

KNIFE GATE VALVE

Series Domino

Advantages

Maintenance-free and self-adjusting sealing

No necessity for gland packing

Bidirectional tight shutoff

Smooth-running even after long downtimes

High resistance against water hammer

Locking of the plate in close position

Variety in actuation: hand wheel, hand lever, sprocket, chain wheel, bevel gear, electric actuator, pneumatic and hydraulic cylinder



TECHNICAL FEATURES

Knife gate valve | series Domino

Maintenance-free and self-adjusting COMPACT cross seal

1 Maintenance-free and self-adjusting

The COMPACT cross seal (double seal lip profile) prevents leakage to the outside caused by the plate. The seal can be readjusted at any time without interrupting the working process.

2 Bidirectional tight shutoff

The valve closes pressure-tightly due to its elastic seat that is chambered and integrated in the body. Its pre-tensioned installation guarantees high leak tightness.

3 Self-cleaning effect

The valve cleans itself by flush-out corners that are part of the body as well as a cutting edge underneath the gate (5). Both features ensure that the sealing is flushed when the valve closes.

4 Total absence of residues

The interplay of the cutting edge of the plate with the one of the lower body allows the media to be cut with neither solids nor fibres to remain in the sealing zone.

5 Segmental arched profile

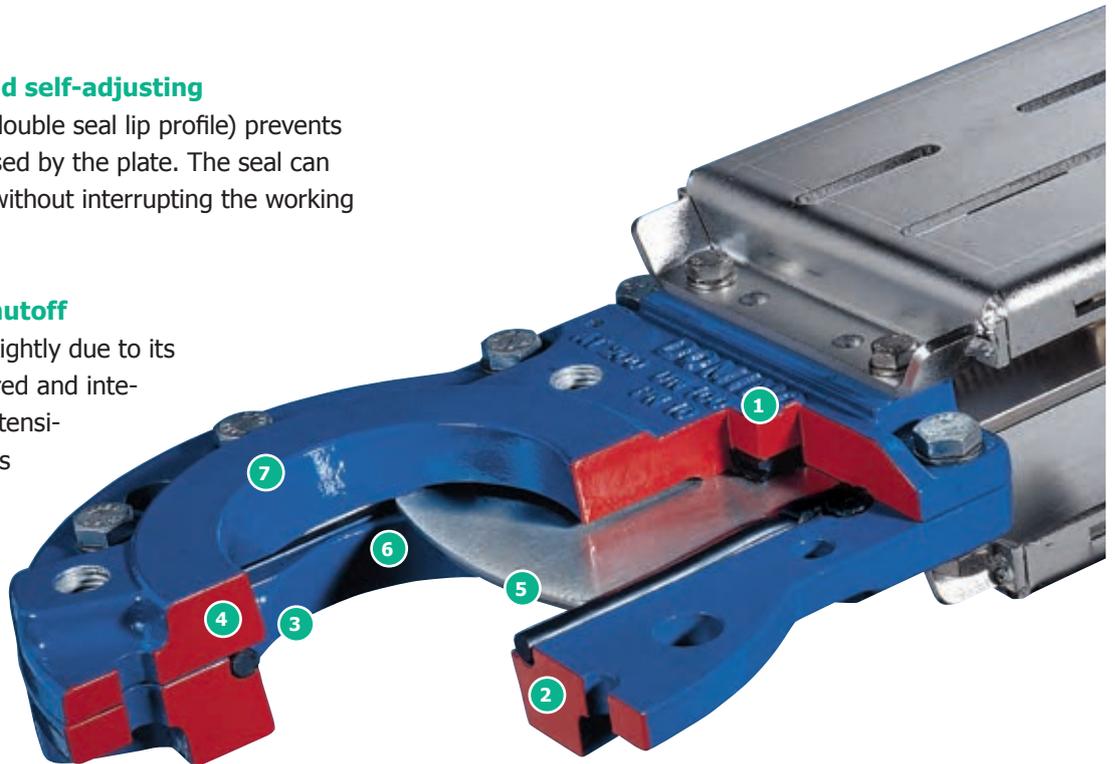
of the plate prevents solids and fibres from being trapped between the plate and sealing while closing the valve.

