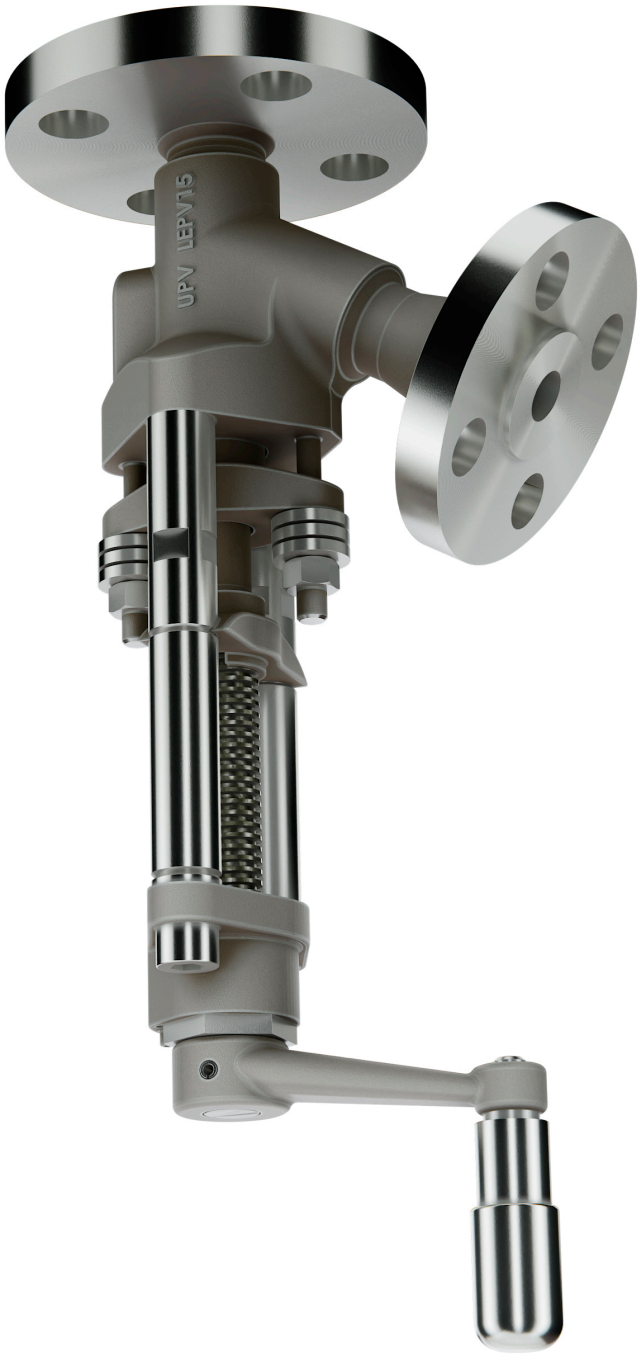
United Process Valves

Tradition Innovation Commitment

LEPV Series

PIPING, VESSEL & REACTOR VALVES

LOW EMISSION 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 Strahman United Process Valves.

Strahman United Process Valves
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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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With the LEPV Series piston valves United Process Valves offers high quality environmentally friendly piston valves. The valves offer low emission packing designs, certified to ISO 15848 as a standard. They can be delivered in a wide variety of process sealings that each meet ANSI class VI sealing class. These valves for draining, injection and sampling applications combine the latest sealing techniques and standards with all the advantages of non- clogging and dead space free features of piston valves. The valves are fully customizable regarding materials and type of construction, selected end connections, type of jacketing, and safety features such as purge ports and safety covers. The LEPV Series piston valves replace traditional sampling, drain and injection valves with old fashioned single ring packing design. They are certified to the latest environmental standards, help clean-up production plants while being completely customizable for your specific application.

Features of LEPV Piston Valves

LEPV Series

Various high-performance sealing systems available
- Soft Seal (as shown here)
- M Seal
- Dual Seal
- M Ring Seal
- M Control
- All sealing systems meet ANSI Class VI class.

Fire Safe Design Certified to API 6FA

Special machined “drop-shaped” lantern that allows flow to be controlled a standard feature to ensure safe sampling.

