

ECCENTRIC BALL VALVE

◎ Overview

Eccentric ball valve (referred to as EBV) adopt unique eccentric structure, with compact structure, good cutting performance, long service life and other characteristics, both with adjustment and cutting two functions. Widely used in chemical industry, power plant, textile, food, medicine, papermaking and other industrial sectors and municipal engineering, water plants and other pipelines to water, sewage, oil liquid or air, gas, natural gas, steam and other media to cut off or adjust the flow control.

◎ Standard Specification

Valve Body

Type	Eccentric Ball
Nominal Diameter	DN25 ~ DN400mm
Nominal Pressure	PN : 1.6Mpa、2.5Mpa、4.0Mpa、6.3 Mpa Class : Class 150 Class 300
Flow Characteristic	Approach Equal Percentage
Bonnet Type	Standard: -20°C ~ +427°C
Connection Type	Wafer, Flange
Body, Trim Material	WCB、CF8、CF8M
Packing Material	PTFE: -45°C ~ +230°C Flexible Graphite : -196°C ~ +600°C
Dimensions	Please refer to sheet 4.
Surface Painting	When the valve body is carbon steel, silver gray (epoxy); When the valve body is stainless steel, the body is not coated.

Actuator

Type	Piston Pneumatic Actuator		Diaphragm Actuator	Electric Actuator
Model	DA	SR	ZMA	According to brand
Acting type	Double Acting	Single Acting	Multi-Spring	—
Function	Modulating, Shut off		Modulating	Modulating
Air or Power Supply	0.3~0.6MPa	0.3~0.6 MPa	0.4 MPa	See brand selection
Thread Connection	NPT1/8"、NPT1/4"、NPT3/8"、NPT1/2"		M16X1.5	
Action Angle	90°			
Action	The valve opens or closes as the input signal increases	Direct action: air pressure increases valve close Reverse action: air pressure increases valve opening		See brand selection
Environmental Temp.	-40~+80°C		-20~+70°C	
Painting Color	Gray		Red	
Accessories	E/P, P/P Valve positioner, air filter regulator, solenoid valve, limit switch, booster, lock up valve, handwheel.			

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◎Main Performance Specification

Item	Name	Pneumatic EBV	Electric EBV
1	Intrinsic error (%)	± 2.5	± 2.5
2	Return difference (%)	2.5	2.0
3	Dead Zone (%)	2.0	3.0
4	Constant point deviation (%)	± 2	± 1.5
5	Rated Angle deviation(%)	+2.5	+0.5
6	Rated Flow Characteristic	Pls refer to sheet 2.	
7	Flow Characteristic	Approach Equal Percentage	
8	Range ability	100:1	
9	Leakage	IV, V, VI	
10	Allowable Differential Pressure	PN	

◎ Sheet 1 Valve body, trim material and suitable temperature · allowable leakage of seat

