

Airsoft Prototype Fuel Rod Prop

The fuel rod prop is intended to assist airsoft games by adding a level of realism. It has 5 game modes, one demo mode and a sensitivity setting mode. The game mode is altered by simply tapping the device within 5 seconds of powering it up to step thru the modes.

It is a simple looking cylinder with 3 levels of RGB LED lights in the opaque center section. The main power switch is hidden in a pinhole and is a push-on/push-off style switch. The system takes input from a hidden internal magnetic switch in the rear of the base, and a shock sensing piezo. The system communicates its status using the RGB LEDs and a simple piezo beeper.

Power

Power for the system is from an internal LiPo or NiMh (9.6v max power no matter what battery is used) battery connected with a deans connector. Changing the battery is as simple as unscrewing the lock screw and the end cap on the top of the device and switching out batteries.

Setting a mode

Power on the device, using a pin or small metal rod to press the hidden power switch, then hold the device steady. The device will initialize and show the current mode. The mode is retained from the last setting automatically.

If you wish to change the mode, tap the device within 5 seconds of powering it on. Each tap will be reported by a change in the light display and the number of beeps corresponding to the mode. Since there is no other display, the RGB lights use binary to show the current mode (the top LED is bit 1, value of 1 - middle #2 LED is bit 2, Value of 2 - bottom #3 LED is bit 3, value of 4). You add up the lit lights to get the mode (mode 5 would be top and bottom or 1+4 lit up). Or just count the beeps.

Charging Base

The unit uses a charging base with a hidden magnet to “charge” or “disarm” the device. The bases are not selective – all bases have the same effect, so it will be up to the players to follow rules about where they can charge and not “cheat”. However, players that figure out this fact may end up improving game play, so the enforcement of your rules on where and when a charge/discharge base can be used is entirely up to you.

One idea to enforce base restrictions is to mount the base on a removable stand, and place/remove the bases as needed for game play.

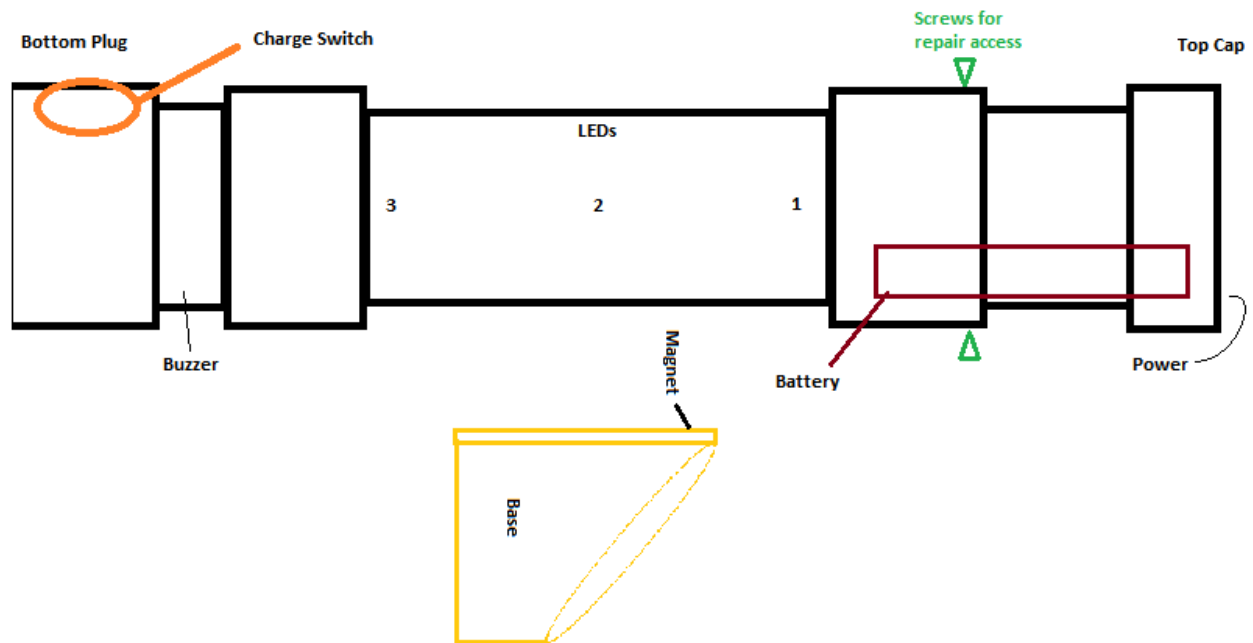
Modes

The modes are as follows. More details about the mode are included below the table. Generally speaking, a blue unit is discharged and will not explode. A green unit is charged, and may or may not explode or discharge if shaken or the charge decays. Red is always danger. White indicates programming mode or what mode is selected.

Mode (binary)	Name	Details
1 (001)	Resupply Safe	Starts uncharged, so the players must find a base to charge it. After charged, the contents decay within 30 minutes. If a player

		pushes the device into red mode by shaking it more than 5 times, the unit discharges.
2 (010)	Demo	Used in initial rally to show the players how the unit operates. Unit starts discharged, must be charged, then decays within one minute to “discharged” mode (blue). Unit can be recharged as many times as desired to demonstrate.
3 (011)	Sensitivity Set	Not a game mode. In this mode, the green LED blinks for 5 seconds waiting for you to “tap” the unit as hard as you want the shake sensor to be set. Hold the unit without shaking at all for maximum sensitivity, tap hard to make the unit robust. Hold unit still for 5 seconds to accept your setting after tapping.
4 (100)	Search & Rescue	Unit starts charged but “blinks” and beeps every 3 seconds to help locate it. Charge will decay within 30 minutes. The unit will go red if abused and pushed to red zone but will never explode or die from abuse. Game ends when charge totally decays, or they deliver it to a base and insert it to deliver the supplies.
5 (101)	Hot Potato	Unit starts charged. Pushing unit to red mode 5 times will cause it to explode. Unit will explode at the end of 30 minutes as well – UNLESS the base is used to reset the countdown.
6 (110)	Rush	Starts charged. Unit will react to shaking but will never be disabled. There is no decay, but the unit must be placed in a base for 5 minutes to explode. Unit resets after explosion.
7 (111)	Resupply Risky	Starts uncharged, so the players must find a base to charge it. After charged, the contents decay within 30 minutes. If a player pushes the device into red mode by shaking it more than 5 times, the unit explodes.

Basic Diagram



Cheat Sheet:

Mode (binary)	Name	Details
1 (001)	Resupply Safe	Uncharged, Charge decay 30m. 5Reds Discharges.
2 (010)	Demo	Used to demo unit. Starts discharged, once charged decays in 2 mins and shaking 2x makes it go red and discharge. Can be recharged.
3 (011)	Sensitivity Set	Unit blinks green for 5s listening for shake level (tap it how hard you want, not at all for max sense. Hold for 5s to accept level.
4 (100)	Search & Rescue	Blinks/beeps at start, picking it up starts 30m countdown to discharge. Charge decays in 30m. Insert in base to deliver and win.
5 (101)	Hot Potato	Charged. 5Reds to explode, or 30m countdown to explosion. Placing in base will reset countdown.
6 (110)	Rush	Charged, No shake reaction, no decay. Unit counts down 5m when placed in base to explosion, then resets.
7 (111)	Resupply Risky	Uncharged, Charge decay 30m. 5Reds Explodes.