

# *keta valve solution corporate*

## *Slide plate control valve*

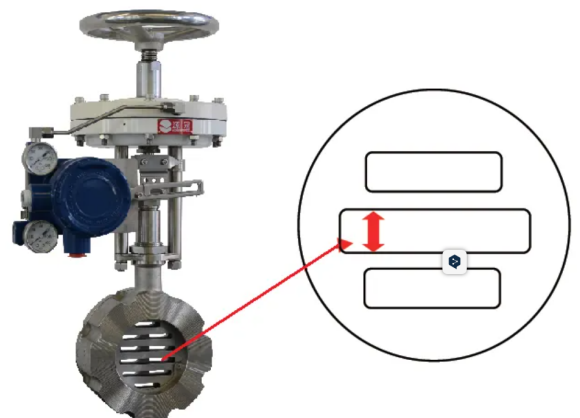


Slide plate control valve Scope of application This standard specifies the product classification, technical requirements, test methods, inspection rules and so on for sliding regulating valves used in industrial process control systems. This standard is applicable to slide control valves with diameter <math>< DN600</math>, pressure class <math>< PN420</math> (Class2500), and temperature range of -196~566 .

The slide plate control valve is a throttling element for regulating process pipeline fluid, which is connected to the actuator by a slide (moving plate) and the valve seat (fixed plate, installed on the valve body) for a straight stroke close to the relative movement to achieve the adjustment function of the valve structure

Classification by actuator type )  
 pneumatic film sliding valve )  
 pneumatic piston sliding valve  
 electric sliding valve  
 electro-hydraulic sliding valve

Classification by valve body type  
 straight sliding valve  
 Angle sliding valve



## Slide plate control valve solve 10 fluid control problems

The slide valve eliminates the shortcomings of traditional control valves, such as small differential pressure, difficult replacement of valve internals, and easy sticking, and can accurately and quickly control all kinds of liquid, gas, and steam media, which can help users solve the following ten control problems.

### 1: Steam pressure and flow control

Application advantages of slide plate control valve: free expansion slide assembly to eliminate the effect of thermal expansion and contraction, all metal hard seal, sealing performance is guaranteed for a long time, the whole valve cover no leakage point, the clamped slide assembly, fewer spare parts, simple maintenance.

### 2: Flow and pressure control of cavitation and flash media

Application advantages of slide plate control valve: standard product design, multi-slot throttling slide, horizontal flow channel design, energy concentrated in the center of the pipeline behind the valve, effectively cope with cavitation and flash damage, long service life of the valve. Cavitation and flashing occurred in the center of the pipeline behind the valve

### 3: small flow medium regulation

Application advantages of slide plate control valve: Standard product design, through carefully designed throttle, can achieve  $1 \times 10^{-6}$  small Cv value, but also can be configured with various electrical accessories or intelligent electric actuator, to achieve comprehensive control functions.

### 4: adjustable relatively large working conditions or multiple groups of working conditions

Application advantages of slide plate control valve: the unbalance force of the slide throttling part is small, the small opening can be accurate and stable operation, and the actual adjustable ratio can reach 80:1 when the equal percentage flow characteristics are selected, which can meet the needs of most of the division control.

5: normal adjustment, emergency need to cut off the occasion

Application advantages of slide plate control valve: short stroke, small actuator volume, emergency cutting can be achieved within 0.2 seconds, sealing performance can reach ANSI CLASS V, adjustment and cutting performance can be well met.

6: high-pressure differential gas regulation and emptying

Application advantages of slide plate control valve: standard product design, multi-groove throttling slide, effectively reduce valve noise, horizontal flow design, reduce high pressure gas scour damage, long service life of the valve.

7: The regulation of liquids and gases containing fine particles

Application advantages of slide plate control valve: all-metal components, horizontal flow design, no dead zone in the valve body, the selection of ceramic or carbide slide components, can achieve long-term reliable control.

8: oxygen, LNG and various types of liquefied gas regulation

Application advantages of slide plate control valve: standard product design, the use of elastic load of carbon fiber filler, can maintain the sealing performance of the valve stem for a long time, the body inside the smooth through flow path design, high strength, small pressure loss, the number of parts is only 50% of the traditional valve, cleaning, assembly and testing costs are less, the price advantage is obvious.

9: adjustment of high temperature, high pressure and corrosive media

Application advantages of slide plate control valve: The slide valve uses a user-oriented modular design, fewer product parts, small size, the use of special alloy materials, can be quickly delivered, the price has an advantage.

