

hawle

ÖZKAN-**PRODUCTS**

HAWLE. **MADE FOR GENERATIONS.**



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Double eccentric butterfly valve
Hawle-Özkan

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Tilting type check valve
with lever and weight
with lever and weight, hydraulic damped

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Slanted seat check valves
without hydraulic end stage dampening
with hydraulic end stage dampening

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Silent check valve
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Foot valve
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Air release valve
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Dismantling joint
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WELCOME

... to the world of Özkan



Özkan is one of the world's leading manufacturers of individual valve solutions. We are a proud producer of high performance double eccentric butterfly valves including all necessary accessories and equipment in accordance with standard and European norms. Custom made valves for special applications and/or operating conditions are part of our unique speciality.

Our know-how spans a variety of applications. Combining the years of experience with our clear understanding of various customer demands, enables us to configure the optimal valve for our industrial and waterworks customers. A comprehensive service programme ensures years of satisfying product performance.

We stand for high quality, efficiency and durability. This is why international customers trust our products and technology - since 1983.

The employees of our company headquarters in Izmir, Turkey, put their efforts and know-how into engineering, development and production processes.

Together with our excellent international network around the globe we strive for continuous improvement and perfection. Driven by a strong customer focus, state-of-the-art technology and professional education, we provide top service and support to all clients.

Özkan a Member of Hawle Austria Group



E. Hawle Armaturenwerke GmbH 4840 Vöcklabruck - Austria - Wagrainner Straße 13
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COMPANY PROFILE

- Founded 1983 in Izmir / Turkey
- 100 % subsidiary of Hawle Austria Group since September 2011
- Producing butterfly valves since 1986, also as a quality OEM manufacturer
- Certificates: ISO 9001, ISO 14001, OHSAS 18001, CE approval
- Distribution in more than 25 countries worldwide
- 180 employees

PRODUCT PORTFOLIO

- Double flanged Butterfly Valves
- Check Valves / Slanted Seat Check Valves / Hydraulic Damped Check Valves
- Axial Silent Check Valves
- Dismantling Joints
- Foot Valves
- Air Release Valves



Izmir plant
Turkey

DOUBLE ECCENTRIC Butterfly Valve Hawle-Özkan



Design features

- Double eccentric, mounted disc
- Standard version incl. operator: Wormgearbox and handwheel
- Design according EN 593
- Prepared for actuator
- Face-to-face dimension according EN 558 – 1 SERIES 14, 13 OPTIONAL
- Flange connection dimensions according to EN 1092-2
- Pressure rates: PN 10 | PN 16 | PN 25 | PN 40

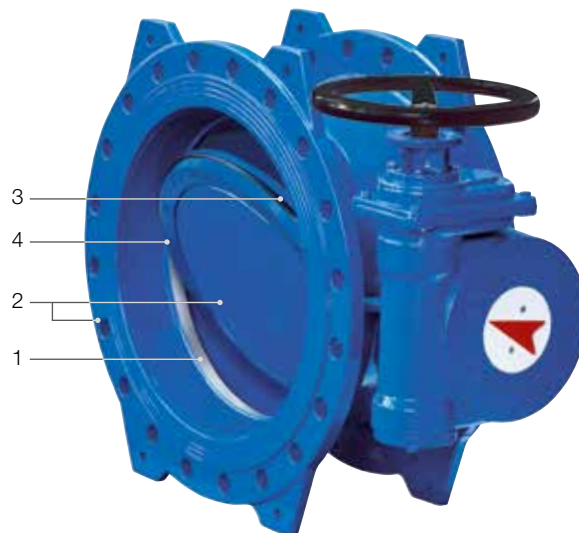
Material | Technical features

- Body seat** made of stainless steel, welded and microfinished
 - Body and disc** made of ductil iron, epoxy powder coated
 - Sealing ring** made of elastomer
 - Retaining ring** made of steel, epoxy powder coated
- **All connections** made of stainless steel
 - **Bearing system** made of bronze - self lubricating
 - **Shafts** made of stainless steel
 - **Handwheel** made of cast iron, epoxy powder coated

Suitable accessories

Adaptor for extension spindles **E2**, DN 200: No. 9211
 Adaptor square cap: No. 2161
 Actuator: No. 9920
 Flat gasket: No. 3390

No. 9881



Order No.	MOP (PN)	Dimensions/DN																	
		150	200	250	300	350	400	450	500	600	700	800	900	1000	1100	1200	1400	1600	1800
9881	10																		
	16																		
	25																		
	40																		

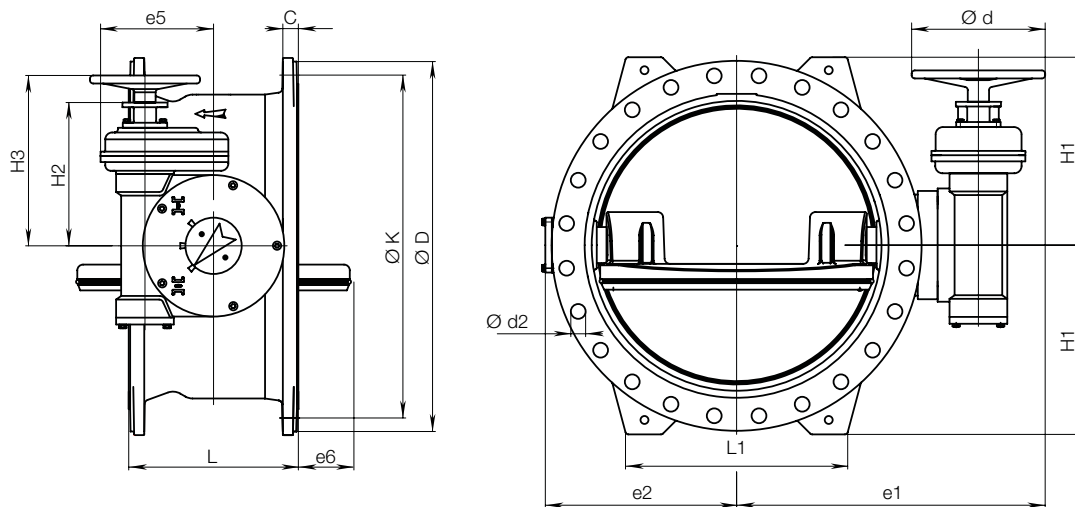
Application example



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DOUBLE ECCENTRIC

Butterfly Valve Hawle-Özkan



No. 9881

Pressure rating PN 10

DN	MOP (PN)	L Serie 14	L1	e1	e2	e5	e6	Ø d	Ø D	Ø K	C	Bolts Qty.	Ø d2	H1	H2	H3	Turns to open/close	Weight
150	10	210	-	378	151	134	0	245	285	240	19,0	8	23	143	136	212	11,25	45
200		230	180	405	177	134	0	245	340	295	20,0	8	23	180	136	212	11,25	60
250		250	220	481	214	158	5	245	405	350	22,0	12	23	213	163	239	10	95
300		270	280	503	237	158	11	245	460	400	24,5	12	23	242	163	239	10	115
350		290	320	595	283	175	28	370	505	460	24,5	16	23	264	184	271	12,5	155
400		310	335	626	297	175	43	370	565	515	24,5	16	28	293	184	271	12,5	165
450		330	380	670	333	198	57	370	615	565	25,5	20	28	320	285	372	36,25	220
500		350	400	701	344	245	67	370	670	620	26,5	20	28	345	334	420	43,5	285
600		390	440	749	414	245	98	370	780	725	30,0	20	31	400	334	420	43,5	350
700		430	540	838	511	313	126	370	895	840	32,5	24	31	460	397	484	104	575
800		470	610	855	530	313	153	370	1015	950	35,0	24	34	520	397	484	104	680
900		510	670	965	618	365	181	370	1115	1050	37,5	28	34	568	432	519	192,5	980
1000		550	740	1039	650	365	206	370	1230	1160	40,0	28	37	625	432	519	192,5	1155
1100		590	750	1022	720	365	237	370	1355	1270	53,5	32	37	695	432	519	192,5	1558
1200		630	900	1251	782	515	264	485	1455	1380	45,0	32	41	738	538	625	362,5	1965
1400		710	1160	1349	917	515	323	485	1675	1590	46,0	36	44	848	538	625	362,5	2690
1500		750	1080	1411	1015	656	348	485	1820	1700	47,0	36	44	910	681	768	562	3440
1600		790	1250	1483	1060	656	379	485	1915	1820	49,0	40	50	970	681	768	562	4366
1800		870	1220	1586	1183	656	431	485	2115	2020	52,0	44	50	1075	681	768	562	4760
2000		950	1300	1769	1303	656	481	485	2325	2230	55,0	48	50	1183	681	768	562	7183
2200		1030	1500	1906	1420	656	533	605	2555	2440	65,0	52	57	1285	809	909	1574	8320
2400		1110	1600	2095	1593	744	604	605	2760	2650	65,0	56	56	1390	898	998	1345	12900
2500		1150	1600	2122	1610	744	628	605	2860	2750	65,0	56	56	1440	898	998	1345	13820

DOUBLE ECCENTRIC

Butterfly Valve Hawle-Özkan



No. 9881

Pressure rating PN 16

DN	MOP (PN)	L Serie 14	L1	e1	e2	e5	e6	Ød	ØD	ØK	C	Bolts		H1	H2	H3	Turns to open/close	Weight
												Qty.	Ød2					
150	16	210		378	151	134	0	245	285	240	19,0	8	23	143	136	212	11,25	45
200		230	180	405	177	134	0	245	340	295	20,0	12	23	180	136	212	11,25	60
250		250	220	481	214	158	6	245	405	355	22,0	12	28	213	163	239	10	95
300		270	280	503	237	158	11	245	460	410	24,5	12	28	242	163	239	10	115
350		290	320	595	283	175	28	370	520	470	26,5	16	28	272	184	271	12,5	162
400		310	335	626	297	198	43	370	580	525	28,0	16	31	300	285	372	36,25	204
450		330	380	670	333	198	57	370	640	585	30,0	20	31	330	285	372	36,25	240
500		350	400	721	344	245	67	370	715	650	31,5	20	34	370	334	420	43,5	325
600		390	500	779	414	245	98	370	840	770	36,0	20	37	432	334	420	43,5	435
700		430	540	838	511	313	126	370	910	840	39,5	24	37	467	397	484	104	610
800		470	615	928	530	313	153	370	1025	950	43,0	24	41	525	397	484	104	780
900		510	675	1007	618	365	181	370	1125	1050	46,5	28	41	573	432	519	192,5	1065
1000		550	740	1039	650	365	206	370	1255	1170	50,0	28	44	638	432	519	192,5	1320
1100		590	750	1091	720	365	237	370	1355	1270	53,5	32	44	696	432	519	192,5	1558
1200		630	900	1251	782	515	264	485	1485	1390	57,0	32	50	753	538	625	362,5	2375
1400		710	1160	1349	917	515	323	485	1685	1590	60,0	36	50	848	538	625	362,5	2870
1500		750	1153	1385	986	656	348	485	1820	1710	62,5	36	57	930	681	768	562	4055
1600		790	1250	1508	1115	656	379	485	1930	1820	65,0	40	57	975	681	768	562	5150
1800		870	1220	1630	1217	656	431	485	2130	2020	70,0	44	57	1080	681	768	562	5580
2000		950	1300	1769	1303	656	481	485	2345	2230	75,0	48	62	1193	681	768	562	8500
2200		1030	1500	1975	1460	744	533	605	2555	2440	80,0	52	62	1290	898	998	1345	11220
2400		1110	1630	2095	1593	744	604	605						1390	898	998	1345	14650
2500		1150	1650	2122	1610	744	628	605						1440	898	998	1345	16040

