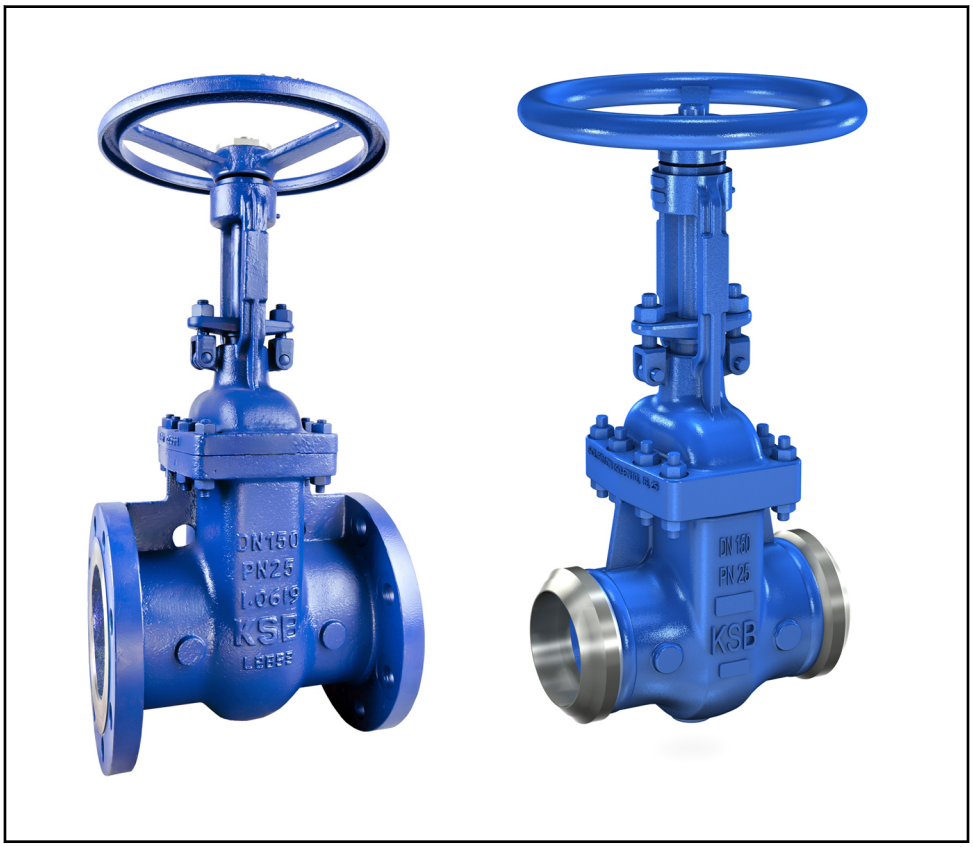
Gate Valve

ECOLINE GT 40

PN 10-40
DN 50-600

Type Series Booklet



Legal information/Copyright

Type Series Booklet ECOLINE GT 40

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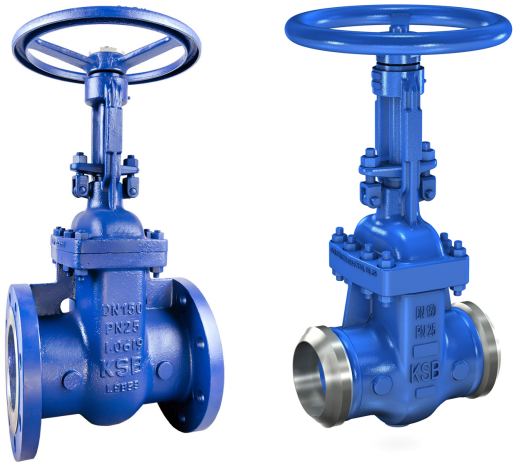
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Gate Valves

Gate Valves with Bolted Bonnet to DIN/EN

ECOLINE GT 40



Main applications

- Boiler recirculation
- Cooling circuits
- Condensate transport
- Petrochemical industry
- Process engineering
- Heat recovery systems
- Sugar industry
- Mining
- Descaling units
- Pulp and paper industry
- Snow-making systems

Fluids handled

- Water
- Steam
- Other non-aggressive fluids such as gas or oil on request.

Operating data

Operating properties

Characteristic	Value
Nominal pressure	PN 10-40
Nominal size	DN 50 - 600
Max. permissible pressure [bar]	40
Min. permissible temperature [°C]	-10
Max. permissible temperature [°C]	+400

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

Body materials

Overview of available materials

Material	Material number	Temperature limit
GP 240 GH	1.0619	≤ 400 °C

Design details

Design

- Bolted bonnet
- Non-rotating stem with external screw
- Back seat
- Flexible wedge
- Yoke head suitable for mounting electric and pneumatic actuators (DIN ISO 5210)
- The valves satisfy the safety requirements of Annex I of the European Pressure Equipment Directive 2014/68/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 2014/34/EU.

