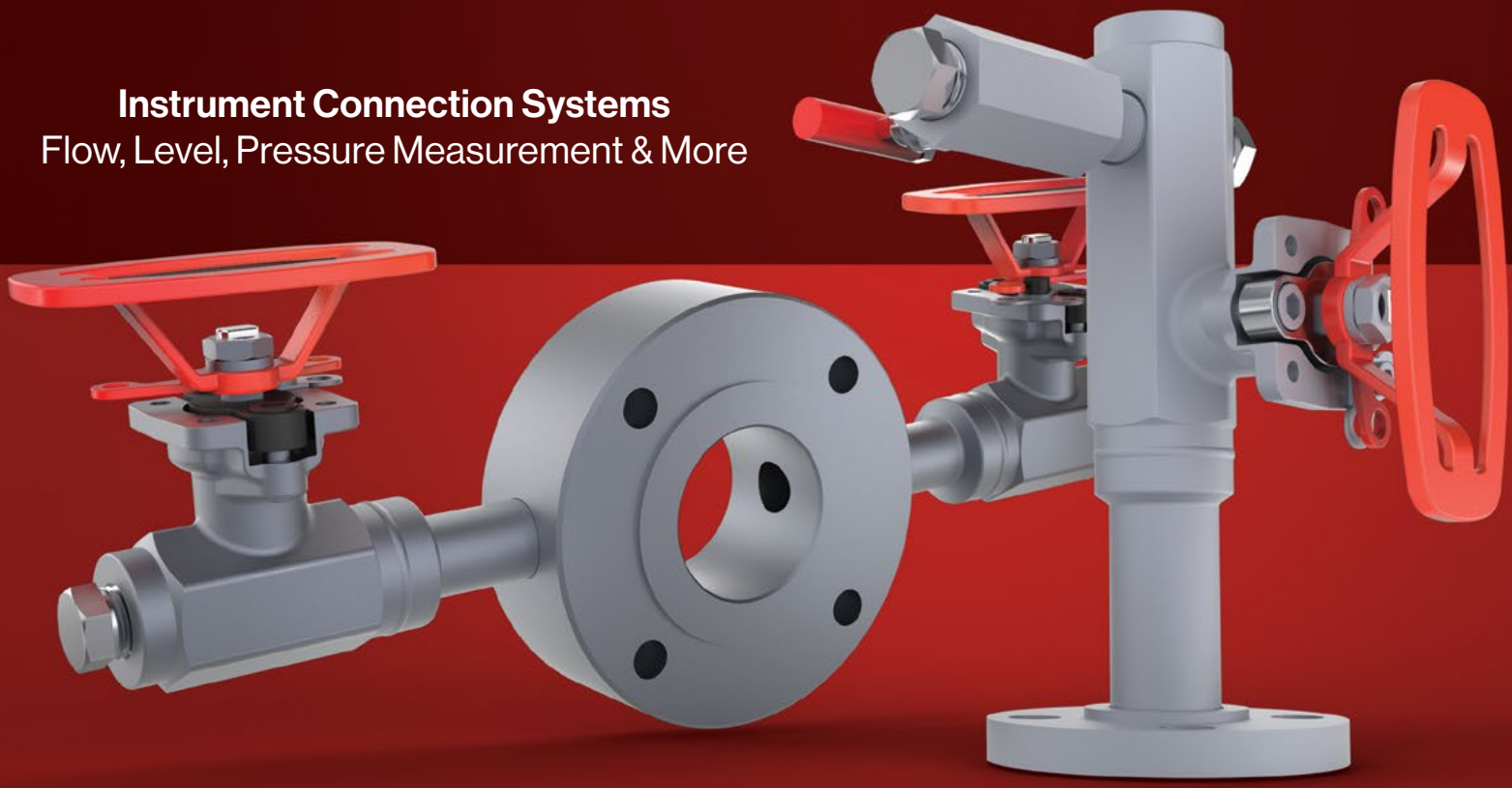
JDVICS | JDV Instrument Connection Systems

Instrument Connection Systems
Flow, Level, Pressure Measurement & More



World leaders in proven close-coupled mounting practices and integrated hardware for optimal instrument performance.

www.jdvics.com | 832.939.9944 | 12411 Citypark Dr #100 Missouri City, TX 77489

JDV Instrument Connection Systems

JDV was founded in Taiwan in 1975, and from its inception has focused on developing technically superior flow control products. It has steadily expanded its product portfolio since its founding, and now has a wide product offering with a focus on research and development, and new technology adoption. JDV's product portfolio now encompasses everything from commodity valves to its flagship engineered products: Metal-seated ball valves, Metal-seated triple offset butterfly valves, and control valves.