No. 9881

Pressure rating PN 25

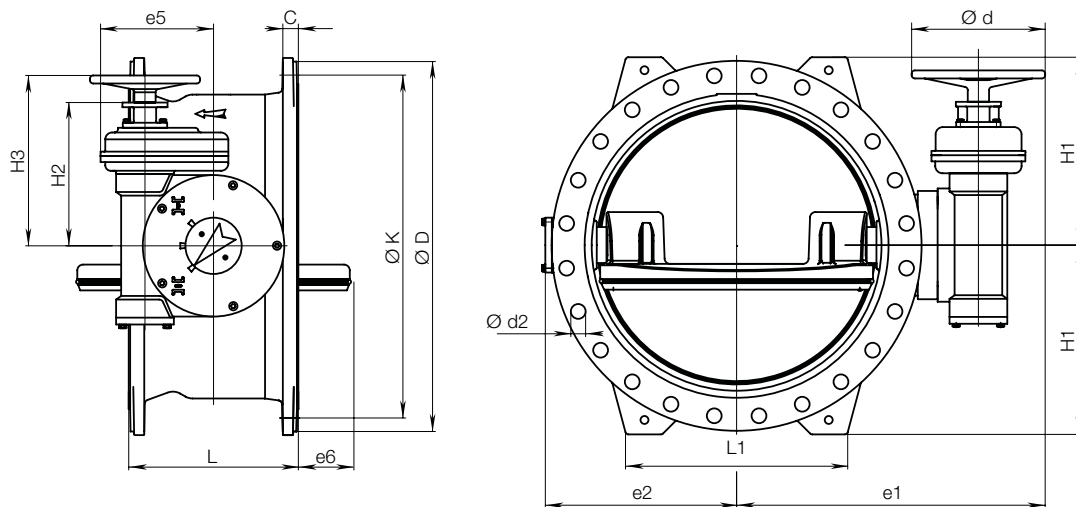
DN	MOP (PN)	L Serie 14	L1	e1	e2	e5	e6	Ød	ØD	ØK	C	Bolts		H1	H2	H3	Turns to open/close	Weight
												Qty.	Ød2					
150	25	210		378	151	134		245	300	250	20,0	8	28	150	136	212	11,25	55
200		230	200	462	198	158		245	360	310	22,0	12	28	190	163	239	10	80
250		250	305	556	250	175	6	370	425	370	24,5	12	31	223	184	271	12,5	160
300		270	340	591	277	198	11	370	485	430	27,5	16	31	253	285	372	36,25	185
350		290	320	619	294	198	28	370	555	490	30,0	16	34	288	285	372	36,25	216
400		310	375	663	342	245	40	370	620	550	32,0	16	37	320	334	420	43,5	295
450		330	470	709	382	245	54	370	670	600	34,5	20	37	345	334	420	43,5	352
500		350	430	745	410	313	67	370	730	660	36,5	20	37	375	397	484	104	475
600		390	530	798	461	313	94	370	845	770	42,0	20	41	433	397	484	104	655
700		430	640	877	535	365	122	370	960	875	46,5	24	44	490	432	519	192,5	900
800		470	575	974	590	365	144	370	1085	990	51,0	24	50	560	432	519	192,5	1184
900		510	745	1114	685	515	177	485	1185	1090	55,5	28	50	610	538	625	362,5	1800
1000		550	760	1171	741	515	206	485	1320	1210	60,0	28	57	675	538	625	362,5	2120
1200		630	880	1286	824	515	264	485	1530	1420	69,0	32	57	775	538	625	362,5	2780
1400		710	1010	1476	964	656	323	485	1755	1640	74,0	36	62	888	681	768	562	4210
1600		790	1210	1603	1110	656	382	605	1975	1860	81,0	40	62	1000	809	909	1574	5640
1800		870	1345	1833	1255	744	409	605	2195	2070	88,0	44	70	1118	898	998	1345	9100
2000		950	1400	1886	1353	744	473	605	2425	2300	95,0	48	70	1228	898	998	1345	11560



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DOUBLE ECCENTRIC

Butterfly Valve Hawle-Özkan



No. 9881

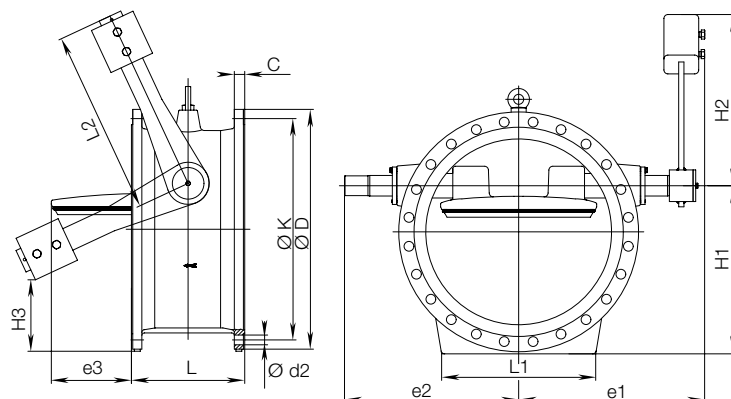
Pressure rating PN 40

DN	MOP (PN)	L Serie 14	L1	e1	e2	e5	e6	Ø d	Ø D	Ø K	C	Bolts Qty. Ø d2	H1	H2	H3	Turns to open/close	Weight
200	40	230	200	462	198	158	0	245	375	320	30,0	12 31	198	163	239	12,5	119
250		250	305	579	250	198	6	370	450	385	34,5	12 34	235	285	372	36,25	180
300		270	340	610	277	198	11	370	515	450	39,5	16 34	268	285	372	36,25	210
350		290	360	631	294	245	28	370	580	510	44,0	16 37	300	334	420	43,5	296
400		310	380	696	342	245	40	370	660	585	48,0	16 41	340	334	420	43,5	360
450		330	470	716	386	313	51	370	685	610	49,0	20 41	353	357	484	104	490
500		350	440	762	412	313	64	370	755	670	52,0	20 44	388	397	484	104	545
600		390	530	828	461	313	94	370	890	795	58,0	20 50	455	397	484	104	740
700		430	640	877	535	365	122	370	995	900	64,0	24 50	508	432	519	192,5	1079
800		470	568	1068	592	515	144	485	1140	1030	72,0	24 57	580	538	625	362,5	1828
900		510	745	1114	685	515	178	485	1250	1140	80,0	28 57	645	538	625	362,5	2280
1000		550	800	1188	743	515	205	485	1360	1250	95,0	28 57	695	538	625	362,5	2530
1200		630	880	1316	883	656	253	485	1575	1460	95,0	32 62	800	681	768	562	3906
1400		710	1110	1536	968	656	307	605	1795	1680	105,0	36 62	915	809	909	1574	5340
1600		790	1250	1733	1133	744	353	605	2025	1900	120,0	40 70	1030	898	998	1345	8820
1800		870	1350	1833	1318	744	407	605	2240	2110	165,0	48 70	1140	898	998	1345	11480

-

[illegible]

- **Body seat** made of stainless steel, welded and microfinished
- **Body and disc** made of ductile iron, epoxy powder coated
- **Sealing rings** made of elastomer
- **Shafts** made of stainless steel
- **Retaining ring** made of steel, epoxy powder coated or stainless steel
- **Internal and external bolts** made of stainless steel
- **Bearing system** made of bronze - self lubricating



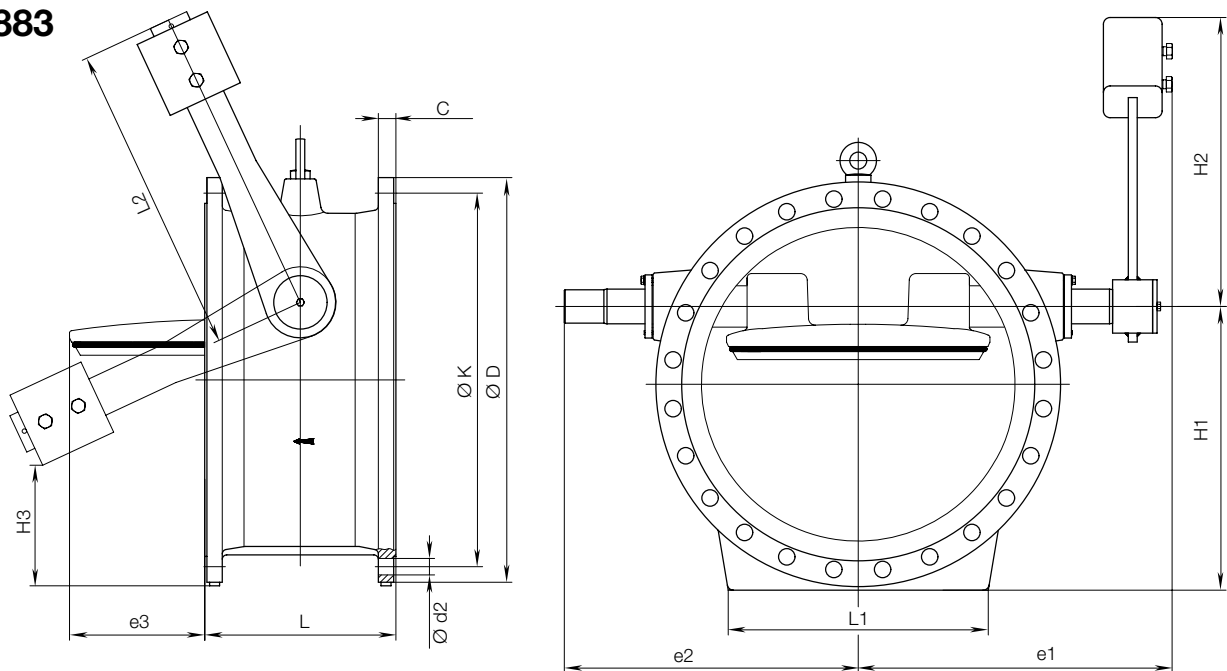
DN	MOP (PN)	L	L1	L2	e1	e2	e3	ØD	ØK	C	Bolts		H1	H2	H3	Weight
											Qty.	Ød2				
150	10	210		200	245	230	9	285	240	19,0	8	23	180	188	65	35
200		230		200	268	252	35	340	295	20,0	8	23	220	188	107	43
250		250		300	325	305	68	405	350	22,0	12	23	265	285	92	73
300		270	285	300	340	317	87	460	400	24,5	12	23	315	285	142	96
350		290	250	400	410	382	117	505	460	24,5	16	23	357	372	140	136
400		310	370	400	440	412	138	565	515	24,5	16	28	400	372	182	168
450		330	425	450	470	443	165	615	565	25,5	20	28	442	418	204	237
500		350	460	500	520	490	188	670	620	26,5	20	28	492	465	222	294
600		390	535	600	590	567	238	780	725	30,0	20	31	580	555	267	423
700		430	580	700	700	661	305	895	840	32,5	24	31	640	653	273	550
800		470	655	800	745	711	355	1015	950	35,0	24	34	723	743	314	820
900		510	680	900	800	780	400	1115	1050	37,5	28	34	797	830	348	1060
1000		550	690	1000	870	863	460	1230	1160	40,0	28	37	887	935	360	1245
1200		630	810	1200	960	938	568	1455	1380	45,0	32	41	1055	1113	442	1810
1400		710	900	1400	1240	1210	682	1675	1590	46,0	36	44	1210	1305	487	3140

