

19E系列

单向刀闸阀

Unidirectional knife gate valve



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单向刀闸阀 / Unidirectional knife gate valve

19E系列单向刀闸阀阀体材质为铸铁或不锈钢。严格按照相关产品质量标准生产，符合EN ISO 9001 质量标准。

该系列可定制不同密封件，也可以做成正方形。法兰钻孔PN10符合 EN 1092-1标准。

适用于水系统、压缩空气、污水系统和水净化系统、化工食品工业系统。使用介质可以为粘性或带固体悬浮颗粒的液体。（请确保您的选择与适用范围一致）。

可提供与使用介质一致的各类密封件。

该系列刀闸阀一般都是明杆的，也可提供暗杆式，可安装多种驱动器和附件。

YES: 可以用于节流和调节流量。

附件

- 保护装置（安装气动执行器时）
- 电磁阀（用于安装气动执行器）

驱动器

- 气动执行器

The bidirectional knife gate valves in Series 19E, with a ductile iron or stainless steel body, are produced in conformity with severe product norms and with EN ISO 9001 quality requirements.

They are available with various seals and, on request, may be manufactured with a square shape. Flange drilling PN10 EN 1092-1.

These valves are suitable for water plants, pneumatic plants, waste water and purification plants, and for the chemical and food industries. Furthermore, they are suitable for handling viscous liquids or liquids with solid parts in suspension. (Please ensure the choice of the corresponding item).

The seals are available in different materials, which correspond to the various fluids to be carried.

These valves are supplied, as standard, with a rising stem. On request, they can be equipped with a non-rising stem, as well as with a wide range of actuators and accessories available for this series.

YES: for choking and regulation of the flow.

Accessories

- Knife protection for pneumatic actuator
- Solenoid valve for pneumatic actuator

Actuator and drives

- Pneumatic actuators

认证 / Certifications



结构及检测标准:

