

**SITINDUSTRIE VALVO VALVES**

**THROUGH CONDUIT VALVES  
TECHNICAL CATALOGUE**

*Ed. 01/DIC-2004*

We are pleased to introduce you to the Trough Conduit valves manufactured by **Valvometal**, branch of Sitindustrie Equipment, under the VALVO® trademark.

**SITINDUSTRIE** started manufacturing valves for the industry in 1955, at its plant in Valduggia, Italy.

Today, it is regarded as a reputed supplier of cast steel gate, globe and check valves, in both bolted and pressure seal bonnet.

Ball valves and through conduit gate valves have been added to the product range of the Company, being capable to offer full packages of valves as a total manufacturer. The primary markets served are the oil and gas exploration, production, petrochemical, refining, pipelines and power generation.

The Company adheres to a Quality Program in accordance with ISO 9001:2000 and also has accreditations for API 6D, API Q1, European Directive 97/23/CE (PED), UDT, Stoomwezen and other Third Party Agencies (Bureau Veritas, TUV, RINA, Lloyd's Register, and other).



Design and manufacturing are carried out in accordance with the main international standards, i.e. ISO, API, ASME, ANSI, ASTM, NACE, BS, AFNOR, DIN and other.

Materials offered includes carbon steel, alloy and stainless steel, and non ferrous alloys.

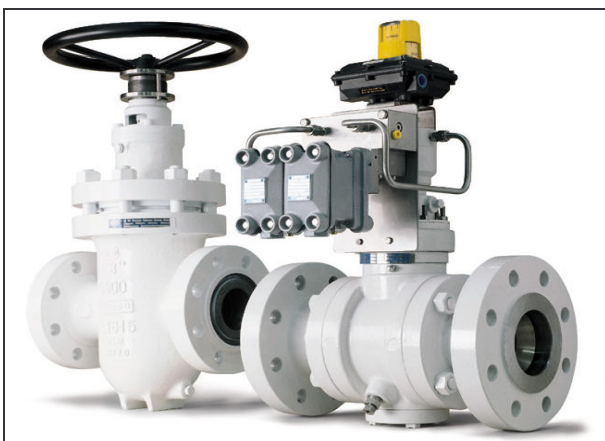
A wide selection of materials is available for internal components.

A lengthy reference list, containing the most respected names in the industries in which we serve, guarantees the strength of the Company in developing the capabilities in the areas of projects and specialities.

The strength of the new solutions for projects and special valves is within our technical capabilities linked with full customer satisfaction.

Furthermore, **SITINDUSTRIE** has launched a "zero-emission" design range of gate and globe valves, called ECO-VALVO, in response to industry

requirement, to satisfy the most stringent and demanding applications of our customers worldwide.



## APPLICATIONS

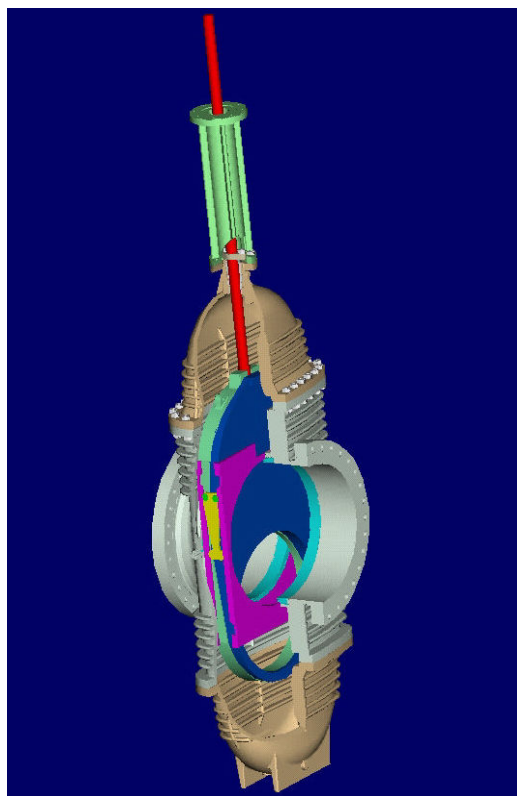
Trough Conduit valves are primarily used in chemical, petrochemical and oil & gas transmission pipelines, onshore terminals, offshore platforms. Trough Conduit valves are also available for underground services.

## MEDIA

Trough Conduit valves are used in a wide range of flow media; they can be designed for use of corrosive fluids in addition to normal liquids and gases.

## ADVANTAGES

Through Conduit valves are well known for easy in-line maintenance in consideration of their top entry construction. The cylindrical body shape allows for a high degree of reliability.

