- For other notes concerning this item, see -84-.

Manual Iris Adjustment

(F Number)

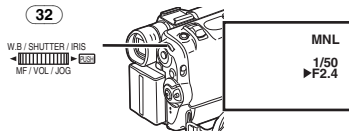
You can use this function when the screen is too bright or too dark.

- 1 Set the [AUTO/MANUAL/FOCUS] Switch (41) to [MANUAL].



- The [MNL] Indication appears.

- 2 Press the [PUSH] Dial (32) until the Iris Indication appears.



- 3 Turn the [PUSH] Dial (32) to adjust the iris.

Range of Iris Adjustment

CLOSE (Closed), F16, ..., F2.0,

OP (Opened)+0dB, ..., OP+18dB

When a value closer to [CLOSE] is selected, the image becomes darker.

When a value closer to [OP+18dB] is selected, the image becomes brighter.

The value to which +dB is attached indicates a Gain-up value. If this value is too large, the quality of the image deteriorates.

To Resume Automatic Adjustment

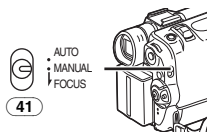
Set the [AUTO/MANUAL/FOCUS] Switch to [AUTO].

- For other notes concerning this item, see -84-.

Manual Focus Adjustment

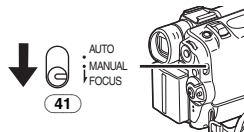
Focus can be adjusted manually for recording in a situation where auto focus may not function well.

- 1 Set the [AUTO/MANUAL/FOCUS] Switch (41) to [MANUAL].



- The [MNL] Indication appears.

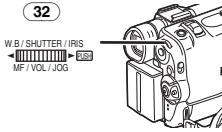
- 2 Slide the [AUTO/MANUAL/FOCUS] Switch (41) to [FOCUS].



- The [▶MF] Indication (Manual Focus Mode) appears.



3 Turn the [PUSH] Dial (32) to adjust the focus.



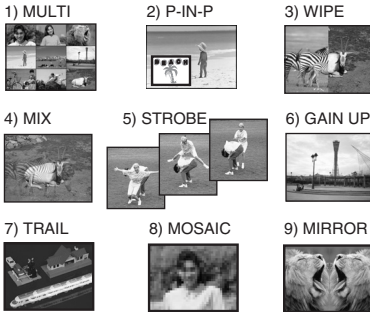
To Resume Automatic Adjustment

Set the [AUTO/MANUAL/FOCUS] Switch to [AUTO].

Digital Effect Functions

This Movie Camera is equipped with Digital Effect Functions that add special effects to the scene.

Digital Effects 1 [EFFECT1]



- 1) Multi Mode [MULTI]
- 2) Picture-In-Picture Mode [P-IN-P]
- 3) Wipe Mode [WIPE]
 - It records images with a stroboscopic effect.
- 4) Mix Mode [MIX]
 - It brightens images electronically.
 - Adjust focus manually when using this mode. (-67-)
- 5) Strobe Mode [STROBE]
 - It records images with a trailing effect.
- 6) Gain-up Mode [GAIN UP]
 - It produces a mosaic-like image.
- 7) Mirror Mode [MIRROR]
 - The right half of an image becomes a mirror image of the left half.

Digital Effects 2 [EFFECT2]



- 10) Negative Mode [NEGA]
 - The colours of the recorded image are inverted as seen in a negative.
- 11) Sepia Mode [SEPIA]
 - It records a scene with a brownish tint, like the colour of old pictures.
- 12) Black & White Mode [B/W]
 - It records an image in black and white.
- 13) Solarisation Mode [SOLARI]
 - It records an image with a painting-like effect.

To Select a Desired Digital Effect

Set [CAMERA FUNCTIONS] >> [DIGITAL EFFECT] >> [EFFECT1] or [EFFECT2] >> a desired Digital Effect.

To Cancel the Digital Effect

Set [CAMERA FUNCTIONS] >> [DIGITAL EFFECT] >> [EFFECT1] or [EFFECT2] >> [OFF].

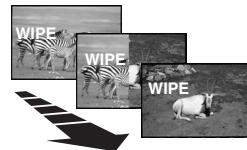
- If the Movie Camera is turned off, the [EFFECT2] settings are cancelled.

- For other notes concerning this item, see -84-.

Wipe Mode and Mix Mode

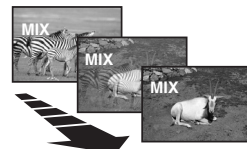
Wipe Mode:

Like a curtain is being pulled, the still picture of the last recorded scene gradually changes to the moving image of a new scene.

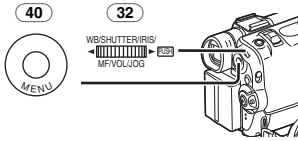


Mix Mode:

While the moving image of a new scene fades in, the still image of the last recorded scene gradually fades out.

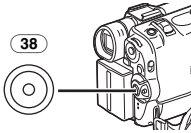


- 1** Set [CAMERA FUNCTIONS] >> [DIGITAL EFFECT] >> [EFFECT1] >> [WIPE] or [MIX].



- The [WIPE] or [MIX] Indication appears.

- 2** Press the Recording Start/Stop Button (38) to start recording.



- 3** Press the Recording Start/Stop Button (38) to pause the recording.

- The last scene is stored in memory. The [WIPE] or [MIX] Indication changes to [WIPE] or [MIX].

- 4** Press the Recording Start/Stop Button (38) to restart the recording.

- The last image of the previous scene gradually changes to the new scene.

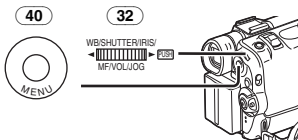
- For other notes concerning this item, see -85-.

Picture-in-Picture Mode



You can display a sub-screen (still picture) inside the screen.

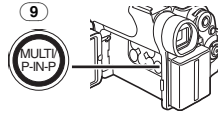
- 1** Set [CAMERA FUNCTIONS] >> [DIGITAL EFFECT] >> [EFFECT1] >> [P-IN-P].



- 2** Set [CAMERA FUNCTIONS] >> [MULTI-PICTURES] >> [P-IN-P] >> a position (1, 2, 3, 4) where you want to insert a small still picture.

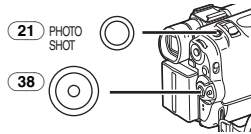


- 3** Aim the Movie Camera at the scene you want to capture and press the [P-IN-P] Button (9) to insert a small still picture.



- A small still picture is displayed in a normal picture.
- If the [P-IN-P] Button is pressed again, the small still picture is cleared.

- 4** Press the Recording Start/Stop Button (38) or the [PHOTO SHOT] Button (21) to record on the Cassette.



- For other notes concerning this item, see -85-.

Multi-Picture Mode

Strobe Multi-Picture Mode:



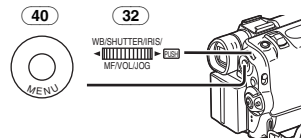
You can capture and record 9 consecutive small still pictures.

Manual Multi-Picture Mode:



You can manually capture and record 9 small still pictures.

- 1** Set [CAMERA FUNCTIONS] >> [DIGITAL EFFECT] >> [EFFECT1] >> [MULTI].



2 Set [CAMERA FUNCTIONS] >> [MULTI-PICTURES] >> [SCAN MODE] >> [STROBE] or [MANUAL].

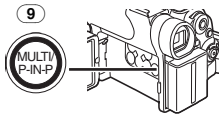
When [STROBE] is selected:

- Set the [SPEED] to a desired strobe speed.
At the [FAST] setting, 9 consecutive still pictures is captured within approximately 1 second, at [NORMAL] within approximately 2 seconds, and at [SLOW] within approximately 3 seconds.
- If you set [SWING] to [ON], the intervals at which the 9 still pictures are taken are longer at the beginning and end than in the middle of the swing strobe period, and it is useful for analyzing swing motion, etc. in sports.

When [MANUAL] is selected:

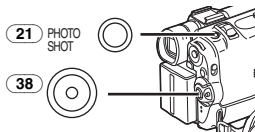
- You can select a desired scene one at a time up to 9 small pictures.

3 Press the [MULTI] Button (9).



- If [MANUAL] is selected, press the [MULTI] Button at each scene you want to capture.

4 Press the Recording Start/Stop Button (38) or the [PHOTO SHOT] Button (21) to record on the Cassette.



Deleting All the Captured Multi-Pictures

While 9 multi-pictures are displayed, press the [MULTI] Button.

- If [MANUAL] has been selected, press the [MULTI] Button after 9 pictures are displayed.

To Display the Multi-Pictures again

Press the [MULTI] Button for 1 second or longer.

To Delete Multi-Pictures One by One

(When pictures were captured in [MANUAL])

When the [MULTI] Button is pressed for 1 second or longer while the still pictures are displayed, the pictures captured last is deleted continuously.

- After still pictures are deleted one by one, they cannot be displayed again.
- For other notes concerning this item, see -85-.

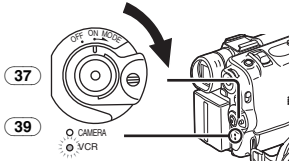
VCR Mode

Playing Back

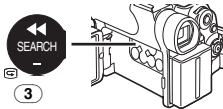
The recorded scene can be played back immediately after the recording.

1 Rotate the [OFF/ON/MODE] Switch (37) and set the Movie Camera to the VCR Mode.

- The [VCR] Lamp (39) lights up.



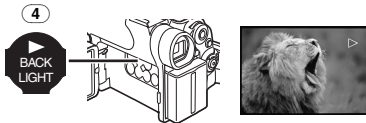
2 Press the [◀◀] Button (3) to rewind the tape.



- Rewind the tape to the point where you want to start playback.
- When the tape reaches the beginning, rewinding stops automatically.

3 Press the [▶] Button (4) to start playback.

- The [▶] Indication appears.



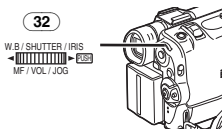
To Stop Playback

Press the [■] Button (7).