JDV's Instrument Connection Systems product line (ICS) is manufactured in the USA at JDV's facility in Missouri City, TX, conveniently located close to the heart of the Gulf Coast chemical and petrochemical complex. This facility designs, manufactures, welds, assembles, paints, tests, inspects and ships 100% of our ICS product line to customer specification as well as our own rigorous internal requirements.

Facility Features

- Paint Booth
- Efficient machining for quick deliveries
- In-house non-destructive examination including: PT | VT | PMI
- All welding uses procedures and personnel qualified to ASME Section IX
- Welding in a wide variety of materials available

Table of Contents

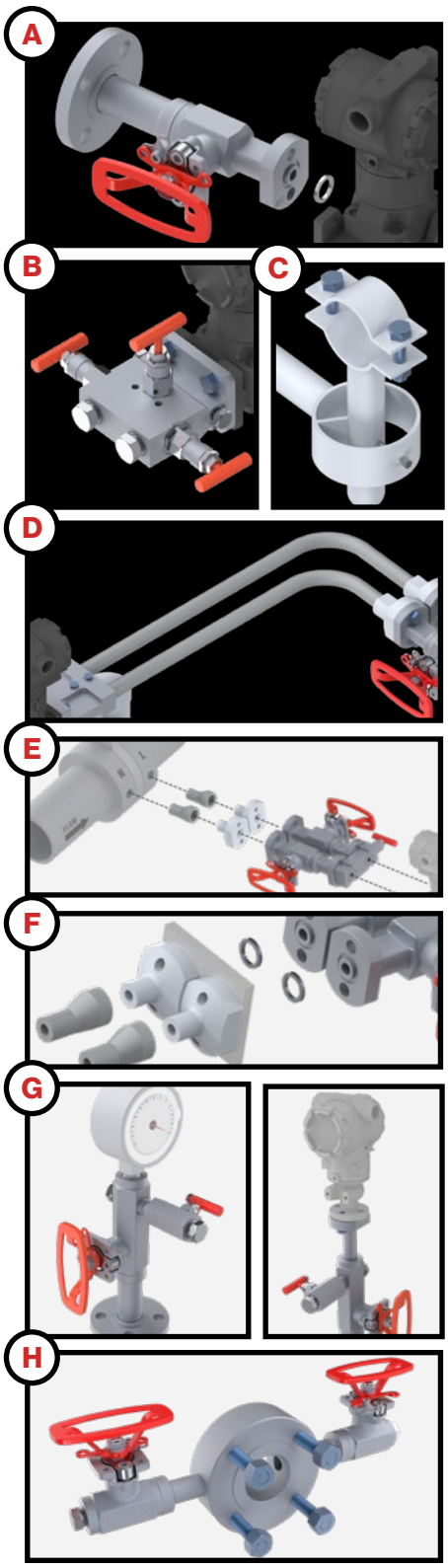
Table of Contents

Our Instrument Connection Systems Offerings

JDV offers instrument connection systems (ICS) in hundreds of configurations, with a variety of options for flow, pressure, and level applications. Each item offers short lead times and comes bagged, tagged, tested, and complete with all required materials (e.g., brackets, bolts, gaskets, stainless steel tags, adapters, flanges, and root or primary block valves. With a customer-supplied transmitter, each configuration is ready for installation.

Product Offering

Each product is designed and packed by experienced piping designers, instrument connection specialists and valve engineers who understand the unique needs of the engineering and contract environment. Built for safety, efficiency, and dependability, JDV's ICS provide a complete turnkey solution. Additional options are available for cryogenic and high temperature applications.



