



2015 EDITION



# 排气阀 Exhaust valve



- 适用压力 Applicable Pressure: PN1.0~1.6MPa
- 适用规格 Applicable Size: DN25~300
- 适用温度 Applicable Temperature: 0°C~90°C
- 主体材质 Body Material: 铸铁、球墨铸铁 Cast iron, Ductile iron
- 连接方式 Connection Type: 螺纹、法兰 Thread, Flanged

## 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](http://www.twtvalve.com)

## 复合式高速进排气阀产品特性

### High speed compound air release valve product features

#### ■更平稳的排气过程

排气过程平稳，可防止出现压力波动或其他破坏性现象。

#### ■更自主地工作方式

可在空管道充水时排放管道内的空气，又能在管道排空或出现负压时，如水柱分离工况下将自动开启，向管道内进气以消除负压。

#### ■更可靠的排放方式

高速排放的气流，甚至混合水雾的高速气流也不会使排气口提前封闭而导致气密封。排气口仅在空气彻底排放后才会封闭。

#### ■更安全的自动保护性能

任何时候，只要系统内压低于大气压，例如发生水柱分离现象时，空气阀就会立即打开向系统内进气，防止系统内出现负压。同时，在系统排空时及时进气可加快排空速度。

#### ■Exhaust process more smoothly

Steady air release can avoid pressure surge and protect pipeline damage.

#### ■More autonomous working mode

The valve can release air when filling water in pipe, enter air to get rid of negative pressure when vacuum or negative pressure exists.

#### ■A more reliable way of discharge

Quick released air and air with water will not close valve orifice in advance and cause air seal. Orifice will close when air is released completely.

#### ■Automatic protection safer performance

Whenever if system pressure is lower than atmosphere foreexample, water column happened, the valve will open immediately and air will enter system to get rid of negative pressure. At the same time, Entering air can speed up the speed of air release during air release.

## 缓闭型进排气阀产品特性

### Slow closing inlet and outlet valve product characteristic

#### ■更灵活的排气方式

将低压排气过程自动分为两个阶段：低压差时全速排气，较高压差时限制排气速度。消除水锤等特殊工况下因全速排气而加剧的压力波动对系统的冲击。

#### ■更广泛的应用范围

适用于可能发生水柱分离工况的管道，大口径、长距离输水管道，快速充水的主管道，深井泵等，保护管道系统避免水锤的影响。

#### ■More flexible air release method

The low pressure exhaust automatic process is divided into two stages: low pressure difference full exhaust, exhaust velocity is relatively high differential pressure limit. To eliminate the impact of water hammer pressure fluctuation in special conditions for full exhaust and the mounting of the system.

