

Knife Gate Valve

HERA-BDS

Type Series Booklet



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Type Series Booklet HERA-BDS

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Knife Gate Valves

Bi-directional Knife Gate Valve

HERA-BDS



Main applications

- Mining
- Waste water treatment plants
- Paper industry / pulp industry
- Cement plants
- Chemical industry

Fluids handled

- Slurry
- Abrasive fluids
- Pulp
- Waste water
- Service water
- Other fluids on request.

Operating data

Table 1: Operating properties

Characteristic	Value
Nominal pressure	PN 10/16
Nominal pressure	Class 150
Nominal size	DN 50 - 600
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	Temperature limit
ASTM A216 WCB	≤ 425 °C
ASTM A351 CF8	≤ 538 °C
ASTM A351 CF8M	≤ 538

Other materials on request.

Design details

Design

- Design to ASME B16.34 and MSS SP-81
- Pressure/temperature ratings to MSS SP-81
- Full-lug body
- Wafer-type body
- Bi-directional seal
- Rising stem
- Non-rising handwheel
- Resilient lining
- The valves satisfy the safety requirements of Annex I of the European Pressure Equipment Directive 2014/68/ EU (PED) for fluids in Group 2.

Variants

- Non-rising stem
- Graphite gland packing for high temperatures
- Locking device
- Protection plate
- Mounting of electric and pneumatic actuators
- Mounting of gearboxes
- Larger nominal sizes ≤ DN 900

Product benefits

- Blade bottom edge curved for high cutting force. Smooth blade surface due to precision grinding and hard chromium plating, for increased abrasion resistance and long service life.
- Internal gland packing with improved sealing performance
- Two-piece body designed without dead volumes to prevent pulp deposits inside the body and jamming of the blade, particularly in the case of solids-laden fluids.
- Long service life due to resilient, abrasion-resistant die-cast rubber seat with metal backing ring. Replaceable seats, easy to remove and install.
- Drain facility at the bottom of the valve body. Body bottom dismantles easily for regular cleaning. Flushing system can be fitted by customer.

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 European 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 Group 2.

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 Group 2.

Related documents

Table 3: Information/documents

Document	Reference number
Operating manual	7330.8

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. Line connection
7. Material
8. Fluid handled
9. Variants
10. Reference number

Always indicate the original serial number and the year of construction when ordering spare parts.

Pressure/temperature ratings

Table 4: Test pressure and operating pressure

PN	DN	Shell test ¹⁾²⁾	Leak test (seat) ¹⁾	Permissible operating pressure
		With water		
		[bar]	[bar]	[bar]
10	50-600	15	2,8	10,3
16	50-600	24	2,8	10,3
Class 150	50-600	30	2,8	10,3

