

## Storage and Handling

Store AeroTech rocket motors in a dry place where the temperature will remain between 45°F and 100°F. Do not cut, saw, attempt to alter the size, attempt to disassemble, attempt to modify (except as described in these instructions), or drop an AeroTech rocket motor. Do not use an AeroTech rocket motor that you believe has been damaged in any way. Do not ignite an AeroTech rocket motor indoors. Do not breathe fumes from the rocket motor exhaust.

## 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. The composite propellant used in AeroTech rocket motors consists primarily of Ammonium Perchlorate and a rubber-like plastic elastomer. Redline™ propellant also contains Strontium Nitrate.

## Disposal

Pack motor firmly in hole in ground so that only the nozzle is exposed, away from people, animals, buildings and flammable materials. Ignite motor electrically from a distance of 30 feet or more. Propellant, delay and ejection charge (if installed) will burn until consumed. **Wait 5 minutes** and then dispose of the motor casing in inert trash.

## Fire Safety

AeroTech composite rocket motors will normally not ignite unless subjected to direct flame. Use water to fight any fires in which AeroTech rocket motors may become involved: Direct the water at the AeroTech rocket motors 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 AeroTech rocket motors. Keep rocket motors 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 that are proven to be defective in manufacture within one year from the date of original purchase. In no case will AeroTech warranty a product more than five (5) years after the date of manufacture. 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.



# 29-54mm DMS™

## Disposable Motor System™ Adjustable Delay & Ejection Charge Single-Use Rocket Motor Assembly & Operation Instructions

**DO NOT OPEN ROCKET MOTOR PACKAGING UNTIL READY TO USE**

**Note:** Motor designation and complete performance specifications (including a sample time-thrust curve) are printed on the DMS motor label and package.

**WARNING-FLAMMABLE:** Read Instructions Before Use. Use only in accordance with instructions. Do not smoke near rocket motors and keep away from open flames and other heat sources. Sale to persons under 18 years of age prohibited by federal law. 'H' and higher power motors for use only by certified flyers. Ignite by electrical means only. **CAUTION:** Keep out of reach of children. Motor is hot after firing.

### Before You Begin:

- Do not modify the motor in any way, except as described herein.
- If any parts are missing or damaged, please call AeroTech at **435-865-7100**.

### Package contents:

1. DMS rocket motor
2. Igniter & ejection charge kit (igniter only w/H45W & I65W)

### Other items needed:

1. Universal™ delay drilling tool
2. Hobby knife or scissors

## 1. Setting the Time Delay

**Notes:** If you want to use the longest (as-supplied) time delay, do not use the delay drilling tool and instead proceed to step 2.1. **Plugged** motors such as the **H45W** and **I65W** do not have an adjustable time delay and ejection and must use alternative means of recovery system deployment, skip to step 3.1.



**1.1 WARNING:** Do not smoke and ensure that there are no open flames or heat sources nearby when setting the time delay. Assemble the AeroTech Universal delay drilling tool with the desired amount of delay time removal (i.e., the - 4 or - 8 seconds removal marked on the tool label) facing the exposed drill bit and motor bulkhead.



1.2 **Optional:** Place the washer between the drill knob and the tool if you want to remove 2 seconds less than the value printed on the tool (i.e., - 2 or - 6 seconds removal). **CAUTION: Do not** shorten the time delay to a value of less than 6 seconds.



1.3 Place the open end of the tool over the motor bulkhead, hold the tool and motor firmly against each other and turn the drill knob several times clockwise until the drill knob sits flush against the drill tool body.



1.4 Remove the tool and shake out the shavings from the tool and motor bulkhead. Dispose of the shavings by burning with a safe method and in a safe location.

## 2. Installing the Ejection Charge and Ejection Cap

2.1 Open the supplied igniter and ejection charge kit and remove the contents.



2.2 Place the ejection charge baffle washer into the ejection charge well of the motor bulkhead.

2.3 **WARNING:** Do not smoke and ensure that there are no open flames or heat sources nearby when installing the ejection charge. Open the ejection charge vial and dispense the desired amount of black powder ejection charge into the ejection charge well of the motor bulkhead. Use about 1/2 of the contents of the vial for 2.6" diameter



rockets and smaller, and the entire vial for 3" and larger rockets. **Note:** additional ejection charge may be required for rockets exceeding 4" in diameter.

2.4 Insert the rounded end of the ejection charge cap into the ejection charge well of the bulkhead and press in completely with the end of the igniter tube or similar object.

## 3. Igniter Installation and Preparation for Flight

**CAUTION:** Install the igniter in the motor only when the rocket is at the pad and ready for launch.

3.1 Remove the supplied FirstFire™ igniter from the cardboard tube and straighten the leads.

3.2 Strip 1/2"-1" of insulation from the ends of the leads.

3.3 Insert the black-coated end of the igniter into the nozzle opening and push it completely into the motor core, until the coated end is touching the time delay element in the motor bulkhead. **IMPORTANT:** On the **H45W** and **I65W** motors that have an offset "moonburning" core, insert the coated end of the igniter through the nozzle and over toward one side of the casing, and rotate the motor until you find the propellant core space. Then continue pushing the igniter into the core space as far as it will go.



3.4 Using a hobby knife or scissors, cut a corner off the end of the nozzle cap (if supplied) to produce a vent hole in the cap about 1/16"-1/8" wide.

3.5 Press the open end of the nozzle cap over the exposed nozzle extension to hold the igniter firmly in place. **Note:** If there is no nozzle cap supplied with the motor, use a piece of masking tape to secure the igniter to the motor.

3.6 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.

3.7 Prepare the rocket's recovery system and then launch the rocket in accordance with the National Association of Rocketry (NAR) and/or Tripoli Rocketry Association (TRA) safety codes. **Note:** After use, the rocket motor casing may be disposed in inert trash.