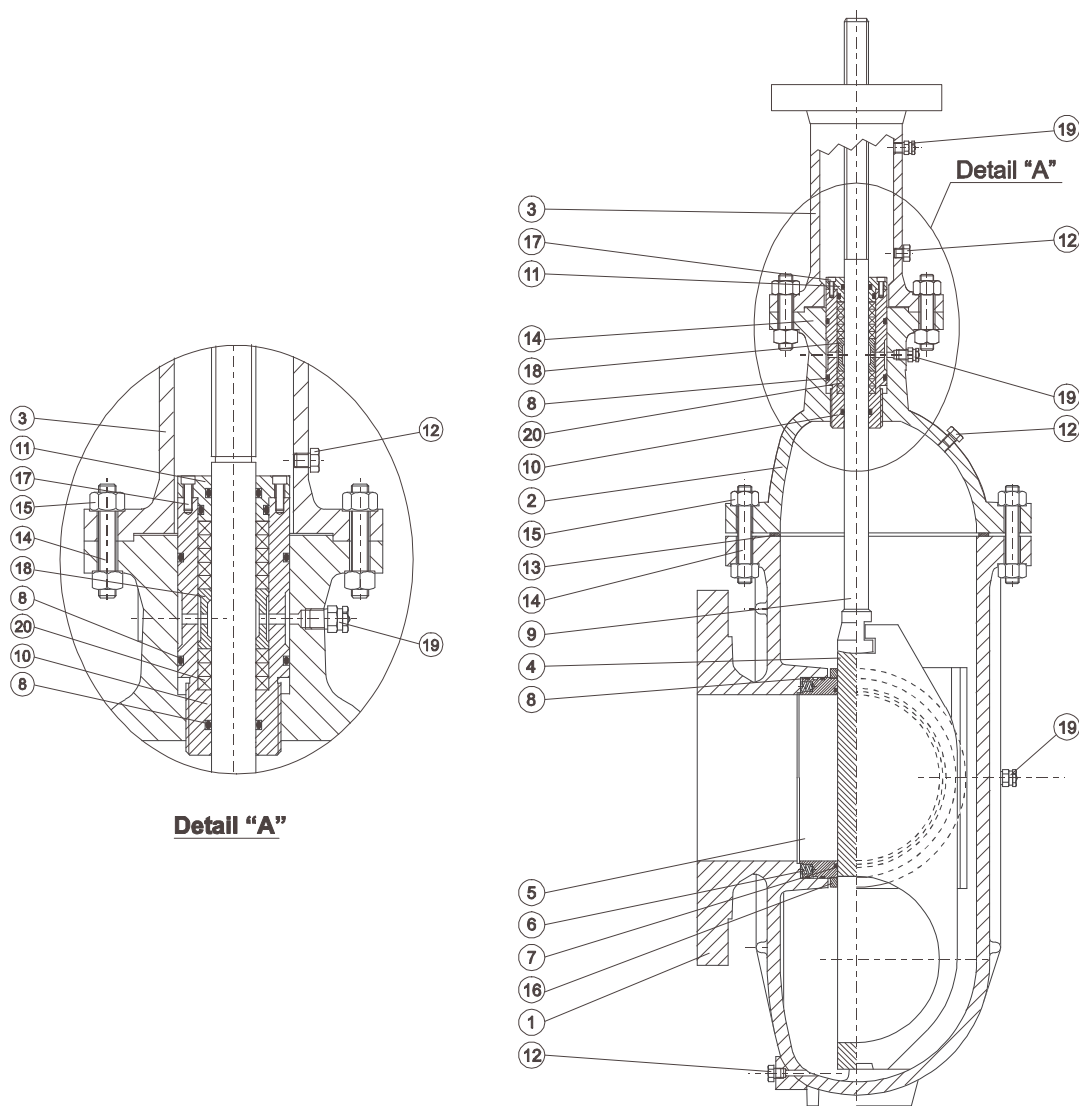


## PRODUCT RANGE

Sitindustrie manufactures trough conduit gate valves either expanding or slab gate valves in a wide range of diameters, pressure classes, materials, and style of constructions.

They are rated, manufactured and tested according to **API 6D** and designed to **ASME code**

Size Class	SLAB GATE						EXPANDING GATE					
	150	300	600	900	1500	2500	150	300	600	900	1500	2500
2"												
2 1/2"												
3"												
4"												
6"												
8"												
10"												
12"												
14"												
16"												
18"												
20"												
24"												
30"												
36"												
42"												
48"												
56"												
60"												



N°	PART NAME	MATERIAL	PART. N°	PART NAME	MATERIAL
1	Body	A216 WCB	11	Gland flange	A182 F304 + O-ring
2	Bonnet	A216 WCB	12	Plug	A105
3	Yoke	A216 WCB	13	Body/Bonnet S.W. Gasket	AISI 316 + GRAPHITE
4	Gate Plate	A182 F6A + Enp	14	Bolt	A193 B7
5	Seat ring	A182 F6A	15	Nut	A194 Gr.2H
6	Spring	INCONEL X750	16	Gate Plate Guide	CARBON STEEL
7	Insert	PTFE	17	Screw	Steel 12.9
8	O-ring	VITON	18	Lantern Ring	AISI 304
9	Stem	A182 F6A	19	Seal Injection Fittings	INOX STAINLESS STEEL
10	Stem Bushing	A182 F304	20	Stem Packing	PTFE



The VALVO valve's through conduit expanding gate design provides specific advantages resulting in reliable performance and long life.

The Expanding Gate valves perform in critical applications as block valves in process system refineries, pipelines and isolation valves in power plant.

### FULL BORE

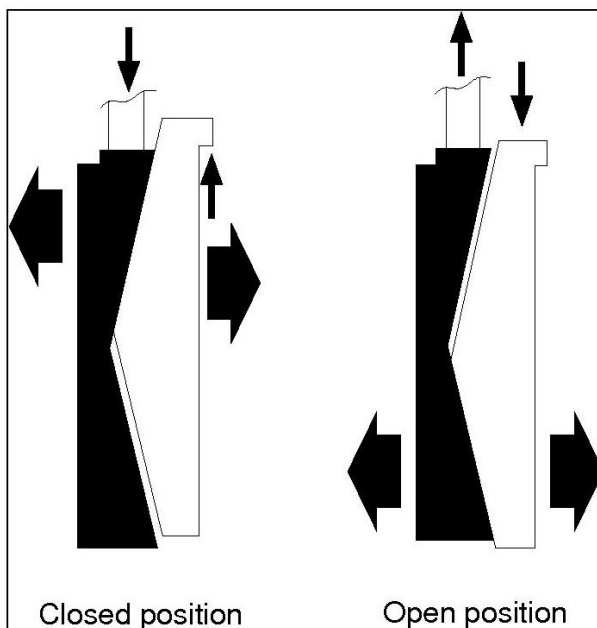
Permits the passage of cleaning and scraping tools. Turbulence and pressure drops are minimized.

