

**How to connect a PC drive to a Sanyo Wavy  
(Spanish and english version)**

**External connection of 3" drive to SVI 738**

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*Converted to PDF by HansO, 2003*

## How to connect a PC drive to a Sanyo Wavy (english version)

| PC 5,25/3,5" | Sanyo Wavy 70FD | NAME            |
|--------------|-----------------|-----------------|
| -----        |                 |                 |
| 2            | NC              | RESERVED        |
| 4            | NC              | RESERVED        |
| 6            | NC              | /DRIVE SELECT 3 |
| 8            | 8               | /INDEX          |
| 10           | 10              | /DRIVE SELECT 0 |
| 12           | 12              | /DRIVE SELECT 1 |
| 14           | NC              | /DRIVE SELECT 2 |
| 16           | 16              | /MOTOR ON       |
| 18           | 18              | DIRECTION       |
| 20           | 20              | /STEP           |
| 22           | 22              | WRITE DATA      |
| 24           | 24              | /WRITE GATE     |
| 26           | 26              | /TRACK 0        |
| 28           | 28              | /WRITE PROTECT  |
| 30           | 30              | READ DATA       |
| 32           | 32              | /SIDE SELECT    |
| 34           | 34              | READY           |

Conector alimentacion (lee mas abajo):

| PC    | Wavy | NOMBRE | COLOR  |
|-------|------|--------|--------|
| ----- |      |        |        |
| 1     | ?    | +5V    | RED    |
| 2     | ?    | GND    | BLACK  |
| 3     | ?    | GND    | BLACK  |
| 4     | ?    | +12V   | YELLOW |

NOTA que los pines impares de la disketera de PC 3,5" son masas (GND).

Los pines 2,4,6,14 no se usan en la disketera de PC 720K. En MSX, los pines 6,14 son las señales DRIVE SELECT 3 y 2.

El el cable del Wavy, los pines 1,2,3,4,5,6,14,29,31,33 no estan conectados.

Los pines 7,9,11 son +5V.

Dejalos sin conectar a la disketera. Para tomar la alimentacion de ellos, usa un conector de alimentacion y conecta el pin 1 (cable rojo) a uno de ellos.

Los pines 2,3 (ground) los puedes conectar a cualquier pin impar (el 13 esta bien para esto).

Ya que el conector del Wavy no entrega +12 voltios, tendras que decidir que hacer: Conecta la disketera sin +12V y prueba si funciona (Algunas no usan los 12 voltios) o tomar los +12V de algun sitio en la placa, directamente de la fuente de alimentacion o del pin 48 del conector de cartucho. Usa un voltimetro para asegurarte que hay +12V donde estes conectado. Siempre desenchufa tu MSX antes de soldar.

Ten en cuenta que una disketera de PC normalmente, viene configurada como secundaria (disk select 1). Si quieres que funcione como primaria y no tiene jumpers, solo tienes que intercambiar los cables 10 y 12 o conectar el 10 al pin 12 y dejar el pin 10 sin conectar.

### Como hacer la adaptacion completa

Coge un cable plano de 34 pines. Asegurate de que los cables 10-16 no esten retorcidos.

Si es asi, mejor desarma el cable y ponlos bien.

El cable 1 es rojo o azul.

Los cambios los haremos en un uno de los extremos.

En el otro, que conecta al MSX, no haremos ningun cambio.

- Corta a un centimetro o dos del conector los siguientes cables:

- 1,3,5,7,9,11,29,31,33

- Pela el cable 15 a la misma distancia (puedes cortarlo y soldarlo luego si quieres).

- Une los pines que has cortado

- (1,3,5,7,9,11,29,31,33) al 13 o al 27, en el lado corto.

- Coge un cable de alimentacion y suelda el pin 1 (rojo) a cualquiera de los cables

- 7,9 u 11, del lado largo.

- Suelda los pines 2,3 del conector de alimentacion a cualquiera de los pines impares, en el lado del conector (lado corto).

- Opcionalmente, puedes tomar +12 voltios del pin 48 del conector de cartucho.