6 Metal guide

Due to the design of the valve the plate is guided by the metal guide in the rear body only. Thus the round seal has a sealing function only, without any need to support the guiding of the plate.

7 High resistance to corrosion

due to powder coated bodies and mounting parts.



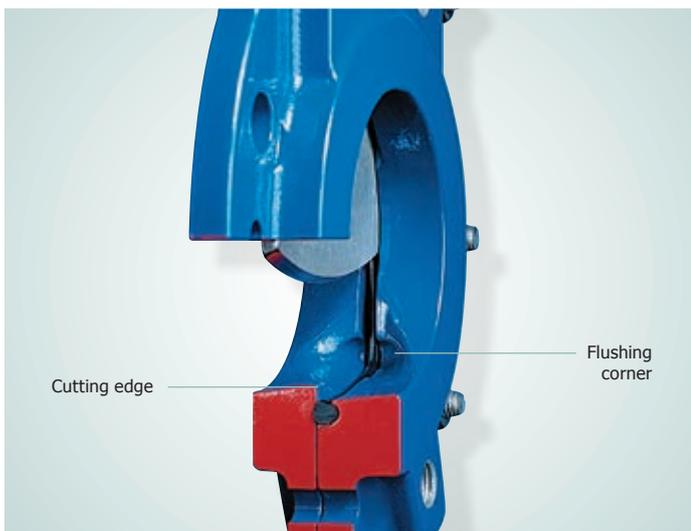
KNIFE GATE VALVE

Series Domino

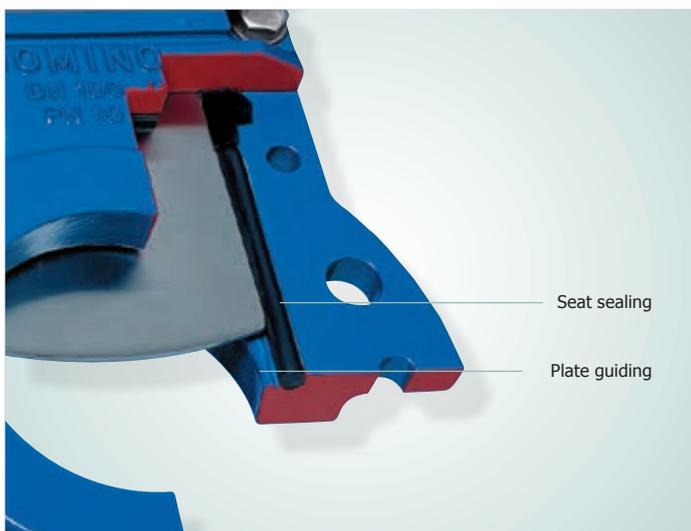


The design of the Domino-knife gate valves fulfils the users' highest requirements:

The maintenance-free COMPACT cross seal (double seal lip profile) guarantees tight shutoff and can be adjusted without interrupting the working process.



The self-cleaning effect is achieved by flush-out corners in the body and the cutting edge underneath the gate. Solids and fibres are cut by the cutting edge before tightening is done against the elastic seat. The guidance of the gate is interrupted on stroke length, thus dirt can be ejected.