Adjusting the Sound Volume

Until the [VOLUME] Indication appears, keep pressing the [PUSH] Dial (32). Then, turn the [PUSH] Dial to adjust the volume. After the adjustment, press the [PUSH] Dial to make the [VOLUME] Indication disappear.



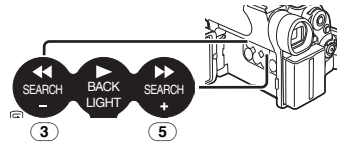
To adjust the volume with the Remote Controller, press the [T] or [W] Button to display the [VOLUME] Indication. Press the [T] Button to increase the volume or press the [W] Button to decrease the volume. The [VOLUME] Indication goes off a few seconds after the adjustment is finished.



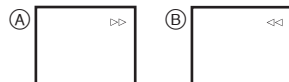
- The sound volume cannot be adjusted using the Remote Controller in Playback Zoom Mode. (-74-)
- If a cassette recorded with a copyright protection signal is played back, the picture is distorted by mosaic-like patterns.
- For other notes concerning this item, see -85-.

Finding a Scene You Want to Play Back

Cue/Review Playback



If the [▶▶] Button (5) or [◀◀] Button (3) is pressed during Playback, it turns to Cue Playback (A) or Review Playback (B).



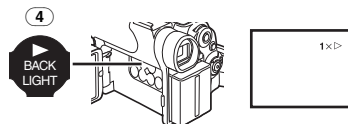
- If the Button is held continuously, it turns to Cue Playback or Review Playback until you release it.

Variable Speed Search Function

The speed of Cue Playback or Review Playback can be varied.

1 During playback, press the [▶] Button (4).

- The [1x▶] Indication appears.



2 Turn the [PUSH] Dial (32) to select a desired search speed.



The following 6 playback speeds are available for the Variable Speed Search Function in both the fast-forwarding and rewinding directions: 1/5x (slow playback in SP Mode only), 1/3x (slow playback in LP Mode only), 1x, 2x, 5x, 10x and 20x.

• This function can be done by pressing the [VAR. SEARCH] and cursor buttons ([▲], [▼]) on the Remote Controller. (-49-)

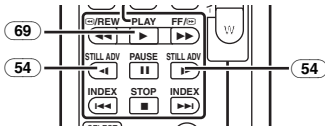
To Resume Normal Playback

Press the [▶] Button (4).

- During Cue or Review Playback, fast-moving images may show mosaic-pattern noise.
- The sound is muted during search.

Slow Motion Playback

This Movie Camera can play back at a slow speed.



- 1 Press the [▶] Button (69).
- 2 Press the [◀] Button or [▶] Button (54) on the Remote Controller.

• The [▶] or [◀] Indication appears.



- When the [◀] Button is pressed, Slow Motion Playback proceeds in the reverse direction. When the [▶] Button is pressed, Slow Motion Playback proceeds in the forward direction.

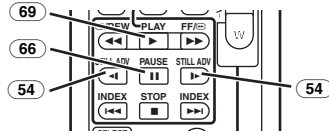
Scenes recorded in the SP Mode are played back at approximately 1/5th of the normal speed. Scenes recorded in the LP Mode are played back at approximately 1/3rd of the normal speed.

To Resume Normal Playback

Press the [▶] Button (69).

Still Playback/Still Advance Playback

This Movie Camera is capable of still picture playback and frame-advance playback.



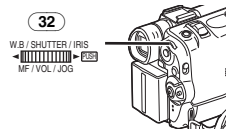
- 1 Press the [▶] Button (69).
- 2 Press the [||] Button (66).
 - The playback image stops in the Still Playback Mode.
- 3 Press the [◀] Button or [▶] Button (54) on the Remote Controller.
 - With each pressing of the [◀] Button, still pictures advance in the reverse direction. With each pressing of the [▶] Button, still pictures advances in the forward direction. If either one of the buttons continues to be pressed, still pictures advance continuously 1 frame at a time until the button is released.

To Resume Normal Playback

Press the [▶] Button (69).

Jog Playback

By turning the Jog Dial ([PUSH] Dial) (32) of the Movie Camera in the Still Playback Mode, still pictures can be advanced one frame at a time in the forward or backward direction.



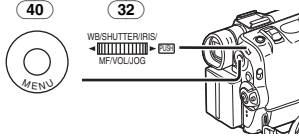
- If the Movie Camera is left in the Still Playback Mode for more than 6 minutes, the Movie Camera switches to the Stop Mode to protect the video heads from excessive wear and tear.

Finding the End of Recording

(Blank Search Function)

The Blank Search Function aids you locate the end of the recording on the Cassette quickly.

- 1 Set [VCR FUNCTIONS] >> [PLAYBACK FUNCTIONS] >> [BLANK SEARCH] >> [YES].



- The [BLANK] Indication appears during the Blank Search.
- Approximately 1 second before the last recorded scene, the Movie Camera switches to the Still Playback Mode.
- If there is no blank portion left on the Cassette, the Movie Camera stops at the end of the tape.

To Cancel Blank Search Before Completion
Press the [■] Button.

Index Search Functions

To facilitate searching of desired scene, this Movie Camera automatically records index signals during recording, as explained in the following.

Photoshot Index Signal

These signals are automatically recorded whenever still pictures are taken in Photoshot Mode. (-60-) Photoshot Index Signals are not recorded on still pictures recorded in Continuous Photoshot Mode.

Scene Index Signal

Scene Index Signals are automatically recorded when you start recording after inserting a Cassette.

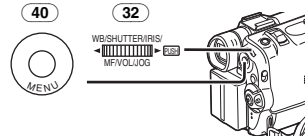
- If [SCENE INDEX] of [RECORDING SETUP] Sub-Menu on the [CAMERA FUNCTIONS] Main-Menu is set to [2HOUR], an index signal is recorded when recording is restarted after an elapse of 2 hours or longer. If it is set to [DAY], an index signal is recorded when recording is restarted after the date has changed since the last recording. (While the index signal is recorded, the [INDEX] Indication flashes for a few seconds.)



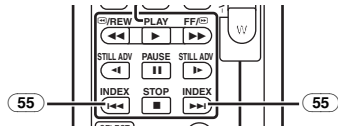
- If the Movie Camera is switched from the VCR Mode to Camera Mode or if the date and time is set before the start of recording, the index signal is not recorded.

Photoshot Index Search

- 1 Set [VCR FUNCTIONS] >> [PLAYBACK FUNCTIONS] >> [SEARCH] >> [PHOTO].



- 2 Press the [▶▶] Button or [◀◀] Button (55) on the Remote Controller.

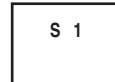


- With each press of the corresponding button, still pictures recorded in Photoshot Mode are searched.
- Sounds are played back for approximately 4 seconds.

Scene Index Search

- 1 Set [VCR FUNCTIONS] >> [PLAYBACK FUNCTIONS] >> [SEARCH] >> [SCENE].
- 2 Press the [▶▶] Button or [◀◀] Button (55) on the Remote Controller.

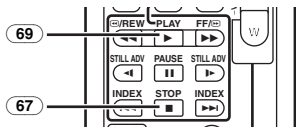
- When the corresponding button is pressed once, the [S 1] Indication appears, and searching of the subsequent scene marked with an index signal starts. Each time the button is pressed after the start of Scene Index Search, the indication changes from [S 2] to [S 9], and the beginning of the scene corresponding to the selected number will be searched.



- Up to 9 scene numbers can be selected.

Continuous Index Search

If the [▶▶] Button or the [◀◀] Button (55) is pressed for 2 seconds or longer, search can be continued at several-second intervals. (To cancel, press the [▶] Button (69) or the [■] Button (67).)

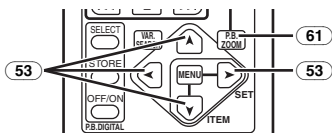


• For other notes concerning this item, see -85-.

Playback Zoom Function

A part of the image can be enlarged up to 10 times during playback.

1 During playback, press the [P.B. ZOOM] Button (61) on the Remote Controller.

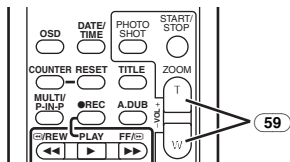


• The centre of the image is enlarged to approximately 2 times.



To Change the Zoom Magnification

2 Change the magnification by pressing the [W] Button or [T] Button (59) on the Remote Controller.



To Change the Enlarging Area of an Image

3 Press the Arrow Button (▲, ◀, ▶, ▼) (53) on the Remote Controller that points to the area you want to enlarge.

To Cancel the Playback Zoom Function

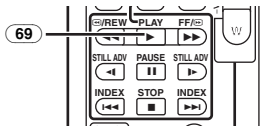
Press the [P.B. ZOOM] Button (61) on the Remote Controller.

• For other notes concerning this item, see -85-.

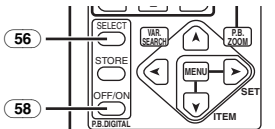
Playback Digital Effect Functions

During playback, special digital effects can be added to the recorded pictures. The same effects as those of Digital Effects 1 and 2, which are used during recording, are obtained.

1 Press the [▶] Button (69).



2 Press the [SELECT] Button (56) on the Remote Controller to select a desired digital effect.



- When the [SELECT] Button is pressed repeatedly, the digital effect selection changes.
- The same setting can be done using [DIGITAL EFFECT] Sub-Menu on the [VCR FUNCTIONS] Main-Menu.

To suspend Playback Digital Effect Temporarily

Press the [OFF/ON] Button (58) to suspend or restart the digital effect. When the digital effect is paused temporarily, the selected effect's indication flashes.

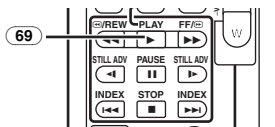
To Cancel the Digital Effect

Press the [SELECT] Button (56) on the Remote Controller and clear the digital effect indication.

