



BCST Valve

Control Valve Serial

BCST Group Co.,Ltd

PRODUCTION EQUIPMENT

生产设备



BCST Group focuses on the design and independent production of valves and products, and is committed to bringing the global advanced fluid control solutions to customers and creating more value for customers. BCST Wuyi not only provides equipment with reliable performance, but also takes full account into the applicability, economy and energy-saving operation solutions.

www.bcstgroup.com

info@bcstgroup.com



品质体现我们的尊严，出类拔萃的品质拒绝平庸。一丝不苟、千锤百炼、标准化的管理体系和系统化的品质保证体系，让本公司产品品质在世界的每个角落都畅通无阻。我们通过与合作者们卓有成效的努力，正促使“杰创武亿”成为世界上最无可挑剔的品质。

Quality is the proxy of the dignity of the Company. The Company seeks for excellent quality without any place for mediocrity. The meticulous, well-seasoned, standardized management system and systematic quality assurance system make the product quality of the Company unobstructed in every corner of the world. Through effective efforts with partners, the Company is making "BCST Wuyi" the most impeccable quality in the world.



FINISHED PRODUCT WAREHOUSE

成品车间

www.bcstgroup.com

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COOPERATION AND MUTUAL BENEFITS

合作共赢

夫仁者，己欲立而立人，己欲达而达人。

合作发展，共创未来。

合作共赢，合作不仅是一种积极向上的心态，
更是一种智慧。

He, who is benevolent, wishing himself to be established, sees that others are established, wishing himself to be successful, sees that others are successful.

By cooperating and developing, we can create the future together. Cooperation is intended for mutual benefits. Cooperation is not only a positive attitude, but also a wisdom.



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TECHNOLOGICAL INNOVATION

科技创新

杰创阀门将始终坚守产品的品质，因为好的品质永远是未来不可动摇的发展方向。今后我们将再接再厉，以创新为力量，创造更好更高的品质，打造更好的品牌，树立精益求精的态度。

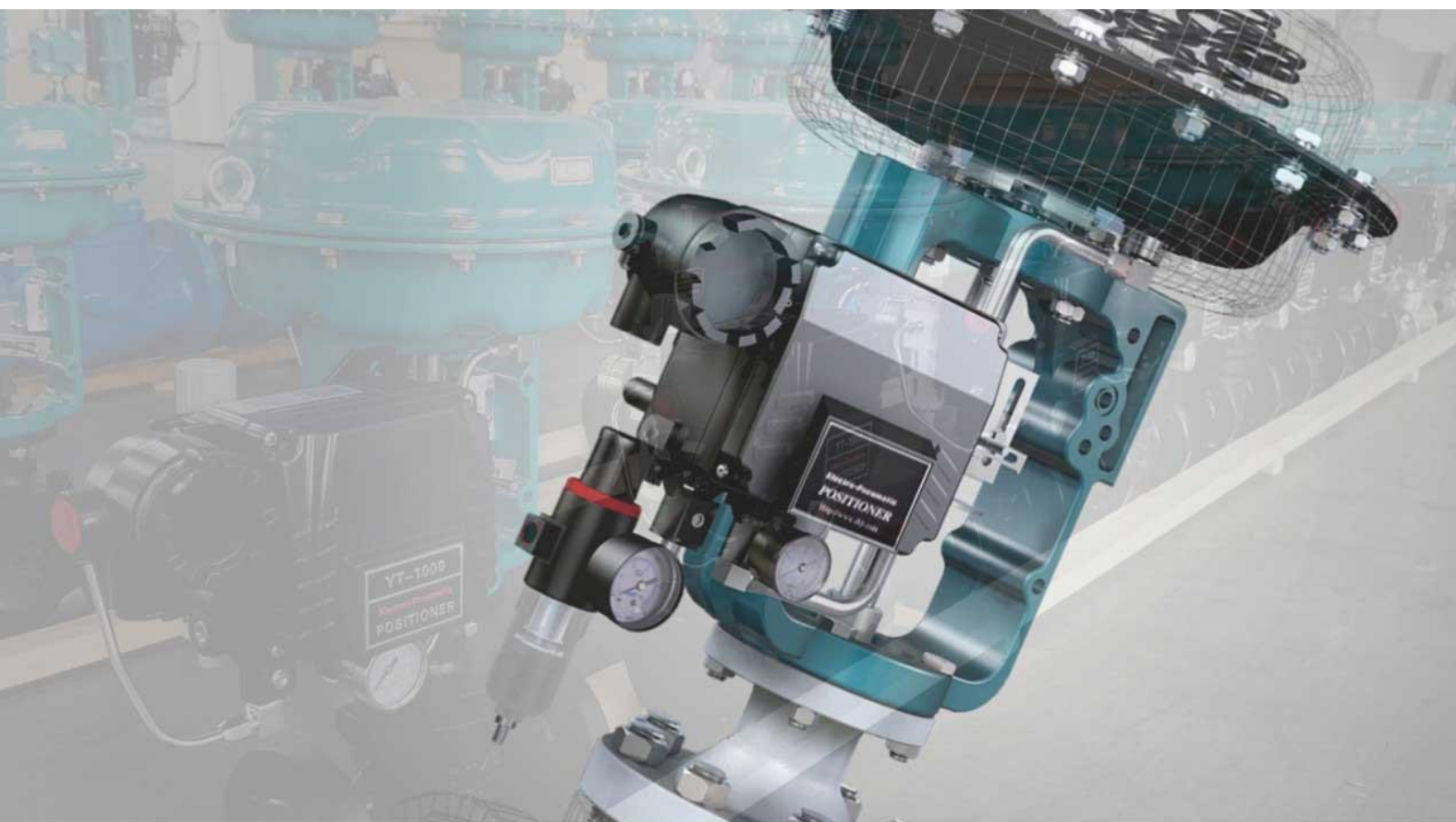
BCSTValve will always adhere to the good quality of products, and good quality is the unshakable development direction in the future. Driven by innovation, we will continue to make persistent efforts to create better and higher quality, create better brand and set up an attitude of continuous improvement in the future.



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Control Valve

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PRODUCT HIGHLIGHTS

产品集锦



顶部导向型单座调节阀
Top-guide single-seated
control valve



顶部导向型多孔笼式调节阀
Top-guide type porous-cage
control valve



注脂密封高温调节阀
Grease seal high temperature
control valve



气动薄膜保温调节阀
Pneumatic film insulation
control valve



气动薄膜保温调节阀
Pneumatic film insulation
control valve



顶部导向型套筒调节阀
Top-guide type sleeve
control valve



三通分流合流调节阀
Three way shunt and
confluence control valve



超小流量针式调节阀
Ultra-small flow needle
control valve



自力式氮封调节阀
Self-operated nitrogen seal
control valve



自力式微压调节阀
Self-operated micro pressure
control valve



自力式调节阀
Self-actuated control
valve series



气动衬氟调节蝶阀
Pneumatic fluorine lining
control butterfly valve



气动O型切断球阀
Pneumatic o-type
cut-off ball valve



气动衬氟O型切断球阀
Pneumatic fluorine lined O-type
cut-off ball valve



电动O型球阀
Electric o-type ball valve



电动波纹管密封调节阀
Electric bellows seal
control valve



电动薄膜切断阀
Electric diaphragm
cut-off valve



电动单座调节阀
Electric single seat
control valve



自力式电控温度调节阀
Self-operated electronic control
temperature control valve

BCST CONTROL VALVE

Nowadays with the development of the modernized industrial automatic controlling system progressing, the requirement to control valve increased. BCST with so many years research and development, developed ZH series direct travel control valve and ZR series angle travel control valve.

Compact structure, advanced operation actuator system. Applicable medium are Liquid, Gas and Steam. BCST control valve with high durability and stability, easy for type choosing. Structure simplified, reduced the spare parts in large quantity, more convenient for valve maintenance and reduced the maintenance cost.



Easy calculation and option

Convenient maintenance

- Optimized spare parts for compatibility to different size.
- Low application cost.

High durability and compactability

- Can provide integrated control valve with actuator
- Valve size range from DN25 to DN500 (1" to 20")

- Pressure grade range from PN10 to PN420 (ANSI Class150 to 1500)

Wide variety of type option



- Power plant

- Steel plant

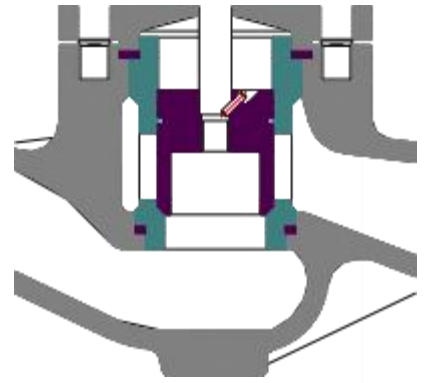
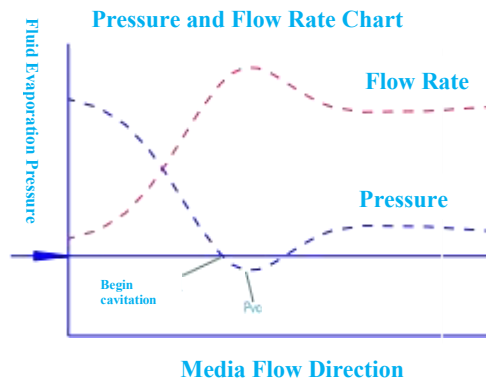
- Fire extinguish system

- Petrochemical industry

- Shipping industry

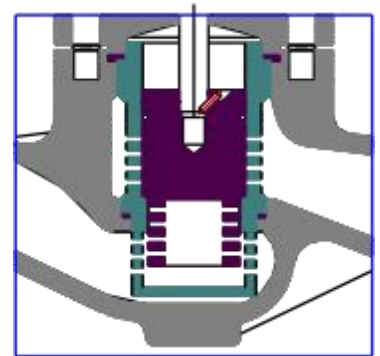
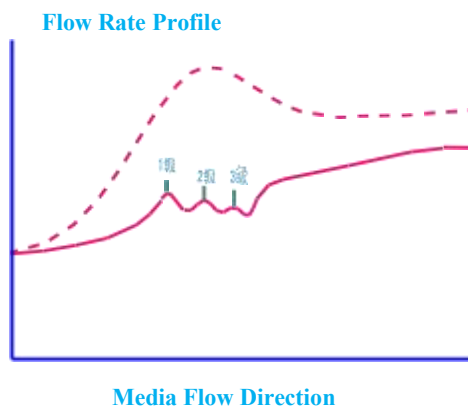
■Fluid

While fluid flow through valve, the fluid resistance will cause valve pressure reduce, meanwhile flow speed increase. The higher valve flow resistance, the higher flow speed. Different fluid may cause aerodynamic noise and cavitation in different level.



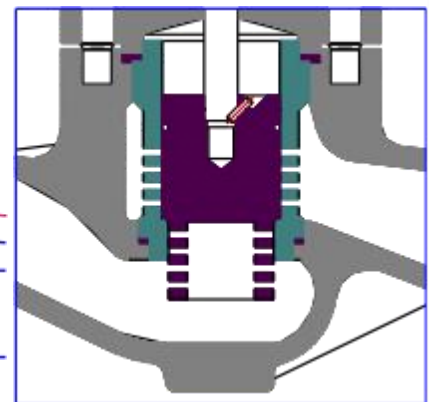
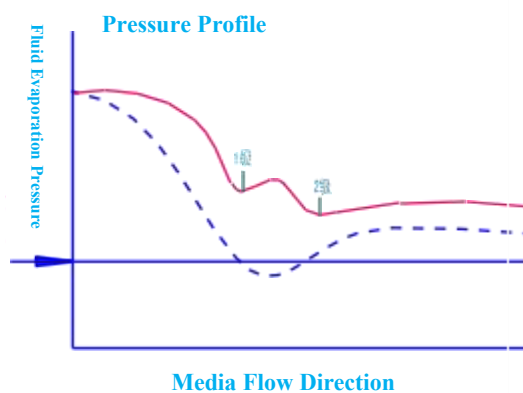
■Aerodynamic noisy solution

Control valve flow rate can also control valve aerodynamic noisy. Mouse cage can continuously absorb energy caused by pressure drop. For further flowrate and noisy treatment may install external equipment, such as Orifice plate or muffler.



■Cavitation solution

Control valve pressure above PVC, continuously absorb energy caused by pressure drop. Increased flow resistance can avoid cavitation. For further flowrate and noisy treatment, may install external equipment, such as Orifice plate or muffler.





CATALOG

JC-ZH series linear actuator control valve

ZHP type Single Seat Series

ZHP type single seat control valve is a kind of top pilot single seat valve, which has simple structure, well sealing, high flow rate and stable application performance. Reasonable top spiral system can avoid vibration during small opening percentage, so as to extend valve working life.

◆Specification



Body type: straight through casting globe type
 Spool type: non-balanced single seat plug type
 Nominal size: DN20~200 NPS 3/4" ~ 8"
 Nominal pressure: PN16 ~ 100 CLASS 150LB ~ 600LB
 Connection: flange: FF、RF、MF、RTJ
 Welding: SW、BW
 Flange dimension: acc. to IEC 60534
 Bonnet type: standard type (-5℃~230℃) 、
 Radiator type: (-45℃~ high than 230℃ occasion) 、
 Low temperature extended type (-196℃~ -45℃) 、
 Bellow seal type
 Warm insulation Jacket type
 Packing: V type PTFE packing, flex. graphite packing, etc.
 Gasket: Metal graphite packing
 Actuator: pneumatic: multi-spring diaphragm actuator, piston type actuator.
 electric: 3810L series smart actuator, PSL series actuator.
 Surface painting: Green color, acrylic acid polyurthene ceramic paint.

◆Code

JC-Z	Actuator	H	Structure	Nominal pressure	Body material	Nominal size
Z series control valve	J: pneumatic diaphragm actuator H: pneumatic piston actuator R: electric 3810L actuator D: electric PSL actuator	Hdirect travel	P: standard single seat PF: soft sealing single seat PL: single seat cage type PG: radiator single seat type PV: bellow seal single seat PD: low temperature single seat	PN16=16 CL150LB=150 LB JIS10K=10K	C=WCB LC=LCB P=CF8 PL=CF3 R=CF8M RL=CF3M D=special material	DN25= DN25 NPS1 " =NPS1"
Such as: Z type pneumatic diaphragm single seat control valve, PN16, body: WCB, nominal size: DN50, type: JC-ZJHP-16C DN50						

◆Performance

Flow characteristic		Linear, percentage, quick open	
Allowable range		50: 1 (CV<6.3 30: 1)	
Rated Cv value		Percentage CV1.6~630 , linear CV1.8~690	
Allowable leakage		Metal seal: IV grade (0.01% rated capacity) Soft seal: VI grade (foam grade) Leakage standard: GB/T 4213	
Performance		Pneumatic	Electric
	Intrinsic error %	±1.5	±1.0
	Return difference, %	≤1.5	≤1.0
	Dead zone, %	≤0.6	≤1.0
	Difference from beginning to end point, %	±2.5	±2.5
	Rated travel difference, %	≤2.5	≤2.5

Note: specification on the basis of control valve with positioner and PTFE packing.

◆Special specification

Special test	Material penetration flaw detection (PT), radiator test (RT), flow characteristic test, low temperature test.
Special treatment	Trim nitrogen treatment, seat hard alloy treatment.
Special rinse	Degreasing and dehydration treatment
Special condition	Special piping or connection, vacuum condition, S.S fastener, special coating.
Special dimension	Customized face to face length or dimension
Test and inspection	Third party test report

◆Actuator

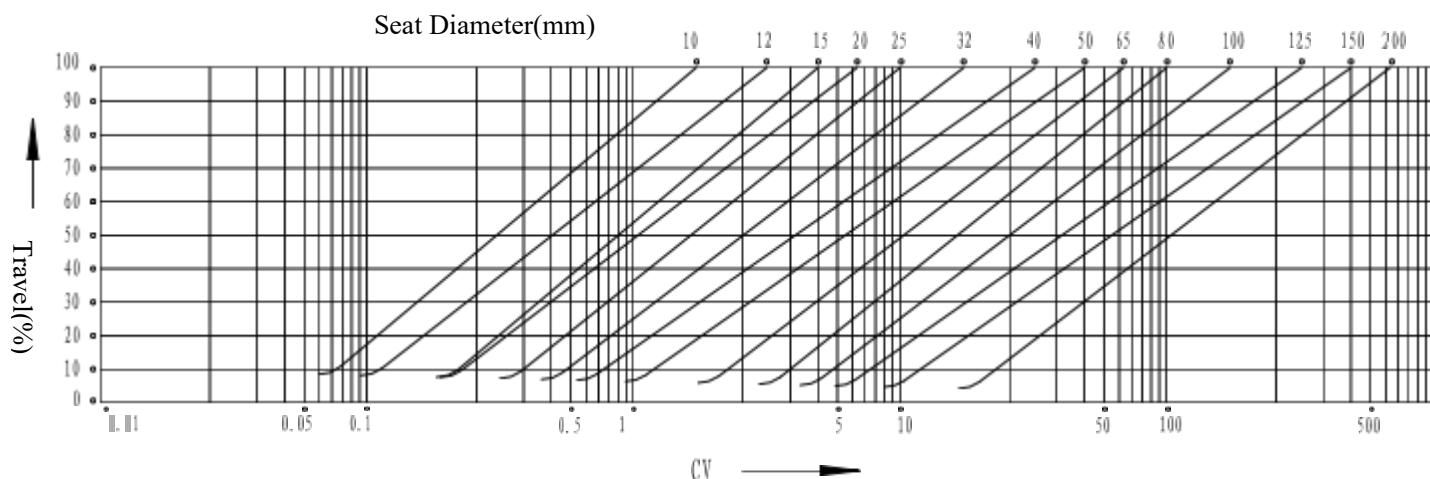
Method	Type	Pneumatic diaphragm actuator	Electric actuator
		ZH23~ZH56	3810L series
		Multi-spring type	Intelligent integrated type
Usage		Regulating type, ON-OFF type	Regulating
Air supply pressure or Power supply voltage		Air supply pressure (Spring range) 140 (20~100) Kpa G 240 (40~200) Kpa G 280 (80~240) Kpa G	Power: AC 200V±10% 50Hz Or Power: AC 380V±10% 50Hz○1
Connector		Air pipe connector: RC1/4	Normal type: cable inlet 2-PF(G1/2") Explosive proof: Protection jacket PF(G3/4")
Direct action		Pressure increase, stem descend, valve close.	Input signal increase, stem descend, valve close.
Reaction		Pressure increase, stem ascend, valve open.	Input signal increase, stem ascend, valve open.
Input signal		40~20mA.DC (with positioner)	Input/output 4~20mA.DC
Lag		≤1%FS (with positioner)	≤0.8%FS
Linear type		2%FS (with positioner)	≤±1%FS
Environmental temperature		-10℃~+70℃	Standard type: -10℃~+60℃ With space heater○1: -35℃~+60℃ Explosive proof: -10℃~+40℃
Surface coating		Green, acrylic acid polyurethane coating	Blue, acrylic acid polyurethane coating
Accessories		E/P, P/P valve positioner, filter regulator, valve converter, solenoid valve, limited switch	Space heater (normal type)

Note ○1: non-standard accessories, need special customized notes.

◆Parameter

Seat diameter (mm)		10	12	15	20	25	32	40	50	65	80	100	125	150	200
Rated Cv	Percentage	1.6	2.5	4.0	6.3	10	16	25	40	63	100	160	250	400	630
	Linear	1.8	2.8	4.4	6.9	11	17.6	27.5	44	69	110	176	275	440	690
Nom. size	Travel	Option flow characteristic Cv. (★standard ●recommended ○customized)													
DN20	16mm	●	●	●	★										
DN25		●	●	●	●	★									
DN32	25 mm	○	○	○	○	○	★								
DN40			○	○	○	○	●	★							
DN50					○	○	○	●	●	★					
DN65	40mm						○	○	○	★					
DN80							○	○	○	●	★				
DN100							○	○	○	●	●	★			
DN125	60mm									○	○	○	★		
DN150											○	○	●	★	
DN200											○	○	●	●	★
Pneumatic actuator Diaphragm area, Ae (cm ²)		ZHA/B-22					ZHA/B-23			ZHA/B-34			ZHA/B-45		
		350					350			560			900		
Action	Spring range	Metal sealing allowable pressure difference (MPa)													
Air open	20-100KPa	4.46	3.09	1.98	1.16	0.7	0.44	0.28	0.18	0.17	0.11	0.07	0.07	0.05	0.03
	40-200 KPa	6.4	6.4	5.94	3.34	2.14	1.31	0.84	0.53	0.51	0.33	0.21	0.22	0.15	0.09
	80-240 KPa	6.4	6.4	6.4	6.4	4.99	3.05	1.95	1.25	1.18	0.78	0.5	0.51	0.36	0.21
Air close	20-100KPa	6.4	6.19	3.96	2.23	2.14	0.87	0.56	0.35	0.34	0.22	0.14	0.15	0.1	0.06
	40-200 KPa	6.4	6.4	6.4	6.4	6.4	5.86	3.64	2.3	2.21	1.43	0.91	0.95	0.66	0.37
	80-240 KPa	6.4	6.4	6.4	6.4	6.4	6.4	5.04	3.18	3.06	1.98	1.26	1.32	0.92	0.52
Electric actuator		Metal sealing max. allowable pressure difference (MPa)													
Type	Thrust (N)														
3810L-08	800	6.4	5.5	3.5	2.38										
3810L-20	2000	6.4	6.4	6.4	4.77	3.05	1.86	1.19	0.76						
3810L-30	3000						2.79	1.79	1.14						
3810L-50	5000						4.66	2.98	1.91	1.13	0.6	0.47			
3810L-65	6500									1.35	0.8	0.57	0.39	0.26	0.16
3810L-99	10000												0.61	0.42	0.20
3810L-160	16000												0.97	0.67	0.35

◆IEC standard equal percentage flow characteristic diagram



◆Material and working temperature

Table 3: body and bonnet material working temperature and pressure range (ANSI)

Temp ℃	Class150					Class300					Class600				
	SCPL 1 LCB	SCPH 2 WCB	SCPH2 1 WC6	SCS13 A CF8	SCS14 A CF8M	SCPL 1 LCB	SCPH 2 WCB	SCPH2 1 WC6	SCS13 A CF8	SCS14 A CF8M	SCPL 1 LCB	SCPH 2 WCB	SCPH2 1 WC6	SCS13 A CF8	SCS14 A CF8M
-196~38	-	-	-	1.90	1.90	-	-	-	4.95	4.95	-	-	-	9.91	9.92
-45~38	1.84	-	-	1.90	1.90	4.78	-	-	4.95	4.95	9.57	-	-	9.91	9.92
-5~38	1.84	1.96	1.99	1.90	1.90	4.78	5.10	5.16	4.95	4.95	9.57	10.02	10.32	9.91	9.92
50	1.81	1.92	1.92	1.84	1.84	4.72	5.00	5.10	4.77	4.80	9.46	10.01	10.22	9.56	9.62
100	1.72	1.76	1.76	1.56	1.56	4.51	4.63	4.88	4.08	4.21	9.02	9.27	9.74	8.17	8.43
150	1.57	1.57	1.57	1.39	1.39	4.40	4.51	4.63	3.62	3.85	8.78	9.04	9.26	7.26	7.69
200	1.40	1.40	1.40	1.25	1.25	4.26	4.38	4.54	3.27	3.56	8.54	8.75	9.06	6.54	7.12
250	1.20	1.20	1.20	1.16	1.16	4.05	4.16	4.44	3.04	3.34	8.11	8.33	8.88	6.10	6.67
300	1.01	1.01	1.01	1.01	1.01	3.76	3.87	4.23	2.91	3.15	7.54	7.74	8.48	5.80	6.32
350	0.84	0.84	0.84	0.84	0.84	3.59	3.69	4.01	2.81	3.03	7.18	7.38	8.04	5.60	6.07
375		0.73	0.73	0.73	0.73		3.64	3.88	2.77	2.96		7.28	7.75	5.54	5.93
400		0.64	0.64	0.64	0.64		3.44	3.65	2.74	2.91		6.89	7.31	5.48	5.81
425		0.55	0.55	0.55	0.55		2.88	3.50	2.71	2.87		5.74	7.01	5.42	5.72
450		0.47	0.47	0.47	0.47		1.99	3.38	2.68	2.81		4.00	6.75	5.37	5.61
475		0.37	0.37	0.37	0.37		1.35	3.16	2.65	2.73		2.70	6.32	5.30	5.46
500		0.28	0.28	0.28	0.28		0.88	2.77	2.60	2.67		1.75	5.55	5.20	5.37
525		0.18	0.18	0.18	0.18		0.51	2.02	2.19	2.57		1.03	4.04	4.77	5.15
538		0.13	0.15	0.15	0.15		0.34	1.63	2.18	2.53		0.72	3.26	4.55	5.06

Table 4: body and bonnet working temperature and pressure range (GB)

Temp. ℃	PN16					PN25					PN40					PN100				
	LC B	WC B	WC 6	CF 8	CF8 M	LC B	WC B	WC 6	CF 8	CF8 M	LC B	WC B	WC 6	CF 8	CF8 M	LC B	WC B	WC 6	CF 8	CF8 M
-29~38	1.5	1.6	1.6	1.5	1.5	2.4	2.5	2.5	2.4	2.4	3.9	4.1	4.1	4.0	3.9	9.0	9.6	9.6	9.3	9.3
93	1.4	1.4	1.4	1.4	1.3	2.2	2.3	2.3	2.1	2.0	3.8	3.7	4.0	3.3	3.4	8.4	8.5	9.6	7.7	8.0
149	1.3	1.3	1.3	1.3	1.2	2.1	2.1	2.1	1.9	1.9	3.7	3.6	3.8	3.0	3.1	8.3	8.3	9.3	7.0	7.2
204	1.1	1.1	1.1	1.1	1.1	1.9	1.9	1.9	1.7	1.7	3.5	3.4	3.7	2.8	2.8	8.0	8.2	8.9	6.4	6.6
260	0.8	1.0	1.0	1.0	1.0	1.7	1.7	1.7	1.5	1.6	3.3	3.2	3.5	2.6	2.6	7.5	7.7	8.5	6.0	6.1
315	0.7	0.8	0.8	0.8	0.8	1.4	1.4	1.5	1.3	1.3	3.0	2.8	3.1	2.3	2.4	6.9	7.1	7.8	5.6	5.8
343	0.6	0.7	0.7	0.7	0.7	1.3	1.3	1.4	1.2	1.2	2.9	2.7	3.0	2.3	2.3	6.7	7.0	7.5	5.5	5.7
371	0.5	0.6	0.6	0.6	0.6	1.2	1.2	1.3	1.1	1.1	2.8	2.7	2.9	2.2	2.2	6.6	7.0	7.3	5.5	5.6
399	0.5	0.5	0.5	0.5	0.5	1.1	1.1	1.2	1.0	1.0	2.5	2.6	2.7	2.1	2.2	6.0	6.5	6.9	5.3	5.5
427	0.5	0.5	0.5	0.5	0.5	0.9	1.0	1.1	0.9	0.9	2.1	2.1	2.6	2.0	2.1	5.0	5.3	6.5	5.1	5.5
454	0.4	0.4	0.3	0.4	0.4	0.7	0.7	1.0	0.8	0.8	1.5	1.4	2.4	2.0	2.0	3.4	3.4	6.2	5.0	5.4
482		0.3	0.3	0.3	0.3		0.5	0.7	0.7	0.7		0.9	2.1	1.9	1.9		2.2	5.8	5.0	5.3
510		0.2	0.2	0.2	0.2		0.3	0.5	0.6	0.6		0.5	1.5	1.8	1.8		1.3	4.1	4.9	4.9
538		0.1	0.1	0.1	0.1		0.1	0.3	0.4	0.4		0.3	1.0	1.5	1.6		0.6	2.7	4.1	4.5
565			0.1	0.1	0.1			0.2	0.3	0.4			0.7	1.4	1.6			1.8	3.9	4.5
593			0.1	0.1	0.1			0.1	0.3	0.4			0.4	1.2	1.4			1.2	3.3	3.9

Note: 1. Temperature or pressure value in the middle range, can calculate the max. value by interpolation method.
2. Pressure in the table are all manometer pressure.

Table 6: Metal seal material working temperature, pressure range and treatment

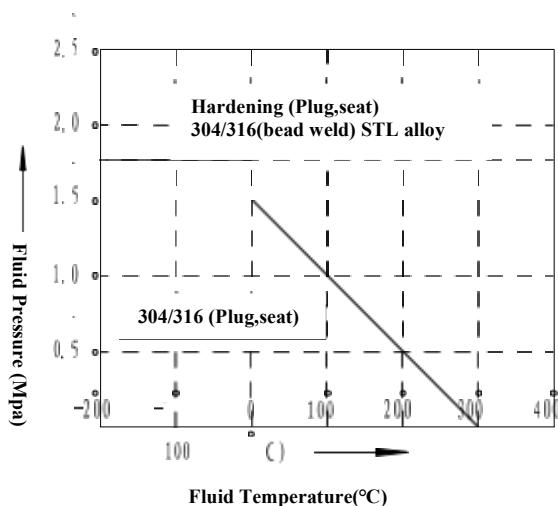


Table 7: Soft seal material working temperature, pressure range and treatment

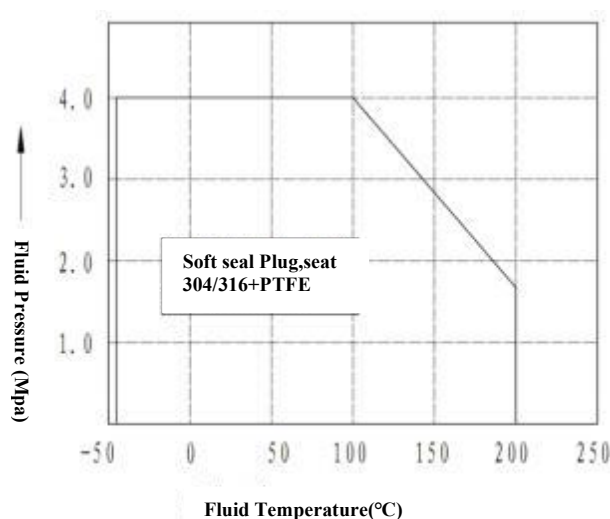


Table 8: RPTFE packing temperature and pressure range

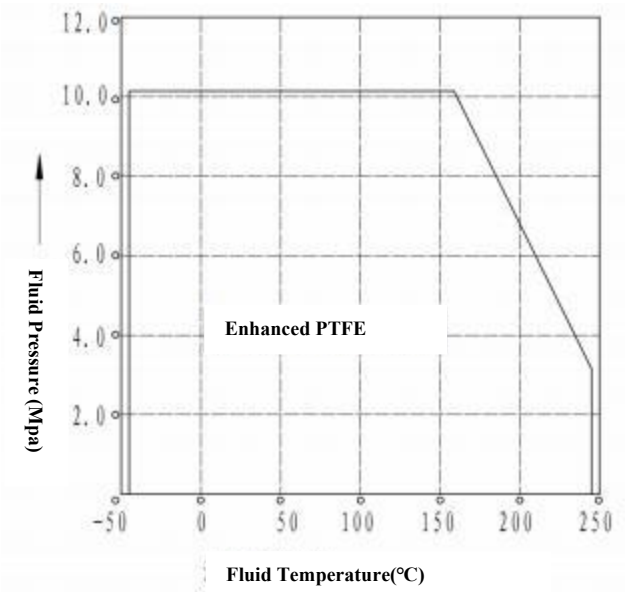


Table 9: Flex. Graphite packing temperature and pressure range.

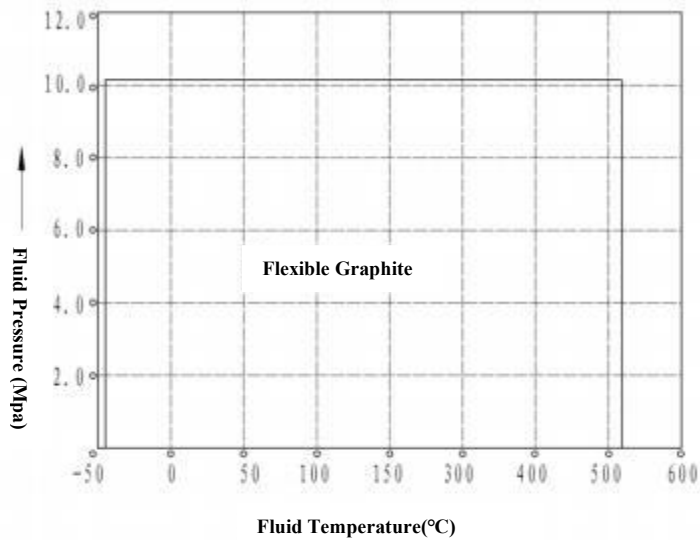


Table 10: Sawtooth gasket SUS316L, alloy steel temperature and pressure range

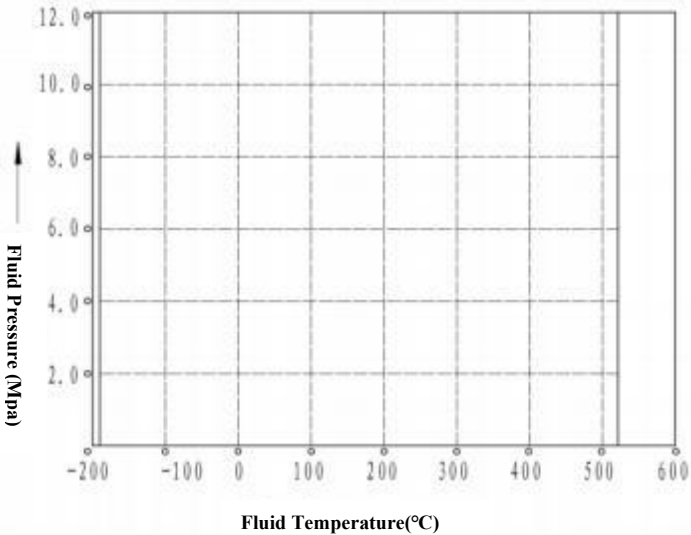


Table 11: Spiral gasket SUS316+ flex. graphite packing temperature and pressure range

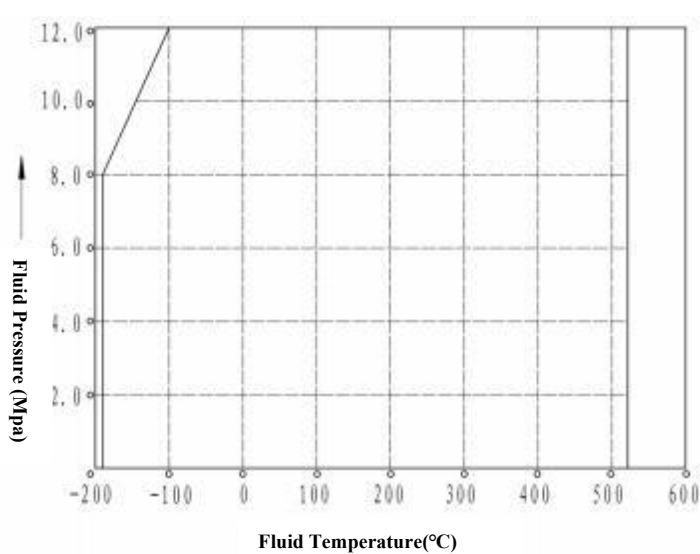


Table 12: Bellow seal working temperature and pressure range

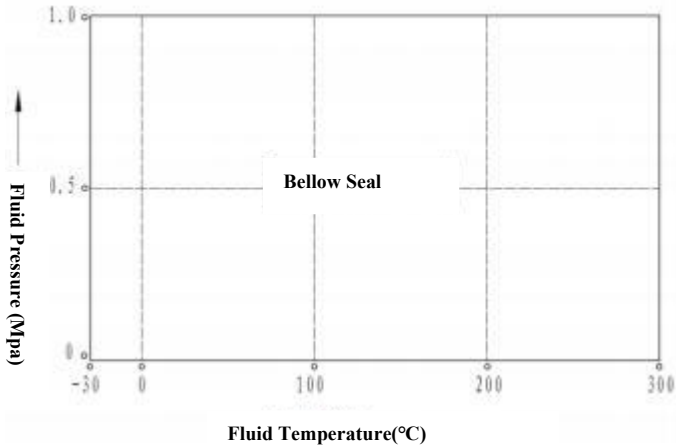
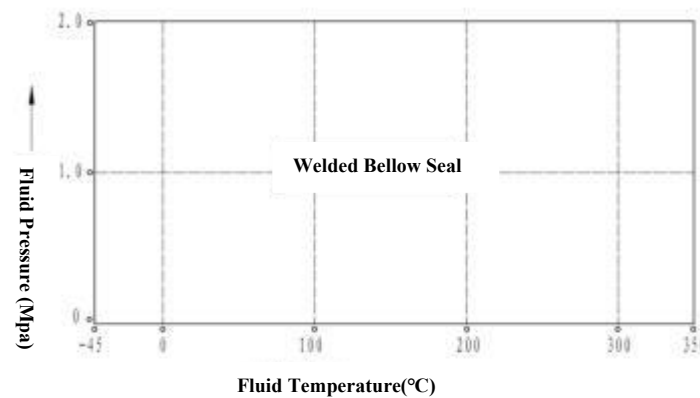


Table 13: Welded bellow sealed working temperature and pressure range.



◆ Standard material and internal structure

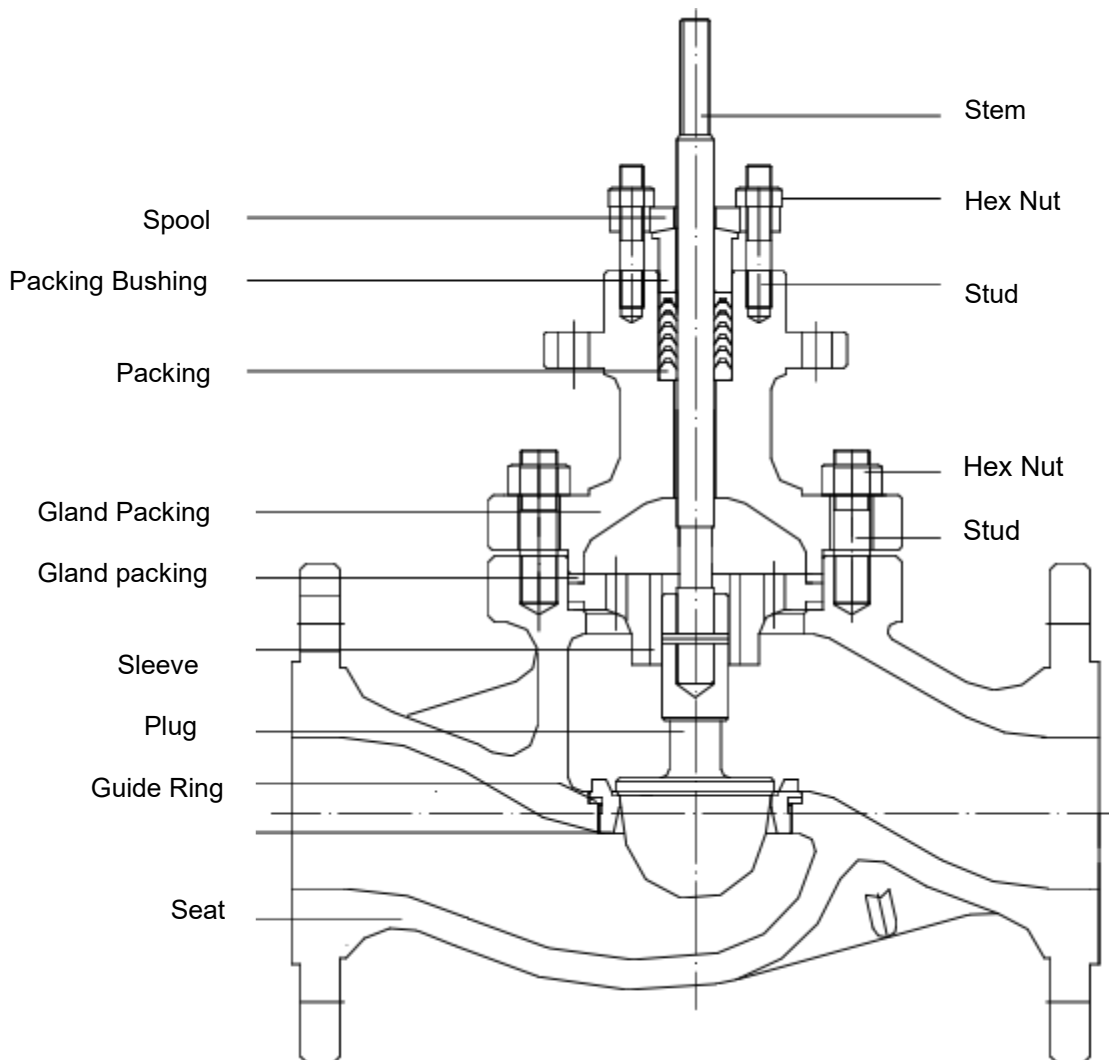


Table 1: Body WCB

1	Body	WCB	LCB	WC9
2	Seat	304	304	304
3	Spool	304	304	304
4	Gasket	316+graphite/PTFE		
5	Bushing	304	304	304
6	Bonnet	WCB	LCB	WC9
7	Packing	PTFE/flex. graphite		
8	Packing bushing	304	304	304
9	Gland	WCB	WCB	WCB
10	Stem	304	304	304
12	Stud	45	40MnB	25Cr2Mo1VA
13	Nut	35	35	25Cr2Mo1VA

Table 2: Body S.S

1	Body	CF8	CF8M	CF3M
2	Seat	304	316	316L
3	Spool	304	316	316L
4	Gasket	316+graphite/PTFE		
5	Bushing	304	316	316L
6	Bonnet	CF8	CF8M	CF3M
7	Packing	PTFE/flex. graphite		
8	Packing bushing	304	316	316L
9	Gland	CF8	CF8M	CF3M
10	Stem	304	316	316L
12	Stud	304	316	316L
13	Nut	304	316	316L

Note:

1. Above structure, seat is metal sealing, PTFE soft sealing is VI grade as option, also can provide stellite hard seal. As per actual working temperature, we may choose proper bolt & nut accordingly.
2. PTFE V type stem packing is with graphite, the working temperature can be higher than 232°C (450 F)
3. The common body material is WCB and S.S, can apply with other high corrosion resistance alloy material.

◆Variety valve structure

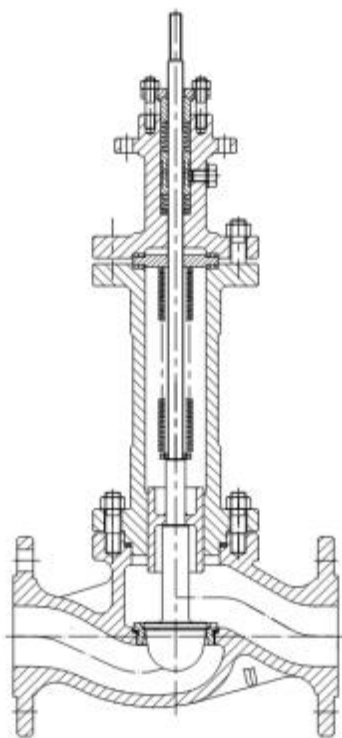


Table 1: PV bellow sealed single seat control valve. Can apply with multi-layer bellow seal, well protect medium against loss.

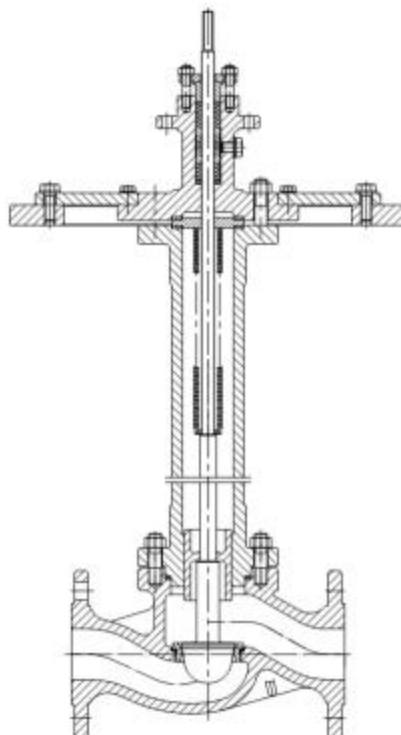


Table 2: PD low temperature single seat control valve, spool integrated external suction structure, convenient and easy for maintenance.

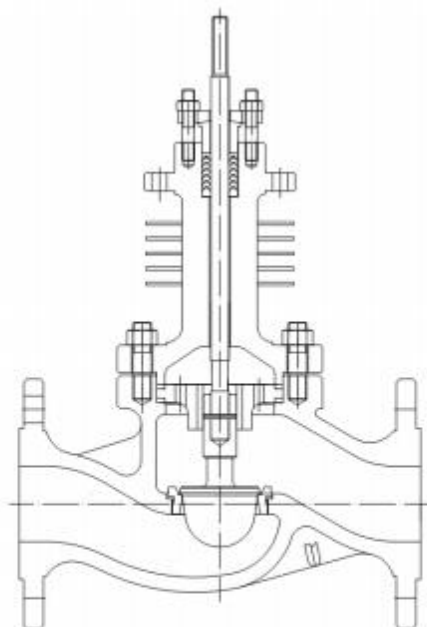


Table 3: PG radiator single seat control valve, applicable for temperature -45°C ~higher 230°C .

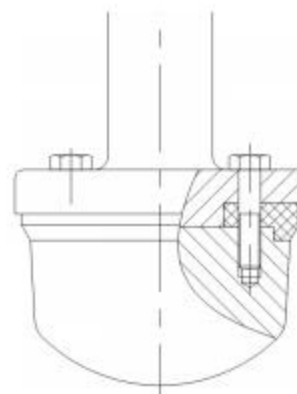
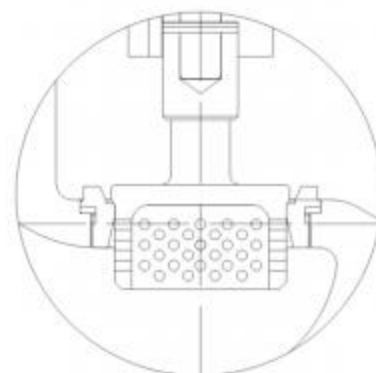


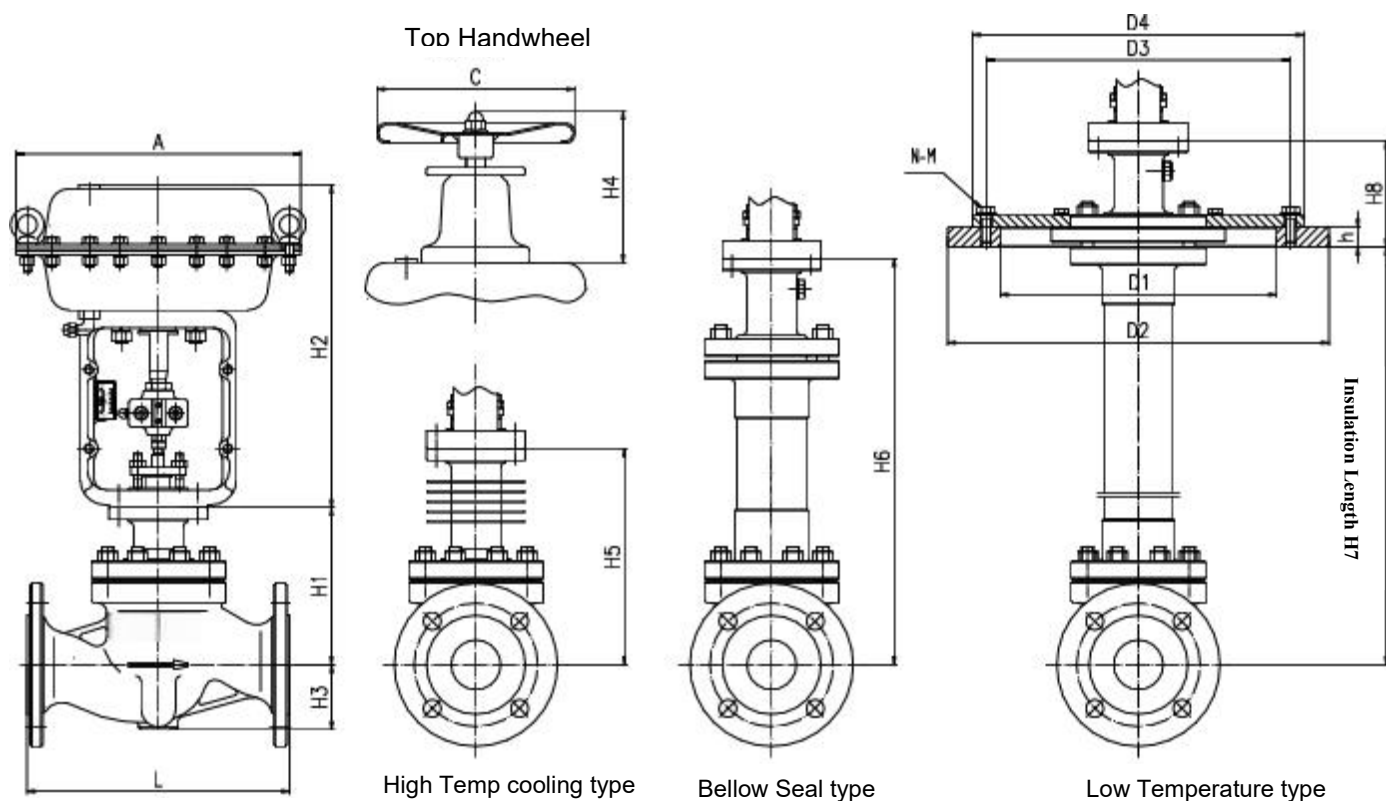
Table 4: PF soft sealing single seat control valve, applicable for VI grade sealing requirement.



Type 5: PL single seat cage type control valve, symmetry multi-pore cage structure can control noisy and cavitation effectively.

◆ Main out form dimension and measurement

Table 5: PN16、CL150LB Pneumatic single seat control valve

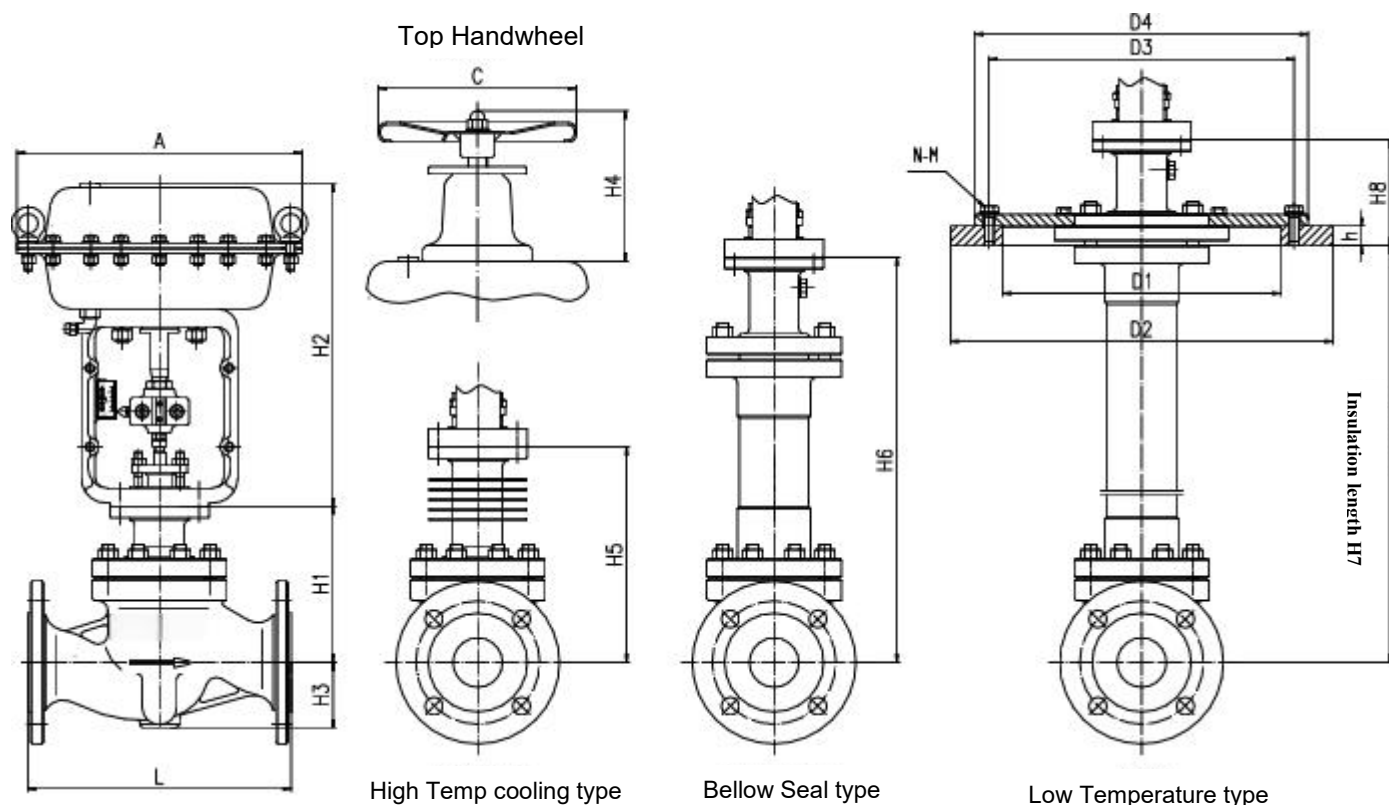


DN Size	DN20 3/4"	DN25 1"	DN32 1 1/4"	DN40 1 1/2"	DN50 2"	DN65 1 1/2"	DN80 3"	DN100 4"	DN125 5"	DN150 6"	DN200 8"
L	181	184	200	222	254	276	298	352	420	451	600
C	200	200	200	200	200	240	240	240	350	350	350
A	285	285	285	288	288	365	365	365	475	475	475
H1	128	137	148	152	159	218	230	238	264	331	346
H2	303	303	303	323	323	417	417	417	520	520	520
H3	65	70	70	85	90	102.5	107.5	125	125	172.5	180
H4	153	153	153	153	153	181	181	181	247	247	247
H5	208	208	224	228	228	334	334	342	408	453	482
H6	338	338	402	402	405	627	628	635	698	702	728
H7	700 (customized)										
H8	88	88	88	88	88	94	94	94	110	110	110
h	15	15	15	15	15	18	18	18	20	20	20
D1	230	230	250	270	305	342	375	430	490	556	665
D2	310	310	335	355	390	430	465	520	585	660	770
D3	260	260	285	305	340	370	405	460	525	580	700
D4	290	290	315	335	370	400	435	490	555	630	740
N-M	8-M12	8-M12	8-M12	8-M14	8-M14	10-M14	10-M14	12-M16	14-M16	16-M16	18-M16
Weight, Kg	21	22	24	32	38	62	67	83	132	160	245

※ Weight in the table did not include the accessory weight. Valve can install side handwheel.

※ With continous valve development, the dimension maybe will have some regulation, kindly contact with BCST for any update valve document.

Table 6: PN25/40、CL300LB Pneumatic single seat control valve dimension and weight.

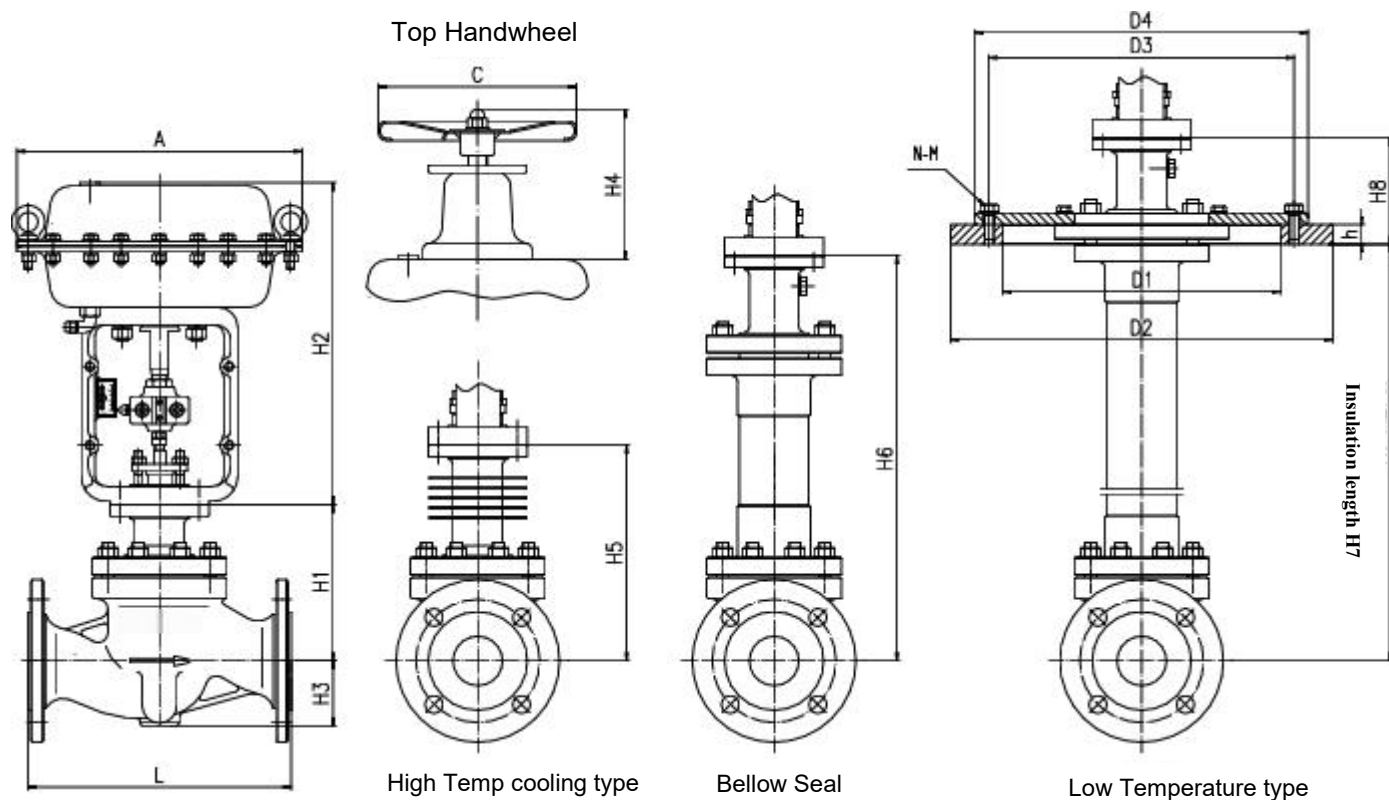


DN Size	DN20 3/4"	DN25 1"	DN32 1 1/4"	DN40 1 1/2"	DN50 2"	DN65 1 1/2"	DN80 3"	DN100 4"	DN125 5"	DN150 6"	DN200 8"
L	194	197	200	235	267	292	317	368	420	473	600
C	200	200	200	200	200	240	240	240	350	350	350
A	285	285	285	288	288	365	365	365	475	475	475
H1	128	137	148	152	159	218	230	238	264	331	346
H2	303	303	303	323	323	417	417	417	520	520	520
H3	65	70	70	85	90	102.5	107.5	125	125	172.5	180
H4	153	153	153	153	153	181	181	181	247	247	247
H5	208	208	224	228	228	334	334	342	408	453	482
H6	338	338	402	402	405	627	628	635	698	702	728
H7	700 (customized)										
H8	88	88	88	88	88	94	94	94	110	110	110
h	15	15	15	15	15	18	18	18	20	20	20
D1	230	230	250	270	305	342	375	430	490	556	665
D2	310	310	335	355	390	430	465	520	585	660	770
D3	260	260	285	305	340	370	405	460	525	580	700
D4	290	290	315	335	370	400	435	490	555	630	740
N-M	8-M12	8-M12	8-M12	8-M14	8-M14	10-M14	10-M14	12-M16	14-M16	16-M16	18-M16
Weight, Kg	22	24	26	35	42	67	74	89	138	166	255

※ Weight in the table did not include the accessory weight. Valve can install side handwheel.

※ With continous valve development, the dimension maybe will have some regulation, kindly contact with BCST for any update valve document.

Table 7: PN63/100、CL600LB Pneumatic single seat control valve dimension and weight.

