

Knife Gate Valve

HERA-BD

Type Series Booklet



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Type Series Booklet HERA-BD

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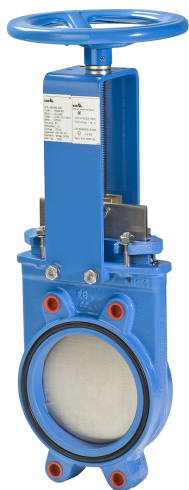
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Knife Gate Valves

Bi-directional Knife Gate Valve

HERA-BD



Main applications

- Waste water treatment plants
- Biogas plants
- Solids transport
- Water treatment
- Paper industry / pulp industry
- Drainage systems
- Drainage
- Washing plants
- Sludge disposal
- Sludge processing
- Food industry / beverage industry

Fluids handled

- Waste water with/without faeces¹⁾
- Activated sludge
- Service water
- Digested sludge
- Solids-laden fluids
- River water, lake water and groundwater
- Raw sludge
- Grey water
- Other fluids on request.

Operating data

Table 1: Operating properties

Characteristic	Value
Nominal pressure	PN 10
Nominal size	DN 50 - 1200
Max. permissible pressure [bar]	10
Min. permissible temperature [°C]	≥ -10
Max. permissible temperature [°C]	≤ +120

Valve body materials

Table 2: Overview of available materials

Material	Material number	Temperature limit
EN-GJS-400-15	5.3106	≤ 120 °C

Design details

Design

- Wafer-type design: suitable for clamping between pipe flanges or dead-end service at full operating pressure
- Single-piece (≤ DN 500) or two-piece (> DN 500) body with integrated flange seal
- Short face-to-face length to EN 558-1/20
- Non-rising stem
- Non-rising handwheel
- Blade made of 1.4571 as standard (≤ DN 400)
- Confined U-shaped seal made of EPDM
- Transverse seal with gland packing
- Robust yoke for actuator mounting as standard
- All steel parts and cast iron parts epoxy-coated (200 µm) to protect against corrosion, colour: RAL 5015, blue

Variants

- Blade made of 1.4571 / AISI 316 Ti (≥ DN 450)
- Stem made of 1.4571 / AISI 316 Ti
- Nuts and bolts made of A4
- Sealing material made of NBR or Viton (U-shaped seal and O-rings)
- Gland packing made of stainless steel braiding, with scraper effect
- Chain wheel ≤ DN 600
- Quick-action lever ≤ DN 150
- Gearbox ≥ DN 400
- Double-acting pneumatic actuators ≤ DN 800
- Electric actuators ≤ DN 1200 (with rising stem)
- Limit switch(es)
- Solenoid valves to NAMUR
- 3.1 certificate
- Larger nominal sizes and other variants on request

¹ Waste water from commercial or industrial use may only be discharged into the local sewer system after it has been treated accordingly.

Product benefits

- All cast iron and steel components are protected against corrosion by high-quality epoxy coating.
- Robust and compact steel yoke for straightforward mounting of pneumatic and electric actuators and position switches. A hard anodised aluminium NAMUR adapter plate attached to the actuator allows sensors or solenoid valves to be quickly installed (plug & run).
- Reliable and service-friendly stem seal: The gland packing is made of PTFE impregnated fibre and can be re-adjusted during operation. There is no need to remove the valve from the piping to replace the packing.
- High functional reliability and tight shut-off in both flow directions
 - The stainless steel blade is polished on both sides and guided by a confined U-shaped seal during the entire valve travel. This prevents "chattering" of the blade and minimises the risk of deposits.
 - Flushing corners in the body ensure the seat is flushed clean when the valve closes.
- Suitable for universal use. Flange connection via tapped blind holes and throughbolts enables the wafer-type knife gate valve to be clamped between pipe flanges or used as dead-end valve at full operating pressure.
- Economically efficient
 - The valve is available in a single-piece or two-piece body design with full bore providing unrestricted flow passage. The body is fully machined inside, resulting in a tight fit of all components, very low pressure losses and high flow coefficients.
 - As a standard feature, O-rings are integrated into the body and serve as flange seals. This helps to save extra costs for providing and fitting external flange seals.

Product information

Product information as per Regulation No. 1907/2006 (REACH)

For information as per European chemicals regulation (EC) No. 1907/2006 (REACH) see <https://www.ksb.com/en-global/company/corporate-responsibility/reach>.

