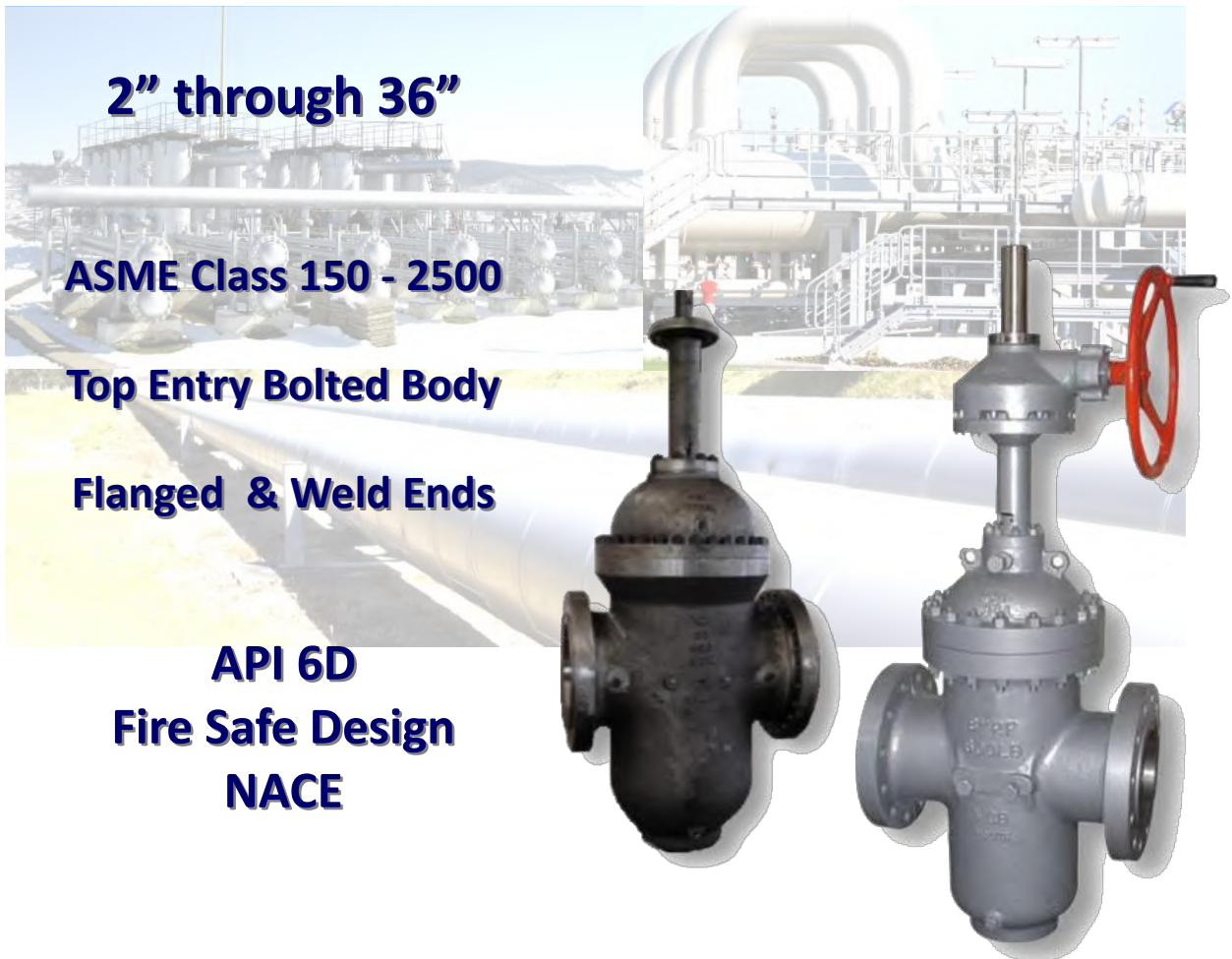


# International Standard Valve, Inc.



## ISV Series GTDS & GTDE

### Slab and Expanding Gate Valves



**2" through 36"**

**ASME Class 150 - 2500**

**Top Entry Bolted Body**

**Flanged & Weld Ends**

**API 6D  
Fire Safe Design  
NACE**



is a registered trademark of International Standard Valve, Inc.

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Bulletin No. ISV-SB1000.1 Issue 05/2013

QUALITY MANAGEMENT SYSTEM  
CERTIFIED BY DNV  
ISO 9001:2008

## ISV Series GTDS and GTDE API 6D THROUGH CONDUIT GATE VALVES

ISV bolted body THROUGH-CONDUIT GATE VALVES are specifically designed to meet the demands of piping services such as crude oil, natural gas, LNG, storage terminals, refined products and other associated gas and liquid transmission pipelines.

ISV's pipeline style gate valves are manufactured in strict accordance to API 6D under ISO 9001 and API Q1 quality systems meeting all applicable industry standards.

