



Valves for Ethylene Service

INNOVATIVE TECHNOLOGY





World-Class
Products and Services

Leadership and Experience

DeltaValve's extensive experience in designing and building engineered severe-service valves and flow control equipment has made us a world recognized industry leader.

We have had isolation valves in service for over 16 years, and have established a proven track record of performance.

At DeltaValve we strive to deliver safe and reliable products at the very best value for our customers. Our goal is to be "Best in Class" in all we do.





Ethylene Process Valves

DeltaValve's transfer line and decoking valves for ethylene service offer unmatched features and benefits to our customers.

Metal to metal seating provides consistent longterm isolation and ultra-low steam consumption. These operational advantages result in an extended service life and maintenance free operation from turnaround to turnaround.

This product line is available in industry standard B16.10 sizes and are ASME B16.34 compliant. Our valves are also configured to meet API 600 /API 6D standards and are available in open (on/off) or sealed body cavity (throttling) configurations offering full bi-directional isolation.

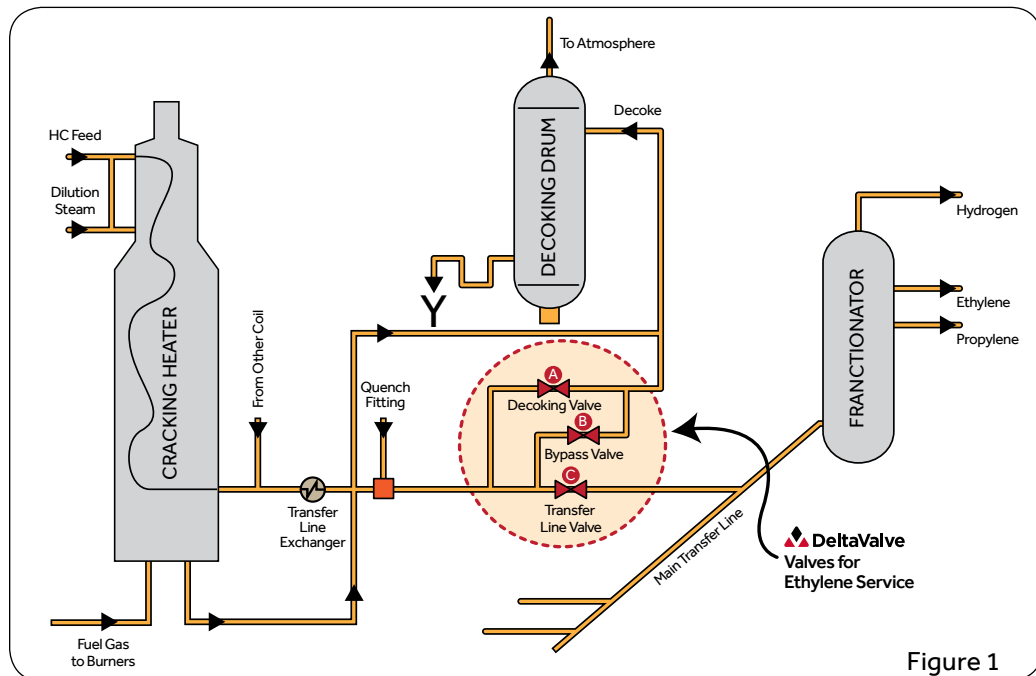


Figure 1

Within the ethylene process, heaters assist the cracking of hydro-carbons. These heaters can experience deposits of coke in the pipework and valves. From time to time these deposits must be removed, ideally without shutting down the process completely.

DeltaValve's product line is designed for use in the **A** decoking, **B** bypass and **C** transfer lines as seen in Figure 1.



Maintenance Free Between Turnarounds

Key Features

- Standard flange mounting per ASME B16.5 and B16.10, flat face or RTJ
- Can be easily modified to custom specifications and specific standards
- Valve body protected from coke accumulation during operation
- Can be installed in any orientation
- Accommodates manual or motorized actuation
- Operating temperature range up to 700°C (1300°F), without cooling or refractory lining
- Hard faced gate and seat assemblies ensure long-term reliability
- External gate position indication

Benefits/Advantages

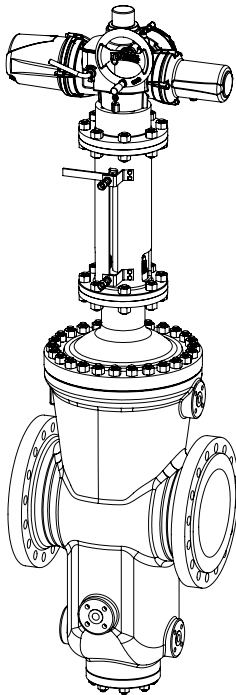
- Designed for maintenance free operation between turnarounds
- Double block-and-purge design utilizes two independent dynamic seats
- Steam purge eliminates all cross valve process leakage
- Rigid valve body prevents high piping loads from affecting valve operation
- Bi-directional flow control allows for process pressure from either direction while maintaining valve seal integrity
- Double live-loaded seats
 - Ground and polished seats provide ultra-tight shut off
 - Seats are in constant contact with the valve gate eliminating coke build up and seat wear
 - Seat assemblies incorporate fully welded bellow seals for extremely low steam consumption
- Single steam purge for simplified piping
- In-line serviceable (internals replaceable without removing body from line)





