



## Kit number 1

## AA Quick Kit

### Package Contents:

- 1 Regulator seat
- 1 Regulator valve pin
- 1 Regulator valve pin spring
- 1 Piston o'ring

### Tools required to complete installation:

**Note:** *The installation procedure outlined below will represent the Air America<sup>®</sup> Factory procedure. Other tools and/or methods of installation are available but not recommended by Air America<sup>®</sup>.*

Soft jawed vise  
Installation collet  
7/16 inch wrench  
1/8 NPT 6 inch pipe  
*Hooked pick*  
Knife  
3/16 inch hex head (ALLEN) wrench  
Lithium (white) grease  
10w30 motor oil  
Cotton swab (Q-TIP)  
Liquid thread sealant (medium strength)  
Alcohol

### Regulator seat replacement procedure:

**WARNING:** *Always remove all the air from the system prior to attempting any repairs. To achieve maximum benefit from your factory replacement parts, have them installed by an authorized AIR AMERICA<sup>®</sup> technician. Additional technical assistance is available at [www.airamerica.com](http://www.airamerica.com).*

### Servicing the piston housing:

Begin by disassembling the unit. Use the 3/16 inch hex head wrench to unscrew (counterclockwise) the old regulator adjusting nut from the piston housing. Once the old regulator nut is unscrewed, remove the nut to expose the clevis portion of the regulator

spring pack. Turning your regulator over (regulator nut side down) will allow the spring pack assembly to drop out. If the regulator spring pack does not drop out, tap the regulator unit against the palm of your hand to shake it loose. **DO NOT TRY TO USE A TOOL TO PRY IT OUT.** Next use the hooked pick to grab the piston assembly by the center jam nut and pull it from the housing. Try to pull straight back when removing the piston so that you won't damage the piston o'ring on the housing threads. **Never grab the outside of the piston assembly with a tool. Damage to the piston will result.**

### **Removing the piston housing:**

Now it is time to separate the piston housing from the gas body. This procedure will vary slightly depending on the type of system you are working with. Install the housing in the collet if you are working with the **Violator™** or **Raptor™** style regulators without machined flats on the piston housing. Then install the collet (parting line up) in the vise and tighten. If you are working with a **Black Ice™** regulator or have a regulator with the wrench flats machined into the housing, install the piston housing directly into the vise (on the flats) and tighten. **CAUTION: DO NOT OVER TIGHTEN,** damage to the thread area may occur. Take the 7/16 inch wrench and remove the output fitting on the regulator, try not to remove the fill nipple do to the installed check valve (*note: secondary regulators will not have a fill nipple with an internal check valve*) in the nipple (**fill nipples are installed to a predetermined depth at the factory**). Once the nipple is removed, install the 1/8 inch x 6 inch pipe into the threads. Use the pipe as a wrench to break loose (counterclockwise) the regulator halves. Upon breaking the two regulator halves lose unscrew them by hand making sure not to lose the regulator pin and spring assembly located between the halves. If your system is the **Apocalypse™** the above procedures will be substituted by removing the 4 piston housing attaching bolts with a 5/32 inch hex head Allen key. Once the bolts are removed then you will be able to turn the piston housing and pull until the two halves separate.

### **Removing the regulator seat:**

Use the knife blade as a wedge to pry the side of the regulator seat up out of it's sealing pocket (see illustration). **CAUTION:** Do not damage the sealing pocket or the surrounding area. Any damage in these areas will result in an inability to seal and/or regulate.

### **Cleaning the assembly:**

Prior to installing your new piston housing, it is best to clean the gas body housing portion of your regulator. Take the cotton swab and dip the end into some alcohol, now wipe the inside of the regulator and thread area. Repeat this process until the cotton swab comes out clean, this may take several applications. **Caution: Be sure not leave any cotton residue in the regulator.**

### **Installing regulator seat:**

Start by identifying the top and bottom side of the regulator seat. Regulator seats are tapered from top to bottom, with the top portion being narrower then the bottom portion. Look at the side of the seat to determine the top from bottom (see illustration). The bottom of the regulator seat should snap into the piston housing and fit firmly without falling out.

### **Installing the piston housing:**

Begin the installation of your piston housing by rotating the gas body so that the regulator seat surface is up (see illustration) and installing the regulator pin and spring assembly. This is done by first installing the cone spring onto the pin itself by fitting the narrow end of the spring over the pin seat (see illustration). If the pin and/or pin spring are damaged use one of the Air America® parts kits to replace them before installation. The pin and spring assembly will go into the center hole with the wide end of the cone spring facing down. To ensure that you have installed them correctly what you will see is the long narrow portion of the pin protruding from the hole in the gas body. Take the piston housing and lightly lube the o'ring with some lithium (white) grease on your finger. **DO NOT OVER LUBRICATE.** Over lubrication will result in the contamination of the regulator seat assembly. Now screw the piston housing onto the gas body, hand tight. Install the piston housing into the vise as you did during the removal procedure and use the pipe to tighten (clockwise) the two assemblies. If your working with the **Apocalypse™** system simply line up the dove tail cut at the top of the regulator and install the piston housing attachment bolts in a cross pattern. Slowly bringing the two halves of the regulator together, alternating opposite corners as you torque the piston housing into place. Once the assemblies are tightened you can, prior to installing the output fitting inspect the threads for any type of damage or metal fragmentation. If any damage is present **DO NOT** install the fitting as described below, contact Air America® immediately for instructions on how to proceed. **Caution: installing a high pressure fitting incorrectly or in a damaged regulator could result in severe damage to the regulator making it unsafe and/or bodily injury.** Now install the output fitting (clockwise), using a small amount of thread sealant on the threads. **Note: Do not use a tape type sealant or thread locker.** Air America® recommends the use of medium strength hydraulic thread sealant only.

#### **Installing the piston assembly and spring pack will be as follows:**

Start by checking the piston o'ring for wear and/or cuts. The o'ring should be free from defects. Check the piston assembly for an even spacing of the o'ring gland (see illustration) and/or deep scratches or scuff along the pistons outer body. If defects or excessive wear are apparent use one of the Air America® parts kits to replace the necessary parts. Lightly lubricate the o'ring and piston with the 10w30 oil. Now install the piston into the piston housing (o'ring side first), by gently pushing it in with your finger. Careful not to rub the o'ring on the threaded portion of the piston housing. Inspect the spring pack assembly for spring bind by holding the clevis portion between your fingers and rotating the springs around it. The springs should move freely around the clevis without excessive side to side spacing. If you have excessive side spacing the springs have lost their useful life and should be replaced. Prepare the parts for installation by putting a few drops of the 10w30 oil on the side of the regulator spring pack, this will lube the springs as they move during use. Next install the spring pack assembly. Remember to install the spring pack silver (clevis) side out. Take a small amount of lithium (white) grease with your finger and coat the first few threads (opposite the hex end) of the regulator adjusting nut. Now install the regulator adjusting nut (clockwise) finger tight until you can just feel it engage the spring pack assembly. Adjust your outgoing regulator pressure with the use of the Air America® universal adjusting tool. Once the pressure is set at the desired amount and the system is under pressure install the tournament cap over the adjusting nut.

***Reminder: If you are unsure or do not feel comfortable with doing the repair after following the supplied instructions, remember you can send your system in to the factory for it to be professionally serviced.***

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