TILTING TYPE CHECK VALVES

with lever and counterweight



No. 9883



Pressure rating PN 16

DN	MOP (PN)	L	L1	L2	e1	e2	e3	ØD	ØK	C	Bolts		H1	H2	H3	Weight
											Qty.	Ød2				
150	16	210		200	245	230	9	285	240	19,0	8	23	180	188	65	35
200		230		200	268	252	35	340	295	20,0	12	23	220	188	107	43
250		250		300	325	305	68	405	355	22,0	12	28	265	285	92	73
300		270	285	300	340	317	87	460	410	24,5	12	28	315	285	142	96
350		290	250	400	410	382	117	520	470	26,5	16	28	357	372	140	136
400		310	370	400	440	412	138	580	525	28,0	16	31	400	372	182	168
450		330	425	450	470	443	165	640	585	30,0	20	31	442	418	204	237
500		350	460	500	520	490	188	715	650	31,5	20	34	492	465	222	294
600		390	535	600	590	567	238	840	770	36,0	20	37	580	555	267	423
700		430	580	700	700	661	305	910	840	39,5	24	37	640	653	273	550
800		470	655	800	745	711	355	1025	950	43,0	24	41	723	743	314	820
900		510	680	900	800	780	400	1125	1050	46,5	28	41	797	830	348	1060
1000		550	690	1000	870	863	460	1255	1170	50,0	28	44	887	935	360	1245
1200		630	810	1200	960	938	568	1485	1390	57,0	32	50	1055	1113	442	1810
1400		710	900	1400	1240	1210	682	1685	1590	60,0	36	50	1210	1305	487	3140

Pressure rating PN 25

DN	MOP (PN)	L	L1	L2	e1	e2	e3	ØD	ØK	C	Bolts		H1	H2	H3	Weight
											Qty.	Ød2				
150	25	210		200	245	230	9	300	250	20	8	28	186	188	73	38
200		230		200	268	252	35	360	310	22	12	28	230	188	117	50
250		250		300	330	317	68	425	370	24,5	12	31	285	285	111	94
300		270	310	400	390	362	87	485	430	27,5	16	31	328	370	112	126
350		290	250	400	435	410	117	555	490	30,0	16	34	375	372	160	160
400		310	370	400	490	469	138	620	550	32,0	16	37	420	376	192	287
450		330	425	500	510	488	167	670	600	34,5	20	37	457	465	187	290
500		350	460	500	570	554	188	730	660	36,5	20	37	500	465	230	376
600		390	535	600	625	610	238	845	770	42,0	20	41	582	555	270	512
700		430	610	700	715	698	306	960	875	46,5	24	44	665	647	300	710
800		470	655	800	768	751	354	1085	990	51,0	24	50	723	760	310	1010
900		510	620	900	836	795	400	1185	1090	55,5	28	50	838	885	330	1460
1000		550	695	1000	900	880	460	1320	1210	60,0	28	57	950	940	350	2390

TILTING TYPE CHECK VALVES

with lever and counterweight, hydraulic damped



Design features

- Tilting type check valve with lever and counterweight, hydraulic damped
- Dimensions: from DN 200 to DN 1000
- Pressure ratings: PN 10 | PN 16 | PN 25
- Tilting disk check valves with hydraulic damper eliminates slam closing and water hammer before entire closing stroke
- Closing speed is adjustable, depending on working conditions. All components of the valve are designed for high stress occurred during damping effect
- Flange connection dimensions according to EN 1092-2

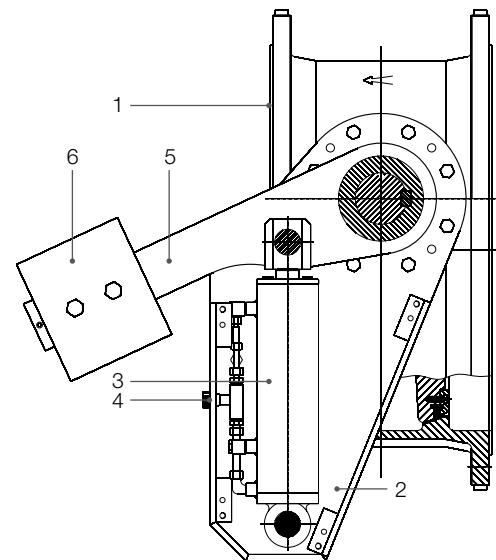
No. 9884



Material | Technical features

- **Body seat** made of stainless steel, welded and microfinished
 - **Body and disc** made of ductile iron, epoxy powder coated
 - **Sealing rings** made of elastomer
 - **Shafts** made of stainless steel
 - **Retaining ring** made of steel, epoxy powder coated, or stainless steel
 - **Internal and external bolts** made of stainless steel
 - **Bearing system** made of bronze - self lubricating
- Body and disc** made of ductile iron, epoxy powder coated
 - Damper chassis** made of steel, epoxy powder coated
 - Hydraulic damper**
 - Closing speed control valve**
 - Lever** made of steel, epoxy powder coated
 - Weight** made of steel, epoxy powder coated

Order No.	MOP (PN)	Dimension/DN												
		150	200	250	300	350	400	450	500	600	700	800	900	1000
9884	10													
	16													
	25													



Application example



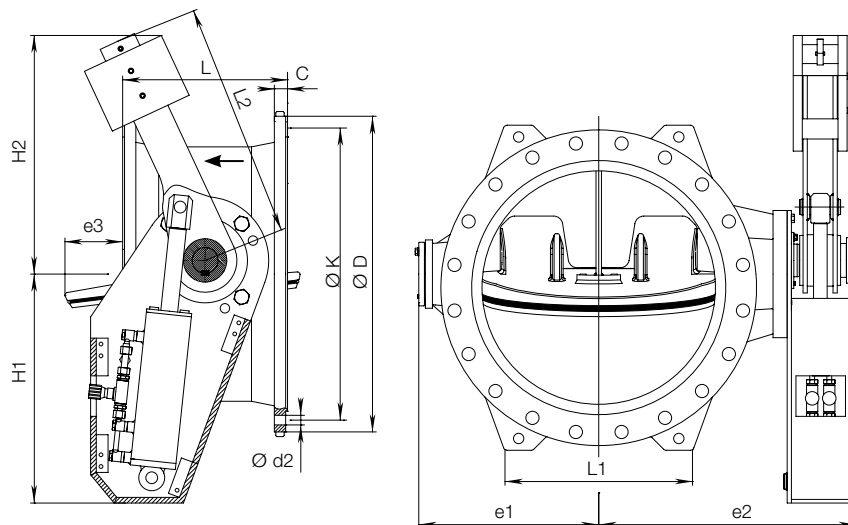
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TILTING TYPE CHECK VALVES

with lever and counterweight, hydraulic damped



No. 9884



Pressure rating PN 10

DN	MOP (PN)	L	L1	L2	e1	e2	e3	ØD	ØK	C	Bolts		H1	H2	Weight
											Qty.	Ød2			
150	10	210		335	132	265		285	240	19,0	8	23	276	348	62
200		230	200	370	210	357	5	340	295	20,0	8	23	297	378	90
250		250	255	370	241	373	29	405	350	22,0	12	23	288	390	130
300		270	278	370	261	414	34	460	400	24,5	12	23	294	383	165
350		290	352	440	291	468	67	505	460	24,5	16	23	325	467	210
400		310	343	440	322	514	69	565	515	24,5	16	28	339	453	230
450		330	380	485	357	550	84	615	565	25,5	20	28	335	498	280
500		350	400	500	382	595	98	670	620	26,5	20	28	486	506	310
600		390	540	605	430	631	139	780	725	30,0	20	31	516	641	610
700		430	598	720	497	750	220	895	840	32,5	24	31	603	807	850
800		470	670	810	563	812	260	1015	950	35,0	24	34	644	913	1050
900		510	710	920	662	933	305	1115	1050	37,5	28	34	707	1030	1350
1000		550	750	1120	688	1045	352	1230	1160	40,0	28	37	705	1255	2050

Pressure rating PN 16

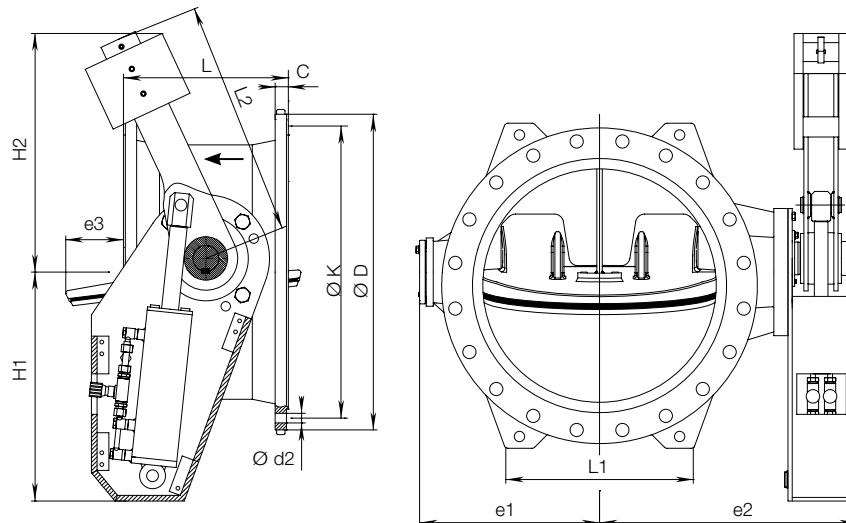
DN	MOP (PN)	L	L1	L2	e1	e2	e3	ØD	ØK	C	Bolts		H1	H2	Weight
											Qty.	Ød2			
150	16	210		335	132	265		285	240	19,0	8	23	276	348	62
200		230	200	370	210	357	5	340	295	20,0	12	23	297	378	90
250		250	255	370	241	373	29	405	355	22,0	12	28	288	390	130
300		270	278	370	261	414	34	460	410	24,5	12	28	294	383	165
350		290	352	440	291	468	67	520	470	26,5	16	28	325	467	210
400		310	343	440	322	514	69	580	525	28,0	16	31	339	453	230
450		330	380	485	357	550	84	640	585	30,0	20	31	335	498	280
500		350	400	500	382	595	98	715	650	31,5	20	34	486	506	420
600		390	540	605	430	631	139	840	770	36,0	20	37	516	641	610
700		430	598	720	497	750	220	910	840	39,5	24	37	603	807	850
800		470	670	810	563	812	260	1025	950	43,0	24	41	644	913	1050
900		510	710	920	662	933	305	1125	1050	46,5	28	41	707	1030	1350
1000		550	750	1120	688	1045	352	1255	1170	50,0	28	44	705	1255	2050

