Guangzhou Taobo M.&E Equipment Co., Ltd.

TBQS 系列 SERIES

全自动气压供水设备

Full-automatic pneumatic water supply equipment

产品介绍 / Product description

通过压力控制开关启动水泵往压力罐内注水，水位上升，罐内的空气被压缩，压力升高，当出水管网压力达到设定上限点时，水泵停机。当用户用水时，罐内净水在压缩空气的作用下向用户供水，随着罐内水量减少，压力下降，当水压下降到下限点时，控制系统启动水泵向罐内和管网注水，这样反复动作达到了自动向用户加压供水的目的。

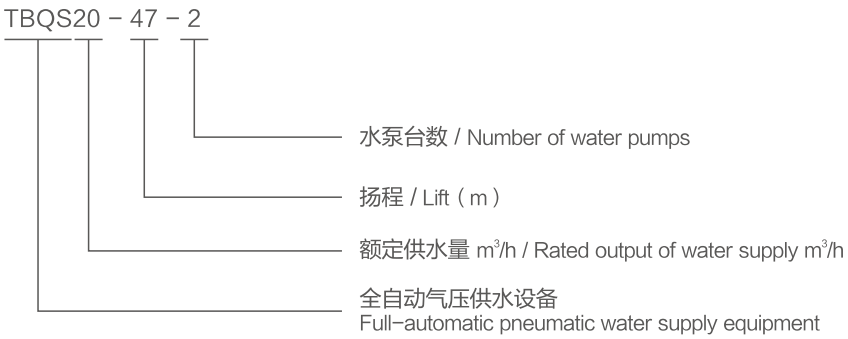
The pressure control switch will start the water pump and water is injected into the pressure tank. With rise of water level, the air in the tank is compressed and the pressure rises. When the pressure of inlet pipe network reaches the set upper limit, the water pump will stop running. When users consume the water, the water in the tank is supplied to users under the force of compressed air. With reduction of water in the tank, the pressure is lowered. When the pressure of water is reduced to the lower limit, the control system will start the water pump and the water is injected into the tank and pipe network. In this way, automatic water supply to users at constant pressure is realized.

工作原理 / Working principle

依据波义耳—马略特定律，即在定温条件下，一定质量气体的绝对压力和它所占的体积成反比。他利用密闭罐中的压缩空气的压力变化，调节供水压力，在给水系统中主要起增压和水量调节作用当压力罐内没有水时，电脑控制器启动水泵往压力罐内注水，水位上升，罐内的空气被压缩，压力升高，当水位升高到A点时，电脑控制器控制水泵停机。当用户用水时，罐内净水在压缩空气的作用下向用户供水，随着罐内水量减少，压力下降，当水位下降到B点时，电脑控制器启动水泵向罐内和管网注水，这样反复动作达到了自动向用户加压供水的目的。

According to Boyle mallorca's law, the absolute pressure exerted by a given mass of gas is inversely proportional to the volume it occupies if the temperature remain unchanged. The equipment utilizes the change of pressure of compressed air in the sealed tank to regulate the pressure of water supply. In the water supply system, it mainly plays a role to boost the pressure to regulate the level of water. If there is no water in the pressure tank, the computer controller will start the water pump and the water is injected into the tank. With rise of water level, the air in the tank is compressed and the pressure rises. When the water level rises to A point, the computer controller will cause the water pump to stop running. When users consume the water, the water in the tank is supplied to users under the force of compressed air. With reduction of water in the tank, the pressure is lowered. When the water level is lowered to B point, the computer controller will start the water pump and the water is injected into the tank and pipe network. In this way, automatic water supply to users at constant pressure is realized.

设备型号意义说明 / Introduction of equipment models



产品特点 / Characteristics of products

- 压力罐采用气囊式，杜绝生锈和水质的二次污染，属绿色环保型产品。
  The pressure tank is of airbag type and prevents rust and secondary pollution to the water. Therefore, it is a green environment-friendly product.

- 产品采用智能化全自动数字控制，使产品性能更加稳定、压力调节更加方便、操作更加简单。
  The product adopts intelligent full-automatic digital control, bringing about more stable performance, more convenient pressure regulation and easier operation.

- 产品体积小、压力大、安装方便、安全可靠无须专人看管。
  The product is small in size and produces high pressure. It is also safe, reliable and easy for installation. Furthermore, unattended operation is available.

- 产品可彻底取代水塔和高位水箱，当天安装，当天便可实现自动供水。
  The product can totally substitute water towers and head water tanks. Automatic water supply is available on the same day when the installation is completed.

- 投资小，占地面积小，便于迁移，比建造水塔、高位水箱节省投资50—70%。
  The product requires small amount of investment and little space, and it is easy to be relocated. Compared with construction of water tower and head water tanks, it can save investment by 50-70%.

