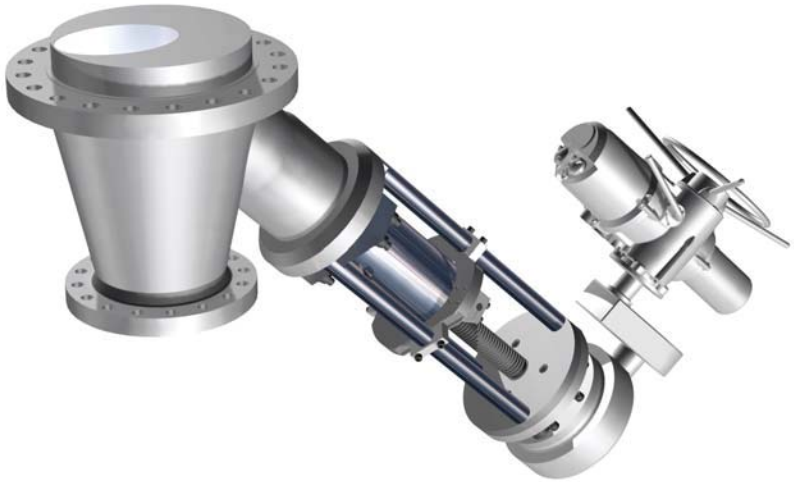
United Process Valves

Tradition Innovation Commitment

VP Series

VESSEL & REACTOR VALVES

METAL & DUAL SEATED PISTON VALVES



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HISTORY & MILESTONES

2023 — June 2023, the Strahman Valves France management team acquires Strahman Valves France and Strahman MGS. Name is changed to United Process Valves.

2019 — Feb 2019, Strahman Valves France acquires MGS in Vaux Sous Aubigny. Name of this add on company becomes Strahman MGS.

Strahman MGS

2004 — Strahman Valves Inc USA, founded in 1921 acquires MG Process Valves. Name is changed to Strahman Valves France.

Strahman VALVES France

2000 — Original French founders acquire the company from Fetterolf Corp. USA Name changed to MG Process Valves.

MG PROCESS VALVES
The answer !

1998 — MG-Fetterolf moves into a new constructed building in Mery, France.

1992 — Name change to MG-Fetterolf after acquisition by Fetterolf USA.

FETTEROLF

1986 — MG Industries is founded by two French partners.

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HIGH PERFORMANCE PISTON VALVES

Code: **VP4D-VP6D**

Dual Seal Piston Valve

High sealing performance of **Dual Seal** specially recommended for medium pressure and temperature processes as well as vacuum conditions

Extended body design provides a flush design and a dead space free connection to the vessel

Purge connections can be added to flush the valve and to clean downstream

An extended stuffing box eliminates dead space and improves piston alignment

Optional heat jacketing

Large valves utilize a non-rising stem to minimize overall length

Live loaded packing is standard

Mechanical position indicator

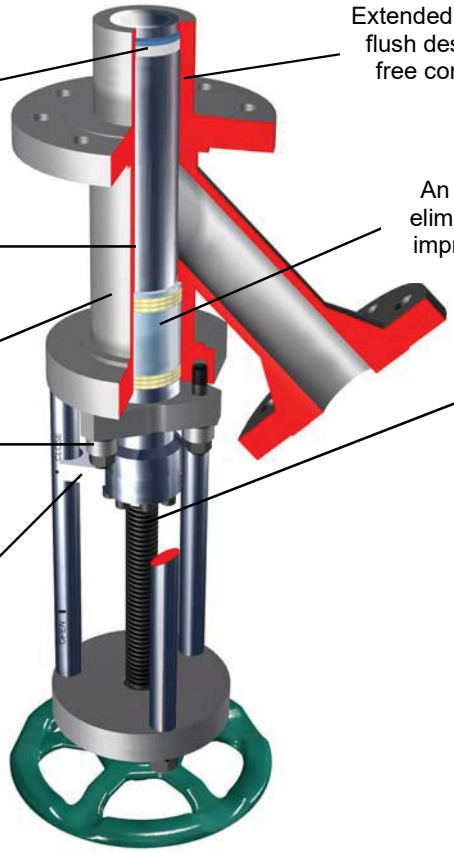


Fig. 026

Code: **VP4D-VP6D**

M Seal Piston Valve

High sealing performance of **M Seal** is recommended for high pressure and temperature processes

