United Process Valves

Tradition Innovation Commitment

DIVERTER VALVES

DP Series

PISTON DIVERTER 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 Strahman United Process Valves.

Strahman United Process Valves
Tradition Innovation Commitment

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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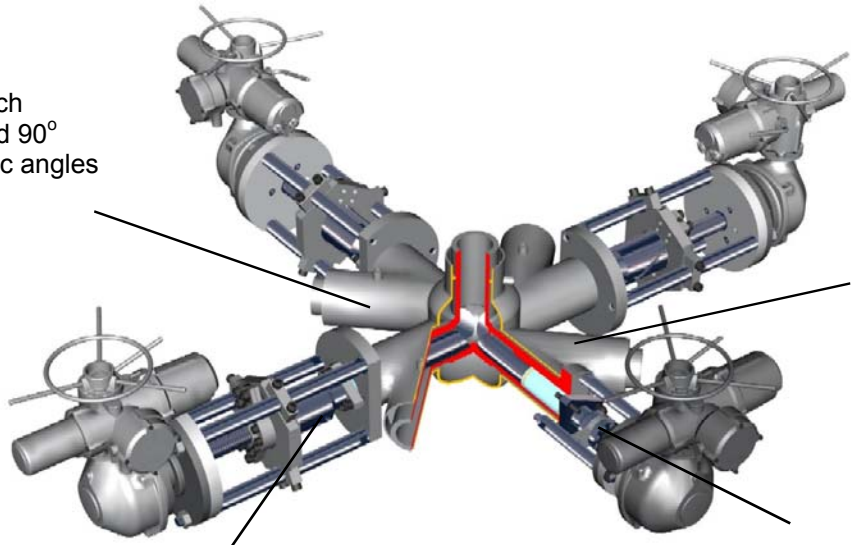
UNITES PROCESS VALVES DEAD SPACE FREE DIVERTER VALVES

Code: **DPS4**

Piston Diverter Valves



Standard branch angles: 45° and 90° 60° and specific angles available

Optional heat jacketing

Optional rotating piston available to minimize dead areas and resident time for high molten polymers

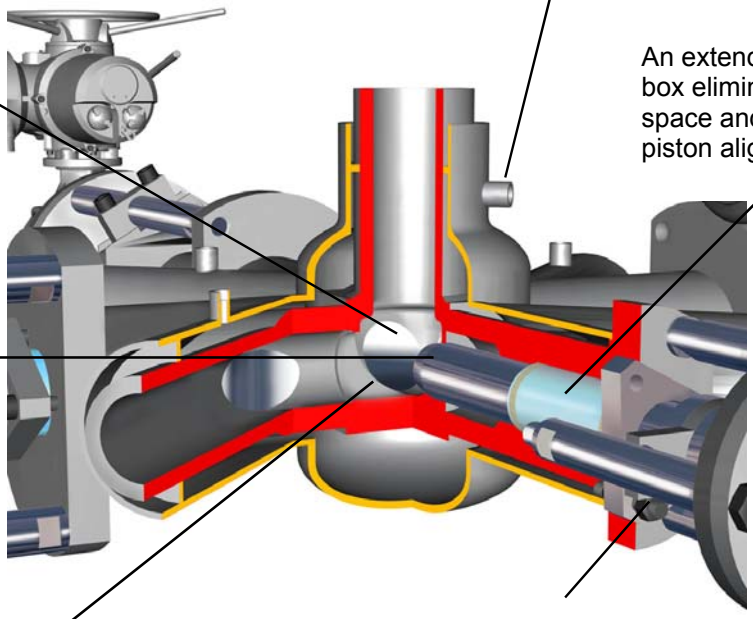
Large valves utilize a non-rising stem to minimize overall length

Fig. 0337D

High sealing performance of **M Seal** for high pressure & temperatures. **M Ring** and **M Control** are also available

