

# LPH15/LPG15 Low-noise Cage Guided Control Valve



Code	Actuator	Action	Air Fail Position	Control	Structure	Body Material	Sealing Material	Trim Material	Connection	DN	PN
LPH15- LPG15-	1 Pneumatic	S Single-acting	1 Normally Open	A On-off	4 Low temperature	A CF3M	P PTFE	A CF3M	1 Flange		
	2 Pneumatic & Handwheel	D Double-acting	2 Normally Closed	B Control	5 Bellows type	B CF8M	Y FEP(F46)	B CF8M	5 Weld		
	4 AC220V	0 Others	3 Flexible	C Intelligent	6 High temperature	C CF8	R BODY	C CF8	0 Others		
	5 AC380V		4 Held	0 Others	7 Normal	D WCB	S Stellite	1 CF3			
	0 Others		0 Others		0 Others	1 CF3	3 Gr	L CE3MN			
						L CE3MN	4 WC	2 Ti			
					2 Ti	0 Others	0 Others				
					5 WCC						
					0 Others						

LPH15-Pneumatic Low-noise Cage Guided Control Valve  
LPG15-Electric Low-noise Cage Guided Control Valve

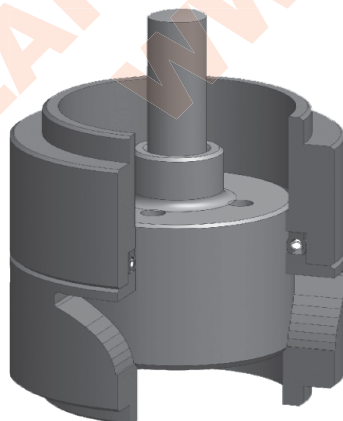
## Overview



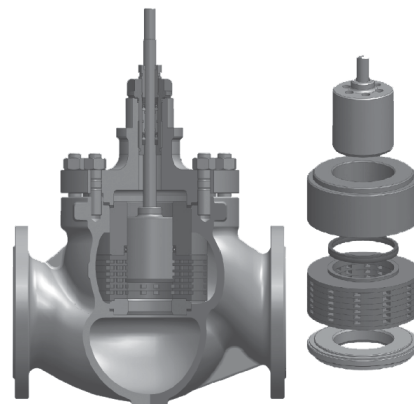
LPH15/LPG15 low-noise cage guided control valves have been designed to remarkably reduce acoustic noise in services of compressible fluids such as steam, air, and natural gas. The cage has a large number of small holes and renders an ideal pressure reduction with a combination in two steps of “restriction” and “diffusion and expansion.” The fluid passage has been designed in S-figure shape for smooth flow of fluid with less pressure loss and a stabilizer is provided as a strainer for flow near the cage, thereby permitting a large Cv value.

The valve plug is of a pressure-balanced type which allows control of a high differential pressure with a small actuating force. The actuator is a compact but high output diaphragm motor of a multiple spring type structured in a simple mechanism.

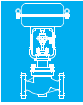
LPH15/LPG15 valves, which are compact but of a low noise type and render high dynamic stability, are suitable especially for control of high temperature, high pressure or high differential pressure process lines.