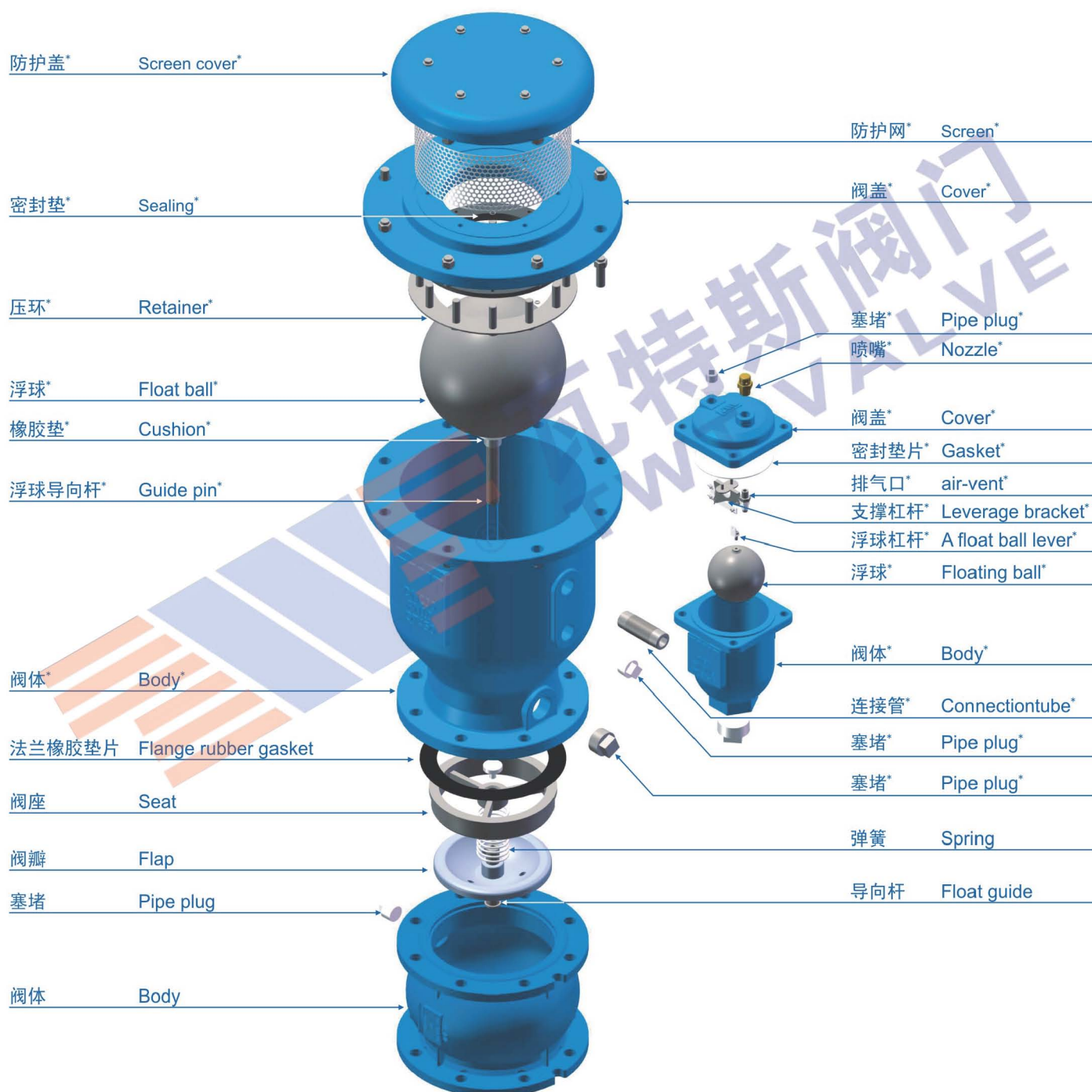
#### ■More extensive scope of application

Application for pipeline with possible water column separation conditions and large diameter, long distance pipeline, rapid water filled main pipeline and deep wellpump, to protect the pipeline system to avoid water hammer effect.



## 复合式高速进排气阀/缓闭型进排气阀结构说明

High speed compound air release valve/Slow closing inlet and outlet valve Product structure



注: \*为复合式高速进排气阀/缓闭型进排气阀通用部件。

Note: \* composite type high speed exhaust valve / Slow closing inlet and outlet valve general parts.

