

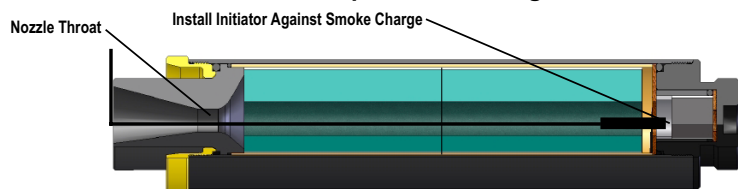
Before You Begin

- 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 54mm aft closure
RMS 54/1706 case
54mm forward seal disk
54mm std. or plugged forward closure
-or-
54mm 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. 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 the reload kit plastic bag and dispose of properly.

1. After the motor has cooled down, unthread and remove the forward and aft closures.
2. 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 closures. **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.
3. Remove the liner from the casing by pushing on either end. Remove the forward seal ring from the liner. Discard the liner, nozzle and forward seal ring o-ring **ONLY**. Using wet wipes or damp paper towels, wipe the inside of the casing and the forward seal ring to remove all propellant residue. **DO NOT discard the forward seal ring!**

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. Metalstorm 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 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

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
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HIGH-POWER RMS™ Reloadable Motor System™ K540M-14A Rocket Motor Reload Kit For RMS-54/1706 Motor Hardware Metalstorm™ Composite Propellant

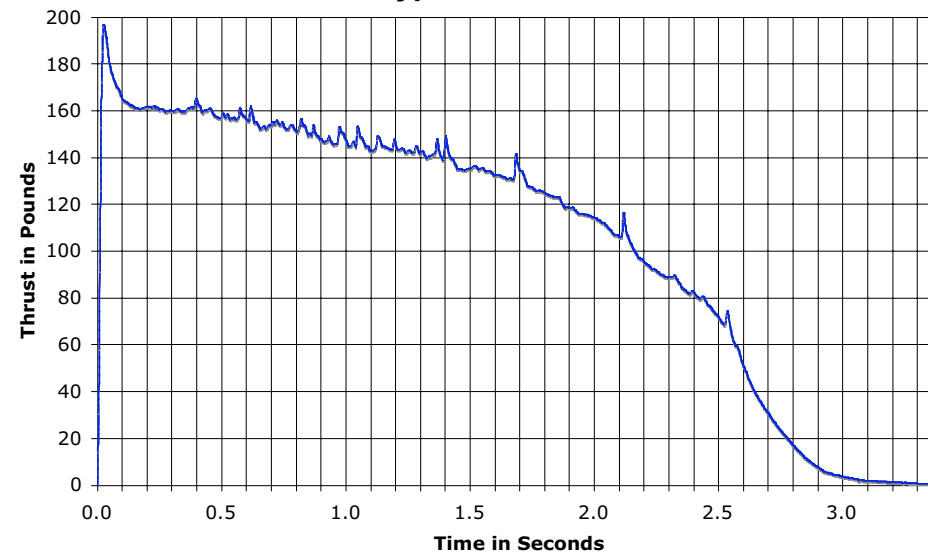
To adjust time delay, use AeroTech Reload Delay Kits (RDks) or drill delay 0.025" per second of adjustment using twist drill. Drilled end faces propellant.