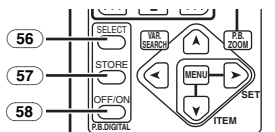
• For other notes concerning this item, see -85-.

Wipe Mode and Mix Mode

1 Press the [▶] Button (69).



2 Press the [SELECT] Button (56) on the Remote Controller and select [WIPE] or [MIX].



3 Press the [STORE] Button (57) at the moment you want to save as a still picture.

- The [WIPE] or [MIX] Indication appears, and the image is saved.

4 Press the [OFF/ON] Button (58) in the scene in which you want to use the Wipe or Mix effect.

- The scene changes as a result of the Wipe or Mix effect.
- The Wipe Function and Mix Function can be used only from the Remote Controller during playback.
- If the [OFF/ON] Button (58) is pressed while Wipe or Mix is carried out, the effect will stop temporarily at that point. Pressing the [OFF/ON] Button (58) again will bring back the effect.

■ Playing back with Multi-Picture Mode

Strobe Multi-Picture Mode [STROBE]

You can capture 9 consecutive still pictures from playback video.

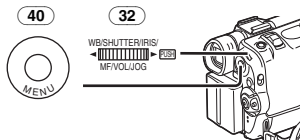
Manual Multi-Picture Mode [MANUAL]

Selecting a desired still picture one at a time, you can capture 9 still pictures.

Index Multi-Picture Mode ([PHOTO], [SCENE])

You can capture 9 screens of pictures to which index signals have been attached.

1 Set [VCR FUNCTIONS] >> [DIGITAL EFFECT] >> [EFFECT SELECT] >> [MULTI].

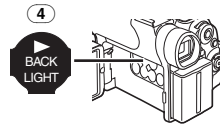


2 Set [VCR FUNCTIONS] >> [MULTI-PICTURES] >> [SCAN MODE] >> [STROBE], [MANUAL], [PHOTO] or [SCENE].

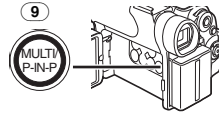
When [STROBE] is selected:

- Set the [SPEED] to a desired strobe speed. At the [FAST] setting, 9 consecutive still pictures is captured within approximately 1 second, at [NORMAL] within approximately 2 seconds, and at [SLOW] within approximately 3 seconds.
- If you set [SWING] to [ON], the intervals at which the 9 still pictures are taken are longer at the beginning and end than in the middle of the swing strobe period, and it is useful for analyzing swing motion, etc. in sports.

3 Play back the tape.



4 Press the [MULTI] Button (9).



If [STROBE] is selected:

- 9 screens are automatically captured starting at the point which the Button is pressed.

If [MANUAL] is selected:

- Press the [MULTI] Button at each scene you want to capture. When 9 screens are captured, the tape will stop.

If [PHOTO] or [SCENE] is selected:

- From the point at which the [MULTI] Button is pressed, 9 screens of pictures to which index signals are attached are captured in the playback direction. After 9 screens are captured, the tape will stop, but if there are 8 or less pictures to be captured, the tape will stop at its end.

Deleting all the captured Multi pictures

While displaying the multi-pictures that have been captured, press the [MULTI] Button (9).

- If [MANUAL] has been selected, press the [MULTI] Button after 9 pictures are displayed.

To display the Multi-Pictures again

Press the [MULTI] Button (9) for 1 second or longer.

To Delete Multi pictures one by one

(When Pictures have been captured in Manual Mode)

When the [MULTI] Button (9) is pressed for 1 second or longer while the still pictures are displayed, the pictures captured last is deleted. If you continue to press the Button, the pictures are deleted consecutively.

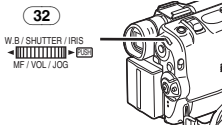
- After still pictures are deleted one by one, they cannot be displayed again.

To Cancel Capturing Pictures (When Pictures have been captured in Index Mode)

Press the [■] Button.

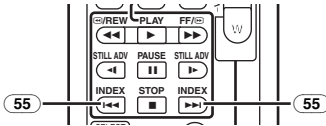
To Search the tape position of a desired picture among the playback pictures displayed on 9 screens

1 After displaying pictures in Multi-Picture Mode, turn the [PUSH] Dial (32) to select the image whose tape position you want to search.



- The selected picture is marked with a frame.

2 Press the [◀◀] or [▶▶] Button (55) on the Remote Controller.



- A still picture playback takes place at the selected picture.

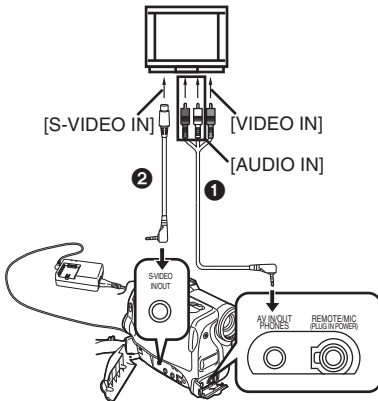
- For other notes concerning this item, see -85-.

Playing Back on Your TV

By connecting your Movie Camera with your TV, the recorded scenes can be viewed on your TV screen.

- Before connecting them, turn off the power of both the Movie Camera and TV.

1 Connect the Socket of the Movie Camera and the Video and Audio Input Sockets of the TV.

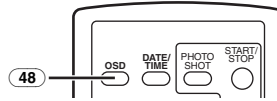


- Using the AV Cable (1), make a connection with the TV. If the TV has an S-Video Socket, connect the S-Video Cable (2), too.

- When plugging the pin plug of the AV cable into the Socket, plug it in as far as it goes.

To Make the Indications Appear on the TV Screen

Press the [OSD] Button (48) on the Remote Controller.



- For other notes concerning this item, see -85-.

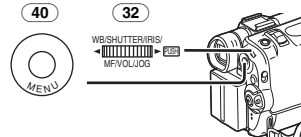
Audio Dubbing

You can add music or narration to the recorded Cassette.

- If the tape recorded in the [16bit] Mode is dubbed with the Audio Dubbing function, the original sound is erased. (If you wish to preserve the original sound, use the [12bit] Mode when recording.)

- Audio Dubbing cannot be performed on a recording done in LP Mode. (-58-)

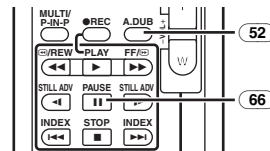
1 Set [VCR FUNCTIONS] >> [AV IN/OUT SETUP] >> [AV JACK] >> [IN/OUT].



2 Continuing the aforesaid setup, select [A.DUB INPUT] >> [MIC] or [AV IN].

- Set to [AV IN] when external device is used, and to [MIC] when an external or built-in microphone is used.

3 Press the [||] Button (66) on the Remote Controller where you want to add new sound.



4 Press the [A.DUB] Button (52) on the Remote Controller.

5 To start Audio Dubbing, press the [||] Button (66) on the Remote Controller.

To Cancel Audio Dubbing

Press the [■] Button (66) on the Remote Controller.

The Movie Camera is in the Still Playback Mode again.

To Play Back the Sound Recorded by 12bit Audio Dubbing

Set [VCR FUNCTIONS] >>
[PLAYBACK FUNCTIONS] >> [12bit AUDIO] >>
[ST2] or [MIX].

ST1: It plays back only the original sound.

ST2: It plays back only the sound added by Audio Dubbing.

MIX: It plays back both the original sound and the sound added by Audio Dubbing simultaneously.

To dub audio while listening to a pre-recorded sound

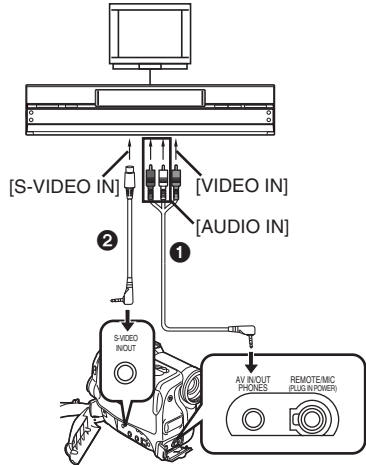
When pausing the audio dubbing, set the [12bit AUDIO] on the [PLAYBACK FUNCTIONS] Sub-Menu to [ST2] and you can check the pre-recorded sound.

When a microphone is used for audio dubbing, use headphones to listen to the pre-recorded sound while dubbing the audio. (When using headphones, set [AV JACK] on the [AV IN/OUT SETUP] Sub-Menu to [OUT/PHONES].) When the line input is used, you can dub audio while listening to a pre-recorded sound from the speaker.

- For other notes concerning this item, see -86-.

Copying on an S-VHS (or a VHS) Cassette**(Dubbing)**

After connecting the Movie Camera and the VCR as illustrated, start the following procedures.



① AV Cable

② S-Video Cable

- Be sure to press the [OSD] Button (-49-) on the Remote Controller prior to copying so that no indications are visible. Otherwise, the displayed tape counter and function indications are also copied.

Movie Camera:

1 Insert the recorded Cassette.

VCR:

2 Insert an unrecorded Cassette with an erasure prevention tab.

- If various setups (such as external input, tape speed, etc.) are required, please refer to the operating instructions of your VCR.

Movie Camera:

3 Press the [▶] Button to start playback.

VCR:

4 Start recording.

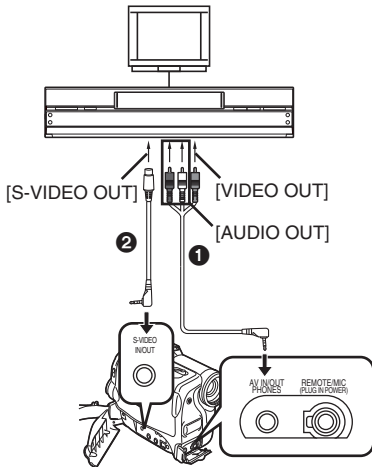
5 Press the Pause or Stop Button to stop recording.

