PREPARATION FOR IGNITION

1. Install the RMS-RC motor into the vehicle’s motor mount tube. Secure the motor into the vehicle by using a motor hook, friction fit, or tape wrapping around the motor where the motor meets the end of the rocket motor tube. If using a motor hook, be sure to hold the hook away from the motor during insertion into the motor tube to prevent the hook from scraping the motor casing. Position the hook tab into the slotted recess in the aft closure.

2. Install the vehicle on the launch pad or make any other preparation required before hooking up the igniter.

3. Attach the electrical launch controller leads to the COPPERHEAD igniter as described below and launch the vehicle as shown in the product instructions.

How to use your COPPERHEAD Ignitors: The AeroTech/RCS COPPERHEAD igniter requires a 12 volt power supply with 3.0 amps of current at the igniter. A 12 volt lantern battery or a car battery is a good source of power. If your launch system is not configured to use COPPERHEAD Ignitors, do one of the following:

1) Purchase an AeroTech/RCS INTERLOCK™ igniter clip and either attach it permanently to your launch system or clamp the microcips of your launch system to the tabs on the INTER- LOCK clip or...

2) Take two pieces of insulated tape and place one piece over the inside of one jaw on each micro-clip. This will insulate one side of the jaw from the other on each clip. When attaching the micro-clips to the igniter, hook up one clip to the igniter and then attach the second clip so that its taped jaw is on the opposite side of the igniter from the taped jaw of the first clip.

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. Ingestion of the propellant, delay or ejection charge, induce vomiting and see a physician as quickly as possible. The AeroTech/RCS composite rocket propellant consists of ammonium perchlorate and a rubber-like plastic elastomer.

DISPENSE OF SPENT MOTOR

After the motor has cooled down, remove the aft closure. Using a wet wipe or damp paper towel, remove any propellant residue from the closure.

POST-FIRING CLEANUP

2. Remove the nozzle, O-ring, and liner assembly and discard.

3. Using a wet wipe or a damp paper towel, 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 the metal parts and store in a dry place.

FIRE SAFETY

Tests show that composite propellant 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 fires in which AeroTech/RCS composite propellant RMS reload kits may become involved: direct the water at the AeroTech/RCS RMS reload kits to keep them below their 550˚F autoigniton temperature. Foam and carbon dioxide fire extinguishers will NOT extinguish burning propellant of the type used in AeroTech/RCS composite propellant RMS reload kits.

TYPICAL TIME - THRUST CURVES:

<table>
<thead>
<tr>
<th>Motor Type</th>
<th>Propellant Weight</th>
<th>Total Impulse</th>
<th>Average Thrust</th>
<th>Loaded Motor Weight</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>oz</td>
<td>gms</td>
<td>lb-sec</td>
<td>N-sec</td>
</tr>
<tr>
<td>F13T</td>
<td>1.1</td>
<td>31.2</td>
<td>13.5</td>
<td>60.0</td>
</tr>
<tr>
<td>G12T</td>
<td>1.8</td>
<td>51.1</td>
<td>22.5</td>
<td>100.0</td>
</tr>
</tbody>
</table>

T = Blue Thunder Propellant

DISPOSAL

Damaged or defective reloads should be returned to RCS.

NOTE: As we can not 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.

RC 32/60 (F13/G12) RCS

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Part # 20042 Rev: 4/27/04
Made in the U.S.A.
RMS-RC™ 32/60-100 Assembly and Operation Instructions

BEFORE YOU BEGIN:

- Study the illustrations and sequence of assembly. THE SEQUENCE OF ASSEMBLY IS EXTREMELY IMPORTANT. USE RMS™ MOTORS AND RELOAD KITS ONLY IN ACCORDANCE WITH ALL INSTRUCTIONS. Review the parts list and become familiar with all parts before assembly. IF ANY PARTS ARE MISSING OR DAMAGED, CONTACT RCS AT: 1 (435) 865-7100 or email at: warranty@aerotech-rocketry.com
- DO NOT MODIFY THE MOTOR OR THE RELOAD KITS IN ANY WAY! Modifications of motor or reload kit parts could result in motor failure and lead to the destruction of both your R/C vehicle and motor and will invalidate your motor warranty.
- USE ONLY AeroTech/RCS RELOAD KITS AND MOTOR PARTS TO REFURBISH YOUR RMS! The AeroTech/RCS reload kits have been designed specifically for use in your particular AeroTech/RCS RMS-RC Motor. Use of imitation components may destroy your motor, R/C vehicle and radio and will invalidate your motor warranty. Only use parts from the AeroTech/RCS reload kit intended for your specific motor. DO NOT INTERCHANGE PARTS! Do not use AeroTech/RCS reload kit parts or motor components for any other purpose than to refurbish an AeroTech/RCS RMS-RC motor.
- DO NOT REUSE ANY OF THE DISPOSABLE PARTS OF THE RELOAD KIT. This includes the liner, O-ring, and nozzle insert. These components have been designed for one use only and must be discarded after firing. Reuse can result in motor failure during subsequent operation and will invalidate your motor warranty.
- DO NOT USE ANY PARTS OF THE RMS-RC SYSTEM THAT ARE DAMAGED IN ANY WAY! Do not use an RMS-RC reload kit that is missing parts. If in doubt, contact RCS at the number above for assistance.

