

# TBWS

系列  
SERIES

## 无负压管网叠压供水设备

Non-negative pressure pipe network pressure  
-superposed water supply equipment

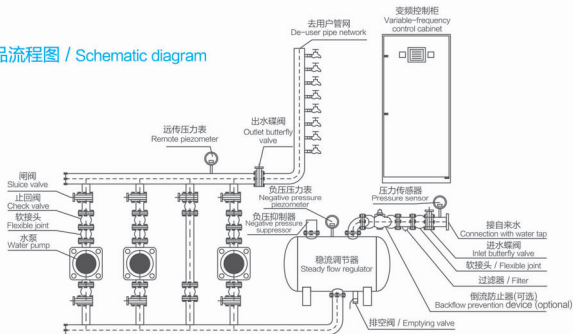


### > 工作原理 / Working principle

无负压供水设备是近年来出现的一种新型给水加压设备，该设备可以直接接至自来水管网上，充分利用自来水原有供水压力，通过先进的变频调速技术来控制工作水泵，实现对用水终端的恒压供水。其设备特点是利用了原有管网压力，做到更为高效节能，同时采用了负压抑制技术，在运行过程中抑制了进水负压的产生，从而保证了自来水管网的安全，首先根据实际情况设定用水点工作压力，并时刻监测市政管网压力，当压力低于用户所需压力时，微机自动控制变频器启动，调节水泵转速提高，直到管网压力上升到用户所需压力，并控制水泵以一恒定转速运行进行恒压供水。当用水量增加时转速提高，当用水量减少时转速降低，时刻保证用户的用水压力恒定。自来水的压力越低，水泵的转速越高；自来水的压力越高，水泵的转速越低。当自来水的压力不小于用户所需的压力时，水泵停止运转。设备在运行过程中充分利用自来水的原有压力，又保证了用户供水压力恒定。设备在运行过程中微机时刻监测市政管网和系统压力，自动控制真空抑制器及稳流补偿器来抑制负压的产生，既充分利用了市政管网的压力，又不产生负压，不对市政管网产生任何不良影响，保证了用水的安全性。无负压供水设备既能利用自来水管网的原有压力，又能动用足够的储存水量满足高峰期用水，且不会对自来水管网产生吸力。

Non-negative pressure water supply equipment is a new type of pressurized water supply equipment launched in recent years. This equipment can be directly connected to the pipe network of running water. It supplies water at constant pressure by fully utilizing the original water supply pressure of running water and by controlling working water pumps through advanced variable-frequency speed regulation technology. One characteristics of the equipment is that it utilizes the original pressure of pipe network to achieve efficiency and energy conservation. Furthermore, negative pressure suppression technology is adopted to prevent occurrence of negative pressure during operation, thus safeguarding the safety of pipe network of running water. First, the working pressure of water use site is set based on actual conditions and the pressure of municipal pipe network is constantly monitored. When the pressure is lower than the pressure demanded by users, the micro automatic control frequency converter will be started to increase the rotation speed of water pump until the pressure of pipe network is raised to the pressure demanded by users and the water pump is controlled to operate at constant rotation speed to ensure water supply at constant pressure. When the water consumption is increased, the rotation speed will increase accordingly; when the water consumption is decreased, the rotation speed will also decrease accordingly. In this way, the pressure of water supply to users is maintained at a constant pressure. The lower the pressure of running water, the higher the rotation speed of the water pump; the higher the pressure of running water, the lower the rotation speed of the water pump. When the pressure of running water is not lower than the pressure demanded by users, the water pump will stop running. During operation, the equipment will fully utilize the original pressure of running water and keep water supply at constant pressure. During operation of the equipment, the microcomputer will constantly monitor the pressure of both municipal pipe network and the system and automatically control the vacuum suppressor and steady current compensator to restrain the occurrence of negative pressure. In this way, it not only fully utilizes the pressure of municipal pipe network but also prevents the occurrence of negative pressure. Therefore, it does not cause any adverse effect to municipal pipe network and ensures the safety of water use. This non-negative pressure water supply equipment not only utilizes the original pressure of pipe network of running water but also sufficient storage water to meeting the demand for water supply at peak time. Furthermore, it does not produce suction to the pipe network of running water.

