

GSD INDUSTRIAL CO., LTD.

XQZ

消防专用气压给水设备



川源股份有限公司

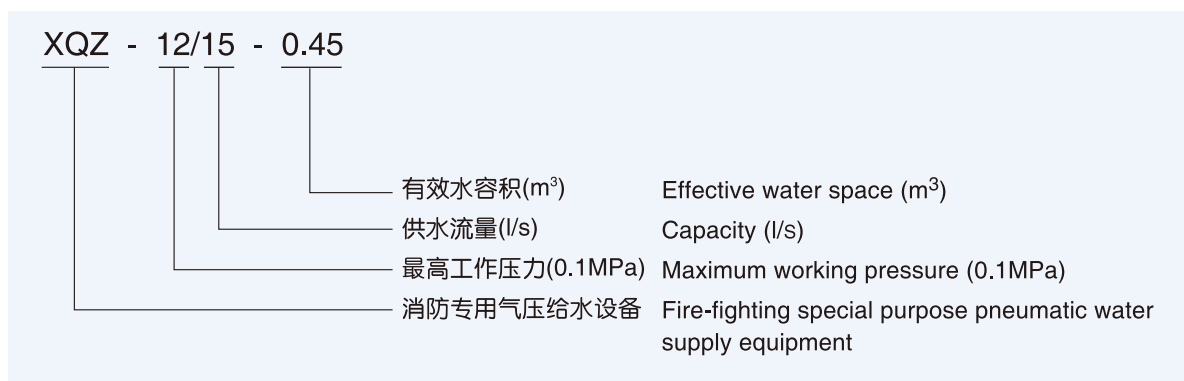
简介

XQZ 型消防专用气压给水设备是川源公司在 AF 型自动消防机组的基础上, 根据公安部发布的国家公共安全行业标准 GA30-92《消防气压给水设备的性能要求和试验方法》、建筑行业标准 JG/T30 10.1-94《隔膜式气压给水设备》设计研制的新型消防专用灭火装置。给水设备由隔膜式气压水罐、水泵机组、管路系统、电控系统及自动控制箱组成。设备适用于高压消防给水系统中与消防按钮及温度、流量等各种传感器配套使用。可满足建筑消防设计要求, 广泛应用于高层建筑、居民小区、机关、院所、学校以及工厂、矿山、农村的消防给水, 并在局部可取代消防水箱和消防控制中心。

GENERAL

XQZ type fire-fighting special purpose pneumatic water supply equipment is a new fire-fighting special purpose fire-extinguishing equipment designed and developed by ChuanYuan company according to GA30-92 National Public Security Industry Standard (performance requirements and testing methods of fire-fighting pneumatic water supply equipment) and JG/T3010.1-94 Architectural Industry Standard and (diaphragm pneumatic water supply equipment) issued by Ministry of Public Security based on AF type automatic fire-fighting units. Water supply equipment is made up of diaphragm pneumatic water tank, water pump unit, pipe system, electrically controlled system and auto control cabinet. The equipment is applicable for use together with all kinds of sensors such as fire-fighting button, temperature and flow quantity sensor etc. in high-pressure fire-fighting water supply system. It can satisfy design requirements for building fire-fighting and is used extensively as fire-fighting water supply system for high-rise building, residence zone, organs of government, college and institute, school and factory, mine and village, also can substitute fire-fighting water tank and fire-fighting control center in some areas.

型号说明 TYPE DESCRIPTION



特点

1. 气压罐一次充气后便可以保证长期使用;
2. 可以局部代替高位水箱和水塔, 有利于结构抗震, 不影响建筑外型美观; 确保消防栓所需供水压力, 供水安全可靠;
3. 能减弱水流噪音, 管道阻力和水锤影响;
4. 电控柜设计新颖, 功能齐全, 自动控制并能手动操作, 消防设备增设水泵自动定期巡检功能, 以防锈死;
5. 占地面积小, 投资省, 安装快, 便于集中管理和维修; 新型隔膜进一步提高罐体气密性, 减轻了对罐体和管道的氧化腐蚀, 延长了罐体与系统的使用寿命。
6. 双管路设计, 设备有两条出水管与消防管网相接, 两条出水管之间有 $\varnothing 100\text{mm}$ 的管路连通, 连通管上设有同径闸阀。

