



# Recycled Computer Parts Turned Into Robots



*Presented  
by  
Vince  
Long  
Billings  
Senior  
High*

# Computers as Parts Sources

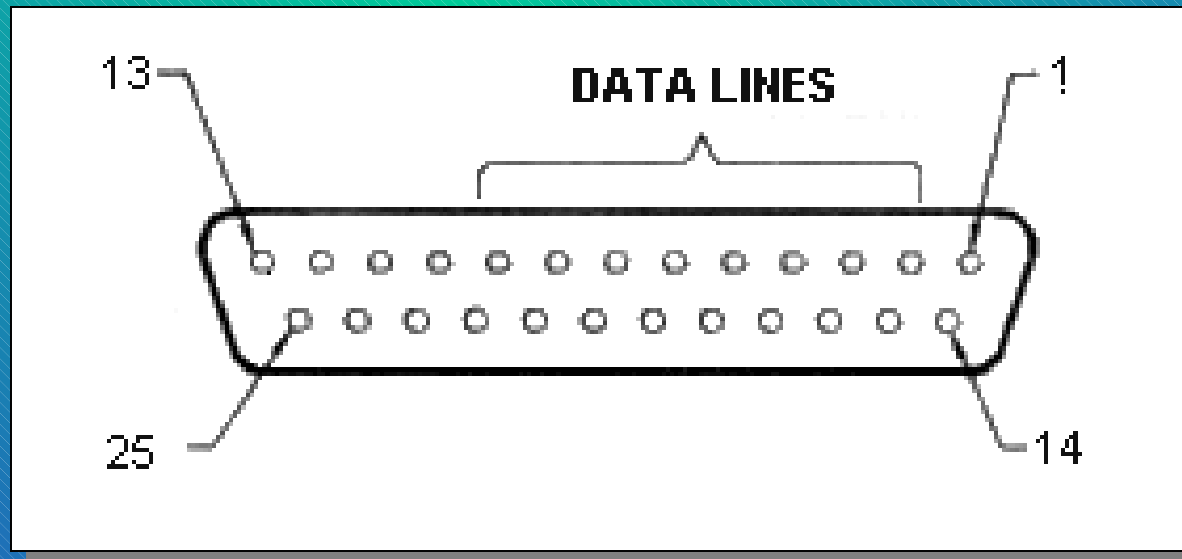
- Power Supplies
- Disk Drives (Motors and Controllers)
- Cables
- Sheet Metal

