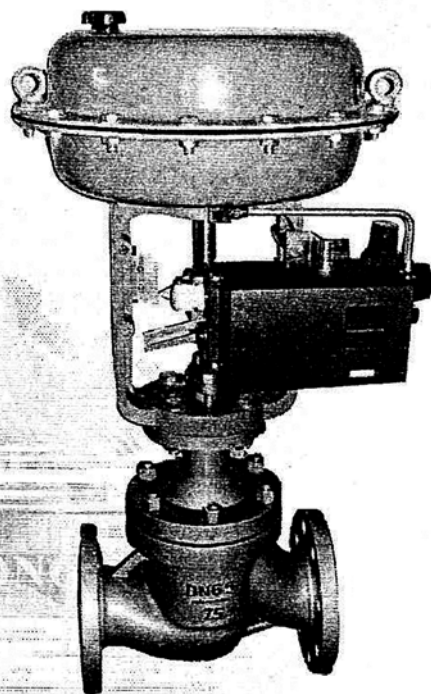


ZJH_M^P (Type)

E-TORK

Pneumatic Control Valve



● Structural Features and Range of Application

ZJHP minitype pneumatic single seat control valve is composed of pneumatic multi-spring diaphragm actuating mechanism and low flow resistance straightway single seat control mechanism. Valve body takes a straightway single seat upper guide structure without bottom cover, and valve spool is plunger structure. Compared with conventional single seat valve, it is featured by small volume, light weight and large flow to adapt to large flow conditions that are strict on leakage.

ZJHM pneumatic sleeve control valve is composed of pneumatic multi-spring diaphragm actuating mechanism and low flow resistance sleeve control mechanism. Compared with conventional sleeve valve, it is 1/3 smaller in volume, 1/3 lighter in weight and 1/3 larger in flow, making it widely used for the automatic control in industrial process demanding little noise and large pressure differential.

● Specifications and Model

Type		Normal Temperature Type	Medium Temperature Type
Model		$ZJH_{P-64}^M - \frac{6}{1} \frac{B}{K}$	$ZJH_{P-64K}^M - \frac{40B}{G}$
Specifications	ZJHP	DN20~200	
	ZJHM	DN25~200	

● Technical Parameters and Performance Index

Main Technical Parameters of Control Mechanism

Nominal Diameter mm		20				25	40		50	65	80	100	150		200
Valve Seat Diameter mm		10	12	15	20	25	32	40	50	65	80	100	125	150	200
Kv Rated Flow Coefficient	Linear	1.8	2.8	4.4	6.9	11	17.6	27.5	44	69	110	176	275	440	690
	Equal Percentage	1.6	2.5	4	6.3	10	16	25	40	63	100	160	250	400	630
Nominal Pressure MPa		0.6; 1.6; 4.0; 6.4													
Stroke mm		16				25				40				60	
Flow characteristic		Linear and equal percentage													
Temperature of medium ℃		-20~200(Normal temperature type) -40~450(Middle temperature type)													
Flange sizes		Cast iron flange to JB78-59; cast steel flange to JB79-59													
Flange type		Type of flange sealing face to JB77-59, therein cast iron flange into sliding type and cast steel flange into female type													
Valve Body Material	PN MPa	0.6 1.6	HT200												
		4.0 6.4	ZG230-500、ZG1Cr18Ni9Ti、ZG0Cr18Ni12Mo2Ti												
Valve Spool Material		1Cr18Ni9、0Cr18Ni2Mo2Ti													
Type of upper bonnet		Conventional type (normal temperature type); hot strip type (middle temperature type)													
Adjustable Ratio		50:1													

Note: flanges to ANSI, JPI and JIS are available, face to face dimensions in accordance with user's requests. (curve of flow characteristic described below) type of upper bonnet

Performance Index

Item			Index Value		Item				Index Value	
Basic Error	Without Positioner	± 5.0	Initial and Terminal Deviation	Pneumatic Close	Without Positioner	Initial Point	± 5.0			
						Terminal Point	± 2.5			
	With Positioner	± 1.0			With Positioner	Initial Point	± 1.0			
						Terminal Point	± 1.0			
Return Difference	Without Positioner	3.0		Pneumatic Open	Without Positioner	Initial Point	± 2.5			
						Terminal Point	± 5.0			
	With Positioner	1.0			With Positioner	Initial Point	± 1.0			
						Terminal Point	± 1.0			
Dead Zone	Without Positioner	3.0	Allowable Leakage 1/h	Single seat type	1 × 10 ⁻⁴ × rated valve capacity					
	With Positioner	0.4								
Rated Stroke Deviation		± 2.5			Sleeve type	1 × 10 ⁻³ × ated valve capacity				