FEATURES

1. Ensure long-term use of the pneumatic tank once after being inflated.
2. Can partly substitute high water level tank and water tower, it is helpful for shock proof of construction and does not affect the beautiful appearance of building. Ensure the water supply supply.
3. Reduce the affections caused by water flow noise, general resisting force and water hammer. The design of electrically controlled cabinet is novel and its functions are complete, can be either automatically controlled or manually operated. Automatic regular examination function of water pump is added for fire-fighting equipment to prevent rust.
4. Small covered area, saving of invested money, fast installation and easy for centralized management and maintenance.
5. New diaphragm can further improve tightness of mixed gas, reduce oxide etch of tank body and pipeline; prolong the service life of tank body and system.
6. Dual pipeline are connected to fire-fighting pipe net according to dual-pipe design. The dual outlet pipes is connected with an interconnecting duct of 100mm, on which there is a gate valve with same diameter set.

使用环境

本设备应安装在室内，并在下列条件下工作：

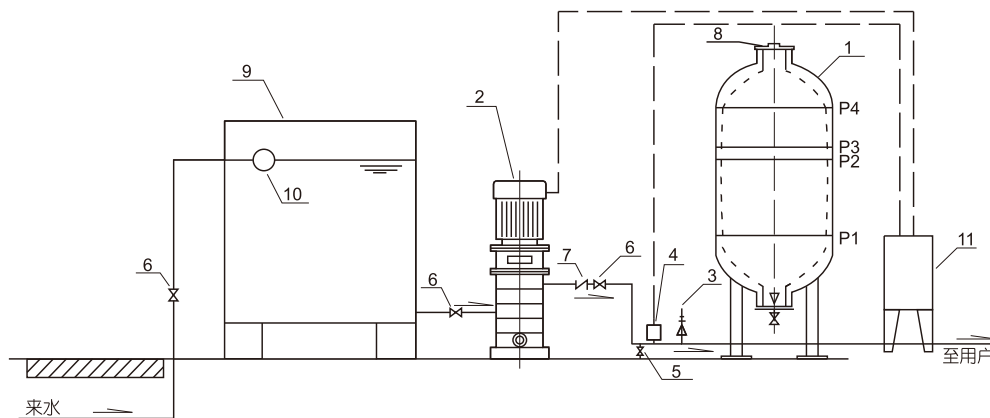
1. 安装基础为水平的混凝土水泥地，或能保证该设备正常工作要求的地板上；
2. 环境温度为5-40℃，其水质应符合消防规范要求；
3. 环境湿度 < 85%，应无凝露(20±5℃)；
4. 无腐蚀性气体和破坏绝缘场合；无强烈阳光和爆炸危险场合；电压波动应处于380V±5%以内；
5. 安装处无强烈振动；
6. 海拔1000米以下（高度变化时，可适当提高容量和耐压等级）。

SERVICE AMBIENT

This equipment should be installed indoors and operated in the following conditions:

1. Installation basement should be horizontal concrete floor or the floor which can ensure that the equipment is in normal operation.
2. Ambient temperature is 5~40℃ and water quality should conform to fire-protection rules.
3. Ambient humidity is < 85% and dewfall(20±5℃) is not permitted.
4. The site without corrosive gas and destructive insulation. The site without strong sunlight and explosion hazard. Voltage fluctuation should be within 380V±5%.
5. No severe vibration at installation place.
6. Below 1000m sea level (The volume and pressure resistance grade can be adequately increased when the height varies).

工作原理 WORKING PRINCIPLE



- 1、隔膜式气压水罐 2、水泵机组 3、安全阀 4、压力传感器 5、泄水阀
6、闸阀 7、止回阀 8、充气口 9、水箱（或水池） 10、浮球阀 11、控制柜

P1---消防供水压力下限：消防设计所允许的最低供水压力。

P2---消防泵启动压力：设备启动主消防泵时的压力。

P3---最低工作压力：指设备维持正常运行的最小压力，即开始补水时气压罐内的压力。

P4---最高工作压力：设备维持正常运行的最大压力，即停止补水时气压水罐内的压力。

1. Diaphragm pneumatic water tank

2. Pump assembly

3. Safety valve

4. Pressure transmitter

5. Water inlet valve

6. Gate valve

7. Check valve

8. Gas-filled port

9. Water tank (or water basin)

10. Float valve

11. Control cabinet

P1---Pressure lower limitation of fire supply: lowest water supply pressure allowed by fire-fighting design.

P2---Starting pressure of fire-fighting pump: the pressure when the equipment starts the main fire-fighting pump.

