

hawle

# **BUTTERFLY VALVES**

100% ÖZKAN 100% MEMBER OF HAWLE GROUP



HAWLE. **MADE FOR GENERATIONS.**



## 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 Group



## COMPANY PROFILE

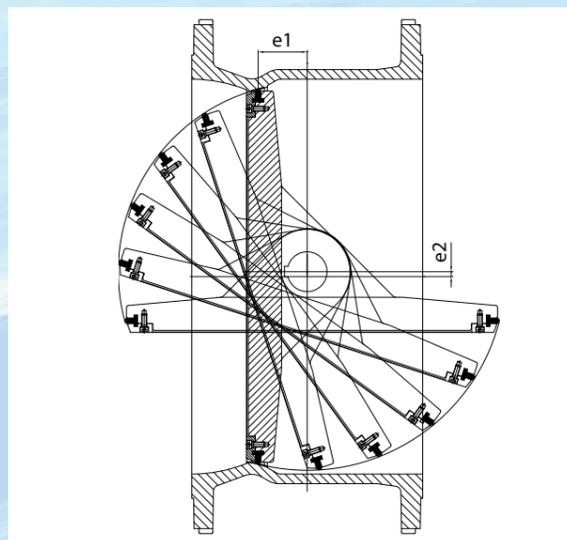
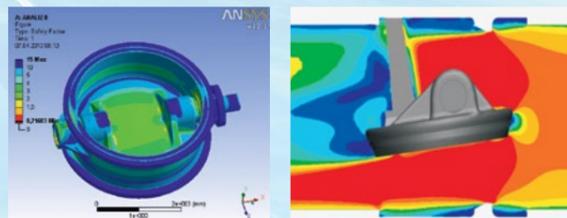
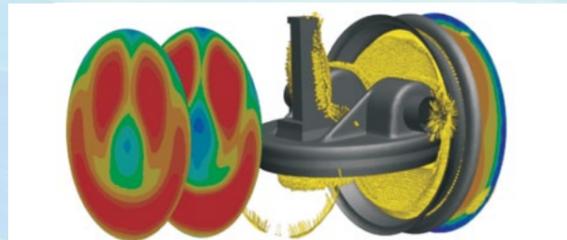
- 100 % subsidiary of Hawle Austria Group since September 2011
- Founded 1983 in Izmir / Turkey
- Producing butterfly valves since 1986, also as a quality OEM manufacturer
- Certificates: ISO 9001, ISO 14001, OHSAS 18001, CE approval
- Distribution in more than 25 countries worldwide
- 180 employees

## PRODUCT PORTFOLIO

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



## ADVANTAGES OF OUR BUTTERFLY VALVES



- **Light weight and smaller installation volume requirement**
- **Easy installation**
- **Low operating torque requirement**
- **Maintenance free design**
- **Suitable for isolation and control service**
- **Drop tight shut-off at rated pressure**
- **Bi-directional tightness**
- **Variable choice of actuators**

### Applications:

- Pumping stations
- Treatment plants
- Reservoirs
- Pipelines
- Power stations (cooling water circuits)
- Desalination plants (special version on request)
- Industrial applications (special version on request)

### Tests:

- Work Tests according EN 12266
- Flow Tests
- Valve Dynamic Closure tests
- Dry film thickness measurements
- Low voltage pinhole test
- Pull-off adhesion test

### Calculations with Computer Software:

ANSYS Mechanical + CFD Flow Structural Analysis + CFD analysis package  
CF design + CFD analysis package

### Double eccentricity:

The first eccentricity (**e1**) brings the axis of rotation outside the sealing axis. That's why full circle sealing between body seat and sealing ring is achieved. The second eccentricity (**e2**) brings the rotation axle of the disc from the main axle of the valve (**e2**). By the help of the second eccentricity the sealing ring is off seated after only a few degrees of movement at open direction. The purpose of the second eccentricity is to quickly relieve rubber seal compression in the area of the disc shafts to eliminate rubber "scuffing" and abrasive wear.

