



# **KV CONTROLS**

Control & Isolation Valves



## **DQ/DC -KNIFE GATE VALVE**

### Service

Linuo DQ knife gate valves are linear shut off valves that are light weight with compact construction. Valves are available as manual with hand-wheel, or can be automated with pneumatic cylinder actuator for remote operation. The arc shape of the gate of our knife gate valve is designed to be particularly suitable for cutting off fluid containing fiber or suspended particles, so the knife gate valves are ideal for many applications in the process industries of Pulp & Paper, Wastewater Treatment, Mining, Sugar Making, and Chemical Processing.

### Double Stem Bearings

At the top of the yoke, our knife gate valves are equipped with two stem bearings for reduced torque and easy operation.

### Internal Packing

Packing gland and packing are internally located, packing leakage can be avoided by construction.

### Travel Aligning Block

Travel aligning block is made in soft material backing with stainless steel screw located at the inlet to offer reliable supportive force to align the travel of gate which may be deviated by the accumulated medium between body cavity and gate during the closing, therefore good tightness can be ensured and clogging risk can be prevented.

### Replaceable Seats

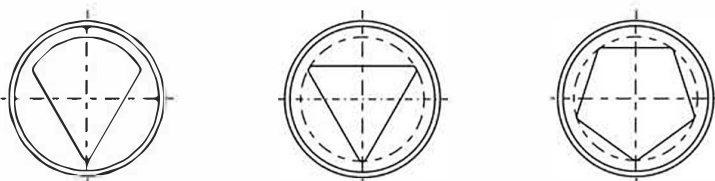
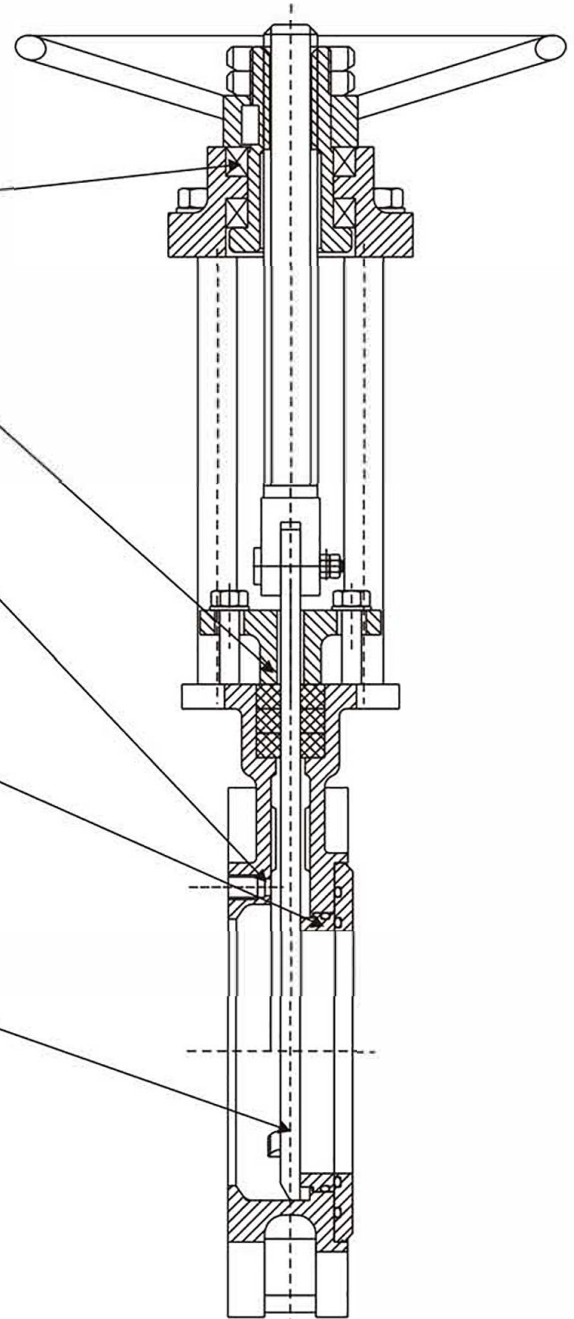
Seats in the Linuo knife gate valves are backed with by an o-ring to give the seat a self-compensating wear function. This results in excellent seat tightness and prolonged life cycle. When seats do wear and need replacement, maintenance to change the seats is easy and fast. Available seat materials include metal seated, EPDM seated, and PTFE seated. Contact Linuo for assistance in seat selection.