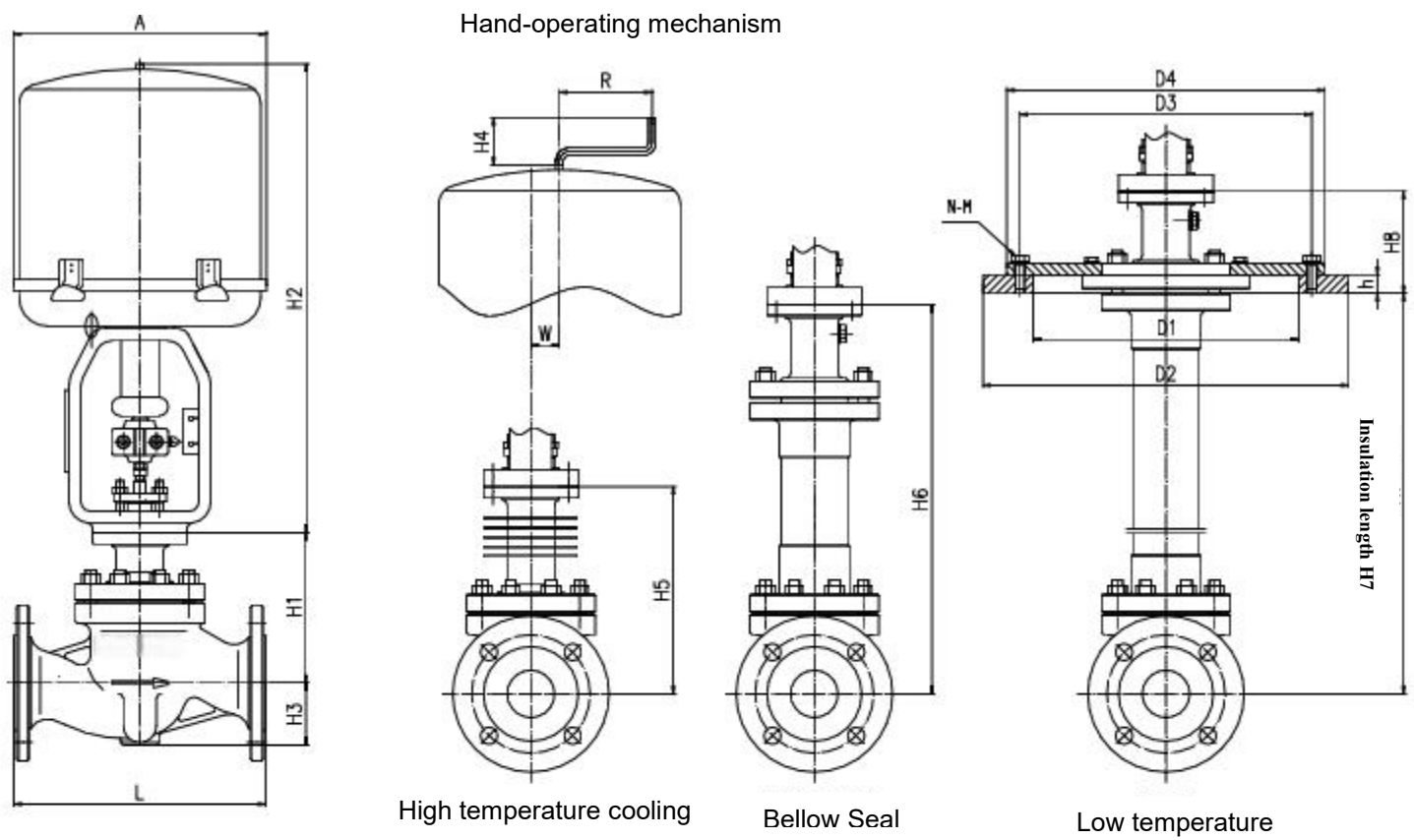


DN Size	DN20 3/4"	DN25 1"	DN32 1 1/4"	DN40 1 1/2"	DN50 2"	DN65 1 1/2"	DN80 3"	DN100 4"	DN125 5"	DN150 6"	DN200 8"
L	206	210	251	251	286	311	337	394	500	508	650
C	200	200	200	200	200	240	240	240	350	350	350
A	285	285	285	288	288	365	365	365	475	475	475
H1	128	137	148	152	159	218	230	238	264	331	346
H2	303	303	303	323	323	417	417	417	520	520	520
H3	65	70	70	85	90	102.5	107.5	125	125	172.5	180
H4	153	153	153	153	153	181	181	181	247	247	247
H5	220	220	240	240	240	350	350	360	420	470	500
H6	338	338	402	402	405	627	628	635	698	702	728
H7	700 (customized)										
H8	88	88	88	88	88	94	94	94	110	110	110
h	15	15	15	18	18	18	20	20	20	20	20
D1	270	270	305	342	375	430	490	556	665	665	765
D2	355	355	390	430	465	520	585	600	770	770	850
D3	305	305	340	370	405	460	525	690	700	700	805
D4	335	335	370	400	435	490	555	630	740	740	845
N-M	8-M14	8-M14	10-M14	10-M14	10-M14	12-M16	14-M16	18-M16	18-M16	18-M16	18-M16
Weight, Kg	24	25	30	42	52	78	82	102	170	190	285

※ Weight in the table did not include the accessory weight. Valve can install side handwheel.

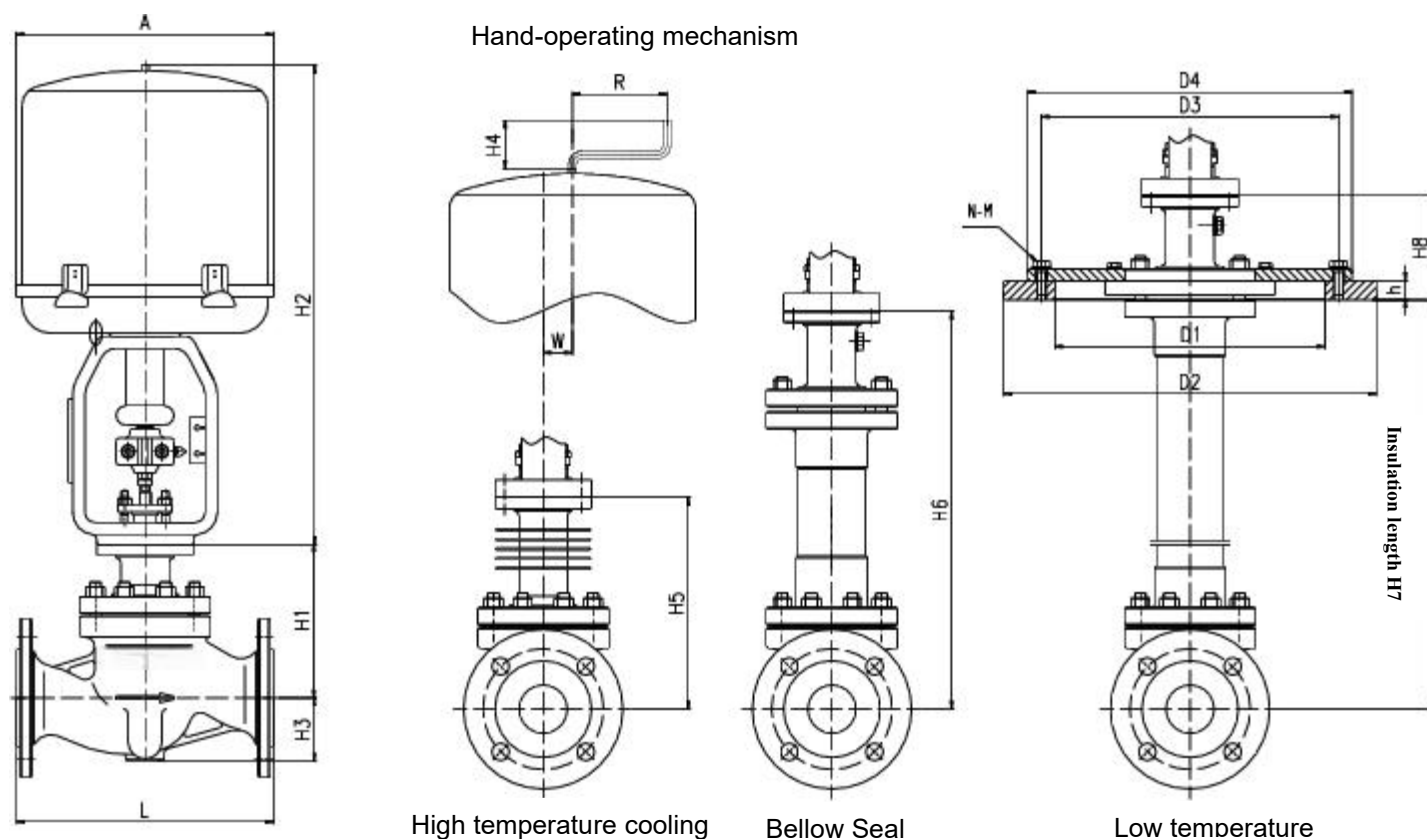
※ With continous valve development, the dimension maybe will have some regulation, kindly contact with BCST for any update valve document.

Table 8: PN16、CL150LB Electric single seat control valve dimension and weight.



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Table 9: PN25/40、CL300LB Electric single seat control valve dimension and weight

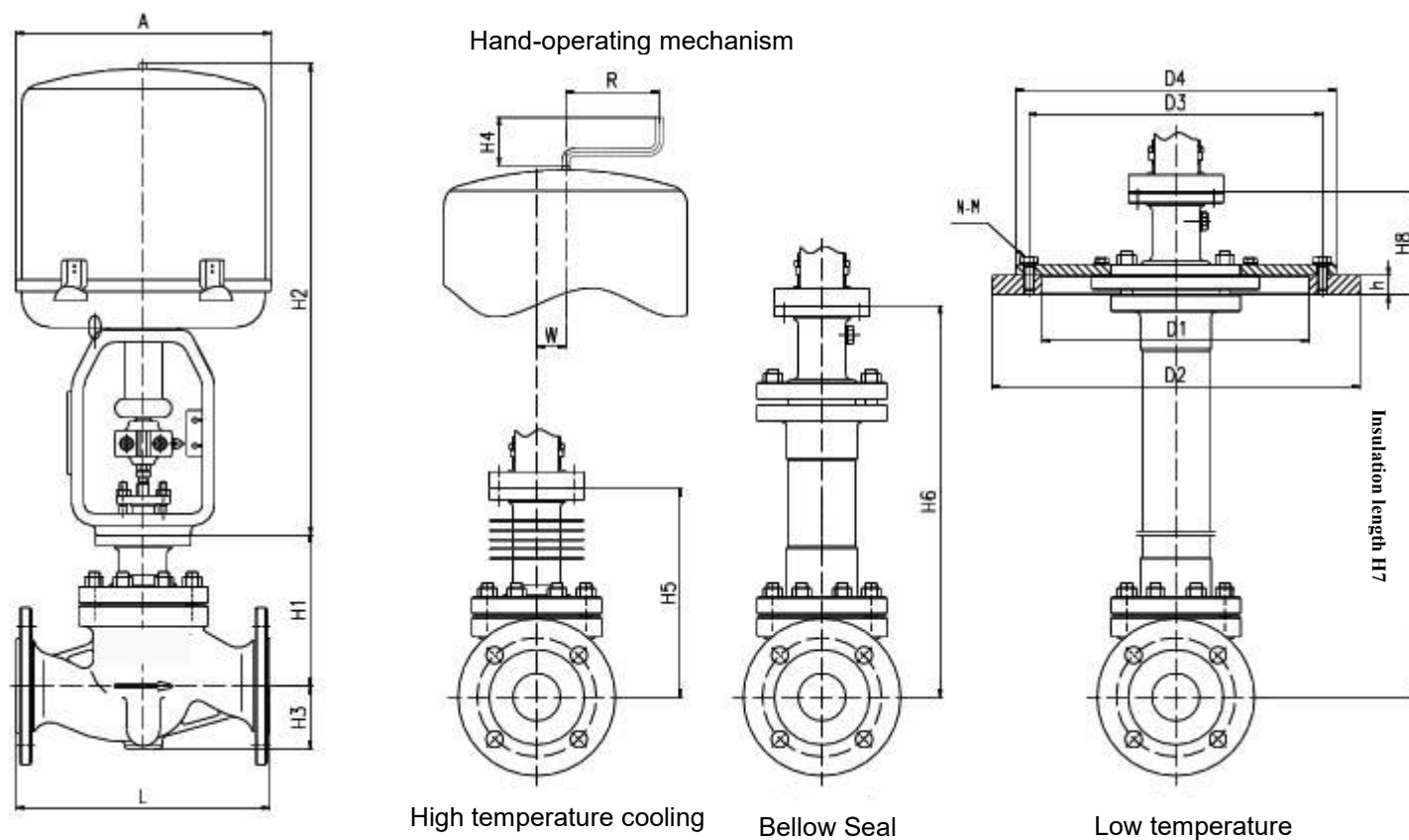


DN Size	DN20 3/4"	DN25 1"	DN32 1 1/4"	DN40 1 1/2"	DN50 2"	DN65 1 1/2"	DN80 3"	DN100 4"	DN125 5"	DN150 6"	DN200 8"
L	194	197	200	235	267	292	317	368	420	473	600
A	225	225	255	255	255	255	255	255	310	310	310
H1	128	137	148	152	159	218	230	238	264	331	346
H2	373	373	495	495	495	535	535	535	725	725	725
H3	65	70	70	85	90	102.5	107.5	125	125	172.5	180
H4	87	87	90	90	90	90	90	90	90	90	90
H5	208	208	224	228	228	334	334	342	408	453	482
H6	338	338	402	402	405	627	628	635	698	702	728
H7	700 (customized)										
H8	88	88	88	88	88	94	94	94	110	110	110
W	28	28	45	45	45	45	45	45	60	60	60
R	80	80	100	100	100	100	100	100	160	160	160
h	15	15	15	15	15	18	18	18	20	20	20
D1	230	230	250	270	305	342	375	430	490	556	665
D2	310	310	335	355	390	430	465	520	585	660	770
D3	260	260	285	305	340	370	405	460	525	580	700
D4	290	290	315	335	370	400	435	490	555	630	740
N-M	8-M12	8-M12	8-M12	8-M14	8-M14	10-M14	10-M14	12-M16	14-M16	16-M16	18-M16
Weight, Kg	17	19	26	35	42	57	64	79	144	150	259

※ Weight in the table did not include the accessory weight. Installed with 3810L type actuator.

※ With continous valve development, the dimension maybe will have some regulation, kindly contact with BCST for any update valve document.

Table 10: PN64/100、CL600LB Electric single seat control valve dimension and weight.



DN Size	DN20 3/4"	DN25 1"	DN32 1 1/4"	DN40 1 1/2"	DN50 2"	DN65 1 1/2"	DN80 3"	DN100 4"	DN125 5"	DN150 6"	DN200 8"
L	206	210	251	251	286	311	337	394	500	508	650
A	225	225	255	255	255	255	255	255	310	310	310
H1	128	137	148	152	159	218	230	238	264	331	346
H2	373	373	495	495	495	535	535	535	725	725	725
H3	65	70	70	85	90	102.5	107.5	125	125	172.5	180
H4	87	87	90	90	90	90	90	90	90	90	90
H5	220	220	240	240	240	350	350	360	420	470	500
H6	338	338	402	402	405	627	628	635	698	702	728
H7	700 (customized)										
H8	88	88	88	88	88	94	94	94	110	110	110
W	28	28	45	45	45	45	45	45	60	60	60
R	80	80	100	100	100	100	100	100	160	160	160
h	15	15	15	18	18	18	20	20	20	20	20
D1	270	270	305	342	375	430	490	556	665	665	765
D2	355	355	390	430	465	520	585	600	770	770	850
D3	305	305	340	370	405	460	525	690	700	700	805
D4	335	335	370	400	435	490	555	630	740	740	845
N-M	8-M14	8-M14	10-M14	10-M14	10-M14	12-M16	14-M16	18-M16	18-M16	18-M16	18-M16
Weight, Kg	19	20	30	42	52	68	72	92	174	194	289

※ Weight in the table did not include the accessory weight. Installed with 3810L type actuator.

※ With continous valve development, the dimension maybe will have some regulation, kindly contact with BCST for any update valve document.



CATALOG

JC-ZH series linear actuator control valve

ZHM type sleeve type control valve

ZHM single level sleeve type control valve with high stability, easy maintenance and wide application. It can be designed as balance type for eliminate static unbalance, with damping effect, reduce valve vibration, can be applied in occasion with large pressure difference, can apply with multi-spring pneumatic diaphragm actuator or electric actuator, etc.

◆Specification

Body type: straight through globe type

Spool type: non-balanced single seat plug type

Nominal size: DN25~300 NPS 1" ~ 12"

Nominal pressure: PN16 ~ 100 CLASS 150LB ~ 600LB

Connection: flange: FF、RF、MF、RTJ

Welding: SW、BW

Flange dimension: acc. to IEC 60534

Bonnet type: Standard type (-5℃~230℃)

Radiator type: (-45℃~ higher than 230℃ occasion)

Low temperature extended type(-196℃~ -45℃)

Bellow seal type

Packing: V type PTFE packing, flex. graphite packing, etc.

Gasket: Metal graphite packing

Actuator: pneumatic: multi-spring diaphragm actuator, piston type actuator.

electric: 3810L series smart actuator, PSL series actuator.

Surface painting: Green color, acrylic acid polyurthene ceramic paint.



◆Code

JC-Z	Actuator	H	Structure	Nominal pressure	Body material	Nominal size
Z series control valve	J: pneumatic diaphragm actuator H: pneumatic piston actuator R: electric 3810L actuator D: electric PSL actuator	H direct travel	M: standard sleeve type MF: soft sealing sleeve ML: Single level cage type MT: Two level cage type MG: sleeve type control valve with radiator MV: sleeve type with bellow seal MD: low temperature sleeve type	PN16=16 CL150LB=150 LB JIS10K=10K	C=WCB LC=LCB P=CF8 PL=CF3 R=CF8M RL=CF3M D=special material	DN25= DN252 NPS1 " = NPS 1"

Such as: Z type pneumatic diaphragm sleeve type control valve, pressure PN16, valve body WCB, nominal size DN50, type: JC-ZJHM-16C DN50

◆ Performance

Flow characteristic		Linear, percentage, quick open	
Allowable range		50: 1	
Rated Cv value		Percentage CV10~1400 , linear CV11~1500	
Allowable leakage		Metal seal: II grade (0.5% rated capacity) soft seal: V grade	
Performance		Pneumatic	Electric
	Allowable tolerance, %	±1.5	±1.0
	Return difference, %	≤1.5	≤1.0
	Dead zone, %	≤0.6	≤1.0
	Difference from beginning to end point, %	±2.5	±2.5
	Rated travel difference, %	≤2.5	≤2.5

Note: specification on the basis of control valve with positioned and PTFE packing.

◆ Special specification

Special test	Material penetration flaw detection (PT), radiator test (RT), flow characteristic test, low temperature test.
Special treatment	Trim nitrogen treatment, seat hard alloy treatment.
Special rinse	Degreasing and dehydration treatment
Special condition	Special piping or connection, vacuum condition, S.S fastener, special coating.
Special dimension	Customized face to face length or dimension
Test and inspection	Third party test report

◆ Actuator

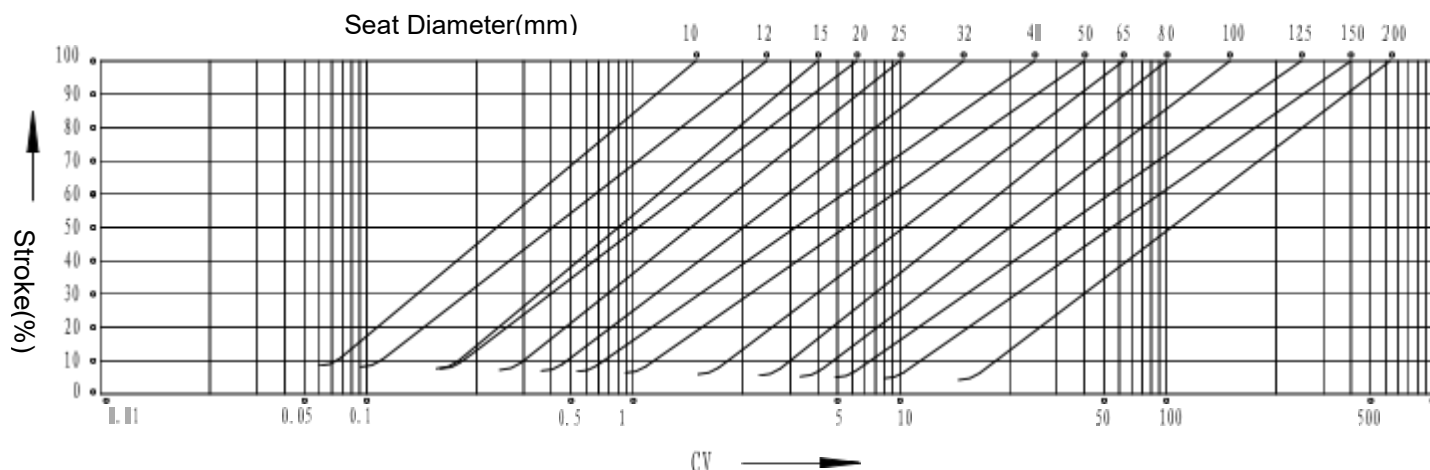
Method	Type	Pneumatic diaphragm actuator	Electric actuator
		ZH23~ZH56	3810L series
		Multi-spring type	Intelligent integrated type
Usage		Regulating type, ON-OFF type	Regulating
Air supply pressure or Power supply voltage		Air supply pressure (Spring range) 140 (20~100) Kpa G 240 (40~200) Kpa G 280 (80~240) Kpa G	Power: AC 200V±10% 50Hz Or Power: AC 380V±10% 50Hz○1
Connector		Air pipe connector: RC1/4	Nomal type: cable inlet 2-PF(G1/2") Explosive proof type: can install protection jacket PF(G3/4")
Positive action		Pressure increase, stem descend, valve close.	Input signal increase, stem descend, valve close.
Negative action		Pressure increase, stem ascend, valve open.	Input signal increase, stem ascend, valve open.
Input signal		40~20mA.DC (with positioner)	Input/output 4~20mA.DC
Lag		≤1%FS (with positioner)	≤0.8%FS
Linear type		2%FS (with positioner)	≤±1%FS
Environmental temperature		-10℃~+70℃	Standard type: -10℃~+60℃ With space heater○1: -35℃~+60℃ Explosive proof: -10℃~+40℃
Surface coating		Green, acrylic acid polyurethane coating	Blue, acrylic acid polyurethane coating
Accessories		E/P, P/P valve positioned, filter regulator, valve converter, solenoid valve, limited switch	Space heater (normal type)

Note ○1: non-standard type should have special notice.

◆Parameter

Seat diameter (mm)		25	32	40	50	65	80	100	125	150	200	250	300
Rated Cv	Percentage	10	16	25	40	63	100	160	250	400	630	1000	1400
	Linear	11	17.6	27.5	44	69	110	176	275	440	690	1100	1500
Nominal size	Travel	Option flow coefficient, Cv (★standard ●recommended ○customized)											
DN25	16 mm	★											
DN32	25 mm	○	★										
DN40		○	●	★									
DN50		○	●	●	★								
DN65		40mm		○	○	○	★						
DN80			○	○	○	●	★						
DN100			○	○	○	●	●	★					
DN125	60mm						○	○	○	★			
DN150							○	○	●	★			
DN200							○	○	●	●	★		
DN250		100mm								○	●	●	★
DN300										○	●	●	★
Pneumatic ctuator,Diaphragm effective area, Ae (cm2)		ZHA/B-23				ZHA/B-34			ZHA/B-45			ZHA/B-56	
		350				560			900			1600	
Action	Spring range	Metal seal allowable pressure difference (MPa)											
Air to open	20-100KPa	3	2.25	2.25	1.95	2.36	2.04	1.67	1.41	1.41	1.14	0.65	0.55
	40-200 KPa	6.4	6.4	6.4	6.4	6.4	6.4	6.4	6.4	6.4	6.4	1.55	1.4
	80-240 KPa	6.4	6.4	6.4	6.4	6.4	6.4	6.4	6.4	6.4	6.4	4.08	4.08
Air to close	20-100KPa	1.5	1.13	1.13	0.98	1.18	1.02	0.84	0.71	0.71	0.57	0.65	0.55
	40-200 KPa	4.5	3.38	3.38	2.93	3.54	3.06	2.51	2.12	2.12	1.71	1.8	1.55
	80-240 KPa	6.4	6.4	6.4	6.4	6.4	6.4	5.85	4.94	4.94	4	4.08	3.65
Electric actuator		Metal seal allowable max. pressure difference (MPa)											
Type	Thrust (N)												
3810L-08	800	6.4	6.4										
3810L-20	2000	6.4	6.4	6.4	5.1								
3810L-30	3000	6.4	6.4	6.4	6.4	5.7	4.76						
3810L-50	5000			6.4	6.4	6.4	6.4	6.25					
3810L-65	6500							6.4	6.4	4.23	3.23		
3810L-99	10000									6.4	6.1	3.31	2.07
3810L-160	16000											6	4

◆IEC standard equal percentage flow characteristic diagram



◆Material and working temperature

Table 3: Body, bonnet material working temperature & pressure range (ANSI)

Temp ℃	Class150					Class300					Class600				
	SCPL 1 LCB	SCPH 2 WCB	SCPH2 1 WC6	SCS13 A CF8	SCS14 A CF8M	SCPL 1 LCB	SCPH 2 WCB	SCPH2 1 WC6	SCS13 A CF8	SCS14 A CF8M	SCPL 1 LCB	SCPH 2 WCB	SCPH2 1 WC6	SCS13 A CF8	SCS14 A CF8M
-196~38	-	-	-	1.90	1.90	-	-	-	4.95	4.95	-	-	-	9.91	9.92
-45~38	1.84	-	-	1.90	1.90	4.78	-	-	4.95	4.95	9.57	-	-	9.91	9.92
-5~38	1.84	1.96	1.99	1.90	1.90	4.78	5.10	5.16	4.95	4.95	9.57	10.02	10.32	9.91	9.92
50	1.81	1.92	1.92	1.84	1.84	4.72	5.00	5.10	4.77	4.80	9.46	10.01	10.22	9.56	9.62
100	1.72	1.76	1.76	1.56	1.56	4.51	4.63	4.88	4.08	4.21	9.02	9.27	9.74	8.17	8.43
150	1.57	1.57	1.57	1.39	1.39	4.40	4.51	4.63	3.62	3.85	8.78	9.04	9.26	7.26	7.69
200	1.40	1.40	1.40	1.25	1.25	4.26	4.38	4.54	3.27	3.56	8.54	8.75	9.06	6.54	7.12
250	1.20	1.20	1.20	1.16	1.16	4.05	4.16	4.44	3.04	3.34	8.11	8.33	8.88	6.10	6.67
300	1.01	1.01	1.01	1.01	1.01	3.76	3.87	4.23	2.91	3.15	7.54	7.74	8.48	5.80	6.32
350	0.84	0.84	0.84	0.84	0.84	3.59	3.69	4.01	2.81	3.03	7.18	7.38	8.04	5.60	6.07
375		0.73	0.73	0.73	0.73		3.64	3.88	2.77	2.96		7.28	7.75	5.54	5.93
400		0.64	0.64	0.64	0.64		3.44	3.65	2.74	2.91		6.89	7.31	5.48	5.81
425		0.55	0.55	0.55	0.55		2.88	3.50	2.71	2.87		5.74	7.01	5.42	5.72
450		0.47	0.47	0.47	0.47		1.99	3.38	2.68	2.81		4.00	6.75	5.37	5.61
475		0.37	0.37	0.37	0.37		1.35	3.16	2.65	2.73		2.70	6.32	5.30	5.46
500		0.28	0.28	0.28	0.28		0.88	2.77	2.60	2.67		1.75	5.55	5.20	5.37
525		0.18	0.18	0.18	0.18		0.51	2.02	2.19	2.57		1.03	4.04	4.77	5.15
538		0.13	0.15	0.15	0.15		0.34	1.63	2.18	2.53		0.72	3.26	4.55	5.06

Table 4: Body, bonnet material working temperature and pressure range (GB)

Temperatu re ℃	PN16					PN25					PN40					PN100				
	LC B	WC B	WC 6	CF 8	CF8 M	LC B	WC B	WC 6	CF 8	CF8 M	LC B	WC B	WC 6	CF 8	CF8 M	LC B	WC B	WC 6	CF 8	CF8 M
-29~38	1.5	1.6	1.6	1.5	1.5	2.4	2.5	2.5	2.4	2.4	3.9	4.1	4.1	4.0	3.9	9.0	9.6	9.6	9.3	9.3
93	1.4	1.4	1.4	1.4	1.3	2.2	2.3	2.3	2.1	2.0	3.8	3.7	4.0	3.3	3.4	8.4	8.5	9.6	7.7	8.0
149	1.3	1.3	1.3	1.3	1.2	2.1	2.1	2.1	1.9	1.9	3.7	3.6	3.8	3.0	3.1	8.3	8.3	9.3	7.0	7.2
204	1.1	1.1	1.1	1.1	1.1	1.9	1.9	1.9	1.7	1.7	3.5	3.4	3.7	2.8	2.8	8.0	8.2	8.9	6.4	6.6
260	0.8	1.0	1.0	1.0	1.0	1.7	1.7	1.7	1.5	1.6	3.3	3.2	3.5	2.6	2.6	7.5	7.7	8.5	6.0	6.1
315	0.7	0.8	0.8	0.8	0.8	1.4	1.4	1.5	1.3	1.3	3.0	2.8	3.1	2.3	2.4	6.9	7.1	7.8	5.6	5.8
343	0.6	0.7	0.7	0.7	0.7	1.3	1.3	1.4	1.2	1.2	2.9	2.7	3.0	2.3	2.3	6.7	7.0	7.5	5.5	5.7
371	0.5	0.6	0.6	0.6	0.6	1.2	1.2	1.3	1.1	1.1	2.8	2.7	2.9	2.2	2.2	6.6	7.0	7.3	5.5	5.6
399	0.5	0.5	0.5	0.5	0.5	1.1	1.1	1.2	1.0	1.0	2.5	2.6	2.7	2.1	2.2	6.0	6.5	6.9	5.3	5.5
427	0.5	0.5	0.5	0.5	0.5	0.9	1.0	1.1	0.9	0.9	2.1	2.1	2.6	2.0	2.1	5.0	5.3	6.5	5.1	5.5
454	0.4	0.4	0.3	0.4	0.4	0.7	0.7	1.0	0.8	0.8	1.5	1.4	2.4	2.0	2.0	3.4	3.4	6.2	5.0	5.4
482		0.3	0.3	0.3	0.3		0.5	0.7	0.7	0.7		0.9	2.1	1.9	1.9		2.2	5.8	5.0	5.3
510		0.2	0.2	0.2	0.2		0.3	0.5	0.6	0.6		0.5	1.5	1.8	1.8		1.3	4.1	4.9	4.9
538		0.1	0.1	0.1	0.1		0.1	0.3	0.4	0.4		0.3	1.0	1.5	1.6		0.6	2.7	4.1	4.5
565			0.1	0.1	0.1			0.2	0.3	0.4			0.7	1.4	1.6			1.8	3.9	4.5
593			0.1	0.1	0.1			0.1	0.3	0.4			0.4	1.2	1.4			1.2	3.3	3.9

Note: 1. Temperature or pressure value in the middle range, can calculate the max. value by interpolation method.

2. Pressure in the table is all manometer pressure.

Table 6: Metal seal material working temperature , pressure range and treatment

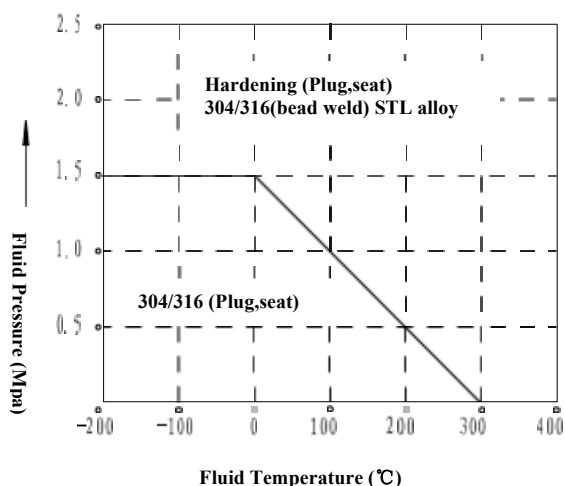


Table 7: Soft seal material working temperature, pressure range and treatment

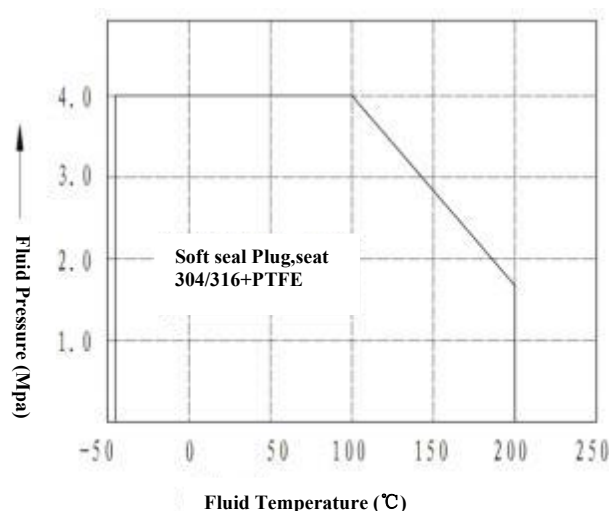


Table 8: RPTFE packing temperature and pressure range

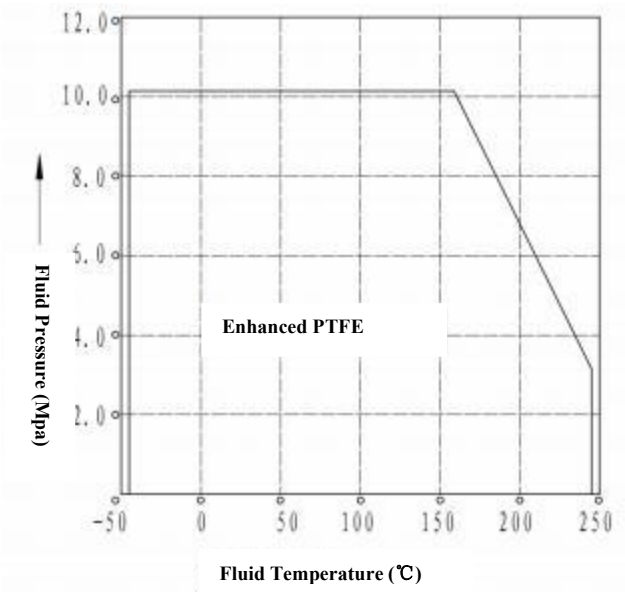


Table 9: Flex. Graphite packing temperature and pressure range.

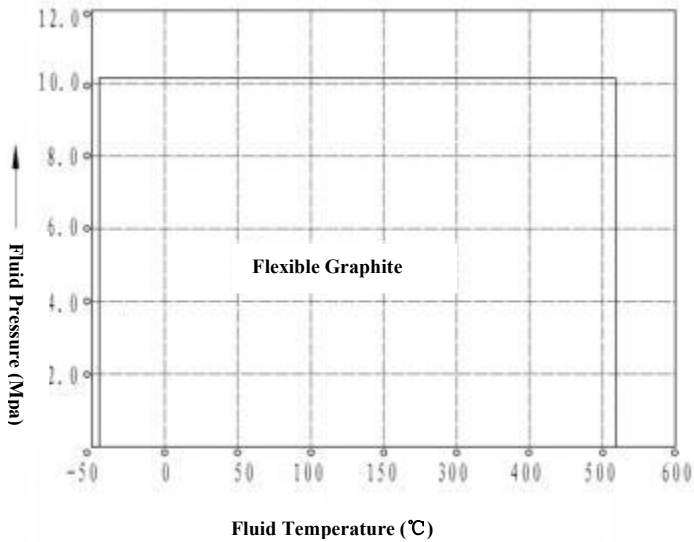


Table 10: Sawtooth gasket SUS316L, alloy steel temperature and pressure range

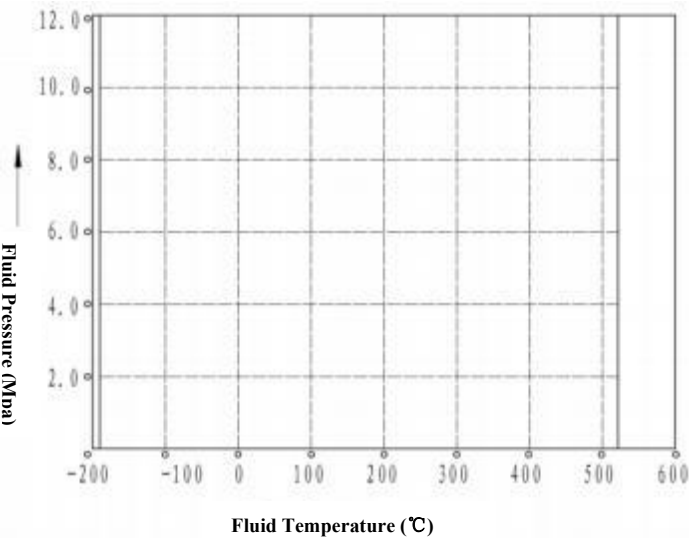


Table 11: Spiral gasket SUS316+ flex. graphite packing temperature and pressure range

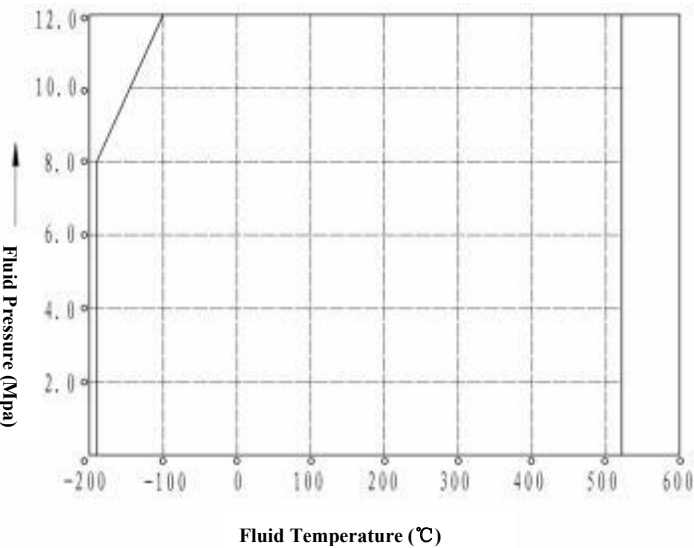


Table 12: Bellow seal working temperature and pressure range

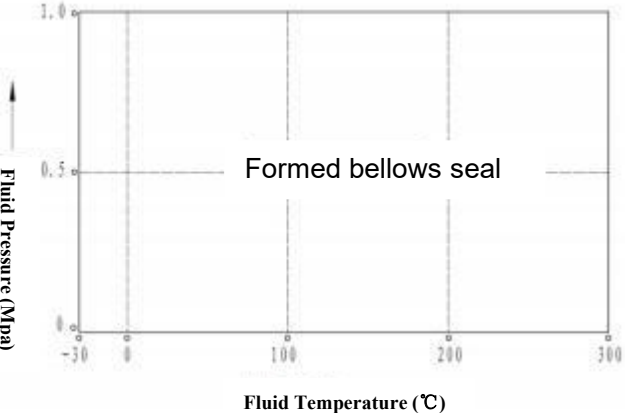
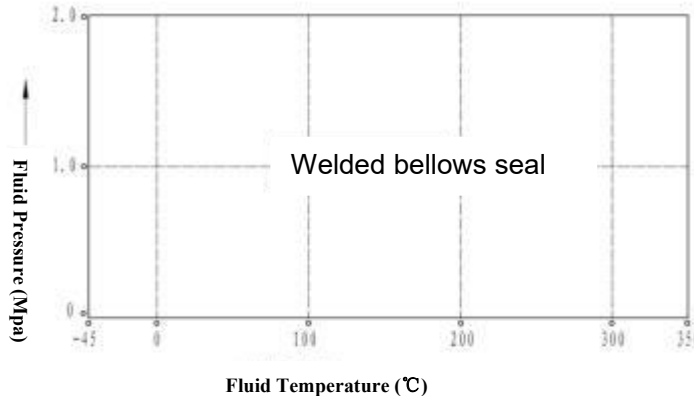


Table 13: Welded bellow sealed working temperature and pressure range.



◆ Material and Internal structure

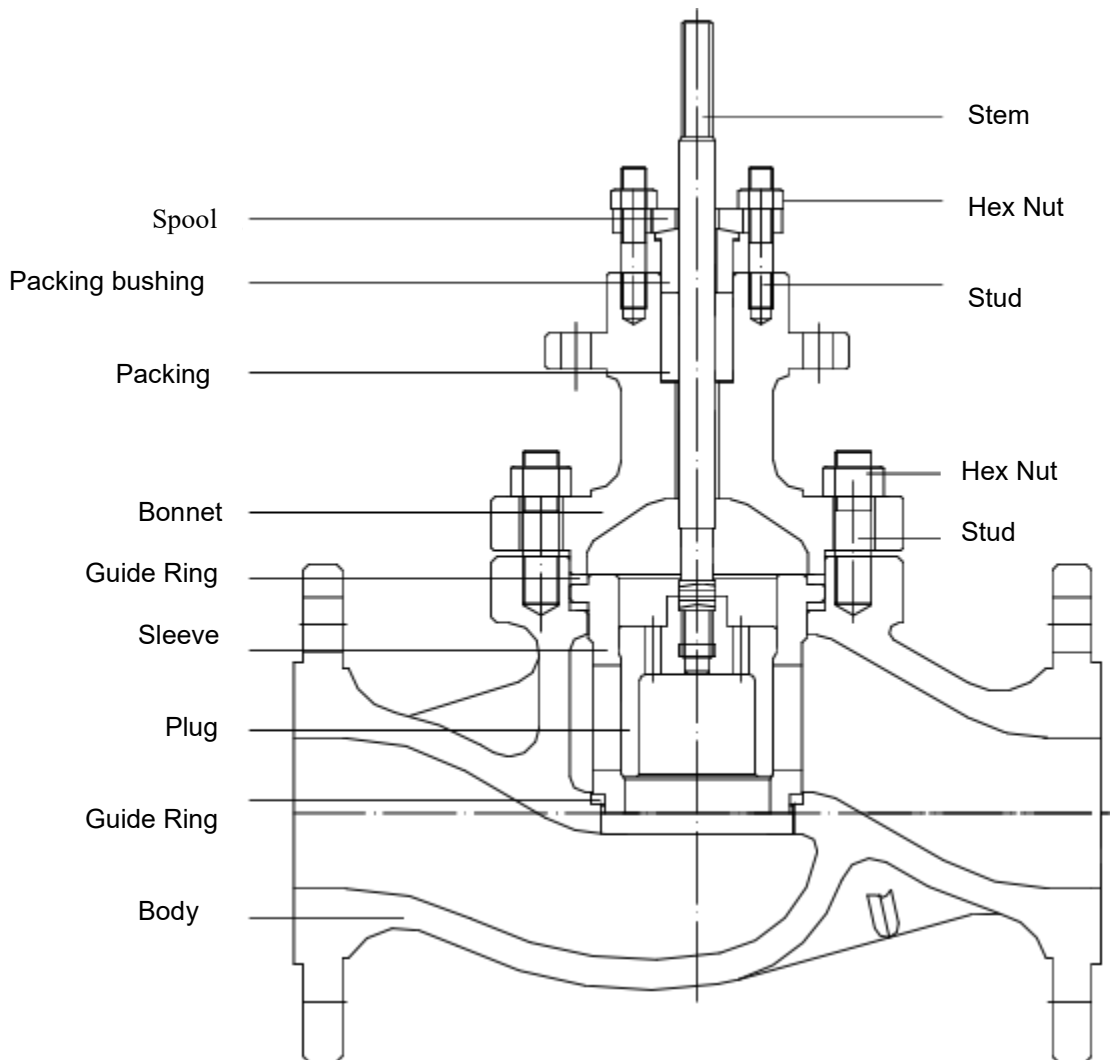


Table 1: Body WCB

1	Body	WCB	LCB	WC9
2	Spool	304	304	304
3	Gasket	316+ graphite /PTFE		
4	Bushing	304	304	304
5	Bonnet	WCB	LCB	WC9
6	Packing	PTFE/ flex. graphite		
7	Packing bushing	304	304	304
8	Gland	WCB	WCB	WCB
9	Stem	304	304	304
10	Stud	45	40MnB	25Cr2Mo1VA
12	Nut	35	35	25Cr2Mo1VA

Table 2 Body: S.S

1	Body	CF8	CF8M	CF3M
2	Spool	304	316	316L
3	Gasket	316+ graphite /PTFE		
4	Bushing	304	316	316L
5	Bonnet	CF8	CF8M	CF3M
6	Packing	PTFE/ flex. graphite		
7	Packing bushing	304	316	316L
8	Gland	CF8	CF8M	CF3M
9	Stem	304	316	316L
10	Stud	304	316	316L
12	Nut	304	316	316L

Note:

1. Above structure, seat is metal sealing, PTFE soft sealing is VI grade as option. Also can provide stillate hard sealing. As per actual working temperature, we may choose proper bolt & nut accordingly.
2. PTFE V type stem packing is with graphite, the working temperature can be higher than 232℃ (450 F)
3. The common body material is WCB and S.S, can apply with other high corrosion resistance alloy material.

◆Valve structure in variety occasion

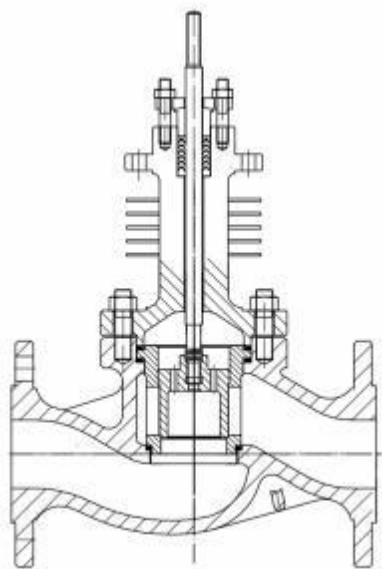


Table 1: MG type radiator sleeve control valve, applicable for temperature -45℃~higher than 230℃ occasion.

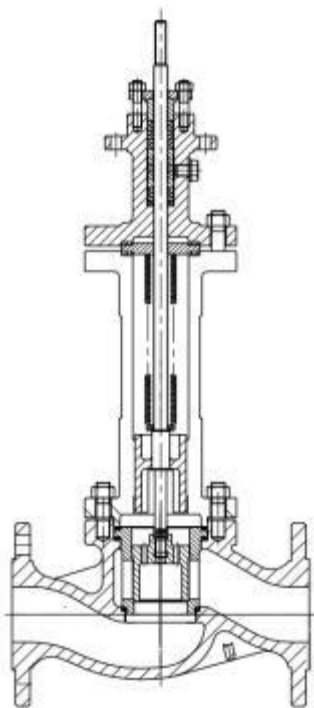


Table 2: MV type bellow sealed sleeve control valve. Applicable for multi-layer bellow seal, well protected medium against loss.

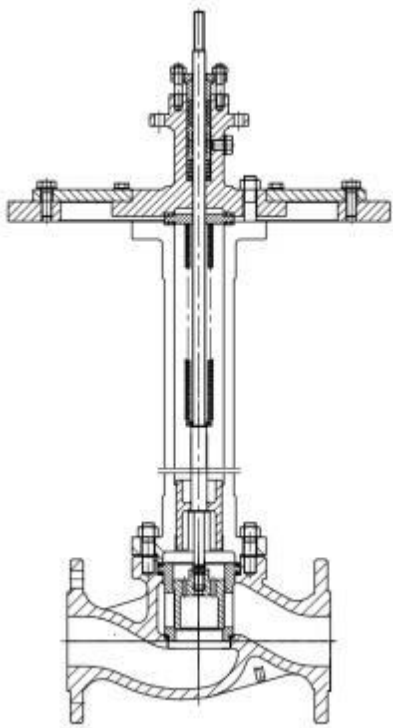


Table 3: MD type low temperature warm insulation sleeve control valve, spool integrated external suction structure, convenient and easy for maintenance.

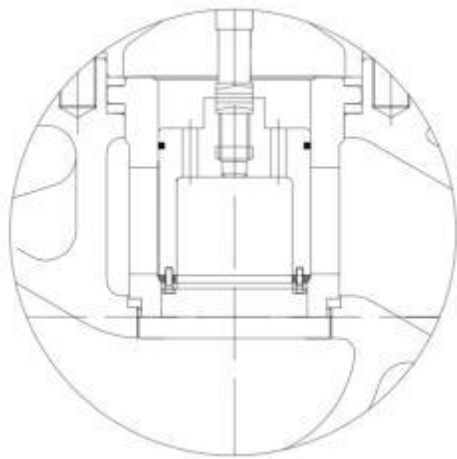


Table 4: MF soft sealing sleeve control valve, applicable for V grade sealing requirement.

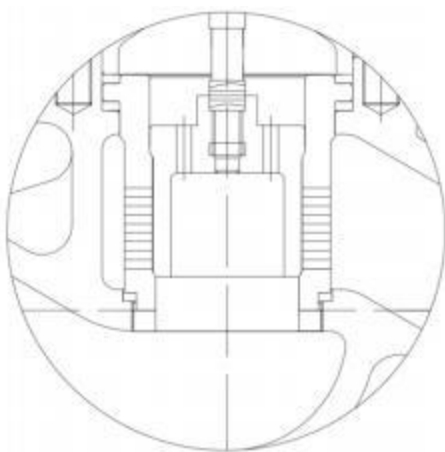


Table 5: ML type single sleeve control valve, unique symmetrical multi-pore disc, more efficiently controlling noisy and cavitation.

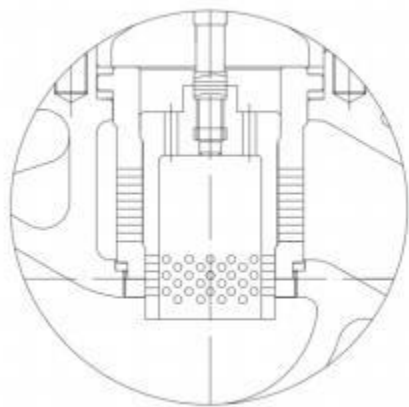
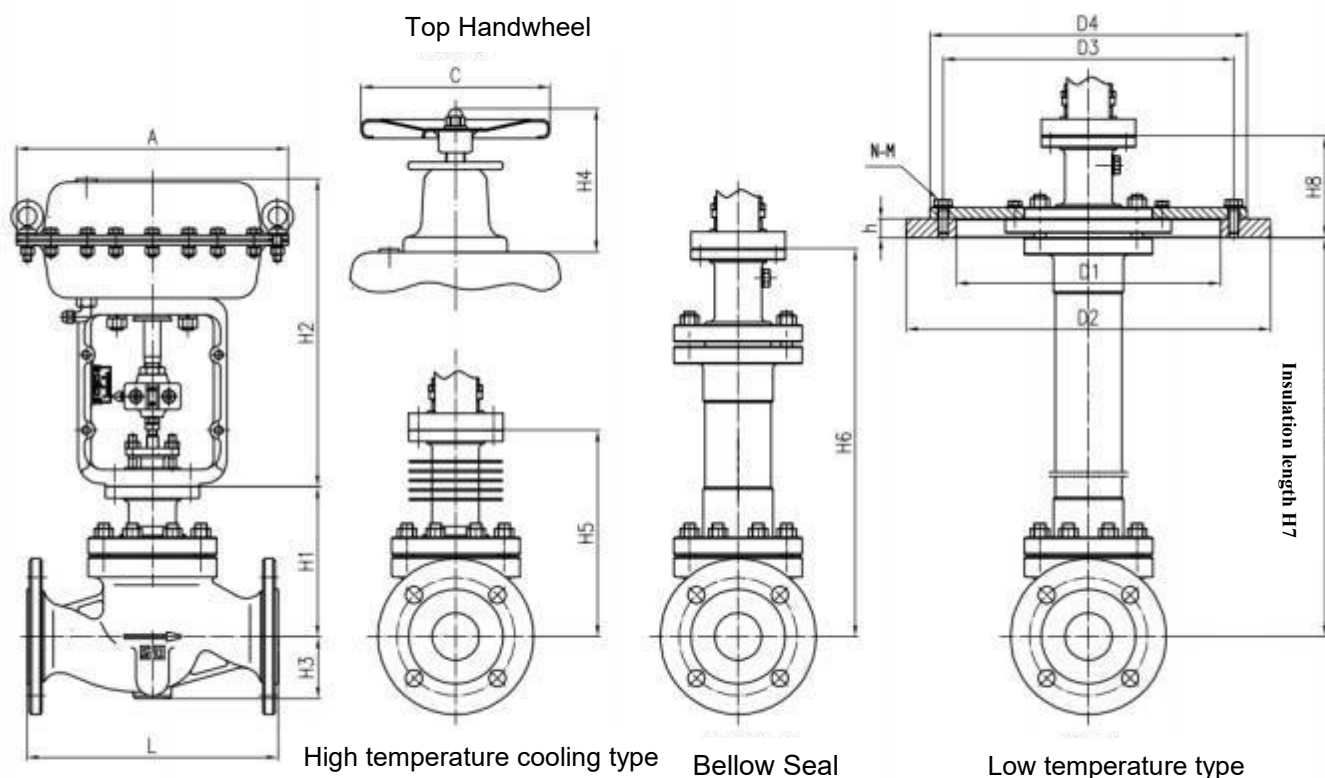


Table 6: MT type two-layer sleeve control valve, symmetrical multi-pore disc reducing pressure gradually, applicable for high pressure difference noisy and cavitation.

◆Main out form dimension and weight

Table 5: PN16、CL150LB Pneumatic sleeve type control valve dimension and weight

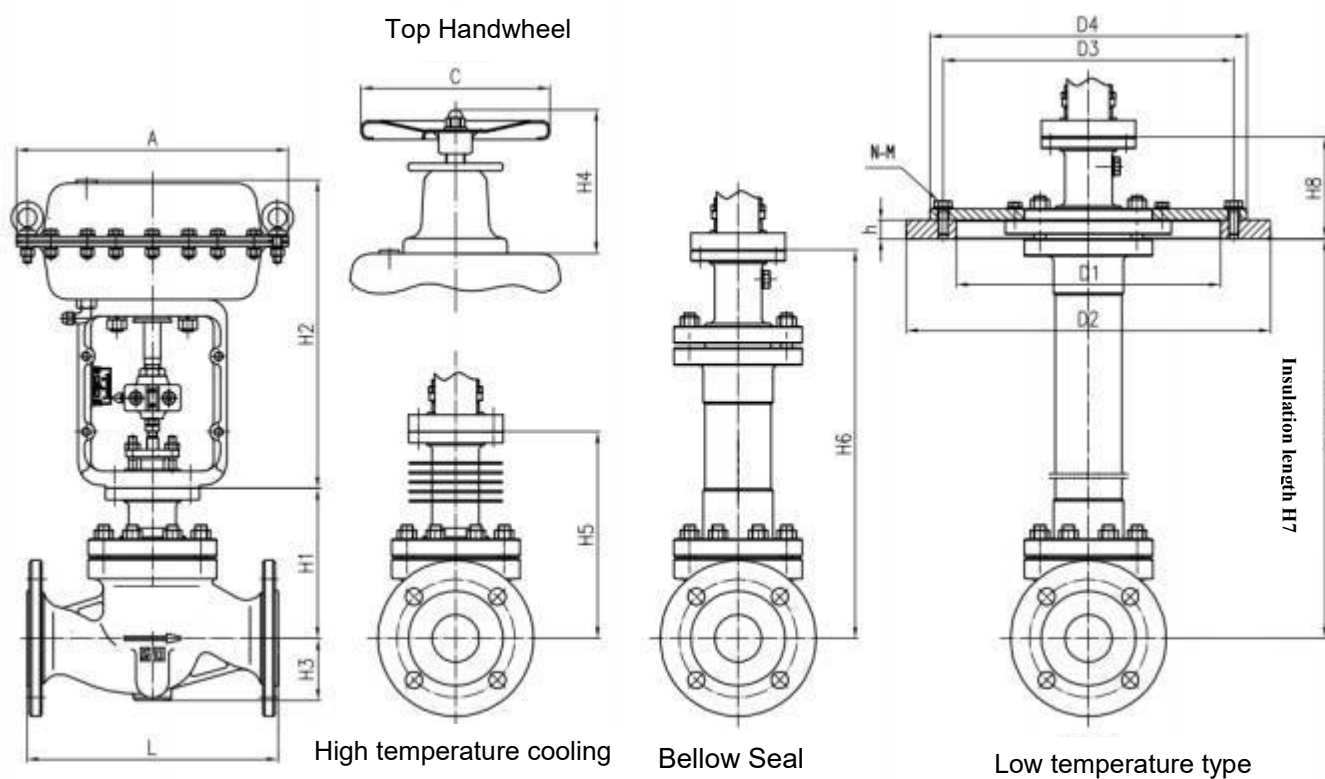


DN Size	DN25 1"	DN32 1 1/4"	DN40 1 1/2"	DN50 2"	DN65 1 1/2"	DN80 3"	DN100 4"	DN125 5"	DN150 6"	DN200 8"
L	184	200	222	254	276	298	352	420	451	600
C	200	200	200	200	240	240	240	350	350	350
A	285	285	288	288	365	365	365	475	475	475
H1	137	148	152	159	218	230	238	264	331	346
H2	303	303	323	323	417	417	417	520	520	520
H3	70	70	85	90	102.5	107.5	125	125	172.5	180
H4	153	153	153	153	181	181	181	247	247	247
H5	208	224	228	228	334	334	342	408	453	482
H6	338	402	402	405	627	628	635	698	702	728
H7	700 (Customized)									
H8	88	88	88	88	94	94	94	110	110	110
h	15	15	15	15	18	18	18	20	20	20
D1	230	250	270	305	342	375	430	490	556	665
D2	310	335	355	390	430	465	520	585	660	770
D3	260	285	305	340	370	405	460	525	580	700
D4	290	315	335	370	400	435	490	555	630	740
N-M	8-M12	8-M12	8-M14	8-M14	10-M14	10-M14	12-M16	14-M16	16-M16	18-M16
Weight, Kg	22	24	32	38	62	67	83	132	160	245

※ Weight in the table did not include the accessory weight. Valve can install side handwheel.

With continuous valve development, the dimension maybe will have some regulation, kindly contact with BCST for any update valve document.

Table 6: PN25/40、CL300LB Pneumatic sleeve type control valve dimension and weight

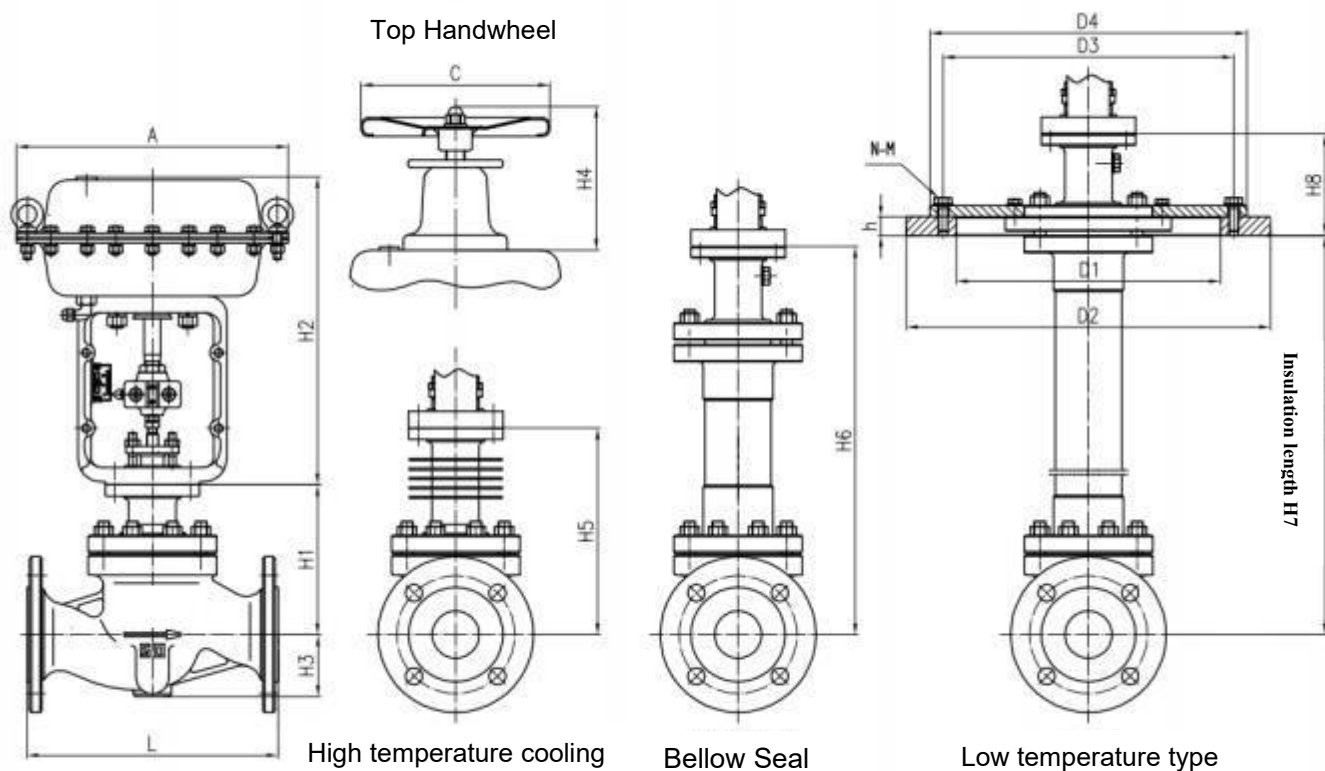


DN Size	DN25 1"	DN32 1 1/4"	DN40 1 1/2"	DN50 2"	DN65 1 1/2"	DN80 3"	DN100 4"	DN125 5"	DN150 6"	DN200 8"
L	197	200	235	267	292	317	368	420	473	600
C	200	200	200	200	240	240	240	350	350	350
A	285	285	288	288	365	365	365	475	475	475
H1	137	148	152	159	218	230	238	264	331	346
H2	303	303	323	323	417	417	417	520	520	520
H3	70	70	85	90	102.5	107.5	125	125	172.5	180
H4	153	153	153	153	181	181	181	247	247	247
H5	208	224	228	228	334	334	342	408	453	482
H6	338	402	402	405	627	628	635	698	702	728
H7	700 (Customized)									
H8	88	88	88	88	94	94	94	110	110	110
h	15	15	15	15	18	18	18	20	20	20
D1	230	250	270	305	342	375	430	490	556	665
D2	310	335	355	390	430	465	520	585	660	770
D3	260	285	305	340	370	405	460	525	580	700
D4	290	315	335	370	400	435	490	555	630	740
N-M	8-M12	8-M12	8-M14	8-M14	10-M14	10-M14	12-M16	14-M16	16-M16	18-M16
Weight, Kg	24	26	35	42	67	74	89	134	166	255

※ Weight in the table did not include the accessory weight. Valve can install side handwheel.