TILTING TYPE CHECK VALVES

with lever and counterweight, hydraulic damped



No. 9884



Pressure rating PN 25

DN	MOP (PN)	L	L1	L2	e1	e2	e3	ØD	ØK	C	Bolts		H1	H2	Weight
											Qty.	Ød2			
150	25	210		335	132	265		300	250	20,0	8	28	276	348	70
200		230	200	370	210	357	5	360	310	22,0	12	28	297	378	95
250		250	250	370	259	416	14	425	370	24,5	12	31	297	383	170
300		270	279	370	261	414	35	485	430	27,5	16	31	294	383	180
350		290	352	440	291	468	67	555	490	30,0	16	34	328	467	220
400		310	343	440	322	514	69	620	550	32,0	16	37	339	453	250
450		330	380	485	357	550	84	670	600	34,5	20	37	335	498	295
500		350	430	500	386	595	98	730	660	36,5	20	37	486	641	850
600		390	539	605	484	721	139	845	770	42,0	20	41	670	740	790
700		430	598	720	497	750	220	960	875	46,5	24	44	603	807	950
800		470	670	810	584	927	260	1085	990	51,0	24	50	644	913	1200
900		510	770	913	671	1030	223	1185	1090	55,5	28	50	916	1255	1850
1000		550	750	1120	688	1045	352	1320	1210	60,0	28	57	705	1255	2070



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SLANTED SEAT CHECK VALVES

with or without hydraulic end stage dampening

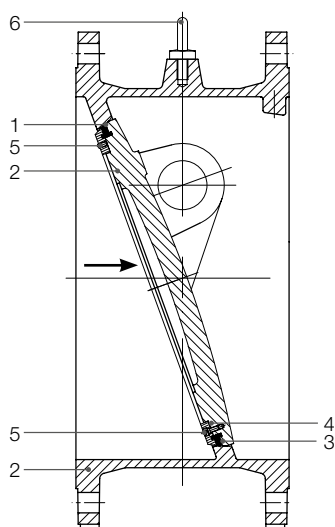


Design features

- In contrast to a standard vertical disc closing position, the closing time is reduced due to slanted disc position
- Lower head loss due to optimized shape of the disc and body
- Compact, very little space required
- No moving parts on the valve exterior side (standard version)
- Dimensions: from DN 200 to DN 1200
- Pressure ratings: PN 10 | PN 16 | PN 25
- Flange connection dimensions according to EN 1092-2
- Option: **hydraulic end stage damper**
 - The effects of a potential water hammer is reduced with the action of hydraulic end stage dampening
 - Easy external service access to the hydraulic dampening system
 - Dampening can be adjusted according to needs
 - Easy opening of the disc as this is not fixed to the damper

Material | Technical features

- Body seat** made of stainless steel, welded and microfinished
 - Body and disc** made of ductile iron, epoxy powder coated
 - Sealing rings** made of elastomer
 - Retaining ring** made of steel, epoxy powder coated or stainless steel
 - Internal and external bolts** made of stainless steel
 - Lifting rings** made of galvanized steel
- **Shafts** made of stainless steel
 - **Bearing system** made of bronze



No. 9885 metal seated

No. 9886 resilient seated



Standard version

without hydraulic end stage dampening



Option

with hydraulic end stage dampening



Order No.	MOP (PN)	Dimension/DN												
		200	250	300	350	400	450	500	600	700	800	900	1000	1200
9885 / 9886	10													
	16													
	25									*	*	*	*	*

* Other dimensions or pressure rating on request

Application example



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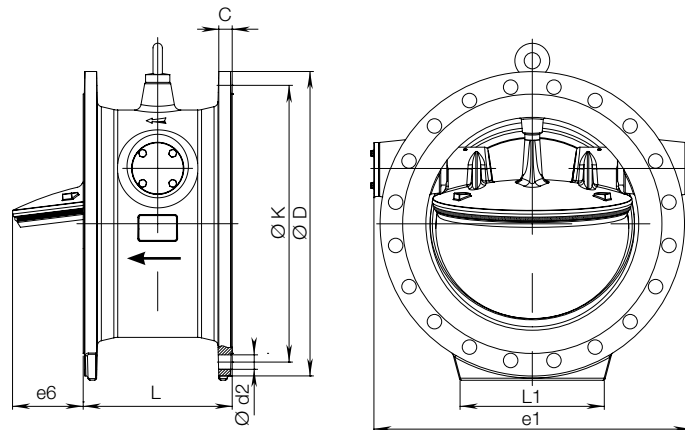
SLANTED SEAT CHECK VALVES

without hydraulic end stage dampening



No. 9885 metal seated

No. 9886 resilient seated



Pressure rating PN 10

DN	MOP (PN)	L	L1	e1	e6	ØD	ØK	C	Bolts		Weight
									Qty.	Ød2	
200	10	230	-	370	17	340	295	20,0	8	23	60
250		250	180	440	48	405	350	22,0	12	23	72
300		270	200	485	63	455	400	24,5	12	23	117
350		290	260	555	90	520	460	26,5	16	23	133
400		310	260	625	115	580	515	28,0	16	28	140
450		330	300	685	145	640	565	30,0	20	28	225
500		350	340	745	166	715	620	31,5	20	28	273
600		390	400	880	217	840	725	36,5	20	31	415
700		430	500	980	256	910	840	39,5	24	31	600
800		470	500	1070	323	1015	950	35,0	24	34	830
900		510	640	1220	360	1125	1050	46,5	28	34	1060
1000		550	740	1374	417	1255	1160	50,0	28	37	1562
1200		630	885	1630	530	1485	1380	57,0	32	41	2275

Pressure rating PN 16

DN	MOP (PN)	L	L1	e1	e6	ØD	ØK	C	Bolts		Weight
									Qty.	Ød2	
200	16	230	-	370	17	340	295	20,0	12	23	62
250		250	180	440	48	405	355	22,0	12	28	75
300		270	200	485	63	455	410	24,5	12	28	119
350		290	260	555	90	520	470	26,5	16	28	135
400		310	260	625	115	580	525	28,0	16	31	142
450		330	300	685	145	640	585	30,0	20	31	227
500		350	340	745	166	715	650	31,5	20	34	275
600		390	400	880	217	840	770	36,5	20	37	417
700		430	500	980	256	910	840	39,5	24	37	602
800		470	500	1070	323	1015	950	35,0	24	41	832
900		510	640	1220	360	1125	1050	46,5	28	41	1065
1000		550	740	1374	417	1255	1170	50,0	28	44	1564
1200		630	885	1630	530	1485	1390	57,0	32	50	2277

Pressure rating PN 25

DN	MOP (PN)	L	L1	e1	e6	ØD	ØK	C	Bolts		Weight
									Qty.	Ød2	
200	25	230	-	370	17	360	310	22,0	12	28	63
250		250	180	440	48	425	370	24,5	12	31	76
300		270	250	525	63	485	430	27,5	16	31	127
350		290	260	555	90	555	490	30,0	16	34	145
400		310	260	625	115	620	550	32,0	16	37	205
450		330	300	705	115	660	585	49,0	16	41	280
500		350	340	745	166	730	660	36,5	20	37	307
600		390	400	880	217	845	770	42,0	20	41	452

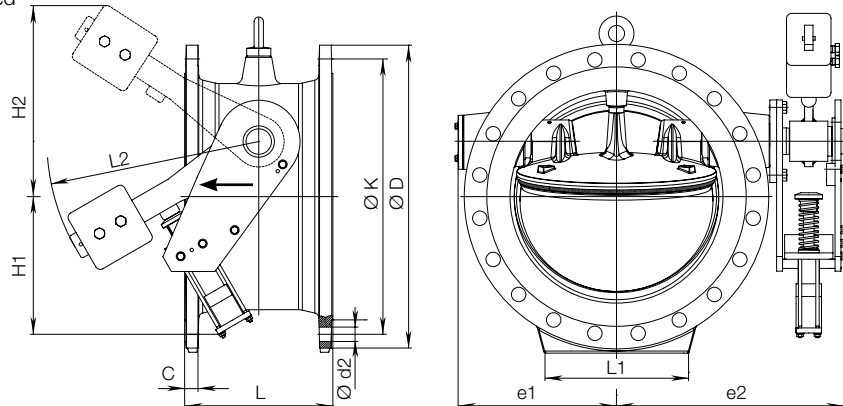
SLANTED SEAT CHECK VALVES

with hydraulic end stage dampening



No. 9885 metal seated

No. 9886 resilient seated



Pressure rating PN 10

DN	MOP (PN)	L	L1	L2	e1	e2	Ø D	Ø K	C	Bolts		H1	H2	Weight
										Qty.	Ød2			
200	10	230	-	235	185	318	340	295	20,0	8	23	250	218	80
250		250	180	300	220	355	405	350	22,0	12	23	265	272	98
300		270	200	300	242	374	455	400	24,5	12	23	252	285	143
350		290	260	400	277	413	520	460	26,5	16	23	269	353	160
400		310	260	400	312	446	580	515	28,0	16	28	257	366	175
450		330	300	450	342	505	640	565	30,0	20	28	324	403	250
500		350	340	500	372	530	715	620	31,5	20	28	334	455	298
600		390	400	600	440	603	840	725	36,5	20	31	310	533	460
700		430	500	700	490	724	910	840	39,5	24	31	360	623	640
800		470	500	800	535	783	1015	950	35,0	24	34	457	733	940
900		510	640	900	610	853	1125	1050	46,5	28	34	466	815	1110
1000		550	740	1000	687	992	1255	1160	50,0	28	37	500	880	1570
1200		630	885	1200	815	1208	1485	1380	57,0	32	41	695	1042	2636

Pressure rating PN 16

DN	MOP (PN)	L	L1	L2	e1	e2	Ø D	Ø K	C	Bolts		H1	H2	Weight
										Qty.	Ød2			
200	16	230	-	235	185	318	340	295	20,0	12	23	250	218	82
250		250	180	300	220	355	405	355	22,0	12	28	265	272	100
300		270	200	300	242	374	455	410	24,5	12	28	252	285	145
350		290	260	400	277	413	520	470	26,5	16	28	269	353	162
400		310	260	400	312	446	580	525	28,0	16	31	257	366	177
450		330	300	450	342	505	640	585	30,0	20	31	324	403	252
500		350	340	500	372	530	715	650	31,5	20	34	334	455	300
600		390	400	600	440	603	840	770	36,5	20	37	310	533	462
700		430	500	700	490	724	910	840	39,5	24	37	360	623	642
800		470	500	800	535	783	1015	950	35,0	24	41	457	733	942
900		510	640	900	610	853	1125	1050	46,5	28	41	466	815	1112
1000		550	740	1000	687	992	1255	1170	50,0	28	44	500	880	1572
1200		630	885	1200	815	1208	1485	1390	57,0	32	50	695	1042	2638

Pressure rating PN 25

DN	MOP (PN)	L	L1	L2	e1	e2	Ø D	Ø K	C	Bolts		H1	H2	Weight
										Qty.	Ød2			
200	25	230	-	235	185	318	360	310	22,0	12	28	250	218	85
250		250	180	300	220	355	425	370	24,5	12	31	265	272	102
300		270	250	300	262	395	485	430	27,5	16	31	282	341	162
350		290	260	400	277	413	555	490	30,0	16	34	269	353	172
400		310	260	310	312	446	620	550	32,0	16	37	257	366	235
450		330	300	450	352	505	660	585	49,0	16	41	327	403	310
500		350	340	500	372	530	730	660	36,5	20	37	334	455	322
600		390	400	390	440	603	845	770	42,0	20	41	310	533	490



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SILENT CHECK VALVE

PN 10 | PN 16 | PN 25 | PN 40



Design features

- Silent check valve
- Dimensions: from DN 100 to DN 1000
- Pressure ratings: PN 10 | PN 16 | PN 25 | PN 40
- Silent check valves are designed to meet non-slam, fast closing characteristics. Spring loaded disc and short closing stroke provides quick response to flow changes. Thus water hammer is minimized and non-slam, quick closing is achieved
- Full waterway design provides full pipeline cross section area around the disc in open position and assures lowest possible headloss
- These valves are suitable for high flow velocities
- They can be mounted in vertical or horizontal pipeline application

