



VP 312 VP 380 LASER DISC DRIVE



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" WP BILLING



LASER SAFETY

This unit employs a laser. Do not remove the cover or attempt to service this device when in operation, due to the possibility of eye damage.

CAUTION

USE OF CONTROLS OR ADJUSTMENTS OR PERFORMANCE OF PROCEDURES OTHER THAN THOSE SPECIFIED HEREIN MAY RESULT IN HAZARDOUS LASER RADIATION EXPOSURE.

CLASS 1 LASER PRODUCT

C Philips 1990 Interactive Media Systems CE division

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1 INTRODUCTION

Professional Laser Disc Drives

Professional laser disc drives are-usually found in applications where rapid random-access of high-quality video sequences (together with audio) are needed, such as training, point-of-sale/point-of-information and visual archiving.

The VP300 series laser disc drives offer outstanding performance and versatility; not only will they play the standard 30cm and 20cm Laser Disc and LaserVision discs, but also 12cm Laser Disc and 12cm and 8cm CD-Audio discs.

The VP 312 is a PAL television system single standard drive whilst the VP 380 is a PAL/NTSC television system multi-standard drive.

VP 312 features

in addition to the expected features, the VP 312 has :

- Excellent full-bandwidth RGB picture quality, and also CVBS PAL output.
- Interactive digital audio for more creative language or music application possibilities.
- Enhanced F-Code computer control commands for all disc types, providing more functions for better application control.
- Digital audio, as well as analogue, using 16 bit x 4 oversampling and dual DAC, and also digital audio output.
- Headphone socket with volume control for personal use in situations where quietness is needed.

VP 380 features

The VP 380 includes all the features of the VP 312 together with :

- PAL/NTSC multi-standard video that accepts all Laser Disc and LaserVision discs from America, Europe and the Far East.
- Y/C (Super-VHS) as well as CVBS output, with optional NTSC to PAL chroma transcoding for use with most PAL televisions and monitors (or vice versa; PAL to NTSC transcoding for NTSC televisions or monitors).

Advanced laser optics assembly

The laser optics assembly combines very compact design with high tracking accuracy and fast access time (typically 1.5 seconds). The optical deck features a 3-phase brushless motor with quartz crystal control ensuring the drives will meet the most demanding applications of interactive video and audio.

On-board character generator

The on-board character generator can display up to 12 rows of 24 characters each. The 96 symbols of the character set are mainly derived from the ASCII table.

Used with the optional remote control handset, the character generator can display the current disc index, (picture number, chapter, track or time code), status of the disc and drive, and also assist in programming automatic play segments.

The character generator is also accessible with F-Code commands providing a low-cost alternative to overlay cards. Controllable features include text size and positioning, flashing characters, 8 colours for text, character outline or windowing, and background and border colour.

Remote control

The optional wired handset provides direct control of the drive when claying all types of disc. Drive configuration can be set-up, and extensive search and programming facilities are provided.

RS232 interface

-Sync generator

The drives have an internal sync generator so that continuous video is output whether or not a disc is playing. This stable output can be used as a sync pulse reference for genlocking with overlay cards, or other drives or video sources.

Continuous play mode

In applications such as point-of-sale, where the drive is required to play a disc over and over again with no computer control, a replay switch is located on the rear panel. When pressed, this has the effect of :

1. Automatically playing the disc in an endless loop.

2. Disabling the front panel controls to prevent tampering.

The functions then available with the remote control handset are also restricted to prevent improper use.

High reliability

Philips electronic and mechanical engineering, based on the world's longest experience in laser disc technology, strives to consistently attain the highest possible quality.

The measured mean time between failures (MTBF) is in excess of 25,000 hours.

Optical disc systems

Optical disc playback systems use an optical (laser beam) readout. The laser beam, concentrated to a fine point (60 times finer than a record stylus), reads very densely-packed information under the transparent sealed surface of the optical disc.

The reproduced picture is very high quality with stereo or 2-channel mono sound. There is no wear to the disc or 'pick-up'. Although the discs are scratch resistant and almost unaffected by dust or finger prints, users are strongly advised to handle them carefully.

Types of optical disc used by the drive

LaserVision

Two types of LaserVision disc are available and the VP 312 and VP 380 will operate with either of these :

- CAV (Constant Angular Velocity) discs spin at a constant speed of 1500 r.p.m. They have a maximum capacity of 54000 pictures per side (36 minutes played at 25 pictures per second) and offer special LaserVision effects such as still, slow-motion, reverse play, fast forward, fast reverse and go to picture or chapter number. CAV discs can be used for interactive programs.
- CLV (Constant Linear Velocity) discs spin at a speed which gradually decreases as the disc plays. They offer continuous forward play only, but with time and chapter search and the advantage of an increased playing time of 1 hour per side (long play).

Both disc types can be used double-sided and have two sound tracks analogue sound.

I full duplex RS232 interface allows external control of all drive features from any computer equiped with an RS232 serial interface port. Handshaking prevents data loss, and the data rate can be set to 1200 or 9600 baud. The control protocol is an extension of the F-Code command set which is compatible with all Philips VP400 series drives.

Laser Disc

- 30 cm, with both CAV and CLV type discs. CAV discs have 36 minutes of video per side, CLV discs have 1 hour of video per side, both types of disc have digital sound, (two sound tracks).
- 20 cm, with both CAV and CLV type discs. CAV discs have 12 minutes of video per side, CLV discs have 20 minutes of video per side, both types of disc have digital sound, (two sound tracks).
- single 12cm "clip-disc", with 6 minutes of video with stereo digital sound and 20 minutes of stereo digital sound.
- Note: NTSC television standard Laser Disc may contain both analogue and digital sound (four sound tracks)

Compact discs

Various types of Compact Disc (CD) discs, can be used with the drive, these are :

- 1. 12 cm, single-sided with up to 72 minutes of stereo digital audio.
- 2. single-sided with up to 20 minutes of stereo digital audio.

Unpacking

The following accessories are provided with the drive.

- Installation and operation manual
- Power interconnection cable
- Optional

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- wired remote control (type VP 131) and wire
- batteries (3) for remote control, Type RO3, UM4 or AAA
- programmers reference manual.

Safety instructions

SEE WARNING INSIDE THE FRONT COVER OF THIS MANUAL FOR LASER SAFETY

Your LaserDisc drive is an advanced electronics unit. The following safety instructions must be followed before using it :

- Check if your mains supply voltage is the same as that given on the type plate on the rear of the drive. If your mains supply voltage is different, consult your supplier.
- Make sure air can circulate freely through the ventilation openings of the drive.
- Do not place the drive near a heat source (e.g. a heating system radiator), or in direct sunlight.
- Do not use liquids near the drive; if liquid is spilt into the drive, switch it off and consult your supplier.
- Never attempt to repair the drive yourself. Always consult a qualified service technician.

