



Lined Bellows Control Valve

Code	Actuator	Action	Air Fail Position Control	Structure	Body Material	Sealing Material	Core Material	Connection	DN	PN	
LPH113- LPG113-	1 Pneumatic 2 Pneumatic & Handwheel 4 AC220V 5 AC380V 0 Others	S Single-acting D Double-acting 0 Others	2 Normally Closed 4 Held 0 Others	A On-off B Control C Intelligent 0 Others	4 Low temperature type 5 Bellows type 6 High temperature type 7 Normal 0 Others	A CF3M B CF8M C CF8 D WCB I CF3 L CE3MN 2 Ti 5 WCC 0 Others	P PTFE Y FEP(F46) R BODY S Stellite 3 Gr 4 WC 0 Others	A CF3M B CF8M C CF8 I CF3 L CE3MN 2 Ti 0 Others	1 Flange 5 Weld 0 Others		

LPH113-Pneumatic Lined Bellows Control Valve
LPG113-Electric Lined Bellows Control Valve



Overview

LPH113/LPG113 Series linear motion single-seat lined control valve adopts full fluorine lined body and trim structure to effectively prevent the corrosion of metal materials in the valve by corrosive media. The metal body cavity is subjected to serrated machining treatment so as to make the lining materials fully fit into the metal and prolong the service life and performance of lining materials. The stem seal is the compound seal of PTFE/PFA bellows seal and V PTFE packing which can eliminate the possibility of media leaking from the stem to the outside. The unbalanced full lined control valve is especially suitable for very corrosive media under low pressure and normal temperature service conditions.

Specifications

DN (mm)	G3/4"		20		25	32	40	50	65	80	100	150							
Diameter (mm)	3	4	5	6	7	8	10	12	15	20	25	32	40	50	65	80	100	150	
KV	0.08	0.12	0.20	0.32	0.50	0.80	1.2	2	3.2	5	8	12	20	32	50	70	100	240	
Flow characteristic	Linear						Linear, Equal percentage												
PN (MPa)	1.0 1.6																		
Pneumatic actuator	Type	ZH _B ^A -1						ZH _B ^A -2				ZH _B ^A -2		ZH _B ^A -3		ZH _B ^A -4		ZH _B ^A -5	
	Active area cm ²	200						280				280		400		630		1000	
	Rated travel	10						10				16		25		40		60	
	Spring range KPa	20 ~ 100						40 ~ 200				20 ~ 100		40 ~ 200		20 ~ 100		40 ~ 200	

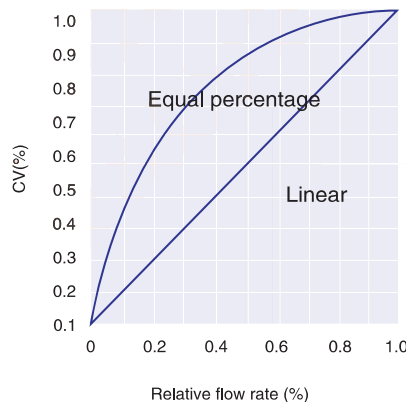


DN (mm)		G3/4"				20				25 32 40 50				65 80		100 150			
Diameter (mm)		3	4	5	6	7	8	10	12	15	20	25	32	40	50	65	80	100	150
Electric actuator	Type	PLSA-20				PLSA-30				PLSA-50		PLSA-65							
	Movement velocity mm/s	2.1				3.5				1.7		3.4							
	Rated travel	16				25				40		60							
	Input signal	0 ~ 10mA DC, 4 ~ 20mA DC 1 ~ 5VDC																	
Operating temperature		-20 ~ 150°C																	
Intrinsic adjustable ratio R		30:1																	

Performances

Item	Technical performance
Basic error %	≤ ± 8
Hysteresis error %	≤ 8
Dead-section %	≤ 6
Rated flow coefficient error	≤ ± 10% (Kv ≤ 5 : ± 15%)
Leakage	± 0.01% Maximum valve capacity

Characteristics



Flow characteristics(Linear (LV))

