

Holonomic Drive

(original design by FVC 3053, '06-'07, Occam's Engineers, posted at <http://www.chiefdelphi.com/media/photos/28621> and photo 28620)

Parts needed:

- 1 Starter kit
- 1 Metal & Hardware kit
- 1 Extra Motor Module
- 4 Omniwheels (large or small)
- 1 Programming Kit

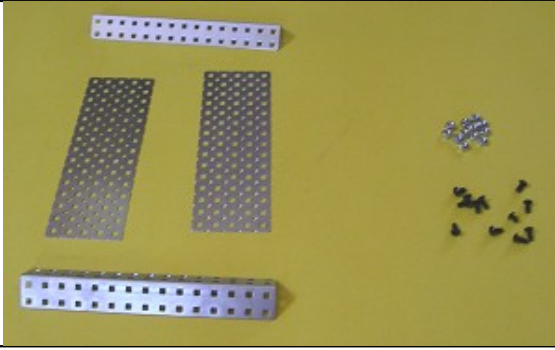
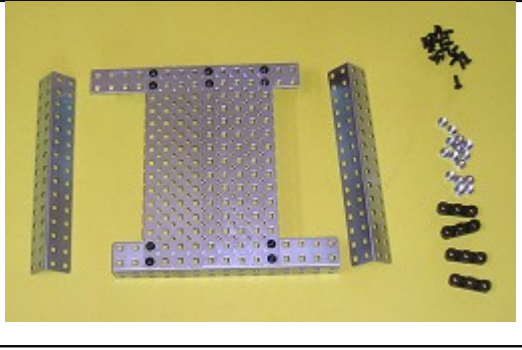
Note: The FVC/FTC bundle kit essentially includes both the Starter Kit and Metal & Hardware Kit.

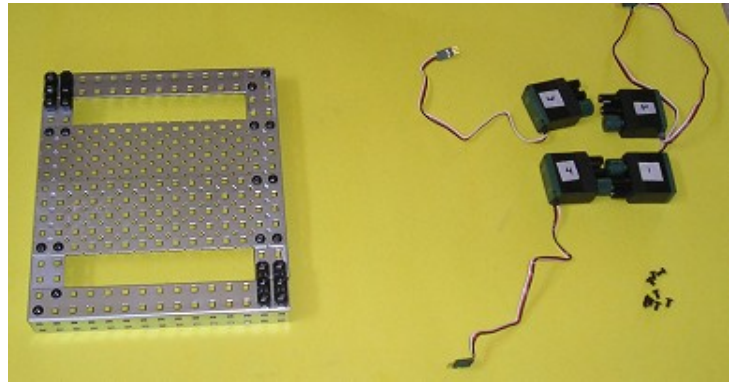
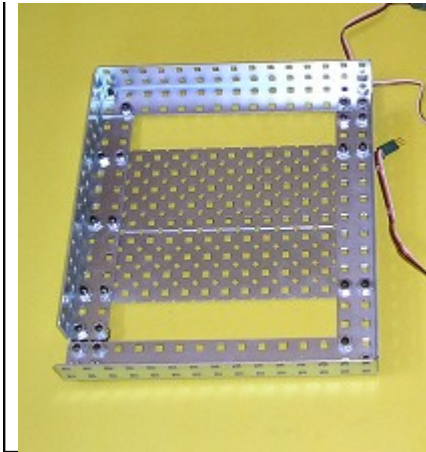
Pieces to cut: None

Project notes:

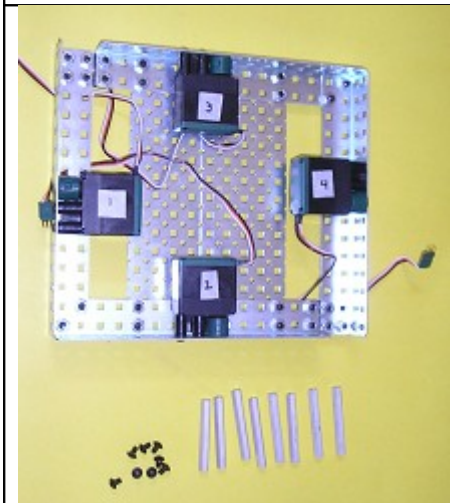
A holonomic drive typically enables a robot to rotate in place, move in any direction, or do both at the same time. This bot is fairly simple to build and fun to drive. The left joystick is used to shift the robot up/down/left/right. See if you program the bot to spin as well.

