



# **Surface pumps and water booster sets instruction manual**



**NOTE** read the manual prior to commencement of use. For safety reasons, the device can only be operated by persons well-familiarised with the manual.



**NOTE:** the manual is the primary part of the purchase and sale contract. The user's failure to observe the instructions included in the manual is a breach of the contract and excludes any complaints arising from potential device failure caused by the use that is inconsistent with instructions of its use.



**NOTE:** prior to start of the device, please make sure that the capacity of the well from which you are going to pump the water is sufficient, i.e. whether the efficiency of the purchased pump is not too high in relation to the well capacity. Installation of the pump that is too large can stop the water flow in the suction pipe and result in "dry" pump operation - without water. Pumps with capacities of 100 l/min and higher require new, efficient wells !



**This equipment is not intended for use by persons (including children) with reduced motor, sensory or mental capacities, or persons without experience or not familiarised with the equipment, unless it is performed under supervision or according to the instruction regarding operation provided by persons responsible for their safety.**

**Attention should be paid so that children do not play with the equipment.**

## APPLICATION:

Surface pumps and booster pumps which are the subject of this manual are intended for water supply to households from individual water intakes. The devices can also be used to increase pressure, provided that the inflow pressure on the suction side does not exceed 3 bars (300000 Pa). When the pumps are used in municipal (collective) water systems, a non-return valve must be installed before the pump to prevent water return to the public water system. The devices described in the manual can be used to pump water from dug or bored wells, provided that the negative pressure, necessary for water suction, does not exceed 8 m of water column. The value of negative pressure is influenced by such factors as (the values sum up):

- 1) vertical distance between the water level and suction pump of the booster set, pump (depth). One meter of depth corresponds to one metre of negative pressure.
- 2) length and diameter of the suction pipe. 10 m long suction pipe with diameter of 1" corresponds to 1.5 m of negative pressure, i.e. 0.15 m of negative pressure per 1 m of the pipe. 10 m long suction pipe with diameter of 1 1/4" corresponds to 1 m of negative pressure, i.e. 0.1 m of negative pressure per 1 m of the pipe. Note: the length of the vertical section must be also taken into account in calculations

### Example:

The booster set is set at the distance of 10 m from the well where the depth to the water level is 5 m. A suction pipe with 1" diameter was used in assembly.

The negative pressure connected with the depth is 5 m.

The negative pressure connected with the length and diameter of the suction pipe is

$(5_{\text{vertical section}} + 10_{\text{horizontal section}}) \times 0.15_{\text{for diameter 1"}} = 2.25 \text{ m}$

In total, the negative pressure is  $5 + 2.25 = 7.25 \text{ m}$ . In this example the negative pressure of 8 m is not exceeded and the booster pump should operate without problems.

If the negative pressure of 8 m is exceeded during operation (e.g. when the water level decreases during pumping), the booster pump can be damaged due to operation without water flow. This type of failure is not subject to warranty repair. Bearing the aforementioned in mind, if it is possible that the water level will decrease, e.g. during droughts or intensive plant watering, the booster set must be installed in such a manner that a possibly high negative pressure reserve is preserved. For this purpose, it is preferable to install the booster set or pump at a short distance from the well and the recommended cross-section of the water pipe to use is 1 1/4".



**Warning!!** Using suction pipes with diameter lower than 1" is prohibited. In such a case, the booster pump will not start pumping water, and if it starts - it may be damaged due to lack of water flow. This type of failure is not subject to warranty repair.



The device is intended for pumping of clean water, with no solid or abrasive particles. Pumping water containing sand results in fast wear and tear of the pump and, in consequence, its failure. In such a case, only paid repair is available.



It is prohibited to use additional filters (except for well filters) on the suction side of the pump. This type of filters reduces the water flow and increases the actual pump suction height. In such a situation, when the filter is soiled, the water column in the suction pipe can be interrupted, causing operation of the pump without water which can result in device failure. Failures caused by operation of the pump without water - "dry", or without flow are not subject to warranty repairs.