Note : There are dangerous voltages inside the drive.

General : Please take care that the drive becomes acclimatized pro-

Removal of transport locks

Turn the drive upside down and rest on firm level surface.



 Turn the red transport locks a quarter turn counter clockwise. Remove them from the drive. Store the transport locks for when you may want to transport the drive to another location.

Transporting the drive

When the drive is to be transported, the tray must be put into the transport condition and the two transit clamps must be refitted. Proceed as follows :

- Remove the disc and close the tray by pushing the OPEN/CLOSE button.
- Switch power off.
- Hold in the PLAY/STOP button, switch power on and wait { seconds (PLAY/STOP button still being pressed).
- Switch power off; the drive is now in transport condition.
- Raise the drive at the front sufficiently to insert the transport locks in their holes and screw them tight.



perly. Optical parts of the drive may suffer from condensation when it is brought from the cold into warm surroundings, and the drive may not work.

Siting

- Stand the drive, on its feet, on a firm horizontal surface.
- Ensure that there is at least 24 cm free in front of the disc drawer to allow it to open fully.



 Ensure that the ventilation slots on the top and underside of the drive are not obstructed.

Never stand the drive directly on any electronic equipment that gives off a substantial amount of heat, or near to any heat source. Avoid any position where the drive is subjected to direct sunlight for long periods. Avoid mechanical shock.

Mains connection

f necessary, fit a mains plug to the mains lead as described below.

Important note for U.K. users

The main lead wires are coloured in accordance with the following code :

Green/Yellow : Earth Blue : Neutral Brown : Live

Warning : this unit must be earthed

These colours may not correspond with the colour markings identiting the terminals in your plug, so proceed as follows : Connect the Green/Yellow wire to the terminal marked [], E, coloured Green or Green/Yellow; Connect the Brown wire to the terminal marked L, or coloured Red; Connect the Blue wire to the terminal marked N, or coloured Black.



Wired remote control VP 131

The disc drive is equipped with a wired remote control jack. The wired remote control handset is optional.

Connecting

 Insert the mini jack plug of the remote control into the WIRED RC (7) socket at the rear of the drive.

Note : The remote control handset and the connection wire must be ordered separately. The part number is as follows :

9022 801 31009 Remote control handset and wire (batteries not included).

Inserting batteries

- · Open the battery holder cover.
- Insert the four new batteries in the battery holder as shown inside the battery compartment.
- Close the battery holder cover.

Batteries should last about a year under normal usage. To prevent possible damage to the remote control, remove batteries whenever they are discharged, or whenever you are not going to use the remote control for long periods.

Use only batteries type RO3, UM4 or AAA.

Video connections

The drive has outputs suitable for both RGB monitors and CVBS monitors. How you connect the system depends very much on the application for which you use the disc drive. It is possible to connect two monitors making use of both the Euroconnector and the CVBS (VIDEO) outputs. One or two monitors can be connected via the outputs mentioned together with a controlling computer connected via the RS 232 socket. The various connection possibilities are described below. Also refer to illustration - "Connection and adaptor cables".

Note : Some monitors have a 'time-constant' switch for use with a VCR; this should be set to the non-VCR position when using the VP 312 or VP 380.

Euroconnector to Euroconnector

This is a direct connection, ensuring the highest quality picture and, if the monitor is equipped for it, stereo sound.

It is also possible to use a TV receiver if it is fitted with a Euroconnector socket.

Connect the cable between the A/V EUROCONNECTOR socket (14) on the rear of the drive and the corresponding socket on the monitor. This connection carries both RGB and CVBS signals. Optimum picture quality is obtained if the RGB signals are used. Therefore if the monitor accepts both RGB and CVBS signals, ensure that it is switched to RGB input.

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insert the mains plug into a wall socket. If the drive is not to be used for a long period of time, remove the mains plug from the wall socket.

2 INSTALLATION

If no Euroconnector socket is available :

 Euroconnector-to-DIN AV (audio/video) - CVBS only.
 If the monitor is fitted with a 6-pole DIN AV (Audio-Video) socket, the Euroconnector-to-DIN AV adaptor cable SBC 1012 (4822 321 20485, length 1.5 m) must be used. Connect the Euroconnector plug to the A/V EUROCONNECTOR socket (14) on the rear of the drive and the DIN AV plug to the monitor. Refer to illustration 'Connection and adaptor cables'.

2. Euroconnector-to-BNC - CVBS only

Using Euroconnector-to-BNC adaptor cable SBC 1013 (4822 321 20484, length 1.5 m), connect the Euroconnector plug to the A/V EUROCONNECTOR socket on the rear of the drive and one coaxial BNC plug to the video input of the monitor. Connect the 5-pole DIN Audio plug of this adaptor cable to the Audio input socket of your monitor or to an audio amplifier. Refer to illustration 'Connection and adaptor cables'.

3. CVBS Cinch

Using a Cinch connection cable connect the CVBS Cinch input on the monitor with the VIDEO output (11) on the rear of the drive. Refer to illustration 'Connection and adaptor cables'.

4. Y/C (S-VHS) VP 380 only

Using a Mini-DIN connection cable connect the Y/C (sometimes called S-VHS) Mini-DIN input on the monitor with the Y/C output (19) on the rear of the drive. Refer to illustration 'Connection and adaptor cables'.

Note : If the video input connectors of your monitor are not described here, consult your dealer for advice. A suitable cable may be available.

Audio connections

Amplifier

The Left AUDIO (L1) and Right AUDIO (R2) (13) can be connected through connection cable SBC 043 (4822 321 20308, length 2.5 m) or SBC 044 (4822 321 20344, length 10 m) to an audio preamplifier or amplifier.

Inputs which can be used include CD/TV, AUX, TUNER or TAPE, but do not use the PHONO input. Either or both sound channels may be switched on or off by means of the AUDIO 1 (left) and AUDIO 2 (right) buttons on the optional remote control handset. If a disc contains stereo sound, this will be reproduced stereophonically when both channels are in operation.

Note: If either audio channel is switched off, then the remaining audio signal is routed to both output channels. This avoids 'one-sided' sound from a dual-language disc.

Digital equipment

The DIGITAL OUTPUT socket (12) can be connected to a digital preamplifier of amplifier or to a digital to analogue converter (DAC).

Computer connections : RS 232-C

If using a computer in the application, use a suitable RS 232 connector and an overlay card (consult your dealer for installation). The RS 232 connector is used to connect the RS 232 input on the computer to the RS 232-C socket (8) on the rear of the drive - see Additional Information. Refer to illustration 'Connection and adaptor cables'.

Headphone connections

In locations where sound from a loudspeaker could cause a distraction, e.g.: training location headphones can be connected at the PHONES socket (5) on the front of the drive. The sound level of the headphones can be adjusted with the VOLUME control (16).







