Bonneted Unidirectional Knife Gate Valve

ISO9001 & CE Accredited

1. Description

The AP series knife gate valve is a unidirectional knife gate valve with bonnet. The completely enclosed body-bonnet structure ensures 0 leakage from the knife gate to surrounding. This valve is very suitable to contaminated/hazardous media for the safety of surrounding.

2. Technical Data

Size: DN 100 to DN 600 (larger diameters on request)

Working pressure:

DN 100 to DN250	10 Bar	NPS 2-10	150 psi
DN 300 to DN450	7 Bar	NPS 12-18	90 psi
DN 500 to DN600	4 Bar	NPS 20-24	60 psi

Standard flange connection:

EN1092	GB/T 9113
ASME B16.5	AS 2129/4087
JIS B2220	Others on request

Application:

Pulp and Paper/ Mining /Waste Water Treatment/ Food and Beverage/Chemical Plants/ Power Plants/ Steel Industry/Etc.

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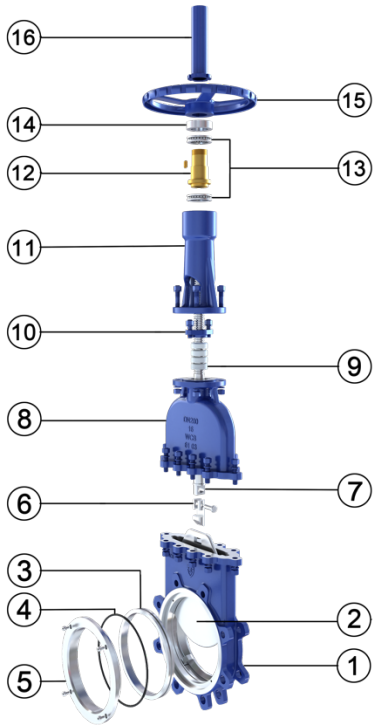
3. Design Features

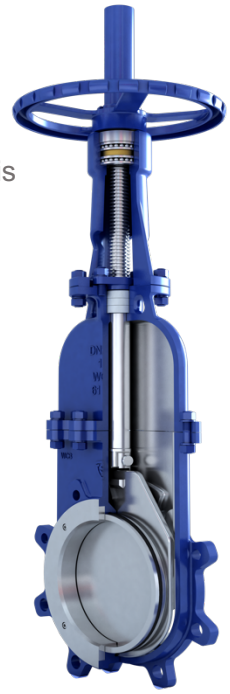


STANDARD PART LIST			
Parts	**WCB**	**CF8**	**CF8M**
1. Body	WCB	CF8	CF8M
2. Gate	304	304	316
3. Seat	Metal/Metal or EPDM		
4. O-ring	NBR		
5. Seat Retainer	WCB	CF8	CF8M
6. Joint	2Cr13	304	316
7. Stem	2Cr13	304	316
8. Bonnet	WCB	CF8	CF8M
9. Packing	PTFE		
10. Gland	WCB	CF8	CF8M
11. Yoke	WCB	CF8	CF8M
12. Stem Nut	Brass	Brass	Brass
13. Thrust Bearing	65Mn	65Mn	65Mn
14. Retainer	#45	#45	#45
15. Hand wheel	GGG30 (Epoxy Coated)		
16. Stem Protector	304	304	304
17. Fasteners	A2-70	A2-70	A4-70

Note: Hand wheel nut is available for valve without stem protector. Non-stainless parts are epoxy coated.

BODY:

- Cast-in guide claws at the port bottom for gate fixture, instead of a groove, eliminates potential valve shutoff clogging while providing tight seal. These guide claws push gate towards seat for tight seal in closed position.
- Integral body design ensures easy assembly and 0 shell leakage.
- Full port design minimizes pressure drop and maximizes flow capacity.
- Completely enclosed structure ensures 0 leakage from valve to the surrounding, which is perfect for contaminated/hazardous media for the safety of surrounding.
- Super thin body design and compact construction contribute to easy installation.



GATE:

- Beveled knife edge provides strong cutting stress and tight sealing.
- Gate thickness can be increased to meet higher pressure.

SEAT:

- Side-entry seat is replaceable, reducing the cost of maintenance.
- L-shape seat retainer locks seat into valve body and covers seat side to prevent direct flow flushing.

Other:

- Stem cover is available to ensure long service life for stem.
- Two thrust bearings minimize torque for operation.
- Grease nipple is available to ease bearing lubrication.

