

Gate Valve

ECOLINE GTF 800

Class 800
NPS 1/2"-2"

Type Series Booklet



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Type Series Booklet ECOLINE GTF 800

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Contents

Gate Valves.....	4
Gate Valves to ANSI/ASME with Bolted Bonnet	4
ECOLINE GTF 800.....	4
Main applications.....	4
Fluids handled	4
Operating data.....	4
Body materials.....	4
Design details	4
Product benefits.....	5
Related documents	5
Purchase order specifications	5
Pressure/temperature ratings.....	5
Materials.....	6
Dimensions and weights.....	7
Notes on installation.....	7

Gate Valves

Gate Valves to ANSI/ASME with Bolted Bonnet

ECOLINE GTF 800



Main applications

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

Fluids handled

- Steam
- Fluids containing gas
- Gas
- High-temperature hot water
- Feed water

Operating data

Operating properties

Characteristic	Value
Nominal pressure	Class 800
Nominal size [inch]	NPS ½ - 2
Max. permissible pressure [bar]	138
Max. permissible pressure [psi]	2000
Min. permissible temperature [°C]	≥ 0
Min. permissible temperature [°F]	32
Max. permissible temperature [°C]	≤ +593
Max. permissible temperature [°F]	+1100

Temperatures < 0 °C on request

Selection as per pressure/temperature ratings (⇒ Page 5)

Body materials

Overview of available materials

Material	Temperature limit
ASTM A 105	≤ 425 °C / 800 °F
ASTM A 182 F11	≤ 593 °C / 1100 °F
ASTM A 182 F22	≤ 593 °C / 1100 °F
ASTM A 182 F304	≤ 593 °C / 1100 °F
ASTM A 182 F316	≤ 593 °C / 1100 °F
ASTM A 182 F304L	≤ 425 °C / 800 °F
ASTM A 182 F316L	≤ 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 2014/68/EU (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 2014/34/EU.

Variants

- Full bore
- Hard-faced back seat
- Extended bonnet
- Locking device
- Position indicator
- Electric actuators
- Version in compliance with TA-Luft (German Clean Air Act) to VDI 2440 for temperatures up to 400 °C
- Butt weld ends
- NACE standard
- Other threaded ends or butt weld ends to ASME B16.25
- Other trims

Product benefits

- Additional features ensure safe sealing to atmosphere:
 - Serrated bonnet gasket, fully confined to prevent creep.
 - Graphite gland packing with packing end rings (male/female joint)
- Stem with burnished shank for long service life and high functional reliability of the gland packing
- Two-piece self-aligning gland follower ensures even compression of packing rings.
- Additional safety and blow-out protection by standard back seat.
- Stem nut free from non-ferrous metals, for versatile application.
- Extended maintenance-free service life
 - Hard-facing applied to wedge and seat rings by deposit welding provides extra wear allowance
 - Wear allowance higher than required as per relevant standard
- Hard-faced body seat and solid wedge seat made of wear-resistant and corrosion-proof materials for reliable sealing and longer service life.

Related documents

Information/documents

Document	Reference number
ECOLINE GTF 150-600 type series booklet (gate valves with bolted bonnet)	7361.11
ECOLINE GLF 800 type series booklet (globe valve with gland packing)	7361.14
ECOLINE PTF 800 type series booklet (lift check valve)	7361.18
ECOLINE SCF 800 type series booklet (swing check valve)	7361.16
Operating manual	0570.86

Purchase order specifications

Please specify the following information in all enquiries or purchase orders:

1. Type
2. Class
3. Nominal size
4. Design pressure
5. Design temperature
6. Differential pressure
7. Fluid handled
8. Material
9. Trim material (API trim number)
10. Line connection
11. Reduced or full bore
12. Variants
13. Reference number

Pressure/temperature ratings

Permissible operating pressure [bar.g] (to ASME B16.34)

Class	Material	[°C]															
		0 to 38	93	149	204	260	316	343	371	399	427	454	482	510	538	566	593
800	A 105	136,0	124,8	120,5	116,4	110,9	104,5	101,1	97,4	93,2	75,7	-	-	-	-	-	-
	A 182 F11 ¹⁾	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
	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
	A 182 F304 ²⁾	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
	A 182 F316 ²⁾	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
	A 182 F304L	110,3	94,0	83,9	77,2	72,3	68,4	67,1	66,2	64,9	63,4	-	-	-	-	-	-
	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 pressure [psi.g] (to ASME B16.34)