A continuacion, segun el tipo de disketera que vayas a conectar, tendras que hacer el siguiente cambio:

- Si la disketera funciona como secundaria (B:), tendras que cruzar los cables 10 y 12  
Si no estas seguro de que tipo de disketera vas a usar, puedes hacer lo siguiente:

- Necesitas 3 pines, y un jumper.
- Corta el cable 10 a unos 2 centimetros.
- Sueda el pin central al cable 10, en el lado del MSX (lado largo)
- Sueda uno de los otros pines al cable 12 del lado del conector (lado corto).
- Sueda al otro pin el cable 10 del lado del conector (lado corto).

Ahora puedes situar el jumper en una posicion u otra, para seleccionar el numero de la unidad (primaria o secundaria).

Si la disketera funciona bien, pero al leer los discos no salen mas que errores y los discos no arrancan, puedes quitar el cable 34 de la disketera (dejalo desconectado de la disketera) y conectarlo a masa (cable impar).  
Tambien puedes hacer lo siguiente:

- Desconecta el cable 34 de la disketera.
- Sueda 3 pines de la siguiente forma:
  - pin 34 MSX (a un lado)
  - pin 34 DRIVE (centro)
  - GND (a un lado)

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|--------------|-----------------|--------------------|
| -----        |                 |                    |
| 2            | ----- NC        | ----- RESERVED     |
| 4            | ----- NC        | ----- RESERVED     |
| 6            | ----- NC        | -- /DRIVE SELECT 3 |
| 8            | ----- 8         | ----- /INDEX       |
| 10           | ----- 10        | -- /DRIVE SELECT 0 |
| 12           | ----- 12        | -- /DRIVE SELECT 1 |
| 14           | ----- NC        | -- /DRIVE SELECT 2 |
| 16           | ----- 16        | ----- /MOTOR ON    |
| 18           | ----- 18        | ----- DIRECTION    |
| 20           | ----- 20        | ----- /STEP        |
| 22           | ----- 22        | ----- WRITE DATA   |
| 24           | ----- 24        | ----- /WRITE GATE  |
| 26           | ----- 26        | ----- /TRACK 0     |
| 28           | ----- 28        | --- /WRITE PROTECT |
| 30           | ----- 30        | ----- READ DATA    |
| 32           | ----- 32        | ----- /SIDE SELECT |
| 34           | ----- 34        | ----- READY        |

### Power connector (see below):

| PC    | Wavy   | NAME | COLOUR |
|-------|--------|------|--------|
| ----- |        |      |        |
| 1     | ---- ? | +5V  | RED    |
| 2     | ---- ? | GND  | BLACK  |
| 3     | ---- ? | GND  | BLACK  |
| 4     | ---- ? | +12V | YELLOW |

NOTICE that odd pins on PC drive are ground (GND).  
Pins 2,4,6,14 are not used on PC 720K drive. MSX uses pins 6,14 for DRIVE SELECT 3 and 2.

Wavy does not use pins 1,2,3,4,5,6,14,29,31,33 and pins 7,9,11 are +5V.  
Leave them disconnected from drive. To get power from them, get a power connector and connect pin 1 (red cable) to one of them.  
Pins 2,3 (GND) have to be connected to any odd pin (i.e. 13)

As Wavy board does not deliver +12V, you have to decide what to do:  
Connect drive without +12V and try to make it work (some drives does not need +12V) or get +12V somewhere in the board, directly from power suply or from pin 48 in cartdrige connector. Use a voltmeter to make sure you connecto to +12V. Always disconnect your MSX from power outlet before soldering.

Bear in mind that a drive for PC comes "de-facto" configured as SECONDARY (disk select 1).  
If you want it to work as PRIMARY and haven't got any jumper, you will have to swap cables 10 and 12 or connect pin 10 (from MSX) to 12 (drive)

### How to make the whole adaption

Have a 34 pin cable. Be sure that cables 10-16 are not crossed over. If so, better disarm cable and make them straight.

Cable 1 is red or blue.

Changes have to be done only in one edge. In the other, the one for MSX, no changes are needed.