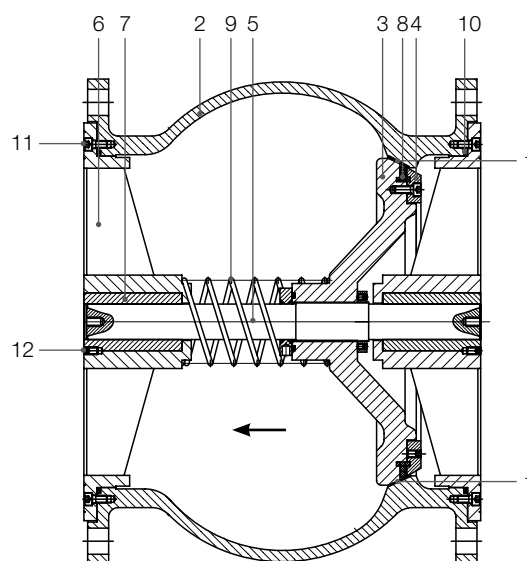
Material | Technical features

- 1 **Body seat** made of stainless steel, welded and microfinished
- 2 **Body** made of ductile iron, epoxy powder coated
- 3 **Disc** made of ductile iron, epoxy powder coated
- 4 **Retaining ring** made of steel, epoxy powder coated, or stainless steel
- 5 **Shafts** made of stainless steel
- 6 **Shaft support** made of ductile iron, epoxy powder coated
- 7 **Bearing** made of bronze - self lubricating
- 8 **Sealing rings** of elastomer
- 9 **Spring** made of stainless steel
- 10 **O-Ring** made of elastomer
- 11 **Bolts** made of stainless steel
- 12 **Hexagonal socket set screw** made of stainless steel

No. 9887



Order No.	MOP (PN)	Dimensions/DN													
		100	150	200	250	300	350	400	450	500	600	700	800	900	1000
9887	10														
	16														
	25														
	40														



Application example

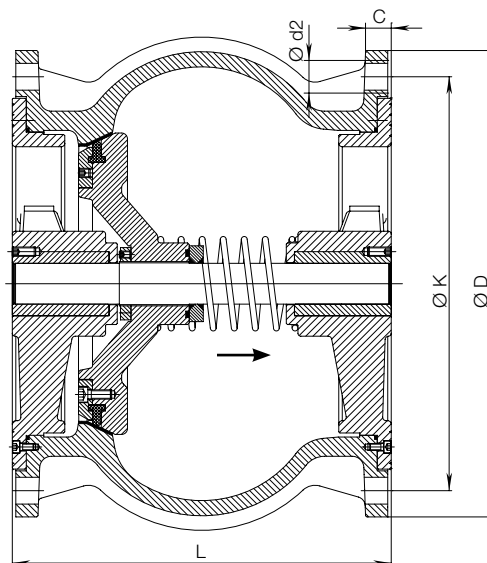


SILENT CHECK VALVE

PN 10 | PN 16 | PN 25 | PN 40



No. 9887



Pressure rating PN 10

DN	MOP (PN)	L	ØD	ØK	C	Bolts		Weight
						Quantity	Ød2	
100	10	175	220	180	19,0	8	19	21
125		200	250	210	19,0	8	19	28
150		225	285	240	19,0	8	23	38
200		275	340	295	20,0	8	23	56
250		325	405	350	22,0	12	23	98,5
300		375	460	400	24,5	12	23	130
350		425	505	460	24,5	16	23	140
400		475	565	515	24,5	16	28	216
450		500	615	565	25,5	20	28	295
500		550	670	620	26,5	20	28	383
600		600	780	725	30,0	20	31	530
700		650	895	840	32,5	24	31	645
800		700	1015	950	35,0	24	34	790
900		800	1115	1050	37,5	28	34	1390
1000		900	1230	1160	40,0	28	37	1680

Pressure rating PN 16

DN	MOP (PN)	L	ØD	ØK	C	Bolts		Weight
						Quantity	Ød2	
100	16	175	220	180	19,0	8	19	21
125		200	250	210	19,0	8	19	28
150		225	285	240	19,0	8	23	38
200		275	340	295	20,0	12	23	56
250		325	405	355	22,0	12	28	98,5
300		375	460	410	24,5	12	28	130
350		425	520	470	26,5	16	28	140
400		475	580	525	28,0	16	31	216
450		500	640	585	30,0	20	31	295
500		550	715	650	31,5	20	34	388
600		600	840	770	36,0	20	37	530
700		650	910	840	39,5	24	37	645
800		700	1025	950	43,0	24	41	803
900		800	1125	1050	46,5	28	41	1390
1000		900	1255	1170	50,0	28	44	1680



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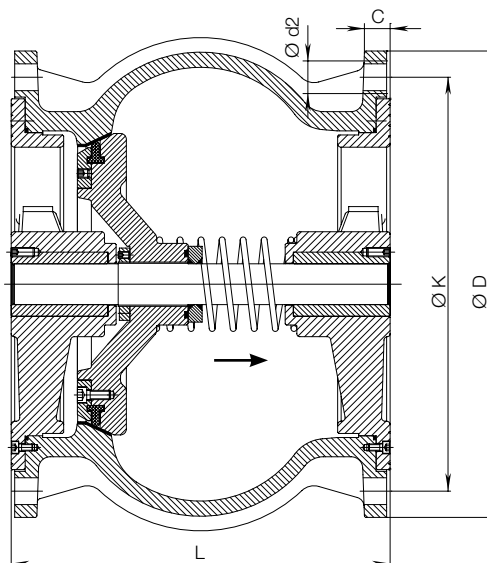
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SILENT CHECK VALVE

PN 10 | PN 16 | PN 25 | PN 40



No. 9887



Pressure rating PN 25

DN	MOP (PN)	L	ØD	ØK	C	Bolts		Weight
						Quantity	Ød2	
100	25	175	235	190	19,0	8	23	25
125		200	270	220	19,0	8	28	30
150		225	300	250	20,0	8	28	42
200		275	360	310	22,0	12	28	59
250		325	425	370	24,5	12	31	104,5
300		375	485	430	27,5	16	31	140
350		425	555	490	30,0	16	34	225
400		475	620	550	32,0	16	37	359
450		500	670	600	34,5	20	37	325
500		550	730	660	36,5	20	37	388
600		600	845	770	42,0	20	41	563
700		650	960	875	46,5	24	44	772
800		700	1085	990	51,0	24	50	981
900		800	1185	1090	55,5	28	50	1396
1000		900	1520	1210	60,0	28	57	1820

Pressure rating PN 40

DN	MOP (PN)	L	ØD	ØK	C	Bolts		Weight
						Quantity	Ød2	
100	40	175	235	190	19,0	8	23	25
125		200	270	220	23,5	8	28	30
150		225	300	250	26,0	8	28	42
200		275	375	320	30,0	12	31	72
250		325	450	385	34,5	12	34	115
300		375	515	450	39,5	16	34	160
350		425	580	510	44,0	16	37	249
400		475	660	585	48,0	16	41	372
450		500	685	610	49,0	20	41	355
500		550	755	670	52,0	20	44	437
600		600	890	795	58,0	20	50	654
700		650	995	900	64,0	24	50	835
800		700	1140	1030	72,0	24	57	1275
900		800	1250	1140	80,0	28	57	1650
1000		900	1360	1250	95,0	28	57	2120

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FOOT VALVE

PN 10 | PN 16



Design features

- The foot valve prevents the water column from draining off upon pump stop
- Installed in pump suction lines
- Dimensions: from DN 100 to DN 1000
- Pressure ratings: PN 10 | PN 16
- Resilient seated
- Body seat made of stainless steel, welded and microfinished
- Low restriction to flow as a result of the optimized design
- Assembly in vertical position
- Other option on request

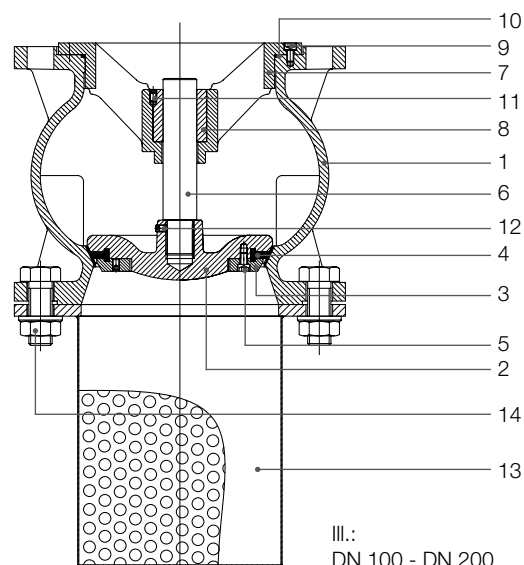
No. 9888



Order No.	MOP (PN)	Dimensions/DN													
		100	125	150	200	250	300	400	450	500	600	700	800	900	1000
9888	10														
	16														

Material | Technical features

- Body** made of ductile iron, epoxy powder coated
- Disc** made of ductile iron, epoxy powder coated
- Retaining ring** made of steel, epoxy powder coated
- Sealing rings** made of elastomer
- Hexagonal socket set screw** made of stainless steel
- Shafts** made of stainless steel
- Shaft support** made of ductile iron, epoxy powder coated
- Bearing** made of bronze
- Hexagonal socket set screw** made of stainless steel
- O-Ring** made of elastomer
- Bolts** made of stainless steel
- Bolts** made of stainless steel
- Strainer** made from galvanized steel or stainless steel
- Bolts and nuts** made from galvanized steel or stainless steel



Application example



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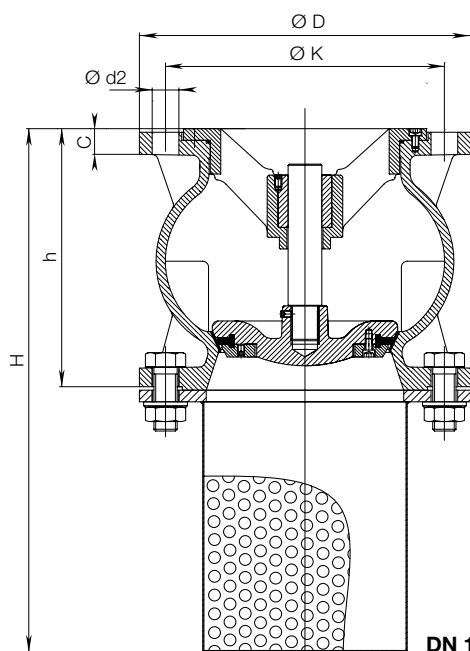
21