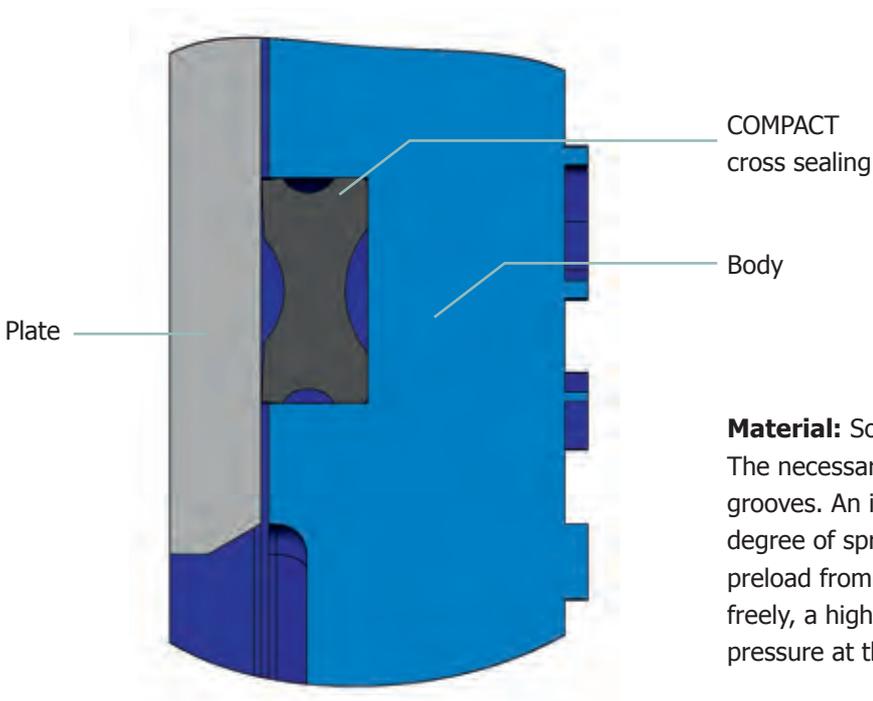


Bidirectional shutoff is achieved by the lateral gate surfaces and the elastic seat which is integrated in the body. The seat is chambered and prestressed mounted. The high finish of the guide- and sealing surface at both sides guarantees long service and tight shutoff. The lateral guidance of the gate prevents the gate from fluttering in either of the flow directions or in throttle positions.

DETAILED SOLUTIONS

Knife gate valve | series Domino

Pre-tensioned and self-adjusting COMPACT cross sealing



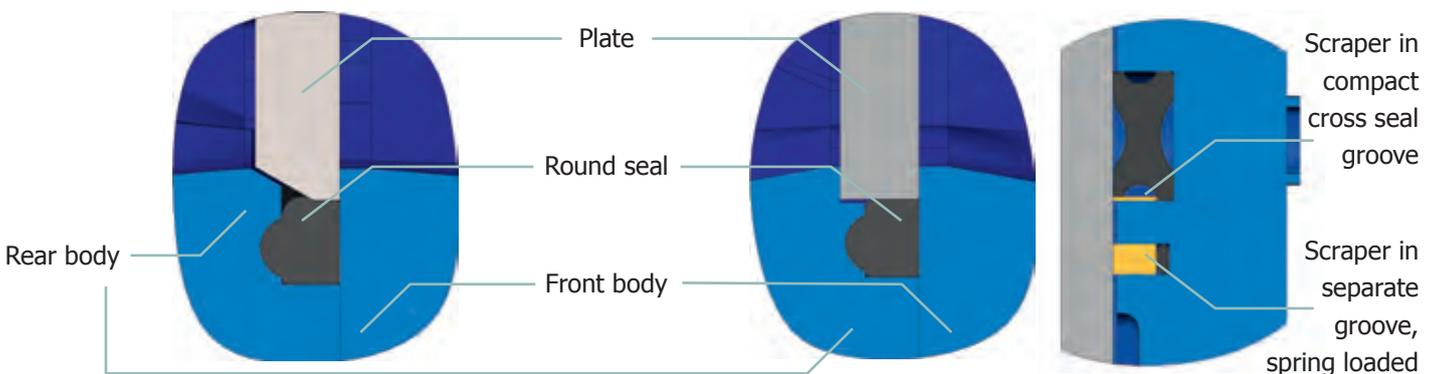
Material: Solid elastomer profile (NBR, EPDM, FPM, MVQ)
The necessary compression is absorbed in the lateral grooves. An inevitable abrasion is compensated by the high degree of spring effect, i.e. there is a natural permanent preload from the sealing itself. As the sealings can be moved freely, a higher internal pressure causes a higher contact pressure at the same time.