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

An extended stuffing box eliminates dead space and improves piston alignment



Piston is contoured for smooth flow in both the open and closed position

Valve has dead space free central area

Live loaded packing arrangement is standard

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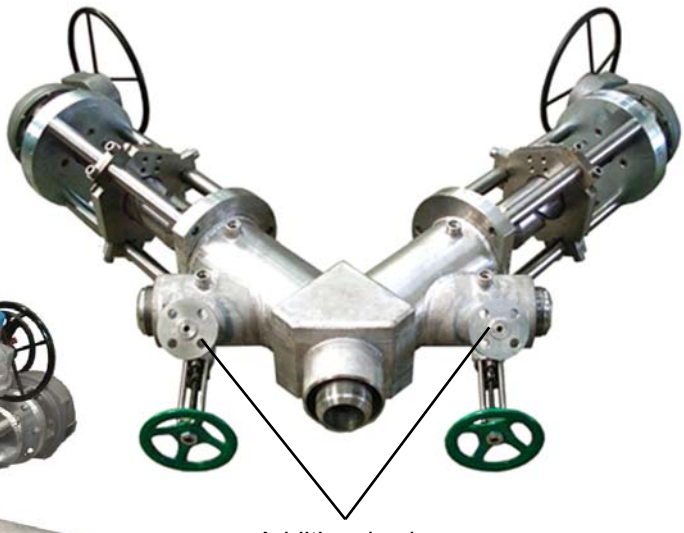
In virtually every process there is a need to divert flow. Dead space free valves are mandatory when diverting the flow of high viscosity products like polymers and slurries. Our full piston design avoids product build-up and clogging in the valve. United Process Valves offers a full range of Piston Diverter valves specially de-signed for this purpose. With United Process Valves' modular component (MCD) system valves be customized to match with any piping layout.
The valves are available with a wide selection of options including materials of construction, actuators, and customized or standard connections to piping. Other options include rotating pistons for smooth flow, high viscosity flow control and additional drain, injection or vent valves.

Typical applications: Flow management of slurry type and molten polymer processes.

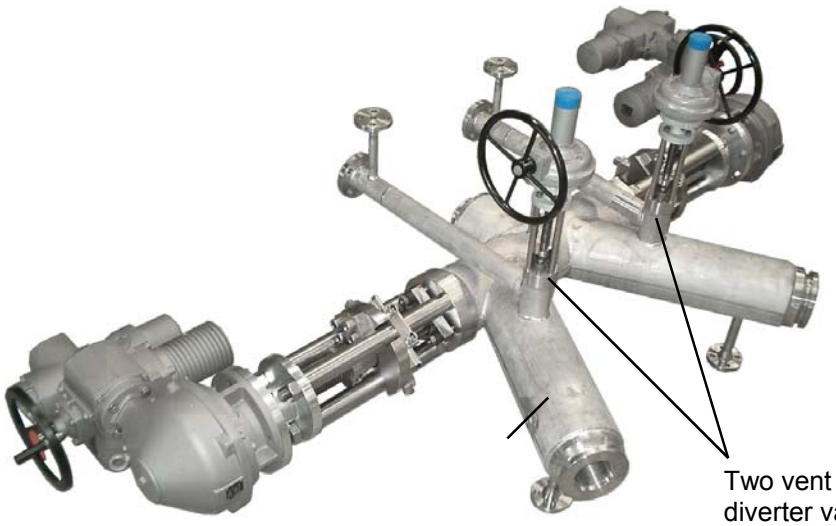
Additional valves for Vent, Drain & Injection applications

For process reasons it can be advantageous to have additional valves installed on the main diverter valve.
These valves are typically used to vent or drain process lines or to inject additives. Some exam-ples are shown below:

A central valve welded to a two way diverter valve for injection or control



Additional valves



Two vent valves welded to an outlet diverter valve of a Duplex filter

Diverter valve with flow-through Grayloc connections for quick removal from process line