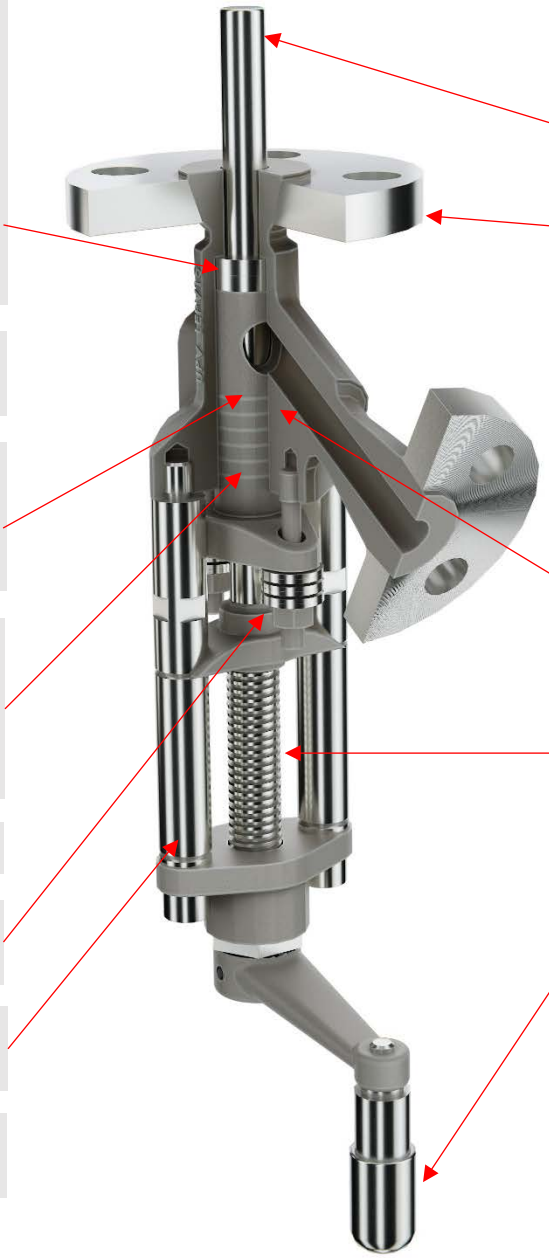
Double packing certified and tested to ISO 15848, 1& 2 is used as a standard.
- Extended stuffing Box to eliminate dead space.

Valves are SIL 2 Certified.

Packing is Live Loaded with spring washers.

Mechanical open / Close indication included.

In compliance with Nace MR0175 & MR0103 as a standard



Valves can be delivered with flush connection, Extended body or Extended Piston (as shown here).

Large type of end connection Available.
- Flanged (as shown here)
- Threaded NPT or BSP connections
- Sanitary flanges & Tri Clamp connection.
- Butt weld connection.

60° branch angle as a standard
- 45°, 60° or special angles available upon request.

Valve Has a self-locking stem to ensure it does not open due to vibrations.

A wide range of actuation options Manual with rotating SSTL cranck for safe actuation with gloves. Alternatives are:
- Hand Wheel
- Air Actuation
- Electric Actuation

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TECHNICAL & GENERAL INFORMATION

