



Why Hydraulic Valve Materials Matter

Materials of construction have a long-term impact on the performance of the valve and the overall hydraulic system. When selecting your high-pressure hydraulic valve materials, consider corrosion, temperature, pressure, wear and cost.

Materials for Valve Bodies, Seats and Spools



Ductile iron

- ✓ Low in cost
- ✓ Readily available
- ✓ Easily absorbs shock

Brass and bronze

- ✓ Low in cost
- ✓ Readily available
- ✓ Improved corrosion resistance over ductile iron

316 stainless steel

- ✓ Excellent corrosion resistance
- ✓ High tensile strength at elevated temperatures

Monel (nickel-copper alloy)

- ✓ Superior corrosion resistance
- ✓ Ideal for cladding of valve trim parts

Inconel (alloy of nickel, chromium and iron)

- ✓ Ideal for handling corrosive media
- ✓ Maintains strength at high temperatures

Materials for Seals, Gaskets and Packing



Polyurethane

- ✓ Highly durable
- ✓ Designed for temperatures up to 200 °F
- ✓ Excellent abrasion resistance

Viton

- ✓ Excellent chemical resistance
- ✓ Works well at high temperatures

Polytetrafluoroethylene (PTFE)

- ✓ Extremely low friction
- ✓ Designed for a wide range of pressures and temperatures

Glass-filled PTFE

- ✓ Improved creep resistance
- ✓ Improved wear resistance and heat transfer

Polyetheretherketone (PEEK)

- ✓ Ideal for steam applications
- ✓ High temperature rating
- ✓ Good corrosion resistance