



BV49

Resilient seated gate valves



GENERAL SPECIFICATIONS

- Belven resilient seated gate valve.
- Non-rising stem and non-rising handwheel with standard clockwise closing direction.
- Straight through full bore passage.
- EPDM fully vulcanized wedge.
- Ductile iron body with in-and outside epoxy coated RAL 5015.
Minimum coating thickness 200µm.
- Bolted bonnet with profiled seal in the body chamber for a tight sealing. The bolts in the bonnet are enclosed by this profiled seal and are additionally sealed with wax.
- Integrated wedge guides are casted into the body and reduce the movement of the wedge when opening and closing for an optimized operation.
- Upto DN150 the valves are standard pressure class PN16 and suitable to be mounted between flanges PN10 and PN16. For sizes DN200 and larger the pressure class PN10 or PN16 has to be selected and this pressure class matches with the flange connection .
- Face to face dimensions according to EN 558-1 series 14 (DIN 3202 F4) or series 15 (DIN 3202 F5).

CONNECTIONS

The valves are with integral casted flanges to suit PN10 or PN16 connections.

- DN50 to DN150 to be mounted between flanges EN 1092-2 PN10/PN16.
- DN200 to DN600 to be mounted between flanges EN 1092-2 PN10 or PN16, to be specified with the enquiry.

TESTING

The valves are tested according to EN 12266-1 (P10-P12).

- The hydraulic test pressure of the body is 1,5x of the pressure class (Shell test).
- The test pressure for the seat test is 1,1x of the pressure class (Seat test).

Seat tightness :

Bi-directional tight shut off according to below standards:

EN 12266-1 A.5 Rate A

ISO 5208 Rate A

DIN 3230, BO and BN, Rate 1

The max. working pressure with bi-directional bubble tight shut-off is equal to the pressure class.

