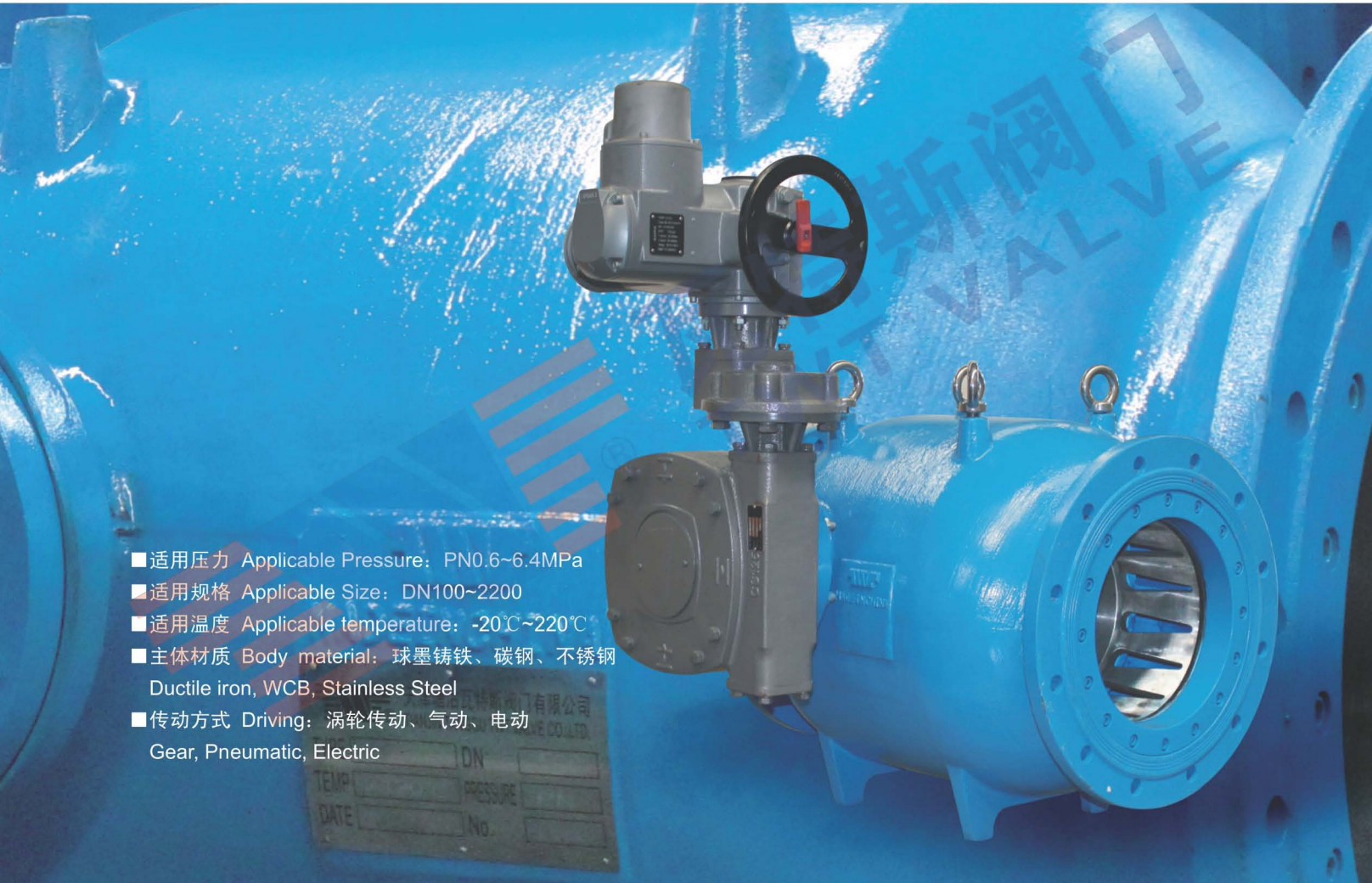




2013 EDITION



EV系列调节阀 EV Series Regulating Valve



- 适用压力 Applicable Pressure: PN0.6~6.4MPa
- 适用规格 Applicable Size: DN100~2200
- 适用温度 Applicable temperature: -20℃~220℃
- 主体材质 Body material: 球墨铸铁、碳钢、不锈钢
Ductile iron, WCB, Stainless Steel
- 传动方式 Driving: 涡轮传动、气动、电动
Gear, Pneumatic, Electric

A leader

In Valve Technology

天津塘沽瓦特斯阀门有限公司
TIANJIN TANGGU TWT VALVE CO., LTD.

www.twtvalve.com

EV2000系列针形活塞式轴流调节阀产品特性

EV2000 series regulating valve, the characteristics of the product

■更合理的结构设计

阀体主要由阀体、活塞、曲柄、连杆、消能装置、阀杆、轴套、阀座、密封圈等主要部件组成。金属与弹性材料的双重密封，采用轴对称形设计，使得阀腔内的水流断面面积始终为环状，在出口处向轴心收缩，避免节流，消除气蚀和震动对管网和管路的损伤。理想的几何设计，流体在流线形阀体内部被很好的引导。

■更有效的高压消能

即使在高压差的情况下，该阀也能有效消除高压差，将高压减为低压，而且不会产生震动和气蚀现象。

■更优质的部件材料

调流阀的关键部位如阀座、挡块、连杆等部件均采用特殊的不锈钢材料制作，硬度为普通不锈钢的三倍，材料耐磨、耐气蚀，质量更优，使用寿命更长。

■更可靠的密封形式

密封为金属对橡胶，抗流体冲蚀力强。在密封时依靠橡胶的弹性特点使密封更可靠。

■更可靠的驱动方式

采用机电一体化电机驱动，具有良好的防水性能，动作灵活、安全可靠，通过传感器对上、下游水位（水压）进行监测，控制系统依靠水位或水压来控制执行机构，进而控制阀门开启度，来准确的控制通过阀门的流量。根据需要可以在现场或通过远程控制系统对设备进行控制。

■更小的流体阻力

该阀先进的结构设计，合理的流道分布，使整个阀门的压力损失降至最低，有利于节约整个管网的动力消耗。

■更可靠的工作效率

合理设计的流道和密封型式，使该阀可以适用于含有泥沙等小颗粒杂质的流体，不会因杂物造成关闭不严而导致泄漏或控制失效。

■更完善地消除气蚀

从入口到缩流断面环状流道面积连续递减导致流速渐升，而不产生气蚀，不产生气蚀损坏的能量转换。

■更完美的调节特性

无论活塞处于任何位置，缩流断面均为环形，从而确保完美的线性调节特性。

■ Structure design is more reasonable.

