



Greater Cairo Foundries
مسابك القاهرة الكبرى



METAL SEATED GATE VALVE







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METAL SEATED GATE VALVE

SERIES 3100 / 3300 / 4300

- The GCF gate valve model is a ductile iron full bore double – flanged metal – seated gate valve designed to comply with ISO 5996 and BS 5163 for water, sewage and industrial applications.
- They can be long body oval type series 4300 or short flat type 3100 & 3300 series.
- The Gate valves are available with Non-Rising Stem (NRS) or outside stem & yoke (OS&Y).
- They can be equipped for manual operation by tee cap or handwheel.
- They can also be supplied to order with gearbox or electrical actuator.

DESIGN FEATURES

STEM DESIGN

Non-Rising Stem (NRS)

- This design is used where insufficient space above the valve restricts the stem from moving upwards.
- Because the stem does not move upward, it cannot be used to determine whether the valve is opened or closed.
- The major disadvantage of NRS design is that the fluid flow through the valve wets the stem thread, making them subject to corrosion and erosion and thus possible failure.
- NRS is not recommended for sewage applications.

Outside Stem and Yoke (OS&Y)

- This design can be used where there is sufficient space above the valve in the pumping station.
- This design prevents thread wetting because the threaded portion of the stem is outside the valve.
- The position of the gate within the valve is easily determined from the position of the top of the stem.
- OS&Y is recommended for sewage and industrial applications.

WEDGE DESIGN

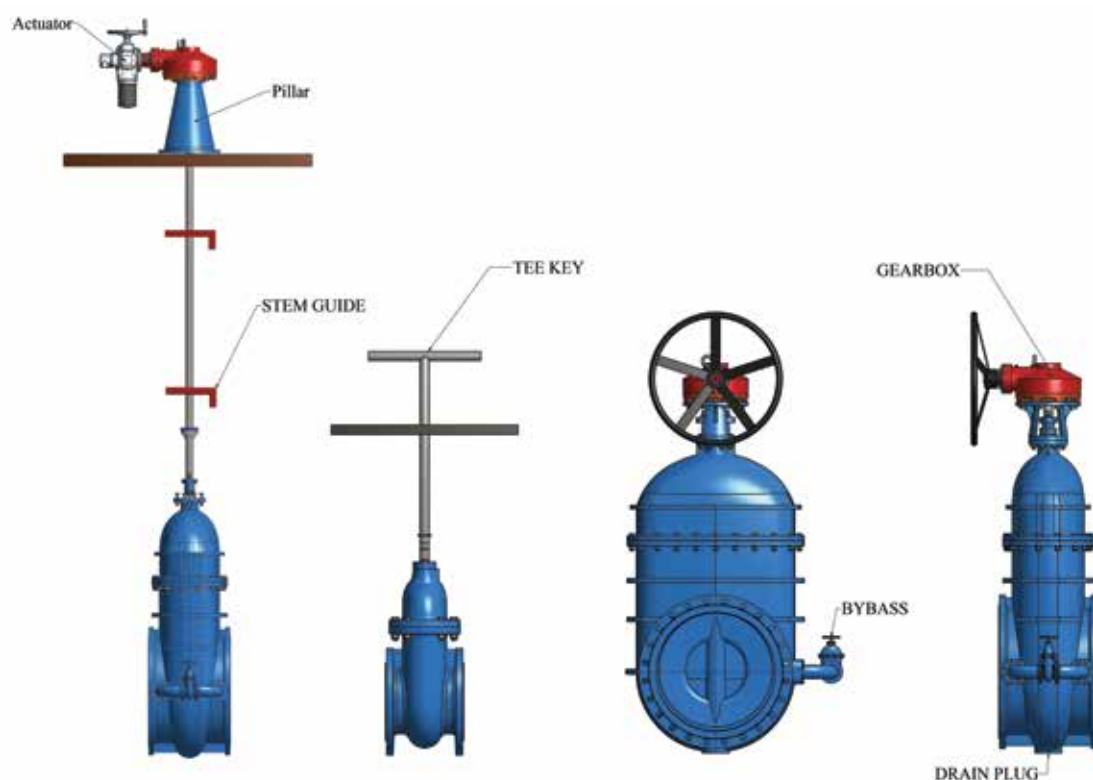
Flexible Wedge/Drop Tight Shut Off

Our special wedge design allows the seating surfaces of the wedge to move independently and adopt to minor inaccuracies in seating surface angles and movement of the seats owing to pipeline loads or thermal expansion of the piping system. Thereby ensuring drop tight shut off.