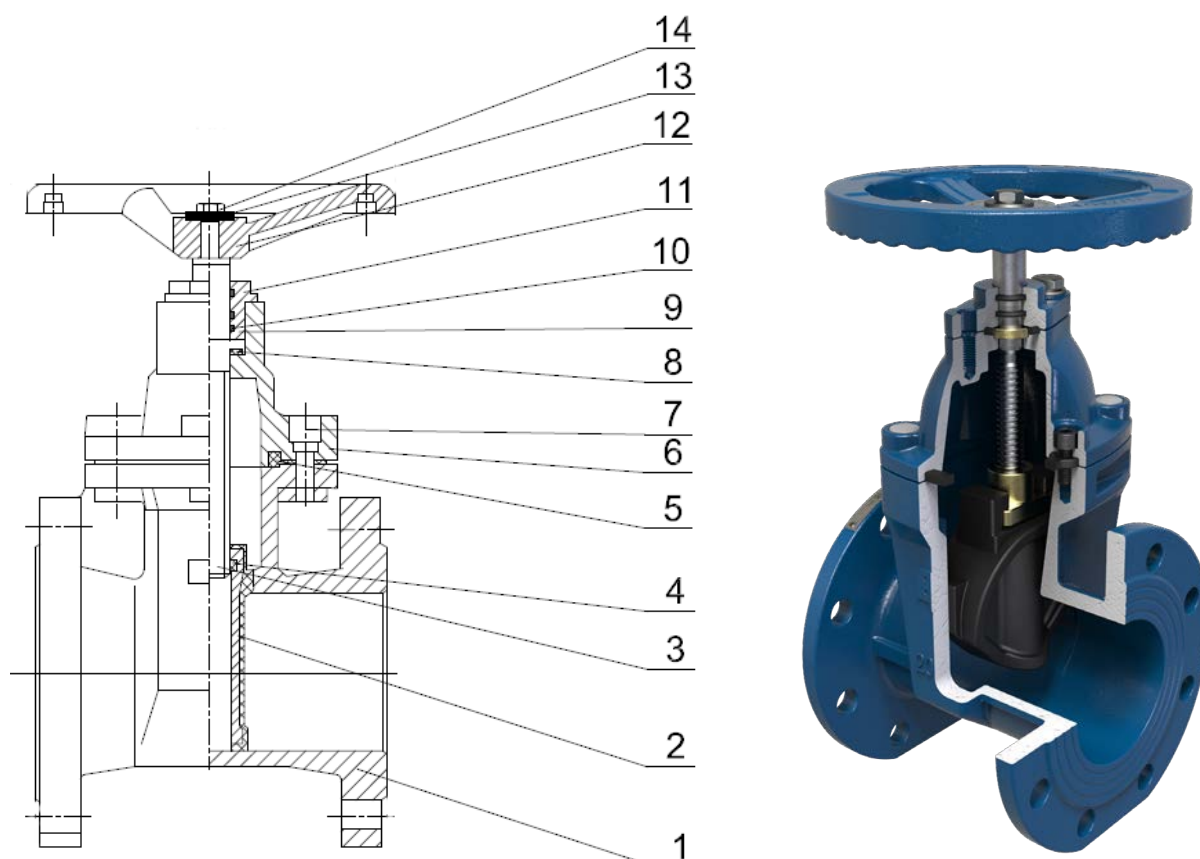
WORKING PRESSURES AND TEMPERATURES

Unless otherwise specified, following max. working pressures are applicable at 20°C :

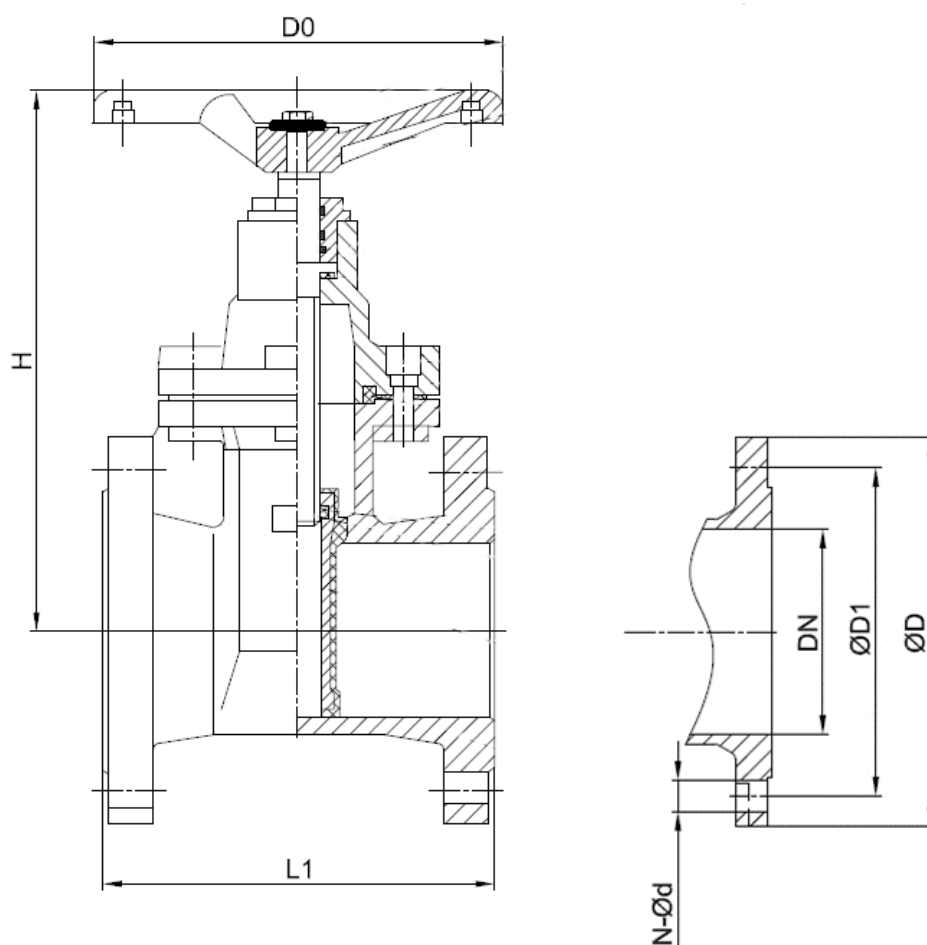
- DN50 to DN150 : 16 bar
- DN200 to DN600 : pressure class PN10 : 10 bar
pressure class PN16 : 16 bar

Because the bodies are in- and outside coated with FBE (Fusion Bonded Epoxy) we recommend a maximum operating temperature of 80°C.

