



# DQJGX 系列

## 胶管阀使用说明书

### DQJGX Series Rolling Pinch Valve Manual



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## 一、概述

胶管阀（Pinch Valve，在国内又称为管夹阀、气囊阀、箍断阀等），其工作原理是通过手动、气动、电动或液动等驱动方式挤压内部胶管，达到开关/调节的作用。

### 1、Introduction

The rolling pinch valve rolling pinch working principle is to squeeze the internal rubber hose through manual, pneumatic, electric or hydraulic drive to achieve the role of switching/adjusting.



图 1 工作原理图

Fig.1 Working principle diagram

DQJGX 胶管阀特点与优势：

- 1、全通性弹性胶管无任何缝隙和死角，避免了胶管内的紊流和磨损。
- 2、全关时确保了双向 o 泄露关闭（即使有残留颗粒），无需要维护的密封件的内部安全设计。
- 3、胶管与管道系统自成一体，每次启闭操作都能自清洗，无阻塞无泥垢产生。

4、针对不同工况可采用不同性能的橡胶配方管，适用复杂多种工况（高磨损、强腐蚀、一定高温等）。

5、胶管是唯一和介质接触的零件，不需昂贵的合金阀体；且胶管更换方便快捷，更换一次胶管相当于换了一台新阀门，性价比高，节约成本。

6、多种驱动方式，可手动现场也可远程，实现集中控制。

7、可做调节阀调节流量使用，智能调节型还可以实现断电保护开/关等多种功能。

8、适用通径广，DN20-DN1500，适用温度广， $-40^{\circ}\text{C}\sim+130^{\circ}\text{C}$ 。

9、我公司胶管阀有信心做到，与其他品牌产品在同等工况条件、同等价位性价比下寿命提高 10-100%，这是我公司对于产品质量的信心和承诺。

#### DQJGXRolling pinch valve Features and advantages:

1、The universal elastic hose without any gaps and dead angles, to avoid turbulence and wear in the hose.

2、Fully closed to ensure two-way o leakage closure (even if there are residual particles), no need to maintain the internal safety of the seal design.

3、The hose and the pipeline system into a body, each opening and closing operation can be self-cleaning, no plug no dirt generation.

4、According to different working conditions can use different properties of rubber formula tube, suitable for complex conditions (high wear, strong corrosion, certain high temperature, etc.).

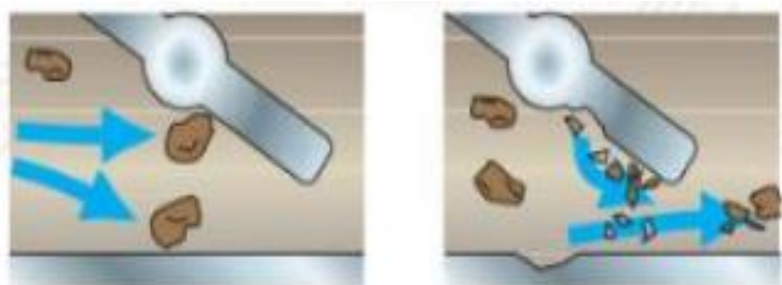
5、The hose is the only part in contact with the medium, without expensive alloy valve body; And the hose replacement is convenient and quick, replacing a hose is equivalent to changing a new valve, cost-effective, cost saving.

6、A variety of driving methods, manual field can also be remote, to achieve centralized control.

7、Can be used to regulate the flow of regulating valve, intelligent regulating type can also achieve power protection on/off and other functions.

8、Suitable for wide diameter, DN20-DN1500, suitable for wide temperature,  $-40^{\circ}\text{C} \sim +130^{\circ}\text{C}$ .

9、Our company is confident that the rolling pinch valve, and other brand products in the same working conditions, the same price and cost performance under the life increase of 10-100%, which is my company's confidence and commitment to product quality. DQJGX Rolling pinch valve Features and advantages:



**图 2 传统金属阀门工作示意图**

**Fig.2 Work diagram of traditional metal valve**

当磨损性颗粒撞击到传统金属阀门的坚硬内表面时，撞击时所产生的能量被金属表面完全吸收，因而过早的磨损了阀座、流道中的凸起部分、

旋转的阀板、旋塞和球体。另外，这些磨损性的颗粒聚集在球体的旋塞上，会划伤密封表面并引起的泄漏。

When abrasive particles strike the hard inner surface of a conventional metal valve, the energy generated by the impact is fully absorbed by the metal surface, prematurely wearing the seat, the bulge in the flow path, the rotating valve plate, the cock, and the ball. In addition, these abrasive particles gather on the cock of the sphere, which can scratch the sealing surface and cause leakage.