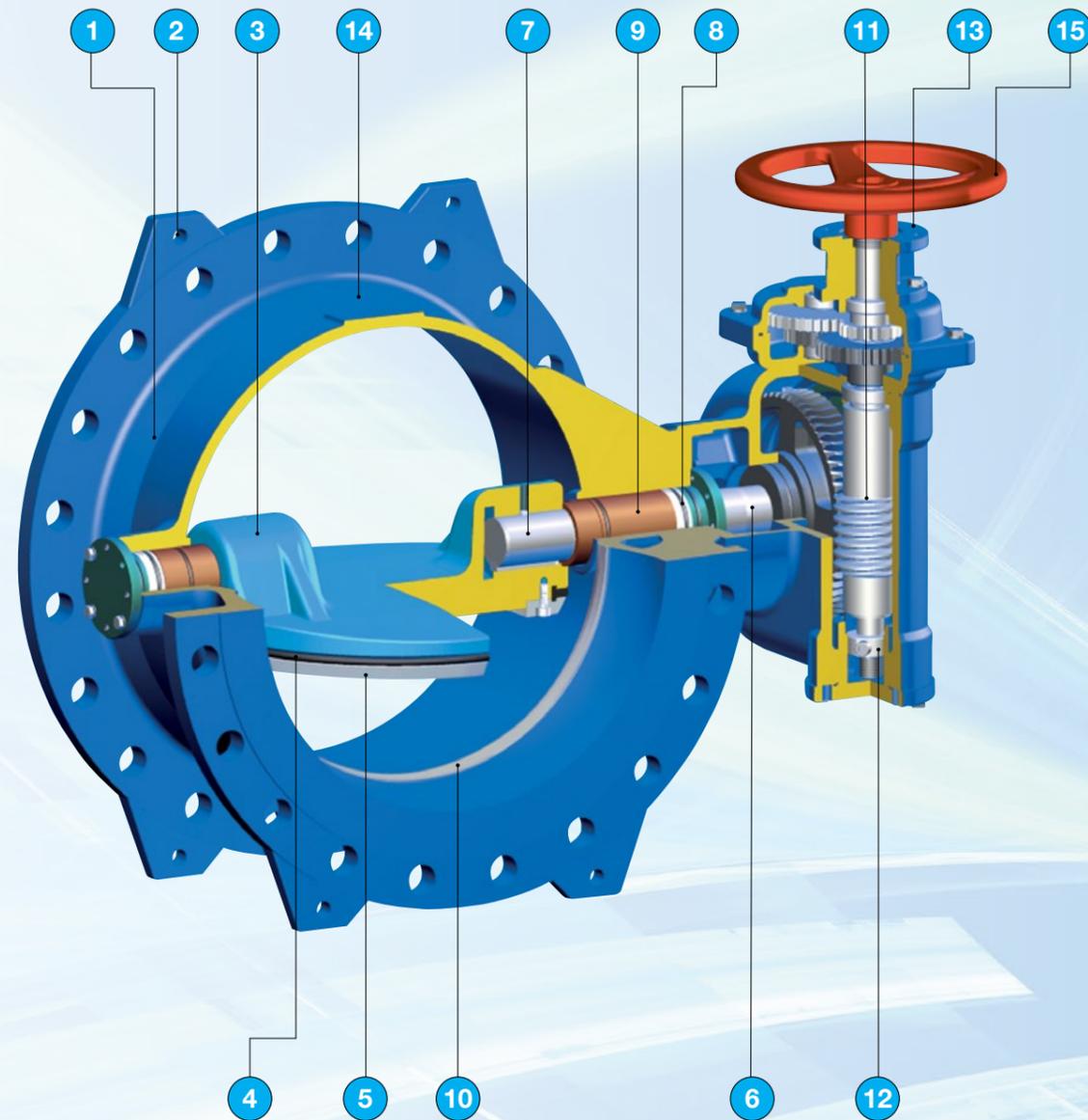
When the valve is open, the rubber is completely unstressed, in this case no permanent compression is retained, even if the valve remains open for years.

