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.

Hardware & Supplies Required

- RMS 38mm aft closure
- RMS 38/360 case
- RMS 38mm std. or plugged forward closure
- 38mm reload adapter system (also refer to RAS instructions)
- Synco™ Super Lube™ or other grease
- Hobby knife
- Wet wipes or damp paper towels

Preparation For Flight

1. Using a hobby knife, cut a corner off the red nozzle cap to create a small (1/16”-1/8”) vent hole. Set the nozzle cap initiator holder aside.

2. Insert the coated end of the FirstFire™ or other initiator through the nozzle throat until it stops against the delay element or forward insulator.

3. Push the vented nozzle cap initiator holder over the initiator lead(s) and nozzle until it stops.

4. 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 at the time of ejection charge firing.

5. 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 delay residues become difficult to remove after 24 hours and can lead to corrosion of the metal parts. Place the spent motor components in the reload kit plastic bag and dispose of properly.

1. After the motor has cooled down, remove the forward and aft closures.

2. Remove the delay insulator, delay o-ring and forward delay spacer (neoprene washer) from the forward closure and discard. Remove and discard the nozzle and the forward and aft o-rings. Using wet wipes or damp paper towels, remove all delay and propellant residue from the closures. WARNING: FAILURE TO COMPLETELY REMOVE DELAY 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.

3. Remove the liner from the casing by pushing on either end. Discard the liner and the forward and aft insulators. Using wet wipes or damp paper towels, wipe the inside of the casing to remove all propellant residue.

4. Apply a light coat of grease to all threads and the inside of the motor case. Reassemble metal parts and store motor in a dry place.

First Aid

For a minor burn, apply a burn ointment. For a severe burn, immerse the burned area in ice water at once and see a physician as quickly as possible. In the unlikely event of oral ingestion of the propellant, induce vomiting and see a physician as quickly as possible. The AeroTech/RCS composite propellant consists primarily of ammonium perchlorate and a rubber-like plastic elastomer.

Disposal

Damaged or defective reload kits should be returned to RCS.

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/RCS RMS™ reload kit pyrotechnic components may become involved. Direct the water at the AeroTech/RCS 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 pyrotechnic components away from flames, sources of heat and flammable materials.

Disclaimer and Warranty

NOTICE: As we cannot control the storage and use of our products, once sold we cannot assume any responsibility for product storage, transportation or usage. 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.

AeroTech Division
RCS Rocket Motor Components, Inc.
Cedar City, UT 84721
www.aerotech-rocketry.com

P/N 20065-2 Rev. 3/28/10
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HIGH-POWER RMS™
Reloadable Motor System™
H170M-14A Rocket Motor Reload Kit
For RMS-38/360 Motor Hardware
Metalstorm™ Composite Propellant

To adjust time delay, use AeroTech Reload Delay Kits (RDKs) or drill delay 0.025” per second of adjustment using twist drill or optional AeroTech Delay Drilling Adapter (DDA). 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 75 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

H170M-14A Typical Time-Thrust Curve

<table>
<thead>
<tr>
<th>Time in Seconds</th>
<th>Thrust in Pounds</th>
</tr>
</thead>
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<tr>
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</tr>
<tr>
<td>0.5</td>
<td>45</td>
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</tr>
<tr>
<td>1.5</td>
<td>35</td>
</tr>
<tr>
<td>2.0</td>
<td>30</td>
</tr>
</tbody>
</table>

Motor Specifications

- Total Impulse: 319.9 N-sec
- Propellant WL: 182.5 grams
- Loaded WL: 330 grams
- Motor Diameter: 38mm
- Burn Time: 1.9 seconds
- Peak Thrust: 45 pounds
- Delay Time: 14 seconds (adjustable)
- Motor Length: 7.95"
Assembly Instructions (numbers refer to item numbers on drawing):

1. Lightly grease o-rings (4, 10 & 17), O-ring & seal of cavity (14) (but not the forward end of cavity)
2. Assemble delay cap (17), delay o-ring (16) and delay spacer (11)
3. Insert forward delay spacer (13) into forward close (14) into the end of the case (7) with the forward insulator (9) and forward o-ring (10) until seated.
4. Insert propellant grains (6) into case (7), then push delay assembly into case (7) until recessed equably from ends of case.
5. Insert forward insulator (9) and forward o-ring (10) into one end and
6. Thread forward insulator (14) into the end of the case (7) with the forward insulator (9) and forward o-ring (10) until seated.
7. Assemble delay seal (12), delay o-ring (16) and delay spacer (11)
8. Disperse electric charge (15) into forward close (14) and seal end with electric charge cap (16)
9. Assemble delay insulator (5) and delay o-ring (6) into case (7) until recessed equably from ends of case.
10. Lightly grease o-rings (4, 10 & 17), O-ring & seal of cavity (14) (but not the forward end of cavity)
11. Place O-ring (18) x 3mm x 21mm x 3mm AeroTech P/N 00001
12. Lightly grease o-rings (4, 10 & 17), O-ring & seal of cavity (14) (but not the forward end of cavity)
13. Place O-ring (18) x 3mm x 21mm x 3mm AeroTech P/N 00001
14. Place delay insulator (5) and delay o-ring (6) into case (7) until recessed equably from ends of case.