2 INSTALLATION





3 CONTROES/CONNECTIONS





3 CONTROLS/CONNECTIONS

4 OPERATING

Controls

Drive front

- OPEN/CLOSE (1)
- For opening or closing the disc-tray.
- PLAY/STOP (2) For switching between 'standby' and 'on' modes.
- STATUS (green) (3) Indicates : standby ready

pausing or at end of disc

speeding up

slowing down

off steady on short on, long off long on, short off flashing steady on and off.

- POWER (4) Indicates whether power is on (green) or off.
- VOLUME (16) Adjusts the headphone sound level
- PAL (green) (18) VP 380 only Indicates that the disc is recorded in PAL television system standard.
- NTSC (green) (17) VP 380 only Indicates that the disc is recorded in NTSC television system standard.

Drive rear

- POWER ON/OFF switch (10) Mains power.
- REPLAY on/off push button (6) [ON ,OFF] Recessed push button, sets the replay function on or off.
- BAUD RATE push button (9) [1200, 9600]
 For selecting the baud rate for RS232-C communications.

Connections

Drive front

 PHONES (5) Allows headphone to be connected.

Drive rear

- MAINS lead socket (15) For connection of the mains lead.
- WIRED RC socket (7) For wired connection of the remote control handset.
- RS232-C socket (female) (8) Provides a 25 pin serial interface for an external computer.
- AUDIO OUT (L1 and R2) sockets (13) Used for connection of an external stereo or 2-channel mono sound amplifier.
- A/V EUROCONNECTOR (14) Provides connection for variety of outputs for a monitor.
- VIDEO socket (11) Provides a CVBS video signal output suitable for a monitor.
- DIGITAL OUT socket (12) Provides digital sound output for a digital audio amplifier.
- Y/C socket (19) VP 380 only Provides a Y/C (S-VHS) video signal output suitable for a monitor.

Operating your drive

The VP 312 drive has been developed for use with a computer (with or without overlay cards). It can also be used in stand alone application with a remote control. If you do use a computer, then dependin on the software you use, you may have to change the setting of the BAUD RATE button (9) from 1200 to 9600 or vice versa.

Handling optical discs

Always handle optical discs by their edge, keep them clean and always return them to their packaging each time you take them ou of the drive.



Care of discs

To ensure the best results from discs follow these guidelines :

- Return the disc to the protective jacket immediately after use.
- Store discs vertically.
- Avoid heat and long exposure to sunlight as this can damage the disc.
- Remove finger prints from the surface using a lint free cloth. Always wipe from the centre to the edge. It is possible to remove more stubborn marks by moistening the cloth with lukewarm soap water.

	-0-0
X	
DO NOT wipe in a circular direction	Gently wipe from the inside to the outer edges

Cleaning disc

Do not use solvents or abrasive cleaners on a disc.

4 OPERATING

Cleaning the drive

As necessary use a lint free cloth to remove dust from the disc drawer.

As necessary use a damp cloth to clean the cover of the drive. Do not use any cleaning fluids such as alcohol, methylated spirits, ammonia or abrasives.

Switching on

- Check that the REPLAY button (6) is in the OFF position (fully out). If the REPLAY button is in the ON position, replay is automatically activated.
- Switch on the drive using the POWER ON/OFF button (10).
- Check that the green POWER indicator (4) is lit and that the green STATUS indicator (3) is out. The drive enters the standby condition.

Inserting a disc

- Press the OPEN/CLOSE button (1), the disc-tray will open.
- Remove the disc you wish to play from its packaging and place it on the disc-tray with the desired label uppermost.



Playing a disc

There are three ways to start play :

- Press the OPEN/CLOSE button (1), the disc-tray closes automaticaly.
- Press the PLAY/STOP button. The disc will build up to speed in accrox. 18 seconds. As the disc builds up speed the green STA-TLS indicator changes to a flashing indication, short on - long off.

OR

 Press the PLAY button (2), the disc-tray closes automatically, the esc starts to build up to speed.

When the end of the disc is reached, the drive returns to the first track and enters the pause mode, the STATUS indicator flashes steady on and off. If no further command is given within 2 minutes, the drive goes to standby and the STATUS indicator goes out.

If repeated playing of the disc is required, the REPLAY button should be in the ON position. The controls on the front of the drive are disabled during replay.

VP 380 only

The PAL or NTSC indicator lights depending upon the disc television system standard.

To stop play and remove the disc

To stop play at any time,

 Press the OPEN/CLOSE button. The status indicator flashes short off - long on, the disc comes to a halt and the disc tray opens. Lift out the disc and return it to its packaging.

OR

· Press the PLAY/STOP button (2). The STATUS indicator flashes short off - long on to show that the disc is slowing down.

When the disc comes to a halt, the drive goes to the standby condition. The STATUS indicator goes out.

 Press the OPEN/CLOSE button, the disc-tray opens. Lift out the disc and return it to its packaging.

Special play functions using the remote control

See inner page front cover. All the functions described in this section may be performed using the optional remote control handset. Some functions have different effects depending upon the present mode (e.g. whether the drive is currently playing a disc or not). CAV and CLV discs also have certain commands which can only be used with that type of disc.

LV = LaserVision LD = LaserDisc CD = CD Audio

(a). STANDBY

[LV] [LD] [CD]

Pressing this button during any play operation will cause the current action to cease. The drive goes to the standby mode. Any on-screen display goes out. If programming is in progress, it is terminated. Pressing any playing mode button while the drive is in standby, causes the drive to commence that action.

(s). PLAY FORWARD

[LV] [LD] [CD]

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Pressing the [>] section of the PLAY button starts forward play (at normal speed).

(s). PLAY REVERSE (CAV only) [LV] [LD] []

Pressing the [<] section of the PLAY button starts reverse play (at normal speed).

(r). STILL (CAV only)

[LV] [LD] [] When either section of the STILL button is pressed, the picture becomes stationary.

OR · Press the disc-tray to close the disc-tray, the disc starts to build

up to speed.

-soon as the correct speed is reached the STATUS indicator compes to a continuous green indication and play commences.

(r). STEP FORWARD OR REVERSE (CAV only) [LV] [LD] [] If the [>] or [<] section of the STILL button is pressed, the following or preceding picture appears respectively.

(I/m). CHAPTER NUMBER TRACK NUMBER, OR TIME CODE INDEX-DISPLAY [LV] [LD] [CD]

In CAV discs, each individual picture has a unique number which is encoded on the disc. Discs may also be divided into chapters; these chapter numbers are also encoded on the disc. To display the current picture number on the monitor screen (Fig. 1), press the PNR button. The play mode is also displayed. Press the button again to remove the display.

STILL

PNR 1642

Fig. 1 Picture number display

To display the chapter number on the screen (Fig. 2), press the CNR button. Press it again to remove the display.

