MANUAL
Knife gate valve AL 48-B4400

Terms of use

The user has to make sure of the equipment use in the good conditions of service (Pressure, temperature and fluid nature) recommended on the our documentation and the marking. The temperatures of use of the knife gate valve, towards the fluid, depend on the material of the seat and the packing. Conform to the marking of the CE nameplate, which defined the minimum and maximum temperatures of service. (See table below).

Acceptable pressure/temperature combinations

Valve type VG / VGS / VGT	Body material	Seat material	Packing (Packing + O-ring)	DN	Pressure / Temperature
VG3???-??MM VG4???-??MM	Cast iron / Ductile iron	Metal/Metal	Packing Graphite	50-250	10 bar / +120°C 6 bar / +300°C
				300-450	7 bar / +250°C 6 bar / +300°C
				500-600	4 bar / +300°C
VG3???-??PTF VG4???-?PTF		PTFE	Packing PTFE / O-ring Nitile	50-250	10 bar / +80°C
				300-450	7 bar / +80°C
				500-600	4 bar / +80°C
VG3???-?EP VG4???-??EP		EPDM	Packing PTFE / O-ring EPDM	50-250	10 bar / +120°C 9,7 bar / +130°C
				300-450	7 bar / +130°C
				500-600	4 bar / +130°C
VG3???-??NI VG4???-?NI		Nitrile	Packing PTFE / O-ring Nitrile	50-250	10 bar / +80°C
				300-450	7 bar / +80°C
				500-600	4 bar / +80°C
VG3???-??SI VG4???-?SI		Silicone	Packing PTFE / O-ring Silicone	50-250	10 bar / +120°C 8,6 bar / +170°C
				300-450	7 bar / +170°C
				500-600	4 bar / +170°C
VG3???-??VI VG4???-?VI		FPM	Packing PTFE / O-ring FPM	50-250	10 bar / +120°C 8.6 bar / +170°C
				300-450	7 bar / +170°C
				500-600	4 bar / +170°C
VG3???-??HY VG4???-?HY		CSM	Packing PTFE / O-ring CSM	50-250	10 bar / +80°C
				300-450	7 bar / +80°C
				500-600	4 bar / +80°C
VG6???-??MM	Austenitic stainless steel	Metal/Metal	Packing Graphite	50-250	10 bar / +100°C 5,6 bar / +600°C
				300-450	7 bar / +350°C 5,6 bar / 600°C
				500-600	4 bar / +600°C
VG6???-??PTF		PTFE	Packing PTFE / O-ring Nitrile	50-250	10 bar / +100°C 9 bar / +130°C
				300-450	7 bar / +130°C
				500-600	4 bar / +130°C
VG6???-??EP		EPDM	Packing PTFE / O-ring EPDM	50-250	10 bar / +100°C 9 bar / +130°C
				300-450	7 bar / +130°C
				500-600	4 bar / +130°C
VG6???-??NI		Nitrile	Packing PTFE / O-ring Nitrile	50-250	10 bar / +80°C
				300-450	7 bar / +80°C
				500-600	4 bar / +80°C
VG6???-??SI		Silicone	Packing PTFE / O-ring Silicone	50-250	10 bar / +100°C 8,4 bar / +170°C
				300-450	7 bar / +170°C
				500-600	4 bar / +170°C
VG6???-??VI		FPM	Packing PTFE / O-ring FPM	50-250	10 bar / +100°C 8,4 bar / +170°C
				300-450	7 bar / +170°C
				500-600	4 bar / +170°C
VG6???-??HY		CSM	Packing PTFE / O-ring CSM	50-250	10 bar / +80°C
				300-450	7 bar / +80°C
				500-600	4 bar / +80°C

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General information

Knife gate valves are always delivered with the packing gland loosened. Before any use, tighten the gland gradually. (See Fig. 18)

After pressurizing the circuit, check for leaks at the cable gland and retighten if necessary. Respect the recommended positions of assembly. (See Fig. 14)

Respect the knife gate valve assembling way. (See Fig. 16)

For bottom line assembling the valve must be installed between flanges. (See Fig. 17)

Be sure that the position indicator is visible.

