



WESDOM



WESDOM GROUP

Triple Eccentric Butterfly Valves

集团总部：中国·郑州华南城中原电商大厦
分工厂：上海·天津·河北·山东·温州·连云港
驻外分公司：非洲·坦桑尼亚·赞比亚·肯尼亚

Group headquarters: Central Plains E-Commerce Building, Zhengzhou South City, China
Branch Factory: Shanghai, Tianjin, Hebei, Shandong, Wenzhou, Lianyungang
Branch Company in Overseas: Tanzania, Zambia, Kenya in Africa

国际贸易部：+86-13203812911
国内贸易部：+86-13849013722

International Trading Department: +86-013203812911
Inland Trading Department: +86-013849013722

坦桑尼亚：+255744222807
+255744222808

P.O Box 3922, mikodheni B, Dar Es Salaam, Tanzania ✉ Weisidunvalve2015@gmail.com

赞比亚：+260972377777
+260963767287

Mungwi Road(adjacent to check point), Lusaka, Zambia

肯尼亚：+254780021428

Nairobi, Kenya ✉ Weisidunvalve@gmail.com

www.wsd-valve.com
www.hawsd.com

✉ info@wsdvalve.com
weisidun@hawsd.com

www.facebook.com/hawsd

www.linkedin.com/company/henan-wesdom

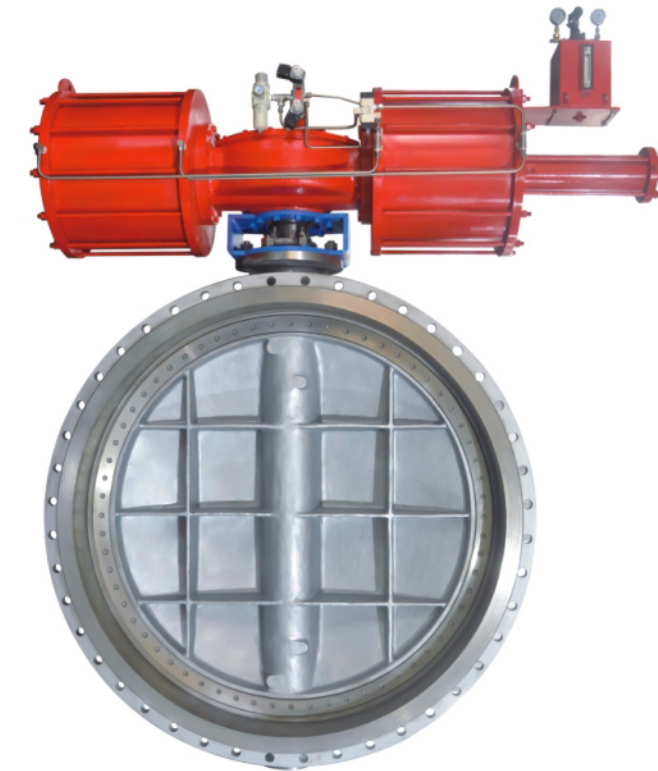
WESDOM GROUP

WESDOM Group specializes in pipeline fluid systems: R&D, production and sales of valves, pipe fittings, water meters, flow meters, etc. The products cover cast iron, cast steel, stainless steel, copper, plastics and other materials, which are widely used in hydropower stations, heat, buildings, Water supply and drainage, petroleum, chemical industry, electric power, medical and other fields.

In recent years, WESDOM Group has actively embraced the era of Internet of Everything, committed to IoT terminal control and artificial intelligence design, big data mining and development, and promoted smart hardware to move towards big data center and wisdom with excellent market foresight and technological innovation. The smart cities, smart heating, smart water and other fields are in progress.

In the early stage, the Internet of Things smart valves and smart water meters were developed to promote and apply smart control systems such as municipal heating and municipal water supply.

In terms of quality control, we have strict control procedures. From the raw materials entering the factory to the final product leaving the factory, after 24 quality inspection passes, each pass must ensure that the product quality is 100% qualified before it can flow into the next process, thus ensuring that the qualified rate of the finished products. WESDOM products can well meet the Chinese standard like GB, JB, HB; American standard like API, ASME, AWWA; British and EU standards like BS, EN, ISO; German standard DIN; Japanese standard JIS; Russian standard GOST and other standards.



