VinWizard Pneumatic Air Valves

Introduction

- **Electric valves fail**
- **Electric valves compromise your wine**

Why has one component enjoyed such widespread use in the winery environment when it has such a history of failure?

The answer lies partially with those responsible for supplying control systems to the industry. They have traditionally looked only at the scope of their own offering and not the whole picture. Such installations have been performed knowing that components their system will interface to will probably fail.

Why Do Electric Valves Fail?

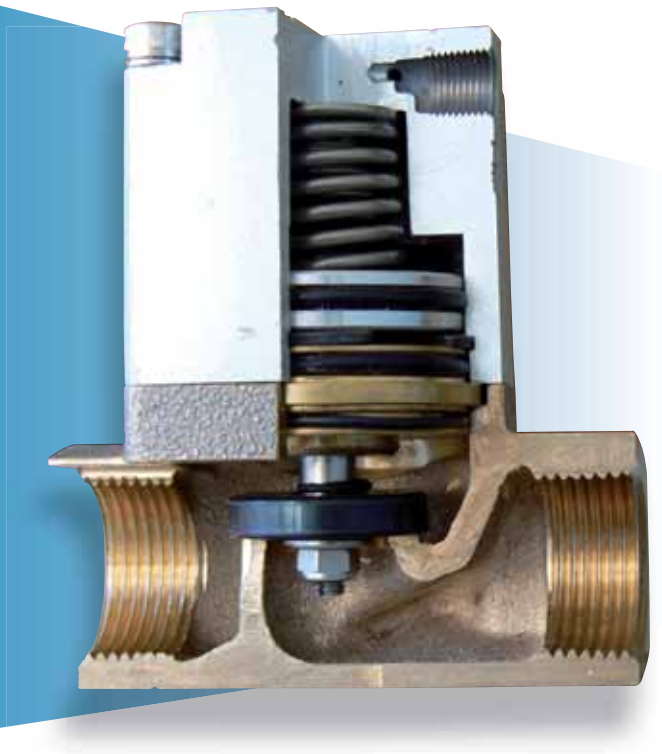
- Electric solenoid valves require voltage at the tank. Despite the most extreme termination efforts, valves that require electricity in areas exposed to condensation will ultimately fail.
- The operation of a solenoid valve can be likened to a motor starting under full load. As it is turning on and off with such force, there is stress on the coil which can result in failure. The high inrush of current also means fuses will blow with regularity.
- Even the best flushing of a system fails to remove debris trapped in the jackets and pipes. This can sit in the jackets for many years before it starts its migration to the filter (often through the solenoid valves). The pilot hole then blocks or the diaphragm is punctured and the valve leaks.
- Given the slamming action of the valves mentioned above, debris will often get lodged over the seat when the valve closes. When the valve opens, the debris is released and the winemaker is left with a question mark as to why his wine was compromised.
- Filters simply strain out the larger particles. They offer less than complete assurance that the valve will not fail at a critical moment.

The VinWizard Way

Frustrated with solenoid valve failure, we approached a respected international manufacturer in 1997 to come up with an affordable and fool proof valve that would better suit a winery environment. The result was a robust bronze bodied pneumatically operated piston valve that operates at a low pressure and requires no voltage of any description at the tank.

Early prototypes were installed at several wineries in Marlborough, New Zealand for the 1999-2000 vintage. The results were impressive.

We have been installing these valves ever since without a reported failure and without the need for annual maintenance checks.



VinWizard Add-on Security

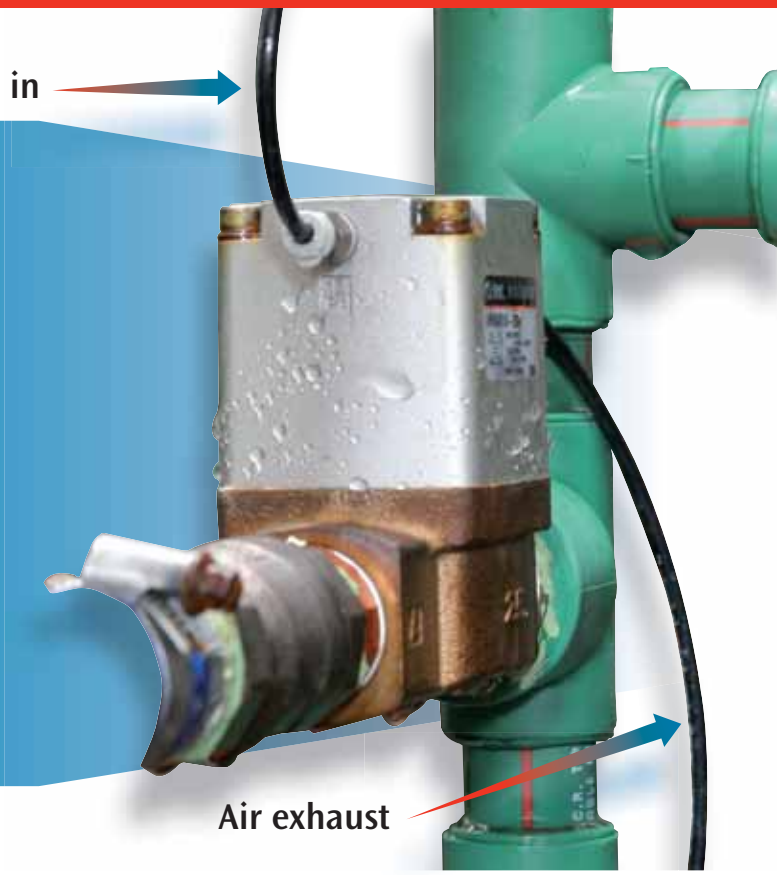
Most suppliers would have been content with the development of such a valve. VinWizard however recognized there were still scenarios to be accounted for.

- The VinWizard system includes a shut-off if the pressure drops too low to operate the valve and a warning is sent to the winemaker. The system is restored automatically as soon as the pressure increases.
- Some wineries provide poor air quality to our panels. Should the air source to our panel contain moisture, a reservoir on the panel traps the moisture and expels prior to entering the panel.

Such attention to detail comes from a single minded determination to protect the wine, regardless of whether the potential cause of failure is within the scope of our offering or not.

Advantages of Pneumatic Valves

- No electrics are run into the winery environment. Solenoids are included in our weather proof centralized panels with airlines running from panel to tank.
- The pneumatic valve air is throttled and as a consequence the valve operates very slowly thus increasing the velocity of the liquid over the seat. This minimizes the chance of a piece of material getting lodged between the neoprene piston seal and the valve seat.
- Complexity of installation at the tank is removed with the airlines simply plugging into the valve.
- A quieter environment to work in due to the elimination of slamming valves.



Summary

Many winemakers put their trust in control devices that were not designed for the task. It has taken us many years to finally come up with a system that works all the time, every time.

The winemaker sleeps with confidence and maintenance costs are greatly reduced.

VinWizard
Wine Technology Solutions

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