Variants

- Stem protecting tube
- Stem protecting tube with position indicator
- Stem protecting tube with limit switch(es)
- Bypass
- Installation kit for electric actuators to EN ISO 5210 Type A
- Spur gear
- Bevel gear
- Electric actuators
- Seat/disc interface made of wear-resistant and corrosion-proof Stellite
- TA-Luft-compliant model for applications to VDI 2440 up to 400 °C (max.)
- Other flange designs
- Other butt weld end versions

Product benefits

- Additional features ensure safe sealing to atmosphere:
  - Bonnet gasket fully confined to prevent creep (PN 40)
  - Graphite gland packing with packing end rings
- Additional safety and blow-out protection by standard back seat
- Long service life and high functional reliability
  - Of the gland packing due to non-rotating stem with burnished shank
  - Hard-faced seat/disc interface made of wear-resistant and corrosion-resistant materials
  - Butt weld end design: high-grade design with connection branch extensions made of forged steel
- Threaded bush free from non-ferrous metals, for versatile application

Related documents

Information/documents

Document	Reference number
STAAL 40 AKK/AKKS type series booklet (swing check valves)	7365.1
Operating manual	7367.8

Purchase order specifications

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

1. Type
2. Nominal pressure
3. Nominal size
4. Operating pressure
5. Differential pressure
6. Operating temperature
7. Material
8. Fluid handled
9. Flow rate
10. Pipe connection
11. Variants
12. Reference number

Always indicate the original serial number and the year of construction when ordering spare parts.

Pressure/temperature ratings

Permissible operating pressure [bar] (to EN 1092-1)[1)]

PN	Material	[°C]							
		RT[2)]	100	150	200	250	300	350	400
10	GP 240 GH	10,0	9,2	8,8	8,3	7,6	6,9	6,4	5,9
16		16,0	14,8	14,0	13,3	12,1	11,0	10,2	9,5
25		25,0	23,2	22,0	20,8	19,0	17,2	16,0	14,8
40		40,0	37,1	35,2	33,3	30,4	27,6	25,7	23,8

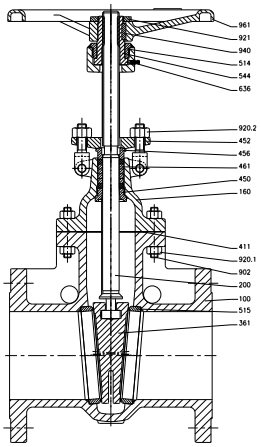
Test pressure

PN	Shell and leak test (body)	Leak test (back seat)	Leak test (seat)
	With water		With air
	Tests P10 and P11 to DIN EN 12266-1	Testing to API 598	Test P12, leakage rate A to DIN EN 12266-1
	[bar]	[bar]	[bar]
10	15	11	6
16	24	17,6	6
25	38	27,5	6
40	60	44	6

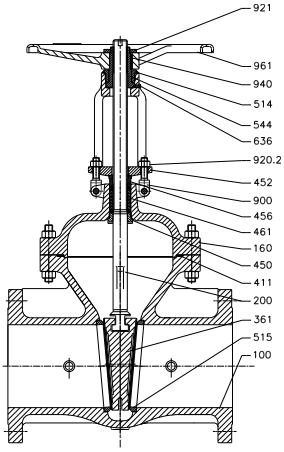
1) An operating pressure to DIN 2401 is also permissible.
2) RT: room temperature (-10 °C to +50 °C)