Round seal in the gate

lower sealing

lateral sealing

with scrapers



Lower sealing

The arched profile of the plate as well as both cutting edges – the one from the body and the one from the plate – allow a total absence of residues, which are totally flushed away from the round seal when the valve is closed. This way leakage is to be prevented.

Lateral sealing

Due to the design and functionality there is a small contact surface between the sealing and the plate only. Thus only small operating force is needed to move the plate. Furthermore, the resistance against possible pressure shocks and blows is given by metal supports.

THE TYPES

Knife gate valve | series Domino



Type SD 1 – AT 100

DN 100 – DN 400

Wafer type knife gate valve for installation between flanges, from size DN 250 onwards also available as lug type execution for flanges acc. to EN 1092-1 / PN 10. Two-piece body, bidirectional tight shutoff. Metal guided plate, locked when closed. Self-adjusting COMPACT cross seal, no necessity for gland packing – maintenance-free. Self-cleaning flush-out corners with cutting edge in the lower body area.

Face-to-face dimension

according to EN 558-1 line 20 (DIN 3202 K1)

Body

GG25, EN GJL-250

Coating

EKB, both inside and outside

Colour

RAL 5010

Plate

Stainless steel 1.4301 or 1.4571

Sealing

NBR (EPDM, FPM, PTFE, ceramic fibre etc.)



Type SD 5 – AT 150

DN 50 – DN 400

Stainless steel execution

Wafer and lug type knife gate valve for installation between flanges acc. to EN 1092-1 / PN 10. Two-piece body, bidirectional tight shutoff. Metal guided plate, locked when closed. Self-adjusting COMPACT cross seal, no necessity for gland packing – maintenance-free. Self-cleaning flush-out corners with cutting edge in the lower body area.

Face-to-face dimension

according to EN 558-1 line 20 (DIN 3202 K1)

Body

Stainless steel 1.4408

Plate

Stainless steel 1.4571 hard chrome-plated

Sealing

NBR (EPDM, FPM, PTFE, ceramic fibre etc.)



Type SD 7 – AT 200

DN 50 – DN 1500

Lug type knife gate valve for installation between flanges acc. to EN 1092-1 / PN 10. DN 200-DN 400 also available in PN 16. Also suitable for dead-end service. Two-piece body, bidirectional tight shutoff. Metal guided plate, locked when closed. Self-adjusting COMPACT cross seal, no necessity for gland packing – maintenance-free. Self-cleaning flush-out corners with cutting edge in the lower body area.

Face-to-face dimension

according to EN 558-1 line 20/16 (DIN 3202 K1/K3)

Body

GG25, EN GJL-250/GGG 40, EN GJS-400-15, stainless steel 1.4408

Coating

EKB, both inside and outside

Colour

RAL 5010

Plate

Stainless steel 1.4301, 1.4571, 1.4462 etc.

Sealing

NBR (EPDM, FPM, PTFE, ceramic fibre etc.)



Type SDR – AT 200 R

DN 50 – DN 1200

Control knife gate valve

With optimised control plate designed for precise air volume control with almost linear control function, e.g. for ventilation tasks in sewage installation plants. Lug type knife gate valve for installation between flanges acc. to EN 1092-1/PN 10. Also suitable for dead-end service. Two-piece body, bidirectional tight shutoff. Metal guided plate, locked when closed. Self-adjusting COMPACT cross seal, no necessity for gland packing – maintenance-free.

Face-to-face dimension

according to EN 558-1 line 20 (DIN 3202 K1)

Body

GG25, EN GJL-250/GGG 40, EN GJS-400-15

Coating

EKB, both inside and outside

Colour

RAL 5010

Plate

Stainless steel 1.4301, or 1.4571

Sealing

NBR (EPDM, FPM, PTFE)



Type SD 3 – AT 300

DN 100 – DN 300

High pressure execution

Up to 40 bar operating pressure, e.g. for dewatered sewage sludges or biomass. Lug type knife gate valve for installation between flanges acc. to EN 1092-1 / PN 10-PN 40. Also suitable for dead-end service. Two-piece body, bidirectional tight shutoff. Metal guided plate, locked when closed. Self-adjusting COMPACT cross seal, no necessity for gland packing – maintenance-free. Self-cleaning flush-out corners with cutting edge in the lower body area.