### THROUGH CONDUIT

Valve body cavity is isolated from flow.

### EXPANDING GATE

The valve's parallel expanding gate provides a simultaneous tight mechanical seat seal upstream and downstream against the seats in both open or closed position. Seal is not affected by pressure changes, heat or vibration



### SEATS

Seat faces are in full contact with the gate whether the valve is closed or open, hence outside the flow stream for a long life operation.

The seats are energized by line pressure and spring loaded and mechanical action of the double disc. Primary seat seal elastomer inserts are placed into a groove, supported by a secondary metal-to-metal seating.

Seats can be removed and replaced while the valve is in line

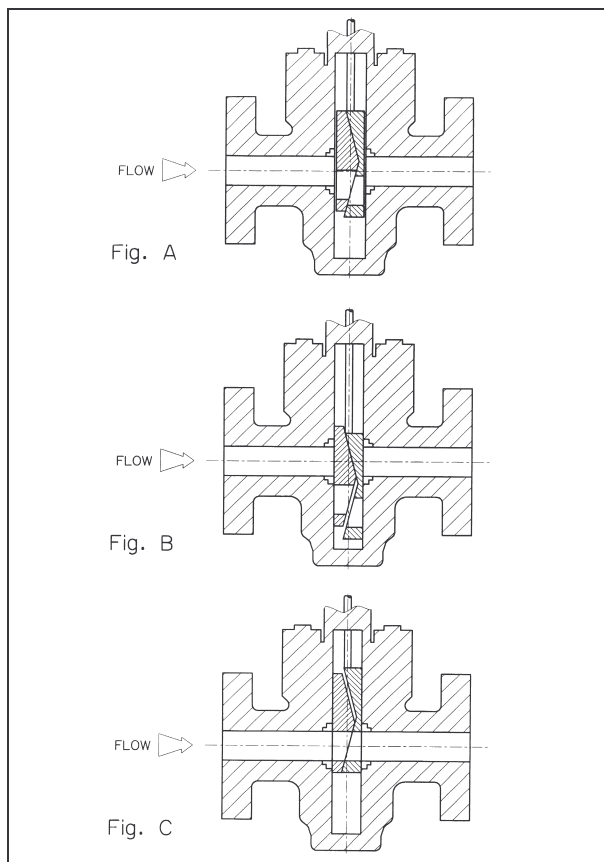
Parallel expanding gate allows a tight mechanical seal both upstream and downstream.

**A.** During travel, the gate and segment assembly is collapsed and matches at all four surfaces.

The face-to-face width of gate is less than distance between seats so that gate & segment travel freely without sticking or wedging.

**B.** In closed position, the two top angles are in contact. With further downward movement the segment halted against the stop, so that the continued descent of the gate allow the solid gate segment -surface to expand, against the seats.

**C.** In open position the two bottom angles are in contact. With further upward movement of the segment the gate/segment assembly expand, sealing against the seats and isolating the body cavity from the flow.



### BLOCK & BLEED CAPABILITY

Tight closure at both seats allows body cavity to be drained with pressure both up and down stream.

### STEM & STEM PACKING

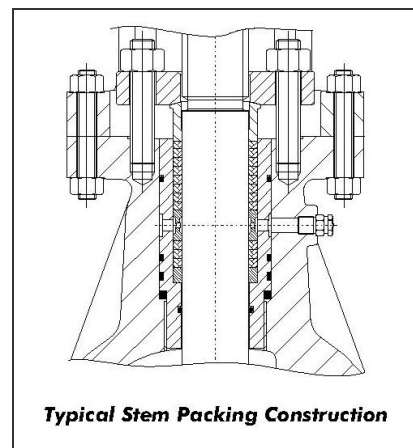
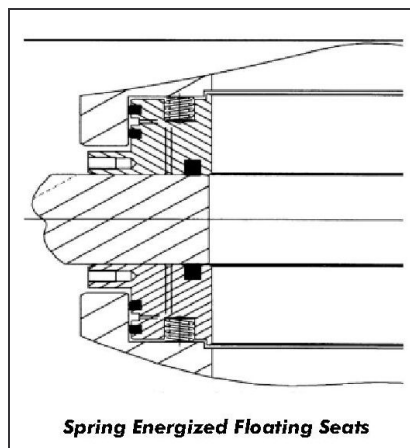
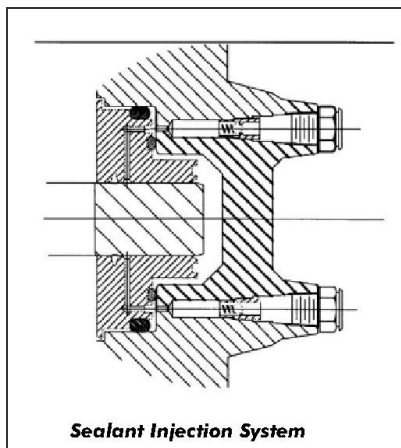
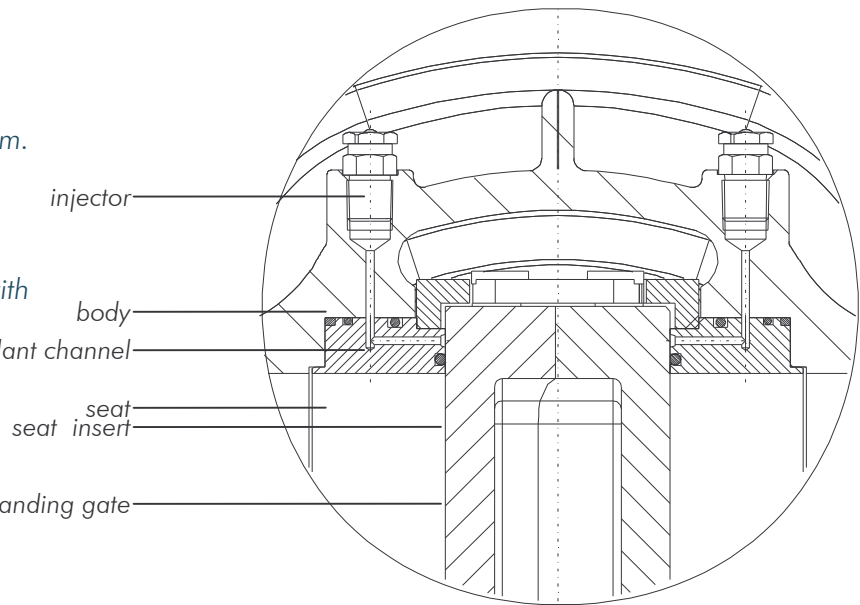
Improved Chevron type "V" style interlocking stem packing rings with provision made for sealant/lubricant injection into packing chamber.