Before use, especially in case of prolonged storage, lubricate the valve stem. (See Fig. 19)

Pay attention to the assembly of the protection tube of the stem during the first installation. The grease reserve of the stem is ensured in the protection tube, offering a regular lubrication. Regularly ensure that a sufficient level of grease is maintained in the protetion tube. When assembling of an electric actuator on the valve, be sure to grease the motor nut and the valve stem.

Knife gate valve type under silo:
Each time the body bottom hatch is dismantled and refitted, the hatch seal must be changed.
Do not disassemble the hatch unless the valve body is no longer under pressure.

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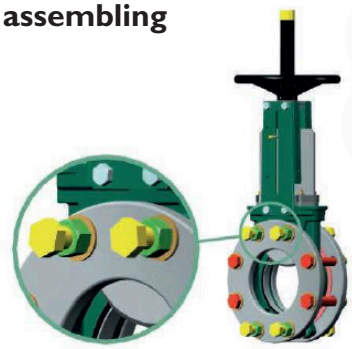
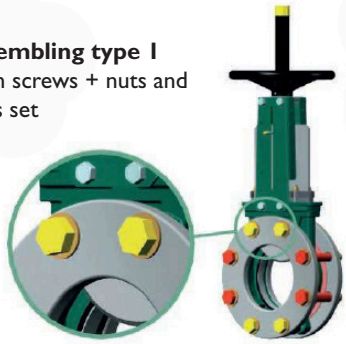
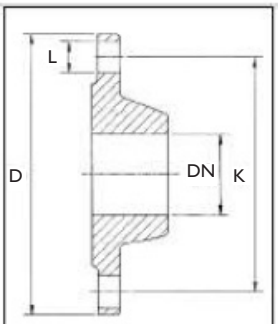
Type of assembling



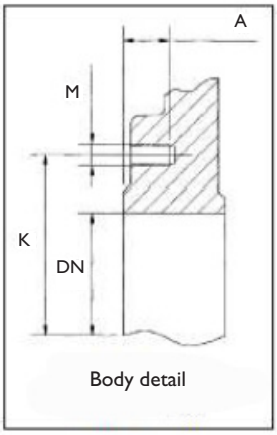
Assembling type 1
With screws + nuts and bolts set



