

HAC Pneumatic Angle Type Control Valve

OVERVIEW

Model HAC series angle type control valve body adopts an angular structure and is adapted to the angle piping structure. And Its has compact structure, sensitive action, low pressure drop loss, large flow capacity and excellent flow characteristics. It is easy to maintain and can be used in harsh working conditions. The internal structure has top-guided single-seated, cage type, single-seated cage type and low noise type, three-stage decompression and other structural designs to meet different working applications.

STANDARD SPECIFICATION

Body

Internal Structure Type

- Top-Guided Single-Seated (Please Refer to HTS Serial)
- Cage Type Control Valve (Please Refer to HCB Serial)
- Single-Seated Cage Type Control Valve (Please Refer to HSC Serial)
- Low-Noise Cage Type Control Valve (Please Refer to HCN Serial)

Nominal Size

3/4", 1", 1-1/4", 1-1/2", 2", 2-1/2", 3", 4", 5", 6", 8", 10", 12", 14", 16"

Pressure rating

- ANSI Class 125, 150, 300, 600
- JIS 10K, 16K, 20K, 30K, 40K
- PN1.6, 4.0, 6.4, 10.0 Mpa

End connection

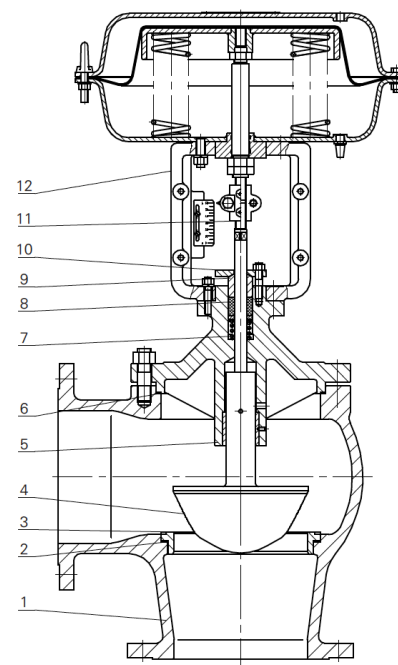
- Flanged End: FF, RF, RJ, LG
According to ANSI B16.5, JIS B2201, JB/T79.1
PN1.6MPa, JB/T79.2
- Welded End: SW, BW
- Threaded End: Rc

Material

A216 WCB, A216WC6, WC9, A352 LCB, A351 CF8, A351 CF8M, A351 CF3M, A351 CF3

Bonnet

- Plain bonnet (-17 to 230°C)
- Extension bonnet Type1(-45 to -17°C and 230 to 566°C)
- Extension bonnet Type 2 Cryogenic
Integral cast type (-100 to -45°C)
Welded type (-196 to -100°C)
- Bellows type



Single-Seat Type Angle Control Valve

1. Angle Valve Body 2. Seat Gasket 3. Valve Seat 4. Plug 5. Bonnet
6. Gasket 7. Spring 8. Packing 9. Packing Screw 10. Packing Plate
11. Travel Indicator 12. Actuator

Packing

V shaped PTFE, PTFE, Flexible graphite

Actuator

Type

Single-acting diaphragm actuator, Spring type piston actuator, Double acting piston actuator

Diaphragm material

Cloth embedded nylon and ethylene propylene rubber

Spring range

- 20 to 100 kPa(0.2 to 1.0 kgf/cm²)
- 40 to 200 kPa(0.4 to 2.0 kgf/cm²)
- 80 to 240 kPa(0.8 to 2.4 kgf/cm²)