Designed for Reliable
Long-term Operation

Technical Data



Size:	6 inch to 36 inch* [152 mm to 914 mm]
Pressure Class:	CL150, CL300, CL600
Body Material:	ASME SA217 C12, ASME SA217 C5, ASME SA216 WCB
Seat Material:	ASME SA182 F9, ASME SA217 C12
Gate Material:	ASME SA387 GR 91 CL 2 (Nitrided)
Stem Material:	Nitronic 50 ASME A479 GR (XM-19)
Bolting:	ASME SA193 B16, ASME SA194 GR7
Actuation:	Electric, hydraulic, manual, bare stem
Engineering and ASME Standards B16.5 / B16.47 B16.10 B16.34 B31.3 API 598 API 600	Pipe flange and flanged fittings Face-to-face and end-to-end dimensions of valves Pressure / temperature charts per materials Pipe line specification Valve inspection and testing Steel gate valves
ASME B&PV Code Section II Part D Section VIII Div 1 & 2	Materials of construction Pressure vessel design

Envelope Dimensions – Class 300

Valve Size*	B16.10 F/F A in [mm]	Envelope Dimensions			Weight lb [kg]
		B in [mm]	C in [mm]	D in [mm]	
6 [150]	15.88 [403]	52.1 [1323]	16.7 [423]	13.3 [338]	650 [295]
8 [200]	19.75 [502]	58.1 [1476]	19.8 [503]	16.0 [406]	1000 [454]
10 [250]	22.38 [568]	64.1 [1628]	23.0 [583]	18.7 [475]	1500 [681]
12 [300]	25.5 [648]	70.1 [1781]	26.1 [663]	21.4 [544]	2100 [953]
14 [350]	30.0 [762]	76.1 [1933]	29.3 [743]	24.1 [612]	2800 [1271]
16 [400]	33.0 [838]	82.1 [2085]	32.4 [823]	26.8 [681]	3800 [1725]
18 [450]	36.0 [914]	89.0 [2261]	36.0 [913]	29.5 [749]	5100 [2315]
20 [500]	39.0 [991]	96.2 [2443]	39.5 [1003]	32.5 [826]	6900 [3132]
24 [600]	43.0 [1092]	117.3 [2979]	46.6 [1184]	36.0 [914]	9500 [4312]
30 [750]	55.0 [1397]	132.0 [3353]	56.3 [1429]	44.0 [1118]	14500 [6582]
36 [900]	68.0 [1727]	146.7 [3726]	65.9 [1674]	52.0 [1321]	22000 [9986]

(Refer to Figure 2 on next page)

*Other valve sizes and custom face-to-face dimensions available upon request.
Chart dimensions assume electric actuation.
Dimensions and weights are subject to change.