### Design Standards and Specifications of products in this bulletin:

API 6D/ISO 14313 – Specification for pipeline valves  
API 607/ISO 10497 – Fire test for soft seated valves  
API 6FA – Specification for fire test for valves  
API Q1 – Specification for quality programs...  
ASME B16.5 – Steel pipe flanges and fittings  
ASME B16.10 – Face to face & end to end dim.  
ASME B16.47 – Large diameter steel flanges: NPS 26–60

ASME B31.1 - Power piping  
ASME B31.3 – Process piping  
ASME B31.4 – Pipeline transportation systems...  
ASME B31.8 – Gas transmission and distribution piping syst.  
ASME B16.25 – Butt welding ends  
NACE MR-01-75 / ISO 15156  
MSS SP-55

### Specifying ISV Through Conduit Gate Valves *Example: ISV figure number GTDEB-060-1310RF-TV-NFG*

Describes an ASME class 600, through-conduit expanding disc gate valve, bolted body design, raised face flange ends, with ASTM Gr. WCC body material, carbon steel + Electroless Nickel Plated trim, PTFE seat seals, Viton o-ring stem seals, meets NACE, is fire safe tested and is gear operated.

<b>G</b>	<b>T</b>	<b>D</b>	<b>E</b>	<b>B</b>		-	<b>0</b>	<b>6</b>	<b>0</b>		-	<b>1</b>	<b>3</b>	<b>1</b>	<b>0</b>	<b>R</b>	<b>F</b>		-	<b>T</b>	<b>V</b>		-	<b>N</b>	<b>F</b>	<b>G</b>
<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>				<b>5</b>					<b>6</b>	<b>7</b>	<b>8</b>						<b>9</b>	<b>10</b>			<b>11</b>	<b>12</b>	

1 Valve Type		2 Valve Style		3 Body Design		4 Series Identifier		5 Pressure Rating		6 Body Material	
Code	Design	Code	Description	Code	Bore	Code	Item ID	Code	Rating	Code	Material
CS	Swing Check	AW	API 6A Wedge	B	Bolted	Blank	N/A	15	Class 150	10	Carbon Steel
GT	Gate	DE	API 6D Expanding			U	USA Production	30	Class 300	11	A105N
		DS	API 6D Slab					60	Class 600	12	WCB
		DW	API 6D Wedge					90	Class 900	13	WCC
								150	Class 1500	20	Low Temp C.S.
								250	Class 2500	21	A105N/LF2
								A02	API 6A 2000	22	LF2
								A05	API 6A 5000	24	LCC
								A10	API 6A 10000	30	Stainless Steel
								A15	API 6A 15000	34	304SS/CF8
										36	316SS/CF8M

7 Trim Material		8 End Connections		9 Seat		10 Seals		11 Features		12 Operator	
Code	Material	Code	End type	Code	Material	Code	Material	Code	Description	Code	Description
10	C.S.+ENP	RF	Flanged RF (B16.5)	E	EPDM	E	EPDM	NF	NACE Compliant	A	Actuated
20	Low Temp. C.S.	RFA	Flanged RF (B16.47-A)	G	Graphite	G	Graphite		Fire Safe Design	B	Bare Steam
30	Stainless Steel	RFB	Flanged RF (B16.47-B)	H	HNBR	H	HNBR		NACE Compliant	C	Chain Wheel
34	304SS/CF8	RJ	Flanged RTJ (B16.5)	K	Kel-F	K	Kel-F	WF	Non Fire Safe	G	Manual Gear
36	316SS/CF8M	RJA	Flanged RTJ (B16.47-A)	L	Low Temp. (-50F) elastomeric	L	Low Temp. (-50F) elastomeric		Without NACE	W	Hand wheel
51	F51 / 318	RJB	Flanged RTJ (B16.47-B)	N	Nylon	O	Neoprene		Fire Safe Design		
61	410SS	FF	Flanged FF	P	PEEK	T	PTFE	WW	Without NACE		
		WW	WE x WE	T	PTFE	V	Viton		Non Fire Safe		
		WF	RF x WE	V	Viton	Z	Special				
		WJ	RTJ x WE	Z	Special	8	PEEK-Lip seal				
		HB	Hub Ends			9	PTFE-Lip Seal				

## ISV Series GTDS and GTDE API 6D THROUGH CONDUIT GATE VALVES

### *Production photos*



**ISV Series GTDS and GTDE** API 6D through-conduit gate valves are produced to meet or exceed applicable industry standards —providing high product reliability at globally competitive cost of ownership.

All valves are manufactured under documented quality processes: ISO 9001, API 6D and API Q1.

### *Quality Systems and Quality Assurance*

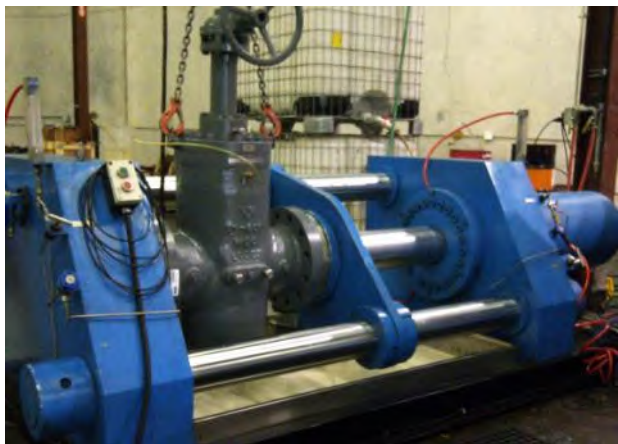
The ISV Series GTDS & GTDE production facility's quality management system is maintained at all levels of production in accordance with ISO 9001 and API Q1.