Face-to-face dimension

according to EN 558-1 line 16 (DIN 3202 K3)

Body

GGG 40, EN GJS-400-15

Coating

EKB, both inside and outside

Colour

RAL 5010

Plate

Stainless steel 1.4301, 1.4571, 1.4462 etc.

Sealing

NBR (EPDM, FPM, MVQ)



Type SD 4 / SD 9 – AT 400 / AT 416

DN 40 – DN 1200

With completely round bore – with a special design according to customer requests possible. Lug type knife gate valve for installation between flanges acc. to EN 1092-1 / PN 2,5-PN 40. Special pressure classes, lengths and nominal sizes possible. Also suitable for dead-end service (SD 9). Two-piece body, bidirectional tight shutoff. Metal guided plate, locked when closed. Self-adjusting COMPACT cross seal. Optional: secondary sealing, readjustable from the outside. Cutting edge in the lower body area.

Face-to-face dimension

according to e.g. EN 558-1 line 16/25/16 (DIN 3202 K1/K2/K3)

Body

GGG 40, EN GJS-400-15, steel, stainless steel

Plate

Stainless steel 1.4301, 1.4571, 1.4462 etc.

Sealing

NBR (EPDM, FPM, MVQ, etc.)

THE TYPES

Knife gate valve | series Domino



Type SD 75 – AT 750

DN 50 – DN 500

Through conduit execution

Lug type knife gate valve for installation between flanges acc. to EN 1092-1/ PN 2.5-PN 160. Also suitable for dead-end service. High pressure and through conduit execution up to PN 160 for dewatered sewage sludges or biomass. Completely round and smooth bore, special lengths and nominal sizes possible. Two-piece body, bidirectional tight shutoff. Metal guided plate embedded protected against pressure shocks. COMPACT cross seal. Optional: secondary sealing, readjustable from the outside.

Face-to-face dimension

according to e.g. EN 558-1 line 16/25/16 (DIN 3202 K1/K2/K3),

Body

Steel, stainless steel V2a or V4A

Plate

Stainless steel 1.4301, 1.4571, 1.4462 etc.

Sealing

NBR (EPDM, FPM, MVQ, etc.)

Type SD 6 – AT 600

Rectangular execution

Lug type knife gate valve for installation between flanges acc. to customer specifications or manufacturer standard. Also suitable for dead-end service. With a special design and different sizes according to customer requests possible. Completely water- and air-tight version for liquids, sludges and granulated solids. Two-piece body, bidirectional tight shutoff. Metal guided plate, locked when closed. Self-adjusting COMPACT cross seal to the atmosphere. Optional: secondary sealing, readjustable from the outside. Cutting edge in the lower body area.

Face-to-face dimension

according to customer requests

Body

Steel, stainless steel V2 or V4A

Plate

Stainless steel 1.4301, 1.4571, 1.4462 etc.

Sealing

NBR (EPDM, FPM, MVQ, ceramic fibre, PTFE etc.)

Clear widths

Upon request

Type SD 2 – AT 200 F

DN 200 – DN 1000

Solid material execution

Lug type knife gate valve for installation between flanges acc. to EN 1092-1/ PN 10. Also applicable as wafer type and suitable for dead-end service. ATEX approved for category II 1D/2GD c. For granulated solids, such as carbon dust. Two-piece body with conically designed plate bed milling groove. Lateral plate guidance interrupted alternately in the front and rear body. Bidirectional tight shutoff in both flow directions.