Materials

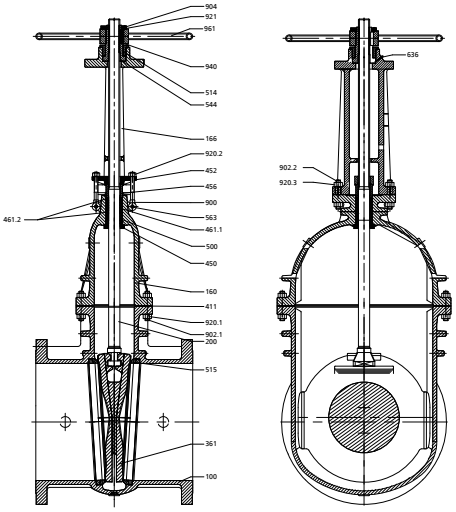
Model with flanged ends



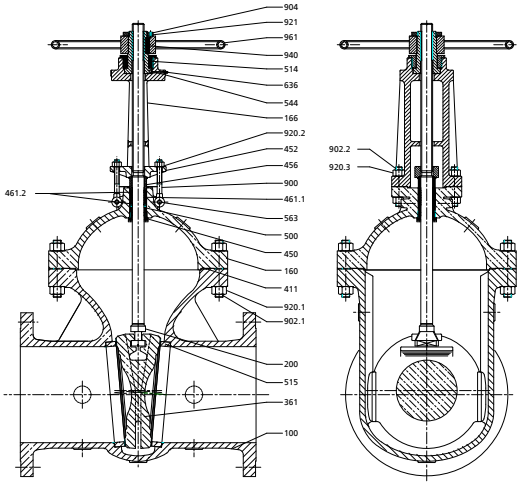
PN 10-25
DN 50-300



PN 40
DN 50-300

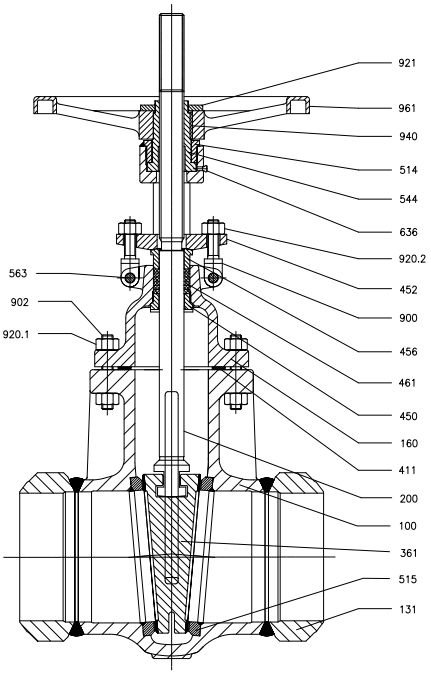


PN 10-25
DN 350-600

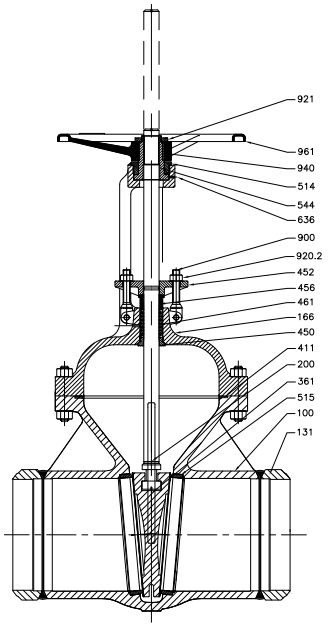


PN 40
DN 350-400

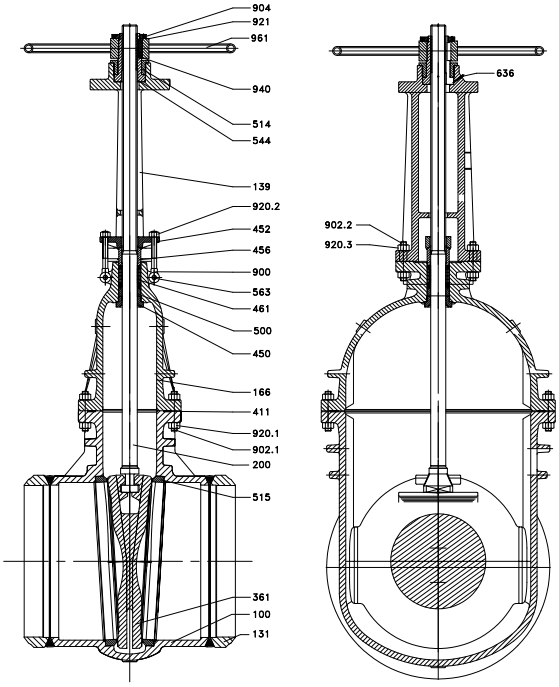
Model with butt weld ends



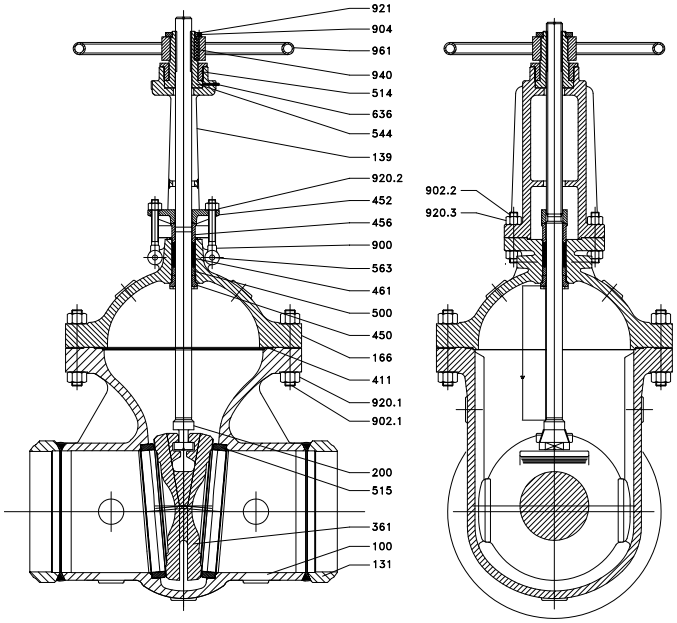
PN 10-25
DN 50-300



PN 40
DN 50-300



PN 10-25
DN 350-600



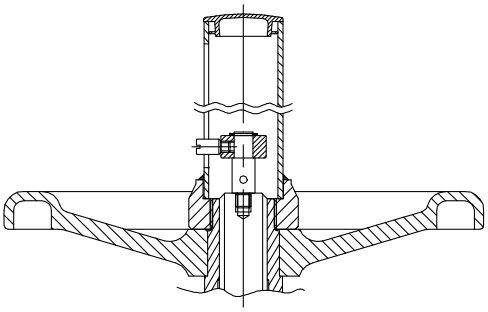
PN 40
DN 350-400

Parts list

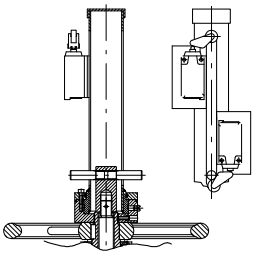
Part No.	Description	Material	Material number	Note
100	Body	GP 240 GH	1.0619	-
131	Connection branch	P 265 GH	1.0425	-
160	Bonnet	GP 240 GH	1.0619	-
166	Yoke	A 216 WCB	-	Equivalent DIN material: GP 240 GH
200	Stem	A 182 F6A	-	Equivalent DIN material: X 10 Cr 13

Part No.	Description	Material	Material number	Note
361	Flexible wedge	A 216 WCB	-	Equivalent DIN material: GP 240 GH
Seat/disc interface	Body	Stellite 6	-	-
	Wedge discs	13 % Cr	-	-
411	Joint ring	SS316-Graphit	-	-
450	Back seat	A 276 410	-	Equivalent DIN material: X 12 Cr 13
