**EXPERIMENTAL MOTOR KIT™ Assembly Guide**

**Step 1. Forward Closure Assembly (also see typical assembly drawing on reverse side)**

1-1. **Apply a light coat of Synco™ Super Lube™ or other grease to the delay o-ring.**

1-2. **Fig.-1:** Chamfer both inner edges of the delay insulator with your fingernail. Assemble the delay element, delay insulator, delay spacer (if used) and delay o-ring as shown.

1-3. **Fig.-2:** Apply a light film of grease to the inner circumference of the delay cavity (but not the forward end of the cavity).

1-4. **Fig.-3:** Insert the delay charge assembly shown in Fig.-2 into the delay cavity, delay o-ring end first, until it is seated against the forward end of the EMK™ forward closure.

**Step 2. Case Assembly**

2-1. **Drill nozzle throat to desired diameter.**

2-2. **Fig.-4:** Install your propellant grain(s) into the liner. **NOTE:** Slotted grains shown in all illustrations. This kit includes a thinner liner and is designed for core-burning grains.

2-3. **Fig.-5:** Push the liner assembly into the motor casing until it is seated against the nozzle end of the case.

2-4. **Fig.-5:** Install the forward insulator (black fiber washer) into the motor casing until it is seated against the liner assembly.

2-5. **Fig.-5:** Mix about 5 grams of a good-quality 5-minute epoxy. Apply a liberal coat of epoxy to the inside surface of the casing in the threaded area above the liner assembly. **CAUTION:** Do not allow epoxy to contact the propellant grain surface.

2-6. **Fig.-6:** Apply a liberal coat of epoxy to the threaded area of the previously assembled forward closure assembly. **CAUTION:** Do not allow epoxy to contact the delay grain surface. With the motor casing held in a horizontal position, thread the forward closure assembly into the open end of the motor casing by hand until it is seated against the forward insulator. Apply additional epoxy to the joint between the forward closure and the case. Set the completed assembly aside to cure in a vertical position.

**Step 3. Ejection Charge Installation**

3-1. **Fig.-7:** Dispense the desired amount of ejection charge into the ejection charge well of the forward closure.

3-2. **Fig.-8:** Press the ejection charge cap (red rubber cap) into the ejection charge well.

3-3. **Fig.-8:** Release the air trapped under the cap by puncturing the center of the cap using the sharp point of a hobby knife.

3-4. **Fig.-8:** 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.

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**EMK™ 29/120 'C' Assembly Guide For Core-burning Propellant Grains**

**Parts List**

<table>
<thead>
<tr>
<th>Description</th>
<th>Part no.</th>
<th>Description</th>
<th>Part no.</th>
</tr>
</thead>
<tbody>
<tr>
<td>29/120 EMK casing (0.155° D)</td>
<td>01912</td>
<td>Delay insulator</td>
<td>02048</td>
</tr>
<tr>
<td>29/120 'C' EMK liner</td>
<td>02048</td>
<td>Delay o-ring</td>
<td>00001</td>
</tr>
<tr>
<td>29mm EMK fwd closure</td>
<td>01916</td>
<td>Ejection charge retainer cap</td>
<td>0406-4</td>
</tr>
<tr>
<td>Forward insulator</td>
<td>05420</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**NOTE:** Use with RCS part nos. 03164 propellant casting tube (.933" O.D.) and 03155L delay casting tube (.610" O.D.). For pre-manufactured delays, use AeroTech Reload Delay Kits (RDKs). Propellant, igniter, delay, delay spacer and ejection charge not included.

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NOTES:

1. APPLY 6 MINUTE EPOXY TO THREADS.

2. ON OUTSIDE DIAMETER OF BULKHEAD.

3. DURING ASSEMBLY NO GREASE PERMITTED.