



MOPPET® XR Compressor Valves

The patented MOPPET XR valve offers extended service life and increased efficiency in challenging applications, such as refining and chemical processing.

Custom-engineered to each application, this versatile valve delivers consistently longer run times and reduces total life cycle costs compared to traditional poppet or plate valves. Whether in hydrogen, ethylene, polypropylene, flare gas, or dirty natural gas, MOPPET XR valves provide proven efficiency and unmatched durability.

BUILT FOR ENDURANCE

The robust valve design uses a series of small-radius, lightweight thermoplastic sealing elements (discs) that operate independently of each other to effectively disperse liquids and debris. Made of carbon- or glass-filled PEEK, these discs have the strength and stiffness to withstand high impact and dynamic forces caused by extreme pressure, driver speed, or incompressible matter in the gas.

The springs have taller free length than typical plate valve springs, allowing for a larger wire diameter that reduces torsional stress and resists damage from debris. High lifts and ample space between spring coils allow debris to pass through the valve without causing damage, while spring pockets have oversized vent holes and central flow to eliminate the build-up of incompressible substances that can cause damage.

The durable discs and springs are enclosed in a valve seat and guard made of ductile iron or other NACE-compliant grades to withstand impacts and eliminate problems with stress corrosion cracking and hydrogen embrittlement.

DESIGNED FOR EFFICIENCY

MOPPET XR valves maintain high gas flow volumes to downstream processes, helping to reduce energy costs. Two standard disc sizes allow valve assemblies to be custom-configured for maximum flow at valve diameters 2 in. (50 mm) to 14.5 in. (368 mm).

With their low mass, the sealing elements can run reliably at high lifts with good flow coefficients.

ADVANTAGES

- Superior reliability extends run times
- Rugged construction withstands severe service
- High efficiency saves energy
- Sealing characteristics maintain high flow
- Fits small diameters and tight clearances
- Compatibility with plug unloaders
- Meets NACE specifications



In addition, gas flows over both the inner and outer diameter of each sealing element, increasing the effective flow area of the valve and reducing horsepower consumption.

The optimized flow path also includes an enlarged inlet flow area and unique tube channels in the sealing elements that direct the gas stream into the spring holes, decreasing turbulence and minimizing pressure losses.

Precision-engineered closing springs and optimized element geometry provide excellent sealing capabilities, at high or low pressures, for lower gas leakage, less recompression and lower discharge temperatures.

FIELD SERVICEABLE OPTION

In remote applications, cartridge-based MOPPET valves can make repairs simple and economical. This design option, optimized at valve diameters 5 in. (127 mm) and up, allows reconditioning with the simple replacement of worn cartridges. No lapping, grinding or machining is required. Cartridges can be removed and replaced in minutes with a hydraulic press, and repair technicians remain fully prepared with only a minimal number of spare parts on-hand.

DESIGN SUMMARY



Field-serviceable MOPPET valve and its cartridge assembly

- Streamlined flow path maximizes gas volume
- High lifts, large springs allow debris to pass freely through valve
- Generous vent holes in spring pockets eliminate build-up of incompressible materials
- Multiple disc sealing elements, available in two sizes, provide optimum flow and resist damage
- Element geometry provides effective seal and maximized lift
- Tapered element base reduces oil sticking
- High-strength sealing elements extend service life
- Available with hanging guard or safety guard



TECHNICAL DATA		
Valve Diameter	2.0 to 14.5 in.	50 to 368 mm
Valve Thickness	Down to 2.0 in.	Down to 50 mm
Compressor Speed	Up to 900 rpm	Up to 900 rpm
Operating Pressure	Up to 3,000 psi	Up to 206 bar
Operating Temperature	-40 to 390°F	-40 to 200°C

Specifications subject to change due to continuing product improvements.