P3---Lowest working pressure: lowest pressure that make equipment maintain normal operation, i.e., the pressure in pneumatic tank when water supply is started.

P4---Highest working pressure: Highest pressure that make equipment maintain normal operation, i.e., the pressure in pneumatic tank when water supply is stopped.



平时由稳压泵和气压罐配合稳压蓄能，当消防管网压力因泄漏下降至最低工作压力P3时，压力传感器启动稳压泵工作，系统压力上升，当压力升高至最高工作压力P4时，压力传感器控制稳压泵停止工作，这样反复运行使消防管网充水并处于高压消态。发生火警时，只要消防栓或喷淋设备等动作，气压水罐内的水可及时向消防管网供水，罐内压力下降；当罐内压力降到P2（消防泵启动压力）时，控制系统自动启动主消防泵，主消防泵启动完毕并向消防管网供水（此时管网压力应不低于消防供水压力下限P1），气压水罐向消防管网供给设备额定有效水容积的水量，供作主消防泵启动完毕前消防用水。

Energy is stored under the cooperation of voltage-regulating pump and pneumatic tank at ordinary times. Voltage-regulating pump will be started by pressure transmitter and system pressure will rise when the pressure of fire-fighting pipe network is lowered to minimum working pressure P3 due to leakage. The pressure transmitter controls the voltage-regulating pump to stop working when the pressure rises to maximum working pressure P4. Thus, these iterative operations make fire-fighting pipe network filled with water and be in the condition of high pressure fire-fighting. Water in pneumatic tank can be promptly fed into fire-fighting pipe network and water pressure in pneumatic tank drops as long as fire hydrants or sprinkling facilities operate when fire alarm is given out. Control system automatically starts the main fire-fighting pump when the pressure in tank drops to P2 (starting pressure of fire-fighting pump). The main fire-fighting pump will feed water into fire-fighting pipe network (at this time the pressure in fire-fighting pipe network should not be less than the lower limitation P1 of fire-fighting water supply pressure) after it is started. The water quantity for the rated effective water space which pneumatic tank feed into fire-fighting pipe network is regarded as water for fire fighting after the main fire-fighting pump has completed the startup.