Each valve undergoes critical inspections at ISV in Stafford including secondary pressure testing.

Each valve is uniquely serialized providing traceability of key production milestones. Each valve carries the API 6D monogram.

Material test reports including chemical, mechanical characteristics of the materials and pressure test results are available with each valve per EN.10204 type 3.1.

ISV Series GTDS & GTDE API 6D through-conduit gate valves undergoes a subsequent series of inspections and tests at the ISV Stafford, Texas facility—including pressure testing & functional testing.



*Pressure test inspections at ISV*

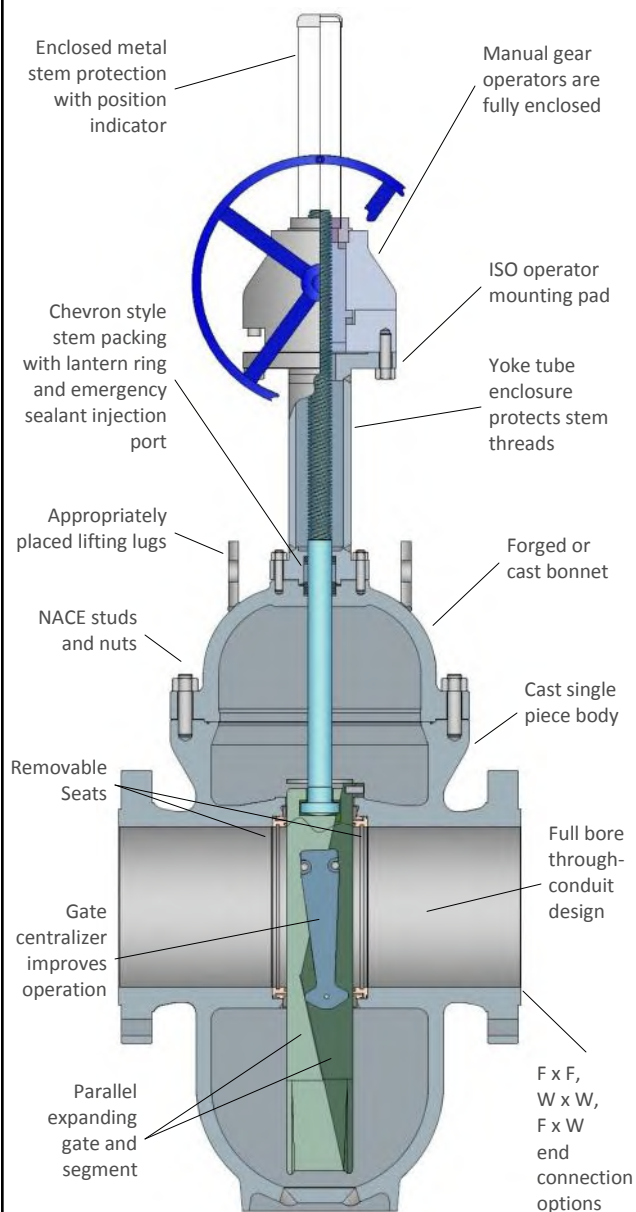
## ISV Series GTDS and GTDE API 6D THROUGH CONDUIT GATE VALVES

Applicable Design Standards	
Basic Design	API 6D
Pressure Test	API 6D
End to End	ASME B16.10
	API 6D
Flange Ends	ASME B16.5
	ASME B16.47
Weld Ends	ASME B16.25



Product Certifications
API 6D
API 6FA

### STANDARD FEATURES:



#### Typical Configuration

Size 20" flanged x flanged Expanding Disc Gate Valve is shown.

- Top entry bolted body construction provides in-line maintenance.
- Single piece cast center body section provides strength in resisting pipeline bending.
- Expanding parallel disc design provides tight mechanical seal regardless of service pressure variations.
- Full bore through-conduit design has same pressure drop of equivalent pipe lengths and additionally allows for a variety of pipe pigging operations.
- Fully enclosed stem / yoke tube with position indicator.
- Rugged polymeric seat inserts.
- Block and Bleed capability.
- Body plug ports for configurable external body cavity over-pressure relief systems.
- Emergency sealant injection system.
- Fire-tested to API 6FA.
- NACE compliant materials are standard unless specified
- Bi-directional with preferred flow direction