复合式高速进排气阀 · 技术参数

High speed compound air release valve technical parameters

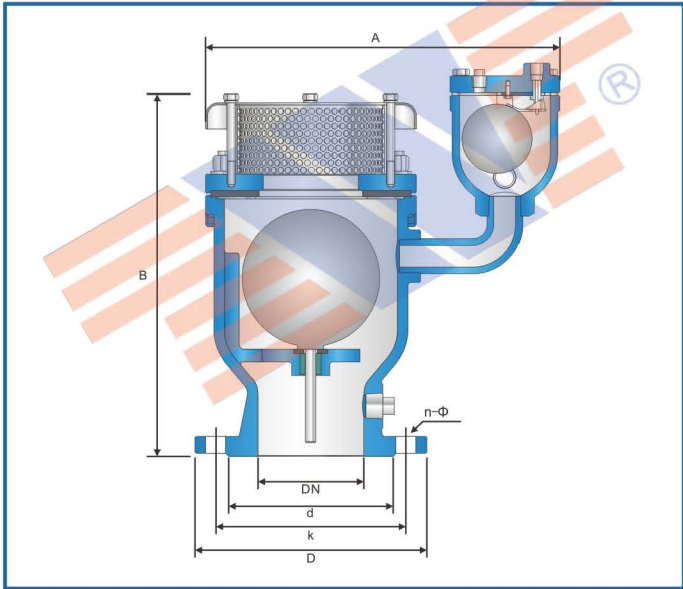


部件	Component	材质	Material
防护盖	Screen cover	不锈钢	Stainless steel
防护网	Screen	不锈钢	Stainless steel
密封垫	Sealing	NBR/EPDM	NBR/EPDM
压环	Retainer	不锈钢	Stainless steel
浮球	Float ball	不锈钢	Stainless steel
橡胶垫	Cushion	NBR/EPDM	NBR/EPDM
浮球导向杆	Guide pin	不锈钢	Stainless steel
阀体	Body	球墨铸铁	Ductile iron
阀盖	Cover	球墨铸铁	Ductile iron
密封垫片	Gasket	NBR/EPDM	NBR/EPDM
支撑杠杆	Leverage bracket	不锈钢	Stainless steel
排气口	Air-vent	不锈钢/黄铜	SS/Brass
浮球杠杆	A floating ball lever	不锈钢	Stainless steel
连接弯管	Connectiontube	不锈钢	Stainless steel

注：上表中列材质为常规配置，如有特殊需要，请在合同中注明。  
Note: Mate rials indicated in above table are for common usage, please give clear declaration in your contract if the re is special need.

复合式高速进排气阀 · 外形尺寸

Compound quick air inbreath-release valve valve dimensions



性能规范

1. 阀门设计制造符合CJ/T 217标准
2. 阀门试验与检验标准符合GB/T 13927标准
3. 法兰连接符合GB/T 17241.6标准
4. 产品外观质量符合GB/T 7927标准

Technical Data

1. Valve design and manufacture according to CJ/T 217 standard
2. Valve testing and inspection standards in accordance with GB/T 13927 standard
3. Flange connection in accordance with GB/T 17241.6 standard
4. Product apperance conforms to GB/T 7927 standard

检查维护程序

关闭空气阀下面的隔断阀；  
卸下阀体和阀盖之间的连接螺栓；  
用清水将浮球、阀体、阀盖、排气口密封圈和滤网冲洗干净；  
将浮球放回原位，安装阀盖，拧紧螺栓；  
打开隔断阀。

Inspection and maintenance program

Close cut-off valve under air release valve.  
take off the connection bolts between valve body and cover use water to clear floatong ball , body , cover , sealing ring and creen.  
The floating ball is put back in place, install the valve cover, tighten the bolts;  
Open the cut-off valve.

安装与维护

安装

应垂直安装在管道的高点；  
空气阀前安装隔断阀（蝶阀或闸阀）。

常规维护

例行检查与维护应规定为标准工作内容；  
建议每年进行一次至两次检查维护，可根据水质情况适当增减。

Installation and maintenance

Installation

Valve Should be installed vertically in the pipeline highest piont.  
The cut-off valve (butterfly valve or gate valve)should be installed before air release valve.

Routine maintenance

Regular check and maintenance should be made as regular work.  
Check and maintenance is recommened for one or two times in one year.  
The work can increase according to water condition.