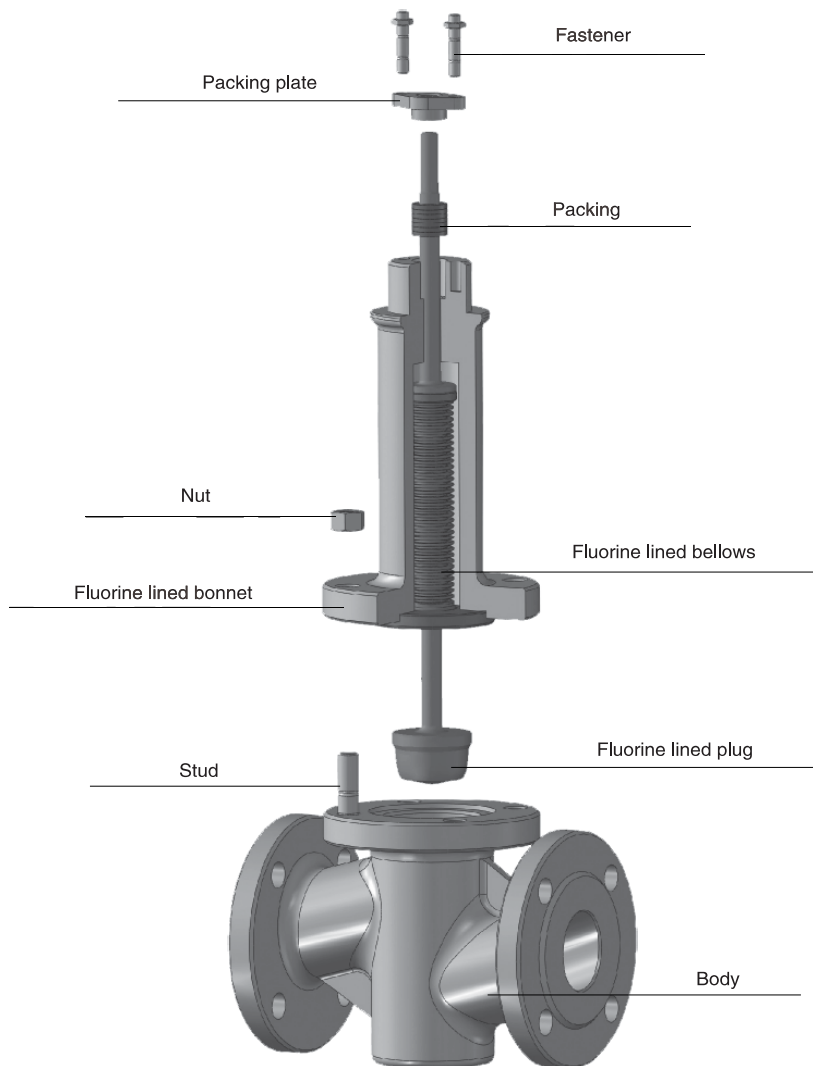
Allowable Differential Pressure for Pneumatic Control Valve

Supply pressure (MPa)	Spring range (KPa)	DN Diameter	G3/4"		20		25		32		40		50		65		80		100		150	
			3-8	10	12	15	20	25	32	40	50	65	80	100	150							
0.14	20 ~ 100	Allowable differential pressure (MPa)						0.8	0.5	0.5	0.3	0.25	0.2	0.12	0.08							
0.24	40 ~ 200								1.2	1.1	0.7	0.65	0.45	0.28	0.20							
0.4	80 ~ 240									1.2	1.1	0.7	0.65	0.45	0.28	0.20						

Allowable Differential Pressure for Electric Control Valve

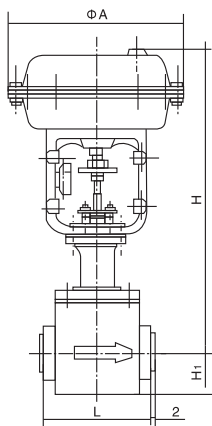
DN	G3/4"							20		25	40	50	65	80	100	150			
Diameter mm	3	4	5	6	7	8	10	12	15	20	25	32	40	50	65	80	100	125	150
Allowable differential pressure MPa	0.08	0.12	0.20	0.32	0.50	0.80	6.4		5.6	3.7	3.4	2.1	1.40	1.4	0.9	0.50	0.47	0.33	