Packages Include:

- **Root Valves** *(Fig. A)*
- **Manifolds** *(Fig. B)*
- **Support Brackets** *(Fig. C)*
- **Impulse Lines** *(Fig. D)*

Level Measurement

Build & Standards
- Drilled and tapped from both sides for safety
- Concentric and eccentric rings meet ASME thickness on both process and instrument sides

Valving & Porting
- Ball, gate, or globe valves available for vent, flush, or drain
- Additional porting and safety options available

Applications & Sizing
- Flush rings suited for vacuum, atmospheric, and positive-pressure service
- Flush ring can step down line size, e.g., 3″ inlet to 2″ outlet

Diaphragm Seals
- Universal seal
- ASME B16.5 / DIN interfaces

Flow Measurement

Meter Types & Orientation (Fig. E)
- Orifice, wedge, or venturi applications
- Horizontal or vertical runs
- Retrofit friendly

Support & Form Factor
- Supported or non-supported installations
- Compact design available

Connections & Standards
- Flanged, or direct weld (Fig. F)
- I-flange per IEC 61518

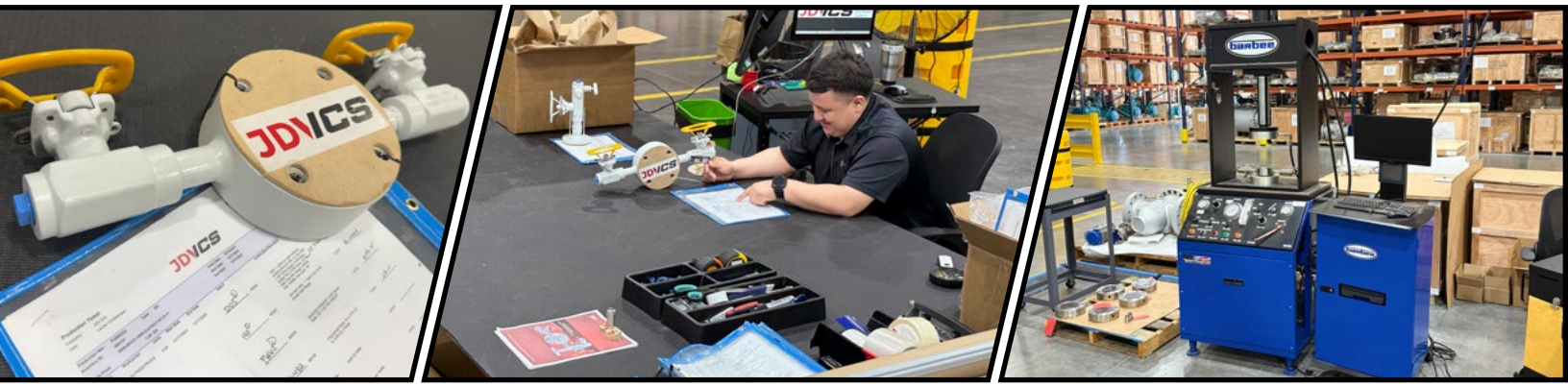
Differential Pressure Performance
- Pressure-compensated DP flow

Pressure Measurement

Transmitter Valves
- JDV valves for pressure transmitters
- Retrofit friendly
- Supported or non-supported
- Works with all process connection types

Gauge Valves (Fig. G)
- JDV valves for pressure gauges
- Ball or gate valves can be used on the flush ring

Flush Rings & Seals (Fig. H)
- For differential and diaphragm seal pressure applications
- Universal seal or ASME B16.5/DIN interfaces
- Concentric or eccentric configurations available



Background

The process industries are making every effort to reduce the cost of manufacturing and construction of new facilities in order to compete in a global economy. Cost studies conducted by leading chemical and refining companies indicate a substantial savings potential in the mounting and maintenance of process transmitters.

In these studies, sub-optimal installation was identified as a leading source of instrument maintenance. 60% of the maintenance activity consisted of repetitive work orders due to hydrostatic head error, leaks, and impulse line-related process/maintenance work. The transmitter was performing to its specification during qualification testing, but not in the field. The deliverables of the transmitters were difficult to achieve due to poor installation.

While end users, engineering companies, and various projects have installation standards, there is a general lack of standardized practices for instrument installation within the industry.

Transmitter Technology

Transmitter technology has advanced significantly over the past 20 years. Conventional installation standards have not kept pace with this technology and are, in fact, rooted in the technology of the past. Smart transmitter technology, combined with value-added, economic, and technology know-how, has produced a paradigm shift in transmitter installation. This is the core of JDV's ICS instrument installation detail system.