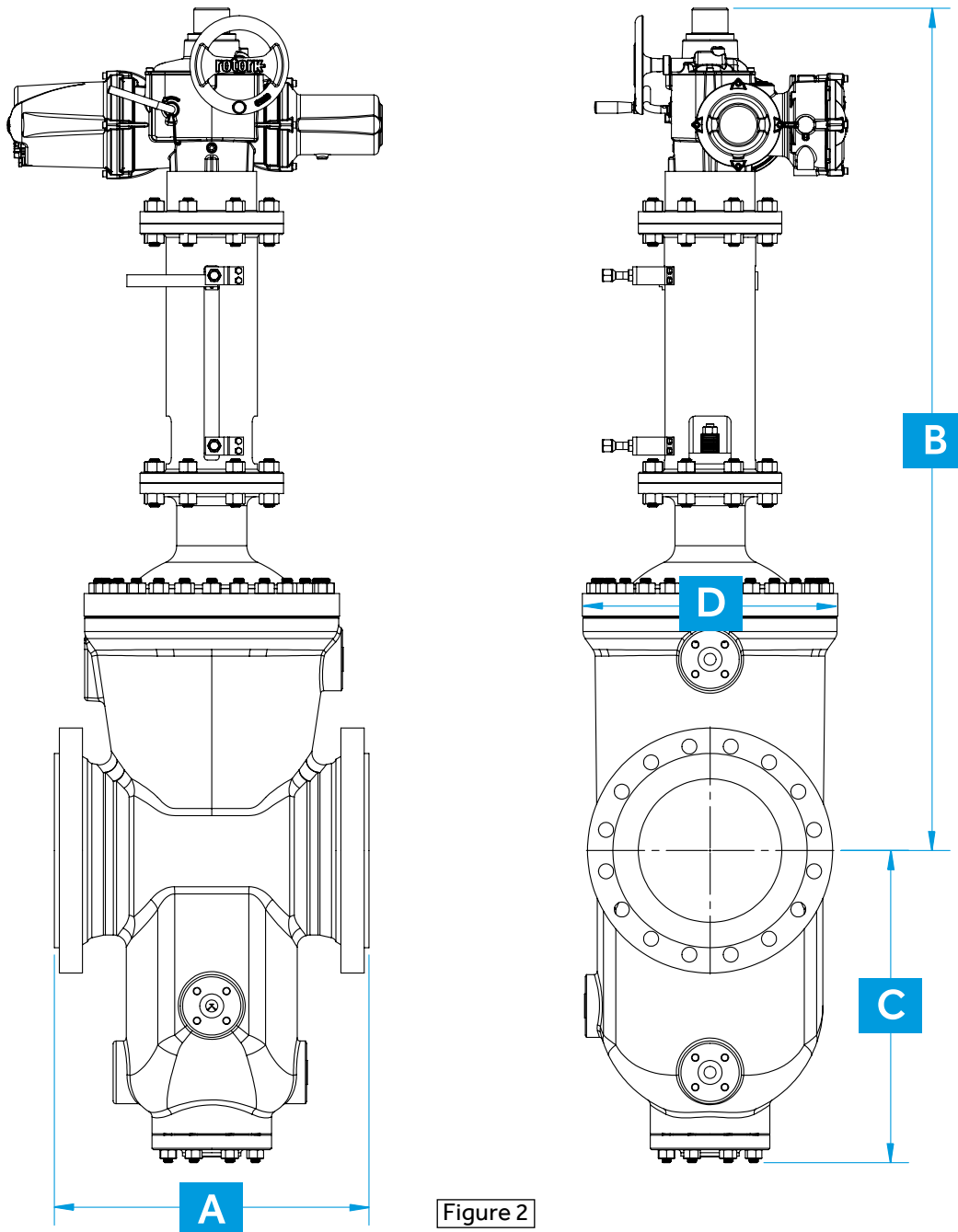


Figure 2



Diagnostics and Maintenance

Diagnostics

- Steam trending diagnostics can be utilized to gauge seat or gate wear and prepare for scheduled maintenance
- Confirmation of positive seat/gate isolation can be achieved

Maintenance

- No maintenance of packing, seat seals, or gate, between turnarounds required
- Actuator stem and stem nut can be replaced without removing the upper valve bonnet





Ultra-tight seal and
low steam consumption

OEM Parts and Service

DeltaValve offers a full line of OEM spare parts for its entire product line. Additionally, DeltaValve's service technicians are available to respond to our customers' needs in a timely and efficient manner. Our network of technicians are highly trained to evaluate, troubleshoot, and resolve issues. They are backed by our engineering group allowing for quick access to technical expertise, drawings, bills of materials, and other relevant data to expedite practical and reliable solutions.

Core services provided by the DeltaValve service team are:

- DeltaValve equipment installations
- Site acceptance tests
- Commissioning supervision
- Site audits
- Turnaround service
- Maintenance and repair
- Equipment rebuilds
- Equipment storage
- Hydraulic flush services
- Electrical loop checks
- On-site training
- Bolt tensioning/torquing
- Valve/equipment maintenance and service

DeltaValve's network of global facilities offer support and technical assistance to our large and growing base of worldwide customers.





Quality Control Quality Assurance

Quality

DeltaValve complies with all aspects of the ISO 9001:2008 certified quality management system, and provides customers with the highest level of quality.

DeltaValve Design Standards

Unheading valves

- ASME and BPVC, Section VIII Div. I and II

Isolation valves

- ASME B16.34

Center feed devices

- ASME B31.3

DeltaValve maintains the following stamps and design certifications:

- ASME
- "U" Stamp, Division I
- "R" Stamp
- National Board Registration

DeltaValve manufactures to the following certifications per international requirements:

- Pressure Equipment Directive (PED) (97/23/EC)
- Canadian Registration Number (CRN)
- TR CU (formerly GOST-R)
- KHK
- Others as required

DeltaValve has experience installing equipment in flameproof/explosion proof, non-incendiary, intrinsically-safe hazardous areas utilizing the following standards:

- IECEx
- InMetro
- NEMA
- PESO
- UL
- TIIS
- ATEX
- KOSHA
- CSA
- JIS
- TR CU
- NEPSI

DeltaValve complies with international certifications and standards, and has unheading valves installed in over 100 refineries in approximately 20 countries around the world.

Quality Assurance Documentation

- ISO 9001:2008 certificate
- Quality assurance manual
- Additional international certifications as required.



Final Assembly and Testing

Our equipment is assembled and tested at our facilities in Houston, Texas and Salt Lake City, Utah. As part of our quality control protocol, each critical component is inspected and reviewed before installation for proper functionality and product quality.



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