Building Procedure:

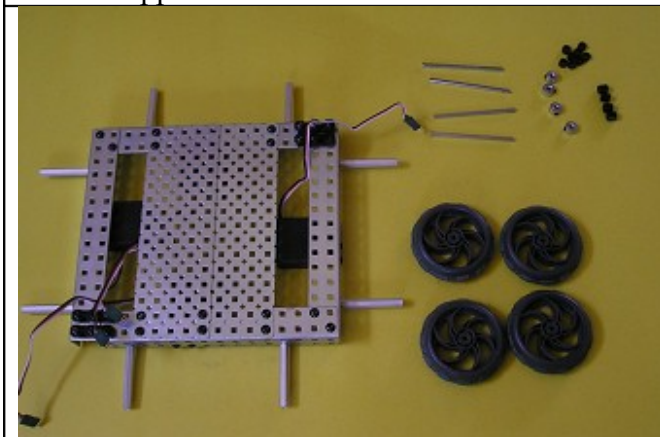
Assemble the Chassis	
 A photograph showing the components for assembling the robot chassis. It includes two long, thin metal plates with a grid of holes, a shorter metal plate, and a small pile of black and silver screws and nuts on a yellow background.	 A photograph showing the completed chassis. The two long metal plates are joined by the shorter plate, forming a rectangular frame. A small pile of screws and nuts is visible to the right of the frame on a yellow background.

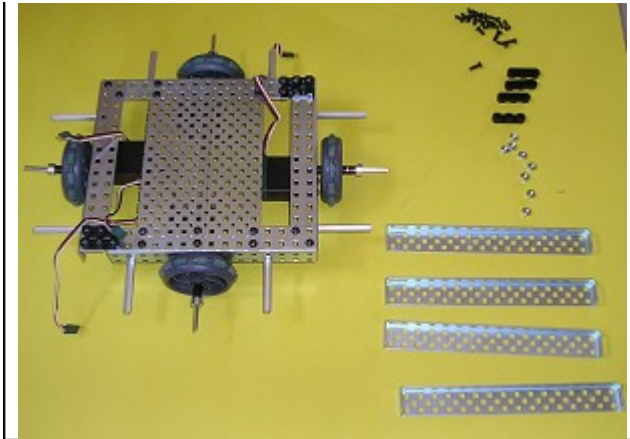


Attach the motors

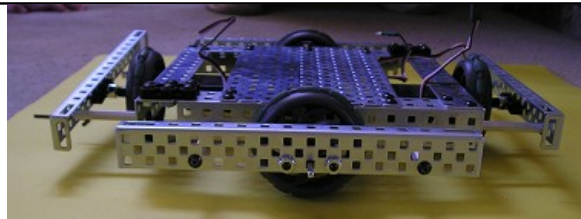


Attach supports and omniwheels

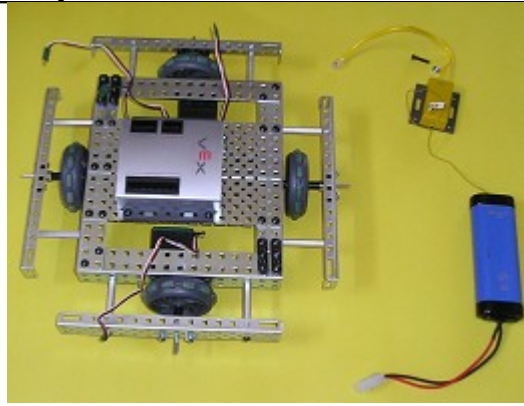
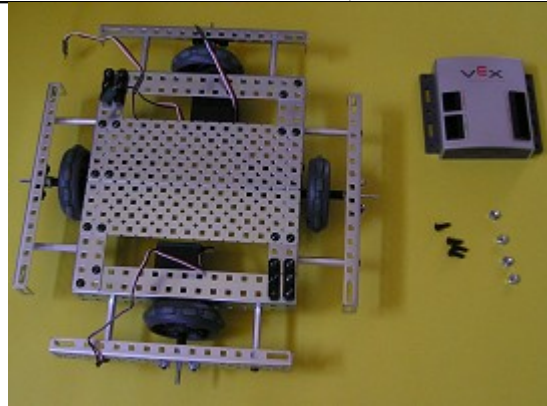