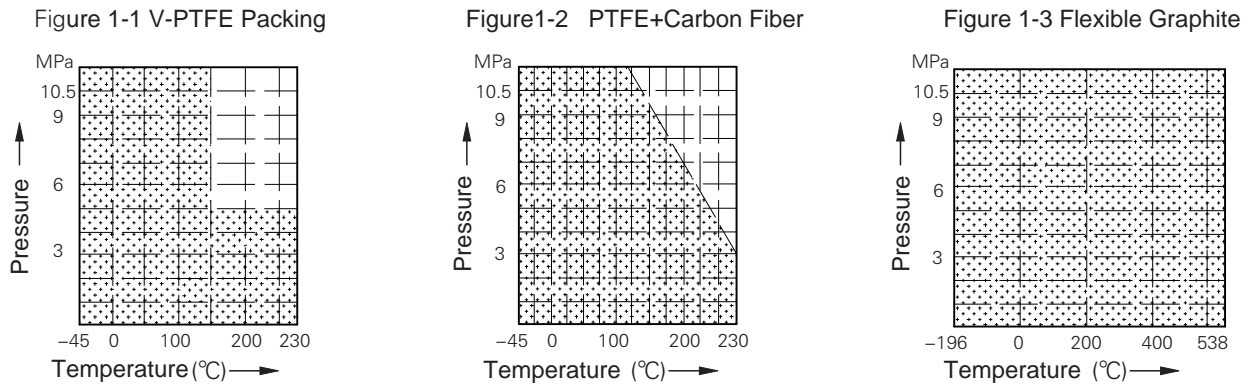
Sheet 1-1 Soft Seat: DN25-DN400

Valve Body		WCB	CF8	CF8M
Trim		CF8	CF8	CF8M
Stem		3Cr13	304/17-4PH	316/17-4PH
Top-Guided		2Cr13	304	316
Seat		PTFE	PTFE	PTFE
Bottom-Guided		304	17-4PH	17-4PH
Bottom Plug Shaft		2Cr13	304	316
Packing		PTFE, Flexible Graphite	PTFE, Flexible Graphite	PTFE, Flexible Graphite
Suitable Temperature		-5~200°C	-45~200°C	-45~200°C
Allowable Temperature	Class	VI	VI	VI
	Standard	GB/T 4213		

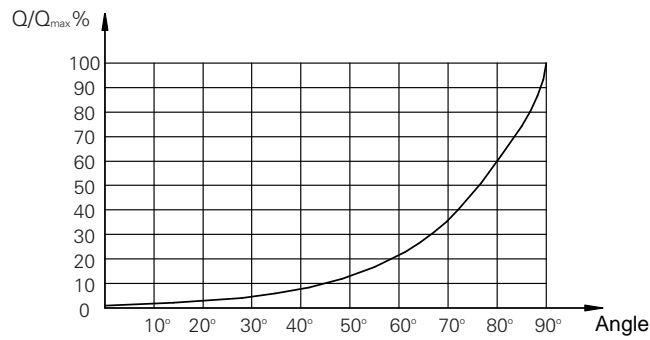
Sheet 1-2 Metal Seat: DN25-DN400

Valve Body		WCB		CF8		CF8M	
Trim		CF8	CF8+ST	CF8	CF8+ST	CF8M	CF8M+ST
Stem		3Cr13		304/17-4PH		316/17-4PH	
Top-Guided		2Cr13		304		316	
Seat		CF8+ST		CF8+ST		CF8M+ST	
Bottom-Guided		304		17-4PH		17-4PH	
Bottom Plug Shaft		2Cr13		304		316	
Packing		PTFE	Flexible Graphite	PTFE	Flexible Graphite	PTFE	Flexible Graphite
Suitable Temperature		-5~200°C	-45~427°C	-5~200°C	-45~427°C	-5~200°C	-45~427°C
Allowable Temperature	Class	IV、V、VI		IV、V、VI		IV、V、VI	
	Standard	GB/T 4213					

