READ THIS BEFORE YOU BEGIN:

- Study the illustrations and sequence of assembly. The sequence of assembly is extremely important. Read all instructions before use. 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 use any parts of the RMS™ system that are damaged in any way. If in doubt, contact RCS at the number above for assistance.

- Do not modify the motor in any way. Modification of the motor or the reload kit parts could result in motor failure, lead to the destruction of both your rocket and motor, and may cause personal injury, death, and/or property damage. Modification of the motor or reload kit in any way will invalidate your motor warranty.

- Use only Aerotech/RCS RMS™ reload kits and motor parts to refurbish your RMS™ motor. The Aerotech/RCS reload kits have been designed specifically for use in your particular Aerotech/RCS RMS™ motor. Use of imitation components may destroy your motor, rocket, and payloads and will invalidate your motor warranty. Only use Aerotech/RCS RMS™ reload kits intended for your specific Aerotech/RCS RMS™ motor. Do not interchange parts! Do not use Aerotech/RCS RMS™ reload kits or motor components for any other purpose than to refurbish an Aerotech/RCS RMS™ motor.

- Do not reuse any of the disposable parts of the RMS™ reload kit. This includes the liner, nozzle and o-rings. 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.

- Motors are hot after firing. Although the RMS™ operates at a lower temperature than most disposable motors, the higher thermal conductivity of the aluminum motor parts will mean a longer cooling time. If in doubt, contact RCS at the number above for assistance.

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- Read and follow the safety code of the Tripoli Rocketry Association (TRA) and comply with all federal, state and local laws in all activities involving high power rockets.

- Read the following before you begin:

**DO NOT OPEN RELOAD KIT UNTIL READY TO USE.**

**PARTS:**

- RMS™-75 HARDWARE
  - 75mm aft closure
  - 75/3840 case
  - 75mm plugged forward closure

**RELOAD PARTS KIT**

- Nozzle (large black plastic part)
- Liner (2-3/4" O.D. black plastic tube)
- Propellant grains (7/8" core)
- Wed & aft o-rings (1/8" thick x 2-3/4" O.D.)
- Forward insulator (2-3/4" O.D. fiber washer)
- Grain spacer o-rings (1/16" thick x 2-1/2" O.D.)
- Smoke charge (short solid part)
- Smoke charge insulator (1-1/2" O.D. tube)
- Nozzle Cap (2-1/4" dia. red cap)

**ITEMS NEEDED FOR USE:**

- Synco™ Super Lube™ or other grease
- Hobby knife
- Electric match w/thermalite, Firestar™ or other igniter
- Masking tape
- Wet wipes or damp paper towels

**SAVE THE RELOAD KIT PLASTIC BAG FOR THE USED RELOAD PARTS, DISPOSE OF BAG AND PARTS PROPERLY.**

**Chapter 1. Forward Closure Assembly**

1-1. Apply a light coat of Synco™ Super Lube™ or other grease to all threads and all o-rings (except the grain spacer o-rings). This will facilitate assembly and prevents the threads from seizing.

1-2. Fig-1: Hold the forward (black) closure in a vertical position, smoke charge cavity facing up. Insert the smoke charge insulator into the smoke charge cavity until it is seated against the forward end of the cavity.

1-3. Fig-2: Apply a liberal amount of grease to one end of the smoke charge element. Insert the greased end of the smoke charge element into the smoke charge cavity until it is seated against the end of the cavity. Set the completed forward closure assembly aside.

**Chapter 2. Case Assembly**

2-1. Fig-3: Using a hobby knife or similar tool, carefully deburr (chamfer) both inside edges of the liner tube (2-3/4" O.D. black plastic tube).

2-2. Fig-4: Insert the larger diameter portion of the nozzle into one end of the liner, with the nozzle liner flange seated against the case. NOTE: Blue Thunder RMS-75/3840 motors use a single large throat nozzle rather than the multiple-throat "Medusa" nozzle shown in the illustrations.

2-3. Fig-5: Perform the remaining assembly steps with the liner held in a horizontal position. Install the propellant grains into the liner, placing the two (2) grain spacer o-rings (1/16" thick x 2-1/2" O.D.) between each propellant grain. The aft grain should be seated against the smoke charge.

2-4. Fig-6: Push the liner assembly into the motor case until the nozzle protrudes approximately 1-3/4" from the end of the case. NOTE: A coating of grease on the outside surface of the liner will facilitate installation and casing cleanup after motor firing.

2-5. Fig-7: Place the forward insulator (2-3/4" O.D. fiber disk) into the forward (bulkhead) end of the case until it is seated against the end of the liner.

2-6. Fig-8: Place the greased forward (1/8" thick x 2-3/4" O.D.) o-ring into the forward (bulkhead) end of the case until it is seated against the forward insulator.

2-7. Fig-9: Thread the previously-completed forward closure assembly into the forward end of the motor case by hand until it is seated against the case. NOTE: There will be considerable resistance to threading in the closure during the last 1/8" to 3/16" of travel.

2-8. Fig-10: Place the greased aft (1/8" thick x 2-3/4" O.D.) o-ring into the groove in the nozzle.

2-9. Fig-11: Thread the aft closure into the aft end of the motor case by hand until it is seated against the case. NOTE: There will be considerable resistance to threading in the closure during the last 1/8" to 3/16" of travel. It is normal if a slight (1/32" to 1/16") gap remains between the closure and the case, and the grains rattle slightly in the liner after tightening.
WARNING: EXPLOSIVES. EXPLOSIVES. EXPLOSIVES.

Do not open reload kit until ready to use. 

NOTE: This reload kit must be used with separate packaged Blue Thunder™ propellant.

Chapter 3. Preparation For Flight

Install Igniter Against Smoke Charge

1. Insert the coated end of a Firestar™ or other nozzles or elements into the rocket's recovery system and then launch.

2. Prepare the rocket's recovery system and then launch the rocket in a dry place. 

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

4. Prepare the rocket's recovery system and then launch the rocket in a dry place. 

5. Apply a light coat of grease to all threads and the inside of the motor in a dry place.

Chapter 4. Post-Recovery Cleanup

1. Perform motor clean-up as soon as possible after motor has cooled. 

2. Remove and discard the forward and aft o-rings from the motor case. Remove the liner, forward insulator and nozzle from the casing by pushing on the nozzle end and discard. Using wet wipes or damp paper towels, wipe the inside of the casing to remove all propellant residue.

3. Remove and discard the forward and aft o-rings from the motor case. Remove the liner, forward insulator and nozzle from the casing by pushing on the nozzle end and discard. 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 in a dry place.

Chapter 5. 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. AeroTech Blue Thunder composite propellant is flammable and may be involved in a fire. Use water to keep the pyrotechnic components of RMS™ reload kit pyrotechnic components 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. 

Chapter 6. Disposal

Follow the instructions for proper disposal of the rocket and motor components.

NOTE: This reload kit is subject to the export control laws of the United States. 

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