Anti-Shock Air Vacuum Valves – Series WAVASD

Henry Pratt AirPro Max® Anti-Shock Air Vacuum Valves are equipped with a measured closing, Anti-Shock Check Valve which regulates the flow of water into the Air Vacuum Valve. This regulation of flow provides additional protection by preventing the Air Vacuum Valve from slamming shut during critical operations. This controlled closure of the valve prevents surge or water hammer conditions from occurring and helps eliminate the possibility of damage to the valve caused by excessive pressure forces.

The Series WAVAS Anti-Shock Check Valve, mounted on the inlet of the Air Vacuum Valve, is a normally open valve. The disc is held open by a flexible spring allowing air to pass through unrestricted. As the Anti-Shock Valve fills with water the disc quickly closes preventing fluid surge against the internal components of the Air Vacuum Valve. The disc of the Anti-Shock Valve is drilled with adjustable flow ports which allow water to enter the Air Vacuum Valve at a measured rate. This regulated flow closes the Air Vacuum Valve without excessive force caused by surge or water hammer.

When the Air Vacuum Valve is closed the pressure on both sides of the Anti-Shock Check Valve disc equalize, returning the disc to the open position. This allows the Air Vacuum Valve to open at any time the water level drops and line pressure approaches atmospheric, permitting air to re-enter the pipeline before a vacuum can form.

Series WAVAS Anti-Shock check valves should be used:

- At high points in pipelines where the hydraulic gradient and flow conditions are such that a negative pressure can possibly form.
- High points on sections of the pipeline having velocities in excess of 7-10 f/s.
- Adjacent to any quick closing valve in a pipeline where a vacuum can be formed when closed.
- On the discharge of larger deep well turbine pumps, between the pump and the check valve.

Anti-Shock Check Valve Assembly Drawing

For WAV drawing details, reference WAV series Valve Water Air Vacuum Valves (Pages 12-16).