**Before You Begin**

- Do not modify the motor in any way.
- If any parts are missing or damaged, call AeroTech at 435-865-7100.
- Use only AeroTech RMS reload kits to refurbish an RMS motor.
- Do not interchange parts from different reload kits.
- Do not reuse any parts of the RMS reload kit.
- Save the reload kit plastic bag for the used reload kit parts. Dispose of bag and parts properly.

**Motor Specifications**

- **Burn Time:** 2.9 seconds
- **Peak Thrust:** 192 pounds
- **Delay Time:** 14 seconds (adjustable)
- **Motor Length:** 16.15"

**Prepare the Rocket's Recovery System and Then Launch the Rocket**

- Remove the smoke charge assembly components from the forward closure and discard. Using wet wipes or damp paper towels, remove all smoke charge and propellant residue from the closure. WARNING: FAILURE TO COMPLETELY REMOVE SMOKE CHARGE RESIDUE FROM THE INSIDE OF THE FORWARD CLOSURE CAN LEAD TO GAS LEAKAGE ON A SUBSEQUENT FLIGHT AND DAMAGE TO YOUR RMS MOTOR FORWARD CLOSURE AND ROCKET VEHICLE. NOTE: Use of a plugged forward closure will eliminate the possibility of this failure mode.

**Fire Safety**

Tests show that the pyrotechnic components of RMS™ reload kits will not explode in fires and normally will not ignite unless subjected to direct flame and then will burn slowly. Use water to fight any fires in which AeroTech RMS™ reload kit pyrotechnic components may become involved. Direct the water at the AeroTech RMS™ reload kit pyrotechnic components to keep them below their 550 deg. F autoignition temperature. Foam and carbon dioxide fire extinguishers will NOT extinguish burning propellants of the type used in RMS™ reload kit pyrotechnic components. Keep reload kit pyrotechnic components away from flames, sources of heat and flammable materials.

**Disclaimer and Warranty**

As we cannot control the storage and use of our products, once sold RCS shall not be held responsible for any personal injury or property damage resulting from the handling, storage or use of our product. The buyer assumes all risks and liabilities therefrom and accepts and uses AeroTech/RCS products on these conditions. No warranty either expressed or implied is made regarding AeroTech/RCS products, except for replacement or repair, at RCS's option, of those products which are proven to be defective in manufacture within one year from the date of original purchase. For repair or replacement under this warranty, please contact RCS. Proof of purchase will be required. Note: Your state may provide additional rights not covered by this warranty.

**High-Power RMS™ Reloadable Motor System™**

**K540M-14A Rocket Motor Reload Kit**

For RMS-54/1706 Motor Hardware Metalstorm™ Composite Propellant

To adjust time delay, use AeroTech Reload Delay Kits (RDGs) or drill delay 0.025" per second of adjustment using twist drill. Drilled end faces propellant.

**Do not open reload kit until ready to use.**

**WARNING-FLAMMABLE:** Read Instructions Before Use. Use RMS reload kits only in accordance with instructions. Sale to persons under 18 years of age prohibited by federal law. For use only by certified users 18 years of age or older. Ignite by electrical means only. Do not smoke when loading RMS motors or use in the vicinity of open flames. CAUTION: Keep out of reach of children. Produces showers of hot sparks. Clear launch area of all combustible material for at least 113 foot radius. Follow NAR & TRA safety codes at all times. Motor hot after firing.

**Certified by the Tripoli Rocketry Association • Made in U.S.A. • www.aerotech-rocketry.com**

AeroTech Division, RCS Rocket Motor Components, Inc., 2113 W. 850 N. St., Cedar City, UT 84721

**Motor Hardware**

- **K540M-14A**
- **Composite Propellant**
- **Motor Diameter:** 54mm

**Hardware & Supplies Required**

- RMS 54mm aft closure
- RMS 54/1706 case
- 54mm forward seal disk
- 54mm std. or plugged forward closure
- 54mm reload adapter system (also refer to RAS instructions)
- Sync™ Super Lube™ or other grease
- Hobby knife
- Wet wipes or damp paper towels

**Preparation For Flight**

1. Insert the coated end of a FirstFire™, Firestar™ or other initiator through the nozzle throat until it stops against the delay charge element.
2. Secure the initiator to the nozzle with a piece of masking tape.
3. Install the motor into the rocket's motor mount tube. Ensure that the motor is securely retained in the rocket by using positive mechanical means to prevent it from being ejected during recovery system deployment.
4. Prepare the rocket's recovery system and then launch the rocket in accordance with the Tripoli Rocketry Association (TRA) Safety Code and National Fire Protection Association (NFPA) Code 1127.

**Post-Recovery Cleanup**

NOTE: Perform motor clean-up as soon as possible after motor firing. Propellant and smoke charge residues become difficult to remove after 24 hours and can lead to corrosion of the metal parts. Place the spent motor components in their 550 deg. F autoignition temperature. Foam and carbon dioxide fire extinguishers will NOT extinguish burning propellants of the type used in RMS™ reload kit pyrotechnic components. Keep reload kit pyrotechnic components away from flames, sources of heat and flammable materials.

**Disposal**

Damaged or defective reload kits should be returned to RCS.
Assembly Instructions (numbers refer to item numbers on drawing):

1. Lightly grease o-rings (4, 10, 16, 19). Case threads (7) and delay cavity of forward closure (14) (but not the forward end of cavity).

2. Assemble delay grain (12). Delay section (11). Delay section (13) and delay o-ring (15) as shown.

3. Install forward closure (17) into forward closure (14) and forward closure (7) with forward seal disk (9) (but not the forward end of cavity).

4. Install forward seal disk o-ring (19) into groove in forward seal disk (9) and insert this assembly into one end of liner (6). Until seated.

5. Insert propellant grain (8) into liner (6), then push inner assembly into case (7) until released equally from ends of case.

6. Install forward o-ring (10) into forward (14) and case (7) with the forward seal disk (9).

7. Thread forward closure (14) into the forward end of the case (7) with the forward o-ring (10) until seated.

8. Assemble nozzles (3) o-rings (4), and obturates (2) into open (a) and case (7), until seated.

9. Dispense propellant charge (15) into forward closure (14) (and seal end with propellant charge cap (16).

10. Lightly grease o-rings (4, 10, 16, 19) and seal end with propellant charge cap (16).

Note: All o-rings are of the same type and are interchangeable.