### Gate Design

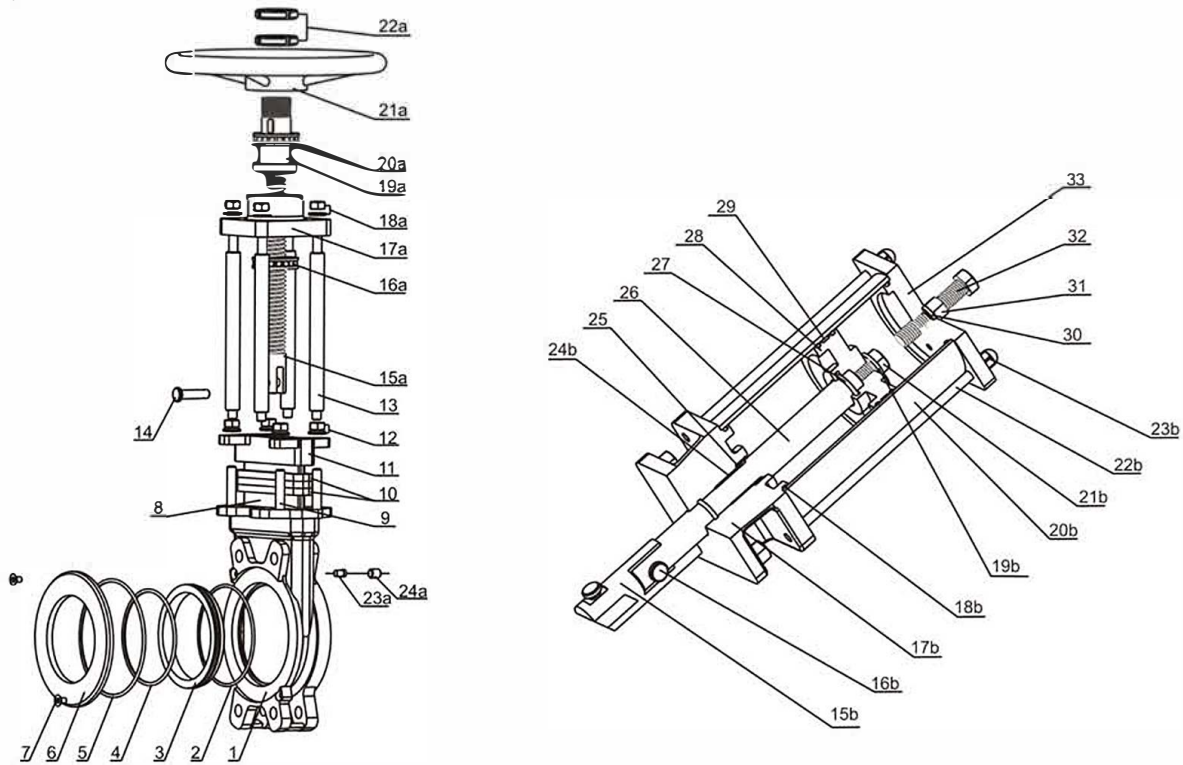
Each gate is precision ground and hard chrome plated as a standard. This provides superior abrasion and corrosion resistance. The arc shape design of the bottom of the gate is particularly suitable to provide strong cutting force for pulp media.

### Diversified Flow Port Option

Custom port shapes including V-port, triangle port, and hexagon port are available. Consult Linuo with your specific needs.



Exploded View



### PARTS LIST - Model DQ

Table 1

No.	Description	Qty	Material of Construction	No.	Description	Qty	Material of Construction
1	Body	1	WCB, CF8, CF8M	23a	Travel Aligning Block	2	SS304+Nylon, PTFE, PPL
2	O-ring	1	NBR, Viton	24a	Screw	2	SS304
3	Seat	1	SS304, SS316 Hard Chrome Plating, PTFE, EPDM	15b	Connection Stem	1	SS304
4	O-ring	1	NBR, Viton	16b	Connection Pin	1	SS304
5	O-ring	1	NBR, Viton	17b	Lower Cylinder Cover	1	WCB
6	Retainer	1	WCB, SS304, SS316	18b	O-ring	1	NBR
7	Socket Head Screw	2	SS304	19b	Gasket	1	SS304
8	Gate	1	SS410, SS304, SS316 Hard Chrome Plating	20b	Cylinder	1	Aluminium Alloy+Spray Coating Teflon/Steel+Cr
9	Stud	4	SS304	21b	Hexagon Bolt	1	WCB
10	Packing	1 set	PTFE, Graphite	22b	Screw	4	45#+Galvanize
11	Gland	1	WCB, CF8, CF8M	23b	Nut	4	WCB
12	Hexagon Nut	4	SS304	24b	Bearing	1	Composite Material
13	Pillar	4	45#+Hard Chrome Plating, SS304	25	Y-ring	1	Polyurethane(TPU)
14	Connection Pin	1	SS304	26	Piston Rod	1	45#+Hard Chrome Plating
15a	Stem	1	SS304	27	O-ring	1	NBR
16a	Plane Bearing	1	GCr6	28	Piston	1	ZL102, WCB
17a	Square Plate	1	Aluminium Alloy	29	Guiding Belt	1	R-PTFE
18a	Hexagon Nut	4	SS304	30	Gasket	1	Teflon
19a	Driving Nut	1	Brass	31	Nut	1	WCB
20a	Plane Bearing	1	GCr6	32	Bolt	1	WCB
21a	Handwheel	1	WCB	33	Upper Cylinder Cover	1	WCB
22a	Nut	1	45# Anti-Corrosion Treated				

## Technical Specification

Nominal Diameter: DN50 through DN1200/2" through 48"

Nominal Pressure Rating: PN 10/PN 16/ANSI 150

Connection Type: Wafer

Temperature: Metal Seat -20°C to 100°C (-4°F to 212°F)

PTFE Seat -20°C to 120°C (-4°F to 248°F)

EPDM Seat -20°C to 100°C (-4°F to 212°F)

Applicable Media: Pulp, Sewage, Coal Slurry, Syrup, Slag.