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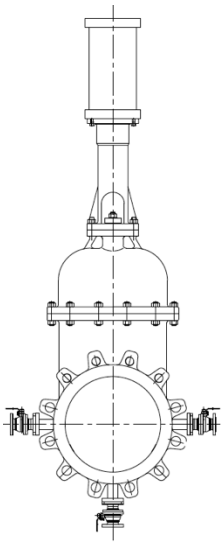
4. Actuator Options

Manual	Automatic
Hand wheel	Electric
Bevel Gear	Pneumatic (single & double-acting)
Chain wheel	Hydraulic
Lever	

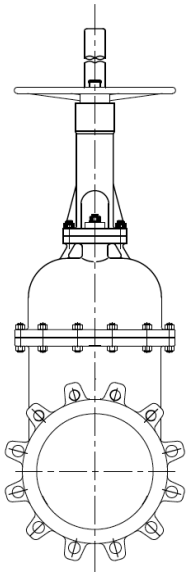
***Note: for other options, please contact us for availability.**

Accessories	
Actuator Manual Override	Locking Device
Stem Extensions	Solenoid Valves
Positioners	ISO Mount

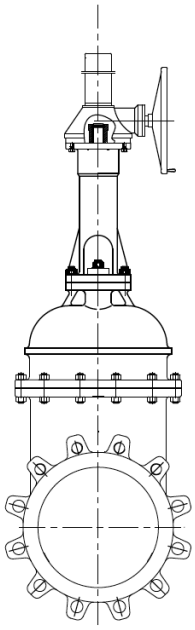


5. Other Options

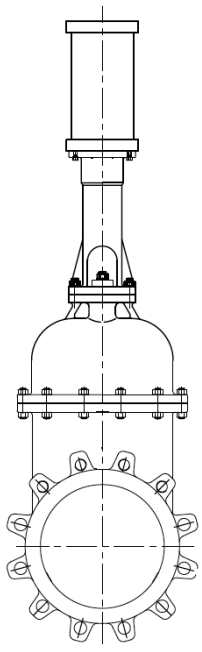
V-PORT	Fabricated Valve
Deflection Cone	Semi-lug Design
Flushing Port	Other materials for valve



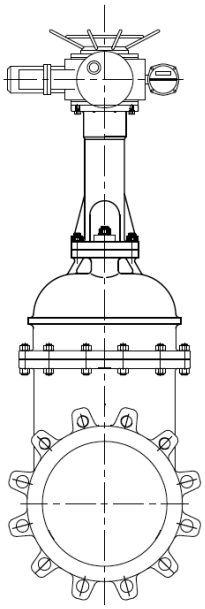
Hand Wheel Valve



Bevel Gear Valve



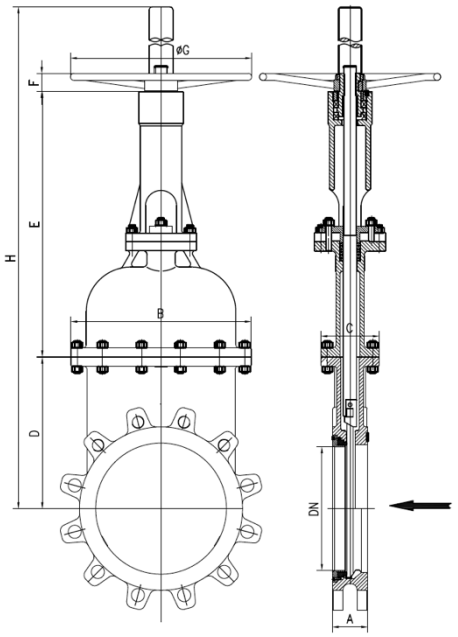
Pneumatic Valve



Electric Valve

Dimension I – Hand Wheel Operated Valve (Rising Stem)

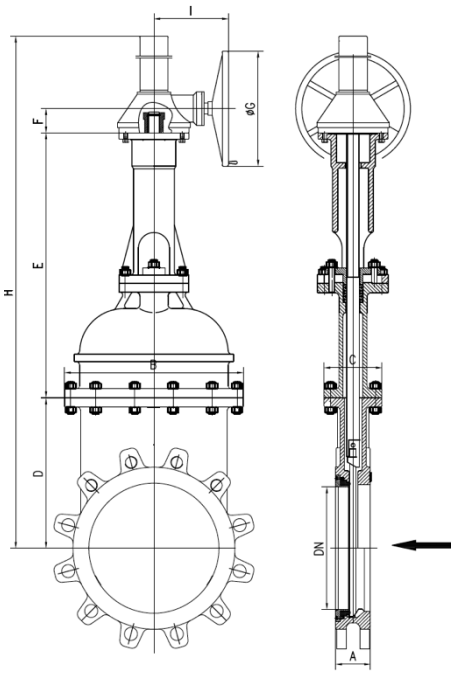
- Standard Manual Actuator
- Including:
  - Hand Wheel
  - Stem
  - Stem Nut
- Size Range:
  - DN100-DN400
  - Gearbox is suggested for size ≥ DN 450
- Options:
  - Stem Cover
  - Locking Device
  - Stem Extension