## SPECIFICATIONS OF BUTTERFLY VALVES

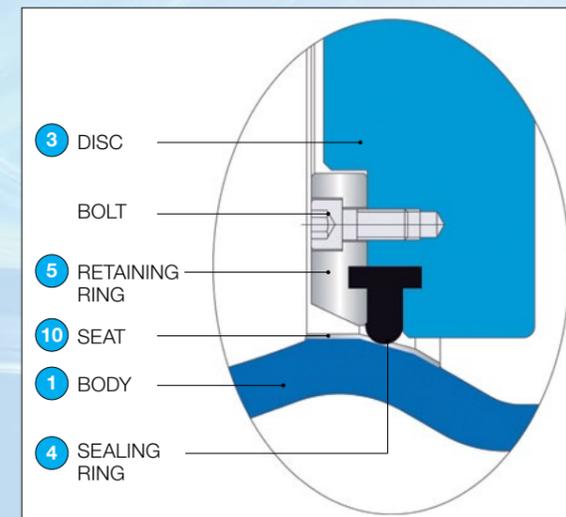


	STANDARD	OPTION
<b>ART. NO.:</b>	9881	
<b>DESIGN</b>	EN 593 DOUBLE FLANGED, DOUBLE ECCENTRIC	
<b>NOMINAL SIZES</b>	DN 150 - DN 2500	
<b>PRESSURE RATE</b>	PN 10, PN 16, PN 25, PN 40	
<b>MEDIUM</b>	POTABLE WATER, RAW WATER	SEA WATER
<b>FACE TO FACE</b>	EN 558 - 1 SERIES 14	EN 558 - 1 SERIES 13
<b>FLANGES</b>	EN 1092 - 2 PN 10 / 16 / 25 / 40	ANSI B16.5; ASME B 16.47 Series A AWWA C207; AS 2129 - AS4087; SABS 1123
<b>BODY</b>	DUCTILE IRON	
<b>DISC</b>	DUCTILE IRON	Al-Ni BRONZE, STAINLESS STEEL
<b>SEALING RING</b>	EPDM RUBBER	NBR
<b>SHAFT</b>	STAINLESS STEEL	
<b>BODY SEAT</b>	STAINLESS STEEL WELD OVERLAY & MICRO FINISHED	RUBBER LINED
<b>RETAINING RING</b>	CARBON STEEL	AL-NI BRONZE, STAINLESS STEEL
<b>INTERNAL FIXINGS</b>	STAINLESS STEEL	
<b>EXTERNAL FIXINGS</b>	STAINLESS STEEL	
<b>BEARING BUSH</b>	BRONZE	NI-AL BRONZE
<b>COATING</b>	EPOXY COATED, min. 250 MICRONS THICKNESS	TWO PACK EPOXY, SOLVENT FREE EPOXY, COAL TAR EPOXY
<b>OPERATION</b>	MANUAL BY WORM GEARBOX AND HANDWHEEL	ELECTRIC, PNEUMATIC, HYDRAULIC, ACTUATOR
<b>WORK TEMPERATURE</b>	According to EN 1074	
<b>COLOUR</b>	RAL 5005	ASK FOR OTHER COLOURS
<b>CLOSING DIRECTION</b>	CLOCKWISE	ANTI CLOCKWISE
<b>GEARBOX</b>	POSITION 01 A WITH HANDWHEEL (see page 10)	OTHER VERSIONS ON REQUEST (see page 10)

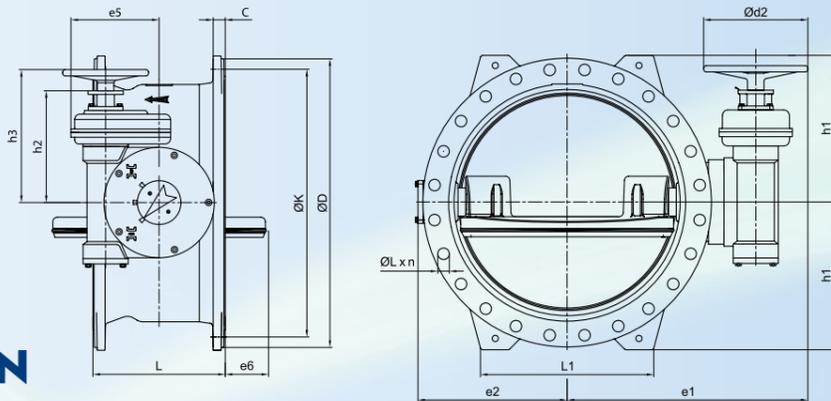
# DESIGN FEATURES OF ÖZKAN BUTTERFLY VALVES



- 1 Body**  
Streamline design and smooth finish of the body provides minimum resistance to flow.
- 2 Lifting holes and feet**  
Integral lifting holes provide easy installation and feet ensure strong ground support.
- 3 Disc**  
Streamlined and low profiled disc including closed hubs ensuring higher Kv values. Double offset disc design reduces seal wear and torque.
- 4 Sealing system**  
Sealing on seat face is ensured by an endless T profile resilient sealing ring which is held on the periphery of the disc by a retaining ring. In closed position the sealing ring is pressed against the conically shaped seat face of the body and provides safe sealing in either direction of flow. In opened position the sealing ring is completely unstressed due to the double eccentric disc design.
- 5 Retaining Ring**  
The one piece retaining ring prevents sealing ring from rolling out. Sealing ring can be replaced easily at site without dismantling the valve disc and without requirement of any special tool.
- 6 Shafts**  
Stub shaft design provides minimal restriction to flow.
- 7 Shaft connection**  
Positive disc to shaft connection by use of key.
- 8 Shaft sealing**  
Multiple O-ring shaft sealing system ensures maintenance free sealing for life span.
- 9 Bearing system**  
Self lubricating plain bearings reduce shaft friction and operating torque. These bearings keep the shaft centralised and prevent axial movement.
- 10 Body seat**  
Stainless steel weld filled and finished integral body seat ensures a corrosion and erosion resistant seat face.
- 11 Worm gear operators**  
Are designed for easy operating of butterfly valve by only one operator.
- 12 Travelling nut**  
Bottom end of the worm shaft is threaded and a travelling nut moves up and down on this threaded spindle. When operating the gear (valve) in "open" or "close" direction, the travelling nut also moves towards the corresponding end stop and prevents the over travel of the valve disc.
- 13 Top flange**  
All butterfly valves are equipped with ISO top flanges for all types of actuator- operator connections.
- 14 Unique tracking number**  
Every valve is equipped with a cast tracking number for easy traceability and identification.
- 15 Handwheel**  
Every valve is equipped with a handwheel (standard version). In combination with the gearbox, the valve is designed for one man operation. Other accessories for operation i.e. electric actuator or head stock on request.