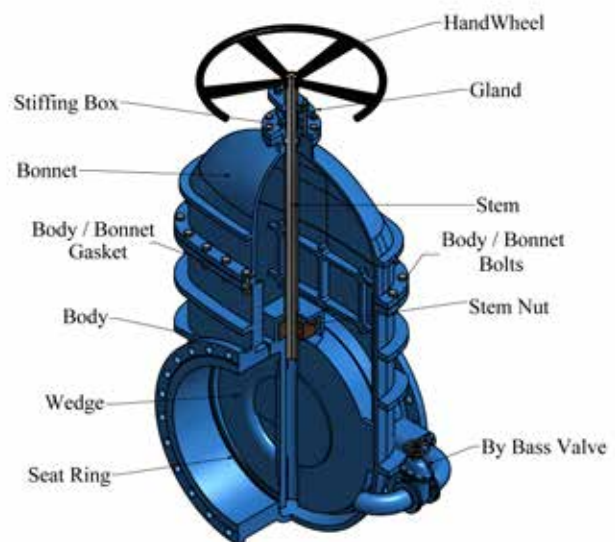
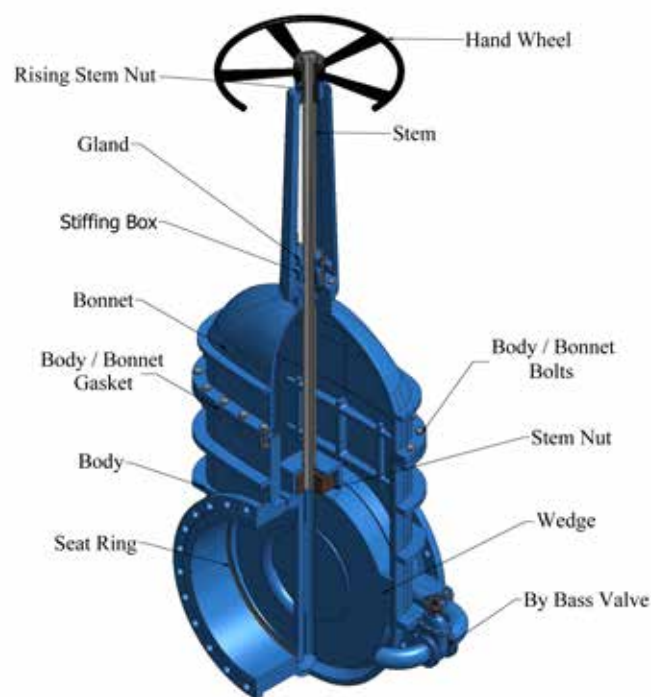


GATE VALVE SELECTION

GCF SERIES	SERIES 3100	SERIES 3300	SERIES 4300
Available Sizes	DN 100 & DN 150	From DN 80 to DN 900	From DN 400 to DN 1800
International Standard	ISO 5752 Series 14	ISO 5996 Short Series	ISO 5996 Long Series
	DN 3352 Series F4	ISO 5752 Series 3 BS 5163	ISO 5752 series 15
Commercial Name	Flat Type	Short Bed Type	Long Bed or Oval Type
Application	Water, Sewage and industrial Applications		
Max. working pressure	10 bars for DN 80-150	10-16 bar for DN ≤ 600	10-16 bar
	6 bars for DN 200 – 300	8 bar for DN 700-800	for all DN Sizes
	4 bars for DN 350 – 500	6 bar for DN 900	
	2.5 bar for DN 600		
Operation	• Manual with hand wheel	• Manual with hand wheel	• Manual with hand wheel
	• Manual with Gear Box	• Manual with Gear Box	• Manual with Gear Box
	• Electrically Operated	• Electrically Operated	• Electrically Operated
	• Pneumatically operated		
Special requirements	• Electric Actuator	• Gearbox	• Gearbox
	• Pneumatic Actuator	• Electric Actuator	• Electric Actuator
	• Extension Spindle	• Extension Spindle	• Extension Spindle
	• T-Key	• By-Bass valve (From DN400)	• By-Bass valve
	• Air vent	• Drain plug	• Drain plug
		• Air vent	• Air vent
		• Lifting eyes	• Lifting eyes



