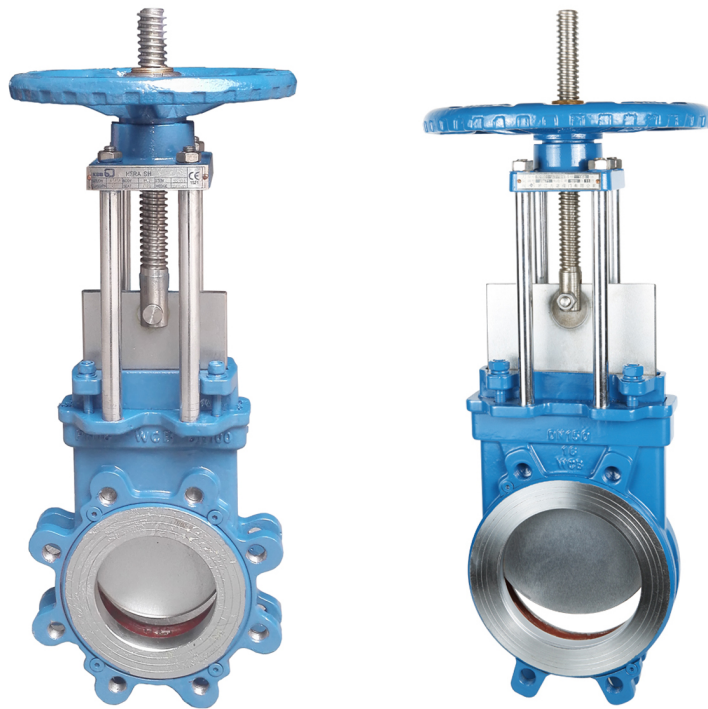




Knife Gate Valve

**HERA-SH**

**Type Series Booklet**



## **Legal information/Copyright**

Type Series Booklet HERA-SH

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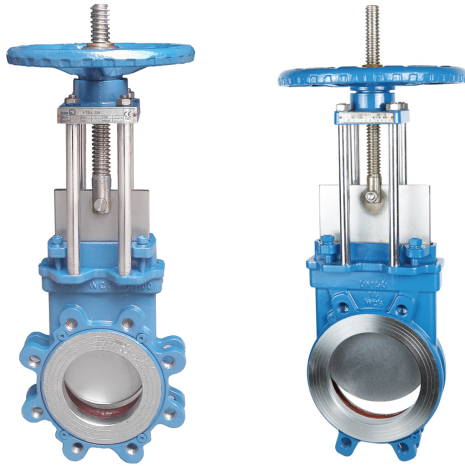
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## Knife Gate Valves

### Uni-directional knife gate valve

## HERA-SH



#### Main applications

- Paper industry / pulp industry
- Waste water treatment plants
- Chemical industry
- Water treatment
- Food industry / beverage industry

#### Fluids handled

- Pulp
- Waste water
- Corrosive fluids
- Syrup
- 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 - 1000
Max. permissible pressure [bar]	10,3
Min. permissible temperature [°C]	≥ -10
Max. permissible temperature [°C]	≤ +180

#### Valve body materials

**Table 2:** Overview of available valve body materials

Material	Temperature limit [°C]
ASTM A216 WCB	≤ 425 °C
ASTM A351 CF8	≤ 538 °C
ASTM A351 CF8M	≤ 538 °C

Other materials on request.

#### Design details

##### Design

- Designed and tested to MSS SP-81
- Pressure/temperature ratings to MSS SP-81
- Single-piece body
- Full-lug body
- Stem sealed by gland packing
- Rising stem
- Outside screw
- Non-rising handwheel
- Uni-directional
- Pillar yoke
- Suitable for mounting electric actuators and gearboxes to DIN ISO 5210

##### Variants

- Non-rising stem
- Graphite gland packing for high temperatures
- Mounting of electric and pneumatic actuators
- Mounting of gearboxes
- Larger nominal sizes and other variants on request

##### Product benefits

- In-situ valve maintenance
  - Externally accessible gland packing, so packing rings can be replaced without removing the valve from the piping.
- Long service life
  - 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
  - O-ring-supported self-adjusting flexible seat with high abrasion resistance and long service life.
- Reliable sealing
  - Retaining ring can be adjusted during maintenance work to restore tightness
- Easy actuation
  - Stem nut supported by needle bearing for lower actuating torque and ease of actuation

