Convert Philips VY 0010, VY 0011 or JVC HC-F303 to 720 kB

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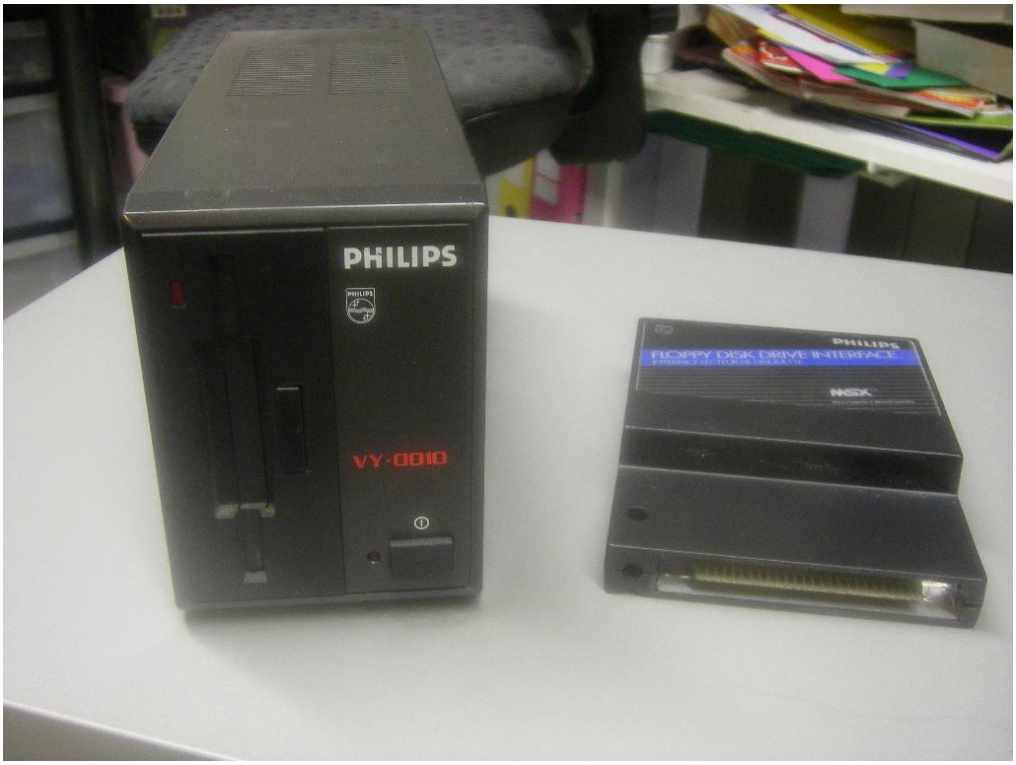
Warning:
The most important part in the computer is the printed circuit board (PCB). Parts can be replaced, but not the PCB. Do not try to unsolder the parts, but cut them loose and then remove the solder pins. The use of IC sockets is recommended.

These external disk drives for the MSX have a storage capacity of 360 kB; the disks are used single-sided. There are many brands of external disk drives and the conversion to 720 kB (double-sided) is largely equal to the one described here. This description concerns the conversion of one of the most common disk drives, the Philips VY 0010 with interface, but is also applicable to other types of external disk drives, such as the Philips VY 0011 and the JVC HC-F303. The interface is required when the MSX does not have its own disk drive or if it is to be used as the 2nd, 3rd, 4th, 5th or 6th disk drive. The replacement disk drive is approximately 15 mm lower than the original disk drive.



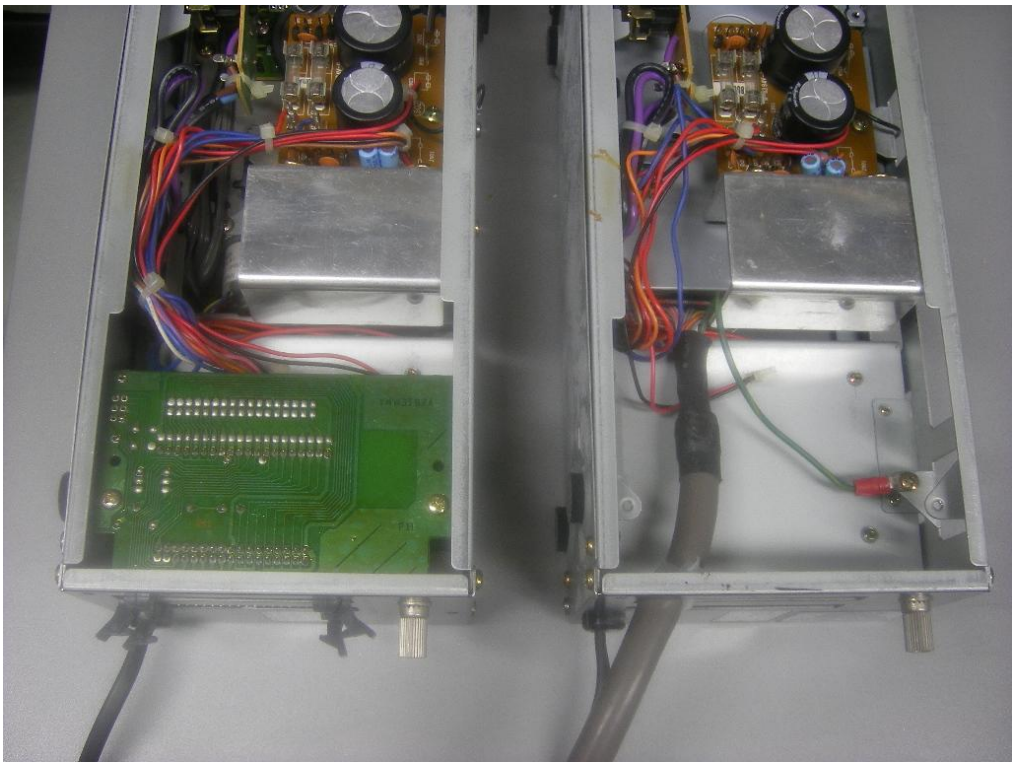
The Philips VY 0010 disk drive with interface.

