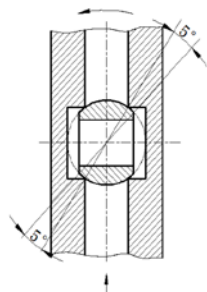




Product reliability test plan

Scope of use:		It is a high pressure gas valve, which is supplied by the pressure between 200KPa and 1050KPa (2bar to 10.5bar)	Designation:	Ball Valve
NO.	Test item No.	Test methods/conditions	product requirements	Test equipment or gage
1	Shell strength test	<ol style="list-style-type: none"> 1. Connect the valve to the equipment, one end is connected to the water inlet, and the other end is blocked and sealed; 2. Open the valve so that the valve ball is fully open; 3. Pressure to the water pressure of 37.5bar, keep for more than 1 minute; 4. Observe whether there is leakage at the joints and holes. 	<ol style="list-style-type: none"> 1. The valve should be kept sealed without leakage; 2. The valve should not be damaged or permanently deformed. 	Water valve static pressure test bench
2	Normal temperature leak test	<p>Leakage test:</p> <ol style="list-style-type: none"> 1. Connect the valve to the equipment, one end is connected to the water inlet, and the other end is blocked and sealed; 2. Open the valve so that the valve ball is half open; 3. Pressure to the water pressure of 37.5bar, keep for more than 1 minute; 4. Sink the valve into the sink and observe whether the connection and the middle hole are leaking. 	The valve shall be kept sealed and free from leakage.	Water valve static pressure test bench
		<p>Internal leakage:</p> <ol style="list-style-type: none"> 1. The valve is completely closed; 2. One end of the valve is connected with the water inlet, and the other end is exposed to the air; 3. Pressure to 6.25bar and keep for more than 2 minutes; 4. Sink the valve into the sink and observe whether there is leakage at the sealing seat; 5. Pressure to 12.5bar water pressure, keep for more than 2 minutes; 6. Sink the valve into the sink and observe whether there is leakage at the sealing seat; 7. Pressure to 18.75bar, keep for more than 2 minutes; 8. Sink the valve into the sink and observe whether there is leakage at the sealing seat; 9. Pressure to 25bar water pressure, keep for more than 2 minutes; 10. Sink the valve into the sink and observe whether there is leakage at the sealing seat; 11. Pressure to 35bar, keep for more than 2 minutes; 12. Sink the valve into the sink and observe whether there is leakage at the sealing seat; 13. Change the direction of the valve port and repeat the test. 	The valve shall be kept sealed and free from leakage.	
3	Operating moment	<ol style="list-style-type: none"> 1. Turn the valve (open and close the valve 1-3 times) before the test, so that it is closed, and then put the valve in the normal temperature for 24 hours; 2. Continuous detection during the process from the fully open position to the fully closed position and back to the fully open position to ensure the consistency of the reading; 3. Rotation speed is 5 ± 1 revolution/min. 	<ol style="list-style-type: none"> 1. The torque does not exceed the value specified in Table B1: DN 6:1.1N.m; DN 8:1.7N.m; DN10:2.3N.m; DN15:2.8N.m; DN20:4N.m; DN25: 5N.m; DN32:10N.m; DN40:30N.m; DN50:30N.m; DN65:30N.m; DN80:30N.m; DN100:30N.m; DN150:30N.m; <p>The torque required for the first opening shall not exceed 1.5 times as shown in Table B1.</p>	The measurement value can be up to 30Nm, suitable for the operation of the handle torque wrench, bench vice

4	Seal Angle test	<ol style="list-style-type: none"> The valve is connected to the equipment; The pressure of 7.5bar is passed into the valve inlet, and the flow rate is adjusted between 1L/ H-5L /h, so that the valve is closed; Gradually open the valve and measure the Angle of rotation of the valve stem when it begins to leak. 	<p>Sealing Angle $\geq 5^\circ$</p> 	Air valve seal Angle test bench
5	Flow test	<ol style="list-style-type: none"> The valve is fully opened, and the inlet pressure is adjusted to 2000Pa; Adjust the valve flow rate, so that the front and back pressure difference is 125Pa; Measure the flow value. 	<p>Flow rate not less than the following specified values: straight (m³/h)</p> <p>DN6 :1m³/h; DN8 :2m³/h; DN10:3m³/h; DN12:3.5m³/h; DN15:5m³/h; DN20:10m³/h; DN25:16m³/h; DN32:27m³/h; DN40:40m³/h; DN50:65m³/h; DN65:100m³/h; DN80:170m³/h; DN100:230m³/h;</p>	Valve flow test bench
6	Torsional test	<ol style="list-style-type: none"> Connect one end of the valve with the pipe; Apply the torque (N.m) shown in Table B2 steadily and gradually to the other end of the valve for 15 minutes: DN6 :15N.m; DN8 :20N.m; DN10:35N.m; DN15:50N.m; DN20:85N.m; DN25:125N.m; DN32:160N.m; DN40:200N.m; DN50:250N.m; DN65:250N.m; DN80:250N.m; DN100:250N.m; DN150:250N.m; Change the direction of the valve port and repeat the test 	<p>After the withdrawal of the force, the serial number 4 leakage test at room temperature, the valve should be kept sealed without leakage or permanent deformation.</p>	Torsion test bench
7	Bending test	<ol style="list-style-type: none"> Connect one end of the valve with the pipe; The other end of the valve is 300mm away from the axis of the valve, apply force in the vertical direction to produce the bending torque (N.m) shown in Table B3, and keep it for 15 minutes: DN6:25N.m; DN8 :35N.m; DN10:70N.m; DN15:105N.m; DN20:225N.m; DN25:340N.m; DN32:475N.m; DN40:610N.m; DN50:1100N.m; DN65:2200N.m; DN80:2200N.m; DN100:4500N.m; DN150:4500N.m; Change the direction of the valve port and repeat the test. 	<p>After the withdrawal of the force, the serial number 4 leakage test at room temperature, the valve should be kept sealed without leakage or permanent deformation.</p>	Bending test bench
8	Life test	<ol style="list-style-type: none"> At room temperature, nominal pressure, flow rate is (5±1) % of the value shown by the flow rate, with air as the medium; Valve rotation from the fully closed position to the fully open position, and then back to the fully closed position; At room temperature, the starting torque does not exceed the value specified in Table B1, and the angular speed is 4-6 RPM; The number of working times is not less than the value specified in table B5: DN 6: 10000; DN 8:8000; DN10: 6000; DN15:4000; DN20:3000; DN25:2000; DN32:2000; DN40:2000; DN50:2000; DN65:1000; DN80:1000; DN100:1000; DN150:1000; 	<p>The valve shall be kept sealed and the operating torque shall not exceed the value specified in Table B1</p>	Valve life test bench
9	Shock resistance test	<ol style="list-style-type: none"> Fix the valve on a solid base; Place a heavy load so that it has the following impact force on the valve body. 	<p>After the withdrawal of the force, the serial number 4 leakage test at room temperature, the valve should be kept sealed without leakage or permanent deformation.</p>	Valve impact tester