Chapter 2. Case Assembly

1. Install the propellant grains into the liner. **NOTE:** Two grains are shown in all illustrations for clarity. RMS-38/240 motors use two (2) grains, and RMS-38/360 motors use three (3) grains.

2. Push the liner assembly into the motor case until it is equally recessed from both ends of the case. **NOTE:** A light coat of grease on the outside surface of the liner will facilitate installation and casing cleanup after motor firing.

3. Place the forward insulator (1-3/8" O.D. O.D. fiber washer) into one end of the motor case, seated against the liner assembly.

4. Place the greased forward (1-8/8" thick X 1-3/8") O.D. O-ring into the forward insulator end of the case until it is seated against the forward insulator.

5. With the motor case held in a horizontal position, thread the previously assembled forward closure assembly into the forward end of the motor case by hand until it is seated against the case.

6. Place the aft insulator (1-3/8" O.D. fiber washer) into the aft end of the motor case, seated against the liner assembly.

7. Push the larger end of the nozzle into the aft o-ring assembly (nozzle) end of the motor case, seated against the aft insulator.

8. Push the large end of the nozzle into the delay o-ring and against the aft insulator. The nozzle will be a snug fit in the o-ring.

9. Thread the aft (gold) closure into the aft end of the motor case by hand until it is seated against the case. **NOTES:** There will be some resistance to threading in the closure during the last 1/32" to 1/16" of travel. It is normal for the grains rattle slightly inside the liner after tightening.

Chapter 3. Ejection Charge Installation

1. Thoroughly clean the outside of the motor of any grease or other residue. Open the ejection charge container and dispense enough ejection charge (FFFFG black powder) into the ejection charge well of the forward closure to fill the well approximately 3/4 full. **NOTE:** 2.6” dia. and smaller rockets using the AeroTech Labyrinth™ baffle system should use only enough ejection charge to fill the cone portion of the ejection charge well. For 4” and larger diameter rockets, fill the well completely.
Chapter 3. Ejection Charge Installation (Cont’d)

3-2. Fig.-13: 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.-14: Using a hobby knife, cut a corner off the empty ejection charge container to create a small (1/16”-1/8”) vent hole. Set the nozzle cap igniter holder aside.

4-2. Fig.-14: Insert the coated end of the FirstFire™ or other igniter through the nozzle throat until it stops against the delay element or forward insulator.

4-3. Push the vented nozzle cap igniter 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 spacer (neoprene washer) 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. 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.

5-3. Remove the liner from the casing by pushing on either end. Discard the liner and the forward and aft insulators. Using wet wipes or damp paper towels, wipe the inside of the casing to remove all propellant residue.

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