MATERIALS



ITEM	DESCRIPTION	MATERIAL
1	BODY	Ductile iron GJS-500-7, Epoxy coated
2	WEDGE	Vulcanized EPDM on core of ductile iron GJS-500-7
3	STEM	Stainless steel AISI 420
4	WEDGE NUT	Manganese Brass CuZn40Mn (DIN 2.0572)
5	PROFIED BONNET SEAL	EPDM
6	BONNET	Ductile iron GJS-500-7, Epoxy coated
7	BOLTS INSIDE THE BONNET	Steel Gr.8.8 enclosed with the profiled seal and covered with wax
8	GASKET	Red brass C83600 CuSn5Pb5Zn5 (DIN 2.1096)
9	STEM NUT	Manganese Brass CuZn40Mn (DIN 2.0572)
10	O-RING	EPDM
11	DUST RING	EPDM
12	HANDWHEEL	Ductile iron GJS-500-7, Epoxy coated
13	WASHER	Stainless Steel AISI 304
14	BOLT	Stainless Steel AISI 304



DN	Series 14	Series 15	ØD0	H	EN 1092-2 PN10			EN 1092-2 PN16			Weight	Weight
	F4	F5									F4	F5
	L1	L1			ØD	ØD1	N-Ød	ØD	ØD1	N-Ød	Kg*	Kg*
40	140	240	160	210	150	110	4-Ø19	150	110	4-Ø19	8	9
50	150	250	160	230	165	125	4-Ø19	165	125	4-Ø19	10	11
65	170	270	160	235	185	145	4-Ø19	185	145	4-Ø19	11	13
80	180	280	180	275	200	160	8-Ø19	200	160	8-Ø19	14	15
100	190	300	200	315	220	180	8-Ø19	220	180	8-Ø19	18	21
125	200	325	250	370	250	210	8-Ø19	250	210	8-Ø19	26	29
150	210	350	250	410	285	240	8-Ø23	285	240	8-Ø23	33	41
200	230	400	300	510	340	295	8-Ø23	340	295	12-Ø23	58	61
250	250	450	350	590	405	350	12-Ø23	405	355	12-Ø28	88	94
300	270	500	400	665	460	400	12-Ø23	460	410	12-Ø28	128	137
350	290	550	500	785	520	460	16-Ø23	520	470	16-Ø28	197	205
400	310	600	500	895	580	515	16-Ø28	580	525	16-Ø31	274	294
450	330	650	500	970	640	565	20-Ø28	640	585	20-Ø31	358	431
500	350	700	600	1090	715	620	20-Ø28	715	650	20-Ø34	410	519
600	390	800	600	1240	840	725	20-Ø31	840	770	20-Ø37	575	719

All dimensions are in mm, unless otherwise specified.

* Mentioned weights are theoretically and are for indication only.

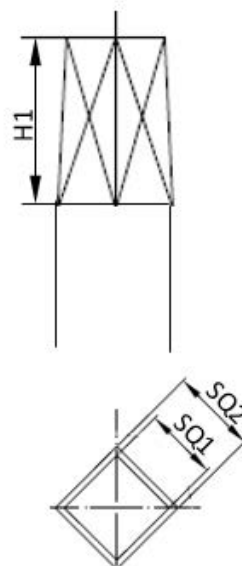
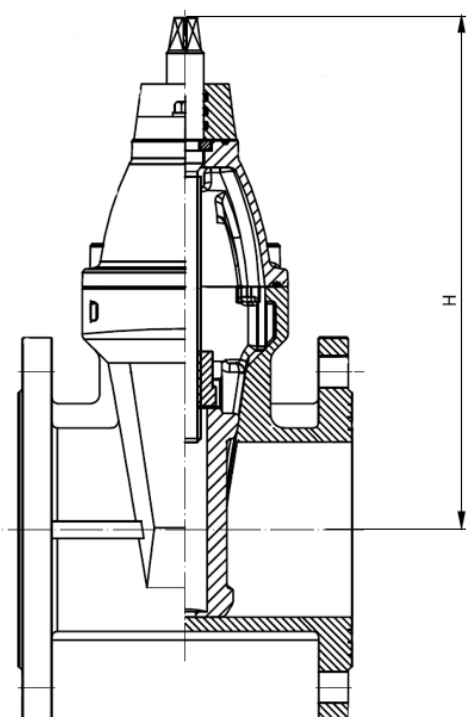
NUMBER OF TURNS

DN	Number of turns
40	14
50	15,5
65	18,5
80	23
100	29,5
125	22,5
150	26
200	35,5
250	45
300	52
350	61
400	69
450	76,5
500	88
600	103



Number of turns to go from complete open position to closed position.