The device is not adjusted to pump caustic, flammable, destructive or explosive substances (e.g. petrol, nitro, oil, etc.), foodstuffs or salty water. Failures caused by pumping of liquids other than pure water are not subject to warranty repairs. The maximal temperature of the pumped water is 35°C.



The device is not adjusted to pump water containing excessive amounts of mineral elements causing deposition of scale on the pumping elements. Operation in such conditions results in premature wear and tear of the operating elements of the pump. In such a case, only paid repair of the pump is available.

#### **DEVICE INSTALLATION:**

The device must be installed in a closed ventilated room, on levelled horizontal plane. The room must be selected in such a manner, so that the device is not exposed to high levels of humidity or frost.



It is prohibited to expose the device to impact of atmospheric factors (rain, snow). Operation in such conditions as too high humidity levels can result in electrocution hazard or failure of the motor or pressure switch. In case of such a failure, only paid repair is available.



The power supply for the pump or booster set must be 230V/50Hz, with earthing.

The suction pipe must be connected to the pump by means of the suction port, using a flexible non-collapsible hose (hose available for purchase from the guarantor), so that the pipe stress is not transferred to the pump.



NOTE: do not use anti-vibration hoses in metal plait for connection of the pump and suction pipe. This type of hoses can be used on the pumping side of the pump. Use of such a hose on the suction side can cause sucking it in - jamming, closing the flow through the hose and resulting in pump operation without water flow and, thus, in a failure. This type of damage is not subject to warranty repair.

In case of ring wells, it is necessary to install a suction rose at the end of the suction pipe with a check valve. For bored wells, the check valve must be installed directly over the filter.

The length of the ring well must be selected in such a manner that the check valve and the rose are at least 30 cm under the lowest possible water level and not lower than 30 cm from the well bottom.

It must be remembered that if the suction hose emerges during operation of the pump, it will result in leakage in the suction system, causing operation of the pump without water flow. Results of such a failure are not subject to warranty repair.



The suction pipe must be tight on its entire length. Any potential leakage, e.g. on the connections, result in air suction by the pump. In the best scenario, the pump will not reach the declared parameters. Finally, the pump will operate without water flow, causing its failure. Results of such a failure are not subject to warranty repair.

The direction of the suction pipe gradient must be towards the intake, so that no syphon is present at any point that would preclude full and exact filling of the system with water.



Prior to start of the pump or booster set, fill the suction pipe and pump with water. The prerequisite for problem-free start is full flooding of the suction pipe and hydraulic part of the pump. The system can be flooded through the flood plug on the suction body of the pump or through the discharge port.



**CAUTION!!** Starting the pump or booster set without previous flooding results in seizure and damage to the plastic parts of the pumping parts. This can also cause irreparable motor damage. In such a case, only paid repair is available and no warranty repair is provided.



After flooding, the discharge port must be connected with the pumping installation. It is recommended to use an anti-vibration hose in a metal plain (available for purchase from the guarantor) for the purpose of connection.

### **ELECTRIC INSTALLATION:**

The electric network used to power the device must be compliant with data provided on the rating plate.

The device plug must be connected to a socket with earthing. The manufacturer and guarantor are not liable for any damage to people or property resulting from lack of proper earthing.

The yellow-green core of the connection cable is earthing.



The powering network must be equipped with an installation, overcurrent motor switch, e.g. M611, securing the motor against overload. In order to provide maximum overload protection for the motor, the switch must be set to maximum coil current provided on the rating plate. The device can operate without this protection, but in case of a failure caused by overload, the repair costs are incurred by the user.



The powering installation must be equipped with a residual current device, with rated making current  $I_n$  not exceeding 30 mA. The manufacturer and guarantor are not liable for any damage to people or property resulting from use of power supply without a proper switch.



### **STARTUP AND OPERATION:**

The first start must be conducted with open taps and valves in order to pump out air particles that could be present in the installation. The start occurs after the plug is connected to the electric network. The taps and valves can be closed after the air particles are pumped out. If the suction installation is tight, when the tank is filled the booster set should reach the pressure causing the pressure switch to stop the motor.