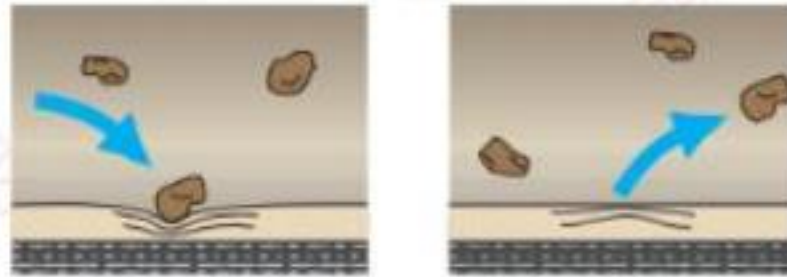


图 3 胶管阀工作示意图

Fig. 3 Rolling pinch valve working diagram

当磨损性颗粒撞击到合成橡胶表面时，撞击先被吸收，然后传回到颗粒，弹性和韧性非常好的合成橡胶套管磨损的速度远小于陶瓷或金属合金阀门。

胶管阀是全通径的，没有间隙、紧固件或阀座影响阀门操作。

When the abrasive particles hit the synthetic rubber surface, the impact is first absorbed and then returned to the particles, and the speed of wear of the synthetic rubber sleeve with very good elasticity and toughness is much less than that of the ceramic or metal alloy valve.

Rolling pinch valves are full-bore, with no clearance, fasteners or seats to affect valve operation.

## 二、产品规格

### 2、 Product specifications

DQJGX 气动胶管阀主要结构参数：

DQJGX pneumatic rolling pinch valve main structural parameters:

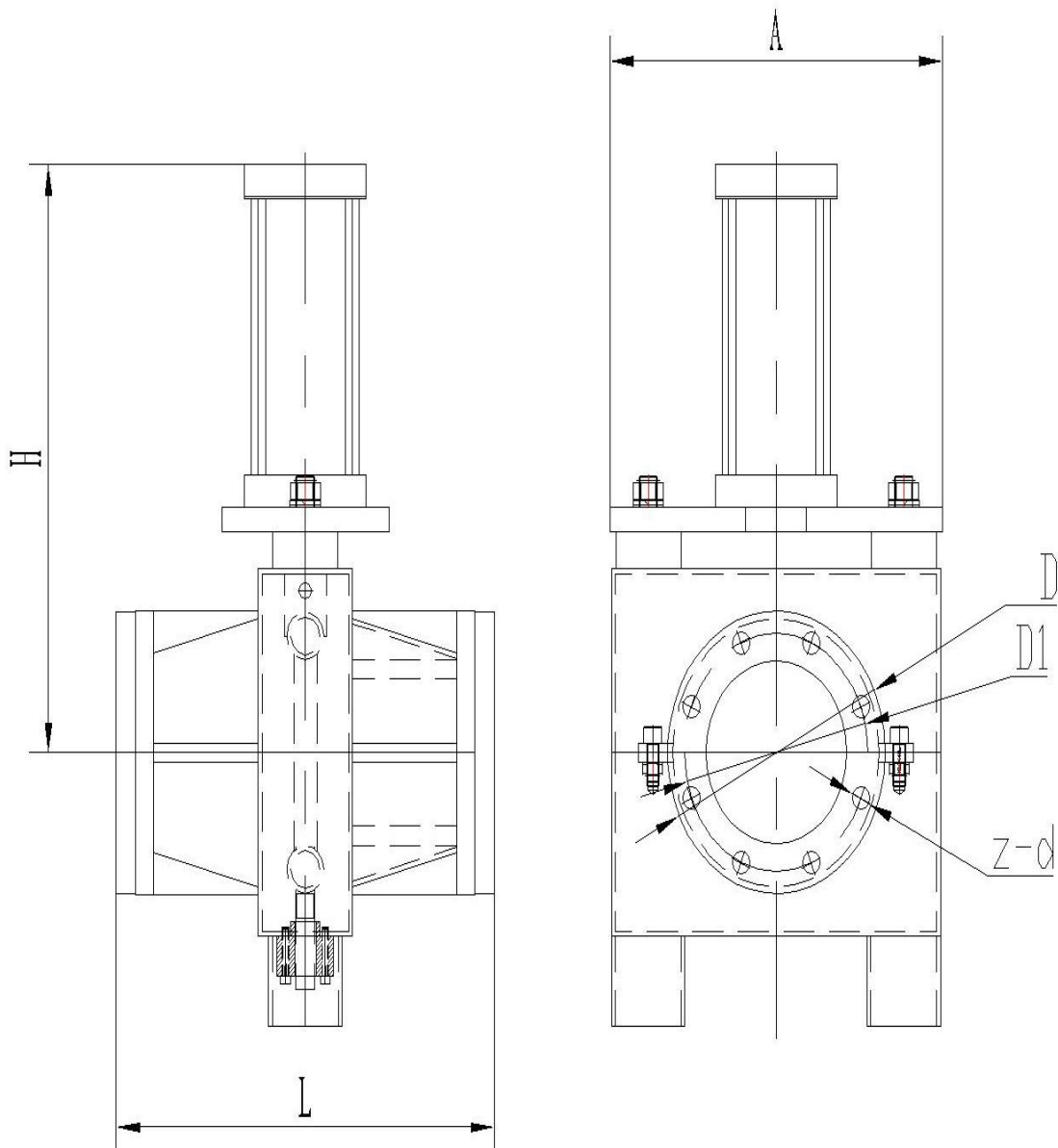


图 4 外形尺寸

Fig.4 Overall dimensions

表 1 结构参数表

Table 1 Structure parameter table



| 公称通径  | 公称压力   | 工作压力   | 气源压力    | L   | A   | D   | D1  | Z-Ø    | II  |
|-------|--------|--------|---------|-----|-----|-----|-----|--------|-----|
| DN50  | 1.6MPA | 0.8MPA | 0.65MPA | 195 | 220 | 165 | 125 | 4-Ø18  | 350 |
| DN65  | 1.6MPA | 0.8MPA | 0.65MPA | 230 | 260 | 190 | 145 | 8-Ø18  | 385 |
| DN80  | 1.6MPA | 0.8MPA | 0.65MPA | 280 | 310 | 200 | 160 | 8-Ø18  | 445 |
| DN100 | 1.6MPA | 0.8MPA | 0.65MPA | 360 | 350 | 220 | 180 | 8-Ø18  | 515 |
| DN125 | 1.6MPA | 0.8MPA | 0.65MPA | 445 | 390 | 250 | 210 | 8-Ø18  | 560 |
| DN150 | 1.6MPA | 0.8MPA | 0.65MPA | 500 | 435 | 285 | 240 | 8-Ø22  | 620 |
| DN200 | 1.6MPA | 0.8MPA | 0.65MPA | 560 | 520 | 285 | 240 | 12-Ø22 | 720 |

### 三、使用说明

#### 3、Instructions for use

##### 1、气动胶管阀的工作原理

全开位置：压缩空气从气缸体低部端盖进入气缸，活塞向上运动，气缸推杆和上夹管一起向上运动，胶管释放弹性恢复初始状态，下夹管协同活塞杆、气缸一起向下运动，阀门打开。

全关位置：压缩空气从气缸体的顶部端盖进入气缸，活塞向下运动，气缸推杆推动上夹管挤压胶管，胶管受力挤压下夹管，下夹管协同滑动轴和气缸一起向上运动，胶管在流道口中心位置密封，阀门关闭；

##### 1、The working principle of pneumatic rolling pinch valve

Full open position: the compressed air enters the cylinder from the end cover of the lower part of the cylinder block, the piston moves upward, the cylinder push rod and the upper clamp pipe move upward together, the hose

releases the elasticity to restore the initial state, the lower clamp pipe moves downward together with the piston rod and the cylinder, and the valve opens.