- 灵活性强：可安装在任意位置，更适应于地震区域。
  Strong flexibility: The product can be installed at any location and is more suitable for seismic regions.

- 所用压力可随楼层高度任意调整。
  The pressure can be adjusted freely based on the height of floors.

- 美观、大方：可取代生活、消防、采暖、及空调用的高位水塔，不影响建筑美观，降低建筑造价。
  Beautiful and elegant: The product can substitute the high water towers used for purposes of living, firefighting, heating and air conditioning, without reducing the beauty or construction price of buildings.

- 便于集中管理：机组为一体化结构。
  Easy for concentrated management: the equipment adopts an integrated structure.

产品构成 / Product composition

一般由气压供水罐、补气装置及电器控制设备等三部分组成。按其主体设备气压供水罐的补气方式分为空压机补气、水力自动补气、一次充给氮气的隔膜式气压供水罐和人工补气等四种类型,气压供水装置适用于村镇、居民点、高层建筑等独立的小型集中供水系统中代替水塔、高位水箱（池）,也适用于高层建筑的消防供水系统。由于气压供水罐属于低压容器,其设计、制造单位应获得劳动安全部门颁发的许可证！气压给水设备的长处是：灵活性大，使用位置不受约束，便于荫蔽。装置、拆开都很便利。成套设备均在工厂生产现场会集拼装。占地面积小，工期短，土建费用低，完成自动化操作，便于管理，气压水罐为密闭容器。高层供水不仅水质不易污染，还有助于消除给水体系中水锤的影响。

Generally, the equipment consists of three parts: pneumatic water tank, air supplement unit and electrical control equipment. The air supplement units can be subdivided into four types by the means of air supplement of the main equipment’s pneumatic water tank: air supplement by air compressor, automatic hydraulic air supplement, diaphragm-type pneumatic water tank with one-time replenishment of nitrogen and manual air supplement. The pneumatic water supply device is applicable to substitution of water tower and head water tank (pool) in independent small concentrated supply system in villages, towns, residential areas and high-rise buildings as well as the firefighting water supply system of high-rise buildings. As pneumatic water tank is a low-pressure container, its designing and manufacturing units have obtained the permit from the labor safety authority. The advantages of pneumatic water supply equipment are as follows: greater flexibility without any restriction on use locations, making it easy to be concealed; easy installation and dismantling. The whole set of equipment is assembled at the production site of factory. It takes little space and short construction period, and the cost of civil engineering is low. Furthermore, automatic operations are available, making management easy. What’s more, as the pneumatic water tank is a sealed container, it not only prevent the water pollution with regard to water supply of high-rise buildings, but also eliminates the water hammer in the water supply system.

性能参数表 / Table of performance parameters

序号 S.N.	型号 Type-Model	用户数量(参考)户 Number of users (Reference) Household	高峰给水量/ Water supply at peak time (m^3/h)	推荐补水泵 Recommended make-up pump					隔膜气压罐 Diaphragm-type air pressure tank			供水管经(参考) Water supply pipe diameter (Reference) mm
				型号 Type	流量 Fiow (m^3/h)	扬程 Lift m	功率 Power kw	台数 Number	型号 Type	公称压力 Nominal pressure MPa	台数 Number	
1	TBQS5-55-2	20	5	CDM5-9	5	55	1.5	2	Φ600	1.0	1	50
	TBQS5-68-2			CDM5-11		68	2.2			1.0		
	TBQS5-80-2			CDM5-13		80	2.2			1.0		
	TBQS5-93-2			CDM5-15		93	2.2			1.0		
2	TBQS10-43-2	30	10	CDM10-5	10	43	2.2	2	Φ800	1.0	1	50
	TBQS10-62-2			CDM10-7		62	3			1.0		
	TBQS10-71-2			CDM10-8		71	3			1.0		
	TBQS10-80-2			CDM10-9		80	4			1.0		
3	TBQS15-47-2	50	15	CDM15-4	15	47	4	2	Φ800	1.0	1	65
	TBQS15-58-2			CDM15-5		58	4			1.0		
	TBQS15-69-2			CDM15-6		69	5.5			1.0		
	TBQS15-81-2			CDM15-7		81	5.5			1.0		
4	TBQS20-47-2	100	20	CDM20-4	20	47	5.5	2	Φ1000	1.0	1	80
	TBQS20-58-2			CDM20-5		58	5.5			1.0		
	TBQS20-70-2			CDM20-6		70	7.5			1.0		
	TBQS20-82-2			CDM20-7		82	7.5			1.0		
5	TBQS42-52-2	200	42	CDM42-30-2	32	52	11	2	Φ1000	1.0	1	100
	TBQS42-61-2			CDM42-30		61	11			1.0		
	TBQS42-73-2			CDM42-40-2		73	15			1.0		
	TBQS42-81-2			CDM42-40		81	15			1.0		