Hydrostatic Head – The Number One Source of Error

Smart transmitters currently deliver high value through increased accuracy (0.075% of span), increased mean time between failures, and performance guarantees of more than five years without calibration. However, transmitter installations that induce a hydrostatic head through the installation practice continue to be a costly and ineffective means of connecting the process to the transmitter in order to achieve the desired results: process control, process optimization, process safety, and increasing the profit margin for both end users and contractors.

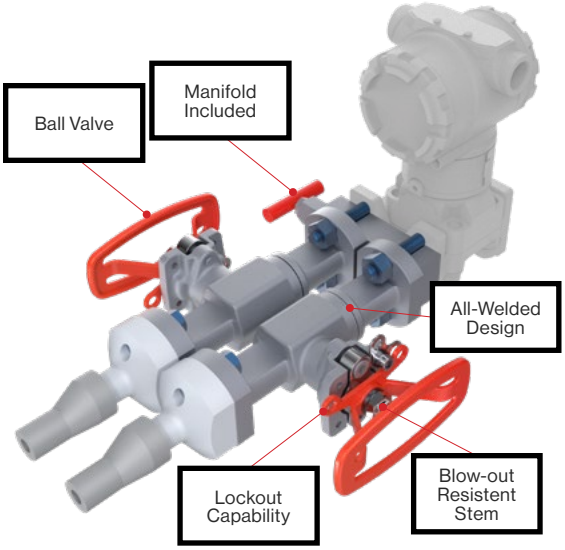
Eliminate Hydrostatic Error and Reduce Installation Costs Up to 40%

JDV's ICS instrument installation details combine the optimum measurement technology with proven mounting practices (close coupling) and hardware integration to produce not only the specified accuracy and stability, but reduced installation costs.

This total package offers a reduction in installation costs by modularizing, pre-engineering, prefabricating, and locking in the optimum transmitter installation in a tamper-proof system that helps ensure the rated performance of the transmitter, while lowering the installed cost per instrument loop by 30% to 40%.

Flow Applications

JDV ICS is a complete solution for orifice, venturi, code, and wedge-meter flow measurement. The system can be combined with differential pressure (DP) flow applications where true process isolation is desired.



3411-00 Base

Features

Configuration & Integration

- Supports single or redundant DP transmitters
- Close-coupled layout minimizes hydrostatic head error
- Instrument manifold included, API 551 practices
- **Packages:** 3411-00 base, 3411-15 adds impulse line and support

Isolation & Valving

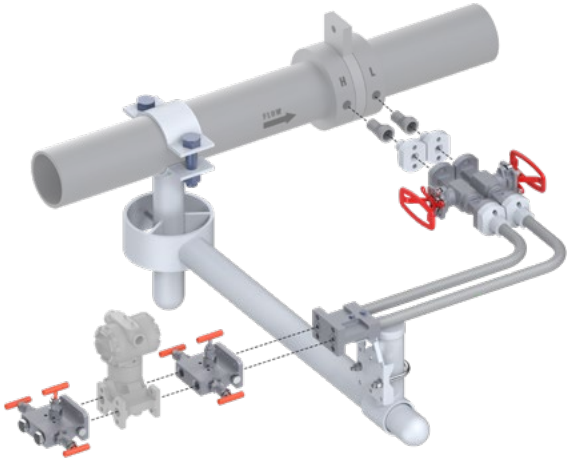
- All-welded construction, no threaded leak points
- True process isolation with quarter-turn ball valves or gate or globe valves
- Lockable, blowout-resistant stems with safety handles

Piping & Serviceability

- 1/2″ fully roddable impulse runs reduce plugging
- In-line rodding access for maintenance
- Compact footprint for tight spaces

Safety & Thermal Management

- Ball valves are API 607 firesafe certified
- Optional impulse line reduces heat at the transmitter
- Instrument ball valves are Low-E Compliant per API 641 as standard
- Instrument ball valves are equipped with self-relieving seats to prevent body cavity overpressure as standard



3411-15 Addition
Same as 3411-00, except with impulse line and supporting brackets.

