



United Process Valves

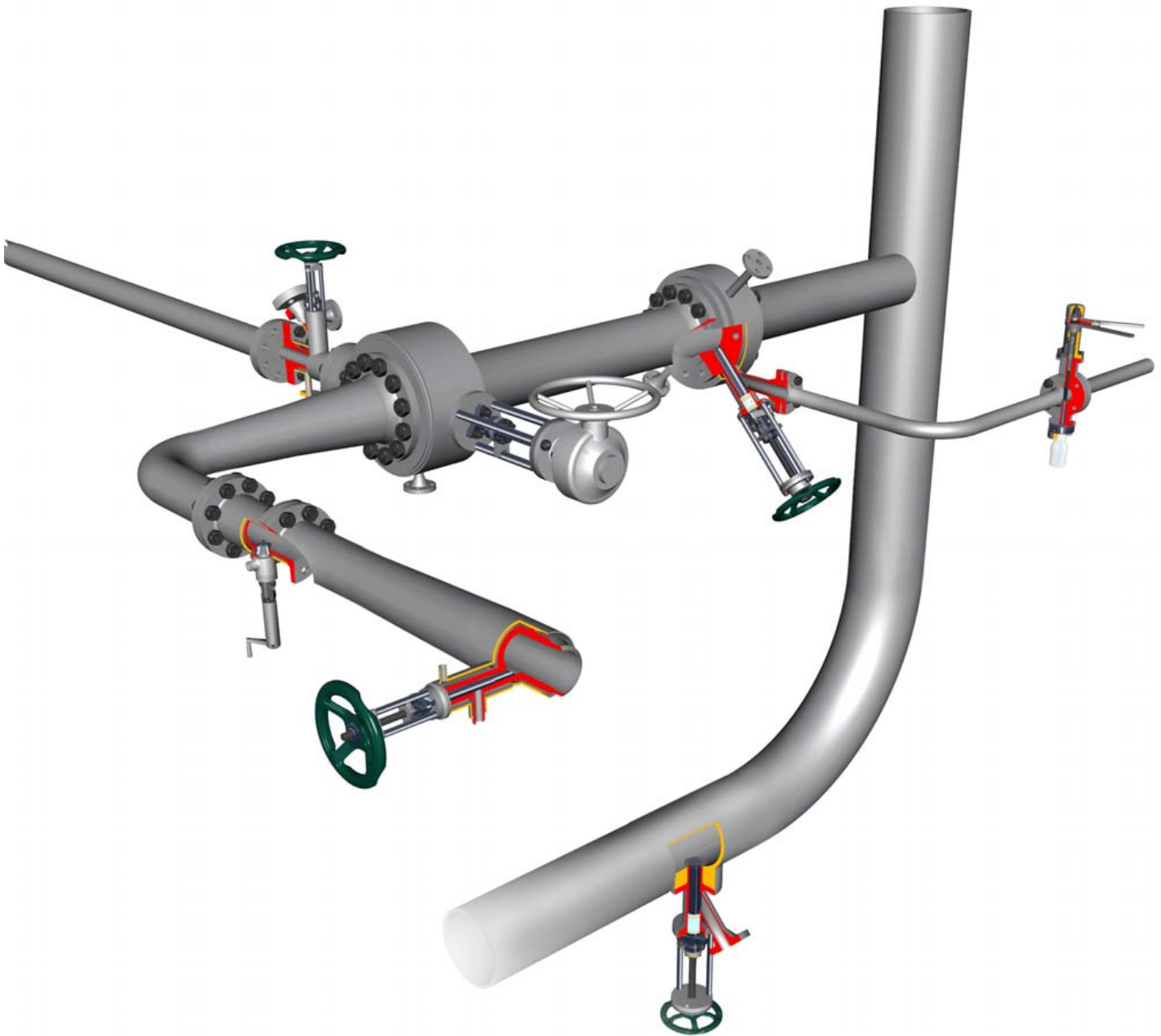
Tradition

Innovation

Commitment

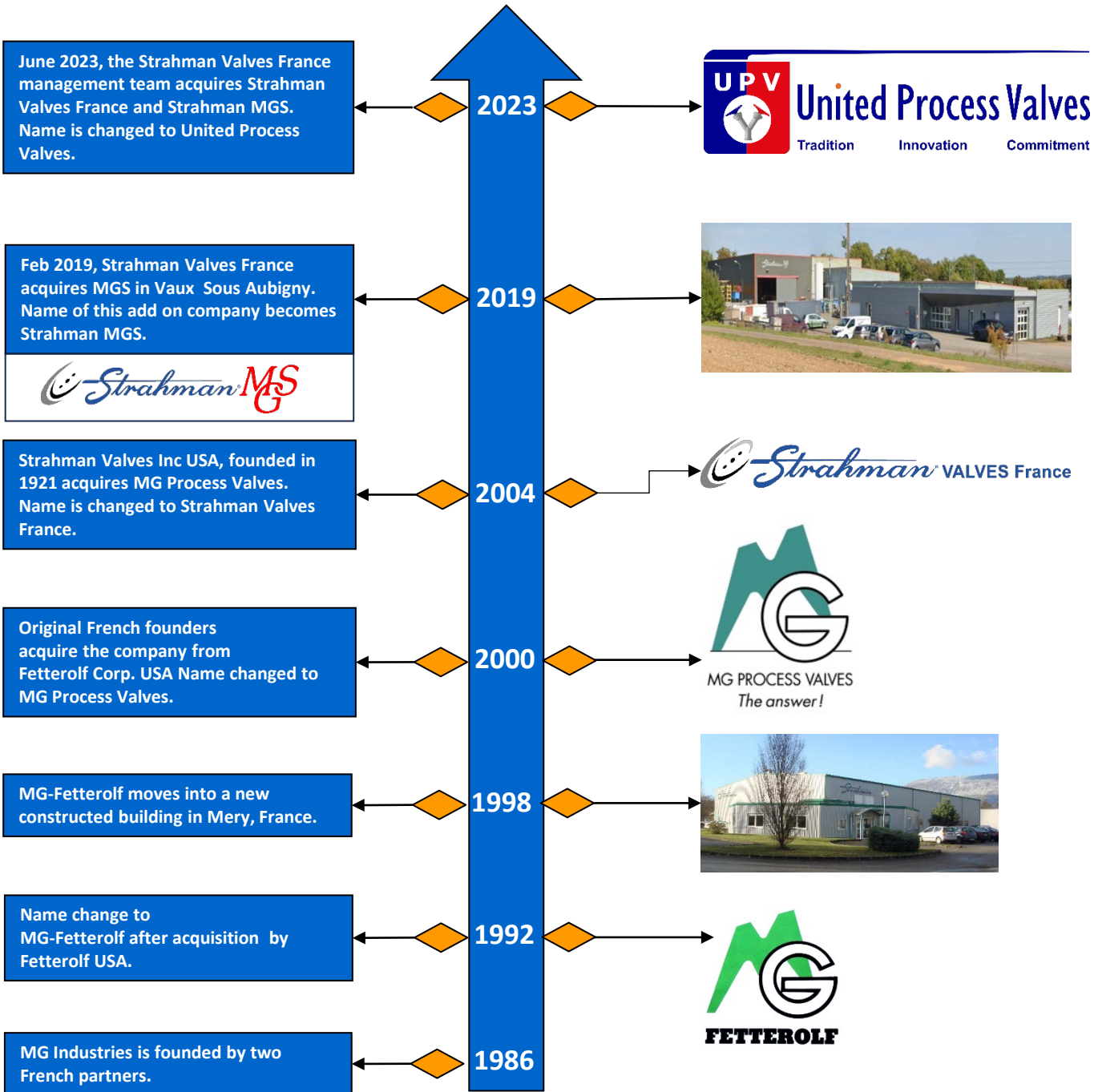
P Series

PIPE VALVE ASSEMBLIES





HISTORY & MILESTONES

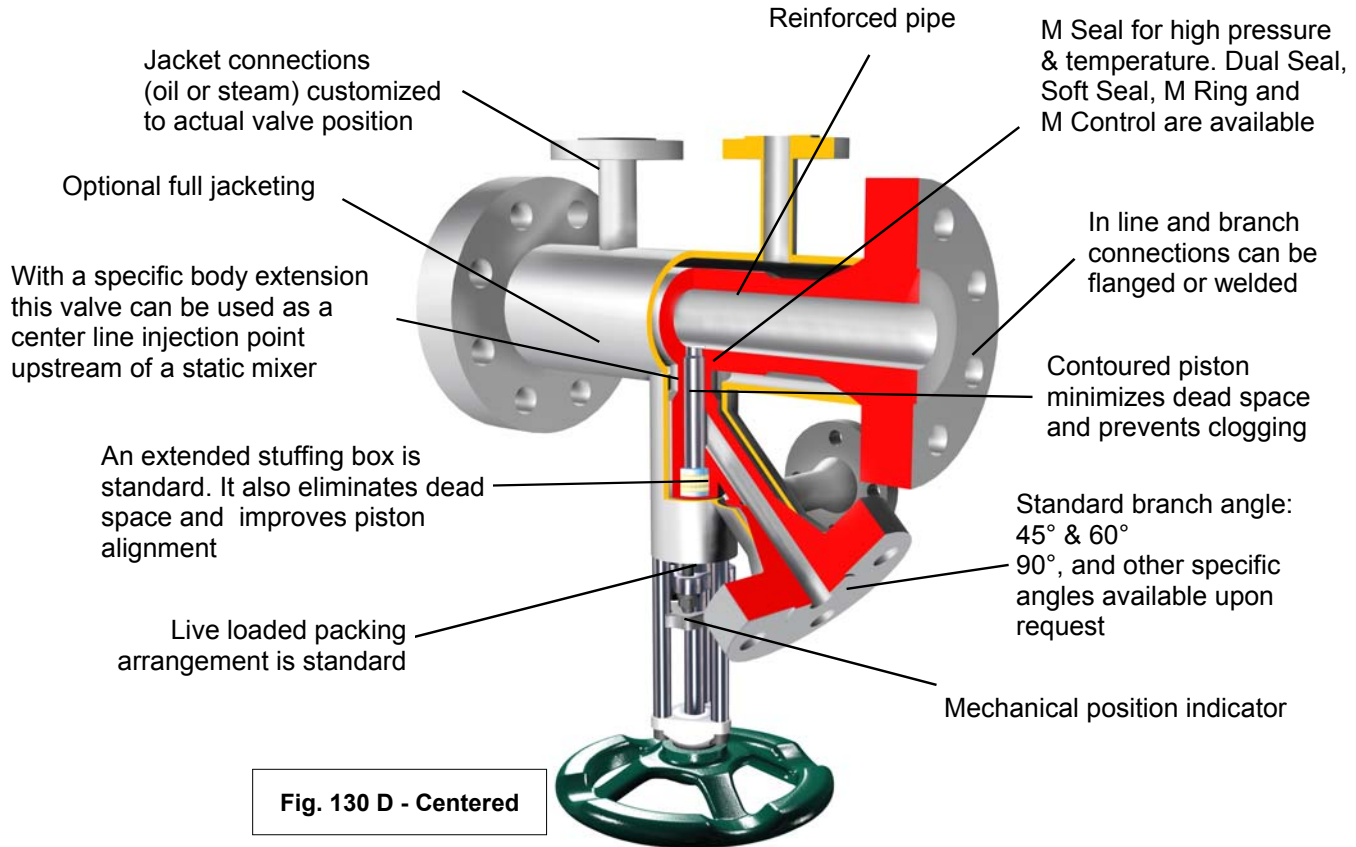




CUSTOMIZED VALVE ASSEMBLIES

Centered Piston Valve assembly

Code: **PPCPMJ**



Dismountable Piston Valve assembly