※ With continous valve development, the dimension maybe will have some regulation, kindly contact with BCST for any update valve document.

Table 7: PN63/100、CL600LB Pneumatic sleeve type control valve dimension and weight

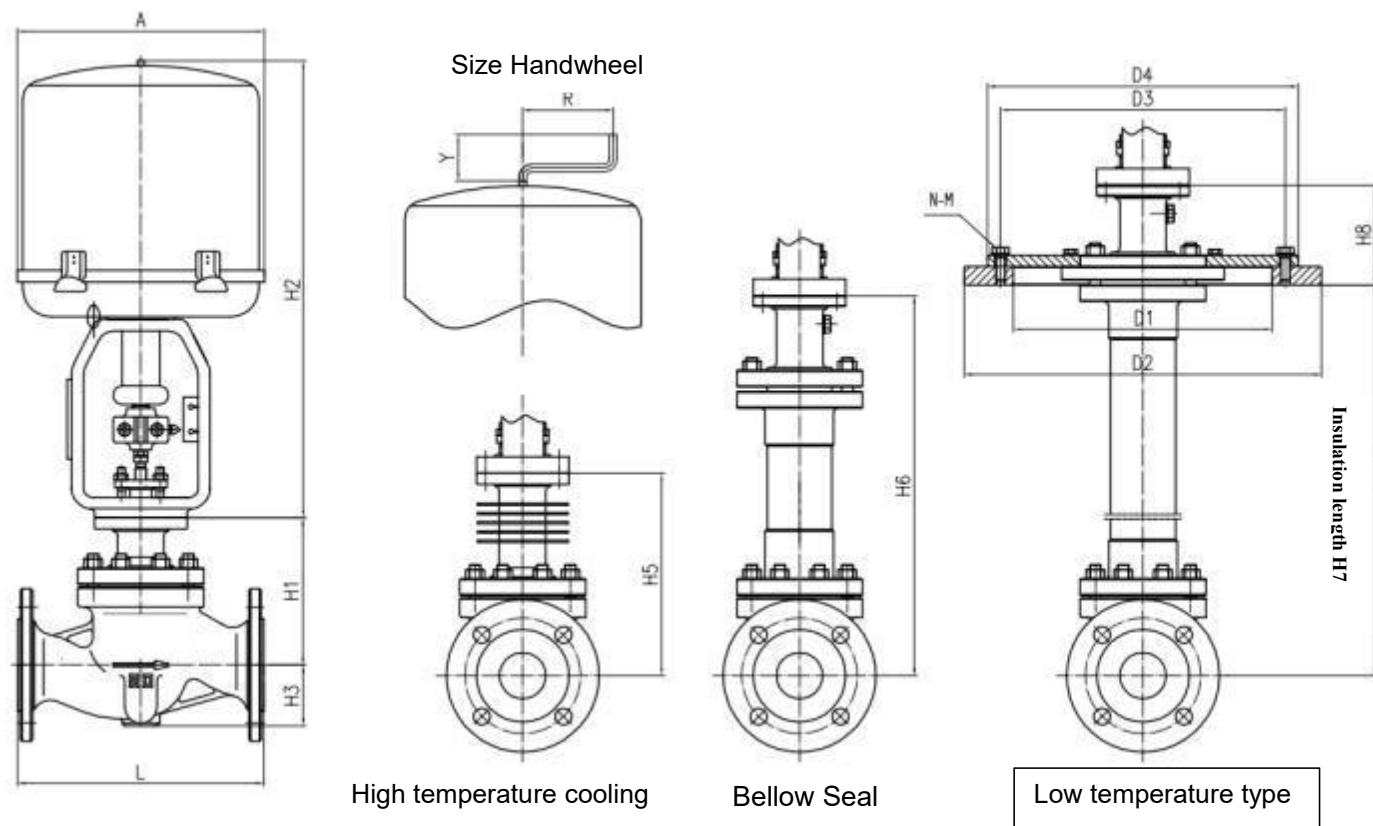


DN Size	DN25 1"	DN32 1 1/4"	DN40 1 1/2"	DN50 2"	DN65 1 1/2"	DN80 3"	DN100 4"	DN125 5"	DN150 6"	DN200 8"
L	210	251	251	286	311	337	394	500	508	650
C	200	200	200	200	240	240	240	350	350	350
A	285	285	288	288	365	365	365	475	475	475
H1	137	148	152	159	218	230	238	264	331	346
H2	303	303	323	323	417	417	417	520	520	520
H3	70	70	85	90	102.5	107.5	125	125	172.5	180
H4	153	153	153	153	181	181	181	247	247	247
H5	220	240	240	240	350	350	360	420	470	500
H6	338	402	402	405	627	628	635	698	702	728
H7	700 (Customized)									
H8	88	88	88	88	94	94	94	110	110	110
h	15	15	18	18	18	20	20	20	20	20
D1	270	305	342	375	430	490	556	665	665	765
D2	355	390	430	465	520	585	600	770	770	850
D3	305	340	370	405	460	525	690	700	700	805
D4	335	370	400	435	490	555	630	740	740	845
N-M	8-M14	10-M14	10-M14	10-M14	12-M16	14-M16	18-M16	18-M16	18-M16	18-M16
Weight, Kg	25	30	42	52	78	82	102	170	190	285

※ Weight in the table did not include the accessory weight. Valve can install side handwheel.

※ With continous valve development, the dimension maybe will have some regulation, kindly contact with BCST for any update valve document.

Table 8: PN16、CL150LB Electric sleeve type control valve dimension and weight

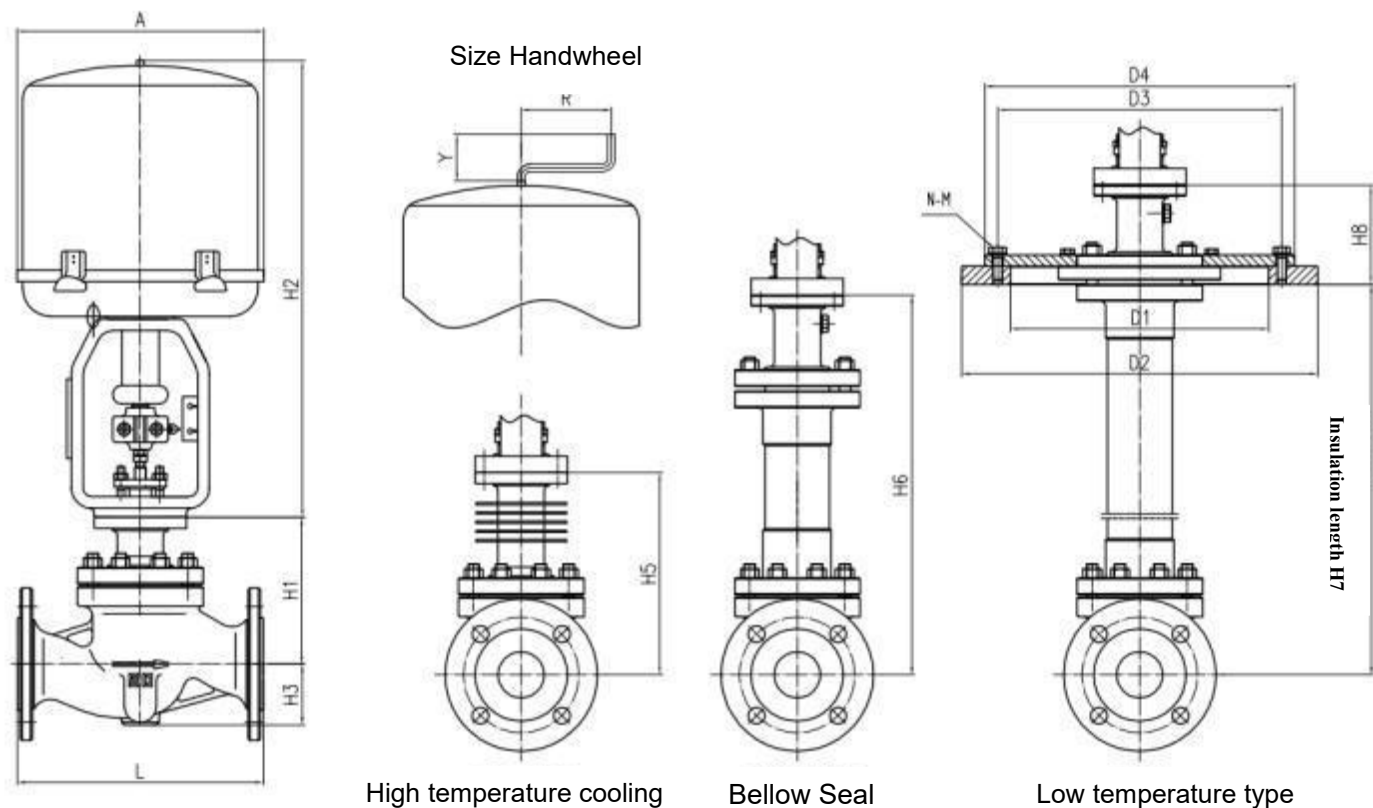


DN Size	DN25 1"	DN32 1 1/4"	DN40 1 1/2"	DN50 2"	DN65 1 1/2"	DN80 3"	DN100 4"	DN125 5"	DN150 6"	DN200 8"
L	184	200	222	254	276	298	352	420	451	600
A	225	255	255	255	255	255	255	310	310	310
H1	137	148	152	159	218	230	238	264	331	346
H2	373	495	495	495	535	535	535	725	725	725
H3	70	70	85	90	102.5	107.5	125	125	172.5	180
H4	87	90	90	90	90	90	90	90	90	90
H5	208	224	228	228	334	334	342	408	453	482
H6	338	402	402	405	627	628	635	698	702	728
H7	700 (Customized)									
H8	88	88	88	88	94	94	94	110	110	110
W	28	45	45	45	45	45	45	60	60	60
R	80	100	100	100	100	100	100	160	160	160
h	15	15	15	15	18	18	18	20	20	20
D1	230	250	270	305	342	375	430	490	556	665
D2	310	335	355	390	430	465	520	585	660	770
D3	260	285	305	340	370	405	460	525	580	700
D4	290	315	335	370	400	435	490	555	630	740
N-M	8-M12	8-M12	8-M14	8-M14	10-M14	10-M14	12-M16	14-M16	16-M16	18-M16
Weight, Kg	17	24	32	38	52	57	73	136	164	249

※ Weight in the table did not include the accessory weight. Applicable with 3810L type actuator.

※ With continous valve development, the dimension maybe will have some regulation, kindly contact with BCST for any update valve document.

Table 9: PN25/40、CL300LB Electric sleeve type control valve dimension and weight

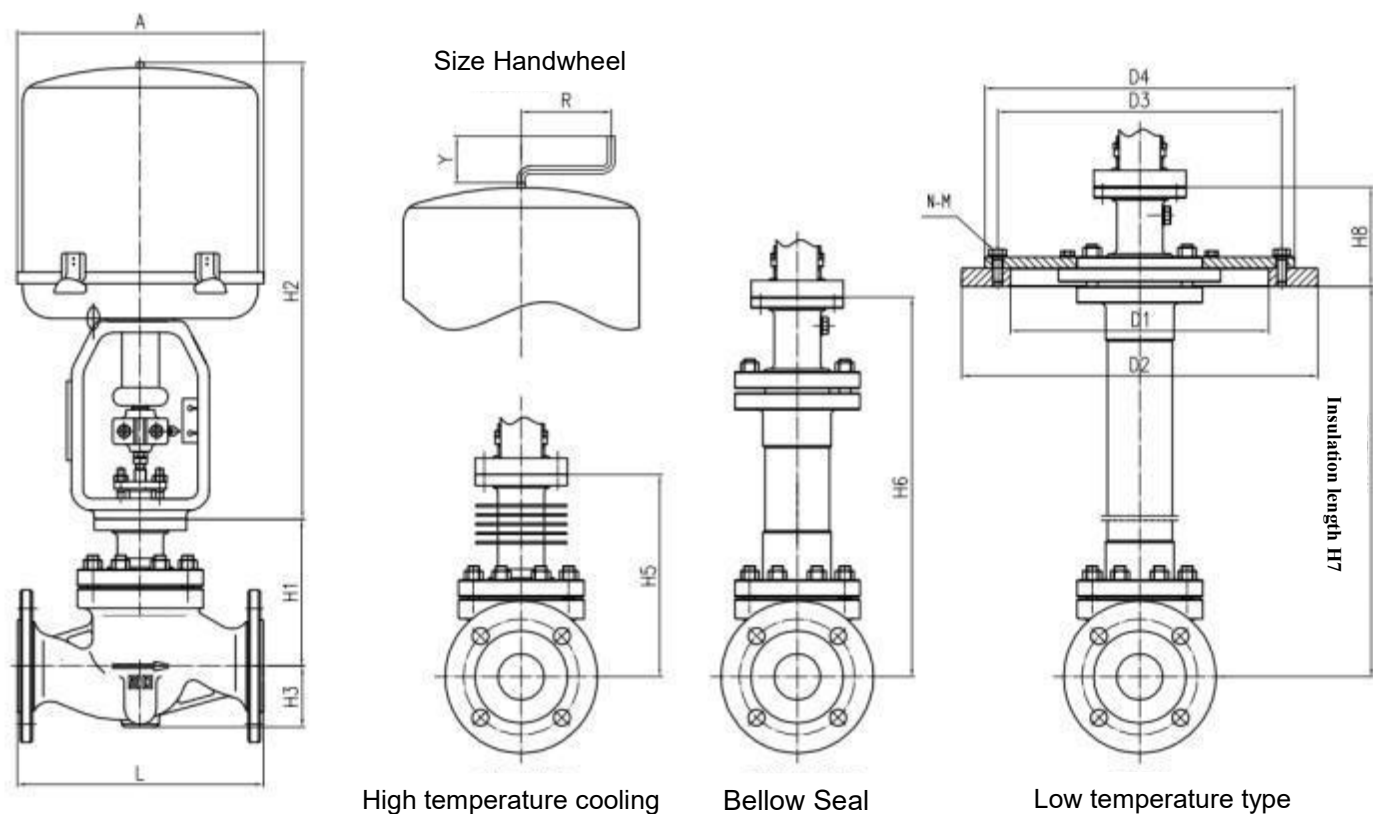


DN Size	DN25 1"	DN32 1 1/4"	DN40 1 1/2"	DN50 2"	DN65 1 1/2"	DN80 3"	DN100 4"	DN125 5"	DN150 6"	DN200 8"
L	197	200	235	267	292	317	368	420	473	600
A	225	255	255	255	255	255	255	310	310	310
H1	137	148	152	159	218	230	238	264	331	346
H2	373	495	495	495	535	535	535	725	725	725
H3	70	70	85	90	102.5	107.5	125	125	172.5	180
H4	87	90	90	90	90	90	90	90	90	90
H5	208	224	228	228	334	334	342	408	453	482
H6	338	402	402	405	627	628	635	698	702	728
H7	700 (Customized)									
H8	88	88	88	88	94	94	94	110	110	110
W	28	45	45	45	45	45	45	60	60	60
R	80	100	100	100	100	100	100	160	160	160
h	15	15	15	15	18	18	18	20	20	20
D1	230	250	270	305	342	375	430	490	556	665
D2	310	335	355	390	430	465	520	585	660	770
D3	260	285	305	340	370	405	460	525	580	700
D4	290	315	335	370	400	435	490	555	630	740
N-M	8-M12	8-M12	8-M14	8-M14	10-M14	10-M14	12-M16	14-M16	16-M16	18-M16
Weight, Kg	19	26	35	42	57	64	79	144	150	259

※ Weight in the table did not include the accessory weight. Applicable with 3810L type actuator.

※ With continous valve development, the dimension maybe will have some regulation, kindly contact with BCST for any update valve document.

Table 10: PN64/100、CL600LB Electric sleeve type control valve dimension and weight



DN Size	DN25 1"	DN32 1 1/4"	DN40 1 1/2"	DN50 2"	DN65 1 1/2"	DN80 3"	DN100 4"	DN125 5"	DN150 6"	DN200 8"
L	210	251	251	286	311	337	394	500	508	650
A	225	255	255	255	255	255	255	310	310	310
H1	137	148	152	159	218	230	238	264	331	346
H2	373	495	495	495	535	535	535	725	725	725
H3	70	70	85	90	102.5	107.5	125	125	172.5	180
H4	87	90	90	90	90	90	90	90	90	90
H5	220	240	240	240	350	350	360	420	470	500
H6	338	402	402	405	627	628	635	698	702	728
H7	700 (Customized)									
H8	88	88	88	88	94	94	94	110	110	110
W	28	45	45	45	45	45	45	60	60	60
R	80	100	100	100	100	100	100	160	160	160
h	15	15	18	18	18	20	20	20	20	20
D1	270	305	342	375	430	490	556	665	665	765
D2	355	390	430	465	520	585	600	770	770	850
D3	305	340	370	405	460	525	690	700	700	805
D4	335	370	400	435	490	555	630	740	740	845
N-M	8-M14	10-M14	10-M14	10-M14	12-M16	14-M16	18-M16	18-M16	18-M16	18-M16
Weight, Kg	20	30	42	52	68	72	92	174	194	289

※ Weight in the table did not include the accessory weight. Applicable with 3810L type actuator.

※ With continous valve development, the dimension maybe will have some regulation, kindly contact with BCST for any update valve document.



CATALOG

JC-ZH Series Linear Actuator Control Valve

ZHF (H) Type 3-way Control Valve

ZHF (H) type 3-way control valve includes diverging and converging actions, it can replace two sets two-way valve and widely used in many occasions to regulate pressure, flowrate, temperature and liquid level. Spool structure with side guiding, well stability, no vibration, low noisy, can bear high pressure difference, easy for connection, etc. While with low nominal size and pressure difference, converging valve can be used in diverging occasion. However, while nominal size higher than DN100 and high pressure difference, converging valve and diverging valve can't be exchanged.



◆Specification

Body type: 3-way casting globe type

Spool type: 3-way double seat spool

Nominal size: DN20~300 NPS 3/4" ~ 12"

Nominal pressure: PN16 ~ 100 CLASS 150LB ~ 600LB

Connection: flange: FF、RF、MF、RTJ

Welding: SW、BW

Flange dimension: acc. to IEC 60534

Bonnet type: standard type (-5℃~230℃)

Radiator type: (-45℃~higher than 230℃ occasion)

Low temperature extended type (-196℃~ -45℃)

Bellow seal type

Packing: V type PTFE packing, flex. graphite packing, etc.

Gasket: Metal graphite packing

Actuator: pneumatic: multi-spring diaphragm actuator, piston type actuator.

electric: 3810L series smart actuator, PSL series actuator.

Surface painting: Green color, acrylic acid polyurthene ceramic paint.



◆Code

Z	Actuator	H	Structure	Nominal pressure	Body material	Nominal size
Z series control valve	J: pneumatic diaphragm type H: pneumatic piston type R: electric 3810L type D: electric PSL type	H: direct travel	F: diverging type H: converging type F(H)G: radiator diverging(converging) type F(H)V: bellow seal diverging (converging) type F(H)D: low temperature diverging(converging) type	PN16=16 CL150LB=150 LB JIS10K=10K	C=WCB LC=LCB P=CF8 PL=CF3 R=CF8M RL=CF3M D= special material	DN25=DN25 NPS1" = NPS 1"

Such as: Pneumatic diaphragm converging (diverging) 3-way control valve, radiator type, pressure PN16, valve material WCB, nominal size DN50, type: JC-ZJHFG-16C DN50

◆ Performance

Flow characteristic		Linear, percentage	
Allowable range		30: 1	
Rated Cv value		Percentage \ linear CV8.5~1280	
Allowable leakage		Metal seal: IV grade (0.01% rated capacity)	
Performance		Pneumatic	Electric
	Allowable tolerance, %	±1.5	±1.0
	Return difference, %	≤1.5	≤1.0
	Dead zone, %	≤0.6	≤1.0
	Difference from beginning to end point, %	±2.5	±2.5
	Rated travel difference, %	≤2.5	≤2.5

Note₀₁ : specification on the basis of control valve with positioner and PTFE packing.

◆ Special specification

Special test	Material penetration flaw detection (PT), radiator test (RT), flow characteristic test, low temperature test.
Special treatment	Trim nitrogen treatment, seat hard alloy treatment.
Special rinse	Degreasing and dehydration treatment
Special condition	Special piping or connection, vacuum condition, S.S fastener, special coating.
Special dimension	Customized face to face length or dimension
Test and inspection	Third party test report

◆ Actuator

Type Method	Pneumatic diaphragm actuator	Electric actuator
	ZH23~ZH56	3810L series
	Multi-spring type	Intelligent integrated type
Usage	Regulating type, ON-OFF type	Regulating
Air supply pressure or Power supply voltage	Air supply pressure (Spring range) 140 (20~100) Kpa G 240 (40~200) Kpa G 280 (80~240) Kpa G	Power: AC 200V±10% 50Hz Or Power: AC 380V±10% 50Hz ₀₁
Connector	Air pipe connector: RC1/4	Nomal type: cable inlet 2-PF(G1/2") Explosive proof: Protection jacket PF(G3/4")
Positive action	Pressure increase, stem descend, valve close.	Input signal increase, stem descend, valve close.
Negative action	Pressure increase, stem ascend, valve open.	Input signal increase, stem ascend, valve open.
Input signal	40~20mA.DC (with positioner)	Input/output 4~20mA.DC
Lag	≤1%FS (with positioner)	≤0.8%FS
Linear type	2%FS (with positioner)	≤±1%FS
Environmental temperature	-10℃~+70℃	Standard type: -10℃~+60℃ With space heater ₀₁ : -35℃~+60℃ Explosive proof: -10℃~+40℃
Surface coating	Green, acrylic acid polyurethane coating	Blue, acrylic acid polyurethane coating
Accessories	Electric-air (air-air) valve positioned, filter regulator, valve converter, solenoid valve, limited switch	Space heater (normal type)

Note ₀₁: non-standard accessories, need special customized notes.

◆Parameter

Seat diamter（mm）		25	32	40	50	65	80	100	125	150	200	250	300			
Rated flow coefficient, CV		8.5	13	21	34	53	85	135	210	340	535	800	1280			
Nominal size	Travel	Option flow coefficient Cv（★standard ●recommended）														
DN25	16 mm	★														
DN32	25 mm		★													
DN40			●		★											
DN50			●		●	★										
DN65		40mm					★									
DN80						●	★									
DN100						●	●		★							
DN125	60mm											★				
DN150											●	★				
DN200											●	●	★			
DN250		100mm							●	●	●	★				
DN300										●	●	★				
Pneumatic actuator Diaphragm area, Ae (cm2)		ZHA/B-23				ZHA/B-34				ZHA/B-45			ZHA/B-56			
		350				560				900			1600			
Action	Spring range	Metal sealing allowable pressure difference（MPa）														
Air open	20-100KPa	0.7	0.44	0.28	0.18	0.17	0.11	0.07	0.07	0.05	0.03	0.05	0.03			
	40-200 KPa	2.14	1.31	0.84	0.53	0.51	0.33	0.21	0.22	0.15	0.09	0.11	0.07			
	80-240 KPa	4.99	3.05	1.95	1.25	1.18	0.78	0.5	0.51	0.36	0.21	0.21	0.15			
Air close	20-100KPa	2.14	0.87	0.56	0.35	0.34	0.22	0.14	0.15	0.1	0.06	0.05	0.03			
	40-200 KPa	6.4	5.86	3.64	2.3	2.21	1.43	0.91	0.95	0.66	0.37	0.11	0.07			
	80-240 KPa	6.4	6.4	5.04	3.18	3.06	1.98	1.26	1.32	0.92	0.52	0.21	0.15			
Electric actuator		Metal sealing max. allowable pressure difference（MPa）														
Type	Thrust（N）															
3810L-08	800	1.52														
3810L-20	2000	3.05	1.86		1.19	0.76										
3810L-30	3000		2.79		1.79	1.14										
3810L-50	5000		4.66		2.98	1.91	1.13		0.6		0.47					
3810L-65	6500						1.35		0.8		0.57	0.39	0.26	0.16		
3810L-99	10000											0.61	0.42	0.20	0.17	0.11
3810L-160	16000											0.97	0.67	0.35	0.27	0.18

◆Material and working temperature

Table 3: body and bonnet material working temperature and pressure range (ANSI)

Temp ℃	Class150					Class300					Class600				
	SCPL 1 LCB	SCPH 2 WCB	SCPH2 1 WC6	SCS13 A CF8	SCS14 A CF8M	SCPL 1 LCB	SCPH 2 WCB	SCPH2 1 WC6	SCS13 A CF8	SCS14 A CF8M	SCPL 1 LCB	SCPH 2 WCB	SCPH2 1 WC6	SCS13 A CF8	SCS14 A CF8M
-196~38	-	-	-	1.90	1.90	-	-	-	4.95	4.95	-	-	-	9.91	9.92
-45~38	1.84	-	-	1.90	1.90	4.78	-	-	4.95	4.95	9.57	-	-	9.91	9.92
-5~38	1.84	1.96	1.99	1.90	1.90	4.78	5.10	5.16	4.95	4.95	9.57	10.02	10.32	9.91	9.92
50	1.81	1.92	1.92	1.84	1.84	4.72	5.00	5.10	4.77	4.80	9.46	10.01	10.22	9.56	9.62
100	1.72	1.76	1.76	1.56	1.56	4.51	4.63	4.88	4.08	4.21	9.02	9.27	9.74	8.17	8.43
150	1.57	1.57	1.57	1.39	1.39	4.40	4.51	4.63	3.62	3.85	8.78	9.04	9.26	7.26	7.69
200	1.40	1.40	1.40	1.25	1.25	4.26	4.38	4.54	3.27	3.56	8.54	8.75	9.06	6.54	7.12
250	1.20	1.20	1.20	1.16	1.16	4.05	4.16	4.44	3.04	3.34	8.11	8.33	8.88	6.10	6.67
300	1.01	1.01	1.01	1.01	1.01	3.76	3.87	4.23	2.91	3.15	7.54	7.74	8.48	5.80	6.32
350	0.84	0.84	0.84	0.84	0.84	3.59	3.69	4.01	2.81	3.03	7.18	7.38	8.04	5.60	6.07
375		0.73	0.73	0.73	0.73		3.64	3.88	2.77	2.96		7.28	7.75	5.54	5.93
400		0.64	0.64	0.64	0.64		3.44	3.65	2.74	2.91		6.89	7.31	5.48	5.81
425		0.55	0.55	0.55	0.55		2.88	3.50	2.71	2.87		5.74	7.01	5.42	5.72
450		0.47	0.47	0.47	0.47		1.99	3.38	2.68	2.81		4.00	6.75	5.37	5.61
475		0.37	0.37	0.37	0.37		1.35	3.16	2.65	2.73		2.70	6.32	5.30	5.46
500		0.28	0.28	0.28	0.28		0.88	2.77	2.60	2.67		1.75	5.55	5.20	5.37
525		0.18	0.18	0.18	0.18		0.51	2.02	2.19	2.57		1.03	4.04	4.77	5.15
538		0.13	0.15	0.15	0.15		0.34	1.63	2.18	2.53		0.72	3.26	4.55	5.06

Table 4: body and bonnet material working temperature and pressure range (GB)

Temp. ℃	PN16					PN25					PN40					PN100				
	LC B	WC B	WC 6	CF 8	CF8 M	LC B	WC B	WC 6	CF 8	CF8 M	LC B	WC B	WC 6	CF 8	CF8 M	LC B	WC B	WC 6	CF 8	CF8 M
-29~38	1.5	1.6	1.6	1.5	1.5	2.4	2.5	2.5	2.4	2.4	3.9	4.1	4.1	4.0	3.9	9.0	9.6	9.6	9.3	9.3
93	1.4	1.4	1.4	1.4	1.3	2.2	2.3	2.3	2.1	2.0	3.8	3.7	4.0	3.3	3.4	8.4	8.5	9.6	7.7	8.0
149	1.3	1.3	1.3	1.3	1.2	2.1	2.1	2.1	1.9	1.9	3.7	3.6	3.8	3.0	3.1	8.3	8.3	9.3	7.0	7.2
204	1.1	1.1	1.1	1.1	1.1	1.9	1.9	1.9	1.7	1.7	3.5	3.4	3.7	2.8	2.8	8.0	8.2	8.9	6.4	6.6
260	0.8	1.0	1.0	1.0	1.0	1.7	1.7	1.7	1.5	1.6	3.3	3.2	3.5	2.6	2.6	7.5	7.7	8.5	6.0	6.1
315	0.7	0.8	0.8	0.8	0.8	1.4	1.4	1.5	1.3	1.3	3.0	2.8	3.1	2.3	2.4	6.9	7.1	7.8	5.6	5.8
343	0.6	0.7	0.7	0.7	0.7	1.3	1.3	1.4	1.2	1.2	2.9	2.7	3.0	2.3	2.3	6.7	7.0	7.5	5.5	5.7
371	0.5	0.6	0.6	0.6	0.6	1.2	1.2	1.3	1.1	1.1	2.8	2.7	2.9	2.2	2.2	6.6	7.0	7.3	5.5	5.6
399	0.5	0.5	0.5	0.5	0.5	1.1	1.1	1.2	1.0	1.0	2.5	2.6	2.7	2.1	2.2	6.0	6.5	6.9	5.3	5.5
427	0.5	0.5	0.5	0.5	0.5	0.9	1.0	1.1	0.9	0.9	2.1	2.1	2.6	2.0	2.1	5.0	5.3	6.5	5.1	5.5
454	0.4	0.4	0.3	0.4	0.4	0.7	0.7	1.0	0.8	0.8	1.5	1.4	2.4	2.0	2.0	3.4	3.4	6.2	5.0	5.4
482		0.3	0.3	0.3	0.3		0.5	0.7	0.7	0.7		0.9	2.1	1.9	1.9		2.2	5.8	5.0	5.3
510		0.2	0.2	0.2	0.2		0.3	0.5	0.6	0.6		0.5	1.5	1.8	1.8		1.3	4.1	4.9	4.9
538		0.1	0.1	0.1	0.1		0.1	0.3	0.4	0.4		0.3	1.0	1.5	1.6		0.6	2.7	4.1	4.5
565			0.1	0.1	0.1			0.2	0.3	0.4			0.7	1.4	1.6			1.8	3.9	4.5
593			0.1	0.1	0.1			0.1	0.3	0.4			0.4	1.2	1.4			1.2	3.3	3.9

Note: 1. Temperature or pressure value in the middle range, can calculate the max. value by interpolation method.
2. Pressure in the table are all manometer pressure.

Table 6: Metal seal material working temperature, pressure range and treatment

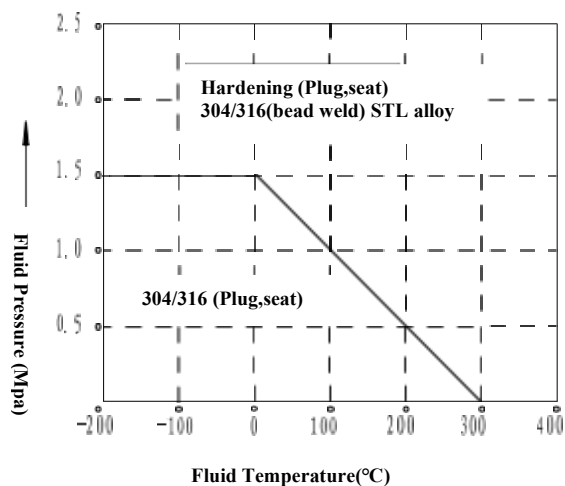


Table 7: Soft seal material working temperature, pressure range and treatment

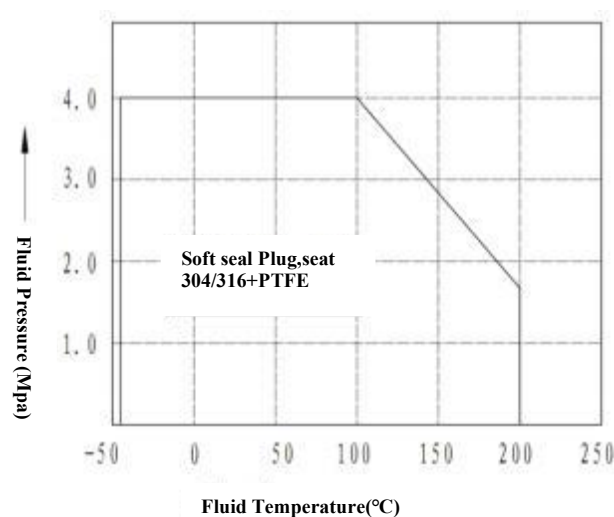


Table 8: RPTFE packing temperature and pressure range

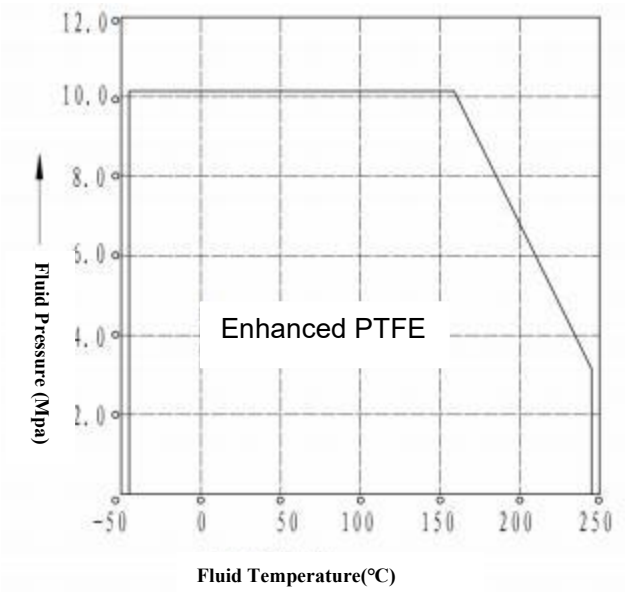


Table 9: Flex. Graphite packing temperature and pressure range.

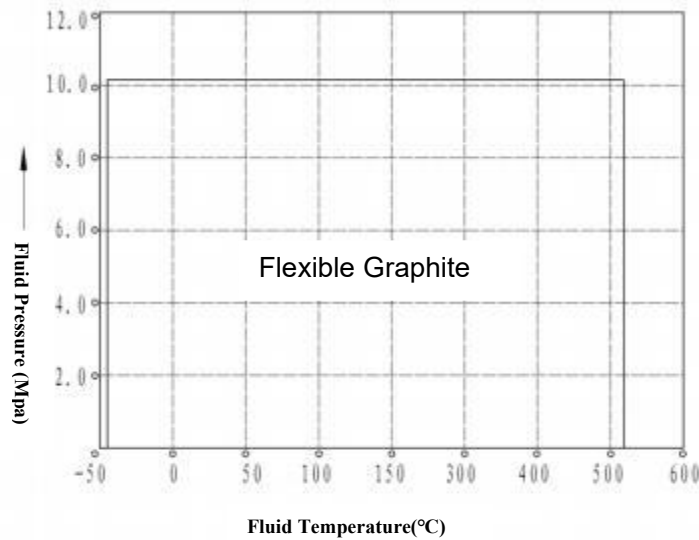


Table 10: Sawtooth gasket SUS316L, alloy steel temperature and pressure range

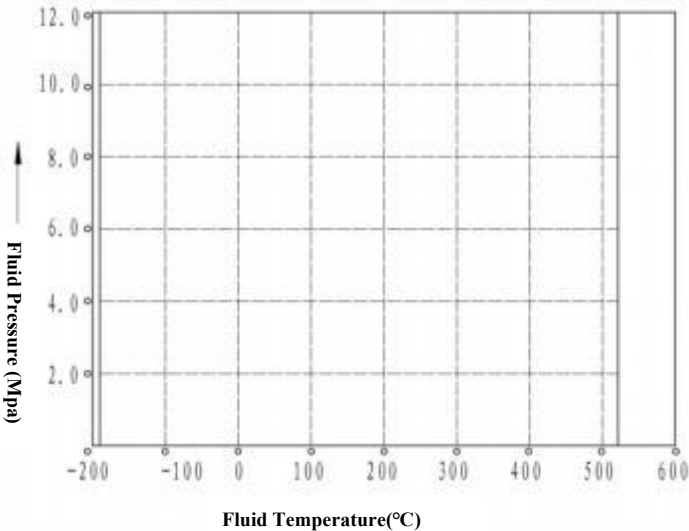


Table 11: Spiral gasket SUS316+ flex. graphite packing temperature and pressure range

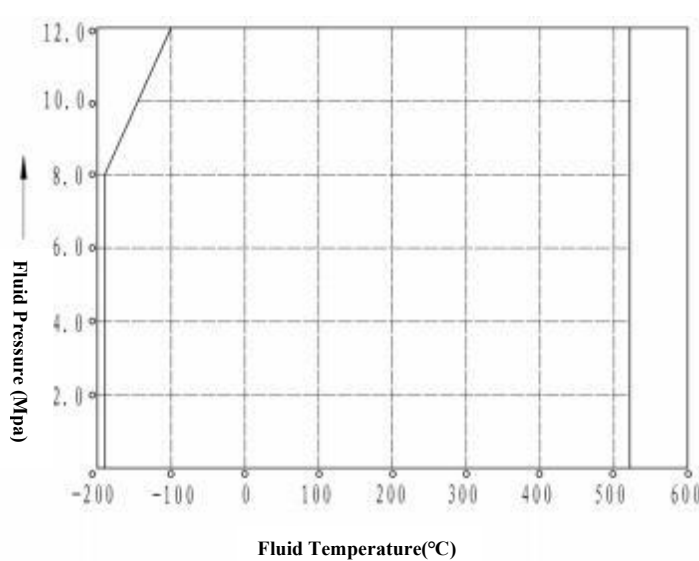


Table 12: Bellow seal working temperature and pressure range

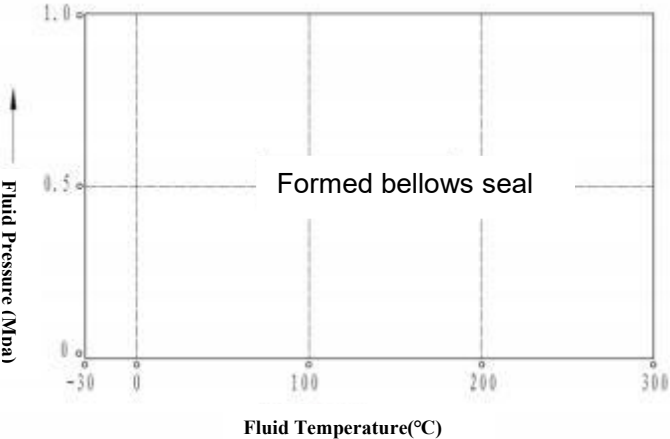
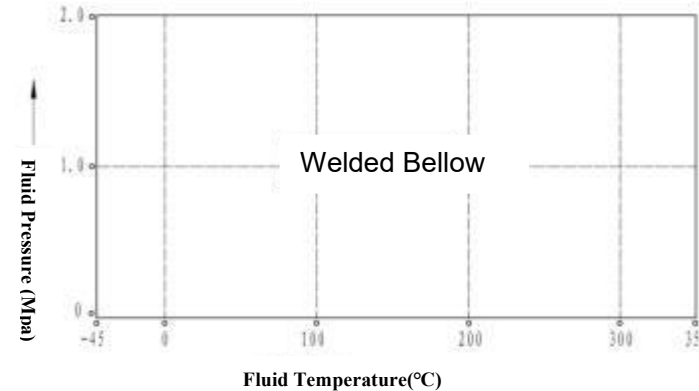


Table 13: Welded bellow sealed working temperature and pressure range.



◆ Standard material and internal structure

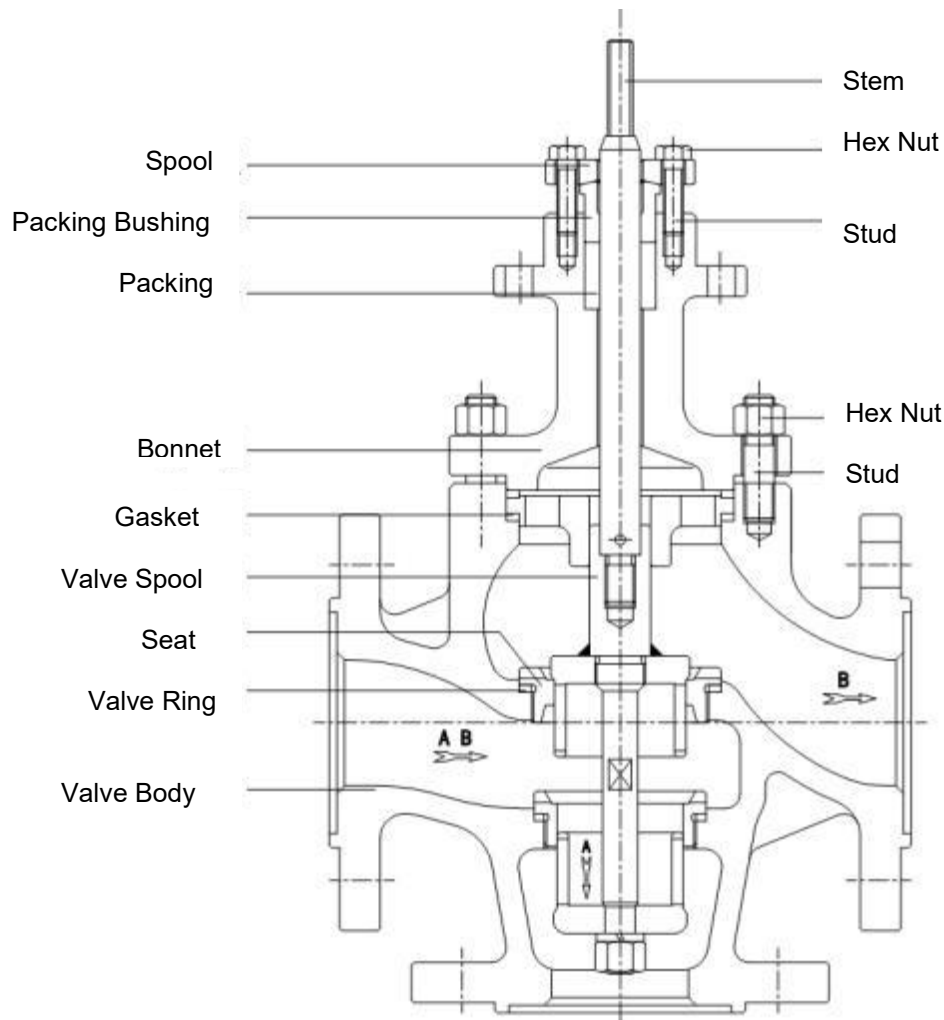


Table 1: Body WCB

1	Body	WCB	LCB	WC9
2	Seat	304	304	304
3	Spool	304	304	304
4	Gasket	316+graphite/PTFE		
5	Bushing	304	304	304
6	Bonnet	WCB	LCB	WC9
7	Packing	PTFE/flex. graphite		
8	Packing bushing	304	304	304
9	Gland	WCB	WCB	WCB
10	Stem	304	304	304
12	Stud	45	40MnB	25Cr2Mo1VA
13	Nut	35	35	25Cr2Mo1VA

Table 2: Body S.S

1	Body	CF8	CF8M	CF3M
2	Seat	304	316	316L
3	Spool	304	316	316L
4	Gasket	316+graphite/PTFE		
5	Bushing	316	316	316L
6	Bonnet	CF8	CF8M	CF3M
7	Packing	PTFE/flex. graphite		
8	Packing bushing	304	316	316L
9	Gland	CF8	CF8M	CF3M
10	Stem	304	316	316L
12	Stud	304	316	316L
13	Nut	304	316	316L

Note:

1. Above structure, seat is metal sealing, PTFE soft sealing is VI grade as option. Also can provide stillate hard sealing. As per actual working temperature, we may choose proper bolt & nut accordingly.
2. PTFE V type stem packing is with graphite, the working temperature can be higher than 232℃ (450 F)
3. The common body material is WCB and S.S, can apply with other high corrosion resistance alloy material.

◆Variety valve structure

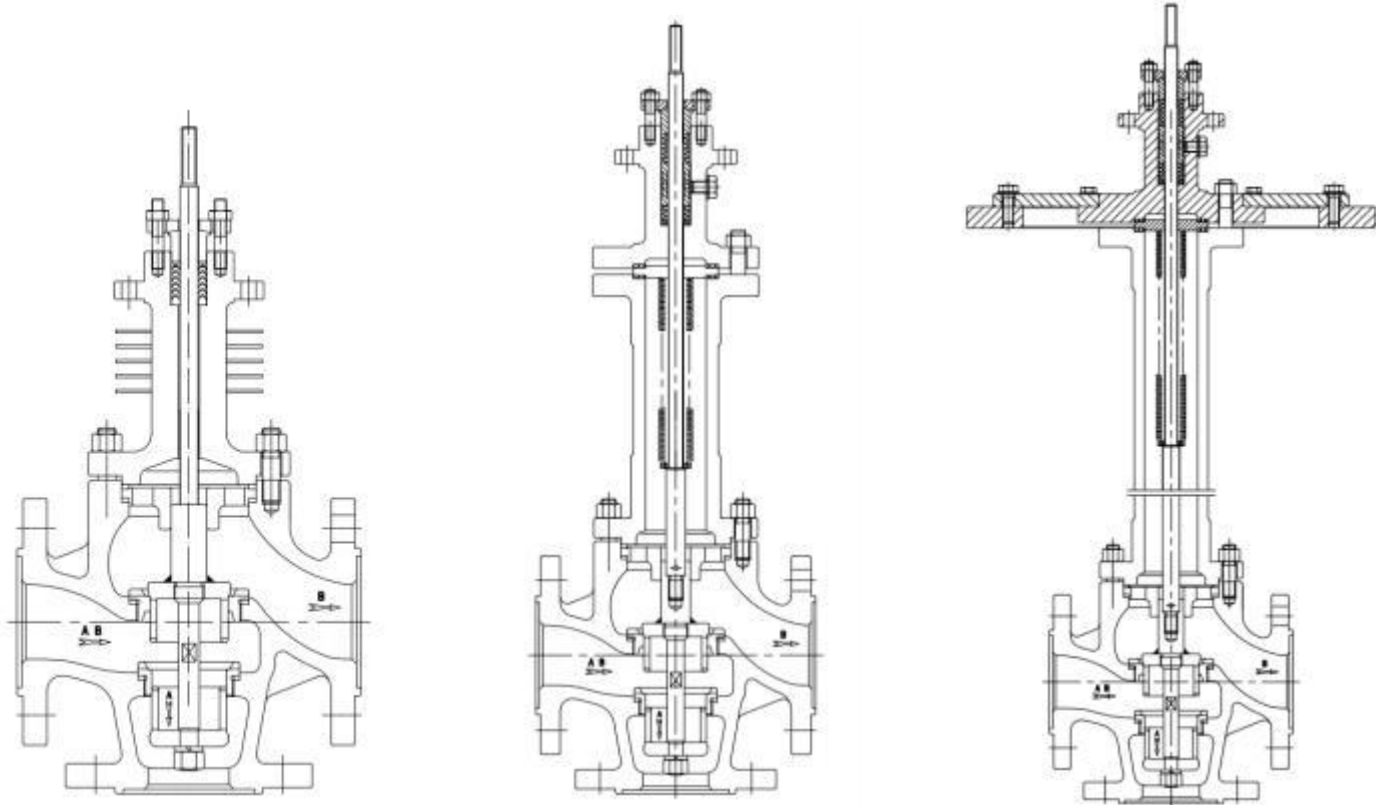
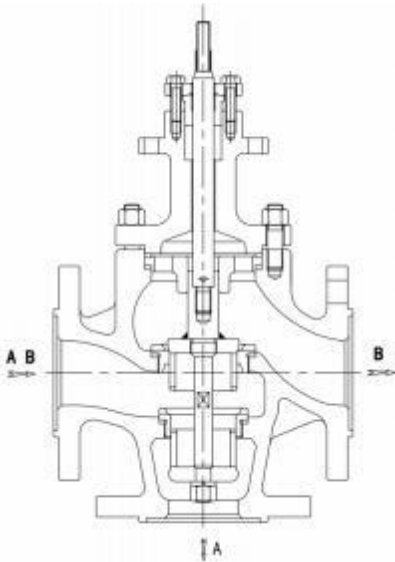
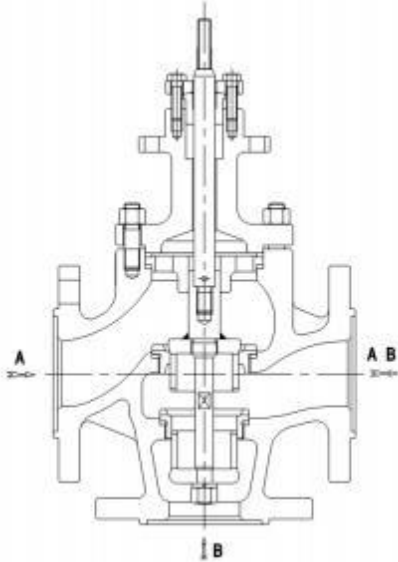


Table 1: MG type radiator plate 3 way control vavle, applicable for temperature -45℃~higher 230℃

Table 2: MV type bellow sealed 3 way control valve, applicable for multi-layer bellow seal, protected medium against loss.

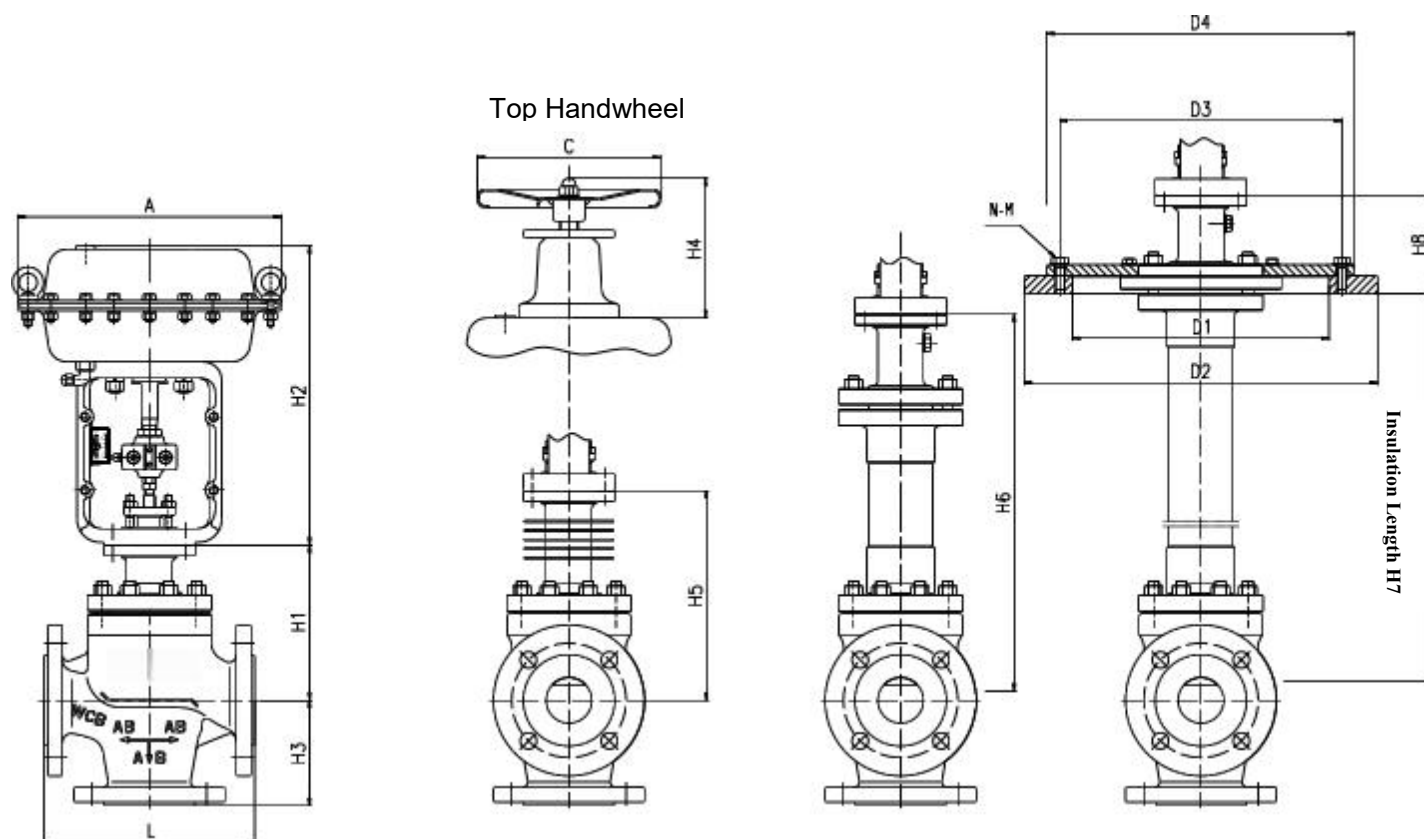
Table 3: MD type low temperature3 way control valve, spool integrated external suction structure, convenient and easy for maintenance.

◆ Medium flow direction

Valve type	ZHF diverging 3-way valve				ZHH converging 3-way valve			
Actuator	Positive action (signal close)		Negative action (signal open)		Positive action (signal close)		Negative action (signal open)	
	Input signal 0%	Input signal 100%	Input signal 0%	Input signal 100%	Input signal 0%	Input signal 100%	Input signal 0%	Input signal 100%
Flow direction	AB→B	AB→A	AB→A	AB→B	A→AB	B→AB	B→AB	A→AB
Flow direction								

◆Main out form dimension and weight

Table 5: PN16/25/40、CL150LB/CL300LB Pneumatic 3-way control valve dimension and weight

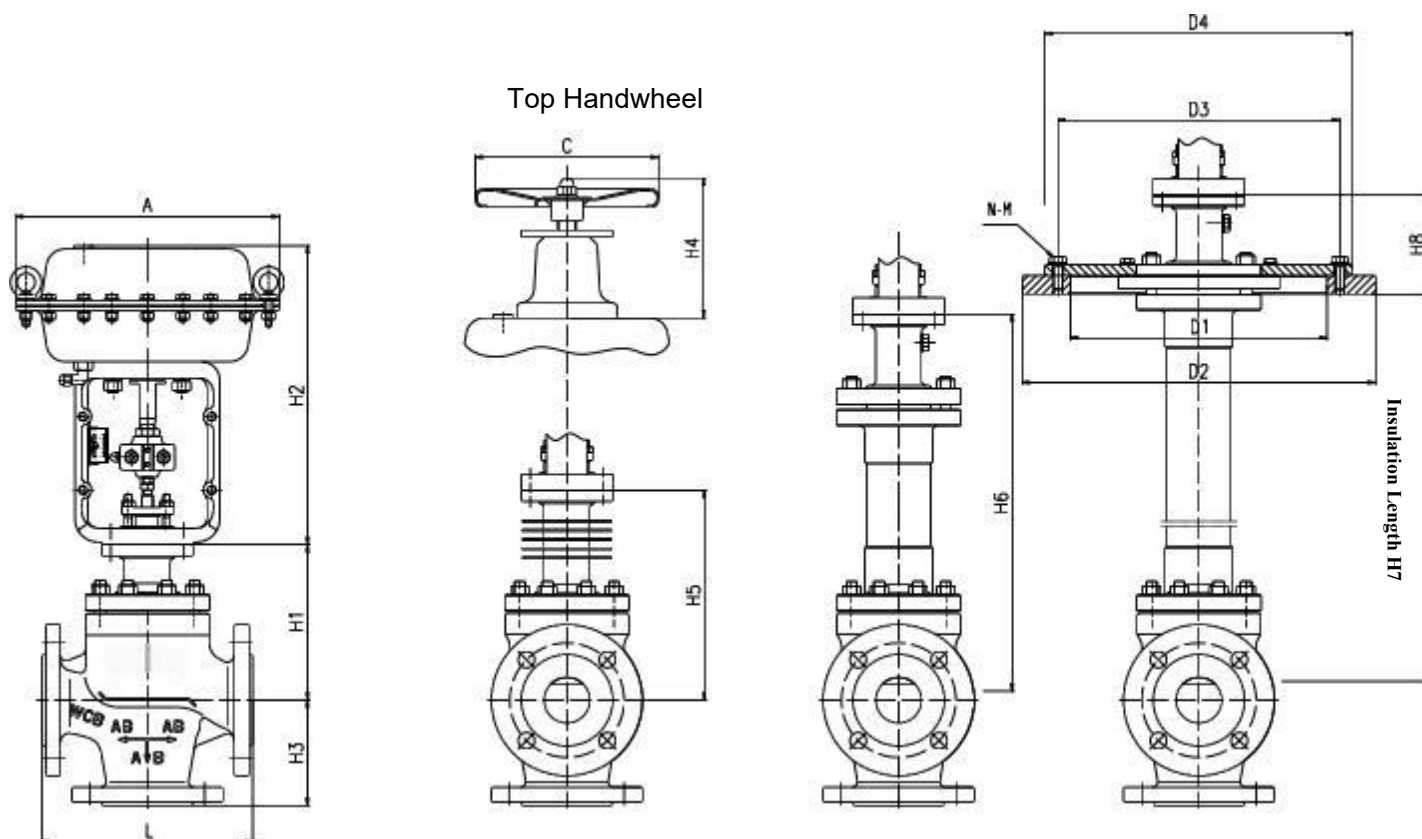


DN Size	DN25 1"	DN32 1 1/4"	DN40 1 1/2"	DN50 2"	DN65 1 1/2"	DN80 3"	DN100 4"	DN125 5"	DN150 6"	DN200 8"
L	160	180	200	230	290	310	350	400	480	600
C	200	200	200	200	240	240	240	350	350	350
A	285	285	288	288	365	365	365	475	475	475
H1	137	148	152	159	218	230	238	264	331	346
H2	303	303	323	323	417	417	417	520	520	520
H3	80	90	100	115	145	155	175	200	270	350
H4	153	153	153	153	181	181	181	247	247	247
H5	208	224	228	228	334	334	342	408	453	482
H6	338	402	402	405	627	628	635	698	702	728
H7	700 (customized)									
H8	88	88	88	88	94	94	94	110	110	110
h	15	15	15	15	18	18	18	20	20	20
D1	230	250	270	305	342	375	430	490	556	665
D2	310	335	355	390	430	465	520	585	660	770
D3	260	285	305	340	370	405	460	525	580	700
D4	290	315	335	370	400	435	490	555	630	740
N-M	8-M12	8-M12	8-M14	8-M14	10-M14	10-M14	12-M16	14-M16	16-M16	18-M16
Weight, Kg	21	23	33	36	64	72	92	155	193	286

※ Weight in the table did not include the accessory weight. Valve can install side handwheel.

※ With continous valve development, the dimension maybe will have some regulation, kindly contact with BCST for any update valve document.