PLAY FWD	CND	2
ILAI I WD	CNR	2

Fig. 2 Chapter number display

In CLV discs and CD discs, an elapsed time code is encoded on the disc. This time code may be in minutes only or in minutes and seconds, depending on the particular disc. Some CLV discs are also divided into chapters, and these chapter numbers are encoded on the disc.

To display the current elapsed time on the screen (Fig. 3), press the PNR button. Press it again to remove the display.

To display the chapter number on the screen (Fig. 2), press the CNR button. Press it again to remove the display.

PLAY FWD

TIME 11 : 23

LV

Fig. 3 Time code display

For CD, the total elapsed of the disc is automatically displayed. Press the PNR button to remove the display. To display the current track number, press the CNR button (the index displays TNR). Press it again to remove the display.

(b). DRIVE AND DISC STATUS DISPLAY [LV] [LD] [CD]

Pressing the DISPLAY button will cause the drive and disc status to be displayed on the screen. If the picture number etc. is displayed on the screen, the drive enters the programming mode. See 'Programming' later in section 5. Disc status (e.g. CAV/CLV, side, size, etc.) is shown on the right and drive status (e.g. audio 1 on) on the left. (Fig. 4)

Pressing the button again switches the display off.

Note : The disc status indication mentioned above is not on every LV-disc.

VIDEO	ON	STEREO
AUDIO1	ON	ANALOG
AUDIO2	ON	SIDE 1
SLOW	1/2	CAV
FAST	2*	

During this search action you will see on the screen a very rapid succession of pictures from the program.

When the button is released, the drive reverts to the mode which it was in prior to searching.

It is often useful to have the picture number etc. displayed while searching.

CLV discs operate in the same way as CAV discs, but the display shows the elapsed time or chapter number, as appropriate. (Not on short chapter - less than 8 seconds).

CD discs perform a slow search with reduced audio level, then after 5 seconds a fast search with no sound.

(Forward search will not work within 5 seconds of the end of the disc, or reverse search within 5 seconds of the beginning.

(t). PAUSE

[LV] [LD] [CD] When the PAUSE button is pressed, the optical read out unit stays in the current position, both audio and video are muted. To resume the previous action, press the PAUSE button once more. While in the pause mode, other functions may also be started by pressing the appropriate buttons (e.g. PLAY, STILL, SEARCH etc.)

(i). SLOW (CAV only)

[LV] [LD] [] Reverse [<] or forward [>] slow motion is obtained by pressing the SLOW button. The slow motion speed may be altered by means of the SPEED + and - buttons.

The speed can be adjusted in steps to 1/2 (default value), 1/4, 1/8, 1/16 of the normal speed (which is 25 frames per second for PAL and 30 frames per second for NTSC), and 1 stop/second or 1 stop/3 seconds of the normal speed (which is 25 frames per second).

(i). FAST (CAV only)

[LV] [LD] [] Reverse [<] or forward [>] fast motion is obtained by pressing the FAST button. Each action moves the optical readout unit at 3 (default value), 4 or 8 times its normal speed. The fast motion speed may be altered by means of the SPEED + and - buttons.

(g+h). AUDIO

[LV] [LD] [CD] The optical discs contain analogue sound for Laser Disc or digital sound for Laser Disc. These can provide stereo sound, or separate sound channels; for example, a commentary in two languages.

When the drive is switched on both sound channels are enabled. In the case of separate sound channels, you can switch one of them off by pressing the relevant AUDIO button (1 or 2). In this case the enabled audio channel appears at both outputs. If the disc contains disc program status information, and two separate sound channels (bilingual) are on the disc, the audio 2 will be switched off automatically. To switch on again, press the appropriate button.

Note : Sound is audible in the forward play mode only (at normal speed).

(m). GOTO PICTURE NUMBER (CAV only)

- [LV] [LD] [] If no picture number is currently displayed on the monitor, press the PNR button. A picture number appears.
- Press the digit button (max. 5) corresponding to the picture number you want to go to (e.g. 2, 2, 1, 3, 5, if you want picture number

1200 BAUD

Fig. 4 Drive and disc status display

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(q). SEARCH [LV] [LD] [CD]

If a specific part of a disc is required, it can be quickly found using the SEARCH button. Pressing and holding the appropriate section of this button moves the optical readout unit in the desired direction at approximately 8 times normal speed.

22135. If you make a mistake, press the CORR button and start again. As soon as you press the first digit the drive assumes the still mode. The number you select is displayed below the current picture number.

· Press the GOTO button. The drive will search for the number selected. During this action sound and video are muted, but the selected number is displayed. On arrival at the selected picture number, the corresponding picture appears on the monitor in still mode. Now you can select any play mode by pressing the corresponding button.

4 OPERATING

(I). GOTO CHAPTER NUMBER

[LV] [LD] []

- . If no chapter number is currently displayed on the monitor, press the CNR button. The chapter number, if available on the disc, appears.
- · Press the digit buttons corresponding to the chapter number (max. 79) you want to go to (e.g. 2 if you want chapter 02). If you make a mistake, press the CORR button and start again. Note that with CAV discs, the drive assumes the still mode as soon as you press the first digit. The number you select is displayed below the current chapter number.
- · Press the GOTO button. The drive searches for the first picture of the chapter selected. During this action, sound and video are muted. On reaching the required chapter, the drive starts normal forward play.

m). GOTO TIME CODE (CLV only) [LV] [LD] []

With CLV discs it is possible to go to a selected time code on the disc.

- · If no time code is currently displayed, press the PNR button. A time position appears on the screen.
- · Press the digit buttons corresponding to the minutes of the time code you want to go to; the number you select is displayed below the time code. If you make a mistake, press the CORR button and start again. Some discs also allow you to enter seconds as well. To enter the seconds, press the ENTER button and then use the digit buttons. For some discs, frames can also be entered. To enter frames, press the ENTER button again and then the digit buttons.
- Press the GOTO button. The drive will search for the time selected. During this action video and sound is muted, and the selected time code is displayed. On arrival at the selected time code, play starts from that point.

Io). GOTO TRACK/NUMBER/TIME CODE [][][CD] When playing a CD disc, either the current track number, or total elapsed time can be displayed on the monitor. Select the index display you want using the CNR button for track number or the PNR button for time code.

- · For track number; press the digit buttons corresponding to the track number you want to go to. If you make a mistake, press the CORR button and start again.
- · For time code; minutes, seconds and frames can be entered, pressing the ENTER button between each entry. The time to enter is the absolute time (total time elapsed from the beginning of the CD disc). If you make a mistake, press the CORR button and start again.
- · Press the GOTO button. The drive will search for the track or time selected. During this action, sound is muted. On arrival at the selected position, play commences.