Allowable Pressure Differential

Type		Single Seat Type						Sleeve Type					
Range of Spring		20~100			40~200			20~100			40~200		
Air Supply Pressure		0.14		0.25		0.4		0.14		0.25		0.4	
Nominal Diameter	Valve Seat Diameter	Pneumatic Close	Pneumatic Open	Pneumatic Close	Pneumatic Open	Pneumatic Close	Pneumatic Open	Pneumatic Close	Pneumatic Open	Pneumatic Close	Pneumatic Open	Pneumatic Close	Pneumatic Open
20	10	6.4	4.46	6.4	6.4	6.4	6.4						
	12	6.4	3.09	6.4	6.4	6.4	6.4						
	15	5.94	1.98	6.4	5.94	6.4	6.4						
	20	3.34	1.11	6.4	3.34	6.4	6.4						
25	25	2.14	0.71	6.4	2.14	6.4	4.99	3.0	1.5	6.4	4.5	6.4	6.4
40	32	1.31	0.44	6.09	1.37	6.4	3.05	2.25	1.13	6.4	3.38	6.4	6.4
	40	0.84	0.28	3.9	0.84	5.26	1.95						
50	50	0.53	0.18	2.5	0.53	3.39	1.25	1.95	1.18	6.4	3.54	6.4	6.4
65	65	0.51	0.17	2.36	0.51	3.21	1.18	2.36	1.02	6.4	3.06	6.4	6.4
80	80	0.33	0.11	1.56	0.33	2.12	0.78	2.04	0.84	6.4	2.51	6.4	5.85
100	100	0.21	0.07	1.0	0.21	1.35	0.5	1.67		6.4		6.4	
150	125	0.22	0.07	1.02	0.22	1.39	0.51	1.41	0.71	6.4	2.12	6.4	4.94
	150	0.15	0.05	0.71	0.15	0.97	0.35						
120	200	0.08	0.028	0.40	0.08	0.54	0.20	1.41	0.57	6.4	1.71	6.4	4.00

Note: 1. All above are provided with valve positioner.

2. Allowable pressure differential is the maximum value of ΔP when valve is closed and $P_2=0$.

3. When the maximum pressure differential is above 1.0Mpa, valve plug and sleeve will be welded with hard alloy in surface.

Main Technical Parameters of Actuating Mechanism

Model	ZHA(B)-22	ZHA(B)-23	ZHA(B)-34	ZHA(B)-45
Effective Area	350	350	560	900
Stroke	16	25	40	60
Range of Spring	20~100; 40~200; 80~240; 20~60; 60~100			

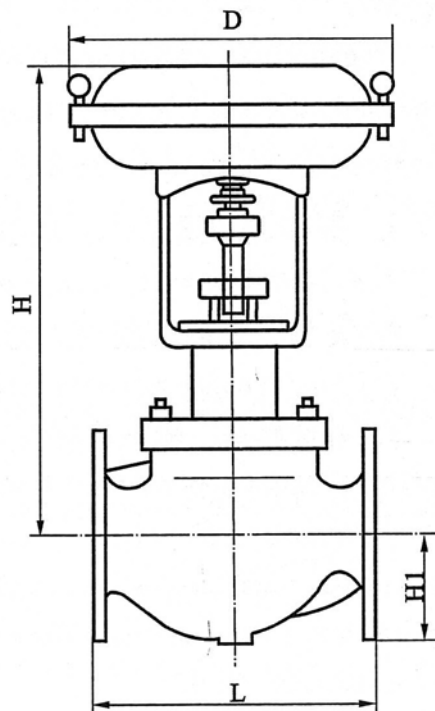
● Available Accessories

Positioner, handwheel mechanism, air filter and pressure reducer etc.

● Overall Dimensions

(Unit): mm

Nominal Diameter DN	D	L			H				H1			
		PN6	PN	PN	Normal Temperature		Middle Temperature		PN	PN	PN	PN
		PN16	40	64	Pneumatic Close	Pneumatic Open	Pneumatic Close	Pneumatic Open	6	16	40	64
20	285	187	194	206	393	406	549	556	45	52.5	52.5	62.5
25		184	197	210	410	417	560	567	50	57.5	57.5	67.5
40		222	235	251	453	460	623	630	65	72.5	72.5	82.5
50		254	267	286	456	463	626	633	70	80	80	87.5
65	360	276	292	311	610	617	790	797	80	90	90	100
80		298	317	337	622	629	802	809	92.5	97.5	97.5	105
100		352	368	394	630	637	810	817	102.5	107.5	115	125
150	470	451	473	508	847	854	1067	1074	130	140	150	170
200		600	600	650	871	878	1091	1098	157.5	167.5	187.6	202.5



Relationship between Allowable Medium Pressure and Working Temperature

Valve Body Material	Nominal Pressure MPa	Medium Working Temperature								
		<120	<200	<250	<300	<350	<400	<425	<435	<450
		Maximum Working Pressure								
HT200	0.6	0.6	0.55	0.5						
	1.6	1.6	1.5	1.4						
ZG230-500	0.6		0.6	0.56	0.5	0.45	0.4	0.36	0.32	0.3
ZG1Cr18Ni9Ti	1.6		1.6	1.4	1.25	1.1	1.0	0.9	0.8	0.75
ZG0Cr18Ni12Mo2Ti	4.0		4.0	3.6	3.2	2.8	2.5	2.2	2.0	1.9
	6.4		6.4	5.6	5.0	4.5	4.0	3.6	3.2	3.0