Assembling type 2
With screws and bolts set



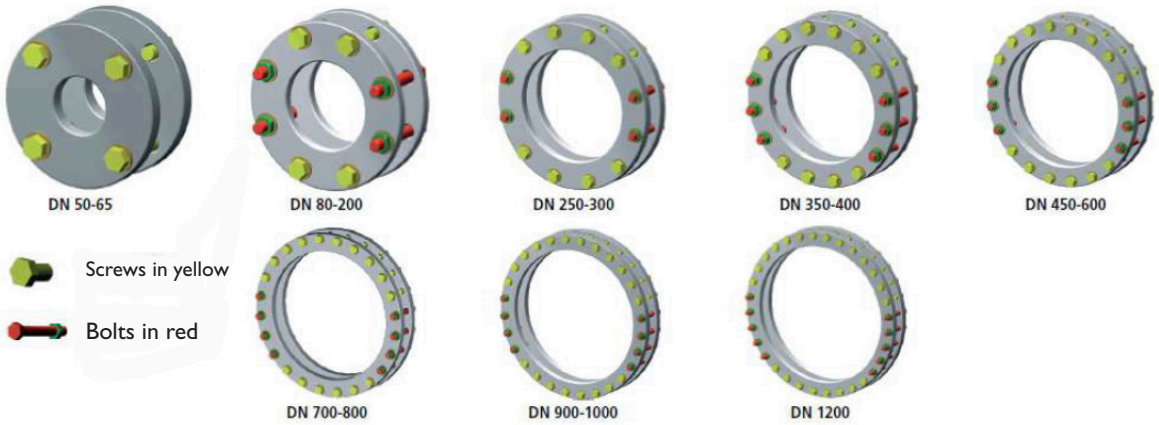
For flange type 11B standard DIN 2632



Body detail

ISO PN 10 connection for flange type 11 B

DN	Range connection			Equipment for assembling between 2 flanges			
	External diameter ØD	Drilling circle ØK	Hole No x ØL	Screw + nut type 1 (yellow) No x M-lg	Screw type 2 (yellow) No x M-lg	Thread depth	Bolt type 1 and 2 (red) No x M-lg
50	165	125	4 x 18	8 x M 16-60	8 x M 16-25	8	-
65	185	145	4 x 18	8 x M 16-60	8 x M 16-25	8	-
80	200	160	4 x 18	8 x M 16-60	8 x M 16-30	9	4 x M 16-120
100	220	180	4 x 18	8 x M 16-60	8 x M 16-30	9	4 x M 16-120
125	250	210	4 x 18	8 x M 16-65	8 x M 16-30	9	4 x M 16-120
150	285	240	8 x 22	8 x M 20-70	8 x M 20-35	10	4 x M 20-130
200	340	295	8 x 22	8 x M 20-75	8 x M 20-35	12	4 x M 20-140
250	395	350	12 x 22	16 x M 20-80	16 x M 20-40	12	4 x M 20-150
300	445	400	12 x 22	16 x M 20-80	16 x M 20-40	12	4 x M 20-150
350	505	460	16 x 22	20 x M 20-90	20 x M 20-45	19	6 x M 20-180
400	565	515	16 x 26	20 x M 24-90	20 x M 24-50	20	6 x M 24-200
450	615	565	20 x 26	28 x M 24-100	28 x M 24-55	24	6 x M 24-200
500	670	620	20 x 26	28 x M 24-100	28 x M 24-55	24	6 x M 24-200
600	780	725	20 x 30	28 x M 27-110	28 x M 27-50	24	6 x M 27-200
700	895	840	24 x 30	32 x M 27	32 x M 27	-	8 x M 27-220
800	1015	950	24 x 33	32 x M 30	32 x M 30	-	8 x M 30-220
900	1115	1050	28 x 33	40 x M 30	40 x M 30	-	8 x M 30-220
1000	1230	1160	28 x 36	40 x M 33	40 x M 33	-	8 x M 33-220
1200	1455	1380	32 x 39	44 x M 36	44 x M 36	-	10 x M 36-240



Tightening torque

8-8 class standard steel (following standard DIN ISO 898/1)

DN		50	65	80	100	125	150	200	250	300	350	400	450	500	600	700	800	900	1000	1200
Thread		M16	M16	M16	M16	M16	M20	M20	M20	M20	M20	M24	M24	M24	M27	M27	M30	M30	M33	M36
Torque (Nm)	Screws	60	60	60	60	60	70	70	70	70	70	150	150	150	230	230	300	300	400	500
	Bolts	190	190	190	190	190	370	370	370	370	370	650	650	650	940	940	1290	1290	1740	2250

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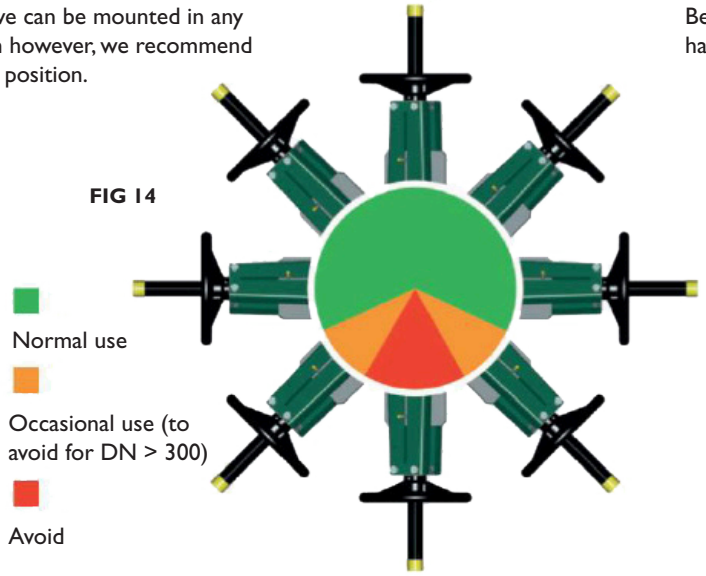
Precautionary measures

Valve positions
The valve can be mounted in any position however, we recommend suitable position.