**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.

**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.

**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).

**Related documents**

**Table 3:** Information/documents

Document	Reference number
Type series booklet HERA-BD (knife gate valve, bi-directional)	7328.1
Type series booklet HERA-BDS (knife gate valve, bi-directional)	7332.1
Type series booklet HERA-BHT (knife gate valve, bi-directional)	7330.1
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. Fluid handled
7. Variants
8. Reference number

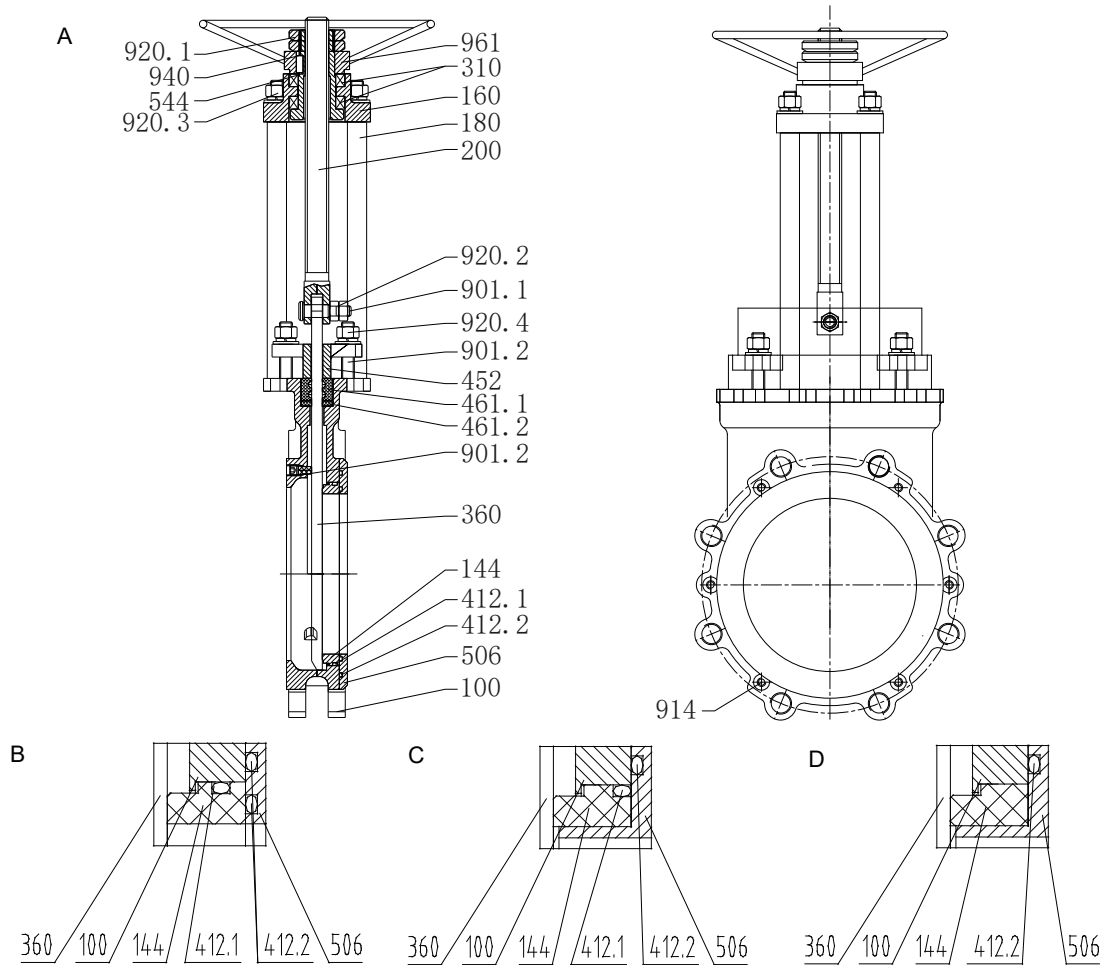
**Pressure/temperature ratings**

**Table 4:** Test pressure and operating pressure

PN	DN	Shell test <sup>1)</sup>	Seat tightness test <sup>1)</sup>	Permissible operating pressure
		With water		
		[bar]	[bar]	[bar]
10	50-600	15	2,8	10,3
	700-1000	15	2,8	6,9
16	50-600	24	2,8	10,3
	700-1000	24	2,8	6,9
Class 150	50-600	30	2,8	10,3
	700-1000	30	2,8	6,9