Class	Material	[°F]															
		32 to 100	200	300	400	500	600	650	700	750	800	850	900	950	1000	1050	1100
800	A 105	1973	1810	1747	1688	1608	1515	1467	1413	1352	1098	-	-	-	-	-	-
	A 182 F11 ¹⁾	2000	2000	1925	1848	1773	1613	1568	1515	1418	1355	1298	1200	850	577	383	257
	A 182 F22	2000	2000	1942	1880	1773	1613	1568	1515	1418	1355	1298	1200	1025	712	467	293
	A 182 F304 ²⁾	1920	1600	1435	1325	1240	1178	1152	1125	1102	1080	1057	1037	1018	947	867	685
	A 182 F316 ²⁾	1920	1653	1493	1368	1275	1203	1178	1160	1138	1125	1115	1107	1032	968	960	813
	A 182 F304L	1600	1363	1217	1120	1048	992	973	960	942	920	-	-	-	-	-	-
	A 182 F316L	1600	1363	1217	1120	1048	992	973	960	942	920	902	-	-	-	-	-

- 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.

Test pressure

Test	Test fluid	Class 800	
		[bar]	[psi]
Shell	Water	205,1	2975
Leak test (back seat)		149,8	2173
Optional leak test (seat)		149,8	2173
Leak test (seat)	Air	5,5	80

Materials

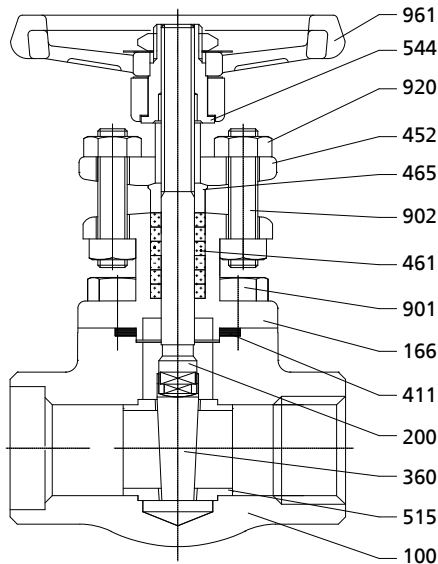
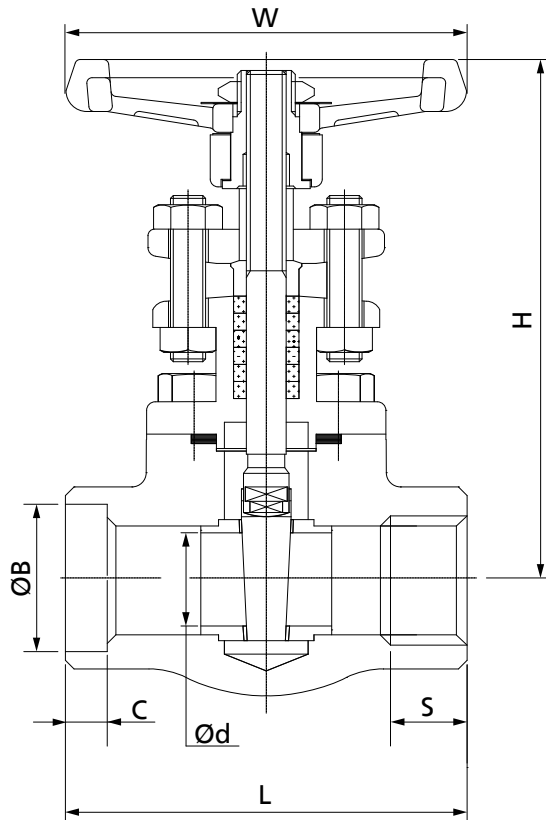


Fig. 1: Sectional drawing of ECOLINE GTF 800

Parts list

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 + ST6	A 182 F6a + ST6	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 + ST6	A 276-410 + ST6	A 276-410 + ST6	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 and weights



ECOLINE GTF 800

Dimensions [mm] and weights [kg]

Class	NPS	L	S	C	Ød	ØB	H ³⁾	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 as per standard

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.

3) Open



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