The valve is mainly composed of a valve body, a piston, crank, connecting rod, energy dissipation device, main components, valve stem, valve seat, sealing ring and sleeve. Double sealing metal and elastic material, by the use of axisymmetric shape design, so that the valve cavity flow area is always ring, shrinkage, avoid the throttle to the axis at the exit, the elimination of cavitation and vibration of pipe network and pipeline damage. Geometric design of ideal fluid, the interior is very good guidance in line.

■ To eliminate the pressure more effectively

Even in the case of high-pressure differential valve, which can effectively eliminate pressure differential, high pressure to low pressure, vibration and cavitation phenomenon does not produce and.

■ More high-quality parts materials

The key parts such as valve, regulating valve block, connecting rod and other components are made of special stainless steel materials, hardness is three times that of ordinary stainless steel, the material wear, cavitation resistance, better quality, longer service life.

■ The sealing is more reliable

Sealing of metal on rubber, resistance to fluid erosion force. Relying on the elastic characteristics of rubber in the sealing, the sealing more reliable.

■ Driving method is more reliable

The use of mechanical and electrical integration of motor drive, has a good waterproof performance, flexible action, safety and reliability, through the sensor on the upstream, downstream water level (pressure) monitoring, control systems rely on water or water pressure to control the actuator, then control the open degree of valve, control valve flow through accurate. According to the needs in the field or through remote control system to control the device.

■ Fluid resistance is smaller

The valve advanced structural design, reasonable distribution of flow, the pressure loss of the valve to a minimum, power to save the whole network consumption.

■ More reliable work efficiency

Channel design and type of seal, the valve fluid can be applied to sediment particles containing impurities, not caused by sundries is not tightly closed and lead to leakage or control failure.

■ Better eliminate cavitation

From the entrance to the vena Contracta annular flow area leads to flow continuously decreasing gradually rising, without cavitation, cavitation damage does not produce energy conversion.

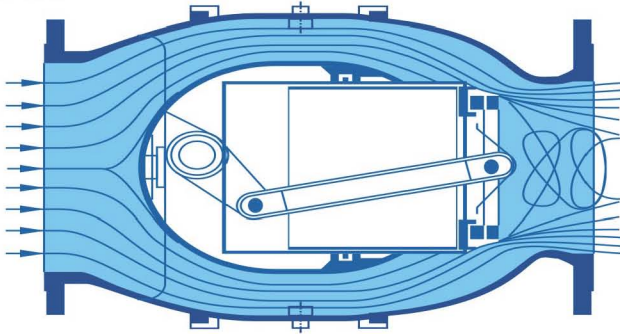
■ A more perfect regulation characteristics

Whether the piston is at any position, the reduced flow cross section are circular, so as to ensure the perfect linear regulation characteristics.

EV2000系列针形活塞式轴流调节阀——消除气蚀

EV2000 series regulating valve-- Eliminate Cavitation

■ 扇叶圈式 Fan Coil Type

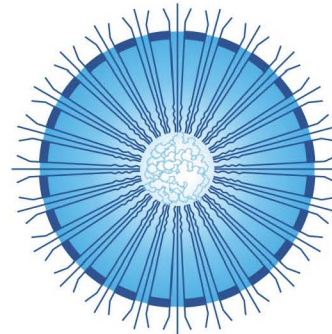
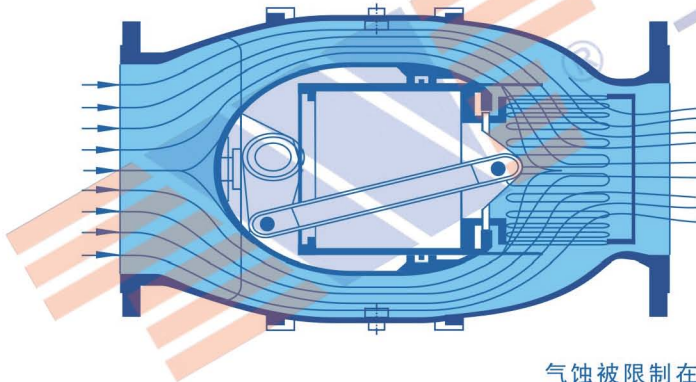


气蚀被限制在管道中央
Cavitation is limited in the center of the pipe

扇叶圈是由均匀分布的导流叶片，将密封圈上游介质流均分为许多股小流，并引导其做螺旋运动。阀体及邻近管道的周边介质流被迫改变流向，这样，气蚀形成的气泡被限制在管道中央，而且完全被水包围，即使这些气泡溃灭，由于它们局限于管道中央的水流内而远离管道和阀门壁面，故不会产生任何气蚀破坏。

Fan coil is composed of guide vanes are uniformly distributed, the sealing ring upstream medium flow into many small streams, and guide its spiral movement. The surrounding medium body and adjacent pipeline flow was forced to change direction, so the formation of cavitation, bubbles are restricted in the center of the tube, and completely surrounded by water, even if the bubble collapse, because they are confined to the central water pipeline and away from the pipe and valve wall, so it won't produce any cavitation damage.

■ 鼠笼式（用于大压差工况） Cage Type (For High Differential Pressure Condition)



气蚀被限制在管道中央
Cavitation is limited in the center of the pipe

鼠笼是活塞的带孔延伸，开槽根据操作工况而定，介质（水）通过鼠笼外周节流成为多股高速流体，沿径向鼠笼圆周中心喷射而互相撞击，由引将气蚀限定在鼠笼中心而此外没有任何材料被损坏，动能（速度径向）在此转为压力能（轴向流）。在此处气泡产生和破裂均处于介质流中，不会对阀门零件造成破坏。

The cage is extended with the slotted hole of the piston, depending on the operating conditions, the medium (water) through the cage of peripheral section flow into several high-speed fluid, radial cage circumference of the center jet crash into each other, led by the cavitation is defined in the cage center and also does not have any material is damaged, the kinetic energy (velocity radial) this into pressure energy (axial). In this bubble and rupture are in the medium flow, not to damage the valve parts.