# TECHNICAL SPECIFICATIONS BUTTERFLY VALVE No. 9881

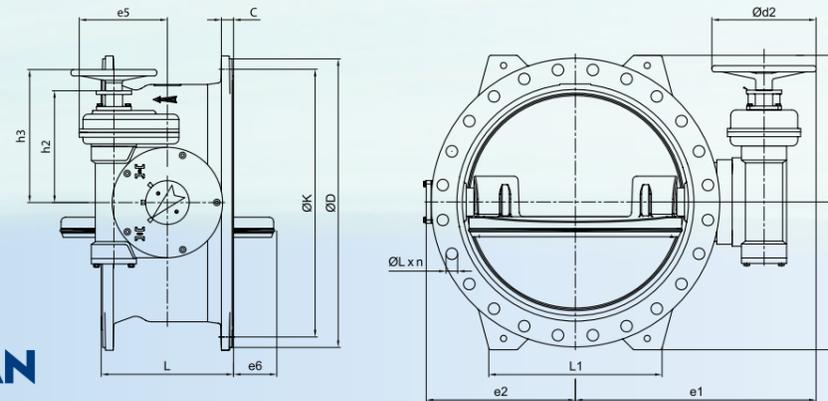


DN	PN	L Series 14	L1	e1	e2	e5	e6	Ød2	ØD	ØK	C	ØL x n	h1	h2	h3	Turns to Close	Weight kg
150	10	210	-	378	151	134	0	245	285	240	19	23x8	143	136	212	11,25	45
200	10	230	180	405	177	134	0	245	340	295	20	23x8	180	136	212	11,25	60
250	10	250	220	481	214	158	5	245	405	350	22	23x12	213	163	239	10	95
300	10	270	280	503	237	158	11	245	460	400	24.5	23x12	242	163	239	10	115
350	10	290	320	595	283	175	28	370	505	460	24.5	23x16	264	184	271	12,5	155
400	10	310	335	626	297	175	43	370	565	515	24.5	28x16	293	184	271	12,5	165
450	10	330	380	670	333	198	57	370	615	565	25.5	28x20	320	285	372	36,25	220
500	10	350	400	701	344	245	67	370	670	620	26.5	28x20	345	334	420	43,5	285
600	10	390	440	749	414	245	98	370	780	725	30	31x20	400	334	420	43,5	350
700	10	430	540	838	511	313	126	370	895	840	32.5	31x24	460	397	484	104	575
800	10	470	610	855	530	313	153	370	1015	950	35	34x24	520	397	484	104	680
900	10	510	670	965	618	365	181	370	1115	1050	37.5	34x28	568	432	519	192,5	980
1000	10	550	740	1039	650	365	206	370	1230	1160	40	37x28	625	432	519	192,5	1155
1100	10	590	750	1022	720	365	237	370	1355	1270	53.5	37x32	695	432	519	192,5	1558
1200	10	630	900	1251	782	515	264	485	1455	1380	45	41x32	738	538	625	362,5	1965
1400	10	710	1160	1349	917	515	323	485	1675	1590	46	44x36	848	538	625	362,5	2690
1500	10	750	1080	1411	1015	656	348	485	1820	1700	47	44x36	910	681	768	562	3440
1600	10	790	1250	1483	1060	656	379	485	1915	1820	49	50x40	970	681	768	562	4366
1800	10	870	1220	1586	1183	656	431	485	2115	2020	52	50x44	1075	681	768	562	4760
2000	10	950	1300	1769	1303	656	481	485	2325	2230	55	50x48	1183	681	768	562	7183
2200	10	1030	1500	1906	1420	656	533	605	2555	2440	65	57x52	1285	809	909	1574	8320
2400	10	1110	1600	2095	1593	744	604	605	2760	2650	65	56x56	1390	898	998	1345	12900
2500	10	1150	1600	2122	1610	744	628	605	2860	2750	65	56x56	1440	898	998	1345	13820