Product Introduction

Triple eccentric butterfly valve plate and seal ring with a unique three-eccentric structure, with compact structure, good cutting performance, long service life and other characteristics, both adjustment and cutting off two functions. Widely used in chemical, electric power, textile, food, medicine, paper and other industrial departments and municipal engineering, water plants and other pipelines to tap water, sewage, oil liquid or air, gas, natural gas, water vapor media cut-off or regulation flow control.

Nominal pressure grades of this series of products are PN(MPa)0.6, 1.0, 1.6, 4.0(150Lb, 300Lb); Valve body diameter range DN80~1200(3"~48"); Applicable fluid temperature range -60~+450°C; Multi-level seal, two-way zero leakage, all-metal hard seal, up to V-level leakage. The flow characteristic is approximately equal percentage.

Characteristic

- Body adopts integral casting technology, compact structure, small volume and light weight;
- Disc three eccentric mounting. When closed, disc expands outwards to achieve the best peripheral seal; When opened, disc and seal ring quickly separated, effectively prevent the seal ring wear;
- Sealing ring design is novel, simple and maintenance-free;
- Sealing ring form is multi-level metal hard seal, suitable for harsh working conditions;
- Due to the use of three eccentric structure, the operating torque is greatly reduced.
- The flow resistance is small, the rated flow coefficient is large, about 3 times that of the same caliber single-seat valve;
- Strong self-cleaning ability, long service life;
- Standard actuators (pneumatic piston and electric) are interchangeable.

Structure Chart

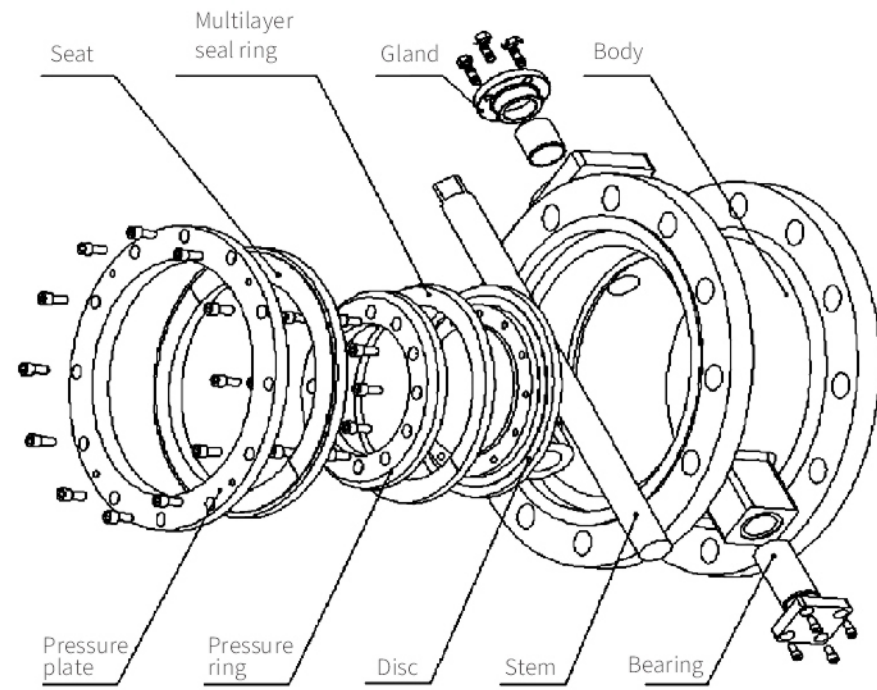
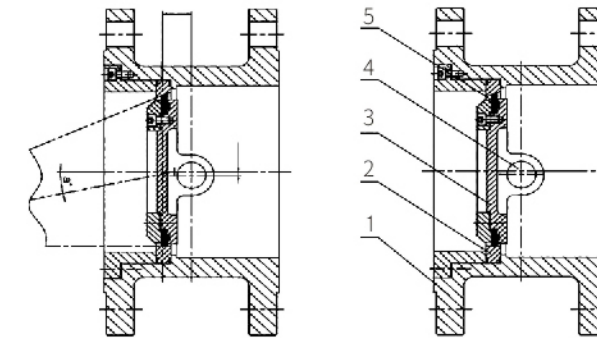


