

Replacing the 720 kB disk drive of a Philips NMS 8245

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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.

The Philips NMS 8245 is standard equipped with a double-sided disk drive (720 kB).



The Philips NMS 8245 MSX-2 computer.

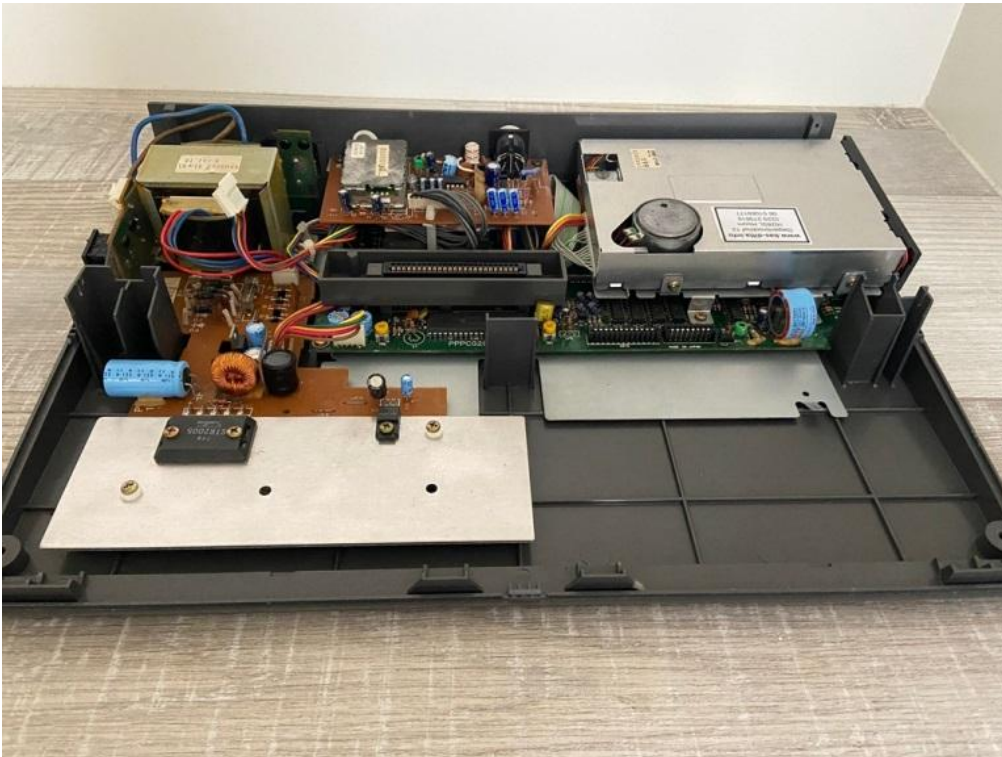
Requisites:

- Disk drive suitable for MSX.