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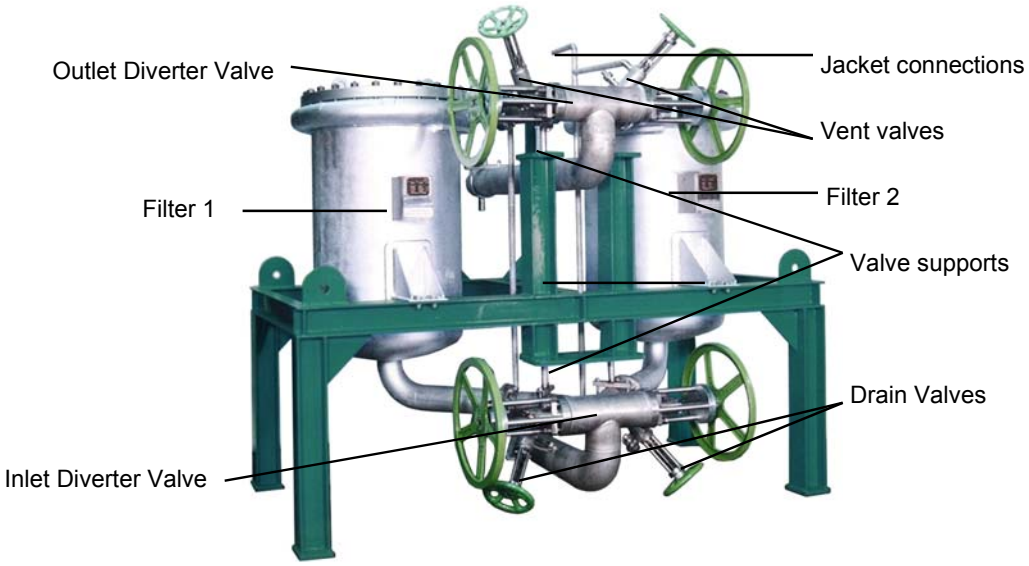
DIVERTER VALVES FOR DUPLEX FILTERS

United Process Valves diverter valves provide a smooth changeover from one polymer filter to another.



RANGE DEFINITION

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 lb	PN 250 -1500 lb	PN 320	PN 420—2500 lb	PN 630 –4500 lb
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													

Inlet Range

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 lb	PN 250 -1500 lb	PN 320	PN 420—2500 lb	PN 630 –4500 lb
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													

Valve Range
M Seal & Dual Seal

M Seal Only

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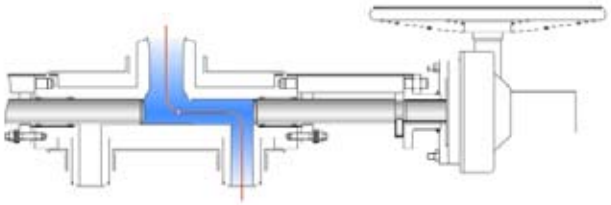
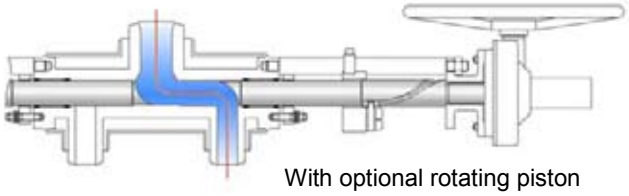
2-WAY PISTON DIVERTER VALVES

Straight Design

Code: **DPS2**





With optional rotating piston

Possible body arrangements **S2**

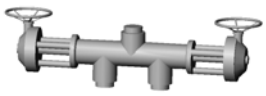


Fig. 01

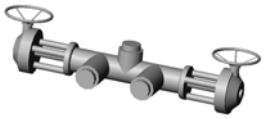


Fig. 02

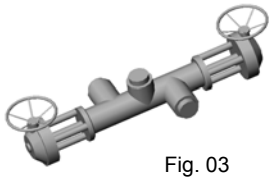
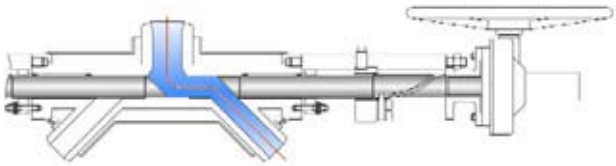


Fig. 03

T Design

Code: **DPT2**



Possible body arrangements **T2**

Fig. 01

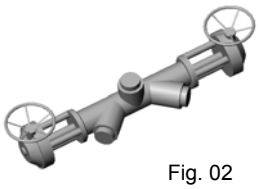
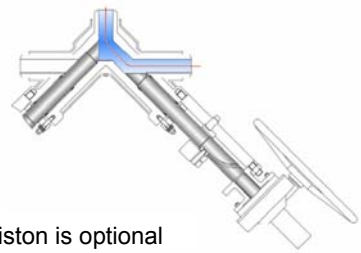


