



## **AMWPro75 Motor Adapter Instructions**

This document is an addendum to the Pro75 instructions. It explains how to load Pro75 reload kits into AMW75 'snap ring style' motor casings using the AMWPro75 motor adapter.

### **READ THIS BEFORE YOU START!**

**DO NOT OPEN RELOAD KIT UNTIL READY FOR USE!**

Federal Law prohibits purchase by persons under the age of 21.

**WARNING – Flammable: Read Entire Instructions prior to use!**

Do not smoke when loading this reload kit, or use in the vicinity of open flames.

Read all the assembly instructions and warnings prior to start of assembly. The order of assembly is important to success. If you have doubt about understanding these instructions, contact the dealer purchased from or the manufacturer prior to use!

Do not use any parts that appear to be damaged in any manner. If in doubt contact your local dealer, or the manufacturer for verification.

Use the reload kit as supplied! Do not modify the components in any manner that is not prescribed by these instructions. Do not mix these reload components with those from any other reload kit. Do not reuse any disposable components of this reload kit. This includes the liner, o-rings, and tracking smoke components. Damage to motor hardware, rocket, and personal injury may result. Modification of this reload kit in any way will invalidate your warranty.

Use only Pro75, AMW75 or AMWProX75 reload kits designed for the proper size Animal Motor Works hardware to reload the motor. Use of the wrong AMW or ProX components or the imitation components will invalidate your warranty. Do not interchange any AMW or ProX components with those from any other manufacturer. Use of the wrong components may lead to the destruction of your rocket and motor hardware, or may cause personal injury, death and/or property damage. Misuse of this reload kit with improper components in any way will invalidate your warranty.

While using this reload kit, it is a requirement to comply with all federal, state, and local laws in effect. Please read and follow the safety code of the Tripoli Rocketry Association (TRA), and/or the National Association of Rocketry (NAR) and/or the Canadian Association of Rocketry (CAR).

**KEEP OUT OF REACH OF CHILDREN.** The reload kit should be stored in a safe and dry location. Keep the reload kit sealed until use. If the propellant grains are subjected to excessive moisture they will become damaged and difficult to ignite. Reseal the reload kit plastic bag if it becomes torn or opened. Recommended use is within 1 year of manufacture date on outside of package. Reload kit storage must also comply with all federal, state, and local laws in effect.

Cesaroni Technology, Gormley, Canada. Version 19/08/2013.

# AMWPro75 Motor Adapter Instructions

This document is an addendum to the Pro75 instructions. It explains how to load Pro75 reload kits into AMW75 'snap ring style' motor casings using the AMWPro75 motor adapter.

Although these instructions are sufficient to load the motor, please see the Pro75 instructions supplied with the reload for more details. Make sure to fully read and understand all warnings and safety precautions in this document as well as those in the Pro75 instructions. .

The table below can be used to cross-reference which AMW75 motor casing fits which Pro75 reload:

| Pro75 reload size | AMW75 casing size |              |               |               |
|-------------------|-------------------|--------------|---------------|---------------|
|                   | 2500              | 3500         | 6000          | 7600          |
| 2G                |                   | + one spacer |               |               |
| 3G                |                   |              | + two spacers |               |
| 4G                |                   |              | + one spacer  |               |
| 5G                |                   |              |               | + two spacers |
| 6G                |                   |              |               | + one spacer  |
| 6GXL              |                   |              |               |               |

## Required Hardware Parts List:

| Qty      | Description                         |
|----------|-------------------------------------|
| 1        | AMW75 Motor Casing                  |
| 1        | (75-NW) Nozzle Washer               |
| 2        | (75-SR) Snap Rings                  |
| 1        | (P75-NH) Pro75 Nozzle holder        |
| 1        | (P75-FC) Pro75 Forward closure      |
| 1        | (AMWP75-AD) AMWPro75 Adapter        |
| 1        | (AMWP75-WH) AMWPro75 Adapter washer |
| Optional | (P75-SP) Pro75 Spacer               |