Flange

DIN EN 1092-1 PN 10

Face-to-face dimension

DIN EN 558 line 20

Body

EN-GJL-250 (GG 25), narrowed in the bore

Coating

EKB, both inside and outside

Colour

RAL 9005, electrically conductive

Plate

1.4301 or 1.4571

Scraper

PTFE with MVQ support

Sealing

Ceramic fibre, NBR, EPDM, FPM



Type SD 8 – AT 500/AT 510 F

DN 400 – DN 700

Solid material execution

Lug and wafer type knife gate valve for installation between flanges acc. to EN 1092-1/PN 10. Also suitable for dead-end service in vertical pipelines and below silos. ATEX approved for category II 1/2 D c TX. One-piece body with funnel-shaped outlet for the prevention of product deposits, sealing on one side, flushing connections in the body at the end of the plate stroke allows the closing of the standing product column.

Flange

DIN EN 1092-1 PN 10

Face-to-face dimension

Manufacturer standard

Body

EN-GJS-400-15 (GGG 40)

Coating

EKB, both inside and outside

Colour

RAL 9005, electrically conductive

Plate

1.4301 or 1.4571

Sealing

NBR

Package

PTFE / NBR



SDH – AT 550F

Solid material execution

For pharmaceutical and chemical industries. Lug and wafer type knife gate valve for installation between flanges acc. to EN 1092-1/PN 10. Also suitable for dead-end service in vertical pipelines and below silos. Two-piece body with funnel-shaped outlet for the prevention of product deposits, sealing on one side, flushing connections in the body at the end of the plate stroke allows the closing of the falling or standing product column.

Flange

DIN EN 1092-1 PN 10

Face-to-face dimension

Manufacturer standard

Body

1.4408, completely high-gloss polished on the inside

Plate

1.4401 high-gloss polished

Sealing

MVQ (FDA-conform)

Package

LATTYflon 3206SO with quad ring

MVQ (FDA-conform)

Nominal sizes

Upon request



SD65 – AT 650

Rectangular execution for solid materials

With a special design and different sizes according to user requests possible. Knife gate valve for solid materials applications for installation between flanges. Also suitable for dead-end service in downpipes or below silos. Flanges according to customer specifications or manufacturer standard. Two-piece body, sealing on one side. Metal guided plate, locked when closed. Self-adjusting COMPACT cross seal. Optional: secondary sealing, readjustable from the outside. Cutting edge in the lower body area.

Face-to-face dimension

According to customer request

Body

Steel or stainless steel V2 or V4A

Plate

Stainless steel 1.4301, 1.4571, 1.4462 etc.

Sealing

NBR (ceramic fibre/graphite, PTFE, EPDM, FPM, MVQ, etc.)

Clear widths

Upon request

KNIFE GATE VALVE

Series Domino

The knife gate valve "System DOMINO" is preferably used for sludge and water treatment, substrate applications in biogas plants and process technology. Media containing sludge or fibres are controlled reliably. The knife gate valve seals pressure-tightly in both flow directions! The versatile designs and actuator versions provide our customers and interested parties with a well-developed and sophisticated product range to benefit from.

Available materials depending on the types and maximum operating temperatures

Body		
	Material	Temperature
22	Grey cast iron EN-GJL-250	- 10 °C up to max. 250 °C
23	Ductile iron EN-GJS-400-15	- 10 °C up to max. 350 °C
44	Cast steel GS C25	- 40 °C up to max. 450 °C
45	Steel ST52/ST37	- 40 °C up to max. 450 °C
66	Stainless steel 1.4408	- 50 °C up to max. 500 °C
Further materials such as aluminium, Hastelloy, etc. possible		

Plate	
	Material
63	Stainless steel 1.4301
66	Stainless steel 1.4571
31	Stainless steel 1.4571 polished
64	Duplex stainless steel 1.4462
Further materials such as aluminium, Hastelloy, etc. possible	

TECHNICAL FEATURES

Knife gate valve | series Domino

Sealing

EPDM (Ethylene-Propylene-Terpolymer)

Operating temperature: - 20 °C to + 130 °C

FEP coated FPM

Operating temperature: - 26 °C to + 200 °C

NBR (nitrile rubber)

Operating temperature: - 20 °C to + 110 °C

PTFE (Polytetrafluorethylene)

Operating temperature: - 200 °C to + 220 °C

MVQ (silicone rubber)