Table 1

NO.	Part name	Common materials
1	Seat	304, 316+ Steillet alloy
2	Multilayer composite seal ring	304+graphite, 304+PTFE
	All metal sealing ring	304, 316+Steillet alloy
3	Bottom cap	ZG2Cr13
4	Body	WCB, CF8, CF8M
5	Clamp plate	WCB, CF8, CF8M
6	Pressing ring	WCB, CF8, CF8M
7	Disc	WCB, CF8, CF8M
8	Stem	17-4PH
9	Bearing	QAL9-4

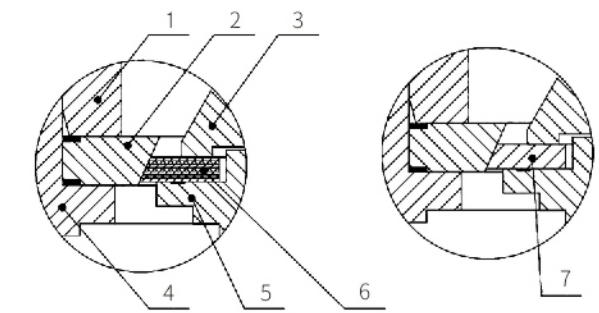
Basic Structure And Sealing Ring Form

C. Eccentricity principle



1. Body 2. Seat 3. Disc 4. Stem 5. Sealing ring

Multilayer composite seal ring and all-metal seal ring



1. Pressure plate 5. disc
 2. Seat 6. Multi-layer composite sealing ring
 3. Seal ring pressure plate 7. All-metal sealing ring
 4. Body

Eccentric butterfly valve design has three eccentricity: The rotation axis of the valve plate deviates from the cross section center of the sealing surface of the valve plate (H1); The axis of rotation deviates from the center of the pipe (H2). The rotation axis of the valve seat forms an Angle α° with the axis of the valve body channel to form three eccentricities.

When it is opened, all points on the sealing surface of the valve plate are separated from the sealing ring at the same time, and there is no extrusion between the valve plate rotation and the sealing ring, which improves the life of the sealing ring. The sealing surface can be automatically adjusted to maintain the best sealing effect. Multilayer composite sealing ring, leakage level is VI, zero leakage. When the all-metal sealing ring is used, the leakage grade is V.

Main Performance Indicators

Table 2

NO.	Item	Pneumatic triple eccentric butterfly valve	Electric triple eccentric butterfly valve
1	Basic error <(%)	±2.5	±2.5
2	Return difference <(%)	2.5	2.0
3	Deadband <(%)	2.0	3.0
4	Always point deviation <(%)	Initial point	±1.5
		End point	
5	Rated angle deviation <(%)	+2.5	+0.5
6	Deviation of rated flow coefficient <(%)		+10

Note: The performance indicators of this product are GB/4213-2008.

Specifications And Technical Parameters

Table 3. Rated flow coefficient

Nominal diameter DN(mm)		80	100	125	150	200	250	300	350	400
Rated flow coefficient Kv		200	405	620	1150	2030	3150	4550	6200	8100
Pneumatic piston type	Single action	100	100	125	143	160	190	210	240	270
	Torque (Nm)	50	50	100	200	300	400	600	1000	1600
	Double acting	83	83	100	125	143	160	190	210	240
	Torque (Nm)	50	50	100	200	300	400	600	1000	1900
Nominal diameter DN(mm)		450	500	600	700	800	900	1000	1200	
Rated flow coefficient Kv		10260	13500	19800	27000	35700	44600	55080	81000	
Pneumatic piston type	Single action	270	300	300	350	400	HAW35S	HAW40S	HAW50S	
	Torque (Nm)	1600	2000	2000	2500	3500	5500	8100	14800	
	Double acting	240	240	240	270	300	350	400	HAW35	
	Torque (Nm)	1900	1900	1900	2600	3500	5700	8500	15000	

Table 4. Main technical parameters

Nominal diameter DN(mm)	DN80~1200 (3"~48")
Nominal pressure PN(MPa)	0.6, 1.0, 1.6, 4.0 (150Lb, 300Lb)
Natural flow characteristic	Approximate equal percentage
Inherently adjustable ratio R	50
Rated Angle (°)	80
Pneumatic actuator form	Single acting, Double acting
Air source pressure (MPa)	The recommended actuator air source pressure is 0.5MPa
Supply voltage	220V.AC 50Hz 380V.AC 50Hz(Three phase)
Input signal	4~20mA.DC, 0~10mA.DC, 1~5V.DC or above signal range control
Connection form	Flange type: Flange standard HG/T20592-2009 Wafer type:
Operating temperature (°C)	Carbon steel:-20~425°C, Stainless steel: -40~595°C