## > 产品流程图 / Schematic diagram



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

TBWS10 - 34 - 2



水泵台数  
Number of water pumps

扬程  
Lift (m)

供水流量  
Flow of water supply

无负压管网叠压供水设备

Non-negative pressure pipe network pressure  
-superposed water supply equipment

## > 使用环境 / Usage environment

控制方式 / Means of control	变频控制 / Variable-frequency control
安装场所 / Installation place	室内 / Indoors
温度环境 / Temperature and environment	+5℃~+40℃
输送液体 / Liquid to be transferred	清水 / Clean water
液体温度 / Liquid temperature	0~70℃
最高使用压力(吸入压力+水泵关死点扬程) Maximum usage pressure (Suction pressure + lift of water pump at dead point)	20kg/cm <sup>2</sup>
最小吸入压力 / Minimum suction pressure	0.2kg/cm <sup>2</sup>
允许吸入压力 / Allowed suction pressure	受到最高使用压力限制 Restricted by maximum usage pressure
水泵 / Water pump	立式/卧式多级离心泵 Vertical/horizontal multistage centrifugal pump
水泵组合台数 / Number of water pumps in one set	2~6台 (Pumps)
电源 / Power	三相 (Three phase) x220/380Vx50Hz

### ◆ 无负压产生 / Non-negative pressure

该设备直接串接在自来水管网上，采用密封水罐和负压抑制及补偿系统，自动调节，使自来水管道无负压产生，因此，使用该设备后，不会影响周围用户的用水。

This equipment can be directly connected to the pipe network of running water in series. Sealed water tank and negative pressure suppression and compensation system was adopted for automatic adjustment to prevent occurrence of negative pressure in the running water pipelines. Therefore, when this equipment is adopted, the water utilization of surrounding users will not be affected.

### ◆ 节约用水 / Water-saving

该设备为全密封结构，彻底防止了有水池，水箱时的跑、冒、滴、漏现象，同时也节省了定期清洗水池。

This equipment adopts full-sealing structure design. Therefore, it not only prevents the effusion, emitting, dripping, or leakage of gas or liquid in the pool or tank, but also saves the time of regular cleaning pools.

### ◆ 节省能源 / Energy saving

因与自来水管网直接串接，可以充分利用自来水管网的压力，只对自来水的进水压力和所需压力的差进行补压，当自来水满足要求时设备就停止工作，而由自来水直供，与其它供水设备相比，节电达40%以上。

As it is directly connected to the pipe network of running water in series, it can fully utilize the pressure of pipe network of running water and compensate the difference between the inlet pressure of running water and the pressure demanded. When the running water satisfies the requirements, the equipment will stop running. As the water is directly from running water, the equipment will save electricity for over 40% compared with other water supply equipment.

### ◆ 节省占地、安装方便 / Space saving and easy installation

不用建水池，不用安装水箱，设备体积小，节省占地面积，施工简单方便。施工周期短，占地面积小。

There is no need to build pools or to install water tanks. As it is small sized, the equipment is space saving and the construction is easy and convenient. It takes a short construction period and a small space.

### ◆ 杜绝二次污染 / No secondary pollution

设备不需要修建水池，安装水箱，且为全封闭系统，取消了二次污染的主要环节，纯净的自来水经过设备加压后直接供给客户。稳流调节器、水泵、管道采用SUS304食品级不锈钢材质，全密封连接，自来水与空气完全隔离开，水源无任何污染。用户可以喝到符合卫生标准的自来水。

The equipment does not require construction of a pool or a water tank. Furthermore, as it is a total sealing system, there is no other main links which will cause secondary pollution. The clean running water is directly supplied to customers after the pressure is boosted. The steady flow regulator, water pump and pipes are all made of SUS 304 food-grade stainless steel. Furthermore, they are connected in a fully-sealed condition. The running water is totally separated from air, thus preventing any pollution to the water. The users can enjoy running water which meets the hygiene standards.

