Özkan Needle valve

DN 200 — 1600, PN 10 | PN 16 | PN 25 | PN 40

No. 9882

Design features

- DN 200 - 1600
- PN 10 / PN 16 / PN 25 / PN 40
- Includes optical position indicator
- Includes handwheel

Order No.	MOP (PN)	Dimensions / DN														
		200	250	300	350	400	450	500	600	700	800	900	1000	1200	1400	1600
9882	10															
	16															
	25															
	40															

Working method

Needlevalvesaredesignedforflowcontrolandregulation applications. Some shut-off valves like butterfly valves and gate valves are used for regulation but these valves are not suitable for continuous operation in regulating duty. Improper continuous use of butterfly and gate valves leads to material damage and decreases operation life. Another feature is the control characteristics – asymmetrical cross section change in closure makes butterfly and gate valves nonlinear control devices. These circumstances can be avoided with a needle valve, as this valve was developed for control and regulation tasks.

The water flow is guided in a ring shaped cross section which is steadily reduced from inlet to discharge port in the needle valve. The ring-shaped cross section of the needle valve is kept in the entire closing movement of piston and this feature makes the needle valve ideal for control valves. An axial moving piston controls the closing port in a linear characteristic.

Cavitation risk is another factor in regulation/control applications. Under extreme operation conditions, control valves are subjected to high pressure differentials. The flow velocity increases in the valve chamber through the flow path and the pressure energy simultaneously falls. If the medium pressure falls below the vapor pressure, vapor bubbles develop. Downstream of the outlet, the medium pressure increases again and the vapor bubbles implode and produce microjets and pressure waves. These microjets and pressure waves hit the valve surface and damage the material where they hit.

The needle valves are specially designed and equipped with special attachments so that the outlet flow, which is carrying vapor bubbles, is guided to the centre of the valve. This design feature ensures that the vapor bubbles which create cavitation damage do not come anywhere near the wall and other components of the valve/pipe. The cavitation bubbles at the centre are dissipated by the increase in the pressure during collision of the water jets.

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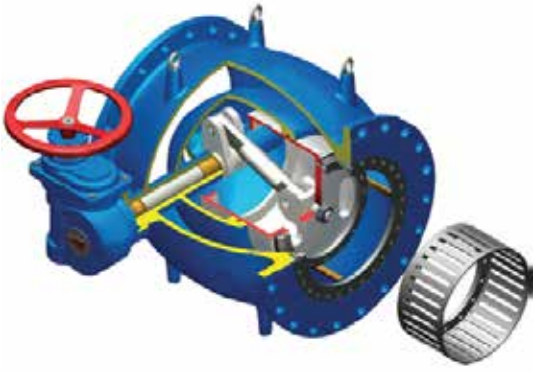
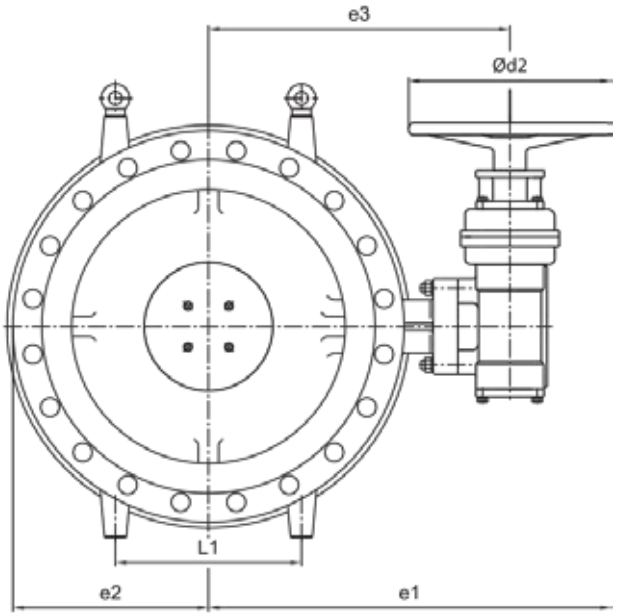
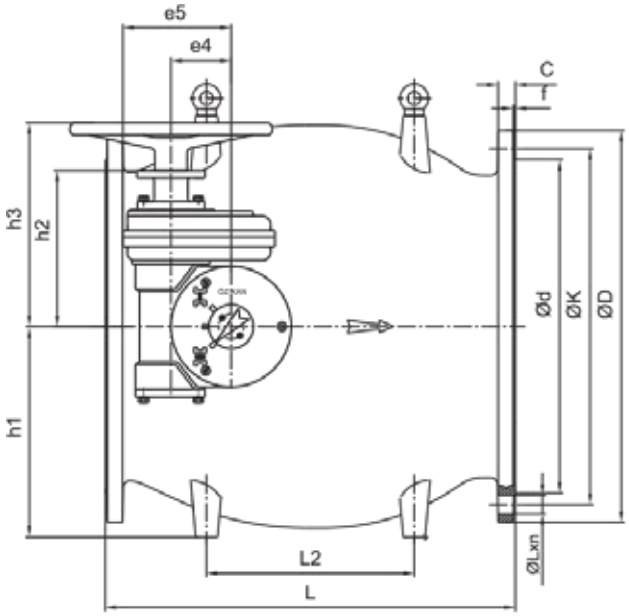
Design







- Optimized body design for better flow guiding, minimum head losses in fully open position
- Max. service life due to the cavitation-free location of the seal ring
- Drive shaft supported on both sides in self-lubricating, maintenance free bushings
- Stainless steel internal parts and fittings
- Wear and corrosion resistant, bronze welded overlay-finished position guides
- Double O-ring sealed shaft
- Optional control devices for optimum cavitation-free control requirements
- Field replacement of the seat and seal ring without the requirement of any special tool

Order No.	DN	L	L1	L2	e1	e2	e3	e4	e5	Ød2	h1	h2	h3	Gearbox
9882	**200**	400	140	200	445	188	312	95	158	245	198	163	239	TK2
	250	450	170	230	480	200	357	95	158	245	235	163	239	
	300	500	200	250	518	230	395	95	158	245	268	163	239	
	350	550	240	280	558	260	435	95	158	245	300	163	239	
	400	600	270	300	656	296	471	110	175	370	340	184	271	TK3
	450	650	300	330	695	330	510	110	175	370	353	184	271	
	500	750	340	380	736	370	551	110	198	370	388	285	372	TK3-RD4
	600	900	400	450	821	440	636	156	245	370	455	334	420	
	700	1.050	470	530	908	510	723	190	313	370	520	397	484	TK3-RD5
	800	1.200	540	600	978	580	793	190	313	370	590	397	484	
	900	1.350	600	680	1.048	655	863	190	313	370	670	397	484	
	1000	1.500	670	750	1.131	730	946	242	365	370	750	432	519	TK3-RD6
	1200	1.800	800	900	1.277	865	1.092	242	365	370	880	432	519	
	1400	2.100	940	1.050	1.442	1.015	1.257	242	365	370	1.030	432	519	
	1600	2.400	1.070	1.200	1.680	1.153	1.437	290	515	485	1.180	538	625	TK3-RD7

All illustrations, technical data, dimensions (in mm) and weights (all weights specified in kg) are non-binding.
Subject to change.

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