DN	PN	L Series 14	L1	e1	e2	e5	e6	Ød2	ØD	ØK	C	ØL x n	h1	h2	h3	Turns to Close	Weight kg
150	16	210	-	378	151	134	0	245	285	240	19	23x8	143	136	212	11,25	45
200	16	230	180	405	177	134	0	245	340	295	20	23x12	180	136	212	11,25	60
250	16	250	220	481	214	158	6	245	405	355	22	28x12	213	163	239	10	95
300	16	270	280	503	237	158	11	245	460	410	24.5	28x12	242	163	239	10	115
350	16	290	320	595	283	175	28	370	520	470	26.5	28x16	272	184	271	12,5	162
400	16	310	335	626	297	198	43	370	580	525	28	31x16	300	285	372	36,25	204
450	16	330	380	670	333	198	57	370	640	585	30	31x20	330	285	372	36,25	240
500	16	350	400	721	344	245	67	370	715	650	31.5	34x20	370	334	420	43,5	325
600	16	390	500	779	414	245	98	370	840	770	36	37x20	432	334	420	43,5	435
700	16	430	540	838	511	313	126	370	910	840	39.5	37x24	467	397	484	104	610
800	16	470	615	928	530	313	153	370	1025	950	43	41x24	525	397	484	104	780
900	16	510	675	1007	618	365	181	370	1125	1050	46.5	41x28	573	432	519	192,5	1065
1000	16	550	740	1039	650	365	206	370	1255	1170	50	44x28	638	432	519	192,5	1320
1100	16	590	750	1091	720	365	237	370	1355	1270	53.5	44x32	696	432	519	192,5	1558
1200	16	630	900	1251	782	515	264	485	1485	1390	57	50x32	753	538	625	362,5	2375
1400	16	710	1160	1349	917	515	323	485	1685	1590	60	50x36	848	538	625	362,5	2870
1500	16	750	1153	1385	986	656	348	485	1820	1710	62.5	57x36	930	681	768	562	4055
1600	16	790	1250	1508	1115	656	379	485	1930	1820	65	57x40	975	681	768	562	5150
1800	16	870	1220	1630	1217	656	431	485	2130	2020	70	57x44	1080	681	768	562	5580
2000	16	950	1300	1769	1303	656	481	485	2345	2230	75	62x48	1193	681	768	562	8500
2200	16	1030	1500	1975	1460	744	533	605	2555	2440	80	62x52	1290	898	998	1345	11220
2400	16	1110	1630	2095	1593	744	604	605	2760	2650	80	62x52	1390	898	998	1345	14650
2500	16	1150	1650	2122	1610	744	628	605	2860	2750	80	62x52	1440	898	998	1345	16040

\*Ask for dimensions

# TECHNICAL SPECIFICATIONS BUTTERFLY VALVE No. 9881



DN	PN	L Series 14	L1	e1	e2	e5	e6	Ød2	ØD	ØK	C	ØL x n	h1	h2	h3	Turns to Close	Weight kg
150	25	210	-	378	151	134	0	245	300	250	20	28x8	150	136	212	11,25	55
200	25	230	200	462	198	158	0	245	360	310	22	28x12	190	163	239	10	80
250	25	250	305	556	250	175	6	370	425	370	24,5	31x12	223	184	271	12,5	160
300	25	270	340	591	277	198	11	370	485	430	27.5	31x16	253	285	372	36,25	185
350	25	290	320	619	294	198	28	370	555	490	30	34x16	288	285	372	36,25	216
400	25	310	375	663	342	245	40	370	620	550	32	37x16	320	334	420	43,5	295
450	25	330	470	709	382	245	54	370	670	600	34.5	37x20	345	334	420	43,5	352
500	25	350	430	745	410	313	67	370	730	660	36.5	37x20	375	397	484	104	475
600	25	390	530	798	461	313	94	370	845	770	42	41x20	433	397	484	104	655
700	25	430	640	877	535	365	122	370	960	875	46.5	44x24	490	432	519	192,5	900
800	25	470	575	974	590	365	144	370	1085	990	51	50x24	560	432	519	192,5	1184
900	25	510	745	1114	685	515	177	485	1185	1090	55.5	50x28	610	538	625	362,5	1800
1000	25	550	760	1171	741	515	206	485	1320	1210	60	57x28	675	538	625	362,5	2120
1200	25	630	880	1286	824	515	264	485	1530	1420	69	57x32	775	538	625	362,5	2780
1400	25	710	1010	1476	964	656	323	485	1755	1640	74	62x36	888	681	768	562	4210
1600	25	790	1210	1603	1110	656	382	605	1975	1860	81	62x40	1000	809	909	1574	5640
1800	25	870	1345	1833	1255	744	409	605	2195	2070	88	70x44	1118	898	998	1345	9100
2000	25	950	1400	1886	1353	744	473	605	2425	2300	95	70x48	1228	898	998	1345	11560