法兰标准: EN 1092 ISO 7005

标识标准: EN19

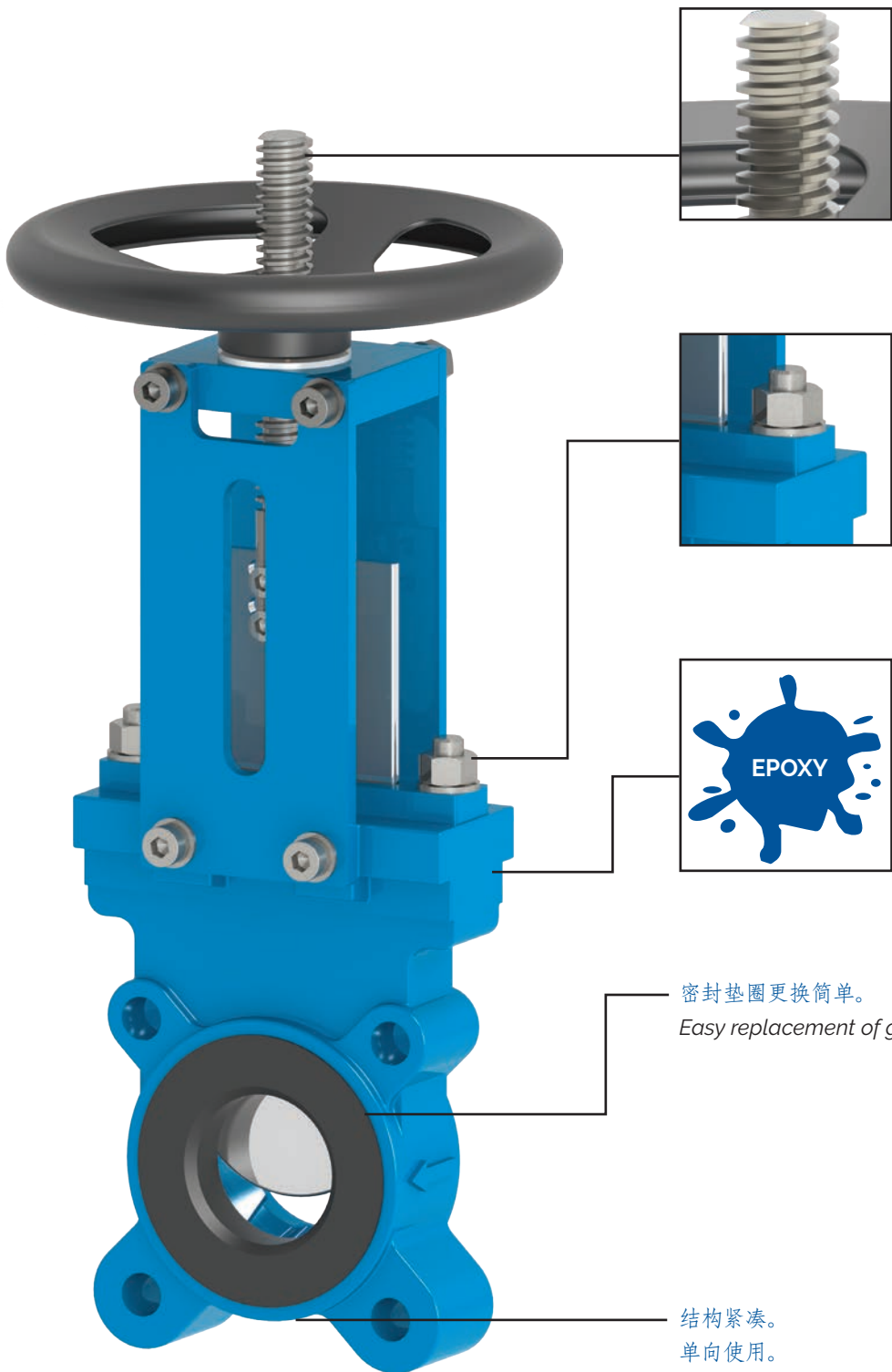
检测标准: EN 12266

Design and testing standards (correspondences):

Flanges: EN 1092 ISO 7005

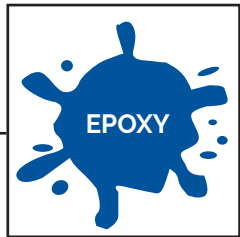
Marking: EN19

Testing: 100% testing in accordance with EN 12266



明杆，带阀杆保护装置。
Standard rising stem with stem protection.

可调节螺栓，用于闸板填料调整。
Adjustment screws for gate packing.



表面喷涂环氧树脂RAL 5017。
Epoxy coating RAL 5017.

密封垫圈更换简单。
Easy replacement of gate seat.

结构紧凑。
单向使用。
一片式阀体。
*Compact design.
Unidirectional.
1 piece body.*

单向刀闸阀 / Unidirectional knife gate valve

铸铁阀体 / Cast iron body



19E101

阀体: GJS 400
 闸板: AISI 316
 密封: NBR
 工作温度: -30 + 80°C

Body: ductile iron
 Gate: AISI 316
 Seal: NBR
 Temp: -30 +80°C



19E109

阀体: GJS 400
 闸板: AISI 316
 密封: EPDM
 工作温度: -30 + 90°C

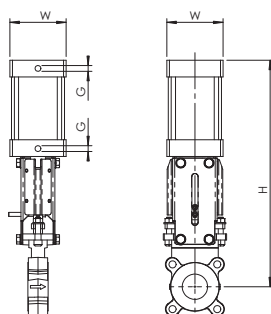
Body: ductile iron
 Gate: AISI 316
 Seal: EPDM
 Temp: -30 +90°C