(f). START

[LV] [LD] [CD] Pressing the START button either starts playing a programmed sequence (if one has been set up), or starts playing the entire disc from the start. This feature can be used to run a programmed sequence, see 'PROGRAMMING' for further information.

(u). CX VP380 only.

Optical discs containing analogue sound may use CX* noise reduction. If present on the disc it will be enabled by the drive. Press the CX button to disable noise reduction. Press the button again to reenable CX noise reduction.

*CX is a trademark of CBS Inc.

(v). 4-CHANNEL AUDIO VP380 only.

NTSC television system standard Laser Disc may contain both analo-

gue and digital sound. If both are present, digital sound is selected by the drive. Press the CX button to select analogue sound (with CX noise reduction). A second press of the button reverses noise reduction, and a third press reselects digital sound.

(b). TV SYSTEM STANDARD VP380 only.

Pressing the DISPLAY button will cause the drive and disc status to be displayed on the screen. The CVBS and Y/C television system standard output of the drive can be selected by pressing digit buttons 0, 1 and 2 :

- 0 = Multi (power-on state)
- 1 = PAL (625 lines 50 frames/second)
- 2 = NTSC (525 lines 60 frames/second)

'Multi' always changes the drive television system standard to that of the disc being played (PAL or NTSC).

'PAL' plays PAL discs but NTSC discs are transcoded to PAL standard (Quasi PAL).

'NTSC' plays NTSC discs but PAL discs are transcoded to NTSC standard (Quasi NTSC).

Note : Line and frame rate do not change for Quasi PAL or Quasi NTSC

REPLAY

The REPLAY button is situated at the rear of the drive and is recessed. Operate it using a pencil or pen.

If the drive is switched on when the REPLAY button is pushed in position (on), the drive automatically starts up in the replay mode, if the drive is already on and the REPLAY button is switched on, play immediately starts at the beginning of a programmed sequence, or returns to the start of the disc.

If the replay mode, the drive is in a continuous play loop. If a programmed sequence is in memory, that sequence will be played over and over again. If there is no programmed sequence in memory, the whole disc will be played over and over again. This feature can be used after a program sequence has been entered, see "PROGRAM-MING" in section 5.

To exit the replay mode, press the REPLAY button at the rear of the drive.

Note : In the replay mode, all controls except the following are disa-

[LV] [LD] []

[][LD][]

(p). TXT VP380 only.

[LV] [LD] []

- Discs that contain Teletext (for example subtitling) can be used in conjunction with Teletext TV's.
- Press TXT button to enable TXT output. Press the button again to disable TXT output.

bled :

REPEAT

Resumes play at the start of the sequence (or disc).

NEXT

Resumes play at the next segment (or chapter) in a sequence.

PNR and CNR

AUDIO 1 & 2

PROGRAMMING

You can program your VP312 using a computer. The VP312 accepts commands using the F-code commands (for overview see table 1). In this case the remote control is still functional.

Note : This drive is not equipped as standard with a battery back-up. Under power down situations all programmed functions will be lost !

It is possible to set up a play sequence by programming picture numbers, chapter numbers or time codes via the remote control handset.

- 1. Press either PNR (for picture number or time code programming) or CNR (for chapter number or track number programming), so that the index display appears on the screen.
- 2. Press the DISPLAY button. The current program (if any) is then displayed on the screen. See Fig. 5.

PROGR	AM 1 PNR	1642
1000	PLAY FWD	2000
3200	FAST* 4	4500
2500	PLAY REV	1000
5100	SLOW: 1/16	51500
2569	STILL 60	2579

Picture Segment Program

PROGRA	AM	CNR	0
1.CNR	5	9.CNR	
2.CNR	7	10.CNR	
3.CNR	9	11.CNR	
4.CNR	16	12.CNR	
5.CNR	18	13.CNR	
6.CNR	20	14.CNR	
7.CNR		15.CNR	
8.CNR		16.CNR	

Chapter Program

TIME	1:23:00
PLAY	17:20:00
PLAY	28:25:00
PLAY	56:55:00
PLAY	59:16:00
	PLAY PLAY PLAY

Time Segment Program

Fig. 5 Programming displays

The drive is now in the programming mode. You are able to modify

Picture numbers may either be entered directly (using the 0 - 9 digit) buttons) and then pressing ENTER, or by storing the current picture number, indicated on the screen. To correct numbers entered directly, use the CORR button. When the cursor is in an empty picture number position, the drive can be controlled in the usual way with the PLAY, SLOW, FAST and STILL buttons. When the desired picture number is reached press the ENTER button, the drive halts and the current picture number is stored.

The required action (PLAY, STILL, etc.) is selected by pressing the corresponding button on the remote control handset and then pressing ENTER. Until ENTER is pressed, the action may be changed simply by pressing another button instead.

With the functions SLOW and FAST, extra information may also be entered by pressing the SPEED + or - buttons. Note that for STILL, it is necessary to enter the duration (in seconds). Pressing the ENTER button moves the cursor to the next entry position. If no action is entered, PLAY is assumed. The program is displayed on the screen below the playing mode. To move on to the next line of the program. press the NEXT button. Pressing this button on the last line of the program moves the cursor back to the first line again.

To move to the second screen, press the DISPLAY button again.

To clear the program displayed, press both CLEAR buttons at the same time.

Pressing the DISPLAY button ends programming and returns to normal operation.

To play this sequence see 'Playing a programmed sequence' below.

The program is saved by the drive until it is cleared (by pressing both CLEAR buttons) or it is updated, or when the power has been switched off.

Chapter program entry

This is performed in a similar way to 'Picture segment program entry described above. Up to 16 chapters displayed on one screen may be stored in any order; repetition of a chapter in the program is also allowed. Chapter numbers must be entered directly using the 0 - 9 digit buttons. To correct an entry, use the CORR button.

The ENTER and NEXT buttons both move the cursor to the next line except when at the last line, when they move the cursor to the first line again.

To clear an entire sequence, press both CLEAR buttons at the same time.

See Fig. 5 Programming display (page 15).

To end programming mode, press DISPLAY. Any empty positions in the chapter sequence will be ignored when the sequence is played back.

the existing program or enter a new program. A flashing cursor indicates the current entry position on the program table. The contents at this position may be changed.

Picture segment program entry (CAV only)

A picture segment program up to 16 entries displayed on 2 screens (8 entries on each) can be programmed. It is displayed as one line on the screen, e.g. format (PNR) 1 action (PNR) 2 1000 PLAY FWD 2000.

To play this sequence see 'Playing a programmed sequence' below.

The program is saved by the drive until it is cleared (by pressing both CLEAR buttons) or it is updated, or the power has been switched off.

CD disc tracks are programmed in a similar way to Chapters, but the only possible function is PLAY FWD.

Time segment program entry (CLV only)

This is carried out in a similar way to 'Picture segment program entry' described above. A time segment sequence format is :

time 1 PLAY

where the time is in minutes and seconds (e.g. 12:45) or minutes only.