Materials

HERA-BDS with handwheel

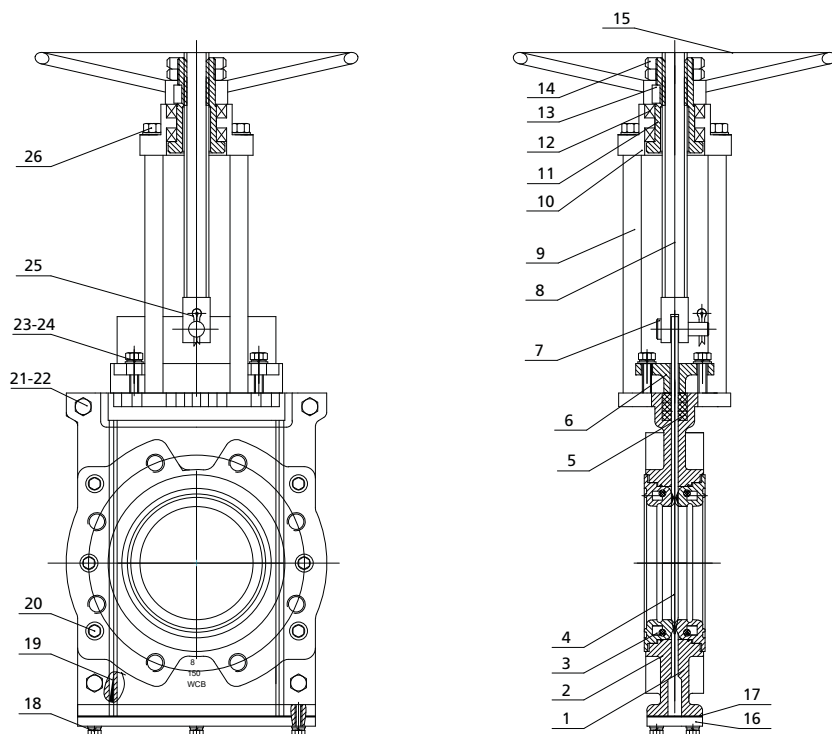


Fig. 1: Sectional drawing of HERA-BDS with handwheel

¹ Test procedure to MSS SP-81

² Test medium at 0 °C to 66 °C

Table 5: Parts list

Part No.	Description	Material	Note
1	Upper body section	ASTM A 216 WCB	-
		ASTM A 351 CF8	-
		ASTM A 351 CF8M	-
2	Lower body section	ASTM A 216 WCB	-
		ASTM A 351 CF8	-
		ASTM A 351 CF8M	-
3	Seat	EPDM	-
		NBR	-
		Rubber	-
4	Blade	ASTM A 182 F304	Hard chromium plated
		ASTM A 182 F316	Hard chromium plated
		ASTM A 276 410	Material available for model with metal (hard chromium plated) seat only
5	Packing ring	NBR or Viton	-
6	Gland follower	ASTM A 216 WCB	-
		ASTM A 351 CF8	-
		ASTM A 351 CF8M	-
7	Pin	ASTM A 182 F304	-
8	Stem	ASTM A 182 F304	-
9	Pillar	ASTM A 182 F304	Body made of A 351 CF8(M)
		C45 + Cr	Body made of A 216 WCB
10	Cover	ASTM A 216 WCB	-
		ZL102	-
11	Nut	H59	-
12	Plain bearing	GCr6	-
13	Key	45#	-
14	Slotted round nut	45#	Electroless nickel-plated
15	Handwheel	Nodular cast iron	-
16	Bottom	ASTM A 216 WCB	-
		ASTM A 351 CF8	-
		ASTM A 351 CF8M	-
17	Gasket	NBR	-
18	Hexagon head bolt	ASTM A 182 F304	-
19	Sealing cord	NBR	-
20	Hexagon socket head cap screw	ASTM A 182 F304	-
21	Hexagon head bolt	ASTM A 182 F304	-
22	Hexagon nut	ASTM A 182 F304	-
23	Stud	ASTM A 182 F304	-
24	Hexagon nut	ASTM A 182 F304	-
25	Split pin	Stainless steel	-
26	Hexagon nut	ASTM A 182 F304	-

HERA-BDS with pneumatic actuator

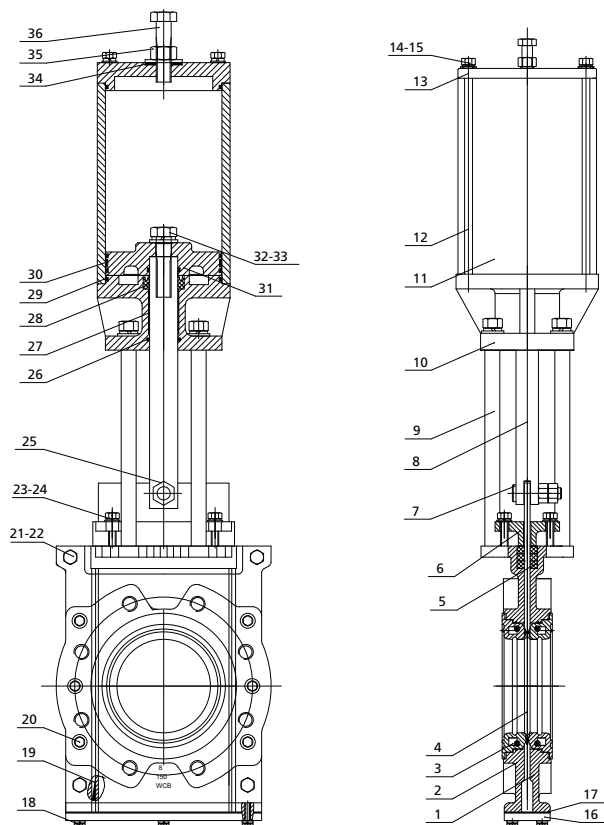


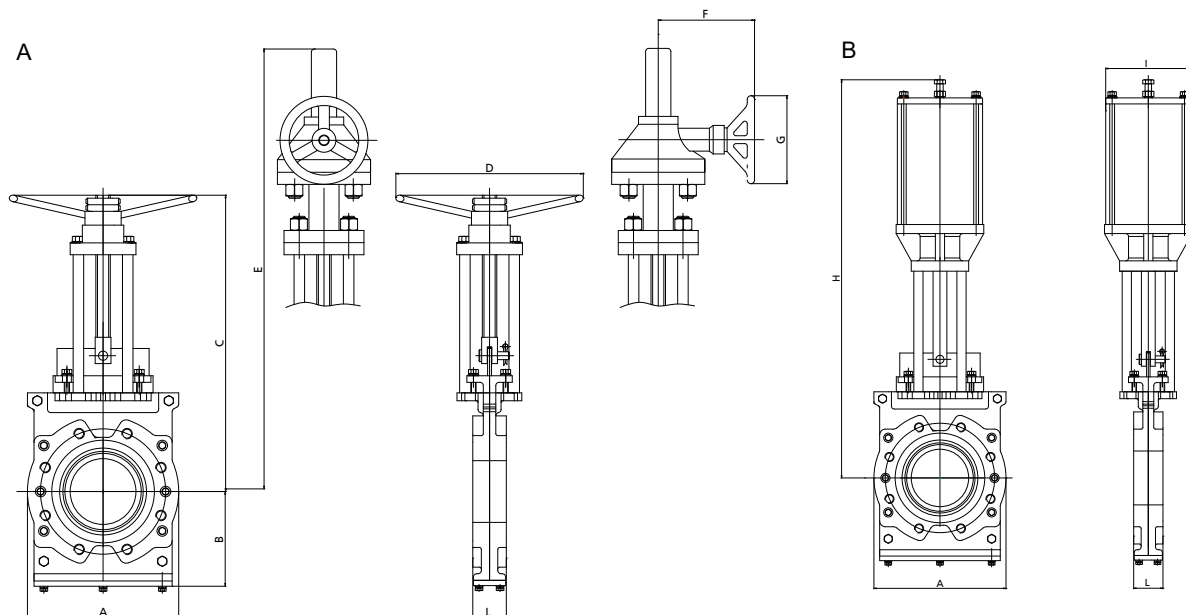
Fig. 2: Sectional drawing of HERA-BDS with pneumatic actuator