Product information as per Directive 2014/34/EU (ATEX)

The valves do not have a potential internal source of ignition and can be used in potentially explosive atmospheres, Group II, category 2 (zones 1+21) and category 3 (zone 2+22) to ATEX 2014/34/EU.

Pressure/temperature ratings

Table 4: Test pressure and operating pressure

PN	DN	Shell test	Leak test (seat)	Permissible operating pressure
		With water		
		Tests P10 and P11 to DIN EN 12266-1	Test P12 to DIN EN 12266-1 ²⁾	-10 to +120 °C
		[bar]	[bar]	[bar]
10	50 - 250	15	11	10
6	300 - 400	9	6,6	6
5	450	7,5	5,5	5
4	500 - 600	6	4,4	4
2	700 - 1200	3	2,2	2

²⁾ DN 50 - 600: leakage rate A, DN 700-1200: leakage rate B

Product information as per Pressure Equipment Directive 2014/68/EU (PED)

The valves satisfy the safety requirements of Annex I of the European Pressure Equipment Directive 2014/68/EU (PED) for fluids in Groups 1 and 2.

Product information as per UK Equipment and Protective Systems Intended for Use in Potentially Explosive Atmospheres Regulations 2016

The valves do not have a potential internal source of ignition and can be used in accordance with the UK's Equipment and Protective Systems Intended for Use in Potentially Explosive Atmospheres Regulations 2016 in potentially explosive atmospheres, Group II, category 2 (zones 1+21) and category 3 (zone 2+22).

Product information as per UK Pressure Equipment (Safety) Regulations 2016

The valves satisfy the safety requirements of the UK Pressure Equipment (Safety) Regulations 2016 (PER) for fluids in Groups 1 and 2.

Related documents

Table 3: Information/documents

Document	Reference number
Technical data sheet	7328.22
Operating manual	7328.8

Purchase order specifications

Please specify the following information in all enquiries or purchase orders:

1. Type
2. Nominal pressure
3. Nominal size
4. Operating pressure
5. Operating temperature
6. Fluid handled
7. Variants
8. Reference number

Materials

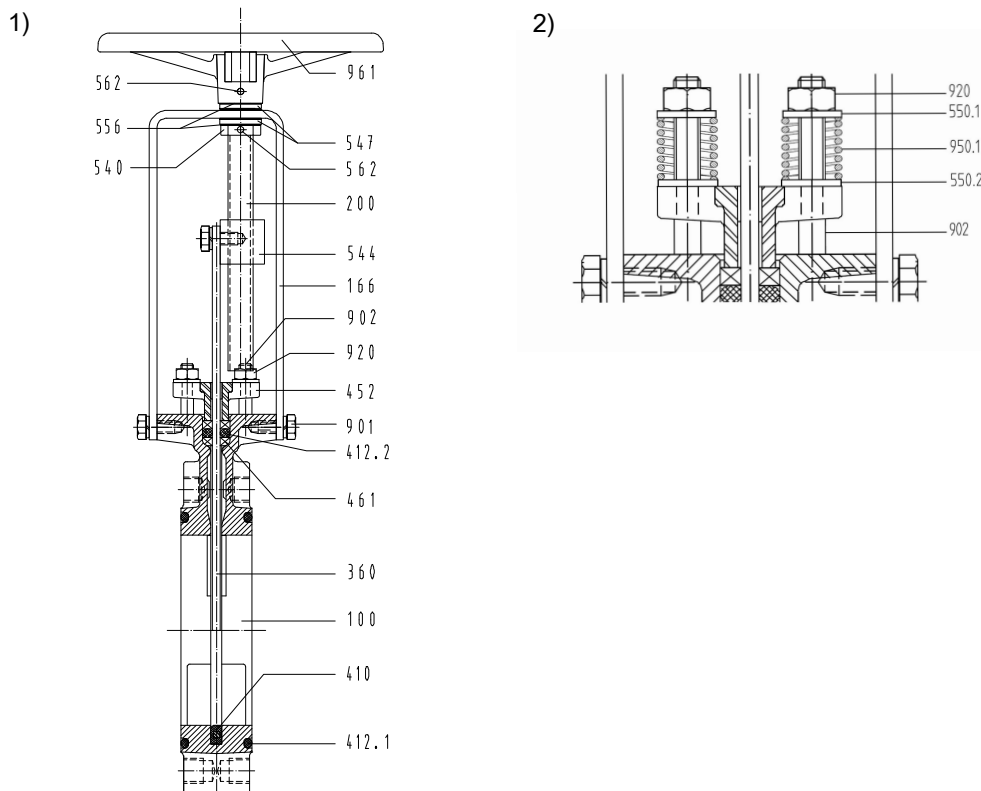


Fig. 1: Sectional drawings

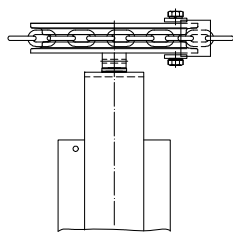
1) Valve with handwheel

2) Detailed view of spring-loaded gland packing

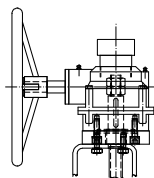
Table 5: Overview of available materials

