Chapter 2. Case Assembly

DO NOT OPEN RELOAD KIT UNTIL READY TO USE.

PARTS:

**RMS HARDWARE**
- 38mm enlarged aft closure (I435T) 1
- 38mm std. or enlarged aft closure (I300T) 1
- 38/480 case (I300T) 1
- 38/600 case (I435T) 1
- 38mm std. or plugged forward closure 1
- 38mm forward seal ring 1

**RELOAD KIT**
- Nozzle (black plastic part) 1
- Liner (1-3/8" O.D. black plastic tube) 1
- Propellant grains 4, 5 or 6
- Aft o-ring (3/16" thick X 1-3/8" O.D.) 1
- Forward o-ring (1/8" thick X 1-3/8" O.D.) 1
- Fire seal ring o-ring (1/16" thick X 1-5/16" O.D.) 1
- Aft insulator (1-3/8" O.D. fiber washer) 1
- Ejection charge cap (adhesive paper disk) 1
- FirstFire™ igniter 1
- Ejection charge container (5/8" O.D. red plastic cap) 1
- Nozzle cap for I435T (13/16" O.D. red plastic cap) 1
- RMS-Plus™ delay element (short solid part) 1
- Delay insulator (13/16" O.D. tube) 1
- Delay o-ring (3/32" thick X 13/16" O.D.) 1
- Aft delay spacer (short colored paper ring) 1
- Forward delay spacer (13/16" O.D. neoprene washer) 1

ITEMS NEEDED FOR USE:
- Synco™ Super Lube™ or other grease
- Hobby knife
- Wet wipes or damp paper towels

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

Chapter 3. Ejection Charge Installation

3-1. **Ejection Charge Installation**

**Ejection Charge Well**
- FFFFG Black Powder

**Ejection Charge**
- (FFFFG Black Powder)
Chapter 3. Ejection Charge Installation (Cont’d)

3-2. Fig.-15: Apply the ejection charge cap (adhesive paper disk) to the center of the end of the forward closure. With the motor held in a NOZZLE DOWN position, gently shake the motor to settle the ejection charge into the cavity above the delay element.

Chapter 4. Preparation For Flight

4-1. Fig.-15: Using a hobby knife, cut a corner off the red nozzle cap (38/6 or 13/16” O.D. red plastic cap) to create a small (1/16”-1/8”) vent hole. Set the nozzle cap igniter holder aside.

4-2. Fig.-16: Insert the coated end of the FirstFire™ or other igniter through the nozzle throat until it stops against the delay element or forward seal ring.

4-3. Push the vented nozzle cap igniter holder over the igniter lead(s) and nozzle until it stops.

4-4. 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.

4-5. 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.

Chapter 5. 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.

5-1. After the motor has cooled down, remove the forward and aft closures.

5-2. Remove the delay insulator, delay o-ring and forward delay spoiler 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. 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.

5-3. Remove the liner from the casing by pushing up on either end. Remove the forward seal ring from the liner. Discard the liner 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!

AeroTech Division
RCS Rocket Motor Components, Inc.
Made in U.S.A.
www.aerotech-rocketry.com

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.

Chapter 6. First Aid

4-4. 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.

Chapter 7. Disposal

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 composite propel-

NOTE: MEDIUM DELAY CHARGE COMPONENTS INCLUDED. For other delay times, use one of the appropriate AeroTech Reload Delay Kits (RDK’s) for the delay time desired. Please refer to the RDK cross-reference list on back of the reload kit header card for proper RDK selection.

Chapter 8. Fire Safety

Damaged or defective reload kits should be returned to RCS.

RMS-38/480-600 BLUE THUNDER™

THIS PACKAGE CONTAINS ONE RMS-PLUS™ RELOAD KIT:

NOTE: MEDIUM DELAY CHARGE COMPONENTS INCLUDED. For other delay times, use one of the appropriate AeroTech Reload Delay Kits (RDK’s) for the delay time desired. Please refer to the RDK cross-reference list on back of the reload kit header card for proper RDK selection.

RMS-38/480-600 BLUE THUNDER RELOAD KIT DATA


RMS™-38/480 I300T 440 N·sec 221.6 g (0.488 lb) 440.5 g (0.970 lb)

RMS™-38/600 I435T 600 N·sec 277.0 g (0.610 lb) 526.9 g (1.161 lb)

RMS-38/480-600 HARDWARE DATA

Hardware Designation Motor Diameter Motor Length Hardware Weight Reload Used

RMS™-38/480 1.500” (38mm) 9.82” 168.5 g (0.371 lb) I300T

RMS™-38/600 1.500” (38mm) 11.70” 190.4 g (0.419 lb) I435T

NOTE: Total impulse shown is optimum. Motor lengths are measured from end of aft closure to end of forward closure. I435T reloads require enlarged 38mm aft closure for use; AeroTech part number 38AC2

NOTE: SALE OF PROPELLANT RELOAD KITS TO PERSONS UNDER 18 YEARS OF AGE PROHIBITED BY FEDERAL LAW. WARNING-FLAMMABLE: Read Instructions Before Use. KEEP OUT OF REACH OF CHILDREN. FOR USE ONLY BY CERTIFIED HIGH-POWER USERS 18 YEARS OF AGE OR OLDER. DO NOT SMOKE when loading these motors or use in the vicinity of open flames.