### SEALANT INJECTION

Emergency sealing injection expanding gate facility can be provided on valves 6" and larger size.

### PERMANENT LUBRICATION

VALVO Valve's gate and stem can be coated with solid film lubricant, corrosion resistant, low friction material which lubricates wearing surface.



**THROUGH CONDUIT GATE VALVE DIMENSIONS**

**ASME Class 150 Lbs (PN20)**

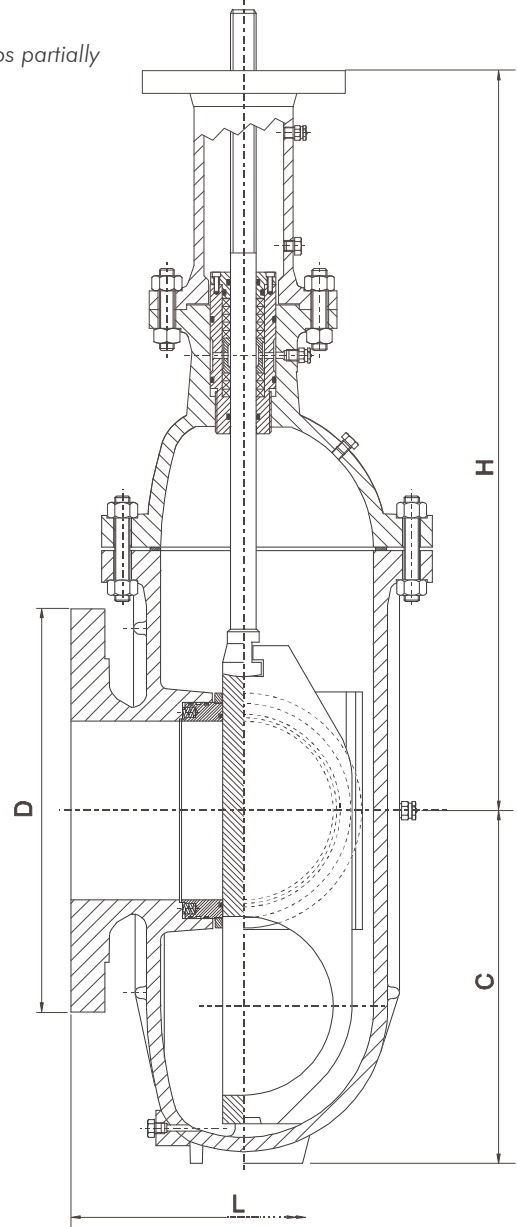
*Through Conduit Gate Valves* are straight-through flow valves which provide positive shutoff, no pressure drop and flow turbulence. Through conduit Gate Valves are bi-directional.

They are recommended for use in a fully open or closed position. Throttling or partially open position promotes erosion, noise and excessive wear.

Sizes: Slab gate 2" to 60" - Expanding gate 2" - 36"

**DESCRIPTION AND FEATURES:**

- slab or expanding gate
- zero leakage
- stem packable while in service
- Bolted construction for easy disassembly in the field
- Double block & Bleed
- Spring energized floating seats
- Self relieving seats
- Locking device (available on request)
- Emergency sealing injection system
- **Design and Test Specifications**
  - Pipeline steel valves API 6D
  - Fire safe design API 6FA
  - NACE MR 01-75
  - Face-to-face, end-to-end ASME B 16.10
  - End flanges (14" to 24") ASME B 16.5
  - End flanges (24" and larger) MSS-SP-44
  - Weld-ends ASME B 16.25