Leakage: Each knife gate valve undergoes hydraulic pressure testing as per MSS SP-81

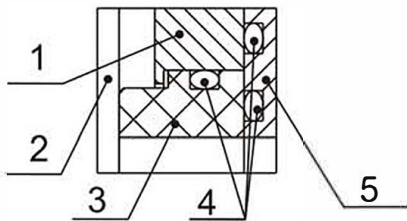
Shell testing pressure: 1.5\*PN

Packing tightness testing pressure: 1.1\*PN

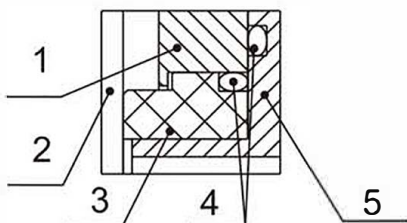
Seat tightness testing pressure: 2.8Bar and maximum allowable working differential pressure (10.3bar for size ≤ DN600/24", 6.9bar for size > DN600/24") .

Bi-Directional: Soft seated knife gate valves are bi-directional with zero leakage to 10 bar/150 psi in the preferred direction and limited tightness in the non-preferred direction at low pressure.

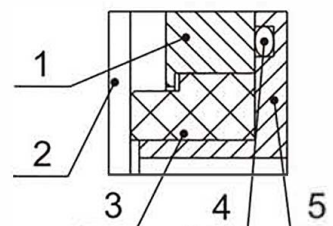
## Seat Construction



Metal Seat



PTFE Seat



EPDM Seat

### Metal Seat

No.	Name	Temperature
1	Body	-20°C to 100°C
2	Gate	-4°F to 212°F
3	Seat	option:
4	O-ring	-20°C to 230°C
5	Retainer	-4°F to 212°F

### PTFE Seat

No.	Name	Temperature
1	Body	
2	Gate	
3	Seat	-20°C to 120°C -4°F to 248°F
4	O-ring	
5	Retainer	

### EPDM Seat

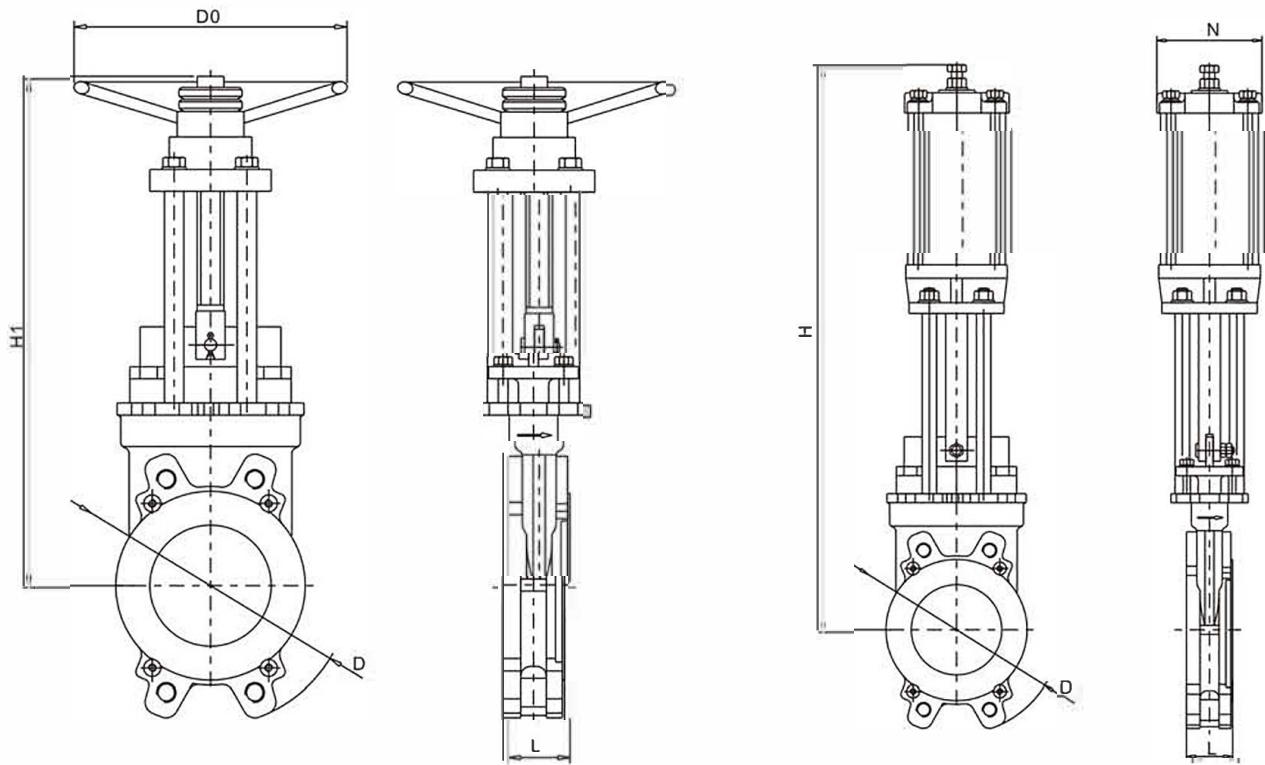
No.	Name	Temperature
1	Body	
2	Gate	
3	Seat	-20°C to 100°C -4°F to 212°F
4	O-ring	
5	Retainer	