FOOT VALVE

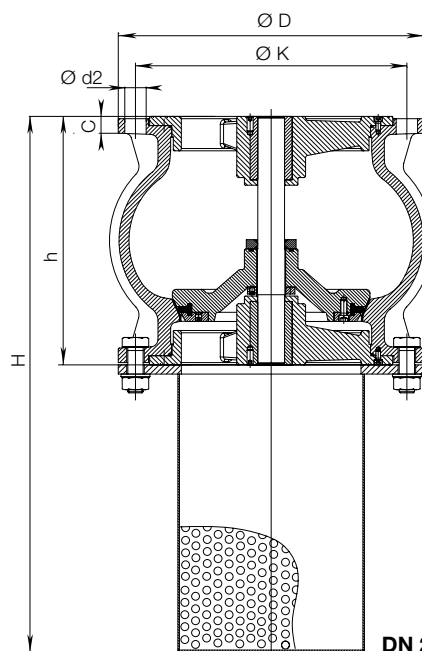
PN 10 | PN 16



No. 9888



DN 100 - DN 200



DN 250 - DN 1000

Pressure rating PN 10

DN	MOP (PN)	H	h	Ø D	Ø K	C	Bolts		Weight
							Quantity	Ø d2	
100	10	325	175	220	180	19,0	8	19	26
125		388	200	250	210	19,0	8	19	34
150		450	225	285	240	19,0	8	23	45
200		575	275	340	295	20,0	8	23	65
250		700	325	405	350	22,0	12	23	112
300		825	375	460	400	24,5	12	23	145
400		1075	475	580	515	28,0	16	28	216
450		1175	500	615	565	25,5	20	28	295
500		1300	550	730	620	31,5	20	28	427
600		1500	600	845	725	36,0	20	31	560
700		1700	650	910	840	40,0	24	31	725
800		1700	700	1015	950	35,0	24	34	790
900	10	1800	800	1115	1050	37,5	28	34	1390
1000		1800	900	1230	1160	40,0	28	37	1680

Pressure rating PN 16

DN	MOP (PN)	H	h	Ø D	Ø K	C	Bolts		Weight
							Quantity	Ø d2	
100	16	325	175	220	180	19,0	8	19	26
125		388	200	250	210	19,0	8	19	34
150		450	225	285	240	19,0	8	23	45
200		575	275	340	295	20,0	12	23	65
250		700	325	405	355	22,0	12	28	112
300		825	375	460	410	24,5	12	28	145
400		1075	475	580	525	28,0	16	31	216
450		1175	500	640	585	30,0	20	31	295
500		1300	550	715	650	31,5	20	34	447
600		1500	600	840	770	36,0	20	37	580
700		1700	650	910	840	40,0	24	37	750
800		1700	700	1025	950	43,0	24	41	794
900	16	1800	800	1125	1050	46,5	28	41	1395
1000		1800	900	1255	1170	50,0	28	44	1686

AIR RELEASE VALVE

dynamic PN 10 | PN 16 | PN 25 | PN 40



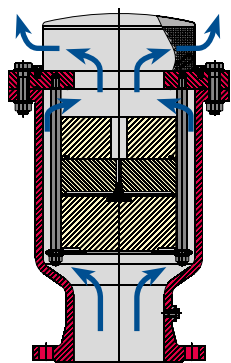
Design features

- Automatic 3-way air release valve with cylindrical floats
- Ventilation outlet in nominal size (large opening cross-section according to the flange size)
- Flange connection dimension according to EN 1092-2 (DN 50 can also be shipped with threaded connection 2")
- Efficient, high performance ventilation protects pipeline from vacuum related damage
- High velocity air discharge prevents premature closure, thus safeguarding optimum ventilation during filling process of pipe lines or containers
- 2-level ventilation system provides effective protection against pressure shocks during high ventilation speeds through a small opening
- Continuously reliable ventilation of air inlets under normal operating conditions
- Compact construction, low volume and weight
- Robust and reliable technology

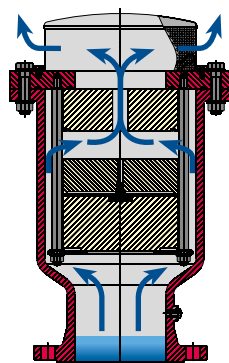
Material | Technical features

- **Body** made of ductile iron, epoxy powder coated inside and outside
- **Sealing ring** made of elastomer
- **All uncoated metal** made of stainless steel
- **Float material** made of PE
- **Medium:** water

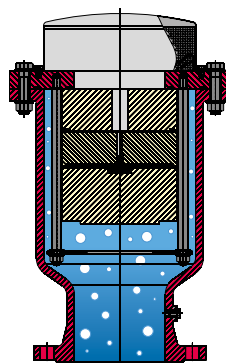
Functional principle



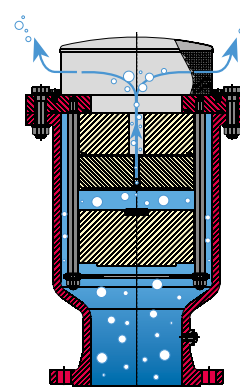
Ventilation of large quantities of air:
During filling, the line will be ventilated via the large cross-section.



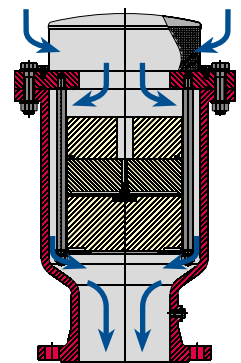
Ventilation at high air velocity through small opening:
Prevention of pressure shocks or premature closure.



Closure:
After ventilation the valve closes automatically.



Ventilation of small quantities of air:
During operation of a line, ventilation is carried out via the small cross-section.



Ventilation:
During drainage of a line, ventilation is carried out via the large cross-section.

No. 9842



Order No.	MOP (PN)	Dimension/DN								
		50	65	80	100	125	150	200	250	300
9842	10									
	16									
	25					*				
	40					*				

* Other dimensions or pressure rating on request

Application example



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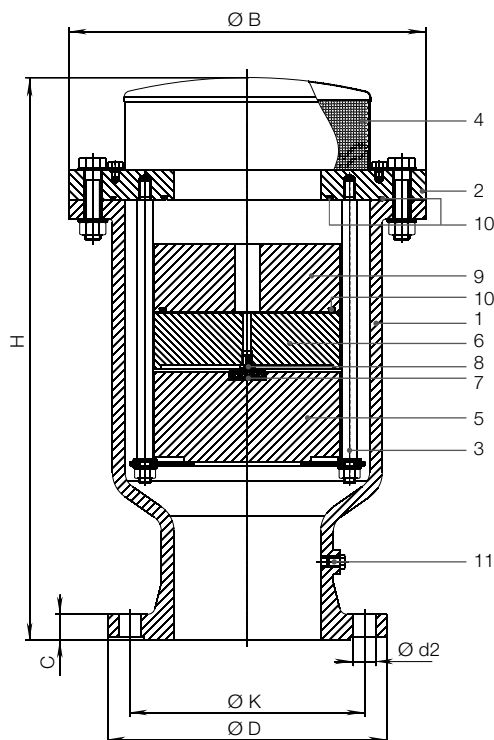
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AIR RELEASE VALVE

dynamic PN 10 | PN 16 | PN 25 | PN 40



No. 9842



	Parts	Material
1	Body	Ductil iron
2	Bonnet	Steel (stainless steel optional)
3	Float guide	Stainless steel
4	Cover	Stainless steel
5	Float	PE
6	Float	PE
7	Seat seal	Elastomer
8	Seat	Stainless steel
9	Float	PE
10	O ring	Elastomer
11	Plug	Steel

DN	MOP (PN)	Ø D	Ø K	C	Bolts		Ø B	H	Weight
					Qty.	Ø d2			
50	10	165	125	19	4	19	200	355	20
65		185	145	19	4	19	225	404	20
80		200	160	19	8	19	240	420	26
100		220	180	19	8	19	255	420	28
125		250	210	19	8	19	255	410	28
150		285	240	19	8	23	365	580	90
200		340	295	20	8	23	410	630	98
250		405	355	22	12	23	540	820	160
300		460	400	24,5	12	23	650	927	180

DN	MOP (PN)	Ø D	Ø K	C	Bolts		Ø B	H	Weight
					Qty.	Ø d2			
50	16	165	125	19	4	19	200	355	20
65		185	145	19	4	19	225	404	20
80		200	160	19	8	19	240	420	26
100		220	180	19	8	19	255	420	28
125		250	210	19	8	19	255	410	28
150		285	240	19	8	23	365	580	90
200		340	295	20	12	23	410	630	98
250		405	355	22	12	28	540	820	160
300		460	410	24,5	12	28	650	927	180

DN	MOP (PN)	Ø D	Ø K	C	Bolts		Ø B	H	Weight
					Qty.	Ø d2			
50	25	165	125	19	4	19	200	355	22
65		185	145	19	4	19	225	404	22
80		200	160	19	8	19	240	420	28
100		235	190	19	8	23	255	420	30
150		300	250	20	8	28	365	580	95
200		360	310	22	12	28	410	630	105
250		425	370	24,5	12	31	540	820	170

DN	MOP (PN)	Ø D	Ø K	C	Bolts		Ø B	H	Weight
					Qty.	Ø d2			
50	40	165	125	19	4	19	200	355	22
65		185	145	19	4	19	225	404	22
80		200	160	19	8	19	240	420	28
100		235	190	19	8	23	255	420	30
150		300	250	26	8	28	365	580	95
200		375	320	30	12	31	410	630	105

DISMANTLING JOINT

PN 10 | PN 16 | PN 25



Design features

- Double flanged fitting, which allows longitudinal adjustment in flanged pipe systems
- Easy assembly and disassembly of flange-fittings
- Continuous threaded bars, therefore, no additional mounting screws necessary
- Length adjustment: face-to-face L (see table) +/- 25 mm
- Flange connection dimensions in accordance with EN 1092-2 | PN 10, PN 16, PN 25 (PN 40 on request)

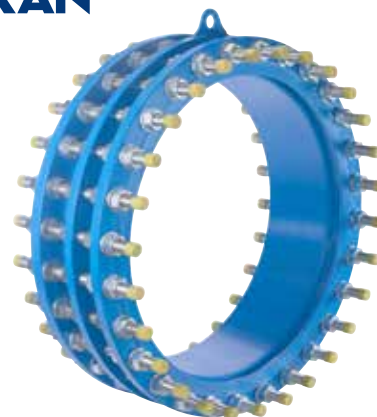
Material | Technical features

- 1,2 **Flanges** made of ductil iron, epoxy powder coated
+ made of steel, epoxy powder coated
- 3 **Retaining flange** made of steel, epoxy powder coated
- 4 **Sealing Ring** made of elastomer
- 5 **Threaded bar** made of galvanized steel
- 6 **Bolts** made of galvanized steel

Pressure rating PN 10

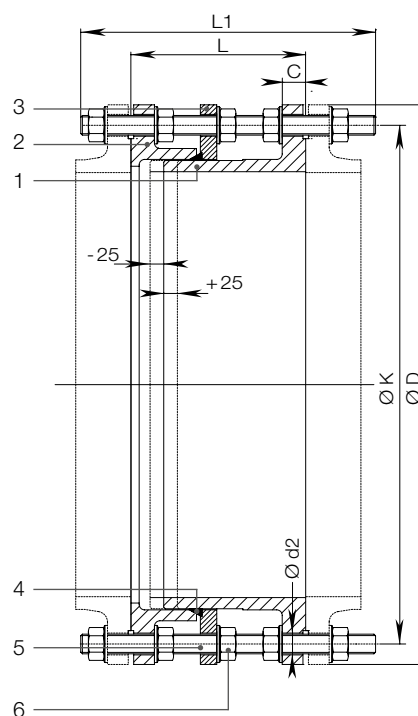
DN	MOP (PN)	L	L1	Ø D	Ø K	C	Bolts		Weight
							Qty.	Ø d2	
50	10	180	280	165	125	19,0	4	19	11
65		180	280	185	145	19,0	4	19	13
80		200	330	200	160	19,0	8	19	17
100		200	330	220	180	19,0	8	19	20
125		200	330	250	210	19,0	8	19	24
150		200	330	285	240	19,0	8	23	30
200		200	330	340	295	20,0	8	23	42
250		220	360	405	350	22,0	12	23	62
300		220	360	460	400	24,5	12	23	67
350		230	360	505	460	24,5	16	23	85
400		230	370	565	515	24,5	16	28	105
450		250	390	615	565	25,5	20	28	131
500		260	390	670	620	26,5	20	28	155
600		260	410	780	725	30,0	20	31	225
700		260	410	895	840	32,5	24	31	300
800		290	460	1015	950	35,0	24	34	361
900		290	460	1115	1050	37,5	28	34	400
1000		290	500	1230	1160	40,0	28	37	516
1100		300	480	1355	1270	53,5	32	37	830
1200		320	520	1455	1380	45,0	32	41	895
1300		370	630	1585	1490	59,0	32	42	1172
1400		360	560	1675	1590	46,0	36	44	1194
1500		380	590	1785	1700	47,0	36	44	1560
1600		390	600	1915	1820	49,0	40	50	1436