Note: 1. Special requirements can be specified by customers;

2. The flange can be manufactured according to ANSI, JIS and other flange standards.

Temperature And Pressure Range For The Use Of Valve Body And Cover Materials

Table 5

Unit: kgf/cm²

Temperature °C	Pressure	PN16		PN40		PN64	
		WCB	CF8	WCB	CF8	WCB	CF8
-196~-20		-	16.0	-	40.0	-	64.0
-20~100		16.0	16.0	40.0	40.0	64.0	64.0
150		16.0	16.0	40.0	40.0	64.0	64.0
200		16.0	16.0	40.0	40.0	64.0	64.0
250		14.0	15.0	36.0	38.0	56.0	60.0
300		12.5	14.0	32.0	36.0	50.0	56.0
350		11.0	13.2	28.0	34.0	45.0	53.0
400		10.0	12.5	25.0	32.0	40.0	50.0
425		9.0	12.0	22.0	31.7	36.0	48.4
450		6.7	11.5	17.0	29.5	26.5	46.8
500		-	10.5	-	26.5	-	42.5
525		-	9.9	-	24.6	-	39.2
560		-	9.0	-	22.0	-	36.0

Operating temperature range of the machine · seat leakage

Table 6

Body	WCB, CF8, CF8M
Seat	304, 316, 316+ Steilet alloy
Sealing ring	Multilayer composite sealing ring, stainless steel + Seley alloy
Pressing ring	WCB, CF8
Filler	Polytetrafluoroethylene, flexible graphite
Gasket	Graphite wound gasket, PTFE gasket
Leakage level	Multi-layer sealing ring: Class VI, zero leakage
	All-metal seal ring: Grade V
Seat leakage (L/h)	Multilayer sealing ring: Microbubble level
	All-metal sealing ring: $1.8 \times 10^{-7} \times \Delta P \times D$
Temperature range (°C)	-20~200, -40~450

Triple Eccentric Butterfly Valves

Allowable Pressure Difference

Table 7. Equipped with pneumatic piston actuator (single acting) allowable differential pressure gauge Unit: MPa

DN (mm)	Actuator	83	100	125	143	160	190	210	240	270	300	350	400	HAW 35S	HAW 40S	HAW 50S	
	Torque(Nm)	40	80	125	230	320	550	677	1000	1612	1929	2700	3600	6100	8700	14000	
80		0.4	0.8														
100			0.3	1.0													
125				0.4	1.0												
150					0.3	1.2											
200						0.2	0.8	1.6									
250							0.3	0.6	2.0								
300							0.2	0.6	1.6								
350								0.2	0.6	1.2							
400	Metal seal							0.1	0.6	1.0	1.6						
450									0.2	0.6	1.6						
500										0.5	1.0	2.0					
600											0.3	0.6	1.6				
700												0.5	1.2				
800													0.6	1.4			
900														0.2	0.8	1.2	
1000															0.2	0.6	1.2
1200																0.3	0.8

Note: 1) The air source pressure is calculated at 0.5MPa;

2) The allowable pressure difference in the table is the company's standard configuration value, and the actuator with greater torque can be selected according to the user's working condition.

Triple Eccentric Butterfly Valves

Butterfly Valve

Table 8. Equipped with pneumatic piston actuator (double acting) allowable differential pressure gauge Unit: MPa

DN (mm)	Actuator	75	83	100	125	143	160	190	210	240	270	300	350	400	HAW 35				
	Torque(Nm)	50	70	113	275	433	550	900	1185	1787	2700	3500	5200	8100	16000				
80		0.4	0.8																
100			0.3	1.0															
125				0.4	1.0														
150					0.3	1.2													
200						0.2	0.8	1.6											
250							0.3	1.0	2.0										
300								0.2	1.0	1.6									
350									0.2	1.0	1.2								
400	Metal seal									0.3	1.0	1.6							
450											0.2	0.8	1.6						
500												0.5	1.0	2.0					
600													0.3	1.2	2.0				
700														0.6	1.2				
800															0.4	0.8	1.6		
900																0.2	0.4	0.8	
1000																	0.2	0.6	1.2
1200																		0.4	1.2

Note: 1) The air source pressure is calculated at 0.5MPa;

2) The allowable pressure difference in the table is the company's standard configuration value, and the actuator with greater torque can be selected according to the user's working condition.