DN	A	B	C	D	E	F	G	H	Weight（kg）
100	51	202	100	145	295	40	200	610	25
125	57	245	105	180	305	40	250	630	36
150	57	285	110	210	410	40	280	830	46
200	70	320	120	245	502	50	300	1030	60
250	70	365	125	280	595	50	350	1170	82
300	76	430	135	290	695	65	400	1400	113
350	76	490	145	330	850	70	450	1630	150
400	89	560	160	390	950	76	450	1820	180

Dimension III – Bevel Gear Operated Valve

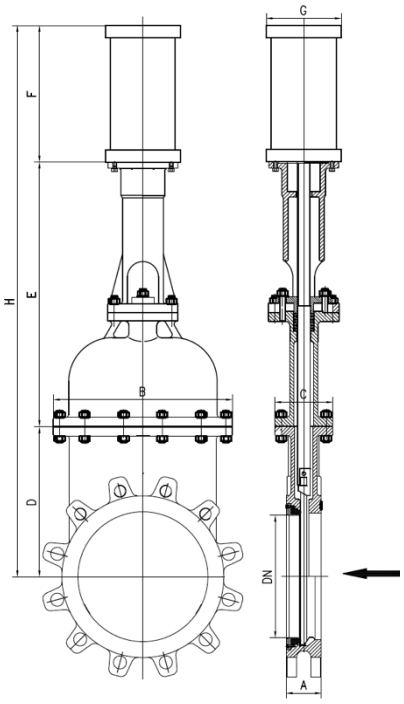
- Mainly applied to valve size ≥DN450
- Including:
  - Gearbox (Standard Ratio: 4.5:1) with hand wheel
  - Stem
  - Stem Protector
- Options:
  - Locking Device
  - Stem Extensions
  - Chain wheel



DN	A	B	C	D	E	F	G	H	I	Weight (kg)
200	70	320	120	245	502	80	310	1100	150	82
250	70	365	125	280	595	80	310	1290	150	104
300	76	430	135	290	695	85	310	1450	170	135
350	76	490	145	330	850	85	310	1700	170	180
400	89	560	160	390	950	85	310	1900	170	210
450	89	610	175	460	990	97	460	2100	233	260
500	114	650	190	560	1020	97	460	2270	233	295
600	114	760	230	620	1200	97	460	2620	233	360

Dimension IV – Double Acting Pneumatic Valve

- Standard DA pneumatic actuator including:
  - Aluminum Cylinder
  - #45 Steel（Chrome Coated）Piston Rod
- Size Range: DN100-DN600
- Air Supply Pressure Range
  - 4 bar to 7 bar.
- Options:
  - Manual Override
  - Locking Device
  - Air tank for fail-safe operation
  - Solenoid Valve
  - Flow Regulator



DN	A	B	C	D	E	F	G	H	Cylinder	Connect	Weight (kg)
100	51	202	100	145	295	270	120	650	C100/100	F1/4	36
125	57	245	105	180	305	290	150	730	C100/135	F1/4	48
150	57	285	110	210	410	320	150	795	C125/160	F1/4	56
200	70	320	120	245	502	370	195	970	C125/210	F3/8	90
250	70	365	125	280	595	420	240	1135	C160/260	F3/8	115
300	76	430	135	290	695	470	280	1275	C200/310	F3/8	155
350	76	490	145	330	850	525	280	1450	C200/360	F3/8	205
400	89	560	160	390	950	570	395	1620	C250/410	F3/8	280
450	89	610	175	460	990	620	395	1770	C250/460	F3/8	310
500	114	650	190	560	1020	680	425	1960	C300/510	F3/8	450
600	114	760	230	620	1200	780	425	2275	C300/610	F3/8	530