Design code and Construction

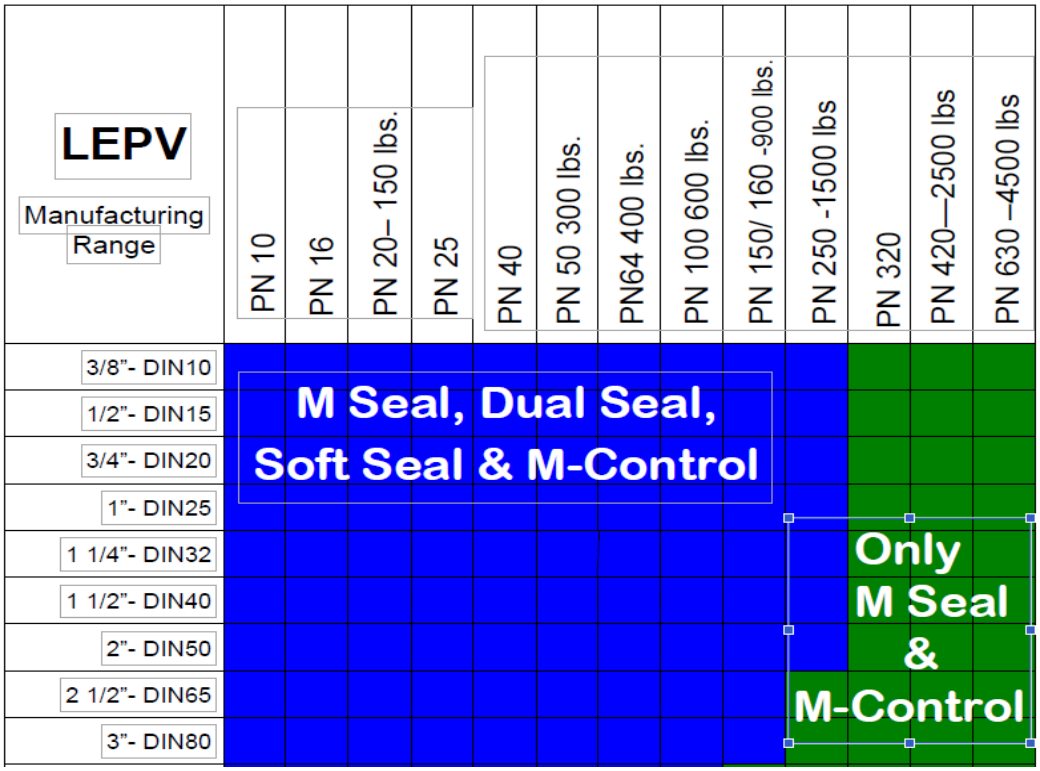
- Design standard compliant with ASME B16.34
- International standards include ANSI, DIN, JIS, API etc
- Wide range of material selections including Carbon steel, Stainless steel, Titanium Hastelloy, Duplex, Super Duplex, Monel, Tantalum and Zirconium.
- Cast, Fabricated, Forged and Bar stock made body designs are available

Surface Finish

- For polymer applications, United Process Valves recommends a surface finish of Ra 0.4 for all parts in contact with the medium.

Quality assurance & testing

- ISO 15848-1 certified for Low emission performance.
- ISO 9001-2015 compliant
- Valves are PED compliant. (United Process Valves has PED Module H approval)
- Fire Safe design certified to API 6FA available
- Valves Meet Nace MR0175 & MR0103
- Valves are SIL 2 certified



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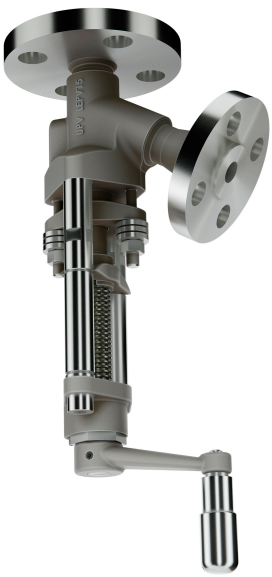
Possible Body Configurations



Cast Body Integral flanged

Cast Body Flanged / Treaded

Cast Body Threaded connections

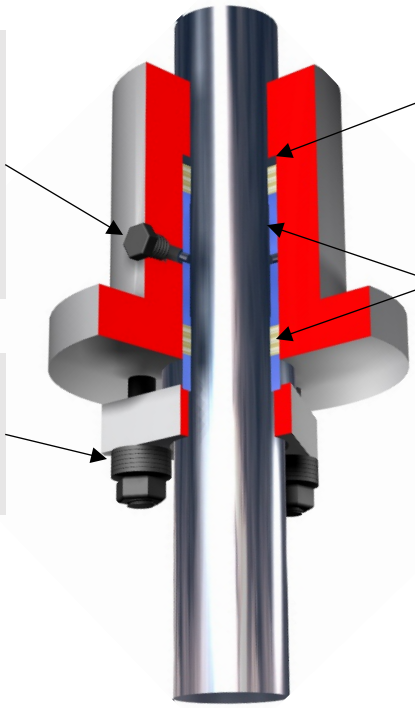
Bar stock made & Forged Body

Jacketed Body

Packing Design for valves sizes 1” to 3”

Optional ¼” NPTF purge port for leak detection or inert gas injection to avoid leakage to atmosphere by using an over pressure.