Table 6: PN63/100、CL600LB pneumatic 3-way control valve dimension and weight

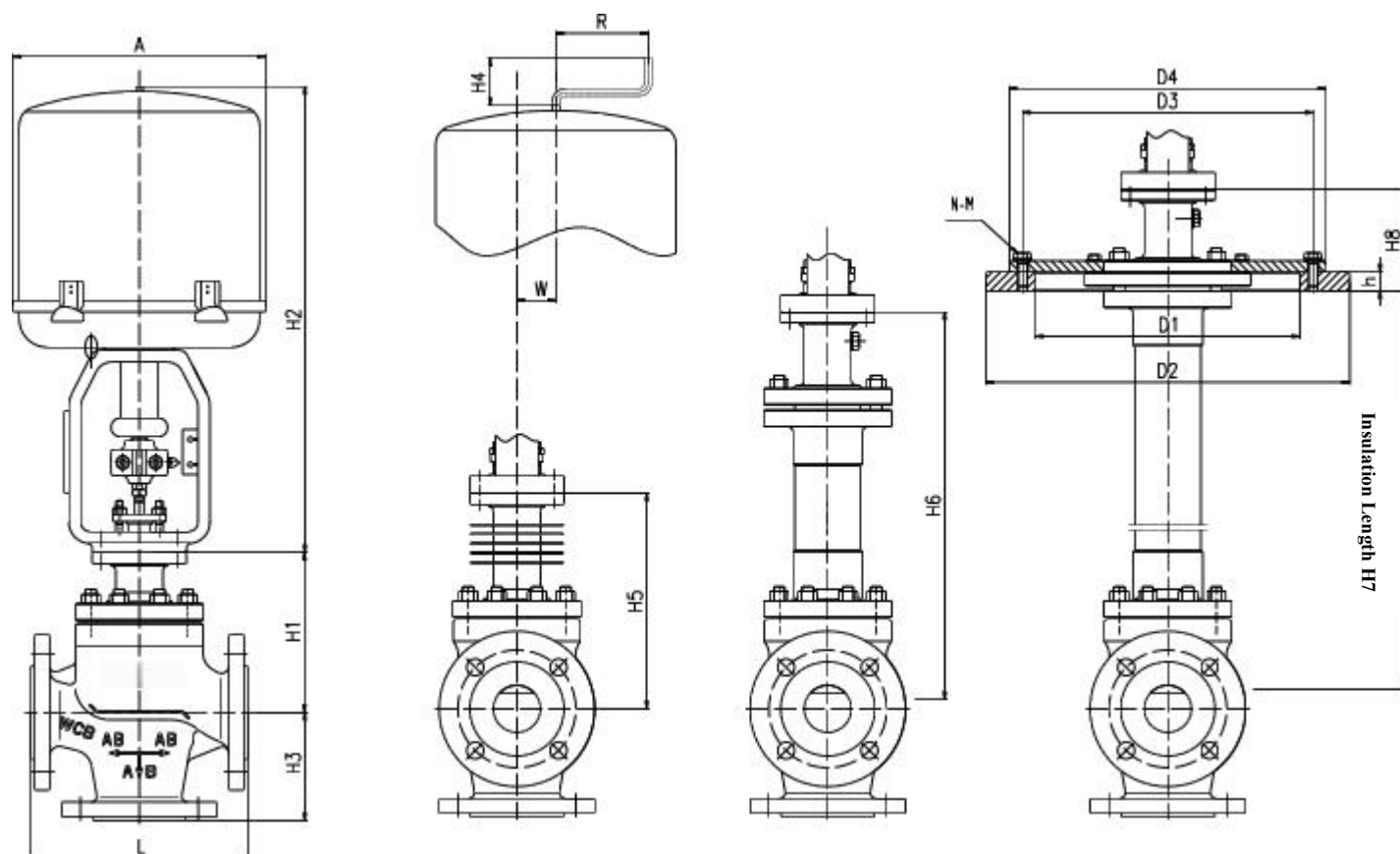


DN Size	DN25 1"	DN32 1 1/4"	DN40 1 1/2"	DN50 2"	DN65 1 1/2"	DN80 3"	DN100 4"	DN125 5"	DN150 6"	DN200 8"
L	230	260	260	300	340	380	430	500	550	650
C	200	200	200	200	240	240	240	350	350	350
A	285	285	288	288	365	365	365	475	475	475
H1	137	148	152	159	218	230	238	264	331	346
H2	303	303	323	323	417	417	417	520	520	520
H3	160	170	180	200	230	250	282	310	430	480
H4	153	153	153	153	181	181	181	247	247	247
H5	220	240	240	240	350	350	360	420	470	500
H6	338	402	402	405	627	628	635	698	702	728
H7	700 (customized)									
H8	88	88	88	88	94	94	94	110	110	110
h	15	15	18	18	18	20	20	20	20	20
D1	270	305	342	375	430	490	556	665	665	765
D2	355	390	430	465	520	585	600	770	770	850
D3	305	340	370	405	460	525	690	700	700	805
D4	335	370	400	435	490	555	630	740	740	845
N-M	8-M14	10-M14	10-M14	10-M14	12-M16	14-M16	18-M16	18-M16	18-M16	18-M16
Weight, Kg	25	28	40	45	74	85	112	180	243	336

※ Weight in the table did not include the accessory weight. Valve can install side handwheel.

※ With continous valve development, the dimension maybe will have some regulation, kindly contact with BCST for any update valve document.

Table 7: PN16/25/40、CL150LB/CL300LB Electric 3-way control valve dimension and weight

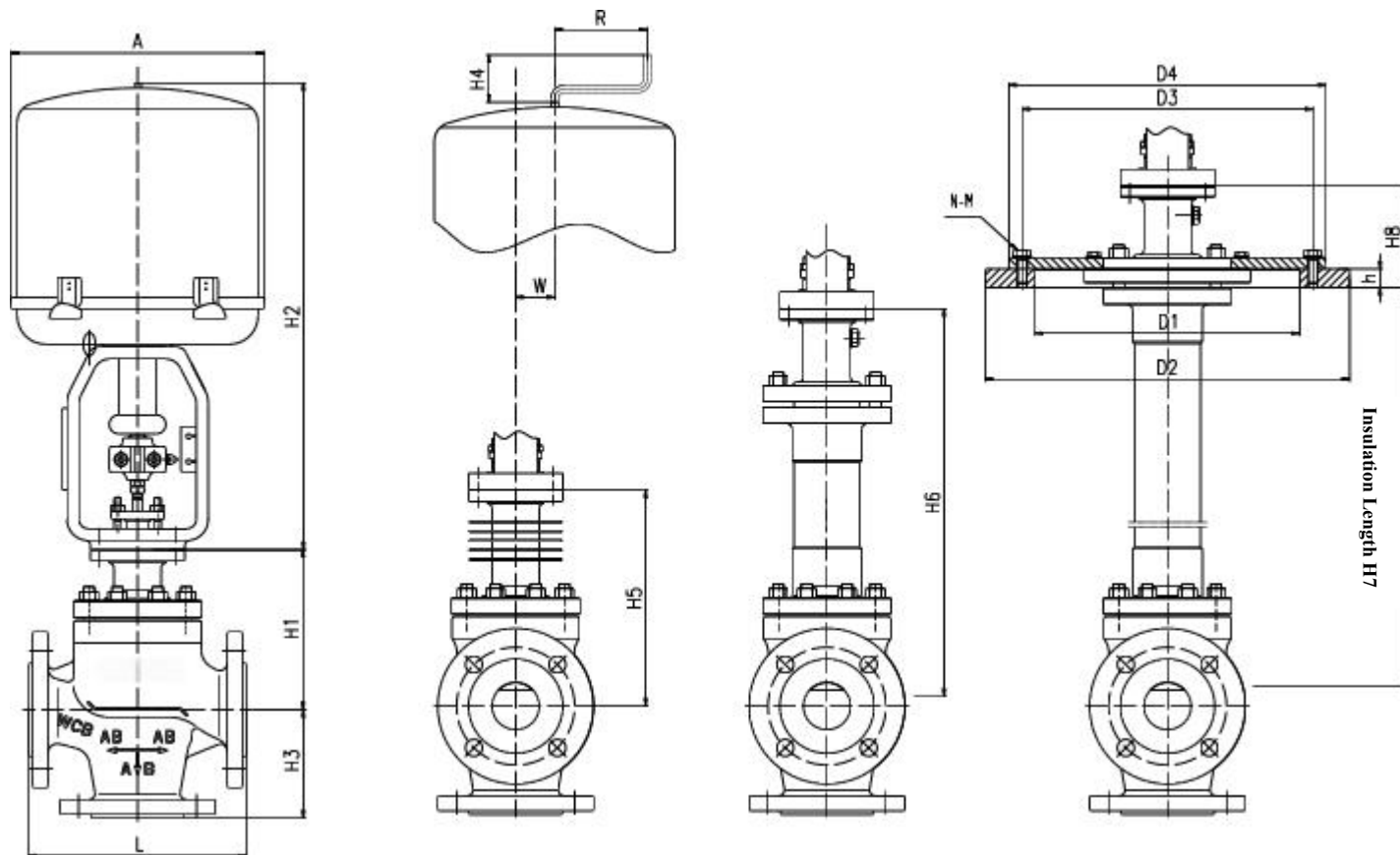


DN Size	DN25 1"	DN32 1 1/4"	DN40 1 1/2"	DN50 2"	DN65 1 1/2"	DN80 3"	DN100 4"	DN125 5"	DN150 6"	DN200 8"
L	160	180	200	230	290	310	350	400	480	600
A	225	255	255	255	255	255	255	310	310	310
H1	137	148	152	159	218	230	238	264	331	346
H2	373	495	495	495	535	535	535	725	725	725
H3	80	90	100	115	145	155	175	200	270	350
H4	87	90	90	90	90	90	90	90	90	90
R	80	100	100	100	100	100	100	160	160	160
H5	208	224	228	228	334	334	342	408	453	482
H6	338	402	402	405	627	628	635	698	702	728
H7	700 (customized)									
H8	88	88	88	88	94	94	94	110	110	110
h	15	15	15	15	18	18	18	20	20	20
D1	230	250	270	305	342	375	430	490	556	665
D2	310	335	355	390	430	465	520	585	660	770
D3	260	285	305	340	370	405	460	525	580	700
D4	290	315	335	370	400	435	490	555	630	740
N-M	8-M12	8-M12	8-M14	8-M14	10-M14	10-M14	12-M16	14-M16	16-M16	18-M16
Weight, Kg	16	23	33	36	54	62	82	159	197	290

※ Weight in the table did not include the accessory weight. Install with 3810L actuator.

※ With continous valve development, the dimension maybe will have some regulation, kindly contact with BCST for any update valve document.

Table 8: PN64/100、CL600LB Electric 3-way control valve dimension and weight



DN Size	DN25 1"	DN32 1 1/4"	DN40 1 1/2"	DN50 2"	DN65 1 1/2"	DN80 3"	DN100 4"	DN125 5"	DN150 6"	DN200 8"
L	230	260	260	300	340	380	430	500	550	650
A	225	255	255	255	255	255	255	310	310	310
H1	137	148	152	159	218	230	238	264	331	346
H2	373	495	495	495	535	535	535	725	725	725
H3	160	170	180	200	230	250	282	310	430	480
H4	87	90	90	90	90	90	90	90	90	90
R	80	100	100	100	100	100	100	160	160	160
H5	220	240	240	240	350	350	360	420	470	500
H6	338	402	402	405	627	628	635	698	702	728
H7	700 (custmized)									
H8	88	88	88	88	94	94	94	110	110	110
h	15	15	18	18	18	20	20	20	20	20
D1	270	305	342	375	430	490	556	665	665	765
D2	355	390	430	465	520	585	600	770	770	850
D3	305	340	370	405	460	525	690	700	700	805
D4	335	370	400	435	490	555	630	740	740	845
N-M	8-M14	10-M14	10-M14	10-M14	12-M16	14-M16	18-M16	18-M16	18-M16	18-M16
Weight, Kg	20	28	40	45	64	75	102	184	247	340

※ Weight in the table did not include the accessory weight. Install with 3810L actuator.

※ With continous valve development, the dimension maybe will have some regulation, kindly contact with BCST for any update valve document.



CATALOG

JC-ZH Series Linear Actuator Control Valve

ZHJ Type Angle Control Valve

ZHJ angle control valve specialized in high viscosity medium, easy for crystallization, with suspended particle and 90 degree angle area. Angle type control valve without dead space, so easy rinsing, convenient for maintenance and wide application. It can be applied with single or balanced cage disc, or multi-layer in high pressure difference occasion. It can also applied with multi-spring pneumatic diaphragm actuator or electric actuator, etc.

◆Specification

Body type: Angle casting globe type

Spool type: single seat, sleeve type

Nominal size: DN20~200 NPS3/4" ~ 8"

Nominal pressure: PN16 ~ 100 CLASS 150LB ~ 600LB

Connection type: Flange: FF、RF、MF、RTJ

Welding: SW、BW

Flange dimension: acc. to IEC 60534

Bonnet type: standard type (-5℃~230℃)

Radiator type: (-45℃~ higher than 230℃ occasion)

Low temperature extended type (-196℃~ -45℃)

Bellow seal type

Warm insulation Jacket type

Packing: V type PTFE packing, flex. graphite packing, etc.

Gasket: Metal graphite packing

Actuator: pneumatic: multi-spring diaphragm actuator, piston type actuator.

electric 3810L series smart actuator, PSL series actuator.

Surface painting: Green color, acrylic acid polyurthene ceramic paint.



◆Code

Z	Actuator	H	Structure	Nominal pressure	Valve material	Nominal size
Z series control valve	J: pneumatic diaphragm H: pneumatic piston R: electric 3810L D: electric PSL type	Hdirect travel	J: standard angle single seat JF: soft seal angle single seat JM: standard angle sleeve type JT: two layer cage sleeve type JG: radiator angle type JV: bellow seal angle type JD: low temperature angle type	PN16=16 CL150LB=150LB JIS10K=10K	C=WCB LC=LCB P=CF8 PL=CF3 R=CF8M RL=CF3M D= special material	DN25= DN252 NPS1 " - NPS 1"

Such as: Z type pneumatic diaphragm angle single seat control valve, pressure PN16, valve material WCB, nominal size DN50, type: JC-ZJHJ-16C DN50

◆ Performance

Flow characteristic		Linear, percentage, quick open	
Allowable range		50: 1 (CV<6.3 30: 1)	
Rated Cv value		Percentage CV1.6~630 , linear CV1.8~690	
Allowable leakage		Metal seal: IV grade (0.01% rated capacity) Soft seal: VI grade (foam grade) Leakage standard: GB/T 4213	
Performance		Pneumatic	Electric
	Allowable tolerance, %	±1.5	±1.0
	Return difference, %	≤1.5	≤1.0
	Dead zone, %	≤0.6	≤1.0
	Difference from beginning to end point, %	±2.5	±2.5
	Rated travel difference, %	≤2.5	≤2.5

Note ○1: specification on the basis of control valve with positioned and PTFE packing.

◆ Special specification

Special test	Material penetration flaw detection (PT), radiator test (RT), flow characteristic test, low temperature test.
Special treatment	Trim nitrogen treatment, seat hard alloy treatment.
Special rinse	Degreasing and dehydration treatment
Special condition	Special piping or connection, vacuum condition, S.S fastener, special coating.
Special dimension	Customized face to face length or dimension
Test and inspection	Third party test report

◆ Actuator

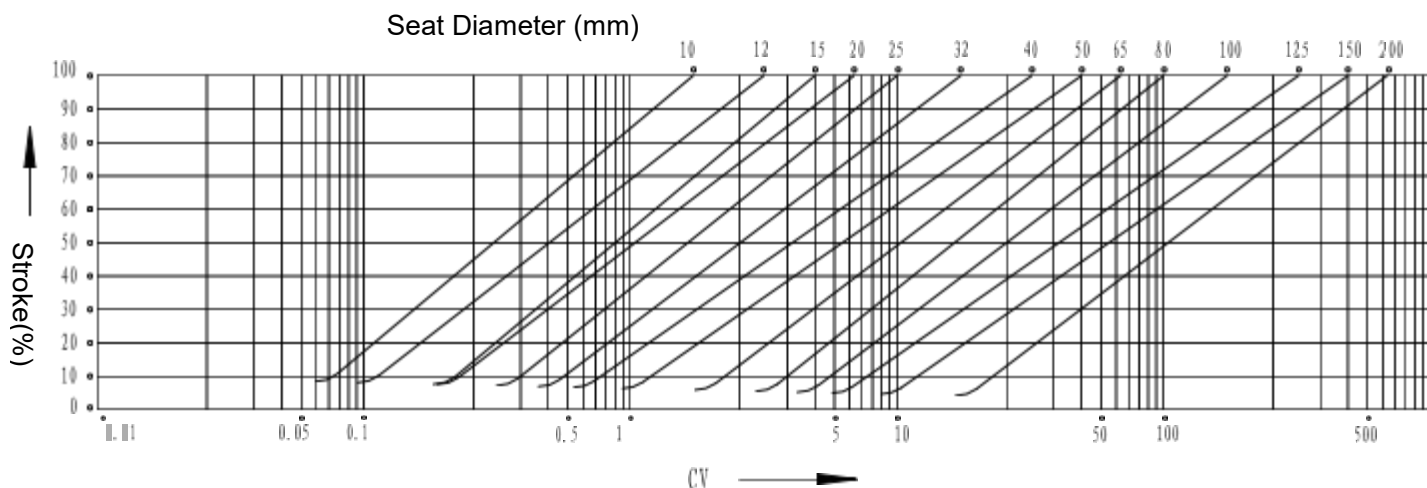
Method	Type	Pneumatic diaphragm actuator	Electric actuator
		ZH23~ZH56	3810L series
		Multi-spring type	Intelligent integrated type
Usage		Regulating type, ON-OFF type	Regulating
Air supply pressure or Power supply voltage		Air supply pressure (Spring range) 140 (20~100) Kpa G 240 (40~200) Kpa G 280 (80~240) Kpa G	Power: AC 200V±10% 50Hz Or Power: AC 380V±10% 50Hz○1
Connector		Air pipe connector: RC1/4	Normal type: cable inlet 2-PF(G1/2") Explosive proof: Protection jacket PF(G3/4")
Positive action		Pressure increase, stem descend, valve close.	Input signal increase, stem descend, valve close.
Negative action		Pressure increase, stem ascend, valve open.	Input signal increase, stem ascend, valve open.
Input signal		40~20mA.DC (with positioner)	Input/output 4~20mA.DC
Lag		≤1%FS (with positioner)	≤0.8%FS
Linear type		2%FS (with positioner)	≤±1%FS
Environmental temperature		-10℃~+70℃	Standard type: -10℃~+60℃ With space heater: -35℃~+60℃ Explosive proof: -10℃~+40℃
Surface coating		Green, acrylic acid polyurethane coating	Blue, acrylic acid polyurethane coating
Accessories		Electric-air (air-air) valve positioned, filter regulator, valve converter, solenoid valve, limited switch	Space heater (normal type)

Note ○1: non-standard accessories, need special customized notes.

◆Parameter

Seat diameter（mm）		10	12	15	20	25	32	40	50	65	80	100	125	150	200
Rated Cv	Percentage	1.6	2.5	4.0	6.3	10	16	25	40	63	100	160	250	400	630
	Linear	1.8	2.8	4.4	6.9	11	17.6	27.5	44	69	110	176	275	440	690
Nominal size	Travel	Option flow coefficient Cv（★ standard ●recommended ○customized）													
DN20	16mm	●	●	●	★										
DN25		●	●	●	●	★									
DN32	25 mm	○	○	○	○	○	★								
DN40			○	○	○	○	●	★							
DN50				○	○	○	●	●	★						
DN65	40mm						○	○	○	★					
DN80							○	○	○	●	★				
DN100							○	○	○	●	●	★			
DN125	60mm									○	○	○	★		
DN150											○	○	●	★	
DN200											○	○	●	●	★
Pneumatic diaphragm effective area, Ae (cm2)		ZHA/B-22					ZHA/B-23			ZHA/B-34			ZHA/B-45		
		350					350			560			900		
Action	Spring range	Metal seal allowable pressure difference（MPa）													
Air open	20-100KPa	4.46	3.09	1.98	1.16	0.7	0.44	0.28	0.18	0.17	0.11	0.07	0.07	0.05	0.03
	40-200 KPa	6.4	6.4	5.94	3.34	2.14	1.31	0.84	0.53	0.51	0.33	0.21	0.22	0.15	0.09
	80-240 KPa	6.4	6.4	6.4	6.4	4.99	3.05	1.95	1.25	1.18	0.78	0.5	0.51	0.36	0.21
Air close	20-100KPa	6.4	6.19	3.96	2.23	2.14	0.87	0.56	0.35	0.34	0.22	0.14	0.15	0.1	0.06
	40-200 KPa	6.4	6.4	6.4	6.4	6.4	5.86	3.64	2.3	2.21	1.43	0.91	0.95	0.66	0.37
	80-240 KPa	6.4	6.4	6.4	6.4	6.4	6.4	5.04	3.18	3.06	1.98	1.26	1.32	0.92	0.52
Electric actuator		Metal seal allowable max. pressure difference（MPa）													
Type	Thrust（N）														
3810L-08	800	6.4	5.5	3.5	2.38	1.52									
3810L-20	2000	6.4	6.4	6.4	4.77	3.05	1.86	1.19	0.76						
3810L-30	3000						2.79	1.79	1.14						
3810L-50	5000						4.66	2.98	1.91	1.13	0.6	0.47			
3810L-65	6500									1.35	0.8	0.57	0.39	0.26	0.16
3810L-99	10000												0.61	0.42	0.20
3810L-160	16000												0.97	0.67	0.35

◆IEC standard equal percentage flow characteristic diagram



◆ Material and working temperature

Table 3: Body, bonnet material working temperature and pressure range (ANSI)

Temp ℃	Class150					Class300					Class600				
	SCPL 1 LCB	SCPH 2 WCB	SCPH2 1 WC6	SCS13 A CF8	SCS14 A CF8M	SCPL 1 LCB	SCPH 2 WCB	SCPH2 1 WC6	SCS13 A CF8	SCS14 A CF8M	SCPL 1 LCB	SCPH 2 WCB	SCPH2 1 WC6	SCS13 A CF8	SCS14 A CF8M
-196~38	-	-	-	1.90	1.90	-	-	-	4.95	4.95	-	-	-	9.91	9.92
-45~38	1.84	-	-	1.90	1.90	4.78	-	-	4.95	4.95	9.57	-	-	9.91	9.92
-5~38	1.84	1.96	1.99	1.90	1.90	4.78	5.10	5.16	4.95	4.95	9.57	10.02	10.32	9.91	9.92
50	1.81	1.92	1.92	1.84	1.84	4.72	5.00	5.10	4.77	4.80	9.46	10.01	10.22	9.56	9.62
100	1.72	1.76	1.76	1.56	1.56	4.51	4.63	4.88	4.08	4.21	9.02	9.27	9.74	8.17	8.43
150	1.57	1.57	1.57	1.39	1.39	4.40	4.51	4.63	3.62	3.85	8.78	9.04	9.26	7.26	7.69
200	1.40	1.40	1.40	1.25	1.25	4.26	4.38	4.54	3.27	3.56	8.54	8.75	9.06	6.54	7.12
250	1.20	1.20	1.20	1.16	1.16	4.05	4.16	4.44	3.04	3.34	8.11	8.33	8.88	6.10	6.67
300	1.01	1.01	1.01	1.01	1.01	3.76	3.87	4.23	2.91	3.15	7.54	7.74	8.48	5.80	6.32
350	0.84	0.84	0.84	0.84	0.84	3.59	3.69	4.01	2.81	3.03	7.18	7.38	8.04	5.60	6.07
375		0.73	0.73	0.73	0.73		3.64	3.88	2.77	2.96		7.28	7.75	5.54	5.93
400		0.64	0.64	0.64	0.64		3.44	3.65	2.74	2.91		6.89	7.31	5.48	5.81
425		0.55	0.55	0.55	0.55		2.88	3.50	2.71	2.87		5.74	7.01	5.42	5.72
450		0.47	0.47	0.47	0.47		1.99	3.38	2.68	2.81		4.00	6.75	5.37	5.61
475		0.37	0.37	0.37	0.37		1.35	3.16	2.65	2.73		2.70	6.32	5.30	5.46
500		0.28	0.28	0.28	0.28		0.88	2.77	2.60	2.67		1.75	5.55	5.20	5.37
525		0.18	0.18	0.18	0.18		0.51	2.02	2.19	2.57		1.03	4.04	4.77	5.15
538		0.13	0.15	0.15	0.15		0.34	1.63	2.18	2.53		0.72	3.26	4.55	5.06

Table 4: Body, bonnet material working temperature and pressure range (GB)

Temp. ℃	PN16					PN25					PN40					PN100				
	LC B	WC B	WC 6	CF 8	CF8 M	LC B	WC B	WC 6	CF 8	CF8 M	LC B	WC B	WC 6	CF 8	CF8 M	LC B	WC B	WC 6	CF 8	CF8 M
-29~38	1.5	1.6	1.6	1.5	1.5	2.4	2.5	2.5	2.4	2.4	3.9	4.1	4.1	4.0	3.9	9.0	9.6	9.6	9.3	9.3
93	1.4	1.4	1.4	1.4	1.3	2.2	2.3	2.3	2.1	2.0	3.8	3.7	4.0	3.3	3.4	8.4	8.5	9.6	7.7	8.0
149	1.3	1.3	1.3	1.3	1.2	2.1	2.1	2.1	1.9	1.9	3.7	3.6	3.8	3.0	3.1	8.3	8.3	9.3	7.0	7.2
204	1.1	1.1	1.1	1.1	1.1	1.9	1.9	1.9	1.7	1.7	3.5	3.4	3.7	2.8	2.8	8.0	8.2	8.9	6.4	6.6
260	0.8	1.0	1.0	1.0	1.0	1.7	1.7	1.7	1.5	1.6	3.3	3.2	3.5	2.6	2.6	7.5	7.7	8.5	6.0	6.1
315	0.7	0.8	0.8	0.8	0.8	1.4	1.4	1.5	1.3	1.3	3.0	2.8	3.1	2.3	2.4	6.9	7.1	7.8	5.6	5.8
343	0.6	0.7	0.7	0.7	0.7	1.3	1.3	1.4	1.2	1.2	2.9	2.7	3.0	2.3	2.3	6.7	7.0	7.5	5.5	5.7
371	0.5	0.6	0.6	0.6	0.6	1.2	1.2	1.3	1.1	1.1	2.8	2.7	2.9	2.2	2.2	6.6	7.0	7.3	5.5	5.6
399	0.5	0.5	0.5	0.5	0.5	1.1	1.1	1.2	1.0	1.0	2.5	2.6	2.7	2.1	2.2	6.0	6.5	6.9	5.3	5.5
427	0.5	0.5	0.5	0.5	0.5	0.9	1.0	1.1	0.9	0.9	2.1	2.1	2.6	2.0	2.1	5.0	5.3	6.5	5.1	5.5
454	0.4	0.4	0.3	0.4	0.4	0.7	0.7	1.0	0.8	0.8	1.5	1.4	2.4	2.0	2.0	3.4	3.4	6.2	5.0	5.4
482		0.3	0.3	0.3	0.3		0.5	0.7	0.7	0.7		0.9	2.1	1.9	1.9		2.2	5.8	5.0	5.3
510		0.2	0.2	0.2	0.2		0.3	0.5	0.6	0.6		0.5	1.5	1.8	1.8		1.3	4.1	4.9	4.9
538		0.1	0.1	0.1	0.1		0.1	0.3	0.4	0.4		0.3	1.0	1.5	1.6		0.6	2.7	4.1	4.5
565			0.1	0.1	0.1			0.2	0.3	0.4			0.7	1.4	1.6			1.8	3.9	4.5
593			0.1	0.1	0.1			0.1	0.3	0.4			0.4	1.2	1.4			1.2	3.3	3.9

Note: 1. Temperature or pressure value in the middle range, can calculate the max. value by interpolation method.
2. Pressure in the table are all manometer pressure.

Table 6: Metal seal material working temperature and pressure range and treatment

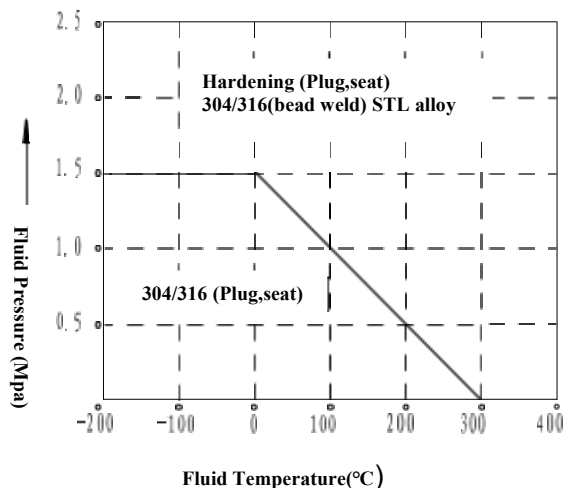


Table 7: Soft seal material working temperature and pressure range and treatment

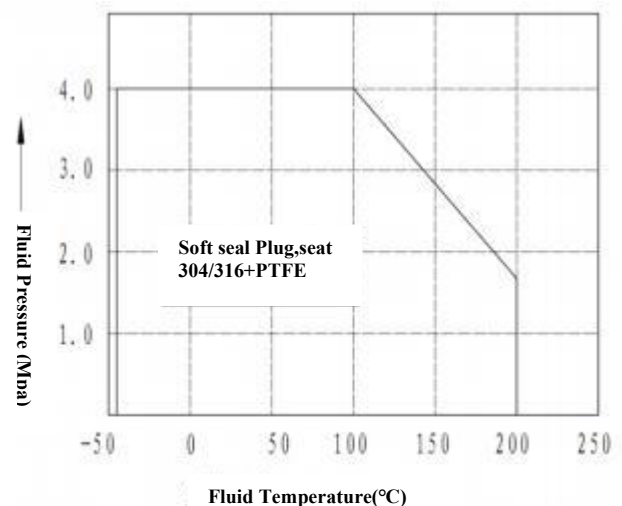


Table 8: RPTFE packing temperature and pressure range

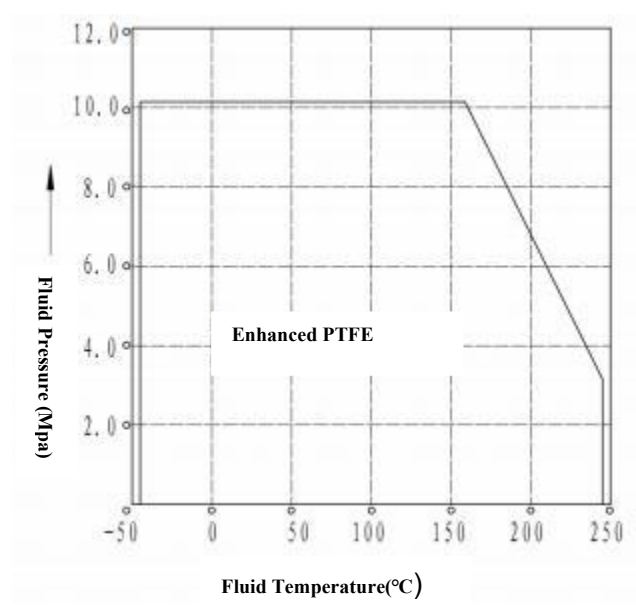


Table 9: Flex. Graphite packing temperature and pressure range.

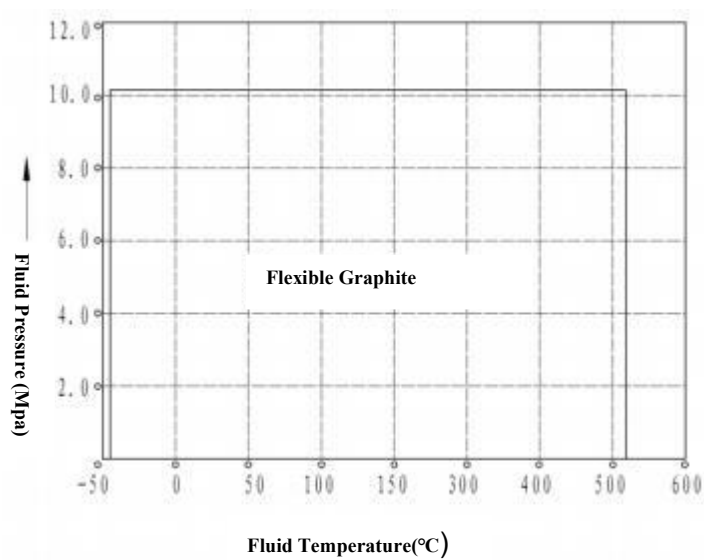


Table 10: Sawtooth gasket SUS316L, alloy steel temperature and pressure range

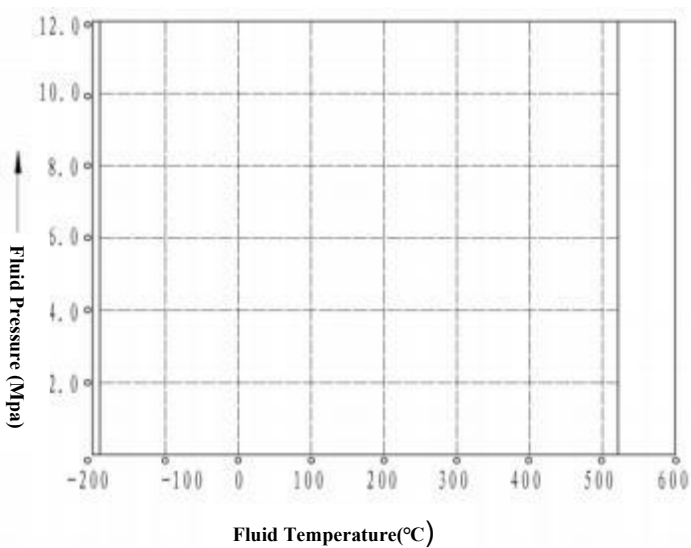


Table 11: Spiral gasket SUS316+ flex. Graphite packing temperature and pressure range

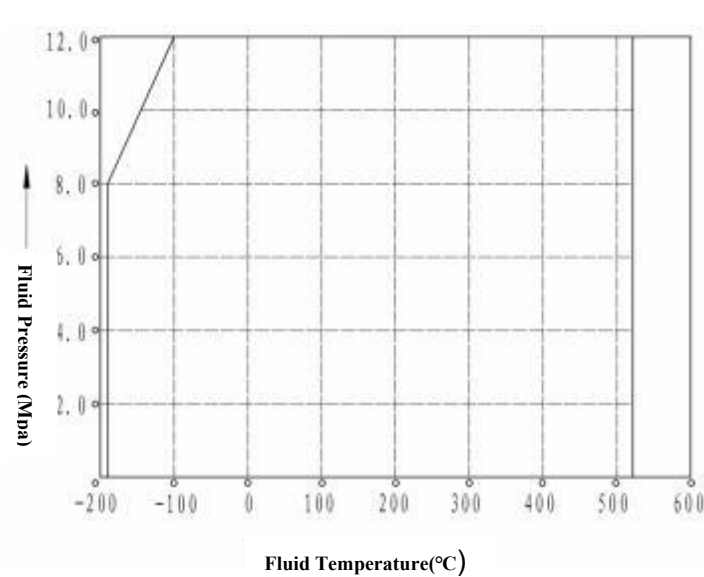


Table 12: Bellow seal working temperature and pressure range

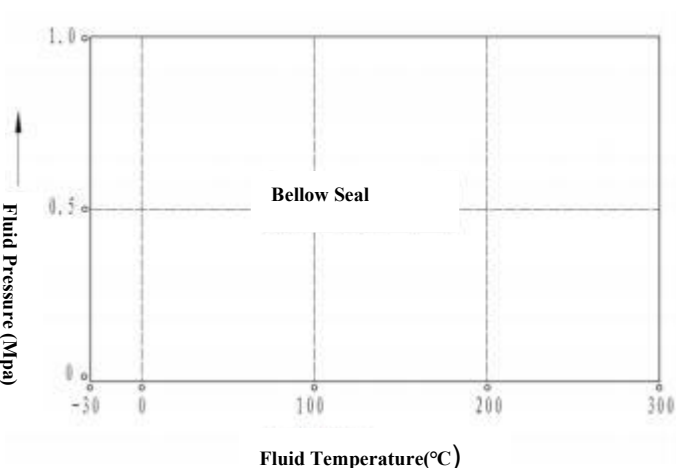
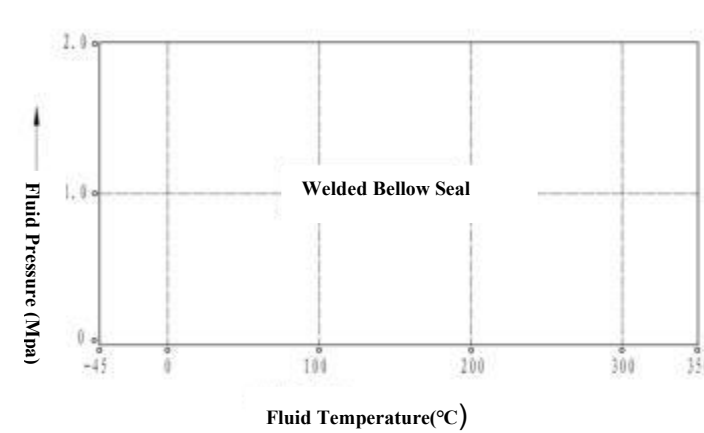


Table 13: Welded bellow sealed working temperature and pressure range.



◆ Material and internal structure

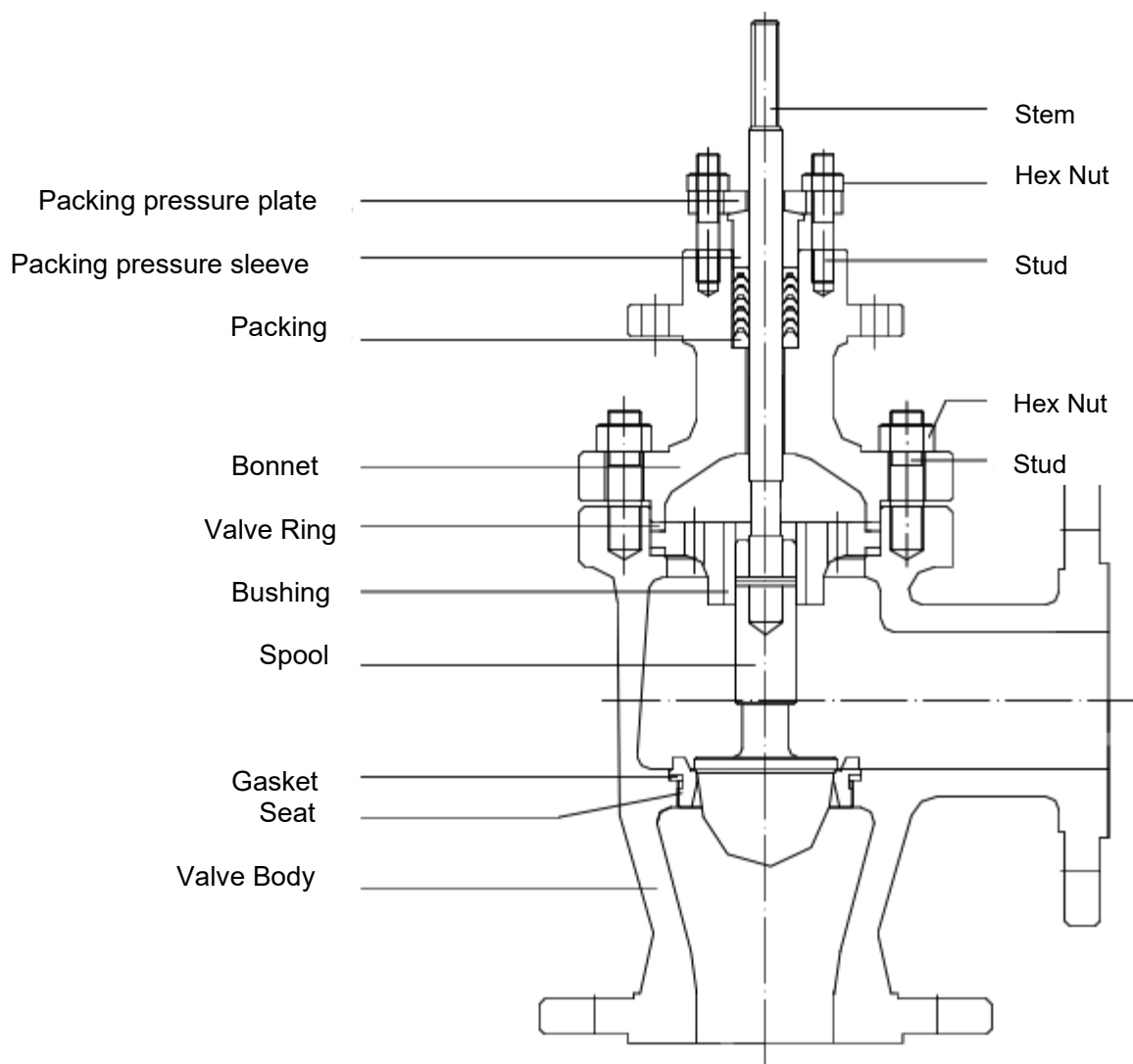


Table 1: Body WCB

1	Body	WCB	LCB	WC9
2	Seat	304	304	304
3	Spool	304	304	304
4	Gasket	316+ graphite/PTFE		
5	Bushing	304	304	304
6	Bonnet	WCB	LCB	WC9
7	Packing	PTFE/ flex. graphite		
8	Packing bushing	304	304	304
9	Gland	WCB	WCB	WCB
10	Stem	304	304	304
12	Stud	45	40MnB	25Cr2Mo1VA
13	Nut	35	35	25Cr2Mo1VA

Table 2: Body S.S

1	Body	CF8	CF8M	CF3M
2	Seat	304	316	316L
3	Spool	304	316	316L
4	Gasket	316+ graphite/PTFE		
5	Bushing	304	316	316L
6	Bonnet	CF8	CF8M	CF3M
7	Packing	PTFE/ flex. graphite		
8	Packing bushing	304	316	316L
9	Gland	CF8	CF8M	CF3M
10	Stem	304	316	316L
12	Stud	304	316	316L
13	Nut	304	316	316L

Note:

1. Above structure, seat is metal sealing, PTFE soft sealing is VI grade as option. Also can provide stillate hard sealing. As per actual working temperature, we may choose proper bolt & nut accordingly.
2. PTFE V type stem packing is with graphite, the working temperature can be higher than 232℃ (450 F)
3. The common body material is WCB and S.S, can apply with other high corrosion resistance alloy material.

◆Variety valve structure

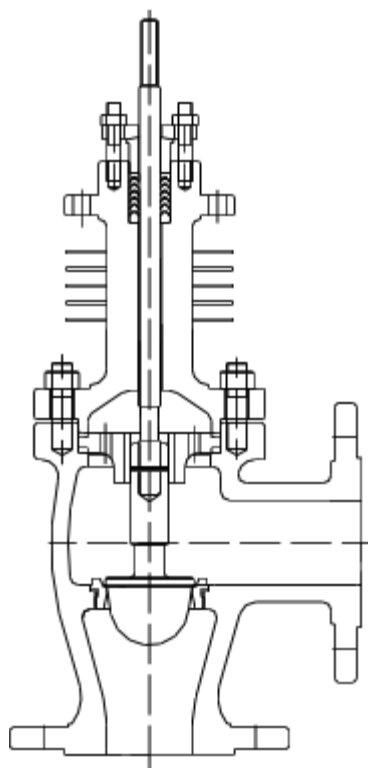


Table 1: MG type radiator sleeve control valve, applicable to temperature -45°C ~higher than 230°C .

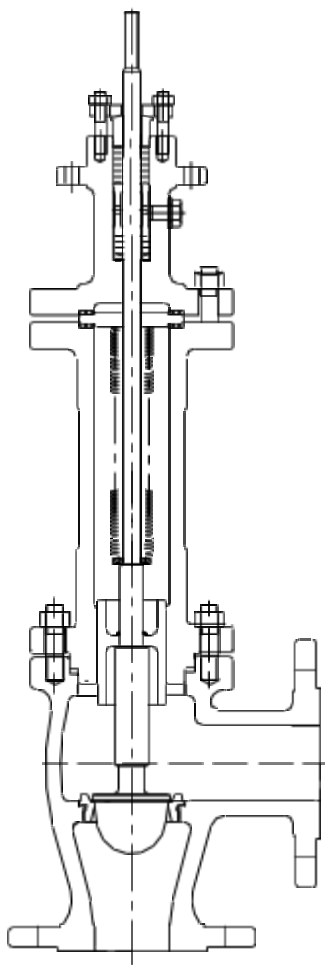


Table 2: MV type sealed sleeve type control valve. Can apply with multi-layer bellow seal, protect medium against loss.

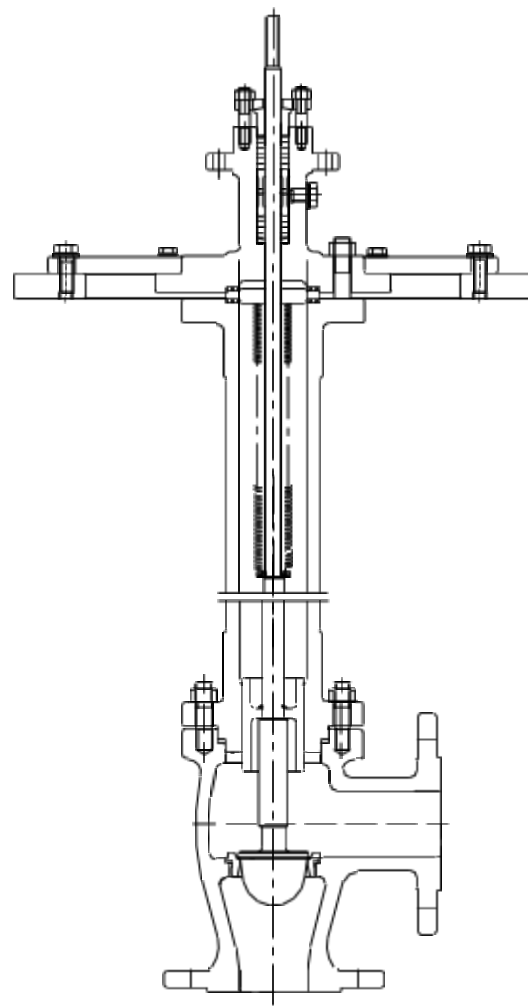


Table 3: MD type low temperature sleeve type control valve, spool integrated external suction structure, convenient and easy for maintenance.

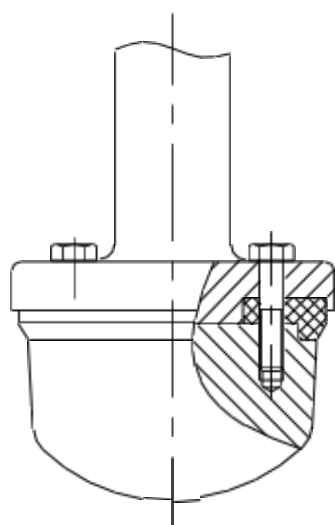


Table 4: JF type soft seal angle type single seat control valve, applicable to V seal.

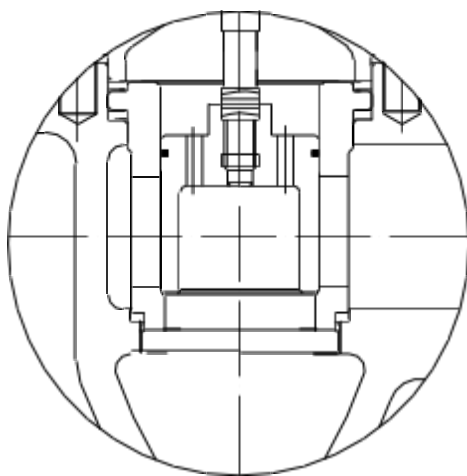


Table 5: JM type angle sleeve type control valve, applicable to high pressure difference occasion.

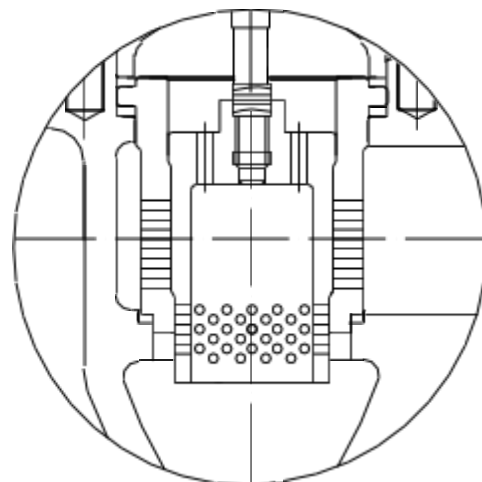
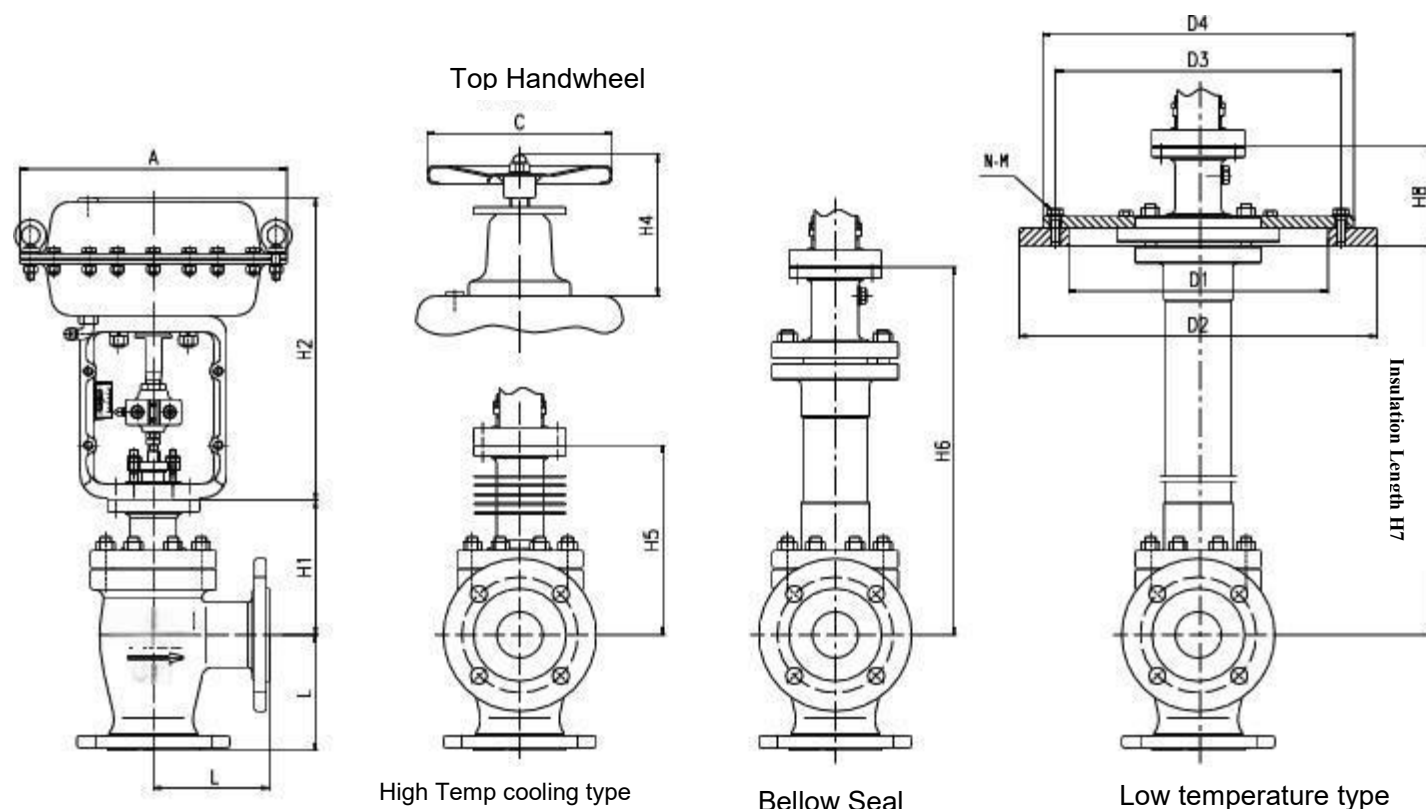


Table 6: JT type two-layer angle type control valve, symmetrical multi-pore cage for pressure reducing, applicable to control noise and cavitation.

◆Main out form dimension and weight

Table 5: PN16/25/40、CL150/300LB Pneumatic angle type control valve dimension and weight

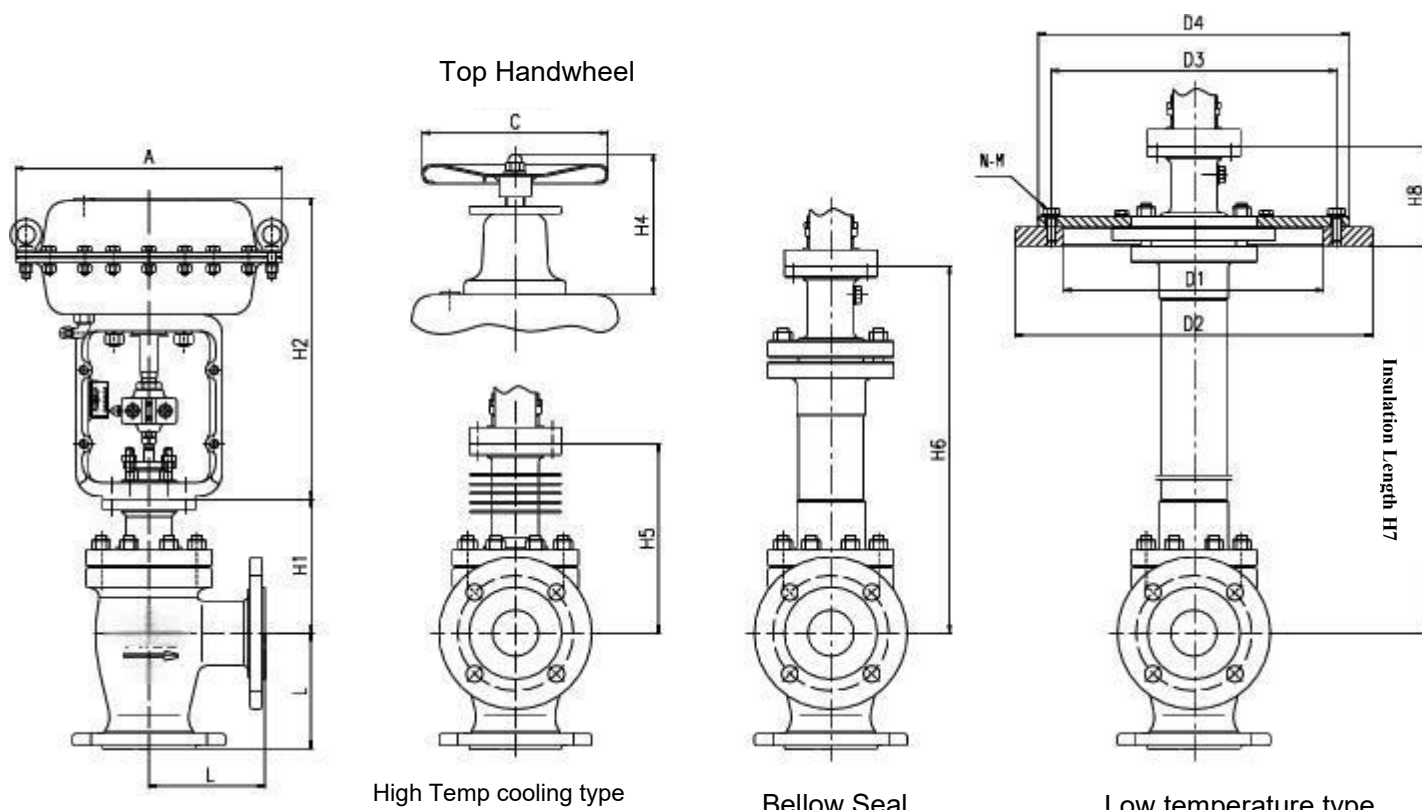


DN Size	DN20 3/4"	DN25 1"	DN32 1 1/4"	DN40 1 1/2"	DN50 2"	DN65 1 1/2"	DN80 3"	DN100 4"	DN125 5"	DN150 6"	DN200 8"
L	95	100	105	115	125	145	155	175	200	225	275
C	200	200	200	200	200	240	240	240	350	350	350
A	285	285	285	288	288	365	365	365	475	475	475
H1	128	137	148	152	159	218	230	238	264	331	346
H2	303	303	303	323	323	417	417	417	520	520	520
H3	65	70	70	85	90	102.5	107.5	125	125	172.5	180
H4	153	153	153	153	153	181	181	181	247	247	247
H5	208	208	224	228	228	334	334	342	408	453	482
H6	338	338	402	402	405	627	628	635	698	702	728
H7	700 (customized)										
H8	88	88	88	88	88	94	94	94	110	110	110
h	15	15	15	15	15	18	18	18	20	20	20
D1	230	230	250	270	305	342	375	430	490	556	665
D2	310	310	335	355	390	430	465	520	585	660	770
D3	260	260	285	305	340	370	405	460	525	580	700
D4	290	290	315	335	370	400	435	490	555	630	740
N-M	8-M12	8-M12	8-M12	8-M14	8-M14	10-M14	10-M14	12-M16	14-M16	16-M16	18-M16
Weight, Kg	22	24	26	35	42	67	74	89	134	166	255

※ Weight in the table did not include the accessory weight. Valve can install side handwheel.

※ With continous valve development, the dimension maybe will have some regulation, kindly contact with BCST for any update valve document.

Table 6: PN63/100、CL600LB Pneumatic angle type control valve dimension and weight

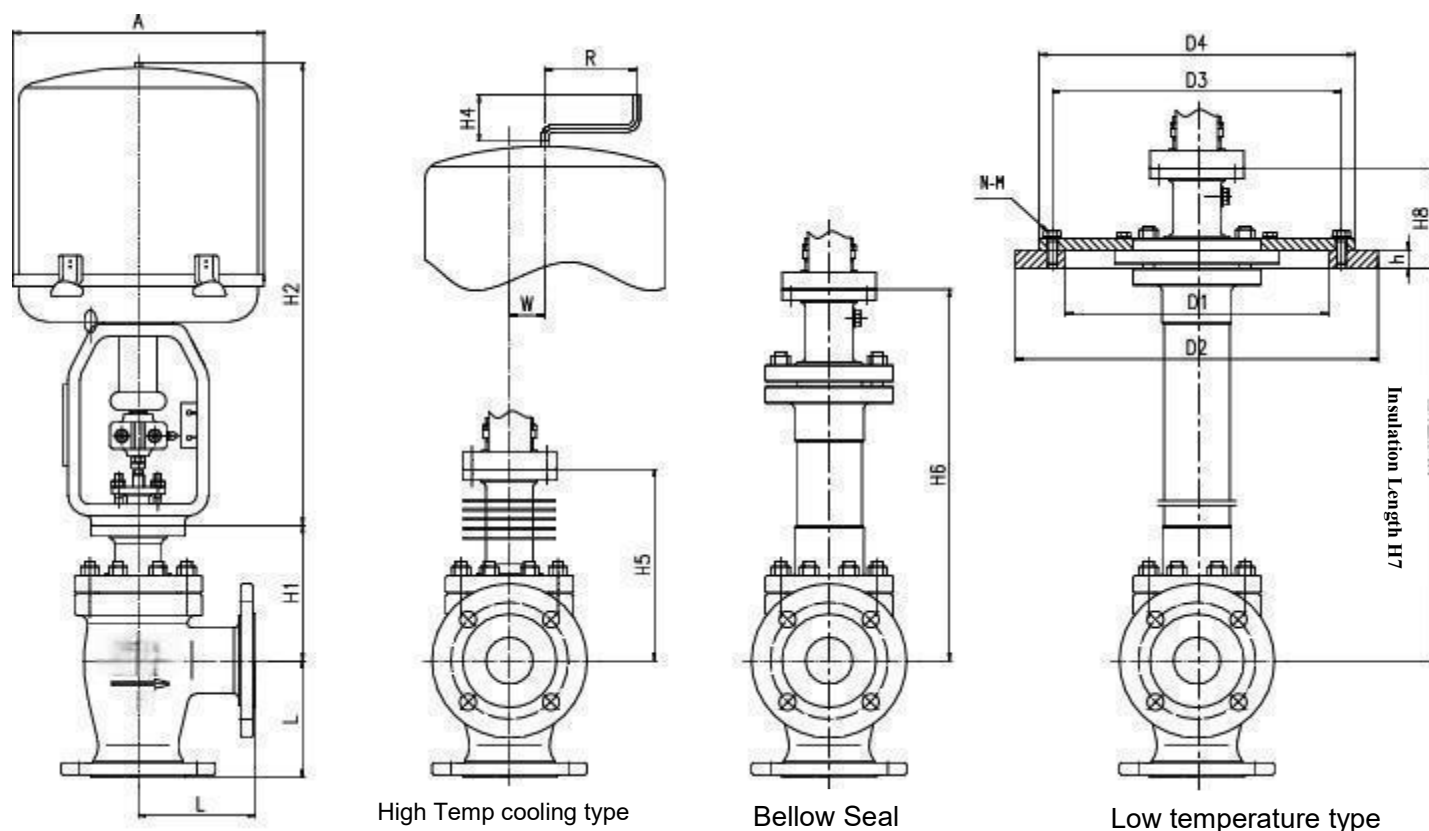


DN Size	DN20 3/4"	DN25 1"	DN32 1 1/4"	DN40 1 1/2"	DN50 2"	DN65 1 1/2"	DN80 3"	DN100 4"	DN125 5"	DN150 6"	DN200 8"
L	115	115	130	130	150	170	190	215	250	275	325
C	200	200	200	200	200	240	240	240	350	350	350
A	285	285	285	288	288	365	365	365	475	475	475
H1	128	137	148	152	159	218	230	238	264	331	346
H2	303	303	303	323	323	417	417	417	520	520	520
H3	65	70	70	85	90	102.5	107.5	125	125	172.5	180
H4	153	153	153	153	153	181	181	181	247	247	247
H5	220	220	240	240	240	350	350	360	420	470	500
H6	338	338	402	402	405	627	628	635	698	702	728
H7	700 (customized)										
H8	88	88	88	88	88	94	94	94	110	110	110
h	15	15	15	18	18	18	20	20	20	20	20
D1	270	270	305	342	375	430	490	556	665	665	765
D2	355	355	390	430	465	520	585	600	770	770	850
D3	305	305	340	370	405	460	525	690	700	700	805
D4	335	335	370	400	435	490	555	630	740	740	845
N-M	8-M14	8-M14	10-M14	10-M14	10-M14	12-M16	14-M16	18-M16	18-M16	18-M16	18-M16
Weight, Kg	24	25	30	42	52	78	82	102	170	190	285

※ Weight in the table did not include the accessory weight. Valve can install side handwheel.

※ With continous valve development, the dimension maybe will have some regulation, kindly contact with BCST for any update valve document.