### ◆ 停电不停水 / No interruption of water supply in case of power outage

在停电时设备仍能利用自来水原有的压力供水。

In case of power outage, the equipment can also supply the water utilizing the pressure of running water.

### ◆ 智能化程度高 / High degree of intellectualization

采用高性能水泵专用静音变频器，配用先进的可编程控制器，无水自动停机，来水自动开机。采用世界上先进的人机界面控制系统，组态准确，清楚、实时、明了地显示出水压力、进水压力、设定压力、工作频率、水泵故障、水泵电流等运行参数和运行状态，同时可显示动态页面和实时图像，全自动智能化控制和管理，友好的人机对话操作简单，性能可靠，无需人员值守。

The equipment is installed with special high-performance silent frequency converter designated for water pumps and advanced programmable controller. In case there is no water supply, the equipment will be automatically shut down. If the water supply is resumed, it will be automatically started. It also adopts the world's advanced human-computer interface control system with correct configuration. This system not only clearly displays the operation parameters and operation status i.e. outlet pressure, inlet pressure, set pressure, working frequency, failure of water pump and current of water pump in real time, but also displays the dynamic pages and real-time image. The features of the equipment include full-automatic smart control and management, friendly and easy human-computer dialogue, reliable performance and unattended operation.

### ◆ 设备功能齐全 / Complete functions

基本功能：设备具有无负压、无水停机、有水自动开机，自动恒压功能、定时自动切换功能、过流、过压、欠压、过载等自动保护功能。

The basic functions of the equipment include absence of negative pressure, automatic shutdown in case of interruption of water supply, automatic start-up in case of resumption of water supply, automatic maintenance of constant pressure, timed automatic switching and the automatic protection against over current, over voltage, deficient pressure and over load etc.

> 性能参数表 / Table of performance parameters

序号 S.N.	型号 Type-Model	流量 / Flow (m <sup>3</sup> /h)	扬程 / Lift (m)	泵组 / Pump set			稳流调节器 (Steady flow regulator) Φ*L(mm)	参考户数(单位: 户) Reference households (Unit: household)
				水泵型号 Water pump model	台数 Number	功率(kw) Power(kw)		
1	TBWS8-5-2	8	5	CDM5-2	2台	0.37	TBG600*1300	15
2	TBWS8-13-2		13	CDM5-4		0.55		
3	TBWS8-18-2		18	CDM5-5		0.75		
4	TBWS8-21-2		21	CDM5-6		1.1		
5	TBWS8-24-2		24.5	CDM5-7		1.1		
6	TBWS8-28-2		28	CDM5-8		1.1		
7	TBWS8-31-2		31.5	CDM5-9		1.5		
8	TBWS8-35-2		35	CDM5-10		1.5		
9	TBWS8-43-2		43	CDM5-12		2.2		
10	TBWS8-47-2		47	CDM5-13		2.2		

序号 S.N.	型号 Type-Model	流量 / Flow (m <sup>3</sup> /h)	扬程 / Lift (m)	泵组 / Pump set			稳流调节器 (Steady flow regulator) Φ*L(mm)	参考户数(单位: 户) Reference households (Unit: household)
				水泵型号 Water pump model	台数 Number	功率(kw) Power(kw)		
1	TBWS12-13-2	12	13.5	CDM10-2	2台	0.75	TBG600*1300	20
2	TBWS12-22-2		22	CDM10-3		1.1		
3	TBWS12-29-2		29	CDM10-4		1.5		
4	TBWS12-37-2		37	CDM10-5		2.2		
5	TBWS12-44-2		44	CDM10-6		2.2		
6	TBWS12-52-2		52	CDM10-7		3		
7	TBWS12-60-2		60	CDM10-8		3		
8	TBWS12-67-2		67	CDM10-9		4		
9	TBWS12-76-2		76	CDM10-10		4		
10	TBWS12-99-2		99	CDM10-13		5.5		