452	Gland follower	A 216 WCB	-	Equivalent DIN material: GP 240 GH
456	Gland bush	A 276 410	-	Equivalent DIN material: X 12 Cr 13
461.1	Packing ring	Graphite	-	-
461.2		Graphite	-	Packing end rings
500	Neck ring	A 276 410	-	≥ DN 400
514	Yoke bush	A 29 M 1035	-	Equivalent DIN material: C 35
515	Seat ring	A 105	-	P 250 GH
544	Threaded bush	A 439 D-2	-	Free from non-ferrous metals
563	Grooved pin	A 29 M 1035	-	Equivalent DIN material: C 35
636	Lubricating nipple	SS304	-	-
900	Eyebolt	A 307-B	-	Equivalent DIN material: St 50.11
902.1/.2	Stud	A 193 B7	-	Equivalent DIN material: 24 CrMo 5
904	Grub screw	-	-	-
920.1/.2/.3	Hexagon nut	A 194 2H	-	Equivalent DIN material: C 35
921	Slotted round nut	A 29 M 1035	-	Equivalent DIN material: C 35
940	Key	A 29 M 1035	-	Equivalent DIN material: C 35
961	Handwheel	QT400-18	-	≤ DN 350, nodular cast iron
		A 29 M 1020	-	> DN 350 Equivalent DIN material: C 22

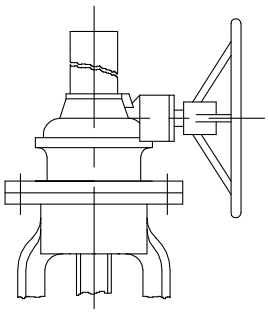
Variants



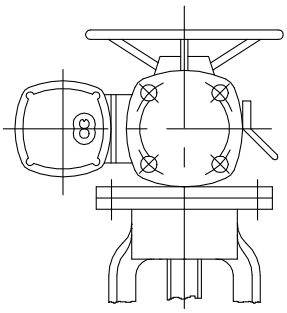
Stem protecting tube with position indicator



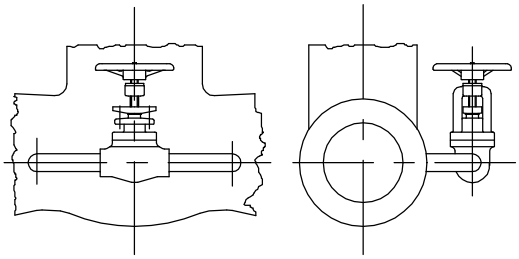
Stem protecting tube with limit switch(es)