■ 多种节流形式 Multiple throttle form

扇叶圈式（标准设计）
鼠笼式（标准设计）

特殊设计（可定制）

多孔式圆筒
锥形调节式
多级鼠笼
节流环式

Fan coil type (standard)
The squirrel cage type (standard)

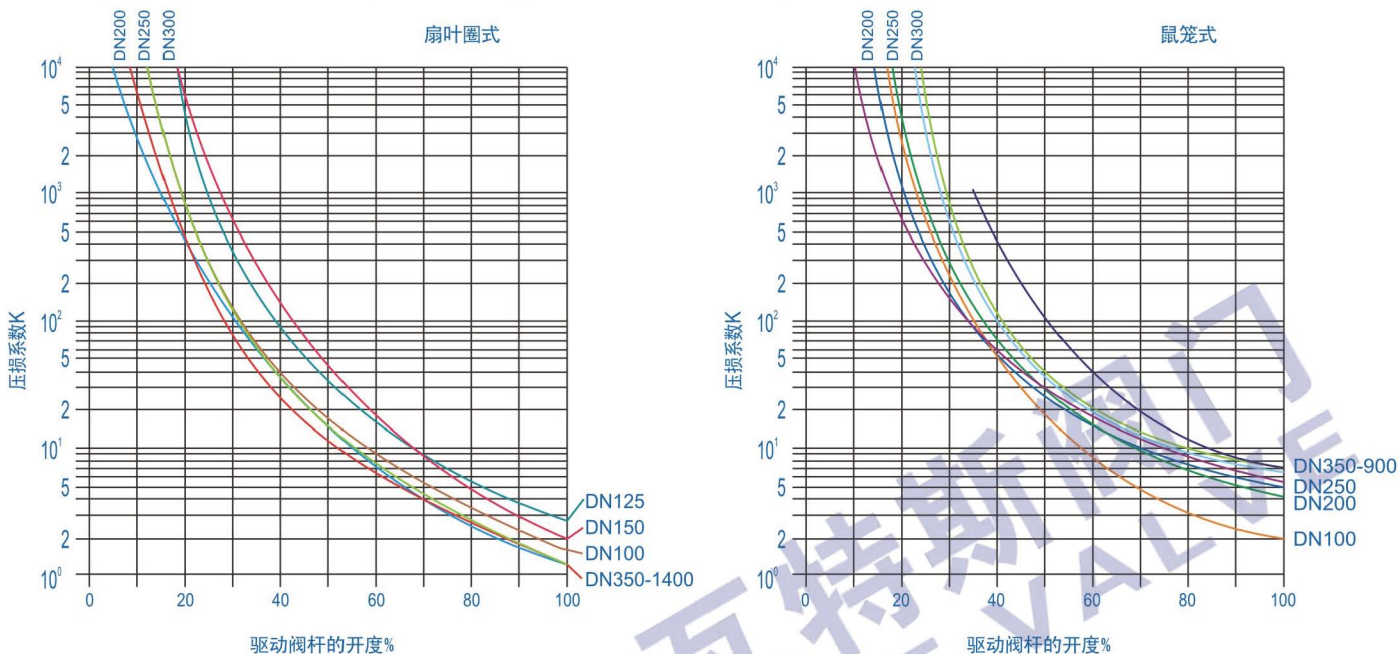
Special design (customizable)

The porous cylinder
Conical adjusting type
Multi stage cage
Throttle ring

EV2000系列针形活塞式轴流调节阀——流量系数

EV2000 series regulating valve -- Flow coefficient

■ 在线压损系数K，流向按阀体所铸箭头方向。
 Online pressure loss coefficient K, flow according to the body of the casting and the direction of the arrow.



注意:

图表中数据仅适用于无气蚀的状况，如有气蚀，应以TWT工程师提供数据为准。

图表得自于流量试验，试验测量值的误差范围符合VDI/VDE2173的要求。

Dn1000以上的鼠笼式阀门，以及多级鼠笼式多喷孔阀门的数据，将根据要求另行提供。

Be careful:

The data in the chart is only suitable for the condition of no cavitation, such as cavitation, should be based on TWT engineer to provide data for.

The chart from the flow test, the error range measurement value to meet the requirements of VDI/VDE2173.

Cage type valve above Dn1000, and the data of multi-stage cage multiple orifice valve, according to the requirements shall be separately provided.

DN	全开位置的压损系数K Pressure loss coefficient K open position		Kvs值 (m ³ /h)			
	扇叶圈式 Fan coil type	鼠笼式 Squirrel-cage	一体式 Integral		分体式 Split	
			扇叶圈式 Fan coil type	鼠笼式 Squirrel-cage	扇叶圈式 Fan coil type	鼠笼式 Squirrel-cage
100	1.61	2.05	320	280		
125	3.06	6.61	350	240		
150	2.71	7.19	540	330		
200	2.02	6.27	1100	640		
250	2.15	9.23	1650	810		
300	2.24	6.99	2450	1350		
350	1.58	6.52				1900
400	1.54	6.54				2480
450	1.55	6.55			3960	3140
500	1.56	6.56			5170	3880
600	1.57	6.57			6540	5590
700	1.58	6.58			8080	7610
800	1.44	6.59			11600	9940
900	1.45	6.59			15800	12590
1000	1.39				21400	
1200	1.11				27100	
1400	1.12				34700	
1600	1.08				54300	
1800	1.09				74000	

■ TWT针阀做为特殊阀的特殊应用
 Application of TWT as a special valve needle valve

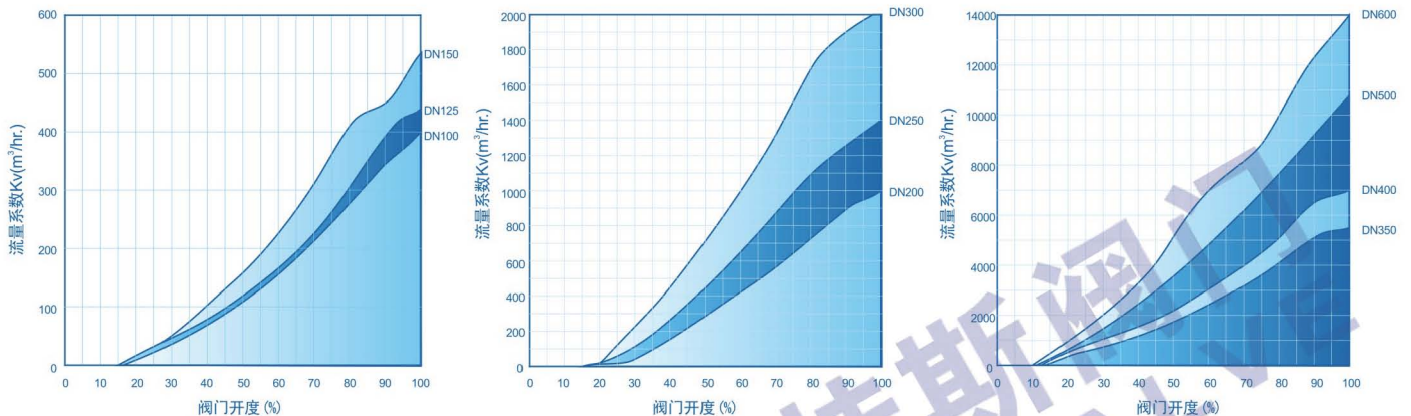
- 天然气管道中的压力控制阀
- 在高工作压力和流速条件下的切断阀
- 长距离输水管线的防水锤安全阀
- 水泵前止回阀（活塞式静音止回阀）
- 压力泄放阀，用以消除管内压力剧升（自力式，不需外部能量）
- 爆管安全阀
- 先导控制减压阀（自力式，不需外部能量）
- In the natural gas pipeline pressure control valve
- Cut off valve in the high working pressure and flow rate conditions.
- Water hammer safety valve in long distance transmission pipeline
- Before pump check valve (piston type silencing check valve)
- Pressure relief valve, in order to eliminate the pipe pressure play rise (self, no external energy)
- Tube explosion safety valve
- Pilot control valve (self, without external energy)