驱动器和附件 / Actuators and accessories

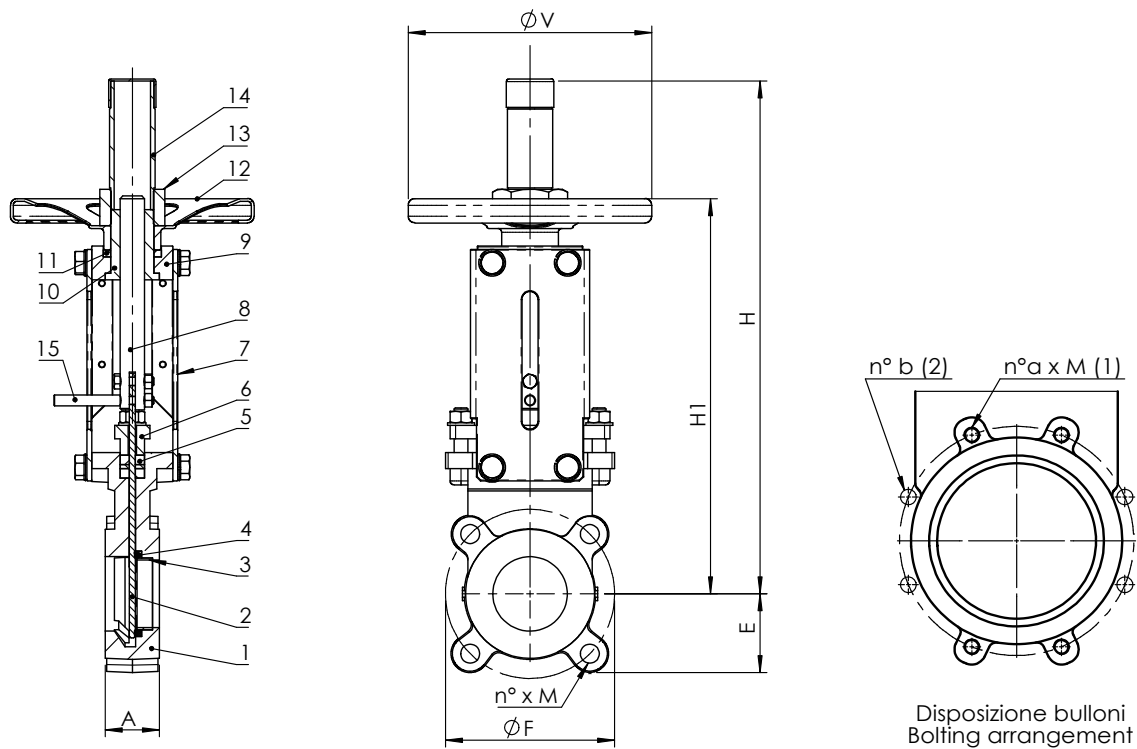


19E + AP

气动执行器
 Pneumatic actuators



DN	50	65	80	100	125	150	200	250	300
19E + AP - DE/DA									
H	417	433	560	655	655	730	918	1072	1465
W	100	100	100	100	125	125	160	200	200
G	1/4"	1/4"	1/4"	1/4"	1/4"	1/4"	1/4"	3/8"	3/8"
重量 / Weight Kg									



材质 / Materials

组件 - Component	材质 - Material
1 阀体 - Body	球铁 - Ductile iron GJS 400 EN1563
2 闸板 - Gate	不锈钢 - Stainless steel AISI 316
3 圆簧 - Retaining ring	不锈钢 - Stainless steel AISI 316
4 阀座 - Seat	NBR / EPDM
5 填料 - Packing	球铁 - Ductile iron GJS 400 EN1563
6 填料压盖 - Packing gland	PTFE + EPDM
7 撑板 - Plates	碳钢 (环氧树脂喷涂) - Carbon steel, epoxy coated
8 阀杆 - Stem	不锈钢 - Stainless steel AISI 304
9 轴套 - Bearing	碳钢 (环氧树脂喷涂) - Carbon steel, epoxy coated
10 阀杆螺母 - Stem nut	青铜 - Bronze
11 滑动垫圈 - Sliding washer	PTFE
12 手轮 - Hand wheel	碳钢 (环氧树脂喷涂) - Carbon steel, epoxy coated
13 锁紧螺母 - Locking nut	碳钢 - Carbon steel
14 阀杆盖 - Stem cover	球铁 (环氧树脂喷涂) - Ductile iron, epoxy coated
16 位置指示器 - Position indicator	不锈钢 - Stainless steel AISI 304
- 螺栓和螺母 - Bolts and nuts	不锈钢 - Stainless steel A2

尺寸 (mm) / Dimensions (mm)

DN	50	65	80	100	125	150	200	250	300	350	400	450
A	40	40	50	50	50	60	60	70	80	96	100	106
E	65	70	96	108	124	135	165	198	234	265	292	308
H	360	400	420	488	564	635	809	946	1118	1282	1441	1587
H1	289	313	335	380	415	470	580	670	768	900	997	1100
V	200	200	200	200	250	250	300	300	300	400	400	400
法兰 Flanges	EN 1092	PN 10/16	PN 10/16	PN 10/16	PN 10/16	PN 10/16	PN 10	PN 10	PN 10	PN 10	PN 10	PN 10
F		125	145	160	180	210	240	295	350	400	460	515
n° x M (1)		4 x M16	4 x M16	4 x M16	4 x M16	4 x M16	4 x M20	4 x M20	4 x M20	8 x M20	8 x M24	8 x M24
n° b (2)		-	-	4	4	4	4	4	8	8	8	12