No. 9810



Order No.	MOP (PN)	Dimension/DN																							
		50	65	80	100	125	150	200	250	300	350	400	450	500	600	700	800	900	1000	1100	1200	1300	1400	1500	1600*
9810	10																								
	16																								
	25																								

*Larger dimensions or pressing rate PN 40 on request



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DISMANTLING JOINT

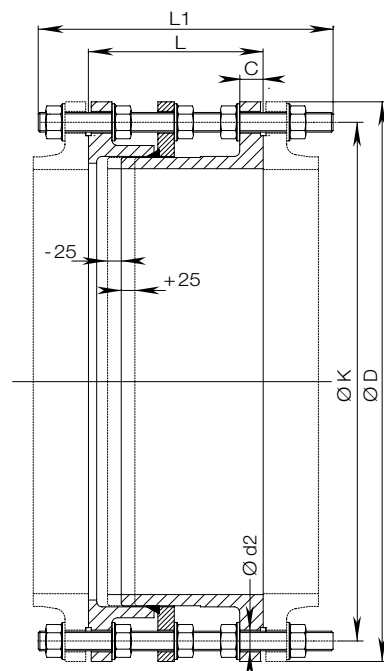
PN 10 | PN 16 | PN 25



No. 9810

Pressure rating PN 16

DN	MOP (PN)	L	L1	Ø D	Ø K	C	Bolts		Weight
							Qty.	Ø d2	
50	16	180	280	165	125	19,0	4	19	11
65		180	280	185	145	19,0	4	19	13
80		200	330	200	160	19,0	8	19	17
100		200	330	220	180	19,0	8	19	20
125		200	330	250	210	19,0	8	19	24
150		200	330	285	240	19,0	8	23	30
200		200	330	340	295	20,0	12	23	45
250		230	370	405	355	22,0	12	28	66
300		250	410	460	410	24,5	12	28	84
350		260	410	520	470	26,5	16	28	107
400		270	430	580	525	28,0	16	31	142
450		270	430	640	585	30,0	20	31	177
500		280	440	715	650	31,5	20	34	200
600		300	500	840	770	36,0	20	37	305
700		300	500	910	840	39,5	24	37	321
800		320	520	1025	950	43,0	24	41	469
900		320	520	1125	1050	46,5	28	41	535
1000		340	560	1255	1170	50,0	28	44	698
1100		340	560	1355	1270	53,5	32	44	830
1200		360	600	1485	1390	57,0	32	50	1070
1300		370	630	1585	1490	59,0	32	50	1172
1400		380	630	1685	1590	60,0	36	50	1270
1500		380	610	1820	1710	62,5	36	57	1560
1600		400	700	1930	1820	65,0	40	57	1705



No. 9810

Pressure rating PN 25

DN	MOP (PN)	L	L1	Ø D	Ø K	C	Bolts		Weight
							Qty.	Ø d2	
100	25	220	340	235	190	19,0	8	23	32
125		220	370	270	220	19,0	8	28	43
150		230	370	300	250	20,0	8	28	52
200		230	370	360	310	22,0	12	28	76
250		250	410	425	370	24,5	12	31	108
300		250	410	485	430	27,5	16	31	129
350		270	480	555	490	30,0	16	34	196
400		280	500	620	550	32,0	16	37	212
450		280	480	670	600	34,5	20	37	281
500		300	500	730	660	36,5	20	37	290
600		320	520	845	770	42,0	20	41	389
700		340	530	960	875	46,5	24	44	505
800		360	600	1085	990	51,0	24	50	690
900		380	600	1185	1090	55,5	28	50	920
1000		400	650	1320	1210	60,0	28	57	1257
1200		450	720	1530	1420	69,0	32	57	1870

Hawle Conditions of Sale 2019

Last updated January 2019 / valid as of 01.01.2019



1 General

1.1 All offers, sales transactions, deliveries and other services provided by E. Hawle Armaturenwerke GmbH (henceforth referred to as „Hawle“) to our customers as of 01.01.2019 are subject exclusively to the following Conditions of Sale.

1.2 Hawle shall not recognise any conflicting or deviating terms and conditions of the customer unless Hawle has expressly agreed to their validity in writing.

1.3 Supplements and amendments to these Conditions of Sale as well as ancillary agreements must be made in writing in order to be effective. This also applies to the waiver of the written form requirement.

1.4 In the event that individual provisions of these Conditions of Sale are or become invalid, the remaining provisions shall remain effective. Ineffective provisions shall automatically be replaced by legally effective provisions which come as close as possible to the economic intent of the contracting parties.

1.5 It is the responsibility of the customer to assess the technical and legal suitability of the goods offered by Hawle for the use intended by the customer or his buyers. The customer is also required to observe export and import restrictions.

1.6 Any administrative authorisations required for the import of goods into their country of destination or for the use intended by the customer or his buyers must be obtained by the customer in good time. In the event that such authorisations are not obtained in good time, delivery dates and periods shall be extended accordingly.

1.7 Hawle reserves the property rights and copyrights to the product catalogue sheets, drawings, product photos, cost estimates and other documents prepared by Hawle. These documents may not be disclosed to third parties without the prior permission of Hawle.

2 Conclusion of contract

2.1 All offers and price lists issued by Hawle are subject to change and non-binding, unless expressly agreed otherwise, and only become binding once Hawle has confirmed the order in writing or performed an action set by Hawle in fulfilment of the contract (e.g. delivery/shipment of the goods).

2.2 Following the confirmation of the order or the performance of an action in fulfilment of the contract by Hawle, the customer may withdraw from the contract only with the prior written consent of Hawle. Unilateral withdrawal from the contract on the part of the customer is not permitted.

3 Prices and terms of payment

3.1 All documents pertaining to an offer such as drawings, illustrations and weight specifications shall only be regarded as approximate unless they are expressly designated as being binding. This reservation applies in particular to obvious errors, typographical errors, printing errors and miscalculations.

3.2 Unless otherwise agreed, the prices quoted by Hawle are in EURO Ex Works Frankenmarkt (EXW, Incoterms 2010), excluding in particular packaging, transport costs, transport insurance, sales tax and export and import duties. Packaging, loading, transport costs and transport insurance as well as potential taxes and duties shall be invoiced separately by Hawle.

3.3 Any changes in wage costs due to collective or statutory regulations or internal agreements as well as changes in other costs relevant to the calculation of costs necessary for the provision of the service, such as the costs incurred for materials, energy, transport, third-party work, financing, etc., shall entitle Hawle to increase the prices accordingly. For this reason, the customer shall have neither the right to withdraw from the contract nor the right to assert that the basis of the transaction has ceased to exist. Orders confirmed by Hawle are exempt from potential price changes.

3.4 Unless otherwise agreed, net payment must be made by the customer within 30 days from the date of invoice. Payments will be offset against the oldest claim due in each respective case.

3.5 The possibility of offsetting payments against claims made by Hawle is excluded.

3.6 In the event that the customer defaults on payment, Hawle shall be released from all further service and delivery obligations and be entitled to withhold any outstanding deliveries or services or to demand advance payments or guarantees.

3.7 In the event that, upon conclusion of the contract, a significant deterioration in the financial circumstances of the customer occurs, or if circumstances become known which from Hawle's point of view are likely to reduce the creditworthiness of the customer, Hawle shall have the right to change due dates for outstanding claims, withhold deliveries to the customer and adjust conditions for future legal transactions with immediate effect.

4 Delivery

4.1 Orders confirmed by Hawle shall be fulfilled by Hawle as swiftly and diligently as possible. The delivery dates and periods announced by Hawle are merely intended to serve as a guideline and are always non-binding unless the stated delivery dates and periods have been expressly designated as binding by Hawle.

4.2 In the event of force majeure or any unforeseeable obstacle for which Hawle is not responsible, delivery dates and deadlines shall be reasonably extended by the duration of the impediment. This shall also apply if Hawle's sub-suppliers encounter such impediments. These include, in particular, official measures, strikes and lock-outs, natural disasters, market-related problems with material procurement as well as import and export restrictions.

4.3 Hawle deliveries may always be divided into sub-deliveries. Hawle is at liberty to make partial deliveries or provide partial services and to issue partial invoices to the customer.

4.4 National and international goods traffic is subject to the terms of delivery FCA, 4890 Frankenmarkt, Hawle dispatch warehouse (Incoterms 2010), unless another delivery clause has been explicitly agreed.

4.5 In the case of a sales shipment, the transfer of risk takes place once the purchased item has been handed over to the first carrier. Where acceptance of a service is required, Hawle's notification of readiness for acceptance shall be decisive for the transfer of risk.

4.6 The customer is obliged to accept the deliveries and services provided by Hawle as per contract. In the event of default of acceptance or a culpable breach of other obligations to cooperate on the part of the customer, Hawle is entitled to demand compensation from the customer for any damage incurred as a result, including any additional expenses.



4.7 Hawle is entitled to make changes to the technical design of the goods ordered, provided that these do not result in significant functional changes and the customer does not demonstrate the unreasonable nature of such changes. Unreasonableness is to be ruled out if the change constitutes a technical improvement or is caused by the further development of the state of the art or by legal or official measures.

4.8 In principle, the customer is not entitled to refunds or replacements. Refunds and replacements are only possible in exceptional cases and require the prior written consent of Hawle.

4.9 The goods delivered by Hawle to the customer are intended for use or resale in the customer's country of residence or in the country of the place of delivery.

5 Reservation of title

5.1 All goods delivered by Hawle remain the property of Hawle until payment has been made in full.

5.2 The customer is authorised to resell the goods in the regular course of business, even during the period in which the goods are subject to reservation of title. If, however, the customer is in default of payment to Hawle, Hawle may prohibit the resale of the goods subject to reservation of title.

5.3 The customer herewith cedes to Hawle all purchase price claims, including all ancillary rights, arising from a resale of the goods to his customers. Hawle accepts this assignment. These purchase price claims serve as security for the goods subject to retention of title.

6 Warranty

6.1 The customer must inspect the received goods with respect to quantity and quality immediately upon receipt. Written notices of defects must be submitted by the customer immediately after receipt of the delivery, but at the latest within 10 days from the date of delivery and prior to any handling or processing, otherwise excluding any warranty claims and/or claims for damages and/or avoidance on account of mistake, but do not entitle the customer to retain the invoiced amounts or portions thereof.