Supply pressure

0.14, 0.16, 0.28, 0.4, 0.5 Mpa

Air connection

Rc1/4 or 1/4NPT internal thread

Ambient temperature

-30 to 70°C

Valve action

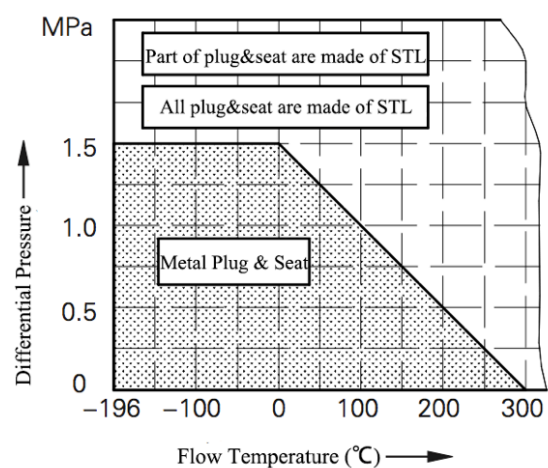
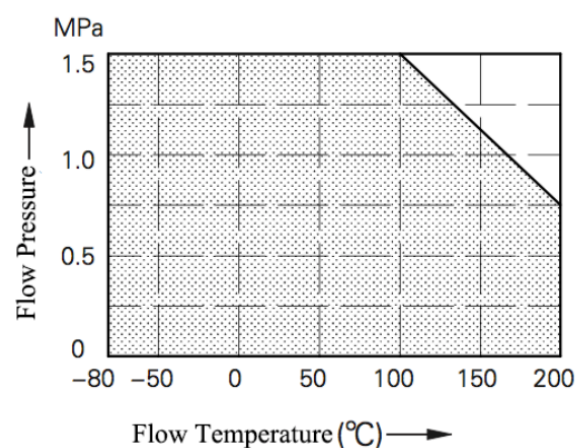
- FO: Air to close(Direct action actuator is combined.)
- FC: Air to open(Reverse action actuator is combined.)

Optional accessories

- P/P or I/P Positioner
- Air filter regulator
- Top-mounted or Side-mounted Handwheel
- Limit switch
- Solenoid valve
- Motion transmitter
- Booster relay
- Lock-up valve
- Air lock relay
- Others

Performance**Rated Kv value**

Refer to table 1.

Figure1-1 Metal Seated*Figure 1-2 Soft Seated(RPTFE)*

ACTUATOR

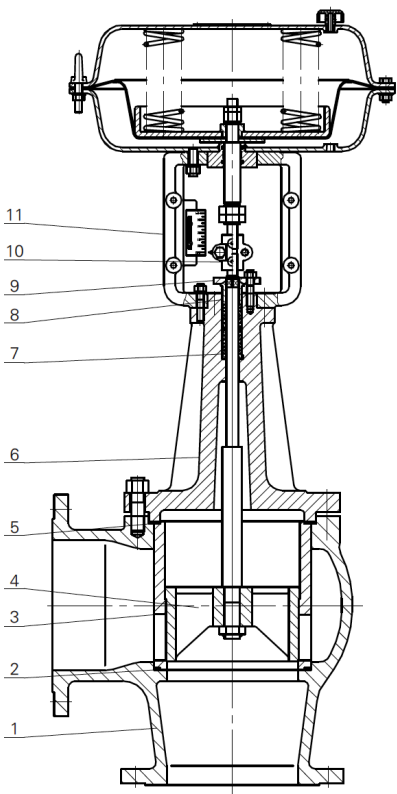
Serial	Diaphragm Pneumatic	Piston Pneumatic	Electric
Model	PZM Serial	Z13 Series	See Selection Model
Type	Multi-Spring	Single Acting Double Acting	_____
Function	Controlling	Controlling	Controlling
Air Or Power Supply	Air Supply (Spring Range) 140Kpa (20Kpa ~ 100Kpa) 250Kpa (40Kpa ~ 200Kpa) 280Kpa (80Kpa ~ 240Kpa) 400Kpa (80Kpa ~ 240Kpa)	Air Supply: 400 ~ 500Kpa	See Selection Catalog
Tube Connection Size	Rc 1/4	Rc 1/4	_____
Direct action	Air to Close (FO)		Increase Signal Valve to Close
Reverse action	Air to Open (FC)		Increase Signal Valve to Open
Allowable Ambient Temperature	-10°C ~ +70°C	-10°C ~ +55°C	_____
Standard Painting Color	Red	Red	_____
Option Accessories	Valve Positioner, Air Filter Regulator, Solenoid Valve, Limit Switch, Volume Booster, HandWheel and Locked Valve etc.		See Selection Catalog

