

04.1系列

三通法兰式铸铁球阀

Three-way diverter flanged cast iron ball valve



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VALVES

三通法兰式铸铁球阀 / Three-way diverter flanged cast iron ball valve

04.1系列三通法兰式换向球阀，阀体材质为铸铁，球体为浮球，严格按照相关产品质量标准生产，符合ISO 9001标准。

该系列分为以下类型：

T4 > 带T型法兰（90度）

Y4 > 带Y型法兰（120度）

三通阀应为三通球阀，渐进式调节分配应为先进的调节分配方式 准确连接；当一侧管路关闭时，另外两个管路会保持全开，因此，某一管路不到位的关闭或开启都会影响另外两个管路的正常工作。适用于供热和空调系统，集中供热、供水和水处理，工业、农业系统，介质可以是压缩空气、油类及碳氢化合物。

（请确保您的选择与适用范围一致）

YES: 可安装于管路中部及末端，可频繁开启，可连接多种驱动器。

NO: 不适用于蒸汽系统及流量调节。

附件

- 隔热延长杆
- ISO5211 标准上法兰可以安装各种驱动器

驱动器

- 气动执行器：单作用/双作用
- 电动执行器

认证 / Certifications



符合2014/68/UE (ex 97/23/CE PED) 标准

结构及检测标准：

法兰标准：EN 1092 ISO 7005

设计标准：EN 1983, EN12516

检测标准：EN 12266 cat. A (ISO 5208 cat. A)

The valves in the 04.1 series are three-way, **diverter** ball valves made of cast iron, with floating ball, manufactured in accordance with the most severe product standards and the quality management of ISO 9001.

They are available in the following versions:

T4 > with "T"-shape flanges (90°)

Y4 > with "Y"-shape flanges (120°)

In all positions, the three way valve guarantees the connection to the atmosphere or to a security pipe, with progressive distribution (TRANSFLOW); for this reason, while one line is closed, the other two lines will be fully open, and as a result, any incorrect alignment resulting in the choking of the bore of one of the lines will lead to the bore of the others being increased. Suitable for heating and conditioning (HVAC), district heating, distribution and treatment of water, industrial applications, agricultural applications, for compressed air processing, oils and hydrocarbons.

(Please ensure the choice of the corresponding item)

YES: for installation in line and end of line, for services with frequent actuation, suitable for installing a wide range of actuators.

NO: for steam, for choking and regulation of the flow.

Accessories

- Lever with extension for thermal insulation
- Kit ISO 5211 flange for installation of actuators

Actuators

- Double acting and single acting pneumatic actuators
- Electric actuators

In conformity with directive 2014/68/UE (ex 97/23/CE PED)

Design and testing standards (correspondences):

Flanges: EN 1092 ISO 7005

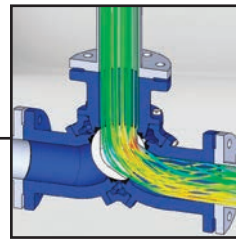
Design: EN 1983, EN12516

Testing: 100% testing in accordance with EN 12266 cat. A (ISO 5208 cat. A)



内外环氧树脂喷涂，耐高温。
环保水性涂料。

Inside and outside epoxy coating, high temperature resistant. Environmentally-friendly, water-based paint.

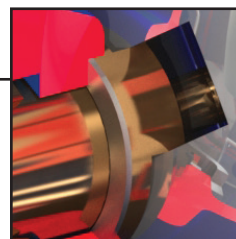


铜镀铬或不锈钢全通径球体；120度平滑圆滑的弧度确保更小的流体扰动和水头损失。

Ball in chrome-plated brass or stainless steel full bore; the smooth, rounded connections between passages at 120° ensure reduced turbulences and low head loss.

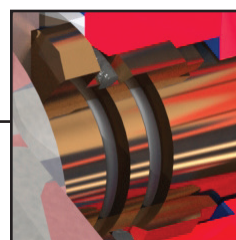
加强型PTFE密封座，可确保温度改变时扭矩恒定。

Seat of ball in reinforced PTFE, as temperature changes, the operation torque remains constant.



防脱出阀杆。

Blow-out proof stem.