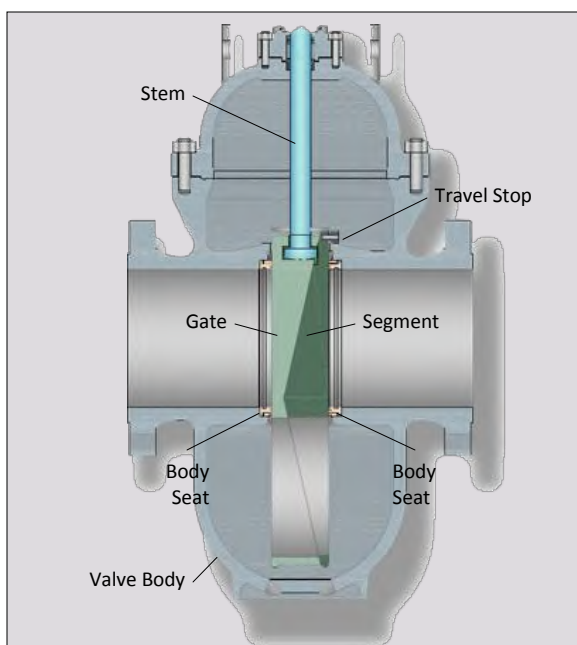


ISV API 6D Gate Valve <i>Production Range</i> <i>Body size (inches)</i>														
Legend: <i>S = Slab Gate</i> <i>E = Expanding Gate</i> <i>* = Special Order Expanding Gate</i>														
ASME CLASS	2	3	4	6	8	10	12	14	16	18	20	24	30	36
150	S	S	S	S	S	S	S	S	S	S	S	S	S	S
300	S, E	S, E	S, E	S, E	S, E	S, E	S, E	S, E	S, E	S, E	S, E	S, E	S, E	S, E
600	S, E	S, E	S, E	S, E	S, E	S, E	S, E	S, E	S, E	S, E	S, E	E	E	E
900	S, E	S, E	S, E	S, E	S, E	S, E	S, E	E	E	E	E	E	-	-
1500	*	*	*	*	*	*	*	-	-	-	-	-	-	-
2500	*	*	*	*	-	-	-	-	-	-	-	-	-	-

## SEATING DESIGN FEATURES

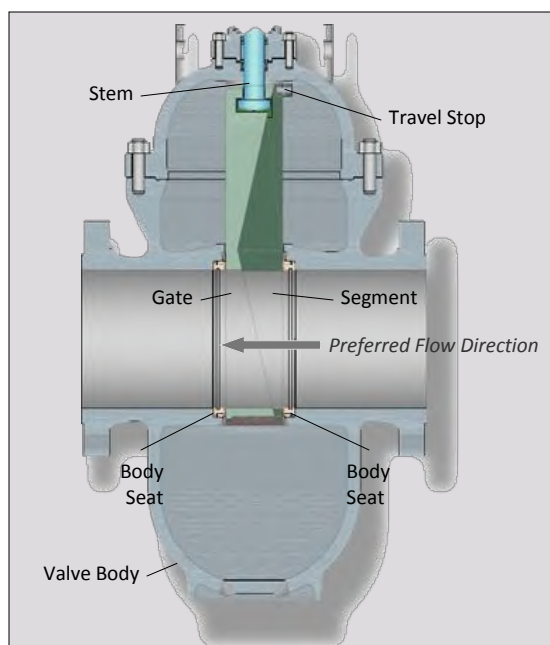
### *Expanding gate seating functionality:*

*ISV parallel expanding gate design achieves tight mechanical seal under variations in the line pressures by providing opposing gate forces to the upstream and downstream parallel seats at the end of the open and closed position. Seating force is achieved via expansion of the gate and gate segment at the mating wedged surfaces.*



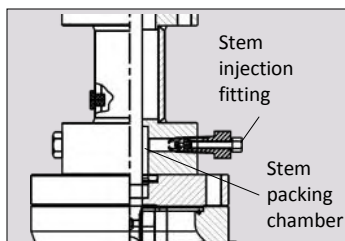
**CLOSED POSITION SEAT SEAL**

In the closed position the segment travel is terminated with a travel stop and the main gate wedges with the segment in the final travel to facilitate mechanical assembly expansion providing a reliable seat seal under dynamic line pressures.



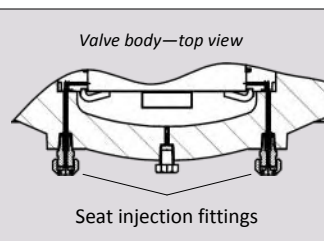
**FULLY OPEN POSITION**

Segment travel stop in the open position provides precise port opening with the valve bore to facilitate through-conduit I.D. internals while the gate wedges to complete bore isolation from the body cavity.



