

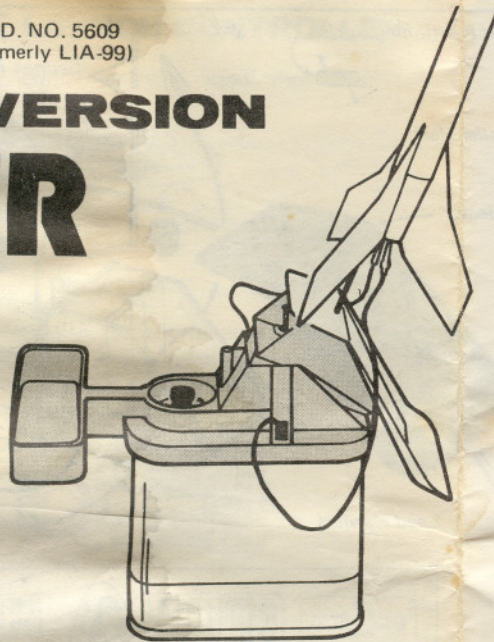


PROD. NO. 5609
(Formerly LIA-99)

DELUXE VERSION

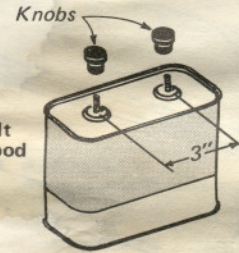
POWR PAD^{T.M.}

MODEL ROCKET LAUNCH SYSTEM



Thousands of model rockets are launched every day in the United States, Canada and other countries. The vast majority of these flights are single-engine (or staged) "¼A" thru "D" power. Powr-Pad is specially designed to be the perfect launch system for this typical model rocket flying with standard engines and mini-motors.

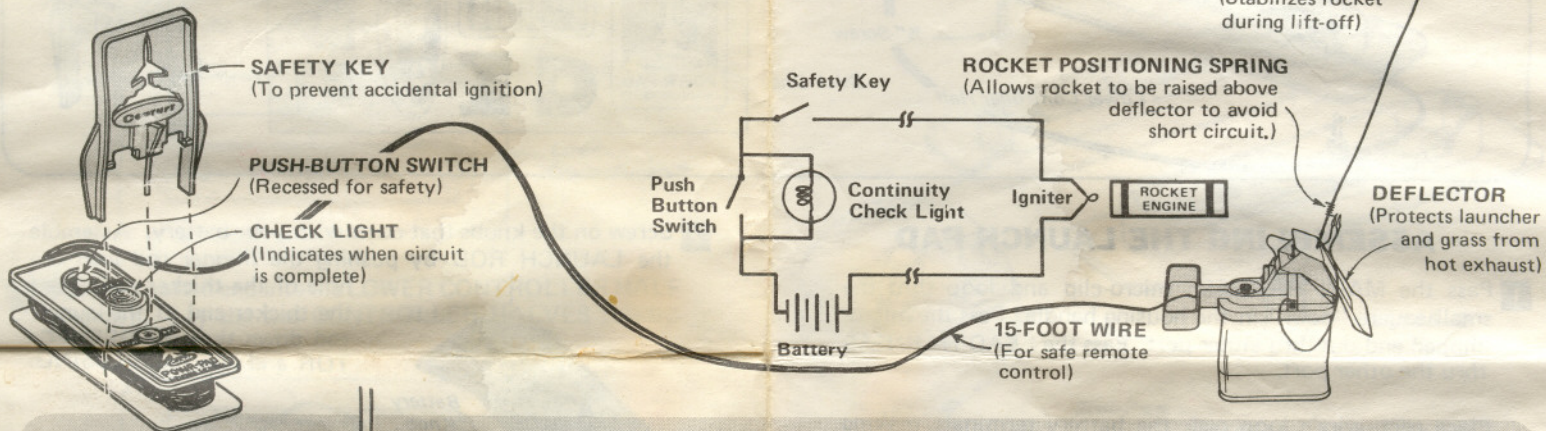
The massive heavy battery (not included) provides a very low center of gravity. This makes the Powr-Pad as stable and tip-resistant as a standard tripod style launcher.