1: 阀体螺纹孔数量 / tapped holes - 2: 双头螺栓数量 / through holes

重量 (kg) / Weight (kg)

带手轮 with hand wheel	6,5	7	9	10,5	12,5	15	32,5	46,5	61	118	133	174
带执行器 with actuator	9,5	10,5	12	13,5	20	22,5	49	71	88	-	-	-

单向刀闸阀 / Unidirectional knife gate valve

最大工作压力 / Maximum pressure

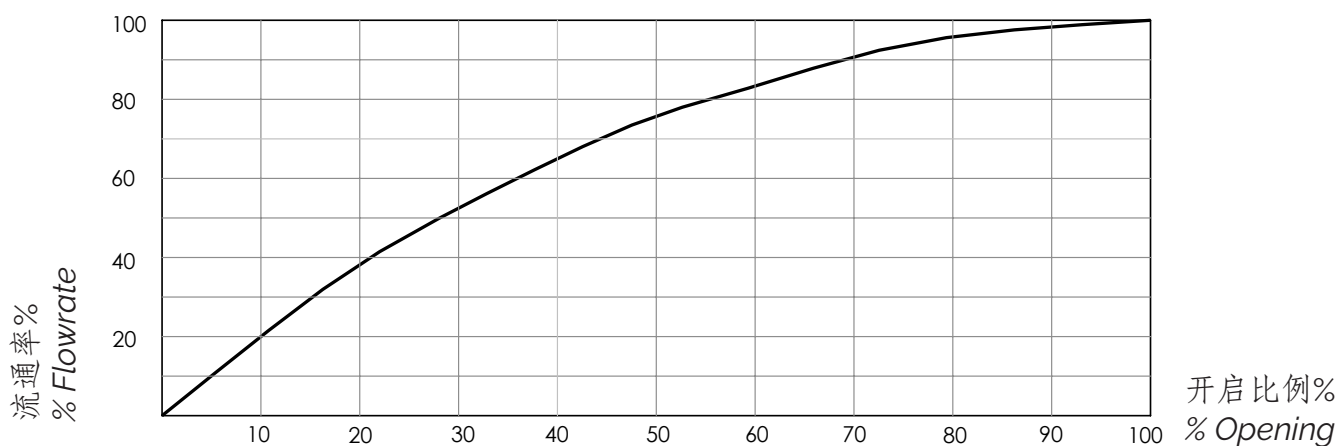
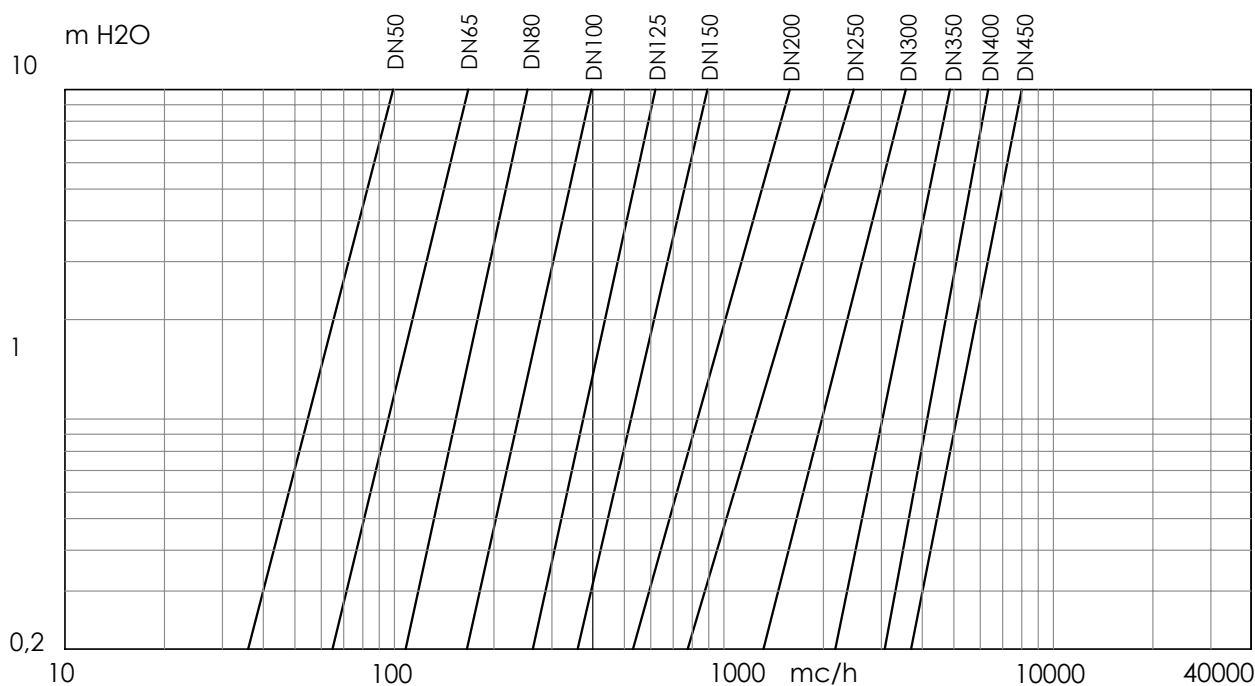
DN	压力 - Pressure
DN 50-200	10 bar
DN 250	8 bar
DN 300	6 bar
DN 350-400	4 bar
DN 450	3 bar