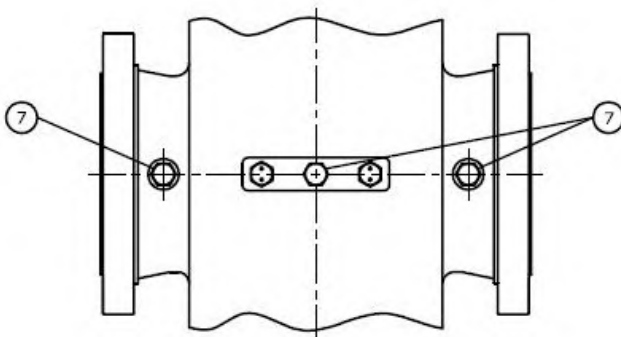
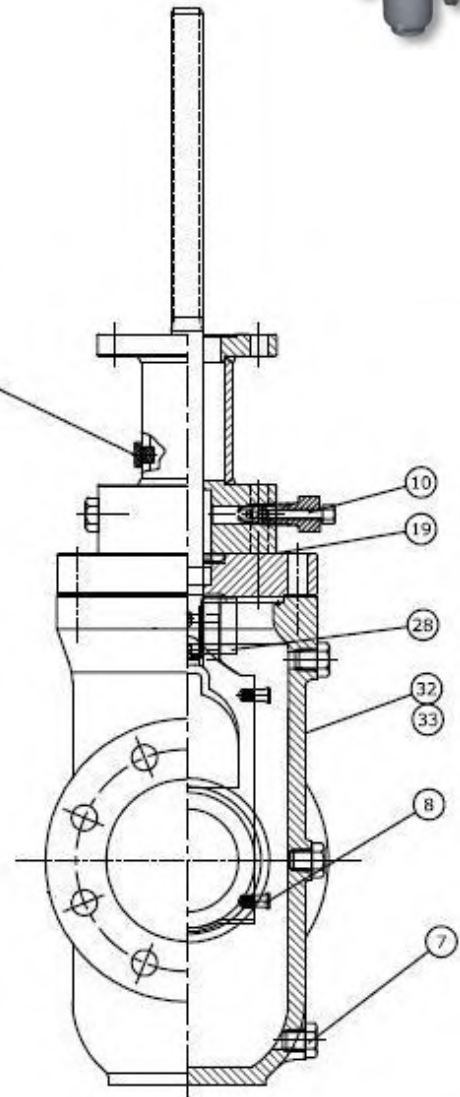
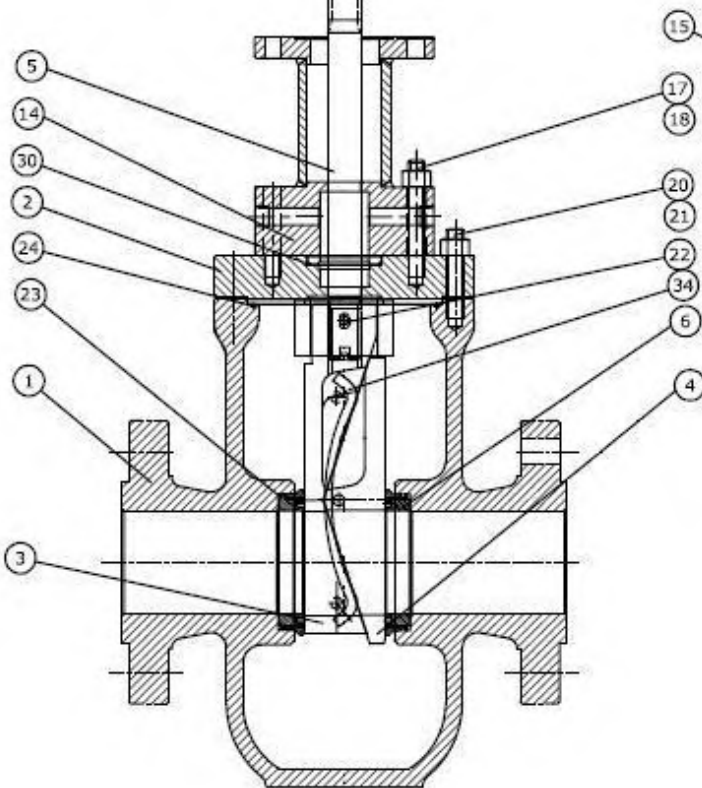
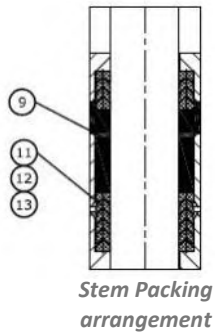
### **Secondary stem and seat injection system**

*ISV's parallel expanding gate valve standard design contain secondary seat and stem injection port to facilitate emergency sealing when needed until proper maintenance or repair can be performed.*

