

Gate Valve

## ECOLINE GTF 800

Class 800  
NPS ½"-2"  
Forged Steel  
Bolted Bonnet  
Threaded Ends or  
Socket Weld Ends

### Type Series Booklet



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Type Series Booklet ECOLINE GTF 800

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## Gate Valves

### Gate Valves with Bolted Bonnet to ANSI/ASME

## ECOLINE GTF 800



#### Main applications

- Boiler feed applications
- Petrochemical industry
- Pipelines and tank farms
- Refineries
- Process engineering

#### Fluids handled

- Steam
- Fluids containing gas
- Gas
- Hot water
- Feed water

#### Operating data

Operating properties

Characteristic	Value
Nominal pressure	Class 800
Nominal size	NPS ½" - 2"
Max. permissible pressure	141 bar / 2000 PSI
Max. permissible temperature	816 °C / 1500 °F

Selection as per pressure/temperature ratings (⇒ Page 4)

#### Body materials

Overview of available materials

Material	Temperature limit
ASTM A 105	Up to 427 °C / 800 °F
ASTM A 182 F11	Up to 593 °C / 1100 °F

Material	Temperature limit
ASTM A 182 F22	Up to 593 °C / 1100 °F
ASTM A 182 F304	Up to 816 °C / 1500 °F
ASTM A 182 F316	Up to 816 °C / 1500 °F
ASTM A 182 F304L	Up to 427 °C / 800 °F
ASTM A 182 F316L	Up to 450 °C / 850 °F

Other materials on request.

#### Design details

##### Design

- Gate valve to API 602
- Tested to API 598
- Body made of forged steel
- Bolted bonnet
- Outside screw
- Outside yoke
- Non-rotating stem
- Stem sealed by gland packing
- Non-rising handwheel
- Reduced bore
- Two-piece self-aligning gland follower
- Graphite gland packing
- Stem with burnished shank
- Fully confined bonnet gasket
- Back seat
- Solid wedge
- The valves satisfy the safety requirements of Annex I of the European Pressure Equipment Directive 97/23/EC (PED) for fluids in Groups 1 and 2.
- The valves do not have a potential internal source of ignition and can be used in potentially explosive atmospheres, Group II, category 2 (zones 1+21) and category 3 (zones 2+22) to ATEX 94/9/EC.

#### Variants

- Seal-welded body/bonnet joint
- Full bore
- Hard-faced back seat
- Extended bonnet
- Locking device
- Position indicator
- Electric actuators
- Butt weld ends
- NACE standard
- Other threaded ends or butt weld ends to ASME B16.25
- Other trims

#### Product benefits

Long gland life and high functional reliability

- Stem with shank burnished to a surface finish of 0.2 µm for reduced friction, lower actuating torque and improved sealing to atmosphere.
- Packing end rings enable higher compressive force by gland follower and prevent extrusion of middle graphite packing rings.

- Two-piece self-aligning gland follower prevents distortion on stem surface caused by improper assembly.

**Reliable sealing and longer service life**

- Hard-faced body seat and solid wedge seat made of wear-resistant and corrosion-proof materials for handling all kinds of corrosive and erosive fluids.
- Male/female joint between body and bonnet prevents excessive compression of fully confined gasket, resulting in longer gasket life and improved sealing performance.

**Additional safety and blow-out protection**

- Standard metal back seat prevents blow-out of stem and other internal components from the valve body and bonnet as a result of fluid pressure inside the valve body.

**Versatile application**

- Stem nut made of chrome nickel steel is suitable for numerous applications, particularly fluids which must not come into contact with component materials containing copper.

**Extended maintenance-free service life**

- Wear allowance higher than specified in relevant standard, for substantially increased service life.
- Hard-facing applied to wedge and seat rings by deposit welding provides extra wear allowance and ensures reliable long-term sealing even with frequent opening/closing cycles.