FIG 14

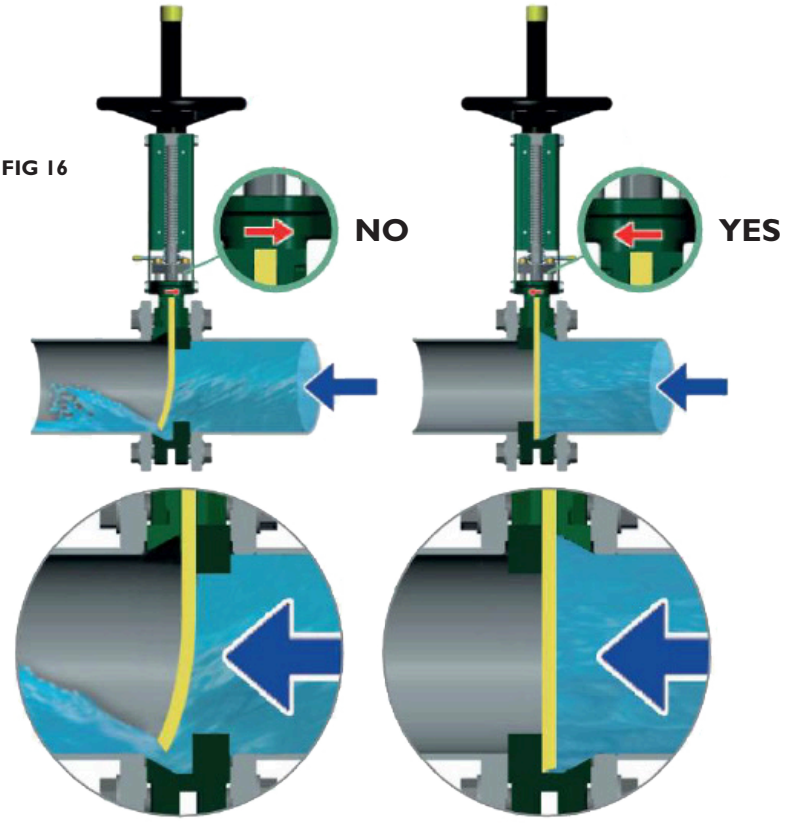


Valves handling
Before assembling please handle the valve with care.

FIG 15

VG knife gate valve assembling way
The valve is unidirectional. It must be installed with the pressure which push the knife on the gasket. The flow direction is user responsibility. Please assemble the valve following the arrow on the body (hydraulics applications).

FIG 16



Bottom valve assembly
For bottom valve assembly, the valve must be mounted between flanges.

FIG 17

For pneumatic or powder conveying applications, contact us.

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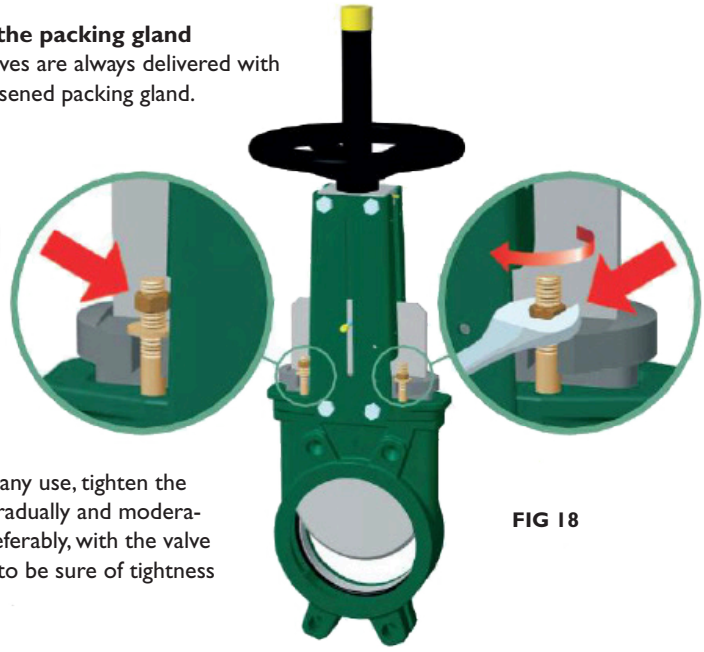
Precautionary measures

Tight the packing gland
The valves are always delivered with the loosened packing gland.