The time is entered either directly, using the 0 - 9 digit buttons, minutes and seconds are entered separately, or by storing the current time position during play. If during play you press the ENTER button, the current time position is stored. When entering the time directly, the CORR button may be used for correction. Depending on the disc used, the seconds entered may be ignored.

To move on to the next line of the program, press the NEXT button. Pressing this button on the last line of the program moves the cursor back to the first line again.

To move to the second screen, press the DISPLAY button again.

To clear the complete program, press **both** CLEAR buttons at the same time.

Pressing the DISPLAY button ends programming and returns to normal operation.

To play this sequence see 'Playing a programmed sequence' below.

The program is saved by the drive until it is cleared (by pressing both CLEAR buttons) or it is updated, or the power has been switched off.

CD disc absolute time segments are programmed in a similar way to TIME segments, but the only possible function is PLAY.

As well as minutes and seconds, frames can be entered (value 0 to 74). Drive access accuracy is \pm 4 frames.

Playing a programmed sequence

To play a sequence which has been stored in the memory as described above, press the START button. The drive searches for the first picture of the sequence stored and then starts the required action. The actions stored are carried out successively in the order in which they are stored. At the end of the last item the drive halts (CAV) or goes to pause (CLV). During search actions between items, video and sound are muted.

A sequence can be stopped by pressing any action button (e.g. PLAY, FAST, STILL).

The NEXT button starts to play the next segment or chapter in a sequence.



Fault symptoms and possible causes

Drive remains in standby mode

Check if transport locks have been removed.

Disc does not eject

- Check the REPLAY button.
- Check that the drive is connected to the mains supply and that the POWER indicator is lit.

Disc does not rotate

- Check that the drive is receiving power: the POWER indicator should be lit.
- · Check that the disc-tray is properly closed.
- · Check that the disc is properly loaded.

Disc rotates but picture is weak or absent

- · Check the connection between monitor and drive.
- Check that the disc has been loaded correctly (label up) on the disc-tray. (Some discs have program content on one side only.)
- Press the [>] section of the SEARCH button.
- The drive is in the pause mode : Press the [>] section of the PLAY button.
- VP380 only.

If the sound is good but picture is poor (rolling/tearing/no colour) check that the disc being played is the expected television system standard (PAL/NTSC).

Drive sticks at particular point on disc

- Press the [>] section of the SEARCH button momentarily to skip over the affected part.
- Remove the disc and wipe both surfaces clean with a soft, dry cloth to remove possible opaque surface marks.

Special effects (still, slow, reverse, fast) do not function

 Check that a CAV disc is being played; when playing CLV discs, the special-effects buttons do not function.

Unstable still picture

 If still pictures taken from a fast moving scene sometimes flicker, this is no fault of the drive but results from the basic program material used for disc production.

Good picture but no sound

- Make sure that the drive is in its forward playing mode (in all other modes there is no sound).
- Check that the sound channels AUDIO 1 (left channel) and/or AUDIO 2 (right channel) are switched on.
- If an LV-ROM disc is being played, there may be data and therefore no sound on the disc. Try a non-LV-ROM disc.

Digit buttons are inoperative

- Check REPLAY button.
- Check whether the picture number or chapter number is displayed on the monitor. If not, press PNR or CNR.

Remote control does not function correctly

- Check batteries in remote control handset.
- If the drive is in the replay mode, most controls are disabled.
- Check mini jack plug is inserted correctly in the WIRED RC socket.

Technical information

Optical discs

LaserVision/Laser Disc

Disc diameter Disc thickness Disc speed

Maximum capacity 300 mm - disc 200 mm - disc

Max. playing time 300 mm - disc

200 mm - disc

Average track pitch

Compact disc

Disc diameter Disc thickness Disc speed

Maximum capacity 120 mm disc 80 mm disc Average track pitch

74 minutes 26 minutes 1.6 μm

1.2 mm

1.6 - 1.8 µm

120 mm or 80 mm

600 - 200 r.p.m.

300 mm or 200 mm

CAV disc : 1500 r.p.m.

CLV disc : 1500-570 r.p.m.

CAV disc : 54 000 pictures per side

CAV disc : 24 000 pictures per side

CAV disc : 36 minutes per side

CAV disc : 16 minutes per side

CLV disc : 24 minutes per side

CLV disc : 1 hour per side

2.7 mm

Drive

Front loading motor-powered disc-tray

startup time	
LV 300 mm :	≤ 20 sec
LV 200 mm :	≤ 14 sec
CD 120 mm :	≤ 10 sec
CD 80 mm :	≤ 10 sec
Clip 120 mm :	≤ 10 sec

unload time(time between Eject command and tray open)LV 300 mm :≤ 9 secLV 200 mm :≤ 4 secCD 120 mm :≤ 3 secCD 80 mm :≤ 3 secClip 120 mm :≤ 3 sec

SSL (solid state laser) Laser type Wavelength Aperture Output of laser

AIGaAs semiconductor 780 nm 0.5 < 5 mW

Random access time CAV, 300 mm

CLV, 300 mm

typically 3 sec max. typically 12 sec max.

The drive fails to respond when under computer control

Check baud rate and parity.

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- Check the connections to the relevant interface.
- Ensure that DATA IN and DATA OUT are the right way around (RS232-C).
- Check that the DTR signal from the drive is being received by the computer (RS232-C).
- Check the CTS signal of the computer.
- To reset drive, switch the power off, wait ten seconds, switch power on.

On-board programming

Capacity of on-board character display

Program retention (with power off) Mains voltage Mains frequency Up to 2 x 8 picture number/time code segment and 2 x 8 chapter segments

12 lines of 24 characters each (F-C code programmable)

not retained (battery - backed memory retrofittable) 220 to 240 V a.c. (± 10 %) 50 to 60 Hz (+/- 5 %)

6 ADDITIONAL INFORMATION

Power consumption
Electrical safety
Operational conditions
Rel. humidity
Storage conditions
Rel. humidity
Dimensions
disc-tray open
Weight
TV system

Video

CVBS output Cinch Euroconnector pin 19

RGB output Europconnector R (pin 15) G (pin 11) B (pin 7)

Video bandwidth

Signal-to-noise ratio

Timebase instability

Audio

Analog Audio output Cinch Audio output Euroconnector pins 1 & 3

Audio bandwidth Signal-to-noise ratio

Channel separation

Digital

Output voltage

Euroconnector pins 1 x 3

Signal to noise ratio Dynamic range Channel separation Digital out

50 W approx.

1 V	± 50 m\	/ into	75 obr	
* pp	± 50 mV	in ito	70.0111	1

0.7 V into 75 ohm 0.7 V into 75 ohm

0.7 V into 75 ohm

RGB : PAL MHz (-3 dB),3 CVBS : MHz (-3 dB),3 encoded VP380 : NTSC CVBS 4.2 MHz (-8 dB) 40 dB typ. unweighted (disc dependent) 50 dB typ. weighted (disc dependent) less than 20 ns (normal play)