EV2000系列针形活塞式轴流调节阀——空气调节用针阀

EV2000 series regulating valve -- Needle valve for air conditioning

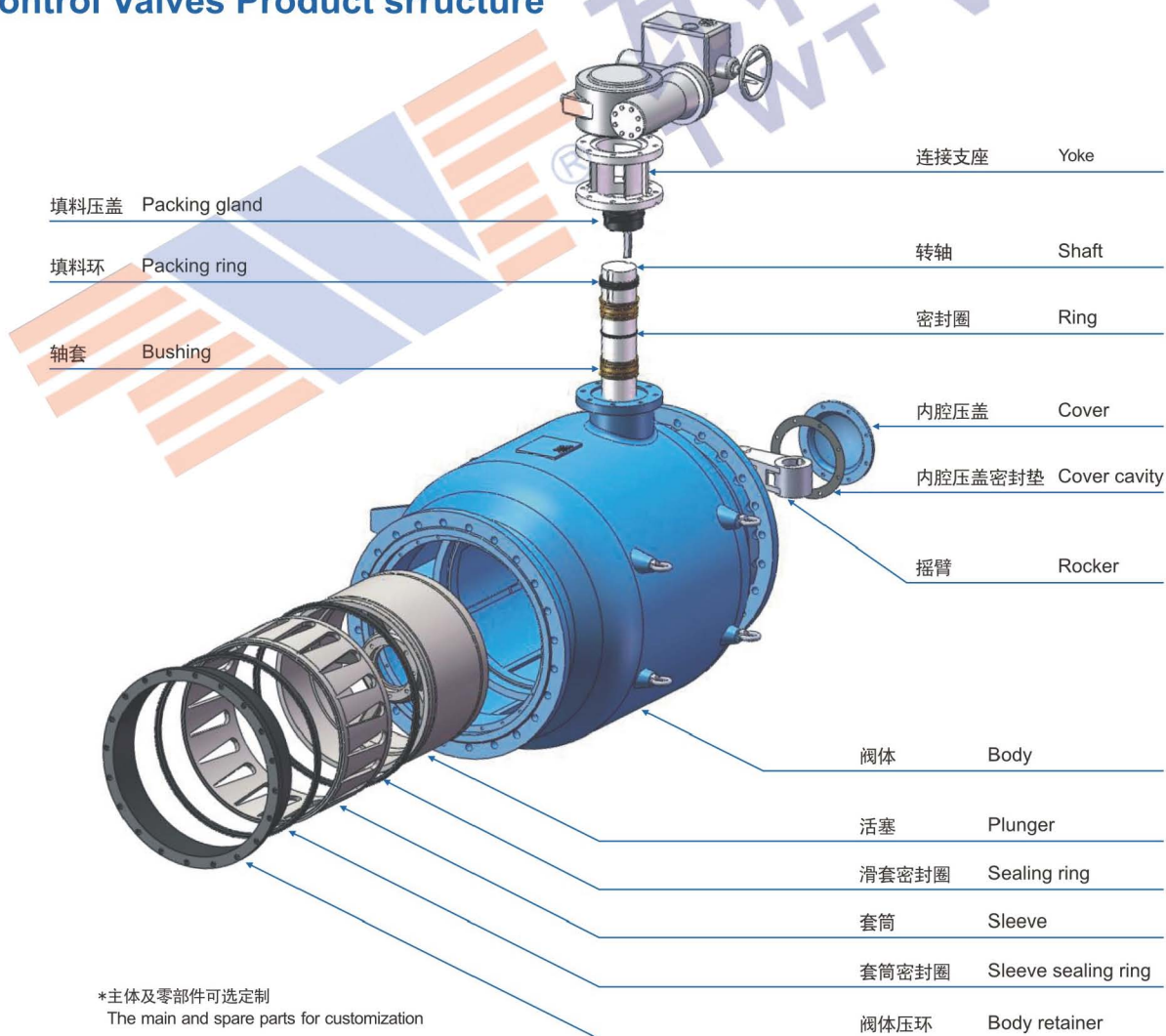
TWT还有专门用于压缩空气的针阀，出口形式为阀座圈；常用于对空气流量调节有极高要求的污水厂活性污泥池曝气管道，能按线性关系精确地调节空气的流量，保证污水处理的效果。该阀门也适用于煤气、天然气等其他气体介质。

TWT there are special needle valve for compressed air, export form for the valve seat; commonly used to regulate air flow with sewage sludge tank aeration pipe demand high, according to the linear relationship between the precise adjustment of air flow, to ensure the efficiency of sewage treatment. The valve is suitable for gas, natural gas and other gas medium.

