TEKMASH®
TECHNOLOGY . ECOLOGY . MACHINE BUILDING

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TEK HYDRODYNAMIC HEATER

TEK hydrodynamic heater is a novel ecologically friendly multi-functional technological equipment (no heating elements) designed for heating any liquids and simultaneously cleaning the heat supply system.

TEK hydrodynamic heater efficiency is not less than 90%.

TEK units are versatile and highly competitive as they do not require any special site, are easily connected to the existent heat supply systems (during one day), can use any quality liquids and are easily operated.

Nowadays more than 2500 TEK heaters are employed in various industries, agriculture and transport in Ukraine. They are used not only for heating and supplying hot water for daily needs (including recirculating water systems), they can also be used in production processes in food, milk, processing, chemical and coal-mining industries. Depending on production process requirements TEK units are used for making emulsions and suspensions, for heating mineral oils, chemical solutions and sea water.

Owing to its easy startup TEK unit is indispensable in case of an emergency, natural disaster, etc.

TEK unit consists of a vessel, a special type mixer and a pump making a single whole. The pump energized by an electric motor feeds liquid to the mixer. Liquid is heated in the mixer by the heat energy released as a result of jets collision.

TEK hydrodynamic heater is provided with an automatic control unit which ensures:

1) water temperature control and maintenance (upper and lower limit);
2) motor protection against loss of phase, winding failure, voltage and current fluctuations, bias voltage in phase;
3) emergency cutoff at limiting temperature.

Specifications

Parameter	ТЕК-1	ТЕК-2	ТЕК-3	ТЕК-4
Space to be heated, m³	до 450	900	1350	2700
Water volume heated for an hour by 40^{0}C, m³	0,14	0,22	0,44	0,9
Heat efficiency, kcal/h	5600	12000	17600	36000
Motor power, kW	7,5	15	22	45
Overall dimensions, mm	1300x535x450	1600x550x600	1650x610x600	1700x620x750
Weight, kg	250	300	400	500

TEK hydrodynamic unit main advantages

1. **Versatility.** TEK units are used:

- for heating buildings (450 – 10000 m³);
- for heating mineral oils, chemical solutions;
- for effectively mixing, homogenizing and dispersing substances;
- for making emulsions, suspensions and simultaneously heating them;
- for airing liquids.

2. Self-sufficiency. TEK unit is a self-sufficient technological aggregate, its operation mode being specified by the customer.

3. Durability. Service life is practically unlimited due to the absence of convective surfaces, narrow slots and quickly wearing parts.

4. Efficiency. TEK units are efficient due to following:

- no need to lay heating main and minimum heat losses;
- production process intensification and lower energy consumption, the final product quality remaining the same;
- no water-conditioning (water quality, pollution and salt load do not influence unit operation);
- operability which is ensured by an automatic control unit, service staff requiring no special training.

5. Safety and ecological friendliness. These features are due to the following:

- TEK units are fire-safe and explosion-proof as heating, pumping and removing deposits are combined in a single technological cycle;
- TEK units do not generate any oscillations dangerous for a man and do not discharge electrolysis hydrogen (like electrode boilers);
- TEK units do not require water-conditioning which is detrimental to health;
- TEK units do not pollute environment with combustion materials.

How to cut heat supply cost by 15 …25%?

1) TEK unit self-sufficiency makes it possible to vary its operation mode depending on the environment temperature and the work hours ensuring comfortable 18…20^{0}C during work hours and 8…10^{0}C during off-hours.

2) The use of a storage vessel and a three-rate meter helps to choose the most economical operation mode under which TEK unit can work during the reduced tariff time and then distribute hot water in the daytime with the help of a low-power circulation pump.

3) Heat losses in the storage vessel can be minimized by using present-day thermo-insulation materials and technologies.

4)

TEKMASH authority:

- heater power calculation;
- installation and adjustment;
- training servicing staff;

warranty.

For the acquisition of heaters and obtaining recommendations apply to

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