When the taps are open, the pressure in the installation drops until it reaches the switch-off value, causing the pressure switch to start the motor. If the switch-on and switch-off pressure do not meet the needs of the user, it is possible to change this range by means of adjustment of the pressure switch. The switch-on and switch-off pressure can be set within the range of 1.5 / 4 bar, with minimal pressure difference between switch-on and switch-off equal to 1.5 bar. In order to perform the adjustment:

- disconnect power supply by unplugging,
- remove the screw securing the cover of the pressure switch and remove the cover,
- adjust the switch-on pressure by means of the large (longer) adjustment screw with a nut (screw with a spring). Turning the screw clockwise increases pressure and anticlockwise - decreases it.
- the switch-off can be adjusted by means of adjustment of the other smaller screw with a nut. Turning the screw clockwise increases pressure and anticlockwise - decreases it.

The booster set is equipped with a membrane tank. The tank is pre-filled with air under pressure of ca. 1.7-2 bar. The best tank capacity is obtained when the initial pressure in the tank is set to 0.2 bar lower than the switch-on pressure set on the pressure switch. To pump or discharge air from the tank, use the valve - a vent identical to those used in car wheels, located in the rear part of the tank. The air pressure in the tank must be checked at least once every 3 months during continuous use or at the beginning of the spring-summer season if the booster set is used in a recreational plot or when excessively frequent switch-on of the pump is found (more frequently than usual). The air pressure in the tank can be checked when the booster set is unplugged and the tap is open. When the water pressure in the installation drops to zero, the air pressure in the tank must be checked with a manometer used for pressure tests in car wheels, placing it near the vent in the rear part of the tank. If the air pressure is too low, it must be filled with a car pump. In no case can the air pressure in the tank exceed 3 bar or be lower than 1 bar. Note: the manometer installed at booster set shows water pressure in the installation, not the air pressure in the tank.



**CAUTION!!** Booster pump operation without air in the tank can cause an overload, resulting in motor failure. Too low or excessive (over 3 bar) pressure in the tank causes frequent switch-on and off of the booster pump. The motor is much more loaded during start-up than in continuous operation. Excessively frequent switching on and off that occur in case of improper air pressure in the tank can cause failures the results of which are not subject to warranty repairs.

Inspection and filling of the air pressure in the tank are responsibility of the user.

In case of use of Multi1300 INOX pumps, the condition of the filter must be checked periodically (at least once every two months). Soiled filter dampens the water flow. In extreme cases, the pump suction can be choked and it will operate without flow which results in device failure.

## STORAGE:



The pump and booster set must be protected against frost. All and any damage resulting from frost is not subject to warranty repair.

If the device is placed in a non-heated room in the winter season and it is not used, it must be disassembled and the water inside it must be drained. Due to the fact that some water may remain in the pump, it is recommended to store the device in a room with positive temperature.



If the pump or booster set is not used for a period exceeding one day, it must be unplugged. It must be remembered that in case of absence of the household residents, any leakage that can occur in the home water system or suction installation will result in booster pump switching on which can lead to flooding of the house or, in case of leakage in the suction installation - to pump failure.

Damage resulting from installation leakage are not subject to warranty repairs.



QB-60, WZ, WZ, WZC, WZCH, WZI type pumps require unclogging after a standstill period without water. Clogging results from sticking of the rotor to the housing due to the water sediments resulting from evaporation. In order to unclog the pump, move the pump shaft before starting the device. To facilitate this, insert a flat screwdriver in the shaft slit visible in the central part of the fan casing. If unclogging by means of a screwdriver is impossible, remove three screws securing the rotor casing, remove the cover revealing the rotor and turn it several times.



## DEVICE DISPOSAL:

The used product is subject to disposal as wastes only in selective waste collection systems organised by the Network of Communal Electric and Electronic Waste Collection Centres. The customer is entitled to return the used equipment to the network of the electric equipment distributor, at least for free and directly, if the returned device is of proper type and fulfils the same function as a newly purchased device.