◎ Figure 1 Packing Material Range of Temperature · Pressure



◎ Figure 2 Flow Characteristic Curve

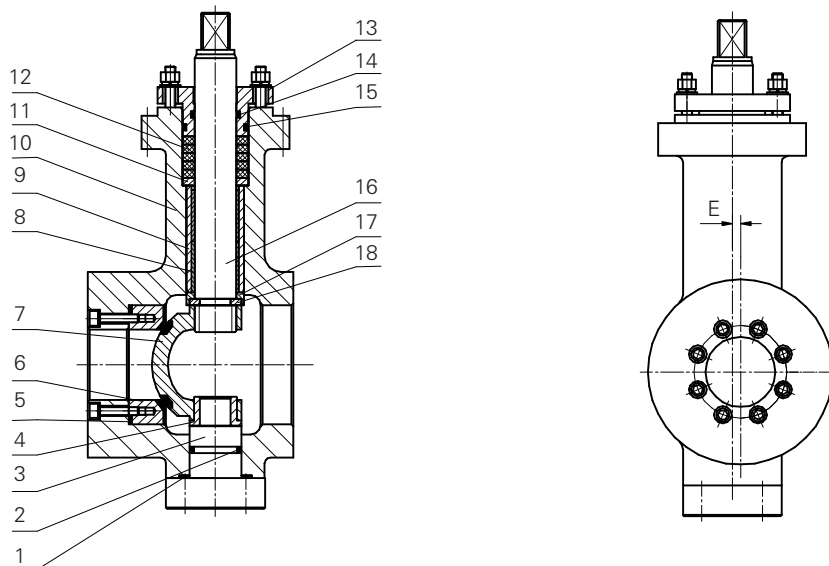


Unit : %

Angle (°)	0	10	20	30	40	50	60	70	80	90
Q/Q_{max} %	1.0	1.7	2.8	4.6	7.7	12.9	21.5	35.9	59.9	100