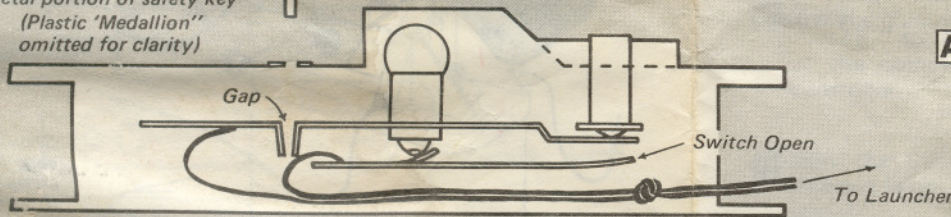
Common 6-volt lantern cell, good for over 500 ignitions.

BRIGHT STAR	158
BURGESS	TW-1
EVEREADY	731
MALLORY	M-918
MARATHON	896
RAY-O-VAC	918
RCA	VS317
SEARS	4707
WARDS	8MW
WIZARD	7D8918

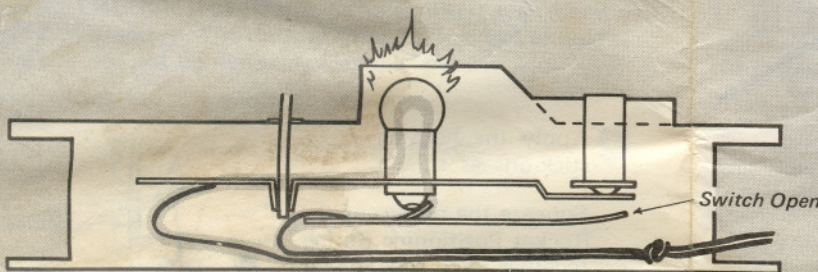
The Powr-Pad is not intended for "cluster" or multiple ignition. We still recommend a standard 12-volt system for that.



Metal portion of safety key
(Plastic "Medallion" omitted for clarity)

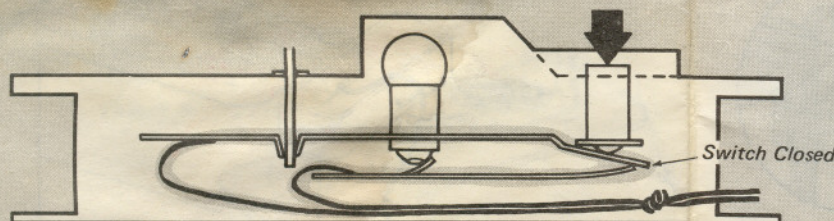


A The safety key is left out while the launcher's micro-clips are attached to the engine igniter. Electricity cannot flow thru because of the gap in the circuit.