Operating temperature: - 30°C to + 200°C

Ceramic fibre/graphite

Operating temperature: - 50 °C to + 500 °C

FPM (fluorine elastomer)

Operating temperature: - 10 °C to + 180 °C

Maximum working pressure

SD1 – AT 100	SD5 – AT 150	SD7 – AT 200	SDR – AT 200R
DN 100 – DN 150: 10 bar DN 200 – DN 300: 6 bar DN 350 – DN 400: 4 bar	DN 50 – DN 150: 10 bar DN 200 – DN 300: 6 bar DN 350 – DN 400: 4 bar	DN 50 – DN 80: 16 bar DN 100 – DN 300: 10 bar DN 350 – DN 400: 6 bar DN 450 – DN 800: 4 bar DN 900: 3 bar DN 1000: 2.5 bar from DN 1200: 2 bar Higher operating pressures are possible depending on the medium	DN 50 – DN 300: 10 bar DN 350 – DN 400: 6 bar DN 450 – DN 800: 4 bar DN 900: 3 bar DN 1000: 2.5 bar DN 1200: 2 bar
SD3 – AT 300	SD4/SD9 – AT 400/AT416	SD75 – AT 750	SD6 – AT 600
DN 100 – DN 250: 40 bar DN 300: 25 bar (for de-watered media)	Standard version up to 16 bar Higher operating pressures are possible depending on the medium	Up to 160 bar (for de-watered media)	Standard version up to 2 bar Higher operating pressures are possible depending on the medium
DN 200 – DN 300: 6 bar	SD8 – AT 500F/AT510F	SD65 – AT 650F	
Standard version max. 1 bar (with solids as medium) Static: DN 200 – DN 300: 10 bar DN 350 – DN 400: 6 bar DN 450 – DN 600: 4 bar DN 700 – DN 900: 3 bar DN 1000 – 2.5 bar	Standard version max. 1 bar (with solids as medium) Static: max. 3 bar	Max. 2 bar depending on the nominal size and the operating conditions (consultation necessary)	