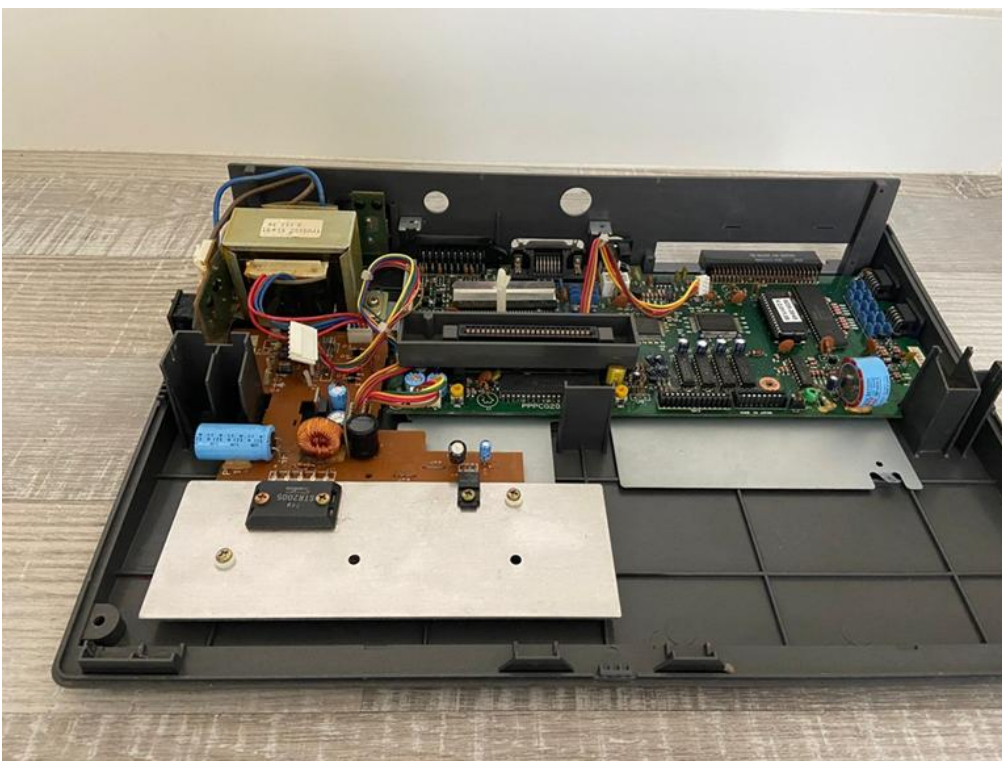
Disassembly

- Remove the case, which is attached with four screws. There are two clips, one on each side of the outer casing. Disconnect the cable from the main board from the cover.
- Remove the keyboard, which is connected to a PCB with two band wires attached to connectors, from which they can be pulled out. The blue earth wire can also be disconnected.
- Remove the AV-PCB, which is attached with two screws. Disconnect the cable to the motherboard on the motherboard side.
- Remove the disk drive, which is secured with two screws. Pull the disk drive cable and power cable from the drive.
- Remove the bottom plate from the disk drive, which is attached with three screws.

- Remove the power supply PCB, which is attached with two screws. Remove the transformer cable from this PCB. Disconnect the cable to the motherboard on the motherboard side.



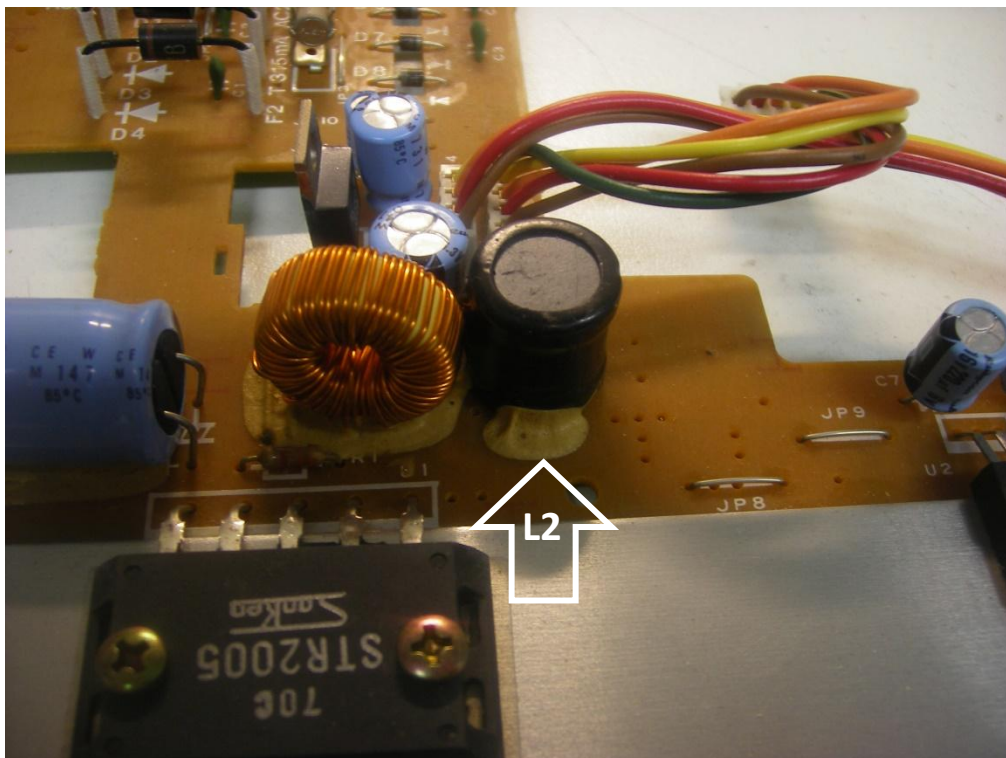
The original double-sided disk drive.



