

Art Applewhite Rockets

from deep in the heart of Texas



The Forte' Launch Controller



User's Manual

Introduction

The Forte' Launch Controller - Simple, Safe, Reliable and Compact. A self-contained, four-pad launch controller in a high impact, water resistant, polypropylene case. It comes in three versions, Deluxe, Standard, and Economy. The control panel has a water resistant snap down cover. The generous 12" x 6" x 8" internal space allows room to store cords, accessories and a 12 volt, lead-acid, riding lawnmower battery (not included). All electrical components, including switches, connectors and wiring, are rated at 15 amps or higher. All pad positions are individually selectable. The controller is capable of 4 simultaneous launches (drag race) or multiple cluster ignition. The built-in continuity tester draws a maximum of 10 milliamps, safe for all igniters including ematches, and operates whenever a pad is selected and continuity exists. The launch button is removable and serves as the safety interlock. Included with all versions of the Forte' launch controller are:

1. A 3 foot power supply cord with 50 amp alligator clips for connection to either an internal or external 12 volt power supply (battery).
2. Hand-held, push-button launch switch rated at 60 amps with a 3 foot connecting cord. The launch switch is housed in a water resistant casing and protected with a weatherproof rubber boot.
3. Two pairs of pad wires with commercial grade plug, solder-less banana plugs, 8 alligator clips and Velcro cord ties.

The only thing you need to add is a 12 volt power supply (battery). You will also need extension cables for the Economy version only. Both of these are available at Walmart and elsewhere at a modest cost. Parts which require periodic replacement such as pad cables and alligator clips are available separately.

Note: This controller has it's limitations. It is designed primarily for model rockets but may also be used for high power rockets provided care is taken to ensure enough current reaches the pad to ignite the motor. Extension cables should be of high quality, heavy gauge wire and no more that 100 feet long. There is no pad-side continuity check with this controller.

Quick Start Instructions

1. Open the case and install the internal battery.
2. Connect the internal battery to the power supply cable with the large alligator clips. The red clip must go on the + (Plus) terminal of the battery and the black clip must go on the – (minus) terminal of the battery for the continuity checker to work.
3. Close and latch the case and flip open the Control Panel cover.
4. Plug the two prong connector of the Launch Button into the connector on the lower left outlet.
5. Plug two, 14 ga., 3 wire extension cables, at least 25 feet long, in the two outlets on the right side. The top outlet is for pads 1 & 2 and the bottom outlet is for pads 3 & 4.
6. Plug the two pairs of pad wires into the sockets of the extension cables. The white wires are for the odd pad (1 or 3) and the brown wires are for the even (2 or 4) pad.

Operating Instructions

1. Put all pad select switches in the SAFE (Off) position.
2. Connect the igniter(s) to the appropriate pad wires.
3. Momentarily select the pad by placing the pad select switch in the ARMED (on) position to test for continuity. The buzzer should give a steady, unwavering tone.
4. Return the pad select switch to the SAFE (Off) position.
5. When the range is clear and rockets are ready to launch, select the appropriate pad by putting it's selector switch in the ARMED (On) position. The continuity buzzer will sound continuously until the Launch button is pressed and the rocket is launched.
6. Once the rocket is launched, return the pad select switch to the SAFE (Off) position.

Maintenance

The controller requires very little maintenance. If it is kept clean and dry, it should give years of reliable service. Avoid over stuffing the box with too many cables and other accessories. There is sufficient room in the box for the recommended battery, the launch button and the pad cables. There is not enough room for the extension cables. They should be stored separately.

The banana plugs and alligator clips on the pad wires should be cleaned after every launch. Built up soot and corrosion can be cleaned off with a wire brush. Replace the pad wires and alligator clips if they are too corroded or the insulation is burned through.

Charge the battery regularly. At least once a month, for several hours. Always disconnect the power supply cable (Large red and black alligator clips) from the battery when connecting the battery to the charger.

The launch controller will weigh about 20 pounds with the battery installed. Handle it with care and don't drop or tip it over.