Standard trim type



Labyrinth trim type



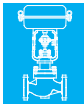
# LPH15/LPG15

## Low-noise Cage Guided Control Valve



### Specifications

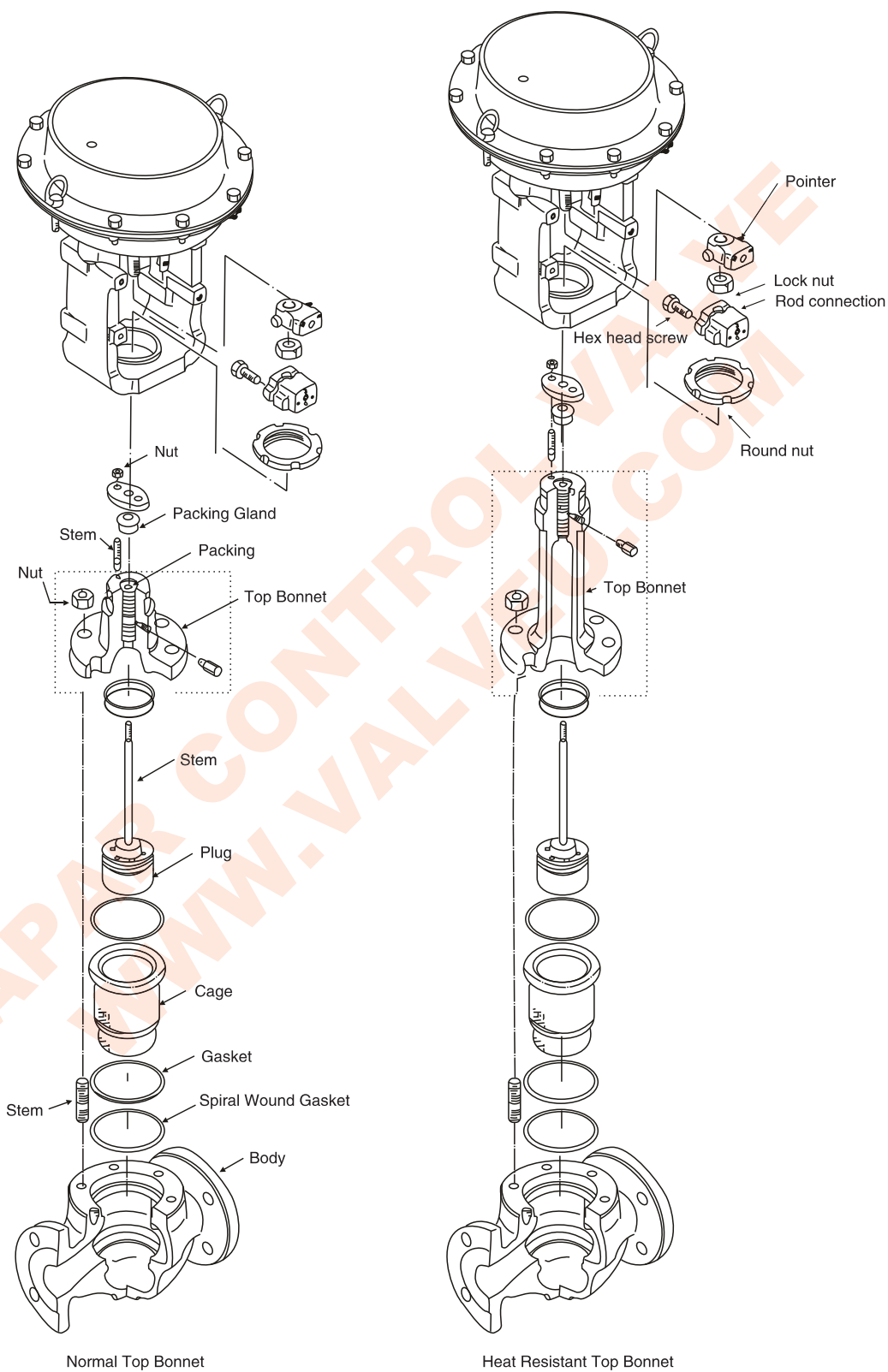
Body	Type: Straight-through, cast globe valve
Nominal size	40,50,65,80,100,150,200mm 1 1/2, 2, 2 1/2, 3, 4, 6, 8 inch
Pressure rating	JIS 10K, 16K, 20K, 30K, 40K ANSI Class 125, 150, 300, 600 PN1.6,4.0,6.4MPa
Body material	CF3M,CF8M,CF8,WCB,CF3,CE3MN,WCC,TI
Core material	304,316,304L,316L,CE3MN
Connection	Flange:FF, RF, RJ, LG, MF Tongue and groove (groove), TG Male and female(female) Flanged end:JIS B2201-1984, ANSI B16.5-1981, GB/T 9112-9124-2000 Weld:SW ( from 40-50mm ), BW ( from 65-200mm )
Bonnet	Plain bonnet ( -5-230°C ) Extension bonnet Type 1 (230-566°C)
Packing / Grease	Grease not provided: When V shaped PTFE packing or PTFE yarn packing is used. Grease provided: When graphite packing is used.
Gasket	Type: Flat type, serrated type Material: Carbon steel (S15C), stainless steel (SUS316, SUS316L, SUS329J1), copper, aluminum, titanium, ASTM B574 (Hastelloy C-276 equivalent), or Alloy 20
Gland type	Bolted gland
Actuator	Pneumatic, electric: refer to the attachment.
Flow characteristics	Linear(LV)
Performance	Inherent range ability 50 : 1 Leakage level: standard ANSI B16.104 level III, less than 0.1% of rated Cv Hysteresis error: With positioner: 1% F.S. Linearity: With positioner: ± 1% F.S.



