

# WARNING

The R.A.T.T. works hybrid rocket motors are designed to operate on Nitrous pressures between 650 and 850 PSI, with a lower safety limit of 600 PSI or 50 degrees Fahrenheit, and an upper safety limit of 900 PSI or 90 degrees Fahrenheit.

Always use a pressure gauge on your nitrous oxide fill tank.

If tank pressure exceeds 900 PSI, place tank in a barrel of cool water and cover with an emergency blanket, available at Department or camping supply stores, to insulate nitrous tank from sun. If tank pressure is below 600 PSI, place tank in a barrel of warm Water.

**Failure to follow these instructions** can result in the combustion chamber being either, over-pressurized causing the forward enclosure to fail, or under-pressurized which will result in an under powered flight. The forward enclosure is designed to fail if the tank is over-Pressurized.

# R.A.T.T. works

## K-240 hybrid assembly instructions

R.A.T.T. works c/o

Monterey Machine Products

1504 A Industrial Park st.

Covina, Ca. 91722

(626) 967-2242

e-mail montmach@aol.com

web-www.rattworks.night.net

Items you will need that are not supplied;

1. 1/2" open end wrench
2. 3/8" allen wrench
3. 1/4"-20 by minimum 1" long cap screw
4. black electrical tape
5. Krytox grease Grainger catalog part no. GPL206
6. Ignitor grain
7. Firestar electric ignitor available from Firestar



Step 1: Attach 5/16" filling line to injector by placing allen wrench in top center of injector opposite side from fitting. Push 5/16" filling line firmly into fitting and tighten with 1/2" wrench 3/4 to 7/8 of a turn.



Step 2: Tape Firestar electric ignitor to filling line as shown.

NOTE: Before placing the ignitor grain into the fuel grain, be sure to increase the diameter of the ignitor grain by wrapping it in electrical tape. This will provide a snug fit.



Step 3: Press ignitor grain into plastic fuel grain as shown.



Step 4: Lubricate O-rings on injector with krytox grease. Feed fill line and electric ignitor wires through top of fuel grain and out the nozzle.







Press injector assembly into top of fuel grain, ensure lower half of injector is completely in fuel grain.



COMPLETED FUEL GRAIN



Step 5: Lubricate inside of motor casing lower end with krytox grease. Insert fuel grain assembly into motor casing until lower ends are even.



Step 6: Feed fill line and electric ignitor wires through threaded retainer, ensure threads are facing motor case. Tighten retainer all the way, no threads showing.



Step 7: Thread forward bulkhead into top of motor case, use 1/4-20 cap screw by threading into vent hole, tighten bulkhead all the way.



COMPLETED HYBRID MOTOR

**CAUTION:** Use only Krytox grease when lubricating necessary parts. When cleaning use only non-flammable degreaser. Failure to follow these warnings may cause explosion during ignition or running of motor!!!