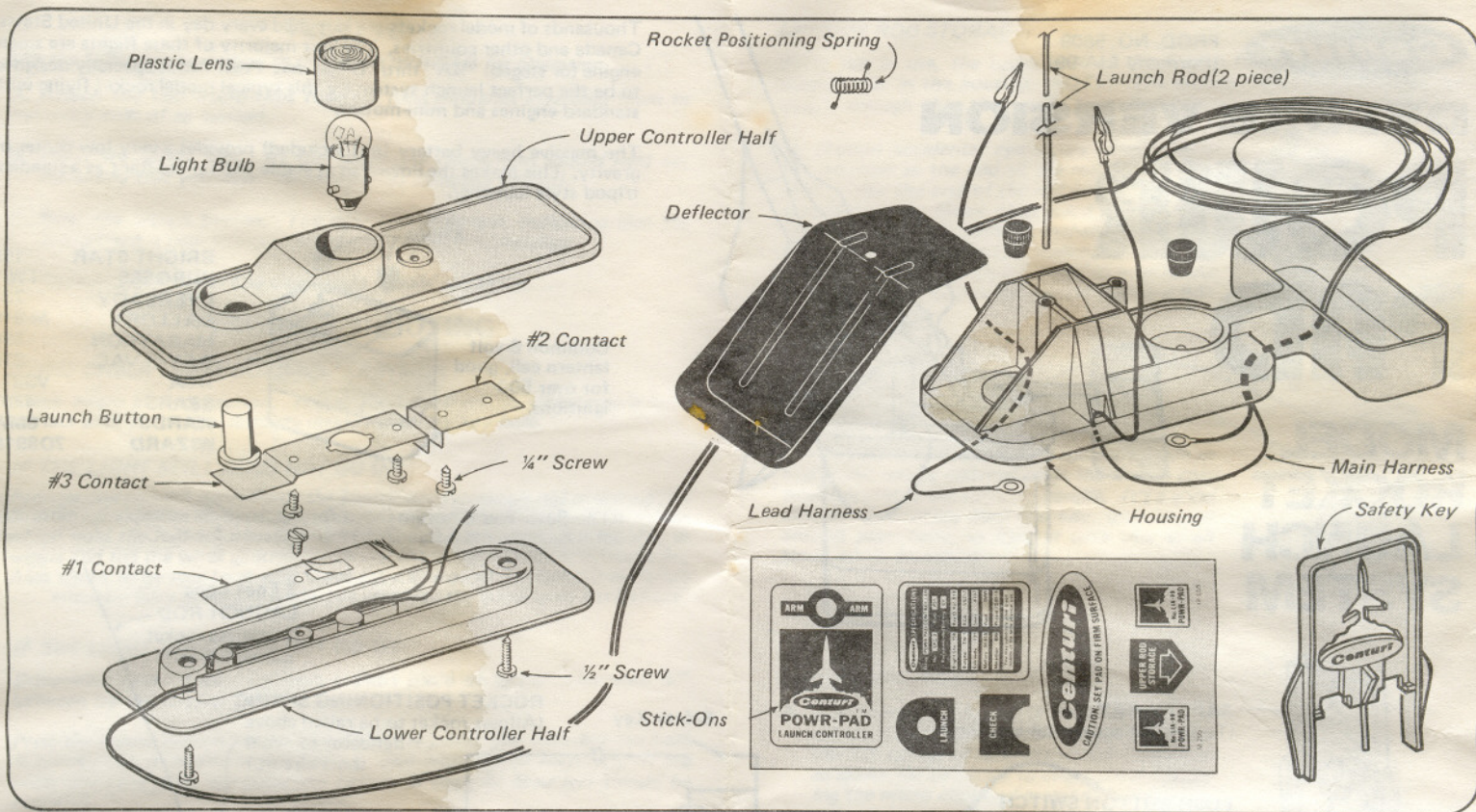


B Inserting the safety key "arms" the circuit, and allows electricity to flow thru the check light. The light should be lit, informing you that the firing circuit is properly hooked up and ready to go.

The small filament in the light bulb resists the flow of electricity (that's what makes it glow), and does not allow the full electric current to ignite the igniter.



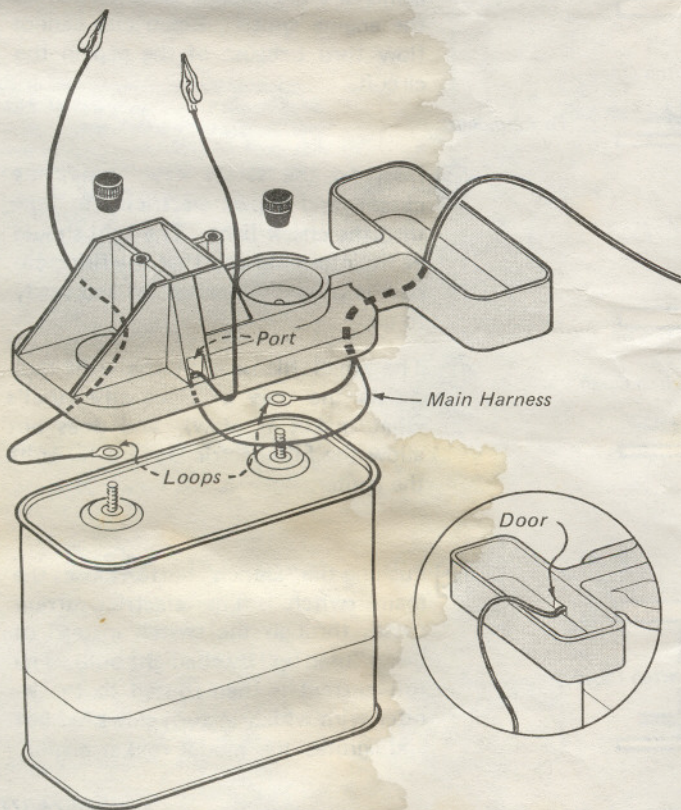
C Pushing the "launch" button closes the main switch. The electric current passes through the switch instead of being "used up" by the light bulb. The full current is then routed to the igniter wire which in turn glows red hot and ignites the model rocket engine.