MAIN PERFORMANCE INDEX

No.	Item			Standard Type Control Valve		Bellows and Extension Type	
				without positioner	with positioner	without positioner	with positioner
1	Basic Error <(%)			±5	±1.5	±15	±4
2	Backlash <(%)			3	1	10	3
3	Dead Zone <(%)			3	0.4	8	1
4	Initial to End Position Deviation <(%)	Air to Open		±2.5	±1	±6	±2.5
				±5	±1	±15	±2.5
		Air to Close		±5	±1	±15	±2.5
				±2.5	±1	±6	±2.5
5	Rated Travel Deviation < (%)			±2.5	±2.5	+ 6	+ 2.5
6	Rated Kv Value			Please see sheet 1.			

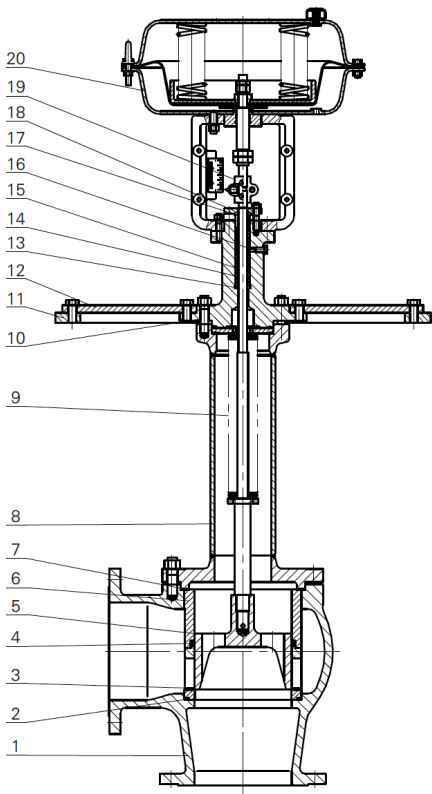
SPECIAL REQUIREMENTS

Special Inspection Of The Valve Body Part	Flow characteristic test, material inspection (test report), low temperature test
Valve Body Cleaning	Cleanliness requirements, oil forbidden, water removal
Valve Body Part and Actuator Special Specifications	Sandproof, dustproof, salt and corrosion resistant, cold area, tropical area, copper forbidden, special air piping and special tube, vacuum working conditions, bolts and nuts that come into contact with the atmosphere are made of stainless steel, specified coating color



Cage Type Angle Control Valve

1. Angle Valve Body 2. Seat Gasket 3. Cage 4. Plug 5. Seal
6. Extension Bonnet 7. Packing 8. Packing Screw 9. Packing Plate
10. Travel Indicator 11. Actuator