工作温度 / Temperature (°C)

温度 - Temperature	最低 - Min	最高 - Max
NBR	-20	80
EPDM	-20	110

水头损失 阀门全开时。介质：水 (1m H₂O = 0,098bar)

Head loss Valve completely open. Fluid: water (1m H₂O = 0,098bar)



Kv - DN表 / Kv - DN chart

DN	50	65	80	100	125	150	200	250	300	350	400	450
Kv	99	167.2	253.3	395.8	618.5	890.6	1'583.4	2'474	3'562.6	4'849	6'335	8'015

19E系列说明及建议

如何正确选择刀闸阀

阀门的使用范围受到温度和介质影响，取决于密封材料。因此了解清楚阀门的工作温度、压强及介质是非常重要的，这样才能选择合适的阀门。

密封材料选用提示:

EPDM - 优点: 耐热性能良好、抗氧化及光照，低温时仍有良好的弹性，耐酸、碱、氧化溶剂，耐水及蒸汽。缺点: 不耐油、汽油及碳氢化合物溶剂。

长期工作温度: $-20 / +100^{\circ}\text{C}$ 。

NBR - 优点: 非常耐油类及各种矿物润滑油，耐汽油、酸、碱及碳氢化合物溶剂。缺点: 不耐氧化及芳香族烃类化合物。

长期工作温度: $-20 / +90^{\circ}\text{C}$ 。

储存与运输

- 放在干燥密闭处。防止橡胶等弹性材料接触到光照。
- 18.000及19.000系列储存时要保证闸板部分处于开启状态，以防对弹性座的损害。
- 避免磕碰，特别是相对脆弱的部件（手柄、手轮、齿轮箱/驱动器）。吊装阀门时不能在脆弱部件上（手轮、手柄）施力。

安装

- 小心装卸。
- 阀门可以竖直安装也可水平安装。对于带有气动执行器且大于DN200口径的刀闸阀，水平安装时要增加支撑（如图1所示）。
- 必须安装在法兰之间，当阀门安装在管路末端时，必须在另一侧安装对接法兰（如图2所示）。

图1/FIG.1

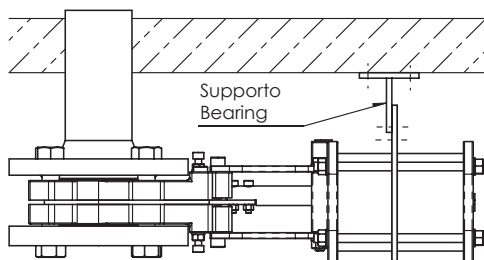
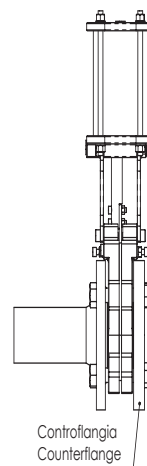


图2/FIG.2



Instruction and Recommendations for series 19E

HOW TO CHOOSE THE VALVE

The operation area of the valve is limited to given temperatures and fluid types, depending on the material of the seal. It is important to communicate the working temperature and pressure and the medium, in order to be sure that the valve is suitable for the application.