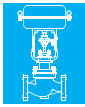
LPH15/LPG15  
Low-noise Cage Guided Control Valve



Exploded View



Low-noise Cage Type Control Valve



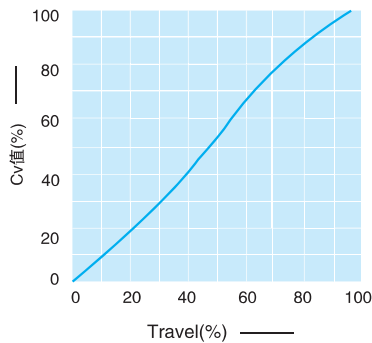
# LPH15/LPG15 Low-noise Cage Guided Control Valve



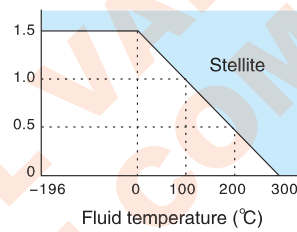
## CV值和行程 Cv Value and Travel

DN	40			50			65			80			100			150			200		
Diameter	25	32	40	32	40	50	40	50	65	50	65	80	65	80	100	100	125	150	125	150	200
CV	11	17	24	17	24	44	24	44	68	44	68	99	68	99	120	120	175	330	175	330	580
Travel	25						38						50			75					

## Characteristics



Flow characteristics(Linear (LV))



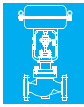
Temperature/normal differential pressure ranges requiring Stellite

## Allowable Differential Pressure

Air-to-close

100KPa

Actuator	Supply pressure	Spring range	Positioner	Allowable differential pressure						
				DN						
				40	50	65	80	100	150	200
ZHA2D	1.4	0.2 ~ 1.0	With	19	15	13	11	8	-	-
	1.6	0.2 ~ 1.0		40	40	40	40	40	-	-
	4.0	0.8 ~ 2.4	With	100	74	54	53	40	-	-
				40	40	40	40	40	-	-
ZHA3D	1.4	0.2 ~ 1.0	With	34	26	23	19	14	10	-
	1.6	0.2 ~ 1.0		40	40	40	40	40	40	-
	4.0	0.8 ~ 2.4	With	100	100	100	94	71	51	-
				40	40	40	40	40	40	-
ZHA4D	1.4	0.2 ~ 1.0	With	-	-	39	32	25	17	14
	1.6	0.2 ~ 1.0		-	-	40	40	40	40	40
	4.0	0.8 ~ 2.4	With	-	-	100	100	100	87	70
				-	-	40	40	40	40	40



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## Low-noise Cage Guided Control Valve



Air-to-open

100KPa

Actuator	Supply pressure	Spring range	Positioner	Allowable differential pressure						
				Diameter						
				40	50	65	80	100	150	200
ZHA2R	1.4	0.2 ~ 1.0	With	19	15	13	11	8	-	-
	2.8	0.8 ~ 2.4		40	40	40	40	40	-	-
				100	100	89	74	57	-	-
ZHA3R	1.4	0.2 ~ 1.0	With	34	26	23	19	14	10	-
	2.8	0.8 ~ 2.4		40	40	40	40	40	40	-
				100	100	100	100	100	71	-
ZHA4R	1.4	0.2 ~ 1.0	With	-	-	39	32	25	17	14
	2.8	0.8 ~ 2.4		-	-	40	40	40	40	40
				-	-	100	100	100	100	99
ZVA5R	1.4	0.2 ~ 1.0	With	-	-	-	-	34	24	19
	1.4	0.4 ~ 1.2		-	-	-	-	40	40	40
				-	-	-	-	100	72	58
2.8	0.8 ~ 2.4	-	-	-	-	40	40	40		
ZVA6R	4	1.9 ~ 3.5	With	-	-	-	-	40	40	-
				-	-	-	-	100	100	-
				-	-	-	-	100	100	-

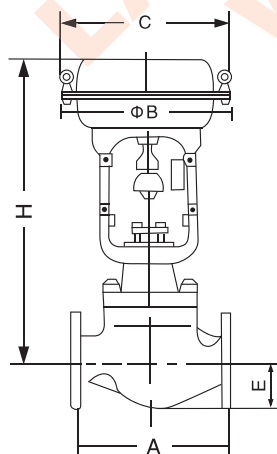
1. Maximum operating pressure designated by ANSI B 16. 34-1981 or JIS B2201-1984.
2. The upper figures denote the operating allowable differential pressure. The lower denote allowable differential pressure at full closure.
3. Column bordered with bold lines denote types provided with standard-type actuator