<sup>1)</sup> Test procedure to MSS SP-81

**Materials**



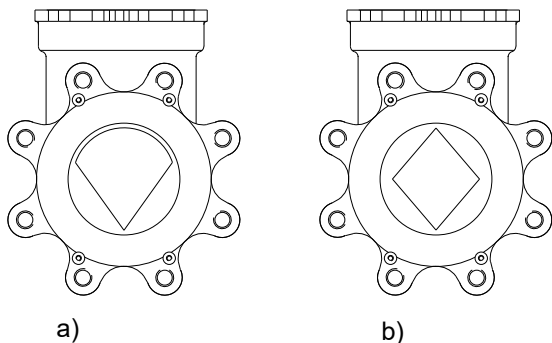
A	Sectional drawing, HERA-SH	C	Sectional drawing, PTFE seat
B	Sectional drawing, metal seat	D	Sectional drawing, EPDM seat

**Table 5:** Parts list

Part No.	Description	Material	Note
100	Body	ASTM A 216 WCB	-
		ASTM A 351 CF8	-
		ASTM A 351 CF8M	-
144	Seat	ASTM A 182 F304	Hard chromium plated for metal-seated design
		ASTM A 182 F316	Hard chromium plated for metal-seated design
		EPDM	-20 °C to +120 °C
		PTFE	-20 °C to +150 °C
160	Cover	Aluminium alloy	-
180	Pillar	ASTM A 182 F304	Body made of A 351 CF8(M)
		C45 + Cr	Body made of A 216 WCB
200	Stem	ASTM A 182 F304	-
310	Plain bearing	GCr6	-
360	Blade	ASTM A 182 F304	Hard chromium plated for metal-seated design
		ASTM A 182 F316	Hard chromium plated for metal-seated design
		ASTM A 276 410	Hard chromium plated
412.1	O-ring	NBR	Standard: -20 °C to +100 °C
		Viton	Variant: -20 °C to +180 °C
412.2	O-ring	NBR	Standard: -20 °C to +100 °C

7329.1/08-EN

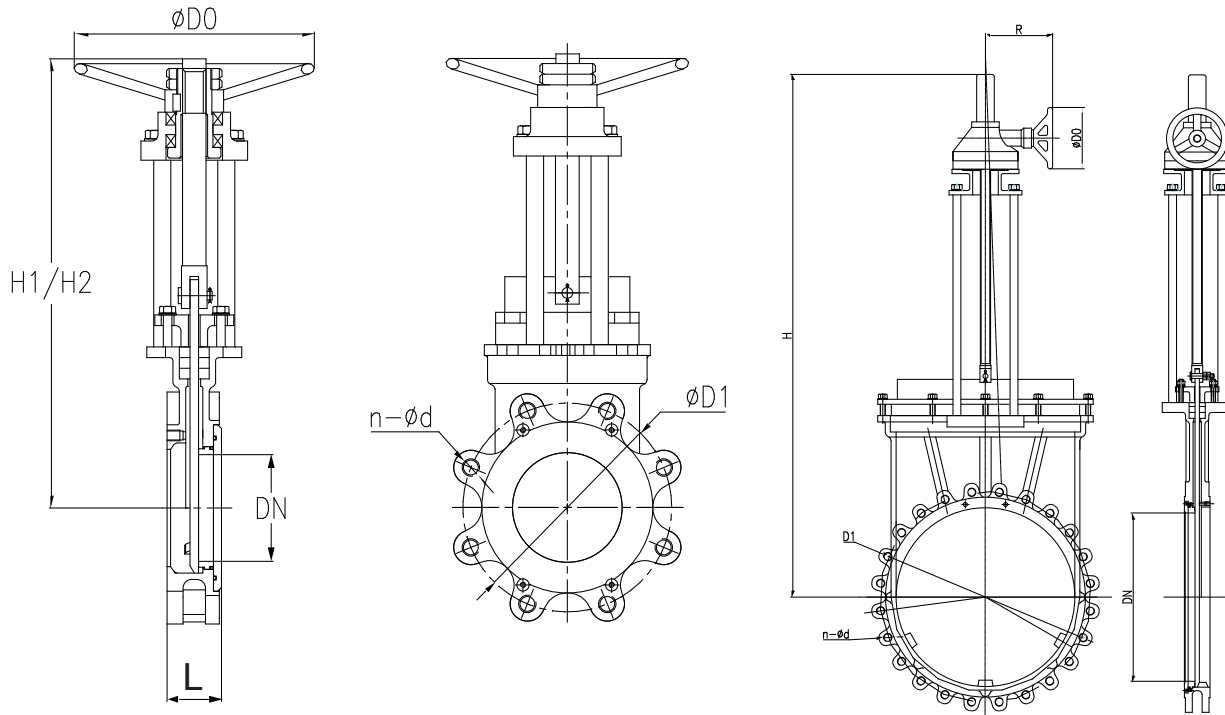
Part No.	Description	Material	Note
412.2	O-ring	Viton	Variant: -20 °C to +180 °C
452	Gland	ASTM A 216 WCB	-
		ASTM A 351 CF8	-
		ASTM A 351 CF8M	-
461.1	Gland packing	NBR or Viton	-
461.2	Guide bush	PTFE	-
506	Retaining ring	ASTM A 216 WCB	-
		ASTM A 182 F304	-
		ASTM A 182 F316	-
544	Threaded bush	H59	-
901.1	Bolt	ASTM A 276 304	-
901.2	Bolt	ASTM A 182 F304	-
914	Hexagon socket head cap screw	ASTM A 182 F304	-
920.1	Nut	ASTM A 182 F304	-
920.2	Nut	ASTM A 182 F304	-
920.3	Nut	ASTM A 182 F304	-
920.4	Nut	ASTM A 182 F304	-
940	Key	C45	-
961	Handwheel	D-2	-

