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mQ-Valve Instructions

A. Contents of Package

- Manual
- mQ-Valve, consisting of:

Guide Rod Spacer | Pilot | Poppet | Valve Body

B. Prepare Your Marker for Installation

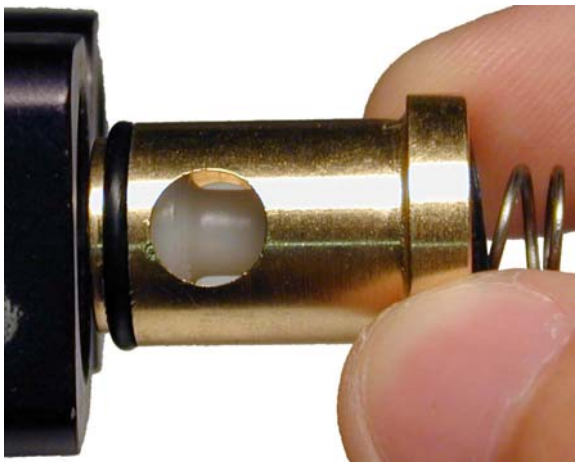
You will need to disassemble certain parts of your Autococker before you install the mQ-Valve. This section will walk you thru each step. DE-GAS YOUR MARKER AND REMOVE THE AIR SYSTEM BEFORE BEGINNING THE INSTALLATION! MAKE SURE THE MARKER IS UNLOADED! EYE PROTECTION SHOULD BE WORN AT ALL TIMES.

STEP 1. REMOVE THE GRIP FRAME

- Consult your e-grip's product manual for instructions.
- Remove the sear / solenoid and associated hardware from your e-grip. These parts are not necessary with the mQ-Valve.

STEP 2. REMOVE THE HAMMER AND MAIN VALVE

- Remove the following parts from your marker: valve, valve spring, jam nut, valve setscrew, and hammer assembly. You will need to remove your backblock and bolt for this process. A special tool is needed to remove the valve. Save the IVG, valve setscrew, and cocking rod for reassembly. Consult your marker's manual for additional help.



C. mQ-Valve Installation

STEP 1. INSERT VALVE BODY

- Push poppet back and forth in the valve body to ensure it is not stuck.
- Insert the valve body with the poppet and spring in place as shown in the picture. Make sure the o-ring at the rear of the valve body and spring stay in place after dropping into the gun body.
- Align the hole of the valve body with the hole in the gun body

STEP 2. INSERT PILOT

- Feed the wire of the solenoid thru the body and out the slot where the sear lug would normally be.
- Gently insert the solenoid into the marker body while pulling the remainder of the wire thru the slot.

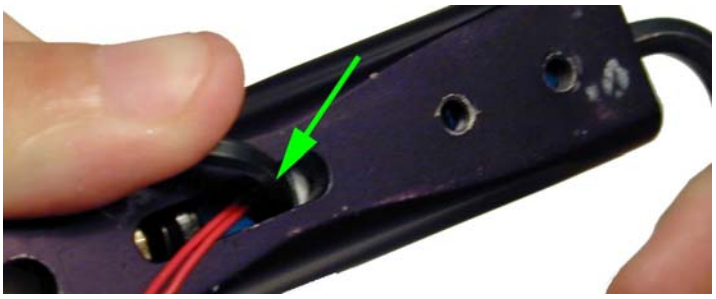
BE CAREFUL WHEN INSERING THE PILOT. SHEARED WIRES ARE NOT COVERED UNDER THE WARRANTY!

- Align the wire and the slot in the solenoid spacer with the slot in the body.

STEP 3. INSERT GUIDE ROD SPACER

- Insert the guide rod spacer with the hollow end toward the IVG.

STEP 4. TIGHTEN IVG



● Use an allen key to keep the solenoid spacer from rotating while threading IVG back into the marker. The IVG needs to be as tight as the original valve jam nut in order to seal the front of the mQ-Valve.
IF THE PILOT ROTATES, THE WIRES COULD BE SHEARED OFF! SHEARED WIRES ARE NOT COVERED UNDER THE WARRANTY!
DO NOT OVERTIGHTEN THE IVG! CRUSHED SOLENOIDS ARE NOT COVERED UNDER THE WARRANTY!

STEP 5. INSPECT VALVE

● The valve should appear as shown in the picture. Be sure the hole in the valve body is aligned with the hole in the gun and that the wires are not pinched.

D. Reassemble Your Marker

STEP 1. REASSEMBLE BODY
● Reinstall the valve setscrew flush with the bottom of the body. Do not thread in more than necessary.
● Reinstall bolt and backblock
● Thread your cocking rod thru the back block and into the rod guide. Threadlocker will be necessary. This is only to stabilize your back block so it does not rotate and snap your pump arm. The cocking rod may be shortened if desired. DO NOT OVERTIGHTEN THE COCKING ROD! CRUSHED SOLENOIDS ARE NOT COVERED UNDER THE WARRANTY!

STEP 2. RE-ASSEMBLE THE GRIP FRAME
● Consult your e-grip's product manual for instructions
● Thread the wires through the opening left by the sear components. Avoid pinching the wires when installing the grip frame. Plug the mQ-Valve solenoid into the board where the sear tripper solenoid used to be.

E. Tuning Your Marker

STEP 1. MQ-VALVE
● Set the sear solenoid dwell time to 4 ms (SON/shot/VDWL). Race frame users will need around 7ms due to their lower voltage.
● Set your marker's pressure to between 250 and 320 psi. You will want to run at as high a pressure as possible. If you over pressurize the valve a pressure release seal will start to hiss. Lower the pressure and the seal will re-seat.
● Chronograph your gun to the desired speed by adjusting the input pressure to your marker (via your main regulator). If your desired velocity is not reached by increasing your pressure, ie, the relief valve starts hissing, then lower the pressure and raise the solenoid dwell by 1 ms.

STEP 2. BLOWBACK
● Set the bolt solenoid delay (CDEL/dwell/BON) to a low number and chamber a ball. Place another ball in the feedneck.
● Fire once in a safe direction and observe the amount of blowback. Increase CDEL/dwell/BON until the blowback is under control. A ball must always be in the chamber and feedneck for this test to work
● Repeat as needed.

STEP 3. SHOOTDOWN
● Increase your bolt close time (COFF/close/BCLO) until no shootdown is noticed.
● Pull trigger rapidly or use full auto. Listen for a difference in sound between the first and second shots.
● If the first and second shots sound different, increase COFF/close/BCLO.

STEP 4. RATE OF FIRE
● Set bolt solenoid on time (CON/load/BDWL) to any value. They only control the rate of fire when the eye is off and are not critical to operation of your marker.
● A relatively low rate of fire is recommended as a failsafe in case of eye malfunction.
● Cocking pressure can be set to any value desired. The timing procedure must be repeated if cocking pressure is changed.

Experience has shown that most mQ-Valve shootdown problems are timing related. Make sure you follow these instructions carefully and check that your tank is screwed in all the way.
See our website at www.pbxlab.com for additional help.