Allowable Differential Pressure for Electric Actuated Control Valve

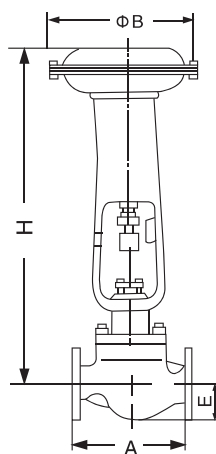
100KPa

Actuator	Allowable differential pressure															
	DN	40			50			65			80			100		
	Diameter	25	32	40	32	40	50	40	50	65	50	65	80	65	80	100
EA2		40			40											
EA3								40			40			40		

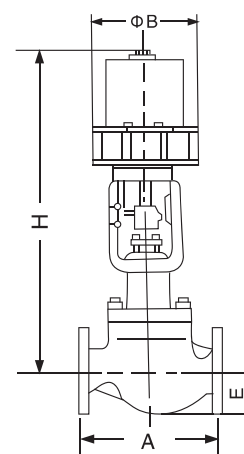
### Dimensions



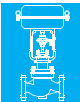
ZHA actuator



ZVA5 actuator



ZVA6 actuator



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## Low-noise Cage Guided Control Valve



mm

DN	A						
	ANSI 150 RJ	ANSI 300 RJ	ANSI 600 RJ	ANSI 300 LG	ANSI 600 LG	ANSI 150 SW、BW	ANSI 150、600 SW、BW
40	235	248	251	244	248	251	251
50	267	283	289	276	283	286	286
65	289	308	314	302	308	311	311
80	311	333	340	327	333	337	337
100	365	384	397	378	391	394	394
150	464	489	511	483	505	473	508
200	556	584	613	578	606	568	610

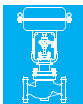
mm

DN	A							
	ANSI 150 RF JIS 10K FF RF PN1.6	JIS 16K RF	ANSI 300 RF JIS20K、30K RF PN4.0	ANSI 600 RF JIS 40K RF PN6.4	JIS 16K MF TG	JIS 20K MF TG	JIS 30K MF TG	JIS 40K MF TG
40	222	231	235	251	235	236	248	251
50	254	263	267	286	265	267	276	286
65	276	288	292	311	290	292	303	311
80	298	313	317	337	310	317	326	337
100	352	364	368	394	360	368	379	394
150	451	465	473	508	475	473	486	508
200	543	560	568	610	570	568	580	610

Fase-to-fase conforms to IEC534-3-1976.

mm

DN	Actuator	H				C	φ B	E
		Normal	Extension bonnet I	Extension bonnet II	Extension bonnet III			
40	ZHA1D、R	425	590	705	945	230	218	70
	ZHA2D、R	500	665	780	1020	281	267	
	ZHA3D、R	590	760	875	1140	363	350	
50	ZHA1D、R	425	595	710	950	230	218	80
	ZHA2D、R	500	670	785	1025	281	267	
	ZHA3D、R	595	765	875	1140	363	350	



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## Low-noise Cage Guided Control Valve



mm

DN	Actuator	H				C	φ B	E
		Normal	Extension bonnet I	Extension bonnet II	Extension bonnet III			
65	ZHA2D、R	575	745/755	880	1130	281	267	88
	ZHA3D、R	630	800/810	930	1180	363	350	
	ZHA4D、R	865	1035/1045	1165	1495	520	470	
80	ZHA2D、R	580	755/765	900	1135	281	267	98
	ZHA3D、R	635	810/820	955	1190	363	350	
	ZHA4D、R	870	1045/1055	1190	1505	520	470	
100	ZHA2D、R	610	810/870	915	1150	281	267	113
	ZHA3D、R	660	860/870	1020	1205	363	350	
	ZHA4D、R	890	1100/1110	1255	1520	520	470	
	ZVA5R	1420	1635	1820	2050	—	620	
	ZVA6R	1160	1375	1560	1790	—	445	
150	ZHA3D、R	785	1020/1045	1250	1385	363	350	170
	ZHA4D、R	955	1190/1215	1425	1570	520	470	
	ZVA5R	1480	1740	1980	2110	—	620	
	ZVA6R	1220	1480	1720	1850	—	445	
200	ZHA4D、R	1090	1350	1580	1710	520	470	220
	ZVA5R	1585	1850	2145	2275	—	620	

注1: 伸长型H 栏尺寸如下: 左边数字是JIS10K 和ANSI 125,150 的阀, 右边数字是JIS16K 和ANSI 300 及以上的阀。

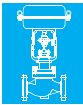
"H" dimensions of Extended bonnet Type are as follows: The left side for JIS 10K and ANSI 125,150, and the right side for JIS 16K and ANSI 300 or over.