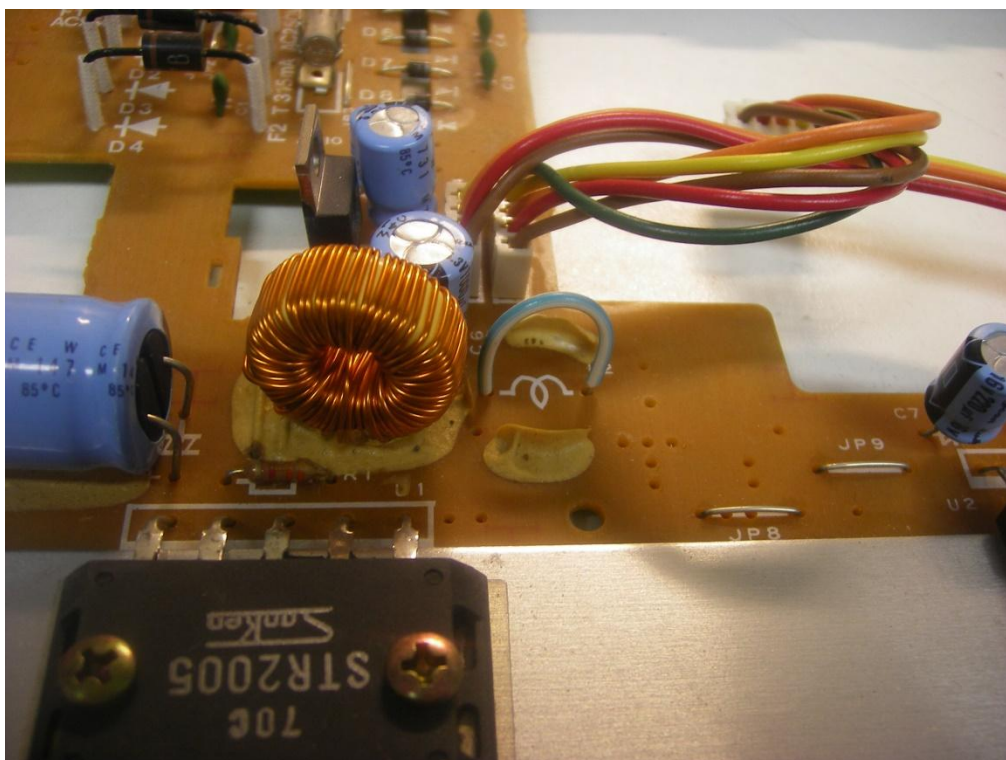
After disassembly.

Adjustments to the power supply

The original disk drive of the Philips NMS 8245 requires both +12V DC and +5V DC. The replacement disk drive has a 34-pin connection and requires only +5V DC. Because the new disk drive requires more power from the +5V DC powerline distortions can be seen on the screen during disk activity. This problem can be solved by replacing coil L2 on the power supply PCB with a wire.



The power supply's PCB before the adjustment.