序号 S.N.	型号 Type-Model	流量 / Flow (m <sup>3</sup> /h)	扬程 / Lift (m)	泵组 / Pump set			稳流调节器 (Steady flow regulator) Φ*L(mm)	参考户数(单位: 户) Reference households (Unit: household)
				水泵型号 Water pump model	台数 Number	功率(kw) Power(kw)		
1	TBWS16-10-2	16	10.5	CDM15-1	2台	1.1	TBG600*1300	40
2	TBWS16-21-2		21.5	CDM15-2		2.2		
3	TBWS16-34-2		34	CDM15-3		3		
4	TBWS16-46-2		46	CDM15-4		4		
5	TBWS16-57-2		57	CDM15-5		4		
6	TBWS16-67-2		67	CDM15-6		5.5		
7	TBWS16-79-2		79	CDM15-7		5.5		
8	TBWS16-91-2		91	CDM15-8		7.5		
9	TBWS16-103-2		103	CDM15-9		7.5		
10	TBWS16-115-2		115	CDM15-10		11		

序号 S.N.	型号 Type-Model	流量 / Flow (m <sup>3</sup> /h)	扬程 / Lift (m)	泵组 / Pump set			稳流调节器 (Steady flow regulator) Φ*L(mm)	参考户数(单位: 户) Reference households (Unit: household)
				水泵型号 Water pump model	台数 Number	功率(kw) Power(kw)		
1	TBWS20-10-2	20	10.5	CDM20-1	2台	1.1	TBG600*1300	70
2	TBWS20-23-2		23	CDM20-2		2.2		
3	TBWS20-35-2		35	CDM20-3		4		
4	TBWS20-47-2		47	CDM20-4		5.5		
5	TBWS20-58-2		58	CDM20-5		5.5		
6	TBWS20-70-2		70	CDM20-6		7.5		
7	TBWS20-82-2		82	CDM20-7		7.5		
8	TBWS20-95-2		95	CDM20-8		11		
9	TBWS20-119-2		119	CDM20-10		11		
10	TBWS20-143-2		143	CDM20-12		15		

