

ENGINEERING**For Dependable • Packless Solenoid Valves****RAPID CYCLING****RAPID CYCLING**

How often is the valve cycled?

Recommended cycling of Magnatrol Valves is between 3 and 6 times a minute (3 to 4 is ideal). If you are cycling quickly or cycling more than the recommended 3 to 6 times a minute, life expectancy of the valve will diminish.

Depending on the fluid and pressure, there are a few cases where the cycling can be rapid enough that it damages the valve's internal parts.

Rapid Cycling can cause premature failure of the valve due to "mushrooming" at the top of the laminated plunger. Mushrooming is caused by the combination of rapid cycling and AC inrush current. The inrush current "snaps" the valve open; when this is done in rapid succession it damages the plunger and other components causing the valve to eventually stick and fail.

REMEDIES for Rapid Cycling:

If your application will involve rapid cycling or if rapid cycling has caused your valve to stick and fail, please review the following:

- **Option # 1:** Modify Valve for Rapid Cycling

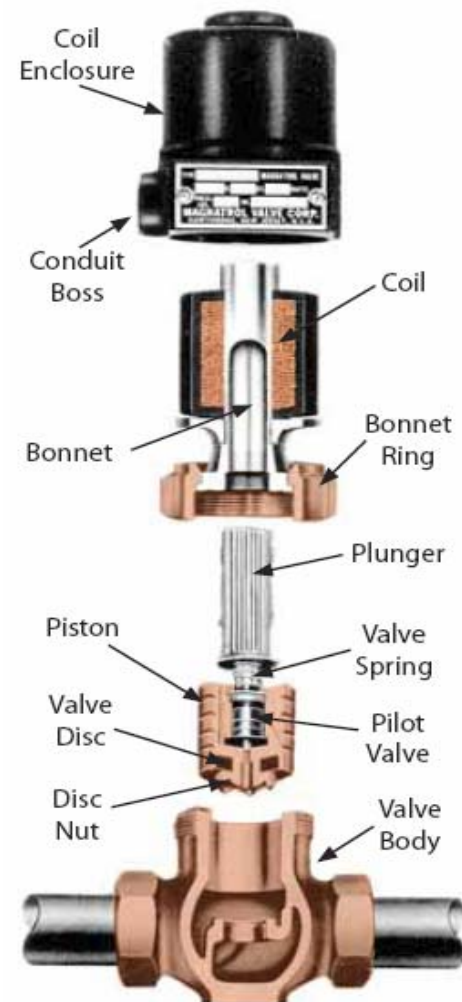
The piston assembly plunger will be chamfered at the top to prevent premature failure due to "mushrooming".

Magnatrol has found that this will extend the number of cycles before service is required.

- **Option # 2:** Use a DC operated valve which is furnished with a solid plunger rather than the laminated plunger used in the AC operated valves. If you only have AC power, order the valve with the "HF" option. The "HF" option uses a DC operated valve equipped with an AC to DC rectifier. This means you continue to use your existing AC power source; the rectifier converts it to DC to operate the valve. This eliminates the AC inrush current and the damage it causes during rapid cycling applications.

Magnatrol has had much success with taking this approach with customers who have experienced failures in rapid cycling applications.

Normally Closed AC valve showing laminated plunger is typical of Type "A" valve 1/2" thru 1-1/4" ▶

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