

## VHS Tape Travels

### *Transcript*

This is the Sony SVO-5800 VHS machine. Here I am inserting a cassette into the cassette compartment, which activates a switch and the tape is pulled into the machine. With the lid now open, a loop of tape is pulled out of the tape by the threading guide. Pressing play, the tape transport engages and the tape is fully threaded into the tape path. There are basically two sides: the supply side—where the tape enters the machine—and the take-up side—where it goes back into the cassette. We're threading again here to take a look at the tape path components on the supply side. P1 here is lining up the tape as it comes out of the cassette to pass over the full erase head perfectly so that when the record function is used tape is properly erased for recording. The next guide is called the inertia roller. Firstly, it provides a little bit of tension to keep the tape in perfect contact with the full erase head, but it also keeps the tape from undergoing small, quick changes in tension as it winds around the supply guides. This large roller helps keep the motion of tape as smooth as possible as it feeds around the upper drum. The entrance roller is the component that actually pulls the tape into the transport during threading, but this guide also keeps the tape at a perfect height as it passes over the upper drum, allowing the tape to be aligned with the video heads. The slant poles allow the tape to contact the video drum at the right angle with the proper tension for reading or writing the data to videotape. They have no moving parts; they're just steel posts helping the tape contact the drum properly.

The head, mounted inside the scanner drum, may be the most delicate mechanical part of the entire VCR. And it's responsible for creating or interpreting the tiny tracks recorded on the videotape. Mounted inside the upper drum, rotating 1,800 times per minutes, these tiny components are ultimately what make video recording and reproduction in a VCR possible.

The exit guide nicely complements the entrance guide. It helps wrap the tape around the video drum during threading and also keeps the tape perfectly positioned for reading audio and video as the tape passes off the upper drum.

The next component in the tape path is the audio and control track head. The audio head records and plays back audio. And the control track head has a critical job. It records a steady pulse signal on the bottom edge of the tape that enables the VCR servo circuit to govern tape and video drum movement precisely so that the spinning heads are exactly positioned over the tiny video tracks on tape.

After the tape passes the final take-up guide P4, it's sandwiched between the capstan and the rubber pinch roller, which is working with the servo system to move the tape through the tape path. The movement of the capstan is extremely precise, and it allows for the tape to move smoothly and at a constant speed during playback so that the recorded video and audio can be output to a monitor for viewing. [video playing]