## Knife Gate Valve

Size	Torque(N · m)
DN50	58.5
DN65	65
DN80	78
DN100	91
DN125	110.5
DN150	143
DN200	175.5
DN250	208
DN300	312
DN350	390
DN400	585
DN450	754
DN500	832
DN600	936
DN700	1105
DN800	1365
DN900	1625

With 30% safety factor included

For service temperature exceeds the above range, please consult Linuo factory for solution.



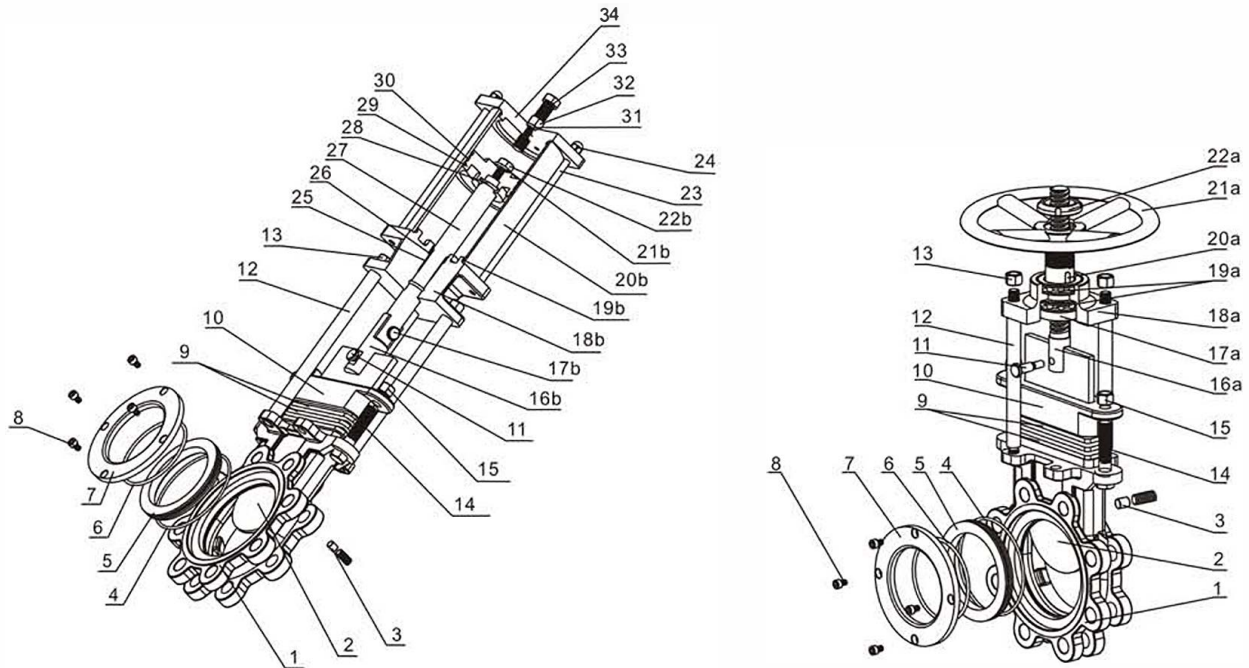
**DIMENSIONS - Model DQ**

Dimensions in mm/inches

Table 2

Size	L	D	H1(Full Closed)	H1(Full Open)	D0	H	N
DN50/2"	48/1.9	165/6.5	330/13.0	390/15.4	200/7.9	490/19.3	120/4.7
DN65/2-1/2"	48/1.9	185/7.3	360/14.2	435/17.1	200/7.9	520/20.5	120/4.7
DN80/3"	51/2.0	200/7.9	390/15.4	485/19.1	220/8.7	590/23.2	120/4.7
DN100/4"	51/2.0	235/9.3	430/16.9	545/21.5	220/8.7	650/25.6	120/4.7
