

Blackmore Cylinder Seeder

Cylinder Head Cleaning/Inspection Instructions

Sept 2002

Cleaning of the Blackmore cylinder head(s) should be done at the end of every sowing season before being stored. Keep the cylinder in its protective sleeve in a temperature controlled room (50—90 degree F) for long term storage. In addition, the cylinder seeder should be totally cleaned of any dirt, paying particular attention to the motor, chain and sprocket drive assemblies. The seeder should be covered and kept out of direct sunlight.

This instruction sheet and accompanying photos provide a guide for cleaning and inspection of the cylinder head. Please read the entire document before proceeding.

Tools needed:

- Allen/hex key wrench set
- 7/16" wrench used to remove cylinder from seeder
- Fine mill file or 220 grit silicone carbide paper

Remove the cylinder head from seeder and place on a *clean* work place. Keep the parts in order as they are removed from the shaft.

Disassembly:

- 1.) Loosen the hex screw in the handle/knob with the proper size Allen wrench. There is some pre-load tension on the spring, therefore hold onto the handle so it does not pop off the shaft. Check the shaft for burrs. Remove and smooth any rough spots (particularly where the set screw contacted the shaft) with a fine file or silicone carbide paper.
- 2.) Remove the aluminum bearing block from the cylinder shaft, but do not force. If the bearing sticks, spray it with a light lubricant such as WD-40 and let it soak for a few minutes. Check for a burr on the shaft. If the bearing assembly cannot be removed from the shaft without forcing it, return the entire cylinder assembly to Blackmore Co. Using a gear puller or hammer to remove the block may damage it beyond repair.
- 3.) Remove the washer next to the bearing block..
- 4.) Remove the two plastic spacer/bushings and the spring from the shaft. Note that the spacer/bushing against the block is shorter and may have a flat spot on its flange to clear the warning plate. If there is not a flat spot, the plate should be notched to provide clearance. The spacer/bushing must not rest on the plate. The flange of the spacer/bushing must rest flat against the block itself to insure proper contact between the block and the hockey pucks. Refer to the diagrams.
- 5.) Pull the valve block off the shaft and set it aside. Note that there are left and right valve blocks.

- 6.) The hockey pucks have a smooth side and a side with rubber O-rings. Turn the cylinder so the keyway is up and remove the hockey puck and the key. When reassembling, the O-rings always go against the cylinder head.
- 7.) With the key removed, gently slide the cylinder down the shaft *without* using any tools. Lubricate the shaft if there is any resistance. Continue to pull the cylinder toward you while slowly turning it on the shaft. Do no force it as this may cause irreparable damage to the cylinder head assembly.
- 8.) Place the cylinder on a soft cloth, such as a towel, to protect and keep it in place.
- 9.) Remove the other hockey puck, key and valve block..
- 10.) In a clean sink or tub, submerge the cylinder in warm (**not** hot) soapy water. Temperature extremes are to be avoided at all times with the cylinder head. Allow the immersed head to soak five to ten minutes to loosen accumulated residue inside the head.. Slosh the cylinder back and forth lengthwise several times permitting water to flow through the cavities. Fill it with water and shake it to dislodge any material inside.

Repeat this process several times, then hold the cylinder upright allowing it to drain thoroughly. Hold the cylinder up to a light source and inspect the internal channels for cleanliness. When the cavities are clean, drain the soapy water from the sink and rinse with clean, warm water. Allow the unit to dry completely. Compressed air can be used to speed up the process, but be careful not scratch the end surfaces of the cylinder with the nozzle.

- 11.) Remove the hoses and clean the valve blocks and hockey pucks in warm soapy water, rinse with clean water and dry thoroughly. Inspect the O-rings on the hockey pucks for cracks or deformities. Check that the surfaces of the valve blocks are smooth where they interface with the hockey pucks. Scoring of these surfaces indicate dirt was on the surfaces, or that the machine was run for a period of time without the air turned on. The air acts as a coolant for the surface interfaces, so it *must* be on at operational speed. Moderate or excessive scoring can result in air leaks between the surfaces, adversely affecting the machine's performance.
- 12.) Carefully reassemble the cylinder head.
- 13.) Reinstall the cylinder on the seeder and, with the vacuum and air on, run the machine in manual mode to completely dry out the cylinder before running with seeds.

Call (800) 874-8660 USA/Canada or (734) 483-8661 Int'l with any questions. Ask for cylinder seeder technical assistance.

Blackmore Company Inc.