## Pro75 Reload Parts List (typical contents):

| Qty                | Description  |
|--------------------|--|
| Varies with reload | 75mm propellant grains with spacer o-rings   |
| 1                  | Tracking smoke element with plastic and phenolic outer sleeves                           |
| 3                  | O-Rings (two large, one smaller)   |
| 1                  | Phenolic liner tube with installed forward closure insulator plate (remove tape for use) |
| 1                  | Single-use nozzle (installed on liner tube)  |
| 1                  | Igniter  |

## Casing Assembly

NOTE: Use the assembly drawing to verify the correct placement of all parts. It is suggested to use disposable gloves during the assembly of the motor.

- 1) Place one large greased o-ring into the outer groove of the nozzle holder. Place the smaller greased o-ring into the inner groove of the nozzle holder. Set nozzle holder aside.
- 2) Place one greased o-ring into the groove in the forward closure.
- 3) Apply grease on inside of tracking smoke cavity of the forward closure. Also apply grease to one face of the tracking smoke grain. Install tracking smoke grain into cavity, grease side down.
- 4) Set forward closure aside.
- 5) Wipe a film of grease on the I. D. of both ends of the case. Set case aside.
- 6) Remove the tape from the forward insulator disc and remove the disc.
- 7) Install propellant into the liner tube. Depending on the load, the grains order can be important. Please check the Pro75 reload instructions for this. Make sure to place a spacer o-ring between each grain (**not** between the nozzle and first grain, and **not** between the last grain and the forward closure insulator disc). Spacer o-rings are packaged with each grain.
- 8) Slide the liner/nozzle/grain assembly into the motor case such that the nozzle is located at the retainer ring side.
- 9) Slide the nozzle holder over the nozzle. Note the inside bevel of the nozzle holder. This sits against the nozzle.
- 10) Install the steel nozzle washer in the case, seated against the nozzle retaining ring.
- 11) 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. You may have to push the nozzle/nozzle-housing in past the snap ring so the nozzle expansion cone clears the snap ring 'ears'.
- 12) Now continue on the other end of the casing.
- 13) Place the forward closure insulator disc on top of the liner assembly.
- 14) Using a twisting motion, install the forward closure assembly into the forward end of the motor case until it is about 1" past the snap ring groove.
- 15) Place the steel AMWPro75 adapter washer on top of the Pro75 forward closure.
- 16) Back-off all bolts of the AMWPro75 adapter.
- 17) Install AMWPro75 adapter over the Pro75 closure with steel washer.
- 18) If applicable, drop in the Pro75 case spacers into the casing.
- 19) Using the snap ring pliers, install a 75mm snap ring into the internal groove on the adapter 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.
- 20) Tighten up the bolts of the AMWPro75 adapters in a star-shaped pattern (like lug nuts) making sure that the Pro75 closure is loaded up evenly by the bolts. When all bolts are tight, the reload should be preloaded against the snap rings and there should be no clearance left. NOTE: It is normal if the grains rattle slightly inside the case.

## Final Preparation

- 1) Install the motor in the motor mounting tube of the rocket. Make sure the motor assembly is securely held in place by using a mechanical means to prevent it from being ejected from the rocket during launch or ejection charge firing.
- 2) Prepare the rockets recovery system as designed.
- 3) Insert an igniter through the nozzle until it stops against the forward bulkhead. Do not block the nozzle throat with any object while ensuring the igniter can not easily dislodge after placement.
- 4) Launch the rocket according to the kit manufacturer's instructions, the National Association of Rocketry (NAR), Tripoli Rocketry Association (TRA) or Canadian Association of Rocketry (CAR) Safety code, and the National Fire Protection Association (NFPA) Code 1127.

