Read this before you begin:

- Study the illustrations and sequence of assembly. THE SEQUENCE OF ASSEMBLY IS EXTREMELY IMPORTANT. READ ALL INSTRUCTIONS BEFORE USE. USE KBA LOADED MOTORS AND RELOAD KITS ONLY IN ACCORDANCE WITH ALL INSTRUCTIONS. REVIEW THE PARTS LIST AND BECOME FAMILIAR WITH ALL PARTS BEFORE ASSEMBLY. IF ANY PARTS ARE MISSING OR DAMAGED, CONTACT RCS AT 1-435-865-7100.
- DO NOT USE ANY PARTS OF THE KBA SYSTEM THAT ARE DAMAGED IN ANY WAY. In doubt, contact RCS at the number above for assistance.
- DO NOT MODIFY THE MOTOR IN ANY WAY. Modification of the motor or the reload kit parts could result in motor failure, lead to the destruction of both your rocket and motor and may cause personal injury, death and/or property damage. Modification of the motor or reload kit in any way will invalidate your motor warranty.
- USE ONLY KBA RELOAD KITS AND MOTOR PARTS TO REFURBISH YOUR KOSDON OR ANIMAL MOTOR. The KBA reload kits have been designed specifically for use in your particular Kosdon or Animal motor. Use of imitation components may destroy your motor, rocket and payload and invalidate your motor warranty. Do not use KBA reload kits or motor components for any other purpose than to refurbish an Kosdon or Animal motor.
- DO NOT REUSE ANY OF THE DISPOSABLE PARTS OF THE KBA RELOAD KIT. This includes the liner and o-rings. These components have been designed for one use only and must be discarded after firing. Reuse can result in motor failure during subsequent operation and will invalidate your motor warranty.
- Motors are hot after firing. Although the KBA motor operates at a lower temperature than most disposable motors, the higher thermal conductivity of the aluminum motor parts may make it seem otherwise. If necessary to handle a motor before it has cooled down, use a rag or similar article.

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

Chapter 1. Nozzle Assembly

1-1. Apply a light coat of Synco™ Super Lube™ or other grease to all four o-rings. This will facilitate assembly and promotes proper sealing of the o-rings.

1-2. Fig.-1: Place two greased nozzle o-rings (2-5/8" O.D. X 1/8") into the grooves in the graphite nozzle.

1-3. Fig.-1: Put grease on your index finger and wipe a film of grease on the I.D. of both ends of the case. Using a twisting motion, install the nozzle into the end of the case that has the external snap ring groove (if applicable). Note from the drawing the proper orientation of the nozzle.

1-4. Fig.-2: Install the steel nozzle washer in the case, seated against the graphite nozzle.

1-5. Fig.-2: Using the snap ring pliers, install a 75mm snap ring into the internal groove on the nozzle end of the case. To prevent eye injury if a snap ring slips out of the pliers, wear eye protection and hold the motor casing at a right angle to yourself.

Chapter 2. Case Assembly

2-1. Fig.-3: Install the propellant grains into the liner until they are equally spaced from both ends of the liner.

2-2. Fig.-4: Install the smoke element into one end of the liner until it is flush with the end of the liner. NOTE: The inhibitor-coated end of the smoke element must face away from the propellant grains.

2-3. Fig.-5: Install the liner assembly into the open end of the case until the aft end of the liner is seated in the nozzle step and the propellant grains are seated against the nozzle. NOTE: A liberal coat of grease on the outside of the liner will facilitate installation and casing cleanup after firing.

2-4. Fig.-6: Install two greased 2-5/8" O.D. X 1/8" o-rings into the grooves in the forward bulkhead.

2-5. Fig.-6: Using a twisting motion, install the forward bulkhead into the forward end of the motor case until it is seated against the liner. Note from the drawing the proper orientation of the forward bulkhead.

2-6. Fig.-6: Using the snap ring pliers, install a 75mm snap ring into the internal groove on the bulkhead end of the case. To prevent eye injury if a snap ring slips out of the pliers, wear eye protection and hold the motor casing at a right angle to yourself. NOTE: It is normal if the grains rattle slightly inside the liner.
Chapter 3. Preparation For Flight

3-1. 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 recovery system deployment.