Gearbox



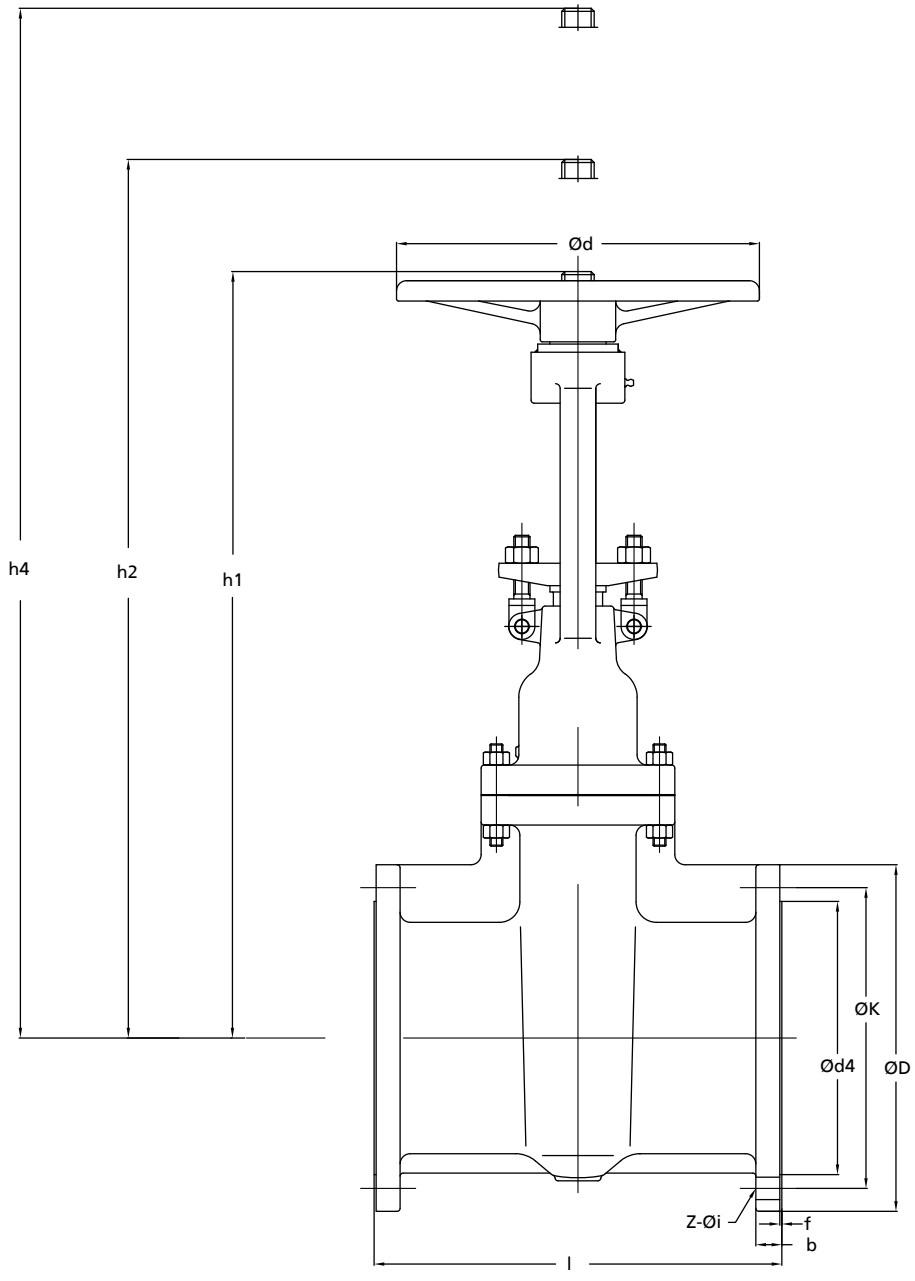
Electric actuators



By-pass

Dimensions and weights

Dimensions and weights of model with flanged ends



ECOLINE GT 40 with flanged ends

Dimensions [mm] and weights [kg]

PN	DN	l	ø D	ø k	No. of bolt holes z	Bolt hole dia. i	ø d_4 × f	b	h_1	h_2 3)	h_4 4)	ø d	[kg]
10	50	250	165	125	4	18	102 × 3	18	300	355	427	203	18
	65	270	185	145	8	18	122 × 3	18	350	433	505	254	26
	80	280	200	160	8	18	138 × 3	20	355	437	552	254	28
	100	300	220	180	8	18	158 × 3	20	425	530	670	254	39
	125	325	250	210	8	18	188 × 3	22	559	705	845	356	60