阀杆处的双O型圈动态密封确保阀门在严苛的工作条件下也能正常工作。

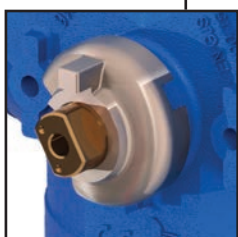
A double O-ring on the stem and the metallic bushing provides a dynamic seal, even in severe working conditions.

120度夹角的双手柄可指示水流方向。

The double lever at 120° indicates the flow direction.

即使阀门已安装到管路上，旋转止动装置也可以进行调节。阀杆顶部标记指示连接的端口。

The RO-STOP device allows selection of flow direction also on the valve already installed. The markings on the stem top show the connected ports.



三通法兰式铸铁球阀 / Three-way diverter flanged cast iron ball valve

NBR

**T4.100**

阀体: EN GJS400-15
 阀球: 黄铜
 阀杆: 黄铜
 O型圈: NBR
 工作温度: $-10 + 100^{\circ}\text{C}$
 Body: ductile iron
 Ball: Brass
 Stem: Brass
 O-ring: NBR
 Temp: $-10 + 100^{\circ}\text{C}$

**Y4.100**

阀体: EN GJS400-15
 阀球: 黄铜
 阀杆: 黄铜
 O型圈: NBR
 工作温度: $-10 + 100^{\circ}\text{C}$
 Body: ductile iron
 Ball: Brass
 Stem: Brass
 O-ring: NBR
 Temp: $-10 + 100^{\circ}\text{C}$

**T4.111**

阀体: EN GJS400-15
 阀球: AISI 304
 阀杆: AISI 304
 O型圈: NBR
 工作温度: $-10 + 100^{\circ}\text{C}$
 Body: ductile iron
 Ball: AISI 304
 Stem: AISI 304
 O-ring: NBR
 Temp: $-10 + 100^{\circ}\text{C}$

**Y4.111**

阀体: EN GJS400-15
 阀球: AISI 304
 阀杆: AISI 304
 O型圈: NBR
 工作温度: $-10 + 100^{\circ}\text{C}$
 Body: ductile iron
 Ball: AISI 304
 Stem: AISI 304
 O-ring: NBR
 Temp: $-10 + 100^{\circ}\text{C}$

FKM

**T4.100 ***

阀体: EN GJS400-15
 阀球: 黄铜
 阀杆: 黄铜
 O型圈: FKM
 工作温度: $-10 + 150^{\circ}\text{C}$
 Body: ductile iron
 Ball: Brass
 Stem: Brass
 O-ring: FKM
 Temp: $-10 + 150^{\circ}\text{C}$

**Y4.100 ***

阀体: EN GJS400-15
 阀球: 黄铜
 阀杆: 黄铜
 O型圈: FKM
 工作温度: $-10 + 150^{\circ}\text{C}$
 Body: ductile iron
 Ball: Brass
 Stem: Brass
 O-ring: FKM
 Temp: $-10 + 150^{\circ}\text{C}$

**T4.111 ***

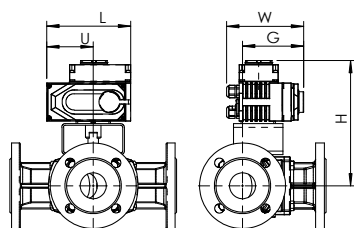
阀体: EN GJS400-15
 阀球: AISI 304
 阀杆: AISI 304
 O型圈: FKM
 工作温度: $-10 + 150^{\circ}\text{C}$
 Body: ductile iron
 Ball: AISI 304
 Stem: AISI 304
 O-ring: FKM
 Temp: $-10 + 150^{\circ}\text{C}$

**Y4.111 ***

阀体: EN GJS400-15
 阀球: AISI 304
 阀杆: AISI 304
 O型圈: FKM
 工作温度: $-10 + 150^{\circ}\text{C}$
 Body: ductile iron
 Ball: AISI 304
 Stem: AISI 304
 O-ring: FKM
 Temp: $-10 + 150^{\circ}\text{C}$

- * 非常适合集中供热系统, 可用于最高 150°C 水温
- * *Most suitable for district heating for water up to 150°C*