10: Regulation of radioactive, highly toxic and dangerous media

Application advantages of slide plate control valve: integrated upper valve cover design, using bellows seal, completely eliminate the hidden danger of leakage of the medium, due to short stroke, long service life of the bellows, up to 100,000 times of full stroke action, can achieve long-term safety control

# Caliper size comparison

DN	DN25	DN32	DN40	DN50	DN65	DN80	DN100	DN125	DN150
NPS	1	1-1/4	1-1/2	2	2-1/2	3	4	5	6
DN	DN200	DN250	DN300	DN350	DN400	DN450	DN500	DN600	---
NPS	8	10	12	14	16	18	20	24	---

## Pressure rating

PN	20	50	110	160	260	420
Class	150	300	600	900	1500	2500

## Power source

The air source pressure is specified as follows:

Pneumatic film sliding valve:  $350\text{kPa} < P < 400\text{kPa}$ .

Pneumatic piston sliding valve:  $400\text{kPa} < P < 800\text{kPa}$  5.3.2

The power supply voltage is as follows: 220V/380V AC 5.4

## Air source quality

The quality of the air source shall meet the requirements specified in 4.8.2 and 4.8.3 of GB/T4213-2008.

The quality of the power supply shall comply with the requirements of GB/T24922, GB/T24923 and GB/T28270 of the technical conditions of the valve electric device.

## Input signal range

Thin film actuator standard input pressure signal range: 100 kPa-250 kPa.2)

The input pressure signal range of the pneumatic piston actuator can be selected within the gas source pressure rating.

Slide regulator with electro-pneumatic valve positioner, positioner standard input electrical signal range 4mA-20mA DC

The standard input electrical signal range for electric devices is 4mA-20mA DC.

Input electrical signals required by the user (ordering party) to meet other standards or specific ranges.

## Valve operating environment conditions

The working environment of the sliding valve should meet the following requirements:

temperature

Standard type: -25~55

Special type: -40~70°C

The special temperature required by the user, but the value should be an integer multiple of 5 ° C.

Air relative humidity: 5%~100%.

The thread sizes of the signal nozzle threaded pneumatic actuator connected with the signal transmission pipeline are RC1/4, RC3/8, RC1/2, NPT1/4, NPT3/8, NPT1/2.

Actuator electrical interface: NPT 1/2, NPT 3/4, NPT1, M20X1.5.

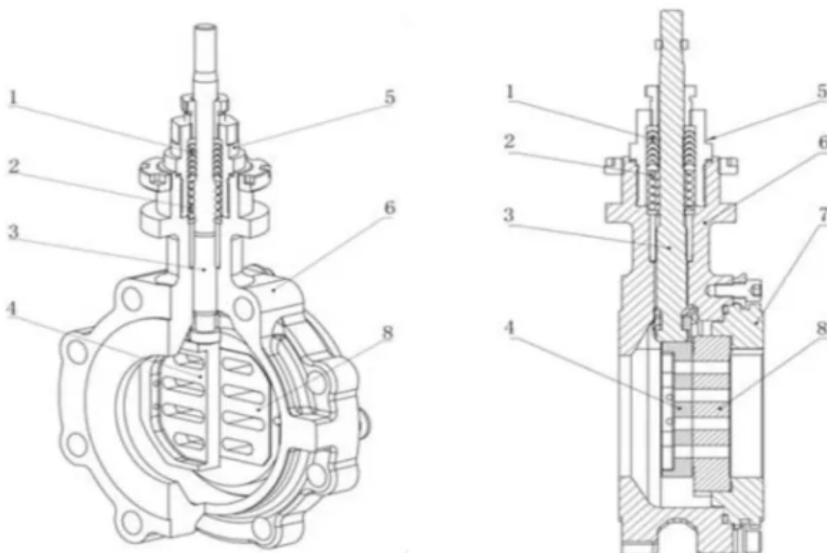
Type and size of connection end

The connecting end type of sliding regulating valve is flange bolt connection and flange clamp connection.

The size and type of flange connection shall comply with the provisions of HG/T20592~20635.

## Structural requirement

### Structure diagram of slide adjusting valve



- 1- Packing
- 2- Packing spring
- 3- Stem
- 4- slide plate (moving plate)
- 5- stuffing box
- 6- Body
- 7- Gland
- 8- seat (fixed plate)



# Flow characteristics corresponding to the orifice shape

The flow characteristics of the slide plate control valve have four kinds, such as straight line, equal percentage, fast opening and parabola, and the corresponding orifice shape



Linear flow characteristic orifice

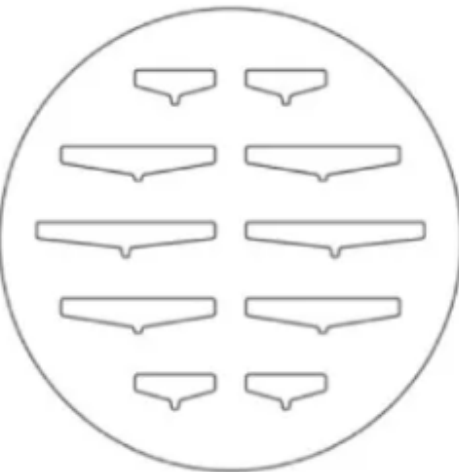


Equal percentage flow characteristic orifice

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Quick opening flow characteristic orifice