Movie Camera:

6 Press the [■] Button to stop playback.

Recording the Contents of Other Equipment

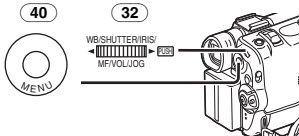
After connecting the Movie Camera and the other equipment as illustrated, start the following procedures.



- ① AV Cable
- ② S-Video Cable

Movie Camera:

- 1 Set [VCR FUNCTIONS] >> [AV IN/OUT SETUP] >> [AV JACK] >> [IN/OUT].



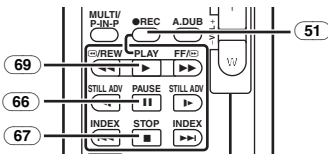
- 2 Insert an unrecorded Cassette.

Other Equipment:

- 3 Insert a recorded Cassette and start playback.

Movie Camera:

- 4 While pressing the [REC] Button (51), press the [PLAY] Button (69).



- 5 Press the [||] Button (66) or [■] Button (67) to stop recording.

Other Equipment:

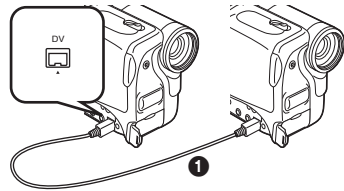
- 6 Press the Stop Button to stop playback.

- For other notes concerning this item, see -86-.

Using the DV Cable for Recording

(Digital Dubbing)

By connecting this Movie Camera with other digital video equipment that has a DV Input/Output Terminal using a DV Cable VW-CD1E (optional) ①, dubbing can be done in the digital format.

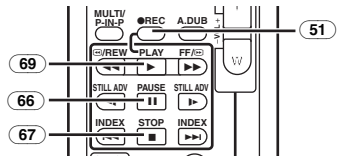


Player/Recorder:

- 1 Insert the Cassette and set to the VCR Mode.

Player:

- 2 Press the [▶] Button (69) to start playback.



Recorder:

- 3 While pressing the [REC] Button (51), press the [PLAY] Button (69).

- Recording starts.

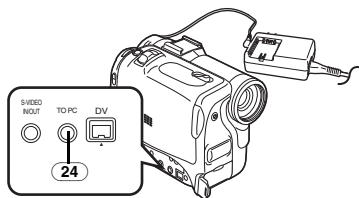
To Stop Dubbing

Press the [||] Button (66) or [■] Button (67).

- For other notes concerning this item, see -86-.

Personal Computer Connection Kit

Using the supplied Personal Computer Connection Kit, you can import still pictures into your personal computer.



- Use the Digital Still Picture Terminal [TO PC] **24** when using the Personal Computer Connection Kit.
- When recording, be careful not to cut off the Time Code from the start of the tape.
- For more details on the operating environment, connections, and procedures, please refer to Personal Computer Connection Kit's operating instructions.

Others

Indications

Various functions and the Movie Camera status are shown on the screen.

	Remaining Battery Power
●	When the battery power becomes low, the Indication changes. When the battery is discharged completely, the () Indication flashes.
RO:45:	Remaining Tape Time
●	Remaining tape time is indicated in minutes. (When it reaches less than 3 minutes, the indication starts flashing.)
CINEMA:	Cinema Mode -64-
D.ZOOM:	Digital Zoom -62-
MULTI:	Multi Mode -68-
P-IN-P:	P-IN-P Mode -68-
WIPE:	Wipe Mode -68-
MIX:	Mix Mode -68-
STROBE:	Strobe Mode -68-
GAIN UP:	Gain-up Mode -68-
TRAIL:	Trailing Effect Mode -68-
MOSAIC:	Mosaic Mode -68-
MIRROR:	Mirror Mode -68-
NEGA:	Negative Mode -68-
SEPIA:	Sepia Mode -68-
B/W:	Black & White Mode -68-
SOLARI:	Solarisation Mode -68-
PB ZOOM:	Playback Zoom -74-
SP:	Standard Mode (Recording Speed Mode) -58-
LP:	Long Play Mode (Recording Speed Mode) -58-
INDEX:	Index signal recording -73-
S 1:	Search Number -73-
5×:	Zoom Magnification Indication -61-
AUTO:	Automatic Mode -59-
MNL:	Manual Mode -64-
	Image Stabilizer -62-
MIC, AV IN:	Audio Dubbing Input Display -76-
12 bit, 16 bit:	Audio Recording Mode -58-
MF:	Manual Focus -67-
	Back Light Mode -63-
	Sports Mode (Programme AE) -65-
	Portrait Mode (Programme AE) -65-
	Low Light Mode (Programme AE) -65-
	Spotlight Mode (Programme AE) -65-
	Surf & Snow Mode (Programme AE) -65-

REC:	Recording -59-
PAUSE:	Recording Pause -59-
	Self-Timer Recording -61-
	When connecting the Free Style Remote Controller with Mic to [REMOTE] Socket and the [TALK] Button is pressed, this indication appears. -60-
▷:	Playback -71-/Forward Camera Search -59-
◁:	Reverse Camera Search -59-
■:	Still Playback -72-
▷▷:	Fast-forward/Cue Playback -71-
◁◁:	Rewind/Review Playback -71-
◁■▷:	Slow Motion Playback -72-
◁■▷■:	Still Advance Playback -72-
◁◁, ▷▷:	Index Search -73-
CHK:	Recording Check -59-
A.DUB ▷:	Audio Dubbing -76-
A.DUB ■:	Audio Dubbing Pause -76-
PHOTO:	Photoshot Mode Recording -60-
BLANK:	Blank Search -73-
R ▷:	Repeat Playback -85-
2×▷▷:	Variable Speed Search -71-
1/500:	When you adjust shutter speed manually, this indication appears. -67-
F2.4:	When you adjust the F Number manually, this indication appears. -67-
	White Balance setting Mode -65-
	Outdoor Mode -65-
	Indoor Mode (recording under incandescent lamp) -65-
C.NIGHT VIEW:	Colour Night View Function -63-
0LUX NIGHT VIEW:	0 Lux Night View Function -63-
Z.MIC:	Zoom Microphone -62-
WIND CUT:	Wind Noise Reduction -64-
[P]:	Progressive Photoshot Mode -61-
VOLUME:	Volume adjustment -71-
15:30:45:	Date/Time Indication -81-

■ To Change the Counter Display Mode

By changing [C.DISPLAY] on the [DISPLAY SETUP] Sub-Menu, you can change the Counter Display Mode to Tape Counter Indication [COUNTER] (0:00.00), Memory Counter Indication [MEMORY] (M0:00.00), and Time Code Indication [TIMECODE] (0h0m00s00f). (-56-) By repeatedly pressing the [COUNTER] Button on the Remote Controller, you can change the Counter Display Mode.

■ To Display Date/Time Indication

To display Date/Time Indication, set the appropriate Date/Time in [DATE/TIME] on the [DISPLAY SETUP] Sub-Menu. (-56-)

You can also press the [DATE/TIME] Button of the Remote Controller repeatedly to display or change the Date/Time Indication.

■ To Change the Display Mode

By changing [DISPLAY] on the [DISPLAY SETUP] Sub-Menu, you can change the Display Mode to All Function Display [ALL], Partial Display [PARTIAL] and Minimum Display [OFF]. (-56-)

Owner ID

You can register your name and address in your Movie Camera to identify the owner.

1 Set [CAMERA FUNCTIONS] >> [OTHER FUNCTIONS1] >> [OWNER ID SET] >> [YES].

- The [OWNER ID] Menu appears.

2 Turn the [PUSH] Dial (32) to select [PIN NUMBER] and press the [PUSH] Dial (32) to input desired numbers.

3 Turn the [PUSH] Dial (32) to select numbers and press the [PUSH] Dial (32) to enter them.

- Be sure to input 4 digits. Otherwise the Pin Number will not be registered.

4 Press the [■] Button.

5 Repeat Steps 2–4 to input desired characters for [NAME] and [POSTCODE].

- You can input up to 12 characters in [NAME], and up to 11 characters in [POSTCODE].

6 Press the [■] Button to finish the setup.

To Verify Owner ID

Keep pressing the [■] Button for approximately 5 seconds.

To Correct the Contents

If Owner ID has already been set, carrying out Step 1 will display [INPUT PIN NUMBER] on the screen. Input the Pin Number you have already selected. If the number is not correct, the screen will not change. If the number is correct, the contents of the setup will be displayed. (By repeating Steps 2 to 4, you can change the contents.)

Initializing the Modes


You can change the Menu settings back to the shipping condition.


1 Set [CAMERA FUNCTIONS] >> [OTHER FUNCTIONS2] >> [INITIAL SET] >> [YES].

- The initializing takes for a while.
- After the initializing is completed, the [COMPLETED] Indication appears with beeps.
- Initializing will not erase the Owner ID setting and the clock setting (-57-) that has been adjusted.

Warning/Alarm Indications


If any one of the following indications lights up or flashes, please check the condition of the Movie Camera.


: Condensation has occurred. -87-

: The accidental erasure prevention slider on the inserted Cassette is open (that is, set to [SAVE]).

You are about to do audio dubbing on the unrecorded (blank) portion of the tape.

No Cassette is inserted. -53-

: The Battery is low. Recharge it. -51-

: The built-in battery is low. -58-

: The video heads are dirty. -87-

END:

The tape came to end during recording.

REMOTE:

Wrong Remote Controller Mode has been selected. -51-

UNPLAYABLE TAPE

(OTHER FORMAT):

You are attempting to play back a tape section that has been recorded with a different TV system.

UNABLE TO A. DUB

(LP RECORDED):

Because the original recording was done in LP Mode, audio dubbing cannot be performed.

INCOMPATIBLE TAPE:

This Cassette is incompatible.

PLEASE RE-OPERATE

AFTER PUSHING

RESET BUTTON:

Mechanism Irregular is detected. Press the [RESET] Button (-48-). This may solve the problem.

TO SERVICE:

It is a malfunction.

COPY INHIBITED:

Because the medium is protected by a copy guard, images cannot be recorded correctly.