喷涂颜色: **RAL 5002**
 Coating: **RAL 5002** colour

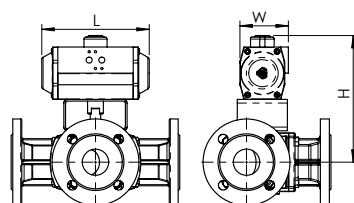


DN	50	65	80	100	125	150
04.1 + AOX	005	008	015	015	030	040
L	160	160	189	189	268	268
H	251	262	305	316	386	405
W	121	121	145	145	225	225
重量 / Weight Kg	23,6	29,6	39,1	48,6	83,4	117,8

04.1 + AOX

电动执行器

Electric actuators



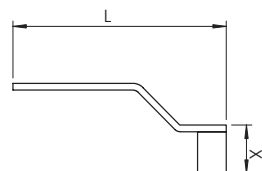
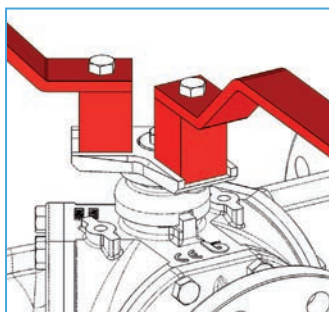
DN	50	65	80	100	125	150
04.1 + AP DE - DA	UT20	UT25	UT30	UT235	UT45	UT50
L	186	248	241	261	367	381
H	258	269	323	371	454	473
W	96	96	114	131	145	181
重量 / Weight Kg	22,15	29,25	38,65	50,45	80,65	120,2

DN	50	65	80	100	125	150
04.1 + AP SE 弹簧复位 - SPRING RETURN	GTXN110	GTXN110	GTXN127	GTXN160	GTXN210	GTXN210
L	221	221	298	374	464	464
H	300	311	366	415	507	526
W	120	120	137	172	224	224
重量 / Weight Kg	26,1	32,1	44,5	62,8	107,4	141,4

04.1 + AP

气动执行器

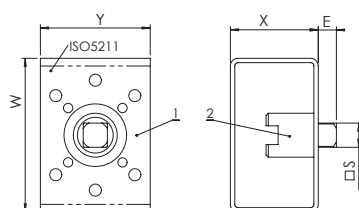
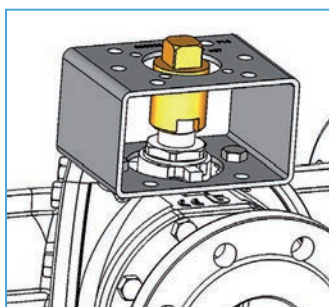
Pneumatic actuator



DN	50	65-80-100	125-150
X	50	50	50
L	260	350	475

隔热延长杆

Lever with extension for thermal insulation



DN	50 - 65	80-100	125-150
ISO 5211	F07/F10	F07/F10	F12
SxE	17x16	22 x 21	27x26
W	120	140	160
X	60	80	80
Y	95	100	120