Table 7: PN16/25/40、CL150/300LB Electric angle type control valve dimension and weight

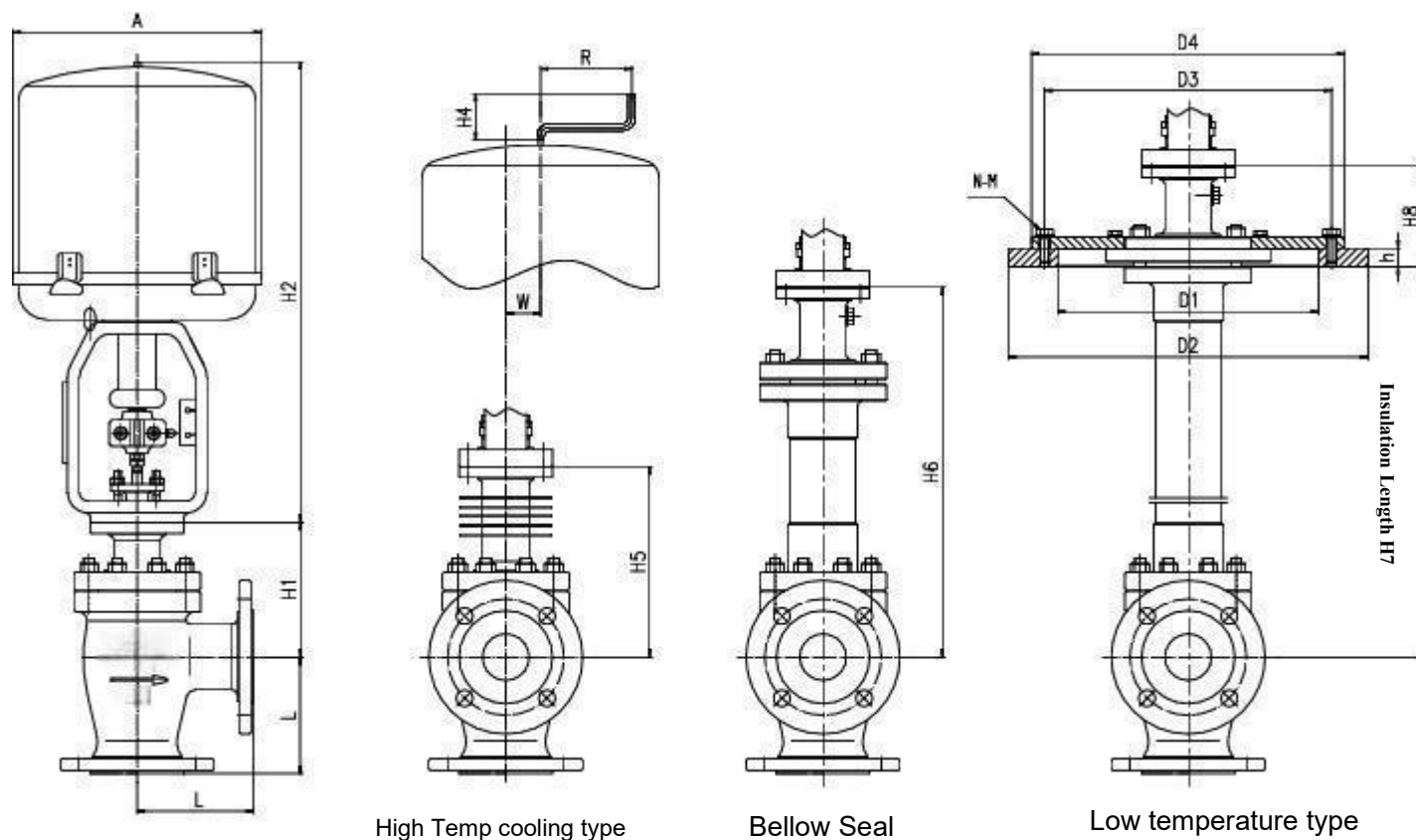


DN Size	DN20 3/4"	DN25 1"	DN32 1 1/4"	DN40 1 1/2"	DN50 2"	DN65 1 1/2"	DN80 3"	DN100 4"	DN125 5"	DN150 6"	DN200 8"
L	95	100	105	115	125	145	155	175	200	225	275
A	225	225	255	255	255	255	255	255	310	310	310
H1	128	137	148	152	159	218	230	238	264	331	346
H2	373	373	495	495	495	535	535	535	725	725	725
H3	65	70	70	85	90	102.5	107.5	125	125	172.5	180
H4	87	87	90	90	90	90	90	90	90	90	90
H5	208	208	224	228	228	334	334	342	408	453	482
H6	338	338	402	402	405	627	628	635	698	702	728
H7	700 (customized)										
H8	88	88	88	88	88	94	94	94	110	110	110
W	28	28	45	45	45	45	45	45	60	60	60
R	80	80	100	100	100	100	100	100	160	160	160
h	15	15	15	15	15	18	18	18	20	20	20
D1	230	230	250	270	305	342	375	430	490	556	665
D2	310	310	335	355	390	430	465	520	585	660	770
D3	260	260	285	305	340	370	405	460	525	580	700
D4	290	290	315	335	370	400	435	490	555	630	740
N-M	8-M12	8-M12	8-M12	8-M14	8-M14	10-M14	10-M14	12-M16	14-M16	16-M16	18-M16
Weight, Kg	17	19	26	35	42	57	64	79	138	170	259

※ Weight in the table did not include the accessory weight. Can install 3810L actuator.

※ With continous valve development, the dimension maybe will have some regulation, kindly contact with BCST for any update valve document.

Table 8: PN64/100、CL600LB Electric angle type control valve dimension and weight



DN Size	DN20 3/4"	DN25 1"	DN32 1 1/4"	DN40 1 1/2"	DN50 2"	DN65 1 1/2"	DN80 3"	DN100 4"	DN125 5"	DN150 6"	DN200 8"
L	115	115	130	130	150	170	190	215	250	275	325
A	225	225	255	255	255	255	255	255	310	310	310
H1	128	137	148	152	159	218	230	238	264	331	346
H2	373	373	495	495	495	535	535	535	725	725	725
H3	65	70	70	85	90	102.5	107.5	125	125	172.5	180
H4	87	87	90	90	90	90	90	90	90	90	90
H5	220	220	240	240	240	350	350	360	420	470	500
H6	338	338	402	402	405	627	628	635	698	702	728
H7	700 (customized)										
H8	88	88	88	88	88	94	94	94	110	110	110
W	28	28	45	45	45	45	45	45	60	60	60
R	80	80	100	100	100	100	100	100	160	160	160
h	15	15	15	18	18	18	20	20	20	20	20
D1	270	270	305	342	375	430	490	556	665	665	765
D2	355	355	390	430	465	520	585	600	770	770	850
D3	305	305	340	370	405	460	525	690	700	700	805
D4	335	335	370	400	435	490	555	630	740	740	845
N-M	8-M14	8-M14	10-M14	10-M14	10-M14	12-M16	14-M16	18-M16	18-M16	18-M16	18-M16
Weight, Kg	19	20	30	42	52	68	72	92	174	194	289

※ Weight in the table did not include the accessory weight. Can install 3810L actuator.

※ With continous valve development, the dimension maybe will have some regulation, kindly contact with BCST for any update valve document.



CATALOG

JC-ZH series linear actuator control valve

ZHW type mini-flow control valve

ZHW type mini-flow control valve is a kind of top pilot single seat valve, which has simple structure, well sealing, high stable application performance. The top pilot system efficiently avoided the small opening vibration, extend the shelf life.

◆Specification



Body type: straight through casting
globe type
Spool type: non-balanced single seat
plug type
Nominal size: DN15, 20, 25, NPS
1/2" ~ 1"
Nominal pressure: PN16 ~ 100
CLASS 150LB ~ 600LB
Connection: flange: FF、RF、MF、
RTJ Welding: SW、BW
Flange dimension: acc. to IEC
60534
Bonnet type: standard type
(-5℃~230℃)
Radiator type: (-45℃~high than
230℃ occasion) Low temperature extended type (-196℃~ -45℃)
Bellow seal type
Packing: V type PTFE packing, flex. graphite packing, etc.
Gasket: Metal graphite packing
Actuator: Pneumatic: multi-spring diaphragm actuator.



Electric: 3810L series smart actuator, PSL series actuator.

Surface painting: Green color, acrylic acid polyurthene ceramic paint.

◆Code

Z	Actuator	H	Structure	Nominal pressure	Body material	Nominal size
Z series control valve	J: pneumatic diaphragm H: pneumatic piston R: electric 3810L D: electric PSL	Hdirect travel	W: standard min-flow WG: single seat with radiator WV:single seat with bellow seal WD: low temperature single seat	PN16=16 CL150LB=150 LB JIS10K=10K	C=WCB LC=LCB P=CF8 PL=CF3 R=CF8M RL=CF3M D= special material	DN25= DN25 NPS1= NPS1"
Such as: Z type pneumatic diaphragm min-flow control valve, pressure PN16 , valve material WCB , nominal size DN50 , type: JC-ZJHW -16C DN50						

◆Performance

Flow characteristic	Linear, percentage, quick open
Allowable range	30: 1
Rated Cv value	CV 0.01~1.0
Allowable leakage	Metal seal: IV grade (0.01% rated capacity) Leakage standard: GB/T 4213

◆Actuator

Method	Type	Pneumatic diaphragm actuator	Electric actuator
		ZH23~ZH56	3810L series
		Multi-spring type	Intelligent integrated type
Usage		Regulating type, ON-OFF type	Regulating
Air supply pressure or Power supply voltage		Air supply pressure (Spring range) 140 (20~100) Kpa G 240 (40~200) Kpa G 280 (80~240) Kpa G	Power: AC 200V±10% 50Hz Or Power: AC 380V±10% 50Hz ^{○1}
Connector		Air pipe connector: RC1/4	Nomal type: cable inlet 2-PF(G1/2") Explosive proof type: can install protection jacket PF(G3/4")
Positive action		Pressure increase, stem descend, valve close.	Input signal increase, stem descend, valve close.
Negative action		Pressure increase, stem ascend, valve open.	Input signal increase, stem ascend, valve open.
Input signal		40~20mA.DC (with positioner)	Input/output 4~20mA.DC
Lag		≤1%FS (with positioner)	≤0.8%FS
Linear type		2%FS (with positioner)	≤±1%FS
Environmental temperature		-10℃~+70℃	Standard type: -10℃~+60℃ With space heater ^{○1} : -35℃~+60℃ Explosive proof: -10℃~+40℃
Surface coating		Green, acrylic acid polyurethane ceramic coating	Blue, acrylic acid polyurethane ceramic coating
Accessories		Electric-air (air-air) valve positioned, filter regulator, valve converter, solenoid valve, limited switch	Space heater (normal type)

Note^{○1}: non-standard accessories, need special customized notes.

◆Performance

Rated flow coefficient, Cv	Percentage					0.25	0.1	0.4	0.63	1.0
	Linear	0.01	0.04	0.1	0.16	0.25	0.1	0.4	0.63	1.0
Nominal size	Travel	Option flow coefficient, Cv (★confirm to IEC ●recommend)								
DN15	16mm	●	●	●	●	●	●	★	★	★
DN20		●	●	●	●	●	●	★	★	★
DN25		●	●	●	●	●	●	★	★	★
Pneumatic actuator		ZHA/B-22								
Diaphragm effective area, Ae (cm ²)		350								
Electric actuator		3810L-08								

◆Material and internal structure

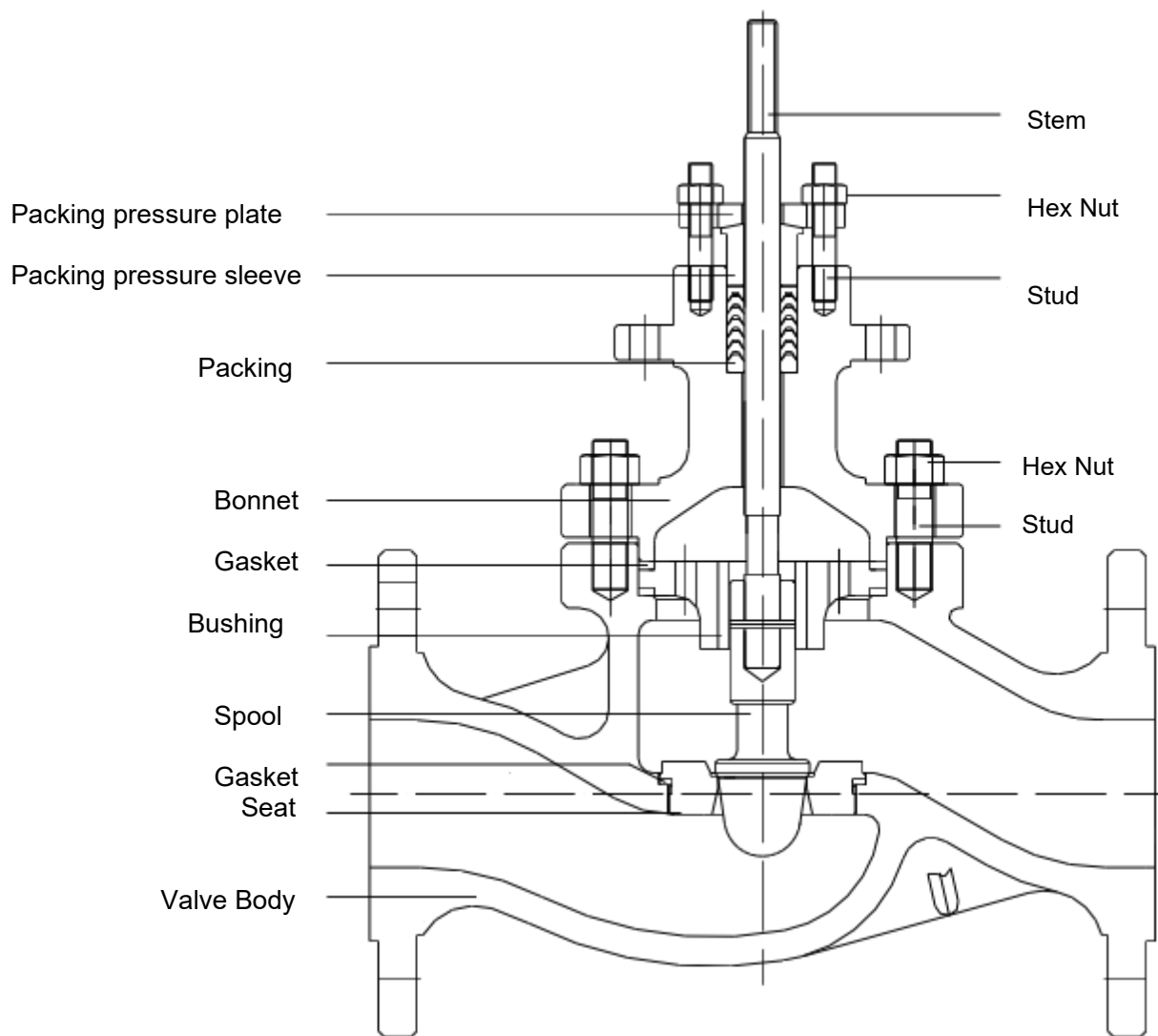


Table 1: Body WCB

1	Body	WCB	LCB	WC9
2	Seat	304	304	304
3	Spool	304	304	304
4	Gasket	316+graphite/PTFE		
5	Bushing	304	304	304
6	Bonnet	WCB	LCB	WC9
7	Packing	PTFE/ flex. graphite		
8	Packing bushing	304	304	304
9	Gland	WCB	WCB	WCB
10	Stem	304	304	304
12	Stud	45	40MnB	25Cr2Mo 1VA
13	Nut	35	35	25Cr2Mo 1VA

Table 2: Body S.S

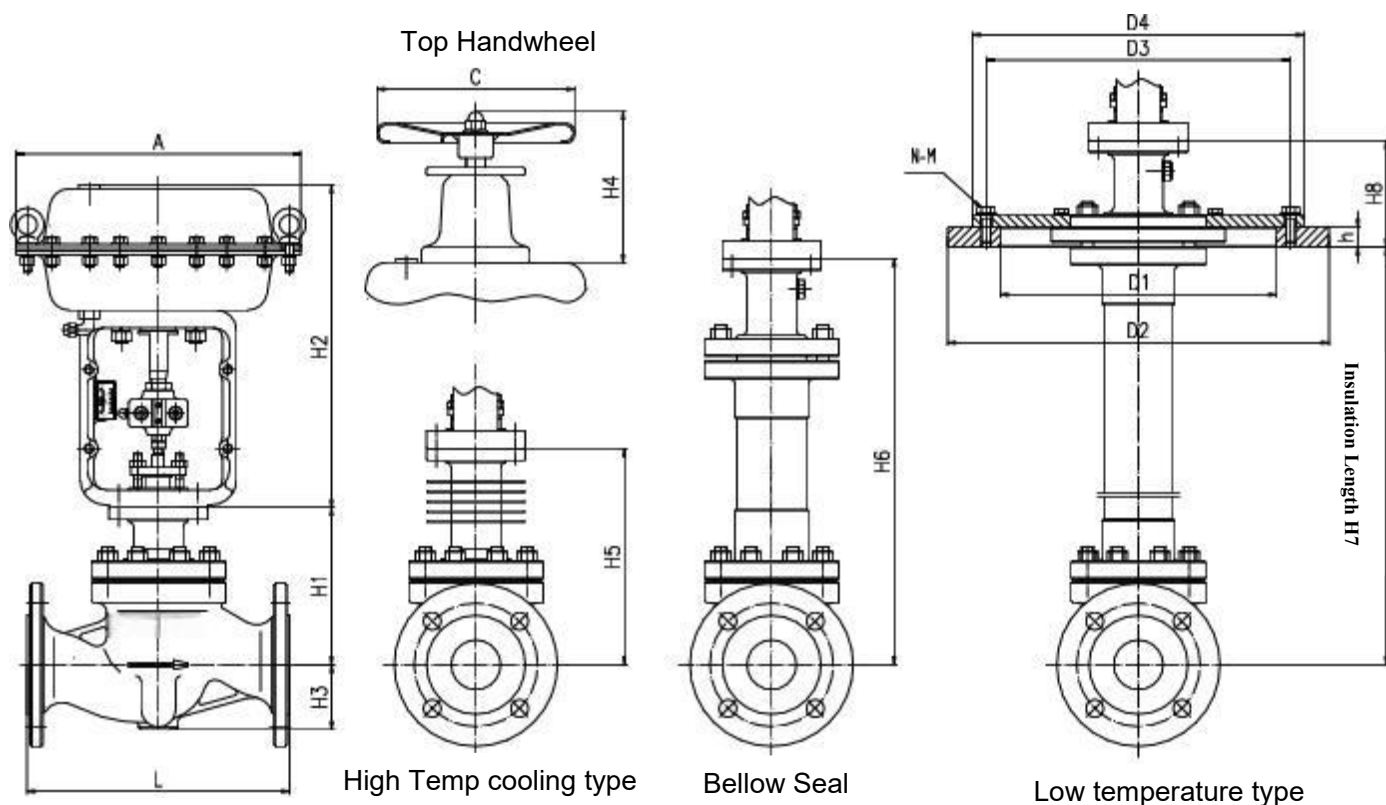
1	Body	CF8	CF8M	CF3M
2	Seat	304	316	316L
3	Spool	304	316	316L
4	Gasket	316+ graphite /PTFE		
5	Bushing	304	316	316L
6	Bonnet	CF8	CF8M	CF3M
7	Packing	PTFE/ flex. graphite		
8	Packing bushing	304	316	316L
9	Gland	CF8	CF8M	CF3M
10	Stem	304	316	316L
12	Stud	304	316	316L
13	Nut	304	316	316L

Note:

1. Above structure, seat is metal sealing, PTFE soft sealing is VI grade as option. Also can provide stillate hard sealing. As per actual working temperature, we may choose proper bolt & nut accordingly.
2. PTFE V type stem packing is with graphite, the working temperature can be higher than 232℃ (450 F)
3. The common body material is WCB and S.S, can apply with other high corrosion resistance alloy material.

◆ Main out form dimension and weight

Table 3: Pneumatic min-flow single seat control valve dimension and weight

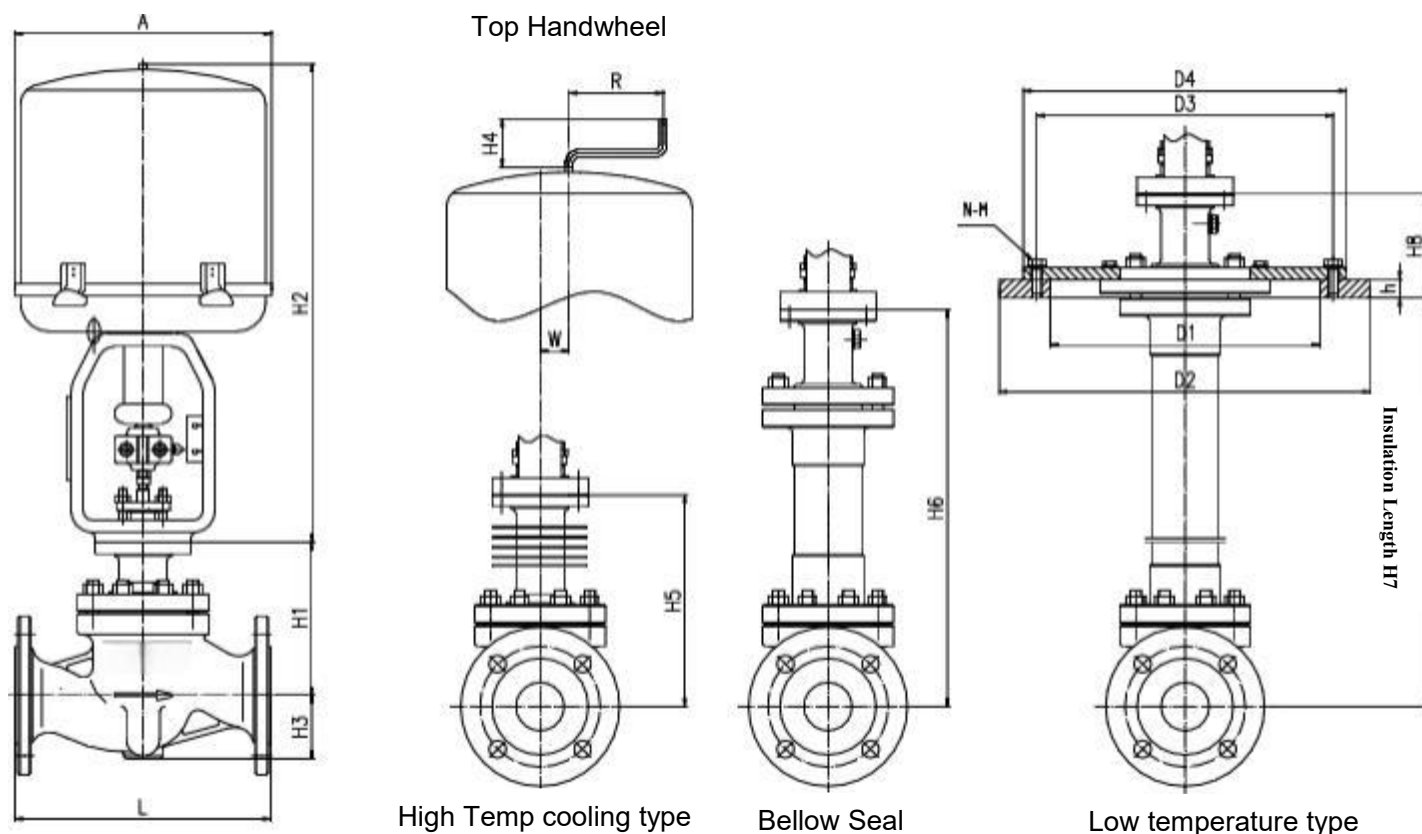


Pressure	PN16 CL150LB			PN25/40 CL300LB			PN63/100 CL600LB		
DN	DN15	DN20	DN25	DN15	DN20	DN25	DN15	DN20	DN25
Size	1/2"	3/4"	1"	1/2"	3/4"	1"	1/2"	3/4"	1"
L	181	181	184	194	194	197	206	206	210
C	200	200	200	200	200	200	200	200	200
A	285	285	285	285	285	285	285	285	285
H1	128	128	137	128	128	137	128	128	137
H2	303	303	303	303	303	303	303	303	303
H3	65	65	70	65	65	70	65	65	70
H4	153	153	153	153	153	153	153	153	153
H5	208	208	208	208	208	208	208	208	208
H6	338	338	338	338	338	338	338	338	338
H7	700 (customized)								
H8	88	88	88	88	88	88	88	88	88
h	15	15	15	15	15	15	15	15	15
D1	230	230	230	230	230	230	230	230	230
D2	310	310	310	310	310	310	310	310	310
D3	260	260	260	260	260	260	260	260	260
D4	290	290	290	290	290	290	290	290	290
N-M	8-M12	8-M12	8-M12	8-M12	8-M12	8-M12	8-M12	8-M12	8-M12
Weight, Kg	20	21	22	20	22	24	22	24	25

※ Weight in the table did not include the accessory weight. Valve can install side handwheel.

※ With continous valve development, the dimension maybe will have some regulation, kindly contact with BCST for any update valve document.

Table 4: Electric min-flow single seat control valve dimension and weight



Pressure	PN16 CL150LB			PN25/40 CL300LB			PN63/100 CL600LB		
DN	DN15	DN20	DN25	DN15	DN20	DN25	DN15	DN20	DN25
Size	1/2"	3/4"	1"	1/2"	3/4"	1"	1/2"	3/4"	1"
L	181	181	184	194	194	197	206	206	210
A	225	225	225	225	225	225	225	225	225
H1	128	128	137	128	128	137	128	128	137
H2	373	373	373	373	373	373	373	373	373
H3	65	65	70	65	65	70	65	65	70
H4	87	87	87	87	87	87	87	87	87
H5	208	208	208	208	208	208	220	220	220
H6	338	338	338	338	338	338	338	338	338
H7	700 (customized)								
H8	88	88	88	88	88	88	88	88	88
W	28	28	28	28	28	28	28	28	28
R	80	80	80	80	80	80	80	80	80
h	15	15	15	15	15	15	15	15	15
D1	230	230	230	230	230	230	270	270	270
D2	310	310	310	310	310	310	355	355	355
D3	260	260	260	260	260	260	305	305	305
D4	290	290	290	290	290	290	335	335	335
N-M	8-M12	8-M12	8-M12	8-M12	8-M12	8-M12	8-M14	8-M14	8-M14
Weight, Kg	15	16	17	16	17	19	18	19	20

※ Weight in the table did not include the accessory weight. Installed 3810L type actuator.

※ With continous valve development, the dimension maybe will have some regulation, kindly contact with BCST for any update valve document.



JC-ZH Series Linear Actuator Control Valve

ZHCF Type PTFE Lined Control Valve

ZHCF type PTFE lined single seat control valve is a kind of bellow sealed single seat control valve. The internal PTFE (F46) lined is workable with high corrosion medium, such as: hydrochloric acid, sulfuric acid, nitric acid, hydrofluoric acid, etc.

◆Specification



Body type: straight through casting globe type
 Spool type: non-balanced single seat plug type
 Nominal size: DN20~150 NPS 3/4" ~ 6"
 Nominal pressure: PN16 ~ 25 CLASS 150/300LB
 Connection: FF、RF、MF、RTJ
 Bonnet type: PTFE lined bellow sealed



Packing: V type PTFE packing, flex. graphite packing, etc.
 Gasket: Metal graphite packing: PTFE
 Actuator: pneumatic: multi-spring diaphragm actuator, piston type
 Electro: 3810L series smart actuator, PSL series actuator.
 Surface painting: Green Acrylic acid polyurthene ceramic paint.

◆Code

Z	Actuator	H	Structure	Nominal pressure	Body material	Nominal size
Z series control valve	J: pneumatic diaphragm actuator H: pneumatic piston actuator R: electric 3810L actuator D: electric PSL actuator	Hdirect travel	CF: standard PTFE lined control valve	PN16=16 CL150LB=150 LB JIS10K=10K	C=WCB LC=LCB P=CF8 PL=CF3 R=CF8M RL=CF3M	DN25= DN25 NPS1 " =NPS1 "

Such as: Z type pneumatic diaphragm PTFE lined control valve, pressure: PN16, body material WCB, nominal size DN50, type: JC-ZJHCF-16C DN50

◆Performance

Flow characteristic		Linear, percentage, quick open	
Allowable range		30: 1	
Rated Cv value		Percentage CV6.3~400 , linear CV6.9~440	
Allowable leakage		soft seal: VI grade (foam grade) Leakage standard: GB/T 4213	
Performance		Pneumatic	Electric
	Allowable tolerance, %	±1.5	±1.0
	Return difference, %	≤1.5	≤1.0
	Dead zone, %	≤0.6	≤1.0
	Difference from beginning to end point, %	±2.5	±2.5
	Rated travel difference, %	≤2.5	≤2.5

Note ○1: specification on the basis of control valve with positioned and PTFE packing.

◆Special specification

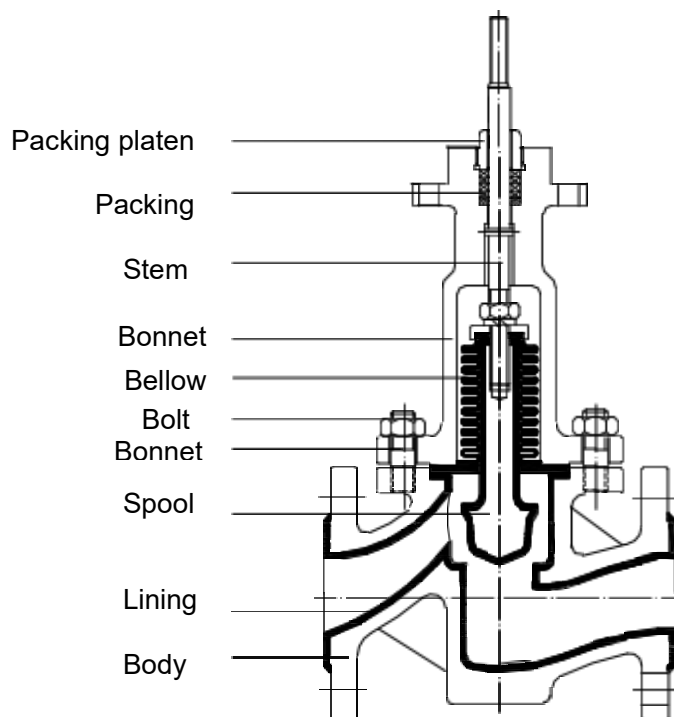
Method	Type	Pneumatic diaphragm actuator	Electric actuator
		ZH23~ZH56	3810L series
		Multi-spring type	Intelligent integrated type
Usage		Regulating type, ON-OFF type	Regulating
Air supply pressure or Power supply voltage		Air supply pressure (Spring range) 140 (20~100) Kpa G 240 (40~200) Kpa G 280 (80~240) Kpa G	Power: AC 200V±10% 50Hz Or Power: AC 380V±10% 50Hz○1
Connector		Air pipe connector: RC1/4	Nomal type: cable inlet 2-PF(G1/2") Explosive proof type: can install protection jacket PF(G3/4")
Positive action		Pressure increase, stem descend, valve close.	Input signal increase, stem descend, valve close.
Negative action		Pressure increase, stem ascend, valve open.	Input signal increase, stem ascend, valve open.
Input signal		40~20mA.DC (with positioner)	Input/output 4~20mA.DC
Lag		≤1%FS (with positioner)	≤0.8%FS
Linear type		2%FS (with positioner)	≤±1%FS
Environmental temperature		-10℃~+70℃	Standard type: -10℃~+60℃ With space heater○1: -35℃~+60℃ Explosive proof: -10℃~+40℃
Surface coating		Green, acrylic acid polyurethane ceramic coating	Blue, acrylic acid polyurethane ceramic coating
Accessories		Electric-air (air-air) valve positioned, filter regulator, valve converter, solenoid valve, limited switch	Space heater (normal type)

Note ○1: non-standard accessories, need special customized notes.

◆Parameter

Nominal size, DN		20	25	32	40	50	65	80	100	125	150
Rated flow coefficient, Cv	Percentage		8	12	20	32	50	70	100	200	240
	Linear	5	10	16	25	38	63	80	120	220	300
Travel		16mm		25 mm			40mm			60mm	
Pneumatic actuator Diaphragm effective area, Ae (cm2)		ZHA/B-22		ZHA/B-23			ZHA/B-34			ZHA/B-45	
		350		350			560			900	
Action	Spring range	Max. allowable pressure difference (MPa)									
Air open	20-100KPa	1.16	0.7	0.44	0.28	0.18	0.17	0.11	0.07	0.07	0.05
	40-200 KPa	3.34	2.14	1.31	0.84	0.53	0.51	0.33	0.21	0.22	0.15
	80-240 KPa	6.4	4.99	3.05	1.95	1.25	1.18	0.78	0.5	0.51	0.36
Air close	20-100KPa	2.23	2.14	0.87	0.56	0.35	0.34	0.22	0.14	0.15	0.1
	40-200 KPa	6.4	6.4	5.86	3.64	2.3	2.21	1.43	0.91	0.95	0.66
	80-240 KPa	6.4	6.4	6.4	5.04	3.18	3.06	1.98	1.26	1.32	0.92
Electric actuator		Max. allowable pressure difference, (MPa)									
Type	Thrust (N)										
3810L-08	800	2.38	1.52								
3810L-20	2000	4.77	3.05	1.86	1.19	0.76					
3810L-30	3000			2.79	1.79	1.14					
3810L-50	5000			4.66	2.98	1.91	1.13	0.6	0.47		
3810L-65	6500						1.35	0.8	0.57	0.39	0.26
3810L-99	10000									0.61	0.42

◆Material and internal structure



1	Body, bonnet	WCB	LCB	CF8
2	Lined	PTFE	PTFE	PTFE
3	Spool	304+ PTFE	304+ PTFE	304+ PTFE
4	Bellow seal	PTFE		
5	Stem	304	304	304
6	Studs, nut	304	304	304

◆ Main out form dimension and weight

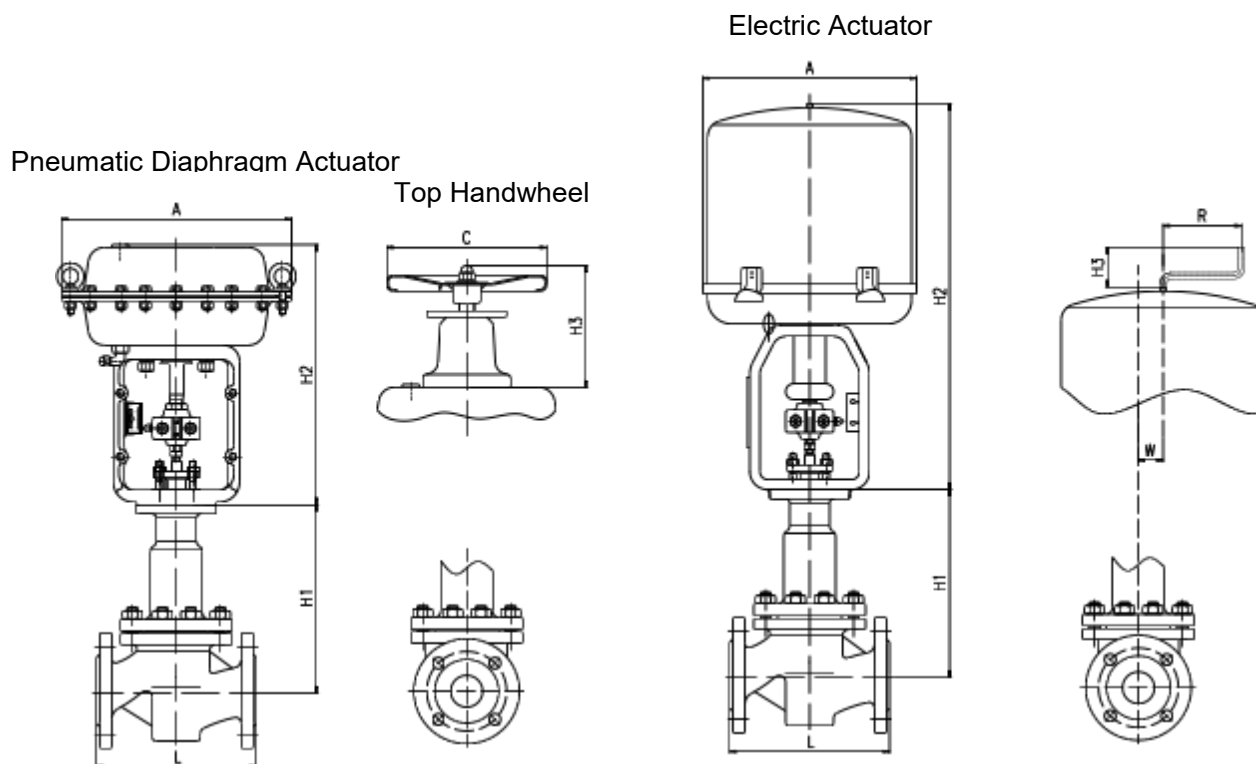


Table: Pneumatic PTFE lined control valve dimension and weight

DN Size	DN20 3/4"	DN25 1"	DN32 1 1/4"	DN40 1 1/2"	DN50 2"	DN65 1 1/2"	DN80 3"	DN100 4"	DN125 5"	DN150 6"
L	150	160	180	200	230	290	310	350	450	480
A	200	200	200	200	200	240	240	240	350	350
C	285	285	285	288	288	365	365	365	475	475
H1	128	137	148	152	159	218	230	238	264	331
H2	303	303	303	323	323	417	417	417	520	520
H3	153	153	153	153	153	181	181	181	247	247
Weight, Kg (pneumatic)	17	19	21	28	31.5	54	64	80	102	120

※ Weight in the table did not include the accessory weight. Valve can install side handwheel.

※ With continuous valve development, the dimension maybe will have some regulation, kindly contact with BCST for any update valve document.

Table: Electric PTFE lined control valve dimension and weight

DN Size	DN20 3/4"	DN25 1"	DN32 1 1/4"	DN40 1 1/2"	DN50 2"	DN65 1 1/2"	DN80 3"	DN100 4"	DN125 5"	DN150 6"
L	150	160	180	200	230	290	310	350	450	480
A	225	225	255	255	255	255	255	255	310	310
H1	128	137	148	152	159	318	230	238	264	331
H2	373	373	495	495	495	535	535	535	725	725
H3	87	87	90	90	90	90	90	90	90	90
W	28	28	45	45	45	45	45	45	60	60
R	80	80	100	100	100	100	100	100	160	160
Weight, Kg (Pneumatic)	12	14	21	28	31.5	44	54	70	106	124

※ Weight in the table did not include the accessory weight. Apply with 3810L type actuator.

※ With continuous valve development, the dimension maybe will have some regulation, kindly contact with BCST for any update valve document.



CATALOG

JC-ZH series linear actuator control valve

ZHD type Multi-layer Control Valve

ZHD type multi-layer control valve applied with multi-cage sleeve type spool or axial labyrinth spool, multi-layer pressure reducing. It controls the medium flowrate, reduces noisy caused by high pressure air or steam, qualified in high pressure medium occasion. It can be applied with multi-spring pneumatic diaphragm actuator or electric actuator.



◆Specification

Body type: straight through casting globe type

Spool type: multi-layer choke spool

Nominal size: DN20~200 NPS 3/4" ~ 8"

Nominal pressure: PN160 ~ 420 CLASS 900LB ~2500LB

Connection: flange: FF 、 RF 、 MF 、 RTJ

Welding: SW、 BW

Bonnet type: standard type (-5℃~230℃) 、

Radiator type: (-45℃~higher than 230℃ occasion) 、

Low temperature extended type (-196℃~ -45℃)

Packing: V type PTFE packing, flex. graphite packing, etc.

Gasket: Metal graphite packing

Actuator: pneumatic: multi-spring diaphragm actuator, piston type actuator.

electric: 3810L series smart actuator, PSL series actuator.

Surface painting: Green color, acrylic acid polyurthane ceramic paint.



◆Code

Z	Actuator	H	Structure	Nominal pressure	Body material	Nominal size
Z series control valve	J: pneumatic diaphragm actuator H: pneumatic piston actuator R: electric 3810L actuator D: electric PSL actuator	Hdirect travel	D: multi-layer sleeve type control valve G: axial labyrinth control valve	PN160=160 CL1500LB=1500 LB	C=A105 LC=LF2 P=F304 PL=F304L R=F316 RL=F316L D= special material	DN25= DN25 NPS1 " =NPS1 "

Such as: Z type pneumatic diaphragm multi-layer sleeve type control valve, pressure PN160, valve material A105, nominal size DN50, type: ZJHD-160 DN50

◆Performance

Flow characteristic		Linear, percentage	
Allowable range		50: 1 ~200: 1	
Rated Cv value		Customized	
Allowable leakage		Metal seal: IV grade (0.01% rated capacity)	
Performance		Pneumatic	Electric
	Allowable tolerance, %	±1.5	±1.0
	Return difference, %	≤1.5	≤1.0
	Dead zone, %	≤0.6	≤1.0
	Difference from beginning to end point, %	±2.5	±2.5
	Rated travel difference, %	≤2.5	≤2.5

Note ○1: specification on the basis of control valve with positioned and PTFE packing.

◆Special specification

Special test	Material penetration flaw detection (PT), radiator test (RT), flow characteristic test, low temperature test.
Special treatment	Trim nitrogen treatment, seat hard alloy treatment.
Special rinse	Degreasing and dehydration treatment
Special condition	Special piping or connection, vacuum condition, S.S fastener, special coating.
Special dimension	Customized face to face length or dimension
Test and inspection	Third party test report

◆Actuator

Method	Type	Pneumatic diaphragm actuator	Electric actuator
		ZH23~ZH56	3810L series
		Multi-spring type	Intelligent integrated type
Usage		Regulating type, ON-OFF type	Regulating
Air supply pressure or Power supply voltage		Air supply pressure (Spring range) 140 (20~100) Kpa G 240 (40~200) Kpa G 280 (80~240) Kpa G	Power: AC 200V±10% 50Hz Or Power: AC 380V±10% 50Hz○1
Connector		Air pipe connector: RC1/4	Nomal type: cable inlet 2-PF(G1/2") Explosive proof: Protection jacket PF(G3/4")
Positive action		Pressure increase, stem descend, valve close.	Input signal increase, stem descend, valve close.
Negative action		Pressure increase, stem ascend, valve open.	Input signal increase, stem ascend, valve open.
Input signal		40~20mA.DC (with positioner)	Input/output 4~20mA.DC
Lag		≤1%FS (with positioner)	≤0.8%FS
Linear type		2%FS (with positioner)	≤±1%FS
Environmental temperature		-10℃~+70℃	Standard type: -10℃~+60℃ With space heater○1: -35℃~+60℃ Explosive proof: -10℃~+40℃
Surface coating		Green, acrylic acid polyurethane coating	Blue, acrylic acid polyurethane coating
Accessories		Electric-air (air-air) valve positioned, filter regulator, valve converter, solenoid valve, limited switch	Space heater (normal type)

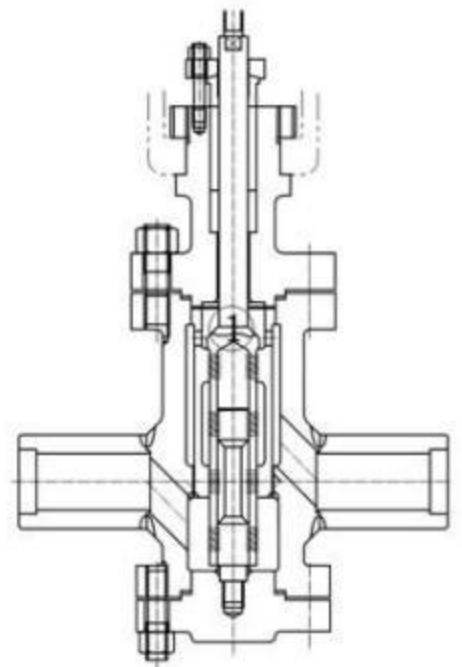
Note ○1: non-standard accessories, need special customized notes.

>>Design characteristic

- ◆ Continuous regulating within high pressure difference range
- ◆ Multi-layer gradually pressure reducing, each layer pressure reducing are above the evaporation pressure, anti-cavitation, low noisy.
- ◆ Spool in non-balanced structure, good conical surface sealing performance.
- ◆ Sleeve structure with multi-hole cage type, high regulating performance.
- ◆ Installed guide on the top and bottom of spool, regulating balance, non-vibration and self-cleaning.
- ◆ Sealing surface welded with hard alloy, spool (stem) surface painted with hard alloy material, high wearing and galling resistance, long life span.

>>Application

- ◆ Boiler water feed bypass regulate low load operation occasion.
- ◆ Water feeding recirculation bypass regulating. (Mini-flow control valve)
- ◆ High pressure bypass water spray heat reducing, superheater thermoreduction.
- ◆ Other high pressure difference occasion medium regulating.

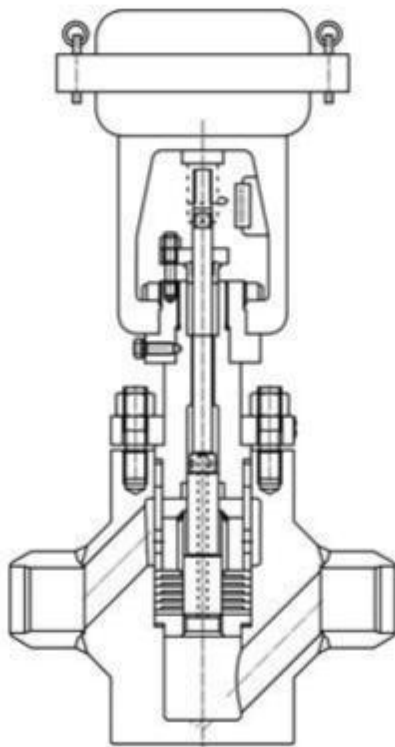


>>Design characteristic

- ◆ Medium flow while pressure reducing via multi-layer throttling disc, anti-cavitation and reducing noisy.
- ◆ Non-balanced and balanced spool. Balanced type has seal ring on the balanced hole.
- ◆ Seat in conical seal surface, with stable seal performance while valve closed.
- ◆ Sealing surface welded with hard alloy, spool (stem) surface painted with hard alloy material, high wearing and galling resistance, long life span.

>>Application

- ◆ Cylinder and main regulating valve dewatering.
- ◆ Cylinder, medium-pressure control valve and air extracting system dewatering.
- ◆ Boiler superheater thermoreduction.
- ◆ High pressure bypass and variety thermoreduction system high pressure difference spray.
- ◆ Water feed recirculation, water feed bypass valve, periodic sewage system, etc.
- ◆ Other high pressure difference occasion medium regulating.



Note: For detailed structure dimension and trim material, please contact with BCST.



Z Series Self-operated control valve

ZZY Type Self-Operated control valve

ZZY type self-operated control valve don't need extra power, but take controlled media energy as power supply。 It brings in actuator to control valve disk position and change two ends different pressure and flow to make valve upstream and backstream pressure stability and has agility, good sealing, pressure set point small fluctuations and steam medium to reduce and stable pressure or relieve pressure self-control. This series products have reduce pressure by backstream pressure control (B type) and relieve pressure by upstream pressure control (K type). Pressure phase control scape: 15~250 KPa . It can satisfy clients working condition requiremnt as per need assemble.



◆ Specification

- Body type : Straight casing ball type body
- Disk type : Quick open disk
- Nominal diameter : DN20—300 , NPS 3/4”---12”
- Nominal pressure :PN16—64 Class 150LB—300LB
- Connection : Flange , FF. RF. RTJ and so on
- Bonnet type : Bolted bonnet
- Packing:V type PTFE
- Sealing gasket : Metal clip graphite
- Actuator: Film sleftype 、 Piston selftype
- Surface painting :Green Acrylic polyurethane enamel

◆ Code

ZZY	Structure type	Nominal pressure	Body material	Mode of action	Conde nsator	Pressure control scope (KPa)		Nominal diameter
Z series self-operation control valve	P: Single seat M:Sleeve type	PN16=16 CL150LB=150 LB	C=WCB LC=LCB P=CF8 PL=CF3 R=CF8M RL=CF3M D=Special material	B: Backstream pressure control K: Upstream pressure control	No: without C: with condensator	15~50	40~80	DN50= DN50 NPS2” =NPS2”
						60~140	120~220	
						160~220	200~260	
						240~300	280~350	
						330~400	380~450	
						480~560	540~620	
						600~700	680~800	
						780~900	880~1000	
						950~1500	1000~2500	

For example : Single self-operated control valve, Nominal pressure PN16,WCB material ,without condensator, pressure scope : 120—220KPa. Size DN50, Model : ZZYP - 16C-B - 120~220-DN50

◆Performance and parameter chart

Nominal diameter (DN)		20	25	32	40	50	65	80	100	125	150	200	250	300
Rated KV		7	11	20	30	48	75	120	190	300	480	760	1100	1750
Rated travle (mm)		8		10		14	20		25	40		50	60	70
Nominal pressure		PN 16、40、64 CLASS150LB~300LB												
Pressure control scope (Kpa)		15~50		40~80		60~140		120~220		160~220		200~260		
		240~300		280~350		330~400		380~450		480~560		540~620		
		600~700		680~800		780~900		880~1000		950~1500		1000~2500		
		* Control pressure chosen among adjustment scope is better												
Flow characteristic		Quick open												
Accuracy of adjustment		±5-10												
Applicant temperature		-40℃≤without condensator≤200℃≤with condensator≤350℃												
allowabl e leakage	hard seal (1 /h)	Single seat:≤10 ⁻⁴ valve rated capacity (IV) Sleeve: ≤5×10 ⁻⁴ (II) valve rated capacity												
	Soft seal (1 /h)	0.15	0.30	0.45	0.60	0.90	1.7	4.0	6.75	11.10	16.0			
Pressure reducing ratio	Max.	10												
	Min.	1.25												
Minmum upstream pressure														
upstream pressure KPa		30	50	100	150	200	250	300	350	400				
Backstream pressure KPa		15-24	15-40	15-80	15-120	20-160	25-200	30-240	35-280	40-320				
upstream pressure KPa		450	500	550	600	650	700	750	800	850				
Backstream pressure KPa		45-360	50-400	55-440	60-480	65-520	170-560	75-600	80-640	85-680				
upstream pressure KPa		900	950	1000	1250	1500	2000	2500	3000					
Backstream pressure KPa		90-720	95-760	100-800	125-1000	150-1200	200-1600	250-2000	300-2400					

◆Material and applicable temperature

Chart 1: Body, bonnet material applicable and pressure scope(ANSI)

Temp °C	Class150					Class300				
	SCPL1 LCB	SCPH2 WCB	SCPH21 WC6	SCS13A CF8	SCS14A CF8M	SCPL1 LCB	SCPH2 WCB	SCPH21 WC6	SCS13A CF8	SCS14A CF8M
-45~38	1.84	-	-	1.90	1.90	4.78	-	-	4.95	4.95
-5~38	1.84	1.96	1.99	1.90	1.90	4.78	5.10	5.16	4.95	4.95
50	1.81	1.92	1.92	1.84	1.84	4.72	5.00	5.10	4.77	4.80
100	1.72	1.76	1.76	1.56	1.56	4.51	4.63	4.88	4.08	4.21
150	1.57	1.57	1.57	1.39	1.39	4.40	4.51	4.63	3.62	3.85
200	1.40	1.40	1.40	1.25	1.25	4.26	4.38	4.54	3.27	3.56
250	1.20	1.20	1.20	1.16	1.16	4.05	4.16	4.44	3.04	3.34
300	1.01	1.01	1.01	1.01	1.01	3.76	3.87	4.23	2.91	3.15
350	0.84	0.84	0.84	0.84	0.84	3.59	3.69	4.01	2.81	3.03
375		0.73	0.73	0.73	0.73		3.64	3.88	2.77	2.96
400		0.64	0.64	0.64	0.64		3.44	3.65	2.74	2.91

Chart 2: Body, bonnet material applicable and pressure scope(GB)

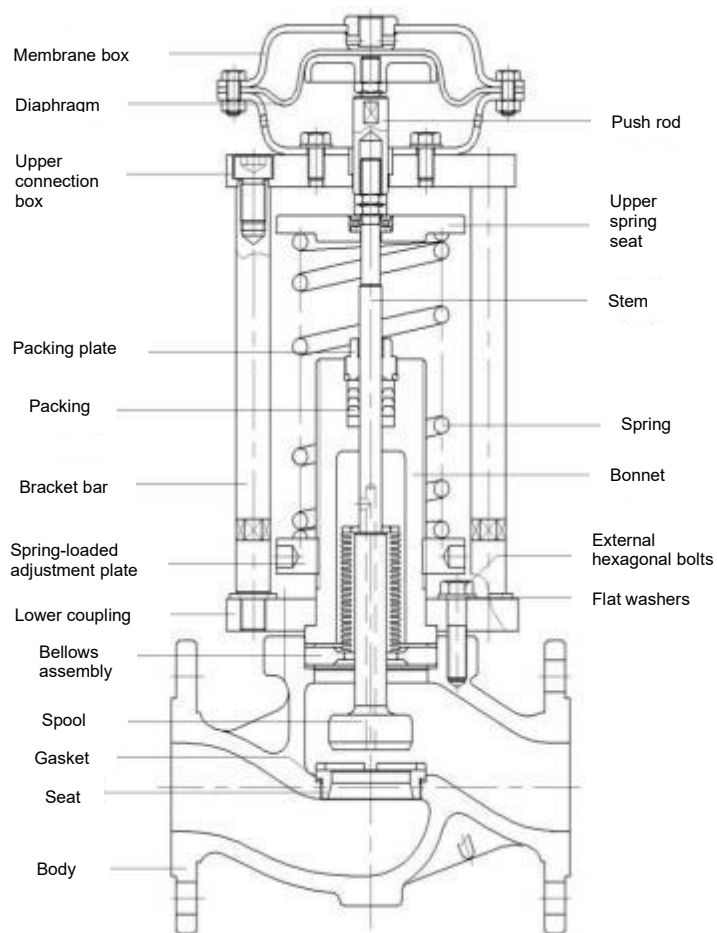
Temp. ℃	PN16					PN25					PN40				
	LCB	WCB	WC6	CF8	CF8M	LCB	WCB	WC6	CF8	CF8M	LCB	WCB	WC6	CF8	CF8M
-29~38	1.5	1.6	1.6	1.5	1.5	2.4	2.5	2.5	2.4	2.4	3.9	4.1	4.1	4.0	3.9
93	1.4	1.4	1.4	1.4	1.3	2.2	2.3	2.3	2.1	2.0	3.8	3.7	4.0	3.3	3.4
149	1.3	1.3	1.3	1.3	1.2	2.1	2.1	2.1	1.9	1.9	3.7	3.6	3.8	3.0	3.1
204	1.1	1.1	1.1	1.1	1.1	1.9	1.9	1.9	1.7	1.7	3.5	3.4	3.7	2.8	2.8
260	0.8	1.0	1.0	1.0	1.0	1.7	1.7	1.7	1.5	1.6	3.3	3.2	3.5	2.6	2.6
315	0.7	0.8	0.8	0.8	0.8	1.4	1.4	1.5	1.3	1.3	3.0	2.8	3.1	2.3	2.4
343	0.6	0.7	0.7	0.7	0.7	1.3	1.3	1.4	1.2	1.2	2.9	2.7	3.0	2.3	2.3
371	0.5	0.6	0.6	0.6	0.6	1.2	1.2	1.3	1.1	1.1	2.8	2.7	2.9	2.2	2.2
399	0.5	0.5	0.5	0.5	0.5	1.1	1.1	1.2	1.0	1.0	2.5	2.6	2.7	2.1	2.2

Note:1. If temperature or pressure is at middle of showed figure , we can use interpolation to get Max working pressure or temperature.

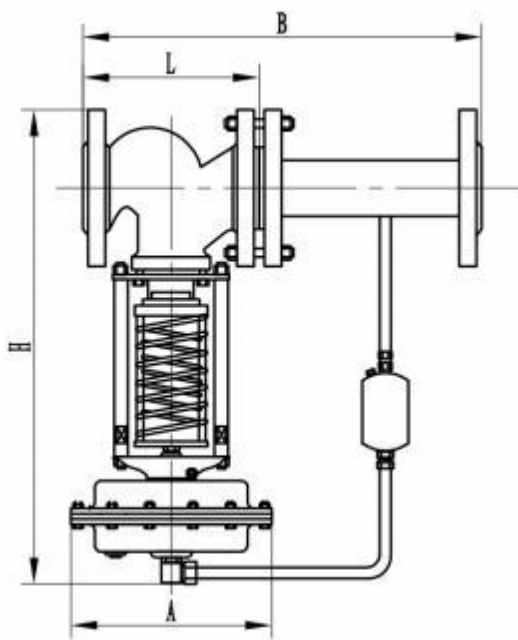
2. The pressure in chart are all gauge pressure.

◆ Standard material and inside structure

1	Body	WCB	CF8	CF8M
2	Seat	304	304	316
3	Disk	304	304	316
4	Gasket	316+ graphit/PTEF		
5	Bellows combination	304	304	316
6	Connection plate	20	CF8	CF8M
7	Spring adjustment plate	304	304	316
8	Bonnet	WCB	CF8	CF8M
9	York	304	304	304
10	Packing	PTFE/ Flexible graphit		
11	Packing gasket	304	304	316
12	Spring	60Si2Mn		
13	Stem	304	304	316
14	Upper spring seat	304	304	304
15	Connection plate	20	304	304
16	Capsule	A3	304	316
17	Diaphragm	Nitrile rubber clamp polyester		
18	Push rod	304	304	316
19	Hex bolt	45	304	316



◆Dimension and weight



Nominal diameterDN			20	25	32	40	50	65	80	100	125	150	200	250	300	
Face to face （L）			150	160	180	200	230	290	310	350	400	480	600	730	850	
Flange connection size （B）			383		512		603	862		1023	1380		1800	2000	2200	
Pressure control scope （Kpa）	15-140	H	475		520		540	710		780	840	880	915	940	1000	
		A	280		308											
	200-500	H	455		500		520	690		760	800	870	880	900	950	
		A	230													
	120-300	H	450		490		510	680		750	790	860	870	890	940	
		A	176					194			280					
	480-1000	H	445		480			670		740	780	850	860	880	930	
		A	176					194			280					
	600-1500	H	445		570		600	820		890	950		1000	1100	1200	
		A	85		96											
	1000-2500	H	445		570		600	820		980	950		1000	1100	1200	
		A	85		96											
Weight（Kg）			26		37		42	72	90	114	130	144	180	200	250	
Connecting pipe joint thread			M1.6×1.5													

※ Weight in chart is standard data without accessory. Matched export connection pipe and condensator are provide according to requirement.

※ As produce improved and technology innovation, size maybe be changed, plase contact BCST Valve technology department to get new product information.



CATALOG

JC-ZR Series angle trip control valve

ZRP type Eccentric rotary control valve

ZRP eccentric rotary valve (CAM deflection control valve),consisted with actuator and eccentric rotary valve, is a kind of angle trip control valve which compose with partly ball valve plate deflection, eccentric rod rotary to control fluid. Rotary center of valve disk not concentric with rotary rod can reduce wear and prolong service life . Disk back setted a contra-vane is advantage for fluid stability flow and good stable. Secondly,

large flow, adjustment scope wide and other feature. It is used widely in petroleum , chemical , electric , metallurgy, steel, papermaking, medical , food, spinning, light industry and other industry.



◆ Standard Specification

Body type: Straight casing eccentric ball type valve

Disk type: Eccentric bow globe ball body

Nominal diameter: DN50 ~300 NPS 2" ~12"

Nominal pressure : PN16 ~40 CLASS 150LB ~300LB

Connection: Flange FF, RF, RTJ, Wafer type and so on.

Bonnet type : Whole type

Packing :V type PTFE, Flexible graphite

Seal gasket : Metal+graphite

Actuator : Pneumatic : pneumatic piston actuator, pneumatic diagram actuator

Electric :DTR series, 3810 series

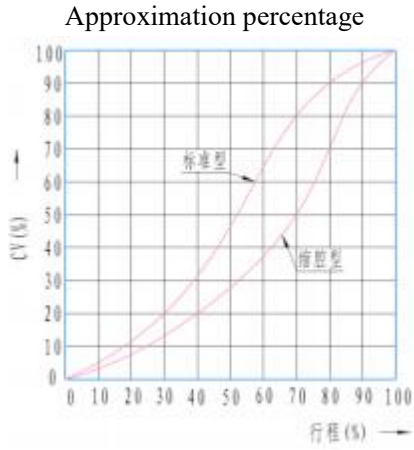
Surface painting :Green Acrylic polyurethane enamel

◆ Model Establishment

Z	Actuator	R	Structure type	Nominal pressure	Body material	Nominal diameter
Z series control valve	S: pneumatic piston J: pneumatic diagram A: Electric DTR series R: Electric 3810 series	R Rotary	P:Standard full cavity rotary PF: Soft seal eccentric Rotary RP:reduced chamfer eccentric rotary	PN16=16 CL150LB = 150 LB	C=WCB LC=LCB P=CF8 PL=CF3 R=CF8M RL=CF3M D= Special material	DN50= DN50 NPS2" =NPS2" "

Example: Pneumatic piston eccentric rotary control valve,pressure PN16, Body material WCB, Nominal diameter DN50, Model: JC-ZSRP-16C DN50

◆ Performance

Flow characteristic		
Adjustment scope	Full chamber type 100:1	Shrinkage chamber type 40: 1
Rated CV	Full chamber type CV 14~1750	Shrinkage chamber type CV 6~700
Travel	Full open 60°	
Allowable leakage	Hard seal:IV (0.01% valve rated capacity) , soft seal:VI (Bubble level)	
Intrinsic error %	Pneumatic type ± 2	Electric type ± 2.0
Hysteresis %	Pneumatic type ≤ 1.5	Electric type ≤ 1.0
Dead zone%	Pneumatic type ≤ 0.6	Electric type ≤ 1.0

Note: Parameters in performance sheet is based on the control valve with positioner and PTFE packing .