DIMENSIONS WITHOUT HANDWHEEL



DN	H	SQ1	SQ2	H1
50	243	13.5	14.5	236
65	246	13.5	14.5	249
80	286	15.5	16.5	275
100	326	17.5	18.5	322
125	422	18.5	19.5	377
150	528	21.5	22.5	424
200	612	24	26.5	500
250	689	24	26.5	591
300	270	500	400	695

All dimensions are in mm.

	DN50	DN65	DN80	DN100	DN125	DN150	DN200	DN250	DN300	DN350	DN400	DN450	DN500	DN600
Kv (m³/h)	231	540	587	1071	1859	2654	4752	7476	11370	14138	19248	24165	28658	44788
ζ (Zeta)	0,15	0,08	0,15	0,11	0,09	0,09	0,09	0,09	0,08	0,1	0,09	0,09	0,1	0,08

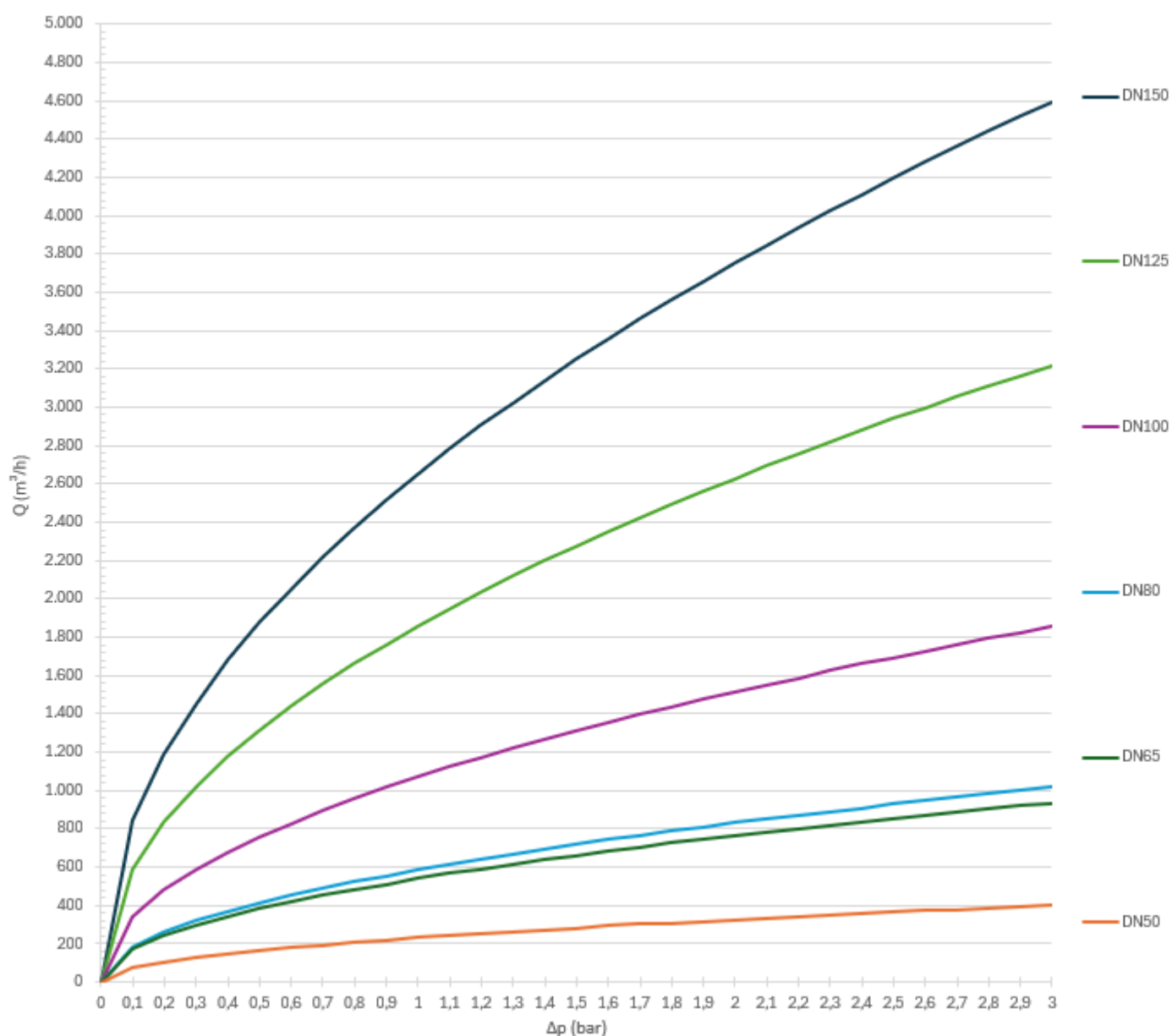
Kv value: flow rate at fully open position and pressure differential of 1 bar.