序号 S.N.	型号 Type-Model	流量 / Flow (m <sup>3</sup> /h)	扬程 / Lift (m)	泵组 / Pump set			稳流调节器 (Steady flow regulator) Φ*L(mm)	参考户数(单位: 户) Reference households (Unit: household)
				水泵型号 Water pump model	台数 Number	功率(kw) Power(kw)		
1	TBWS32-9-2	32	9	CDM32-10-1	2台	1.5	TBG800*1500	200
2	TBWS32-13-2		13	CDM32-10		2.2		
3	TBWS32-20-2		20	CDM32-20-2		3		
4	TBWS32-27-2		27	CDM32-20		4		
5	TBWS32-33-2		33	CDM32-30-2		5.5		
6	TBWS32-40-2		40	CDM32-30		5.5		
7	TBWS32-46-2		46	CDM32-40-2		7.5		
8	TBWS32-53-2		53	CDM32-40		7.5		
9	TBWS32-60-2		60	CDM32-50-2		11		
10	TBWS32-67-2		67	CDM32-50		11		
序号 S.N.	型号 Type-Model	流量 / Flow (m <sup>3</sup> /h)	扬程 / Lift (m)	泵组 / Pump set			稳流调节器 (Steady flow regulator) Φ*L(mm)	参考户数(单位: 户) Reference households (Unit: household)
				水泵型号 Water pump model	台数 Number	功率(kw) Power(kw)		
1	TBWS42-16-2	42	16	CDM42-10-1	2台	3	TBG800*1500	300
2	TBWS42-20-2		20	CDM42-10		4		
3	TBWS42-32-2		32	CDM42-20-2		5.5		
4	TBWS42-41-2		41	CDM42-20		7.5		
5	TBWS42-52-2		52	CDM42-30-2		11		
6	TBWS42-61-2		61	CDM42-30		11		
7	TBWS42-73-2		73	CDM42-40-2		15		
8	TBWS42-81-2		81	CDM42-40		15		
9	TBWS42-93-2		93	CDM42-50-2		18.5		
10	TBWS42-101-2		101	CDM42-50		18.5		
序号 S.N.	型号 Type-Model	流量 / Flow (m <sup>3</sup> /h)	扬程 / Lift (m)	泵组 / Pump set			稳流调节器 (Steady flow regulator) Φ*L(mm)	参考户数(单位: 户) Reference households (Unit: household)
				水泵型号 Water pump model	台数 Number	功率(kw) Power(kw)		
1	TBWS65-13-2	65	13	CDM65-10-1	2台	4	TBG1000*2000	450
2	TBWS65-20-2		20	CDM65-10		5.5		
3	TBWS65-26-2		26	CDM65-20-2		7.5		
4	TBWS65-33-2		33	CDM65-20		11		
5	TBWS65-40-2		40	CDM65-30-2		11		
6	TBWS65-46-2		46	CDM65-30-1		15		
7	TBWS65-53-2		53	CDM65-30		15		
8	TBWS65-60-2		60	CDM65-40-2		18.5		
9	TBWS65-66-2		66	CDM65-40-1		18.5		
10	TBWS65-73-2		73	CDM65-40		22		
序号 S.N.	型号 Type-Model	流量 / Flow (m <sup>3</sup> /h)	扬程 / Lift (m)	泵组 / Pump set			稳流调节器 (Steady flow regulator) Φ*L(mm)	参考户数(单位: 户) Reference households (Unit: household)
				水泵型号 Water pump model	台数 Number	功率(kw) Power(kw)		
1	TBWS85-14-2	85	14	CDM85-10-1	2台	5.5	TBG1000*2000	800
2	TBWS85-20-2		20	CDM85-10		7.5		
3	TBWS85-30-2		30	CDM85-20-2		11		
4	TBWS85-41-2		41	CDM85-20		15		
5	TBWS85-52-2		52	CDM85-30-2		18.5		
6	TBWS85-64-2		64	CDM85-30		22		
7	TBWS85-75-2		75	CDM85-40-2		30		
8	TBWS85-86-2		86	CDM85-40		30		
9	TBWS85-98-2		98	CDM85-50-2		37		
10	TBWS85-110-2		110	CDM85-50		37		
序号 S.N.	型号 Type-Model	流量 / Flow (m <sup>3</sup> /h)	扬程 / Lift (m)	泵组 / Pump set			稳流调节器 (Steady flow regulator) Φ*L(mm)	参考户数(单位: 户) Reference households (Unit: household)
				水泵型号 Water pump model	台数 Number	功率(kw) Power(kw)		
1	TBWS120-18-2	120	18.5	CDM120-10	2台	11	TBG1000*2000	1000
2	TBWS120-28-2		28.5	CDM120-20-2		15		
3	TBWS120-34-2		34.5	CDM120-20-1		18.5		
4	TBWS120-40-2		40	CDM120-20		22		
5	TBWS120-49-2		49	CDM120-30-2		30		
6	TBWS120-55-2		55.5	CDM120-30-1		30		
7	TBWS120-61-2		61	CDM120-30		30		
8	TBWS120-69-2		69	CDM120-40-2		37		
9	TBWS120-76-2		76	CDM120-40-1		37		
10	TBWS120-81-2		81	CDM120-40		45		