# Other Parts Sources

- Copy Machines
- Printers
- Parts Vendors
  - Mouser
  - Radio Shack

# Making Connections

## The Parallel Port



# Making Connections

## The Parallel Port Pin Values

PIN	9	8	7	6	5	4	3	2
VALUE	128	64	32	16	8	4	2	1

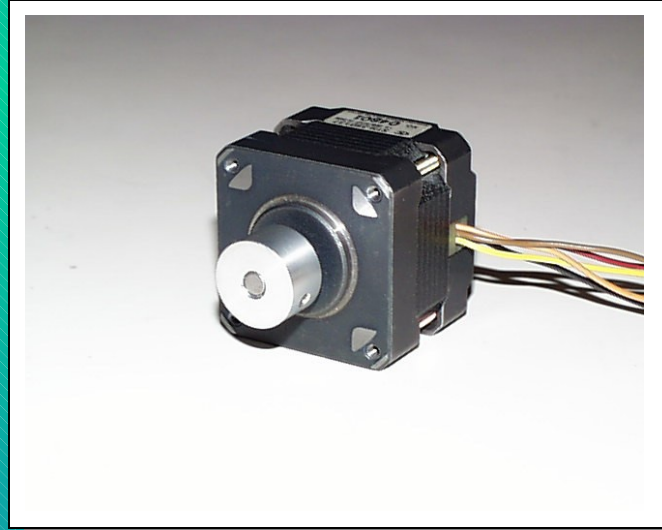
# Programming

- Language Choice
  - QuickBasic
  - Visual Basic
  - Pascal
  - C++

**DEMO THE TRAINER**



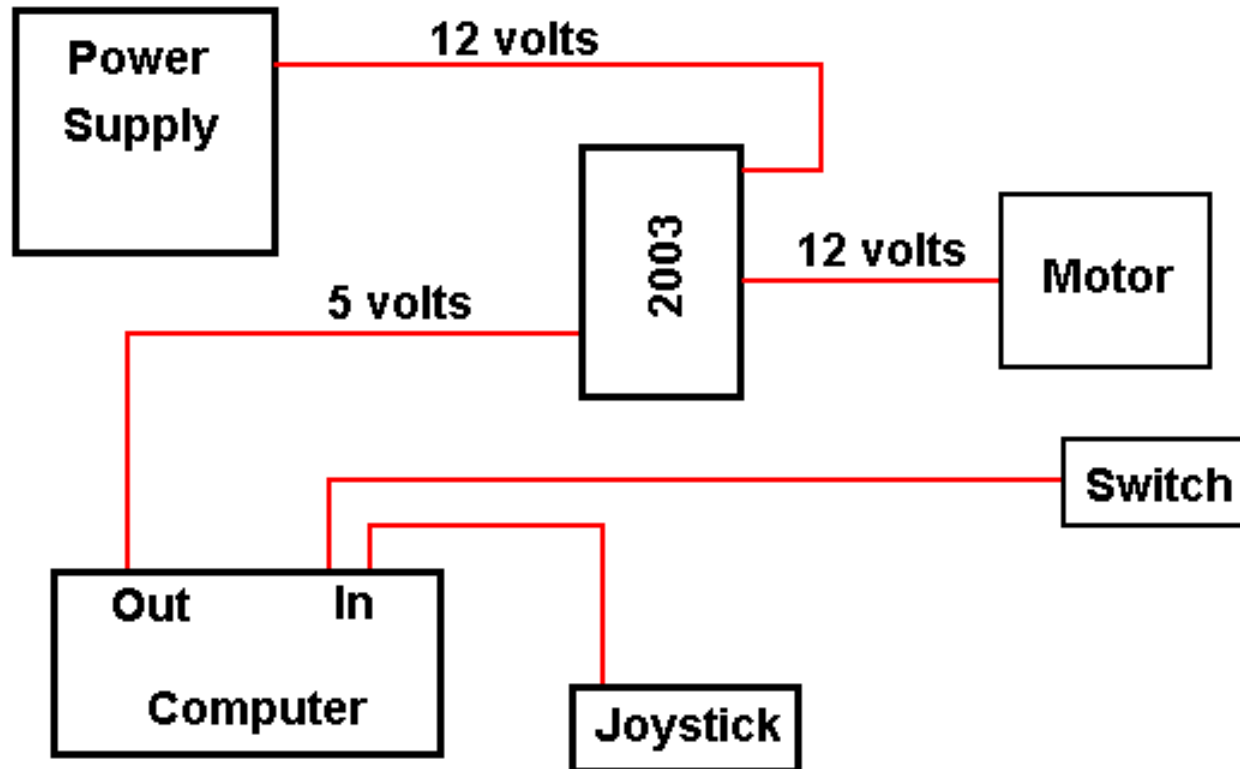