Zeta value: pressure loss coefficient (K).

PRESSURE LOSS TABLE

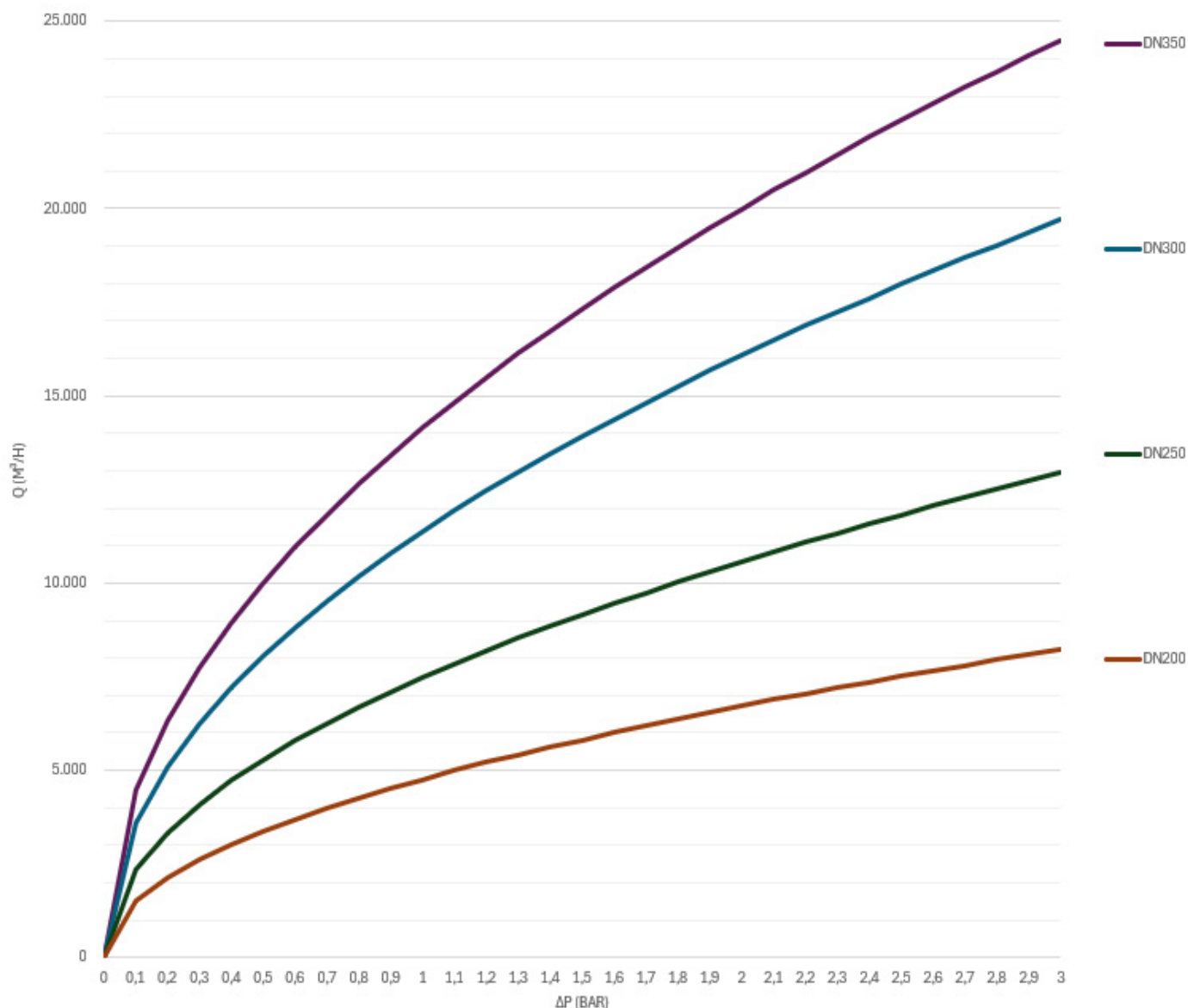
	DN50	DN65	DN80	DN100	DN125	DN150	DN200	DN250	DN300	DN350	DN400	DN450	DN500	DN600
Kv (m³/h)	231	540	587	1071	1859	2654	4752	7476	11370	14138	19248	24165	28658	44788
ρ kg/m³	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000
Δp bar	Q m³/h	Q m³/h	Q m³/h	Q m³/h	Q m³/h	Q m³/h	Q m³/h	Q m³/h	Q m³/h	Q m³/h	Q m³/h	Q m³/h	Q m³/h	Q m³/h
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0,1	73	170	185	338	587	839	1502	2364	3595	4470	6086	7641	9062	14163
0,2	103	241	262	478	831	1186	2125	3343	5084	6322	8607	10806	12816	20029
0,3	126	295	321	586	1018	1453	2602	4094	6227	7743	10542	13235	15696	24531
0,4	146	341	371	677	1175	1678	3005	4728	7191	8941	12173	15283	18124	28326
0,5	163	381	415	757	1314	1876	3360	5286	8039	9997	13610	17087	20264	31669
0,6	178	418	454	829	1439	2055	3680	5790	8807	10951	14909	18718	22198	34692
0,7	193	451	491	896	1555	2220	3975	6254	9512	11828	16104	20217	23977	37472
0,8	206	482	525	957	1662	2373	4250	6686	10169	12645	17215	21613	25632	40059
0,9	219	512	556	1016	1763	2517	4508	7092	10786	13412	18260	22924	27187	42489
1	231	540	587	1071	1859	2654	4752	7476	11370	14138	19248	24165	28658	44788
1,1	242	566	615	1123	1949	2783	4983	7840	11924	14828	20187	25344	30056	46974
1,2	253	591	643	1173	2036	2907	5205	8189	12455	15487	21085	26471	31393	49062