机组标准规格表 STANDARD SPECIFICATIONS TABLE OF THE UNIT

序号 No.	机组型号 Unit type	型号 Pump type	主泵 Main pump				气压罐 Pneumatic tank			稳压泵 Stabilized pressure pump			电控柜型号 Control cabinet type
			流量 Capacity m³/h	扬程 Head m	数量 Number 台	功率 Power kW	型号 Type	Ø x H m	数量 Number 个	型号 Type	数量 Number 台	功率 Power kW	
1	XQZ6/5-0.15	MV50-12.6-48.8/4	18	40.8	2	4	SQL800	0.8x2.22	1	MV32-4-64/8	1	2.2	PCS-HD-3x4-X
2	XQZ8/5-0.15	MV50-12.6-73.2/6	18	61.2	2	5.5	SQL800	0.8x2.22	1	MV32-4-88/11	1	2.2	PCS-HD-3x5.5-X
3	XQZ10/5-0.15	MV50-12.6-97.6/8	18	81.6	2	7.5	SQL800	0.8x2.22	1	MV32-4-104/13	1	3	PCS-HD-3x7.5-X
4	XQZ12/5-0.15	MV50-12.6-122/10	18	102	2	11	SQL800	0.8x2.22	1	MV32-4-128/16	1	3	PCS-HD-3x11-X
5	XQZ15/5-0.15	MV65-25.2-120/6	18	129	2	15	SQL800	0.8x2.22	1	MV32-4-144/18	1	4	PCS-HY-3x15-X
6	XQZ6/10-0.3	MV80-50-40/2	36	42.8	2	11	SQL1000	1.0x2.5	1	MV32-4-64/8	1	2.2	PCS-HD-3x11-X
7	XQZ8/10-0.3	MV80-50-60/3	36	64.2	2	15	SQL1000	1.0x2.5	1	MV32-4-88/11	1	2.2	PCS-HY-3x15-X
8	XQZ10/10-0.3	MV80-50-80/4	36	85.6	2	22	SQL1000	1.0x2.5	1	MV32-4-104/13	1	3	PCS-HY-3x22-X
9	XQZ12/10-0.3	MV80-50-100/5	36	107	2	30	SQL1000	1.0x2.5	1	MV32-4-128/16	1	3	PCS-HY-3x30-X
10	XQZ15/10-0.3	MV80-50-120/6	36	128.4	2	30	SQL1000	1.0x2.5	1	MV32-4-144/18	1	4	PCS-HY-3x30-X
11	XQZ6/15-0.45	MV80-54-40/2	54	40	2	11	SQL1200	1.2x2.87	1	MV32-4-64/8	1	2.2	PCS-HD-3x11-X
12	XQZ8/15-0.45	MV80-54-60/3	54	60	2	15	SQL1200	1.2x2.87	1	MV32-4-88/11	1	2.2	PCS-HY-3x15-X
13	XQZ10/15-0.45	MV80-54-80/4	54	80	2	22	SQL1200	1.2x2.87	1	MV32-4-104/13	1	3	PCS-HY-3x22-X
14	XQZ12/15-0.45	MV80-54-100/5	54	100	2	30	SQL1200	1.2x2.87	1	MV32-4-128/16	1	3	PCS-HY-3x30-X
15	XQZ15/15-0.45	MV80-54-120/6	54	120	2	30	SQL1200	1.2x2.87	1	MV32-4-144/18	1	4	PCS-HY-3x30-X
16	XQZ6/20-0.45	MV100-72-40/2	72	40	2	15	SQL1200	1.2x2.87	1	MV32-4-64/8	1	2.2	PCS-HY-3x15-X
17	XQZ8/20-0.45	MV100-72-60/3	72	60	2	22	SQL1200	1.2x2.87	1	MV32-4-88/11	1	2.2	PCS-HY-3x22-X
18	XQZ10/20-0.45	MV100-72-80/4	72	80	2	30	SQL1200	1.2x2.87	1	MV32-4-104/13	1	3	PCS-HY-3x30-X
19	XQZ12/20-0.45	MV100-72-100/5	72	100	2	37	SQL1200	1.2x2.87	1	MV32-4-128/16	1	3	PCS-HY-3x37-X
20	XQZ15/20-0.45	MV100-72-120/6	72	120	2	45	SQL1200	1.2x2.87	1	MV32-4-144/18	1	4	PCS-HY-3x45-X
21	XQZ9/55-0.11	MV100-100-80/4	100	80	2	37	SQL1200	1.2x2.87	1	MV40-8-90/9	1	5.5	PCS-HY-3x37-X