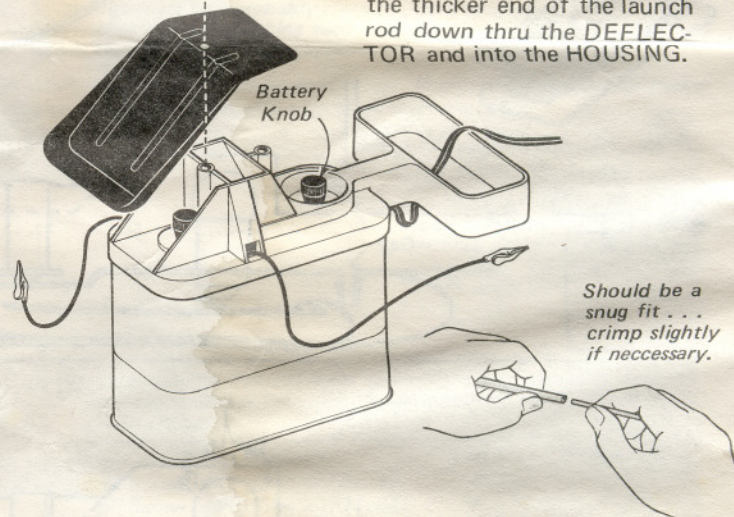
ASSEMBLING THE LAUNCH PAD

- 1 Pass the MAIN HARNESS micro-clip and loop thru the small square "door" in the housing handle. Pass the micro-clipped end out thru either port. Pass the LEAD HARNESS thru the other port.

Place each wire's loop over the battery terminals, making sure they are firmly around the terminals. Lower the HOUSING carefully in place, and avoid jamming any wires.

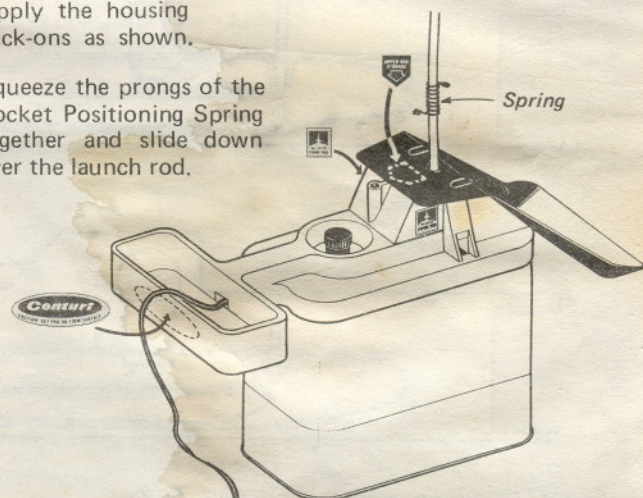


- 2 Screw on the knobs that came with your battery. Assemble the LAUNCH ROD by pushing the thinner rod into the hole of the thicker rod. Pass the thicker end of the launch rod down thru the DEFLECTOR and into the HOUSING.



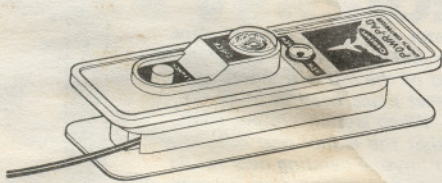
- 3 Apply the housing stick-ons as shown.

Squeeze the prongs of the Rocket Positioning Spring together and slide down over the launch rod.



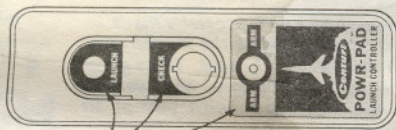
ASSEMBLING THE LAUNCH CONTROLLER

The completed launch controller will look like this:



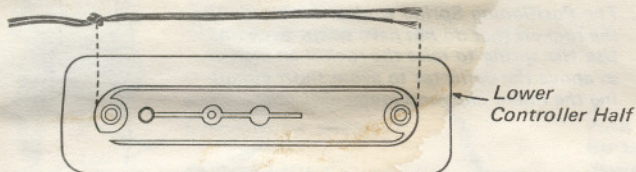
- 4** The metallic "LAUNCH" stick-on should be applied, as the very first step, because it is too tricky to put on after the launch button is in place. Simply peel stick-ons off their backing sheet and position gently as shown.