550 mV r.m.s./1k ohm at 100 % modulation depth

275 mV r.m.s./1k ohm at 100 % modulation depth 20 - 20 000 Hz - 3 dB >50 dB weighted VP380 : CX on > 62 dB (disc dependent) >50 dB

Cinch 200 mVrms ± 1.5 dB at -20 dB, 1 KHz Cinch 100 mVrms ± 1.5 dB at -20 dB, 1 KHz \geq 90 dB \geq 86 dB \geq 80 dB 0.5V_{pp} \pm 20 % into 75 ohm

A/V Euroconnector pin	alamat
	signal
1	audio out (right)
2 3	not connected
3	audio out (left)
4	audio earth
4 5 6	blue earth
	not connected
7 8	blue out
	disc drive status 12 V
9	green earth
10	not connected
11	green out
12	not connected
13	red earth
14	earth
15	red out
16	fast blanking : 2.5 V into 75 ohm (RGB status)
17	CVBS earth
18	RGB status earth
19	· CVBS out
	(also acts as sync out when using RGB) not connected
20	not connected
21	socket earth



RS232 interface

Serial computer interface, in accordance with international communication standard EIA-232-D. Full duplex 1200/9600 baud (selectable) 8 data bits, 1 stop bit, no parity



The drive is fitted with a 25-pole female D-type connector with the following pin connections :

PIN SIGNAL

Y/C CONNECTOR



PIN SIGNAL 1 GND 2 GND 3 Y output 4 C output

- 2 (T x D) transmitted date from drive to computer
 3 (R x D) received data from computer to drive
- 5 (CTS) clear to send : a signal from computer to drive indicating the computer is ready to receive data
- 7 (GND) logic ground
- 20 (DTR) data terminal ready : a signal from drive to computer indicating the drive is ready to receive data.

6 ADDITIONAL INFORMATION

Note :

Detailed information for programmers is provided in the programmer's guide. (This may be ordered seperately).

TABLE 1 - F-CODE COMMAND LIST

This table lists the necessary codes to be sent by the computer to the drive in order to perform each function.

halt.

20

dec = decimal code hex = hexadecimal code char = character

dec	hex	char	function	dec	hex	char	function	
36	24	\$0	Replay switch disable			FxxxxxNyyyyyA	Goto picture	
00	10 T	\$1	Replay switch enable (default)			,,,,,,	number xxxx and	
39	27	1	Eject (open the frontloader tray)				play until yyyyy then	
40	28	(0	# CX off				repeat until cleared.	
40	20	(0	# CX on	72	48	HO	Remote control not routed to	
				12	40	110	computer (default)	
		X	# CX normal (default)			H1	Remote control routed to	
41	29)0	Transmission delay off (default)				computer	
11222)1	Transmission delay on	70	40	10	Local front-panel buttons disabled	
42	2A		Halt (still mode)	73	49	10	Local front-panel buttons enabled	
44	2C	,0	Standby (unload)			11		
1/201	1000000	,1	On (load)			10	(default) Remote control disabled for drive	
47	2F	/	Pause (halt + all muted)	74	4A	JO		
58	ЗA	: .	Reset to default values			112	control	
63	ЗF	?F	Picture number request			J1	Remote control enabled for drive	
		?C	Chapter number request				control (default)	
		?T	Time code request	76	4C	L	Still forward	
		?N	Track number	77	4D	M	Still Reverse	
			information request	78	4E	N	Normal play forward	
		?Snn	Track start time request	79	4F	0	Normal play reverse	
		?1	Disc I.D. request	81	51	QxxR	Goto chapter number and halt	
		?D	Disc program status request			QxxxN	Goto chapter number and play	
		?P	Drive status request			QxxyyzzS	Play chapter/track (sequence)	
		?E	Disc lead-out start request				and halt	
		?U	User code request			Qxx[mmssff]N	Goto track number	
		?=	Revision level request				[time code in track] and play	
65	41	AO	Audio-1 off			QxxP	Goto track number and pause	
00	41	A1	Audio-1 on (default)			QxxyyzzA	Play chapter/track (sequence)	
66	42	BO	Audio-2 off			Groff James 1	then repeat until cleared	
00	42	B1	Audio-2 on (default)	83	53	SxxF	Set fast speed value, 3, 4, or 8	
07	40			00	00	SxxxS	Set slow speed value, 1/2, 1/4,	
67	43	CO	Chapter number display off			32223	1/8, 1/16, 1 step/sec or	
		~	(default)				1 step/3 sec	
		C1	Chapter number display on			SA	# Sound forced analogue	
68	44	DO	Picture number/time code display			SA	(4-channel NTSC disc)	
			off (default)				# Sound normal	
		D1	Picture number/time code display on			SN		
		D/	Text on screen	~ .		T	(digital sound if available)	
69	45	EO	Video off	84	54	TmmssffN	Goto time code and play	
		E1	Video on (default)			Tmmssffl	Load time code information register	
		EM	# Video multistandard			TmmssffS	Load time code stop register	
		EP	# Video transcoded PAL			TmmssffA	Load time code auto-stop register	
		EN	# Video transcoded NTSC			TmmssffP	Goto time code then pause	
70	46	Fxxxxxl	Load picture number information			TmmssffNmmss	sffS Goto first time code and play until	
			register				second time code, then halt	
		FxxxxxS	Load picture number stop register			TmmssffNmmss	sffA Goto first time code and play until	
		FxxxxxR	Goto picture number then				second time code, then repeat until	
			Still mode				cleared	
		FxxxxX	Goto picture number then normal	85	55	U	Slow motion forward	
		17000011	play forward	86	56	V	Slow motion reverse	
		FxxxxxQ	Goto picture number and continue	87	57	Ŵ	Fast forward	
		1 11111	previous play mode	88	58	×	Clear	
		Evone	Load picture number autostop	90	5A	ź	Fast reverse	
		FxxxxxA		90	UM.	£		
		5	register					
		FxxxxP	Goto picture number	Mad	tes :			
		12 No. 100	then still mode			mmand must be to	rminated by a carriage return <cr>.</cr>	
		FxxxxXyyyyyS	Goto picture					
			number xxxxx and			y,z) must be in AS	CII; leading zeros are optional.	
			play until yyyyy then		m, s, f		lauton nonanda framas	
			halt	Digits mm,ss,ff represent minutes, seconds, frames.				

-

- Digits mm,ss,ff represent minutes, seconds, frames.
 Commands marked # are for VP380 only.