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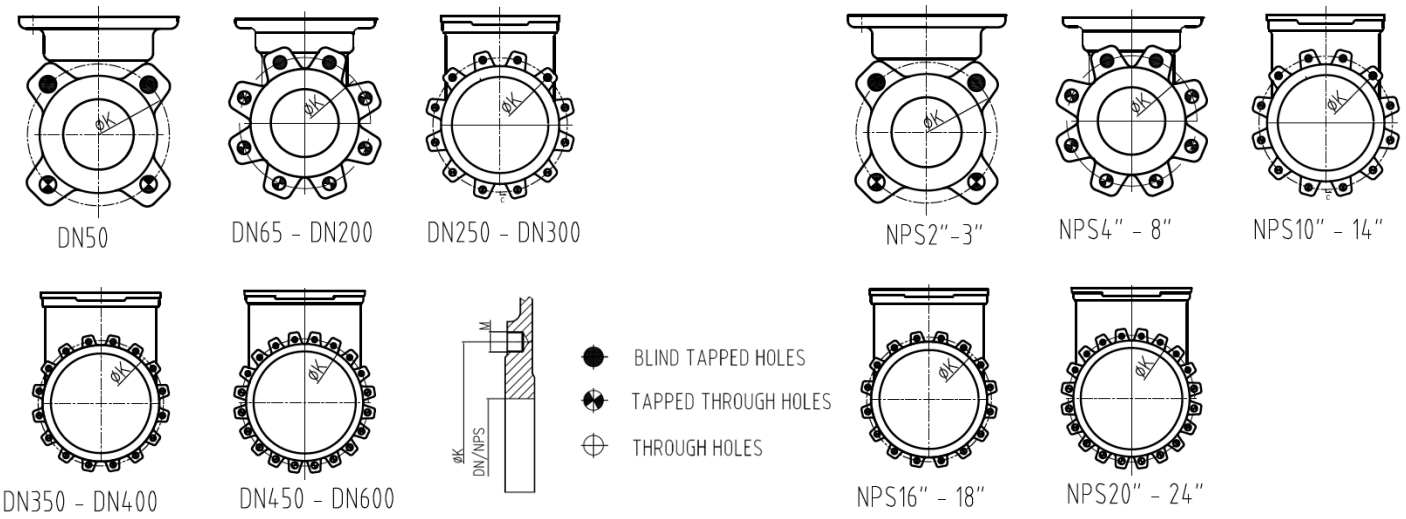
Dimension V – FLANGE AND BOLTING DETAILS



EN 1092

DN	K	n°	M	T	● ◕ ⊕
50	125	4	M-16	11	2 – 2 – 2
65	145	4	M-16	11	2 – 2 – 2
80	160	8	M-16	11	2 – 6 – 6
100	180	8	M-16	11	2 – 6 – 6
125	210	8	M-16	11	2 – 6 – 6
150	240	8	M-20	14	2 – 6 – 6
200	295	8	M-20	14	2 – 6 – 6
250	350	12	M-20	18	4 – 8 – 8
300	400	12	M-20	18	4 – 8 – 8
350	460	16	M-20	22	6 – 10 – 10
400	515	16	M-24	24	6 – 10 – 10
450	565	20	M-24	24	8 – 12 – 12
500	620	20	M-24	24	8 – 12 – 12
600	725	20	M-24	24	8 – 12 – 12

ANSI B16.5

DN	K	n°	M	T	● ◕ ⊕
2"	4 3/4"	4	5/8" UNC	3/8"	2 – 2 – 2
2 1/2"	5 1/2"	4	5/8" UNC	3/8"	2 – 2 – 2
3"	6"	8	5/8" UNC	3/8"	2 – 2 – 2
4"	7 1/2"	8	5/8" UNC	3/8"	2 – 6 – 6
5"	8 1/2"	8	3/4" UNC	3/8"	2 – 6 – 6
6"	9 1/2"	8	3/4" UNC	1/2"	2 – 6 – 6
8"	11 1/2"	8	3/4" UNC	1/2"	2 – 6 – 6
10"	14 1/2"	12	7/8" UNC	3/4"	4 – 8 – 8
12"	17"	12	7/8" UNC	3/4"	4 – 8 – 8
14"	18 1/2"	16	1" UNC	7/8"	4 – 8 – 8
16"	21 1/2"	16	1" UNC	1"	6 – 10 – 10
18"	22 1/2"	20	1 1/8" UNC	1"	6 – 10 – 10
20"	25"	20	1 1/8" UNC	1"	8 – 12 – 12
24"	29 1/2"	20	1 1/4" UNC	1"	8 – 12 – 12

Appendix – Actuator Selection Data

DN	Thrust（N）	Torque (N*M)	NO. of Turns	Stem Size
100	2190	38	28	Tr20*4 LH
125	2600	48	28	Tr22*5 LH
150	3400	65	33	Tr22*5 LH
200	4090	90	37	Tr28*6 LH
250	5600	150	45	Tr28*6 LH
300	6700	190	52	Tr28*6 LH
350	9800	230	60	Tr32*6 LH
400	15300	310	69	Tr32*6 LH
450	18900	460	66	Tr35*6 LH
500	22000	530	73	Tr40*7 LH
600	27100	620	88	Tr40*7 LH

Note: Thrust and Torque data are reference for normal application, for specific conditions, please contact us for further support.