Rub firmly for good bond



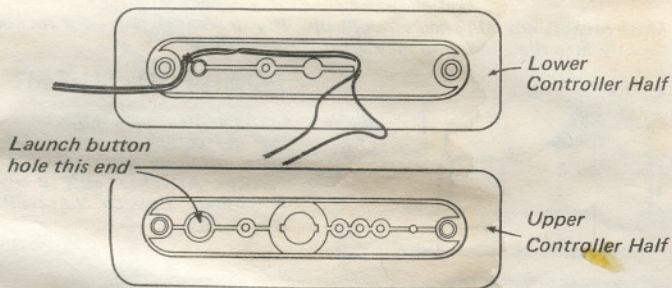
Stick-Ons

- 5** You need to tie a knot in the controller end of the MAIN HARNESS (this will prevent the cord from being pulled out). Measure the knot position as shown.



Lower Controller Half

- 6** Lay the knotted end into the LOWER CONTROLLER HALF as shown. Lay the two CONTROLLER HALVES side-by-side as shown.

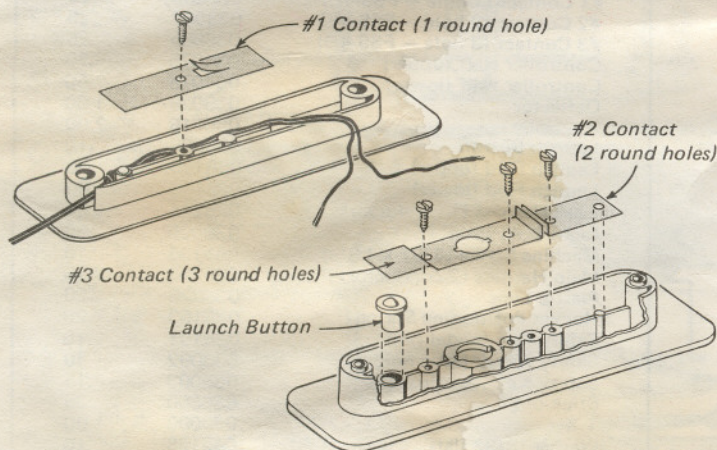


Lower Controller Half

Launch button hole this end

Upper Controller Half

- 7** Insert the LAUNCH BUTTON in its hole. Insert each metal CONTACT as shown. Use the four short (1/4") screws to hold in place . . . do not tighten screws completely.



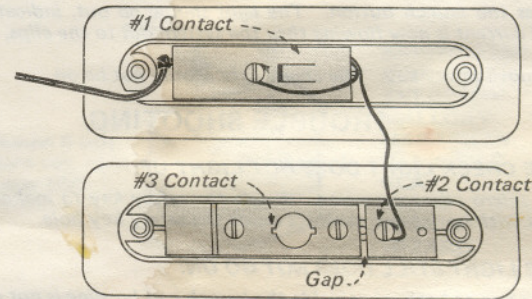
#1 Contact (1 round hole)

#2 Contact (2 round holes)

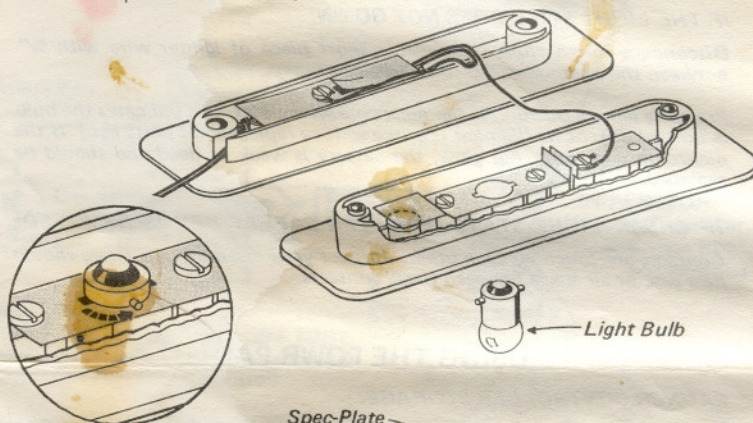
#3 Contact (3 round holes)

Launch Button

- 8** Wrap the exposed wires tightly around their screws as shown and tighten all screws. Be sure there is a gap between contacts #2 and #3.