Live loaded packing with spring washers to reduce maintenance.



Bottom packing ring is selected with a differential hardness from the piston to act as scraper ring and prevent piston damage.

Valve has double packing with an extended stuffing box and lantern ring as a standard to avoid dead space and extend the lifetime of the packing.

Typical packing materials include PTFE, Graphite, Aramide braid, Graphite braid and many more.

To meet the latest requirements in low emission valve operation, All packing arrangements are ISO 15848-1 certified as a standard.

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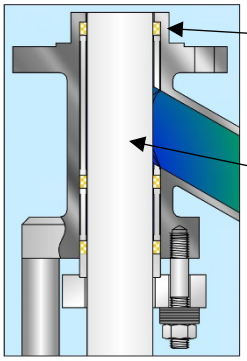
Available Sealing systems

Soft Seal- The seat-less principle of the UPV Soft Seal system assures superior sealing performance. While closing, the plunger moves through the valve bore, effectively rodding 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 seated rings provide dimensional stability with temperature variations.

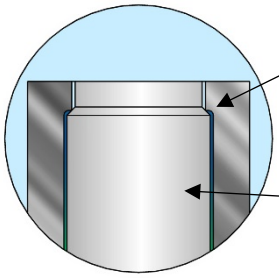
Greater piston hardness avoids scratches which is the most common cause of seal ring damage and leakage.

High rigidity lantern is designed to avoid distortion or contact with the piston.

Temperature
Min: -50 C / -60°F
Max: 500°C / 932°F

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

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.



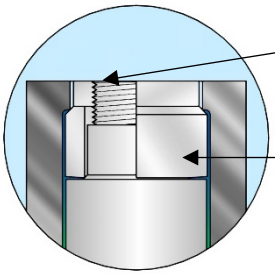
Greater hardness on body seat assures that wear occurs on piston first Easy maintenance is key.

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.



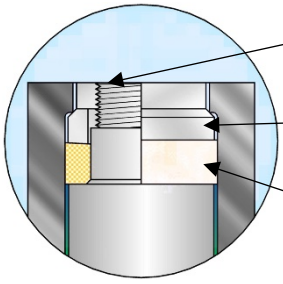
Locking nut is secured by a tack weld.

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.

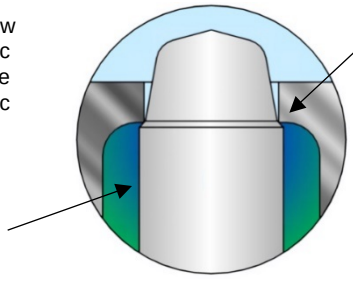
A secondary seal ring is made of resilient material like PTFE, PTFE glass filled.

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.

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Optional double sealing feature for severe service application

UPV offers a unique double sealing design were our soft sealing and metal to metal M-sealing designs are combined in one valve offering long and reliable valve sealing performance for severe applications. In combination with a heating jacket this design works very well on asphalt, bitumen, resin and other high viscosity products.

Double sealing system includes:
- **Soft Seal system with double packing design.**

Double packing certified and tested to ISO 15848, 1& 2 is used as a standard.
- **Extended stuffing Box to eliminate dead space.**