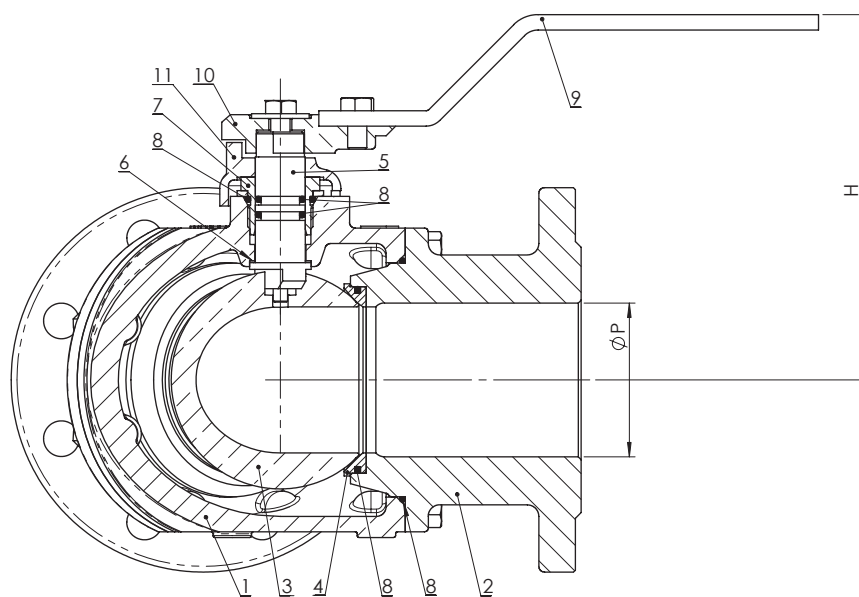
- 1) 支架 - Bracket
- 2) 接头 - Joint

注意：下订单时请说明管路连通位置

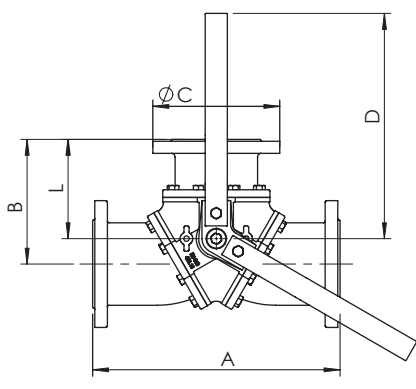
KISO

ISO 5211标准法兰连接装置

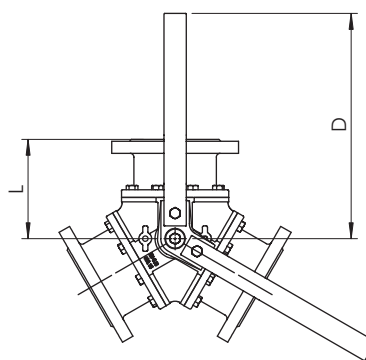
Kit ISO 5211 flange for mounting of actuators



T4.1



Y4.1



尺寸 (mm) / Dimensions (mm)

DN		50	65	80	100	125	150
P		50	63	76	95	120	145
A	非标准 - Not standardized	320	350	390	430	490	570
B		160	175	195	215	245	285
C	EN 1092/2 PN16	165	185	200	220	250	285
D		260	350	350	350	475	475
L		130	140	155	165	185	212
H		167	173	187	198	242	261

重量 (kg) / Weight (kg)

kg (T)		20	26	34,5	44	70	104
kg (Y)		19	24,5	32,5	40	66	98

扭矩 (Nm) / Operating torque (Nm)

Nm		20	40	70	100	180	250
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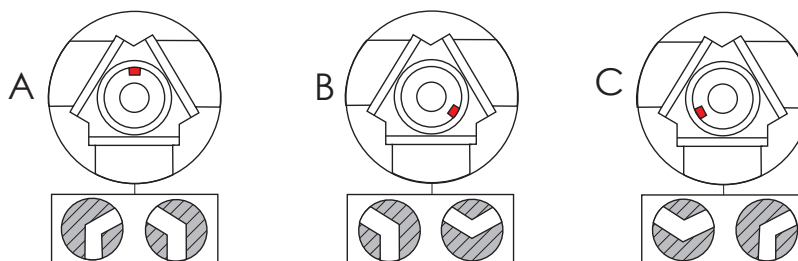
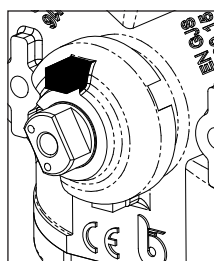
注意：请将扭矩数值乘以1.5倍作为选择驱动装置的依据。

N.B.: In order to choose the right actuator, we recommend multiplying the operating torque figure by a safety coefficient, K=1.5

材质 - Materials

	组件 - Component	材质 - Material
1	阀体 - Body	球铁 - Ductile iron EN GJS 400-15
2	法兰 - Flange	铸铁 - Cast iron EN GJL 250
3	球阀 - Ball	镀铬黄铜 - Brass chrome plated CuZn40Pb2 / AISI304
4	球座 - Ball seat	加强型PTFE - Carbon reinforced PTFE
5	阀杆 - Stem	黄铜 - Brass CuZn40Pb2 / AISI304
6	滑动垫圈 - Sliding washer	PTFE
7	圆环 - Ring	黄铜 - Brass CuZn40Pb2 / AISI304 4
8	O型圈 - O-ring	NBR / FKM (Viton®)
9	手柄 - Lever	环氧树脂涂层碳钢 - Carbon steel, epoxy coated
10	手柄毂 - Lever hub	镀锌黄铜 - Brass CuZn40Pb2 galvanized
11	旋转止动装置止动片 - Lever stop RO-STOP	镀锌黄铜 - Brass CuZn40Pb2 galvanized
12	螺栓 - Bolts	镀锌碳钢 - Galvanized carbon steel