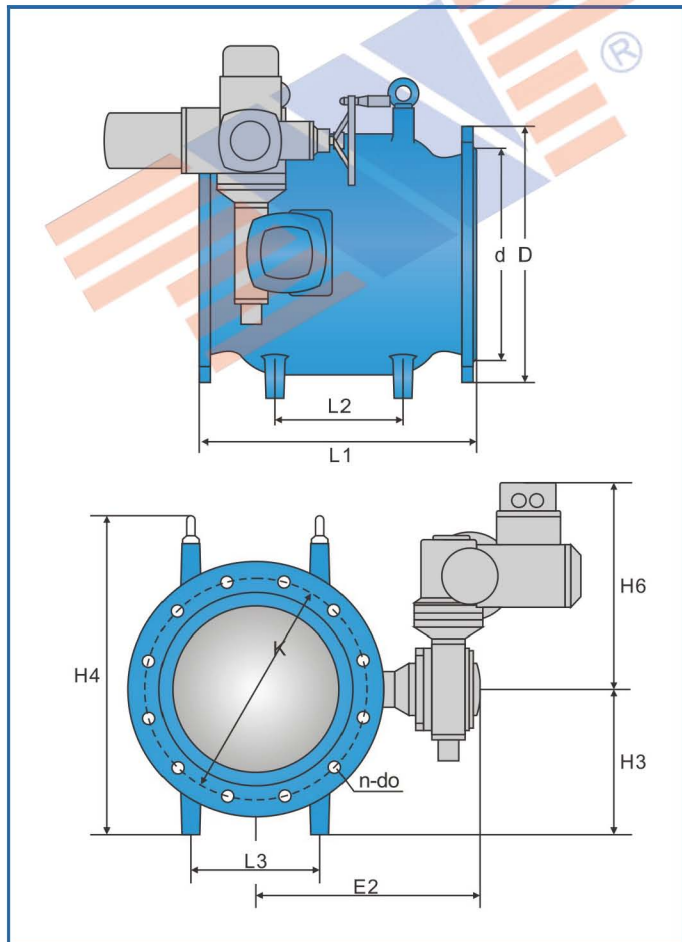


EV2000系列针形活塞式轴流调节阀结构说明

Control Valves Product structure



EV2000系列针形活塞式轴流调节阀技术参数
EV2000 series regulating valve technical parameters

DIMENSIONS


部件	Component	材质 Material
连接支座	Yoke	Qt450
填料压盖	Packing gland	Qt450
填料环	Packing ring	润滑青铜
转轴	Shaft	2Cr13
轴套	Brushing	润滑青铜
密封圈	Ring	丁腈橡胶NBR
内腔压盖	Cover	Qt450
内腔压盖密封垫	Cover cavity	丁腈橡胶NBR
摇臂	Rocker	304
阀体	Body	QT450
活塞	Plunger	304
滑套密封圈	Sealing ring	丁腈橡胶NBR
套筒	Sleeve	304
套筒密封圈	Sleeve sealing ring	丁腈橡胶NBR
阀体压环	Body retainer	304

注：所有部件可根据实际工况选用不同材质。
 Note: All parts can choose different material, according to the actual condition of selection.

1. 侧法兰连接符合GB/T17241.6-2008标准。

1. Connection between side flanges is in conformity with standard GB/T17241.6-2008.

■TWT针阀——优秀的调节阀
TWT valve-- Good regulating valve

1. 实践证明的可靠的设计
 2. 可选择大范围的尺寸和压力等级
 3. 多种出口形式
 4. 多种材料组合以适用不同工况
 5. 坚固耐用的结构设计
 6. 适合多种不同用途的型号
 7. 流线形的阀体及轴对称流道
 8. 可装配通用的操作齿轮和执行机构
 9. 低水头损失
- 1 Proved by the practice of design
 - 2 Can choose a wide range of sizes and pressure classes
 - 3 Kinds of form
 - 4 Kinds of material combinations to be suitable for different conditions
 - 5 Strong structure design and durable
 - 6 Suitable for a variety of different uses of the model
 - 7 The valve body and axisymmetric flow streamline
 - 8 Assembly operation gear and universal actuator
 - 9 Low head loss

EV2000系列针形活塞式轴流调节阀外型尺寸

EV2000 series regulating valve overall dimension

DN	PN10 · 16							PN10				PN16			
	L1	L2	L3	E2	H3	H4	H6	D	d	K	n-do	D	d	K	n-do
150	350	135	145	328	155	355	373	285	211	240	8-Φ23	285	211	240	8-Φ23
200	400	135	145	328	190	425	373	340	266	295	8-Φ23	340	266	295	12-Φ23
250	450	175	175	403	230	513	373	395	319	350	12-Φ23	405	319	355	12-Φ28
300	550	235	235	403	260	573	373	445	370	400	12-Φ23	460	370	410	12-Φ28
400	600	305	305	518	335	741	380	565	480	515	16-Φ28	580	480	525	16-Φ31
450	650	355	355	518	345	761	380	615	530	565	20-Φ28	640	548	585	20-Φ31
500	750	405	405	629	385	841	509	670	582	620	20-Φ28	715	609	650	20-Φ34
600	900	505	505	654	460	1010	590	780	682	725	20-Φ31	840	720	770	20-Φ37
700	1050	565	565	800	520	1150	509	895	794	840	24-Φ31	910	794	840	24-Φ37
800	1400	605	605	797	600	1309	509	1015	901	950	24-Φ34	1025	901	950	24-Φ40
900	1500	705	705	880	650	1428	509	1115	1001	1050	28-Φ34	1125	1001	1050	28-Φ40
1000	1600	755	755	1016	720	1568	630	1230	1112	1160	28-Φ37	1255	1112	1170	28-Φ43
1200	1800	810	810	1136	850	1828	720	1455	1328	1380	32-Φ40	1485	1328	1390	32-Φ49
1600	2500	1210	1210	1609	1200	2608	945	1915	1750	1820	40-Φ49	1930	1750	1820	40-Φ56
1800	2700	1510	1510	1998	1380	3058	1178	2115	1950	2020	44-Φ49	2130	1950	2020	44-Φ56
2000	3000	1610	1610	2210	1540	3410	1178	2325	2150	2230	48-Φ49	2345	2150	2230	48-Φ62

DN	PN25 · 40							PN25				PN40			
	L1	L2	L3	E2	H3	H4	H6	D	d	K	n-do	D	d	K	n-do
150	350	135	145	328	155	355	373	300	211	250	8-Φ28	300	211	250	8-Φ28
200	400	135	145	328	190	425	373	360	274	310	12-Φ28	375	281	320	12-Φ31
250	450	175	175	403	230	513	373	425	330	370	12-Φ31	450	345	385	12-Φ34
300	550	235	235	403	260	573	373	485	389	430	16-Φ31	515	409	450	16-Φ34
400	600	305	305	518	335	741	380	620	503	550	16-Φ37	660	535	585	16-Φ40
450	650	355	355	518	345	761	380	670	548	600	20-Φ37	685	560	610	20-Φ40
500	750	405	405	629	385	841	509	730	609	660	20-Φ37	755	615	670	20-Φ43
600	900	505	505	654	460	1010	509	845	720	770	20-Φ40	890	735	795	20-Φ49
700	1050	565	565	700	520	1150	509	960	820	875	24-Φ43				
800	1400	605	605	797	600	1309	509	1085	928	990	24-Φ49				
900	1500	705	705	880	650	1428	509	1185	1028	1090	28-Φ49				
1000	1600	755	755	1016	720	1568	630	1320	1140	1210	28-Φ56				
1200	1800	810	810	1136	850	1828	720	1530	1350	1420	32-Φ56				
1600	2500	1210	1210	1609	1200	2608	945	1975	1780	1860	40-Φ62				

注：欲订购标中未列出的产品可与本公司销售部门联系。
Note: For sizes and classes not shown, please contact our Sales Department.