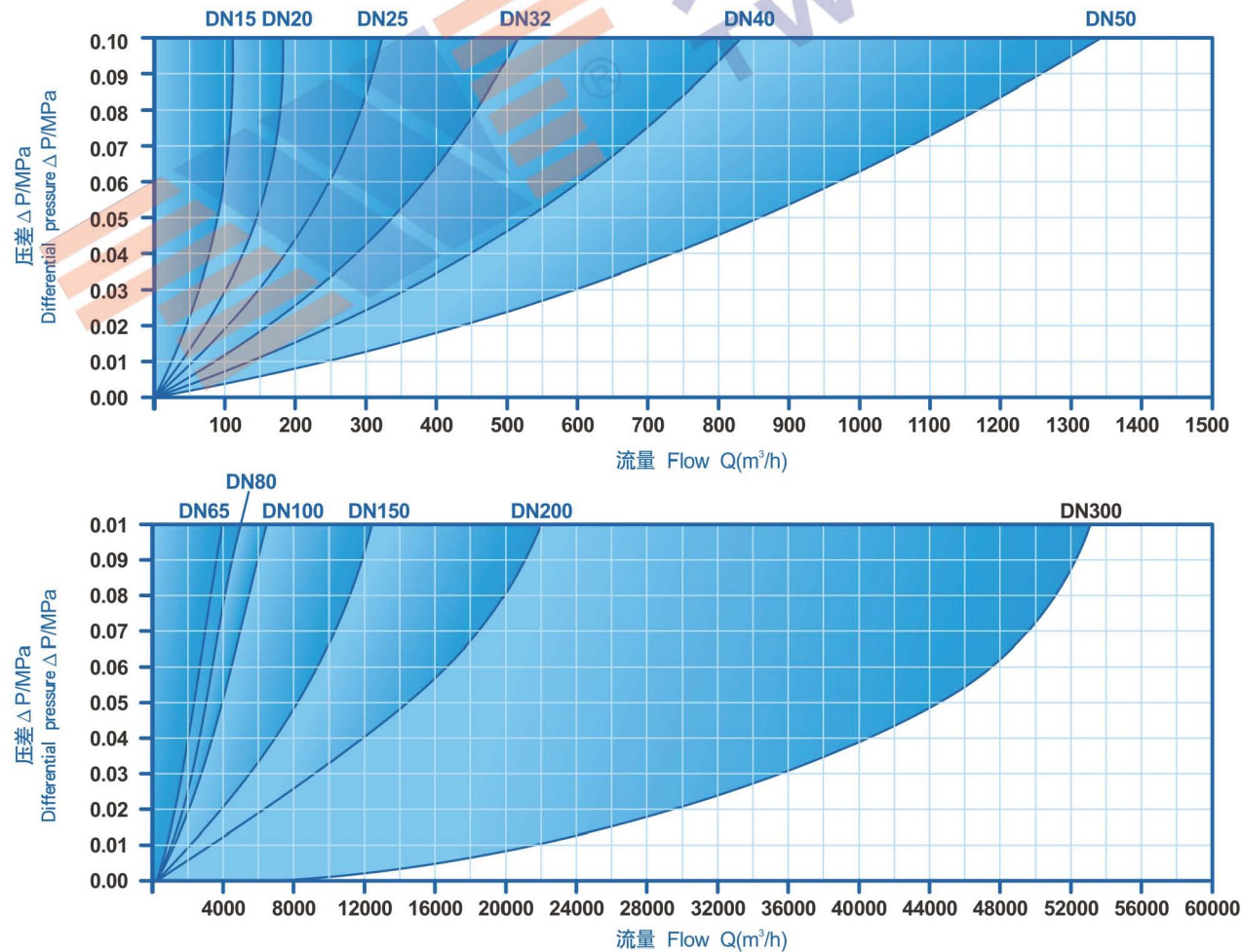
复合式高速进排气阀 · 外型尺寸 PN10 · PN16  
High speed compound air release valve overall dimension PN10-PN16

单位 Unit: mm

规格 Size	PN10				PN16				A	B	重量 WT (kg)
	D	k	d	n-Φ	D	k	d	n-Φ			
15	95	65	46	4-Φ14	95	65	46	4-Φ14			
20	105	75	56	4-Φ14	105	75	56	4-Φ14			
25	115	85	65	4-Φ14	115	85	65	4-Φ14			
32	140	100	76	4-Φ19	140	100	76	4-Φ19			
40	150	110	84	4-Φ19	150	110	84	4-Φ19			
50	165	125	99	4-Φ19	165	125	99	4-Φ19	270	260	14
80	200	160	132	8-Φ19	200	160	132	8-Φ19	310	330	22
100	220	180	156	8-Φ19	220	180	156	8-Φ19	336	375	28
150	285	240	211	8-Φ23	285	240	211	8-Φ23	500	520	95
200	340	295	266	8-Φ23	340	295	266	12-Φ23	645	665	150
250	395	350	319	12-Φ23	405	355	319	12-Φ28	780	820	210
300	445	400	370	12-Φ23	460	410	370	12-Φ28	900	1025	270

