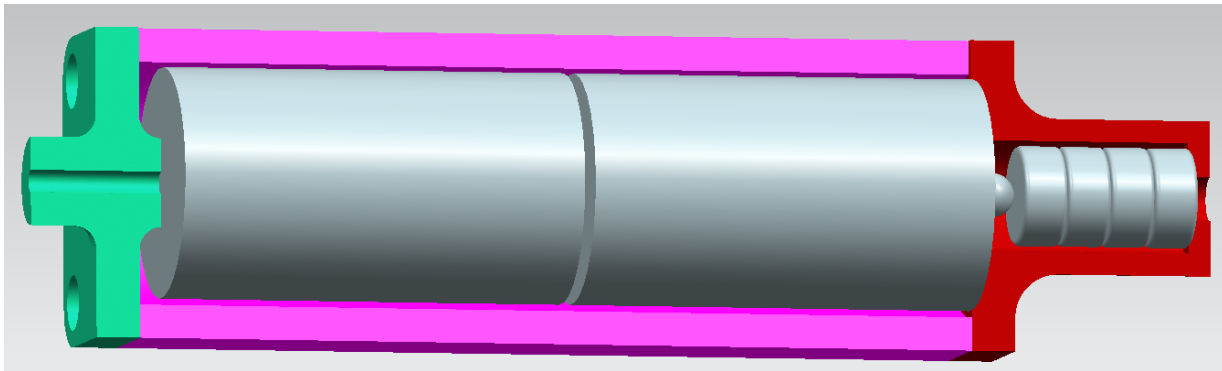


Materials for Electric Motor Project

- 2 - "D" cell batteries
(Can be purchased from vendor) or
- 8 - .25 – 20UNC -2A Socket Head Capscrews
- 2'-0" - 14-2 Romex electrical wire (solid core)
- 4 – Rare earth magnets $\varnothing.5625$ x .25 thick
- Bearing Ball – $\varnothing.25$



Assembly, Design and Operating Suggestions

The model housing provided is our version of the body capable of operating the motor. The projection at the bottom of the batteries is to minimize frictional losses upon rotation. The hole in the left-hand end of the body is provided to allow for a wire to accommodate the motor rotation. The hole in the right-hand end of the body is to allow for various metallic tools to be affixed to the magnet.

The two "D" cell batteries provide the needed charge to rotate magnets. Magnets are provided to complete the magnetic field.

Bearing ball is provided to minimize friction between batteries and rare earth magnets. The magnet in contact with the bearing ball should have a spherical pocket in the center to pilot the ball. This can be achieved using a ball end mill, commercially available. The mill can be used in a drill press to cut a pocket in the center of the magnet.

As "D" cell batteries do not provide a great deal of power to the design, it is necessary to minimize contact friction between rotating and stationary parts.