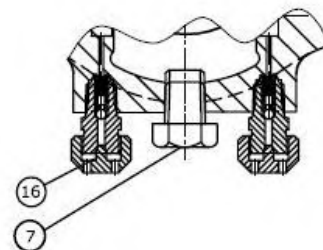


# Standard Materials - Series GTDE (Expanding Gate)

4" size and smaller



Front fitting bosses view



Fittings & plugs—Top view

## Standard Materials - Series GTDE (Expanding Gate)

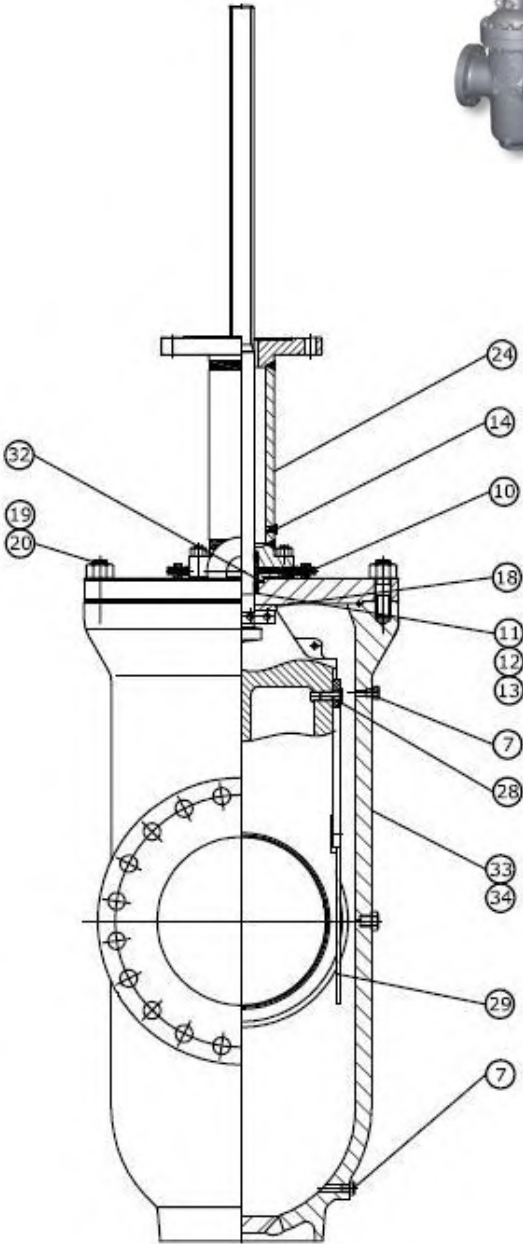
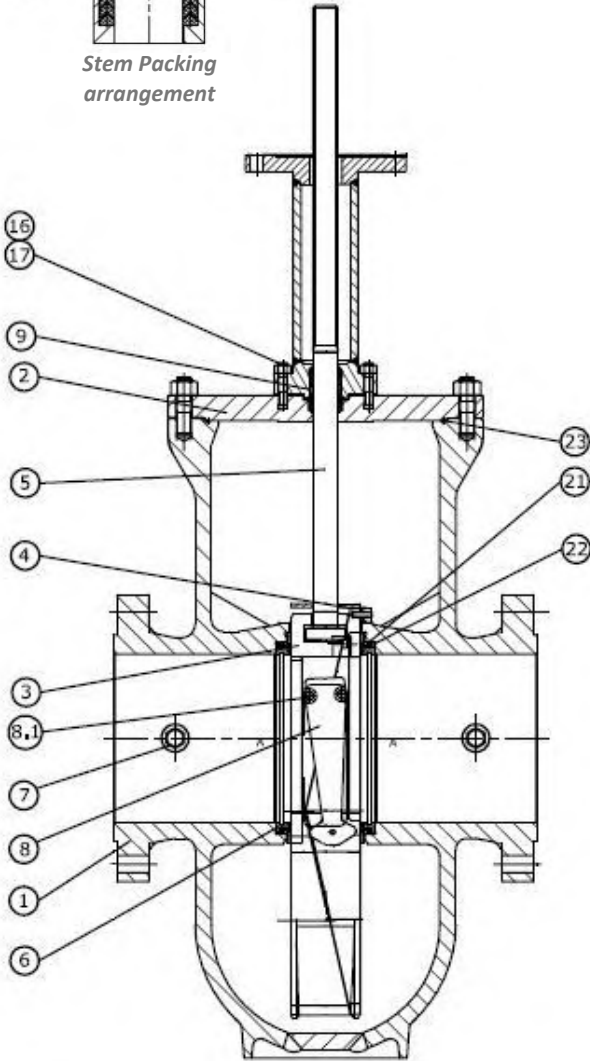
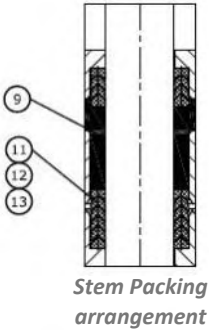
Item No.	Part Description	Materials <i>(Other materials are available on request)</i>	
		<i>Oil &amp; Gas (-20F to 250F) Service</i>	<i>Low Temp (-50F to 250F) Service</i>
1	Body	WCC	LCC
2	Bonnet	A516 Gr.70	LF2
3	Major Gate	WCC+ENP	LCC+ENP
4	Segment Gate	WCC+ENP	LCC+ENP
5	Stem	CS+ENP / 410SS / 17-4PH	LT-CS+ENP / XM19 / 17-4PH
6	Seat	A105+ENP+RPTFE	LF2+ENP+RPTFE
7	Plug	CS	LT-CS
8	Spring Pin	410SS	410SS
9	Stem Sealant	synthetic polymer	synthetic polymer
10	Packing Fitting	A182-F6 or SS	SS
11	Packing Ring - Female	RPTFE	RPTFE
12	Packing Ring - Vee	RPTFE	RPTFE
13	Packing Ring - Male	RPTFE	RPTFE
14	Yoke Tube/Gland Assembly	A105	LF2
15	Plug	Plastic	Plastic
16	Grease Fitting	SS	SS
17	Bolt	A193 B7M	A320 L7M
18	Nut	A194 2HM	A194 7M
19	Gasket	Rubber Fiber	LT-Rubber Fiber
20	Bolt	A193 B7M	A320 L7M
21	Nut	A194 2HM	A194 7M
22	Hinge Pin	A182-F6 or SS	SS
23	O-Ring	Viton	LT-Viton
24	O-Ring	Viton	LT-Viton
28	Sleeve	SS	SS
30	O-Ring	Viton	LT-Viton
31	Gasket	Rubber Fiber	LT-Rubber Fiber
32	Name Plate	SS	SS
33	Rivet	SS	SS
34	Bow Spring	45MN	45Mn
*	Stem Protector (not shown)	CS	CS