### Weight

kg

DN	Actuator	Flange						Weld	
		ANSI 150 JIS 10K		ANSI 30 JIS 16、20、30K		ANSI 600 JIS 40K		ANSI150、300、600 JIS 10、16、20、30K	
		P	E I	P	E I	P	E I	P	E I
40	ZHA2D、R	31	34	36	39	44	47	36	39
	ZHA3D、R	43	46	48	51	56	59	48	51
50	ZHA2D、R	37	40	42	45	47	50	42	45
	ZHA3D、R	49	52	54	57	59	62	54	57
65	ZHA2D、R	43	47	48	52	65	69	48	52
	ZHA3D、R	55	59	60	64	77	81	60	64
	ZHA4D、R	86	90	91	95	108	112	91	95





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## Low-noise Cage Guided Control Valve



kg

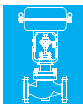
DN	Actuator	Flange						Weld	
		ANSI 150 JIS 10K		ANSI 30 JIS 16、20、30K		ANSI 600 JIS 40K		ANSI150、300、600 JIS10、16、20、30K	
		P	E I	P	E I	P	E I	P	E I
80	ZHA2D、R	53	59	63	69	85	91	63	69
	ZHA3D、R	65	71	75	81	97	103	75	81
	ZHA4D、	96	102	106	112	128	134	106	112
100	ZHA2D、R	63	73	78	88	113	123	75	85
	ZHA3D、R	75	85	90	100	125	135	87	97
	ZHA4D、R	106	116	121	131	156	166	118	128
	ZVA5R	233	234	248	258	283	293	245	255
	ZVA6R	248	258	263	273	298	308	260	270
150	ZHA3D、R	157	172	187	202	237	252	177	192
	ZHA4D、R	188	203	218	233	268	283	208	233
	ZHA5D、R	315	330	345	360	395	410	335	350
	ZVA6R	330	345	360	375	410	425	350	365
200	ZHA4D、R	268	1288	318	338	438	458	308	328
	ZVA5R	395	415	445	465	565	585	435	455

### Dimensions and Weight of Electric Low-noise Cage Guided Control Valve

mm

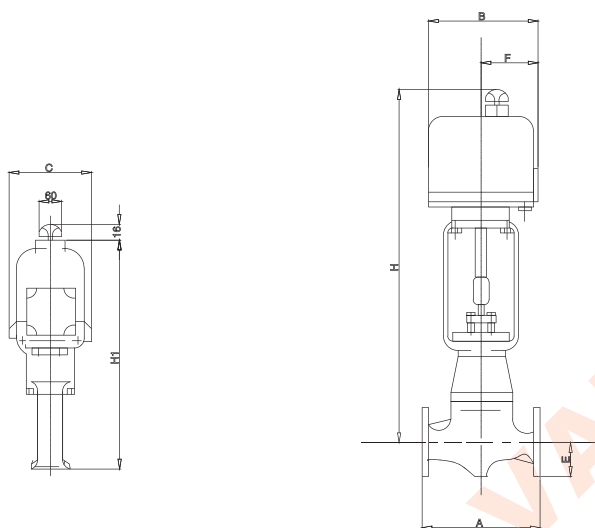
DN	H		H1	B	E	C	F
	Normal	Extension bonnet Type I					
40	540	705	533	214	70	138	116
50	540	710	335	214	80	138	116
65	625	795/805	378	244	100	140	120
80	630	805/815	378	244	100	140	120
100	660	860/870	378	244	115	140	120





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## Low-noise Cage Guided Control Valve



### Weight

kg

DN	Flange						Weld	
	ANSI 125 150 JIS 10K		ANSI 300 JIS 16 20 30K		ANSI 600 JIS 40K		ANSI 150,300,600 JIS 16 20 30K	
40	27	30	32	35	40	43	32	35
50	33	36	38	41	43	46	38	41
65	39	43	44	8	61	65	44	48
80	49	55	59	65	81	87	59	65
100	59	69	74	84	109	119	71	81