Notes and Hints

Concerning the Power Supply

- When the Movie Camera is used for a long time, the Camera body becomes warm, but this is not a malfunction.
- If the [CHARGE] Lamp does not light up although the Battery is attached to the AC Adaptor, detach the Battery and reattach it.

Inserting/Removing the Cassette

- In the case of using a previously recorded Cassette, you can use the Camera Search Function to find the position where you want to continue recording.
- If a new Cassette is inserted, rewind to the beginning of the tape before starting recording.
- When inserting the cassette, make sure it faces in the right direction and then push it in until it stops.
- When the Cassette Holder is in action, do not touch anything except the [PUSH CLOSE] Button.
- When closing the Cassette Compartment Cover, do not get anything caught in the cover, such as a cable of an optional stereo microphone.

Alarm Sounds

When [BEEP SOUND] on the [OTHER FUNCTIONS1] Sub-Menu on the [CAMERA FUNCTIONS] Main-Menu is set to [ON], confirmation/alarm beeps are issued as follows.

1 Beep

- When you start recording
- When you switch the [OFF/ON/MODE] Switch from [OFF] to [ON]

2 Beeps

- When you pause recording
- 2 Beeps for 4 times
- If you perform a wrong operation before or during recording

Recording Check

- For Recording Check, the recording speed mode (SP/LP) must be the same as the mode used for the recording. If different, playback images will be distorted.

Camera Search

- In Camera Search Mode, images may contain mosaic-pattern noise. This is a phenomenon that is characteristic of digital video and not a malfunction.
- If the recording speed modes (SP/LP) of previous recording and new recording are different, playback images may be distorted.

Quick Start

- During the Quick Start Standby Mode, a minute amount of electricity is consumed.
- When the Movie Camera is left in the Recording Pause Mode for 6 minutes, it will be turned into the Quick Start Standby Mode. To turn the Movie Camera on again, set the [OFF/ON/MODE] Switch to [OFF] and then set it to [ON] again. (The Quick Start Mode will be restored.)
- This Function is not activated when a tape is not inserted even if the Quick Start Recording Lamp lights:
- In the following cases, Quick Start is temporarily cancelled when the Quick Start Mode is set. Set the Camera Mode again, and the Quick Start Mode will be restored.
 - Set to the VCR Mode
 - The Battery is replaced
- If the [QUICK START] Button is pressed and held for approximately 2 seconds during the Quick Start Standby Mode, the Lamp will go off and the Movie Camera will completely be turned off.
- If the Movie Camera is not operated for approximately 30 minutes when the Quick Start Recording Lamp lights, the Lamp will go off and the Movie Camera will completely be turned off.
- In the Automatic White Balance Mode, the colour may be recorded unnaturally at the beginning of the recording.
- The zoom magnification differs from when it is in the Quick Start Standby Mode and when the recording starts.

Photoshot

- Photoshot Recording results in slightly inferior image quality.

Progressive Photoshot Function

- The still pictures are recorded at a slightly rewind point from where you press the [PHOTO SHOT] Button.
- When you change to the Still Picture Mode, you will hear a click. This is the sound of the iris closing and not an indication of malfunction.
- If you record still pictures in Progressive Photoshot Mode when your Movie Camera is set to Programme AE (-64-), the brightness of the images may change.
- Using the Night View Functions cancels the Progressive Photoshot Function.

About [PROGRESSIVE] Setup

- When the [P] Indication is displayed, you can use the Progressive Photoshot Function.

When [PROGRESSIVE] is [ON]:

You can use the Progressive Photoshot Function at any time. In this case, however, the following functions are disabled.

- Digital Effect Modes in [EFFECT1] -68-
- Digital Zoom [D.ZOOM] -62-
- 1/750 s or faster shutter speed -67-

When [PROGRESSIVE] is set to [AUTO]

You cannot use the Progressive Photoshot Function in the following cases.

- When the zoom magnification is approximately 10× or higher
- When the shutter speed is 1/750 s or faster
- When [EFFECT1] is set to [WIPE], [MIX], [STROBE], [GAIN UP], [TRAIL], [MOSAIC], [MIRROR]
- When the pictures are displayed on a Multi screen

Self-timer Recording

- When [BEEP SOUND] on the [OTHER FUNCTIONS1] Sub-Menu on the [CAMERA FUNCTIONS] Main-Menu is set to [ON], the beep sound will be emitted along with the Recording Lamp flashing in the Self-timer Standby Mode.
- By operating the [OFF/ON/MODE] Switch, the Self-timer Standby Mode is cancelled.

Zoom In/Out Functions

- When you are zooming on a faraway subject, a sharper focus is achieved if the recording subject is 1.2 metres or more away from the Movie Camera.

Zoom Microphone Function

- The Zoom Microphone Function may not work effectively if the surrounding noise is too loud.
- It does not work with an external microphone.

Digital Zoom Functions

- As the magnification of digital zoom increases, the quality of image may deteriorate.
- White balance cannot be set in the digital zoom range.

Image Stabilizer Function

- The Image Stabilizer Function does not operate in a dimly lit place. In this case, the [] Indication flashes.
- Under fluorescent lighting, image brightness may change or colours may not look natural.
- After-images may appear.
- When a tripod is used, it is recommended that you turn the Image Stabilizer off.
- Within the digital zoom range, or when recording with a conversion lens attached, the Image Stabilizer Function may not work effectively.

Backlight Compensation Function

- When setting the Iris manually, the Backlight Compensation Function does not work.
- By operating the [OFF/ON/MODE] Switch, the Backlight Compensation Function is cancelled.

Night View Functions

- In a bright place, such as the outdoors, the recorded picture may become whitish.
- In a dark place, the recorded picture is presented in a time-lapse-like manner.
- Adjust the Focus manually.
- The Progressive Photoshot Function is automatically turned off.
- The Continuous Photoshot Function cannot be used.
- White Balance cannot be set.
- The shutter speed cannot be adjusted.
- The Image Stabilizer, Programme AE or Digital Effect Modes in [EFFECT1] cannot be set.
- When recording with the Night View Function, it is recommended to use the tripod.
- The Night View Function makes the signal charging time of CCD longer up to 25 times than usual, so that the dark scenes that are invisible for naked eyes can be recorded brightly. For this reason, a bright dots may be seen, but this is not a malfunction.

Wind Noise Reduction Function

- It does not work with the microphone on the Free Style Remote Controller with Mic nor an external microphone.
- When it is set to [ON], directivity of microphone is regulated depending on the strength of wind to reduce wind noise.


Cinema Function

- Using the Cinema Mode does not widen the recording angle.
- If you play back tape recorded in Cinema Mode on a wide-screen (16:9) format TV, playback size is automatically adjusted to fit the TV screen format. Please refer to the TV's operating instructions for details.
- When images are displayed on a TV screen, the Date/Time Indication may be erased in some cases.
- Depending on the TV, the picture quality may be deteriorated.
- Using the Cinema Mode deactivates [MULTI] and [P-IN-P] of [EFFECT1].
- Depending on the software in use, the imported Cinema picture may not be displayed correctly.

■ Programme AE

- If any of the Programme AE Modes is selected, you cannot adjust the shutter speed (-67-) or iris (-67-).
- You cannot use Sports Mode, Portrait Mode or Low-Light Mode with Gain-up Mode [GAIN UP].
- When using Sports Mode, Portrait Mode or Low-Light Mode, using the Night View Function cancels this mode.

Sports Mode

- During normal playback, the image movement may not look smooth.
- Because the colour and brightness of the playback image may change, avoid recording under fluorescent light, mercury light or sodium light.
- If you record a subject illuminated with strong light or a highly reflective subject, vertical lines of light may appear.
- If the light is insufficient, the [] Indication flashes.

Sports Mode/Portrait Mode

- If you record a still picture in Progressive Photoshot Mode, the brightness and hue of the recorded still picture may become unstable.
- If this mode is used for indoor recording, playback images may flicker.

Low Light Mode

- Extremely dark scenes may not be able to be made brighter to a satisfactory degree.

Spotlight Mode

- With this mode, recorded images may turn out to be extremely dark.
- If the recording subject is extremely bright, its recorded image may turn out to be whitish.


Surf & Snow Mode

- If the recording subject is extremely bright, its recorded image may turn out to be whitish.

■ White Balance

In the following cases, you cannot change White Balance:

- When you set [EFFECT1] of [DIGITAL EFFECT] Sub-Menu on the [CAMERA FUNCTIONS] Main-Menu to [GAIN UP] or [EFFECT2] to [SEPIA] or to [B/W].
- When you set the Zoom to 10× or higher
- During Digital Still Picture Mode
- When you display a Menu
- When you use the Night View Mode

In the following cases, the [] Indication flashes:

- The flashing indicates that the previously adjusted White Balance setting is still kept. This setting will be kept until White Balance is adjusted again.
- You may not be able to achieve correct White Balance Adjustment manually under weak illumination.

■ Manual Shutter Speed Adjustment

- You may see vertical lines of light in the playback image of a brightly shining subject or highly reflective subject.
- During normal playback, movement in the images may not look smooth.
- Because the colour and brightness of the playback image may become unstable, avoid recording under fluorescent light, mercury light or sodium light.
- If you are using Gain-up Mode (-68-), Programme AE Mode (-64-) or Night View Mode (-63-), you cannot adjust the shutter speed.

■ Manual Iris Adjustment

- Depending on zoom magnification, there are iris values that will not be displayed.
- If you are using Night View Mode (-63-) or Programme AE Mode (-64-), you cannot adjust the iris.
- If you attempt to adjust the Shutter Speed after setting the Iris, the value set for the Iris will be cancelled.




■ Digital Effect Functions

- It is not possible to use [MULTI], [P-IN-P], [WIPE], [MIX] or [TRAIL] of [EFFECT1] together with the digital modes of [EFFECT2] on the [DIGITAL EFFECT] Sub-Menu.
- If you have set [EFFECT2] to [B/W] or [SEPIA], changing the selected White Balance Mode is not possible. (-65-)
- Setting the Cinema Mode cancels the Picture-in-Picture Mode and the Multi-Picture Mode.

