

EBS Pressure Switch Loading Procedures

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DANGER: ALWAYS FOLLOW THE PERFORATING INDUSTRY CODE OF PRACTICE AND GOVERNMENT PERFORATING GUIDELINES WHEN LOADING OR HANDLING A PERFORATING GUN.

WARNING: ALL SURFACE TESTING OF THE FIRING CIRCUIT MUST BE DONE BEFORE THE DETONATORS ARE INSTALLED.

Begin loading by inspecting switch sub. Switch bore should be clean and free of debris. Check passage for wires as well. Switch should fit freely into bores up to O-Rings.

Unwind switch wires and feed them through sub body. While holding slight tension on the wires to prevent slack, insert switch body up to O-RINGS. A light coat of grease on body and o-rings will help sealing and switch removal. Using any tool that pushes on steel body, gently push or tap switch body home in bore. **DO NOT HIT OR PRESS ON PIN. THIS WILL ACTIVATE SWITCH.** Pay particular attention that switch wires do not become pinched behind switch body. Pinched or twisted wires are the most common cause of problems.

Connect yellow wire on uphole end of switch to through circuit of gun and connect Red or Black wire with diode to insulated leg of detonator. Downhole pin continues through circuit to lower gun. As each sub and switch is made up, we recommend using a blasting meter to check continuity through the firing circuit. This helps to identify and locate any problems immediately, rather than right before or after going downhole.

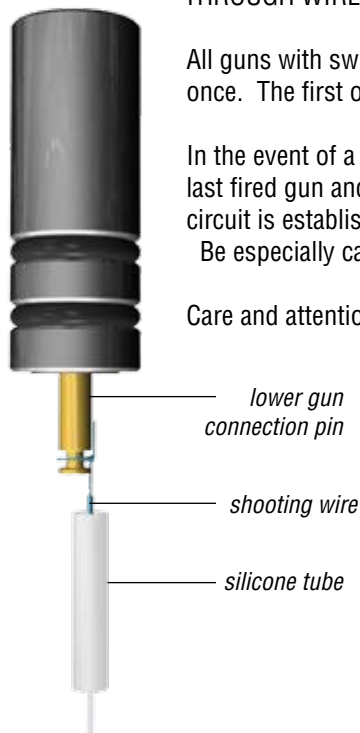
When loading guns it is helpful to mark them plainly as Positive or Negative, depending on the switch used. Red and black paint on the port plugs, charge scallops, or switch subs, has worked well for this. EBS identifies the polarity of the switch by which polarity it will pass to a detonator after it functions. **THE SWITCH DOES NOT DISCRIMINATE POLARITY ON THROUGH WIRE.** It is important that the operator be aware of the layout and sequence of his guns.

All guns with switches must be fired with DC (direct current). Any AC (alternating current) will fire all guns at once. The first or bottom gun must be fired with the opposite polarity of the switch above it.

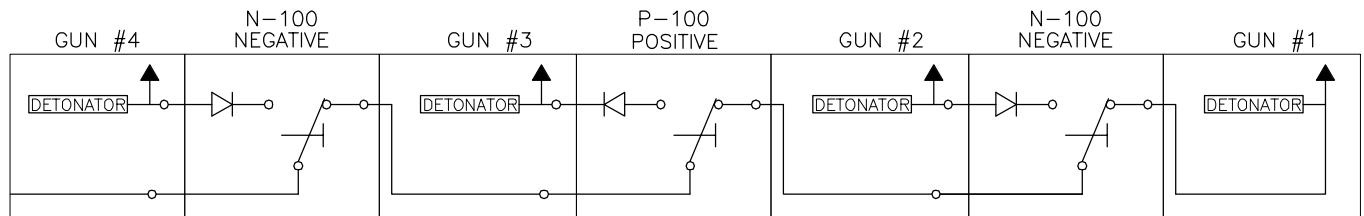
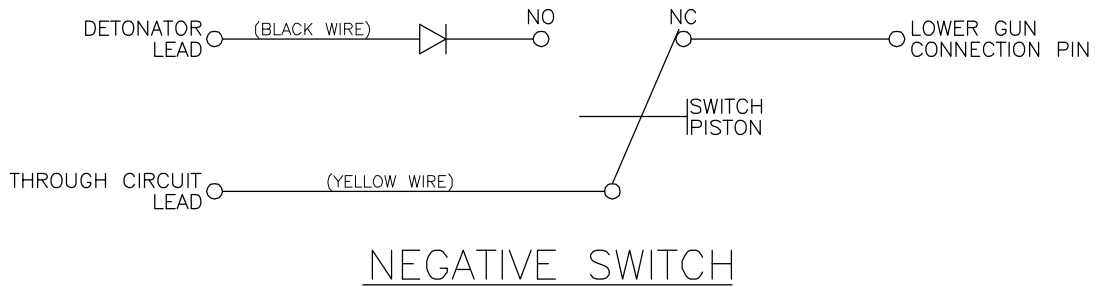
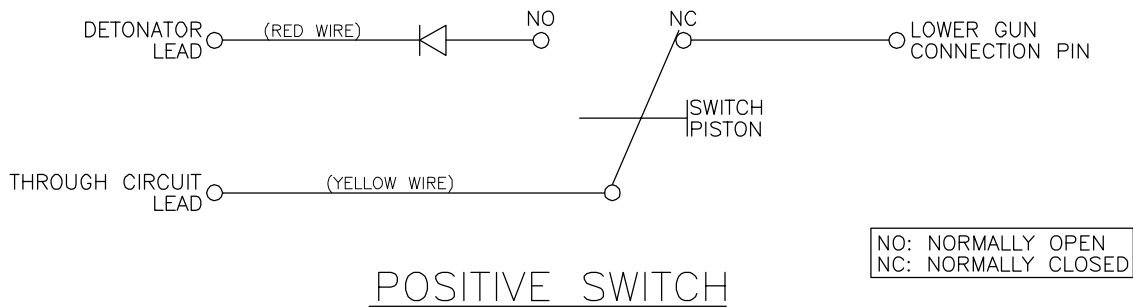
In the event of a misfire, after following all company **SAFETY POLICIES AND INDUSTRY REGULATIONS** break off last fired gun and remove all detonators from the gun string. Check circuit through remaining gun string. After circuit is established, connect bottom gun circuit to pin, install all detonators, and continue perforating.

Be especially careful to note polarity of gun above switch.

Care and attention in loading and assembly will ensure good performance in the field.



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SEQUENCE WIRING