*Note: For product quality improvements, designs and materials are subject to change without notice.*

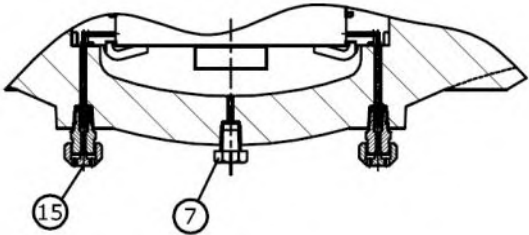
**Part descriptions and materials on this page correspond to the drawing views on the adjacent page.**

# **Standard Materials - Series GTDE (Expanding Gate)**

*6" size and larger*



*Fittings & plugs—Top view*





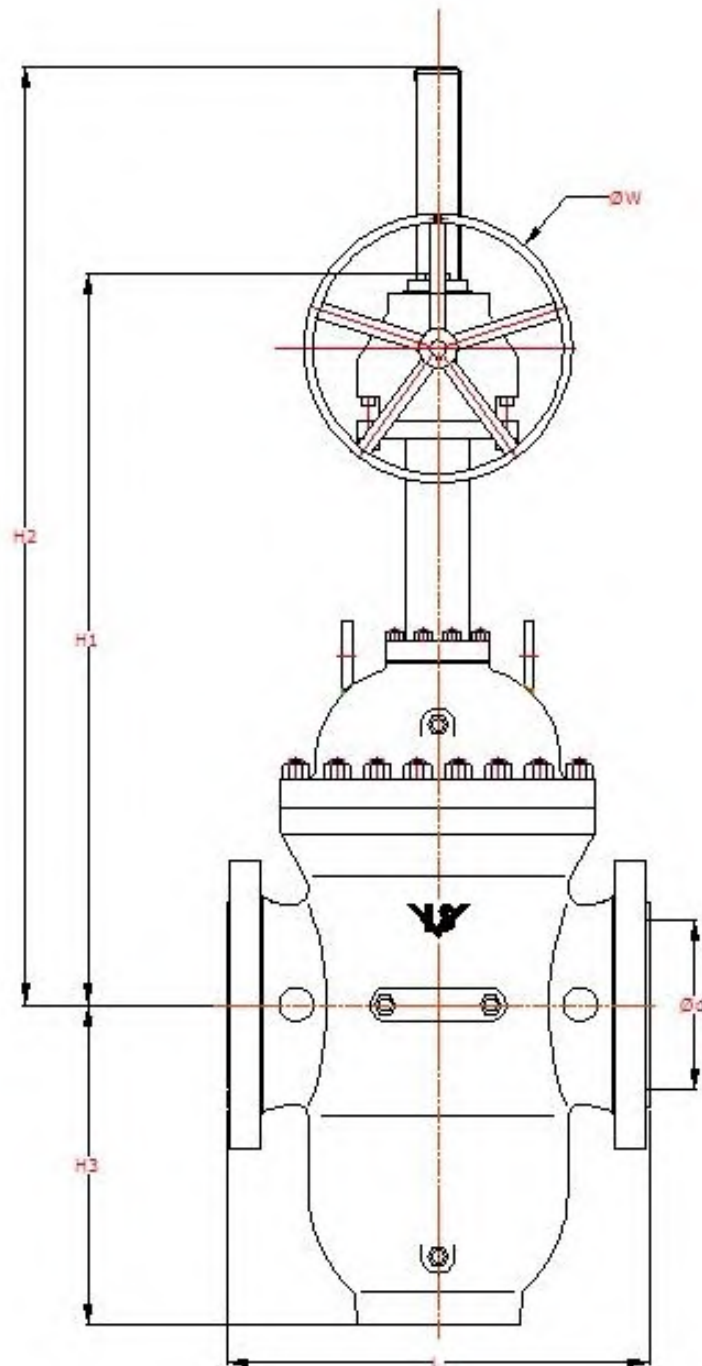
## Standard Materials - Series GTDE (Expanding Gate)

