



Overview

The PolarStar Modular Regulator System (MRS) can be used with any SLP, LP or standard HPA tank designed for Paintball applications. It is safe to use with tanks which output up to 900PSI. (Note: The output pressure of the regulator can vary slightly depending on the output pressure of the tank it is used with.)

DO NOT APPLY INPUT PRESSURE GREATER THAN 900PSI.

Installation

To install the regulator onto your tank, simply align the threaded base of the regulator with the tank threads and turn clockwise until the regulator is snug. The o-ring on the top of your tank will create a seal against the walls of the regulator body so excessive force is not needed when tightening.

On/Off Valve

Once the regulator is installed into your tank, turn the knurled knob on the left side of the regulator clockwise to open the air flow into the regulator. It is recommended to have the air rig disconnected from your HPA system before applying air so that in the event of a malfunction the HPA system will not be affected.

To depressurize the system for storage, turn the knob counter-clockwise until you hear a small amount of air vent around the knob. This will depressurize the high pressure (tank side) of the regulator so it can be easily removed from the tank. Do not continue to turn the knob after the air has vented as it will unscrew completely from the regulator body. The low pressure (gun side) of the regulator will still retain pressure until the line is purged by either firing your rifle or disconnecting your line a few times.

Pressure Adjustment

The pressure adjustment screw is located on the right side of the regulator. Using a 3/32 allen wrench, turn the screw counter-clockwise to increase pressure and clockwise to decrease pressure. When decreasing pressure, you will need to either fire your rifle or purge the line before the adjustment registers on your gauge.

Tournament Lock

To secure the integral tournament lock, slide the collar down against the base of the regulator so that the pressure adjustment screw is concealed. Event staff can now attach a standard chrono zip-tie around the body of the regulator just above the collar to prevent the collar from moving.

Maintenance

The MRS regulator will require periodic cleaning and greasing to maintain top performance. The most basic maintenance is the cleaning of the piston and piston bore. This should be performed every 100,000 to 150,000 cycles or sooner if the recharge rate has slowed or the output pressure has become less consistent.

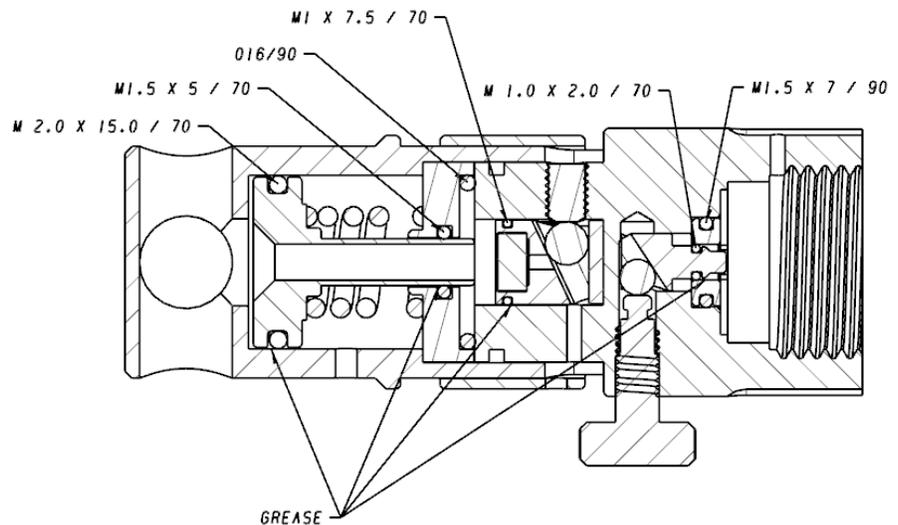
1. Turn off, remove from tank and release pressure from the regulator.
2. Remove the four #8x32 Flat Head screws using a 5/32" hex wrench.

3. Slide the upper section off the input section and remove the internal components (dividing wall, spring & piston). Be careful not to scratch or damage the stem of the piston, especially the thin edge, as this can lead to leaks or creeping due to poor sealing.

4. Clean any dirt and old grease from the piston bore, piston and dividing wall o-rings.

5. Apply new grease to the piston o-rings (left 2 locations in diagram) and reassemble by inserting the piston first, followed by the spring then the dividing wall.

6. Align the upper section, input section and the lock and then reinstall the four screws. The small hole in the lock should line up with the small hole in the input section (opposite the adjustment screw). The upper section is reversible and may be installed so that the gauge is facing the user for either right or left handed adjustment.



HPA Safety

High Pressure Air has been used for decades as a source to power Airguns, Paintball Guns and Airsoft Replicas. It is safe and effective to use although there are some precautions that should always be followed while using HPA.

A quick inspection of your Compressed Air Tank should be done before using the tank. Take a look at the top of the valve, the threads and the gauge for any cracks, signs of stress or damaged o-rings. The fill nipple should be clean of debris. A fiber wrapped tank should be free of cracks and serious dings or chips. A few minor scratches can be expected but any chip that reaches the fiber threads underneath the clear resin exterior means that tank is no longer safe to use.

This is why it is recommend to use a paintball tank bottle cover for your HPA tank. All it takes is one drop, one trip and fall for your expensive investment to become unsafe and ruined. Most tank covers are made of neoprene or other material, usually with additional padded sections for extra impact protection. The material which your backpack is made from is not very thick and does not offer much in the way of protection when you have to push up against cover or slide into a bunker only to find a rock in the most inconvenient of places. The extra cushion provided by a neoprene tank cover can mean the difference between capturing that flag or going home for the day.

Know the pressure rating of your tank! It should go without saying but some people still mess this up. At fields with self-fill stations you need to be sure you only fill to the proper pressure. At fields where the staff does the filling you should always mention whether your tank is a 3000 psi or 4500 psi when you hand it to them as a reminder, since they might be filling many tanks quickly between games and sometimes get sidetracked.

Sometimes after getting a fill and disconnecting you might hear a slight hissing from the fill nipple. There is an o-ring on a little piston in this piece that on occasion needs to be replaced (it's a good idea to carry a spare in your kit bag). Never put any oil or grease in the fill nipple to stop a leak! Oil or grease in the fill nipple will be blasted into a mist form when high pressure air starts rushing through. Tanks heat up when filled to pressure, and if it gets hot enough this oil mist gets can ignite, similar to how a diesel engine combusts. So remember, NEVER PUT ANYTHING IN THE FILL NIPPLE!

Compressed air is much more stable than CO2 or Green Gas in all weather conditions but being exposed to extreme heat can still overpressurize the vessel to the point of blowing a burst disk, as well as degrading the seals. Therefore, just like a CO2 cartridge or can of Green Gas, you don't want to leave your HPA tank in a hot trunk of the car or laying in direct sunlight during high heat conditions.



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