1,3	263	615	669	1221	2119	3026	5418	8523	12963	16119	21946	27552	32675	51066
1,4	273	638	694	1267	2199	3140	5622	8845	13453	16728	22774	28592	33908	52993
1,5	282	661	718	1311	2276	3250	5819	9156	13925	17315	23573	29595	35098	54853
1,6	292	683	742	1354	2351	3357	6010	9456	14382	17883	24347	30566	36249	56652
1,7	301	704	765	1396	2423	3460	6195	9747	14824	18433	25096	31507	37365	58396
1,8	309	724	787	1436	2494	3560	6375	10030	15254	18968	25823	32420	38448	60089
1,9	318	744	809	1476	2562	3658	6550	10304	15672	19487	26531	33309	39502	61735
2	326	763	830	1514	2629	3753	6720	10572	16079	19994	27220	34174	40528	63339
2,1	334	782	850	1552	2693	3846	6886	10833	16476	20487	27893	35018	41529	64903
2,2	342	800	870	1588	2757	3936	7048	11088	16864	20970	28549	35842	42506	66431
2,3	350	818	890	1624	2819	4024	7206	11337	17243	21441	29191	36648	43462	67924
2,4	357	836	909	1659	2879	4111	7361	11581	17614	21902	29818	37436	44396	69385
2,5	365	853	928	1693	2939	4196	7513	11820	17977	22354	30433	38208	45312	70816
2,6	372	870	946	1726	2997	4279	7662	12054	18333	22796	31036	38964	46209	72218
2,7	379	887	964	1759	3054	4360	7808	12284	18682	23231	31627	39707	47089	73594
2,8	386	903	982	1792	3110	4440	7951	12509	19025	23657	32208	40435	47954	74944
2,9	393	919	999	1823	3165	4519	8092	12731	19362	24076	32778	41151	48802	76271
3	400	935	1016	1855	3219	4596	8230	12948	19693	24487	33338	41855	49637	77575