Device CE marking year.....  
(entered by the seller based on the device rating plate)

**EC DECLARATION OF CONFORMITY (Module A):**

PHU Dambat, Gawartowa Wola 38, 05-085 KAMPINOS, POLSKA, e-mail: [biuro@dambat.pl](mailto:biuro@dambat.pl)

Under the Act of 30 August 2002 on the conformity system (Journal of Laws of 2004, No. 204, item 2087), we declare, assuming full liability, that the pumps and booster sets with 2L, 24L, 50L capacity tanks, series:

JET100A(a)TF, AJ 50/60, MH 1300 (INOX), MHI 1300 (SS), MHI 2200 (SS), MHI 2500 (SS), JSW 150, WZ250, WZ750, QB60, WZ250 hydr 2L, DP355A, JET100A, SCM32, JSW 200, MultiHWA 4000 INOX, MultiAJ 1300 SS, MHI 1100 SS, JSW150INOX, Multi1300INOX, WG, WGZ, MH1500, MH1500INOX, WZC250, WZC750, WZCH250, BJ45/75, ATLAS125, WZI250, WZI750, HP1500 this declaration refers to, are compliant with the following Directives of the European Parliament and Council, as amended:

- 1) MD 2006/42/WE (applied standards EN 292-1:1991, EN 292-2-1991/A1: 1995, PN- EN 809:1999/AC: 2004)
- 2) EMC 2004/108/WE (applied standards PN-EN 55014-1:2004, PN-EN 61000-3-2:2004)
- 3) LVD 2006/95/WE (applied standards PN-EN 60335-1:2004+A1:2005+A2:2008+ A12: 2008, PN-EN 60335-2-41:2005)

Under Art. 9 of Directive no. 97/23/EC, the pumps and booster sets with 50L and lower capacity tanks are qualified as category I pressure devices.

Adam Jastrzębski 23.11.2008

**TECHNICAL DATA**

TYPE:	Motor power	Coil Current	Power supply voltage	Max. efficiency	Max. head height	Max. suction depth	Suction/discharge port	Highest admissible booster set pressure
	[W]	[A]	[V]	[l/min]	[m]	[m]		P <sub>s max</sub> [bar]
JET100A(a)	1100	2.4	~230	60	50	8	1" x 1"	4
AJ 50/60	1100	2.4	~230	60	50	8	1" x 1"	4
MHI1100SS	1100	5.0	~230	32	109	8	1" x 1"	4
MHI 1300	1300	6.0	~230	100	55	8	1" x 1"	4
MH 1300 INOX	1300	6.0	~230	100	55	8	1" x 1"	4
MHI 1300SS	1300	6.0	~230	100	55	8	1" x 1"	4
MHI 2200 (SS)	2200	10.0	~230	165	61	8	1 1/4" x 1 1/4"	4
MHI 2500 (SS)	2500	11.5	~230	150	105	8	1" x 1"	4
BJ 45/75	1100	3.9	~230	75	45	7.5	1 1/4" x 1"	4
JSW 150	1500	3.7	~230	80	46	8	1" x 1"	4
JSW150 INOX	1500	3.7	~230	70	45	8	1" x 1"	4
WZI250	250	1.6	~230	35	35	8	1" x 1"	4
WZI750	750	3.2	~230	50	60	8	1" x 1"	4
WZC / WZCH 250	250	1.6	~230	30	30	8	1" x 1"	4
WZC 750	750	4.6	~230	70	45	8	1" x 1"	4
JET100A	1100	4.0	~230	60	50	8	1" x 1"	4
WZ 250 hydr 2L	250	1.6	~230	35	35	7	1" x 1"	4
ATLAS125	1250	4.35	~230	70	54	8	1" x 1"	4
JSW 200	1800	7.5	~230	100	63	8	1" x 1"	4
MultiHWA4000 INOX	1800	7.4	~230	120	53	8	1" x 1"	4
MH1500 (INOX)	1500	7.5	~230	100	65	8	1" x 1"	4
HP1500	1500	9.6	~230	110	63	8	1" x 1"	4
Multi1300 INOX	1300	6.0	~230	70	50	8	1" x 1"	4