PML HYBRID-READY FAQ

1/4/04

Hybrid Ready

What makes a kit “hybrid ready”? A long motor tube, an electronic deployment system and/or compartment, and a venting hole. The customer must drill the venting hole as motors differ as to where the hole should be located.

Hybrid Motor Mounts

Hybrid motors require very long motor mounts. Call us for specific assistance in obtaining a hybrid motor mount for a scratch-build project. We offer kits that are already designed specifically for hybrid motors; see the Hybrid Ready section of the webstore.

Our 54mm kits can take Hypertek’s "Standard J" and their "New Hammerhead J". Our 38mm kits are intended for Sky Ripper Hybrids and, with the use of a 29mm adapter, RATT Works hybrids.

Some customers ask why the Ion kit has a shorter (28”) MMT than our other 38mm kits. Simple…to keep the price, size and weight down for using smaller H and I hybrids and/or smaller composite motors.

PMR Motor Retention System

The PMR-54, -38, and -29/38 will work with hybrid motors.

ERM System

The Electronic Recovery Module (ERM) system is based on our CPR3000 system, and is designed specifically for hybrid rockets. ERM is designed for the PML AccuFire timer or PML Co-Pilot altimeter, though others may work. All of our hybrid-ready rockets (except Aurora, Tempest, and Nimbus) use the ERM System.

Here’s what you get with the ERM system:

- Complete altimeter/timer bay assembly.
- Complete Threaded Airframe Coupler assembly made from 6061 aluminum with a blue anodized finish.
- All mounting hardware for the PML Co-Pilot or Transolve P6 altimeter. (Mounts for Transolve P5 or P4 and Adept ALTS-25 altimeters sold separately).
- A complete ejection system including charge canister for e-matches and holder. (Charge cylinders for flash bulbs sold separately.)
- Rear deployment piston system.
- External safety switch and lead wires.

See the Hybrids page of our website for graphics of ERM and additional details.

ERM-Complete vs. ERM-Retrofit Systems
The ERM Complete includes the recovery airframe and the pre-cut nosecone. All you will need with this is the MMT/fin section to make a rocket.

The ERM Retrofit does not include the recovery airframe nor the nosecone. This is good for retrofitting an existing kit.

ESH-54 Timer Housing

An ESH54 is a timer housing made from a 54mm coupler tube, a couple of bulkplates, a removable G-10 plate (that you mount the timer to) and an LES holder. The tank of a Hybrid motor is approximately the same diameter as the ID of the coupler tube. This allows the ESH to slip over the tank (must be friction fitted) by a distance of about 1/2" to 1" and butt against the lower bulkplate. The upper bulkplate (cap) has the LES holder attached to the topside and is removable for accessing the timer. This "cap" is actually two bulkplates glued together in a fashion similar to the one on an Intellicone. The G-10 plate (with timer installed) is held centered within the tube via two opposing (wooden) runners and can be slid out when the upper bulkplate (cap) is removed.

CPR3000 and Hybrids

Using CPR3000 with a hybrid-based rocket is usually impractical, due to the excessive length that needs to be added to the rocket. CPR3000 requires nearly 3 feet to be added to a hybrid-based rocket, effectively putting it “out of bounds” for use with hybrid rockets. Our ERM system is a much better solution.

PML AccuFire and Hybrids

The AccuFire Staging Timer is NOT affected by hybrid motor harmonics; it’s completely safe to use with hybrids.