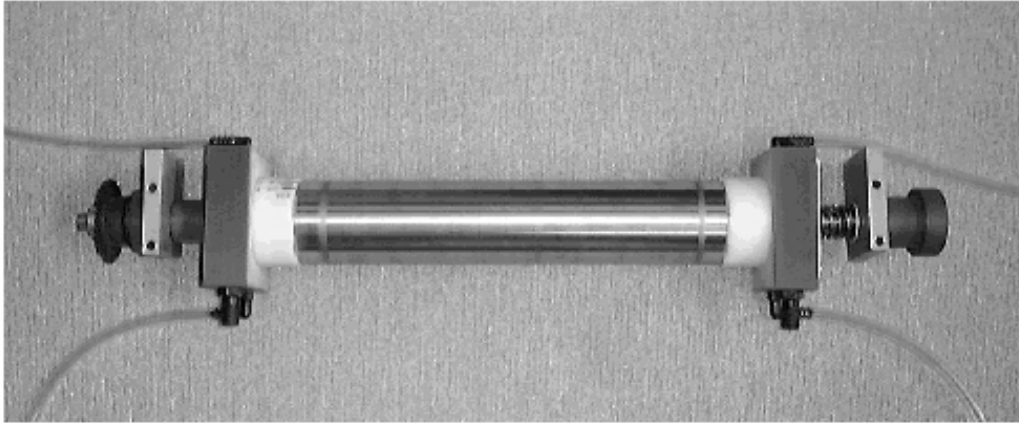
10800 Blackmore Avenue, Belleville, MI, USA 48111-2500