DN	PN	L Series 14	L1	e1	e2	e5	e6	Ød2	ØD	ØK	C	ØL x n	h1	h2	h3	Turns to Close	Weight kg
150	40	210	-	378	151	134	0	245	300	250	26	23x8	150	136	212	11,25	55
200	40	230	200	462	198	158	0	245	375	320	30	31x12	198	163	239	12,5	119
250	40	250	305	579	250	198	6	370	450	385	34.5	34x12	235	285	372	36,25	180
300	40	270	340	610	277	198	11	370	515	450	39.5	34x16	268	285	372	36,25	210
350	40	290	360	631	294	245	28	370	580	510	44	37x16	300	334	420	43,5	296
400	40	310	380	696	342	245	40	370	660	585	48	41x16	340	334	420	43,5	360
450	40	330	470	716	386	313	51	370	685	610	49	41x20	353	357	484	104	490
500	40	350	440	762	412	313	64	370	755	670	52	44x20	388	397	484	104	545
6																	

## WORM GEAR OPERATORS

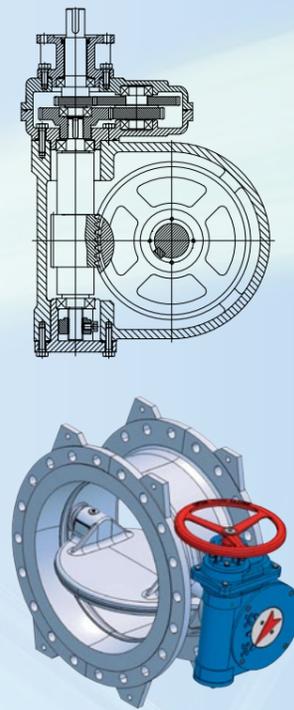
TK-TYPE range worm gear operators have been designed for the operation of butterfly valves. Worm gear operators offer a quarter turn (90°) motion that is required by butterfly valves and disc motion is limited at open and closed positions by travelling nut system.

Self locking (irreversible) gear design guarantees the correct operation and tightness of butterfly valves.

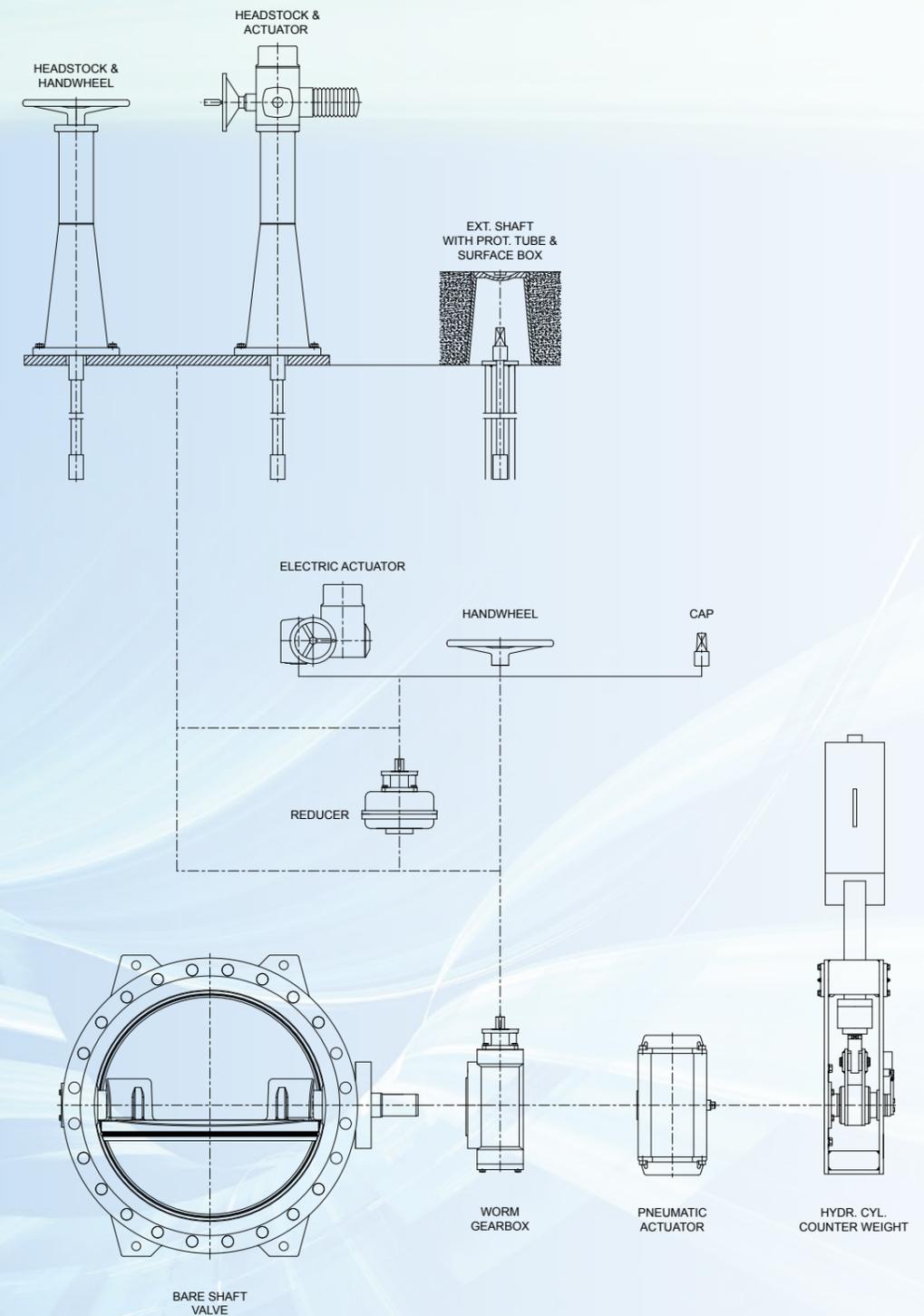
Nine types of worm gear operators cover the torque requirements of the whole range of butterfly valves.