Some indications for choosing the seal:

EPDM - Advantages: It has excellent resistance to heat, ozone and sunlight, very good flexibility at low temperatures, good resistance to alkalis, acids, oxygenated solvents and very good resistance to water and steam. Limits: poor resistance to oil, gasoline and all hydrocarbon-based solvents.

Maximum continuous operating temperature $-20 / +100^{\circ}\text{C}$.

NBR - Advantages: excellent resistance to oil and mineral lubricants, good resistance to gasoline, alkalis, acids, hydrocarbon-based solvents. Limits: poor resistance to ozone and to aromatic hydrocarbons

Maximum continuous operating temperature $-20 / +90^{\circ}\text{C}$.

STORAGE AND TRANSPORT

- Keep in dry and closed place. Avoid exposure of the elastomeric parts to sunlight.
- For art. 18.000 and 19.000: during storage, the gate has to be partially open in order to prevent damage to the elastomeric part.
- Avoid knocks, especially to the delicate parts (lever, hand wheel, gear boxes/actuators). Do not use the weaker parts (lever, hand wheel) to lift the valve.

INSTALLATION

- Handle with care.
- The valve is suitable for installation with the stem axis in a vertical or horizontal position. For valves with pneumatic actuators, for mounting with the stem axis horizontal, an appropriate support is needed (fig. 1) for $\text{DN} > 200$.
- The mounting has to be made between flanges. In case of end of line installation, a counter flange **MUST** be mounted (fig. 2).

- 清洁法兰接触面。
- 根据不同的工作温度及介质类型选用合适的垫圈。
- 管路法兰上不能有突出物和尖锐边缘，以防对阀表面的损坏。
- 不能先将阀门装到法兰后，再去将法兰与管路进行焊接。
- 请选择合适长度的螺栓，如果太长，则不能完全旋紧。应按图3b或3c所示安装。交叉旋紧螺栓。

- Clean the surfaces of contact carefully.
- Use flat gaskets suitable for the working temperature and medium type.
- Avoid the presence of protrusions and sharp edges of the piping, in order not to damage the surface of the valve lining.
- Do not weld the flanges to the piping after installing the valve.
- Chose a screw of the correct length: if the screw too long, it will not be possible to tighten it sufficiently. Assemble as shown in Fig. 3 b or 3 c. Tighten bolts crosswise.

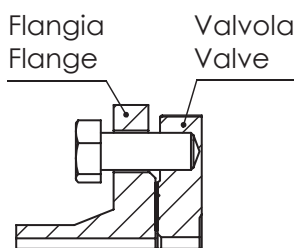


图3a/FIG.3a NO

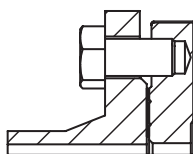


图3b/FIG.3b SI

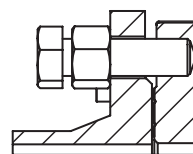


图3c/FIG.3c SI

- 阀门安装到管路后，应避免管路的倾斜、扭转或未对正对阀门产生应力。水锤作用会引起阀门损坏或破裂。建议安装弹性接头以尽量避免这种情况，降低水锤的影响。弹性接头在安装时，必须保证橡胶与金属的接触密封（避免弹性接头与阀门密封座直接接触）。

19E系列只能单向密封。需按阀体上的介质流向指示箭头安装。如安装了锥形导流板，需确保其沿着流向可以正常工作。

- Avoid inclination, twisting and misalignments of the piping which might subject the valve to unwanted stresses, once it has been installed. Water hammers might cause damage and ruptures. It is recommended that such conditions should be avoided, or elastic joints be used, in order to reduce such effects. The joints have to be mounted to obtain a rubber on metal contact (avoid mounting the joint directly on the valve lining).

The valves in Series 19E are unidirectional. Respect the flow direction indicated by the arrow on the body. If a conical deflector is installed, ensure that it is installed in the flow direction for correct operation.