Benefits

Accuracy & Stability

- Reduced hydrostatic head errors through close coupling
- Improved signal fidelity from minimized impulse volume

Reliability & Safety

- Fewer leak paths with welded valves
- Fire-safe rating and lockout isolation protect people and assets

Maintainability & Uptime

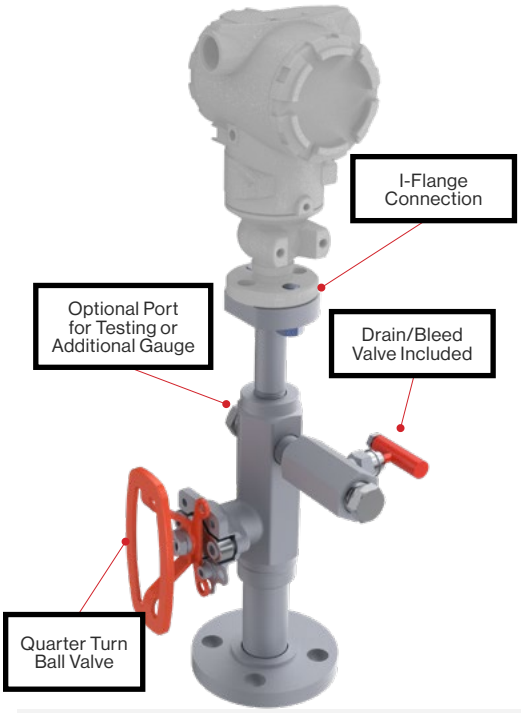
- Roddable runs speed line clearing and turnarounds
- Integrated manifold reduces fittings, leaks, and rework

Cost & Schedule

- Packaged assembly lowers design, procurement, and install cost
- Compact layout shortens installation and commissioning time

Pressure Applications

JDV ICS offers a complete solution for pressure measurement. It can be combined with gauge applications where true process isolation is desired.



5505-05
I-flange connection (in lieu of threaded connection) for transmitter positioning.

5271-00
Threaded and weld connections available.

Features

Isolation & Safety
- True process isolation with quarter-turn ball valves or gate valves
- Ball valves are API 607 firesafe certified
- Drain/bleed valve included and oval safety handle
- Instrument ball valves are Low-E Compliant per API 641 as standard
- Instrument ball valves are equipped with self-relieving seats to prevent body cavity overpressure as standard

Mounting & Orientation
- Close-coupled mounting
- Transmitter or gauge can be mounted horizontally or vertically
- Optional pilot supplied

Connections & Porting
- Threaded, I-flange, weld, or flanged process connections
- Optional port for testing or an additional gauge
- Full-port block valve with optional test or auxiliary gauge port

Ratings & Packages
- Designs to 600°F (315°C)
- 5571-00 assembly available with weld or flanged connection
- 5505-05 I-flange option for transmitter positioning

Benefits

Lower Installed Cost
- Integrated, close-coupled package reduces field labor and hardware

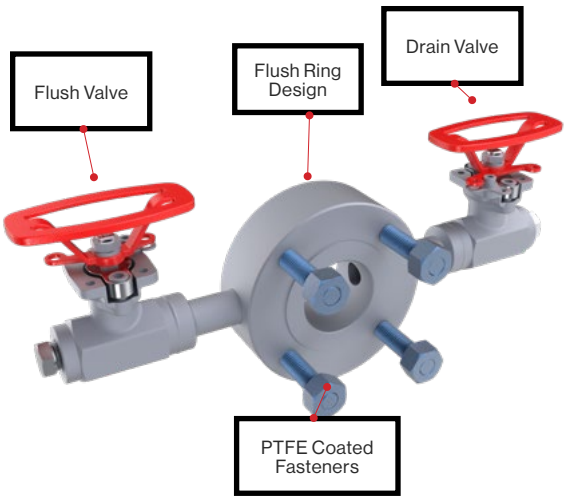
Reduced Design Effort
- Pre-engineered assembly cuts design and engineering time

Easier Maintenance
- Streamlined layout improves service access and upkeep

Lower Procurement Cost
- Fewer discrete components simplify purchasing

Level Applications

JDV ICS is a complete solution for diaphragm seal measurement as well. It can be combined with diaphragm seals for applications where flushing/draining of process fluid is desired.