Part No.	Description	Material	Material number	Note
100	Body	EN-GJS-400-15	5.3106	DN 50 - 500: epoxy-coated, single-piece DN 600: epoxy-coated, two-piece
166	Yoke	Steel	1.0044 / S275JR	Epoxy-coated
200	Stem	Stainless steel	1.4016 / AISI 430	Non-rising
360	Blade	Stainless steel	1.4571 / AISI 316 Ti	DN 50 - 400
		Stainless steel	1.4301 / AISI 304	≥ DN 450
410	U-shaped seal	EPDM with steel core	-	-
412.1	O-ring	EPDM	-	Integrated flange seal
412.2	O-ring	EPDM	-	-
452	Gland follower	EN-GJS-400-15	5.3106	Epoxy-coated
461	Gland packing	PTFE-impregnated synthetic fibres	-	-
540	Bush	Stainless steel	1.4301 / AISI 304	-
544	Threaded bush	Brass	-	-
547	Guide bush	Manganese bronze	C86300 / CB762S	-
556	Anti-friction disc	PET + solid lubricant	-	-
562	Spring-type straight pin	Steel	DIN 7346	-
901	Hexagon head bolt	A2	-	-
902	Stud	A2	-	-
920	Hexagon nut	A2	-	-
961	Handwheel	Steel	-	DN 50 - 300: epoxy-coated
		EN-GJS-400-15	5.3106	≥ DN 350: epoxy-coated

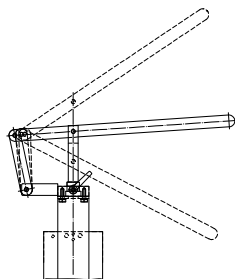
Variants



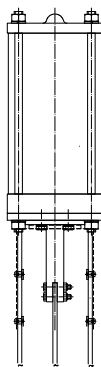
Chain wheel (non-rising stem)



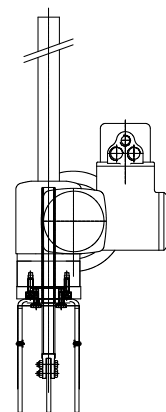
Gearbox (non-rising stem)