◆ Selected parameter

Nominal diameter DN (mm)		25	40	50	65	80	100	125	150	200	250	300
Rated flow coefficient Cv	Full chamber type	14	30	55	100	135	230	320	500	850	1300	1750
	Shrinkage chamber type	6	12	20	40	54	92	128	200	340	520	700
Double action pneumatic actuator		Air supply pressure 400KPa										
Model	Torque (N.M)	PTFE packing , metal seal allow differential pressure										
ATD63	23.5	2.35	0.94									
ATD75	46.5	5.0	2.84	1.49	0.57	0.33						
ATD88	73.2			2.39	0.99	0.62						
ATD100	106				1.54	0.99	0.30	0.19				
ATD125	221						1.29	0.80	0.39			
ATD160	453						2.84	1.79	0.89	0.47	0.26	0.14
Single action pneumatic actuator		Air supply pressure 400KPa										
Model	torque (N.M)	PTFE packing , metal seal allow differential pressure										
ATS75	26.5	0.19										
ATS88	44	1.19	0.09									
ATS100	60.7	3.97	1.59	0.81	0.11							
ATS125	126			2.19	0.89	0.59						
ATS160	269					1.39	0.53	0.34				
ATS200	467						2.84	1.79	0.89	0.47	0.26	0.14
Electric actuator												
Model	Torque (N.M)	PTFE packing , metal seal allow differential pressure										
3810R-10	100	10	7.5	4.0								
3810R-30	300				5	4.5	2.3	2.1	1.9			
3810R-50	500									1.0	0.6	0.4

◆ Actuator

Style	Model	
	Pneumatic piston actuator	Full electronic type electric actuator
	AT Series	3810R Series
Usage	Single action, Double action	Built-in control box type intelligent integration
Air supply pressure or supply voltage	Adjustment, on-off	Adjustment
Connector	Air supply pressure (spring scope) 400 Kpa G	Power:AC 200V±10% 50Hz Or power: AC 380V±10% 50Hz
Direct action	Air tube adapter: RC1/4	Normal type: Cable intake 2-PF(G1/2") Exd : it can be installed protective sleeve PF(G3/4"
Reaction	Gas pressure increase disk anti-clockwise rotation, valve close	Input signal increase disk anti-clockwise rotation, valve close
Input signal	Gas pressure increase disk clockwise rotation, valve open	Input signal increase disk clockwise rotation, valve open
Lag	40~20mA.DC (with E/P positioner)	Input/output 4~20mA.DC
Linearity	≤1%FS (with positioner)	≤0.8%FS
Working temperature	2%FS (with positioner)	≤+1%FS
Coating	-10℃~+70℃	Standard type: -10℃~+60℃ With spacer heater: -35℃~+60℃ Exd type: -10℃~+40℃
Option parts	Green, acrylic polyurethane enamel	Blue, acrylic polyurethane enamel
	Electric-Pneumatic (Pneumatic-pneumatic) valve positioner, LFT, Valve position transmitter, solenoid valve, limited switch	Space heater (normal type)

Note1: Not standard configuration, need to be stated before order.

◆ Material and applicable temperature

Chart1: Body, bonnet applicable temperature –pressure range (ANSI)

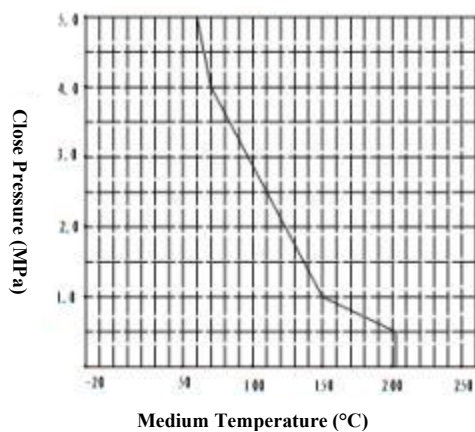
Temp. ℃	Class150					Class300				
	SCPL1 LCB	SCPH2 WCB	SCPH21 WC6	SCS13A CF8	SCS14A CF8M	SCPL1 LCB	SCPH2 WCB	SCPH21 WC6	SCS13A CF8	SCS14A CF8M
-45~38	1.84	-	-	1.90	1.90	4.78	-	-	4.95	4.95
-5~38	1.84	1.96	1.99	1.90	1.90	4.78	5.10	5.16	4.95	4.95
50	1.81	1.92	1.92	1.84	1.84	4.72	5.00	5.10	4.77	4.80
100	1.72	1.76	1.76	1.56	1.56	4.51	4.63	4.88	4.08	4.21
150	1.57	1.57	1.57	1.39	1.39	4.40	4.51	4.63	3.62	3.85
200	1.40	1.40	1.40	1.25	1.25	4.26	4.38	4.54	3.27	3.56
250	1.20	1.20	1.20	1.16	1.16	4.05	4.16	4.44	3.04	3.34
300	1.01	1.01	1.01	1.01	1.01	3.76	3.87	4.23	2.91	3.15
350	0.84	0.84	0.84	0.84	0.84	3.59	3.69	4.01	2.81	3.03
375		0.73	0.73	0.73	0.73		3.64	3.88	2.77	2.96
400		0.64	0.64	0.64	0.64		3.44	3.65	2.74	2.91

Chart2: Body, bonnet applicable temperature –pressure range(GB)

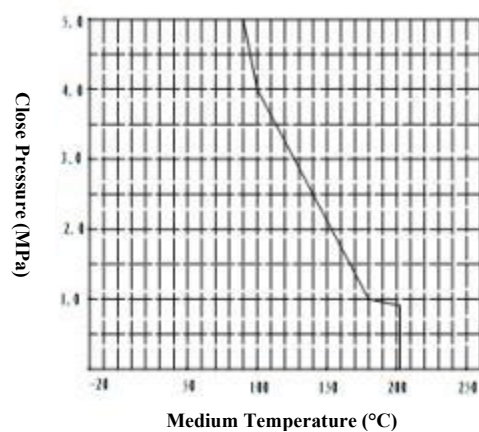
Temp. ℃	PN16					PN25					PN40				
	LCB	WCB	WC6	CF8	CF8M	LCB	WCB	WC6	CF8	CF8M	LCB	WCB	WC6	CF8	CF8M
-29~38	1.5	1.6	1.6	1.5	1.5	2.4	2.5	2.5	2.4	2.4	3.9	4.1	4.1	4.0	3.9
93	1.4	1.4	1.4	1.4	1.3	2.2	2.3	2.3	2.1	2.0	3.8	3.7	4.0	3.3	3.4
149	1.3	1.3	1.3	1.3	1.2	2.1	2.1	2.1	1.9	1.9	3.7	3.6	3.8	3.0	3.1
204	1.1	1.1	1.1	1.1	1.1	1.9	1.9	1.9	1.7	1.7	3.5	3.4	3.7	2.8	2.8
260	0.8	1.0	1.0	1.0	1.0	1.7	1.7	1.7	1.5	1.6	3.3	3.2	3.5	2.6	2.6
315	0.7	0.8	0.8	0.8	0.8	1.4	1.4	1.5	1.3	1.3	3.0	2.8	3.1	2.3	2.4
343	0.6	0.7	0.7	0.7	0.7	1.3	1.3	1.4	1.2	1.2	2.9	2.7	3.0	2.3	2.3
371	0.5	0.6	0.6	0.6	0.6	1.2	1.2	1.3	1.1	1.1	2.8	2.7	2.9	2.2	2.2
399	0.5	0.5	0.5	0.5	0.5	1.1	1.1	1.2	1.0	1.0	2.5	2.6	2.7	2.1	2.2

Note: 1.If temperature or pressure is at middle of showed figure , we can use interpolation to get Max working pressure or temperature. 2. The pressure in chart are all gauge pressure.

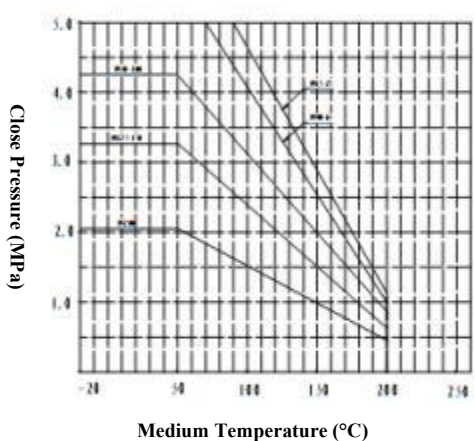
PTFE Seat (Fixed Ball Type)



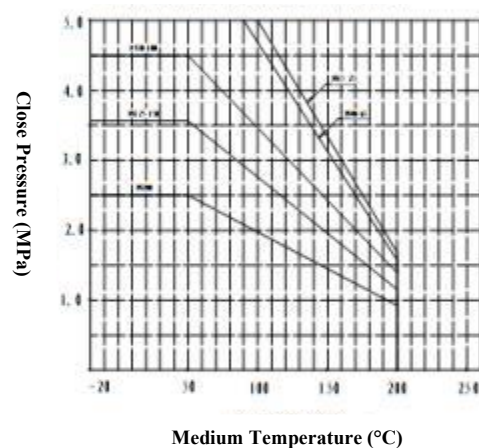
MgS₂ PTFE Seat (Fixed Ball Type)



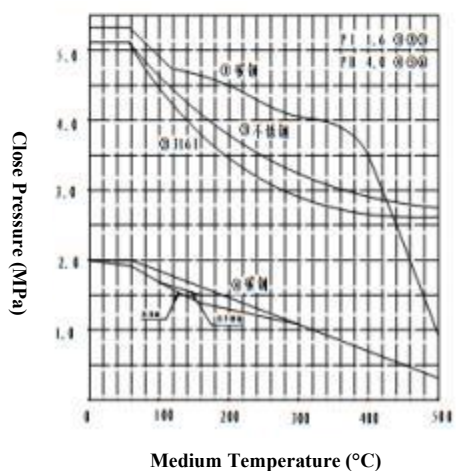
PTFE Seat (Float Ball Type)



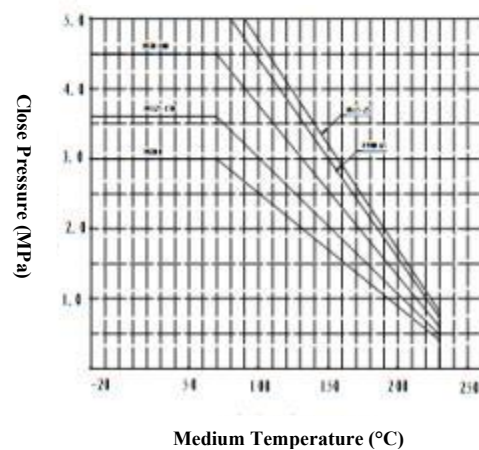
MgS₂ PTFE Seat (Float Ball Type)



Special Graphite Seat (Float Ball Type)



Mg Fibre PTFE Seat(Float Ball)



◆ Standard material and inside structure

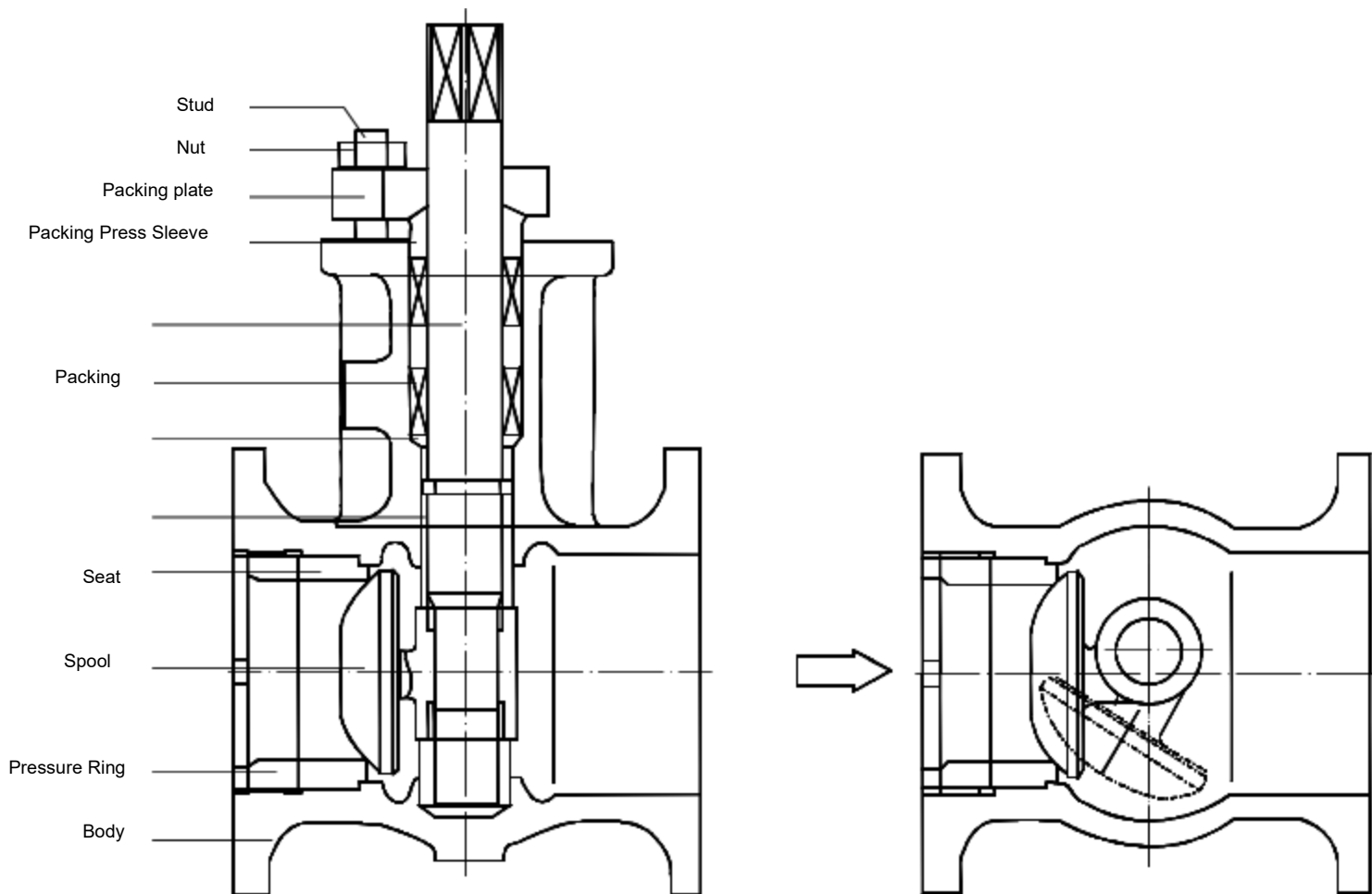


Chart3: Body material: WCB

1	Body	WCB	LCB	WC9
2	Seat	304	304	304
3	Disk	304	304	304
5	Gasket	304	304	304
6	Bonnet	WCB	LCB	WC9
7	Packing	PTFE/ Flexible graphit		
8	Packing gland	304	304	304
9	Packing clamp	WCB	WCB	WCB
10	Stem	304	304	304
12	Stud	45	40MnB	25Cr2Mo1VA
13	Nut	35	35	25Cr2Mo1VA

Chart4: Body material: Stainless steel

1	Body	CF8	CF8M	CF3M
2	Seat	304	316	316L
3	Disk	304	316	316L
5	Gasket	304	316	316L
6	Bonnet	CF8	CF8M	CF3M
7	Packing	PTFE/ Flexible graphit		
8	Packing gland	304	316	316L
9	Packing clamp	CF8	CF8M	CF3M
10	Stem	304	316	316L
12	Stud	304	316	316L
13	Nut	304	316	316L

Note:

1. Above is standard structure, seat is metal to metal, PTFE soft seat is VI seal option. We also provide STL coating strim.
2. Standard body material is WCB and SS, We can provide many kinds alloy material to be used in high corrosive situation.

◆ Main out form dimension

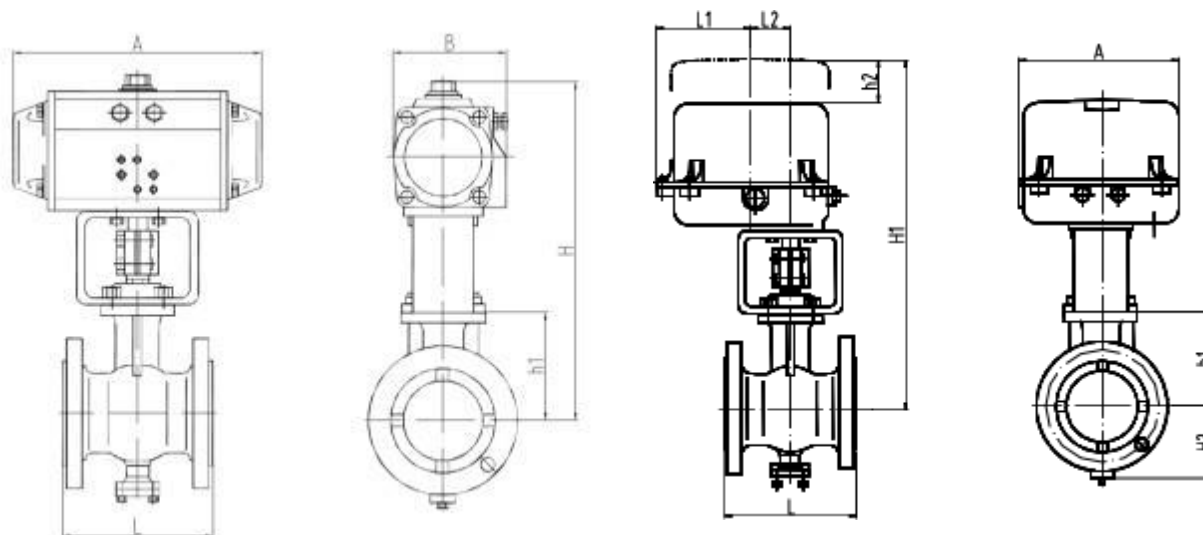


Chart 5: Pneumatic eccentric rotary control valve dimension Unit:mm

Nom. Diameter	L	h1	Double action actuator				Single action actuator			
			Model	A	B	H	Model	A	B	H
25	100	100	ATD63	158.5	83	300	ATS75	210.5	94.5	300
			ATD75	210.5	94.5	300	ATS88	247.5	106	330
40	115	110	ATD75	210.5	94.5	310	ATS100	268.5	123	340
			ATD88	247.5	106	340	ATS125	345	152	380
50	125	125	ATD75	210.5	94.5	325	ATS100	268.5	123	360
			ATD88	247.5	106	360	ATS125	345	152	395
65	143	135	ATD75	210.5	94.5	335	ATS100	268.5	123	375
			ATD88	247.5	106	375	ATS125	345	152	405
80	165	145	ATD100	268.5	123	380	ATS125	345	152	415
			ATD125	345	152	415	ATS160	438	187	470
100	195	180	ATD100	268.5	123	415	ATS125	345	152	500
			ATD125	345	152	455	ATS160	438	187	500
125	210	254	ATD125	345	152	515	ATS 160	438	187	545
			ATD160	438	187	530	ATS200	543	222	650
150	230	267	ATD125	345	152	550	ATS200	543	222	590
			ATD160	438	187	550	ATS265	728	330	670
200	245	292	ATD160	438	187	600	ATS200	543	222	710
			ATD200	543	222	710	ATS265	728	330	770
250	300	330	ATD200	543	222	740	ATS200	543	222	740
			ATD265	728	330	800	ATS265	728	330	800
300	340	356	ATD200	543	222	790	ATS200	543	222	790
			ATD265	728	330	840	ATS265	728	330	840

Chart 6: Electric eccentric rotary control valve dimension Unit:mm

Nom.Diameter	25	40	50	65	80	100	125	150	200	250	300
L	100	115	125	143	165	195	210	230	245	300	340
H1	490	525	541	650	690	700	815	910	970	1090	1110
H2	40	45	49	60	65	100	128	150	180	220	260
h1	100	110	125	135	145	180	215	230	275	310	345
A	225	225	225	225	225	225	335	335	335	335	335

※ Weight in above chart is standard data without accessory. As produce improved and technology innovation, size maybe be changed, plase contact BCST Valve technology department to get new product information.



CATALOG

JC-ZR Series control valve

ZRV type V-adjustable ball valve

ZRV type V-adjustment ball valve, disk with V type slot, which produce shear force with hard seal seat relative rotation to shut fiber to avoid jamming. It realizes to adjust pressure, flow, temperature, liquid level and other parameter. It has flow ability, high adjustment precision, large adjustment, good sealing, light weight and other feature. It can be used in mostly situation except small size, angular, three way connection. It is best produce instead of importing product, especially applicant to adjust mud and including fiber medium and including micron solid

suspended matter. It is widely used in paper making, sugaring, petroleum, chemical, metal and other industry automatic control system.

◆ Standard Specification

Body type : Straight casing ball valve

Disk type: V opening sphere

Nominal Diameter ; DN50 ~300 NPS 2" ~12"

Norminal pressure : PN16 ~40 CLASS 150LB ~300LB

Connection : Flange FF, RF, RTJ, wafer and so on

Packing : V type PTFE, Flexible graphit

Seal gasket: Metal + graphite

Actuator : Pneumatic : pneumatic piston actuator, pneumatic diagram actuator

Electric :DTR series, 3810 series

Surface painting :Green Acrylic polyurethane enamel

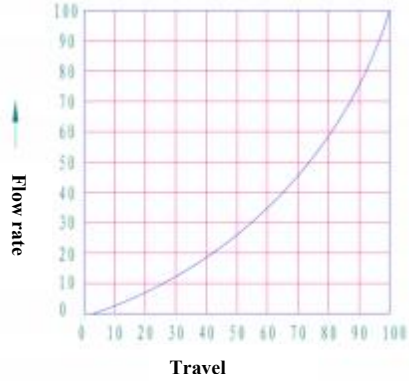


◆ Model Establishment

Z	Actuator	R	Structure	Nominal pressure	Body material	Nominal diameter
Z series control valve	S: Pneumatic piston J: Pneumatic diaphragm D:Electric DTR R: Electric 3810	R Rotary	V: Standard V-adjustment VF:Soft seal V-adjustment	PN16=16 CL150LB= 150 LB	C=WCB LC=LCB P=CF8 PL=CF3 R=CF8M RL=CF3M D=Special material	DN50= DN50 NPS2 " =NPS2 "

Example: Pneumatic piston V-adjustment ball valve, Pressure PN16, Body material WCB, Nominal diameter DN100, Model: JC - ZSRV - 16C DN100

◆ Performance

Flow characteristic	Approximate equal percentage 	
Adjustment scope	Full chamber type 200:1	
Rated CV	Hard seal CV 32~3700 Soft seal CV 32~3550	
Travel	Full open 90°	
Allowable leakage	Hard seal :IV (0.01% Rated capacity) Soft seal:VI (Bubble level)	
intrinsic error %	Pneumatic ± 2	Electric ± 2.0
Hysteresis %	Pneumatic ≤ 1.5	Electric ≤ 1.0
Dead zone %	Pneumatic ≤ 0.6	Electric ≤ 1.0

Note 01: Parameters in performance sheet is based on the control valve with positioner and PTFE packing .

◆ Selected parameter

Norminal diameterDN（mm）		25	40	50	65	80	100	125	150	200	250	300
Rated flow coefficient Cv	Hard seal	32	78	90	160	250	360	610	1120	1850	2950	3700
	Soft seal	32	78	90	150	240	345	580	1080	1800	2800	3550
Double action pneumatic actuator		Air supply pressure 400KPa										
Modle	Torque（N.M）	PTFE packing, metal seal allow different pressure Unit:MPa										
ATD75	46.5	1.72	0.83	0.53	0.30	0.16						
ATD88	73.2		1.33	1.33	0.49	0.28						
ATD100	106					0.48	0.16					
ATD125	221					0.82	0.45	0.25	0.19			
ATD160	453						0.81	0.52	0.40	0.13		
ATD200	850							0.9	0.69	0.60	0.42	0.31
Single action pneumatic actuator		Air supply pressre 400KPa										
Model	Torque（N.M）	PTFE packing, metal seal allow different pressure Unit:MPa										
ATS88	44	0.60	0.24	0.16	0.08							
ATS100	60.7	1.10	0.49	0.31	0.17	0.08						
ATS125	126		1.21	0.79	0.44	0.25	0.06					
ATS160	269					0.56	0.20	0.10	0.08			
ATS200	467					0.81	0.56	0.31	0.24			
ATS240	880							0.9	0.69	0.46	0.24	0.17
Electric actuator												
Model	Torque（N.M）	PTFE packing, metal seal allow different pressure Unit:MPa										
3810R-10	100	1.7	0.5	0.3	0.16							
3810R-30	300					0.48	0.25					
3810R-50	500						0.9	0.5	0.4	0.13		
3810R-100	1000									0.7	0.38	0.2

◆ Actuator

Type	Model	Pneumatic piston Actuator	Full electric type electric actuator
		AT series	3810L series
		Double action, single action	Built-in control box, intelligent integration
Usage		Adjustment, on-off	Adjustment
Supply gas pressure or supply electric voltage		Air supply pressure(spring scope) 400 Kpa G	Power: AC 200V±10% 50Hz Or power: AC 380V±10% 50Hz○1
Connector		Air tube adapter: RC1/4	Normal type:wire intake 2-PF(G1/2") Exd:Installing protective sleeve PF(G3/4")
Direct action		Gas pressure increase disk anti-clockwise rotaion, valve close	put signal increase disk anti-clockwise rotation, valve close
Reaction		Gas pressure increase disk clockwise rotaion, valve open	Input signal increase disk clockwise rotation, valve open
Input signal		40~20mA.DC (with electric pneumatic valve positioner)	Input/output: 4~20mA.DC
Lag		≤1%FS (with positioner)	≤0.8%FS
Linearity		2%FS (with positioner)	≤±1%FS
Working temperature		-10℃~+70℃	Standard type: -10℃~+60℃ With spacer heater○1: -35℃~+60℃ Exd: -10℃~+40℃
Coating		Green, acrylic polyurethane enamel	Blue, acrylic polyurethane enamel
Option parts		Electric-Pneumatic (Pneumatic-pneumatic)valve positioner,LFT,Valve position transmitter,solenoid valve,limited switch	Space heater (normal type)

Note○1 : Not standard configuration,need to state specially to custom

◆ Material and applicable temperature

Chart3: Body.Bonnet applicable temperature—pressure range (ANSI)

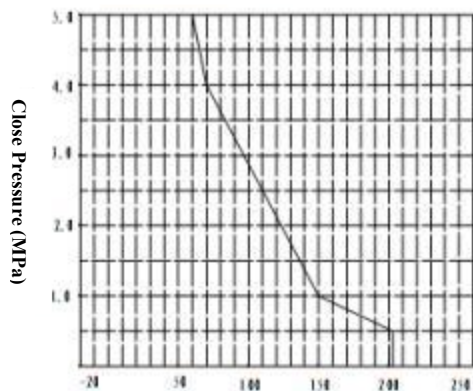
Temp ℃	Class150					Class300				
	SCPL1 LCB	SCPH2 WCB	SCPH21 WC6	SCS13A CF8	SCS14A CF8M	SCPL1 LCB	SCPH2 WCB	SCPH21 WC6	SCS13A CF8	SCS14A CF8M
-45~38	1.84	-	-	1.90	1.90	4.78	-	-	4.95	4.95
-5~38	1.84	1.96	1.99	1.90	1.90	4.78	5.10	5.16	4.95	4.95
50	1.81	1.92	1.92	1.84	1.84	4.72	5.00	5.10	4.77	4.80
100	1.72	1.76	1.76	1.56	1.56	4.51	4.63	4.88	4.08	4.21
150	1.57	1.57	1.57	1.39	1.39	4.40	4.51	4.63	3.62	3.85
200	1.40	1.40	1.40	1.25	1.25	4.26	4.38	4.54	3.27	3.56
250	1.20	1.20	1.20	1.16	1.16	4.05	4.16	4.44	3.04	3.34
300	1.01	1.01	1.01	1.01	1.01	3.76	3.87	4.23	2.91	3.15
350	0.84	0.84	0.84	0.84	0.84	3.59	3.69	4.01	2.81	3.03
375		0.73	0.73	0.73	0.73		3.64	3.88	2.77	2.96
400		0.64	0.64	0.64	0.64		3.44	3.65	2.74	2.91

Chart4: Body.Bonnet applicable temperature—pressure range (GB)

Temp. ℃	PN16					PN25					PN40				
	LCB	WCB	WC6	CF8	CF8M	LCB	WCB	WC6	CF8	CF8M	LCB	WCB	WC6	CF8	CF8M
-29~38	1.5	1.6	1.6	1.5	1.5	2.4	2.5	2.5	2.4	2.4	3.9	4.1	4.1	4.0	3.9
93	1.4	1.4	1.4	1.4	1.3	2.2	2.3	2.3	2.1	2.0	3.8	3.7	4.0	3.3	3.4
149	1.3	1.3	1.3	1.3	1.2	2.1	2.1	2.1	1.9	1.9	3.7	3.6	3.8	3.0	3.1
204	1.1	1.1	1.1	1.1	1.1	1.9	1.9	1.9	1.7	1.7	3.5	3.4	3.7	2.8	2.8
260	0.8	1.0	1.0	1.0	1.0	1.7	1.7	1.7	1.5	1.6	3.3	3.2	3.5	2.6	2.6
315	0.7	0.8	0.8	0.8	0.8	1.4	1.4	1.5	1.3	1.3	3.0	2.8	3.1	2.3	2.4
343	0.6	0.7	0.7	0.7	0.7	1.3	1.3	1.4	1.2	1.2	2.9	2.7	3.0	2.3	2.3
371	0.5	0.6	0.6	0.6	0.6	1.2	1.2	1.3	1.1	1.1	2.8	2.7	2.9	2.2	2.2
399	0.5	0.5	0.5	0.5	0.5	1.1	1.1	1.2	1.0	1.0	2.5	2.6	2.7	2.1	2.2

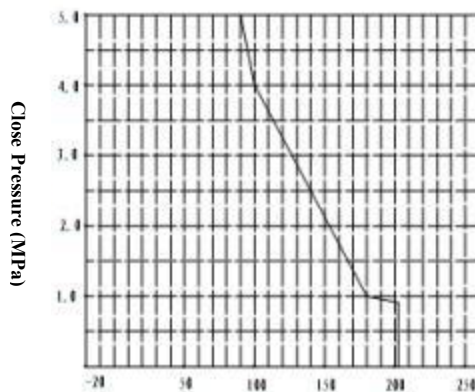
Note: 1.If temperature or pressure is at middle of showed figure , we can use interpolation to get Max working pressure or temperature. 2. The pressure in chart are all gauge pressure.

PTFE Seat Fixed Ball Valve



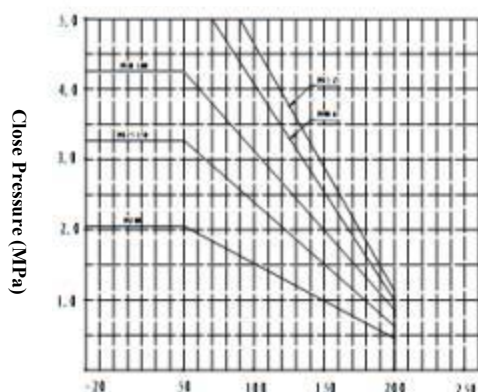
Medium Temperature (°C)

MgS₂ PTFE Seat (Fixed Ball Type)



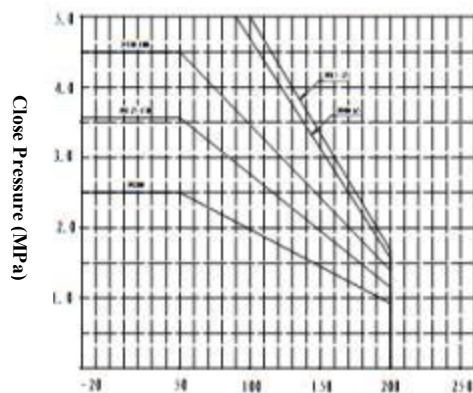
Medium Temperature (°C)

PTFE Seat (Float Ball Type)



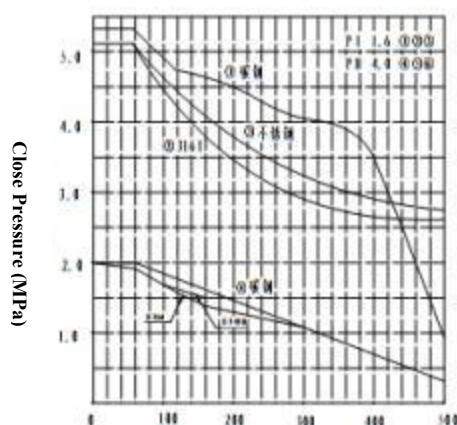
Medium Temperature (°C)

MgS₂ PTFE Seat (Float Ball Type)



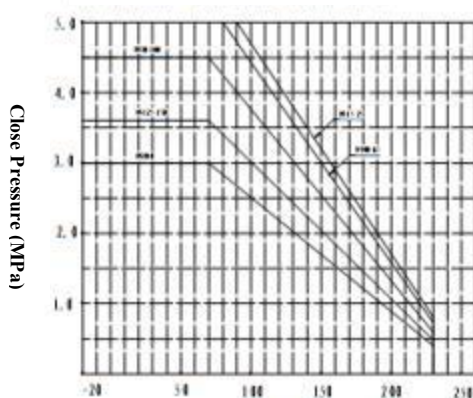
Medium Temperature (°C)

Special Graphite Seat (Float Ball Type)



Medium Temperature (°C)

Mg Fibre PTFE Seat(Float Ball)



Medium Temperature (°C)

◆ Standard type material and inside struction

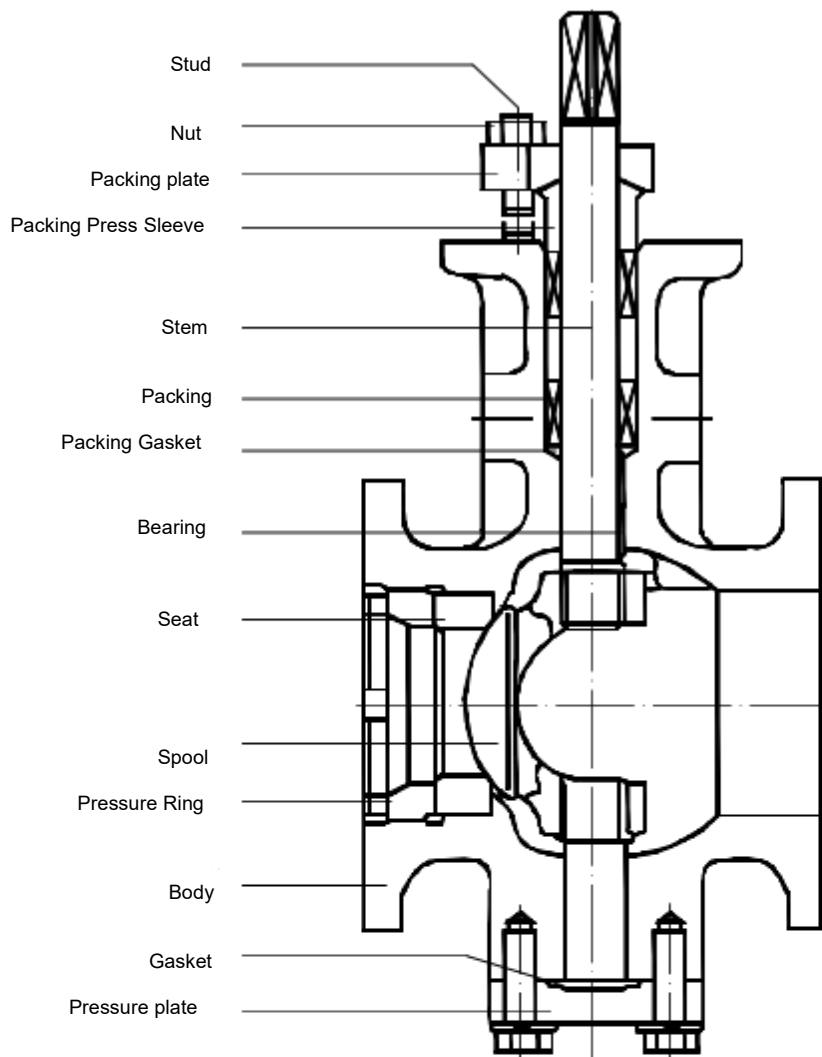


Chart 1: Body: WCB

1	Body	WCB	LCB	WC9
2	Seat	304	304	304
3	Disk	304	304	304
4	Gasket	316+ graphit /PTFE		
5	Bushing	304	304	304
6	Bonnet	WCB	LCB	WC9
7	Packing	PTFE/ Flexible graphit		
8	Packing gland	304	304	304
9	Clamp	WCB	WCB	WCB
10	Stem	304	304	304
12	Bolt	45	40MnB	25Cr2Mo1VA
13	Nut	35	35	25Cr2Mo1VA

Chart 2: Body: Stainless steel

1	Body	CF8	CF8M	CF3M
2	Seat	304	316	316L
3	Disk	304	316	316L
4	Gasket	316+ Graphit/PTFE		
5	Bushing	304	316	316L
6	Bonnet	CF8	CF8M	CF3M
7	Packing	PTFE/ Flexible graphit		
8	Packing gland	304	316	316L
9	Clamp	CF8	CF8M	CF3M
10	Stem	304	316	316L
12	Bolt	304	316	316L
13	Nut	304	316	316L

Note:

1. Above is standard structure, seat is metal to metal, PTFE soft seat is VI seal option. We also provide STL coating strim.
2. Standard body material is WCB and SS, We can provide many kinds alloy material to be used in high corrosive situation.

◆ Main out form dimension

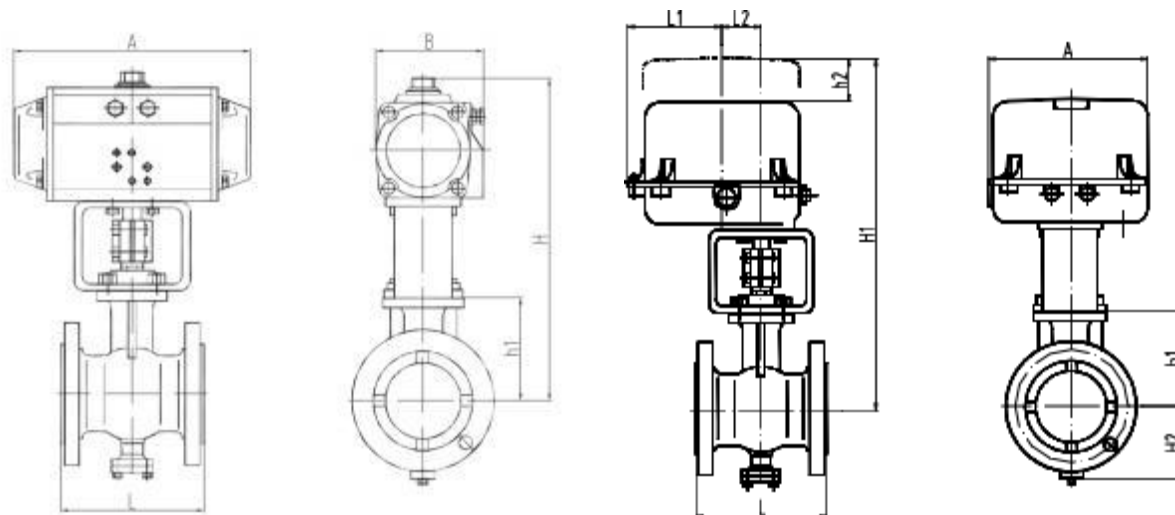


Chart5: Pneumatic eccentric rotary control valve dimension Unit:mm

Nominal diameter	L		h1	Double action actuator				Single action actuator			
	wafer	Flange		Model	A	B	H	Model	A	B	H
25	62	102	100	ATD63	158.5	83	300	ATS75	210.5	94.5	300
				ATD75	210.5	94.5	300	ATS88	247.5	106	330
40	62	114	110	ATD75	210.5	94.5	310	ATS100	268.5	123	340
				ATD88	247.5	106	340	ATS125	345	152	380
50	75	124	125	ATD75	210.5	94.5	325	ATS100	268.5	123	360
				ATD88	247.5	106	360	ATS125	345	152	395
65	80	143	135	ATD75	210.5	94.5	335	ATS100	268.5	123	375
				ATD88	247.5	106	375	ATS125	345	152	405
80	100	165	145	ATD100	268.5	123	380	ATS125	345	152	415
				ATD125	345	152	415	ATS160	438	187	470
100	115	194	180	ATD100	268.5	123	415	ATS125	345	152	500
				ATD125	345	152	455	ATS160	438	187	500
125	130	213	254	ATD125	345	152	515	ATS 160	438	187	545
				ATD160	438	187	530	ATS200	543	222	650
150	160	229	267	ATD125	345	152	550	ATS200	543	222	590
				ATD160	438	187	550	ATS265	728	330	670
200	200	243	292	ATD160	438	187	600	ATS200	543	222	710
				ATD200	543	222	710	ATS265	728	330	770
250	240	297	330	ATD200	543	222	740	ATS200	543	222	740
				ATD265	728	330	800	ATS265	728	330	800
300	334	338	356	ATD200	543	222	790	ATS200	543	222	790
				ATD265	728	330	840	ATS265	728	330	840

Chart6: Electric eccentric rotary control valve dimension Unit:mm

Nominal diameter	25	40	50	65	80	100	125	150	200	250	300
L	Wafer	62	62	75	80	100	115	130	160	200	334
	Flange	102	114	124	143	165	194	213	229	243	338
H1		490	525	541	650	690	700	815	910	970	1110
H2		40	45	49	60	65	100	128	150	180	260
h1		100	110	125	135	145	180	215	230	275	345
A		225	225	225	225	225	225	335	335	335	335

※ Weight in above chart is standard data without accessory. As produce improved and technology innovation, size maybe be changed, plase contact BCST Valve technology department to get new product information.



CATALOG

JC-ZJ series control valve

ZRD type high performance adjustable butterfly valve

ZRD adjustment type butterfly valve, adopting intelligent control, can adopt electric or pneumatic actuator to realize adjustment of pressure, flow, temperature, liquid level . It has compact structure, strong function, small volume ,good seal, good performance, simply assort, large flow and other features to be suited for slabby, including partical ,fibre medium. It is suitable for automatic control system of food, environmental protective , light industry , petroleum , prepar marking, chemical , teaching and scientific research equipment, electric and other industry now.



◆ Standard specification

Body type: Flat casting molding

Disk type: Triple eccentric butterfly

Nominal diameter: DN50 ~600 NPS 2" ~24"

Nominal pressure: PN16—64 Class 150LB

Connection: Flange, Wafer

Bonnet type: Whole piece

Packing: V type PTFE , Flexible graphite

Sealing gasket: Metal clip graphite

Actuator: Pneumatic: Pneumatic piston actuator, pneumatic diaphragm actuator

Electric: DTR series, 3810 series

Surface painting: Green Acrylic polyurethane enamel



◆ Model Establishment

Z	Actuator	R	Structure type	Nominal pressure	Body material	Nominal diameter
Z series control valve	S:Pneumatic piston J:pneumatic diaphragm D:Electric DTR series R:Electric 3810 series	R Rotary	D: Standard type hard seal adjustment DF: Soft seal adjustment	PN16=16 CL150LB=150 LB	C=WCB LC=LCB P=CF8 PL=CF3 R=CF8M RL=CF3M D=Special material	DN50= DN50 NPS2" =NPS2"

Such as: Pneumatic piston hard seal adjustment butterfly valve, Pressure PN16, Body material WCB, Nominal diameter DN100.Type is JC-ZSRD-16C DN100

◆ Performance

Flow characteristic	Approximate equal percentage	
Adjustable range	50:1	
Rated CV figure	Full champter CV 85~20500	
Travel	Full open 90°Adjustment 0-70°	
Allowance leakage	Hard seal:IV (0.01% Valve rated volume) Soft seal:VI (Bubble class)	
intrinsic error %	Pneumatic $\ominus$ 1 $\pm$ 2	Electric $\pm$ 2.0
Hystersis %	Pneumatic $\ominus$ 1 $\leq$ 1.5	Electric $\leq$ 1.0
Dead zone %	Pneumatic $\ominus$ 1 $\leq$ 0.6	Electric $\leq$ 1.0

Note: Parameters in performance sheet is based on the control valve with positioner and PTFE packing .

◆ Selected parameter

Nominal diameter DN (mm)	50	65	80	100	125	150	200	250	300	350	400	450	500	600
Rated flow series Cv	85	180	240	390	690	1000	1760	3390	4730	6700	8900	10500	14800	20500
PTFE packing, metal seal allow different pressure Unit: MPa														
Double action pneumatic actuator			1.45	0.54	0.79	0.42	0.34	0.1	0.27	0.17	0.12	0.19	0.11	0.04
Single action pneumatic actuator			0.82	0.38	0.5	0.44	0.33	0.19	0.38	0.16	0.14	0.14	0.12	0.11

◆ Actuator

Type	Model	Pneumatic piston actuator	Full electric type electric actuator
		At series	3810R series
		Single action, double action	Built-in control box type intelligent integration
Usage		Adjustable, on-off	Adjustable
Air supply pressure or supply electric voltage		Supply gas pressure(spring scope) 400 Kpa G	Power: AC 200V $\pm$ 10% 50Hz Or power: AC 380V $\pm$ 10% 50Hz $\ominus$ 1
Connector		Gas tube connector: RC1/4	Normal type:wire intake 2-PF(G1/2") Exd: Installing protective sleeve PF(G3/4")
Direct action		Gas pressure increase disk anti-clockwise rotaion, valve close	Input signal increase disk anti-clockwise rotation, valve close
Re-action		Gas pressure increase disk clockwise rotaion, valve open	Input signal increase disk clockwise rotation, valve open
Input signal		40~20mA.DC (with electric pneumatic valve positioner)	Input /output: 4~20mA.DC
lag		$\leq$ 1%FS (with positioner)	$\leq$ 0.8%FS
Linearity		2%FS (with positioner)	$\leq$ +1%FS
Working temperature		-10℃~+70℃	Standard: -10℃~+60℃ With spacer heating: $\ominus$ 1: -35℃~+60℃ Exd: -10℃~+40℃
Coating		Green, acrylic polyurethane enamel	Blue, acrylic polyurethane enamel
Option parts		Electric-Pneumatic (Pneumatic-pneumatic)valve positioner,LFT, Valve position transmitter, solenoid valve, limited switch	Space heater (normal type)

Note: Not standard configuration, need to be stated before order.

◆ Material and applicable temperature

Chart 1: Body.Bonnet applicable temperature—pressure scope (ANSI)

Temp. ℃	Class150					Class300				
	SCPL1 LCB	SCPH2 WCB	SCPH21 WC6	SCS13A CF8	SCS14A CF8M	SCPL1 LCB	SCPH2 WCB	SCPH21 WC6	SCS13A CF8	SCS14A CF8M
-45~38	1.84	-	-	1.90	1.90	4.78	-	-	4.95	4.95
-5~38	1.84	1.96	1.99	1.90	1.90	4.78	5.10	5.16	4.95	4.95
50	1.81	1.92	1.92	1.84	1.84	4.72	5.00	5.10	4.77	4.80
100	1.72	1.76	1.76	1.56	1.56	4.51	4.63	4.88	4.08	4.21
150	1.57	1.57	1.57	1.39	1.39	4.40	4.51	4.63	3.62	3.85
200	1.40	1.40	1.40	1.25	1.25	4.26	4.38	4.54	3.27	3.56
250	1.20	1.20	1.20	1.16	1.16	4.05	4.16	4.44	3.04	3.34
300	1.01	1.01	1.01	1.01	1.01	3.76	3.87	4.23	2.91	3.15
350	0.84	0.84	0.84	0.84	0.84	3.59	3.69	4.01	2.81	3.03
375		0.73	0.73	0.73	0.73		3.64	3.88	2.77	2.96
400		0.64	0.64	0.64	0.64		3.44	3.65	2.74	2.91

Chart 2: Body.Bonnet applicable temperature—pressure scope (GB)

Temp. ℃	PN16					PN25					PN40				
	LCB	WCB	WC6	CF8	CF8M	LCB	WCB	WC6	CF8	CF8M	LCB	WCB	WC6	CF8	CF8M
-29~38	1.5	1.6	1.6	1.5	1.5	2.4	2.5	2.5	2.4	2.4	3.9	4.1	4.1	4.0	3.9
93	1.4	1.4	1.4	1.4	1.3	2.2	2.3	2.3	2.1	2.0	3.8	3.7	4.0	3.3	3.4
149	1.3	1.3	1.3	1.3	1.2	2.1	2.1	2.1	1.9	1.9	3.7	3.6	3.8	3.0	3.1
204	1.1	1.1	1.1	1.1	1.1	1.9	1.9	1.9	1.7	1.7	3.5	3.4	3.7	2.8	2.8
260	0.8	1.0	1.0	1.0	1.0	1.7	1.7	1.7	1.5	1.6	3.3	3.2	3.5	2.6	2.6
315	0.7	0.8	0.8	0.8	0.8	1.4	1.4	1.5	1.3	1.3	3.0	2.8	3.1	2.3	2.4
343	0.6	0.7	0.7	0.7	0.7	1.3	1.3	1.4	1.2	1.2	2.9	2.7	3.0	2.3	2.3
371	0.5	0.6	0.6	0.6	0.6	1.2	1.2	1.3	1.1	1.1	2.8	2.7	2.9	2.2	2.2
399	0.5	0.5	0.5	0.5	0.5	1.1	1.1	1.2	1.0	1.0	2.5	2.6	2.7	2.1	2.2

Note: 1.If temperature or pressure is at middle of showed figure , we can use interpolation to get Max working pressure or temperature. 2. The pressure in chart are all gauge pressure.

Chart 8: PTFE packing temperature-pressure range

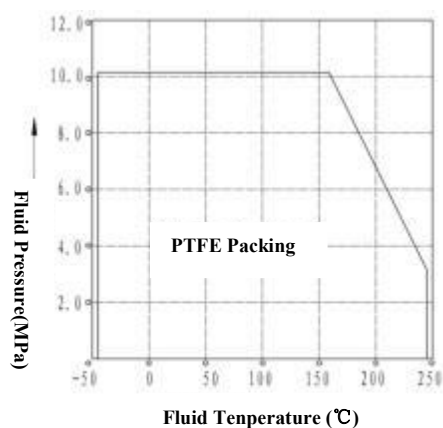


Chart 9: Flexible packing temperature-pressure range

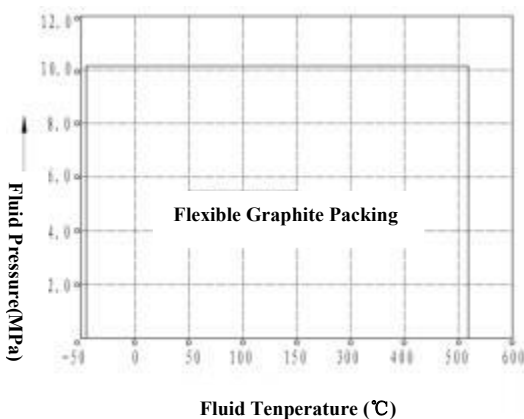


Chart 6: Metal seal material applicable tempertuare-pressure scope and treatment

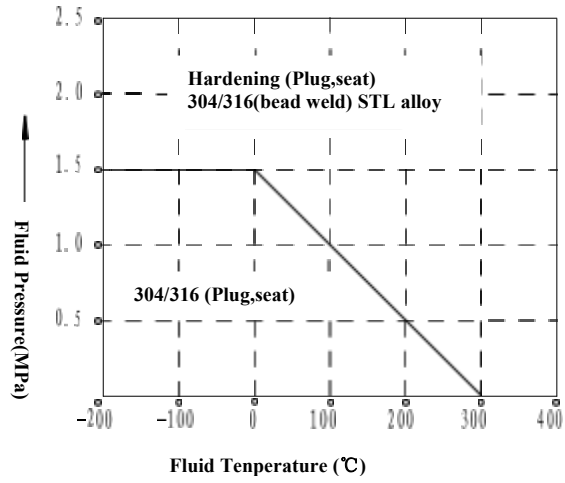
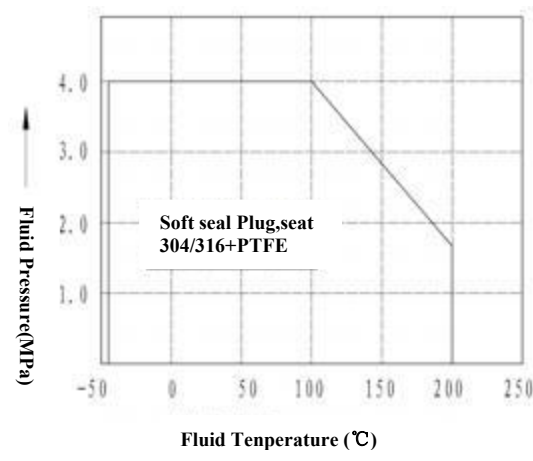


Chart 7:Soft seal material applicable tempertuare-pressure scope and treatment



◆ Standard material and inner structure

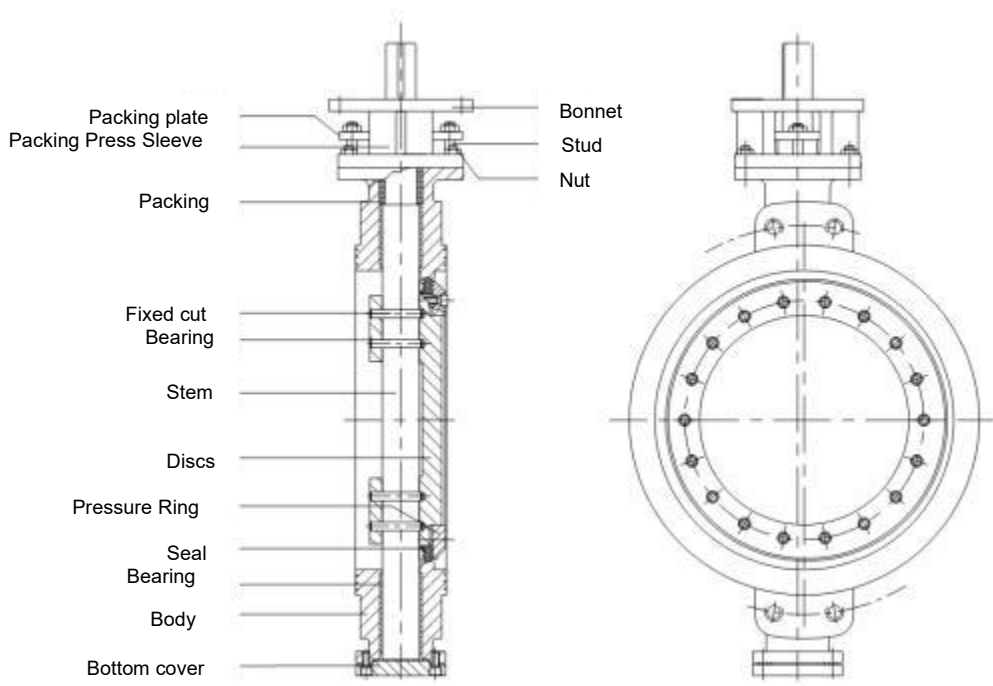


Chart 1: Bodymaterial WCB

1	Body	WCB	LCB	WC9
2	Bonnet	WCB	LCB	WC9
3	Disc	304	304	304
4	Clamp ring	304	304	304
5	Gasket	NBR/PTFE		
6	Bearing	304	304	304
7	Bonnet	WCB	LCB	WC9
8	Packing	PTFE/Flexible graphite		
9	Gland	304	304	304
10	Clamp	WCB	WCB	WCB
12	Stem	304	304	304
13	Bolt	45	40MnB	25Cr2Mo1VA
14	Nut	35	35	25Cr2Mo1VA

Chart 2: body material Stainless steel

1	Body	CF8	CF8M	CF3M
2	Bonnet	CF8	CF8M	CF3M
3	Disc	304	316	316L
4	Clamp ring	304	316	316L
5	Gasket	NBR/PTFE		
6	Bearing	304	316	316L
7	Bonnet	CF8	CF8M	CF3M
8	Packing	PTFE/Flexible graphite		
9	Gland	304	316	316L
10	Clamp	CF8	CF8M	CF3M
12	Stem	304	316	316L
13	Bolt	304	316	316L
14	Nut	304	316	316L

- Note:
- Above is standard material, 304 is metal to metal, PTFE soft seat is VI seal option. We also provide STL coating trim.
 - Standard body material is WCB and SS, We can provide many kinds alloy material to be used in high corrosive situation.

◆ Main out form dimension

Chart 3: Pneumatic adjustment butterfly valve dimension Unit: mm

DN	A	Wafer				Flange		
		L	H	H1	D	L	H	H1
50	245	43	625	112	125	108	625	112
65	245	46	625	115	145	112	625	115
80	245	49	645	120	160	114	645	120
100	355	56	675	138	190	127	675	138
125	355	64	715	164	220	140	715	164
150	355	70	800	175	250	140	800	175
200	250	71	850	205	310	152	850	205
250	250	76	925	240	370	165	925	240
300	450	83	1035	290	430	178	1035	290
350	450	92	1070	320	490	190	1070	320
400	450	102	1190	350	550	216	1190	350
450	650	114	1250	380	600	222	1250	380
500	650	127	1290	410	660	229	1290	410
600	850	154	1455	470	770	267	1455	470

Note:

1. Dimension in chart is double action cylinder valve
Without accessory , PN16/25
2. H is standard dimension. It can be heighten according to Client's requirement.

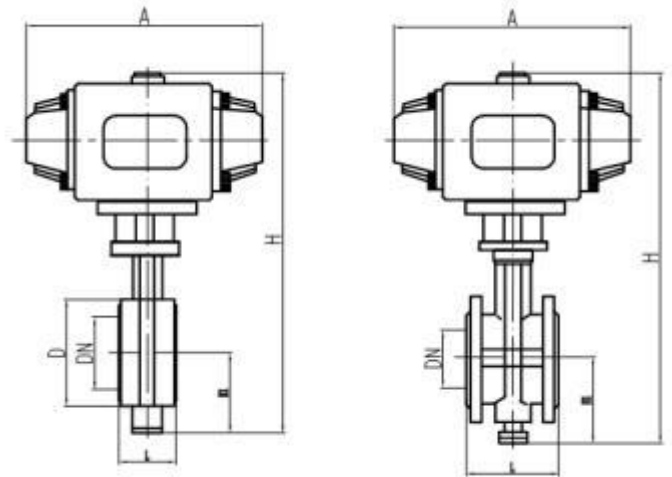
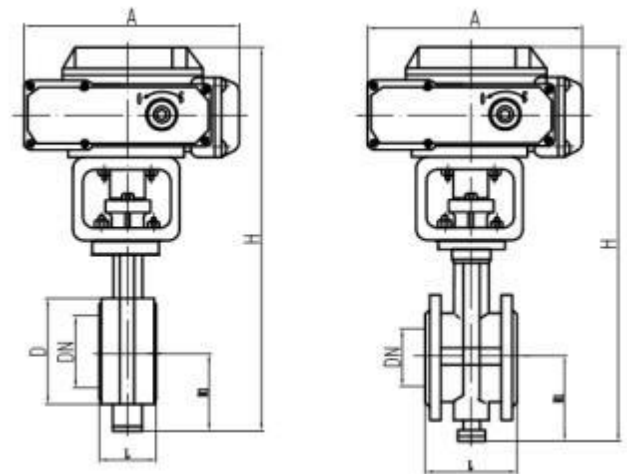


Chart 4: Electric adjustment butterfly valve dimension Unit: mm

DN	A	Wafer				Flange		
		L	H	H1	D	L	H	H1
50	208	43	452	112	125	108	539	112
65	208	46	475	115	145	112	554	115
80	208	49	516	120	160	114	569	120
100	208	56	551	138	190	127	614	138
125	208	64	566	164	220	140	649	164
150	256	70	606	175	250	140	725	175
200	256	71	731	205	310	152	835	205
250	256	76	778	240	370	165	890	240
300	256	83	830	290	430	178	995	290
350	346	92	996	320	490	190	1155	320
400	346	102	1058	350	550	216	1225	350

Note:

1. Dimension in chart is double action cylinder valve without accessories, PN16/25
2. H is standard dimension. It can be heighten according to client's requirement.





CATALOG

JC-ZQ series stop valve

ZQP type stop valve

ZQP stop valve has simply structure, easy operation , small volume, light weight, good seal, large flow, reliability using and so on. Disk can use single action or sleeve to adopt stop need under different pressure drop .It can choice big push pneumatic piston actuator or electric actuator.

◆ Specification

Body type : Straight casing ball type body
 Disk type : Single plug or balance sleeve
 Nominal diameter : DN20—300 , NPS 3/4''---8''
 Nominal pressure :PN16—100 Class
 150LB—600LB

Connection : Flange , FF. RF. RTJ
 Weld: SW. BW

Face to face : Confirm to IEC 60534

Bonnet type : Standard (-5℃~230℃) , radiation pin (-45℃~230℃). Low temperature extend (-196℃~ -45℃) ,Bollow seal, insulating clamp mode.