旋转止动装置



旋转止动装置简化了操作。因为即使在阀门安装后仍可以选择连接的端口。如果要拆卸执行机构，则阀杆顶部的标记指示球座（连接的端口）的位置

图中所示红色方块的位置为旋转止动装置止动片的位置。

旋转止动装置指示了通道间可连接的情况，如图A, B, C所示。

注意：下订单时请说明管路连通位置（位置A、B或C）。

The RO-STOP device ensures extremely easy handling, as it allows the choice of the connected port even after the installation of the valve. In case of actuation dismantling, markings on the stem top show the position of the ball (connected ports)

The red square in the drawing indicates the position of the lever stop of the RO-STOP device.

It indicates the allowed connection between the passage ways in that position, as shown in pictures A, B and C.

N.B. When ordering, specify the required position of the connection (position A, B or C).

三通法兰式铸铁球阀 / Three-way diverter flanged cast iron ball valve

最大工作压力 / Maximum pressure

介质* Fluids*	安装位置 Mounting	
	法兰中间 BETWEEN FLANGES	管路末端 END OF LINE
危险性气体G1 Hazardous gases G1	NO	NO
危险性液体L1 Hazardous liquids L1	16 bar	10 bar
非危险性气体G2 Non hazardous gases G2	16 bar	10 bar
非危险性液体G2 Non hazardous liquids G2	16 bar	10 bar
水** Water**	16 bar	16 bar

* 危险性气体、液体的认证以 2014/68/EU e 1272/2008 (CLP) 标准为准

** 是指供水和排水系统的水 (PED 2014/68/EU 1.1.2b)

* hazardous gas, liquids acc. 2014/68/EU e 1272/2008 (CLP)

** For supply, distribution and discharge of water (PED 2014/68/EU 1.1.2b)

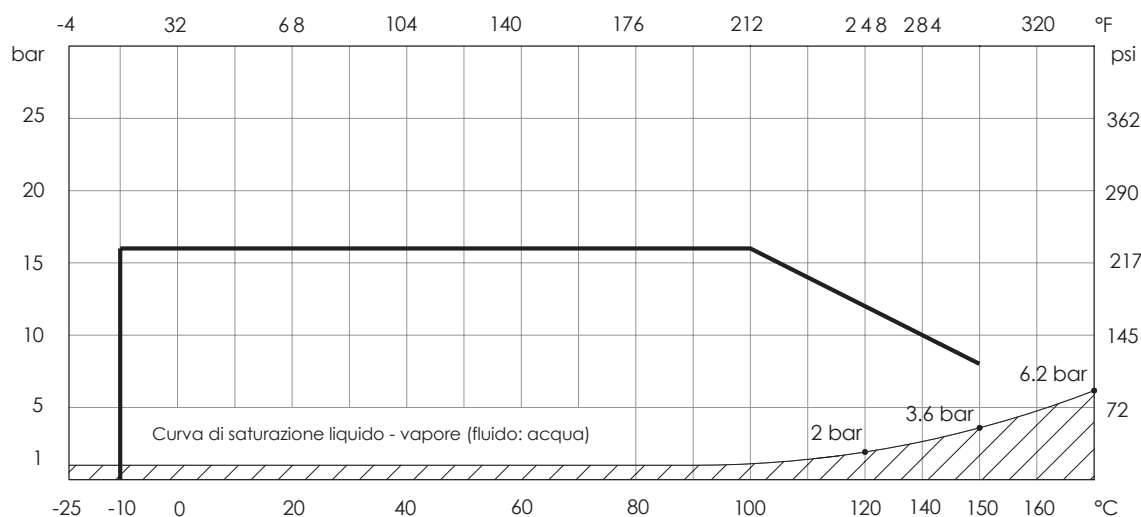
工作温度 / Temperature (°C)

