

Domestic VCR's

Domestic VCR's are some times used to record from CCTV cameras this is mainly due to their availability and price. However there are several problems to be noted when considering the use of a domestic VCR.

- 1: The domestic VCR is not intended for use over long periods and the picture quality will degrade very quickly after only a few months of operation.
- 2: The time that a domestic VCR will continually record is limited to either 4 or in some cases 8 hours.
- 3: There is no method of automatically triggering the VCR to start and stop recording.

In short the use of domestic VCR's is not recommended.

Time laps VCRs

Time lapse VCRs used are different to domestic machines in two important respects. Firstly, an industrial machine is designed and built to a standard that will enable it to run 24 hours a day, 365 days a year. A normal domestic machine would be expected to operate for a fraction of this time and so the moving parts can be designed to a lower standard and hence cost.

Also the VCRs used in CCTV systems are typically 'Time-Lapse' machines capable of stepping the tape at slow rates and hence making a standard 3-hour video cassette last for longer periods, often up to 40 days.

If it is necessary to record audio as well as video signals it is necessary to use a machine with linear recording capability, normally only available in 12 hour or 24 hour recording modes. Here the tape is moved not in a step-wise fashion but is driven through evenly at approximately 1/4 (12Hr) or 1/8 (24Hr) of normal speed.

When using a VCR in time-lapse mode it is important to realise that not all of the pictures from the camera are being recorded.

For example with a VCR in 24 hour mode, only one picture in 8 coming from the camera is actually being laid onto the tape. Hence there is a short interval between each recorded picture of approximately 1/3 sec. and this gives rise to the jerky 'early movie' type pictures on playback.

24 Hour machines are popular due to their relatively low cost and ease of use in that the tapes need only be changed once per day.

Where coverage is required for longer periods, e.g. over weekends or even holidays when no staff are available to change tapes, then a time lapse machine capable of running for periods up to 96 hours is required.

These are normally much more expensive, capable of running for up to 960 Hours.

Most time-lapse VCRs are equipped with an alarm input driven by a volt-free contact.

This enables the VCR to be switched from time-lapse to real-time (3 Hour) mode automatically by an external movement detector, e.g. a PIR. The VCR will then run in real-time for a period up to several minutes, recording all the available information from the camera before returning to the normal time-lapse mode until another alarm is detected.

Recording resolution

The most common mistake people make when using VCR's is they will use high resolution cameras and monitors and then expect the recorded picture to be better than a medium resolution camera. This is not the case, as a VHS VCR whether it is a domestic or time laps unit will only record at a maximum of 300 TVL.

VHS

The VHS (Video Home System) standard VCR is capable of achieving resolutions of 300 lines for B & W pictures and 240 lines for colour.
The VHS system is ideally suited for use with medium resolution cameras.

SVHS

The SVHS (Super Video Home System) standard VCR is capable of achieving resolutions of 400 lines for B & W pictures and 340 lines for colour.
The SVHS system is ideally suited for use with high-resolution cameras.

Tapes

Recording in time-lapse mode is particularly arduous for the videocassette tape itself because the tape is being jerked along step-by-step as each new picture is recorded and so is liable to stretching. Also it is in contact with the video head of the VCR, which is continually spinning at some 1500 r.p.m. and so is subject to much higher levels of wear than are experienced in domestic machines.

It is for these reasons that only high-quality videocassettes should be used and that they are changed frequently.
Some official guidelines recommend that any one tape does no more than 10 passes through a machine before being archived or replaced.