### Design Features

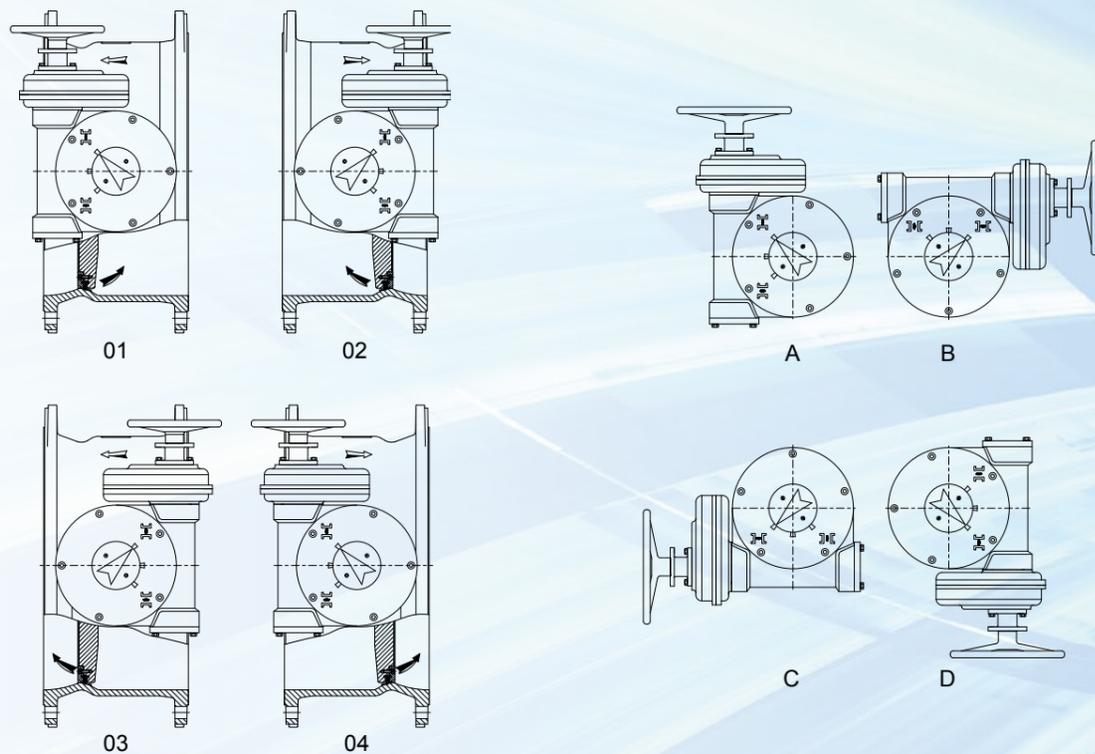
- Robust design
- Factory set 90° swing angle. Setting of the end stop by travelling nut system
- Strong, integrated into the body valve attachment
- Valve attachment according to ISO 5211
- Self locking worm gearing with minimum backlash
- ISO 5210 top flange for mounting of multi-turn actuators
- Mechanical position indicator



## POSSIBLE ACTUATORS FOR ÖZKAN BUTTERFLY VALVES



## POSSIBLE POSITIONS FOR WORM GEAR OPERATORS



TILTING TYPE CHECK VALVES

Are designed as short body, small volume and light weight. The double offset disc is kept in open position and degree of disc opening depends on the velocity of flow. They can be mounted in vertical or horizontal pipeline application. Adjustable weight offers the adaptability to the individual working conditions. These valves are available with metal to metal or resilient seating options.