EV3000系列套筒阀产品特性

EV3000 series sleeve valve, the characteristics of the product

■更可靠的设计

由于新型套筒阀是平衡式结构，与非平衡式的直通单座阀比较，所配置的执行机构可以比较小，但却可以克服比直通单座调节阀高的介质压差。最大阀座直径时，允许工作压差是相同配置直通单座调节阀的2倍左右，也可配置薄膜式执行机构和防爆电动执行机构。套筒上装有外置阀座，可提供零泄漏关闭。

■更长久的使用寿命

阀杆与填料之间的摩擦力比较小，减小了阀门动作的阻力，且阀杆和填料的磨损也小，使用寿命增加。另外，较小直径的阀杆在中高温时热胀冷缩变化量小，避免了在中高温时阀杆与填料之间摩擦力增大或互相抱卡塞住的情况发生。

■更平稳的流体动力

对称的锥形喷孔排列，平衡了流体动力，并消除振动，同时水水流过喷孔并消能而不接触密封座。

■更紧凑的结构

采用平衡式结构，阀前后介质压差对阀瓣产生的不平衡力非常小，相同工况下同类型阀门所需要的执行机构推力小，其阀杆直径比单座非平衡阀设计或选择更小。两个连接法兰端面之间的尺寸小，需要的安装空间较小、需要的遮蔽结构的尺寸较小。

■更平稳的操作

没有障碍的流道，使操作更平稳，消除了振动。

■更精确的控制

线性的流量特性，允许在阀门的整个行程上进行精确的流量控制。

■更方便的维护

采用自对中无螺纹卡入式阀座结构和模块化设计，阀门拆装方便，并能达到IV级以上泄漏量标准。采用较大的维修孔，使阀门处于管线中就可进行在线维护。

■更严密的密封

在150℃以下时，金属硬密封可以达到IV级以上泄漏量标准，聚四氟乙烯软密封可以达到VI级泄漏量标准。使用寿命高于直通单座调节阀。

■A more reliable design

Because the sleeve valve is a balance structure, compare through single-seat valve and unbalanced, actuator configuration can be relatively small, but can be overcome through single-seat control valve higher than the medium pressure difference. The maximum diameter of the valve seat, allowable working pressure is about 2 times of the same configuration through single-seat control valve, also can be equipped with diaphragm actuator and explosion-proof electric actuator. The sleeve is provided with an external valve seat, can provide zero leakage off.

■A long use life

Friction between stem and packing is relatively small, reducing the valve action and abrasion resistance, the stem and the packing is also small, the service life is increased. In addition, the smaller diameter stem expansion in high temperature shrinkage variation is small, avoid in high temperature between the stem and the packing friction increases or holding each other card plugging happens.

■Fluid power more stable

The conical spray holes symmetrically arranged, balance the fluid dynamic, and the elimination of vibration, and water flows through the orifice and energy dissipation and does not contact the sealing seat.

■A more compact structure

The balanced structure, the valve before and after the media pressure on the valve of the unbalanced force is very small, the same type of valve actuators the same condition required small thrust, the valve stem diameter than the single-seat non-balanced valve design or select a smaller. Two connecting flange between the end faces of small size, small size of the shielding structure smaller installation space, need to.

■More stable operation

Channel unobstructed, make the operation more stable, eliminated the vibration.

■More precise control

A linear flow characteristic, allows precise flow control in the entire valve stroke.

■More convenient maintenance

Using the self for no thread clamping seat structure and modular design, the valve assembly and disassembly are convenient, and can achieve the above standard IV leakage. The repair hole is larger, so that the valve in the pipeline can be online maintenance.

■The seal is more rigorous

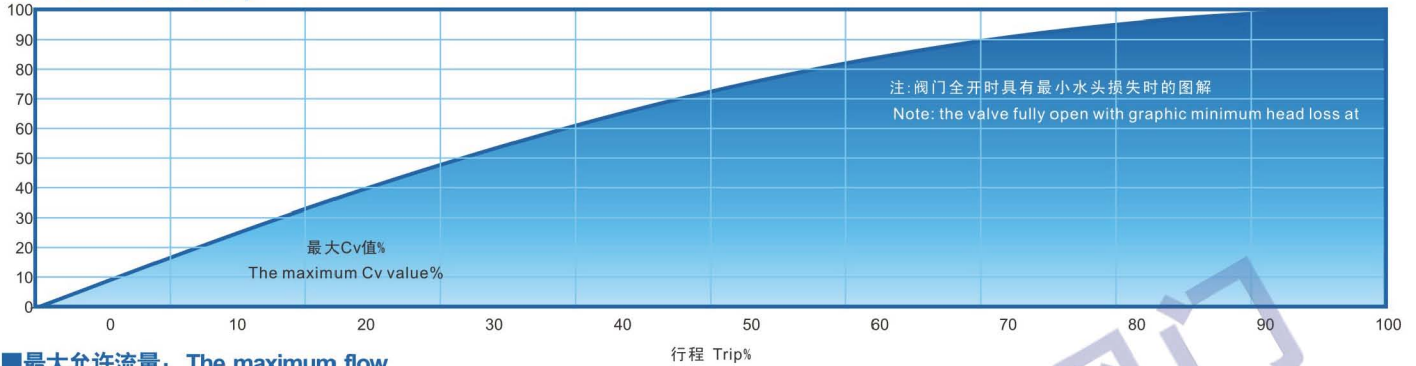
At 150℃, metal hard seal can be achieved than grade leakage standard, PTFE soft seal can reach grade VI leakage standard. The service life than through single-seat control valve.

