

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 wrapping tape around the junction 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 COPPER-HEAD igniter as described below and launch the vehicle as shown in the product instructions.

How to use your COPPERHEAD Igniters: 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 igniters, 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 microclips 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.

MISFIRES: If a misfire occurs and a loaded AeroTech/RCS RMS-RC motor does not ignite for any reason within five seconds of pressing the launch button, release the launch button and remove the safety key from the electrical launch controller. **WAIT ONE MINUTE** before approaching or allowing anyone else to approach the vehicle. Keep your fingers and hands out from underneath the vehicle and away from the possible path of the motor exhaust jet. Do not place any part of your body in front of the vehicle. Disconnect the igniter clip from the COPPERHEAD igniter. Carefully remove the vehicle from the launch pad. Keeping the motor nozzle pointed away from your face and body - and away from any other person's face or body - remove the igniter and repeat the motor preparation and launching process.

POST-FIRING CLEANUP

NOTE: Perform RMS-RC motor cleanup as soon as possible after motor firing. Propellant and delay residues become difficult to remove 24 hours after motor firing. These residues can lead to corrosion of the metal parts. **DISPENSE OF SPENT MOTOR COMPONENTS PROPERLY.**

1. 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.

2. Remove the nozzle and liner assembly and discard. **SAVE THE O-RING** for use with the remaining sets of reload components.
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.

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, 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.

DISPOSAL

Damaged or defective reloads should be returned to RCS.

NOTICE: 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

AeroTech Division
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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 autoignition temperature. Foam and carbon dioxide fire extinguishers will NOT extinguish burning propellant of the type used in AeroTech/RCS composite propellant RMS reload kits.

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.

Part # 20024 Rev: 4/27/04
Made in the U.S.A.

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AEROTECH
CONSUMER AEROSPACE

RMS-RC™ 24/20-40

RELOADABLE MOTOR SYSTEM™ FOR
R/C ROCKET GLIDERS & R/C CARS

Division of RCS Rocket Motor Components, Inc.

This RMS-RC motor is only to be used in radio controlled rocket gliders and cars. Reload kits for this motor do not contain delay or ejection charges and are not appropriate for standard vertical launch rockets. AeroTech/RCS produces a separate line of RMS motors for standard vertical launch hobby rockets.

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

THIS PACKAGE CONTAINS:

* = NAR Certified

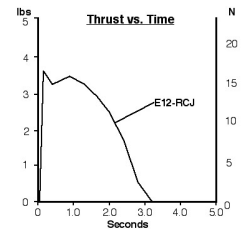
E12-RJC* 3-Pak

The reload kit shown above is **ONLY** for use in AeroTech/RCS RMS-RC 24/20-40 motors.

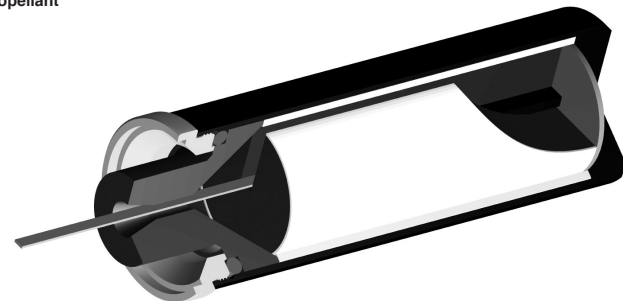
NOTE: SALE TO PERSONS UNDER 18 YEARS OF AGE PROHIBITED BY FEDERAL LAW. WARNING: FLAMMABLE: Read Instructions Before Use. KEEP OUT OF REACH OF CHILDREN. DO NOT SMOKE when loading these motors or use in the vicinity of open flames. FOR SAFE DISPOSAL READ INSTRUCTIONS.

TYPICAL TIME - THRUST CURVES:

Motor Type	Propellant Weight		Total Impulse		Average Thrust		Loaded Motor Weight	
	oz	gms	lb-sec	N-sec	lbs	N	oz	gms
E12J	1.0	28.3	8.1	36.0	2.7	12.0	2.1	58.8



J = Black Jack Propellant



REQUIRES 12 VOLT LAUNCH SYSTEM

RMS-RC™ 24/20-40 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 you 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 kits 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 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.

- * **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.