**Variants**


**Fig. 1:** Blade design  
a) V port  
b) Diamond port

**Table 6:** Blade design

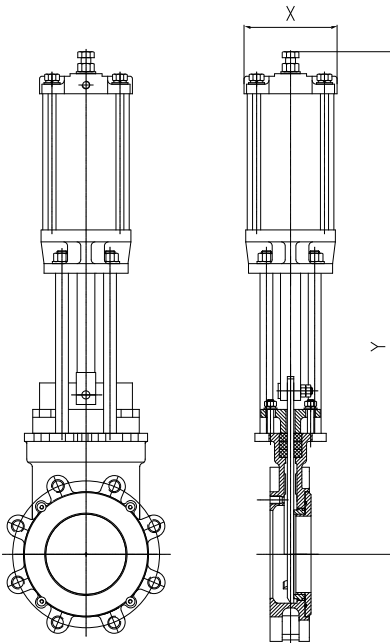
DN	Round-port Cv	V-port Cv	Diamond-port Cv
50	156	80	100
65	230	120	150
80	340	180	220
100	612	315	390
125	970	500	620
150	1430	730	615
200	2620	1350	1670
250	4230	2150	2700
300	5395	2750	3500
350	6730	3450	4300
400	8735	4420	4600
450	10870	5500	7000
500	14095	7100	9000
600	20655	10450	13200

**Dimensions and weights**

**Fig. 2:** Dimensions with handwheel or gearbox

**Table 7:** Dimensions [mm] and weights [kg]

PN	DN	L	H1	H2	H	DO	R	D1	Bolt hole ID d	Number of clearance holes n	Bolt size	[kg]
10	50	48	330	390	-	200	-	125	18	4	M16	10
	65	48	360	435	-	200	-	145	18	4	M16	11
	80	51	390	485	-	220	-	160	18	8	M16	13,5
	100	51	430	545	-	220	-	180	18	8	M16	15,5
	125	57	475	615	-	250	-	210	18	8	M16	23,5
	150	57	510	675	-	280	-	240	22	8	M20	29
	200	70	620	835	-	315	-	295	22	8	M20	43
	250	70	765	1015	-	355	-	350	22	12	M20	67,5
	300	76	850	1170	-	400	-	400	22	12	M20	100,5
	350	76	970	1320	-	450	-	460	22	16	M20	126
	400	89	1060	1469	-	500	-	515	26	16	M24	176,2
	450	89	-	-	1780	460	340	565	26	20	M24	195
	500	114	-	-	1920	460	340	620	26	20	M24	236
	600	114	-	-	2175	460	340	725	30	20	M27	380
700	117	-	-	2535	460	340	840	30	24	M27	540	
800	117	-	-	2845	530	420	950	33	24	M30	685	
900	130	-	-	3270	530	420	1050	33	28	M30	967	
1000	156	-	-	3600	530	420	1160	33	28	M30	1200	
16	50	48	330	390	-	200	-	125	18	4	M16	10
	65	48	360	435	-	200	-	145	18	4	M16	11
	80	51	390	485	-	220	-	160	18	8	M16	13,5
	100	51	430	545	-	220	-	180	18	8	M16	15,5
	125	57	475	615	-	250	-	210	18	8	M16	23,5
	150	57	510	675	-	280	-	240	22	8	M20	29
	200	70	620	835	-	315	-	295	22	12	M20	43,5
	250	70	765	1015	-	355	-	355	26	12	M24	68
	300	76	850	1170	-	400	-	410	26	12	M24	101
	350	76	970	1320	-	450	-	470	26	16	M24	127
	400	89	1060	1469	-	500	-	525	30	16	M27	177
	450	89	-	-	1780	460	340	585	30	20	M27	195
	500	114	-	-	1920	460	340	650	33	20	M30	236
	600	114	-	-	2175	460	340	770	36	20	M33	380
700	117	-	-	2535	460	340	840	36	24	M33	540	