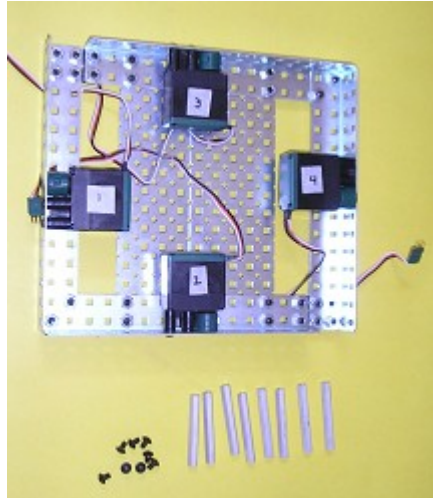
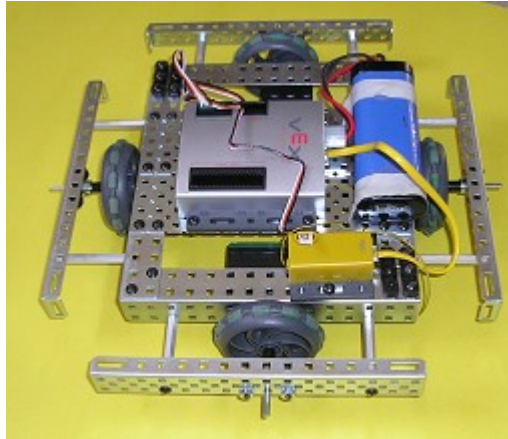
Attach outside rails



Attach the microcontroller, RF module and battery

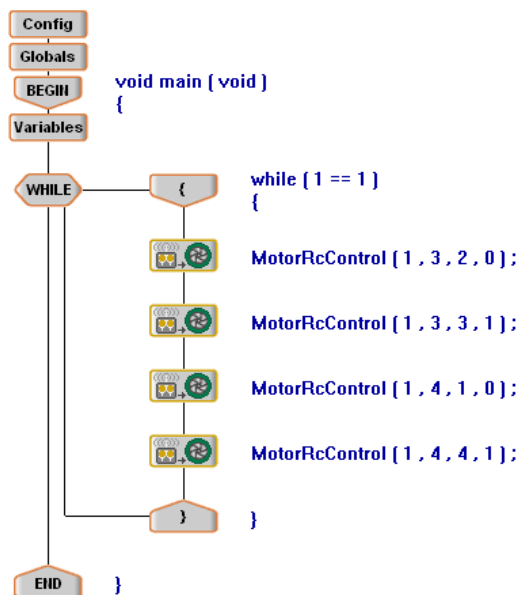


Attach the motor wires - motors labeled 1, 2, 3, 4 plug into ports 1, 2, 3, 4
Viewed from the bottom, the motor numbers go counter clockwise



Programming:

The following program allows the left joystick to shift the bot up/down/left right.



```

1 #include "Main.h"
2
3 void main { void }
4 {
5     while { 1 == 1 }
6     {
7         MotorRcControl { 1 , 3 , 2 , 0 } ;
8         MotorRcControl { 1 , 3 , 3 , 1 } ;
9         MotorRcControl { 1 , 4 , 1 , 0 } ;
10        MotorRcControl { 1 , 4 , 4 , 1 } ;
11    }
12 }

```