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

复合式高速进排气阀排气量曲线图  
Compound quick air inbreath-release valve exhaust volume curve



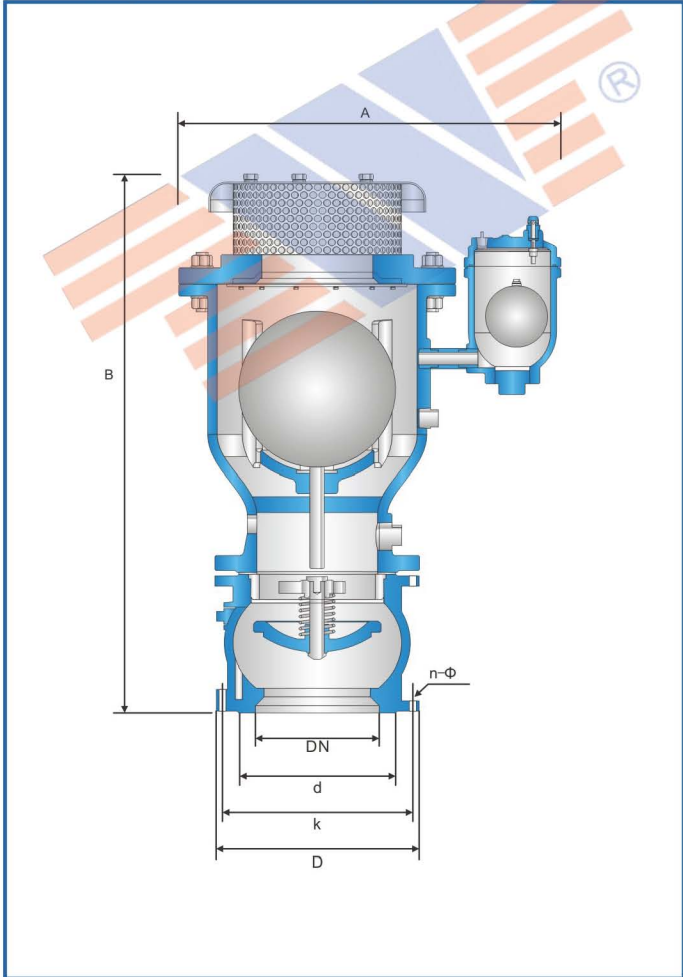
缓闭型进排气阀 · 技术参数

Slow closing inlet and outlet valve products technical parameters



缓闭型进排气阀产品 · 外形尺寸

Slow closing inlet and outlet valve products dimensions



部件	Component	材质	Material
防护盖	Screen cover	不锈钢	Stainless steel
防护网	Screen	不锈钢	Stainless steel
密封垫	Sealing	NBR/EPDM	NBR/EPDM
压环	Retainer	不锈钢	Stainless steel
浮球	Float ball	不锈钢	Stainless steel
橡胶垫	Cushion	不锈钢	Stainless steel
浮球导向杆	Guide pin	不锈钢	Stainless steel
阀体	Body	球墨铸铁	Ductile iron
阀盖	Cover	球墨铸铁	Ductile iron
密封垫片	Gasket	NBR/EPDM	NBR/EPDM
支撑杠杆	Leverage lever	不锈钢	Stainless steel
排气口	Air-vent	不锈钢/黄铜	SS/Brass
浮球杠杆	A floating ball lever	不锈钢	Stainless steel
连接弯管	Connectiontube	不锈钢	Stainless steel
法兰橡胶垫片	Flange rubber gasket	NBR/EPDM	NBR/EPDM
阀座	Seat	不锈钢	Stainless steel
阀瓣	Flap	球铁/不锈钢	DI/Stainless steel
弹簧	Spring	不锈钢	Stainless steel
阀杆	Stem	不锈钢	Stainless steel

注：上表中所列材质为常规配置，如有特殊需要，请在合同中注明。

Note: Mate rials indicated in above table are for common usage, please give clear declaration in your contract if the re is special need.

- 性能规范
- Technical Data
1. 阀门设计制造符合CJ/T 217标准

2. 阀门试验与检验标准符合GB/T 13927标准

3. 法兰连接符合GB/T 17241.6标准

4. 产品外观质量符合GB/T 7927标准
1. Valve design and manufacture according to CJ/T 217 standard.

2. Valve testing and inspection standards in accordance with GB/T 13927 3. standard.

3. standard.