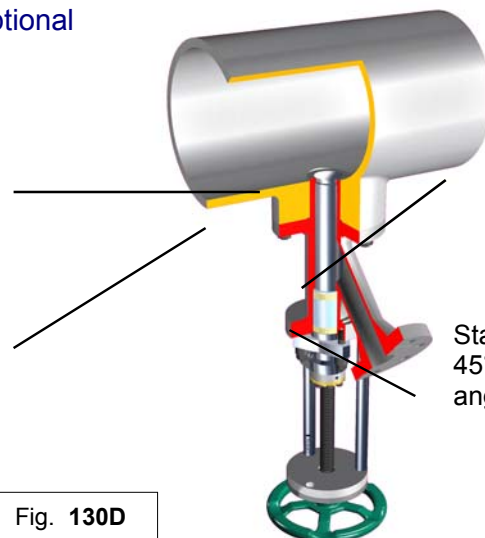
Code: **PDCPM**

A dismountable valve assembly is a combination of a valve bolted to a section of process line. (Refer to Vessel & Reactor Valves brochure) Process pipe connections can be flanged or welded. When compared to a welded assembly the advantages are:

- The valve can be removed from the process line
- Greater flexibility for branch orientation
- Heating Jacket optional

Recommended extended body design for flush and dead space free connection to process pipe

United Process Valves pads offer full bore and valve interchangeability



Valve can be either a Piston or Disc type with a choice of seals:

- Soft Seal
- Dual Seal
- M Seal
- M Control

(Refer to the Vessel & Reactor brochure)