USA/Canada (800) 874-8660 * Int'l (734) 483-8661 * Fax (734) 483-5454 / 2387

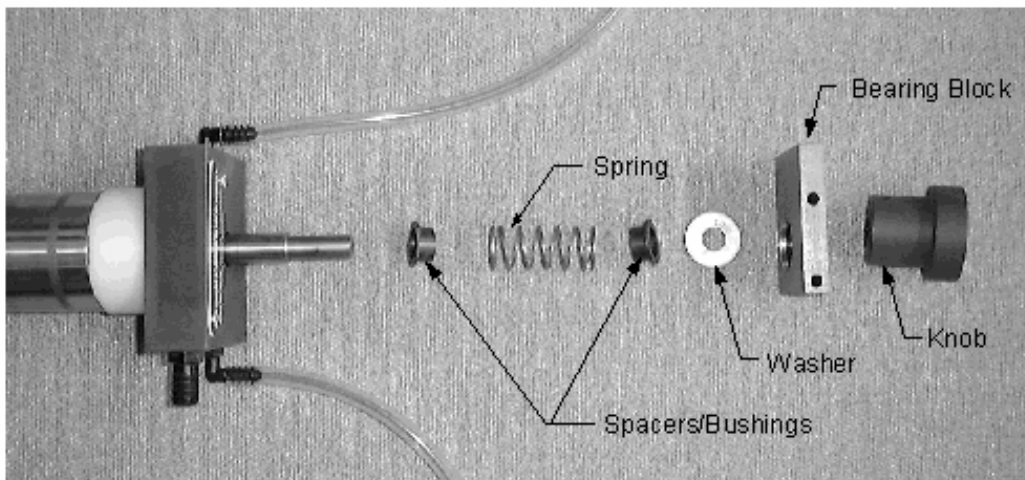
www.blackmoreco.com

e-mail: dsteiner@blackmoreco.com

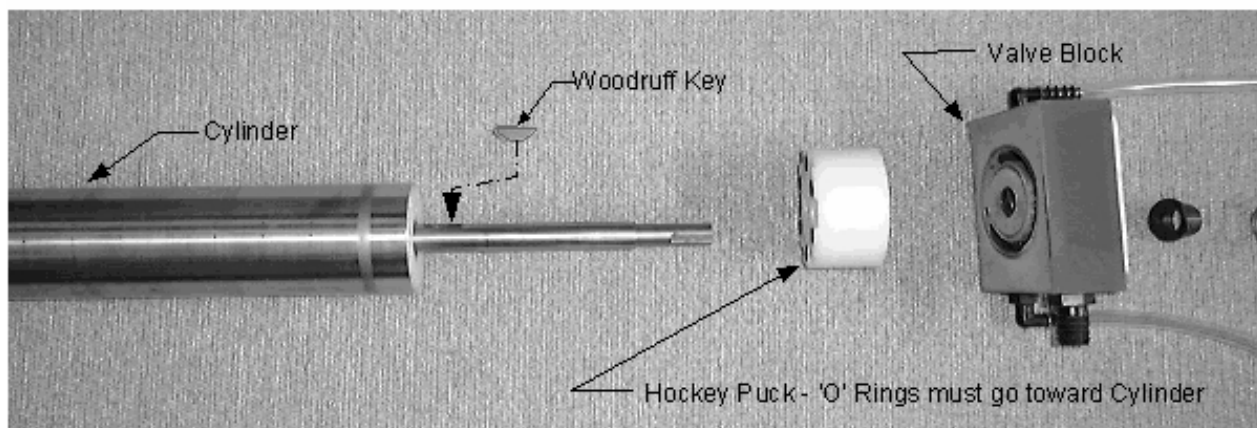
Cylinder Head Assembly



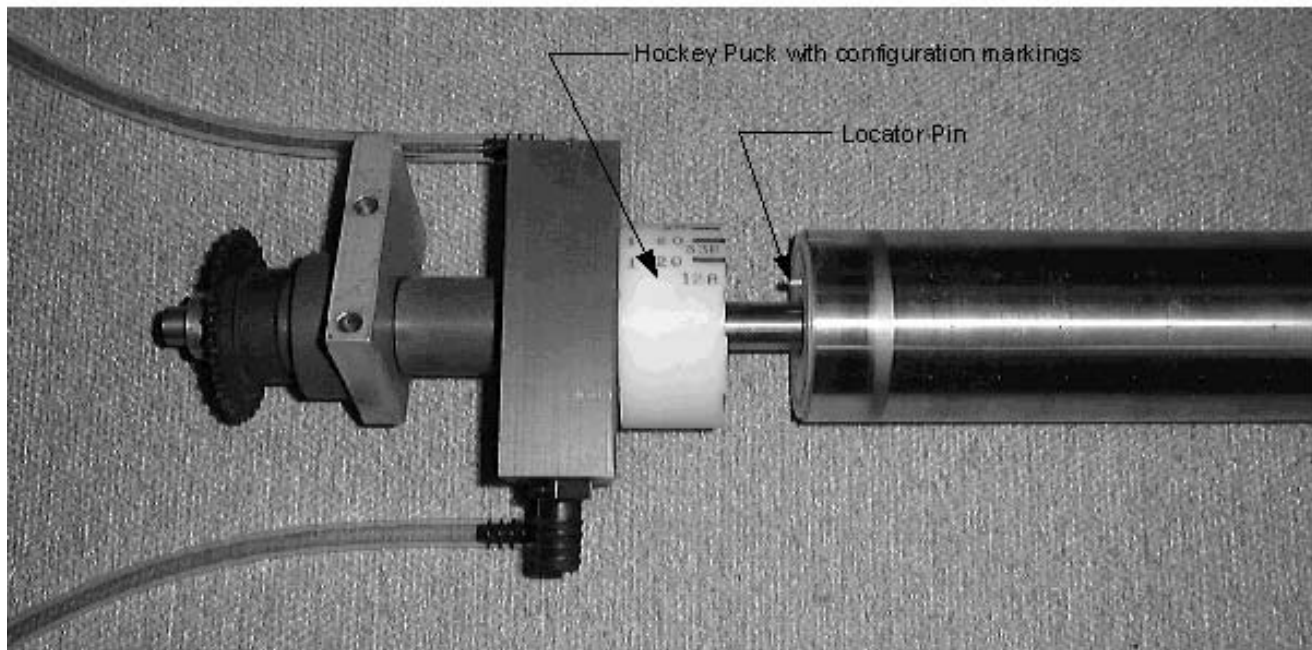
Assembled Cylinder Head



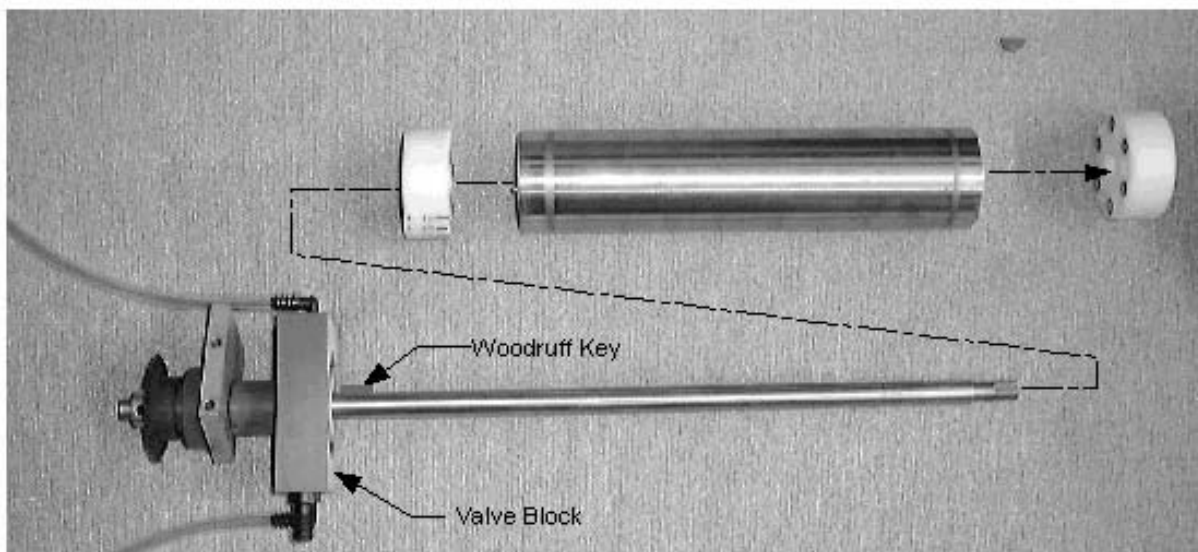
Step 1: Loosen allen screw in gray knob and remove knob, bearing block, washer, spacers/bushings and spring.



Step 2: Remove air block, hockey puck and woodruff key.



Step 3: Slide cylinder on shaft and notice Locator Pin and Locator Pin holes in the Hockey Puck with the cylinder head configuration marking. Unit must be re-assembled with the cylinder and hockey puck positioned as shown.



Step 4: Remove cylinder, hockey puck, woodruff key and valve block. Re-assemble in opposite order.

If you have questions, call Blackmore at 1-800-874-8660