ITEMS NEEDED FOR USE:

- Wet wipes or damp paper towels
- Remotely operated electrical ignition system

**PARTS:**

<table>
<thead>
<tr>
<th>RMS-RC 32/60-100 MOTOR</th>
</tr>
</thead>
<tbody>
<tr>
<td>32mm Aft Closure</td>
</tr>
<tr>
<td>32mm Case</td>
</tr>
<tr>
<td>Grease</td>
</tr>
</tbody>
</table>

**RELOAD KIT (2-Pak):**

| Liner (1-1/8" O.D. tube) | 2 |
| Propellent Grain (solid slotted part) | 2 |
| Aft O-Ring (1-1/8" thick x 1-1/8" O.D.) | 2 |
| Nozzle (black plastic part) | 2 |
| COPPERHEAD™ Igniter | 2 |
| Grain spacer tube (“F” reloads only) | 2 |

1. Apply a light coat of grease to the Aft O-ring and all threaded surfaces. This will facilitate assembly and prevent the threads from seizing. **NOTE:** When all this grease that comes with the motor has been consumed, use petroleum jelly or similar grease.
2. Using your fingernail or a blunt object, remove the burr (rough raised edge) from both inside and outside ends of the liner tube by pressing or scraping and rotating the tube at the same time.
3. **Fig-1:** Insert a propellant grain into the liner tube until the SOLID (not slotted) END is FLUSH with one end of the tube.
4. **Fig-2:** Insert the grain spacer (for “F” reloads only) into the liner tube until it is seated against the slotted end of the propellant grain.
5. **Fig-3:** Insert the large (wide) end of the nozzle into the liner tube until it is seated against the grain spacer tube (for “F” reloads) or the slotted end of the propellant grain (for “G” reloads). Apply a light coat of grease to the exposed (solid) end of the propellant grain. This film of grease prevents a high thrust “spike” at motor burnout.
6. **Fig-4:** Insert the liner assembly into the motor case until it is seated against the forward end of the case.
7. **Fig-5:** Place the greased aft O-ring into the groove between the nozzle and the case.
8. **Fig-6:** Thread the aft closure into the motor case by hand until it stops against the case.
9. **Fig-7:** Insert the coated (black) end of a COPPERHEAD™ igniter through the nozzle throat and into the slot in the propellant grain until the igniter stops. **NOTE:** This operation may be performed before the nozzle is installed, especially in the case of shorter propellant grains.
10. Secure the igniter lead to the nozzle using a small piece of masking tape.

**NOTE:** “F” RELOADS SHOWN IN ALL ILLUSTRATIONS

**NOTE:** All motors are hot after firing. Although the RMS-RC operates at a lower temperature than most disposable motors, the higher thermal conductivity of the aluminum motor parts may make it seem otherwise. If necessary to handle a motor before it has cooled down, use a rag or similar article.

Comply with all federal, state and local laws in all activities with hobby rockets.

DO NOT OPEN RELOAD KITS UNTIL READY TO USE! Close reload kit bag securely after removing a set of reload components.

NOTICE: “F” RELOADS

Light Coat of Grease on This End of Propellant Grain

Install Nozzle in Liner Tube Until Seated Against Grain Spacer (“F” Reloads) or Propellant Grain (“G” Reloads)

Motor Case

Liner Assembly

Liner Assembly Seated Against the Forward End of Motor Case

Aft O-ring Installed Between Nozzle and Case as Shown

Install the Aft Closure into Case Until Seated Against End of Case

Install Igniter Through Nozzle Until Seated in Slot of Propellant