In the following cases, using the [EFFECT1] on the [DIGITAL EFFECT] Sub-Menu is not possible.

- When [PROGRESSIVE] is set to [ON] (-61-)
- When the Night View Mode is set (-63-)

It is as follows when [GAIN UP] is selected.

- Manual Focus Mode
- The shutter speed and White Balance cannot be operated.
- The Sports Mode [], the Portrait Mode [] and Low Light Mode [] are cancelled.

Wipe Mode and Mix Mode

If either one of the following operations is carried out, stored images will be erased, and Wipe and Mix Functions cannot be used.

- Use the Camera Search Function
- Press the [STILL] Button

Picture-in-Picture Mode

- If the [OFF/ON/MODE] Switch is operated, the smaller picture disappears.

Multi-Picture Mode

- If the [MULTI] Button is pressed while self-recording Mirror Mode (-60-) is used, the still picture is displayed from the upper right corner of the screen, but, in reality, the picture is recorded from the upper left corner as usual.
- Multi-Picture Mode cannot be used in digital still picture mode.
- The quality of Multi images deteriorates slightly.
- The top and bottom of the Multi pictures will be cut off slightly.

■ Playing Back

Repeat Playback

If you continue to press the [▶] Button for 5 seconds or longer, the Movie Camera switches to Repeat Playback Mode, and the [R ▷] Indication appears. (To cancel Repeat Playback Mode, set the [OFF/ON/MODE] Switch to [OFF].)

Listening to Playback Sound through Headphones

If you want to use the headphones to listen to the playback sound, set [AV JACK] on the [AV IN/OUT SETUP] Sub-Menu to [OUT/PHONES] and connect the headphones to the [PHONES] Socket (-48-) on the Movie Camera. In this case, no sound (including a warning sound and shutter sound) will be reproduced through the built-in speaker of the Movie Camera.

Choosing Sound during Playback

You can select the sound by using the [AUDIO OUT] setting on the [PLAYBACK FUNCTIONS] Sub-Menu.

- STEREO: Stereo Sound (main sound and sub sound)
- L: Left channel sound (main sound)
- R: Right channel sound (sub sound)
- If you dub a tape recorded at the [12bit] selected as the [AUDIO REC] on the [RECORDING SETUP] Sub-Menu, playback sound becomes stereo sound regardless of the [AUDIO OUT] setting if [12bit AUDIO] is set to [MIX].

■ Index Search Functions

- Index Search may not be possible at the beginning of tape.
- Because Photoshot Index Signals are not recorded on still pictures recorded in Continuous Photoshot Mode, the Photoshot Index Search Function cannot be used for these still pictures.
- Scene Index Search may not function properly if the interval between 2 scene index signals is shorter than 1 minute.

■ Playback Zoom Function

- You cannot adjust the sound volume with the Remote Controller in Playback Zoom Mode.
- If you turn off the Movie Camera power or if you switch from VCR Mode to Camera Mode, Playback Zoom Mode is automatically cancelled.
- Even if Playback Zoom Functions are being used, images that are output from the DV Terminal (-48-) or Digital Still Picture Terminal (-79-) are not enlarged.
- As you enlarge an image, the quality of image suffers.
- During a Playback Zoom, the Variable Speed Search Function cannot be changed with the Remote Controller.

■ Playback Digital Effect Functions

- Signals of images to which digital effects are added during playback cannot be output from the DV Terminal (-48-) or Digital Still Picture Terminal (-79-).
- You cannot use the Wipe or Mix Function while playing back the non-recorded portion of tape.

Multi-Picture Mode (VCR Mode)

- The quality of Multi images deteriorates slightly.
- Playback Multi-Mode screens cannot be output through the DV Terminal (-48-) or Digital Still Picture Terminal (-79-).
- If there is input from DV Terminal, a multi screen cannot be created.
- If you switch the Movie Camera from the Index Multi-Picture Mode over to the Camera Mode, the setting of [SCAN MODE] on the [MULTI-PICTURES] Sub-Menu of the [CAMERA FUNCTIONS] Main-Menu is automatically set to [STROBE].

■ Playing Back on Your TV

- If you set [AV JACK] on the [AV IN/OUT SETUP] Sub-Menu to [IN/OUT], nothing will be shown on the TV screen except during playback.
- Picture size may be displayed differently when playing back a Cinema picture on a wide-screen TV with [B/W] or [SEPIA] of Playback Digital Effect.

■ Audio Dubbing

- The blank section of a tape cannot be dubbed.
- Sounds sent through the DV Terminal cannot be dubbed.
- If a tape has a non-recorded portion when the tape is dubbed, images and sounds may be disturbed when this portion of the tape is played back.
- If you set the tape counter back to 0 at the position where you want to stop Audio Dubbing so as to make it possible to use the Memory Stop Function (-92-), Audio Dubbing is terminated automatically when the tape reaches this position.
- In the case of importing data recorded with Audio Dubbing to a PC using the PC's software programme, only the original sound (ST1) may be imported, depending on the software programme.

■ Recording the Contents of Other Equipment

Analog-Digital Conversion

- When the Movie Camera is connected with other digital video equipment through its DV Terminal, images recorded in analog form from other external equipment can be output to the digital video equipment through the DV Terminal.
- To DV-output analog video signals sent from other equipment, set [DV OUT] on the [AV IN/OUT SETUP] Sub-Menu to [ON]. (Normally, keep the [DV OUT] set to [OFF]. If it is set to [ON], the quality of the image may be disturbed.)

■ Using the DV Cable for Recording (Digital Dubbing)

- Regardless of the setting, digital dubbing is carried out automatically in the same audio recording mode as that of the Cassette on the playback-side.
- The images on the monitor of the recording side may be disturbed, but it does not affect the recorded images.
- Even if Playback Digital Effects or Playback Zoom have been used, these effects are not output from the DV Terminal.
- Even if you use device equipped with DV Terminals (such as IEEE1394), you may not be able to perform Digital Dubbing in some cases.
- Date or other information to be displayed cannot be displayed if the software of the connected equipment does not support the display function.

Cautions for Use

■ After Use

- 1 Take out the Cassette. (-53-)
- 2 Set the [OFF/ON/MODE] Switch to [OFF].
- 3 Detach the power supply and retract the Viewfinder or the LCD Monitor. (-51-, -54-)
- 4 To protect the Lens, attach the supplied Lens Cap.

■ Cautions for Use

When you use your Movie Camera in a rainy or snowy day or on a beach, make sure that no water enters inside the Movie Camera.

- Water may cause the Movie Camera or Cassette to malfunction. (Irreparable failure may occur.)
- If sea water splashes onto the Movie Camera, wet a soft cloth with tap water, wring it well, and use it to wipe the camera body carefully. Then, wipe it again thoroughly with a soft dry cloth.

Keep the Movie Camera away from magnetized equipment (such as a microwave oven, TV, video game equipment, etc.).

- If you use the Movie Camera on or near a TV, images or sounds may be disturbed due to electromagnetic wave radiation.
- Do not use near a cell phone because doing so may cause noise to adversely affect the picture and sound.
- By strong magnetic fields created by speakers or large motors, recording on the tape may be damaged, or images may be distorted.
- Electromagnetic wave radiation generated by a microprocessor may adversely affect the Movie Camera, causing the disturbance of images and sounds.
- If the Movie Camera is affected by magnetically charged equipment and does not function properly, turn off the Movie Camera power and detach the Battery or AC Adaptor and then connect the Battery or AC Adaptor again. Thereafter, turn on the Movie Camera power.

Do not use your Movie Camera near radio transmitters or high-voltage lines.

- If you record pictures near radio transmitters or high-voltage lines, recorded images or sounds may be adversely affected.

Do not use this Movie Camera for surveillance purpose or other business use.

- If you use the Movie Camera for a long period of time, the internal temperature increases and, consequently, this may cause malfunction.
- This Movie Camera is not intended for business use.

When you use your Movie Camera on a beach or similar place, do not let sand or fine dust get into the Movie Camera.

- Sand or dust may damage the Movie Camera or Cassette. (Care should be taken when inserting and removing the Cassette.)

Do not spray insecticides or volatile chemicals onto the Movie Camera.

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

Do not use benzine, thinner or alcohol for cleaning the Movie Camera.

- The camera body may be deformed and the surface finish may peel off.
- Before cleaning, detach the Battery or pull out the AC Mains Lead from the AC mains socket.
- Wipe the Movie Camera with a soft dry cloth. To remove stubborn stains, wipe with a cloth that is soaked in a detergent diluted with water and afterward finish wiping with a dry cloth.
- For storing or transporting the Movie Camera, place it in a bag or case lined with soft pads so as to prevent the coating on the camera body from being worn.

After use, be sure to take the Cassette out and detach the Battery from the Movie Camera or pull out the AC Mains Lead from AC mains socket.

- If the Cassette is left in the Movie Camera, the tape sags and deteriorates.
- If the Battery is left on the Movie Camera for a long time, the voltage drops excessively, and the Battery will not function even after it is recharged.

About AC Adaptor

- 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. After the temperature of the Battery has decreased or increased sufficiently, charging starts automatically. If the [CHARGE] Lamp continues to flash even after the Battery temperature has decreased or increased sufficiently, the Battery or AC Adaptor may be faulty. In this case, please contact a dealer.
- If the Battery is warm, charging takes a longer time than normal.
- If you use the AC Adaptor near a radio, radio reception may be disturbed. Keep the AC Adaptor 1 metre or more away from radio.
- When the AC Adaptor is in use, it may generate whirring sounds. However, this is normal.

- After use, be sure to pull out the AC Mains Lead from the AC mains socket. (If they are left connected, a minute amount of current is consumed.)
- Keep the electrodes of the AC Adaptor and Battery always clean.