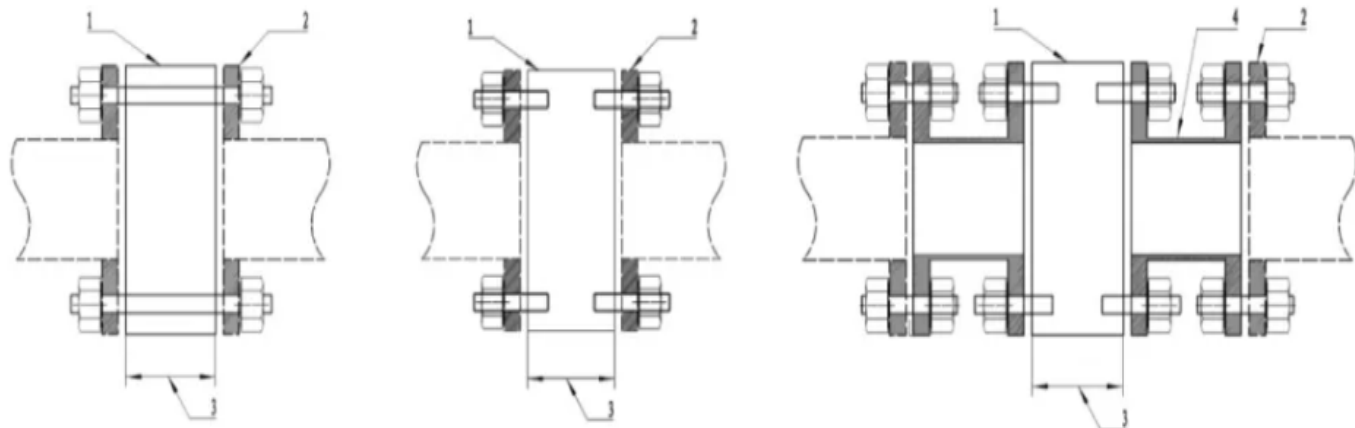


Parabolic flow characteristic orifice



## Pipe connection

The pipe connection mode of sliding regulating valve is clamp type, single flange type, double flange type



1-valve body  
2- Pipe flange  
3- Body length

1-valve body  
2- Pipe flange  
3- Body length diagram

1-valve body  
2- Pipe flange  
3- Body length  
4- Flange short tube

wafer connection

Single flange connection

Double flange connection

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## Valve body dimensions

公称口径	pressure 公称压力					
	PN20	PN50	PN110	PN160	PN260	PN420
valve body dimension 阀体长度 (单位: mm)						
DN25	59	68	68	103	112	126
DN32	71	80	80	107	114	137
DN40	71	80	80	115	124	153
DN50	71	80	80	130	147	172
DN65	82	93	93	136	166	193
DN80	85	96	96	146	184	220
DN100	95	103	142	158	231	249
DN125	103	113	167	184	262	—
DN150	114	131	180	203	291	—
DN200	132	170	217	246	345	—
DN250	140	198	249	277	—	—
DN300	148	230	292	344	—	—
DN350	165	254	315	—	—	—
DN400	181	277	355	—	—	—
DN450	191	292	385	—	—	—
DN500	205	317	414	—	—	—
DN600	235	357	468	—	—	—

# Miro-flow slide plate control valve



Micro-flow slide plate control valve, the use of innovative design, to fill the gap of domestic micro-flow control valve, the minimum Cv value of up to  $1 \times 10^{-6}$ , can be equipped with small multi-spring pneumatic film actuator or intelligent electric actuator, good linearity, small dead zone, sensitive response, can achieve high-precision adjustment of micro-flow, to overcome the pressure difference of up to 40Mpa.

In addition, through the different combination design of the upper valve cover, it can provide high temperature type, cryogenic type, bellows seal type, and can also choose alloy material processing and manufacturing, suitable for all kinds of highly corrosive media, fast delivery, price advantage.

## Technical specifications:

Nominal diameter: DN6~DN15

Nominal pressure: PN16~400, CLASS150~2500

Medium temperature:  $-253 \sim +816^{\circ}\text{C}$

Body material: stainless steel, all kinds of alloy

Leakage grade: ANSI CLASS IV&V

Flow coefficient Cv:  $1 \times 10^{-6} \sim 0.01$

Connection mode: thread, sleeve, welding, flange

Driving mode: pneumatic, electric, manual

Application field: fine chemical, petrochemical, pharmaceutical, microelectronics and other industries of small and pilot test equipment and scientific research institute test equipment in various gas, liquid conditions of micro flow accurate regulation.