<b>MAIN DIMENSIONS (mm)</b>																				
<i>(Data of bigger sizes are available on request)</i>																				
<b>DN</b>	<b>4"</b>	<b>6"</b>	<b>8"</b>	<b>10"</b>	<b>12"</b>	<b>14"</b>	<b>16"</b>	<b>18"</b>	<b>20"</b>	<b>22"</b>	<b>24"</b>	<b>26"</b>	<b>28"</b>	<b>30"</b>	<b>32"</b>	<b>36"</b>	<b>38"</b>	<b>40"</b>	<b>42"</b>	<b>48"</b>
<b>L</b>	229	267	292	330	356	381	406	432	457	*	508	559	610	660	711	813	*	*	*	*
<b>C</b>	220	300	385	470	570	640	698	780	860	970	1063	1105	1185	1270	1355	1590	*	*	*	*
<b>D</b>	229	279	343	406	483	533	597	635	698	749	813	870	927	984	1060	1168	*	*	*	*
<b>H</b>	590	750	910	950	1095	1160	1435	1460	1610	1770	2030	2035	2175	2330	2465	2720	*	*	*	*

\* Available on request

## ASME Class 300 Lbs (PN50)

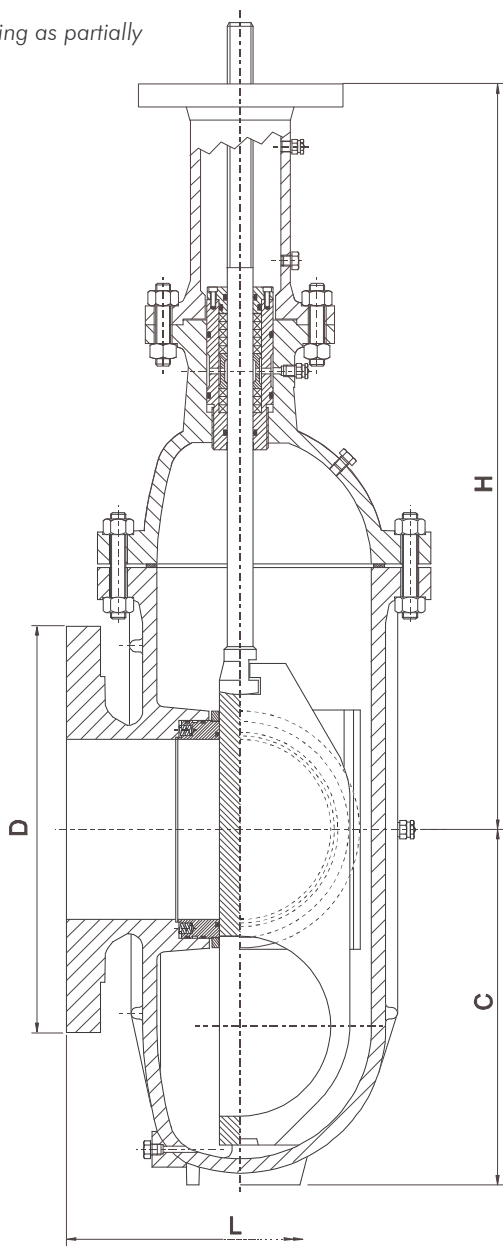
**Through Conduit Gate Valves** are straight-through flow valves which provide positive shutoff, no pressure drop and flow turbulence. Through conduit Gate Valves are bi-directional.

They are recommended for use in a fully open or closed position. Throttling as partially open position promotes erosion, noise and excessive wear.

Sizes: Slab gate 2" to 48" - Expanding gate 2" - 36"

### DESCRIPTION AND FEATURES:

- slab or expanding gate
- zero leakage
- stem packable while in service
- Bolted construction for easy disassembly in the field
- Double block & Bleed
- Spring energized floating seats
- Self relieving seats
- Locking device (available on request)
- Emergency sealing injection system
  
- **Design and Test Specifications**
  - Pipeline steel valves API 6D
  - Fire safe design API 6FA
  - NACE MR 01-75
  - Face-to-face, end-to-end ASME B 16.10
  - End flanges (14" to 24") ASME B 16.5
  - End flanges (24" and larger) MSS-SP-44
  - Weld-ends ASME B 16.25



<b>MAIN DIMENSIONS (mm)</b>																			
<i>(Data of bigger sizes are available on request)</i>																			
DN	6"	8"	10"	12"	14"	16"	18"	20"	22"	24"	26"	28"	30"	32"	36"	38"	40"	42"	48"
<b>L</b>	403	419	457	502	762	838	914	991	1092	1143	1245	1346	1397	*	*	*	*	*	*
<b>C</b>	542	410	510	600	870	934	1005	1010	1169	1248	1326	1385	1473	*	*	*	*	*	*
<b>D</b>	318	381	444	521	584	648	711	775	838	914	972	1035	1092	*	*	*	*	*	*
<b>H</b>	816	860	1080	1240	1370	1522	1670	1795	1963	2081	2228	2365	2502	*	*	*	*	*	*