3) Open
4) Vertical clearance for removal

PN	DN	l	ø D	ø k	No. of bolt holes z	Bolt hole dia. i	ø d_4 × f	b	h_1	h_2 3)	h_4 4)	ø d	[kg]
	150	350	285	240	8	22	212 × 3	22	597	763	953	356	103
	200	400	340	295	8	22	268 × 3	24	745	970	1186	356	132
	250	450	395	350	12	22	320 × 3	26	890	1155	1400	457	206
	300	500	445	400	12	22	370 × 4	26	1074	1395	1795	508	301
	350	550	505	460	16	22	430 × 4	26	1295	1660	1950	508	443
	400	600	565	515	16	26	482 × 4	26	1493	1903	2423	610	619
	450	650	615	565	20	26	532 × 4	28	1583	2051	2544	700	753
	500	700	670	620	20	26	585 × 4	28	1748	2260	2665	800	889
	600	800	780	725	20	30	685 × 5	34	2051	2669	3169	800	1349
16	50	250	165	125	4	18	102 × 3	18	300	355	427	203	18
	65	270	185	145	8	18	122 × 3	18	350	433	505	254	26
	80	280	200	160	8	18	138 × 3	20	355	437	552	254	28
	100	300	220	180	8	18	158 × 3	20	425	530	670	254	40
	125	325	250	210	8	18	188 × 3	22	559	705	845	356	60
	150	350	285	240	8	22	212 × 3	22	597	763	953	356	104
	200	400	340	295	12	22	268 × 3	24	745	970	1186	356	133
	250	450	405	355	12	26	320 × 3	26	890	1155	1400	457	210
	300	500	460	410	12	26	378 × 4	28	1074	1395	1795	508	307
	350	550	520	470	16	26	438 × 4	30	1295	1660	1950	508	430
	400	600	580	525	16	30	490 × 4	32	1493	1903	2423	610	629
	450	650	640	585	20	30	550 × 4	40	1583	2051	2544	700	789
	500	700	715	650	20	33	610 × 4	44	1748	2260	2665	800	964
	600	800	840	770	20	36	725 × 5	54	2051	2669	3169	800	1467
25	50	250	165	125	4	18	102 × 3	20	300	355	427	203	19
	65	270	185	145	8	18	122 × 3	22	350	433	505	254	26
	80	280	200	160	8	18	138 × 3	24	355	437	552	254	32
	100	300	235	190	8	22	162 × 3	24	425	530	670	254	42
	125	325	270	220	8	26	188 × 3	26	559	705	845	356	67
	150	350	300	250	8	26	218 × 3	28	597	763	953	356	105
	200	400	360	310	12	26	278 × 3	30	745	970	1186	356	133
	250	450	425	370	12	30	335 × 3	32	890	1155	1400	457	235
	300	500	485	430	16	30	395 × 4	34	1074	1395	1795	508	338
	350	550	555	490	16	33	450 × 4	38	1295	1660	1960	508	484
	400	600	620	550	16	36	505 × 4	40	1493	1903	2423	610	707
	450	650	670	600	20	36	555 × 4	46	1583	2051	2519	700	847
	500	700	730	660	20	36	615 × 4	48	1748	2260	2615	800	1025
	600	800	845	770	20	39	720 × 5	58	2051	2669	3169	800	1536
40	50	250	165	125	4	18	102 × 3	20	300	355	427	203	19
	65	290	185	145	8	18	122 × 3	22	385	465	537	254	36
	80	310	200	160	8	18	138 × 3	24	400	486	601	254	43
	100	350	235	190	8	22	162 × 3	24	505	615	755	254	89
	125	400	270	220	8	26	188 × 3	26	576	720	860	356	120
	150	450	300	250	8	26	218 × 3	28	665	835	1025	356	128
	200	550	375	320	12	30	285 × 3	36	797	1022	1238	457	220
	250	650	450	385	12	33	345 × 3	38	970	1237	1627	508	368
	300	750	515	450	16	33	410 × 4	42	1104	1427	1872	508	489
	350	850	580	510	16	36	465 × 4	46	1366	1738	2238	610	847
	400	950	660	585	16	39	535 × 4	50	1493	1920	2470	700	1145