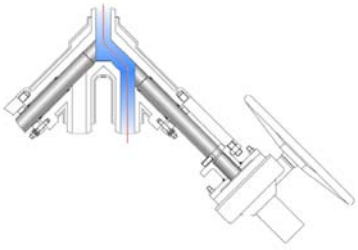
Fig. 02

Y Design

Code: **DPY2**



Rotating Piston is optional



Standard

Possible body arrangements **Y2**

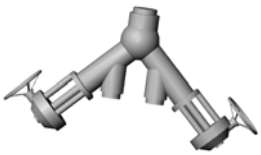


Fig. 01

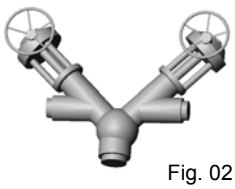


Fig. 02

Fig. 03

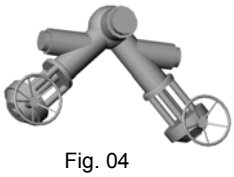


Fig. 04

United Process Valves

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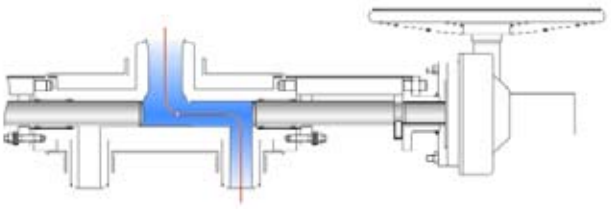
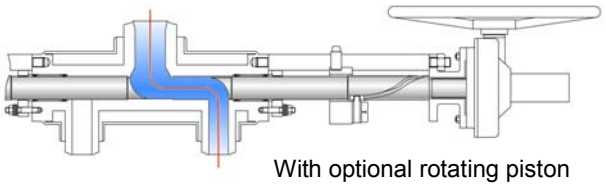
3 WAY PISTON DIVERTER VALVES

Straight Design

Code: **DPS3**





With optional rotating piston

Possible body arrangements **S3**

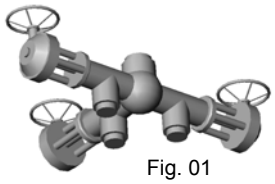


Fig. 01

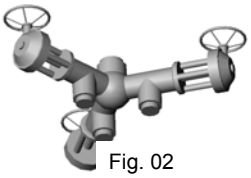


Fig. 02

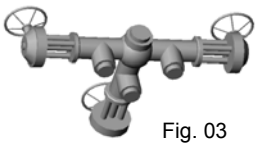


Fig. 03

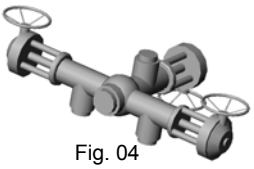
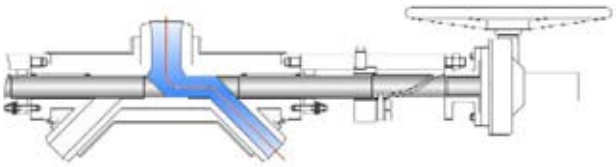


Fig. 04

T Design

Code **DPT3**



Rotating piston is optional

Possible body arrangements **T3**

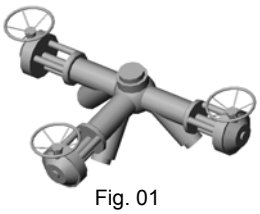


Fig. 01

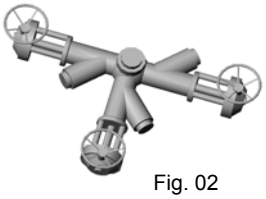


Fig. 02

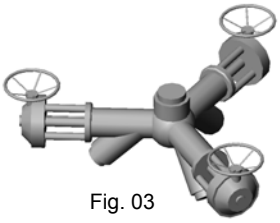
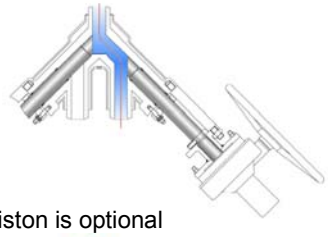