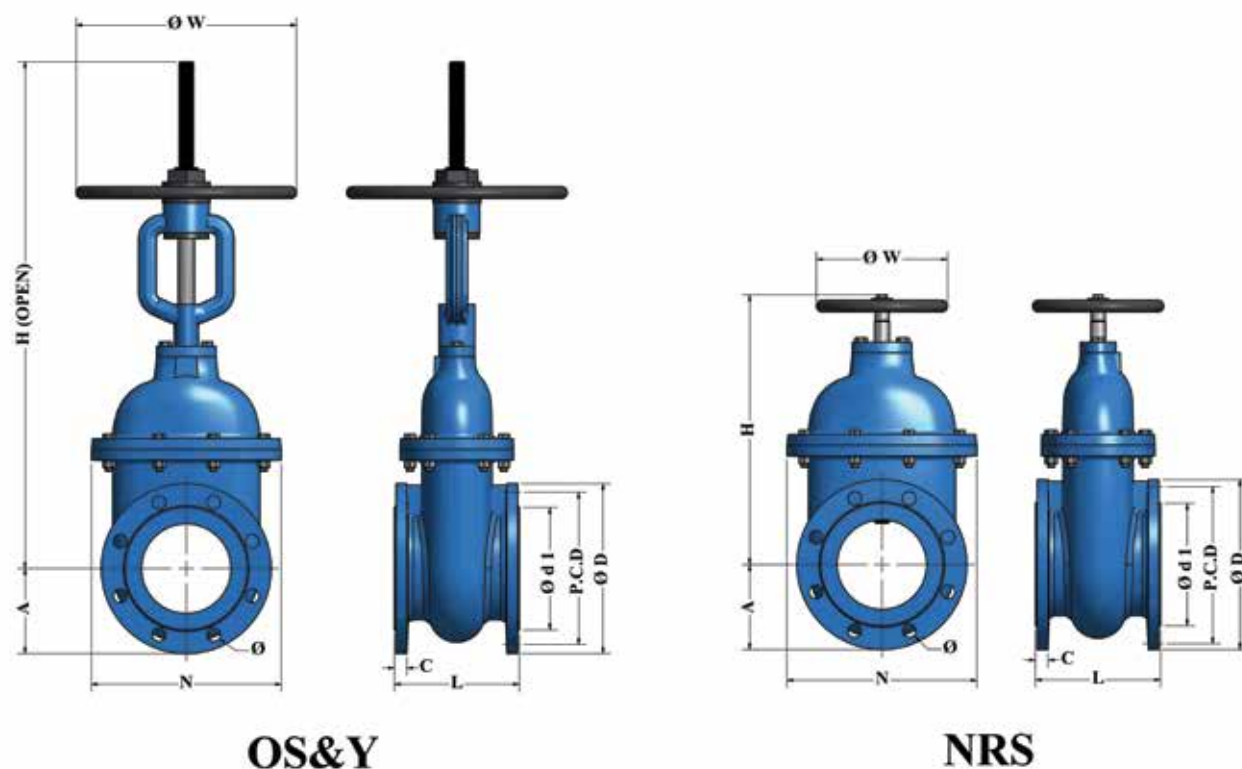
GATE VALVE MATERIAL SELECTION



Part Name	Material	Standard	Remark
Body, Bonnet, Wedge, Stuffing box and Yoke	Ductile Iron A	ISO 1083 grade 500-7	Equivalent to DIN 1693 (GGG 50), EN GJS-500-7 and ASTM A536-80 GRADE 70-50-05
	Ductile Iron B	ISO 1083 grade 400-15	Equivalent to GGG 40, EN GJS-400-15 and BS2789:1985 GRADE 400/7
	Ductile Iron C	BS2789:1985 GRADE 400/12	ASTM536-80 GRADE60-40-18
	Gray Cast Iron	GG25	BS1452:1990, ASTM48-76 GRADE40B
Body and Wedge Seat Rings	Hight Tensile Bronze		BS2874CZ116
	Commercial Brass		
Stem	Martensitic Stainless Steel	X20CR13	BS420S37, ASTM276-1967GRADE420
	Austenitic Stainless Steel	S.S 304 or S.S 316	BS304S15, ASTM276-1967GRADE304
Stem Nut	Hight Tensile Bronze		BS2874CZ116
Body Bonnet Bolts & Nuts	Galvanized Steel	Grade 4.6 and 8.8	BS970-1955EN3D
	Austenitic Stainless Steel	S.S 304 and S.S 316	BS304S15, ASTM276-1967GRADE304
Hand Wheel	Ductile Iron A	ISO 1083 grade 500-7	Equivalent to DIN 1693 (GGG 50), EN GJS-500-7 and ASTM A536-80 GRADE 70-50-05
	Gray Cast Iron	GG25	BS1452:1990, ASTM48-76 GRADE40B
	Fabricated Steel	St 37	BS970-1955EN3D
Body Bonnet Sealing	EPDM		
Packing	PTFE		