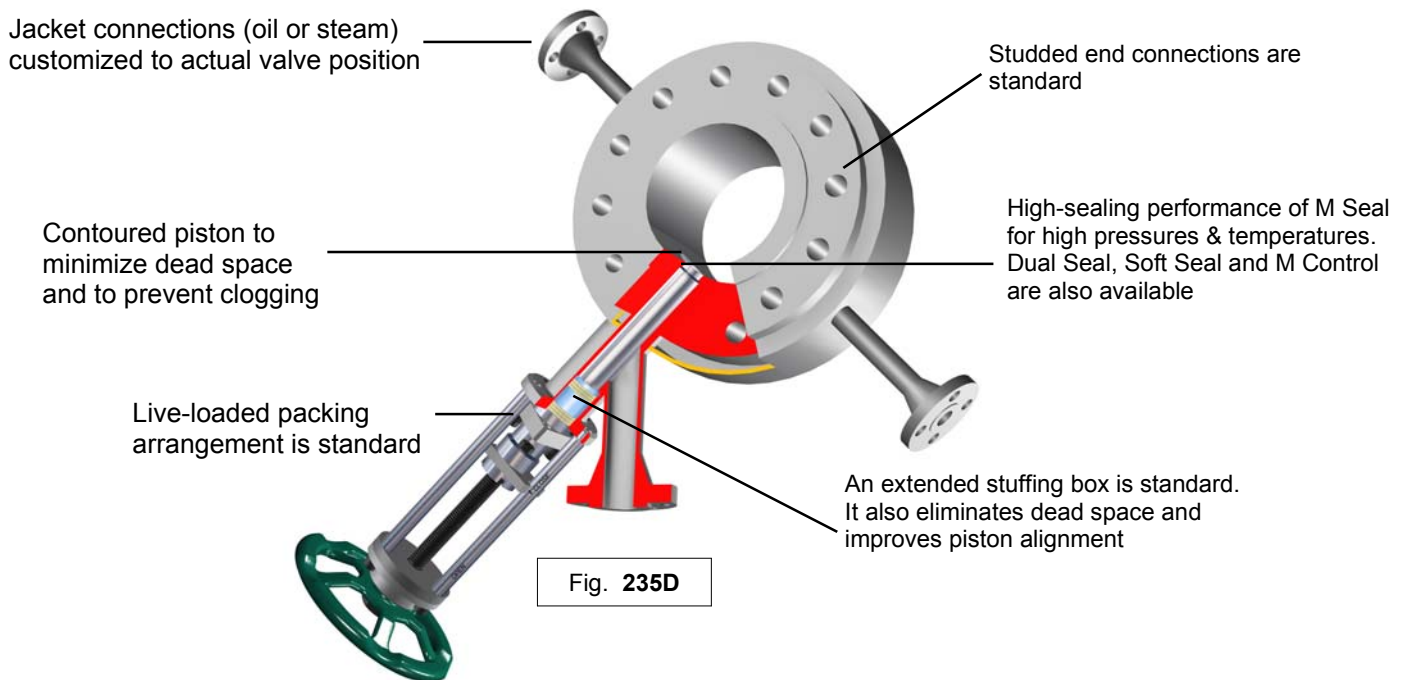
Standard branch angle: 45°, 60° & 90°. Other specific angles available upon request

Fig. 130D

United Process Valves pipe assembly valves are mostly a piston type design. They are dead space free and customized to fit specific process piping. Strahman valves are available in a choice of options including material of construction, sealing systems, actuators and customized or standard connections to piping. Other specific features include full jacketing, valve tangentially positioned to process pipe or additive injection. Typical applications: Draining, sampling and injection for high or low pressure slurry type and molten polymer processes.

Wafer Type Piston Valve assembly

Code: **PFCPMJ**



Tangential Piston Valve Assembly

Code: **PPTPMJ**

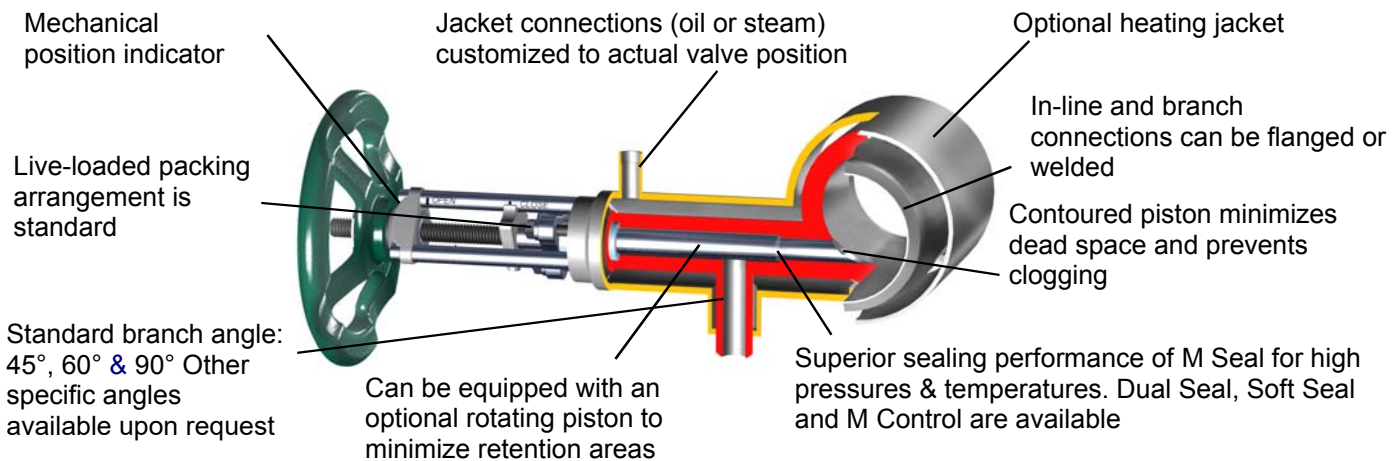


Fig. 130D Tangential

Pipe Crossing Piston Injection Valve

Code: **PFXPMJ**

As an option, this valve can be equipped with an exchangeable pipe to inject additives into the center of the flow. Installation is usually upstream of a static mixer