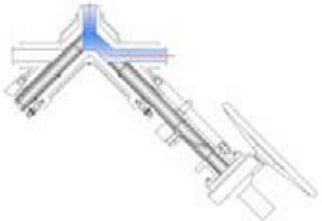
Fig. 03

Y Design

Code: **DPY3**



Rotating Piston is optional



Standard

Possible body arrangements **Y3**

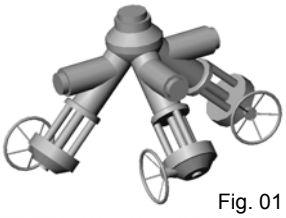


Fig. 01

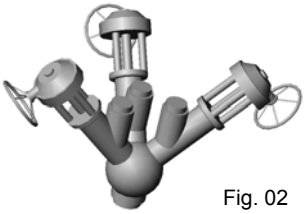


Fig. 02

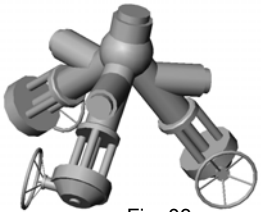


Fig. 03

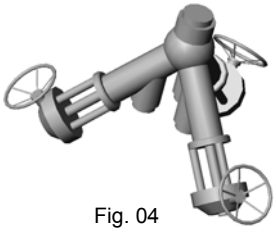


Fig. 04

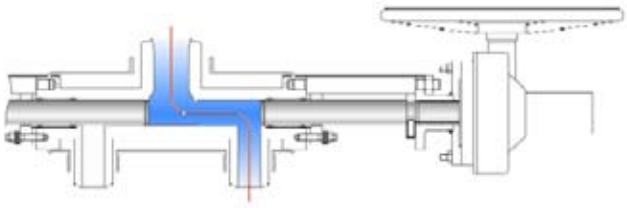
United Process Valves

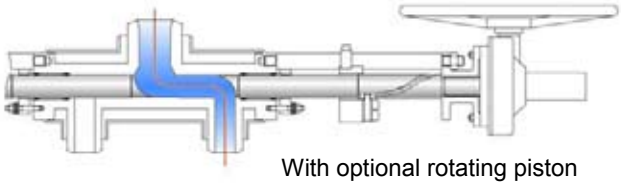
Tradition Innovation Commitment

4-WAY PISTON DIVERTER VALVES

Straight Design

Code: **DPS4**





With optional rotating piston

Possible body arrangements **S4**

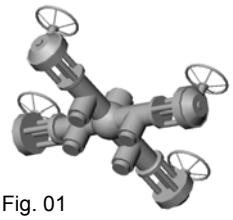


Fig. 01

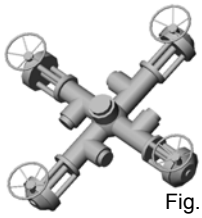


Fig. 02

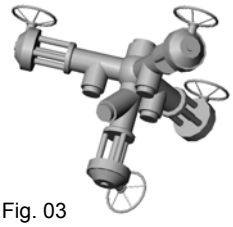
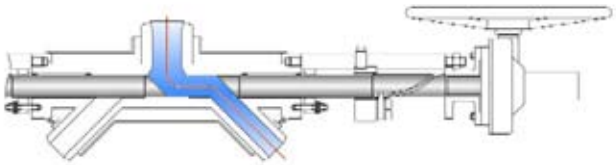


Fig. 03

T Design

Code: **DPT4**



Possible body arrangements **T4**

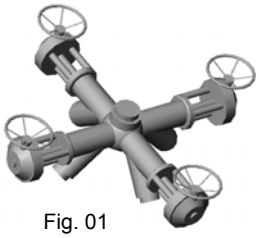


Fig. 01

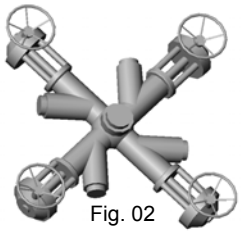
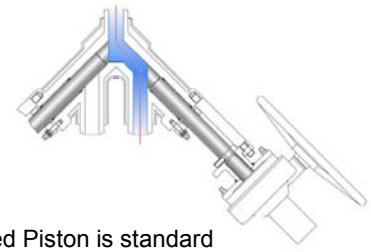