Triple Eccentric Butterfly Valves

Table 9. Equipped with electric actuator allowable differential pressure meter

Unit: MPa

DN (mm)	Actuator	01	02	03	04	05	06	07	08	09	10	11	12
	Torque(Nm)	50	100	200	300	600	900	1200	2000	3000	5000	8000	15000
80		0.4	0.8										
100			0.3	1.0									
125				0.4	1.0								
150					0.3	1.2							
200					0.2	0.8	1.6						
250						0.6	1.2	2.0					
300						0.4	1.0	1.6					
350							0.6	1.2	2.0				
400	Metal seal						0.4	1.0	1.6				
450								0.2	0.8	1.6			
500								0.5	1.2	2.0			
600									0.8	1.2	2.0		
700								0.4	0.6	1.6			
800										0.4	0.8	1.6	
900										0.2	0.6	1.2	
1000											0.2	0.5	1.0
1200												0.4	1.2

Note: 1) The allowable pressure difference in the table is the company's standard configuration value, and the actuator with greater torque can be selected according to the user's working condition.

Triple Eccentric Butterfly Valves

Butterfly Valve

Overall Dimensions And Weight

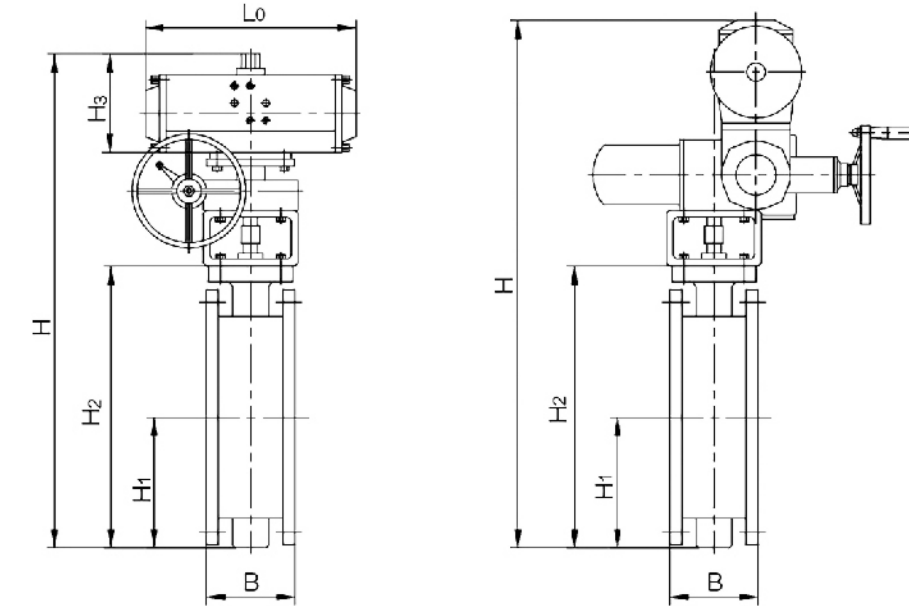


Table 10

Unit: mm

DN	H1	H2	H3	H	Electric H	B	L0	With handwheel H	Weight (kg)	Air connection
80	100	230	140	450	490	114	234	570	30	
100	120	255	160	500	530	127	234	630	48	
125	135	295	160	550	580	140	234	680	55	
150	150	330	160	610	650	140	290	750	75	
200	197	412	190	740	780	152	460	860	90	NAMUR 1/4"G
250	203	446	212	770	810	165	530	890	120	
300	225	546	230	936	990	178	602	1086	155	
350	293	607	285	1040	1200	190	602	1200	190	
400	338	693	285	1163	1320	216	722	1320	220	
450	365	770	340	1240	1360	222	722	1390	290	
500	418	828	374	1300	1420	229	722	1450	320	
600	450	910	420	1410	1500	267	742	1560	410	NAMUR 1/2"G
700	525	1066	480	1717	1700	292	860	1870	610	
800	570	1170	480	1830	1900	318	860	2020	886	
900	656	1285	560	2300	2420	325	960	2500	990	
1000	741	1490	560	2500	2630	410	960	2700	1200	
1200	780	1750	700	2700	2950	470	960	2900	1450	

Note: The data in the table is based on PN10, and the weight is based on the pneumatic standard.