6.2 The warranty period for defects which were not detected during the inspection of the shipment is six months from the date of delivery and is neither extended nor interrupted by attempts at improvement; it also applies to partial deliveries. Notification of any such defects must be given in writing within 10 days from the date the defect was discovered, otherwise excluding warranty claims and/or claims for damages and/or avoidance on account of mistake, but do not entitle the customer to retain the invoiced amounts or portions thereof.

6.3 It has been agreed between Hawle and the customer that a hydrostatic pressure test in accordance with EN 805 is to be performed after laying a pipeline but prior to the main backfilling of the pipe trench or further constructional measures in shafts, plants or buildings which restrict accessibility to the valves and pipe fittings. If such a test is not performed, the customer or his customers shall be charged with contributory negligence of at least 50% in the event of damage. The customer agrees to inform his customers accordingly and to pass on this obligation to perform the described hydrostatic pressure test to his customers.

6.4 Possible warranty obligations generally cover the defective goods, but not the expenses otherwise associated with correcting the defect such as excavation costs, working hours and travel expenses.

6.5 The customer always bears the burden of proving that the delivered goods were defective at the time of delivery.

6.6 The place of performance for warranty obligations is always the place of delivery agreed for the original delivery.

6.7 Hawle shall be free to decide whether to fulfil possible warranty claims by means of replacements, improvement measures, price reductions or conversions.

7 Damages and liability

7.1 Any consulting provided by Hawle, whether verbal or in writing, is non-binding and does not release the customer from his obligation to examine the goods with respect to their suitability and the intended purpose. This applies above all, but not exclusively, to the suitability of the goods for the use intended by the customer or his customers, in particular to their suitability for the substances (gases and/or liquids) to be conveyed.

7.2 Hawle shall be liable for damages caused to the customer in the course of processing the business transaction in an amount not exceeding the value of the order placed with Hawle, and only in the event of gross negligence on the part of Hawle or gross negligence on the part of the executors working for Hawle, with the exception of personal injuries in which case Hawle shall be liable even in the event of minor negligence. The burden of proving gross negligence always lies with the injured party.

7.3 IN NO EVENT SHALL HAWLE BE HELD LIABLE, WHETHER IN TORT OR CONTRACT, FOR INDIRECT DAMAGES, CONSEQUENTIAL DAMAGES, PURELY PECUNIARY LOSSES, FOREGONE PROFITS OR DAMAGES ARISING FROM DELAYS OR OUT OF THIRD PARTY CLAIMS.

7.4 The time limit for asserting claims for damages is one year from the date on which the customer gains knowledge of, or is subject to, negligent ignorance of the damage and the injuring party.

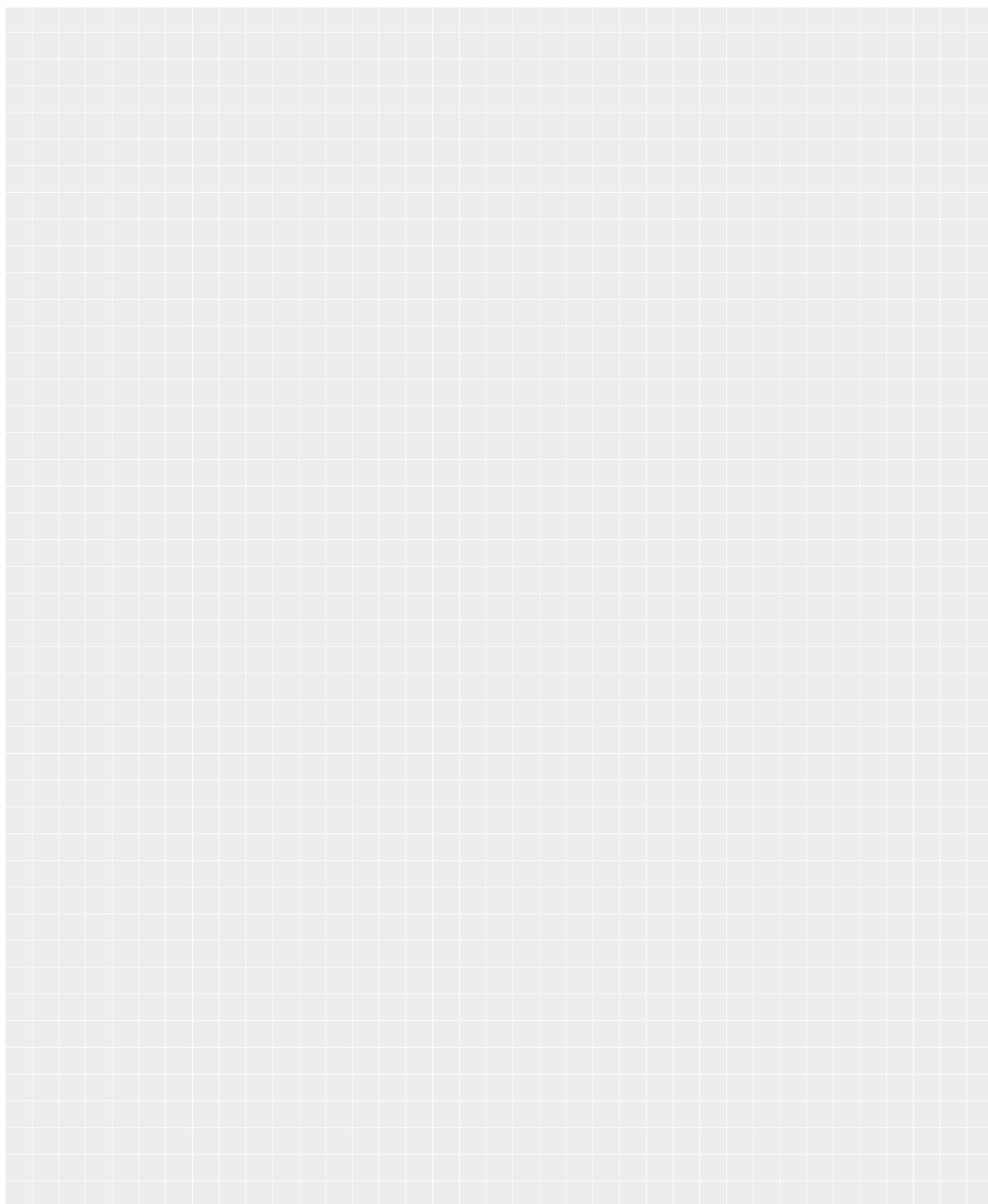
7.5 In the event that the customer himself is held liable under product liability law, he undertakes to immediately notify Hawle thereof by telephone or in writing and to immediately inform Hawle of the address of the claimant, failing which the customer's right of recourse against Hawle arising from product liability will cease to apply. Negotiations of claims arising from product liability with respect to Hawle products shall be conducted exclusively by Hawle.

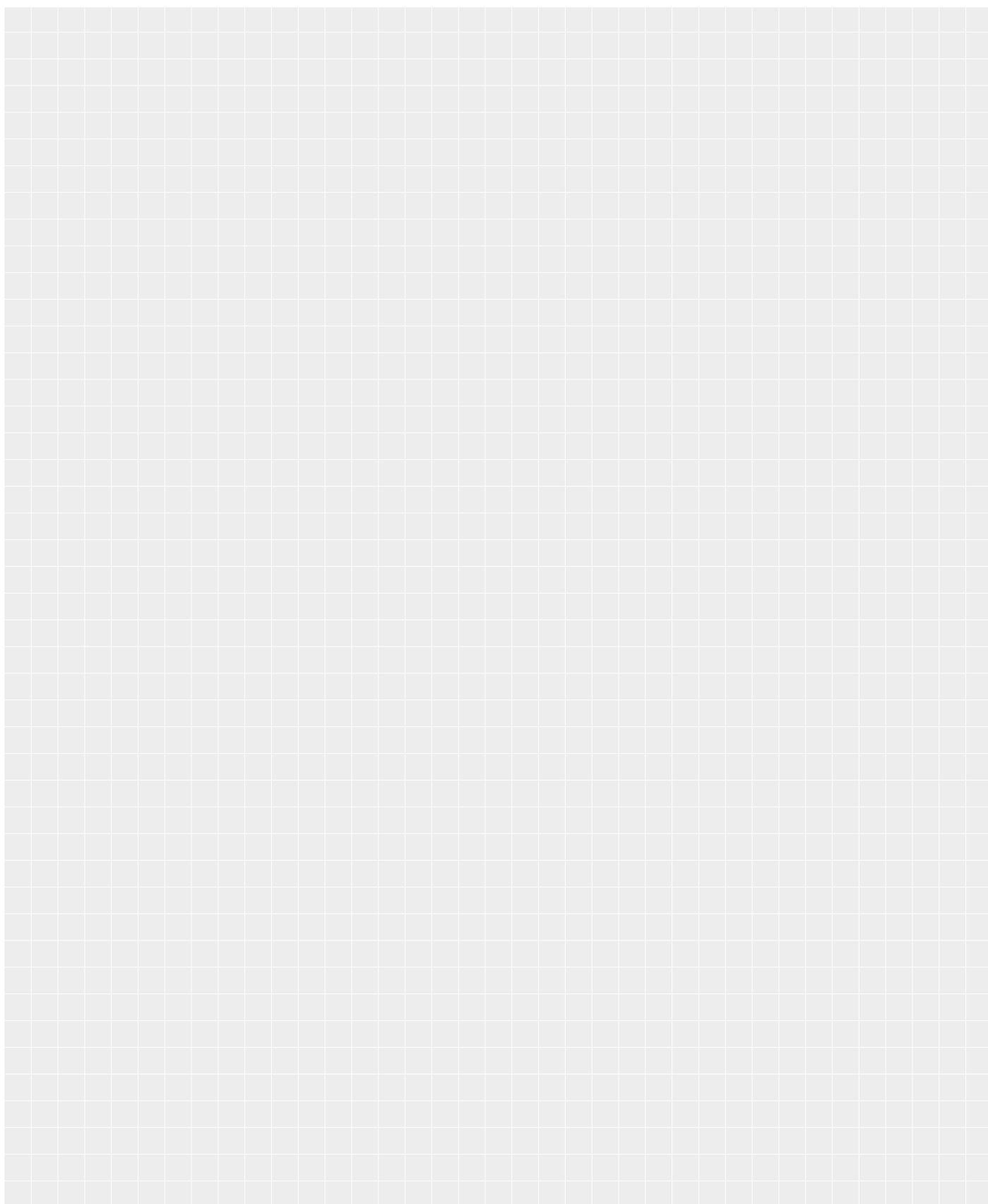
8 Place of performance, court of jurisdiction, applicable law

8.1 The place of performance for both delivery and payment is always 4840 Vöcklabruck/Austria, even if a different place of delivery has been agreed individually.

8.2 The exclusive court of jurisdiction for all disputes arising from legal transactions between the customer and Hawle is the competent court in 4840 Vöcklabruck/Austria. Moreover, Hawle is also entitled to sue at the customer's registered office.

8.3 All legal transactions between the customer and Hawle are subject exclusively to Austrian substantive law, excluding international conflict of law rules. The application of the UN Convention on Contracts for the International Sale of Goods (CISG) is explicitly excluded.



A large rectangular area filled with a light gray grid pattern, intended for handwritten notes.

The logo for hawle, featuring the word "hawle" in a lowercase, sans-serif font, with a blue swoosh underline that starts under the 'h' and ends under the 'e'.

hawle

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Printed on recycled, chlorine-free bleached paper and aging.



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