Condensation

If the Condensation Indication flashes after the Movie Camera is turned on, condensation has formed inside the Movie Camera. In this case, the Movie Camera power is turned off automatically after about 1 minute.

Follow the steps below:

1 Take out the Cassette.

- None of the other functions operate. Depending on the amount of condensation, removing the Cassette may even become difficult. If this happens, wait for 2 to 3 hours before taking the Cassette out.

2 Open the Cassette Compartment Cover and wait for 2 to 3 hours.

- The number of hours to wait depends on the amount of condensation and ambient temperature.

3 2 to 3 hours later, turn on the Movie Camera power and check to see if the Condensation Indication is displayed.

- Even if the Condensation Indication is not displayed, as a precaution, please wait for another hour before using the Movie Camera.

Watch for Condensation even before the Condensation Indication is displayed.

- Because condensation takes place gradually, the Condensation Indication may not be displayed during the first 10 to 15 minutes of condensation formation inside the Movie Camera.
- In extremely cold places, condensation may freeze and form frost. In this case, the frost melts first, thus forming condensation, and then it takes another 2 to 3 hours to eliminate the condensation.

When the Lens is Fogged:

Set the [OFF/ON/MODE] Switch to [OFF] and leave the Movie Camera in this condition for about 1 hour. When the lens temperature becomes close to the ambient temperature, the fog disappears naturally.

Video Head Clogging and Care

If the heads (the parts that make contact with tape) are dirty, mosaic-pattern noise may appear on the playback image, or the screen as a whole becomes black. If the heads are extremely dirty, recording performance deteriorates, and, in the worst case, the Movie Camera cannot record at all.

Causes of Dirty Heads

- Large quantity of dust in the air
- High-temperature and high-humidity environment
- Damaged tape
- Long operating hours

Using Mini-DV Format Digital Video Head Cleaner

- 1 Insert the Head Cleaner into the Movie Camera in the same manner as a Video Cassette.**
- 2 Press the [▶] Button, and approximately 20 seconds later, press the [■] Button. (Do not rewind the tape.)**
- 3 Take out the Head Cleaner. Insert a Video Cassette and start recording. Then, play the tape back to check the recorded image.**
- 4 If the image is not still clear, repeat Steps 1 to 3. (Do not use the Head Cleaner for 3 times or more consecutively.)**

Notes:

- Do not rewind every time you use the Head Cleaner. Rewind only when the tape reaches the end, and then use it again from the beginning in the same manner as before.
- If the heads become dirty soon after cleaning, the tape may be damaged. In this case, immediately stop using that Cassette.
- Do not clean the heads excessively. (Excessive cleaning may cause excessive wear of the heads. If the heads are worn, images cannot be played back even after the heads are cleaned.)
- If the dirty heads cannot be cleaned with the Head Cleaner, the Movie Camera needs to be cleaned at a service centre. Please consult a dealer.
- Video Head Cleaners can be purchased from service centres.
- Head cleaning due to dirty heads is not considered a malfunction of the product. It is not covered by the warranty.

Periodical Check-up

To maintain the highest image quality, we recommend replacement of worn parts, such as heads, etc., after approximately 1000 hours of use. (This, however, depends on operating conditions, such as temperature, humidity, dust, etc.)

■ Optimal Use of the Battery Battery Characteristics

This Battery is a rechargeable lithium ion battery. Its ability to generate power is based upon the chemical reaction that takes place inside it. This reaction is susceptible to the surrounding temperature and humidity, and, if the temperature is too high or too low, the operating time of the

Battery becomes shorter. If the Battery is used in an extremely cold environment, the Battery may operate only for about 5 minutes. If the Battery becomes extremely hot, a protective function may operate, and the Battery may become unusable for a while.

Be Sure to Detach the Battery after Use

Be sure to detach the Battery from the Movie Camera. (If it is left attached to the Movie Camera, a minute amount of current is consumed even when the Movie Camera power is off.) If the Battery is left attached to the Movie Camera for a long time, over discharge takes place. The Battery may become unusable after it is charged.

Disposing of an Unusable Battery

- The Battery has a limited life.
- Do not throw the Battery into fire because it may cause an explosion.

Always Keep the Terminals of the Battery Clean

Prevent the terminals from getting clogged with dirt, dust, or other substances. If you drop the Battery accidentally, check to see if the Battery body and terminals are deformed. Attaching a deformed Battery to the Movie Camera or AC Adaptor may damage the Movie Camera or AC Adaptor.

■ Cautions for Storage

Before storing the Movie Camera, take the Cassette out and detach the Battery.

Store all the components in a dry place with a relatively stable temperature.

(Recommended Temperature: 15 to 25°C,

Recommended Humidity: 40 to 60%)

Movie Camera

- Wrap it with a soft cloth to prevent dust from getting into the Camera.
- Do not leave the Movie Camera in places that expose it to high temperature.

Battery

- Extremely high temperatures or low temperatures will shorten the life of the Battery.
- If the Battery is kept in smoky or dusty places, the terminal may rust and cause malfunctions.
- **Do not allow the Battery terminals to come in contact with metal objects (such as necklaces, hairpins, etc.). This can result in a short circuit or heat generation and, if you touch the Battery in this condition, you may be badly burned.**
- Store the Battery in a completely discharged state. To store the Battery for a long period of time, we recommend you charge it once every year and store it again after you completely use up the charged capacity.

Cassette

- Before storing it, rewind the tape to the beginning. If the Cassette is left for more than 6 months with the tape stopped midway, the tape sags (although it depends on the storage condition). Be sure to rewind to the beginning.
- Store the Cassette in its case. Dust, direct sunlight (ultraviolet rays), or humidity may damage the tape. Dust contains hard mineral particles, and dusty Cassettes damage the heads of the Movie Camera and other components. Develop a habit of returning the Cassette back to its case.
- Once every half year, wind the tape to the end and then rewind it to the beginning. If the Cassette is left for 1 year or longer without winding or rewinding, temperature and humidity changes may cause the Cassette to deform due to swelling, shrinking, and so forth. The wound tape may stick to itself.
- Do not place a Cassette near highly magnetic substances or equipment.
- The surface of tape is covered with extremely minute magnetic particles, upon which signals are recorded. Magnetic necklaces, toys, etc., have magnetic force that is stronger than you may normally expect, and they may erase the contents of a recording or may cause noise in images and sounds.

■ LCD Monitor/Viewfinder/Lens Hood LCD Monitor

- In a place with drastic temperature changes, condensation may form on the LCD Monitor. Wipe it with soft dry cloth.
- If your Movie Camera is extremely cold when you turn its power on, the image on the LCD Monitor is slightly darker than usual at first. However, as the internal temperature increases, it goes back to the normal brightness.

Extremely high precision technology is employed to produce the LCD Monitor screen featuring a total of approximately 113,000 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.

Viewfinder

- Do not direct the Viewfinder or Lens to the sun. Internal components may be seriously damaged.
- When the Movie Camera is used with a large capacity Battery (CGA-DU21; optional)

attached to it, it is not practical to look in the Viewfinder from behind the Battery.

Extremely high precision technology is employed to produce the Viewfinder screen featuring a total of approximately 113,000 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.

Lens Hood

- Do not attach other conversion lenses in front of the Lens Hood; there is no mount to be used for the attachment.
- When you wish to attach the Tele Conversion Lens (VW-LT2714N2E; optional), Wide Conversion Lens (VW-LW2707N2E; optional), MC Protector (VW-LMC27E; optional), or ND Filter (VW-LND27E; optional), first of all, turn the Lens Hood counterclockwise. If the MC Protector or ND Filter is used, the Lens Hood can be mounted on the filter.
- If you push the [W/T] Lever toward [W] during recording with the filter and conversion lens attached together to the Movie Camera, 4 corners of the image may become dark (vignetting). For details, please refer to the operating instructions of your accessories.
- Be sure to keep the Lens Hood attached to the Movie Camera so as to shut out unnecessary light.

Before Requesting Repair (Problems and Solutions)

Power

- 1: The Movie Camera power cannot be turned on.**
 - Is the power source connected correctly? (-51-)
- 2: The Movie Camera power is turned off automatically.**
 - If you leave the Movie Camera in Recording Pause Mode for more than 6 minutes, the power is turned off automatically to protect the tape and to save the Battery power. (-59-)
- 3: The Movie Camera power does not stay on long enough.**
 - Is the Battery low? Charge the Battery or attach a fully charged Battery. (-51-)
 - Has condensation occurred? Wait until the Condensation Indication disappears. (-87-)

Battery**1: Battery runs down quickly.**

- Is the Battery fully charged? Charge it with the AC Adaptor. (-51-)
- Are you using the Battery in an extremely cold place? In cold places, the operating time of the Battery becomes shorter. (-88-)
- Has the Battery worn out? If the operating time is still too short even after the Battery is fully charged, the Battery has worn out.

2: The Battery cannot be charged.

- If the DC Input Lead is connected to the AC Adaptor, charging cannot be performed. Disconnect the DC Input Lead.

Normal Recording**1: Recording does not start although power is supplied to the Movie Camera and the Cassette is correctly inserted.**

- Is the accidental erasure prevention slider on the Cassette open? If it is open (set to [SAVE]), recording cannot be performed. (-54-)
- Is the tape wound to the end? Insert a new Cassette. (-53-)
- Is the Movie Camera power turned on? (-59-)
- Is the [CAMERA] Lamp on? If the [CAMERA] Lamp is not on, no recording function can be operated. (-59-)
- Has condensation occurred? Wait until the Condensation Indication disappears. (-87-)

Other Recording**1: Auto Focus Function does not work.**

- Is Manual Focus Mode selected? If Auto Focus Mode is selected, focus is automatically adjusted. (-67-)
- There are some recording subjects and recording surroundings for which the Auto Focus Function does not operate correctly. In this case, use the Manual Focus Mode to adjust the focus. (-91-)

Editing**1: Audio dubbing cannot be performed.**

- Is the accidental erasure prevention slider on the Cassette open? If it is open (set to [SAVE]), recording cannot be performed. (-54-)
- Are you attempting to edit a tape portion that was recorded in LP Mode? LP Mode does not allow audio dubbing to operate. (-58-)

Indications**1: The Time Code becomes inaccurate.**

- The Time Code Indication counter may not be constant in the reverse direction in Slow Motion Playback Mode, but this is not a malfunction.

