

Installation And Operation Instruction

ON/OFF Metal Ball Valve

-ZPR700 Series



Products Overview

The ZPR700 series ON/OFF(shutoff) metal ball valve features a high fluid capacity, compact structure, excellent sealing performance, long service life, cost-effectiveness, and easy maintenance. It finds extensive applications in industries such as petroleum, chemical, natural gas, electric power, metallurgy, food processing, and pharmaceuticals. Moreover, it can be utilized for water treatment systems, steam, oil, liquefied gas (LPG), natural gas (NG), and coal gas mediums. Additionally, the fireproof option and special hardening treatment are available to meet customer requirements for enhanced safety and broader applications.

Classification Of On/Off Metal Ball Valves:

- ①ZPR750F:Soft-Seated Shutoff O Ball Valve
- ②ZPR750Y:Metal-Seated Shutoff O Ball Valve
- ③ZPR760F:V-Modulating Ball Valve
- ④ZPR770F:Three-way Reversing Ball Valve
- ⑤ZPR780F:Tank Bottom Discharge O Ball Valve
- ⑥ZPR790F:Four-Way Reversing Ball Valve

Application And Characteristics

The ZPR750F Soft-Seated Shutoff O Ball Valve features a compact and reliable structure, ensuring excellent sealing performance. It's easy maintenance, while the closed state of the sealing surface and ball surface minimizes erosion from the medium. This valve is easy to operate and maintain, suitable for the common mediums like water, chemical solvents, acids, natural gas. It can also withstand harsh conditions such as Oxygen, hydrogen peroxide, methane and ethylene,etc. As a result of its versatility and durability, it finds extensive applications across various industries.

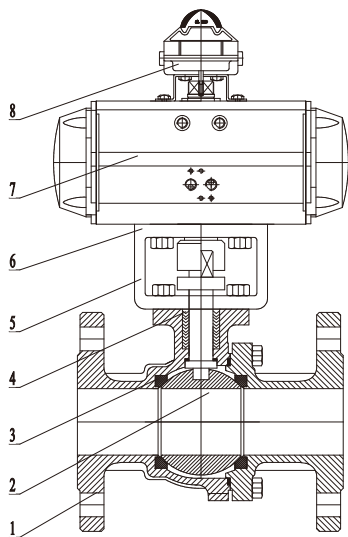
1. Ball valves exhibit minimal flow resistance due to their low fluid resistance.
2. With a simple structure, small size, and light weight, they are highly convenient for various applications.
3. The ball valve have two tight and reliable sealing surfaces, commonly made of PTFE material, ensure excellent sealing performance and complete isolation in vacuum systems.
4. Operating the valve is effortless as it only requires a 90° rotation from full open to full close position, allowing for easy remote control.
5. Maintenance is hassle-free with the easily disassembled and replaceable movable sealing rings in the simple structure of the ball valve.
6. When fully open or closed, the ball and valve seat sealing surface effectively isolates the medium without causing erosion on the valve seat surface.
7. Ball valves have a wide range of applications.The diameters from a few millimeters to few meters, suitable for both high vacuum and high-pressure conditions.
8. The wiping action during opening and closing enables ball valves to be used in media containing suspended solid particles.

Product Structure

The metal ball valve is available in two configurations: Floating ball and Trunnion ball.

The floating ball structure is suitable for valves with a diameter of 250mm or smaller, while the Trunnion ball structure is designed for valves with a diameter of 250mm or above.

This non-directional valve can be installed at any direction.



1. Body
2. Ball (Disc)
3. Seat
4. Packing
5. Bracket
6. Connecting Shaft
7. Pneumatic Actuator
8. Limit Switch

Technical Parameters/Performance Indicators

Body/Bonnet Material	WCB、 304、 316、 316L、 TA2、 HC	Leakage Level	ANSI B16.104 Grade VI
Core Material	304、 316、 316L、 TA2、 HC	Flow Characteristic	Shut-Off
Seat Material	PTFE TFM PI	Ends	Flang(RF/FM)
Packing Material	PTFE Flexible Graphite	Flange Connection Standard	HG20592-2009,ANSI B16.5
Valve Type	O-port,V-port,Multi-port(3 / 4 -ways), Discharge Ball Valve	Actuator (Rotary Motion Type)	Pneumatic Type
Temp.Range	-40°C—250°C		Electric Type

Medium temperature $\leq 120^{\circ}\text{C}$, choose material PTFE for seat and packing.

Medium temperature $\leq 180^{\circ}\text{C}$, choose material TFM4215 for seat and packing.