Table 6: Parts list

Part No.	Description	Material	Note
1	Upper body section	ASTM A 216 WCB	-
		ASTM A 351 CF8	-
		ASTM A 351 CF8M	-
2	Lower body section	ASTM A 216 WCB	-
		ASTM A 351 CF8	-
		ASTM A 351 CF8M	-
3	Seat	EPDM	-
		NBR	-
		Rubber	-
4	Blade	ASTM A 182 F304	Hard chromium plated
		ASTM A 182 F316	Hard chromium plated
		ASTM A 276 410	Material available for model with metal (hard chromium plated) seat only
5	Packing ring	NBR or Viton	-
6	Gland follower	ASTM A 216 WCB	-
		ASTM A 351 CF8	-
		ASTM A 351 CF8M	-
7	Pin	ASTM A 182 F304	-
8	Cylinder rod	45#	Hard chromium plated
9	Pillar	ASTM A 182 F304	Body made of A 351 CF8(M)
		C45 + Cr	Body made of A 216 WCB
10	Bottom end cap	Q 235	-
		ZL102	-
11	Cylinder	Q 235	Aluminium alloy
12	Tie bolt	Q 235	Galvanised
13	Top end cap	Q 235	-
		ZL102	-
14	Hexagon nut	ASTM A 182 F304	-

Part No.	Description	Material	Note
15	Spring washer	65Mn	-
16	Bottom	ASTM A 216 WCB	-
		ASTM A 351 CF8	-
		ASTM A 351 CF8M	-
17	Gasket	NBR	-
18	Hexagon head bolt	ASTM A 182 F304	-
19	Sealing cord	NBR	-
20	Hexagon socket head cap screw	ASTM A 182 F304	-
21	Hexagon head bolt	ASTM A 182 F304	-
22	Hexagon nut	ASTM A 182 F304	-
23	Stud	ASTM A 182 F304	-
24	Hexagon nut	ASTM A 182 F304	-
25	Hexagon nut	ASTM A 182 F304	-
26	O-ring	NBR	-
27	Boundary-lubricated bearing	Composite	-
28	Y-ring	Polyurethane	-
29	O-ring	NBR	-
30	Guide ring	PTFE	-
31	Piston	ZL102	-
		Q 235	-
32	Hexagon head bolt	45#	-
33	Spring washer	65Mn	-
34	Gasket	PTFE	-
35	Hexagon nut	ASTM A 182 F304	-
36	Adjusting screw	ASTM A 182 F304	-

Dimensions and weights



A	Dimensions of HERA-BDS with handwheel or gearbox	B	Dimensions of HERA-BDS with pneumatic actuator
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Table 7: Dimensions [mm] and weights [kg]

DN	L	A	B	C ³⁾	E ³⁾	D	F	G	H	I	With hand-wheel [kg]	With gearbox [kg]	With pneu- matic actuator [kg]
50	48	165	120	450/360	-	220	-	-	550	120	20	-	26
65	48	190	130	475/390	-	220	-	-	600	120	22	-	30
80	51	200	145	535/415	-	220	-	-	640	120	26	-	35
100	51	230	150	600/450	-	250	-	-	700	145	35	-	42
125	57	230	180	690/510	-	250	-	-	840	190	38	-	50
150	57	285	200	740/550	-	282	-	-	910	190	42	-	66
200	70	345	220	885/660	-	355	-	-	1100	225	65	-	87
250	70	405	275	1060/780	-	355	-	-	1280	225	85	-	140
300	76	485	330	1220/870	-	400	-	-	1440	282	120	-	225
350	76	535	350	1400/985	-	500	-	-	1700	330	150	-	298
400	89	600	380	-	1670/1220	-	260	310	1855	410	-	230	335
450	89	635	400	-	1800/1230	-	340	460	2000	500	-	290	395
500	114	705	450	-	1950/1790	-	340	460	2180	550	-	360	470
600	114	820	510	-	1890/2490	-	340	460	2400	650	-	440	570

Mating dimensions as per standard

Face-to-face lengths: MSS SP-81

Flanges: Mating dimensions, Class 150:
ANSI B 16.5
Mating dimensions, PN 10, PN 16:
DIN 2501

³ Fully open/closed



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