22	XQZ6/30-0.45	MV125-108-40/2	108	40.6	2	19	SQL1200	1.2x2.87	1	MV32-4-64/8	1	2.2	PCS-HY-3x19-X
23	XQZ8/30-0.45	MV125-108-60/3	108	60.9	2	30	SQL1200	1.2x2.87	1	MV32-4-88/11	1	2.2	PCS-HY-3x30-X
24	XQZ10/30-0.45	MV125-108-80/4	108	81.2	2	37	SQL1200	1.2x2.87	1	MV32-4-104/13	1	3	PCS-HY-3x37-X
25	XQZ12/30-0.45	MV125-108-100/5	108	101.5	2	45	SQL1200	1.2x2.87	1	MV32-4-128/16	1	3	PCS-HY-3x45-X
26	XQZ15/30-0.45	MV125-108-120/6	108	121.8	2	55	SQL1200	1.2x2.87	1	MV32-4-144/18	1	4	PCS-HY-3x55-X
27	XQZ8/35-0.45	MV100-108-70/2	126	60	2	37	SQL1200	1.2x2.87	1	MV32-4-88/11	1	2.2	PCS-HY-3x37-X
28	XQZ10/35-0.45	MV100-108-105/3	126	90	2	55	SQL1200	1.2x2.87	1	MV32-4-104/13	1	3	PCS-HY-3x55-X
29	XQZ12/35-0.45	MV100-100-120/6	126	108	2	55	SQL1200	1.2x2.87	1	MV32-4-128/16	1	3	PCS-HY-3x55-X
30	XQZ15/35-0.45	MV100-108-140/4	126	120	2	75	SQL1200	1.2x2.87	1	MV32-4-144/18	1	4	PCS-HY-3x75-X
31	XQZ6/40-0.6	MV150-150-40/2	140	41.2	2	30	SQL1400	1.4x3	1	MV32-5.4-60/8	1	2.2	PCS-HY-3x30-X
32	XQZ8/40-0.6	MV150-150-60/3	140	61.8	2	37	SQL1400	1.4x3	1	MV32-5.4-83/11	1	3	PCS-HY-3x37-X
33	XQZ10/40-0.6	MV150-150-80/4	140	82.4	2	45	SQL1400	1.4x3	1	MV32-5.4-105/14	1	4	PCS-HY-3x45-X
34	XQZ12/40-0.6	MV150-150-100/5	140	103	2	55	SQL1400	1.4x3	1	MV32-5.4-120/16	1	4	PCS-HY-3x55-X
35	XQZ15/40-0.6	MV150-150-120/6	140	123.6	2	75	SQL1400	1.4x3	1	MV32-5.4-143/19	1	5.5	PCS-HY-3x75-X
36	XQZ8/50-0.6	MV150-150-80/4	180	68	2	45	SQL1400	1.4x3	1	MV32-5.4-83/11	1	3	PCS-HY-3x45-X
37	XQZ10/50-0.6	MV150-150-100/5	180	85	2	55	SQL1400	1.4x3	1	MV32-5.4-105/14	1	4	PCS-HY-3x55-X
38	XQZ12/50-0.6	MV150-150-120/6	180	102	2	75	SQL1400	1.4x3	1	MV32-5.4-120/16	1	4	PCS-HY-3x75-X
39	XQZ15/50-0.6	MV150-150-140/7	180	119	2	75	SQL1400	1.4x3	1	MV32-5.4-143/19	1	5.5	PCS-HY-3x75-X
40	XQZ6/60-0.6	MV150-180-50/2	216	43.6	2	37	SQL1400	1.4x3	1	MV32-5.4-60/8	1	2.2	PCS-HY-3x37-X
41	XQZ8/60-0.6	MV150-180-75/3	216	65.4	2	55	SQL1400	1.4x3	1	MV32-5.4-83/11	1	3	PCS-HY-3x55-X
42	XQZ10/60-0.6	MV150-180-100/4	216	87.2	2	75	SQL1400	1.4x3	1	MV32-5.4-105/14	1	4	PCS-HY-3x75-X
43	XQZ12/60-0.6	MV150-180-125/5	216	109	2	90	SQL1400	1.4x3	1	MV32-5.4-128/17	1	5.5	PCS-HY-3x90-X
44	XQZ15/60-0.6	MV150-180-150/6	216	130.8	2	110	SQL1400	1.4x3	1	MV32-5.4-150/20	1	5.5	PCS-HY-3x110-X