**DN 100 – DN 1400** PN 10, PN 16, PN 25

No. 9883



TILTING TYPE CHECK VALVES WITH HYDRAULIC DAMPER

If the backflow reaches the check valve before the disc is closed, the result will be slam closing and water hammer. Tilting Disc Check Valves with Hydraulic Damper eliminates slam closing and water hammer for 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.

**DN 150 - DN 1000** PN 10, PN 16

No. 9884



SLANTED SEAT CHECK VALVES

Slanted seat check valves are equipped with a seating plane, creating an angle with the vertical plane to reduce the swing angle and closing time. These check valves can be used in all non return applications. On request slanted seat check valves can be supplied with external end-stage dampers. The advantage is a better closing characteristic due to the smaller swing angle of the disc. Due to this the closing time is reduced compared to other check valve types. No lever and counter weight requirement. These valves are available with metal to metal (9885) or resilient (9886) seating.

**DN 200 – DN 1200** PN 10, PN 16, PN 25

No. 9885 / 9886



\*other applications on request!

SILENT CHECK VALVES

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. They are suitable for high flow velocities.

**DN 100 – DN 1000** PN 10, PN 16, PN 25

No. 9887



DISMANTLING JOINTS

Are double flanged fittings which allow longitudinal adjustment in flanged pipe systems. It has been developed to provide greater flexibility at both the planning and installation stages of flanged pipework systems and for easy maintenance of flanged valves.

**DN 100 – DN 2500** PN 10, PN 16, PN 25

No. 9810



FOOT VALVES

Installed in pump suction lines. The foot valve prevents the water column from draining off upon pump stop.

**DN 100 – DN 1000** PN 10, PN 16, PN 25

No. 9888



\*other applications on request!

WELCOME  
... TO THE WORLD OF HAWLE.

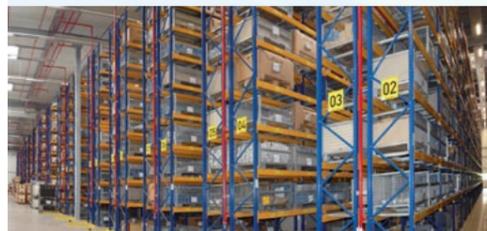
**E. HAWLE Armaturenwerke GmbH is a traditional Austrian company manufacturing a wide range of valves and fittings for the water distribution systems.**



Site Vöcklabruck



Site Frankenmarkt



Central stock



Epoxy powder coating



Quality tests

»Tradition is stoking the fire, not praying over the ashes«, this saying by Gustav Mahler (1860-1911). Since the foundation of HAWLE there has been an uncompromising demand for the quality and functionality of the products. The aforementioned »fire« is something HAWLE also has with regard to research: with a passionate spirit and great persistence HAWLE's engineers seek technical solutions that aid people working in the pipe trenches.

Profound knowledge has been characteristic of HAWLE for more than sixty years and HAWLE has remained in family ownership since it was founded in 1948. This situation provides the company with the necessary backing for long term planning and investments as well as sufficient security in complicated development projects. Tradition the way HAWLE perceives it does not involve rigidity of thought, instead tradition means devotion to sustainable values as the solid basis for a successful future, and this is also felt by HAWLE customers.

**More than »off-the-peg products«**

What makes HAWLE special is not just the fact that it is a family-owned company run with passion, but that it also offers a broad product range with unparalleled choice. More than 15,000 products from HAWLE are offered worldwide. HAWLE does not only specialise in »off-the-peg products«, but also takes on customised production to meet the clients' specific ideas and needs. This requires efficiency: in order to guarantee the fast availability of products, HAWLE has an outstanding network of warehouses and traders with whom weekly deliveries are made. Furthermore the central warehouse in Frankenmarkt holds up to 10,000 pallets, with one million finished products ready for immediate delivery.

The HAWLE motto »made for generations« is more than just a slogan. It is a call for passion, to build customer relationships and to secure the future through mutual trust.

HAWLE. **MADE FOR GENERATIONS.**

HAWLE PRODUCT RANGE



VALVES



ACCESSORIES



AIR RELEASE VALVES AND HYDRANTS



REPAIR CLAMPS AND PIPE SADDLES



FLANGED CONNECTIONS AND RESTRAINT SYSTEMS



ISO-PIPE-FITTINGS



FIRE HYDRANTS



PIPE FITTINGS



TOOLS

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