Single-Seated Cage Type Angle Control Valve

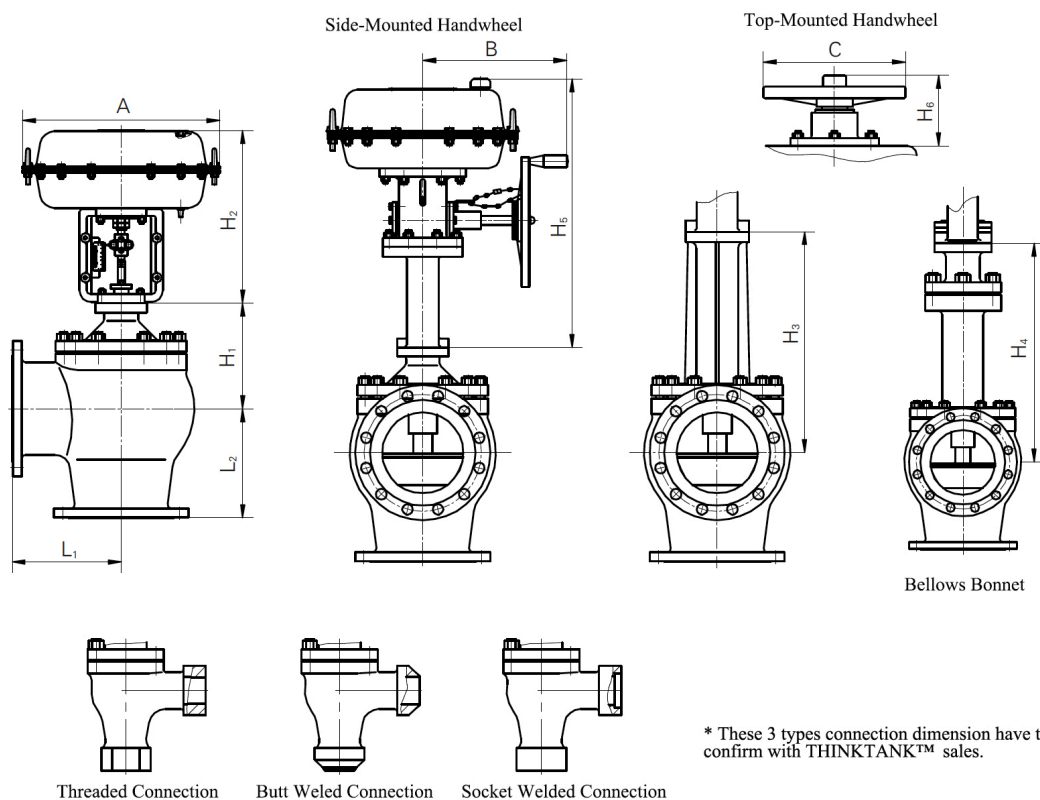
1. Angle Valve Body 2. Seat Gasket 3. Below Cage 4. Sealing Ring
5. Plug 6. Upper Cage 7. Seal 8. Cryogenic Bonnet 9. Bellows
10. Top Flange 11. Plate 12. Connection Plate 13. Packing Gasket
14. Packing 15. Gasket 16. Inspection Port(need custom)
17. Packing Screw 18. Gland 19. Travel Indicator 20. Actuator

Sheet 1. Rated Kv Value · Rated Travel

Nominal Diameter	Seat Diameter	Rate Kv		Travel
		Linear	EQ%	
20	6	0.01	-	16
		0.04	-	
		0.10	-	
		0.16	-	
		0.25		
	8	0.40		
		0.63		
	11	1.0		
		1.6		
		2.5		
	15	4.0		
	20	6.3	6.9	
25	6	0.01	-	16
		0.04	-	
		0.10	-	
		0.16	-	
		0.25		
	8	0.40		
		0.63		
	11	1.0		
		1.6		
		2.5		
	15	4.0		
	20	6.9	6.3	
	25	11	10	
32	20	6.9	6.3	16
	25	11	10	
	32	17.6	16	25