GATE VALVE DIMENSIONS

GCF METAL SEATED GATE VALVE SERIES 3100



OS&Y

NRS

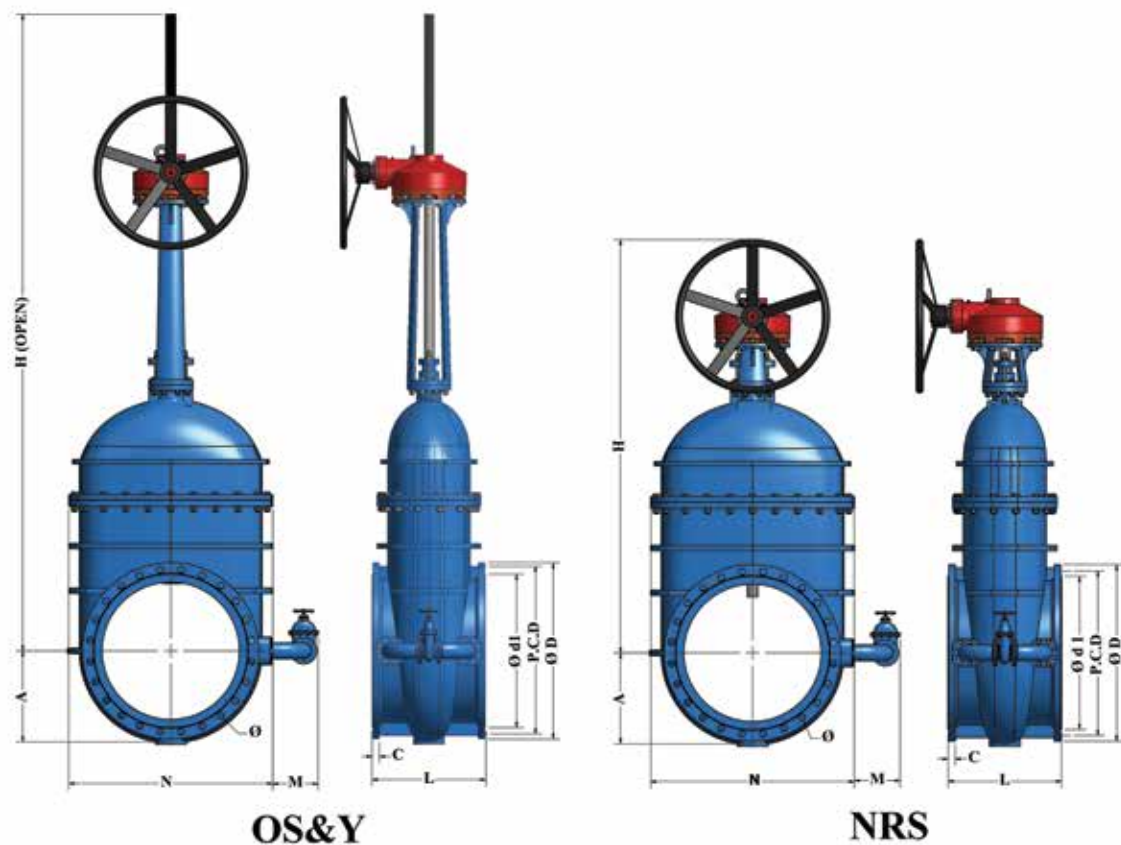
Dimensions in mm

DN	L	Maximum Height		A	N	ØW	Flanges & Drilling Details of PN10						Flanges & Drilling Details of PN16					
		H (NRS)	H (Open) (OS&Y)				ØD	Ød1	C	Bolt hole details			ØD	Ød1	C	Bolt hole details		
										P.C.D	Ø	NO.				P.C.D	Ø	NO.
80	180	310	520	100	250	180	200	132	19	160	19	8	200	132	19	160	19	8
100	190	350	650	110	260	180	220	156	19	180	19	8	220	156	19	180	19	8
150	210	460	850	150	320	200	285	211	19	240	23	8	285	211	19	240	23	8
200	230	510	960	170	390	200	340	266	20	295	23	8	340	266	20	295	23	12
250	250	650	1000	200	450	350	400	319	22	350	23	12	400	319	22	355	28	12
300	270	715	1115	230	500	350	455	370	24.5	400	23	12	455	370	24.5	410	28	12
350	290	1400	1950	260	570	500	520	429	26.5	460	23	16	520	429	26.5	470	28	16
400	310	1500	2100	290	630	500	580	480	28	515	28	16	580	480	28	525	31	16
450	330	1600	2500	320	690	600	640	527	30	565	28	20	640	544	30	585	31	20
500	350	1800	2600	360	765	600	715	582	31.5	620	28	20	715	609	31.5	650	34	20
600	390	2000	3000	420	890	600	840	682	36	725	31	20	840	720	36	770	37	20