机组结构及安装尺寸图 STRUCTURE AND INSTALLATION DIMENSIONS OF THE UNIT

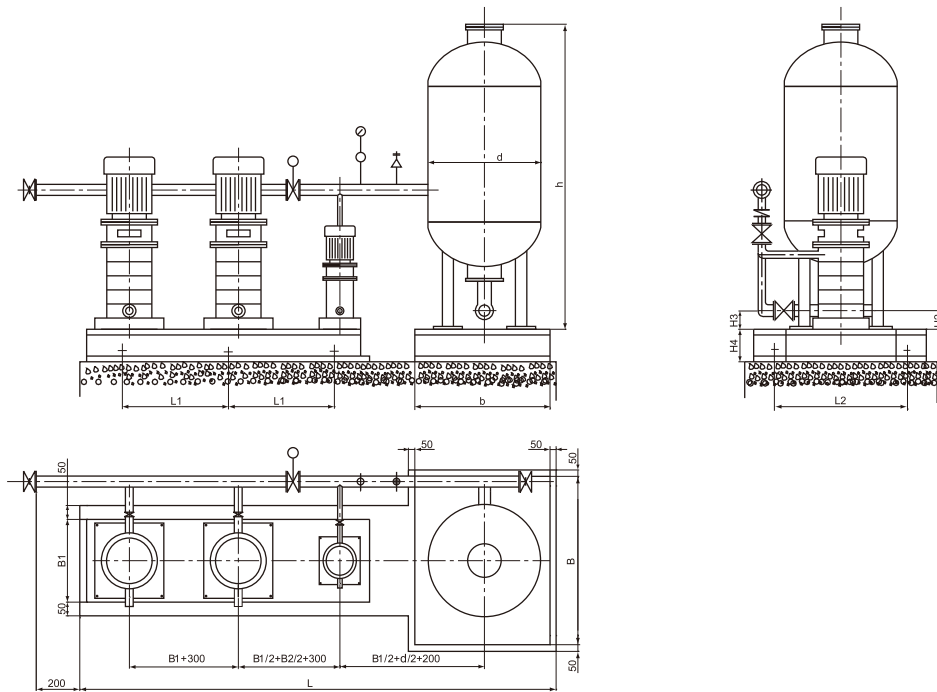


Fig.1

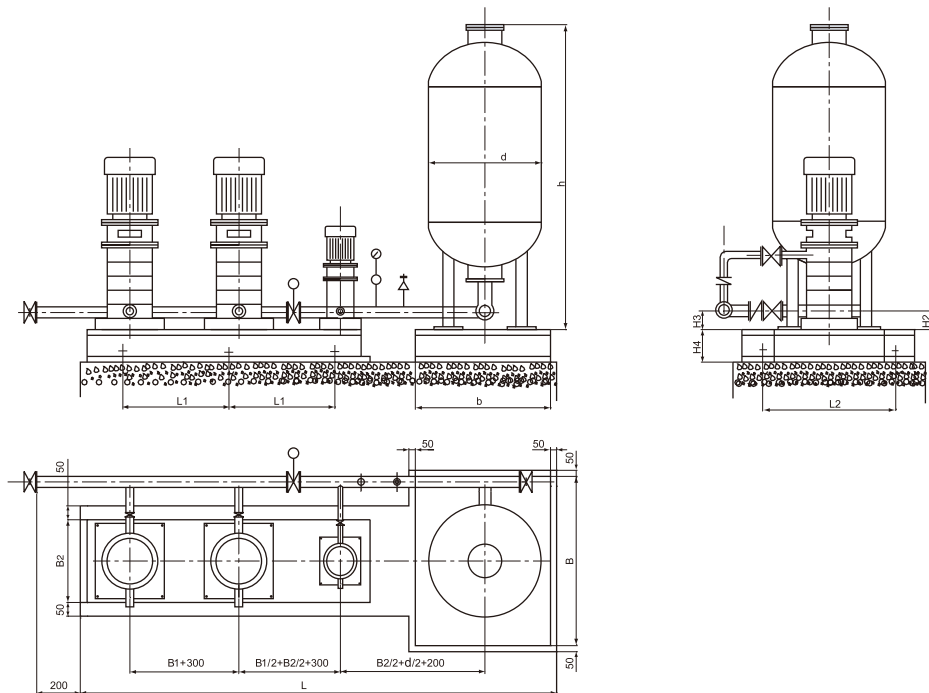


Fig.2

XQZ消防机组安装尺寸

XQZ FIRE FIGHTING UNITS INSTALLATION DIMENSIONS

序号 No.	主泵 Main pump		稳压泵 Stabilized pressure pump		气压罐 Pneumatic tank			H ₂	H ₃	H ₄	B	b	B ₁	B ₂	L	L ₁	L ₂
	型号 Type	数量 Number	型号 Type	数量 Number	型号 Type	Ødxh(m)	数量 Number										
1	MV50-12.6		MV32-4		SQL800	0.8x2.22		104		100	800	670	345	210	2510	500	500
2	MV65-25.2		MV32-4		SQL800	0.8x2.22		100		100	800	670	300	210	2420	475	500
3	MV80-50		MV32-4		SQL1000	1.0x2.5		115		120	1000	840	480	210	2980	600	600
4	MV80-54		MV32-4		SQL1200	1.2x2.87		120		120	1200	1030	450	210	3120	575	650
5	MV100-72	2	MV32-4	1	SQL1200	1.2x2.87	1	125	75	120	1200	1030	480	210	3180	600	650
6	MV100-100		MV32-4		SQL1200	1.2x2.87		140		120	1200	1030	510	210	3240	615	650
7	MV100-100		MV40-8		SQL1200	1.2x2.87		140		120	1200	1030	510	330	3360	615	650
8	MV100-108		MV32-4		SQL1200	1.2x2.87		140		120	1200	1030	574	210	3368	655	650
9	MV125-108		MV32-4		SQL1200	1.2x2.87		140		160	1200	1030	510	210	3240	615	650
10	MV150-150		MV32-5.4		SQL1400	1.4x3		218		160	1400	1200	615	210	3650	685	750
11	MV150-180		MV32-5.4		SQL1400	1.4x3		160		160	1400	1200	615	210	3650	685	750