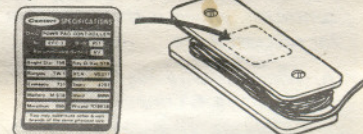
- 9** Insert the LIGHT BULB up through its hole and twist it 1/4 turn . . . this prevents the bulb from falling out. Notice how the SAFETY KEY fills the gap between contacts #2 and #3 to complete the circuit.



Light Bulb

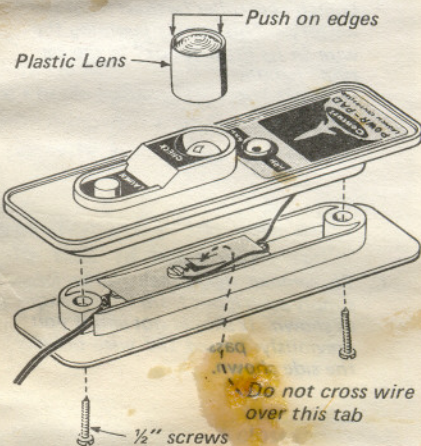
- 10** Apply the stick-on "SPEC-PLATE" to the backside of the completed launch controller.

Spec-Plate



- 11** Join the CONTROLLER HALVES carefully as shown, without jamming the wires. Secure with the two long (1/2") screws.

- 12** Push the PLASTIC LENS down into place . . . It should be a tight friction-fit. If it seems loose remove it and rough up the edge a bit, and reinsert.

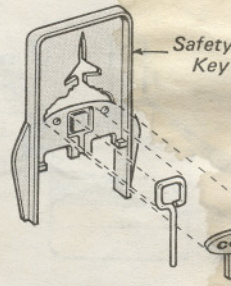


Push on edges

Plastic Lens

Do not cross wire over this tab

1/2" screws



The medallion safety key parts are glued together with plastic model cement, or epoxy glue. The metal portion of the key is sandwiched firmly between the two plastic parts.

TESTING

Use the following procedure to test the POWR-PAD for operation.

- Attach the two micro-clips together (this simulates attaching them to the metal ends of an igniter).
- Insert the safety key. At this point, the check light should light up, indicating that you have "continuity" (a complete circuit).
- Press the launch button. The light should go out, indicating that the full current is now flowing thru the system out to the clips.
- Remove safety key. The check light should not be on.

TROUBLE SHOOTING

IF THE CHECK LIGHT DOES NOT LIGHT UP:

Check micro clip connection. Wiggle the safety key to make sure it is in contact with both brass contacts inside the safety key hole.

IF THE LIGHT STILL DOES NOT GO ON:

Perhaps one or both wires inside the launch pad housing is not making good contact with the battery terminal. Remove the deflector. Loosen the knobs which hold the housing on the battery. Reach down inside the housing to wiggle and tug the wires gently. Watch the check light to see if it comes on. Also check to be sure both wire loops are still around the battery terminals . . . one may have fallen off when you attached the housing to the battery.

IF THE LIGHT STILL DOES NOT GO ON:

Disconnect micro clips. Connect a short piece of igniter wire with $\frac{3}{4}$ " between the micro-clips.

Press the launch button. If the nichrome wire glows, this indicates the bulb is burned out, or its filament is broken. (See replacement parts list.) If the nichrome wire does not glow, the battery is weak or dead and should be replaced.

IF CHECK LIGHT STAYS ON AFTER SAFETY KEY IS REMOVED:

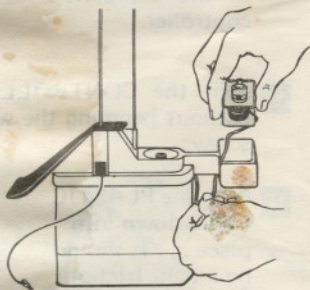
Contacts are touching each other. Inspect your assembly . . . There should be a gap, or air space between those contacts.