Extended body design for a flush dead space free arrangement

Optional heat jacketing

Jacket connections (oil or steam can be customized to the actual valve position

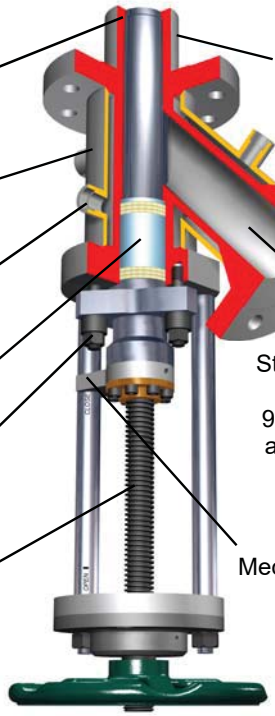
Standard branch angle: 45° & 60° 90°, and other specific angles available upon request

An extended stuffing box eliminates dead space and improves piston alignment

Live loaded packing is standard

Mechanical position indicator

Large valves utilize a non-rising stem to minimize overall length



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United Process Valves' **M Seal & Dual Seal** designs are dead space free reactor outlet valves. When opening, the piston retracts completely into the valve body providing an unrestricted full flow. In combination with our maximized port sizes, this design offers maximum flow capacity. **M Seal** is specially designed for high pressure and temperature applications such as polymer processes. For mid-range pressure and temperature applications with slurries or high viscosity products **Dual Seal** offers the unique double sealing reliability.
United Process Valves' are available in a choice of options including material of construction, actuators and customized or standard connections to piping. Other specific features are full jacketing, vacuum package and dead space free connections to vessels.
Typical applications include the draining of viscous products especially in combination with low pressure and/or vacuum processes.

BODY ARRANGEMENTS

United Process Valves **M Seal, M Ring Seal, M Control and Dual Seal** Piston valves use the following designs:

- Figure **023** or **030** are for small sizes or high pressure applications. Valves have a rising stem design.
- Figure **026** or **035** are for large sizes. Valves have non-rising stems to minimize overall dimensions.