3-2. Fig. 7: Insert the coated end of a FirstFire™ or other suitable igniter through the nozzle throat until it stops against the smoke element.

3-3. Prepare the rocket's recovery system and then launch the rocket in accordance with the kit manufacturer's instructions. The Tripoli Rocketry Association (TRA) Safety Code and National Fire Protection Association (NFPA) Code 1127.

Chapter 4. Mistfires

If a mistfire occurs and a loaded KBA motor does not ignite for any reason within five seconds of pressing the launch button, release the launch button and remove the safety key from the electrical launch controller. WAIT ONE MINUTE before approaching or allowing anyone else to approach the rocket. Keep your fingers and hands out from underneath the rocket and do not place any part of your body over the launch pad. Disconnect the igniter clips from the electrical igniter. Carefully remove the igniter from the motor, and install a new igniter and repeat the launching process.

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 snap rings and the aft steel washer from the case.

5-2. Thread a 3/8-16 bolt into the hole in the forward bulkhead. Grasp the exposed end of the bolt and remove the bulkhead using a twisting and pulling motion.

5-3. Using a wooden dowel or similar instrument inserted into the forward bulkhead end of the case, gently push the nozzle and liner out of the casing. Discard the liner.

5-4. Remove and discard the nozzle o-rings and the forward bulkhead o-rings. Using wet sponges or damp paper towels, wipe the surfaces of the casing, nozzle, and forward bulkhead to remove all propellant and smoke element residue. WARNING: FAILURE TO COMPLETELY REMOVE PROPELLANT AND SMOKE ELEMENT RESIDUE FROM THE HARDWARE CAN LEAD TO GAS LEAKAGE ON A SUBSEQUENT RECOVERY.

Chapter 6. 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 KBA/RCS composite propellant consists primarily of ammonium perchlorate and a rubber-like plastic elastomer.

Chapter 7. Disposal

Damaged or defective reload kits should be returned to RCS.

Chapter 8. Fire Safety

Tests show that the pyrotechnic components of KBA 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 KBA reload kit pyrotechnic components may become involved: Direct the water at the KBA reload kit pyrotechnic components 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 KBA reload kit pyrotechnic components. Keep reload pyrotechnic components away from flames, sources of heat and flammable materials.

Disclaimer and Warranty

NOTE: 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 and/or Kosdon Enterprises 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 KBA/RCS products on these conditions. No warranty either expressed or implied is made regarding KBA/RCS products, except for replacement or repair, at RCS's option, of those products which are proven to be defective in manufacture within one year from the date of original purchase. 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.

Kosdon by AeroTech Division
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Chapter 9. Post-Recovery Cleanup

NOTE: 75mm KBA reload kits are sold in a "plugged" configuration only and do not include an ejection charge. 75mm KBA motors must be used in conjunction with a timer, altimeter or radio-actuated recovery system.

Chapter 10. Final Assembly

Ensure that the motor is securely retained in the rocket's motor mount tube. Install the motor into the rocket's motor mount tube.

Chapter 11. Flight and Damage to Your Kosdon/Animal Motor Hardware and Rocket Vehicle

Apply a light coat of grease to the exterior of the forward bulkhead and the inside of the motor case. Store motor parts in a dry place. DO NOT store ungreased nozzle in casing which can lead to severe corrosion of the case.

Chapter 12. 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 KBA/RCS composite propellant consists primarily of ammonium perchlorate and a rubber-like plastic elastomer.

Chapter 13. Disposal

Damaged or defective reload kits should be returned to RCS.

Chapter 14. Fire Safety

Tests show that the pyrotechnic components of KBA 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 KBA reload kit pyrotechnic components may become involved: Direct the water at the KBA reload kit pyrotechnic components 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 KBA reload kit pyrotechnic components. Keep reload pyrotechnic components away from flames, sources of heat and flammable materials.

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NOTE: 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 and/or Kosdon Enterprises 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 KBA/RCS products on these conditions. No warranty either expressed or implied is made regarding KBA/RCS products, except for replacement or repair, at RCS's option, of those products which are proven to be defective in manufacture within one year from the date of original purchase. 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.

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