DN125/5"	57/2.2	255/10.0	475/18.7	615/24.2	250/9.8	715/28.2	145/5.7
DN150/6"	57/2.2	285/11.2	510/20.1	675/26.6	280/11.0	790/31.1	145/5.7
DN200/8"	70/2.8	345/25.4	620/24.4	835/32.9	315/12.4	1040/40.9	180/7.1
DN250/10"	70/2.8	405/15.9	740/29.1	1010/39.8	355/14.0	1225/48.2	240/9.4
DN300/12"	76/3.0	485/19.1	850/33.5	1170/46.1	400/15.7	1390/54.7	290/15.4
DN350/14"	76/3.0	535/21.1	940/37.0	1300/51.2	450/17.7	1650/65.0	350/13.8
DN400/16"	89/3.5	600/23.6	1060/41.7	1460/57.5	500/19.7	1820/71.7	350/13.8
DN450/18"	89/3.5	640/25.2	1190/46.9	1640/64.6	550/21.7	2015/79.3	400/15.7
DN500/20"	114/4.5	715/28.1	1290/50.8	1790/70.5	600/23.6	2185/86.0	400/15.7

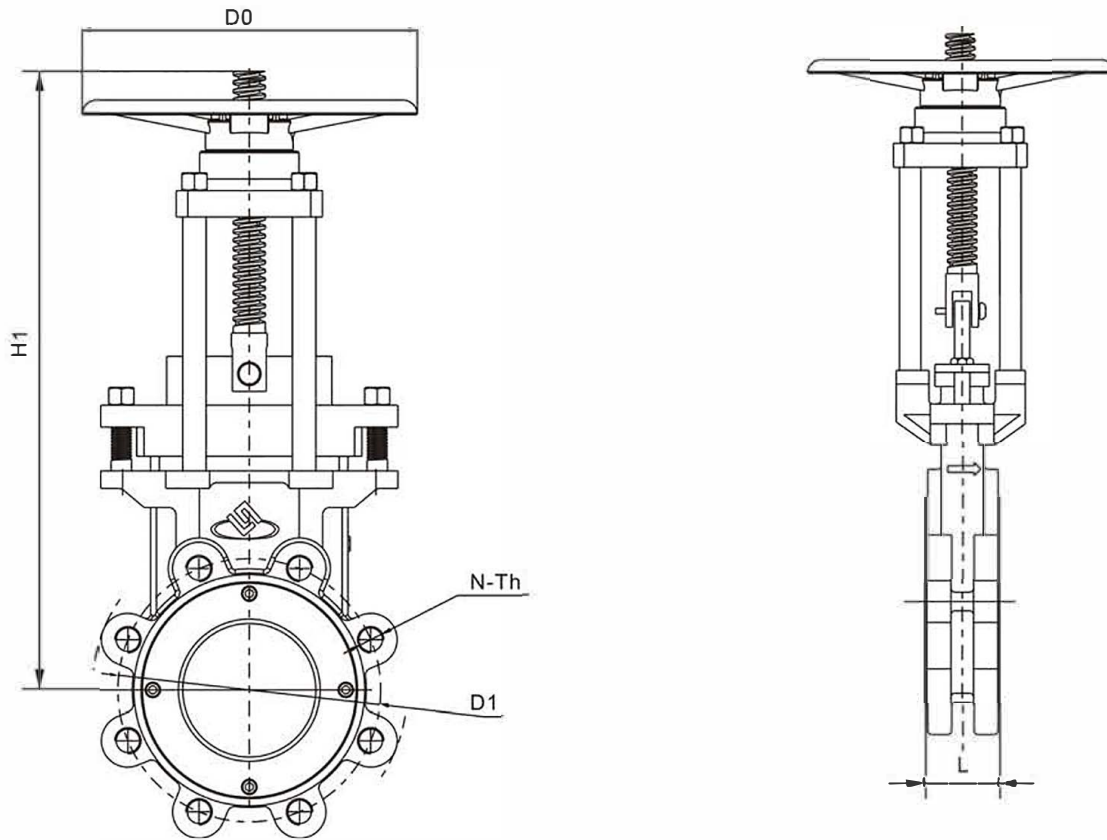
Note: End Connection Dimension as per EN1092-2 PN10, PN16 or ASME/B16.5 150LB