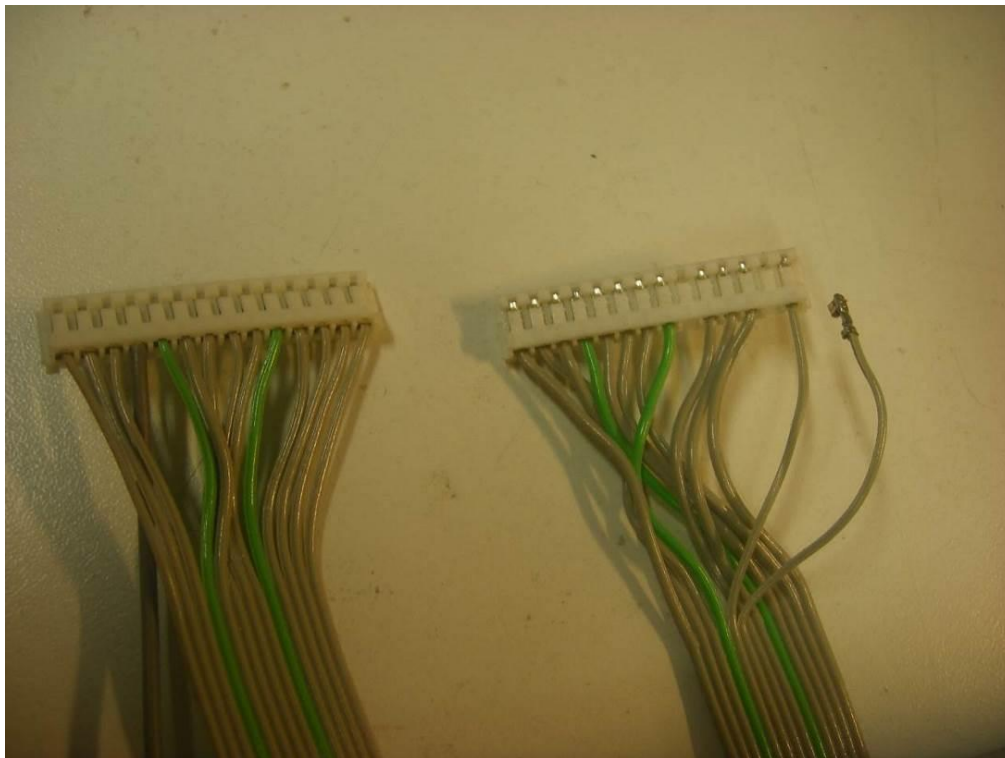
The power supply's PCB after replacing L2 with a wire.

Adapting the 14-pin disk drive cable

The existing cable can be reused, but it needs to be rewired. This is done by putting several wires to different positions on the 14-pin connector at the disk drive side of the cable. It can then be plugged into the 34-pin disk drive connector. The 'thicker' gray wire (pin 11) will be removed.