温度 Temperature	最低 min	最高 Max			
		长期 - continuous		短时 - peak	
		L1	G2,L2	L1	G2,L2
NBR	-10	100	100	-	110
FKM (Viton®)	-10	100	150	-	170

注意：温度上升时最大工作压力会有所下降；详情请参考压力温度曲线G1, L1, G2, L2；请参考左侧表格。

NB: the maximum working pressure decreases while the temperature increases; please refer to "pressure/temperature" chart G1, L1, G2, L2; see chart to side

压力温度曲线 - Pressure/temperature chart

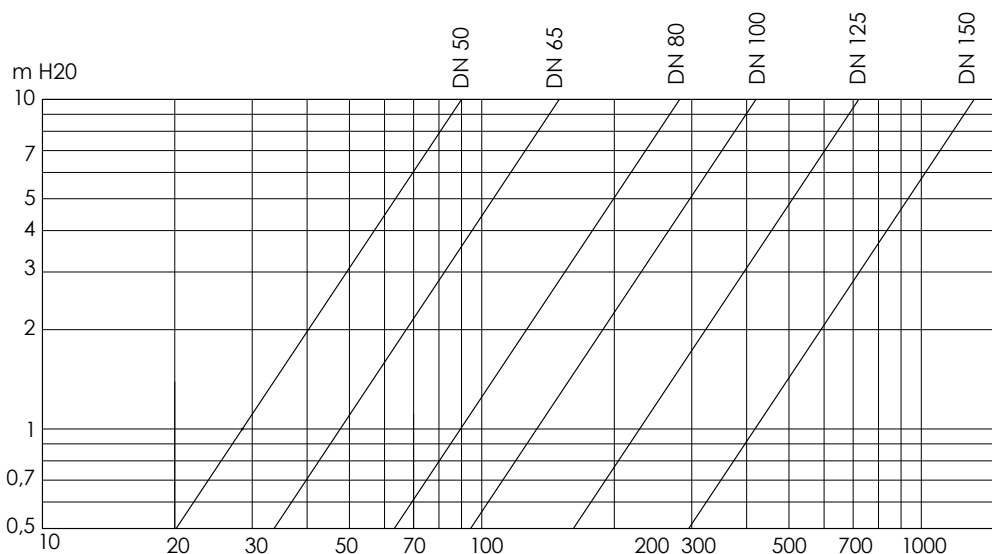


不适用于蒸汽系统。当工作温度和压力处于饱和蒸汽压曲线（阴影区域）下方时，请勿使用该阀门。

RANGE NOT SUITABLE FOR STEAM. DO NOT use when temperature and pressure are below the liquid-steam saturation line (hatched area)



水头损失 介质：水 (1m H₂O = 0,098bar) / Head loss Fluid: water (1m H₂O = 0,098bar)