## Ignition and Lighting AMW Reload Kits

All applicable high power model rocket regulations require electrical ignition of this reload kit. Under no circumstances should any AMW reload kit be ignited with direct flame ignition, or hand lighting. In the event of a misfire within 5 seconds of pressing the launch button, release the button. Wait 3 minutes prior to approach, or allowing anyone to approach the loaded rocket. After 3 minutes has elapsed, the old igniter should be removed

and replaced. Keep all body parts from the direct path of the exhaust jet, and the flight path of the rocket. Upon igniter replacement, repeat the launching process.

### **Reloadable Motor Cleanup (Post firing)**

Note: The motor will be hot after use. If necessary to handle the spent motor prior to full cool down, use a soft rag, or other heat protection. The clean up should occur within 24 hours of firing. After 24 hours the propellant residues are much more difficult to clean and may cause corrosion of the metal parts. Place the used reload kit components in a plastic bag and dispose of properly. **DO NOT LITTER!** The motor is easiest to clean and disassemble when it is slightly warm to the touch. This occurs after a period of 30 minutes after firing. **DO NOT** attempt to clean if the motor is too hot to remove from the airframe without the use of heat protection. It is suggested to use disposable gloves during the cleanup of the motor.

- 1) Loosen the bolts of the AMWPro75 adapter.
- 2) Using the proper sized snap ring tool, remove the snap rings from the motor casing. Remove the aft (nozzle) end metal washer, also.
- 3) Remove the AMWPro75 adapter and adapter washer.
- 4) Place a properly sized bolt into the forward bulkhead, and with a slight twisting motion, pull the bulkhead from the casing. A firm, steady motion helps to prevent the o-ring from sticking in the groove. Remove the o-ring and place the forward closure back in place. Push the forward closure into the casing with the bolt in place. The liner and nozzle and nozzle retainer will protrude out of the other end enough to grasp easily.
- 5) Grasp the exposed part of the liner and remove with a twisting motion.
- 6) Remove the nozzle retainer from the nozzle.
- 7) Discard the liner + nozzle.
- 8) Remove the o-rings from the nozzle retainer.
- 9) Using wet wipes, or dampened paper towels, wipe the inside of the casing, nozzle retainer, and forward closure to completely remove all propellant residues.
- 10) Apply a thin coating of grease to the inside of the casing, exterior of the bulkhead and the nozzle retainer. Store the components away from moisture.

### **Safety & First Aid**

Keep all AMW reload kits away from sources of heat, flames, and flammable materials. AMW reload kits have been tested and proven to burn slowly with intense heat, and not explode when ignited. Normally, direct flame is required for ignition to occur. In case of accidental ignition, fight any fires with water. Foam and carbon dioxide will not suppress the reload grains, as they contain an oxidizer. In the case of minor skin burns, apply a burn ointment. For more severe skin burns; immerse the burn into water immediately, and seek medical help as quickly as possible. Do not ingest or eat any part of the AMW reload kit. In case of accidental ingestion, induce vomiting, and seek medical help as quickly as possible. The AMW propellant consists mainly of ammonium perchlorate in a polyurethane elastomer compound.

### **Disposal**

In the unfortunate event the AMW reload kit needs to be disposed of due to damage or defects, it should be returned to the AMW. Please contact AMW for instructions, prior to return.

### **Warranty and Legal Disclaimer**

**Cesaroni Technology Inc, (CTI)** certifies that it has exercised reasonable care in the manufacture and design of its products. We do not assume any responsibility for product storage, transportation or usage. CTI shall not be held responsible for any personal injury or property damage resulting from the improper handling, storage or use of their products. The buyer assumes all risks and liabilities and accepts and uses CTI products on these conditions. No warranty either expressed or implied is made regarding CTI products, except for replacement or repair, at CTI's option, of those products that are proven to be defective in manufacture within one year from the date of original purchase. Proof of purchase will be required. For repair or replacement under this warranty, please contact your point of purchase.

AMW75-3500 casing with Pro75-3G reload and AMWPro75 adapter