Requisites:

- Disk drive suitable for MSX and correctly configured as an A- or B-drive (depending on the application).
- Disk-ROM (preferably with IC socket).
- Plastic angle profile, 15 mm high.
- Sealant adhesive or double-sided tape for mounting the angle profile.
- Cable tie.

Disassembly:

- Remove the disk drive.
- Remove both PCBs containing the connectors for the computer and second disk drive.



On the left the disk drive in its original state and on the right with the PCBs removed.

Mounting the disk drive:

- Attach the angle profile to the new disk drive using adhesive or double-sided tape.
- Slide the new disk drive slightly into the enclosure from the front.
- Connect the power supply cable to the disk drive.
- Connect the original disk drive cable directly to the disk drive.
- Now slide the disk drive all the way into place.
- Secure the ground wire lug to a mounting point on the removed circuit board.
- Create a strain relief for the disk drive cable by securing it to the enclosure with a cable tie.
- The power cable from the removed PCBs is no longer used and may remain loose.

On the left the double-sided disk drive with angle profile, on the right the original single-sided disk drive.

On the left the original single-sided disk drive, on the right the new double-sided disk drive.

The new double-sided disk drive with connected cables.

On the left the VY 0010 before the conversion and on the right after the conversion.

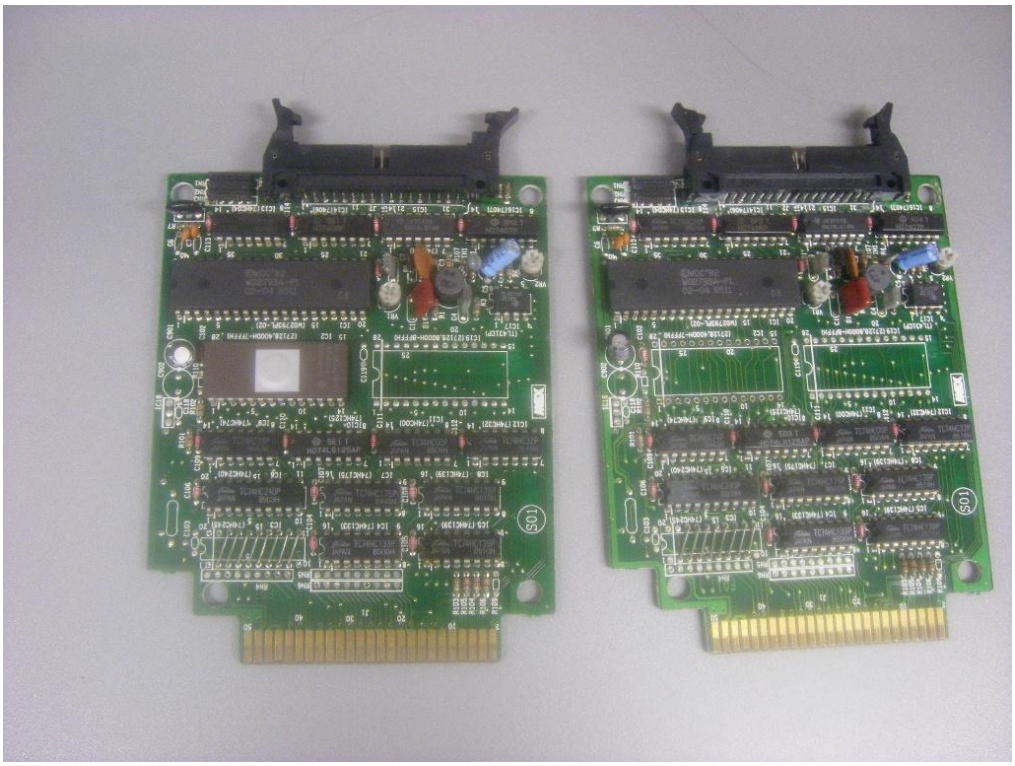
The back of the VY 0010 with a cable tie as strain relief.

The old disk drive and redundant PCBs.

Conversion of the interface:

The only necessary modification to the interface is replacing the disk ROM. For most interface types, this is an EPROM of type 27C128. In this example, a so-called fast disk ROM is used as the replacement ROM, which is also used in the manual for installing a 720 KB disk drive in a Philips NMS 8230.

- If the disk ROM is installed in an IC socket, remove the ROM from the socket.
- If the ROM is soldered to the PCB, cut all the pins and then remove them one by one with tweezers. Thoroughly vacuum all the print spots to ensure no traces of tin remain.
- Preferably, solder a 28-pin IC socket to the PCB and place the new EPROM in it. The new EPROM can also be soldered directly to the PCB.



On the left the interface with and on the right without the original EPROM.

The interface with replacement disk ROM.

➔ Now test the operation.

This conversion is easy to test. Connect the disk drive to the interface and plug it into a computer.

- Format a disk using the CALL FORMAT command. You can now format disks both single-sided and double-sided.
- The computer should now also be able to boot from a double-sided disk.

Although this conversion is relatively simple, the following errors may occur:

- Problem: The disk drive light remains on continuously.
  Cause: The disk drive cable is connected incorrectly; rotate it 180 degrees.
- Problem: The computer does not display DISK BASIC.
  Cause: Defective EPROM or a bad solder joint.
- Problem: The disk drive displays DISK OFFLINE or another error message.
  Cause: The new disk drive is defective or not compatible with MSX.