Exploded View

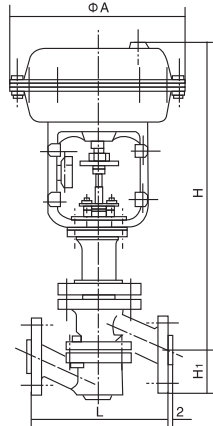




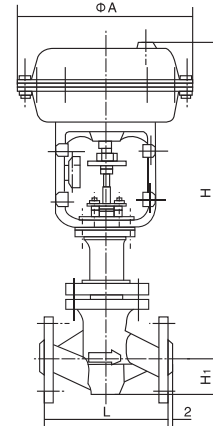
Dimensions and Weight



G3/4 " Integral type



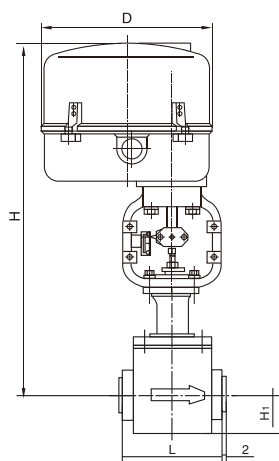
DN20~32 Separate type



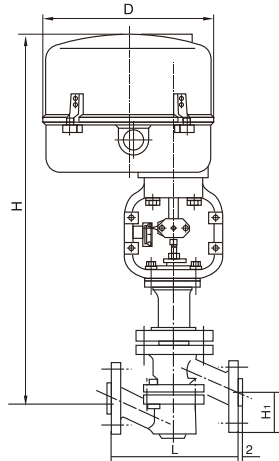
DN40~150 Integral type

mm

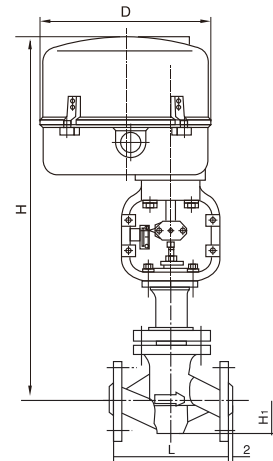
DN	3/4"	20	25	32	40	50	65	80	100	150
L	116	180	185	200	220	250	275	300	350	480
A	245	245	245	245	290	290	362	362	362	454
H	401	445	485	495	523	532	697	699	699	817
H ₁	50	65	70	80	71	88	102	140	170	190
Weight (kg)	17	17	19	21	28	31.5	54	64	80	120



G3/4 " Integral type



DN20~32 Separate type



DN40~150 Integral type



mm

DN	3/4"	20	25	32	40	50	65	80	100	150
L	116	185	185	200	220	250	275	300	350	480
D		260/280					290/310			360
H	547	547	564	720	720	730	845	867	890	1190
H ₁	50	65	70	80	71	88	102	140	170	190
Weight (kg)	14	14	15	26	26	30	34	42	52	152

PFA Material

PFA exhibits thermal characteristics similar to PTFE, with outstanding temperature resistance that is able to withstand super low to high temperatures (maximum continuous service temp 2600C).

PFA is transparency and mechanically strong under high temperature, therefore it is not only easily workable but also applicable with extrusion molding to the same degree as general thermoses plastic. It is used where purity is important, such as semiconductor wafer basket, piping couplings and anti corrosive linings. PFA has much better mechanical properties compare with FEP, and excellent molding process method such as extrusion, compression, blow, transfer and injection. PFA and PTFE demonstrates nearly the same outstanding capabilities in the temperature range between -200°C and 260°C, and the reason would be the high bonding strength of carbon, fluorine and oxygen atoms.

PTFE Material

The fluorine atoms completely cover the carbon chain backbone and protect the carbon-carbon bond from attack. The fluorine acmes are also responsible for the low surface energy and exceptional frictional characteristics of PTFE. PTFE does not flow above its melting point because of its high melt viscosity. It requires special polymer processing like paste extrusion, compression molding and sintering.

Among all the fluoric plastics products, PTFE offers the highest heat resistance at 260°C (maximum temp. for continuous use).It would not be corroded by most chemicals and has good electrical insulation and dielectric characteristics. Moreover, it has a unique non-stick property and the lowest coefficient of friction amongst solids. It is the most widely used fluoroplastics, now found in O-rings, gaskets, bearings, tube, wiring, hot plates and irons due to its non-stick property, as well as chemical valve linings.

Performance

PFA

Property	Testing Method	Value	Unit
Specific Gravity	ASTM D-3307	2.12~2.16	-
Melting Point	ASTM D-3307	304	°C
Tensile Strength	ASTM D-3307	340~398	kg/cm ²
Elongation	ASTM D-3307	360~420	%
Melt Flow Rate	ASTM D-3307	7~8	g/10 min
Chemical Resistance	-	Excellent	

PTFE

Property	Testing Method	Value	Unit
Specific Gravity	ASTM D-792	2.14~2.20	-
Melting Point	-	327	°C
Tensile Strength	ASTM D-638	140~350	kg/cm ²
Elongation	ASTM D-638	100~300	%
Melt Flow Rate	ASTM D-696	10	10~5/°C
Chemical Resistance	-	Excellent	

Pressure and Temperature Rating