EV3000系列套筒阀设计说明

EV3000 series sleeve valve, the characteristics of the product

■套筒阀Cv值Vs行程

Sleeve valve Cv Vs trip



■最大允许流量: The maximum flow

规格 Size		最大允许流量 The maximum flow value				
in	mm	cfs	gpm	mgd	m ³ /s	l/s
4	100	2.8	1257	1.8	0.08	79.1
6	150	6.3	2827	4.1	0.18	177.9
8	200	11.2	5027	7.2	0.32	316.3
10	250	17.5	7854	11.3	0.49	494.3
12	300	25.1	11310	16.2	0.71	711.8
14	350	34.2	15394	22.1	0.97	968.8
16	400	44.7	20106	28.9	1.27	1265.4
18	450	56.5	25447	36.5	1.60	1601.5
20	500	69.8	31416	45.1	1.98	1977.1
24	600	100.5	45239	65.0	2.85	2847.0
30	750	157.1	70686	101.5	4.45	4448.5
36	900	226.2	101788	146.2	6.41	6405.8
42	1100	308.7	138529	199.5	8.74	8739.8
48	1200	402.1	180956	259.9	11.39	11388.2
54	1400	508.9	229023	328.9	14.41	14413.2
60	1500	628.3	282744	406.1	17.79	17794.0
66	1700	760.3	342120	491.4	21.53	21530.8
72	1800	904.8	407151	584.8	25.62	25623.4

规格 Size		最大允许流量 The maximum flow value				
in	mm	cfs/ $\sqrt{\text{ft}}$	Cv=gpm/ $\sqrt{\text{psi}}$	mgd/ $\sqrt{\text{psi}}$	(m ³ /s)/ $\sqrt{\text{m}}$	(l/s)/ $\sqrt{\text{m}}$
4	100	0.44	302	0.43	0.02	23
6	150	0.99	679	0.98	0.05	51
8	200	1.77	1208	1.74	0.09	91
10	250	2.76	1887	2.72	0.14	142
12	300	3.97	2717	3.91	0.20	204
14	350	5.41	3698	5.33	0.28	277
16	400	7.06	4830	6.96	0.36	362
18	450	8.94	6113	8.80	0.46	458
20	500	11.03	7547	10.87	0.57	566
24	600	15.89	10868	15.65	0.82	815
30	750	24.83	16981	24.45	1.27	1274
36	900	35.75	24453	35.21	1.83	1834
42	1100	45.81	33268	47.90	2.50	2503
48	1200	63.56	43472	62.60	3.26	3260
54	1400	80.44	55019	79.23	4.13	4126
60	1500	99.31	67925	97.81	5.09	5094
66	1700	120.17	82189	118.35	6.16	6164
72	1800	143.01	97812	140.85	7.34	7336

注: 数据是在特定工况下所定, 请向TWT的工厂咨询。

Note: Data is defined in the particular conditions, please refer to the TWT plant.

EV3000系列套筒阀技术参数

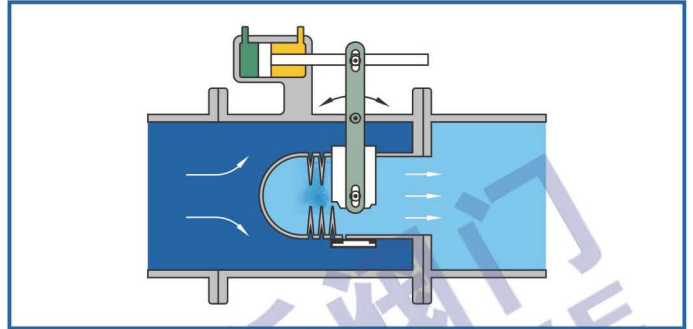
EV3000 series sleeve valve Technical Parameters



■套筒阀·气蚀控制

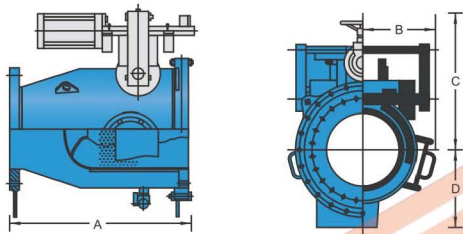
Sleeve valve, cavitation control

轴线多喷孔套筒阀用于减压、调压及控制流量。专门为消能而设计的套筒阀虽不能完全消除气蚀现象，但可以控制气蚀点，使之不能损害阀门。不锈钢套筒和创新的喷孔排列平衡了阀门的流体动力，水柱彼此冲击消能因而避免损坏阀壁。

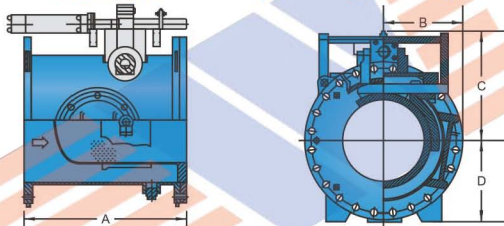


Axis multi jet sleeve valve for decompression, pressure regulating and flow control. Sleeve valve for energy dissipation design cannot completely eliminate cavitation phenomenon, but can control the cavitation, which does not damage the valve. Nozzle hole arranged stainless steel sleeve and innovation of the balance of fluid power valve, so as to avoid damage to valve wall column impact each other.

EV3100型缩径阀体 EV3100 type reducing valve

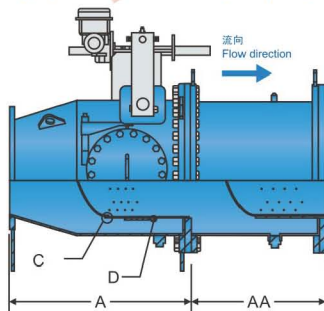


EV3200型直通阀体 EV3200 type straight through valve



EV3300型(配二级CD的套筒阀)(AA+A等于总长)

EV3300 type (sleeve valve two level CD (AA+A) is equal to the length)

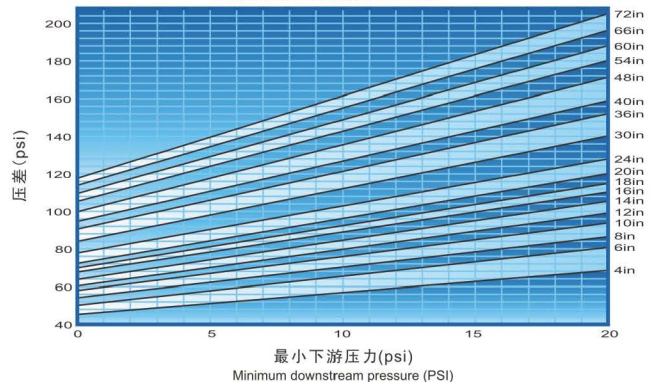


■二级CD确定步骤 Two level CD determining step

在极端条件的应用中，需要带有消能器(CD)的EV3300型。

1. 选择一个阀门口径，见套筒阀选型步骤。
2. 查表找到您的应用中最大流量时的最大压差和最小允许下游压力 / 背压的交点。若该点位于所选择的阀门口径线之下，则不需要安装CD；如果该点位于所选择的阀门口径线之上，则可能需要安装CD。
3. 如需详细分析，请您与工厂或代理商联系。

套筒阀二级CD确定图
Determination of sleeve valve two CD



In extreme conditions, with energy dissipation device (CD) type Ev3300..