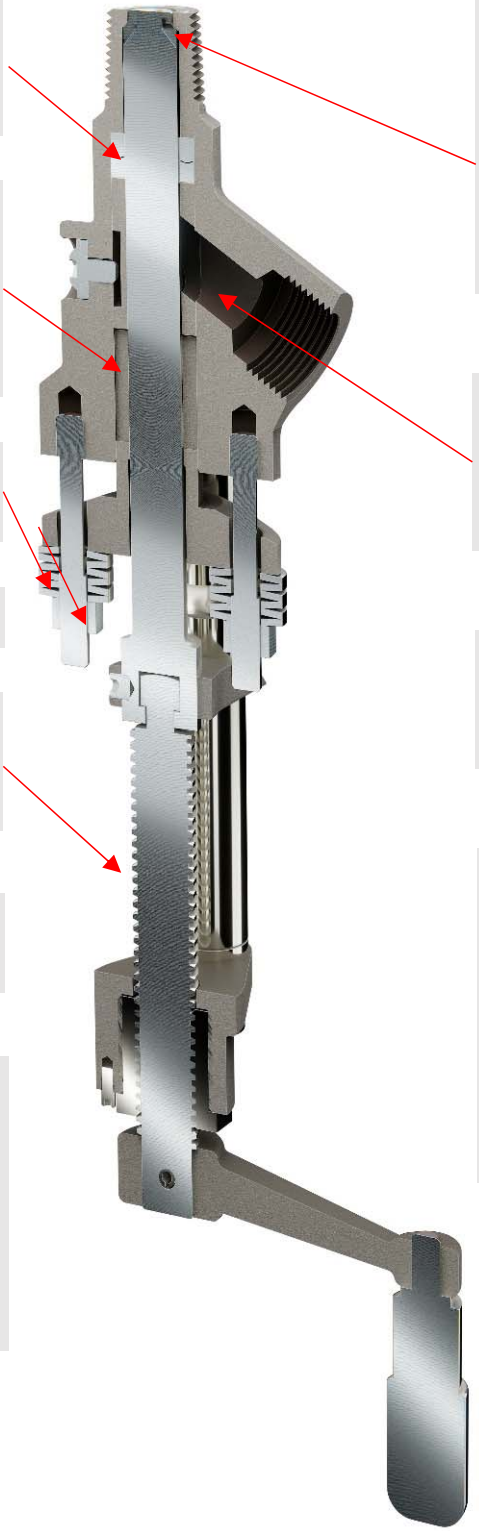
Packing is Live loaded with spring washers.

Valves are SIL 2 Certified.

Valve has a self-locking stem to ensure it does not open due to vibrations.

Mechanical open / Close indication included.

Large type of end connections Available.
- **Flanged (as shown here).**
- **NPT, BSP or SW connections.**
- **Sanitary flanges & Tri Clamp connections.**
- **Butt weld connections.**



M Seal, metal to metal sealing with stellited body seat.
- **Systems meet ANSI Class VI.**
- **Double sealing design is fire safe certified to API 6FA. (Metal seat with graphite soft seal system)**

Special machined "drop-shaped" lantern that allows flow control is available and recommended to ensure safe sampling.

60° branch angle as a standard
- **45°, 90° or special angles available upon request.**

A wide range of actuation options:
- **Manual with rotating SSTL cranck for safe actuation with gloves.**

Alternatives are:
- **Hand Wheel.**
- **Air actuation.**
- **Electric actuation.**

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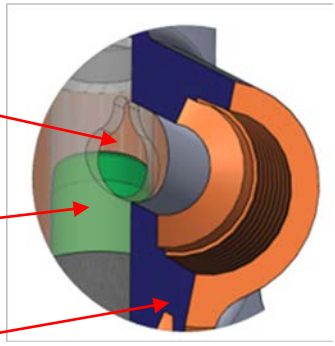
Standard Flow control function

To help control the flow through the valve during sampling or injection our LEPV valves are equipped with a flow control function as a standard. The bore of the lantern ring is specially machined (drop shaped) to allow flow control while operating the valve. This provides operator safety. Large, sudden (hot or dangerous) flows that may hurt the operator are eliminated. In case of Injection the flow of the injected medium can be controlled.

Special machined "drop-shaped" lantern that allows flow to be controlled.