PRESSURE LOSS CHART DN50-DN150



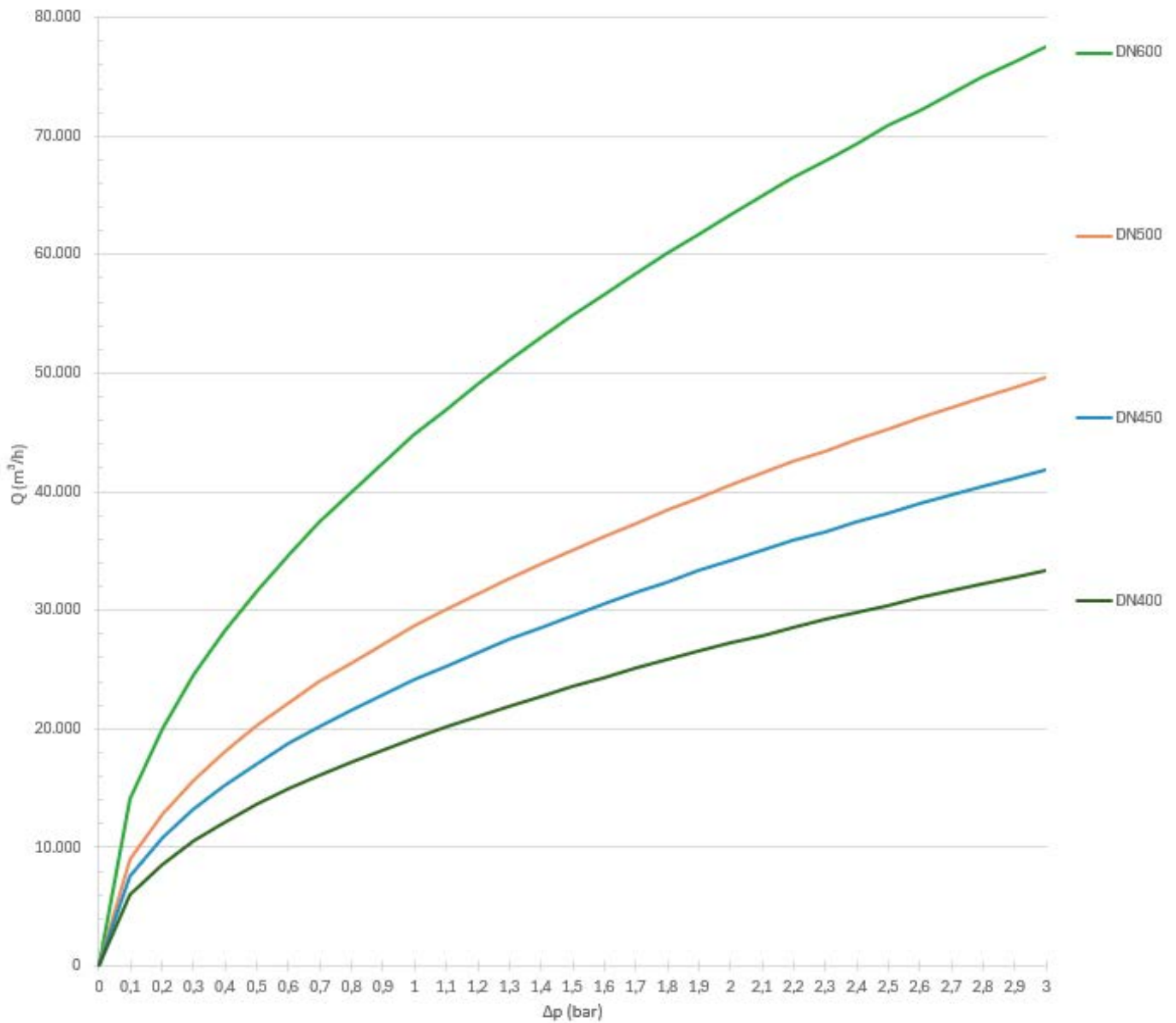
The above chart is created for water with a density of 1000 kg/m^3 and assuming that the gate valve is fully open. The values can also be read in the pressure loss table.

PRESSURE LOSS CHART DN200-DN350



The above chart is created for water with a density of 1000 kg/m³ and assuming that the gate valve is fully open. The values can also be read in the pressure loss table.

PRESSURE LOSS CHART DN400-DN600



The above chart is created for water with a density of 1000 kg/m^3 and assuming that the gate valve is fully open. The values can also be read in the pressure loss table.



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