Mating dimensions as per standard

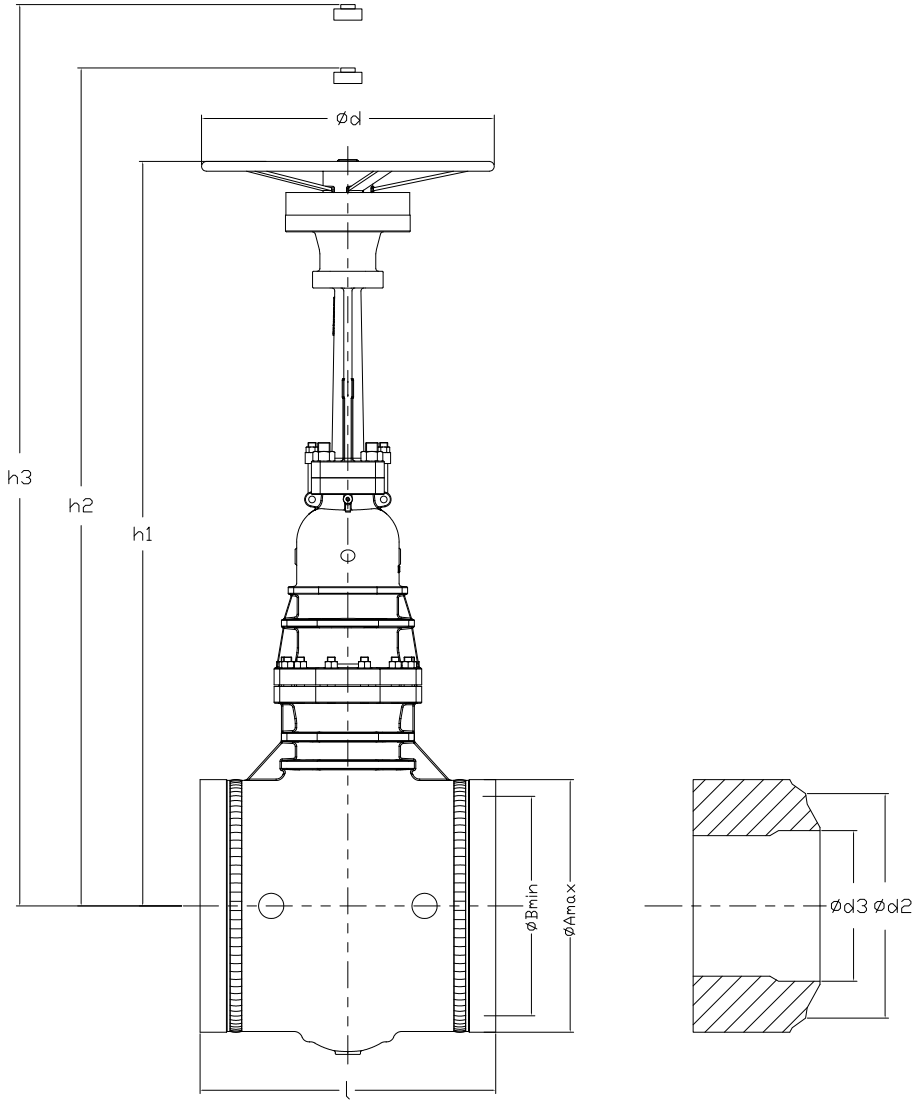
Face-to-face lengths:	PN 10-25: EN 558-1/15 PN 40: EN 558-1/26
Flanges:	Mating dimensions to DIN EN 1092-1
Flange facing:	Type B

Other flange designs

- E.g. groove (type D), tongue (type C), recess (type F), spigot (type E) to EN 1092-1 at both ends
- Other flange designs on request

3) Open
4) Vertical clearance for removal

Dimensions and weights of model with butt weld ends



ECOLINE GT 40 with butt weld ends

Dimensions [mm] and weights [kg]

PN	DN	l	Butt weld ends, unmachined		Butt weld ends machined to DIN EN 12627			h_1	h_2 [5]	h_4 [6]	ø d	[kg]
			ø $A_{max.}$	ø $B_{min.}$	ø d_2	ø d_3	Associated pipe dimensions					
10	50	250	79	49	62	54,5	60,3 × 2,9	300	355	427	203	14
	65	270	94	60	77	70,3	76,1 × 2,9	350	433	505	254	20
	80	280	107	80	91	82,5	88,9 × 3,2	355	437	552	254	24
	100	300	136	100	117	107,1	114,3 × 3,6	425	530	670	254	33
	125	325	165	122	144	131,7	139,7 × 4	559	705	845	356	55
	150	350	194	147	172	159,3	168,3 × 4,5	597	763	953	356	92
	200	400	246	197	223	206,5	219,1 × 6,3	745	970	1186	356	110
	250	450	302	250	278	260,4	273 × 6,3	890	1155	1400	457	205
	300	500	353	300	329	309,7	323,9 × 7,1	1074	1395	1795	508	297
	350	550	391	333	362	339,6	355,6 × 8	1295	1660	1950	508	426
	400	600	440	381	413	390,4	406,4 × 8	1493	1903	2423	610	625
	450	650	493	428	464	439,4	457 × 8,8	1583	2051	2544	700	755

