



Asheville, North Carolina  
www.dukepro.com  
866-587-3853

# D80/ESI Owner's Manual

- Step 1.** For safety, never touch the Arm /Fire buttons when loading the shock tube or connecting electric blasting cap circuits. Never connect the blasting cap (electric or shock tube) until you are ready to fire the shot. Observe blasting safety rules at all times. **All it takes is one mistake.**
- Step 2.** Load shock tube into one of the shock tube adapters on the tip. Use the smaller White tip for standard commercial shock tube 1/8", or the larger pneumatic fitting for Mil-Spec shock tube 0.156". When firing electric blasting caps remove the shock tube adapter tip and store in a safe place. Then attach the wires to the terminals (caps are not polarity sensitive) and keep the copper wires where you can see them. Above all do not touch or allow the wires to come into contact with your skin during firing.
- Step 3.** When you are ready to fire the shot, for electric caps make sure the terminals are tight on the wires and you are not in contact with them. For shock tube make sure the shock tube is fully seated. If the shock tube length is over 30 feet insert a splice about 8 feet out using Tygon tubing. This provides a path for hot gases to vent instead of burning the operator or the machine.
- Step 4.** To Arm the machine, push the ARM switch for 6-8 seconds. The Red "READY" lamp indicates proper voltage has been reached.
- Step 5.** To Fire the shot, maintain the ARM switch AND with the red READY lamp illuminated, depress the FIRE switch.

## **TO ABORT THE SHOT:**

Release the ARM switch **without** pressing the FIRE switch. The high voltage will be discharged internally.

## **BATTERY REPLACEMENT:**

To replace the battery, remove the two screws on the back cover. Remove the nine volt cell from the battery clip. Duracell ® part number MN1604 is the recommended battery or any American made 9 volt alkaline cell as a replacement. Reattach the rear cover being careful to align the back cover and replace and tighten screws. Do not over tighten screws. Gradually tighten the screws making 2 passes so that the pressure is applied uniformly to the rear cover and gasket.

## **D80/ESI TESTING/MAINTENANCE PROCEDURE**

### **TESTING**

- Test the tip prior to insertion of the shock tube for spark. An audible "pop" should be heard and approximately 1" of plasma flame should be ejected from the tip.
- Test ignition tip with a short (less than 4 inch) piece of shock tube.
- Check the battery with a volt meter. There should be at least 7.5 Volts. Replace as necessary.
- If spark is still weak or missing, test the tip on another D80/ESI. If second D80/ESI is not available, verify battery voltage (It should be greater than 8.0 volts).

### **MAINTENANCE**

- During normal usage, no maintenance is required for the electronics except battery replacement. The expected battery life (Duracell ® 9V Alkaline) is 200 - 300 shots.
- Each ignition block should last at least 1,000 shots. There are four ignition blocks inside of the tip. You can access these and rotate the block 90 degrees for another 1,000 shots
- **TECH TIP:** Improperly shipped or stored shock tube can have "dead" spots that will not easily fire. Always store a roll of shock tube on its side! If you are not sure, dangle the tip attached to about 2-3 feet of shock tube and thump the shock tube a couple of times. The powder will fall down to the tip insuring an extra hot start.

# D80/ESI Tip Maintenance Procedure



Asheville, North Carolina, USA  
www.dukepro.com  
828-683-6022

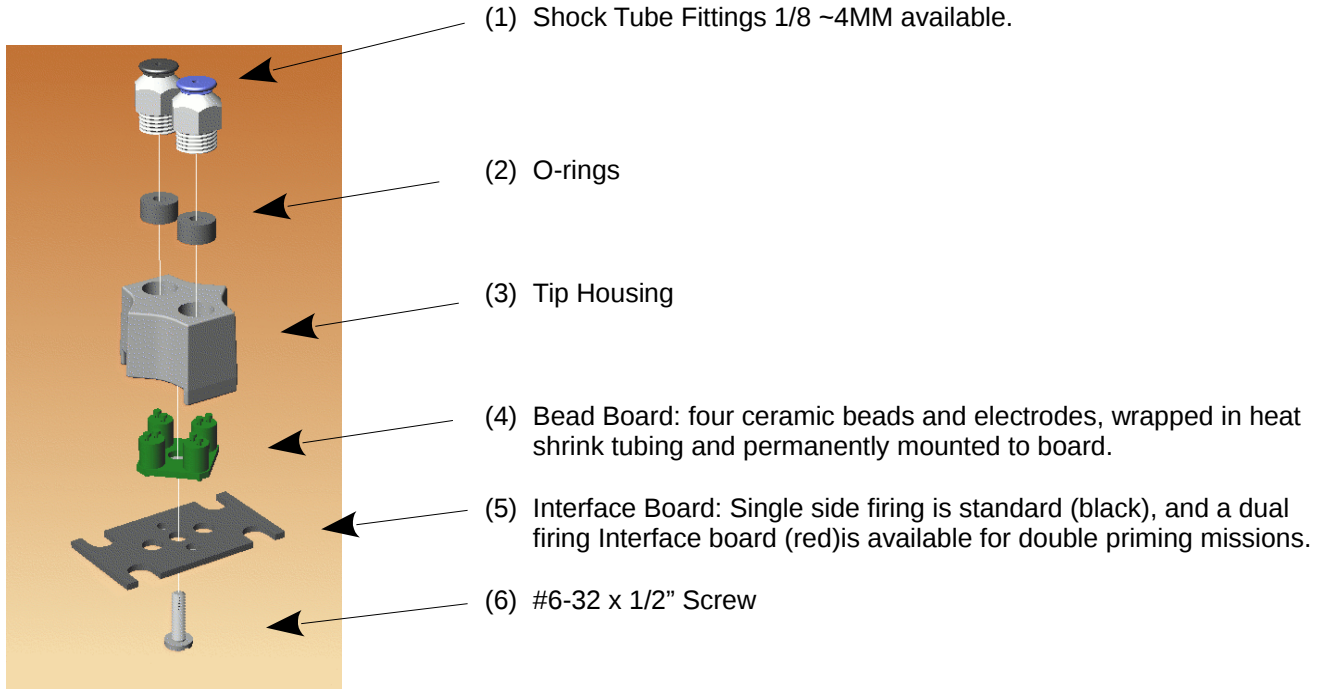


Illustration 1: Exploded View

## Tip Rejuvenation Instructions:

Remove #6-32 screw (6) and the mounting board (5).

1. Remove both shock tube fittings (1).
2. Using a flat blade screwdriver, gently pry the bead board (4) out of the tip housing (3). Rotate the bead board (4) 90 degrees, and re-insert into tip housing (make sure the shrink tube follows the bead and doesn't remain behind) (3), or replace the bead board with a new one.
3. Replace mounting board and secure with #6-32 screw. Tighten firmly.
4. Place the mounting board on the tip block, tighten the #6-32 screw, and check the continuity it should be between 2k~12k and is usually around 6k ohms on both sides.
5. Test the tip by mounting it on the initiator and test fire it several times. Approximately 1-1/2 to 2 inches of flame should be ejected from tip on each fire cycle. Repeat with other side of tip.

**Caution:** High velocity particles are ejected from shock tube tip when firing. **Do not look directly into the tip when firing.**

Replacement bead boards (4) are available from Duke Pro. See [www.dukepro.com](http://www.dukepro.com) or call 866-587-3853 for pricing.