**Related documents**

- Gate valve, type ECOLINE GTF 150-600, see type series booklet 7361.11
- Operating manual 7361.81

**On all enquiries/orders please specify**

- Type
- Class
- Nominal size
- Pressure rating
- Temperature rating
- Differential pressure
- Fluid handled
- Material
- Trim material (API trim number)
- Line connection
- Reduced or full bore
- Variants
- Number of type series booklet

**Pressure/temperature ratings**

Permissible operating pressures in bar at temperatures in °C (to ASME B16.34)

Class	Material	0 to 38	93	149	204	260	316	343	371	399	427	454	482	510	538	566	593	621	649	677	704	732	760	788	816
800	A 105	136,0	124,8	120,5	116,4	110,9	104,5	101,1	97,4	93,2	75,7														
800	A 182 F11 <sup>1)</sup>	137,9	137,9	132,7	127,4	122,2	111,2	108,1	104,5	97,8	93,4	89,5	82,7	58,6	39,8	26,4	17,7								
800	A 182 F304 <sup>2)</sup>	132,4	110,3	98,9	91,4	85,5	81,2	79,4	77,6	76,0	74,5	72,9	71,5	70,2	65,3	59,8	47,2	37,7	30,3	24,5	20,8	17,1	13,8	10,7	7,7
800	A 182 F22	137,9	137,9	133,9	129,6	122,2	111,2	108,1	104,5	97,8	93,4	89,5	82,7	70,7	49,1	32,2	20,2								
800	A 182 F316 <sup>2)</sup>	132,4	114,0	102,9	94,3	87,9	82,9	81,2	80,0	78,5	77,6	76,9	76,3	71,2	66,7	66,2	56,1	43,6	34,0	27,0	21,5	17,7	13,8	10,7	7,7
800	A 182 F304L	110,3	94,0	83,9	77,2	72,3	68,4	67,1	66,2	64,9	63,4														
800	A 182 F316L	110,3	94,0	83,9	77,2	72,3	68,4	67,1	66,2	64,9	63,4	62,2													

Permissible operating pressures in PSI at temperatures in °F (to ASME B16.34)

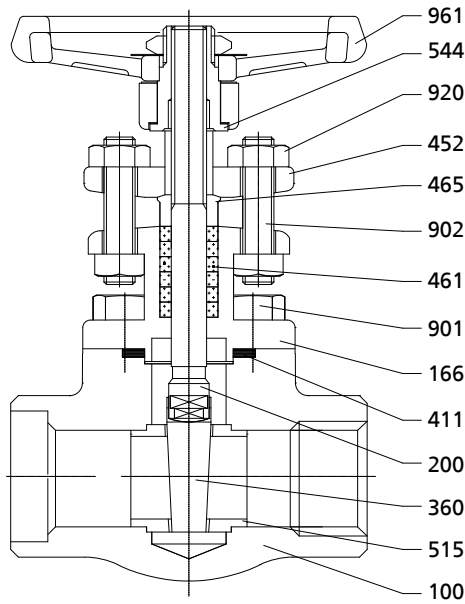
Class	Material	32 to 100	200	300	400	500	600	650	700	750	800	850	900	950	1000	1050	1100	1150	1200	1250	1300	1350	1400	1450	1500
800	A 105	1973	1810	1747	1688	1608	1515	1467	1413	1352	1098														
800	A 182 F11 <sup>1)</sup>	2000	2000	1925	1848	1773	1613	1568	1515	1418	1355	1298	1200	850	577	383	257								
800	A 182 F304 <sup>2)</sup>	1920	1600	1435	1325	1240	1178	1152	1125	1102	1080	1057	1037	1018	947	867	685	547	440	355	302	248	200	155	112
800	A 182 F22	2000	2000	1942	1880	1773	1613	1568	1515	1418	1355	1298	1200	1025	712	467	293								
800	A 182 F316 <sup>2)</sup>	1920	1653	1493	1368	1275	1203	1178	1160	1138	1125	1115	1107	1032	968	960	813	632	493	392	312	257	200	155	112
800	A 182 F304L	1600	1363	1217	1120	1048	992	973	960	942	920														
800	A 182 F316L	1600	1363	1217	1120	1048	992	973	960	942	920	902													

**Test pressures**

Test	Test medium	Class 800	
		bar	psi
Shell	Water	205,1	2975
Leak test (back seat)		149,8	2173
Leak test (seat)		149,8	2173
Leak test (seat)	Air	5,5	80

1) Use normalised and tempered materials only.  
2) At temperatures over 538 °C (1000 °F), use only when carbon content is 0.04% or higher.