设备构件及技术要求

STRUCTURAL PARTS OF EQUIPMENT AND TECHNOLOGICAL REQUIREMENTS

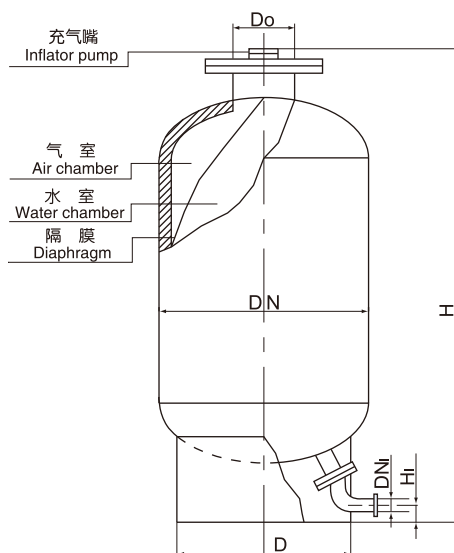
气压水罐 PNEUMATIC WATER TANK

1.型号说明 TYPE DESCRIPTION



2.立式隔膜式气压水罐结构尺寸

STRUCTURAL DIMENSIONS OF VERTICAL DIAPHRAGM PNEUMATIC WATER TANK



立式气压罐 VERTICAL PNEUMATIC TANK

规格型号 Specifications & models	罐体最高 工作压力 Max working pressure of tank body (MPa)	罐体公 称直径 DN Nominal diameter of tank body (mm)	H mm	H ₁ mm	D mm	罐体总 容积 V ₀ Total volume of tank body (m ³)	罐体内水容积 V _s Water space in tank body					供水量 Water supply volume m ³ /h	入孔直径 D ₀ Diameter of inlet mm	进出水管直径 DN ₁ Diameter of water inlet and outlet pipe mm	重量 Weight kg
							a=0.85	a=0.80	a=0.75	a=0.70	a=0.65				
							m ³	m ³	m ³	m ³	m ³				
SQL400x1.0 0.6 1.6	0.6 1.6	400	1430	150	320	0.11	0.017	0.022	0.028	0.033	0.039	0.5-1.0	150	50	113 118 143
SQL600x1.0 0.6 1.6	0.6 1.6	600	1730	140	480	0.32	0.048	0.064	0.08	0.096	0.112	1.5-3.0	200	50	172 217 262
SQL800x1.0 0.6 1.6	0.6 1.6	800	2220	140	660	0.76	0.114	0.152	0.19	0.228	0.266	3.5-7.0	200	50	343 349 504
SQL1000x1.0 0.6 1.6	0.6 1.6	1000	2500	150	830	1.41	0.212	0.282	0.353	0.423	0.494	6.0-12	350	80	494 617 853
SQL1200x1.0 0.6 1.6	0.6 1.6	1200	2870	180	1020	2.37	0.356	0.474	0.593	0.711	0.83	10-20	350	80	657 970 1194
SQL1400x1.0 0.6 1.6	0.6 1.6	1400	3000	175	1190	3.4	0.51	0.68	0.85	1.02	1.19	14-30	350	100	1006 1206 1600
SQL1500x1.0 0.6 1.6	0.6 1.6	1500	3060	180	1250	3.97	0.596	0.794	0.993	1.194	1.39	15-35	350	100	1100 1399 1937
SQL1600x1.0 0.6 1.6	0.6 1.6	1600	3100	175	1320	4.6	0.69	0.92	1.15	1.38	1.61	20-45	350	100	1184 1645 2116
SQL1800x1.0 0.6 1.6	0.6 1.6	1800	3300	180	1420	6.1	0.915	1.22	1.525	1.83	2.135	30-60	426	125	1868 2318 2848
SQL2000x1.0 0.6 1.6	0.6 1.6	2000	3500	170	1620	8.12	1.218	1.624	2.03	2.436	2.842	40-90	426	125	1905 2679 3046

电控柜规格及技术参数表
Specification table of electric control cabinet

No.	型号 TYPE	Dimensions(mm)		
		A × B × C	D × E	4-Ød
1	PCS-HD-3 × 4-X	1000 × 550 × 350	450 × 300	4-Ø10
2	PCS-HD-3 × 5.5-X	1000 × 550 × 350	450 × 300	4-Ø10
3	PCS-HD-3 × 7.5-X	1200 × 650 × 350	550 × 300	4-Ø10
4	PCS-HD-3 × 11-X	1200 × 650 × 350	550 × 300	4-Ø10
5	PCS-HY-3 × 15-X	1500 × 70 × 350	600 × 300	4-Ø13
6	PCS-HY-3 × 19-X	1500 × 700 × 350	600 × 300	4-Ø13
7	PCS-HY-3 × 22-X	1500 × 700 × 350	600 × 300	4-Ø13
8	PCS-HY-3 × 30-X	1600 × 850 × 400	700 × 350	4-Ø13
9	PCS-HY-3 × 37-X	1600 × 850 × 400	700 × 350	4-Ø13
10	PCS-HY-3 × 45-X	1600 × 850 × 400	700 × 350	4-Ø13
11	PCS-HY-3 × 55-X	1800 × 1000 × 450	900 × 400	4-Ø17
12	PCS-HY-3 × 75-X	1800 × 1000 × 450	900 × 400	4-Ø17
13	PCS-HY-3 × 90-X	2000 × 1200 × 500	1100 × 450	4-Ø17
14	PCS-HY-3 × 110-X	2000 × 1200 × 500	1100 × 450	4-Ø17