\* Available on request



## ASME Class 400 Lbs (PN 68)

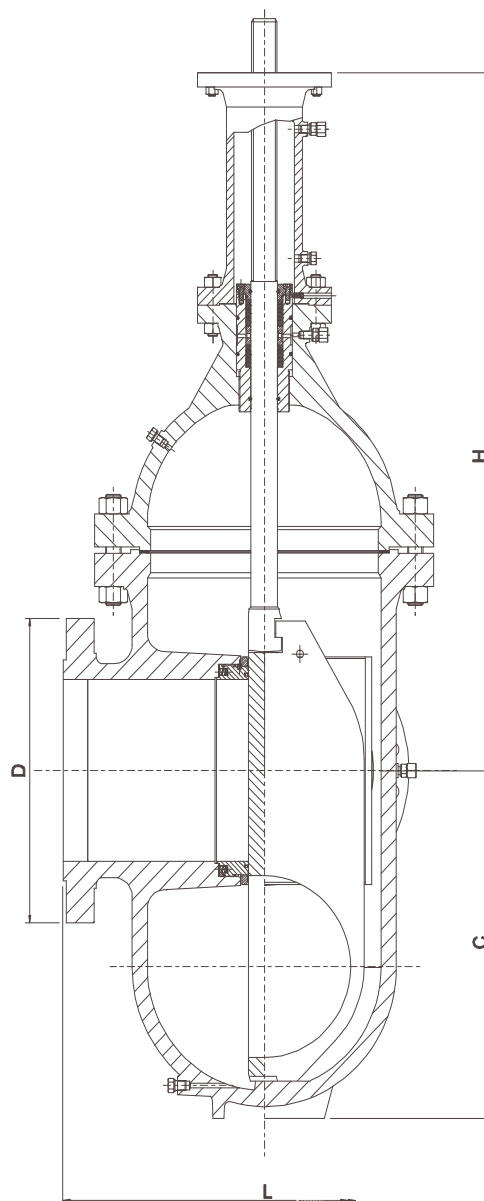
**Through Conduit Gate Valves** are straight-through flow valves which provide positive shutoff, no pressure drop and flow turbulence. Through conduit Gate Valves are bi-directional.

They are recommended for use in a fully open or closed position. Throttling a s partially open position promotes erosion, noise and excessive wear.

Sizes: Slab gate 2" to 48" - Expanding gate 2" - 36"

### DESCRIPTION AND FEATURES:

- slab or expanding gate
- zero leakage
- stem packable while in service
- Bolted construction for easy disassembly in the field
- Double block & Bleed
- Spring energized floating seats
- Self relieving seats
- Locking device (available on request)
- Emergency sealing injection system
  
- **Design and Test Specifications**
  - Pipeline steel valves API 6D
  - Fire safe design API 6FA
  - NACE MR 01-75
  - Face-to-face, end-to-end ASME B 16.10
  - End flanges (14" to 24") ASME B 16.5
  - End flanges (24" and larger) MSS-SP-44
  - Weld-ends ASME B 16.25



<b>MAIN DIMENSIONS (mm)</b>															
<i>(Data of bigger sizes are available on request)</i>															
<b>DN</b>	<b>6"</b>	<b>8"</b>	<b>10"</b>	<b>12"</b>	<b>14"</b>	<b>16"</b>	<b>18"</b>	<b>20"</b>	<b>22"</b>	<b>24"</b>	<b>26"</b>	<b>28"</b>	<b>30"</b>	<b>32"</b>	<b>36"</b>
<b>L</b>	495	597	672	762	826	902	978	1054	1143	1232	1308	1397	*	*	*
<b>C</b>	500	580	512	602	840	737	970	1028	1190	1116	1350	1233	*	*	*
<b>D</b>	318	381	444.5	521	584	648	711	775	838	914	972	1035	*	*	*
<b>H</b>	780	910	1070	1215	1350	1490	1650	1830	2000	2110	2270	2421	*	*	*

\* Available on request

## ASME Class 600 Lbs (PN 100)

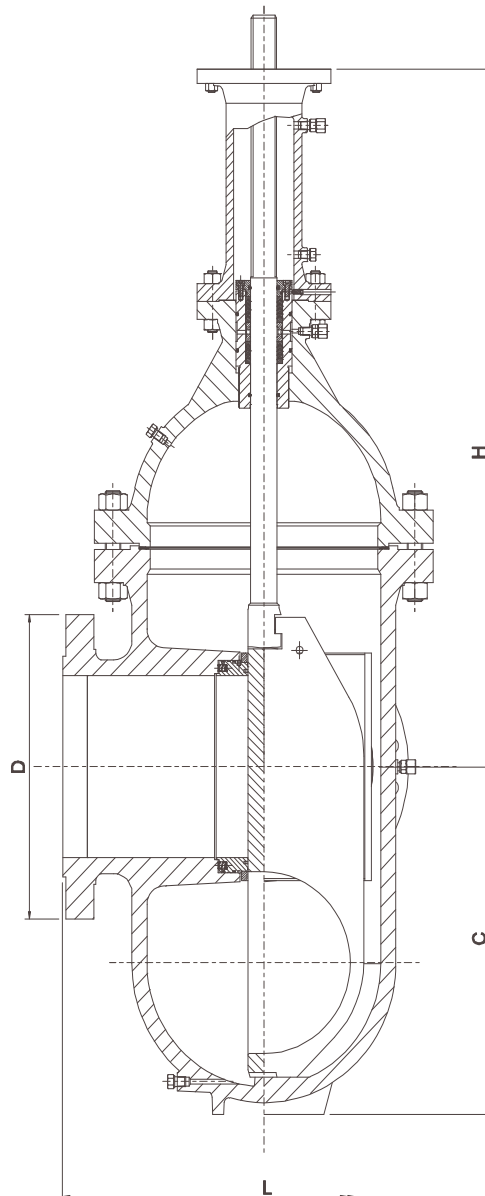
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They are recommended for use in a fully open or closed position. Throttling as partially open position promotes erosion, noise and excessive wear.