Flush Ring

Features

Isolation & Safety

- True process isolation with quarter-turn ball or gate valves
- Ball valves are API 607 firesafe certified
- Integrated drain and bleed with oval safety handle
- Instrument ball valves are Low-E Compliant per API 641 as standard
- Instrument ball valves are equipped with self-relieving seats to prevent body cavity overpressure as standard

Mounting & Manifold

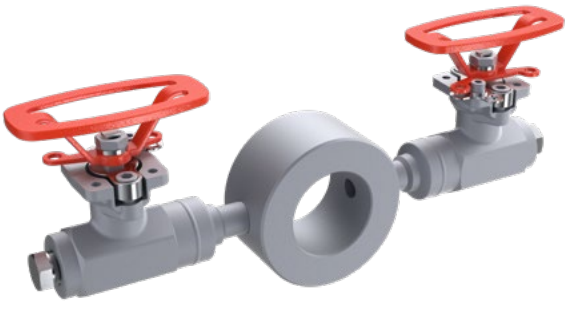
- Close-coupled instrument mounting
- Manifold supports drain, bleed, and flush functions
- Works with a transmitter or a gauge, horizontal or vertical

Connections & Porting

- Threaded, weld, I-flange, or flanged process connections
- Full-port block valve for minimal pressure drop
- Optional test or auxiliary gauge port

Ratings & Packages

- Service to 600°F (315°C)
- Packaged assemblies available for fast install
- Optional pilot supply and support hardware



Bleed Ring

Benefits

Lower Installed Cost

- Pre-engineered package reduces fittings, field labor, and rework
- Compact footprint shortens installation time

Reliability & Safety

- Fire-safe design and lockable isolation improve protection
- Fewer leak paths and robust block valve increase uptime

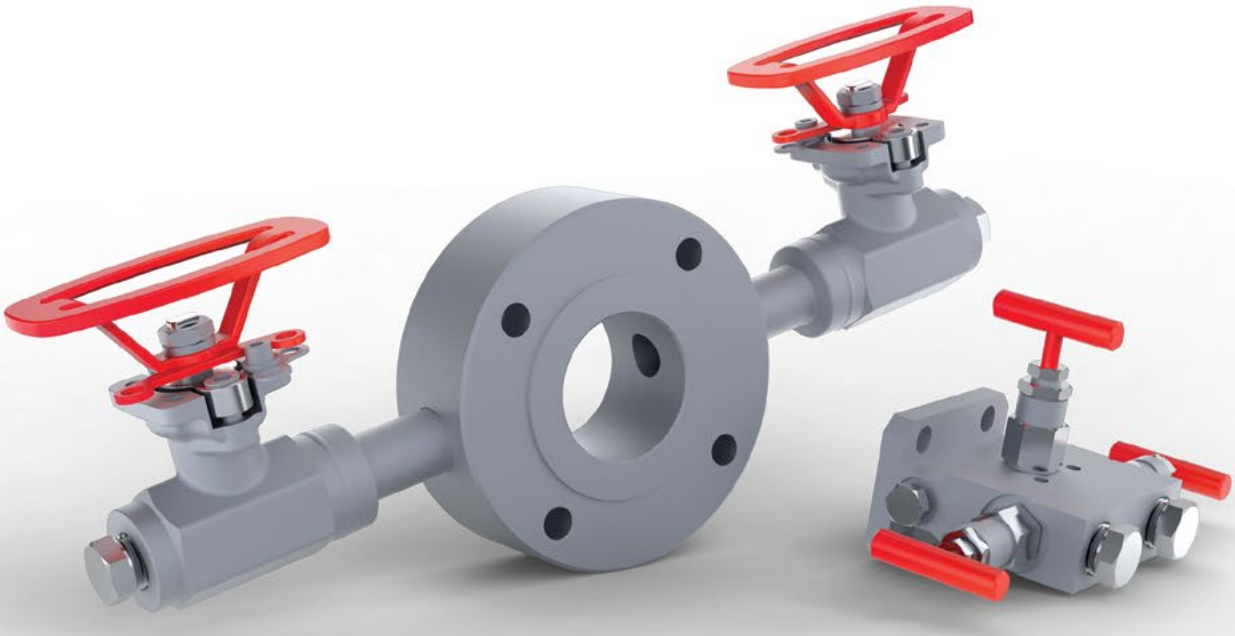
Maintainability & Access

- Integrated drain and flush simplify service and calibration
- Close coupling improves access and reduces impulse volume

Flexibility & Standardization

- Multiple connection types match site standards and retrofits
- Compatible with transmitters or gauges across orientations

LEVEL, FLOW & PRESSURE MEASUREMENT CONNECTIONS



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