Jacket connections (oil or steam) customized to actual valve position

Enlarged valve bore provides full flow capacity through the valve

Extended stuffing box eliminates dead space and improves piston alignment

Studded end connections are standard

Large valves equipped with Non-rising stem to minimize overall length

Mechanical Position Indicator

Live-loaded packing arrangement is standard

Optional heating jacket

Optimized seat position minimizes pressure drop and eliminates retention areas

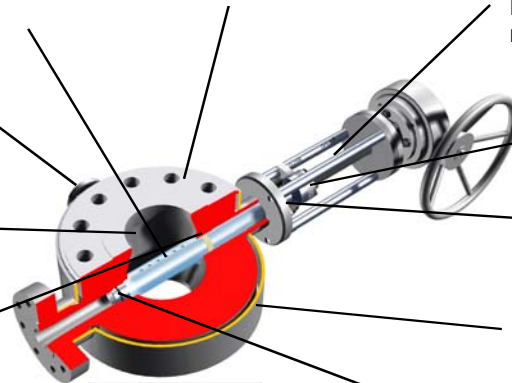


Fig. 570D

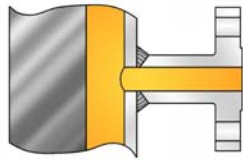
RANGE DEFINITION

VD Manufacturing Range	PN 10	PN 16	PN 20—150 lbs.	PN 25	PN 40	PN 50 300 lbs.	PN64 400 lbs.	PN 100 600 lbs.	PN 150/ 160 -900 lbs.	PN 250 -1500 lbs	PN 320	PN 420—2500	PN 630 —4500
3/8"- DIN10													
1/2"- DIN15													
3/4"- DIN20													
1"- DIN25													
1 1/4"- DIN32													
1 1/2"- DIN40													
2"- DIN50													
2 1/2"- DIN65													
3"- DIN80													
4"- DIN100													
5"- DIN125													
6"- DIN150													
8"- DIN200													
10"- DIN250													
12"- DIN300													
14"- DIN350													
16"- DIN400													
18"- DIN450													
20"- DIN500													
24"- DIN600													
28"- DIN700													
32" - DN800													
36" - DN900													
40" - DN1000													
44" -DN1100													
48" - DN1200													

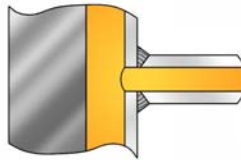
Piping & Valves

Piping Only

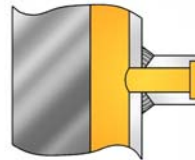
JACKET CONNECTIONS



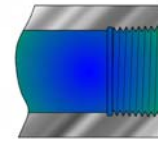
Flanges
ANSI, DIN, JIS



Butt Weld



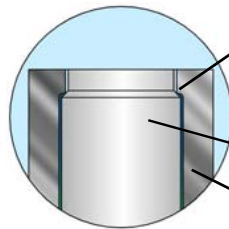
Socket Weld & Threaded
(FNPT)



Threaded
Connections
(NPT & BSP)

SEALING SYSTEMS

M Seal- This sealing system offers a wide range of material combinations selected to create a differential hardness between body and plunger seat. The maintenance friendly design of the **M Seal** system provides long & reliable valve performance and is suitable for almost all process conditions.



Greater hardness on body seat assures wear occurs on piston first
- Easy maintenance is key
One piece piston design minimizes dead area
Valve Body

Temperature

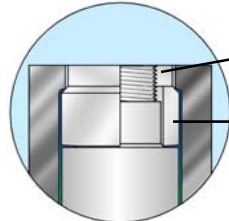
Min: -200° C / -330° F

Max: 815° C / 1500° F

Pressure

Max: 630 bar / 9000 psig

M Ring Seal- The **M Ring Seal** is also based on a differential hardness between the body and the piston surface. The replaceable metallic seal ring made of aluminum, nickel or titanium provides excellent sealing performance especially in applications that combine full vacuum and temperatures above 200° C.