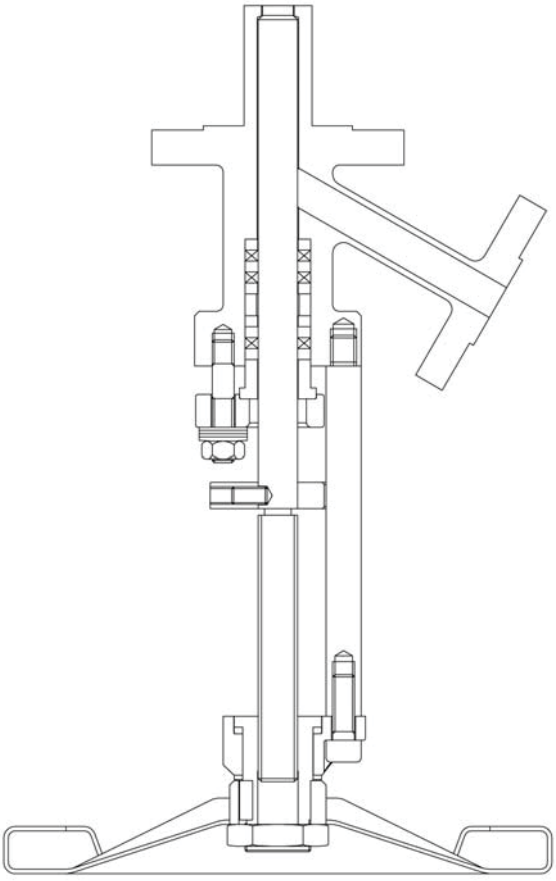

Fig. 023 & 030

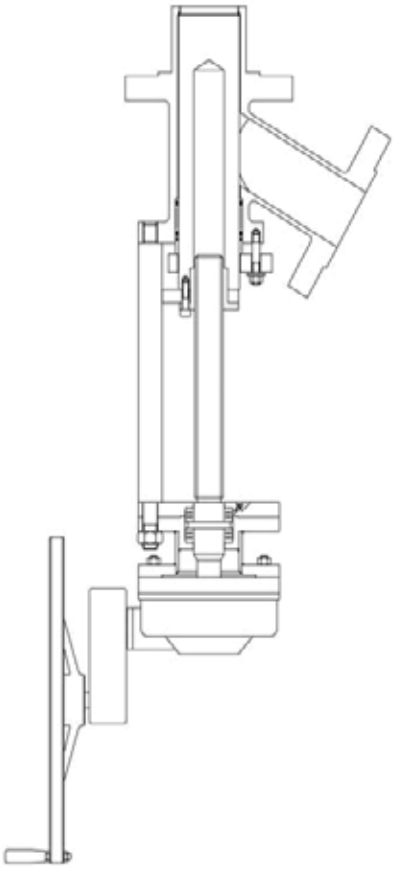

Fig. 026 & 035

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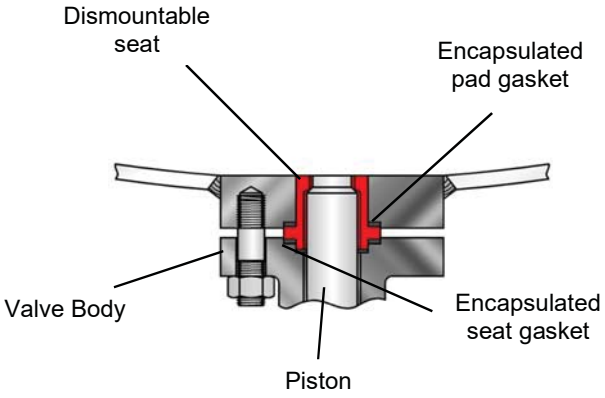
DISMOUNTABLE SEAT

As an option the body seat can be dismountable. This is an attractive option when the process is corrosive during the reaction. Parts directly in contact with the process (seat and trim) are made of sophisticated alloys while valve body and piping are fabricated from regular materials.

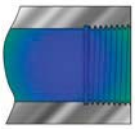
Note: The closing effort is transferred to the pad bolting and the body flange. A stress calculation is required to check the correct sizing of the bolting section & the flange thickness. United Process Valves engineers will be pleased to make these calculations.



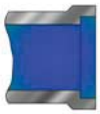
LINE & BRANCH CONNECTIONS

Flanges ANSI, DIN, JIS

Heated Flanges

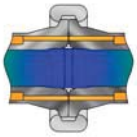


Threaded connections



Socket Weld

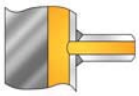
Butt Weld



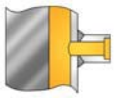
Fast Bolting Union Graylock Securamax

JACKET CONNECTIONS

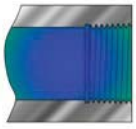
Flanges ANSI,DIN,JIS



Butt Weld



Socket Weld & FNTP



Threaded connections

ACTUATION OPTIONS

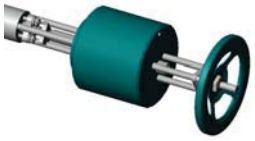
Hand Wheel

Bevel Gear

Electric Actuator

Air Motor

Double or single acting Air Cylinder



Double or single acting Air Cylinder with Safety Hand Wheel

Double or single acting Air Cylinder with side mounted Safety Hand Wheel

Hydraulic Cylinder

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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 finish of 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

RANGE DEFINITION

VP 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 lbs	PN 630 –4500 lbs
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													