Packing:V type PTFE, Flexible graphite

Sealing gasket : Metal clip graphite

Actuator: Pneumatic : multi spring diaphragm actuator, piston actuator,

Electric : 3810 series intelligent electric actuator, PSL actuator

Surface painting :Green Acrylic polyurethane enamel



◆ Code

Z	Actuator	Q	Structure type	Nominal pressure	Body material	Nominal diameter
Z series stop valve	H:pneumatic piston J:pneumatic diaphragm R:Electric 3410 series D:Electric PSL series	Q stop valve	P: standard single seat type PF: soft seal single seat type PG: wigh radiation single type PV: bollow single seat type PD: low temperature single seat M:standard sleeve type MF: soft seal sleeve type MG: with radiation sleeve type MV:bollow sleeve s type MD: low temperature sleeve type	PN16=16 CL150LB=150 LB JIS10K=10K	C=WCB LC=LCB P=CF8 PL=CF3 R=CF8M RL=CF3M D=Special material	DN25= DN25 NPS1 " =NPS1 "

Such as: Z type pneumatic diaphragm stop valve, PN16, Body material:WCB, nominal diameter:DN50, Type is JC-ZJQP-16C DN50

◆Performance

Flow characteristic	Quick open
Allowable leakage	Hard seal: IV Class (0.01% valve rated volume) Soft seal: VI class (bubble class) Leakage standard: GB/T 4213

Note1 : parameter in performance is with positioner and PTFE packing control valve

◆Special specification

Special test	Material body penetration inspection (PT), radiographic inspection (RT), Flow feature test, low temperature test
Special treatment	Trim nitrogen treatment , Seal coating hard alloy treatment
Special clean	completely forbidden oil, removing water treatment
Special specification	Special piping or special air connector, vaccume use condition, fastener adopt stainless steel, Special coating
Special size	Produce according to user's structure length or dimension
Authentication test	Third party authenticate test report

◆Actuator

Type	Model	Piston actuator	Full electronic type electric actuator
		LVP80~LVP300	3410L series
		Single piston/Double piston	On-off
Usage		On-off	On-off
Supply gas pressure or supply voltage		Air supply pressure (400-800KPa)	Power : AC 200V±10% 50Hz Or AC 380V±10% 50Hz○1
Connector		Air tube adapter : RC1/4	Normal type : Cable intake 2-PF(G1/2") Exd type: it can be installed protective sleeve
Input signal		40~20mA.DC (E/P positioner)	Input/putout4~20mA.DC
Ambient temperature		-10℃~+70℃	Standard type : -10℃~+60℃ With spacer heater○1 : -35℃~+60℃ Exd type: -10℃~+40℃
Coating		Green, acrylic polyurethane enamel	Blue, acrylic polyurethane enamel
Option parts		Filtration reducing valve ,solenoid valve,limited switch	Spacer heater (Normal type)

Note○1 : Not standard configuration, need to be stated before order.

◆Parameter

Nominal diameter (DN)	20	25	32	40	50	65	80	100	125	150	200
Travel (mm)	16			25		40			60		
Thrust of pneumatic actuator (N)	80			125		170			250		
	1900			4500		8450			18000		
Pneumatic diaphragm actuator Effective diaphragm area Ae (cm2)	ZHA/B-22			ZHA/B-23		ZHA/B-34			ZHA/B-45		
	350			350		560			900		
Thrust of electric actuator (N)	3410L-20			3410L-50		3810L-65			3810L-160		
	2000			5000		6500			16000		

◆ Material and applicable temperature

Chart3: Body.Bonnet applicable temperature—pressure scope (ANSI)

Temp ℃	Class150					Class300					Class600				
	SCPL 1	SCPH 2	SCPH2 1	SCS13 A	SCS14 A	SCPL 1	SCPH 2	SCPH2 1	SCS13 A	SCS14 A	SCPL 1	SCPH 2	SCPH2 1	SCS13 A	SCS14 A
-196~38	-	-	-	1.90	1.90	-	-	-	4.95	4.95	-	-	-	9.91	9.92
-45~38	1.84	-	-	1.90	1.90	4.78	-	-	4.95	4.95	9.57	-	-	9.91	9.92
-5~38	1.84	1.96	1.99	1.90	1.90	4.78	5.10	5.16	4.95	4.95	9.57	10.02	10.32	9.91	9.92
50	1.81	1.92	1.92	1.84	1.84	4.72	5.00	5.10	4.77	4.80	9.46	10.01	10.22	9.56	9.62
100	1.72	1.76	1.76	1.56	1.56	4.51	4.63	4.88	4.08	4.21	9.02	9.27	9.74	8.17	8.43
150	1.57	1.57	1.57	1.39	1.39	4.40	4.51	4.63	3.62	3.85	8.78	9.04	9.26	7.26	7.69
200	1.40	1.40	1.40	1.25	1.25	4.26	4.38	4.54	3.27	3.56	8.54	8.75	9.06	6.54	7.12
250	1.20	1.20	1.20	1.16	1.16	4.05	4.16	4.44	3.04	3.34	8.11	8.33	8.88	6.10	6.67
300	1.01	1.01	1.01	1.01	1.01	3.76	3.87	4.23	2.91	3.15	7.54	7.74	8.48	5.80	6.32
350	0.84	0.84	0.84	0.84	0.84	3.59	3.69	4.01	2.81	3.03	7.18	7.38	8.04	5.60	6.07
375		0.73	0.73	0.73	0.73		3.64	3.88	2.77	2.96		7.28	7.75	5.54	5.93
400		0.64	0.64	0.64	0.64		3.44	3.65	2.74	2.91		6.89	7.31	5.48	5.81
425		0.55	0.55	0.55	0.55		2.88	3.50	2.71	2.87		5.74	7.01	5.42	5.72
450		0.47	0.47	0.47	0.47		1.99	3.38	2.68	2.81		4.00	6.75	5.37	5.61
475		0.37	0.37	0.37	0.37		1.35	3.16	2.65	2.73		2.70	6.32	5.30	5.46
500		0.28	0.28	0.28	0.28		0.88	2.77	2.60	2.67		1.75	5.55	5.20	5.37
525		0.18	0.18	0.18	0.18		0.51	2.02	2.19	2.57		1.03	4.04	4.77	5.15
538		0.13	0.15	0.15	0.15		0.34	1.63	2.18	2.53		0.72	3.26	4.55	5.06

Chart 4: Body.Bonnet applicable temperature—pressure scope (GB)

Temp ℃	PN16					PN25					PN40					PN100				
	LC B	WC B	WC 6	CF 8	CF8 M	LC B	WC B	WC 6	CF 8	CF8 M	LC B	WC B	WC 6	CF 8	CF8 M	LC B	WC B	WC 6	CF 8	CF8 M
-29~38	1.5	1.6	1.6	1.5	1.5	2.4	2.5	2.5	2.4	2.4	3.9	4.1	4.1	4.0	3.9	9.0	9.6	9.6	9.3	9.3
93	1.4	1.4	1.4	1.4	1.3	2.2	2.3	2.3	2.1	2.0	3.8	3.7	4.0	3.3	3.4	8.4	8.5	9.6	7.7	8.0
149	1.3	1.3	1.3	1.3	1.2	2.1	2.1	2.1	1.9	1.9	3.7	3.6	3.8	3.0	3.1	8.3	8.3	9.3	7.0	7.2
204	1.1	1.1	1.1	1.1	1.1	1.9	1.9	1.9	1.7	1.7	3.5	3.4	3.7	2.8	2.8	8.0	8.2	8.9	6.4	6.6
260	0.8	1.0	1.0	1.0	1.0	1.7	1.7	1.7	1.5	1.6	3.3	3.2	3.5	2.6	2.6	7.5	7.7	8.5	6.0	6.1
315	0.7	0.8	0.8	0.8	0.8	1.4	1.4	1.5	1.3	1.3	3.0	2.8	3.1	2.3	2.4	6.9	7.1	7.8	5.6	5.8
343	0.6	0.7	0.7	0.7	0.7	1.3	1.3	1.4	1.2	1.2	2.9	2.7	3.0	2.3	2.3	6.7	7.0	7.5	5.5	5.7
371	0.5	0.6	0.6	0.6	0.6	1.2	1.2	1.3	1.1	1.1	2.8	2.7	2.9	2.2	2.2	6.6	7.0	7.3	5.5	5.6
399	0.5	0.5	0.5	0.5	0.5	1.1	1.1	1.2	1.0	1.0	2.5	2.6	2.7	2.1	2.2	6.0	6.5	6.9	5.3	5.5
427	0.5	0.5	0.5	0.5	0.5	0.9	1.0	1.1	0.9	0.9	2.1	2.1	2.6	2.0	2.1	5.0	5.3	6.5	5.1	5.5
454	0.4	0.4	0.3	0.4	0.4	0.7	0.7	1.0	0.8	0.8	1.5	1.4	2.4	2.0	2.0	3.4	3.4	6.2	5.0	5.4
482		0.3	0.3	0.3	0.3		0.5	0.7	0.7	0.7		0.9	2.1	1.9	1.9		2.2	5.8	5.0	5.3
510		0.2	0.2	0.2	0.2		0.3	0.5	0.6	0.6		0.5	1.5	1.8	1.8		1.3	4.1	4.9	4.9
538		0.1	0.1	0.1	0.1		0.1	0.3	0.4	0.4		0.3	1.0	1.5	1.6		0.6	2.7	4.1	4.5
565			0.1	0.1	0.1			0.2	0.3	0.4			0.7	1.4	1.6			1.8	3.9	4.5
593			0.1	0.1	0.1			0.1	0.3	0.4			0.4	1.2	1.4			1.2	3.3	3.9

Note: 1. If temperature or pressure is at middle of showed figure , we can use interpolation to get Max working pressure or temperature.

2. The pressure in chart are all gauge pressure.

Fig. 6 Metal seal material applicable tempertuare, pressure scope and treatment

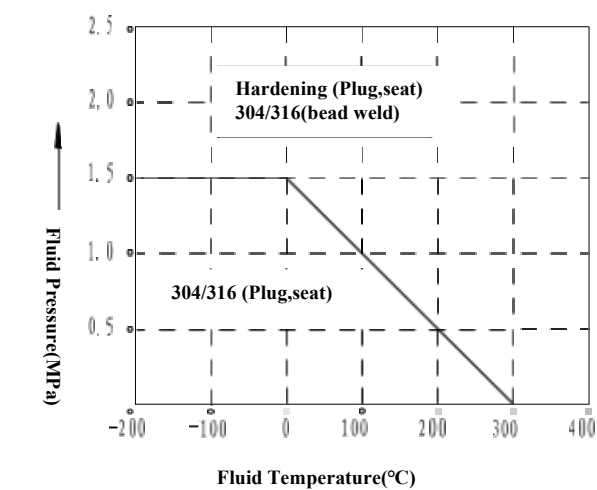


Fig 7: Soft seal material applicable tempertuare, pressure scope and treatment

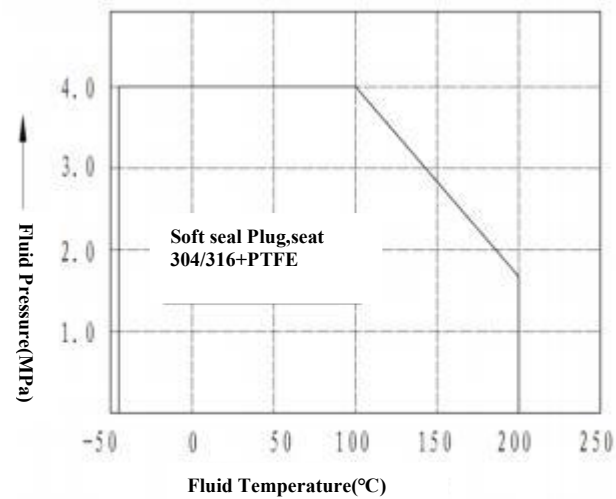


Fig. 8: PTFE packing temperature,pressure scope

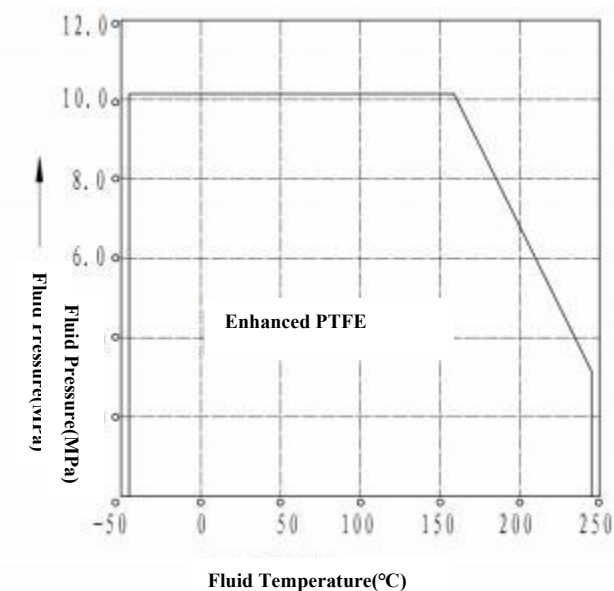


Fig.9: Flexible packing temperature, pressure scope

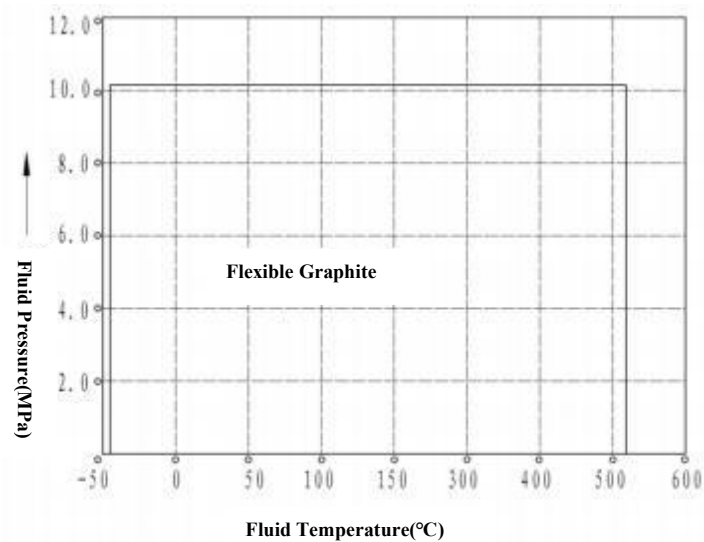


Fig.10: Zigzag washer SUS316L、 alloy steel temperature,pressure scope

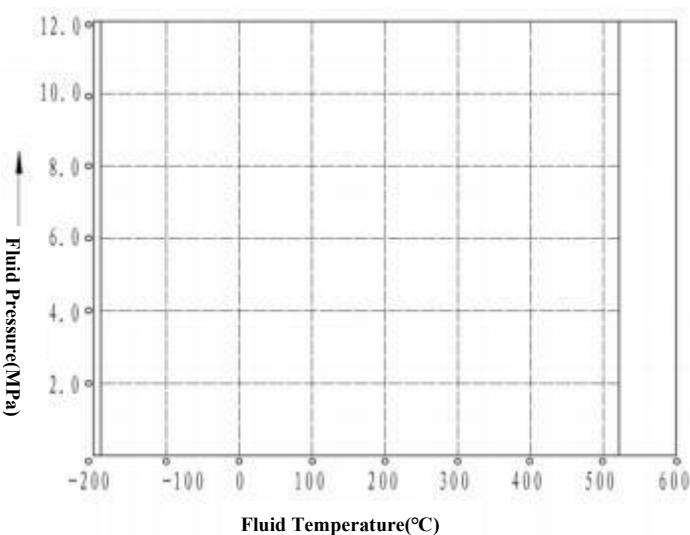


Fig.11: Winding washer SUS316+ flexibal graphite temperature and pressure scope

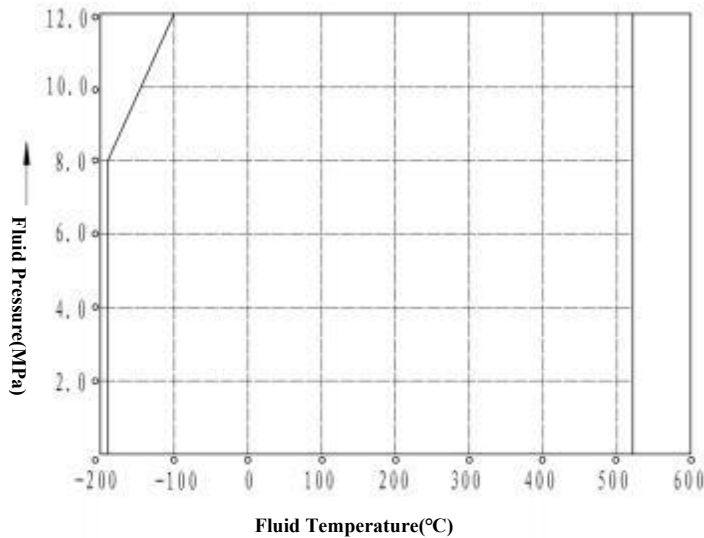


Fig. 12: Forming bellow seal applicable temperature and pressure scope

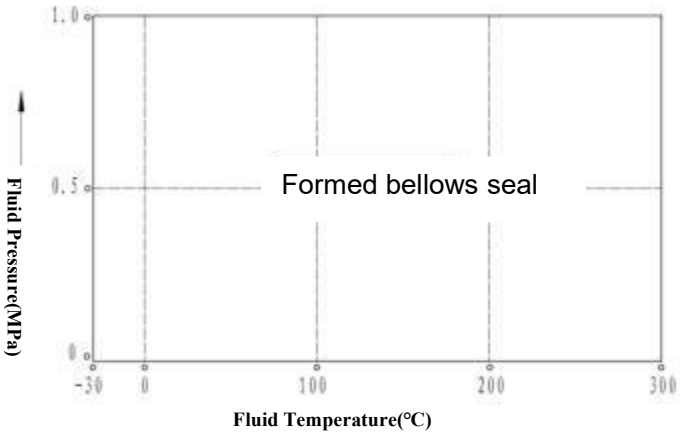
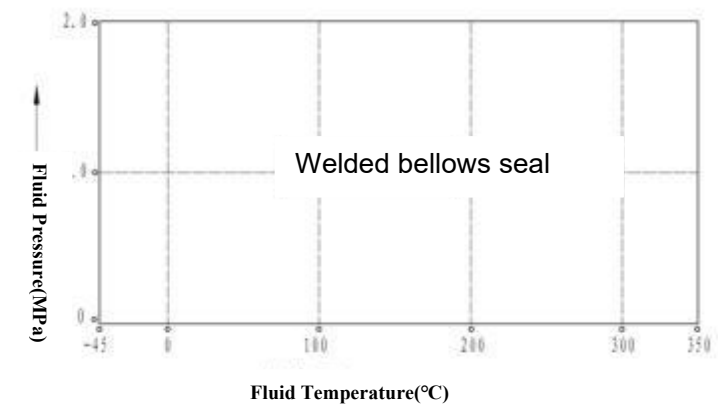


Fig. 13: Weld bellow seal applicable temperature and pressure scope



◆Standard material and inner structure

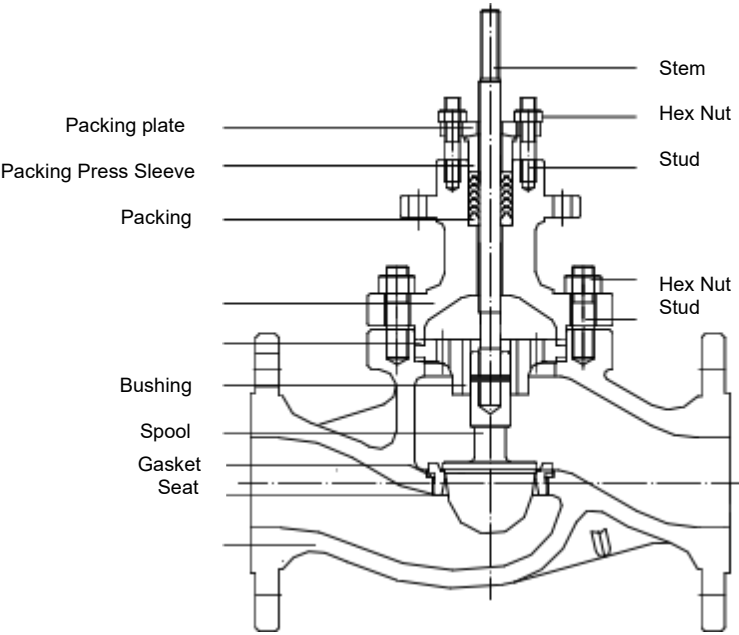


Chart1: Body WCB

1	Body	WCB	LCB	WC9
2	Seat	304	304	304
3	Disk	304	304	304
4	Gasket	316+ graphite /PTFE		
5	Bushing	304	304	304
6	Bonnet	WCB	LCB	WC9
7	Packing	PTFE/Flexible graphite		
8	Bushing	304	304	304
9	Gland	WCB	WCB	WCB
10	Stem	304	304	304
12	Bolt	45	40MnB	25Cr2Mo1VA
13	Nut	35	35	25Cr2Mo1VA

Chart 2: Body S.S

1	Body	CF8	CF8M	CF3M
2	Seat	304	316	316L
3	Disk	304	316	316L
4	Gasket	316+ graphite /PTFE		
5	Bushing	304	316	316L
6	Bonnet	CF8	CF8M	CF3M
7	Packing	PTFE/Flexible graphite		
8	Bushing	304	316	316L
9	Gland	CF8	CF8M	CF3M
10	Bolt	304	316	316L
12	Bolt	304	316	316L
13	Nut	304	316	316L

Note: 1. Above is standard structure, seat is metal to metal, PTFE soft seat is VI seal option. We also provide STL coating trim. We will be more reasonable to choice bolt and nut for detail applicable temperature.

2. PTFE V type ring packing is standard configuration, could be instead of flexible graphite. One extend length bonnet installing graphite can be used in over 232℃ condition.

3. Except WCB and SS, We can provide many kinds alloy material to be used in high corrosive situation

◆Main out form Dimension and weight

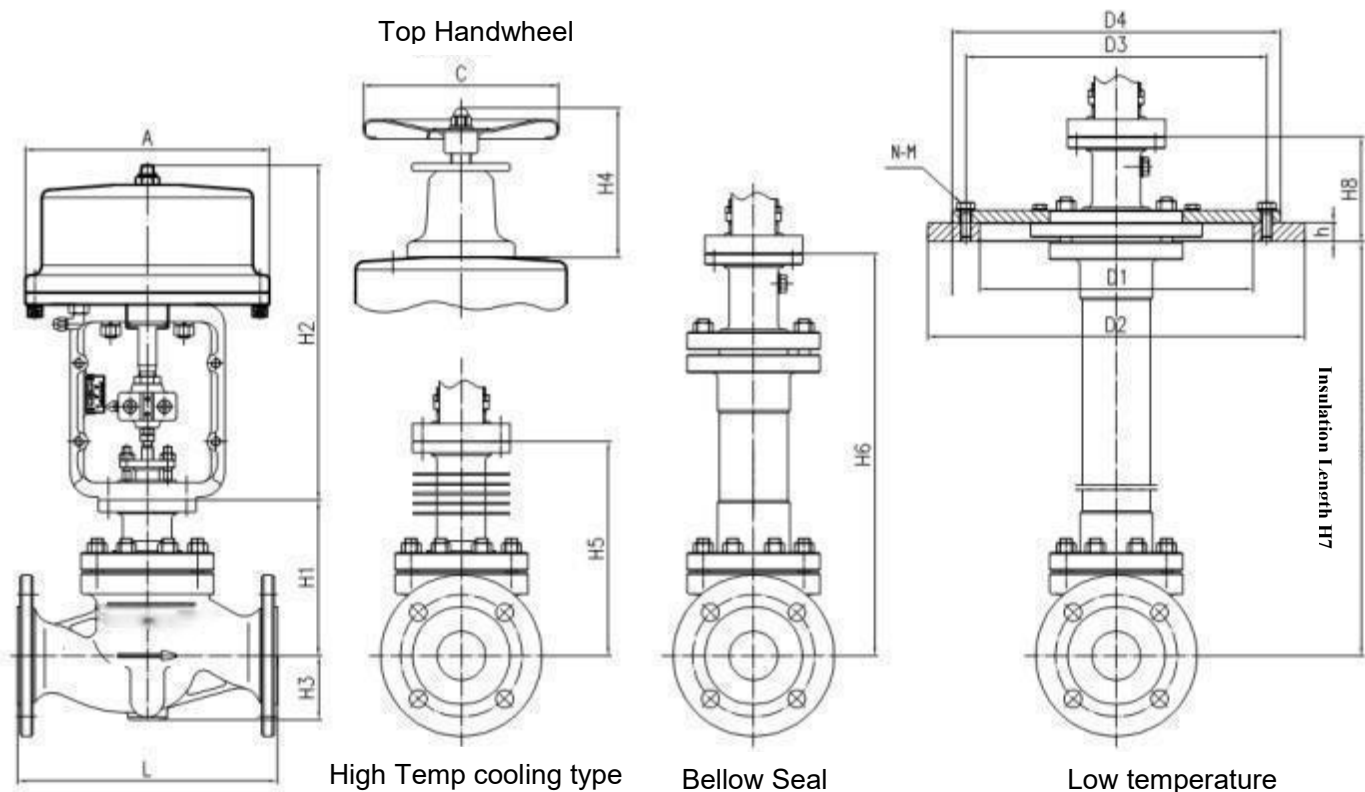


Chart 5: PN16. CI150LB pneumatic stop valve dimensioni and weight

DN Size	DN20 3/4"	DN25 1"	DN32 1 1/4"	DN40 1 1/2"	DN50 2"	DN65 1 1/2"	DN80 3"	DN100 4"	DN125 5"	DN150 6"	DN200 8"
L	181	184	200	222	254	276	298	352	420	451	600
A	200	200	200	200	200	240	240	240	350	350	350
C	285	285	285	288	288	365	365	365	475	475	475
H1	128	137	148	152	159	318	230	238	264	331	346
H2	303	303	303	323	323	417	417	417	520	520	520
H3	65	70	70	85	90	102.5	107.5	125	125	172.5	180
H4	153	153	153	153	153	181	181	181	247	247	247
H5	208	208	224	228	228	334	334	342	408	453	482
H6	338	338	402	402	405	627	628	635	698	702	728
H7	700 (can be customized)										
H8	88	88	88	88	88	94	94	94	110	110	110
h	15	15	15	15	15	18	18	18	20	20	20
D1	230	230	250	270	305	342	375	430	490	556	665
D2	310	310	335	355	390	430	465	520	585	660	770
D3	260	260	285	305	340	370	405	460	525	580	700
D4	290	290	315	335	370	400	435	490	555	630	740
N-M	8-M12	8-M12	8-M12	8-M14	8-M14	10-M14	10-M14	12-M16	14-M16	16-M16	18-M16
Weight Kg	21	22	24	32	38	62	67	83	132	160	245

※ Weight in chart is standard figure without accessory. It can be installed byway handwheel

※ As produce improved and technology innovation, size maybe be changed, plase contact BCST Valve technology department to get new product information.

Chart 6: PN25,CL300LB pneumatic stop valve dimension and weight

DN Size	DN20 3/4"	DN25 1"	DN32 1 1/4"	DN40 1 1/2"	DN50 2"	DN65 1 1/2"	DN80 3"	DN100 4"	DN125 5"	DN150 6"	DN200 8"
L	194	197	200	235	267	292	317	368	420	473	600
A	200	200	200	200	200	240	240	240	350	350	350
C	285	285	285	288	288	365	365	365	475	475	475
H1	128	137	148	152	159	318	230	238	264	331	346
H2	303	303	303	323	323	417	417	417	520	520	520
H3	65	70	70	85	90	102.5	107.5	125	125	172.5	180
H4	153	153	153	153	153	181	181	181	247	247	247
H5	208	208	224	228	228	334	334	342	408	453	482
H6	338	338	402	402	405	627	628	635	698	702	728
H7	700 (can be customized)										
H8	88	88	88	88	88	94	94	94	110	110	110
h	15	15	15	15	15	18	18	18	20	20	20
D1	230	230	250	270	305	342	375	430	490	556	665
D2	310	310	335	355	390	430	465	520	585	660	770
D3	260	260	285	305	340	370	405	460	525	580	700
D4	290	290	315	335	370	400	435	490	555	630	740
N-M	8-M12	8-M12	8-M12	8-M14	8-M14	10-M14	10-M14	12-M16	14-M16	16-M16	18-M16
Weight Kg	22	24	26	35	42	67	74	89	138	166	255

Chart 7: PN63/100, CL600LB pneumatic stop valve dimension and weight

DN Size	DN20 3/4"	DN25 1"	DN32 1 1/4"	DN40 1 1/2"	DN50 2"	DN65 1 1/2"	DN80 3"	DN100 4"	DN125 5"	DN150 6"	DN200 8"
L	206	210	251	251	286	311	337	394	500	508	650
A	200	200	200	200	200	240	240	240	350	350	350
C	285	285	285	288	288	365	365	365	475	475	475
H1	128	137	148	152	159	318	230	238	264	331	346
H2	303	303	303	323	323	417	417	417	520	520	520
H3	65	70	70	85	90	102.5	107.5	125	125	172.5	180
H4	153	153	153	153	153	181	181	181	247	247	247
H5	220	220	240	240	240	350	350	360	420	470	500
H6	338	338	402	402	405	627	628	635	698	702	728
H7	700 (can be customized)										
H8	88	88	88	88	88	94	94	94	110	110	110
h	15	15	15	18	18	18	20	20	20	20	20
D1	270	270	305	342	375	430	490	556	665	665	765
D2	355	355	390	430	465	520	585	600	770	770	850
D3	305	305	340	370	405	460	525	690	700	700	805
D4	335	335	370	400	435	490	555	630	740	740	845
N-M	8-M14	8-M14	10-M14	10-M14	10-M14	12-M16	14-M16	18-M16	18-M16	18-M16	18-M16
Weight Kg	24	25	30	42	52	78	82	102	170	190	285

※ Weight in chart is standard figure without accessory, but with double action piston actuator. It can be installed by way handwheel.

※ As produce improved and technology innovation, size maybe be changed, please contact BCST Valve technology department to get new product information.

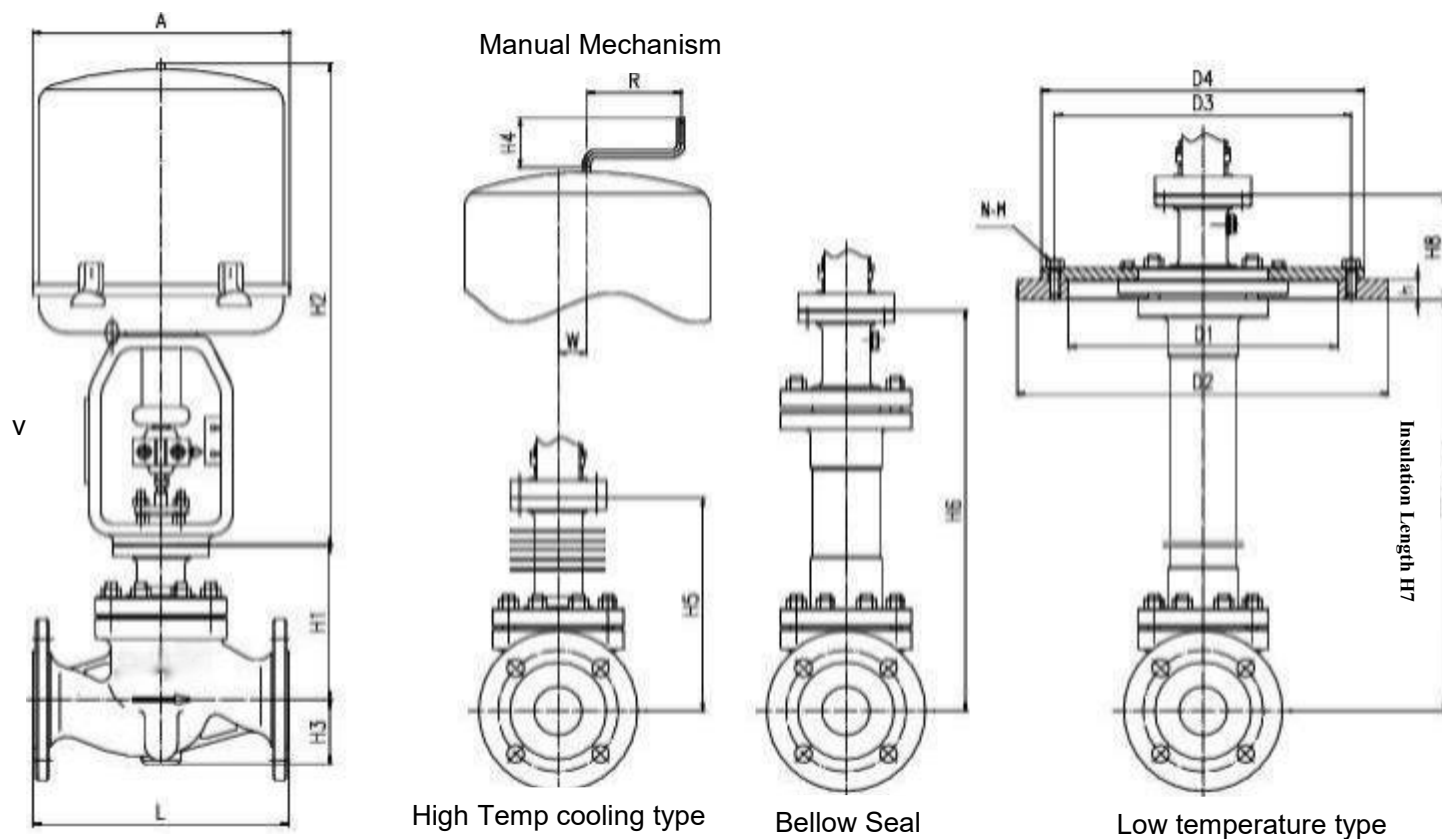


Chart 8: PN16, CL150LB Electric stop valve dimension and weight

口径 尺寸	DN20 3/4"	DN25 1"	DN32 1 1/4"	DN40 1 1/2"	DN50 2"	DN65 1 1/2"	DN80 3"	DN100 4"	DN125 5"	DN150 6"	DN200 8"
L	181	184	200	222	254	276	298	352	420	451	600
A	225	225	255	255	255	255	255	255	310	310	310
H1	128	137	148	152	159	318	230	238	264	331	346
H2	373	373	495	495	495	535	535	535	725	725	725
H3	65	70	70	85	90	102.5	107.5	125	125	172.5	180
H4	87	87	90	90	90	90	90	90	90	90	90
H5	208	208	224	228	228	334	334	342	408	453	482
H6	338	338	402	402	405	627	628	635	698	702	728
H7	700 (can be customized)										
H8	88	88	88	88	88	94	94	94	110	110	110
W	28	28	45	45	45	45	45	45	60	60	60
R	80	80	100	100	100	100	100	100	160	160	160
h	15	15	15	15	15	18	18	18	20	20	20
D1	230	230	250	270	305	342	375	430	490	556	665
D2	310	310	335	355	390	430	465	520	585	660	770
D3	260	260	285	305	340	370	405	460	525	580	700
D4	290	290	315	335	370	400	435	490	555	630	740
N-M	8-M12	8-M12	8-M12	8-M14	8-M14	10-M14	10-M14	12-M16	14-M16	16-M16	18-M16
Weight Kg	16	17	24	32	38	52	57	73	136	164	249

※ Weight in chart is standard figure without accessory, but with 3410 type actuator

※ As produce improved and technology innovation, size maybe be changed, please contact BCST Valve technology department to get new product information.

Chart 9: PN25/40, CL300LB Electric stop valve dimension and weight

DN Size	DN20 3/4"	DN25 1"	DN32 1 1/4"	DN40 1 1/2"	DN50 2"	DN65 1 1/2"	DN80 3"	DN100 4"	DN125 5"	DN150 6"	DN200 8"
L	194	197	200	235	267	292	317	368	420	473	600
A	225	225	255	255	255	255	255	255	310	310	310
H1	128	137	148	152	159	318	230	238	264	331	346
H2	373	373	495	495	495	535	535	535	725	725	725
H3	65	70	70	85	90	102.5	107.5	125	125	172.5	180
H4	87	87	90	90	90	90	90	90	90	90	90
H5	208	208	224	228	228	334	334	342	408	453	482
H6	338	338	402	402	405	627	628	635	698	702	728
H7	700 (can be customized)										
H8	88	88	88	88	88	94	94	94	110	110	110
W	28	28	45	45	45	45	45	45	60	60	60
R	80	80	100	100	100	100	100	100	160	160	160
h	15	15	15	15	15	18	18	18	20	20	20
D1	230	230	250	270	305	342	375	430	490	556	665
D2	310	310	335	355	390	430	465	520	585	660	770
D3	260	260	285	305	340	370	405	460	525	580	700
D4	290	290	315	335	370	400	435	490	555	630	740
N-M	8-M12	8-M12	8-M12	8-M14	8-M14	10-M14	10-M14	12-M16	14-M16	16-M16	18-M16
Weight Kg	17	19	26	35	42	57	64	79	144	150	259

Chart 10: PN64/100, CL600LB Electric stop valve dimension and weight

DN Size	DN20 3/4"	DN25 1"	DN32 1 1/4"	DN40 1 1/2"	DN50 2"	DN65 1 1/2"	DN80 3"	DN100 4"	DN125 5"	DN150 6"	DN200 8"
L	206	210	251	251	286	311	337	394	500	508	650
A	225	225	255	255	255	255	255	255	310	310	310
H1	128	137	148	152	159	318	230	238	264	331	346
H2	373	373	495	495	495	535	535	535	725	725	725
H3	65	70	70	85	90	102.5	107.5	125	125	172.5	180
H4	87	87	90	90	90	90	90	90	90	90	90
H5	220	220	240	240	240	350	350	360	420	470	500
H6	338	338	402	402	405	627	628	635	698	702	728
H7	700 (can be customized)										
H8	88	88	88	88	88	94	94	94	110	110	110
W	28	28	45	45	45	45	45	45	60	60	60
R	80	80	100	100	100	100	100	100	160	160	160
h	15	15	15	18	18	18	20	20	20	20	20
D1	270	270	305	342	375	430	490	556	665	665	765
D2	355	355	390	430	465	520	585	600	770	770	850
D3	305	305	340	370	405	460	525	690	700	700	805
D4	335	335	370	400	435	490	555	630	740	740	845
N-M	8-M14	8-M14	10-M14	10-M14	10-M14	12-M16	14-M16	18-M16	18-M16	18-M16	18-M16
Weight Kg	19	20	30	42	52	68	72	92	174	194	289

※ Weight in chart is standard figure without accessory, but with 3410L type actuator

※ As produce improved and technology innovation, size maybe be changed, please contact BCST Valve technology department to get new product information.



JC-ZQ series stop valve

ZQO Type stop ball valve

ZQO stop valve include actuator and ball valve. O type ball valve has strong function , small volume, light weight, good seal, large flow, reliability using and so on. Expecially, ball valve have realiable seal as pipe inside stop use. It is widely used in food, environmental protective , light industry , petroleum , pepar marking, chemical , teaching and scientific research equipment, electric and other industry

now.

◆ Standard specification

Body type : Straight casing valve

Disk type : O type globe ball

Nominal diameter : DN15 ~300 NPS 1/2" ~12"

Nominal pressure :PN16—64 Class 150LB—300LB

Connection : Flange FF, RF, RTJ and so on. Wafer

Bonnet type : Whole piece

Packing:V type PTFE , Flexible graphite

Sealing gasket : Metal clip graphite

Actuator: Pneumatic : Pneumatic piston actuator, pneumatic diaphragm actuator

Electric :DTR series, 3810 series

Surface painting :Green Acrylic polyurethane enamel



◆Code

Z	Actuator	Q	Structure type	Nominal pressure	Body material	Nominal diameter
Z series stop valve	S:Pneumatic piston actuator J:pneumatic diaphragm actuator A:Electric DTR series R:Electric 3810 series	Q stop valve	O: Standard type hard seal OH: Hard seal	PN16=16 CL150LB=CL150	C=WCB LC=LCB P=CF8 PL=CF3 R=CF8M RL=CF3M D=Special material	DN50=DN50 NPS2 =NPS2"

Such as: Pneumatic piston stop valve, Pressure PN16, Body material WCB, Nominal diameter DN50.Type is JC-ZSQO-16C DN50

◆Performance

Flow characteristic	Quick open(ON-OFF)				
Rated CV figure	Fully port type CV 21~7359				
Travel	Full open 90°				
Allowance leakage	Soft seal : 0 leak				

◆Parameter

Nominal diameter (mm)	15	20	25	32	40	50	65	80	100	125	150	200	250	300
Rated Cv	21	38	72	112	170	273	384	512	940	1452	2222	3589	5128	7359
Pneumatic actuator seat:PTFE														
Double action ATD	50		63	75		88	100		125	145	180	240	265	
Single action ATS-	63	75		88	100	115	125	145	160	200	240	265	330	
Electric actuator Seat: PTFE														
Electric actuator 3410R-	05		10			20		50		60			100	

◆Actuator

Style	Model	Pneumatic piston actuator	Full electronic type electric actuator
		AT Series	3410 Series
		Single action, Double action	Stop type
Usage		Adjustment, on-off	Stop
Supply gas pressure or supply voltage		Air supply pressure (spring scope) 400 Kpa G	Power: AC 200V±10% 50Hz Or AC 380V±10% 50Hz○1
Connector		Air tube adapter : RC1/4	Normal type: Cable intake 2-PF(G1/2") Exd : it can be installed protective sleeve PF(G3/4"
Working temperature		-10℃~+70℃	Standard type: -10℃~+60℃ With spacer heater: -35℃~+60℃ Exd type: -10℃~+40℃
Coating		Green, acrylic polyurethane enamel	Blue, acrylic polyurethane enamel
Option parts		Electric-Pneumatic (Pneumatic-pneumatic)valve positioner,LFT,Valve position transmitter,solenoid valve,limited switch	Space heater (normal type)

Note: Not standard configuration,need to state specially to custom

◆Material and applicable temperature

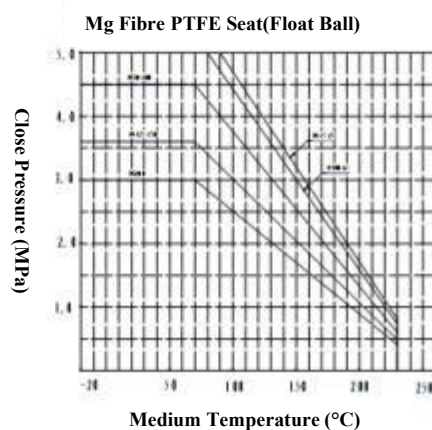
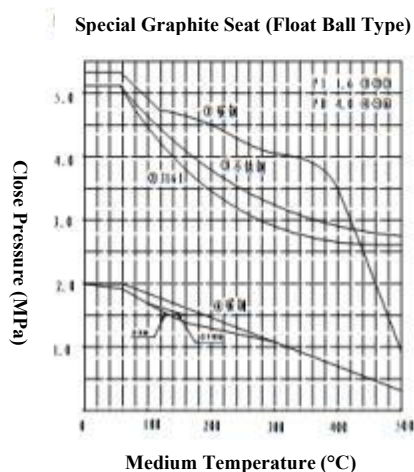
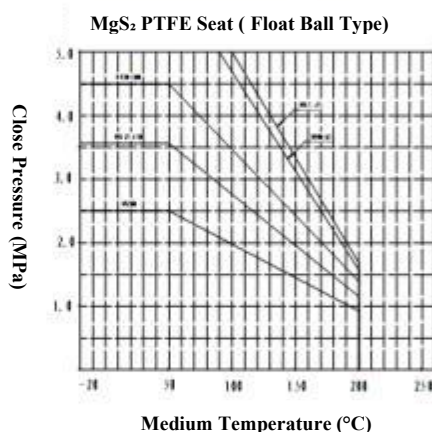
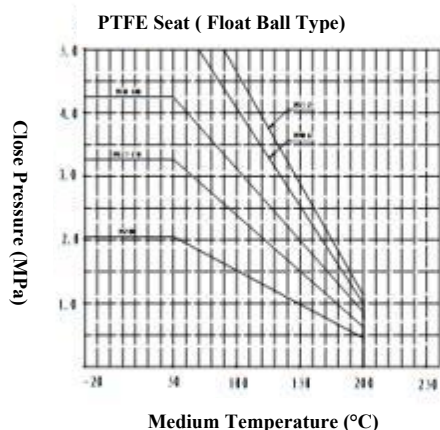
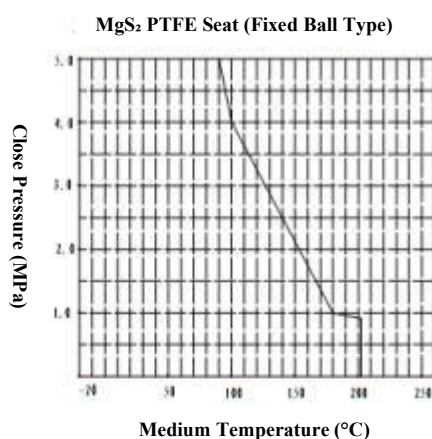
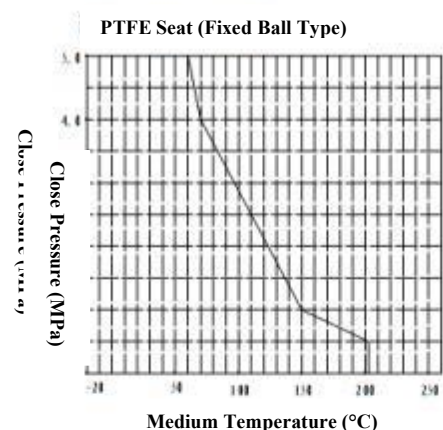
Chart1: Body,bonnet applicable temperature –pressure scope(ANSI)

Temp ℃	Class150					Class300				
	SCPL1 LCB	SCPH2 WCB	SCPH21 WC6	SCS13A CF8	SCS14A CF8M	SCPL1 LCB	SCPH2 WCB	SCPH21 WC6	SCS13A CF8	SCS14A CF8M
-45~38	1.84	-	-	1.90	1.90	4.78	-	-	4.95	4.95
-5~38	1.84	1.96	1.99	1.90	1.90	4.78	5.10	5.16	4.95	4.95
50	1.81	1.92	1.92	1.84	1.84	4.72	5.00	5.10	4.77	4.80
100	1.72	1.76	1.76	1.56	1.56	4.51	4.63	4.88	4.08	4.21
150	1.57	1.57	1.57	1.39	1.39	4.40	4.51	4.63	3.62	3.85
200	1.40	1.40	1.40	1.25	1.25	4.26	4.38	4.54	3.27	3.56
250	1.20	1.20	1.20	1.16	1.16	4.05	4.16	4.44	3.04	3.34
300	1.01	1.01	1.01	1.01	1.01	3.76	3.87	4.23	2.91	3.15
350	0.84	0.84	0.84	0.84	0.84	3.59	3.69	4.01	2.81	3.03
375		0.73	0.73	0.73	0.73		3.64	3.88	2.77	2.96
400		0.64	0.64	0.64	0.64		3.44	3.65	2.74	2.91

Chart2: Body,bonnet appicable temperature –pressure scope(GB)

°C	PN16					PN25					PN40				
	LCB	WCB	WC6	CF8	CF8M	LCB	WCB	WC6	CF8	CF8M	LCB	WCB	WC6	CF8	CF8M
-29~38	1.5	1.6	1.6	1.5	1.5	2.4	2.5	2.5	2.4	2.4	3.9	4.1	4.1	4.0	3.9
93	1.4	1.4	1.4	1.4	1.3	2.2	2.3	2.3	2.1	2.0	3.8	3.7	4.0	3.3	3.4
149	1.3	1.3	1.3	1.3	1.2	2.1	2.1	2.1	1.9	1.9	3.7	3.6	3.8	3.0	3.1
204	1.1	1.1	1.1	1.1	1.1	1.9	1.9	1.9	1.7	1.7	3.5	3.4	3.7	2.8	2.8
260	0.8	1.0	1.0	1.0	1.0	1.7	1.7	1.7	1.5	1.6	3.3	3.2	3.5	2.6	2.6
315	0.7	0.8	0.8	0.8	0.8	1.4	1.4	1.5	1.3	1.3	3.0	2.8	3.1	2.3	2.4
343	0.6	0.7	0.7	0.7	0.7	1.3	1.3	1.4	1.2	1.2	2.9	2.7	3.0	2.3	2.3
371	0.5	0.6	0.6	0.6	0.6	1.2	1.2	1.3	1.1	1.1	2.8	2.7	2.9	2.2	2.2
399	0.5	0.5	0.5	0.5	0.5	1.1	1.1	1.2	1.0	1.0	2.5	2.6	2.7	2.1	2.2

- Note:**
1. If temperature or pressure is at middle of showed figure , we can use interpolation to get Max working pressure or temperature.
 2. The pressure in chart are all gauge pressure.



◆ Standard material and inside structure

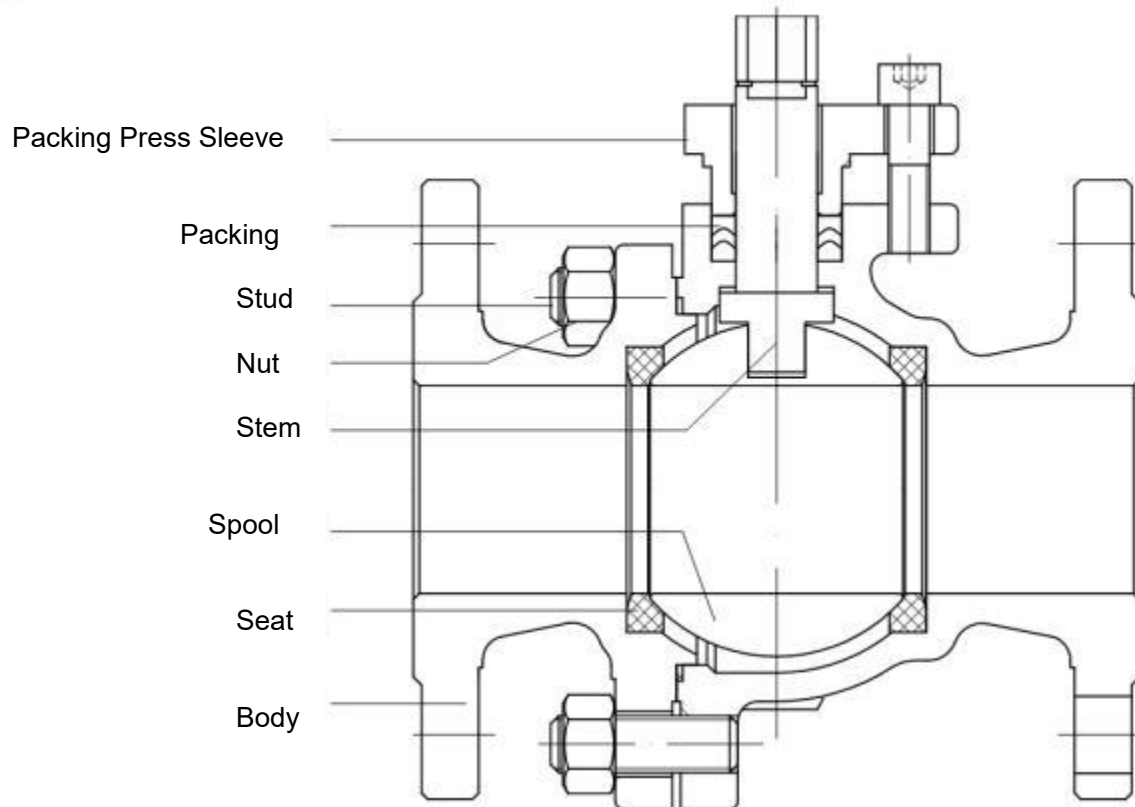


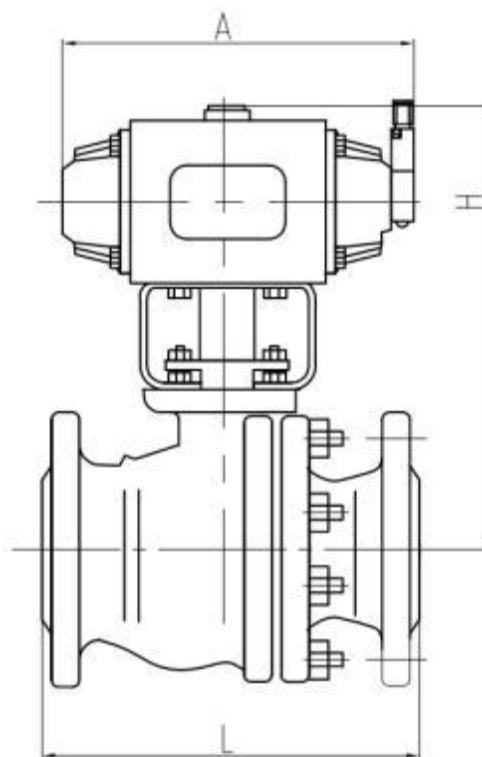
Chart 3: Main parts material

1	Body	WCB	LCB	CF8	CF8M
2	Seat	304	304	304	316
3	Ball	304	304	304	316
5	Gasket	304	304	304	316
6	Bonnet	WCB	LCB	CF8	CF8M
7	Packing	PTFE/Flexible graphite			
8	Packing gasket	304	304	304	316
9	Packing flat	WCB	WCB	CF8	CF8M
10	Stem	304	304	304	316
12	Bolt	45	40MnB	304	316
13	Nut	35	35	304	316

◆Main Out form dimension

Chart5.Pneumatic stop type ball valve dimention Unit:mm

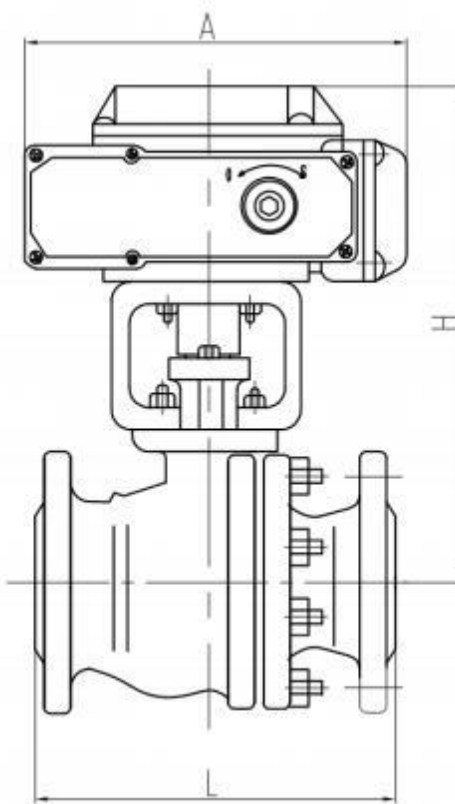
DN	L		H	A
	PN16/25	PN40		
15	130	130	185	141
20	140/	140	191	141
25	150	150	193	159
32	165	180	212	211
40	180	200	217	211
50	200	220	260	248
65	220	250	293	269
80	250	280	325	269
100	280	320	380	345
125	320	400	468	409
150	360	400	510	487
200	400	550	655	633
250	630		725	728
300	750		765	728



※ Weight in chart is standard data without accessory.but with double action pneumatic actuator. As produce improved and technology innovation, size maybe be changed, plase contact BCST Valve technology department to get new product information.

Chart6. Electric stop ball valve dimentsion Unit:mm

DN	L		H	A
	PN16/25	PN40		
15	130	130	275	157
20	140/	140	280	157
25	150	150	287	157
32	165	180	384	208
40	180	200	312	208
50	200	220	325	208
65	220	250	335	256
80	250	280	365	256
100	280	320	400	256
125	320	400	420	256
150	360/	400	440	256
200	400	550	470	256
250	630		545	380
300	750		580	380



※ Weight in chart is standard data without accessory.but with DTR electric actuator. As produce improved and technology innovation, size maybe be changed, plase contact BCST Valve technology department to get new product information.



ZHA/B Type Pneumatic Diaphragm Actuator

ZHA/B type multi-spring pneumatic diaphragm actuator change ourput pressure of pneumatic adjustment gauge into push rod displacement change.It can connect straight trip control valve to change control system output signal into disk corresponding position to realize to control control valve open degree. It has force uniform, good stability, large output push, small size, light weight and other advantages.

◆Action type

ZHA type: direct action, pneumatic close. When air pressure increase, stem part would move down

ZHB type: re-action, When air pressure incease, stem part would move up

◆Performance and selected parameter

Type	ZHA/B-11	ZHA/B-22	ZHA/B-23	ZHA/B-34	ZHA/B-45	ZHA/B-56
Travel (mm)	10	10、16	16、25	40	40、60	100
Effective area (cm)	200	350	350	560	960	1600
Air interface size	M10×1				M12×1.25	M16×1.5
Air supply pressure	0.14、0.25MPa					
Working temperature	-30~60℃					
Spring scope	0.02~0.10、0.04~0.10、0.08~0.24MPa					
Hystersis	With positioner : 1%, without positioner : 3%					
Linearity	With positioner : 1% Without positioner : ±5%					



◆ Model Establishment

ZH	Action type	Size specification	Spring scope (KPa)	Handwheel structure
ZH series actuator	A: Direct action B:Re-action	11	20-100 40-200 80-240	Without : Without handwheel D:top entry handwheel C: Side entry handwheel
		22		
		23		
		34		
		45		
		56		

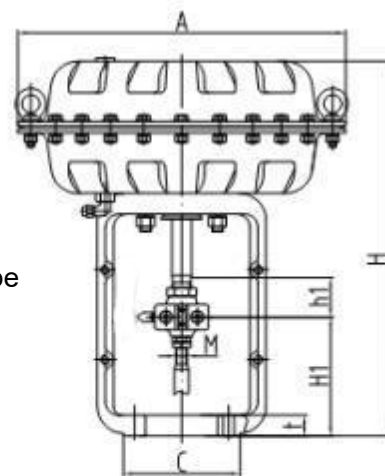
◆Dimension and weight

Model Size	ZH-22	ZH-23	ZH-34	ZH-45	ZH-56
A	285	288	365	475	585
H	300	323	417	520	720
H1	90	90	130	135	170
h1	40	41	41	54	61
t	18	18	23	26	34
C	95	100	130	150	180
H3(MAX)	179	179	230	315	400
F	200	200	240	350	449
H2	106	115	170	195	270
h2	40	40	50	55	65
N-d1	2-d10	2-d10	4-d12	4-d14	4-d18
d2	60	60	80	95	100
D	80	80	105	118	130
Weight (kg)	12	16	22	52	125

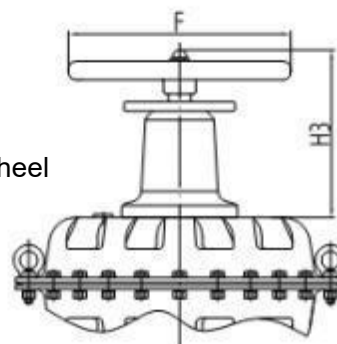
Remark:

Control valve diameter	Stem screw
3/4"	M8
20,25,32,40,50	M8
65,80,100	M12×1.25
125,150,200	M16×1.5
250,300	M20×1.5

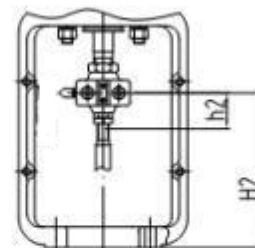
ZHB Air open type



Top Handwheel



ZHA Gas-off



ZH22-23



ZH34-56



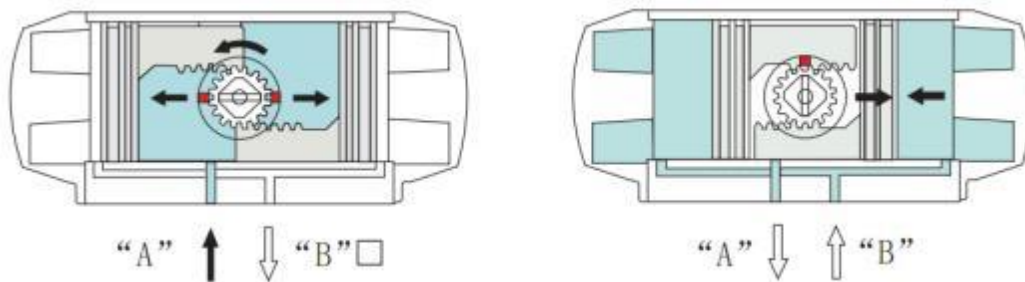
AT-D/S Type Pneumatic Piston Actuator

ATD/ATS new type gear strip type pneumatic actuator contains overseas and domestic new technology and by CAD 3D model innovation and optimal design, its appearance is beautiful compact, modernized molding. It also adopts new material, new craft to make product quality and performance more reliable. Multi-specification selected is more economy; Products with the latest international comprehensive standard specifications to meet the needs of the present and future.



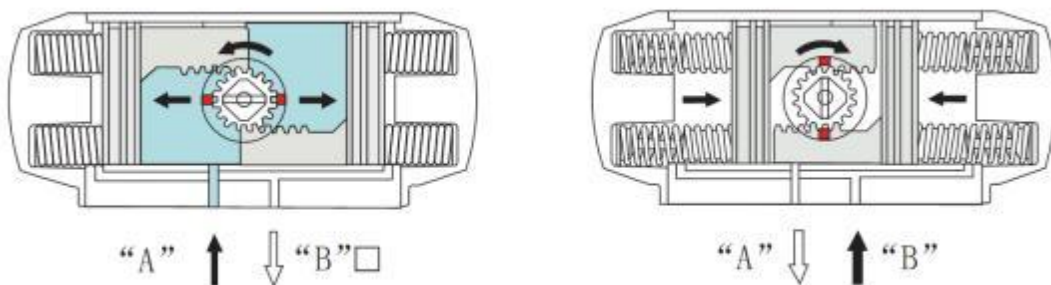
◆ Working principle of ATD double action actuator

When air pressure comes to cylinder two side piston chamber from gas port (A), two pistons move to side of cylinder and then two side chamber air is moved out from gas port (B) and at the same time two piston gear strip with output shaft spin anti clockwise. Otherwise, When air pressure comes to cylinder two side piston chamber from gas port (B), two pistons move to middle of cylinder and then middle chamber air is moved out from air port (A) and at the same time, two piston gear strip with shaft spin clockwise. (If pistons are installed relative inverse direction, then output shaft are changed to reverse rotation, it would be double action inverse transformation.)