5) Open
6) Vertical clearance for removal

PN	DN	l	Butt weld ends, unmachined		Butt weld ends machined to DIN EN 12627			h_1	h_2 [5]	h_4 [6]	ø d	[kg]
			ø $A_{max.}$	ø $B_{min.}$	ø d_2	ø d_3	Associated pipe dimensions					
	500	700	546	477	516	490,4	508 × 8,8	1748	2260	2665	800	911
	600	800	652	574	619	588	610 × 11	2051	2669	3169	800	1367
16	50	250	79	49	62	54,5	60,3 × 2,9	300	355	427	203	14
	65	270	94	60	77	70,3	76,1 × 2,9	350	433	505	254	20
	80	280	107	80	91	82,5	88,9 × 3,2	355	437	552	254	24
	100	300	136	100	117	107,1	114,3 × 3,6	425	530	670	254	33
	125	325	165	122	144	131,7	139,7 × 4	559	705	845	356	55
	150	350	194	147	172	159,3	168,3 × 4,5	597	763	953	356	92
	200	400	246	197	223	206,5	219,1 × 6,3	745	970	1186	356	110
	250	450	302	250	278	260,4	273 × 6,3	890	1155	1400	457	205
	300	500	353	300	329	309,7	323,9 × 7,1	1074	1395	1795	508	297
	350	550	391	333	362	339,6	355,6 × 8	1295	1660	1950	508	426
	400	600	440	381	413	390,4	406,4 × 8	1493	1903	2423	610	625
	450	650	493	428	464	439,4	457 × 8,8	1583	2051	2544	700	755
	500	700	546	477	516	490,4	508 × 8,8	1748	2260	2665	800	911
	600	800	652	574	619	588	610 × 11	2051	2669	3169	800	1367
25	50	250	79	49	62	54,5	60,3 × 2,9	300	355	427	203	14
	65	270	94	60	77	70,3	76,1 × 2,9	350	433	505	254	20
	80	280	107	80	91	82,5	88,9 × 3,2	355	437	552	254	24
	100	300	136	100	117	107,1	114,3 × 3,6	425	530	670	254	33
	125	325	165	122	144	131,7	139,7 × 4	559	705	845	356	55
	150	350	194	147	172	159,3	168,3 × 4,5	597	763	953	356	92
	200	400	246	197	223	206,5	219,1 × 6,3	745	970	1186	356	110
	250	450	302	250	278	258,8	273 × 7,1	890	1155	1400	457	205
	300	500	353	300	329	307,9	323,9 × 8	1074	1395	1795	508	297
	350	550	391	333	362	339,6	355,6 × 8	1295	1660	1960	508	426
	400	600	440	381	413	388,8	406,4 × 8,8	1493	1903	2423	610	625
	450	650	493	428	464	439,4	457 × 8,8	1583	2051	2519	700	755
	500	700	546	477	516	488	508 × 10	1748	2260	2615	800	911
	600	800	652	574	619	585	610 × 12,5	2051	2669	3169	800	1367
40	50	250	79	49	62	54,5	60,3 × 2,9	300	355	427	203	14
	65	290	94	60	77	70,3	76,1 × 2,9	385	465	537	254	30
	80	310	107	80	91	82,5	88,9 × 3,2	400	486	601	254	35
	100	350	136	100	117	107,1	114,3 × 3,6	505	615	755	254	80
	125	400	165	122	144	131,7	139,7 × 4	576	720	860	356	106
	150	450	194	147	172	159,3	168,3 × 4,5	665	835	1025	356	110
	200	550	246	197	223	206,5	219,1 × 6,3	797	1022	1238	457	189
	250	650	302	250	278	258,8	273 × 7,1	970	1237	1627	508	326
	300	750	353	300	329	307,9	323,9 × 8	1104	1427	1872	508	423
	350	850	391	333	362	338	355,6 × 8,8	1366	1738	2238	610	744
	400	950	440	381	413	384,4	406,4 × 11	1493	1920	2470	700	1001

Mating dimensions as per standard

Face-to-face lengths:	PN 10-25: EN 12982/15 PN 40: EN 12982/26
Butt weld ends:	DIN EN 12627
Weld groove form:	DIN EN 12627

Different designs of butt weld ends and weld groove forms are possible, but only within the dimensions $A_{max.}$ and $B_{min.}$.

Installation instructions

The gate valves are designed for a max. differential pressure equal to the permissible operating pressure.

If a bypass line is required or requested for other reasons, an ECOLINE GLF 800 globe valve as per type series booklet 7361.14 is used as bypass valve. The nominal size of the globe valve depends on the gate valve nominal size (see table).

Nominal size of bypass valve

Nominal size of gate valve	Nominal size of bypass valve
DN 150 - 200	DN 15
DN 250 - 350	DN 25
DN 400 - 600	DN 40

5) Open
6) Vertical clearance for removal

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