# The Stepper Motor



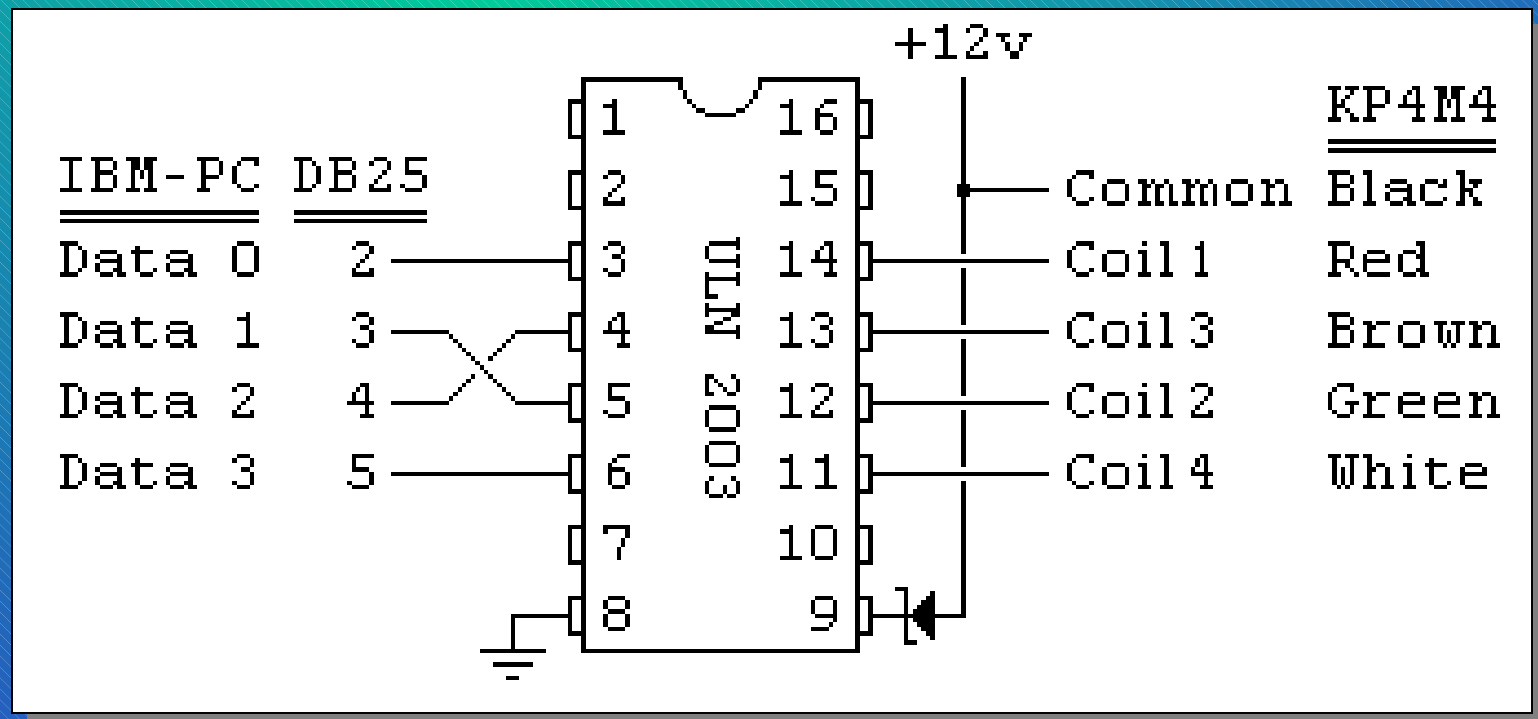
- **Stepper vs. Standard DC motors**
- **Uni- vs. Bi-Polar**
- **Pulsing sequences**
- **Controller chips**



# Flowchart



# Controller Chips



**ULN 2803 (8-bit) Also Available**

# Activity Possibilities

- Soccer Bots
- Distance Measuring
- Maze Solving
- Automation
- Web-based

This image is coming to you from Room 117,  
**Billings Senior High**  
Billings, Montana, USA



Image will reload in  seconds.