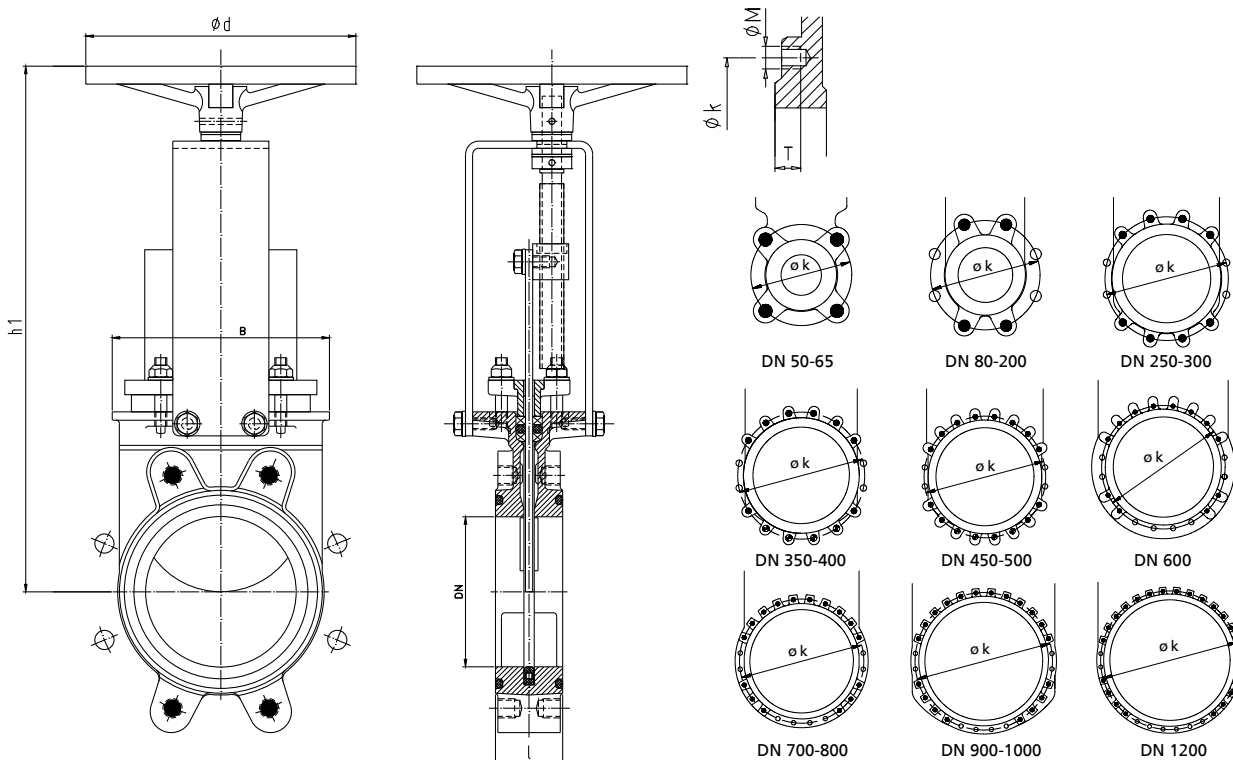
Quick-action lever



Pneumatic actuators
(double-acting)



Electric actuators
(rising stem)

Dimensions and weights

Fig. 2: Sectional drawing
Table 6: Dimensions and weights



PN	DN	l	h ₁	B	ø d	[kg]
		[mm]	[mm]	[mm]	[mm]	
10	50	43	312	113	225	8
	65	46	339	128	225	9
	80	46	364	143	225	10
	100	52	405	162	225	12
	125	56	439	181	225	15
	150	56	485	209	225	17
	200	60	595	263	310	30
	250	68	695	315	310	42
6	300	78	785	370	310	60
	350	78	932	420	410	90
	400	102	1017	478	410	140
5	450	114	1119	532	550	185
4	500	127	1219	584	550	204
	600	110	1379	762	550	230
2	700	110	1736	890	800	380
	800	110	1923	1012	800	550
	900	110	2047	1112	800	680
	1000	110	2487	1240	800	800

Table 7: Dimensions [mm]

PN	DN	ø k	Number of bolt holes z	Bolt size ø M	Blind hole depth T	Tapped blind holes n ₁	Clearance holes ³⁾ n ₂	Tapped holes ⁴⁾ n ₃
		[mm]	Qty		[mm]	Qty	Qty	Qty
10	50	125	4	M16	10	4	0	0
	65	145	4	M16	10	4	0	0
	80	160	8	M16	12	4	4	0
	100	180	8	M16	12	4	4	0
	125	210	8	M16	14	4	4	0

³ Bolts passing along the side of the body

⁴ Tapped from both ends, not through-tapped

PN	DN	ø k	Number of bolt holes z	Bolt size ø M	Blind hole depth T	Tapped blind holes n ₁ 	Clearance holes ³⁾ n ₂ 	Tapped holes ⁴⁾ n ₃ 
		[mm]	Qty		[mm]	Qty	Qty	Qty
10	150	240	8	M20	14	4	4	0
	200	295	8	M20	14	4	4	0
	250	350	12	M20	18	8	4	0
6	300	400	12	M20	21	8	4	0
	350	460	16	M20	21	6	4	6
	400	515	16	M24	28	6	4	6
5	450	565	20	M24	30	12	4	4
4	500	620	20	M24	40	8	4	8
	600	725	20	M27	26	12	8	0
2	700	840	24	M27	20	16	8	0
	800	950	24	M30	20	16	8	0
	900	1050	28	M30	20	20	8	0
	1000	1160	28	M33	20	20	8	0

Mating dimensions as per standard

Face-to-face lengths: EN 558-1/20 up to DN 500

≥ DN 600: see table

Flanges: DIN EN 1092-2

Other flange designs

- Other flange designs on request

Installation information

HERA BD is bi-directional, i.e. flow may pass the valve in either direction. Installation as dead-end valve at full operating pressure without counterflange is permissible. Observe the maximum operating pressures for the respective nominal sizes. Due to the O-rings integrated into the flange faces no further flange seals are required.



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