Low-cost AVR programmer

For all AVR microcontrollers

Before using this programmer....

Be carefull with using this programmer, because it has no insulation circuitry! Especially when using high voltages e.g. 110/230 Vac on your project. One mistake and your day can be ruined, your expensive PC distroyed!

In-circuit or as a target:

You can use this programmer for in-circuit programming, or as a target programmer, the first diagram shows the target version, the second the in-cicuit version. In-circuit is very usefull when your hardware finished project needs to be fine-tuned.

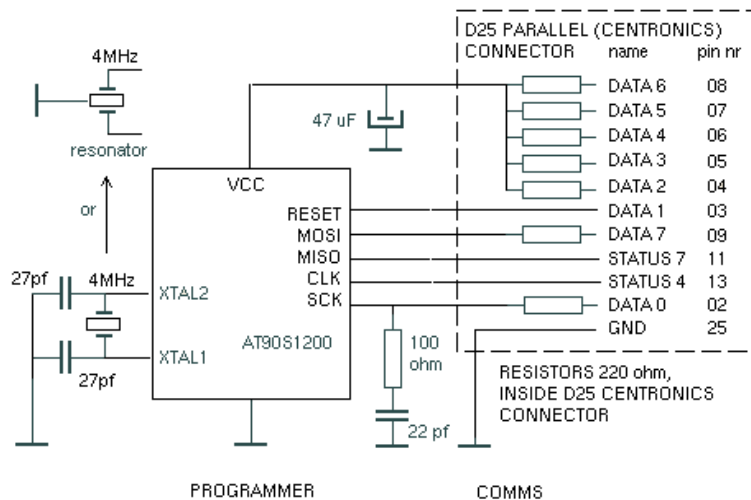### How to make one ?
(click here to see a photo session)

The possibilities...
1. A connector type programmer. A small homemade PCB or hobby board soldered to the 25 sub-D connector, which you can plug in your LPT1 port of your PC. You can take a cheap standard IC-socket or a textool ZIF-socket.
2. The second way is with a data-cable of about 2 meters, and a small PCB on your desk or table, so you don't have to place the target uC in the PCB behind you PC.
First solder the seven 220 ohm resistors to the 25 sub-D connector, then solder a data-cable. At the end of the cable you can fix it to a PCB or a RJ45 part, or you can take a hobby-board and solder the X-tal, capacitors, resistor and the socket on it, well just use your imagination a bit, it will operate exellent.

(Software & Diagrams by Pitronics)

This is probably the cheapest and simplest AVR programmer around....
(instead of an X-tal you can also take a resonator, this saves a bit space on the PCB)

And this is the in-circuit version, handy for debugging your projects.
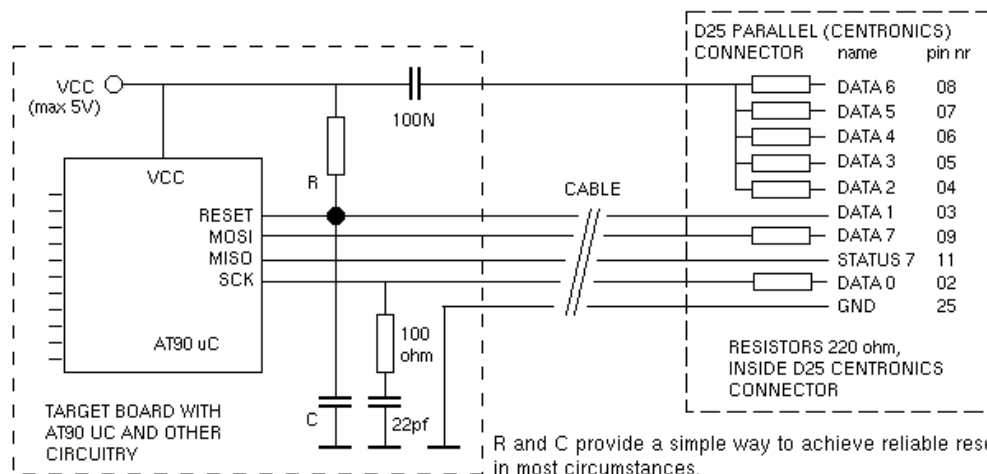
Part list:

7x 220 ohm
1x 100 ohm
1x 22pf
2x 27pf
1x 100n
1x 47uF/16V
1x IC- or textool-socket
1x X-tal 4 MHz
1x 25 sub-D connector

Software:

Here you can download SP12. With this FREE (GNU) software from Pitronics you can upload the program in the AVR's flash memory. (type: Intel hex)

With WAVRASM from Atmel you can assemble your ASM code to e.g. name_of_program.hex. (all AVR definitions can be found here)