You can change between our two WebCams  
by clicking on one of the following choices:

[Classroom Cam](#) - [Robot Cam](#)

**HOW IT WORKS**

## Control the Bronc Rover

Forward



Back

| Turn on the  
Lamp |



| Turn off the  
Lamp |

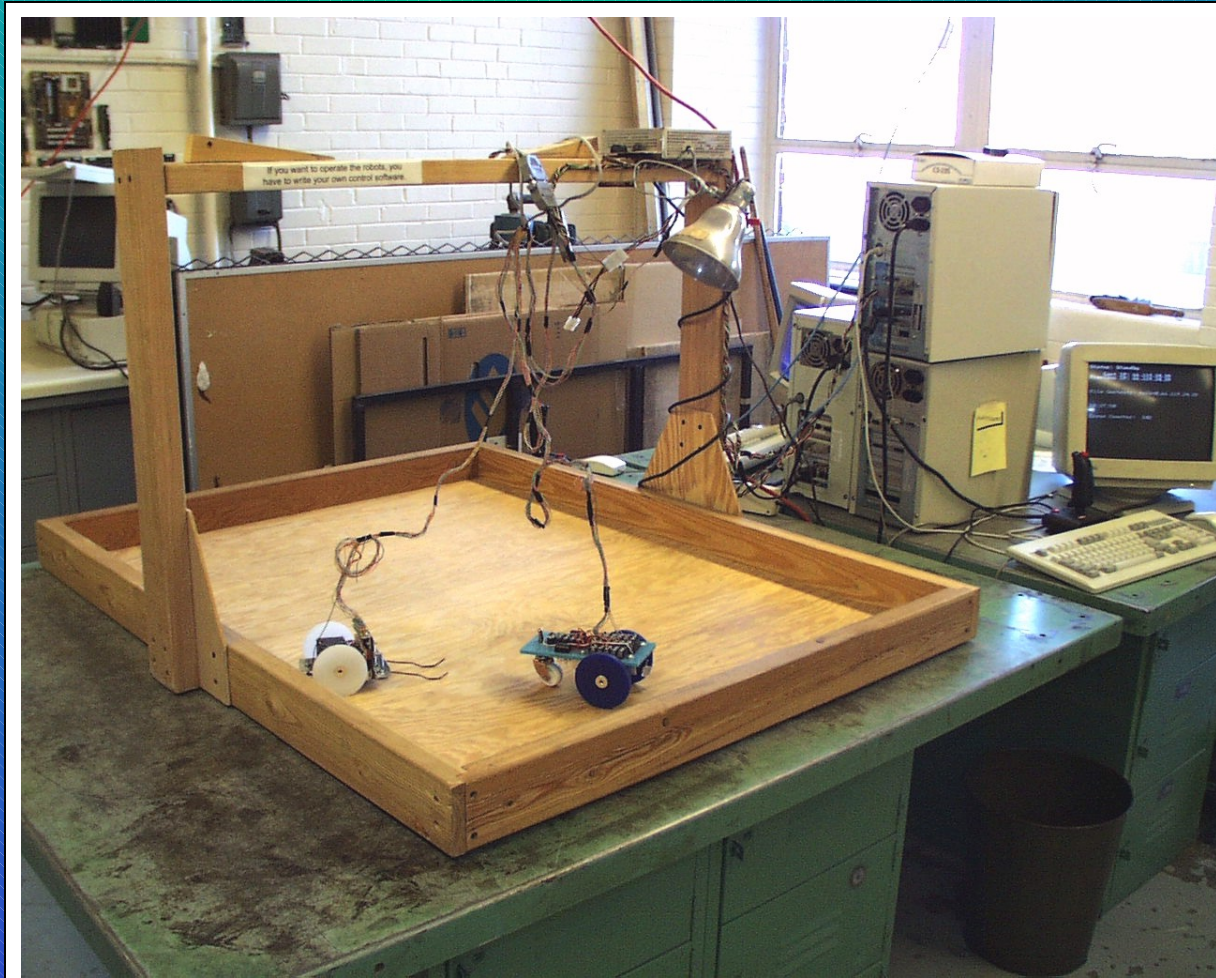


If we are set up for this activity, you  
will see our Bronc Rover Robot in the  
Webcam view to the left.

By clicking on the direction arrows you  
can move the robot a short distance.

There will be a delay between the time  
that you click on an arrow and when  
you see the robot move. The length of  
the delay depends on a few factors,  
including the speed of your network  
connection.

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