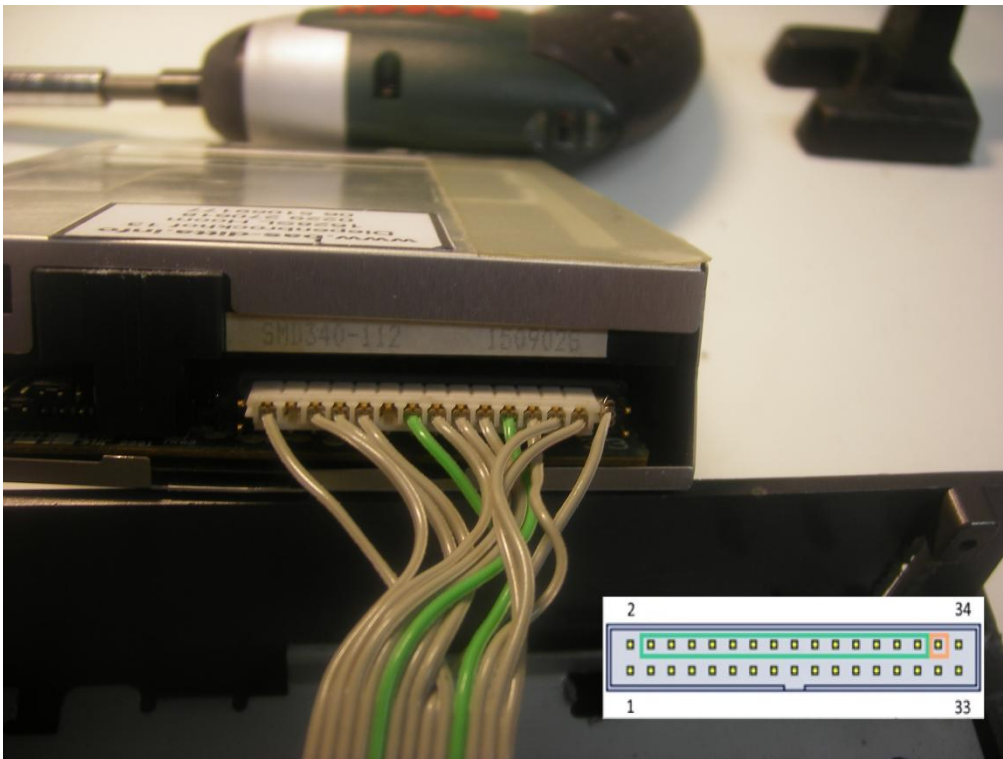
Connections of the 14-pin cable:

| Main board side | | Disk drive side |
|-----------------|-------|---|
| 1 | ----- | 3 |
| 2 | ----- | 8 |
| 3 | ----- | 9 |
| 4 | ----- | 10 |
| 5 | ----- | 11 |
| 6 | ----- | 4 |
| 7 | ----- | 5 |
| 8 | ----- | Connected right next the 14-pin connector at position '15'. |
| 9 | ----- | 1 |
| 10 | ----- | 7 |
| 11 | ----- | Remove. |
| 12 | ----- | 12 |
| 13 | ----- | 13 |
| 14 | ----- | 14 |



Left: cable with original wiring.

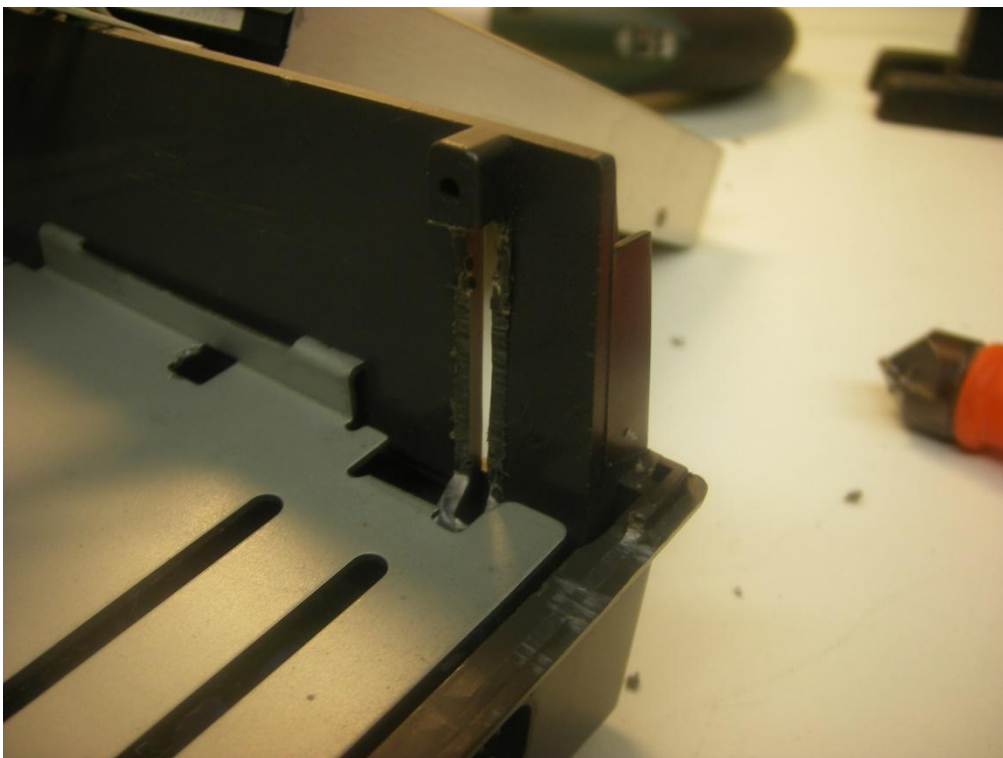
Right: the rewired cable.