Locking nut is secured by a tack weld
Resilient metal ring seals between the body & Piston

Temperature

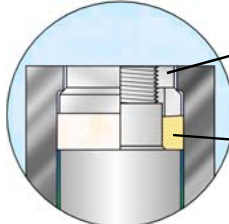
Min: -200° C / -330° F

Max: 450° C / 840° F

Pressure

Max: 250 bar / 3550 psig & full vacuum

Dual Seal- The **Dual Seal** is a unique double sealing system that works as a piston operating within a cylindrical seat. Unlike other designs, the secondary resilient seal ring is mounted on the piston and will expand after metal to metal contact of the primary seat ring. The design provides a true metal to metal seal in case of resilient seat failure.



Locking nut is secured by a tack weld
A secondary seal ring is made of resilient material like PTFE, PTFE glass lined

Temperature

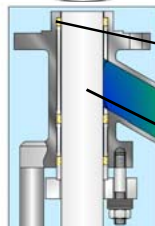
Min: -50° C / -60° F

Max: 200° C / 450° F

Pressure

Max: 250 bar / 3550 psig & full vacuum

Soft Seal- The **Soft Seal** utilizes a seat-less principle sealing performance. While closing, the plunger moves through the valve bore, effectively rodding any remaining product out of the valve. The live loaded packing arrangement avoids over-compression of the upper seal ring while the valve is in the open position.



Rigid soft seat ring provides dimensional stability with temperature variations
Greater piston hardness avoids scratches-the most common cause of damage to seal rings

Temperature

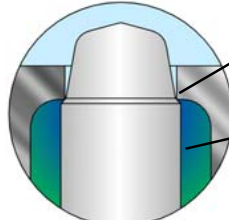
Min: -50° C / -60° F

Max: 200° C / 390° F

Pressure

Max: 250 bar / 3550 psig & full vacuum

M-Control- With the **M-Control** system, United Process Valves provides customized flow to regulate a specific laminar flow with high viscosity. The system uses a piston with a specific shape to control flow and/or pressure. The **M-Control** uses the **M-Seal** system.



Greater hardness on body seat allows piston to wear first
Body cavity is sized to keep full flow capacity through the valve

Temperature

Min: -200° C / -330° F

Max: 815° C / 1500° F

Pressure

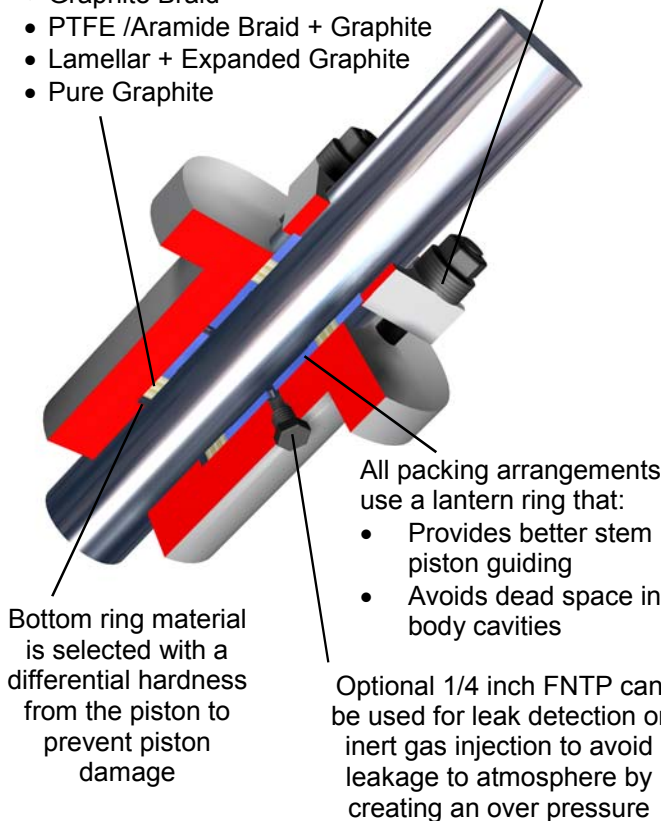
Max: 630 bar / 9000 psig

PACKING DEFINITION

Typical packing materials:

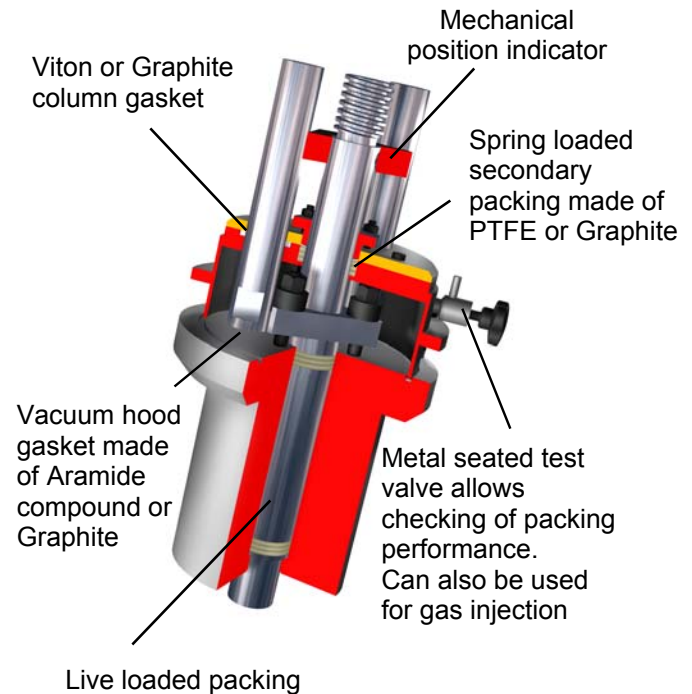
- PTFE
- PTFE / Aramide Braid
- Carbon / Graphite Braid
- Graphite Braid
- PTFE /Aramide Braid + Graphite
- Lamellar + Expanded Graphite
- Pure Graphite