GCF Reserves the right to change the above dimensions without any prior notice

GATE VALVE DIMENSIONS

GCF METAL SEATED GATE VALVE SERIES 3300



Dimensions in mm

DN	L	A	N	M	Maximum Height		Flanges & Drilling Details of PN10						Flanges & Drilling Details of PN16					
					H (NRS)	H (Open) (OS&Y)	ØD	Ød1	C	Bolt hole details			ØD	Ød1	C	Bolt hole details		
										P.C.D	Ø	NO.				P.C.D	Ø	NO.
80	203	100	250	-	345	550	200	132	19	160	19	8	200	132	19	160	19	8
100	229	110	270	-	360	660	220	156	19	180	19	8	220	156	19	180	19	8
150	267	150	330	-	460	840	285	211	19	240	23	8	285	211	19	240	23	8
200	292	190	410	-	700	1200	340	266	20	295	23	8	340	266	20	295	23	12
250	330	220	480	-	800	1320	400	319	22	350	23	12	400	319	22	355	28	12
300	356	230	520	-	850	1450	455	370	24.5	400	23	12	455	370	24.5	410	28	12
350	381	300	620	250	1350	1900	520	429	26.5	460	23	16	520	429	26.5	470	28	16
400	406	350	680	300	1500	2000	580	480	28	515	28	16	580	480	28	525	31	16
450	432	400	820	300	1650	2300	640	527	30	565	28	20	640	544	30	585	31	20
500	457	400	900	300	1750	2400	715	582	31.5	620	28	20	715	609	31.5	650	34	20
600	508	500	1000	300	2000	3200	840	682	36	725	31	20	840	720	36	770	37	20
700	610	520	1100	350	2200	3500	910	794	39.5	840	31	24	910	794	39.5	840	37	24
800	660	540	1250	350	2500	4200	1025	901	43	950	34	24	1025	901	43	950	40	24
900	711	650	1500	450	3000	4500	1125	1001	46.5	1050	34	28	1125	1001	46.5	1050	40	28

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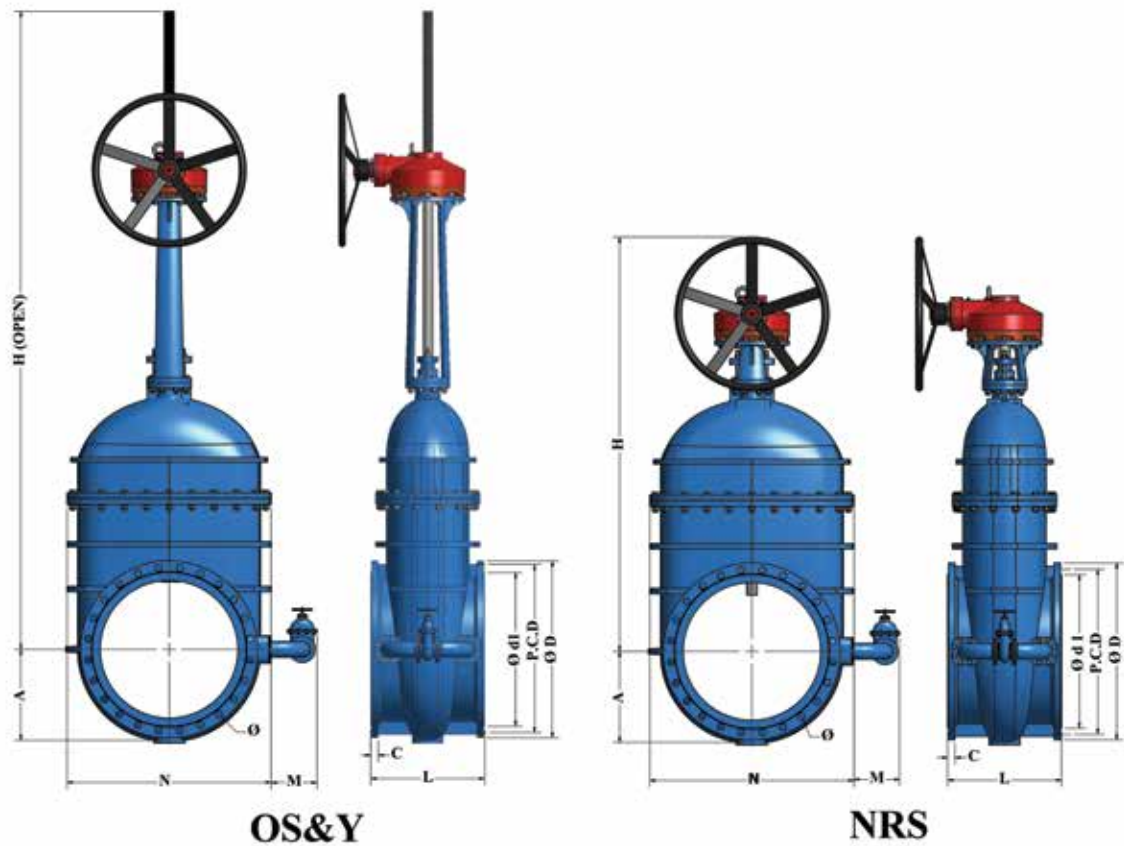