Sizes: Slab gate 2" to 48" - Expanding gate 2" - 36"

### DESCRIPTION AND FEATURES:

- slab or expanding gate
  - zero leakage
  - stem packable while in service
  - Bolted construction for easy disassembly in the field
  - Double block & Bleed
  - Spring energized floating seats
  - Self relieving seats
  - Locking device (available on request)
  - Emergency sealing injection system
- **Design and Test Specifications**
    - Pipeline steel valves API 6D
    - Fire safe design API 6FA
    - NACE MR 01-75
    - Face-to-face, end-to-end ASME B 16.10
    - End flanges (14" to 24") ASME B 16.05
    - End flanges (24" and larger) MSS-SP-44
    - Weld-ends ASME B 16.25



<b>MAIN DIMENSIONS (mm)</b>																
<i>(Data of bigger sizes are available on request)</i>																
DN	4"	6"	8"	10"	12"	14"	16"	18"	20"	22"	24"	26"	28"	30"	32"	36"
<b>L</b>	432	559	660	787	838	889	991	1092	1194	1295	1397	1448	1549	*	*	*
<b>C</b>	235	338	430	515	602	660	737	800	950	995	1110	1220	1251	*	*	*
<b>D</b>	273	356	419	508	559	603	686	743	813	870	940	1016	1073	*	*	*
<b>H</b>	610	785	910	1050	1215	1380	1490	1646	1845	2000	2195	2360	2516	*	*	*

\* Available on request

## ASME Class 900 Lbs (PN150)

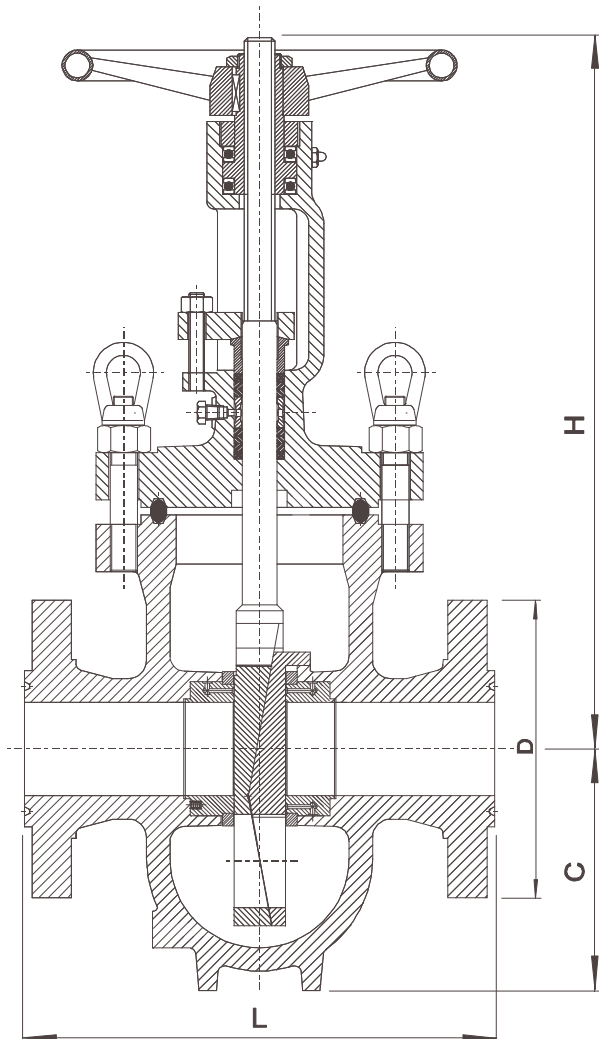
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They are recommended for use in a fully open or closed position. Throttling or partially open position promotes erosion, noise and excessive wear.

Sizes: Slab gate 2" to 24" - Expanding gate 2" - 24"

### DESCRIPTION AND FEATURES:

- slab or expanding gate
- zero leakage
- stem packable while in service
- Bolted construction for easy disassembly in the field
- Double block & Bleed
- Spring energized floating seats
- Self relieving seats
- Locking device (available on request)
- Emergency sealing injection system
- **Design and Test Specifications**
  - Pipeline steel valves API 6D
  - Fire safe design API 6FA
  - NACE MR 01-75
  - Face-to-face, end-to-end ASME B 16.10
  - End flanges (14" to 24") ASME B 16.5
  - End flanges (24" and larger) MSS-SP-44
  - Weld-ends ASME B 16.25



<b>MAIN DIMENSIONS (mm)</b> (Data of bigger sizes are available on request)										
DN	3"	4"	6"	8"	10"	12"	14"	16"	18"	20"
L	384	460	613	740	841	968	1038	1140	1232	1334
C	195	380	564	705	816	840	890	920	1150	1224
D	241	292	381	470	546	610	641	705	787	857
H	578	690	800	950	1080	1240	1476	1522	1770	1974