- Cut down following cables near drive connector (1 or 2 centimeters far is enough)
  - 1,3,5,7,9,11,29,31,33
- Peel off cable 15 (or cut it and solder later if you want).
- Join cables you cut before (1,3,5,7,9,11,29,31,33) to 13 or 27 on short side (drive).
- Get a power cable and solder pin 1 (red) to 7 or 9 or 11, on long side (MSX).
- Solder power connector pin 2,3 to any odd pin on short side (drive).
- As an option, you can get +12 from pin 48 of cartridge connector.

Next, depending on the drive you are using you will have to make following change:

- If your drive works as secondary (B:), you will need to swap cables 10 and 12.

If you are not sure of what kind of drive you are using, you can make the following:

- You will need 3 pins and a jumper.
- Cut cable 10 and 12 (aprox 2 cms from connector).
- Solder center pin to cable 10 on MSX side (long side).
- Solder one edge pin to cable 12 on short side (drive).
- On the other pin, solder cable 10 on short side (drive).

Now you can set jumper to select drive number (primary or secondary)

If the drive work properly but, when a disk is read you only get errors and all disks fail to boot, try to disconnect cable 34 from drive (leave this pin unconnected) and connect it to ground (odd pin). You can also do the next:

- Disconnect cable 34 from drive.
- Solder 3 pins and add a jumper
  - pin 34 MSX (one side)
  - pin 34 DRIVE (centre)
  - GND (other side)

## External connection of 3" drive to SVI 738

| 3" drive | PC 5,25/3,5" | SVI 3,5" (DB25F) | NAME               |
|----------|--------------|------------------|--------------------|
| 1        | 7            | 20-25            | GND                |
| 2        | 8            | 4                | /INDEX             |
| 3        | 9            | 20-25            | GND                |
| 4        | 10           | 17               | -- /DRIVE SELECT 0 |
| 5        | 11           | 20-25            | GND                |
| 6        | 12           | 5                | -- /DRIVE SELECT 1 |
| 7        | 15           | 20-25            | GND                |
| 8        | 16           | 18               | ----- /MOTOR ON    |
| 9        | 17           | 20-25            | GND                |
| 10       | 18           | 6                | ----- DIRECTION    |
| 11       | 19           | 20-25            | GND                |
| 12       | 20           | 7                | ----- /STEP        |
| 13       | 21           | 20-25            | GND                |
| 14       | 22           | 8                | ----- WRITE DATA   |
| 15       | 23           | 20-25            | GND                |
| 16       | 24           | 9                | ----- /WRITE GATE  |
| 17       | 25           | 20-25            | GND                |

|          |          |             |                       |
|----------|----------|-------------|-----------------------|
| 18 ----- | 26 ----- | 10 -----    | /TRACK 0              |
| 19 ----- | 27 ----- | 20-25 ----- | GND                   |
| 20 ----- | 28 ----- | 11 ---      | /WRITE PROTECT        |
| 21 ----- | 29 ----- | 20-25 ----- | GND                   |
| 22 ----- | 30 ----- | 12 -----    | READ DATA             |
| 23 ----- | 31 ----- | 20-25 ----- | GND                   |
| 24 ----- | 32 ----- | 13 -----    | /SIDE SELECT          |
| 25 ----- | 33 ----- | 20-25 ----- | GND                   |
| 26 ----- | 34 ----- | 19 -----    | READY                 |
|          | 2 -----  |             | RESERVED (DO NOT USE) |

NOTE all odd pins on both 3" and PC 3,5" are GND

You have to be aware of the drive config, that is, if the drive you are using was working as drive A or B. If it is an A drive, it would not work as drive B and, if it is a B drive, may be not work as A drive. If you want 3" drive to work as secondary drive (configured as A drive), just swap pins 4 and 6, or connect pin 6 where 4 should be and leave 4 disconnected. If it is a B drive and want to act as A drive, swap same pins.

#### DC Power connector:

| 3"     |        | PC       |  | SVI  |  | NAME |
|--------|--------|----------|--|------|--|------|
| 1 ---- | 4 ---- | 1 ----   |  | +12V |  |      |
| 2 ---- | 3 ---- | 20-25 -- |  | GND  |  |      |
| 3 ---- | 2 ---- | 20-25 -- |  | GND  |  |      |
| 4 ---- | 1 ---- | 2 -----  |  | +5V  |  |      |