Live loaded packing arrangement minimizes maintenance



VACUUM HOOD

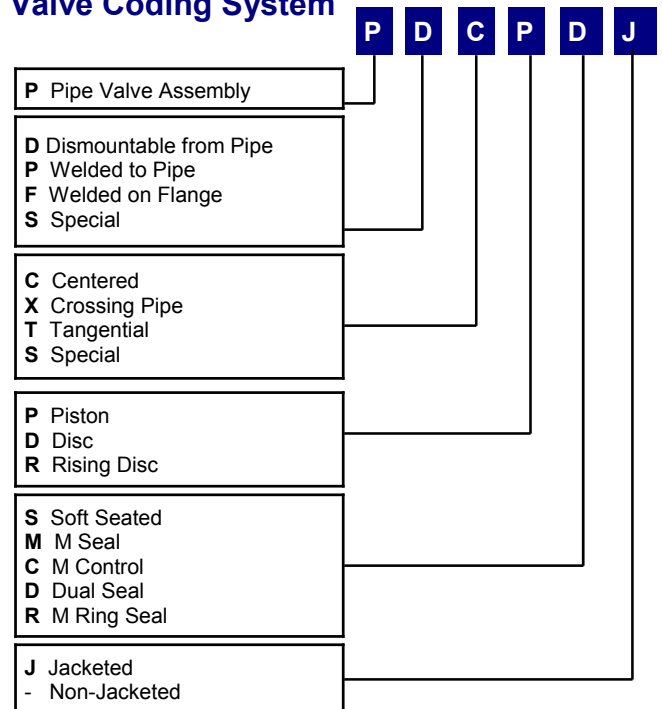
For valves on full vacuum service United Process Valves offers a special **vacuum package** that maintains tightness to atmosphere. Valves with this package are usually equipped with an **M Ring Seal** design as process sealing. The system uses a replaceable aluminium or nickel seal ring and provides high vacuum performance. This special **vacuum package** provides zero leakage between atmosphere and process.



STANDARD BODY GASKET RANGE

PTFE
Aramide / Nitrile
Carbon / Aramide
Laminated Graphite
Laminated Graphite / 316
Spiral Wound 316L / PTFE
Spiral Wound 316L / Graphite
Spiral Wound 321 / Graphite
Spiral Wound Inconel / Graphite
Spiral Wound Titanium / Graphite
Welded Lips

Valve Coding System





TECHNICAL & GENERAL INFORMATION

Design Code & Construction

- Design standard compliant with ASME B16.34
- International standards include ANSI, DIN, JIS, API etc.
- Wide range of material selections including carbon steel / stainless steel / Titanium / Hastelloy / Duplex / Monel / Tantalum / Zirconium
- Fabricated, cast, forged and bar stock designs
- Combinations of fabricated, sand and investment casings, and bar stock available