CABBITTONAL INTONMATION

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TABLE 2 - ACKNOWLEDGEMENTS BACK TO EXTERNAL COMPUTER

On some F-Code commands, the drive will return a response code to the host computer. These are summarised below.

dec	hex	response syntax (ASCII)	description	dec	hex	response syntax (ASCII)	description
79	4F	0	Returned when disc-tray is opened by an F-code command ":" or when disc-tray is open and a command which			A 8	Acknowledgement on TmmssffN or TmmssffP when completed, or on TmmssffNmmssffS or TmmssffNmmssffA when started
83	53	S.	expects a response is received Acknowledgement on ON (,1) command when disc reaches			A 9 A N	Acknowledgement on Tmmssffl when passed N e g a t i v e
85	55	U	correct speed Acknowledgement on ON (,1) command when no disc is loaded				acknowledgement : picture number, chapter number or time code in error
61	ЗD	= x1 x2 x3 x4 x5	Returned after revision level	Notes			
70	46	F x1 x2 x3 x4 x5	request (?=) Returned after picture number			onse is terminated by	a carriage return <cr>.</cr>
67	43	C x1 x2[x3 x4]	request command (?F) Returned after chapter/number request command (?C)			se characters, includir .x12) are in ASCII.	ng leading zeros, are sent.
78	4E	N x1 x2 x3 x4 x5 x6	Returned after track number information request command (?N)				
83	53	S x1 x2 x3 x4 x5 x6					
69	45	E x1 x2 x3 x4 x5 x6	Returned after disc lead-out start request command (?E)				
68	44	D x1 x2 x3 x4 x5	Returned after disc status				
73	49	l x 1x 12	Returned after disc i.d. request				
80	50	P x1 x2 x3 x4 x5	command (?I) Returned after drive status				
84	54	T x1 x2 x3 x4 x5 x6	Returned after time code				
85	55	U x1 x2 x3 x4 x5	Returned after user code				
88	58	х	Returned after ?F,?C,?T,?N, ?Snn, ?I, ?D, ?E, ?U when				
65	41	A0	information is not available Acknowledgement on FxxxxR, FixxxxIQ or FixxxXP when completed				
		A1	Advinceledgement on FxxxxX when completed, or on FixeconNyyyyyS or FixeconNyyyyyA when started				
		A.2	Adknowledgement on Fixecos when stopped, or on				
		A3	Ficocol Nyyyy S when completed Actinomiedgement on Fixoooxl				

when passed Adknowledgement on TmmssffS when stopped, or on TimmssffNimmssffS when completed Adknowledgement on FxxxxA or TimmssfA when stopped Adknowledgement on QxxX, or QxxR, when completed Adxnowledgement on QxxyyzzS when completed

A4

A5

A6

A7

GADDITIONAL INTONALION

-

TABLE 3 - DRIVE RESPONSES TO COMPUTER ON COMMANDS FROM REMOTE CONTROL HANDSET (OPTIONAL)

Drive commands from remote control handset when routed to host computer, after H1 command (RC to computer on), are of the form :

dec	hex	syntax		
76	4C	Lx		

Where x is given by the following codes :

EJECT	Е
STANDBY DISPLAY	1
NEXT	÷
CLEAR	X
ENTER	P
START/REPEAT	F
AUDIO 1	A
AUDIO 2	В
CNR	R
PNR	D
CORR	C
GOTO	K W
FAST > FAST <	Z
SLOW >	
SLOW <	U T
SPEED +	H
SPEED -	G
TXT	Y
PAUSE	V
SEARCH >	>
SEARCH <	<
STILL >	L
STILL <	M
PLAY >	N
PLAY <	0
CX	(

Note :

There is no EJECT button on the VP131 remote control handset.

Similarly, when an H1 command routes RC commands to the host computer, the numeric keys of the remote control handset, will give a response of the form :

dec	hex	syntax		
86	56	Vx		

Where x is the key value in ASCII :

DIGIT 0	0
DIGIT 1	1
DIGIT 2	2
DIGIT 3	3
DIGIT 4	4

DIGIT 5 DIGIT 6 DIGIT 7 DIGIT 8 DIGIT 9

Nota : Each response is terminated by a carriage return <CR>.

5

6

7

8

9



TABLE 4 - CODES FOR BUILT IN CHARACTER GENERATOR

ASCII	DISPLAY	HEX-CODE	ASCII	DISPLAY	HEX-CODE
[space]	[background]	20	[O]	[O]	4F
[!]	11	21	[P]	[P]	50
["]	0	22	[Q]	[Q]	51
[#]	[white squares]	23	[R]	(R)	52
[\$]	[blank video]	24	[S]	[S]	53
[%]	[36]	25	(T)		54
[&]	557	26	[U]	[U]	55
[7]	D	27	M	[0] [M]	56
[(]		28	[W]	[W]	57
[)]		29			58
Č)	m	2A	M	M	59
[+]	[+]	2B	[Z]	[7]	5A
i.i		2C	[[]]	[(]]	5B
[-]		2D			5C
[.]		2E	[11]	[telephone]	5D
Й		2F			
[O]	10	30		[arrow up]	5E 5F
[1]		31		[arrow down]	
[2]	125	32	[a]	[a]	60 61
[2] [3]		33	[b]	[b]	62
[4]	540	34	[C]	[0]	63
[5]		35	[d]	[0] [d]	64
[6]		36	[e]	[e]	65
[7]	17	37	[7]	[6] [f]	66
[7] [8]		38	[g]	[g]	67
[9]		39	[h]	[h]	68
		3A	[1]		69
		3B	[]]		6A
[<]		3C	[k]	[k]	6B
[=]	EZ				6C
[=] [>]		3E	[1] [m]	[m]	60
[?]	[7]	3D 3E 3F	[n]	[n]	6D 6E 6F
[?]	[begin/end string]		[0]	[O]	6E
	(not displayed)	40	[q]	[q]	70
[A]	143	41	[q]	[g]	70 71
(A) (B) (C) (D) (E) (F) (G) (H)	8	42	[r]	[q] [r] [s] [t] [u] [v]	72
[C]	10	43	[S]	[5]	73
[D]	P	43 44	[S] [t]	[]	74
E	12	45	[u]	[1]	75
[F]	15	45 46 47	[V]	[V]	76
[G]	(G)	47	[w]		77
(H)	3-4	48	[X]	[x]	78
	NERDER NE	49	[y]	[w] [x] [y] [z] [£]	72 73 74 75 76 77 78 79 7A 79 7A 7B 7C
[J]	54	4A	[Z]	[z]	74
[] [J] [K] [L] [M]	90	4B	[z] [{] [] [)]	(6)	78
	LI.	4B 4C	[]]	[arrow left]	70
[M]		4D	D1	[\$]	70
[N]	N LINE	4D 4E	[-]	Tenness alashaft	7D 7E
				francise inflind	



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