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Wastewater Treatment Plants

We provide technological equipment for pumping stations, water treatment plants and wastewater treatment plants. Traditionally, the wastewater treatment plant sector is on a very high level. That is to say, we deliver first and foremost the complete technology, including installation and control systems. It means that we purchase much of the equipment for complete systems from established producers. However, some special machines for mechanical and biological purification are produced by ourselves according to our own construction designs.

The equipment for mechanical purification involves a simple machine which is used for cleaning the coarse screen, then, for cleaning, all kinds of grit chambers and settlement tanks.



Regarding biological purification, we deliver equipment for aeration tanks which can work with different types of aeration processes and all known types of secondary settlement tanks. Various systems for tertiary purification are included in biological purification systems. For this purpose we produce e.g. vertical stirring machines.

For the treatment and disposal of sludge we produce thickening tanks and storage tanks which can be made of either concrete or steel.

We use a special gear wheel drive for bigger secondary settlement tanks and storage and thickening tanks with a circular or longitudinal shape. This special gear wheel drive can be used for longitudinal grit chambers as well. Its advantage is in the separation of the drive from the advance of the machine. This advance is done by one axis with two wheels. The wheels are not driven and they can advance on a simple rail. This system protects the concrete rim of the tanks from damage. The actual driving is done by a gear wheel driven through a gear-box by an electric motor. The gear wheel meshes with a rack rail which is installed next to the normal rail. The driving power then depends only on the qualities of the electric motor.

This solution enables the equipment to be operated easily in all types of weather and operating conditions. The drive design for new stations is problem-free and the whole solution can easily be adapted for all common tank sizes. Next, the drive can be installed in the present equipment. Thus, a complete exchange of the present equipment is not necessary.

Small secondary settlement tanks in a vertical layout are very interesting as well. They can additionally equipped with a wiper for the tank bottom. This layout is very interesting for wastewater treatment plants with smaller degrees of contamination up to approximately 5,000 EO. For such plants we can deliver a compact purification system called KOMBIBLOK®.



The KOMBIBLOK® system is a biological unit designed for the biological purification of wastewater of different kinds, especially communal wastewater. The unit consists of an aeration tank, secondary settlement tank, and equipment for the recycling of activated sludge. The essential model range is based on the dimensions of the type of secondary settlement tank. This module is followed by an aeration tank, which is divided into separate parts according to the purification technology process. The layout of the aeration tank can vary in many ways. Therefore, the architecture of the whole plant can meet all the needs of the investor. The KOMBIBLOK® system can be enlarged by the addition of simple mechanical cleaning equipment and simple sludge treatment. In this way it can be used as a complete purifying system for municipal and similar types of wastewater from small and medium-sized sources of pollution. Thanks to the modular system it is possible to build the wastewater treatment plant in stages or to put it into operation in stages as well. Its construction in two lines enables the staff to do some work on the plant without interruption.



The various layouts of the aeration tank make it possible to operate different technological purification processes, depending on the desired grade of purification and the type of wastewater. The simplest aeration or/and aeration with nitrification and denitrification of organic waste are both possible. In such cases the technological equipment depends on the technological process. Aeration systems with fine bubbles and vertical stirrers are mostly used. These types of equipment are relatively cheap and very reliable. Their operation is very easy, so the wastewater treatment plant need only be supervised from time to time. All the processes have been automated.



The first wastewater treatment plant of the above-mentioned type was built for LDN Paseka, reaching 1,000 EO in 1971. During the renovation of this plant the GIGANT surface aerator was replaced by aeration with fine bubbles powered by blowers. The plant is still in operation nowadays and has a capacity of about 1,500 EO. More than one thousand wastewater treatment plants of this type have been built since then and most of them remain in operation today. The next picture shows the half-renovated biological part of the wastewater treatment plant in Dub na Moravě. In the aeration tank aeration equipment using fine bubbles was installed instead of the two surface aerators. In the secondary settlement tank new equipment was installed to remove floating impurities. The second half is not used today. Both wastewater treatment plants meet all the requirements which are necessary for the awarding of permission. This is common to all the other wastewater treatment plants, whether renovated or run according to the original design.



In order to spread awareness about this successful wastewater treatment plant we have founded a club called the KOMBIBLOK® KLUB. There are no duties for the members of the club; only the sharing of experience about operating the KOMBIBLOK® wastewater treatment plants with other members is possible. Some basic information can be obtained at www.ekoprogres.cz. For specific questions please contact ekoprogres@ekoprogres.cz to get an erudite answer. You can be a member of this club as well, if you are interested in membership, for example by sending a question or a message that you will not be disturbed by being sent some information.

Your advantage: we provide a guarantee of the purifying effect of KOMBIBLOK® wastewater treatment plants during the whole operating life of the equipment.