## PARTS LIST - Model DC

Table 1

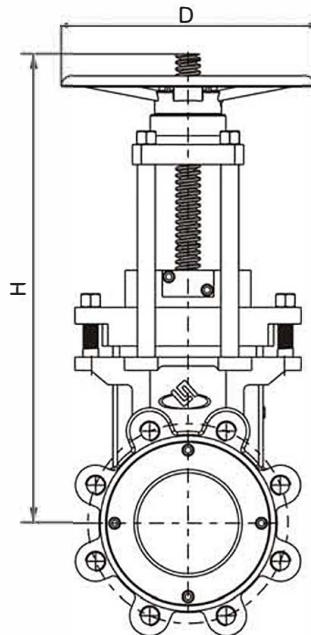
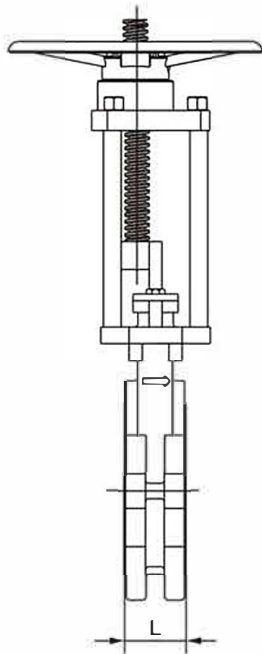
No.	Description	QTY	Material of Construction	No.	Description	QTY	Material of Construction
1	Body	1	WCB, CF8, CF8M	16b	Connection Rod	1	45# Hard Chrome Plating, SS304
2	Gate	1	SS410, SS304, SS316 Hard Chrome Plating	17b	Connection Pin	1	SS 304
3	Travel Aligning Block	2	SS304+Nylon, PTFE, PPL	18b	Lower Cylinder Cover	1	WCB
4	O-ring	1	NBR, Viton	19b	O-ring	1	NBR
5	Seat	1	SS304, SS316 Hard Chrome Plating, PTFE, EPDM	20b	Cylinder	1	Aluminium alloy with inner face PTFE coated or Carbon Steel Hard Chrome Plating
6	O-ring	1	NBR, Viton	21b	Washer	1	SS304
7	Retainer	1	Carbon Steel, SS304, SS316	22b	Hexagon Bolt	1	Carbon Steel
8	Socket Head Screw	varies	SS304, SS316	23	Connection Rod	4	45# Zinc plating
9	Packing	1set	PTFE Graphite	24	Nut	4	Carbon Steel Hard Chrome Plating
10	Gland	1	WCB, CF8	25	Bushing	1	Composite material
11	Connection Pin	1	SS304	26	Y-ring	1	TPU(Polyurethane)
12	Pillar	4	45# Hard Chrome Plating, SS304	27	Piston Rod	1	45# Hard Chrome Plating
13	Hexagon Nut	4	Carbon Steel, SS304	28	O-ring	1	NBR
14	Hexagon Bolt	2	Carbon Steel, SS304	29	Piston	1	Z1102, Carbon Steel
15	Hexagon Nut	2	Carbon Steel, SS304	30	Guiding Ring	1	Reinforced PTFE
16a	Stem	1	SS410	31	Gasket	1	PTFE
17a	Nut	1	H59	32	Hexagon Bolt	1	Carbon Steel
18a	Square Plate	1	WCB	33	Adjusting Bolt	1	Carbon Steel
19a	Plane Bearing	2	GCr6	34	Upper Cylinder Cover	1	WCB
20a	Flat Key	1	45#				
21a	Handwheel	1	WCB				
22a	Nut	1	45# Anti-Corrosion Treated				



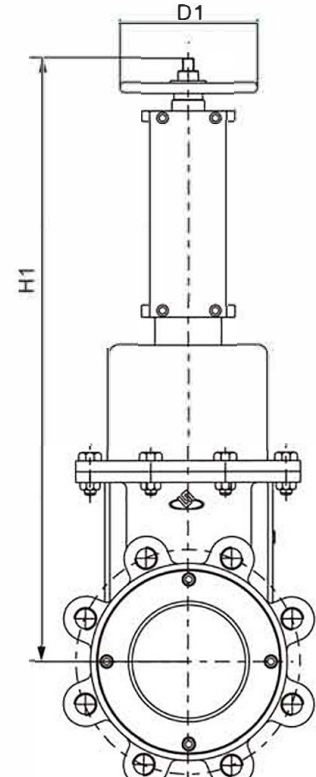
**DIMENSIONS - Model DC with Handwheel**