◆ Working principle of ATS single action actuator

When air pressure comes to cylinder two side piston chamber from gas port (A), two pistons move to side of cylinder to force spring compress and then two side chamber air is moved out from gas port (B) and at the same time two piston gear strip with output shaft spin anti clockwise. Under air pressure and after solenoid valve transferring, two pistons move to middle of cylinder and then middle chamber air is moved out from air port (A) and at the same time, two piston gear strip with shaft spin clockwise. (If pistons are installed relative inverse direction, when spring returns output shaft are changed to reverse rotation, it would be single action inverse transformation.)



◆ Model Establishment

AT	Action type	Size spec.	Angle	Connectoin size	Output shaft size	Spring Q'ty	Working temp	Anticorrosion grade
AT series pneumatic actuator	D: Double action S: Single action	50~330	90°=090 120°=120 180°=180	Comply with international standard	LD= Parallel oblique output hole HT= Parallel to edge output hole W= Two key output hole	5 - 12(only ATS)	ST=Standard - 15~+150℃ LT=Low temperature -40~+80℃	Common condistion=A Low concentration acid condistion=B

◆ Performance and parameter chart

Model	Max.air pressure	Roraty degree	Working temp	Travel adjustment (R/1°)	Cylinder diameter φ (mm)	Cylinder volume(L) Open --close	ON-OFF Time (S) Open --close		Weight/per spring(kg)	
ATD/ATS-50	Dry or lubrication clean compressed air 8Bar	90°±4° or full travel 0°~90°	ST:(Standard)NBR O-ring -20~+80℃ HT:(hightemperature)Viton O-ring -15~+150℃ LT:(low temperature)silicone rubber O-ring -40~+80℃	1/6	50	0.1 0.2	ATD0.2	ATD0.3	ATD1.1	0.01
ATD/ATS 63				1/6	63	0.2 0.3	ATS0.3	ATS0.3	ATS1.2	
ATD/ATS 75				1/5	75	0.3 0.5	ATD0.3	ATD0.3	ATD1.6	0.02
ATD/ATS 88							ATS0.3	ATS0.4	ATS1.8	
ATD/ATS-100				1/5	88	0.5 0.8	ATD0.4	ATD0.4	ATD2.8	0.03
ATD/ATS-115							ATS0.4	ATS0.5	ATS3.2	
ATD/ATS-125				1/5	100	0.7 1.1	ATD0.4	ATD0.5	ATD4.0	0.06
ATD/ATS 145							ATS0.5	ATS0.6	ATS4.7	
ATD/ATS 160				1/5	115	1.2 1.8	ATS0.5	ATD0.6	ATD5.9	0.07
ATD/ATS 180							ATS0.7	ATS0.9	ATS6.7	
ATD/ATS-200				1/4	125	1.5 2.3	ATD0.7	ATD0.8	ATD8.5	0.13
ATD/ATS-240							ATS0.9	ATS1.1	ATS10.0	
ATD/ATS 265				1/4	145	2.4 3.8	ATD0.9	ATS1.1	ATD10.7	0.16
ATD/ATS 330							ATS1.2	ATS1.4	ATS12.5	
				1/4	160	3.1 4.9	ATD1.2	ATD1.4	ATD15.5	0.25
	ATS1.5	ATS1.8	ATS18.3							
	1/4	180	4.3 6.9	ATD1.5	ATD1.7	ATD19.5	0.36			
				ATS1.8	ATS2.1	ATS23.3				
	1/4	200	5.9 9.5	ATD2.0	ATD2.2	ATD26.7	0.50			
				ATS2.4	ATS2.8	ATS32.8				
	1/4	240	10.0 15.2	ATD2.7	ATD3.2	ATD35.6	0.62			
				ATS3.5	ATS4.0	ATS43.6				
	1/4	265	14.5 21.4	ATD3.5	ATD4.0	ATD58.2	1.12			
				ATS4.1	ATS4.6	ATS71.0				
	1/4	330	25.0 40.0	ATD4.0	ATD4.5	ATD78.8	1.56			
				ATS4.5	ATS5.0	ATS96.5				
				ATD6.0	ATD7.0	ATD130				
				ATS7.5	ATS8.5	ATS163	2.95			

◆ ATD double action actuator output torque

Actuator model	2.5bar	3.0bar	3.5bar	4.0bar	4.5bar	5.0bar	5.5bar	6.0bar	7.0bar	8.0bar
ATD-50	8.3	10.0	11.6	13.3	15.0	16.6	18.3	19.9	23.3	26.6
ATD-63	14.7	17.6	20.5	23.5	26.4	29.3	32.2	35.2	41.0	46.9
ATD-75	29.1	34.9	40.7	46.5	52.3	58.2	64.0	69.8	81.4	93.0
ATD-88	45.7	54.9	64.0	73.2	82.3	91.5	101	110	128	146
ATD-100	66.5	79.7	93.0	106	120	133	146	160	186	213
ATD-115	107	129	150	172	193	215	236	258	301	344
ATD-125	138	166	194	221	249	277	304	332	387	443
ATD-145	217	261	304	348	391	434	478	521	608	695
ATD-160	283	340	397	453	510	567	623	680	793	907
ATD-180	383	459	536	612	689	765	842	918	1071	1224
ATD-200	531	638	744	850	956	1063	1169	1275	1488	1700
ATD-240	935	1122	1309	1496	1683	1870	2057	2244	2618	2992
ATD-265	1347	1617	1886	2156	2425	2695	2964	3234	3772	4311
ATD-330	2350	2821	3291	3761	4231	4701	5171	5641	6581	7521

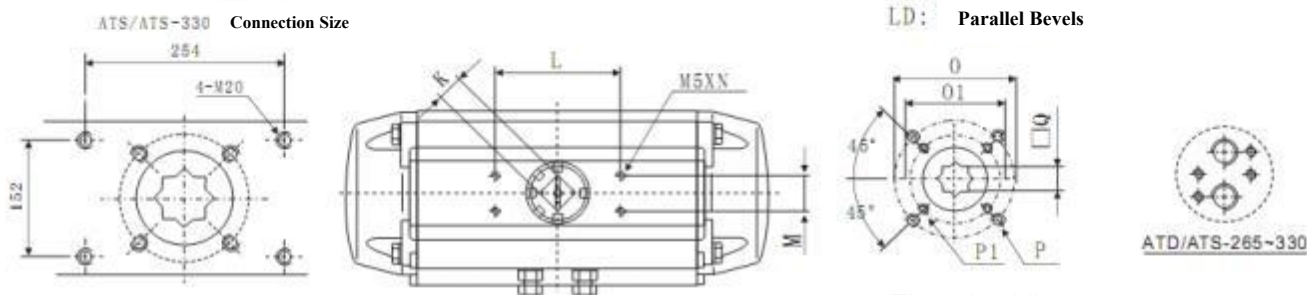
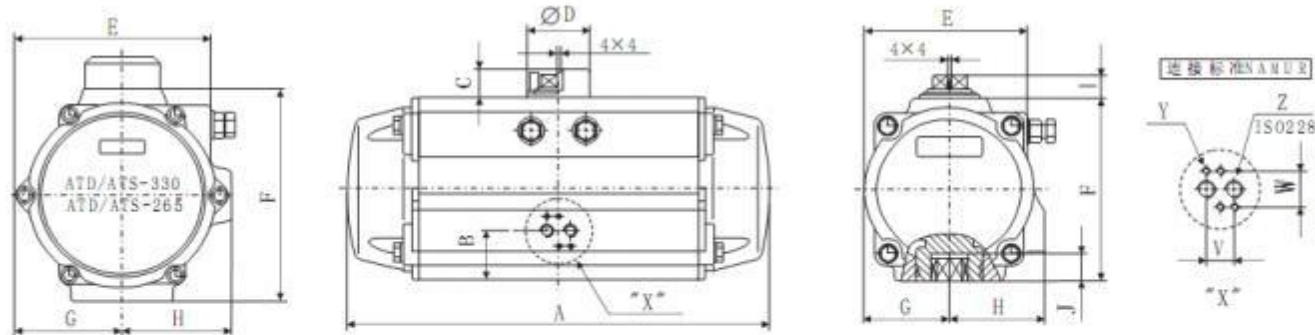
◆ATS single action actuator input torque

Actuator model	Spring Qty.	Air pressure torque																		Spring Reset torque			
		2.5bar		3.0bar		3.5bar		4.0bar		4.5bar		5.0bar		5.5bar		6.0bar		7.0bar			8.0bar		
		0° On	90° Off	0° On	90° Off	0° On	90° Off	0° On	90° Off	0° On	90° Off	0° On	90° Off	0° On	90° Off	0° On	90° Off	0° On	90° Off	0° On	90° Off	0° On	90° Off
ATS-50	05	4.9	3.4	6.6	5.1	8.2	6.8	9.9	8.4	11.6	10.1	13.2	11.7									4.9	3.4
	06	4.2	2.5	5.9	4.1	7.6	5.8	9.2	7.4	10.9	9.1	12.5	10.8	14.2	12.4							5.8	4.1
	07			5.2	3.2	6.9	4.8	8.5	6.5	10.2	8.1	11.9	9.8	13.5	11.5	15.2	13.1					6.8	4.7
	08					6.2	3.8	7.9	5.5	9.5	7.2	11.2	8.8	12.8	10.5	14.5	12.1	17.8	15.5			7.8	5.4
	09							7.2	4.5	8.9	6.2	10.5	7.8	12.2	9.5	13.8	11.2	17.2	14.5	20.5	17.8	8.8	6.1
	10									8.2	5.2	9.8	6.9	11.5	8.5	13.2	10.2	16.5	13.5	19.8	16.8	9.7	6.8
	11											9.2	5.9	10.8	7.6	12.5	9.2	15.8	12.5	19.1	15.9	10.7	7.4
	12													10.1	6.6	11.8	8.2	15.1	11.6	18.4	14.9	11.7	8.1
ATS-63	05	9.1	6.2	12	9.1	15	12	17.9	15	20.8	17.9	23.7	20.8									8.5	5.5
	06	8	4.5	10.9	7.4	13.8	10.3	16.8	13.3	19.7	16.2	22.6	19.1	25.6	22.1							10.2	6.7
	07			9.8	5.7	12.7	8.7	15.7	11.6	18.6	14.5	21.5	17.4	24.5	20.4	27.4	23.3					11.8	7.8
	08					11.6	7	14.6	9.9	17.5	12.8	20.4	15.8	23.3	18.7	26.3	21.6	32.1	27.5			13.5	8.9
	09							13.4	8.2	16.4	11.1	19.3	14.1	22.2	17	25.2	19.9	31	25.8	36.9	31.6	15.2	10
	10									15.3	9.4	18.2	12.4	21.1	15.3	24.1	18.2	29.9	24.1	35.8	29.9	16.9	11.1
	11											17.1	10.7	20	13.6	22.9	16.5	28.8	22.4	34.7	28.2	18.6	12.2
	12													18.9	11.9	21.8	14.8	27.7	20.7	33.5	26.6	20.3	13.3
ATS-75	05	18	11.7	23.8	17.6	29.6	23.4	35.4	29.2	41.2	35	47.1	40.8									17.3	11.1
	06	15.8	8.3	21.6	14.1	27.4	19.9	33.2	25.7	39	31.5	44.8	37.3	50.7	43.2							20.8	13.3
	07			19.4	10.6	25.2	16.4	31	22.3	36.8	28.1	42.6	33.9	48.4	39.7	54.3	45.5					24.2	15.5
	08					23	13	28.8	18.8	34.6	24.6	40.4	30.4	46.2	36.2	52	42	63.7	53.7			27.7	17.7
	09							26.6	15.3	32.4	21.1	38.2	27	44	32.8	49.8	38.6	61.5	50.2	73.1	61.8	31.1	19.9
	10									30.2	17.7	36	23.5	41.8	29.3	47.6	35.1	59.2	46.7	70.9	58.4	34.6	22.1
	11											33.8	20	39.6	25.8	45.4	31.7	57	43.3	68.7	54.9	38.1	24.3
	12													37.4	22.4	43.2	28.2	54.8	39.8	66.4	51.4	41.5	26.5
ATS-88	05	27.4	16.8	36.5	26	45.7	35.1	54.8	44.3	63.9	53.4	73.1	62.6									28.9	18.3
	06	23.7	11.1	32.8	20.2	42	29.3	51.1	38.5	60.3	47.6	69.4	56.8	78.6	65.9							34.7	22
	07			29.2	14.4	38.3	23.6	47.5	32.7	56.6	41.9	65.7	51	74.9	60.1	84	69.3					40.4	25.7
	08					34.6	17.8	43.8	26.9	52.9	36.1	62.1	45.2	71.2	54.4	80.4	63.5	98.6	81.8			46.2	29.4
	09							40.1	21.2	49.3	30.3	58.4	39.5	67.5	48.6	76.7	57.7	95	76	113	94.3	52	33
	10									45.6	24.5	54.7	33.7	63.9	42.8	73	52	91.3	70.2	110	88.5	57.8	36.7
	11											51.1	27.9	60.2	37	69.3	46.2	87.6	64.5	106	82.8	63.5	40.4
	12													56.5	31.3	65.7	40.4	84	58.7	102	77	69.3	44
ATS-100	05	41.1	27	54.4	40.3	67.7	53.6	81	66.8	94.2	80.1	108	93.4									39.4	25.3
	06	36.1	19.1	49.3	32.4	62.6	45.7	75.9	58.9	89.2	72.2	103	85.5	116	98.8							47.3	30.4
	07			44.3	24.5	57.6	37.8	70.8	51.1	84.1	64.3	97.4	77.6	111	90.9	124	104					55.2	35.4
	08					52.5	29.9	65.8	43.2	79.1	56.5	92.3	69.7	106	83	119	96.3	146	123			63.1	40.5
	09							60.7	35.3	74	48.6	87.3	61.9	101	75.1	114	88.4	140	115	167	142	71	45.5
	10									68.9	40.7	82.2	54	95.5	67.3	109	80.5	135	107	162	134	78.8	50.6
	11											77.2	46.1	90.5	59.4	104	72.7	130	99	157	126	86.7	55.6
	12													85.4	51.5	98.7	64.8	125	92	152	118	94.6	60.7
ATS-115	05	63.3	41.8	87.8	63.3	109	84.7	131	106	152	128	174	149									65.6	41
	06	58.1	28.7	79.6	50.1	101	71.6	123	93.1	144	115	165	136	187	158							78.7	49.3
	07			71.3	37	92.8	58.5	114	80	136	101	157	123	179	144	200	166					91.8	57.5
	08					84.6	45.4	106	66.9	128	88.3	149	110	171	131	192	153	235	196			105	65.7
	09							97.9	53.8	119	75.2	141	96.7	162	118	184	140	227	183	270	226	118	74
	10									111	62.1	133	83.6	154	105	176	127	219	170	261	212	131	82
	11											124	70.5	146	92	167	113	210	156	253	199	144	90.3
	12													138	78.8	159	100	202	143	245	186	157	98.5

Actuator model	Spring Qty.	Air pressure torque																Spring Reset torque					
		2.5bar		3.0bar		3.5bar		4.0bar		4.5bar		5.0bar		5.5bar		6.0bar			7.0bar		8.0bar		
		0° On	90° Off	0° On	90° Off	0° On	90° Off	0° On	90° Off	0° On	90° Off	0° On	90° Off	0° On	90° Off	0° On	90° Off		0° On	90° Off	0° On	90° Off	
ATS - 125	05	85.9	55.9	114	84	141	111	169	139	197	167	224	194									82.5	52.5
	06	75.4	39.4	103	67	131	95	158	122	186	150	214	178	241	205							98.9	62.9
	07			92.6	50.6	120	78	148	106	176	134	203	161	231	189	259	217					115	73.4
	08					110	62	137	89.4	165	117	193	145	221	173	248	200	304	256			132	83.9
	09							127	72.9	155	101	182	128	210	156	238	184	293	239	348	294	148	94.4
	10									144	84	172	112	200	140	227	167	283	223	338	278	165	105
	11											161	95.3	189	123	217	151	272	206	327	261	181	115
	12													179	107	206	134	262	190	317	245	198	126
ATS - 145	05	135	88.2	178	132	222	175	265	219	309	262	352	305									129	82.3
	06	119	62.4	162	106	205	149	249	193	292	236	336	280	379	323							155	98.7
	07			146	80.1	189	124	232	167	276	210	319	254	363	297	406	341					181	115
	08					173	97.7	216	141	259	185	303	228	346	272	390	315	477	402			206	132
	09							200	115	243	159	286	202	330	246	373	289	460	376	547	463	232	148
	10									227	133	270	177	313	220	357	263	444	350	531	437	258	165
	11											254	151	297	194	340	238	427	324	514	411	284	181
	12													280	168	324	212	411	299	498	386	310	197
ATS - 160	05	171	117	228	174	285	231	341	287	398	344	455	401									166	112
	06	149	84	206	141	262	197	319	254	376	311	432	367	489	424							199	135
	07			183	108	240	164	296	221	353	278	410	334	466	391	523	448					233	157
	08					217	131	274	188	331	244	387	301	444	358	501	414	614	528			266	179
	09							252	154	308	211	365	268	422	324	478	381	592	494	705	608	299	202
	10									286	178	343	235	399	291	456	348	569	461	683	575	332	224
	11											320	201	377	258	433	315	547	428	660	541	365	247
	12													354	225	411	281	524	395	638	508	399	269
ATS - 180	05	225	146	301	222	378	299	454	375	531	452	607	528									237	158
	06	193	98.3	270	175	346	251	423	328	499	404	576	481	652	557							284	190
	07			238	127	315	204	391	280	468	357	544	433	621	510	697	586					332	221
	08					283	157	359	233	436	310	512	386	589	463	665	539	818	692			379	253
	09							328	186	404	262	481	339	557	415	634	492	787	645	940	798	426	284
	10									373	215	449	291	526	368	602	444	755	597	908	750	474	316
	11											418	244	494	320	571	397	724	550	877	703	521	347
	12													463	273	539	350	692	503	845	656	569	379
ATS - 200	05	319	216	425	323	532	429	638	535	744	641	850	748									315	212
	06	277	153	383	260	489	366	595	472	702	578	808	685	914	791							378	255
	07			340	197	447	303	553	409	659	515	765	622	872	728	978	834					441	297
	08					404	240	510	346	617	452	723	559	829	665	935	771	1148	984			504	340
	09							468	283	574	389	680	496	787	602	893	708	1105	921	1318	1133	567	382
	10									532	326	638	433	744	539	850	645	1063	858	1275	1070	630	425
	11											595	370	702	476	808	582	1020	795	1233	1007	693	467
	12													659	413	766	519	978	732	1191	944	756	510
ATS - 240	05	501	319	688	506	875	693	1062	880	1249	1067	1436	1254									616	434
	06	414	196	601	383	788	570	975	757	1162	944	1349	1131	1536	1318							740	521
	07			514	259	701	446	888	633	1075	820	1262	1007	1449	1194	1636	1381					863	608
	08					614	323	801	510	988	697	1175	884	1362	1071	1549	1258	1923	1632			986	695
	09							714	387	901	574	1088	761	1275	948	1463	1135	1837	1509	2211	1883	1109	782
	10									815	451	1002	638	1189	825	1376	1012	1750	1386	2124	1760	1233	869
	11											915	514	1102	701	1289	888	1663	1262	2037	1636	1356	955
	12													1015	578	1202	765	1576	1139	1950	1513	1479	1042
ATS - 265	05	780	565	1050	834	1319	1104	1589	1373	1858	1643	2128	1912									783	567
	06	667	408	936	678	1206	947	1475	1217	1745	1486	2014	1756	2284	2025							939	680
	07			823	521	1092	791	1362	1060	1631	1330	1901	1599	2170	1869	2440	2138					1096	794
	08					979	634	1249	904	1518	1173	1787	1443	2057	1712	2326	1981	2865	2520			1252	907
	09							1135	747	1405	1017	1674	1286	1943	1555	2213	1825	2752	2364	3291	2903	1409	1021
	10									1291	860	1561	1130	1830	1399	2100	1668	2638	2207	3177	2746	1565	1134
	11											1447	973	1717	1242	1986	1512	2525	2051	3064	2590	1722	1247
	12													1603	1086	1873	1355	2412	1894	2951	2433	1878	1361
ATS - 330	05	1333	1017	1803	1487	2273	1957	2743	2427	3214	2897	3684	3367									1334	1017
	06	1130	750	1600	1220	2070	1690	2540	2161	3010	2631	3480	3101	3950	3571							1600	1221
	07			1396	954	1866	1424	2337	1849	2807	2364	3277	2834	3747	3304	4217	3774					1867	1424
	08					1663	1157	2133	1627	2603	2097	3073	2567	3543	3037	4013	3508	4954	4448			2134	1628
	09							1930	1360	2400	1831	2870	2301	3340	2771	3810	3241	4750	4181	5690	5121	2400	1831
	10									2196	1564	2666	2034	3136	2504	3607	2974	4547	3914	5487	4854	2667	2035
	11											2463	1767	2933	2237	3403	2707	4343	3648	5283	4588	2934	2238
	12													2729	1971	3200	2441	4140	3381	5080	4321	3200	2442

◆Main out form Dimension (mm)

Connection Standard ISO 5211/VD1/VDE3845



Elevation View

Model	50	63	75	88	100	115	125	145	160	180	200	240	265	330
ATD/ATS														
ISOflange	F04	F05	F05-07	F05-07	F07-10	F07-10	F07-10	F10-12	F10-12	F12	F14	F16	F16	F16
A	140.5	158.5	210.5	247.5	268.5	315	345	408.5	437.5	487	543	633	728	876
B	26.5	30	30.5	32.5	37.5	42.5	45	47.5	52	58.5	62.5	78.5	165	187
C	20	20	20	20	20	30	30	30	30	50	50	50	50	50
φD	40	40	40	40	40	56	56	65	65	80	80	115	115	115
E	59	72	84.5	97.5	111	127	136	156.5	169	190.5	213	251	298.5	383
F	69	85	102	115	127	145	157	177	196	220.5	245	298.5	330	405
G	29	36	42.5	49.5	56	64	69.5	80	88	99	110	131	163.5	201
H	41.5	47	52	56.8	67	77	82	91.5	99	105	112	131	166	204.5
I	14.5	14.5	14.5	14.5	14.5	24.5	24.5	24.5	24.5	44.5	44.5	44.5	44.5	44.5
Jmim	12	16	16	19	19	24	24	29	29	29	38	38	48	57
K	11	11	17	17	17	27	27	27	27	36	36	36	36	36
L	80	80	80	80	80	80	80	80	80	130	130	130	130	130
M	30	30	30	30	30	30	30	30	30	30	30	30	30	30
N	4	8	8	8	8	8	8	8	8	8	8	8	8	8
φO1	42	50	50	50	70	70	70	102	102	125	140	165	165	165
φO	-	-	70	70	102	102	102	125	125	-	-	-	-	-
P1	4-M6	4-M6	4-M6	4-M6	4-M8	4-M8	4-M8	4-M10	4-M10	4-M12	4-M16	4-M20	4-M20	4-M20
P	-	-	4-M8	4-M8	4-M10	4-M10	4-M10	4-M12	4-M12	-	-	-	-	-
φQ	11	14	14	17	17	22	22	27	27	27	36	36	46	55
V	24	24	24	24	24	24	24	24	24	24	24	40	40	40
W	32	32	32	32	32	32	32	32	32	32	32	45	45	45
Y	M5×8	M5×8	M5×8	M5×8	M5×8	M5×8	M5×8	M5×8	M5×8	M5×8	M5×8	M6×10	M6×10	M6×10
Z	1/8"	1/8"	1/8"	1/8"	1/4"	1/4"	1/4"	1/4"	1/4"	1/4"	1/4"	3/8"	1/2"	1/2"

3810/3410 Electric Actuator

3810 , 3410 series electronic type electric actuator , using 220V AC single phase power as drive power , that is a safety electric actuator accepting computer controller or operator 4-20mADC or 1-5VDC input signal to operate. Its inside has servo system, no need spare servo amplifier. Key part “ controller “ adopt advanced hybrid integrated circuit, and use resin to solid -cast. After ageing treatment, moistureproof , shockproof. Positioner adjust zero , trip , sensitivity conveniently. Function switch can choice direct action, reaction, choicing stop signal three situation. Meanwhile, actuactor has overload protection, temperature protection and compressed spring protecting valve close completely. It is a high reliable product, with straight trip and angle trip consist of electric control valve.



◆Technology parameter

	Parameter name	3810 series	3410 series
Control structure	Input signal	4~20mADC or 1~5VDC	220VAC Switch signal
	Opening signal	4~20mADC (load resistor below 500Ω)	Feedback 4~20mADC or 0~1.0KΩ
	Dead zone	0.8~1.0% Can be adjusted to 0.4%	
	Zero adjustment	25%	
	Span adjustment	20~100%	
	Intrinsic error , Hysteresis	1.0%	
	Limit control, switch	Open side, close side	Open side, close side
	Opening test	Procision conductive plastic positioner	Procision conductive plastic positioner
Power	Power	AC220±10% 50Hz (AC380V)	AC220±10% 50Hz
	Drive motor	AC reversible single-phase gear motor	AC reversible single-phase gear motor
	KW	A type	50 VA
		B type	150 VA
		C type	220 VA
		D type	350VA
Affiliation	Overload protection unit	A 、 B type optional , C 、 D type necessary	
	Torque switch	Angular trip can be installed (optional)	Angular trip can be installed (optional)
	Space heater	Optional ,but Exd are not installed	Optional ,but Exd are not installed
	Hand gear	Portable hand crank	Portable hand crank
Installation condition	Working temp	Normal without heater -10℃~+60℃	Normal without heater -10℃~+60℃
		Normal with heater -35℃~+60℃	Normal with heater -35℃~+60℃
		Exd type: -10℃~+60℃	Exd type :10℃~+60℃
	Allowance vibration	Below 1.5G	Below 1.5G
	Relative humidity	Normal:below 95% , Exd type :45~85%	Normal:below 95% , Exd type :45~85%
	Working gas	No corrosive gas	No corrosive gas
	Seams	Nomal A 、 B 、 C type : 2-PF1/2	Nomal A 、 B 、 C type : 2-PF1/2
		Normal D type and Exd type 2-PF3/4	Normal D type and Exd type 2-PF3/4
	Wiring mouth	Signal wire shielding and power wire isolation	
	Protection class	IP55	IP55
	Exd class	EXd II BT4	EXd II BT4

Note: AC380V needs to point when placing order.

◆Code

381	Action type	Model name	York name	Output force
381: adjustment 341: on-off type	L: straight trip S: Angular trip	S: Normal type X: Exd type	A:A Series york B:B series York C: C series York	L series push force=*100N R series torque=*10NM
For example: Straight trip adjustment normal type, B series york, push force 5000N : 381LSB -50 Angular trip on-off Exd type, B series york, torque 200NM: 341RXB -20				

◆Linear actuator 3810L、3410L series

Category	3810L series	3410 Series	Rated output force N	Speed mm/s	Max travel mm
Normal type	381LS A-08	341LS A-08	800	4.2	30
	381LSA-20	341LSA-20	2000	2.1	
	381LSB-30	341LSB-30	3000	3.5	60
	381LS B-50	341LS B-50	5000	1.7	
	381LSC-65	341LSC-65	6500	3.4	100
	381LSC-99	341LSC-99	10000	2.0	
	381LSC-160	341LSC-160	16000	1.0	
Exd type	381LX A-08	341LX A-08	800	4.2	30
	381LXA-20	341LXA-20	2000	2.1	
	381LXA-30	341LXA-30	3000	3.5	60
	381LXA-50	341LXA-50	5000	1.7	

◆Rotary actuator 3810R、3410R series

Category	3810 R series	3410R series	Rated output torque N.m	Action time 90°/S	Max angle
Normal type	381RSA-02	341RSA-02	20	8.5	90°
	381RSA-05	341RSA-05	50	17	
	381RSB-10	341RSB-10	100	18	
	381RSB-20	341RSB-20	200	36	
	381RSC-30	341RSC-30	300	24	
	381RSC-50	341RSC-50	500	42	
	381RSC-60	341RSC-60	600	48	
	381RSD-100	341RSD-100	1000	30	
	381RSD-150	341RSD-150	1500	42	
Exd type	381RXB-10	341RXB-10	100	18	90°
	381RXB-20	341RXB-20	200	36	

◆Connection size for the yoke of linear actuator

Supporting yoke parameter

Each specification actuator can be supported 2`3 kinds yoke connected with national unify flexiable control valve. It still need to be test actuator output force to confirm if it can satisfy max force ofvalve on and off .

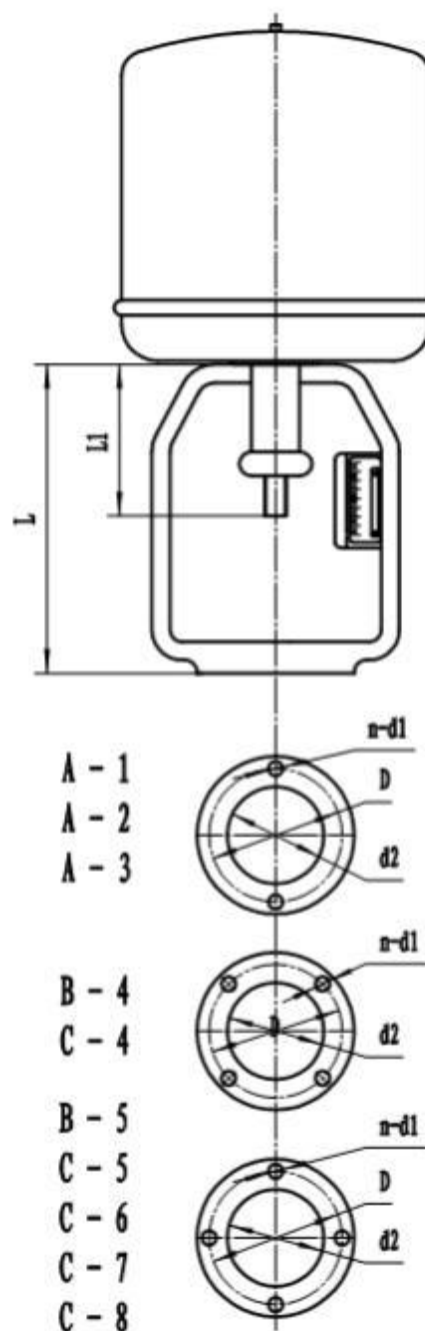
Model	Control valve nominal diameter	Yoke item
381LSA-08	3/4"	A-1
381LXA-08	20	A-2
381LSA-20	20~50	A2
381LXA-20		
381LSB-30	25~50	B-3
381LXB-30	65~100	B-4
381LSB-50 381LXB-50	25~50	B-3
	65~100	B-4
	125~150	B-5
381LSC-65	65~100	C-4
	125~200	C-5
381LSC-99	125~200	C-5
	250~300	C-6
381LSC-160	125~200	C-7
	250~300	C-8

Yoke and control valve link size

Yoke Item	L	L1	D	n-d1	D2
A-1	168	78	Φ55	2-Φ10	Φ36
A-2	173	78	Φ80	2-Φ10	Φ60
B-3	215	125	Φ80	2-Φ10	Φ60
B-4	255	125	Φ105	4-Φ12	Φ80
B-5	267	125	Φ118	4-Φ14	Φ95
C-4	285	175	Φ105	4-Φ12	Φ80
C-5	310	175	Φ118	4-Φ14	Φ95
C-6	345	175	Φ130	4-Φ18	Φ100
C-7	410	270	Φ118	4-Φ14	Φ95
C-8	440	270	Φ130	4-Φ18	Φ100

Reference (national system set)

Control valve size DN	L	Stem screw
3/4"	90	M8
20,25,32,40,50	95	M8
65,80,100	135	M12×1.25
125,150,200	140	M16×1.5
250,300	170	M20×1.5



DTR Type Electric Actuator

DTR series rotatory type electric actuator function completely, has on-off type, adjustment type and so on. It has small volume, light weight, reliable performance. Bearing and key parts adopt import product, and worm gear output integration to remove joint, gap, high drive precision, small hysteresis. Choosing special copper alloy forging, high strength, good wearability. Aluminum alloy casing shell. beautiful appearance, low electromagnetic interference, install at any angle, easy use, anticorrosion, antirust, free oil. It is double limit, overload, overheat protection, good safety performance. Whole trip has multi speed to choice, adopting single-phase electric power drive, outside line simple, and DTR adopt advanced digital technology and highly integrated module. Mechatronics design can receive computer or meter output 4-20mA DC or 1-5VDC

standard signal directly to realize intelligent control and precision location of electric valve. In addition, we have organic exterior intelligent module and built-in type intelligent module for client's choice.



◆ Action type

Type Item	DTR-05	DTR-10	DTR-20	DTR-40	DTR-100	DTR-200
Power	200/220VAC 50/60Hz	200/220VAC 50/60Hz	200/220VAC 50/60Hz	200/220VAC 50/60Hz	200/220VAC 50/60Hz	200/220VAC 50/60Hz
Output torque	50N.M	100N.M	200N.M	400N.M	1000N.M	2000N.M
Action scope	0-90°	0-90°	0-90°	0-90°	0-90°	0-90°
Action time	15s	30s/60s	30s/60s	30s/60s	30s/60s	30s/60s
Protective device	Overheat protection					
Working temp	-30~+60°	-30~+60°	-30~+60°	-30~+60°	-30~+80°	-30~+80°
Rated current	0.15A	0.3A	0.45A	0.8A	1.0A	1.2A
Insulation resistance	100M/500V DC	100M/500V DC	100M/500V DC	100M/500V DC	100M/500V DC	100M/500V DC
Withstand voltage	1500V AC 1 minute					
Manual operation	Handle operation	Handle operation	Handle operation	Handle operation	Handle operation	Handle operation
Limit	Electric-pneumatic, mechanical double limit					
IP grade	IP-65	IP-65	IP-65	IP-65	IP-65	IP-65
Install angle	Any angle	Any angle	Any angle	Any angle	Any angle	Any angle
Position measurement	Potentiometer	Potentiometer	Potentiometer	Potentiometer	Potentiometer	Potentiometer
Drive motor	8 W/E	23 W/E	45 W/E	90 W/E	120 W/E	120 W/E
Body, bonnet material	Casting aluminum alloy					
Input signal	4-20mA Or 1-5V	4-20mA Or 1-5V	4-20mA Or 1-5V	4-20mA Or 1-5V	4-20mA Or 1-5V	4-20mA Or 1-5V
Output signal	4-20mA	4-20mA	4-20mA	4-20mA	4-20mA	4-20mA
Weight	2.5 kg	4.5 kg	8.0 kg	8.1 kg	11.0 kg	11.0 kg

◆Code

DT	R	Torque name	Circuit form
DT series electric actuator	R:angular trip	05=output torque 50NM	A :standard Others as circuit drawing

For example: DT angular trip actuator, torque 50NM, A type circuit : DTR05 -A

◆Control circuit schematic

Type A : Limit position switch (standard type) Function : Opening and closing operation by means of a switching circuit and output of an active position signal (fully open, fully closed).	
Type B: With intermediate position switch Function: Intermediate position limitation by means of a switching circuit or output of a set of passive switching signals indicating the fully open and fully closed position of the valve. Structure: With two intermediate position switches	
Type C: With potentiometer Function: Control of the valve opening angle by means of a switching circuit and output of a resistance signal corresponding to the opening position. Structure: With 1000 potentiometer	
Type D: With potentiometer and intermediate position switch Function: Control of the valve opening angle by means of a switching circuit, output of a resistance signal corresponding to the opening position, and output of a passive position signal. Structure: With potentiometer and intermediate position switch	
Type E: With control module (regulation type) Function: Regulation, input 4~mADC or 1~, output 4~mA Construction: With control module and 1K potentiometer	
Type F: With control module (regulation type) Function: Regulation, input 4~mADC or 1~, output 4~mA Construction: With control module and 1K potentiometer	

ACCESSORIES OF ACTUATOR SERIES



Jiangsu BCST Group Co.,Ltd

EVP2001 Type inner intelligent valve positioner

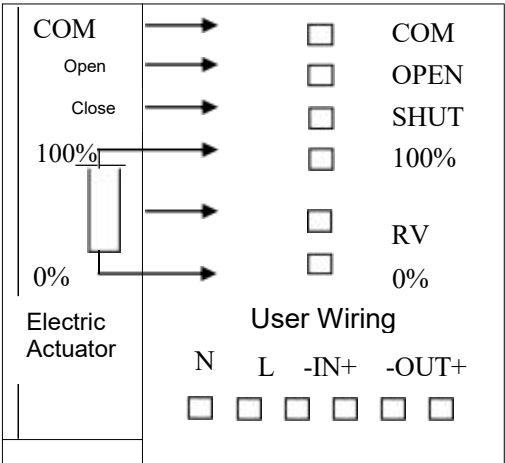
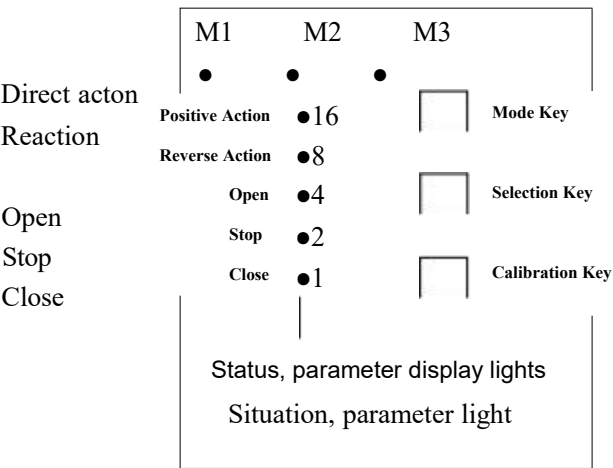
The electric valve EVP2001 intelligent control is based on the new high-speed low-power Industrial SCM as the core of the intelligent signal acquisition and control unit. This product uses a soft-measurement technology and pulse width modulation (PWM) intelligent control algorithm, can directly receive the output of 4-20mA signals from industrial instrument or computer and electric actuator's inside plastic potentiometer position feedback signal, use kinds of valves or devices to proceed precise positioning operation. We adopt ring fluorine resin encapsulation, compact and can be mounted directly on the junction box of electric actuator. It can output the rotational angle (or displacement) feedback signal corresponding to the electric actuator. The controller uses three key operation, eight LEDs display the working status of the controller directly, with the function of fault diagnosis, easy to operate.



◆Technology feature :

- Control precision : 3.1%-0.1% can be setted
- Receiving control signal : 4-20mA or 1-5VDC (Please confirm current or voltage control type when order it)
- Power : single-phase alternation current 220V±10%50Hz
- Working temperature: -20~+70°C
- Dimensioin : 88×78×35mm
- Electric actuator full open 、 full close automatic position calibration
- Adjust position intelligent by input signal and actuator angle
- Output actuator position feedback signal 4-20mADC

◆Intelligent controller panel



220V 4-20mA4-20mA

ZXQ2003/2004 type intelligent valve positioner

ZXQ2003、ZXQ2004 electric valve intelligent positioner is intelligent signal collection control system using industry singlechip as certer . Small volume , It can be installed in electric actuator connection box or mounted in outside by DIN guid rail , and can receive output 4-20mADC signal of industrial gauge or computer (other input signal can be custumed before out of factory). It matchs potentiometer feedback electric actuator to operate vary valve or device precision position and freely calibrate electric actuator corner (displacement) , at same time, output 4-20mADC actuator corner (displacement)feedback exchange signal. We can set precision actuator corner lower limit value and upper limit value by pressing key. Positioner adopts 3 pcs press key operation , 9 pcs LED light to appear positioner model directly, and 4 digital LED appear valve position actual opening, valve position design opening, positioner shell inner temperature, easy operation.



◆Technology feature

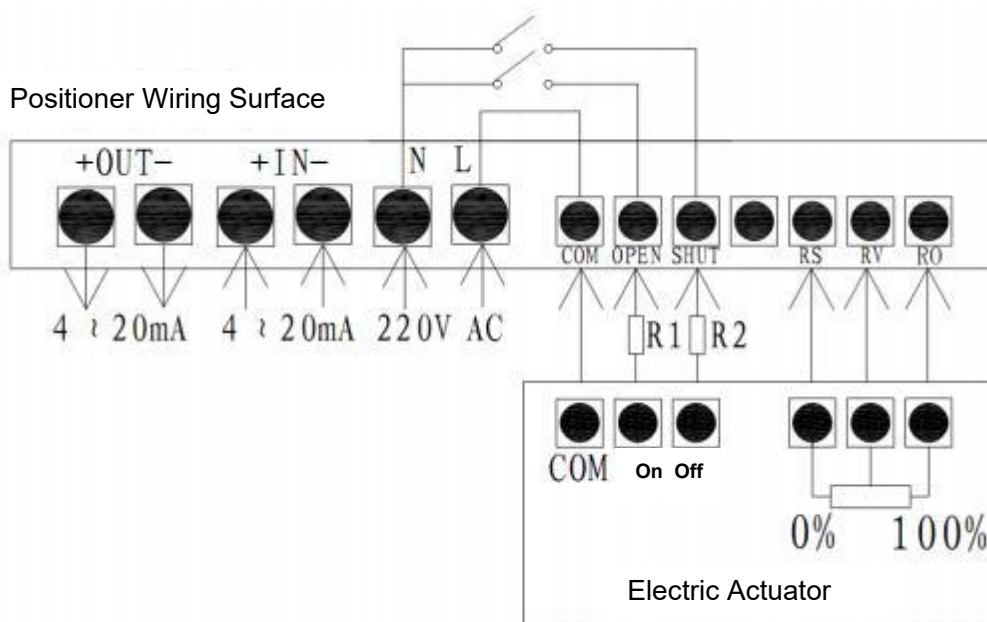
- Control precision: 0.1%-3.0% (can be adjusted by U4 parameter)
- Can be linked with electric actuator feedback signal: Potentionmeter 500Ω-10KΩ
- Can be received outside control signal DC) : 4-20mA(1-5V、0-10V、 on-off value are setted before being carried out of factory
- Input resistance : 250Ω
- Some can be setted by U1 parameter: ①DRTA/Direct action, RVSA/reverse action ② Input signal interrupt , Interrupt model –OPEN, STOP, SHUT
Optional : ① Controlled silicon output (AC, 600V, 25A)
② Servomotor output (AC, 250V, 10A) Note: specify when order
- Output actuator position signal : low-drift output 4-20mADC actuator full close to full open, signal insulate with input completely.
- Working temperature : 0-70℃. Humidity : 35-85%
- Overtemperatuer protective fuction: Positioner inner temperature $\geq 70^{\circ}\text{C}$, Positioner stop controlling actuator.
- Dimension: ZXQ2003 77mm(Bottom surface length)×76mm(width) ×51mm(height)
ZXQ2004 74mm(Bottom surface length)×57mm (width) ×45mm(height)
- Can calibrate actuator action interval of input signal (normally calibrate actuator full close ,full open position)
- Can set up-down limit point
- Actuator locked-rotor detection control function : like control actuator locked-rotor lasts 3-4S, positioner will be off control output 1min. Test control repeatedly to locked-rotor are released.
- Can set self-adjustment precision : While actuator is working, can't position ,appear 3 times vibration,
- positioner will reduce positioner precision to 1/1000 (original precision + 1/1000). repeatedly adjust to suitable control precision. Set parameter is UO (000.x)
- Code lock, avoid wrong action
- Avoide actuator start frequently function
- With erro code indicating accident reason
- Intelligent step adjustment position precision as per input signal and actuator angle positon

◆Link way

Refer to below gauge terminal and gauge shell connection drawing to connect electric actuator and power wire. Please note connection polar, in order to reduce motor interference, electric actuator control wire and feedback wire should be apart. Gauge weak electric signal wire shorter is better. If it is necessary to use longer wire, we should shield signal wire. Out shield and control box should be connected to earth suitable.

Positioner and electric actuator are connected by 7 wire connector, Positioner GND can connect with electric actuator shell or suspending in the air without connecting. RO, RV, RS connect feedback potentiometer in electric actuator. RV are connected with potentiometer slide arm, RO are connected with resistor reducing terminal between actuator opening and slide arm. RS are connected with another terminal. SHUT, OPEN, COM are connected with servo motor close, open, com terminal.

Note: Positioner COM, OPEN, SHUT is active output terminal, COM, OPEN and COM, SHUT related output voltage is power voltage.



◆Intelligent control panel

Parameter appearance	1	LED Window	Appear valve actual open digital, valve design open digital, positioner shell inner temperature and design parameter by key
Situation indication	2	OPEN	Output control —open relay close
	3	SHUT	Output control —shut relay close
	4	MANU	Manual situation
	5	AUTO	Automatic situation
MODE	6	DRTA	Direct action model, Input signal related output as below: 4mA — full (normally calibrated as full open) 20mA—zero (normally calibrated as full shut)
	7	RVSA	RVSA model, input signal related output as below: 4mA —Zero(normally calibration as full shut) 20mA—full (normally calibration as full open)
	8	OPEN	Input signal stop model is —open , make actuator open to max open limit position
	9	STOP	Input signal stop model is —stop , make actuator stop at present position
	10	SHUT	Input signal stop model is —shut , make actuator open to min open limit position
Key	11	A/M	Manual/automatic exchange key, parameter input amendment and exchange
	12	▲	Digital increase key, under automatic situation, is used to exchange and appear valve position design opening digital, under manual situation, is —open
	13	▼	Digital decrease key, under automatic situation, is used to exchange and appear positioner shell inner temperature. Under manual situation, is — shut

YT1000L Type Electric-Pneumatic Valve Positioner

YT-1000L electric-pneumatic valve positioner is a device that receives direct current signal from controller or control system and transport air to straight trip pneumatic actuator to control valve opening .

◆Performance and parameter

Type	Singal	Double action
input signal	4~20 mA DC	
Resistance	250±15 Ohm	
Input pressure	1.4~7 kgf/cm ² (20~100	
Trip	10~150 mm	
Air connection	PT (NPT) 1/4	
Pressure gauge connection	PT (NPT) 1/8	
Power connection	PF 1/2 (G 1/2)	
Exd class	ExiaIIBT6, ExdmIIBT6,	
IP class	IP 66	
Working temperature	-20℃~70℃(standard)	
Linearity	±1% F.S.	±2% F.S.
Hystersis degree	1% F.S.	
Spirit acuity	±0.2%	±5% F.S.
Repeatability	±0.5% F.S.	
Air consumption	3 LPM (Sup=1.4kgf/cm ² ,	
Flow	80 LPM (Sup=1.4kgf/cm ² ,	
Material	Casing aluminum	
Weight	2.8kg	



◆Technology feature

- Within 5~200Hz no resonance phenomenon
- Direat action and reaction, single action and double action can be easily exchange
- As resonance caused by small type actuator, it can be resolved by adding positioner throttles.
- Air consumption less, the economy is good
- Can be split range control within 1/2 without exchanging parts.

◆Code

Type	Action type	Exd class	Feedback stem	Throttle	Selected parts
YT-1000L	S Signal action	m ExdmIIBT5	1 10~40mm	1 φ1	0 No
	D Double action	c ExdmIIBT5	2 20~70 mm	2 φ2	1 +PTM (with inner valve position feedback)
		i ExiaIIBT6	3 50~100 mm	3 No	2 +PTM (with outside valve position feedback)
		n without Exd	4 100~150 mm		3 +L/S (with inner limited switch)
					4 +L/S (with outside limited switch)
					5 +PTM+L/S (with inner valve position feedback + limited switch)

YT1000R Type Electric-Pneumatic Valve Positioner

YT- 1000R electric-pneumatic valve positioner is a kind of device that receives direct current signal from controller or control system and transport air to angular trip pneumatic actuator to control valve opening .

◆Performance parameter

Item, type		Single actin	Double action
Input signal		4-20mA DC	
Resistance		250±15Ω	
Input pressure		1.4~7kgf/cm ² (20~100psi)	
Trip scope		0~90°. 0~60°	
Air connction		PT (NPT) 1/4	
Pressure gauge connection		PT (NPT) 1/8	
Power connection		PF 1/2 (G1/2)	
Exd class		Ex dm IIB T5 Ex dm IIC T5 Ex ia IIB T6	
IP Class		IP66	
Environment temp.	Working temperature	-20℃~70℃	
	Exd temperature	-20℃~60℃	
Linearity		±1% F.S.	±2% F.S.
Hysteresis degree		±1% F.S.	
Spirity acuity		±0.2% F.S.	±0.5% F.S.
Repeatability		±0.5% F.S.	
Air consumption		2LPM(Sup=1.4kgf/cm ² ,20psi)	
Flow		80LPM(Sup=1.4kgf/cm ² ,20psi)	
Material		Casting aluminum	
Weight		2.8kg(6.2lb)	

◆Code

Model	Action type	Exd class	Feedback stem	Throttle	Optional parts
YT-1000L	S signal action	m ExdmIIBT5	1 10~40mm	1 φ1	0 No

	D Double action	c ExdmIICT5	2 20~70 mm	2 φ2	1 +PTM (with inner valve position feedback)
		i ExiaIIBT6	3 50~100 mm	3 No	2 +PTM (with outside valve position feedback)
		n without Exd	4 100~150 mm		3 +L/S (with inner limited switch)
					4 +L/S (with outside limited switch)
					5 +PTM+L/S (with inner valve position feedback + limited switch)



◆Technology feature

- Within 5~200Hz no resonance phenomenon
- Direat action and reaction, single action and double action canbe easily exchange
- As resonance caused by small type actuator, it can be resolved by adding positioner throttles.
- Air consumption less, the economy is good
- Can be split range control within 1/2 without exchanging parts.

YT1200L Type Pneumatic –Pneumatic Valve Positioner

YT- 1000L pneumatic-pneumatic valve positioner is a kind of device that receives direct current signal from controller or control system and transport air to straight trip pneumatic actuator to control valve opening .

◆Performance and parameter

Item, type	Single action	Double action
Input signal	0.2~1kgf/cm ² (3~15psi)	
Input pressure	1.4~7kgf/cm ² (20~100psi)	
Trip	10~150mm	
Air connection	PT (NPT) 1/4	
压力表接口 Pressure gauge connection	PT (NPT) 1/8	
IP class	IP66	
Enviroment temperature	-20~70℃ (-4~158°F)	
Linearity	±1% F.S.	±2% F.S.
Hystersis degree	1% F.S.	
Spirit acuity	±0.2% F.S.	±0.5% F.S.
Repeatability	±0.5% F.S.	
Air consumption	3LPM (Sup=1.4kgf/cm ² , 20psi)	
Flow	80LPM (Sup=1.4kgf/cm ² , 20psi)	
Material	Casting aluminum	
Weight	1.7kg(3.1lb)	



◆Technology feature

- Small size
- Direat action and reaction, single action and double action canbe easily exchange
- As resonance caused by small type actuator, it can be resolved by adding positioner throttles.
- Air consumption less, lower economic cost.
- Can be split range control within 1/2 without exchanging parts.

◆Code

Model	Action type	Feedback stem	Throttle	Selected parts
YT- 1200L	 Single action	 10~40mm	 φ1	0 No 0 without
	 Double action	 20~70 mm	 φ2	1 +PTM (inner valve position feedback)
		 50~100 mm	 No	2 +PTM (outside valve position feedback)
		 100~150 mm		3 +L/S(inner limited switch)
				4 +L/S(outside limited switch)
				5 +PTM+L/S (inner valve positioner feedback + limited switch)

YT1200R Type pneumatic –pneumatic valve positioner

YT- 1000R pneumatic-pneumatic valve positioner is a kind of device that receives direct current signal from controller or control system and transport air to angular trip pneumatic actuator to control valve opening .



◆ Performance and parameter

Item, type	Singal action	Double action
Input signal	0.2~1kgf/cm ² (3~15psi)	
Input pressure	1.4~7kgf/cm ² (20~100psi)	
Trip	0~90°	
Air connection	PT (NPT) 1/4	
Pressure gauge connection	PT (NPT) 1/8	
IP class	IP66	
Enviroment temperature	-20~70℃ (-4~158°F)	
Linearity	±2% F.S.	
Hystersis degree	1% F.S.	
Spirit acuity	±0.5% F.S.	
Repeatability	±0.5% F.S.	
Air consumption	3LPM (Sup=1.4kgf/cm ² , 20psi)	
Flow	80LPM (Sup=1.4kgf/cm ² , 20psi)	
Material	Casting aluminum	
Weight	1.7kg(3.1lb)	

◆Technology feature

- Small size
- Direat action and reaction, single action and double action canbe ea sily exchange
- As resonance caused by small type actuator, it can be resolved by adding positioner throttles.
- Air consumption less, lower economic cost.
- Can be split range control within 1/2 without exchanging parts.

◆Code

Model	Action type	Exd class	Feedback stem	Throttle	Selected parts
YT-1200R	 Signal actgion	 ExdmIIBT5	 M6×34L	 φ1	0 No 0 without
	 Double action	 ExdmIICT5	 M6×63L	 φ2	1 +PTM(inner valve position feedback)
		 ExiaIIBT6	 M8×34L	 No	2 +PTM (outside valve position feedback)
		 不防爆	 M8×63L		3 +L/S(inner limited switch)
					4 +L/S(outside limited switch)
					5 +PTM+L/S(inner valve positioner feedback + feedback)

XCYB200/205 Type Filter Reducing Valve

XCYB-200, XCYB-205 air filter reducing valve is a kind of device that adjust factory main air pipe supply pressure to positioner and control device needed stable pressure digital.

◆Technology feature

- Whatever input pressure and flow wave, it always keep stable output pressure
- Light weight, small size, easy install and maintainance
- It can filter 5 micrometer molecule
- If output pressure is higher than designed pressure, it will relieve air to maintain stable output pressure
- YT-205 material is stainless stell, is used to corrosivity atmosphere enviroment and sea environment.

◆Performance and parameter



YT-200



YT-205

Item, type	XCYB-200		XCYB-205
	A	B	C
Max input pressure	15kgf/cm ² (231psi)		
Max output pressure	4.2kgf/cm ² (57psi)	8.4kgf/cm ² (120psi)	2.1kgf/cm ²
Air connection	PT(NPT)1/4		NPT1/4
Pressure gauge connection	PT(NPT)1/4		NPT1/4
Enviroment temperature	-20~70℃(-4~158°F)		
Min filter size	5 micrometer		
Material	Casing aluminum		Stainless steel
Weight	0.6kg(1.7lb)		1.4kg(3.0lb)

◆Code

Model	Ajustable scop	Connection type	Pressure garge	Enviroment temperature
XCYB-200	A 0~4.2kgf/cm ²	P PT1/4	0 无	1 -20℃~70℃
XCYB-205	B 0~8.4kgf/cm ²	N NPT1/4	1 4Kgf/cm ²	2 -20℃~120℃
	C 0~2.1kgf/cm ²		2 10Kgf/cm ²	3 -40℃~70℃
Note: XCYB-20 noly has NPT connection.				

XCYB300/310/320 Type pneumatic amplifier

Pneumatic amplifier XCY-300 and XCYB-310 provide max flow to actuator, are used to improve valve action speed.

◆Technology Feature

- XCYB-300 and XCYB-310 provide air pressure ratio 1:1, so speed and accuracy is perfect
- By adjusting bypass to improve system stable
- It is very sensitive for input signal small change.



◆Performance and parameter

Item, type	XCYB-300	XCYB-320	XCYB-310
Max input pressure	7kgf/cm ² (100psi)		
Max output pressure	7kgf/cm ² (100psi)		
In/out pressure ratio	1:1		
Flow ratio (Cv)	1.02	2.26	4.98
In/out connection	PT(NPT)1/4	PT(NPT)1/4	NPT3/4
Signal connection	PT(NPT)1/4		
Linearity	±1%(F.S.)		
Enviroment temperature	-20~70℃ (-4~158°F)		
Material	Casing aluminum	Casing aluminum	Casing aluminum
	Stainless steel		Stainless steel
Weight	0.5kg	0.76kg	2.3kg
	1.3kg		5kg

◆Code

Type	Connection	Enviroment temperature
XCYB-300	P PT	1 -20℃~70℃
XCYB-310	N NPT	2 -20℃~120℃
XCYB-305		3 -40℃~70℃
XCYB-315		
XCYB-320		

XCYB-400 pneumatic blocking valve is a kind of device that can test pressure in time and automatic shut access , when air supply pressure is lower than designed pressure,

- Small size, light weight, unnecessary share work, can be connected with metal directly.
- Be sensitive to below 0.1kgf/cm^2 pressure drop
- Adopting epoxy paint , good anti-corrosion
- Can increase limited switch and indicator to monitor XCYB-400 open-close situation



Item, type		Single action	Double action
Signal pressure		Max 7kgf / cm ² (100psi)	
Pressure scope		1.4~7kgf/ cm ² (20~100psi)	
Pneumatic lock pressure		Max 7kgf / cm ² (100psi)	
Differential pressure		Lower than 0.1kgf/ cm ² (1.4psi)	
Flow ratio		0.9	
Enviroment temperature		-20~70℃ (-4~158°F)	
Air connection		PT(NPT) 1/4	
Material	XCYP-400	casing aluminum	
	XCYP-405	Stainless steel	
Weight	XCYP-400	0.45kg	0.7kg
	XCYP-405	1.3kg	1.5kg

Type	Action type		Connection type		Enviroment temperature	
XCYB-400	S	Single action	P	PT1/4	1	-20℃~70℃
	D	Double action	N	NPT1/4	2	-20℃~120℃
					3	-40℃~70℃

Note: XCYB 405 just has NPT connection

HVJB type Solenoid valve

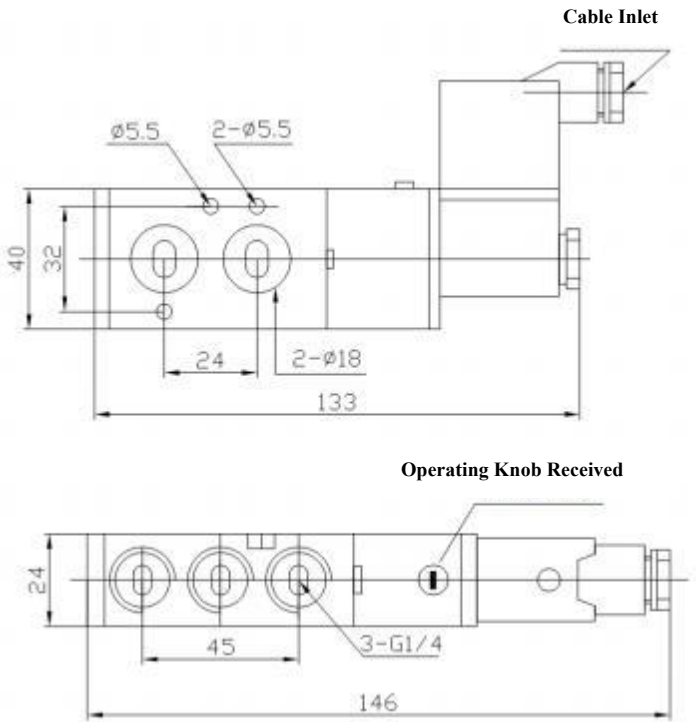
HVJB25 solenoid valve are used as pneumatic valve —open and —close electronical operation. It confirms to NAMUR connection standard, and are installed in pneumatic actuator side directly, unnecessary pipe connection. As per gauge control system ,needs to choice single electronic control or double electronic control , two-position five way solenoid valve are installed double action actuator. Two-position three way solenoid valve are installed single action actuator. Whole machine simple, compact, small volume , long life. This produce has normally type (IP67) and exd type. Exd class is ExdIIBT4, which is used in factory explosive environment place.

Technology feature

- Working medium : air (after 40 micrometer filter)
- Connection : inlet G1/4 outlet G1/4
- Effective area (mm)²: 35
- Lubrication : unnecessary (can supply oil)
- Working pressure(MPa): 0.15-0.8
- Working temperature(°C): are used in 0-50 unfreeze
- Voltage scope: 15%
- Electric consumption: AC220V: 3.9VA,6.0VA,8.5VA;
DC24V: 2.5W,4.8W
- Reversing time (S): 0.05
- Manual type : Press reversing key (press and then totate to self-lock)
- Normally type: IP65
- Exd type: ExdIIBT4



Main out form dimension



Code

Model	Connection type	Connect pipe type	Control type	Voltage	Connection wire type
HVJB	23=two position three way	1= pipe connectin	1= single electric control	1=AC220V,	D=DIN normal type
	25=two positin five way	2= plate connectin	2=double electric control	2=DC24V	R= direct lead type

APL-310N/410N Type Limited Switch

APL-310N and APL-410N limited switch box transport actuator and vavle position signal to site and romote operation station. It can be installed on actuator top directly, confirms VDI/VDE3845 . Its feature: site visible position indicator, quick adjustment position cam. Adjustment cam are installed by spline and spring. Once switch cam takes off spline ,it will rotate to adjust needed positin. It has prevent off shell screw and two cable inlet G1/2 pipe connection. Inner trip switch advanced connecting wiring terminal . 8 pcs terminal and is linked by solenoid valve

◆ Technology feature

- With dome director
- Without other tools , it can easily adjust cam switch position
- Connection wire box has 8 pcs standard terminal
- Wiring terminal has solenoid valve terminal
- It has 2 pcs 1/2lpower connection. We can easily connect wire as per site situation
- Can change easily dome director transparent windows direction.

◆ Feature parameter

APL-310N	APL-410N
Shell IP type (I P67)	Exd type (Exd II BT4)
Machinical microswitch	
Voltage: alternating voltage 220V, AC or direct current DC	
Current: 0.6A , 125VDC, 16A 1/2HP125 250V AC 16(3)A250V-T105u#	

Optional : Pass current output signal , proximity switch,

resistive potentiometer



◆ Model preparation

TYPE	Structure type
HAPL	310N= normally type IP67
	410N= Exd type Exd II BT4

◆ Main out form dimension

HAPL-310N Type

HAPL-410N Type