使用须知

1. 本设备应进行以下内容的定期维护工作，其工作周期由用户根据设备使用环境条件、设备负荷以及各组成元器件的使用要求而定。
2. 主消防泵的定期运行，以防水泵锈蚀卡死；
3. 自动电控柜的清洁，各活动触点的保养；
4. 每到冬季的防冻措施；
5. 水泵及管路中附件的定期检修以防锈蚀沉淀堵死管路；
6. 检查各仪表工作是否正常。

注意事项

1. 在安装使用中，应采取可靠的防冻措施，如果发生冰冻，不仅设备立即失效，而且有些器件将冻裂报废；
2. 气压水罐中的压力将随温度变化而变化，且温度的急剧变化也将引起压力的较大变化。故应防止阳光直射和避免外界热源的不稳定加热；
3. 自动控制柜为室内非防爆性设备，不能在无遮蔽的室外有可燃性、爆炸性气体和粉尘的场所安装使用；
4. 按消防规范要求，设备的两路出水口均应同消防管网相接；引水方式应为自灌式；产品出厂前已进行压力试验和气室充气工作，若用户自行充气时，应严格按下述操作程序进行：
 - a. 气压水罐的调试程序，应本着先充水后充气的原则进行。充水时可利用城市给水系统充水，一般情况下，充水时即将排气阀打开，当水室空气排净时即停止充水，关闭排气阀，开始充气。
 - b. 充气前将电接点压力表上下指针转至需要的最高压力和最低压力位置上，然后打开充气嘴进行充气，当气室的充气压力达到最高压力值时，充气完毕，关闭充气阀。

WORKING DIRECTIONS

1. The following periodical maintenance should be carried out to the equipment. Its working cycle is determined by customer according to the environment and condition for equipment's operation, equipment charge and operating requirements of every constituent element.
2. Operate periodically the main fire-fighting pump in order to prevent it from being corroded by rust or hydraulic lock.
3. Clear automatic electric control cabinet and keep each movable part in good condition.
4. Take anti-freezing precautions in winter.
5. Check periodically the accessories in water pump and pipeline to prevent rust precipitations from blocking pipe up.
6. Check each instrument whether they are in good working condition or not.

POINTS FOR ATTENTION

1. It is necessary to carry out reliable anti-freezing precautions during installation and usage. If freezing occurs, not only the equipment will immediately lose effectiveness but also some parts of the equipment will be splitting by frost or be damaged thoroughly.
2. The pressure in pneumatic water tank will vary along with temperature's variation, and rapid change of temperature will cause the pressure to vary greatly. Thus it is necessary to prevent direct sun light and to avoid being heated up by unsteady external heat source.
3. Automatic control cabinet is non-explosion resistance equipment indoors. Forbid to install this cabinet at unsheltered outdoor place where there is combustible and explosive gas or powder-like waste around it.
4. Dual water outlet on equipment should be both conn fire-fighting pipe network according to fire-protection rules. Water-diverting method should be self-irrigation. The products should have passed press test and air inflation test for air chamber before they are dispatched from factory. The following operation procedures must be strictly observed by customer if he/she want to carry out test by himself/herself.
 - A. The debugging program of pneumatic water tank should be carried out according to the principle of "first filling water then inflating air". It is possible to utilize city water supply system to fill water. Generally, the air outlet valve is opened when water is started to fill. Stop water filling, close air outlet valve and start to inflate air as soon as the air in water chamber is exhausted clearly.
 - B. Rotate the upper and lower pointers in electrical contact pressure meter to the positions of maximum pressure and minimum pressure, then open gas-filled tank for air inflation. Air inflation is completed when inflation pressure in air chamber reaches to the maximum pressure and close gas-filled valve.