Dimensions in mm/inches Table 2

Size	L	D0	H1 Full Closed	H1 Full Open	D1		N-Th	
					150lb	PN10/PN16	150lb	PN10/PN16
DN50/2"	48/1.9	200/7.9	290/11.4	350/13.8	120.5/4.7	125	4 X 5/8 - 11 NC	4-M16
DN65/2-1/2"	48/1.9	200/7.9	310/12.2	375/14.8	139.7/5.5	145	4 X 5/8 - 11 NC	4-M16
DN80/3"	51/2.0	220/8.7	350/13.8	430/16.9	152.5/6.0	160	4 X 5/8 - 11 NC	8-M16
DN100/4"	51/2.0	220/8.7	436/17.2	535/21.1	190.5/7.5	180	8 X 5/8 - 11 NC	8-M16
DN125/5"	57/2.2	220/8.7	460/18.1	585/23.0	216/8.5	210	8 X 3/4 - 11 NC	8-M16
DN150/6"	57/2.2	280/11.0	510/20.1	660/26.0	241.5/9.5	240	8 X 3/4 - 11 NC	8-M20
DN200/8"	70/2.8	280/11.0	610/24.0	810/31.9	298.5/11.8	295	8 X 3/4 - 11 NC	8-M20/12-M20
DN250/10"	70/2.8	280/11.0	765/30.1	1015/40.0	362/14.3	350/355	12 X 7/8 - 9 NC	12-M20/12-M24
DN300/12"	76/3.0	380/15.0	820/32.3	1120/44.1	432/17.0	400/410	12 X 7/8 - 9 NC	12-M20/12-M24
DN350/14"	76/3.0	450/17.7	970/38.2	1320/52.0	476/18.7	460/470	12 X 1 - 8 NC	16-M20/16-M24
DN400/16"	89/3.5	500/19.7	1024/40.3	1424/56.1	540/21.3	515/525	16 X 1 - 8 NC	16-M24/16-M27
DN450/18"	89/3.5	600/23.6	1235/48.6	1685/66.3	578/22.8	565/585	16 X 1-1/8 - 7 NC	16-M24/16-M27
DN500/20"	114/4.5	600/23.6	1286/50.6	1786/70.3	635/25.0	620/650	20 X 1-1/8 - 7 NC	20-M24/20-M27



DCA-Non-Rising-Stem



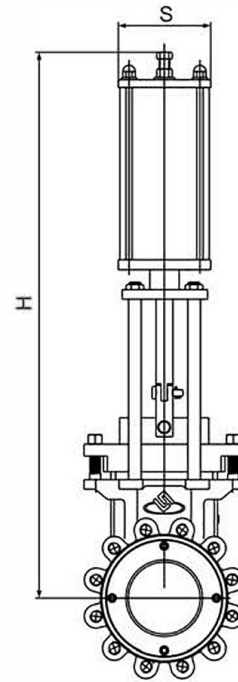
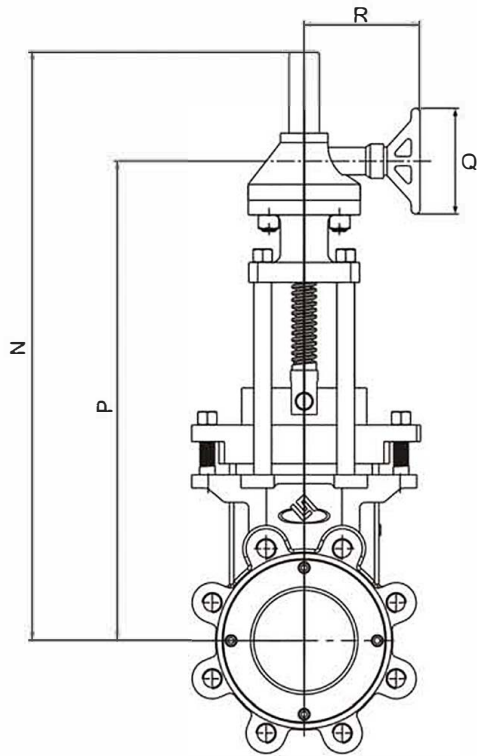
DCB-Bonneted

**DIMENSIONS - Model DCA Non-Rising Stem and DCB Bonneted**

Dimensions in mm/inches Table 3

Size	L	DCA Non-Rising Stem		DCB Bonneted	
		D	H	D1	H1
DN50/2"	48/1.9	180/7.1	300/11.8	180/7.1	330/13.0
DN65/2-1/2"	48/1.9	180/7.1	310/12.2	180/7.1	360/14.2
DN80/3"	51/2.0	220/8.7	373/14.7	180/7.1	390/15.4
DN100/4"	51/2.0	240/9.4	420/16.5	220/8.7	440/17.3
DN125/5"	57/2.2	260/10.2	460/18.1	240/9.4	510/20.1
DN150/6"	57/2.2	280/11.0	510/20.1	260/10.2	600/23.6
DN200/8"	70/2.8	300/11.8	610/24.0	280/11.0	700/27.6
DN250/10"	70/2.8	340/13.4	765/30.1	300/11.8	840/33.1
DN300/12"	76/3.0	380/15.0	820/32.3	340/13.4	960/37.8
DN350/14"	76/3.0	400/15.7	970/38.2	380/15.0	1100/43.3
DN400/16"	89/3.5	450/17.7	1024/40.3	400/15.7	1250/49.2
DN450/18"	89/3.5	530/20.9	1235/48.6	450/17.7	1380/54.3
DN500/20"	114/4.5	600/23.6	1286/50.6	530/20.9	1530/60.2