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

K540M-14A Typical Time-Thrust Curve

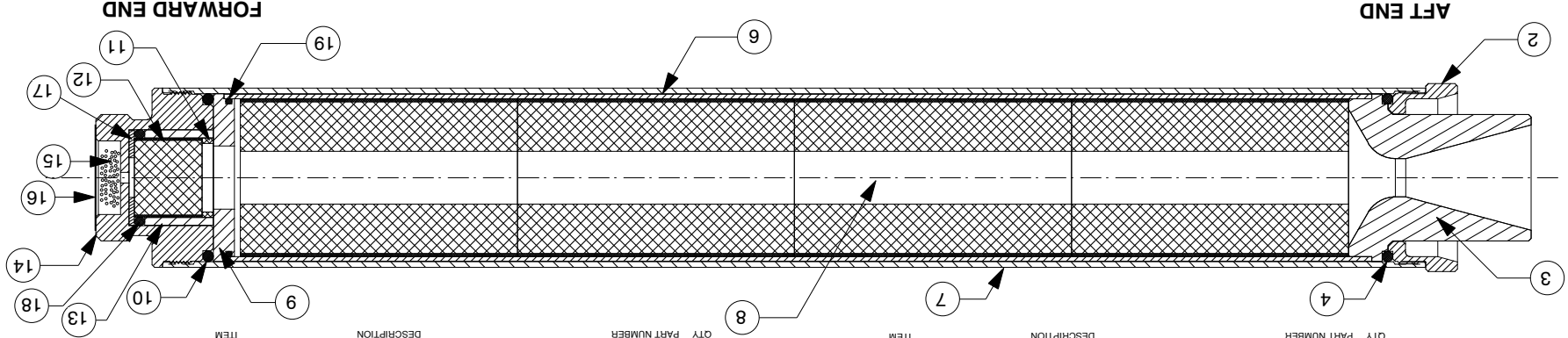


Motor Specifications

Total Impulse:	1596.3 N-sec	Burn Time:	2.9 seconds
Propellant Wt.:	876.7 grams	Peak Thrust:	192 pounds
Loaded Wt.:	1275 grams	Delay Time:	14 seconds (adjustable)
Motor Diameter:	54mm	Motor Length:	16.15"

K540M-14A Assembly Drawing and Instructions

ITEM	DESCRIPTION	QTY	PART NUMBER	ITEM	DESCRIPTION	QTY	PART NUMBER
1	FORWARD O-RING (2" O.D. X 1/8") 224	1	00224	1	FORWARD SEAL DISK- 54MM FMS	1	54FSD
2	NOZZLE CAP	1	NA	2	AFT CLOSURE	1	54ACC
3	54MM H/P NOZZLE (.455" DT UNDRILLED)	1	01670	3	54MM H/P NOZZLE (.455" DT UNDRILLED)	1	01670
4	INNER LINER	1	NA	4	AFT O-RING (2" O.D. X 1/8") 224	1	00224
5	PHENOLIC LINER (1.99" O.D. X 13.610")	1	03000-4	5	INNER LINER	1	NA
6	CASE	1	5417C	6	EJECTION CHARGE CAP (1-1/4")	1	05604
7	PROPPELLANT GRAINS (1.87" O.D. X 3.285")	4	03M54-1	7	FWD DELAY SPACER (1-1/8" O.D. X .062")	1	03355
8	FORWARD SEAL DISK- 54MM FMS	1	54FSD	8	DELAY O-RING (1.17" O.D. X .123")	1	00002
9	FORWARD O-RING (2" O.D. X 1/8") 224	1	00224	9	FWD SEAL DISK O-RING (1-7/8" O.D. X 1/16") 031	1	00031
10	INNER LINER	1	NA	10	FORWARD DELAY SPACER (.94" O.D. X .135")	1	03970
11	PHENOLIC LINER (1.99" O.D. X 13.610")	1	03000-4	11	DELAY GRAIN(.933" O.D. X .803")	1	03920
12	CASE	1	5417C	12	AFT DELAY SPACER (1.13" O.D. X .815")	1	03356
13	PROPPELLANT GRAINS (1.87" O.D. X 3.285")	4	03M54-1	13	FORWARD CLOSURE (REGULAR)	1	54FCC
14	FORWARD SEAL DISK- 54MM FMS	1	54FSD	14	EJECTION CHARGE (USER SUPPLIED)	1	03700
15	FORWARD O-RING (2" O.D. X 1/8") 224	1	00224	15	EJECTION CHARGE CAP (1-1/4")	1	05604
16	INNER LINER	1	NA	16	FORWARD DELAY SPACER (1-1/8" O.D. X .062")	1	03355
17	PHENOLIC LINER (1.99" O.D. X 13.610")	1	03000-4	17	DELAY O-RING (1.17" O.D. X .123")	1	00002
18	CASE	1	5417C	18	FORWARD DELAY SPACER (1-1/8" O.D. X .062")	1	03355
19	FORWARD O-RING (2" O.D. X 1/8") 224	1	00224	19	FORWARD DELAY SPACER (1-1/8" O.D. X .062")	1	03355



Assembly Instructions (numbers refer to item numbers on drawing):

1. Lightly grease o-rings (4, 10, 18 & 19), case threads (7) and delay cavity of forward closure (14) (but not the forward end of cavity).
2. Assemble delay grain (12), delay spacer (17), delay insulator (13) and delay o-ring (18) as shown.
3. Install forward delay spacer (17) into forward closure (14), then push step 2 delay assembly into forward closure (14), o-ring end first.
4. Install forward seal disk o-ring (19) on groove in forward seal disk (9) and insert this assembly into one end of liner (6) until seated.
5. Insert propellant grains (8) into liner (6), then push liner assembly into case (7) until recessed equally from ends of case.
6. Install forward o-ring (10) into (forward) end of 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 nozzle (3), aft o-ring (4), and aft closure (2) into open (aft) end of case (7) until seated.
9. Dispense ejection charge (15) into forward closure (14) and seal end with ejection charge cap (16).