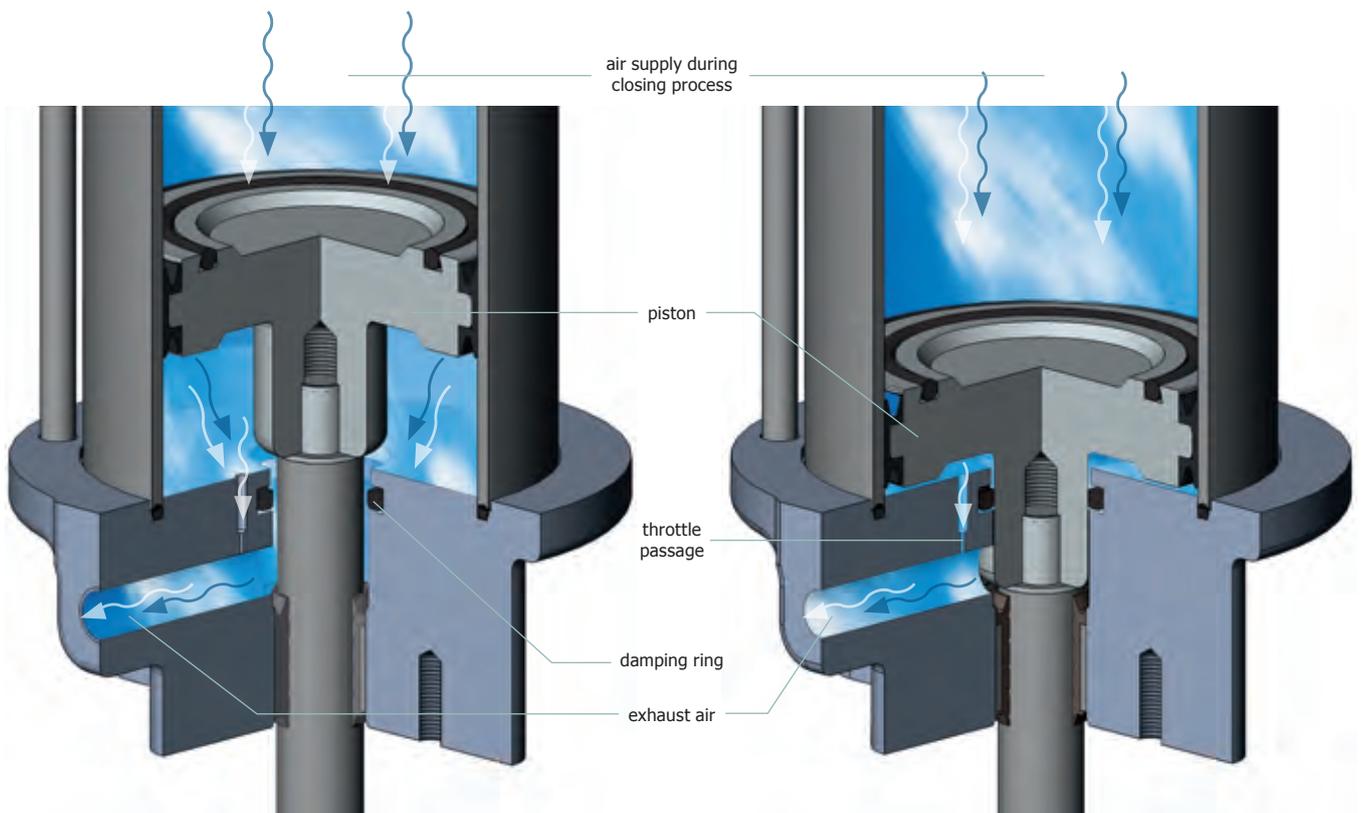
KNIFE GATE VALVES

Actuations

The pneumatic end position damping in closing direction allows a gentle closing of the gate valve plate into the seat sealing of the gate valve in the bottom area (lower sealing in the shut-off).

During the closing process, the exhaust air is shut-off within the last centimetres of the stroke via the air connection by retracting the lower plate of the piston into the damping ring. The residual volume is only released via the throttle passage from this moment on.

In this way, a considerable higher counter-pressure is built-up for a short time in the air chamber of the outflowing air, which counteracts the movement. The speed of the cylinder piston and thus also the closing speed of the gate valve plate is reduced significantly within a short period of time.



MOUNTING PARTS

Actuations and automation



DOMINO pneumatic cylinder

Piston diameter	Standard strokes	Compressed air connections
80 mm	51 mm, 66 mm, 81 mm	R ¼"
100 mm	102 mm, 127 mm	R ¼"
160 mm	152 mm, 202 mm	R ¼"
200 mm	202 mm, 252 mm	R ¼"
250 mm	253 mm, 303 mm	R ¼"
300 mm	352 mm, 402 mm, 452 mm, 502 mm, 602 mm, 702 mm	R ½"

Further materials such as aluminium, Hastelloy, etc. possible

DOMINO pneumatic cylinder

Double-acting, air pressure 6-10 bar, cylinder body, cap and bottom made of piston plate made of steel or aluminium,

piston aluminium (optionally stainless steel), made of stainless steel 1.4104, optionally 1.4571.



Hand wheel

Hand-wheel for non-rising stem made of cast iron GGG 40 – JS 1030, diameter 150 mm – 500 mm. Also available with ball handle upon request.



Hydraulic cylinder

Double-acting, for control pressures up to 250 bar. Also available with hydraulic end position indicator and distance measuring system for continuous position feedback.



Electric actuator

For rising stems, applicable for both control or regular operation.



Control of the pneumatic actuators via solenoid valves, 3/2 ways, 5/2 ways, 5/3 ways with blocked intermediate position, quick exhaust and booster valves, ATEX, SIL.



Indication of the end position OPEN / CLOSE via proximity sensors, wiring in terminal boxes possible, ATEX and ASi-Bus versions upon request.



Indication of the end position OPEN / CLOSE via mechanical proximity switches with roller swivelling lever, open mounting, wiring in terminal boxes possible, optionally also for Exatmospheres.