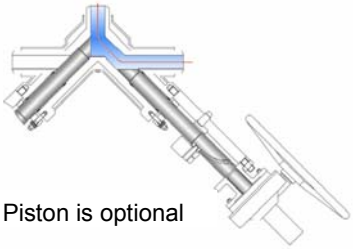
Fig. 02

Y Design

Code: **DPY4**



Contoured Piston is standard



Rotating Piston is optional

Possible body arrangements **Y4**

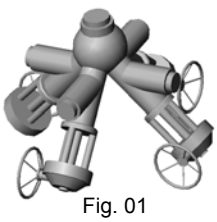


Fig. 01

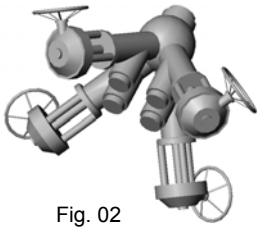


Fig. 02

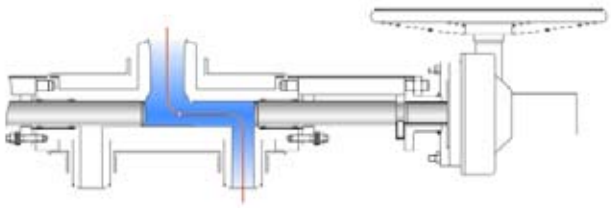
United Process Valves

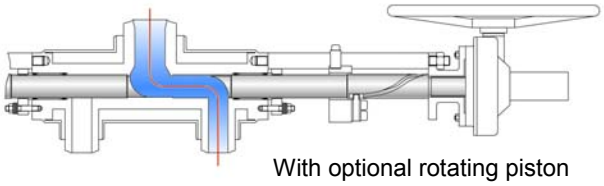
Tradition Innovation Commitment

5-6-WAY PISTON DIVERTER VALVES

Straight Design

Code: **DPS5-DPS6**





With optional rotating piston

Possible body arrangements

S5

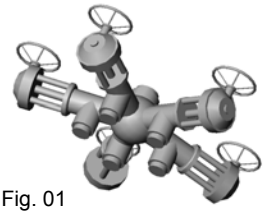


Fig. 01

S6

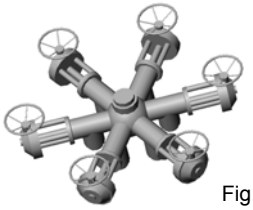
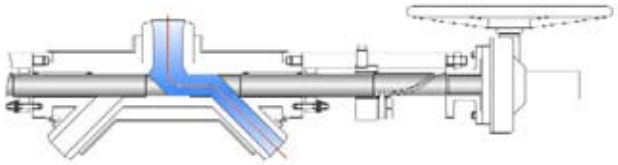


Fig. 02

T Design

Code **DPT5-DPT6**



Rotating piston is optional

Possible body arrangements

T5

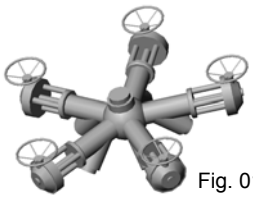


Fig. 01

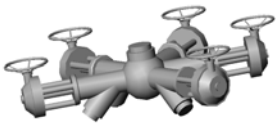


Fig. 02

T6

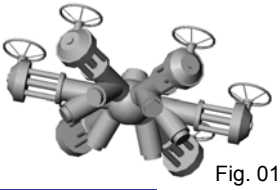
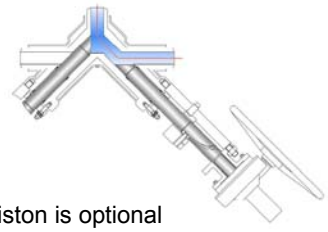