This is the way to connect the rewired cable without the need for a conversion PCB.

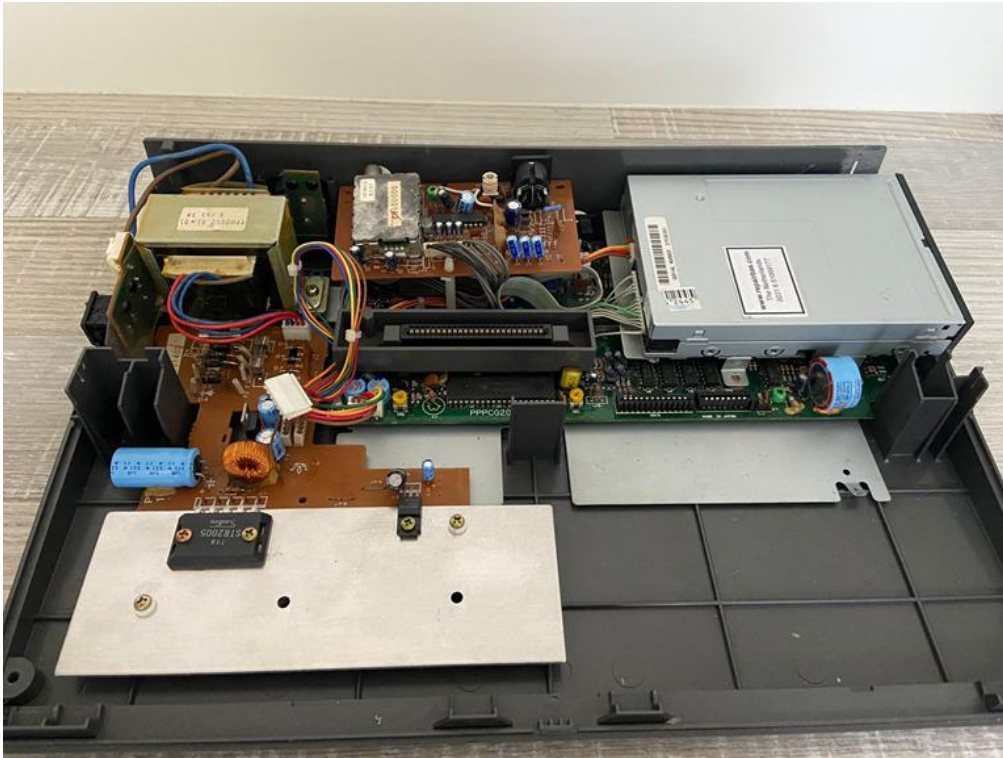
Mounting the disk drive

The disk drive does not physically fit in the location of the original disk drive. The disk drive base plate can be adjusted to your liking. The easiest way is to mount the new disk drive on the bottom plate with double-sided adhesive tape, after the original mounting points have been removed. Space must also be created at the back of the computer housing.



The modified rear side of the Philips NMS 8245.

All parts are now ready and everything can be put together.



The Philips NMS 8245 with a new double sided disk drive mounted.