● Installation of Control Valve

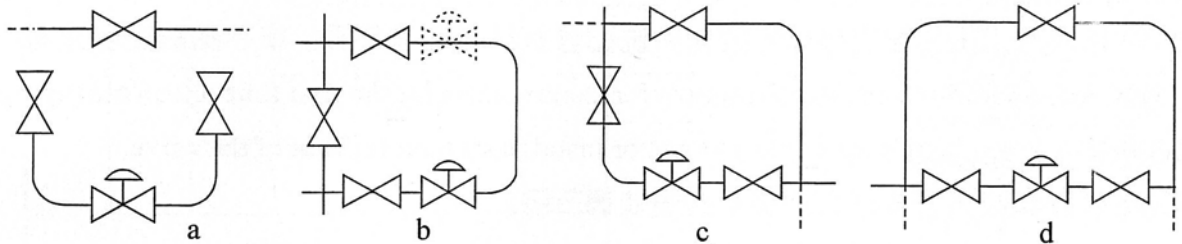
Unqualified installation of control valve can cause failure and great waste. On the contrary, if properly installed, it can be assured of normal operation, lengthened service life, lessened maintenance work and outstanding system control performance.

1. To install a control valve, the following shall be considered:

(1) Safety: personnel and equipment safety during the process of installation.

(2) Control performance: pressure loss of piping system shall be in conformity with the pressure loss considered when calculating the dimensions of control valve, thus to ensure the required flow characteristic. Inlet and outlet should be provided with enough straight pipe section as much as possible.

(3) Installation position: there should be enough space to facilitate the manual operation of persons (including bypass operation) and to ensure the possibility of on-site disassembly and maintenance of control valve and its accessories.



Installation Diagram

Note: the dotted line in the diagram means another allowable direction at the inlet and outlet of pipeline.

(4) Control valve manifold: normally, in the process of piping, cutoff valve and bypass valve will be mounted to form up a valve manifold with the control valve, thus to adapt to the continuous operation of equipment. Upon maintenance of control valve, it should be isolated by cutoff valve and controlled by bypass valve. In the diagram there are four types of arrangement of control valve manifold that are suggested.

2. Field Installation

Installation personnel should know that control valve is a kind of precise instrument, and shall be kept away damages resulted from impact and drop. The following shall be noted:

(1) Valve should better be mounted vertically on pipeline. For valve of large weight or to be used in vibrating conditions, there should be a support.

(1) Valve should better be mounted vertically on pipeline. For valve of large weight or to be used in vibrating conditions, there should be a support.

(2) Valve body should be kept away the excessive stress due to the piping in the front or at the back, or the serious nonaxiality of equipment flanges.

(3) Before operation and after shutdown for examination for the first time, clean the piping system first and then install the control valve, or install a strainer in front of the valve.

(4) Do remember to install the control valve according to the arrowhead of flow direction marked on the body of valve.

● Materials of Main Parts and Recommended Range of Service Temperature

Name of Part	Material	Range of Temperature	Remark
Valve body upper bonnet	HT200	-20~+200℃	
	ZG230-500	-40~+450℃	
	ZG1Cr18Ni9Ti	-250~+550℃	
	ZG0Cr18Ni2Mo2Ti	-250~+550℃	
Valve spool and seat	1Cr18Ni9	-250~+550℃	
	0Cr18Ni12Mo2Ti	-20~+550℃	
Packing	PTFE	-40~+200℃	
Diaphragm	NBR embedded with reinforced Dacron		
Compression Spring	60Si2Mn		
Diaphragm Cover	A3		

● Specifications of Model Formulation

Z J H P □ — □ □ □ □

Product	Z									Category of Actuator
		J								Minitype
			H							Linear Stroke
				P						Valve Structural Type of Single Seat Control Valve
				M						Valve Structural Type of Sleeve Control Valve
Supplement of Valve Structural Type				Q					Control Cutoff	
				V					Bellows Seal	
Nominal Pressure						16			1.6MPa	
						40			4.0MPa	
						64			6.4MPa	
Overall Action Mode							B		Pneumatic Close Type	
							K		Pneumatic Open Type	
Working Temperature							Nil	Conventional Type	Cast Iron: -20~200℃	
									Cast Steel : -40~250℃	
									Cast Stainless Steel:-60~250℃	
							S	Heat Radiating Type	Cast Steel : -40~450℃	
									Cast Stainless Steel:-60~450℃	
							G	High Temperature Type	< 560℃	
							D	Low Temperature Type	-60~-100℃	
							D1		-100~-200℃	
							D2		-200~-250℃	

● Order Information

Please specify the following conditions in detail when placing an order:

- ◇ Product Model
- ◇ Nominal pressure
- ◇ Nominal diameter and rated flow coefficient Kv
- ◇ Signal pressure and range of spring
- ◇ Flow characteristic
- ◇ Valve open and close operation
- ◇ Range of working temperature of medium
- ◇ Materials of valve body and spool
- ◇ Any accessories, and the model of accessories
- ◇ Any other special requirements