PN	DN	L	H1	H2	H	DO	R	D1	Bolt hole ID d	Number of clearance holes n	Bolt size	[kg]
16	800	117	-	-	2845	530	420	950	39	24	M36	685
	900	130	-	-	3270	530	420	1050	39	28	M36	967
	1000	156	-	-	3600	530	420	1170	42	28	M39	1200
Class 150	2"	48	330	390	-	200	-	120,5	19	4	5/8"-11UNC	10
	2.5"	48	360	435	-	200	-	139,5	19	4	5/8"-11UNC	11
	3"	51	390	485	-	220	-	152,5	19	4	5/8"-11UNC	13,5
	4"	51	430	545	-	220	-	190,5	19	8	5/8"-11UNC	15,5
	5"	57	475	615	-	250	-	216	22,4	8	3/4"-10UNC	23,5
	6"	57	510	675	-	280	-	241,5	22,4	8	3/4"-10UNC	29
	8"	70	620	835	-	315	-	298,5	22,4	8	3/4"-10UNC	43,5
	10"	70	765	1015	-	355	-	362	25,4	12	7/8"-9UNC	68
	12"	76	850	1170	-	400	-	432	25,4	12	7/8"-9UNC	101
	14"	76	970	1320	-	450	-	476	28,4	12	1"-8UNC	127
	16"	89	1060	1460	-	500	-	540	28,4	16	1"-8UNC	177
	18"	89	-	-	1780	460	340	578	31,8	16	1 1/8"-7UNC	195
	20"	114	-	-	1920	460	340	635	31,8	20	1 1/8"-7UNC	236
	24"	114	-	-	2175	460	340	749	35	20	1 1/4"-7UNC	380
	28"	117	-	-	2535	460	340	864	35	28	1 1/4"-7UNC	540
32"	117	-	-	2845	530	420	978	41,2	28	1 1/2"-6UNC	685	
36"	130	-	-	3270	530	420	1086	41,2	32	1 1/2"-6UNC	967	
40"	156	-	-	3600	530	420	1200	41,2	36	1 1/2"-6UNC	1200	


**Fig. 3:** Dimensions with pneumatic actuator

**Table 8:** Dimensions [mm] and weights [kg]

PN	DN	Pneumatic actuator type (double-acting)	X	Y	[kg]
Class 150	50	KZSL-100	120	490	14
	65	KZSL-100	120	520	16,5
	80	KZSL-100	120	590	19,5
	100	KZSL-100	120	650	22
	125	KZSL-125	145	715	32
	150	KZSL-125	145	790	38,5
	200	KZSL-160	180	1040	65
	250	KZSL-200	240	1225	95,5
	300	KZSL-250	290	1390	152
	350	KZSL-300	350	1650	240
	400	KZSL-300	350	1820	282
	450	KZSL-350	400	2015	398

PN	DN	Pneumatic actuator type (double-acting)	X	Y	[kg]
10 16 Class 150	500	KZSL-350	400	2185	470
	600	KZSL-400	450	2380	698
	700	KZSL-500	550	2770	884
	800	KZSL-600	650	3040	1180
	900	KZSL-600	680	3500	1500
	1000	KZSL-600	680	3900	1750

Face-to-face lengths: MSS SP-81  
 Flanges: DIN 2501 (PN 10/16)  
 ASME B16.5 (Class 150)





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