Kv - DN 表 / Kv - DN chart

DN	50	65	80	100	125	150
Kv	90	150	282	420	720	1'320



04.1系列说明及建议

储存

- 请保存在密闭干燥的环境中。
- 存储时阀门应处于全开状态以防止阀座损坏。

维护

- 橡胶O型圈建议每隔24个月更换一次，PTFE阀座每隔48个月更换一次。更换时间间隔长短视阀门使用情况而定。
- 定期清洁阀门表面，防止尘土堆积。

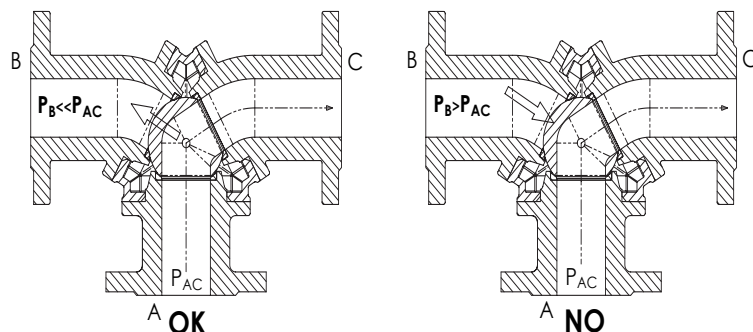
建议

阀门进行任何维修或拆卸前，请确保：管路、阀门和流体已冷却；压力已卸去；管路及管道中的有毒、易燃、有腐蚀性的流体已排净。

50°C以上及0°C以下的流体可能会对人体造成伤害。

正确使用警告

04系列三通球阀是带浮球的换向阀，当阀门工作时，三个方向均暂时连通，然后流量开关逐渐从一个位置换到另一个位置，这种特点意味着正确使用时，压力是使球体压紧阀座，而不是压力来自关闭管路的另一侧（如图1）。这种情况下可能发生泄漏 注意：该阀门为单向阀，请按照阀体上标识的介质流动方向安装。并引起球座的损坏（如图2）。



安装

- 小心装卸。
- 阀门安装时需保证其处于全开或全闭状态。
- 将阀门放置在管路法兰之间，并在管路和阀门法兰间放置密封垫圈。检查密封垫圈的位置是否正确。
- 不能用螺栓将法兰硬拉过来。最后需将螺栓交叉拧紧。
- 不能在阀门与法兰连接后，再去将法兰管路进行焊接。
- 水锤作用会导致阀门损坏和破裂。倾斜、扭转、阀门管路中心线与管路未对准会使阀门受力。建议安装弹性接头等来尽量减少管路的震荡。
- 当管路温度因为供热由室温向高温过渡时，球与体之间（开启时）或球孔内（全闭时）的流体有膨胀损坏球及阀座的趋势。所以建议阀门的打开和关闭都应处于中间温度时（如40°C、60°C等）。带有放泄塞的特殊阀门可更好应对高温状况。
- 低于0°C时，球与体之间的流体可能结冻，造成无法逆转的损坏。如阀门暴露在这样的条件下，建议将阀门隔离处理。

Instruction and Recommendations for serie 04.1

STORING

- Keep in a dry and closed place.
- While stored, the valve must be fully open to avoid damages to the seats.

MAINTENANCE

- It is recommended that the rubber O-rings be replaced at least every 24 months, and the PTFE seats, at least every 48 months. The period of replacement depends on the use of the valve.
- Clean the surface of the valve periodically, in order to prevent accumulation of dust.

RECOMMENDATIONS

Before carrying out maintenance or dismantling the valve, be sure that the pipes, valves and liquids have cooled down, that the pressure has decreased and that the lines and pipes have been drained in case of toxic, corrosive, inflammable and caustic liquids.

Temperatures above 50°C and below 0°C might cause damage to people.

WARNING ABOUT PROPER USE

The three-way ball valve Series 04 is a TRANS-FLOW valve with floating ball; when moving, all three ports of the valve are temporarily open, and as a result, the flow switches from one port to the other progressively. These features mean that, for proper use, the pressure acts against the seat of the closed port, and NOT FROM THE CLOSED PORT SIDE (see 1). In this case, leakage and ball seat damage may occur. The drawing shows an example of position.

INSTALLATION

- Handle with care.
- The valve must be installed in the ON or OFF position.
- Place the valve between the flanges of the pipe and install the seal between the pipe and valve flanges. Check the correct position of the seals.
- Do not use bolts of the counter flanges to bring the piping close to the valve. The bolts must be cross tightened.
- Do not weld the flanges to the piping after installing the valve.
- Water hammers might cause damage and ruptures. Inclinations, torsions and misalignments of the piping may subject the installed valve to excessive stresses. It is recommended that elastic joints be used in order to reduce such effects as much as possible.
- While heating from room temperature to the high operating temperature, the liquid located between the body and ball (valve open), or located in the bore of the ball (valve closed) tends to expand and may damage the ball and the seats; it is recommended that the valve be opened and closed at intermediate temperatures during the heating process (for example at 40°C /60°C/...) Special valves with drain plugs are available for this application. At sub-zero temperatures, the liquid between the body and ball may freeze, causing irreparable damage. If the valve is exposed to such conditions, insulation of the valve is recommended.

三通法兰式铸铁球阀 / Three-way diverter flanged cast iron ball valve

- 建议定期开关阀门，以防阀球及阀座表面杂质堆积，特别是流体中存在较多钙离子时。

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。

- It is recommended that the ball valves be operated periodically, to prevent the build-up of materials on the ball and on the seats.

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.