M Seal and Dual Seal

M Seal only

VPS 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 lbs	PN 630 –4500 lbs
3/8”- DIN10													
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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													
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20”- DIN500													
24”- DIN600													
28’ - DIN700													
32” - DN800													
36” - DN900													
40” - DN1000													
44” -DN1100													
48” - DN1200													

Fig. 039

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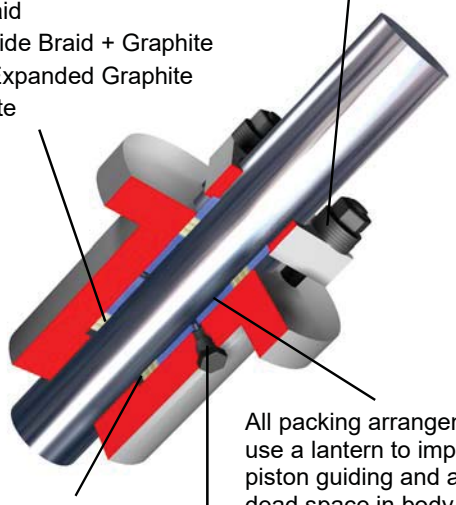
PACKING DEFINITION

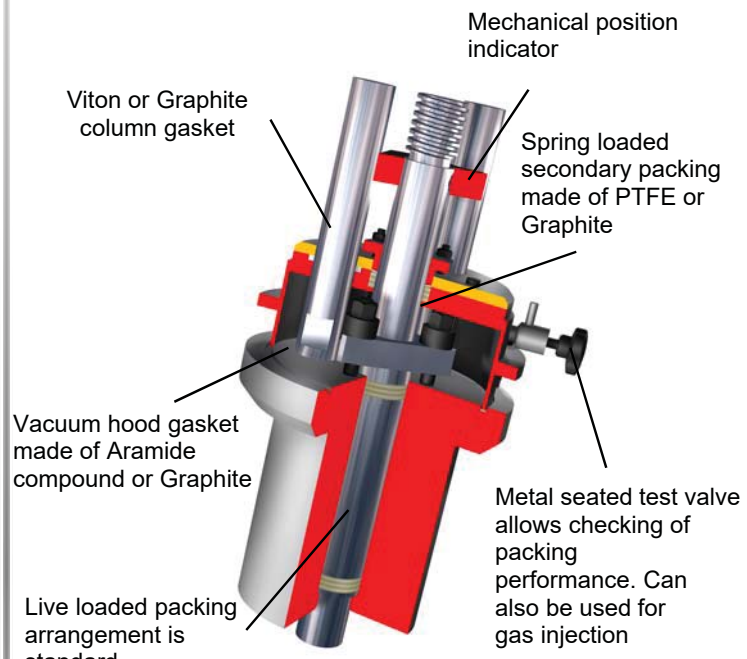
Typical Packing Materials:

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



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 PAD 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
- Perfluoroelastomer (Kalrez) O
- Welded Lips
- Metallic O Ring Helicoflex Gasket Aluminium/316
- Metallic O Ring Helicoflex Gasket Nickel/Nimonic 90
- 316L RTJ
- Nitrile O Ring
- EPDM O Ring
- Silicone O Ring
- Fluorocarbon (Viton) O Ring
- Silicone FEP Jacketed O Ring

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

V	P	4	S	B	J

V Vessel Reactor Valves

P Piston
D Disc
R Rising Disc
A Accessories

4 45° Branch Angle
6 60° Branch Angle
9 90° Branch Angle
S Straight
$ Special

S Soft Seated
M M Seal
C M Control
D Dual Seal
R M Ring Seal

B Extended Body
P Extended Plunger c
D Dismountable Seat
$ Special

J Jacketed
- Non-Jacketed

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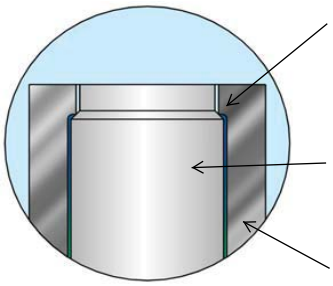
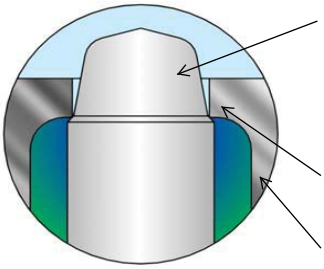
SEALING SYSTEMS

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.