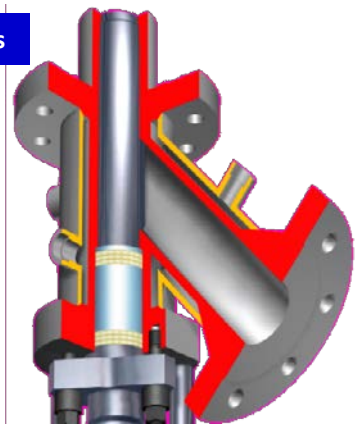
Piston positioned half-way in the drop shaped opening of the lantern ring to allow flow control

Valve Branch



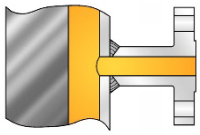
- Bolt-on Jackets

Optional Heating Jackets

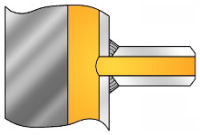


- Integral welded Jackets

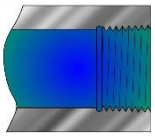
Jacket connections



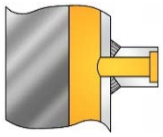
Flanged ANSI, DIN, JIS



Butt Weld



Threaded to NPT or BSP



Socket weld

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F-9300

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Test Report

Test of a control valve 1/2" 300 Lbs according to ISO 15848-1 (march 2006)

N : CET00103601_PV_Final_02_b	**Date : 26 July 2018**
Recipient (s) :	**MONSIEUR BENOIT RENARD STRAHMAN VALVES SAVOIE - HEXAPOLE BOITE POSTALE 20085 73420 MERY FRANCE**
Request reference: **N° CF045168 of 27 January 2014**	
Articles provided by the applicant: **Valve ½'' 300 Lbs**	

1. Aim of the test :

The test was carried out in March 2014 at the **Sealing Technology Department** of Cetim at Nantes, according to ISO 15848-1 (March 2006) procedure.

2. Tested component:

The following valve:
- Valve type: **Valve 1/2" CI300 (Stem dia. : 14 mm)**
- Manufacturer: **STRAHMAN VALVES**

Equipped with a packing **BURATAL 9650 HT**
- Manufacturer: **EagleBurgmann**

3. Test conditions:
- Fluid: helium
- Pressure: 50 / 33 bar
- Temperature: 20 / +350 °C
- Number of mechanical cycles: 500 cycles/CO1
- Number of thermal cycles: 2

4. Test results:
- Highest leakage measured: $7{,}3.10^{-5}$ mg.s^{-1}.m^{-1} (Tightness class BH<10^{-4} mg.s^{-1}.m^{-1})
- Number of stem seal adjustments: 1

5. Conclusion:

Performances within these conditions correspond to the following classification:

ISO FE BH-CO1-SSA1-T200(20/350)-CI300 (50/33)-ISO 15848/1.

All the results and procedure detail are given in the detailed test report number CET00103601_PV_Final_01_b.

Signé par: Cougnon Laurent
Date et temps: 2018.07.27 09:28:52 +02:00

In charge of test
Laurent COUGNON

Signé par: Sauger Emmanuel
Date et temps: 2018.07.27 09:46:07 +02:00

Project Engineer
Emmanuel SAUGER

cofrac ESSAIS Accréditation N° 1-0037
Portée disponible sur www.cofrac.fr

Centre Technique des industries mécaniques cetim

Siège social / Headquarters 52, avenue Félix-Louat - BP 80067 - F - 60304 Senlis Cedex
Tél. +33 (0) 3 44 67 30 00 Fax. +33 (0) 3 44 67 34 00 Centre Technique, régi par les articles L342.1 à L342.13 du Code de la Recherche N°Siren 775629074 Code APE 7219Z

apave

ATTESTATION / *CERTIFICATE*
N° EP-SE-06-AQ-006 V1

Apave Exploitation France
Organisme Notifié N° 0082
Notified Body N° 0082

Approuve le système qualité mis en place par :
approuves the quality system implemented by :

STRAHMAN UNITED PROCESS VALVES

Le système qualité approuvé est appliqué par le fabricant, dont le siège est établi à :
The approved quality system is implemented by the manufacturer, whose head office is located at :

73420 MERY - FRANCE

Pour les activités suivantes :
For the following activities :