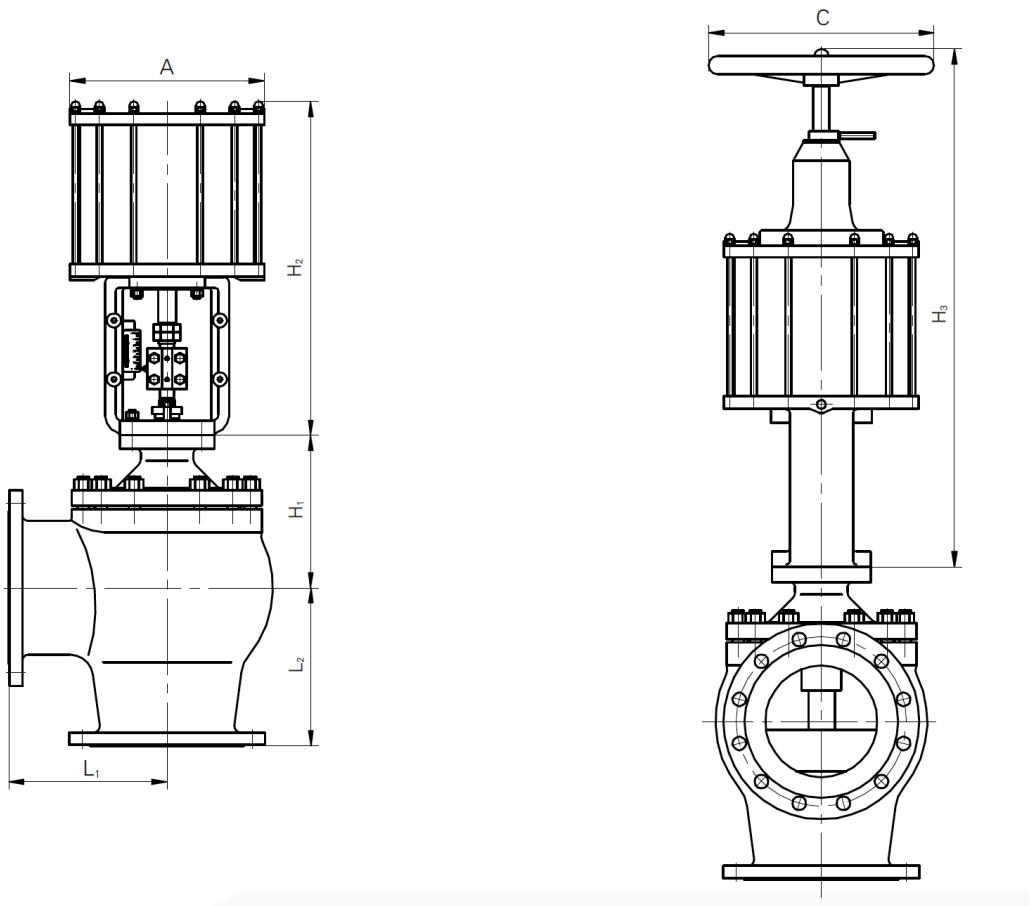
Nominal Diameter	Seat Diameter	Rate Kv		Travel
		Linear	EQ%	
40	25	11	10	16
	32	17.6	16	25
	40	27.5	25	
50	32	17.6	16	25
	40	27.5	25	
	50	44	40	
65	40	27.5	25	25
	50	44	40	
	65	69	63	
80	50	44	40	25
	65	69	63	40
	80	110	100	
100	65	69	63	40
	80	110	100	
	100	176	160	
125	80	110	100	40
	100	176	160	
	125	275	250	60
150	100	176	160	40
	125	275	250	60
	150	440	400	
200	125	275	250	60
	150	440	400	
	200	690	630	