USING THE POWR-PAD

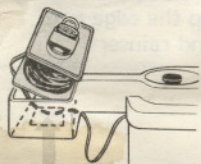
LAUNCH CONTROLLER STORAGE:

For the utmost in portability, the wire may be wrapped around the launch controller, which is then stored in the carrying handle. Follow these tips for successful use:

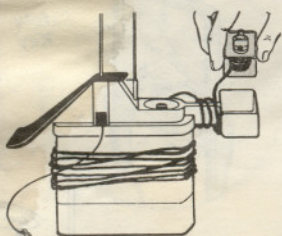
- Wind the wire neatly around the launch controller. It will fit easily if not done in a sloppy manner.



- Push the launch controller down into carrying handle. Notice how wire is passed down the side of the launch controller farthest from the battery. This avoids jamming the wire in its little "door" in the carrying handle.



- To remove the launch controller, simply push it out from underneath as shown. It should not jam if you previously passed the wire down the side shown.

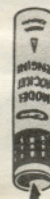


- If you are in a hurry and do not want to bother storing the wire this way, simply wrap the wire around the battery.

LAUNCH ROD STORAGE:

When not in use, the upper half of the launch rod may be stored in its special hole in the housing. **NOTE:** The launch rods should fit together snugly enough that they can't be pulled apart by the rocket taking off.

To prevent accidental eye injury always place the launcher so the end of the rod is above eye level or cap the end of the rod with hand when approaching it. Never place head or body over the launching rod. When launcher is not in use always store it so that the launch rod does not present a danger to anyone bending over it. As shown here, an expended engine case is a perfect safety cap.



SAFETY KEY:

The "Medallion" Safety Key is specially made so that it can not be inserted while the launch controller is still in the carrying handle. It's a good idea to tie a string thru the key, and wear it around your neck, to keep it with you at all times while launching.



LAUNCHING TIPS

- The Positioning Spring is ideal for use with the rockets that do not have swept-back fins. Use the spring to raise the rocket an inch or so above the deflector to avoid short circuiting the micro clips and metal deflector.
- The Powr-Pad is very stable and resists tipping over, due to the heavy battery. However, please avoid launching off loose gravel, spongy grass, or other similar soft surfaces.
- Micro clips must be reasonably clean to insure continuity. Make sure the micro clips are not touching each other or the metal deflector, as this would cause a "short" in the system.
- Most rockets are launched straight up. If you want to aim your rocket slightly into the wind, you may want this accessory.

POWR-PAD TILTER

Compensates for weathercocking and parachute drift. Adjusts infinitely within 30° of vertical. Attaches easily to any Powr-Pad. Catalog No. T-99. \$1.25 each.



If you should loose or break any parts of your powr-pad, replacement parts may be ordered directly from Centuri (see parts list). If any part you receive is defective, return it to the factory and ask for a free replacement.

Part Name	Part No.	Price Each
$\frac{1}{4}$ " Screw (#4 PHSM) 4 required	045139	.10
$\frac{1}{2}$ " Screw (#4 PHSM) 2 required	045126	.10
#1 Contact (1 hole - FSS-4E)	038066	.25
#2 Contact (2 hole - FSS-4F)	038067	.25
#3 Contact (3 hole - FSS-4D)	038065	.25
Controller Half (upper)	034075	.50
Controller Half (lower)	034076	.50
Deflector	038029	1.00
Housing	085216	2.00
Launch Button	038068	.10
Launch Rod (upper)	038194	.40
Launch Rod (lower)	038198	.60
Lead Harness (1 conductor)	085214	1.00
Light Bulb (Mfg. #51)	038020	.50
Machine Screw (8/32 x 1 5/8)	045135	.10
Main Harness (2 conductor)	085213	2.75
Plastic Lens	038026	.20
Rocket Positioning Spring	038153	.20
Safety Key (metal pin)	038101	.15
Safety Key (plastic holder)	038092	.40
Safety Key (plastic cap)	038093	.15
Stick-ons	036850	.35
Tilter	038090	1.00
Washer (8/32 flat)	045188	.10
Wing Nut 8/32 x 3/4)	045142	.10

Send 85¢ extra for postage and handling.