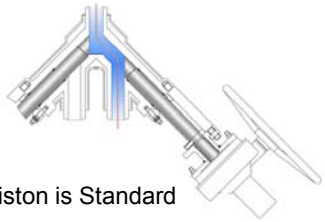
Fig. 01

Y Design

Code: **DPY5-DPY6**



Rotating Piston is optional



Contoured Piston is Standard

Possible body arrangements

Y5

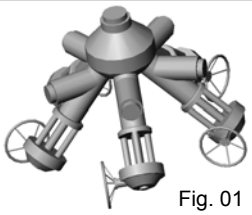


Fig. 01

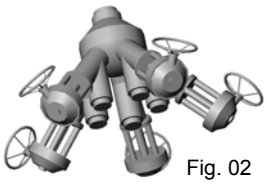


Fig. 02

Y6

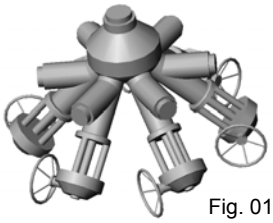


Fig. 01

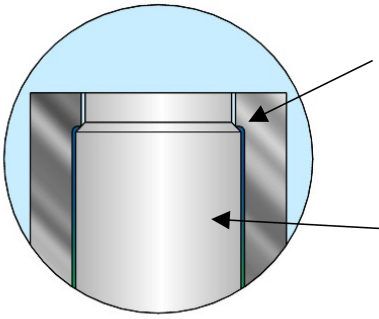
Fig. 02

United Process Valves

Tradition Innovation Commitment

SEALING SYSTEMS PISTON VALVES

M Seal 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 sealing performance and is suitable for almost all process conditions.



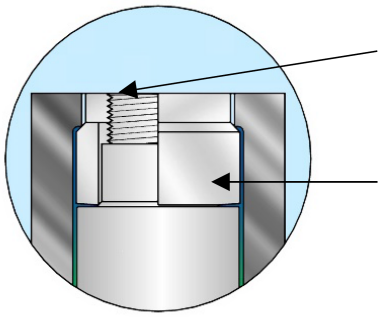
Greater hardness on body seat assures that wear occurs on piston first Easy maintenance is key.

One-piece piston design provides the geometrical arrangement to ensure long-term performance.

Temperature
Min: -200 C / -330°F
Max: 815°C / 1500°F

Pressure
Max: 630 bar / 9137 psi & full vacuum.

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.



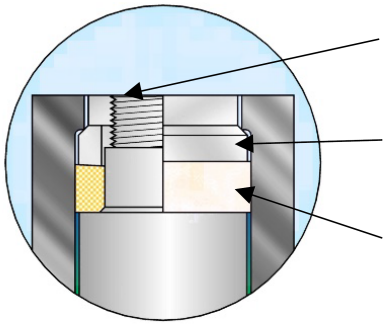
Locking nut is secured by a tack weld.

Resilient metal ring seals between the body seat and disc and provides high performance sealing for vacuum and high temperature applications.

Temperature
Min: -200 C / -330°F
Max: 450°C / 842°F

Pressure
Max: 250 bar / 3626 psi & full vacuum.

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.



Locking nut is secured by a tack weld.

The primary metal to metal seal ring compresses the secondary resilient seal ring.

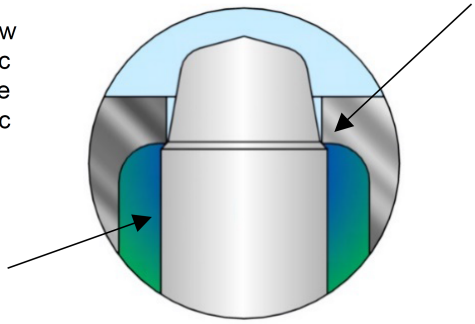
A secondary seal ring is made of resilient material like PTFE, PTFE glass filled.

Temperature
Min: -50 C / -60°F
Max: 225°C / 437°F

Pressure
Max: 250 bar / 3626 psi & full vacuum.

M-Control 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.

Body cavity is sized to keep full flow capacity through the valve



Greater hardness on body seat assures that wear occurs on piston first. Easy maintenance is key.

UPV's experience with high viscosity control valves combined with our calculation software provides a smooth and high performing control valve.

Temperature
Min: -200 C / -330°F
Max: 815°C / 1500°F

Pressure
Max: 630 bar / 9137 psi & full vacuum.