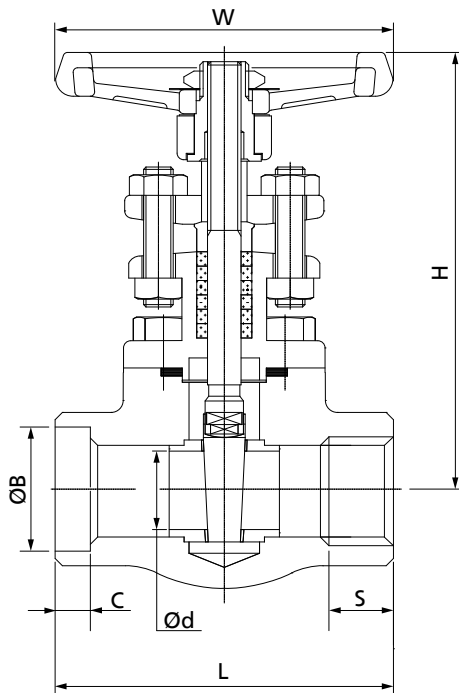
**Materials**



Overview of available materials

Part No.	Description	Material				
		A 105 Trim 8	A 182 F11 Trim 5	A 182 F22 Trim 5	A 182 F304 Trim 2	A 182 F316 Trim 10
100	Body	A 105	A 182 F11	A 182 F22	A 182 F304	A 182 F316
166	Yoke	A 105	A 182 F11	A 182 F22	A 182 F304	A 182 F316
200	Stem	A 182 F6a	A 182 F6a	A 182 F6a	A 182 F304	A 182 F316
360	Wedge	A 182 F6a	A 182 F6a + STL6	A 182 F6a + STL6	A 182 F304	A 182 F316
411	Joint ring	304 + graphite	304 + graphite	304 + graphite	304 + graphite	316 + graphite
452	Gland follower	A 105	A 105	A 105	A 182 F304	A 182 F316
465	Lower gland section	A 276 410	A 276 410	A 276 410	A 276 304	A 276 316
461	Gland packing	Flexible graphite	Flexible graphite	Flexible graphite	Flexible graphite	Flexible graphite
515	Seat ring	A 276 410 + STL6	A 276 410 + STL6	A 276 410 + STL6	A 276 304	A 276 316
544	Threaded bush	A 276 410	A 276 410	A 276 410	A 276 410	A 276 410
901	Bolt	A 193 B7	A 193 B16	A 193 B16	A 193 B8	A 193 B8M
902	Stud	A 193 B8	A 193 B16	A 193 B16	A 193 B8	A 193 B8
920	Nut	A 194 2H	A 194 8	A 194 8	A 194 8	A 194 8M
961	Handwheel	A 197	A 197	A 197	A 197	A 197

**Dimensions**



Dimensions in mm

Class	NPS	L	S	C	Ød	ØB	H <sup>3)</sup>	W	[kg]
800	½"	79	13,6	10	10,0	21,8	158	100	2,25
	¾"	92	13,9	13	13,5	27,2	162	100	2,40
	1"	111	17,4	13	17,5	33,9	197	120	4,10
	1 ¼"	118	18,0	13	22,5	42,7	219	150	5,90
	1 ½"	118	18,4	13	28,6	48,8	243	150	6,80
	2"	132	19,2	16	36,5	61,2	265	150	8,50

**Mating dimensions - Standards**

Face-to-face lengths: see table  
 Threaded ends: ASME B1.20.1  
 Socket weld ends: ASME B16.11

**Notes on installation**

Flow may pass a gate valve in either direction. High-pressure valves with pressure relief arrangement are unidirectional, however.

<sup>3)</sup> Open





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