

Standalone AVR Chip Prep w/ Arduino Bootloader

AVR Chips on the arduino uno come loaded with a bootloader to run the usb communication & arduino stdlib. This is how to go from a blank chip to a flashed chip.

Chip Initial Prep

Pin connections:

```
16MHz Crystal across PB6/PB7
connect 22pF bipolar caps from the crystal to ground:
```

```

                                GND
PB6 -----|-----22pF--|
           |           |
           | Crystal   |
PB7 -----|-----22pF--|
```

```
Pin R10k pullup to +5V
AVCC connected to +5V
also might be useful to have pwr indicator LED
```

Arduino as ISP Setup & Burning

- Start by Loading File → Examples → 11.ArduinoISP → ArduinoISP
- Connect separate Arduino UNO board (hereafter called the programmer) to pc via usb.
- Upload the ISP sketch to the programmer.
- Install the [MiniCore library](#) and install the MiniCore boards
- Wire the following connections from the programmer:

```
10 -> MOSI (17)
11 -> MISO (18)
12 -> SCK (19)
13 -> RESET (1)
```


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