- la conception *- design*	- la fabrication *- manufacture*	- l'inspection finale *- final inspection*	- les essais *- testing*

Module H

destinés à être mis sur le marché européen conformément à la Directive 2014/68/UE
to be placed on the EU market according to the Directive 2014/68/EU

Robinetterie industrielle spéciale mécanosoudée et moulée

Les résultats de l'évaluation figurent dans le rapport N° DESP-2023-2158 du 20/12/23
The results of assessment are included in the report No

La présente notification est valable pour une période de trois ans, à compter du 11/09/21
This certificate is valid for a 3 years period from the date of delivery

Tout projet d'adaptation du système qualité doit être communiqué à l'Organisme Notifié.
Any adaptation of the quality system must be transmitted to the Notified Body.

Emis le (jour/mois/année):
Issued on (day/month/year) :

21/03/2024

Ce certificat est valable jusqu'au :
This certificate is valid until :

10/09/2024

Le représentant autorisé :
Authorized representative:
E. MARTY

Ce document annule et remplace celui du : 09/09/2021
This document cancels and supersedes the one dated : 09/09/2021
La présente attestation originale comprend une page et 0 annexe(s). Elle est transmise en deux exemplaires au demandeur. Aucun duplicata ne sera délivré.
This certificate includes one page and 0 appendix. Two originals have been transmitted to the authorized representative. No duplicata will be issued.

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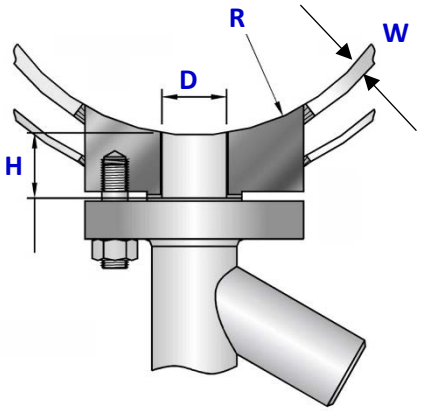
Pipe Connections

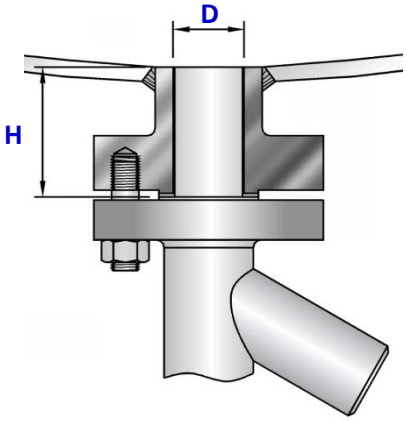
Nozzles & Pads

To connect valves to process piping , UPV can supply the valves with easy-to-fit standardized pads or nozzles for welding into the process pipe. In both cases, the customer must specify :

- Process pipe size & pipe wall thickness (pipe sch.) “W”
- Pad or nozzle length “H”
- Inside diameter “D” can be specified by the customer or UPV can determine the “D” size to match the valve.
- If contouring of the pad or Nozzle is required, UPV will contour to match radius “R” of the process pipe to eliminate retention areas



Contoured Pad

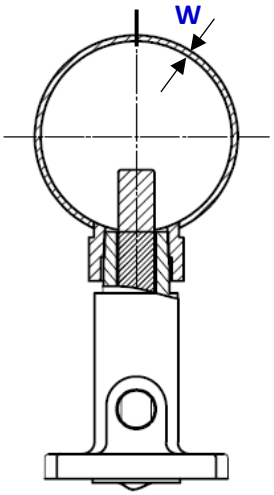


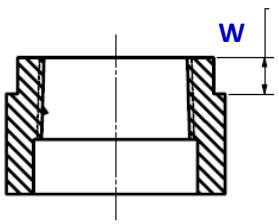
Nozzle

Contoured & non-contoured Half couplings

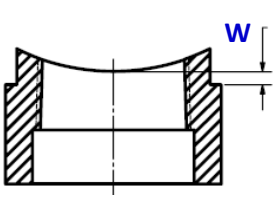
For threaded (NPT) connections to process pipes UPV can supply contoured or non-contoured half couplings. Contoured couplings (shown below) are normally used for smaller pipe sizes up to 6". Contouring of the coupling allows it to match the inside of the pipe and not obstruct flow. The contour will match the inside diameter of the process pipe. Non-contoured couplings can be supplied for pipe sizes 8" and above. The larger pipe size doe not require contouring to prevent dead space. To manufacture a half coupling UPV needs following information:

- Process pipe size & pipe wall thickness (pipe sch.) “W”





Non-contoured half coupling



Contoured half coupling

Contoured half coupling

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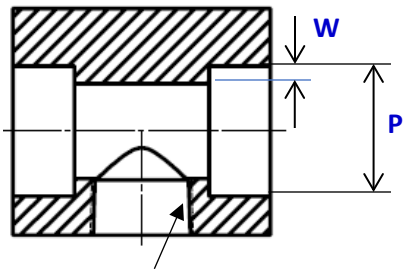
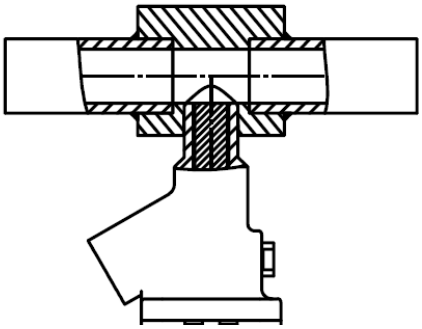
Special Tee Adapters

To connect valves LEPV valves with threaded connections to small diameter process pipes of 2” and smaller, UPV can supply the valves with easy-to-fit Tee adapters for installation into the process pipe. To manufacture a Tee adapter, UPV needs following information:

- Process pipe size (“P”) & pipe wall thickness (pipe sch.) “W”



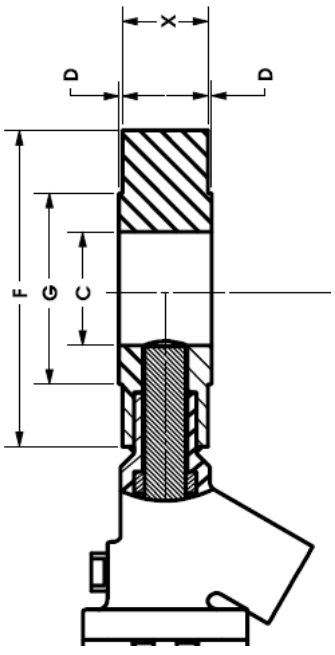


Interflange adapters

LEPV valves can be installed in between process flanges by using our inter-flange adapters. To manufacture an interflange adapter, UPV needs following information:

- Process pipe size, pipe wall thickness (pipe sch.) or inside diameter of the process pipe.
- Process flange size and pressure rating.
- With this information we can determine below mentioned dimensions C, D,F,G & X

Valve with Interflange adapter



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Sampling Adapters & Bottles

Allowing operator to safely take a product sample without being in direct in contact with the product. Adapters are made from stainless steel with PTFE inserts that can be matched with customers specific sample bottle. Safety covers are made from Lexan or 316 SSTL. We also offer complete enclosed Sampling boxes

Safety shield

To protect the valve piston and stem from the outside elements, dust etc. we can deliver option safety shields made from Stainless Steel

Actuation options

Handle / Cranck

Hand wheel

Bevel Gear

Double or Single acting Air Cylinder

Double or Single acting Air Cylinder with safety hand wheel

Electric Motor

Valve Coding System L P 4 S P J

L Low emission Piston Valve					
P Piston **A** Accessories					
	4 45° Branch Angle **6** 60° Branch Angle **9** 90° Branch Angle **$** Special				
		S Soft Seated **M** M Seal **C** M Control **D** Dual Seal **R** M-Ring Seal			
			B Extended Body **P** Extended Plunger **D** Dismountable Seat **$** Special		
				J Jacketed **-** Non-Jacketed	

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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 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:

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ISO 9001:2015 BUREAU VERITAS Certification

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