4. Flange connection in accordance with GB/T 17241.6 standard.

The appearance quality of the product conforms to GB/T 7927 standard.

- 安装要求
- Installation requirements
1. 于安装前，请先检查并清除主体内的杂物。

2. 在阀前装一只检修阀，以便下次的安装维修。阀如果安装于荫井内，应有足够空间以便容纳技术人员调整及维护工作。

3. 若排气阀安装于室外，请注意阀门的保温，以防阀门内水结冰或冻裂阀门。

4. 若排气阀所在管线断水频繁，建议在排气阀前加装一个缓冲阀。
1. Please check and remove the debris from the body before installation.

2. In front of the valve installed a maintenance valve for the next installation and maintenance. If the valve installed in the Yinjing, there should be enough space to accommodate technical personnel adjustment and maintenance.

3. If the exhaust valve is installed on the outside, please pay attention to the valve insulation, to prevent water freeze or Donglie valve valve.

4. If the exhaust valve of the pipeline water frequently, it is suggested to install a buffer valve in the exhaust valve.



缓闭型进排气阀 · 外型尺寸 PN10 · PN16

Slow closing inlet and outlet valve products overall dimension PN10·PN16

单位 Unit: mm

规格 Size	PN10				PN16				A	B	重量 WT (kg)
	D	k	d	n-Φ	D	k	d	n-Φ			
50	165	125	99	4-Φ19	165	125	99	4-Φ19	270	410	21.2
80	200	160	132	8-Φ19	200	160	132	8-Φ19	310	510	34
100	220	180	156	8-Φ19	220	180	156	8-Φ19	336	565	44
150	285	240	211	8-Φ23	285	240	211	8-Φ23	500	730	122
200	340	295	266	8-Φ23	340	295	266	12-Φ23	645	895	193
250	395	350	319	12-Φ23	405	355	319	12-Φ28	780	1070	270
300	445	400	370	12-Φ23	460	410	370	12-Φ28	900	1295	353

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

缓闭组件运行过程

在深井泵房中的运行

在深井泵房中，管道初次充水时，管道内的空气通过空气阀高速排放，管道里的水以高速撞击浮球，空气阀突然关闭，形成闭阀水锤。缓闭型空气阀分两级关闭，有效的防止空气阀突然关闭，因而降低系统内压力波动。