Position of full closure: compressed air enters the cylinder from the top end cover of the cylinder block, the piston moves down, the cylinder push rod pushes the upper clamp pipe to squeeze the hose, the hose is forced to squeeze the lower clamp pipe, the lower clamp pipe moves upward together with the sliding shaft and the cylinder, the hose is sealed in the center of the runner and the valve is closed;

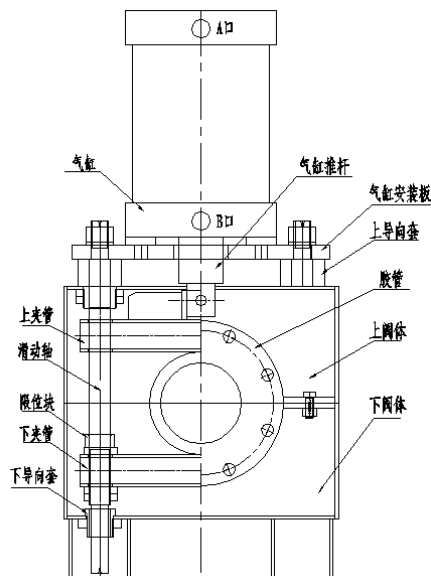


图 5 胶管阀的总装图

Fig.5 Final assembly drawing of the rolling pinch valve

气缸 air cylinder    上夹管 Top clamp tube    滑动轴 sliding axle    限位块 stop block  
 下夹管 Lower clip pipe    下导向套 Lower guide sleeve    气缸推杆 Cylinder push rod    气缸安装板 Cylinder mounting plate  
 上阀体 Upper valve body    下阀体 Lower valve body

## 2、应用范围

- 1、采矿冶金业的尾矿、浮选池、离心机控制、石灰送料、选煤、矿



山充填等。

2、化学工业的浆液/化学制品、工业处理、强酸碱介质、粉末、二氧化钛等。

3、电力行业中的除灰尘系统、底灰处理、输煤装置、脱硫脱硝、FGD系统等。

4、广泛的应用于制浆造纸厂、污水处理厂、建筑水泥、石油化工行业等。

## **2. Scope of application**

1、 Tailings, flotation tank, centrifuge control, lime feeding, coal preparation, mine filling, etc., in mining and metallurgy industry.

2、 Chemical industry slurry/chemical products, industrial treatment, strong acid-base media, powder, titanium dioxide, etc.

3、 Dust removal system, bottom ash treatment, coal transport device, desulfurization and denitrification, FGD system, etc., in the power industry.

4、 Widely used in pulp and paper mills, sewage treatment plants, construction cement, petrochemical industry, etc.

## **3、胶套结构**

胶管阀中胶管是阀门唯一与介质接触的零件， 是任何胶管阀耐磨、耐腐蚀、承压和抗曲挠等多种问题的关键所在。

1、内层：采用各种不同橡胶原料及配方制作，解决磨损、腐蚀、高温等多种问题。

- 2、中间层：多层帘子布夹布加强。
- 3、外层：进口天然橡胶，起到保护作用。并解决胶管耐压耐夹与耐曲挠等问题。
- 4、外壁：外壁中间部分配有手工扎带，解决胶管与启闭装置的固定和抗拉问题，并有效解决管道负压对胶管开启度的影响。

胶管有高弹性、抗撕裂、长分子链的结构而且高耐磨耐腐蚀，全法兰橡胶一体成型，使用寿命超长。

### **3、Rubber jacket structure**

In the rolling pinch valve, the hose is the only part in contact with the medium of the valve, which is the key to many problems such as wear resistance, corrosion resistance, pressure and buckling resistance of any rolling pinch valve.

- 1、Inner layer: using a variety of different rubber raw materials and formulations to solve wear, corrosion, high temperature and other problems.
- 2、Middle layer: multi-layer cord cloth clip cloth strengthening.
- 3、Outer layer: imported natural rubber, play a protective role. And solve the problem of pressure resistance and clamp resistance of rubber hose.
- 4、Outer wall: the middle part of the outer wall is equipped with manual cable ties to solve the fixing and tensile problems of the hose and the opening and closing device, and effectively solve the influence of negative pressure of the pipeline on the opening degree of the hose.

Hose has high elasticity, tear resistance, long molecular chain structure and high wear resistance and corrosion resistance, all flange rubber integrated molding, long service life.