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GATE VALVE DIMENSIONS

GCF METAL SEATED GATE VALVE SERIES 4300



Dimensions in mm

DN	L	A	M	N	Maximum Height		Flanges & Drilling Details of PN10						Flanges & Drilling Details of PN16					
					H (NRS)	H (Open) (OS&Y)	ØD	Ød1	C	Bolt hole details			ØD	Ød1	C	Bolt hole details		
										P.C.D	Ø	NO.				P.C.D	Ø	NO.
400	600	450	300	780	1500	2100	580	480	28	515	28	16	580	480	28	525	31	16
450	650	480	300	840	1600	2500	640	527	30	565	28	20	640	544	30	585	31	20
500	700	520	300	920	1800	2600	715	582	31.5	620	28	20	715	609	31.5	650	34	20
600	800	580	300	1050	2000	3000	840	682	36	725	31	20	840	720	36	770	37	20
700	900	600	400	1110	2100	3500	910	794	39.5	840	31	24	910	794	39.5	840	37	24
800	1000	660	400	1300	2400	4100	1025	901	43	950	34	24	1025	901	43	950	40	24
900	1100	720	400	1400	3000	4500	1125	1001	46.5	1050	34	28	1125	1001	46.5	1050	40	28
1000	1200	780	400	1500	3100	4600	1255	1112	50	1160	37	28	1255	1112	50	1170	43	28
1100	1200	780	400	1500	3100	4600	1355	1215	53.5	1270	37	32	1355	1215	53.5	1270	43	32
1200	1400	890	500	1700	3500	5600	1485	1328	57	1380	40	32	1485	1328	57	1390	49	32
1400	1450	990	500	2000	4200	6650	1685	1530	60	1590	43	36	1685	1530	60	1590	49	36
1500	1500	1060	600	2000	4500	7000	1820	1640	62.5	1700	43	36	1820	1640	62.5	1710	56	36
1600	1500	1060	600	2300	4500	7000	1930	1750	65	1820	49	40	1930	1750	65	1820	56	40
1800	1600	1400	700	2600	5200	8500	2130	1950	70	2020	49	44	2130	1950	70	2020	56	44

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HYDROSTATIC TEST

GCF valves go through hydraulic test according to ISO 5208 leakage rate A and EN 122661-. A comparison in the following table shows the different leakage rates for different valve classifications.

Leakage rates for different valve categories

Test Fluid	Unit Leakage Rate	Rate A	Rate B	Rate C	Rate D
Liquid	Mm3/sec	No Leakage	0.01 X DN	0.03 x DN	0.1 X DN

Shell and Closure Test

- Shell test pressure shall be 1.5 x CWP (cold working pressure)
- Closure / Disc pressure shall be 1.1 x CWP
- Visually detectable leakage from any external surface of the shell not be permitted.
- Visually detectable leakage from the disc in the closed position during the duration of test shall not be permitted.

Test Duration Table

Valve Size	Shell (sec)	Closure (sec)
$65 \leq DN \leq 150$	60	60
$200 \leq DN \leq 300$	120	120
$DN \geq 350$	300	120





GCF Gate Valve DN 1500





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