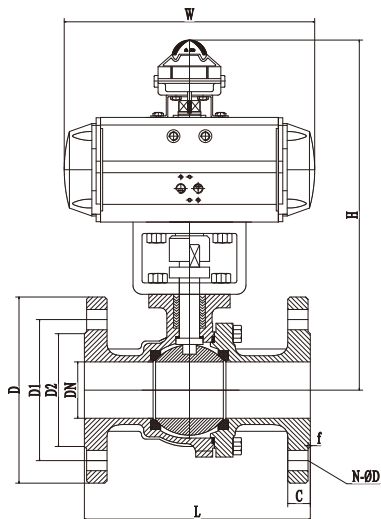
Medium temperature $\leq 250^{\circ}\text{C}$, choose material PI for seat and packing.

Actuator Options Table

Nominal Diameter	Pneumatic Actuator (Gears/Racks)		Electric Actuator	Rated Flow Coefficient (KV)
	Duplex Acting	Single Acting		
DN15	AT50DA	AT63SR	05	20
DN20	AT50DA	AT63SR	05	38
DN25	AT63DA	AT75SR	05	72
DN32	AT75DA	AT90SR	10	93
DN40	AT90DA	AT100SR	10	145
DN50	AT100DA	AT115SR	15	230
DN65	AT115DA	AT125SR	20	406

Nominal Diameter	Pneumatic Actuator (Gears/Racks)		Electric Actuator	Rated Flow Coefficient (KV)
	Duplex Acting	Single Acting		
DN80	AT125DA	AT145SR	40	576
DN100	AT145DA	AT160SR	50	940
DN125	AT160DA	AT190SR	80	1400
DN150	AT190DA	AT210SR	100	2050
DN200	AT210DA	AT240SR	160	3600
DN250	AT270DA	AT300SR	200	5150
DN300	AT300DA	AT350SR	200	7350

Outer Size



Nominal Diameter	L (previous)	L (current)	H	W	ATSR
DN20	140	130	340	168	AT63SR
DN25	150	140	365	219	AT75SR
DN32	165	165	385	249	AT90SR
DN40	180	165	425	274	AT100SR
DN50	200	203	455	315	AT115SR
DN65	220	222	500	355	AT125SR
DN80	250	241	535	417	AT145SR
DN100	280	305	575	452	AT160SR
DN125	320	356	675	540	AT190SR
DN150	360	394	720	585	AT210SR
DN200	400	457	795	685	AT240SR

Nominal Diameter	D	D1	D2	C	f	N-Φ D
DN20	105	75	55	18	2	4-Φ 14
DN25	115	85	65	18	2	4-Φ 14
DN32	140	100	75	18	2	4-Φ 18
DN40	150	110	85	18	2	4-Φ 18
DN50	165	125	100	18	2	8-Φ 18
DN65	185	145	120	18	2	8-Φ 18
DN80	200	160	135	20	2	8-Φ 18
DN100	220	180	155	20	2	8-Φ 18
DN125	250	210	185	22	2	8-Φ 18
DN150	285	240	210	22	2	8-Φ 22
DN200	340	295	265	24	2	12-Φ 22

(The size of the product is subject to the physical object)

Installation Notice

1. Before installation, carefully inspect the valve (Tag No., type, diameter, pressure, material, etc.) to ensure compliance with the required specifications. If the product is labeled with a flow direction indicator on the valve's body that equipped with the pipeline flow direction. If without indicator, no further consideration of flow direction is necessary.
2. The valves should be vertically installed on horizontal pipelines, with the actuator positioned at the top. It is advisable to avoid installing them at an angle.
3. When connecting pipes and sealing faces are made of metal materials, it is essential to use a fluoroplastic sealing gasket; otherwise, premature damage and leakage may occur on the valve's sealing face. To ensure uninterrupted production during maintenance or failure situations, consider setting up a bypass.
4. The product has been meticulously designed and manufactured according to relevant parameters specified in technical specifications. In case there are changes in usage parameters, please promptly contact our company (special requirements should be communicated prior to placing an order). The product undergoes thorough testing and adjustment before leaving our factory; if possible before installation, conducting additional tests on sealing and external leakage is recommended. Product accessories have already been adjusted to their optimal positions and should not be arbitrarily altered.
5. During system or pipeline flushing and testing procedures, ensure that the valve remains fully open.

Repair & Maintenance

1. During maintenance, operators must stand on the side of the valve and refrain from operating from the front. For toxic, flammable, and explosive media, it is advisable to increase the distance to them.
2. If there is a seal leakage, deactivate the signal source to allow for automatic valve closure. Adjust the connection screws on the valve cover. If leakage persists, shut down the pipeline and inspect for potential seal damage. In case of no damage, clean any impurities and reinstall it; if damaged, replace the valve instead of using it.
3. In case of packing leakage, tightening the cover bolt (3-5 turns) usually resolves this issue. Avoid replacing packing while under pressure.
4. For working conditions prone to substance crystallization (soft substances), pay attention to checking for blockages caused by crystallization in order to prevent flow and pressure reduction.