顺时针旋转可以将阀门关闭。

手动或电动阀门安装后，为避免阀门锈蚀卡紧，应在其螺母上和螺栓涂抹防水润滑油脂（如硅润滑脂或二硫化钼润滑脂）。阀门在使用过程中，应定期对闸板和阀体间密封和阀体上部密封进行检查。

阀门生产组装时，填料压盖的螺栓是按照一定标准扭矩锁紧的，然而根据不同使用压力或更严苛的使用环境，如发现上部有泄漏现象，需要将螺栓进一步锁紧。交叉锁紧螺栓，注意参考“维护”部分给出的扭矩值。

Closure is achieved by turning clockwise.

For manual or electrical actuation of the valve, once the valve has been installed, grease the nut and screw with a water-repellent grease (for example silicon grease or Molykote) in order to avoid seizures. While putting the valve into operation, and periodically during its life span, it is recommended that the seals between the gate and body, and those in the upper part of the valve be checked.

During valve assembly, the packing gland bolts are tightened with a standard torque. However, depending on the pressure and other service conditions, if a leakage from upper part of the valve should be spotted, it may be necessary to tighten these bolts further. Cross tighten the bolts and respect the torque values indicated in the "Maintenance" section.

安装气动执行器的注意事项

用于连接空气压缩系统的接口：DN50-200，BSP G1/4"螺纹。
DN250-300，BSP G3/8"螺纹。

空气压缩系统的压力需在6-10 bar之间。

为了确保正确关闭，建议最小供气压力为6 bar。

注意：压力低于6 bar可能导致阀门打开/关闭太慢，以及关闭不完全。

进入气动执行器的空气应经过过滤、干燥和润滑。

安装电动执行器的注意事项

必须按照说明书进行使用和维护。

每周均应该对阀门进行检查和润滑（特别是调制执行器）。

维护

注意：带压力操作可能会造成人身伤害和阀门损坏。

阀门进行任何维修或拆卸前：

请确保阀门、管路中的流体已冷却；阀门、管路中的压力已卸去；
有毒、易燃、有腐蚀性的流体已排净。

建议每两年至少开关两次阀门以检查其工作状态是否良好。需定期检查闸板和阀体间密封以及弹性密封件的性能。当发现泄漏时，可以将填料压盖调整螺栓稍稍拧紧，如果仍不能解决问题，可以按照下面的提示进行更换。

更换阀座

- a. 完全打开阀门。
- b. 小心地取下密封圈(1)，避免损坏和变形。
- c. 拆下阀座(2)。检查阀座状态，必要时进行更换。
- d. 装回密封圈(1)。

WARNING FOR VALVES WITH PNEUMATIC ACTUATOR

BSP G1/4" for DN50-200 and BSP G3/8" for DN250-300 threads are provided for air supply connection.

Air supply pressure must be between 6 and 10 bar.

In order to ensure correct closure, a supply pressure of minimum 6 bar is recommended.

NB: *Pressure below 6 bar may cause the valve to open/close too slowly, as well as incomplete closure.*

The air supply to the actuator must have previously been filtered, dehumidified and lubricated.

RECOMMENDATIONS FOR VALVES WITH ELECTRIC ACTUATOR

The user must follow the instructions for using and maintaining the actuator.

Valves with an electric actuator (especially those with modulating actuators) must be checked and lubricated every week.

MAINTENANCE

NB: *OPERATING ON A LINE UNDER PRESSURE MIGHT CAUSE INJURY AND DAMAGE TO THE PLANT.*

Before dismantling or maintaining the plant:

Ensure that the pipes, valves and fluids have cooled down, the pressure has decreased and the lines and pipes have been drained in case of toxic, corrosive, inflammable or caustic liquids.