2: The Remaining Tape Time Indication disappears.

- When you record still pictures in Photoshot Mode, the Remaining Tape Time Indication may disappear temporarily. However, it reappears when recording normally.

3: The Remaining Tape Time Indication does not match the actual remaining tape time.

- If scenes of less than 15 seconds are continuously recorded, the remaining tape time cannot be displayed correctly.
- In some cases, the Remaining Tape Time Indication may show remaining tape time that is 2 to 3 minutes shorter than the actual remaining tape time.

Playback (Pictures)**1: Pictures cannot be played back even when the [▶] Button is pressed.**

- Is the [VCR] Lamp on? If the [VCR] Lamp is not on, the playback function cannot be used. (-71-)

2: Mosaic-pattern noise appears on images during Cue, Review or Slow Motion Playback.

- This phenomenon is characteristic of digital video systems. It is not a malfunction.

3: Although the Movie Camera is correctly connected to a TV, playback images cannot be seen.

- Have you selected "Video Input" on the TV? Please read the operating instructions of your TV and select the channel that matches the input sockets used for the connection.

4: Playback picture is not clear.

- Are the heads of the Movie Camera dirty? If the heads are dirty, playback image cannot be clear. (-87-)

Playback (Sound)**1: Sound is not played back from the built-in speaker of the Movie Camera or the headphones.**

- Is the volume too low? During playback, keep pressing the [PUSH] Dial until the [VOLUME] Indication appears. Then, turn the [PUSH] Dial to adjust the volume. (-71-)

2: Different sounds are reproduced at the same time.

- [12bit AUDIO] on the [PLAYBACK FUNCTIONS] Sub-Menu of the [VCR FUNCTIONS] Main-Menu has been set to [MIX]. As a result, the original sound and sound that was recorded by audio dubbing are played back together. It is possible to reproduce the sounds separately. (-77-)

3: The original sound was erased when audio dubbing was performed.

- If you perform audio dubbing on a recording done in [16bit] Mode, the original sound will be erased. If you wish to preserve the original sound, be sure to select [12bit] Mode at the time of recording.

4: Sounds cannot be played back.

- Although a Cassette with no audio dubbing is being played, is [12bit AUDIO] on the [PLAYBACK FUNCTIONS] Sub-Menu of the [VCR FUNCTIONS] Main-Menu set to [ST2]? To play back a Cassette with no audio dubbing, [12bit AUDIO] must be set to [ST1]. (-77-)
- Is the Variable Speed Search Function working? Press the [▶] Button to cancel the Variable Speed Search Function. (-71-)

Others

1: The Free Style Remote Controller with Mic does not operate correctly.

- If it is not plugged in tightly, it will not operate correctly.

2: The Movie Camera clatters when shaking it.

- It is a sound of the lens moving, not a malfunction.

Explanation of Terms

■ Digital Video System

In a digital video system, images and sounds are converted into digital signals and recorded on a tape. This complete digital recording is capable of recording and playback with minimal image and sound deterioration.

In addition, it automatically records data, such as Time Code and Date/Time, as digital signals.

Compatibility with S-VHS or VHS Cassettes

Because this Movie Camera employs a digital system for recording image and sound data, it is not compatible with conventional S-VHS or VHS video equipment that employs an analog recording system.

The size and shape of the Cassette are also different.

Compatibility with Output Signals

Because AV signal output from the AV signal output socket is analog (the same as conventional video systems), this Movie Camera can be connected with S-VHS or VHS video or a TV for playback.

■ Focus

Auto Focus Adjustment

The Auto Focus System automatically moves forward and backward the focusing lens inside the Movie Camera to bring the subject into focus so that the subject can be seen clearly.

However, the Auto Focus System does not function properly for the following subjects or under the following recording conditions.

Please use the Manual Focus Mode instead.

- 1) **Recording a subject whose one end is located closer to the Movie Camera and the other end farther away from it**
 - Because Auto Focus makes adjustments at the centre of an image, it may be impossible to focus on a subject that is located in both foreground and background.
- 2) **Recording a subject behind dirty or dusty glass**
 - Because the focus is on the dirty glass, the subject behind the glass will not be focused.
- 3) **Recording a subject in dark surroundings**
 - Because the light information that comes through the lens decreases considerably, the Movie Camera cannot focus correctly.
- 4) **Recording a subject that is surrounded by objects with glossy surfaces or by highly reflective objects**
 - Because the Movie Camera focuses on the objects with glossy surfaces or on highly reflective objects, the recording subject may become blurry.
- 5) **Recording a fast-moving subject**
 - Because the focus lens-inside moves mechanically, it cannot keep up with the fast-moving subject.
- 6) **Recording a subject with little contrast**
 - Because the Movie Camera achieves focus based upon the vertical lines of an image, a subject with little contrast, such as a white wall, may become blurry.

■ Time Code

Time Code signals are data that indicate time measured in hours, minutes, seconds, and frames (25 frames per second). If this data is included in a recording, an address is assigned to each image on the tape.

- The Time Code is automatically recorded as a part of the sub-code at each recording.
- When a new (previously unrecorded) Cassette is inserted, the Time Code automatically starts from zero. If a recorded Cassette is inserted, the Time Code picks up from the point where the last scene was recorded. (In this case, when the Cassette is inserted, the zero display [0h00m00s00f] may appear, but the Time Code starts from the previous value.)
- The Time Code cannot be reset to zero.
- Unless the Time Code is continuously recorded from the beginning of a tape, accurate editing may not be possible. To ensure that the Time Code will be recorded with no breaks, we recommend the use of the Camera Search

Function (-59-) or the Blank Search Function (-73-) before recording a new scene.

■ Memory Stop Function

The Memory Stop Function is useful for the following operations.

Rewinding or fast-forwarding a tape to a desired position

- 1 Set [DISPLAY SETUP] >> [C.DISPLAY] >> [MEMORY].**
- 2 Reset the Tape Counter to zero at the tape position from which you want to play it back later. (-49-, -56-)**
- 3 Start playback or recording.**
- 4 After playback or recording has finished: Rotate the [OFF/ON/MODE] Switch and set the Movie Camera to VCR Mode.**
 - The [VCR] Lamp lights up.
- 5 Rewind the tape.**
 - The tape automatically stops approximately at the position where the counter was set to zero.

Stopping editing automatically during audio dubbing

- 1 Set [DISPLAY SETUP] >> [C.DISPLAY] >> [MEMORY].**
- 2 Reset the Tape Counter to zero at the position where you want to stop editing.**
- 3 Play back the still picture where you want to start audio dubbing.**
- 4 Start audio dubbing. (-76-)**
 - Audio dubbing automatically stops at the position where the counter was set to zero.

Specifications

Specifications

Digital Video Camera

Information for your safety

Power Source:

DC 7.9/7.2 V

Power Consumption:

Recording

2.1 W (When using Viewfinder)

3.0 W (When using LCD Monitor)

Recording Format:

Mini DV (Consumer-use Digital Video SD Format)

Tape Used:

6.35 mm digital video tape

Recording/Playback Time:

SP: 80 min.; LP: 120 min. (with DVM80)

Video

Recording System:

Digital Component

Television System:

CCIR: 625 lines, 50 fields PAL colour signal

Audio

Recording System:

PCM Digital Recording

16 bit (48 kHz/2ch), 12 bit (32 kHz/4ch)

Image Sensor:

1/6-inch CCD Image Sensor

Lens:

Auto Iris, F1.8, Focal Length; 2.3–23 mm, Macro (Full Range AF)

Filter Diameter:

27 mm

Zoom:

10:1 Power Zoom

Monitor:

2.5-inch LCD

Viewfinder:

Colour Electronic Viewfinder

Microphone:

Stereo

Speaker:

1 round speaker \varnothing 20 mm

Standard Illumination:

1,400 lx

Minimum Required Illumination:

1 lx (Colour Night View Mode)

Video Output Level:

1.0 Vp-p, 75 ohm

S-Video Output Level:

Y Output: 1.0 Vp-p, 75 ohm

C Output: 0.3 Vp-p, 75 ohm

Audio Output Level (Line):

316 mV, 600 ohm

Video Input Level:

1.0 Vp-p, 75 ohm

S-Video Input Level:

Y Input: 1.0 Vp-p, 75 ohm

C Input: 0.3 Vp-p, 75 ohm

Audio Input Level (Line):

316 mV, 10 kohm or more

Mic Input:

Mic sensitivity -50 dB (0 dB=1 V/Pa, 1 kHz) (Stereo mini jack)

Digital Still Picture (TO PC):

Digital Still Picture Output, Control Signal

Input/Output (Transfer rate: max. 115 kbps)

Digital Interface:

DV Input/Output Terminal (IEEE1394, 4-pin)

Dimensions:

Approx. 66 (W)×83 (H)×110 (D) mm

Weight:

Approx. 430 g (without Battery and DV cassette)

Approx. 490 g (with CGA-DU07 and DVM60)

Operating Temperature:

0°C–40°C

Operating Humidity:

10%–80%

AC Adaptor

Information for your safety

Power Source:

AC 110–240 V, 50/60 Hz

Power Consumption:

19 W

DC Output:

DC 7.9 V, 1.4 A (Movie Camera Operation)

DC 8.4 V, 0.65 A (Battery Charging)

Dimensions:

61 (W)×32 (H)×91 (D) mm

Weight:

Approx. 105 g

Weight and dimensions are approximate values.

Specifications may change without prior notice.



VQT0C39-2
F0103Me2043 (7000 ©)



Matsushita Electric Industrial Co., Ltd.

Web site: <http://www.panasonic.co.jp/global/>

松下電器産業株式會社
日本國大阪