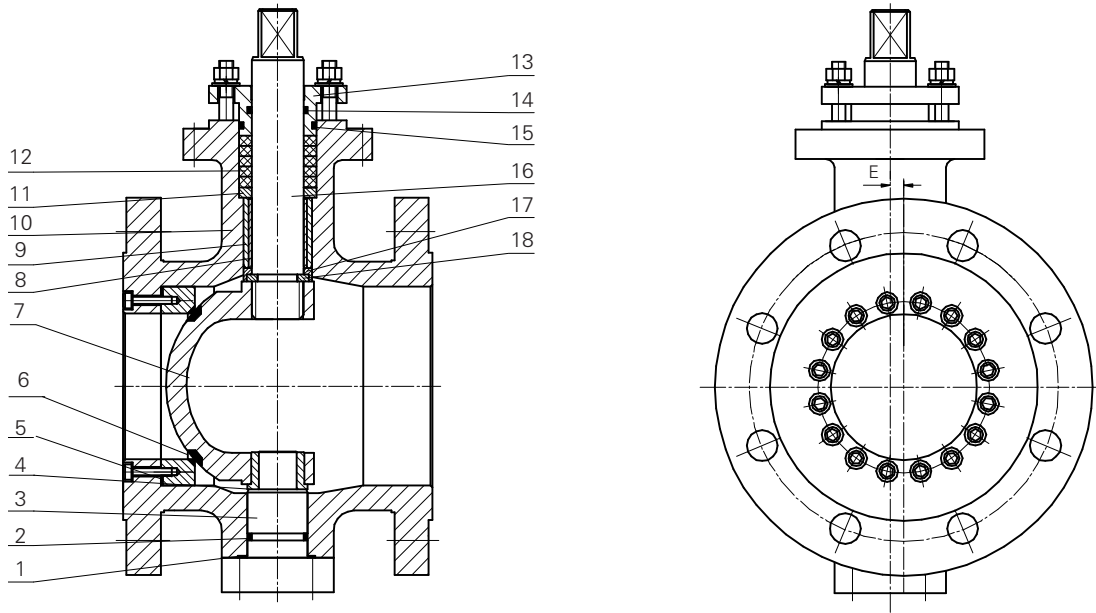
◎ Figure 3 Valve Body Structure Chart

Figure 3-1 Metal Seat Eccentric Ball Valve



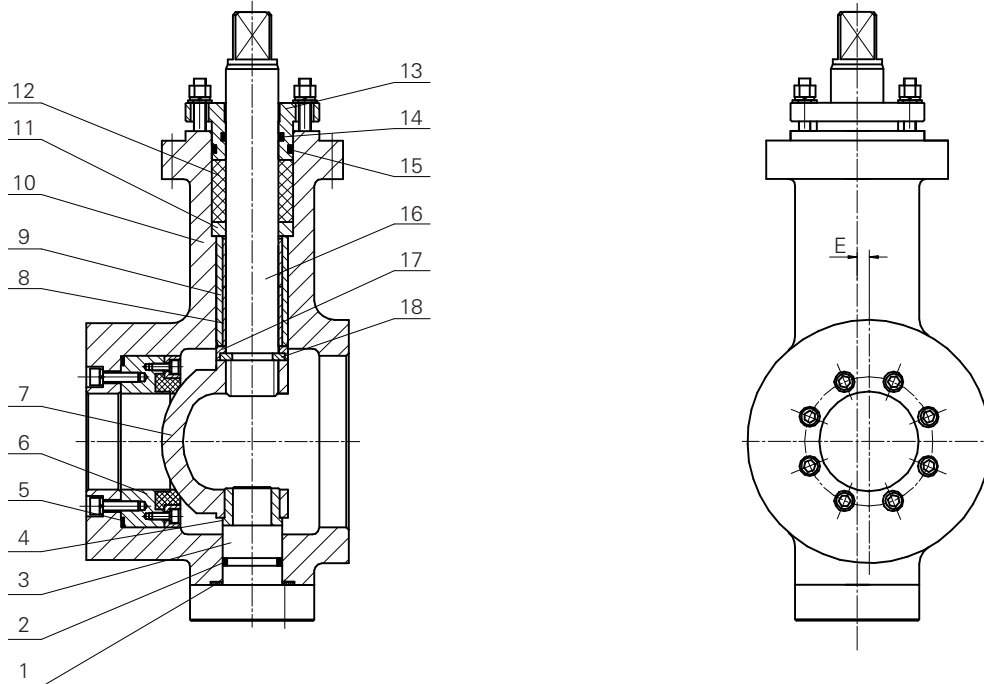
Wafer type : DN25-DN50

ECCENTRIC BALL VALVE

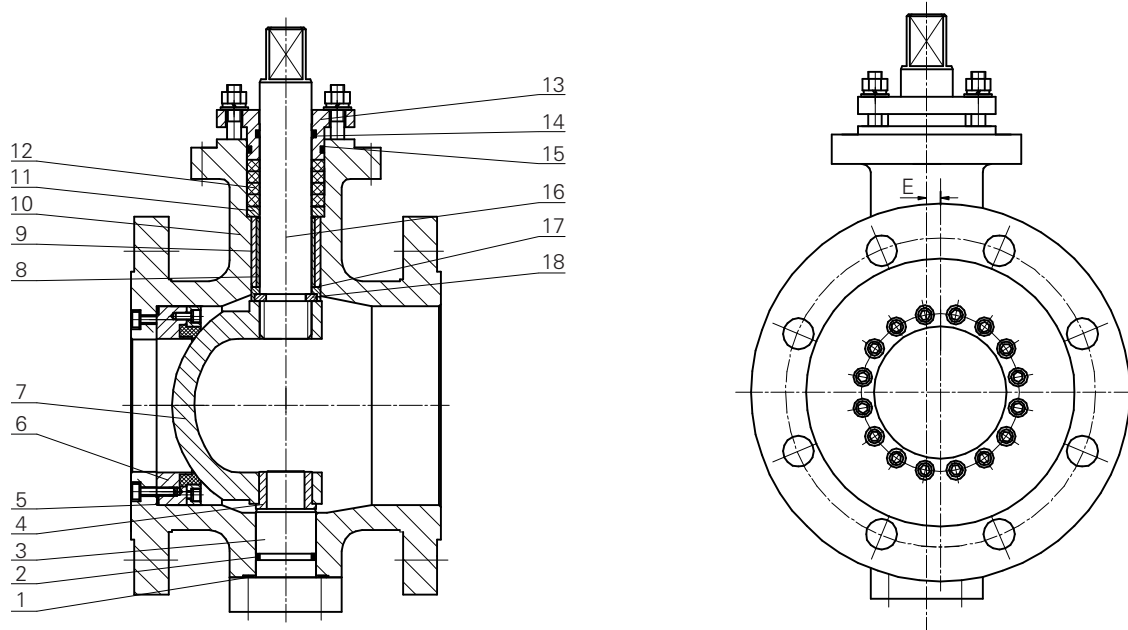


Flange ends: DN65–DN400

Figure 3-2 Soft Seat Eccentric Ball Valve



Wafer type: DN25–DN50



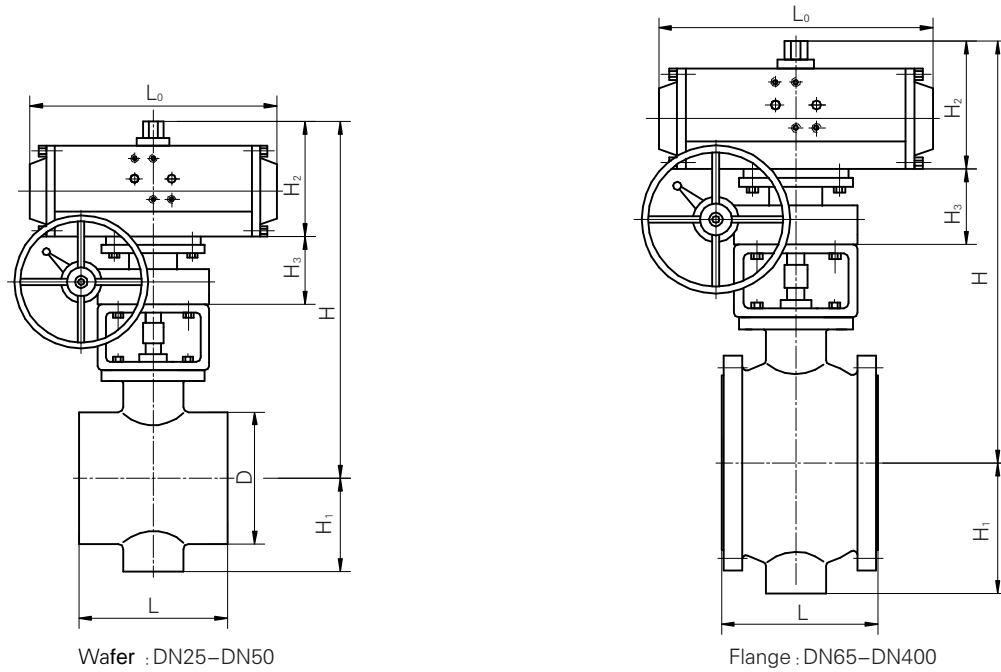
Flange ends: DN65–DN400

- 1. Bottom shaft seal gasket 2. O-ring 3. Bottom Shaft 4. Bottom Guided 5. Seat Sealing 6. Seat Component
- 7. Plug 8. Shaft Sleeve 9. Top Guided 10. Valve Body 11. Packing Gasket 12. Packing 13. Packing Gland
- 14. O-ring 15. O-ring 16. Valve Stem 17. Retainer Ring 18. Split Ring

© Sheet 2 Rated Kv Value

DN(mm)	Rated flow coefficient Kv	DN(mm)	Rated flow coefficient Kv	DN(mm)	Rated flow coefficient Kv
25	20	80	240	250	2400
32	30	100	370	300	3900
40	50	125	620	350	6150
50	100	150	940	400	9800
65	150	200	1540		

Sheet 4-2 Pneumatic Eccentric Ball Valve Dimension & Weight



单位: mm

DN	H	H ₁	H ₂	H ₃	L	L ₀	D	GW kg	Air Thread
25	380	60	160	73	90	177	Φ70	4	G1/8"
32	420	65	175	93	95	203	Φ80	4.5	G1/4"
40	440	70	190	93	100	216	Φ90	5.5	
50	480	75	200	93	110	284	Φ102	7.5	
65	510	95	230	108	150	290		15.5	
80	600	102	250	108	160	368		18.5	
100	685	120	270	108	180	420		24.5	
125	785	138	320	135	220	583		37.5	
150	850	155	355	135	250	662		51.5	M16 × 1.5
200	920	190	425	138	290	1359		84	
250	1150	230	520	138	335	1448		122.5	
300	1400	260	575	138	400	1850		187	
350	1500	300	655	138	450	1850		265	
400	1600	340	740	138	500	1850		365	

Note: Above sheet according the nominal pressure PN16, and weight just for valve body, the other information please contact THINKTANK sales.