Before any use, tighten the gland gradually and moderately, preferably, with the valve closed to be sure of tightness quality.

FIG 18

Greasing and protection tube
Take care of the assembly of the protection tube of the stem at the time of the first installation. The grease reserve of the stem is ensured in the protection tube, offering a regular greasing.

In the event of prolonged storage or of weak frequency of operation, lubricate the valve stem regularly.

FIG 19

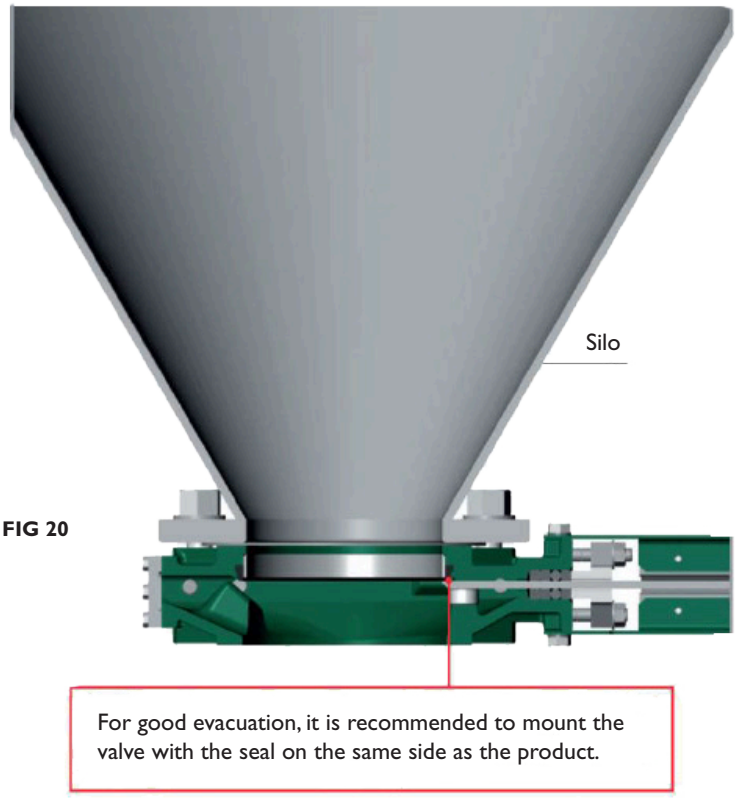


FIG 20

For good evacuation, it is recommended to mount the valve with the seal on the same side as the product.

Valves support
The manual valves in large diameter, valves equipped with heavy actuators, eletric motors etc, should be supported by means of the retaining plate supplied, when they are mounted horizontally or inclined.

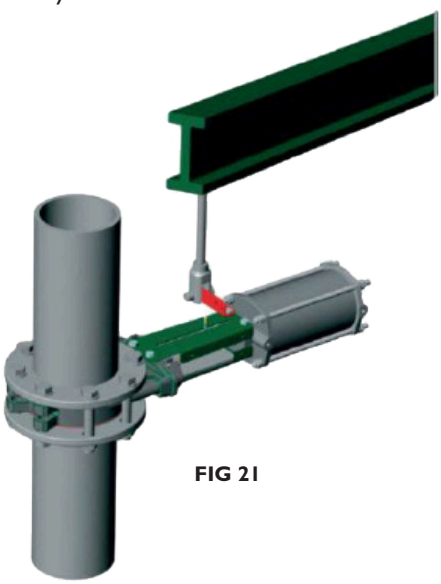


FIG 21

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Packing and seat replacement

The parts that need replacement are: packing, valve seat gasket (for pneumatic actuator) and gate. Their lite cycles depend largely on the use of pressure, temperature, amount of maneuvers, aggressive chemicals, etc.

It is necessary to control the alignment of the gate in the body before the support plates are fully screwed.