## ASME Class 1500 Lbs (PN250)

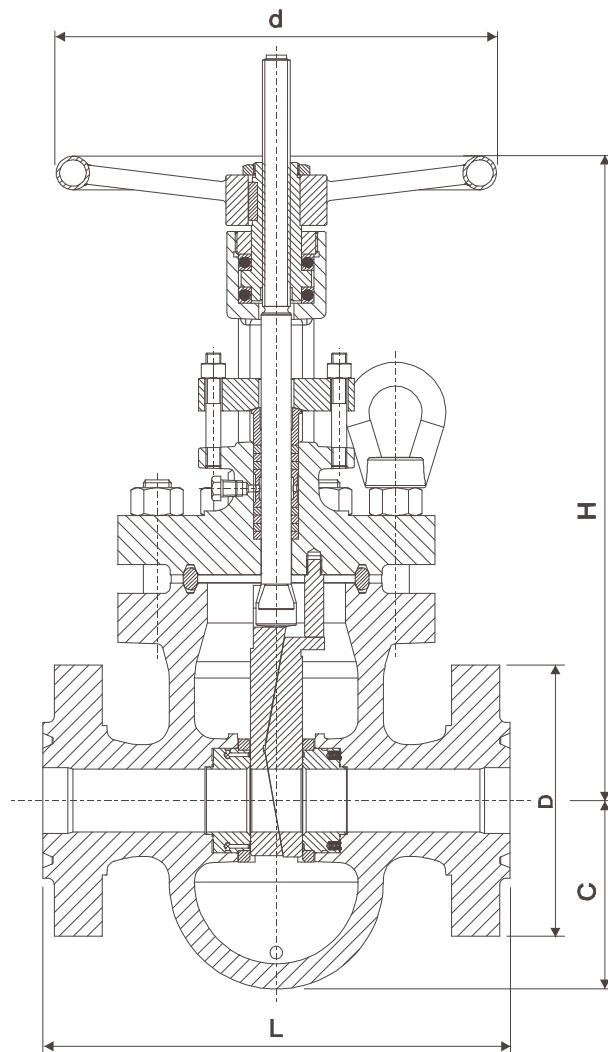
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They are recommended for use in a fully open or closed position. Throttling as partially open position promotes erosion, noise and excessive wear.

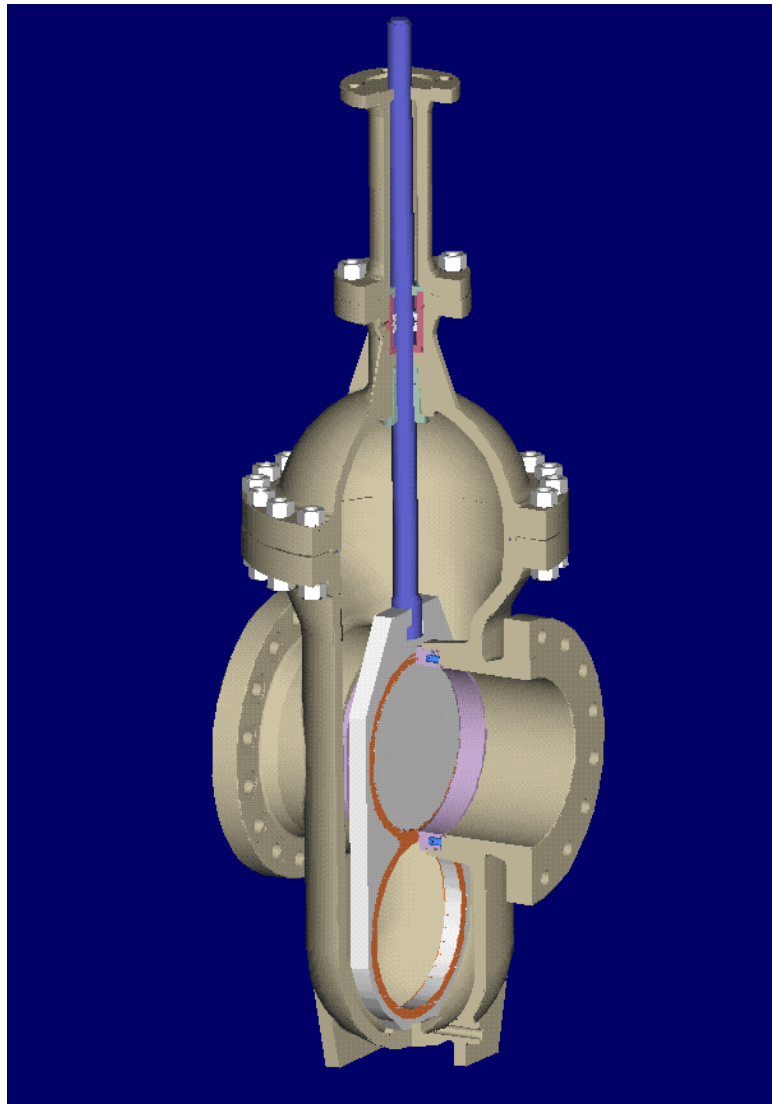
Sizes: Slab gate 2" to 16" - Expanding gate 2" - 16"

### DESCRIPTION AND FEATURES:

- slab or expanding gate
  - zero leakage
  - stem packable while in service
  - Bolted construction for easy disassembly in the field
  - Double block & Bleed
  - Spring energized floating seats
  - Self relieving seats
  - Locking device (available on request)
  - Emergency sealing injection system
- **Design and Test Specifications**
    - Pipeline steel valves API 6D
    - Fire safe design API 6FA
    - NACE MR 01-75
    - Face-to-face, end-to-end ASME B 16.10
    - End flanges (14" to 24") ASME B 16.5
    - End flanges (24" and larger) MSS-SP-44
    - Weld-ends ASME B 16.25



<b>MAIN DIMENSIONS (mm)</b>								
<i>(Data of bigger sizes are available on request)</i>								
<b>DN</b>	<b>2"</b>	<b>4"</b>	<b>6"</b>	<b>8"</b>	<b>10"</b>	<b>12"</b>	<b>14"</b>	<b>16"</b>
<b>L</b>	371	549	711	841	1000	1146	1276	1407
<b>C</b>	150	450	600	756	865	897	919	987
<b>D</b>	216	311	394	483	584	673	749	825
<b>H</b>	513	740	865	1035	1180	1352	1607	1660



For any information please contact:

**SITINDUSTRIE EQUIPMENT Srl – VALVOMETAL**

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<http://www.sitindustrie.com>