It is recommended that the valve be opened/closed at least twice a year to check that it works properly. It is important to plan periodic inspections to check for any leakages between the body and gate and to verify the conditions of the elastomer seal. In the case of leakages, the packing adjustment screws may be tightened a little. In the event of it being necessary to replace the seals, proceed as indicated here below:

REPLACING THE SEAT

- a. *Open the valve completely*
- b. *Carefully remove the ring (1), avoiding damages and deformations.*
- c. *Remove the seat (2). Verify the conditions and, if necessary, replace it.*
- d. *Reassemble the ring (1).*

更换密封件

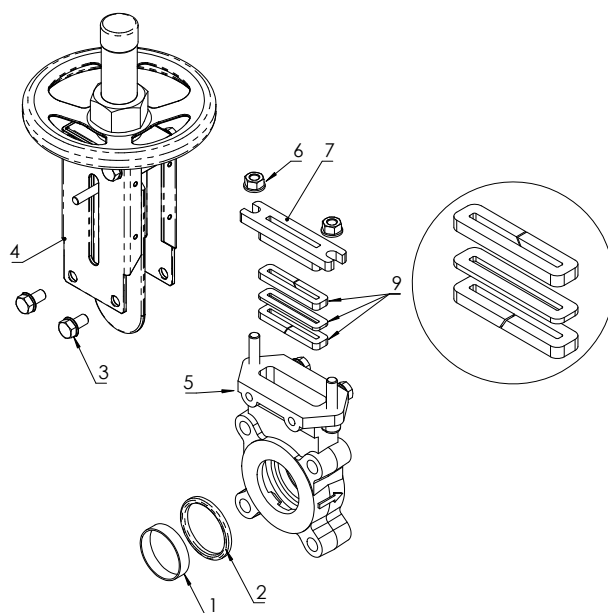
- e. 旋下固定支撑板(4)和阀体(5)的螺栓(3)。
 - f. 取下阀门的上半部分。
 - g. 取下螺母(6)，然后取下填料压盖(7)。从内腔中取出填料。
 - h. 装入新的填料(9)，装入时保证每块填料的接口互相错开。
 - i. 重新装回填料压盖(7)。用手将螺母(6)旋回，直至螺母与填料压盖接触后，再旋转半圈，最后将螺母交叉锁紧。
 - j. 在阀杆螺栓及螺母上涂抹中性防水防锈油脂（如硅润滑脂或二氧化钼润滑脂）。
 - k. 阀门重新投入使用前，检查阀门上半部分阀体和闸板间的密封件是否工作正常。
- 发生泄漏时，可适当将螺栓(6)交叉旋紧，直至不再泄漏。

重要信息：一旦泄漏停止，即不要再继续旋紧填料压盖的螺母。因为过大的压紧力会提高阀门的开启扭矩，加剧密封件的损坏。

REPLACING THE SEALS

- e. Remove the screws (3) that fixing the plates (4) to the body (5).
 - f. Remove the upper part of the valve.
 - g. Remove the nuts (6) and then remove the packing gland (7). Remove the packing from its housing.
 - h. Put the new packing (9) in place. Insert the packing braids, one by one, into the packing housing, ensuring that the two ends of each seal match without overlapping and that the seal ends are placed with their opposite sides alternating.
 - i. Reassemble the packing gland (7). Tighten the nuts (6) by hands until contact with the packing gland, then proceed with another ½ turn. Tighten the nuts crosswise.
 - j. Lubricate stem screw and stem nut with neutral water repellent grease (f.ex. silicone grease or Molykote)
 - k. Before putting the valve back into operation, check the seal between the body and gate in the upper parts of the valve.
- In the event of leaks, the packing adjustment nuts (6) may be tightened a little, until the leaks stop.
- IMPORTANT:** Once the leaks have stopped, do not continue to tighten the nuts of the packing gland. Excess pressure on the packing gland will result in a high operating torque of the valve, and cause the seal to deteriorate more quickly.

图5/FIG. 5



处置

对于输送危险介质（有毒、腐蚀性……）的阀门，如果阀门中可能残留残余物，请采取适当的安全预防措施并进行必要的清洁。负责人员必须经过培训并配备适当的防护装置。

在处置之前，请按照不同材料拆卸阀门并分离组件。请参考产品资料获取更多信息。根据当地和现行有效的法规并在考虑环境的情况下，将分类的物料送交回收利用（例如金属材料）或进行处置。

DISPOSAL

For valve operating with hazardous media (toxic, corrosive...), if there is a possibility of residue remaining in the valve, take due safety precaution and carry out required cleaning operation. Personnel in charge must be trained and equipped with appropriate protection devices. Prior to disposal, disassemble the valve and separate the component according to various materials. Please refer to product literature for more information. Forward sorted material to recycling (e.g. metallic materials) or disposal, according to local and currently valid legislation and under consideration of the environment.