

## TURBO VALVE KIT INSTRUCTIONS

### WHAT IT DOES:

The PMI TURBO VALVE will increase the air efficiency of your PMI gun and allow you to get more shots from your constant air tank or 12 gram cartridge. It is done by porting the air passages inside your gun to allow the air to flow better as in high performance racing engines. The amount of increase will vary with gun type or configuration and ambient temperature. Constant air guns can see up to a 50% increase in shots. Fully-rigged tournament guns with the proper internal modifications and 12 gram adapters such as the MICRO-CA II have been known to double the number of usable shots from one cartridge.

### INSTALLATION:

The PMI TURBO VALVE kit provides a direct replacement for the valve and hammer assembly in the PMI guns. Since a valve tool is required to remove the assembly, this procedure should only be attempted by a qualified person. **DO NOT REPLACE THE BRASS BUTTON THAT HOLDS THE REAR OF THE INTERNAL VALVE SPRING!!** Replace the main spring, valve spring, and the o-ring with the parts supplied in the kit.

### SETUP:

Once your TURBO VALVE has been installed and tested for leaks, you must use a chronograph to dial in your velocity. The main spring supplied in your kit is shorter than a stock spring and will likely require shimming with the supplied washers to 280-290 fps which is the ideal range. Higher velocity will severely reduce the number of shots and prematurely freeze the cartridge. Lower starting velocity will cause the shots to naturally fall off into the unusable range before the CO<sub>2</sub> cartridge is empty. Since your gun is now much more efficient its velocity will be more sensitive to changes in weather, paint etc. so ALWAYS chrono your gun before use. Remember, liquid CO<sub>2</sub> pressure is directly related to temperature and ALL guns get fewer shots when the outside temperature is cold.

### TEST USING THE MICRO-CA II:

Usable shots from a 12 gram is a matter of continuing debate; as of this writing there is no standard for the test. Our method involves the following: With temperature at 70°-80°, we install a MICRO-CA II quick-change adapter in place of the constant air tank and load in a fresh, room temperature cartridge. The first shots should be 280-285 fps. Then shoot every shot through the chrono, waiting for the fps reading before shooting again. After every ten shots pause for approximately 1 minute to let the cartridge recover. Stop counting shots when the velocity drops below 230 fps. This method counts usable shots instead of all balls that just manage to come out of the barrel.

### TEST USING OTHER CO<sub>2</sub> ADAPTERS:

Other adapters are tested in the same manner as the MICRO-CA II, except those units with back check valves and hoses to a remote adapters must first be primed with a 12 gram cartridge and fired down to 230 fps before starting with a fresh cartridge and counting shots.

### PMI I SPECIAL ADAPTER:

The PMI I requires the use of the internal PMI XPANSION CHAMBER in addition to the TURBO VALVE to increase performance. The XPANSION CHAMBER allows the liquid CO<sub>2</sub> to warm before entering the valve, keeping the pressure up for improved performance.

### MAXIMUM PERFORMANCE:

For maximum tournament performance where a few additional shots can mean the difference between winning or losing, there are additional modifications available. For maximum air flow all the passages in the gun must be opened up, this includes the bolt and the hole between the upper and lower brass barrels known as the PORT TUBE. The bolt passages should be opened to 1/4 inch or properly ported bolts can be purchased through any authorized PMI distributor. The port tube is critical and should NOT be attempted by anyone but very qualified armsmiths. PMI's authorized facility for port tube enlargement is AIRGUN DESIGNS (312-520-7507). Their specially built equipment can enlarge the port tube hole without drilling any external holes.

### WARRANTY:

The PMI TURBO VALVE kit comes with a 90-day limited factory warranty against defects in parts or workmanship. PMI is not responsible for damage to guns due to improper installation of this kit and any such damage is not covered under the gun's 90 day warranty. If you have any questions about the installation please speak to a qualified armsmith in your area.