Item No.	Part Description	Materials <i>(Other materials are available on request)</i>	
		<i>Oil &amp; Gas (-20F to 250F) Service</i>	<i>Low Temp (-50F to 250F) Service</i>
1	Body	WCC	LCC
2	Bonnet	A105	LF2
3	Major Gate	WCC+ENP	LCC+ENP
4	Segment Gate	WCC+ENP	LCC+ENP
5	Stem	CS+ENP / 410SS / 17-4PH	LT-CS+ENP / XM19 / 17-4PH
6	Seat	A105+ENP+RPTFE	LF2+ENP+RPTFE
7	Plug	CS	LT-CS
8	Guide Pad	CS+ENP	LT-CS+ENP
8.1	Guide Pad Pin	410SS	410SS
9	Stem Sealant	synthetic polymer	synthetic polymer
10	Packing Fitting	A182-F6 or SS	SS
11	Packing Ring - Female	RPTFE	RPTFE
12	Packing Ring - Vee	RPTFE	RPTFE
13	Packing Ring - Male	RPTFE	RPTFE
14	Plug	Plastic	Plastic
15	Grease Fitting	SS	SS
16	Bolt	A193 B7M	A320 L7M
17	Nut	A194 2HM	A194 7M
18	Holding Ring	410SS	410SS
19	Bolt	A193 B7M	A320 L7M
20	Nut	A194 2HM	A194 7M
21	O-Ring	Viton	LT-Viton
22	O-Ring	Viton	LT-Viton
23	O-Ring	Viton	LT-Viton
24	Yoke Tube Assembly	CS	LT-CS
28	Pin	F6	SS
29	Gate Guide	CS+ENP	LT-CS+ENP
32	Gasket	PTFE	PTFE
33	Name Plate	SS	SS
34	Rivet	SS	SS
*	Stem protector (not shown)	CS	CS

*Note: For product quality improvements, designs and materials are subject to change without notice.*

**Part descriptions and materials on this page correspond to the drawing views on the adjacent page.**

## Dimensional Data- Series GTDE (Expanding Gate)



## Dimensional Data- Series GTDE (Expanding Gate)

NPS	Class 300 (inches)					
	d	L	H1	H2	H3	W
2"	1.93	8.50	14.69	19.37	3.94	9.84
3"	2.91	11.14	24.49	28.15	7.24	9.84
4"	3.94	12.01	26.22	30.98	7.48	11.81
6"	5.91	15.87	34.45	41.26	12.80	17.72
8"	7.91	16.50	38.62	47.24	15.87	19.69
10"	9.92	17.99	44.69	57.48	19.37	23.62
12"	11.93	19.76	45.47	60.24	22.48	25.59
14"	13.15	30.00	46.65	63.39	25.79	29.53
16"	15.16	32.99	68.43	84.65	28.58	25.59
18"	17.17	35.98	72.83	90.94	31.89	18.11
20"	19.17	39.02	81.65	102.56	35.39	18.11
24"	23.19	45.00	94.29	107.13	41.77	18.11
30"	28.94	55.00	102.60	133.94	53.35	18.11
36"	34.41	67.99	121.26	159.45	59.45	23.62

NPS	Class 600 (inches)					
	d	L	H1	H2	H3	W
2"	1.93	11.50	15.47	20.28	4.25	11.81
3"	2.91	14.02	24.80	28.27	7.56	11.02
4"	3.94	17.01	26.22	30.98	7.87	15.75
6"	5.91	22.01	32.91	39.57	12.68	19.69
8"	7.91	25.98	38.62	47.24	16.46	22.05
10"	9.92	30.98	44.09	54.72	20.00	17.72
12"	11.93	32.99	50.98	63.78	23.07	23.62
14"	13.15	35.00	57.87	72.05	25.83	23.62
16"	15.16	39.02	61.61	78.15	29.21	23.62
18"	17.17	42.99	68.70	80.39	32.80	18.11
20"	19.17	47.01	77.36	98.23	35.94	18.11
24"	23.19	55.00	95.08	120.16	42.76	27.95
30"	28.94	65.00	107.32	138.27	51.97	35.43
36"	34.41	74.02	123.50	165.08	60.24	35.43

NPS	Class 900 (inches)					
	d	L	H1	H2	H3	W
2"	1.93	14.49	13.19	18.43	4.92	11.81
3"	2.91	15.00	25.39	29.06	8.46	11.81
4"	3.94	17.99	26.22	30.98	9.06	15.75
6"	5.91	24.02	32.91	39.57	13.11	19.69
8"	7.91	29.02	38.62	47.24	17.05	22.05
10"	9.92	32.99	44.09	54.72	20.00	18.11
12"	11.93	37.99	50.98	63.78	23.86	18.11
14"	12.68	40.51	58.27	72.44	26.57	18.11
16"	14.69	44.49	62.40	78.35	29.72	18.11
20"	18.54	52.01	77.76	98.62	36.54	18.11
24"	22.44	60.98	89.37	114.37	43.62	18.11

*The dimensions on this page correspond to the drawing view on the adjacent page.*



**ISV — Stafford, Texas**



## OTHER ISV PRODUCTS



*Oil & Gas Floating Ball valves*



*Trunnion mounted Ball valves*

**Contact Sales Representative:**

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