1. select a valve diameter, see the sleeve valve selection steps.
2. Table 3, find the maximum pressure in your application when the difference of maximum flow and minimum allowed the downstream pressure / pressure point. If the point is selected
The caliber of the valve under the line, do not need to install the CD; if the valve diameter line the point is selected, you may need to install CD.
3. For a detailed analysis, please and contact the factory or office.

为了确定精确的气蚀常数，请使用下列的计算公式：
In order to determine the cavitation constant accurate, please use the following formula:

$$C = \frac{P_2 - P_v}{P_1 - P_2} = \frac{P_2 + 14.2}{\Delta P}$$

如果 $C \leq C_{cr}$ ，将会发生严重的气蚀
If $C \leq C_{cr}$, there will be a severe cavitation

C=气蚀常数；无量纲的
C_{cr}=0.15或更小
P₁=上游的水头；psi
P₂=下游的水头；psi
ΔP=P₁-P₂=阀门前后水头损失；psi
P_v=在海平面的水的汽化压力(-14.2psi)

C= cavitation constant; dimensionless
C_{cr}=0.15 or less
P₁= upstream of the head; PSI
P₂= downstream of the head; PSI
ΔP=P₁-P₂= before and after the valve head loss; PSI
P_v= in the sea water vapour pressure (-14.2psi)

EV3000系列套筒阀外型尺寸

EV3000 series sleeve valve Overall Dimension

EV3100型缩径阀最大尺寸 EV3100 type reducing valve maximum size	套筒直径 Size	A	B	C	D	EV3200型直通阀最大尺寸 EV3200 type straight through valve maximum size	上游管径 Size	套筒直径 Size	A	B	C	D	EV3300型二级最大尺寸 EV3300 type two level of maximum size	最小上游管径 Min upper diameter	CD套筒直径 DN of CD sleeve	CD长度 AA CD length AA
	100	254	280	406	152		350	100	229	280	406	152		150	100	102
150	381	280	457	184	350	150	305	280	457	184	200	150	152			
200	508	280	508	216	350	200	381	280	508	216	300	200	203			
250	635	280	559	248	400	250	457	280	559	248	350	250	254			
300	762	331	610	286	450	300	533	331	610	286	450	300	305			
350	889	382	660	318	500	350	635	382	660	318	500	350	356			
400	1016	433	711	349	600	400	711	433	711	349	600	400	406			
450	1143	458	762	381	660	450	787	458	762	381	660	450	547			
500	1270	484	813	413	700	500	864	484	813	413	700	500	508			
600	1524	611	914	483	900	600	1016	611	914	483	900	600	610			
750	1905	687	1067	572	1100	750	1245	687	1067	572	1100	750	762			
900	2286	865	1219	610	1400	900	1499	865	1219	610	1400	900	914			
1100	2540	941	1321	671	1500	1100	1651	941	1321	671	1500	1100	1016			
1200	3048	1042	1524	768	1700	1200	1956	1042	1524	768	1700	1200	1219			
1400	3429	1119	1676	867	1800	1400	2184	1119	1676	867	1800	1400	1372			
1500	3810	1322	1829	953	2000	1500	2413	1322	1829	953	2000	1500	1524			
1700	4191	1398	1981	1041	2300	1700	2642	1398	1981	1041	2300	1700	1676			
1800	4572	1652	2134	1124	2600	1800	2870	1652	2134	1124	2600	1800	1829			

注：1、此阀门是为特殊的操作条件专门设计的，操作条件的改变会影响阀门的使用性能。

2、阀门的安装位置和上游隔离阀的形式也会影响阀门的性能。

3、如果上游隔离阀门不是全径流道的，应在该隔离阀后流出至少7倍管道直径的距离。

4、在靠近套筒阀的位置使用弯头或三通接头也会影响它的性能。

5、所有控制阀在选用时均需进行技术确认。

Note: 1. The valve is specially designed for the special operating conditions, operating conditions change will affect the performance of the valve.

2. The isolation valve installation position and the upstream valve will also affect the performance of the valve.

3. If the upstream isolation valve is not full bore flow, should be in the isolation valve out of at least 7 pipe diameters distance.

4. Near the sleeve valve position using the elbow or three joints will also affect its performance.

5. All the control valve in the selection to the technical confirmation.

注：1、所有的压力等级和各类驱动装置。

2、基于用所列的最小上游管径，对最大的管径，尺寸会相应增大。

Note: 1, Pressure grades and types of all driving device.

2, The minimum diameter for upstream based on column, on larger diameter, the size will be increased accordingly.

产品型号

The product model

示例 Example: EV2000 II B400C40A											
系列号 Serial number	结构形式 Structure form	驱动方式 Drive mode		尺寸 Size	材质 Texture of material		压力 PN		控制方式 Control mode		
EV2000	扇叶式	I	涡轮传动	A	球墨铸铁	Q	PN10	10	天然气空气压力流量控制		K I
EV3100	Fan leaf			200	球墨铸铁		PN16	16	The natural gas air pressure and flow control valve		
EV3200	鼠笼式	II	电动传动	B	碳钢	C	PN25	25	先导式控制减压阀		K II
EV3300	The squirrel cage			300	碳钢		PN40	40	Pilot control valve		
	多级鼠笼	III	液动传动	C	不锈钢	P	.....	.....	防水锤安全阀		A
	Multi stage cage			400	不锈钢		.....	.....	Water hammer safety valve		
	多孔圆筒	IV	组合式传动	D	其他材质 (可选)				爆管安全阀		AD
	Porous cylinder			.....	其他材质 (可选)				Tube explosion safety valve		
	节流环式	V							压力泄放阀		F
	Throttle ring								Pressure relief valve		
	锥形调节式	VI							活塞式静音止回阀		CH
	Conical adjusting								Piston type mute check valve		
									高压流流速切断阀		QB
									High pressure flow cut-off valve		

声 明

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天津塘沽瓦特斯阀门有限公司
二〇一二年



地址：天津市滨海新区塘沽国家海洋高新技术园区
金江路1999号300451

Add : No. 1999 Jinjiang Rd., TMHT, Tanggu district,
Binhai New Area, Tianjin 300451, China

Tel : 86-22-65728888 65727777

Fax : 86-22-65727744

Email: service@twtvalve.com

http: www.twtvalve.com

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