#### 四、安装指南及维护与保养

1、胶管阀在安装前应先核对阀门铭牌上的位号、口径、公称压力、作用方式、所配附件等是否符合规定要求。

2、胶管阀要求安装在水平管道，阀门执行机构朝天安装，这样阀门在开关过程中，不会受到执行机构重量影响阀门使用性能。但由于现场位置局限，必须要求阀门在垂直管道安装时，应对执行机构采取一定的支撑（带滑轨）、吊装措施，以使阀门运行安全可靠。

3、胶管阀应安装在便于操作和维修的地方。

4、阀门安装前必须对管道进行清洗，除去管道中的异物，诸如焊渣、氧化皮石块等，安装后应使阀门处于全开位置，对管道和阀门进行清洗及检查阀门与管道连接处的密封性。

5、应根据工艺需要确定是否需要对胶管阀设置旁通。

6、应定期对胶管阀进行检查、维修，检查重点为胶套、滑动轴和导向套等零件，如有损坏应及时修复或调换，确保阀门正常使用。

7、本气动执行机构的气路控制是由电磁阀控制的，电磁阀线圈为普通型及防爆型线圈，用户可根据需要选择，防爆线圈接线时应按照防爆操作规范对连接线头进行处理，确保连接可靠。

8、气动胶管阀的使用气源压力范围 0.6~0.7Mpa。

#### 4、Installation guide and maintenance

1、 Before the installation of the rolling pinch valve should first check the valve nameplate on the number, caliber, nominal pressure, mode of action, accessories, etc. meet the requirements.

2、 The rolling pinch valve is required to be installed in the horizontal pipe, and the valve actuator is installed in the air, so that the valve will not be affected by the weight of the actuator during the switching process. However, due to the limitations of the site location, it is necessary to require that when the valve is installed in the vertical pipeline, certain support (with slide rail) and lifting measures should be taken for the actuator to make the valve operate safely and reliably.

3、 The rolling pinch valve should be installed in a place that is easy to operate and maintain.

4、 The valve must be cleaned before installation, remove foreign matter in the pipeline, such as welding slag, oxide stone, etc., after installation, the valve should be in a fully open position, cleaning the pipeline and valve and check the tightness of the valve and pipeline connection.

5、 Should be determined according to the process needs to determine whether the rolling pinch valve set bypass.

6、 The rolling pinch valve should be regularly inspected and repaired, the focus of the inspection is the rubber sleeve, sliding shaft and guide sleeve and other parts, if there is damage should be repaired or replaced in time to ensure

the normal use of the valve.

7、The pneumatic actuator gas path control is controlled by the solenoid valve, solenoid coil for ordinary type and explosion-proof coil, the user can choose according to the need, explosion-proof coil wiring should be processed in accordance with the explosion-proof operation specifications to ensure reliable connection.

8、The use of pneumatic rolling pinch valve air pressure range 0.6~0.7Mpa

Four, installation guide and maintenance and maintenance

## 五、常见问题与解决方案

1、气源、信号压力一定，但阀门动作不稳定，其主要原因是：供气管线漏气，阀门摩擦力大，气缸漏气。因此，检查供气管线、气缸是否漏气。

2、阀门动作迟钝，主要原因是：滑动轴和导向套的摩擦力大导致开关不顺畅，应清理导向套和滑动轴脏污，并在上下导向套位置涂抹润滑油，重新开关阀门。

3、阀的泄漏量太大，主要原因是：阀门胶管破裂，更换新的胶管。

4、阀体渗漏，主要原因是：阀门胶管破裂，更换新的胶管。

## 5、 Common problems and solutions

1、The air source, signal pressure is certain, but the valve action is unstable, the main reasons are: air supply pipeline leakage, valve friction, cylinder

leakage. Therefore, check whether the gas supply line and cylinder leak.

2、The valve action is slow, the main reason is: sliding shaft and guide sleeve friction caused by the switch is not smooth, should clean the guide sleeve and sliding shaft dirt, and in the upper and lower guide sleeve position apply lubricating oil, re-open the valve.

3、The leakage of the valve is too large, the main reason is: the valve hose is broken, replace the new hose.

4、The valve body leakage, the main reason is: valve hose rupture, replace the new hose.

## 六、订货须知

订货时，请写明：

- 1、产品型号
- 2、公称通径
- 3、公称压力
- 4、执行机构（单/双作用）
- 5、介质温度
- 6、阀体和阀内件材料
- 7、附件
- 8、其它特殊要求



## 6、 Instructions for ordering

When ordering, please state:

- 1、 Product model
- 2、 Nominal diameter
- 3、 Nominal pressure
- 4、 The executive mechanism (single/double action)
- 5、 Medium temperature
- 6、 Valve body and valve interior materials
- 7、 Accessories
- 8、 Other special requirements

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