**DIMENSIONS - Bevel Gear**

Dimensions in mm/inches Table 4

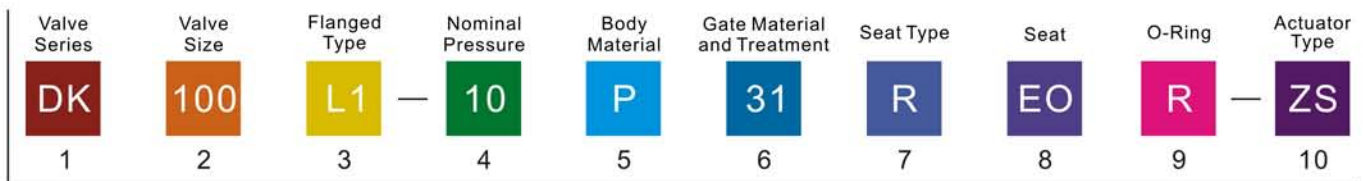
Size	N	R	Q	P
DN200/8"	964/38.0	200/7.9	310/12.2	650/25.6
DN250/10"	1064/41.9	200/7.9	310/12.2	800/31.5
DN300/12"	1210/47.6	260/10.2	310/12.2	860/33.9
DN350/14"	1563/61.5	260/10.2	310/12.2	1010/39.8
DN400/16"	1660/65.4	260/10.2	460/18.1	1150/45.3
DN450/18"	1810/71.3	260/10.2	460/18.1	1305/51.4
DN500/20"	1900/74.8	340/13.4	460/18.1	1420/55.9
DN600/24"	2100/85.7	340/13.4	460/18.1	1660/65.4
DN700/28"	2650/104.3	480/18.9	460/18.1	1950/76.8
DN800/32"	2900/114.2	480/18.9	460/18.1	2200/86.6
DN900/36"	3200/126.0	480/18.9	460/18.1	2400/94.5
DN1000/40"	3600/141.7	500/19.7	460/18.1	2610/102.8

**DIMENSIONS - Pneumatic**

Dimensions in mm/inches Table 5

Size	S	H
DN50/2"	120/4.7	430/16.9
DN65/2-1/2"	120/4.7	465/18.3
DN80/3"	120/4.7	592/23.3
DN100/4"	120/4.7	640/25.2
DN125/5"	145/5.7	715/28.2
DN150/6"	145/5.7	811/31.9
DN200/8"	180/7.1	955/37.6
DN250/10"	225/8.9	1200/47.2
DN300/12"	275/10.8	1322/52.1
DN350/14"	330/13.0	1537/60.5
DN400/16"	330/13.0	1805/71.1
DN450/18"	380/15.0	2200/86.6
DN500/20"	380/15.0	2600/102.4
DN600/24"	425/16.7	2960/116.5

# How To Order - Knife Gate Valves



## 1 Valve Series

DK Slurry Knife Gate Valve	DT Through-going Knife Gate Valve
DF Square Knife Gate Valve	DB Funnel Knife Gate Valve
DS Double Knife Gate Valve	DQ Wafer Type Knife Gate Valve
DC Lugged Type Knife Gate Valve	

Knife Gate Valve

## 2 Valve Size

050 DN50 2"	250 DN250 10"	600 DN600 24"
080 DN80 3"	300 DN300 12"	700 DN700 28"
100 DN100 4"	350 DN350 14"	800 DN800 32"
125 DN125 5"	400 DN400 16"	900 DN900 36"
150 DN150 6"	450 DN450 18"	1000 DN1000 40"
200 DN 200 8"	500 DN 500 20"	

## 3 Flanged Type

L1 RF Lugged	D1 RF Wafer
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## 4 Nominal Pressure

10	PN10	01	150Lb
16	PN16	1K	10K

## 5 Body Material

C	WCB	B	LCB
P	CF8	D	LCC
Q	CF3	W	WC6
M	CF8M	L	CF3M

## 6 Gate Material and Treatment

3 SS304	7 SS317	1 Hard Chrome Plating
4 SS304L	8 SS410	3 Nickel Base Alloy
5 SS316	9 SS201	4 Tungsten Carbide
6 SS316L		5 Ionitriding
		6 Stellite

## 7 Seat Type

Y Metal Seat	R Soft Seat
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## 8 Seat

Metal Seat		Soft Seat	
3 SS304	1 Hard Chrome Plating	PO	PTFE
4 SS304L	2 Nickel Plating	RO	RTFE
5 SS316	3 Nickel Base Alloy	NO	NYLON
6 SS316L	4 Tungsten Carbide	LO	PPL
7 SS317	5 Ionitriding	KO	PEEK
8 SS410	6 Stellite	EO	EPDM
9 SS201			

## 9 O-Ring

R	NBR	Temp.Range	-20°C~100°C
E	EPDM	Temp.Range	-20°C~120°C
V	VITON	Temp.Range	-20°C~230°C

## 10 Actuator Type

ZS	Double Acting
ZK	Electric Motor
SD	Manual

Note: Not all materials available for all models.

Note: Dimensions are for reference only. Consult factory for certified drawings.

Note: Specifications subject to change.

Wide industrial application range served by KV CONTROL product including  
Chemical / Petrochemical / Oil & Gas / Pulp & Paper / Biochemistry / Pharmaceutical / Water  
/ Mining



**KV CONTROLS**

Control & Isolation Valves

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