水柱分离情况下的运行

泵站断电等意外事故造成水柱分离工况。水柱在泵后或管道高点分离形成一个负压区，管道内的水柱相向流动，形成水柱弥合，其产生的瞬间高压可能会使管道爆裂。

在管道特殊点安装此型空气阀，工作过程如下：

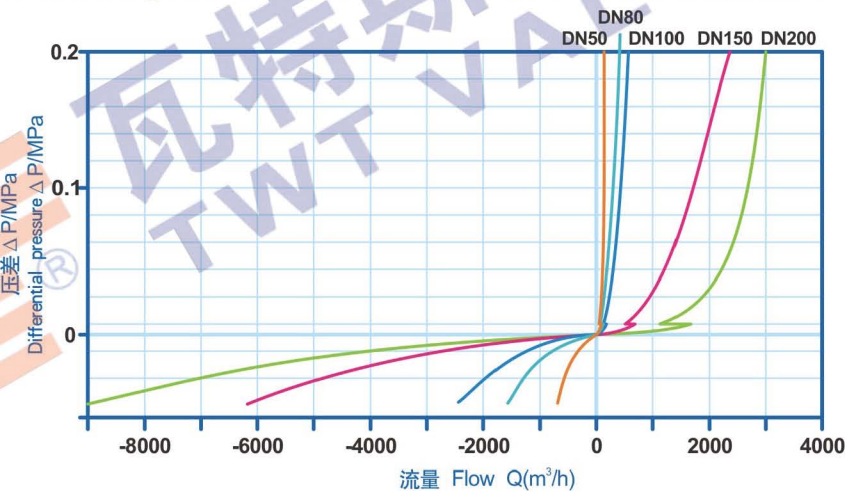
水柱分离时，大量的空气从空气阀进入真空区，消除负压。

当水柱弥合时，空气会立刻通过排气阀泻放。内置的缓闭组件，限制排气流速，平抑管道内的压力波动。

缓闭型空气阀的缓冲式结构，有效提高了阀门的空气关闭压力，在水气相间的工况下，阀门也能正常运行。

缓闭型进排气阀排气量曲线图

Slow closing inlet and outlet valve products exhaust volume curve



Slow closing assembly operation process

In the deep well pump in operation

In the deep well pump room, the pipeline first filled with water, the air through the air valve at high speed, the pipe in the water to high-speed impact float, the air valve suddenly closed, forming a closed valve water hammer. The closed - type air valve is divided into two stages, which can effectively prevent the air valve suddenly shut down, thereby reducing the pressure fluctuation in the system.

Running of the water column separation

Pumping station power and other accidents caused by water column separation conditions. Water column in the pump or pipe high separate to form a negative pressure zone, opposite the water flow in the pipeline, forming water column to bridge and its instantaneous high pressure may will make the pipeline burst.

In the special point of the pipeline, the air valve is installed, and the working process is as follows:

When the water column is separated, a lot of air from the air valve into the vacuum, eliminating negative pressure.

When the water column is close, the air will be immediately purge through the vent valve. Slow closing built-in component, limit the exhaust flow rate, pressure fluctuations in the pipeline.

Slow closing type of air valve buffer structure, effectively improve the valve air off pressure, in the condition of the gas phase, the valve can also run normally.

另有防水锤排气阀，可根据客户要求设计。

Another waterproof hammer exhaust valve, according to customer requirements design.

其排气过程被分为两个阶段：管道内外压差在设计压力以下时大量排气；管道内外压差在设计压力以上时少量排气；在管道内出现负压时能自动补气；在出现弥合性水锤前，降低空气排放速度，利用管道中的气囊有效地缓冲水柱弥合时发生的瞬间压力升高，消除水锤的破坏效应。

The exhaust process is divided into two stages: pipeline pressure difference between the inside and outside in the design pressure below a lot of exhaust; both inside and outside the pipeline pressure difference at design pressure above a few exhaust; when there is a negative pressure in the pipe can automatically supplement air; before the bridge water hammer and reduce air emissions growth, the airbag in the pipeline effectively buffer water column to bridge the instantaneous pressure increased, eliminate the damage effect of water hammer.



# 声 明

## STATEMENT

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Considering that recently some behaviors on the market of confusing TWT company name, infringement of TWT trademark as well as some companies counterfeiting TWT products, our company hereby states and declares: our company is the only legal owner of "TWT" trademark and brand. Tianjing Tanggu TWT Valve Co., Ltd., is the official name of our company, our company has never authorized any other company or enterprise to use the name, has never set up any branch company or office in the other areas, and has never cooperated with any other companies or enterprises to use the trademark, brand and know-how of our company.

In order to safeguard the rights and interests of our company and all clients, fight against fake and inferior products, our company, since this Statement on the day, will keep records for each contractual project and agent. From June, 2009, all clients signing contracts with our company can check performance of contract, including the details of contract list and delivery period, etc. from "TWT" official website [www.twtvalve.com](http://www.twtvalve.com) If any doubts, clients can call our company for consultation. Any person and enterprise that have provided or reported fake and inferior products, should this be found to be true after examination, will receive awards from our company.

Our company hereby reiterates: "TWT" brand, trademark, patent and copyright all are the property of Tianjing Tanggu TWT Valve Co., Ltd., If any infringement is found, any infringer will be prosecuted for his economic and legal liabilities without exception.

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

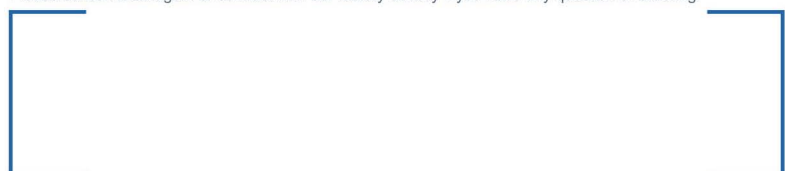
Tel : 86-22-65728888 65727777

Fax : 86-22-65727733

Email: [service@twtvalve.com](mailto:service@twtvalve.com)

http: [www.twtvalve.com](http://www.twtvalve.com)

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