

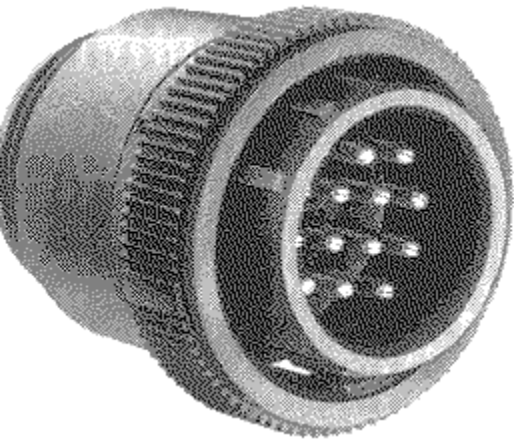
MIT OpenCourseWare  
<http://ocw.mit.edu>

2.007 Design and Manufacturing I  
Spring 2009

For information about citing these materials or our Terms of Use, visit: <http://ocw.mit.edu/terms>.

## 2.007 Kit Part: Circular 14 Pin Connector

[www.tycoelectronics.com](http://www.tycoelectronics.com)



### 1 Black Housing

1 Black Housing with 3-4-4-3 grid of holes and polarized locking collar 8" of 18 AWG electrical wire with snap-in AMP pins

### 10 Wires with Pins

#### Possible uses:

1. To connect the electrical actuators to the umbilical cord

#### Tips:

To assemble, first, make sure you have the wires in the proper orientation. **It is possible to stick the wires in backwards and once they have been pushed in, they cannot be removed!** You should identify Pin #1 and stick one of the wires in the side with the fine pitch threads such that the metal connector at the end is protruding out of the connector inside the locking collar. Continue to insert until you hear a faint click. The wire should now be locked in place. Confirm that this is true by lightly trying to pull the wire out. Insert the other nine wires.

A good technique is to use a yellow and blue wire for each channel. For example, blue wires for pins 1,3,5 and 7 and yellow wires for pins 2,4,6, and 8. Use red for pin 13 and black for pin 14. Note that other than color, there is no difference between the wires and you may use any color scheme you wish.

Once you have inserted all ten wires, screw on the black collar and use the hot-air gun to heat up the tubing bonded to the collar. After a few seconds, the tubing should start to shrink around the wires. Once the tubing has shrunk around the wires remove the heat as excessive heat will cause the tubing to crack. The shrinking process is irreversible, so make sure you have inserted all the wires correctly and know which ones they are. Once the collar is on you will be unable to tell which wire is which by visual inspection. It is a good idea to use a bit of masking tape and put small labels on each wire that designates its pin number.

Pins 1 and 2 are for the **RED CHANNEL**

Pins 3 and 4 are for the **YELLOW CHANNEL**

Pins 5 and 6 are for the **BLUE CHANNEL**

Pins 7 and 8 are for the **GREEN CHANNEL**

Pins 9,10,11,and 12 do NOTHING

Pin 13 is **POWER** (Positive Battery Terminal)

Pin 14 is **GROUND** (Negative Battery Terminal)