Dimension for Standard, Extension & Bellows Bonnet



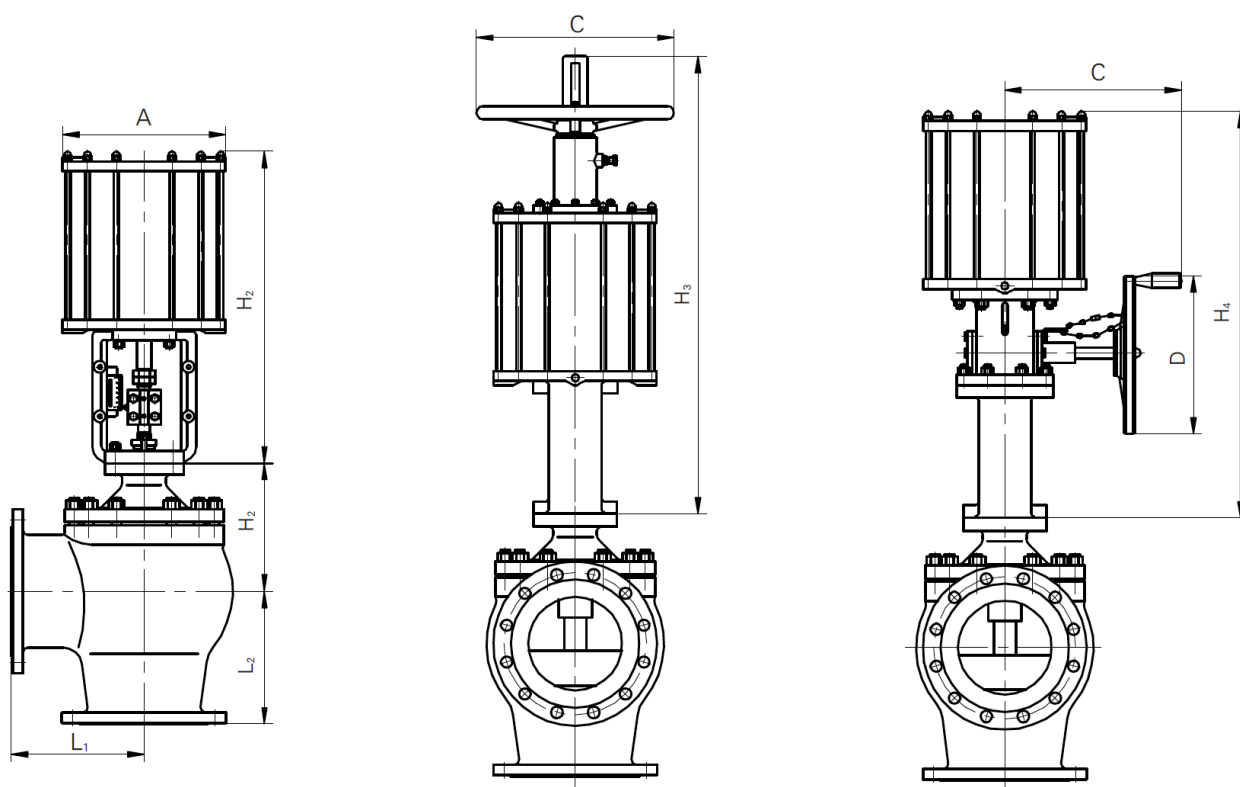
Nominal Diameter DN(mm)	L1		L2		H1	H3	H4	Actuator					
	PN16 PN25 PN40 150LB	PN64 PN100 300LB 600LB	PN16 PN25 PN40 150LB	PN64 PN100 300LB 600LB				A	C	H2	H5	H6	B
20(3/4")	95	95	115	115	115	240	322	282	220	258	465	180	260
25(1")	100	100	115	115	115	240	322	282	220	258	465	180	260
32(1-1/4")	105	105	130	130	132	300	366	282	220	258	465	180	260
								308	220	280	465	180	260
40(1-1/2")	115	115	130	130	142	310	390	282	220	258	465	180	260
								308	220	280	465	180	260
50(2")	125	125	150	150	159	320	402	308	220	280	465	180	260
65(2-1/2")	145	145	170	170	169	329	594	308	220	280	465	180	260
								394	270	360	580	236	305
80(3")	155	155	190	190	165	325	590	308	220	280	465	180	260
								394	270	360	580	236	305
100(4")	175	175	215	215	176	241	603	394	270	360	580	236	305
125(5")	200	200	250	250	208	418	632	394	270	360	580	236	305
								498	320	435	675	310	330
150(6")	225	225	275	275	253	450	625	394	270	360	580	236	305
								498	320	435	675	310	330
200(8")	275	275	325	325	265	456	625	498	320	435	675	310	330

Piston Pneumatic Angle Valve(Double Acting)



Nominal Diameter DN(mm)	L1/L2		H1	Actuator			
	PN16 PN25 PN40 150LB	PN64 PN100 300LB 600LB		A	C	H2	H3
65(2-1/2")	145	170	210	210	270	480	780
				280	270	490	790
80(3")	155	190	210	210	270	480	780
				280	270	490	790
100(4")	175	215	220	280	270	490	790
				325	320	500	800
125(5")	200	250	290	325	320	590	950
				354	320	628	988
150(6")	225	275	340	325	320	590	950
				354	320	628	988
200(8")	275	325	370	325	320	590	950
				354	320	628	988

Piston Pneumatic Angle Valve(Single Acting)



Nominal Diameter DN(mm)	L1/L2		H1	Actuator						
	PN16 PN25 PN40 150LB	PN64 PN100 300LB 600LB		A	B	C	D	H2	H3	H4
65(2-1/2")	145	170	210	280	250	250	270	535	772	700
				325	250	250	270	565	802	730
80(3")	155	190	210	280	250	250	270	535	772	700
				325	329	329	270	565	802	730
100(4")	175	215	220	325	329	329	270	565	802	730
				385	329	329	270	570	807	735
125(5")	200	250	290	385	329	329	270	635	870	835
				430	349	349	270	695	1045	894
150(6")	225	275	340	430	349	349	270	695	1045	894
200(8")	275	325	370	430	349	349	270	695	1045	894



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