Parts



The Launch Controller



The Launch Button



The Pad Cables with Alligator clips
2 sets are required for 4 pads



The Control Panel

Top – Pad select switches

Pad select switch positions – Left = SAFE (Off), Right = ARMED (On)

Left, center – The continuity buzzer

Left, bottom – The Launch Button Connector

Right – The Extension Cable connectors

Center – Fold Down Carrying Handle



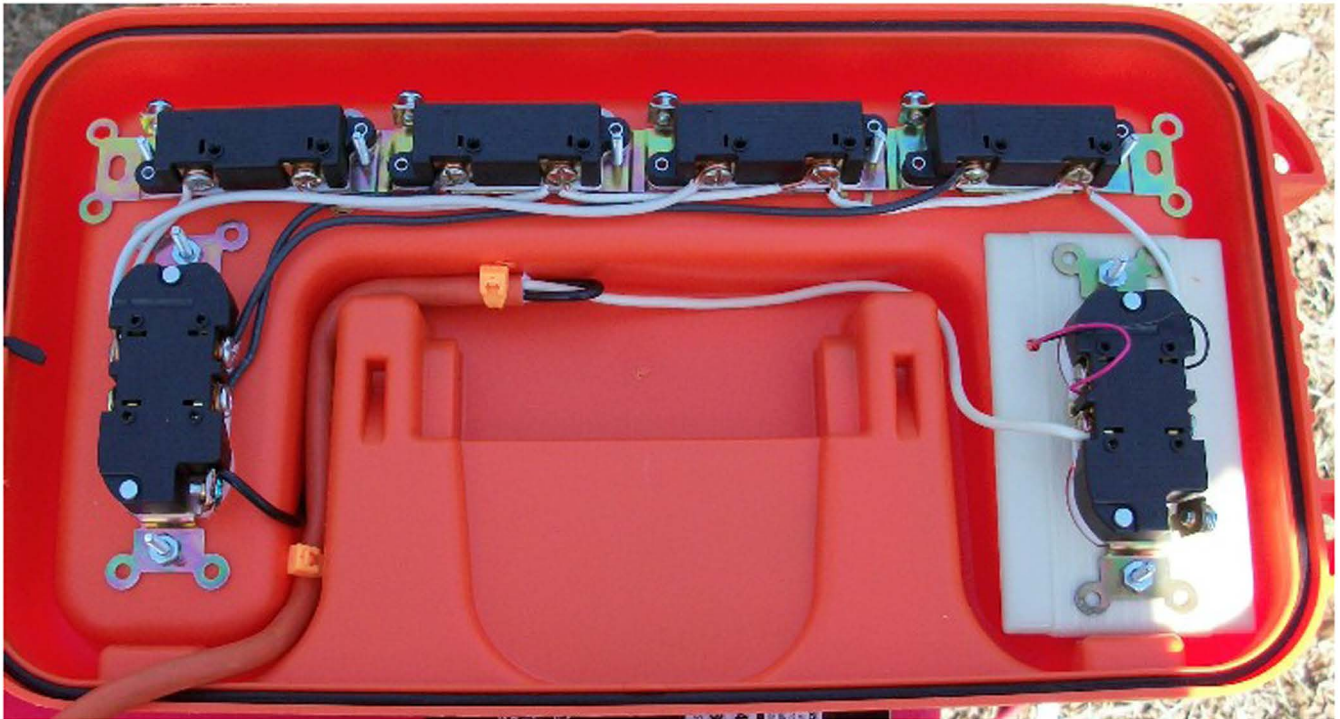
The Forte' Launch Controller configured for a launch. The Control Panel Cover is open, the Launch Button and Extension Cables are connected to their respective outlets.



The Launch Controller connected to an internal lead acid battery



Suitable Internal Batteries (not included)
Left – Auto Zone, Right – Walmart



Control Panel Parts Layout (Rear View)

- Top – Pad Select Switches
- Left – Extension Cord Outlets
- Right – Launch Button Outlet
- Bottom left – Power Supply Cable

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Schematics