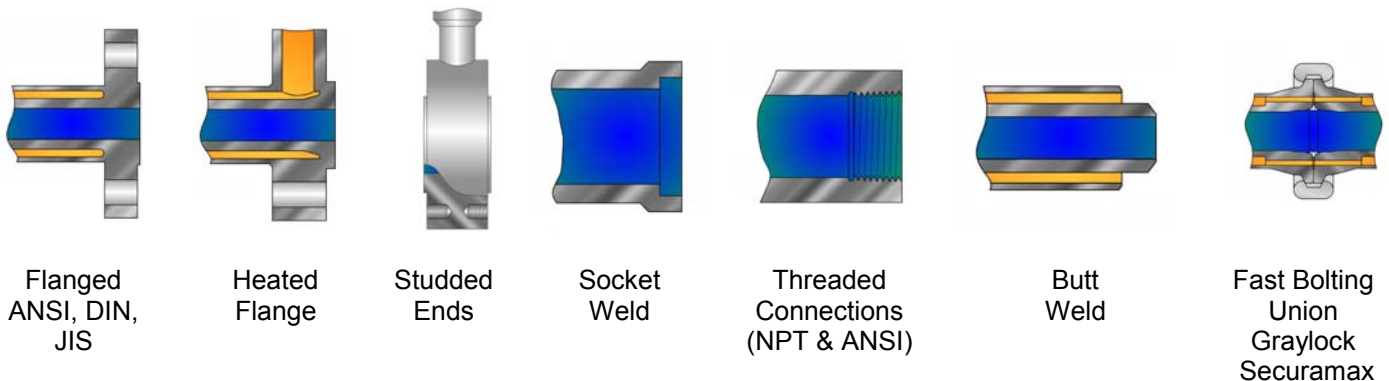
Surface Finish

- For polymer applications, United Process Valves recommends a surface facing of 300 (Ra 0.4) for all parts are in contact with the medium

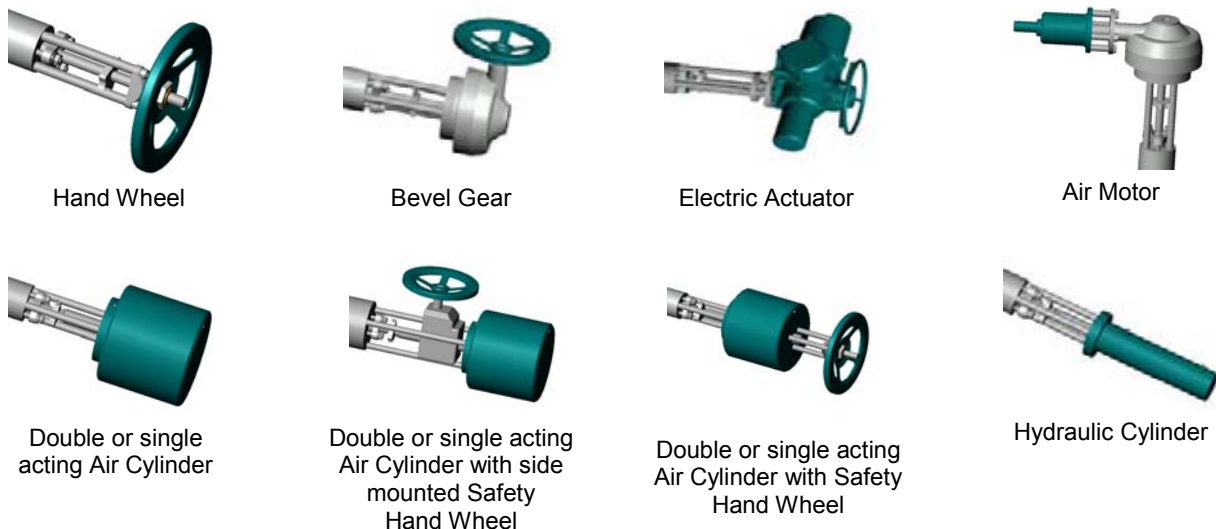
Quality assurance & testing

- ISO 9001 compliant
- PED / ATEX / CE marking
- ISO 15848 1 & 2, low emission testing and certification available
- Standard testing procedures

LINE & BRANCH CONNECTIONS



ACTUATION OPTIONS





United Process Valves products include:

PISTON TYPE SAMPLING VALVES

United Process Valves has a full line of sampling valves that produce live samples without exception. Our sampling valves unique design prevents failure caused by sediment or clogging.

PISTON TYPE DRAIN VALVES

United Process Valves Drain Valves are designed to prevent clogging. They are ideal for use in liquid and gas services or with slurries, polymers, and high viscosity fluids that tend to solidify at room temperature.

PISTON & DISC TYPE IN-LINE VALVES

United Process Valves Piston and Disc Type In-Line Valves alternative to a failing ball, plug or gate valve. With a wide range of positive sealing systems like M Seal, M Ring Seal and M Control, these valves provide superior in-line tightness. When opening the piston or disc it retracts completely into the valve body providing an unrestricted full flow

PISTON & DISC TYPE DIVERTER VALVES

United Process Valves Diverter Valves are designed to divert process flows with high and low viscosity. They are dead space free to prevent clogging. They are ideal for use in liquid and gas services or with slurries, polymers, and high viscosity fluids that tend to solidify at room temperature.

SINGLE- & DOUBLE DISC SLAB GATE VALVES

United Process Valves Diverter Valves are designed to divert process flows with high and low viscosity. They are dead space free to prevent clogging. They are ideal for use in liquid and gas services or with slurries, polymers, and high viscosity fluids that tend to solidify at room temperature.

LINE BLINDS

United Process Valves Line Blinds provide zero leakage downstream and total isolation on process pipelines, vessels, and maritime applications. No pipeline movement is required when blind position is changed.

www.unitedprocessvalves.com

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ISO 9001:2015

BUREAU VERITAS
Certification