PARTS:

RMS-RC 24/20-40 MOTOR

24mm Aft Closure	1
24mm Case	1
Grease	1 tube

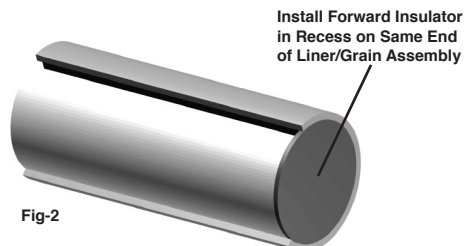
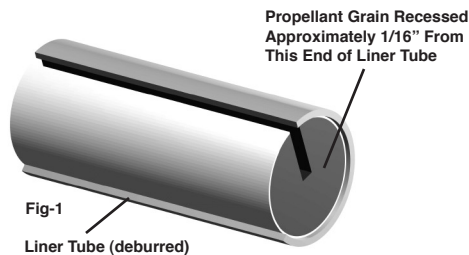
RELOAD KIT (3-Pak)

Liner (7/8" O.D. tube)	3
Propellant Grain (solid slotted part)	3
Aft O-Ring (3/32" thick x 7/8" O.D.) (reuse twice)	1
Nozzle (Black plastic part)	3
COPPERHEAD™ Igniter	3
Forward Insulator (25/32" O.D. fiber disk)	3

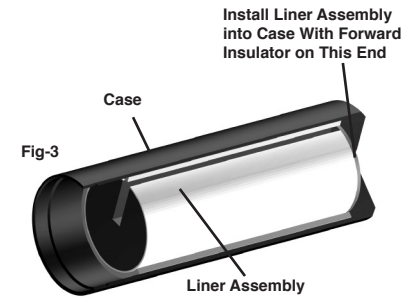
ITEMS NEEDED FOR USE:

Wet wipes or damp paper towels
Remotely operated electrical ignition system

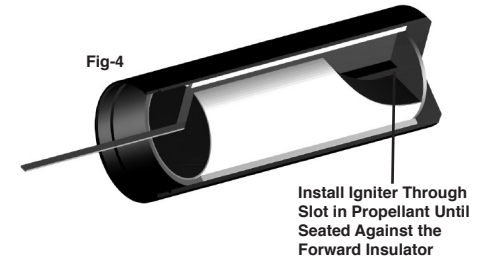
1. Apply a light coat of grease to the Aft O-ring and all threaded surfaces. This will facilitate assembly and prevent the threads from seizing. **NOTE:** When all the grease that comes with the motor has been consumed, use petroleum jelly or similar grease.
2. Using your fingernail or a blunt object, remove the burr (rough raised edge) from both inside and outside ends of the delay insulator 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 one end is recessed approximately 1/16" from one end of the tube. The propellant grain will be flush or slightly protruding from the other end of the liner tube.
4. **Fig-2:** Install the forward insulator (25/32" fiber disk) into the end of the liner tube where the propellant grain is recessed 1/16" from the end of the liner tube. The forward insulator should now be flush with the end of the liner tube.



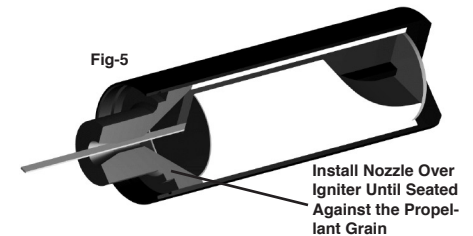
5. **Fig-3:** Insert the liner assembly into the motor case until it is seated against the forward end of the case, with the forward insulator disk seated as shown.



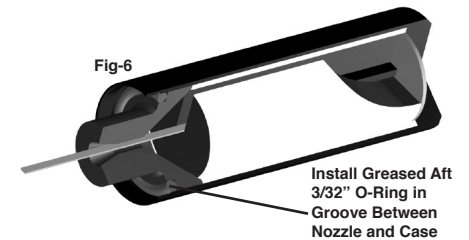
6. **Fig-4:** Insert the coated (black) end of a COPPERHEAD igniter into the motor case, through the slot in the propellant grain and seated against the forward insulator disk as illustrated.



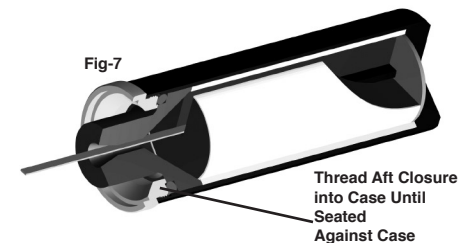
7. **Fig-5:** Using the point of a pencil, remove any plastic "flashing" that may still remain in the nozzle throat. Insert the large (wide) end of the nozzle over the igniter and into the motor case until it is seated against the end of the liner assembly.



8. **Fig-6:** Place the greased aft O-ring (3/32" thick) into the groove between the nozzle and the case.



9. **Fig-7:** Thread the aft closure into the case until seated by hand.



10. Secure the igniter lead to the nozzle using a small piece of masking tape.