

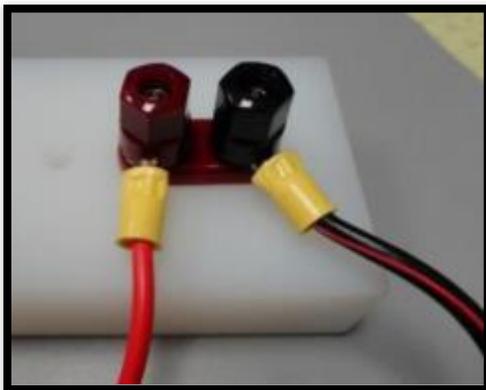
# **NBL Engineering and Safety Requirements for Micro-g NExT**

## **I. Pneumatic Power Requirements**

- i. Student projects will be allowed to connect to the NBL's compressed air (shop air) system:
  1. Pressure – 125 psig (a regulator will be provided to reduce pressure within operating limits of your tool)
  2. NBL Shop Air Connector details:
    - a. Grainger: Coupler Plug, (M)NPT, Item# 1HLZ8, Mfr. Model# A73440-BG
      - i. Note: the female P/N is 1HLZ9
    - b. Quick Coupler Body, (F)NPT, Steel Item# 1HUK7, Mfr. Model# A73410-BG
  3. NASA will supply the air lines.
- ii. All lines, fittings, and pneumatic devices must be rated for a minimum pressure of two and a half (2.5) times the maximum supply pressure.
- iii. All pneumatic tools must operate at 90 decibels or less. The tools will be tested underwater for sound level at the NBL.

## **II. Electrical Power Requirements**

- i. Student projects will be allowed to connect to the NBL's electrical outlet: DC 12v, 25 amp. No other electrical power sources will be allowed.
  1. The interface connection will consist of a positive and negative female banana plug connection.
- ii. Tool must incorporate a verifiable barrier to electric shock.
- iii. The NBL power supply will be located a minimum of 11 feet from the pool edge. Cables must be of sufficient length to reach without tension between the power supply, the controller, and the tool. Specific requirements will be determined based on underwater test location



Example banana plugs

### **III. Labels**

- i. The hardware provided shall have labels as follows:
  1. Mate/de-mate alignment marks, operation indicators, as required
  2. Caution and warning tags for Hazard areas (i.e., pinch points, sharp edges, etc.).
  3. Hardware identification
  4. Additional safety labels may be requested by Test Readiness Review (TRR).