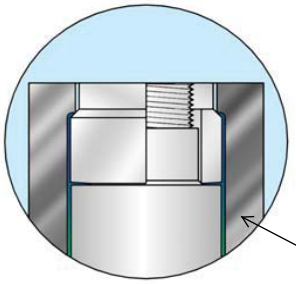
Temperature
Min: -200° C / -330° F
Max: 815° C / 1500° F
Pressure
Max: 630 bar / 9000 psig

M-Control- The **M-Control** system provides customized flow characteristics to regulate a specific laminar flow with high viscosity. The system uses a piston with a specific shape to control flow and/or pressure. **M-Control** uses the specific sealing features of the **M seal** system.



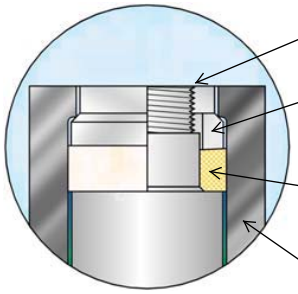
Temperature
Min: -200° C / -330° F
Max: 815° C / 1500° F
Pressure
Max: 630 bar / 9000 psig

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.



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 like 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.



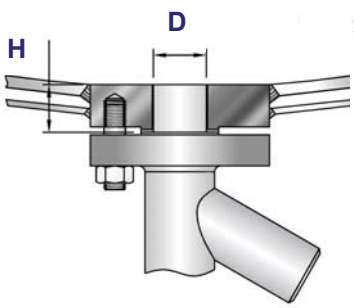
Temperature
Min: -50° C / -60° F
Max: 200° C / 450° F

Pressure
Max: 250 bar / 3550 psig
& full vacuum

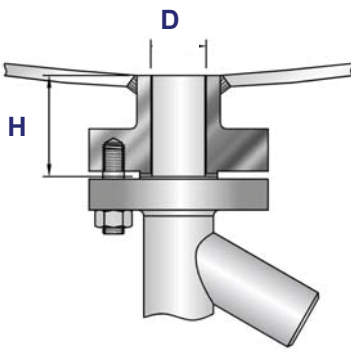
VESSEL CONNECTIONS

To connect valves to existing vessels or reactors, there are two possibilities: a nozzle or a pad connection. In both cases, the customer must specify the following vessel connection details: « **D** » (inside diameter), « **H** » (height), **DN** (nominal size), **PN** (pressure rating) and connection **standard** (ISO, ANSI, DIN, etc.). To eliminate retention areas radius « **R** » can be specified for optional contouring. For new projects United Process Valves can supply valves with easy-to-fit standardized pads that are ready to be installed.

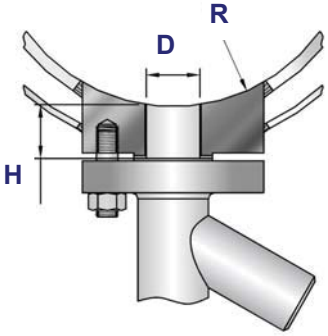
Vessel Pad



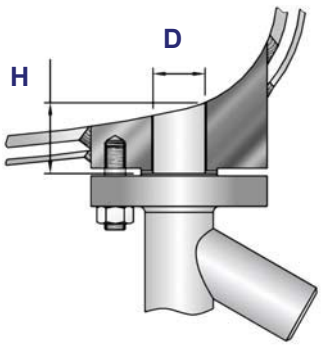
Vessel Nozzle



Pipe Assembly Pad



Custom Vessel Pad



United Process Valves

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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