Packing replacement

a. Check that the pipe is without pressure and close the valve.

b. Disconnect the gate (1) and stem.

c. Unscrew the nuts of the packing gland (2) and take it off (8).

d. Remove the braided windings (5} and the O-ring (6) then clean the housing (7}.

e. Place the new braids (5} and the O-ring (6} by altering the joints (see figure A).

f. Replace the gland (8) and its nuts (2).

g. Reattach the stem on the gate (1).

h. Put the pipe under pressure while tightening the nuts of the packing gland (2) until tightness.

Replacement of the valve seat (on tight valves):

a. Disassemble the valve

b. Disassemble the actuator

c. Disassemble the gate (1)

d. Disassemble the stainless steel ring off (4)

e. Disassemble the used gasket (3) and clean its place

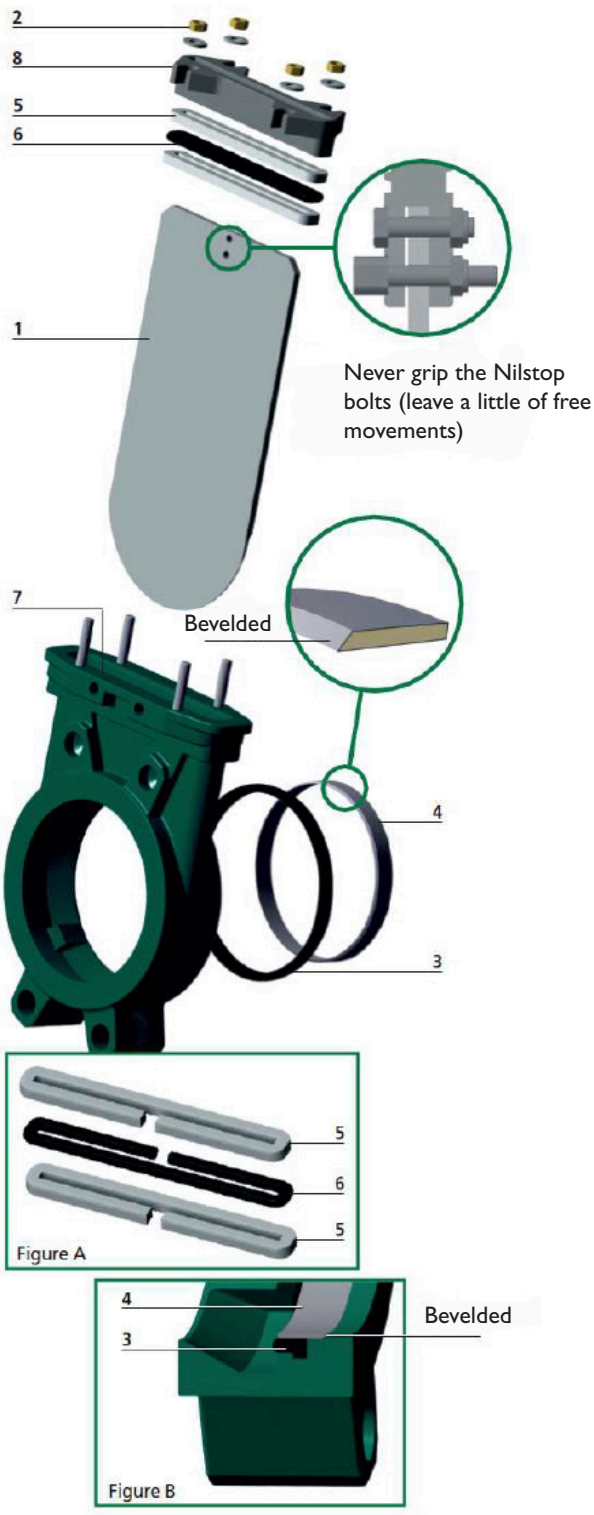
f. Assemble the new shaped gasket (3)

g. Assemble the support ring (4) by hammering it over the entire diameter to place it in its housing (see figure B).

h. Put the gate back without damaging the seat (1)

i. Reattach the operating device and perform several opening and closing operations before replacing the valve on the installation.

j. Before completely tightening the support plates, check the alignment of the gate in the body with the operating device (especially pneumatic actuator).



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