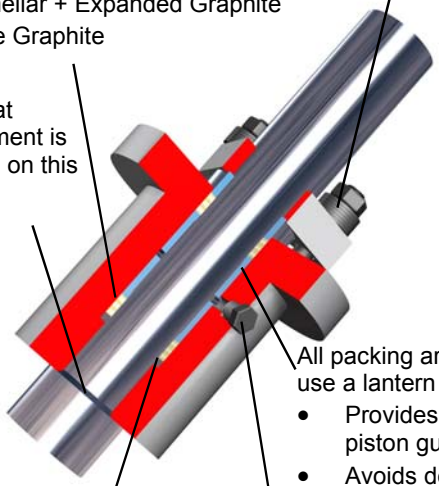
PACKING DEFINITION

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

Back seat arrangement is standard on this valve



All packing arrangements use a lantern ring that:

- Provides better stem piston guiding
- Avoids dead space in body cavities

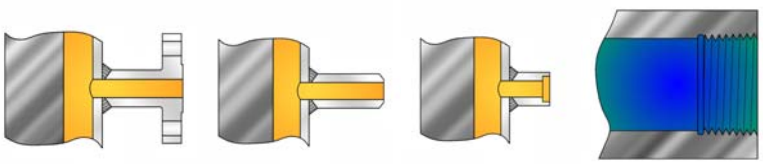
Bottom ring material is selected with a differential hardness from the piston to prevent piston damage

Optional 1/4 inch NPTF can be used for leak detection or inert gas injection to avoid leakage to atmosphere by creating an over pressure

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

JACKET CONNECTIONS



Flanges ANSI,DIN,JIS

Butt Weld

Socket Weld

Threaded connections NPT & BSP

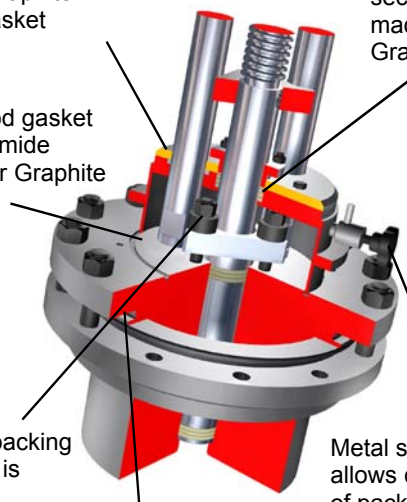
VACUUM HOOD

For valves on full vacuum service Unites 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.

Viton or Graphite column gasket

Spring loaded secondary packing made of PTFE or Graphite

Vacuum hood gasket made of Aramide compound or Graphite



Live loaded packing arrangement is standard

Welded lip seals

Metal seated test valve allows checking of packing performance. Can also be used for gas injection

Valve Coding System

D	P	S	2	M	J

D Diverter Valve

P Piston
D Disc
A Accessories

S Straight
T T Design
Y Y Design
$ Special

2 2 Valves
3 3 Valves
4 4 Valves
6 6 Valves
$ Special

M M Seal
C M Control
D Dual Seal
R M Ring Seal

J Jacketed
- Non-Jacketed

United Process Valves

Tradition Innovation Commitment

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

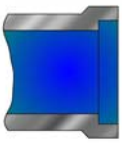
Quality assurance & testing

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

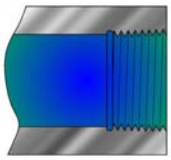
LINE & BRANCH CONNECTIONS

Flanges
ANSI, DIN, JIS

Heated
Flanges

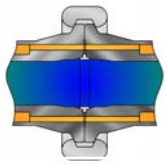


Socket
Weld



Threaded
connections
NPT & BSP

Butt
Weld



Fast Bolting Union
Graylock Securamax

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

United Process Valves

Tradition Innovation Commitment

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 Single- & Double-Disc Slab Gate Valves are specifically designed for use in transfer line and decoking valves for ethylene cracking units and isolation applications in FCCU (fluid catalytic cracking unit) and DCU (delayed Coker unit) plants. The safety and continuous production of process plants often depend on the reliability of these “key-equipment” valves.

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. Please contact your local United Process Valves representative for further details or visit our website:

www.unitedprocessvalves.com

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ISO 9001:2015 BUREAU VERITAS Certification

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