



INKOS®

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*Complex Deliveries for Drinking,
Technologic and Waste Water
Treatment by*

- flotation*
- filtration*
- clarification and sedimentation*
- biological treatment*

INKOS®



The company INKOS was established in the year 1990. Gradually, as the company was developing, main fields of its activity have been stabilised since the year 1992, namely complex deliveries of equipment for water cleaning by biological activation, flotation, atmospheric and pressure filtration on a filter screen, sand filtration, sedimentation, mechanical pre-treatment, and the production of principal equipment for the above fields of activity.

The company has gradually developed its own construction designs and size series of principal equipment.

INKOS manufactures circular flotation machines, atmospheric and pressure micro-screen filters, pressure, atmospheric and continuous sand filters, built-in interiors of primary and secondary sedimentation tanks, thickening tanks, and bar screens for mechanical pre-treatment.

INKOS provides complex designs as well as individual deliveries of principal equipment to end users and supplier companies. References may be obtained from its clients, i.e. suppliers and operators of sewage and water treatment plants and clients dealing in energetics, paper industry, rubber-making industry, china clay processing, chemical and food industries.

The company INKOS delivers its products to home and foreign markets. More than one third of the total turnover is delivered abroad.

ABOUT INKOS





INKOS delivers complex technologies to the fields in which its principal equipment is manufactured.

Complex and turn-key deliveries are provided in the following fields:

- Municipal and industrial waste water treatment plants
- Industrial waste water and technologic water flotation plants
- Waste and technologic water filtration plants
- China clay thickening

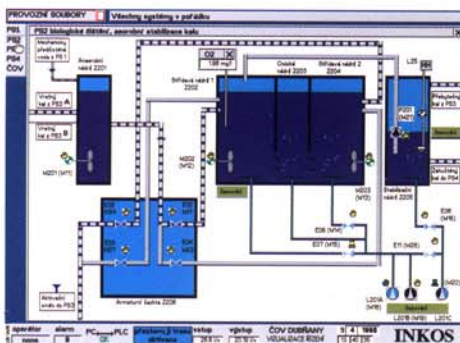
At the preparation stage of order and the technical assignment the company provides:

- Consultancy and optimal technological designs
- Laboratory and tests of designed technology
- Evaluation of optimal variant

The complex delivery includes:

- Project
- Building, machine and electrical parts of deliveries
- Complete testing and trial operation
- Final evaluation of plant construction and trial operation

The company INKOS has its own laboratory and testing equipment for tests of flotation and all types of filtration.



COMPLEX DELIVERIES



INKOS manufactures and delivers bridges and inside built-in parts of primary and secondary sedimentation tanks and thickening tanks situated in concrete reservoirs. Tanks of small dimensions are delivered with casing, either en block or in parts.

Sedimentation tanks are delivered up to 42 m of diameter, thickening tanks up to 30 m of diameter. The equipment are made from carbon steel with surface finish, stainless steel, or in a combination of carbon and stainless steel.

INKOS has developed its own designs of travels, drives, intakes, foot bridges and scrapers for removing sludge from the bottom of the tanks. These designs have been verified by a number of installations and a long-term operation in waste water treatment plants.

The application of peripheral traction drive is very advantageous in case of china clay thickening tanks, as against other designs it is very reliable at restraining increased resistance of stiff china clay. Another great advantage of this drive as against central drives is low consumption of electric power.



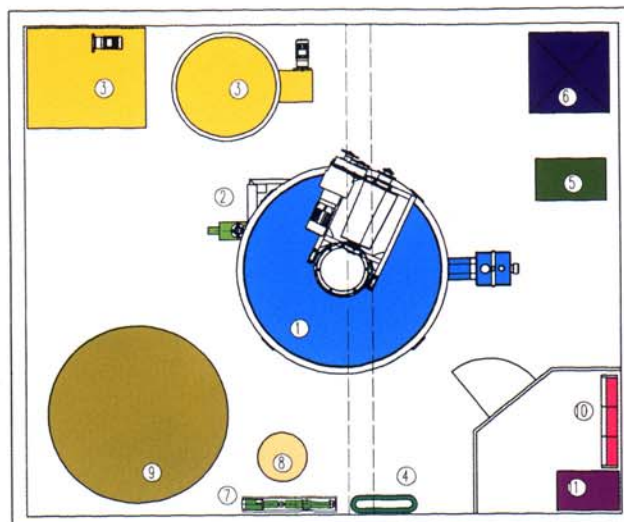
SEDIMENTATION



FLOTATION

Flotation is a technological purification process meant especially for heavily contaminated industrial, technological and waste waters. In some cases, this technology, based on separation of solid substances contained in purified water by taking them up to the level of a flotation plant by means of a great number of fine bubbles, is irreplaceable.

INKOS manufactures circular flotation machines with rotating built-in parts of its own design. SUPRAFLOT LC flotation machines work on the principle of a zero speed of raw water after its discharge of a distribution arm to a flotation tank, and of a zero speed of purified water before its discharge from the flotation tank to a collecting arm. This principle is completed with another progressive technology of creating air bubbles necessary for taking sludge flakes up to the surface, and released from pressure water in which air was dissolved for this purpose. That is why SUPRAFLOT LC achieves higher efficiency and performance on substantially smaller plants than other comparable plants of different types. SUPRAFLOT LC is delivered according to flow rate, contamination, raw water type, and requested values of purified water given by a client. Flotation machines are delivered to paper mills, meat processing factories, dairies, chemical and metallurgical companies, and water treatment plants.



1. Supraflot LC
2. SM mixer
3. Chemical system
4. Reactor
5. Compressor
6. Raw water tank
7. Sludge pump
8. Equalisation sludge basin
9. Clarifying basin
10. Distributor
11. Control system



Atmospheric micro-screen drum filters working on the principle of filtration on a filter screen are meant for filtration of liquids, especially technological water, and for tertiary treatment of water behind secondary sedimentation tanks of waste water treatment plants. Filter operation is continuous. The liquid runs through the filter screen and impurities bigger than its holes are caught on the screen and removed periodically of its surface without interrupting the filtration.

INKOS manufactures two types of the atmospheric micro-screen drum filters which differ from one another in workmanship and seating a filter drum and in a way of removing impurities caught on the filter screen:

MBF OS micro-screen drum filters with spraying off impurities, filter drum seated horizontally, provided with casing or for installation to a channel;

MBF OD micro-screen drum filters with suction of impurities, filter drum seated vertically, provided with casing.

Sand filtration is another method of very fine filtration. This technology is used in drinking and industrial water treatment plants, for technological water filtration, as the last stage before membrane filtration and as a tertiary degree of waste water treatment plants. INKOS delivers classic closed sand filters for filtering pressure water and open filters filtering at atmospheric pressure.

Another type of delivered sand filter is VIVASAND atmospheric continual sand filter with its own design of continual sand mining. VIVASAND has the most progressive technology of sand filtration replacing classic atmospheric and pressure filtration for the purpose of reducing acquisition cost, power consumption, and extending the life of the plant.

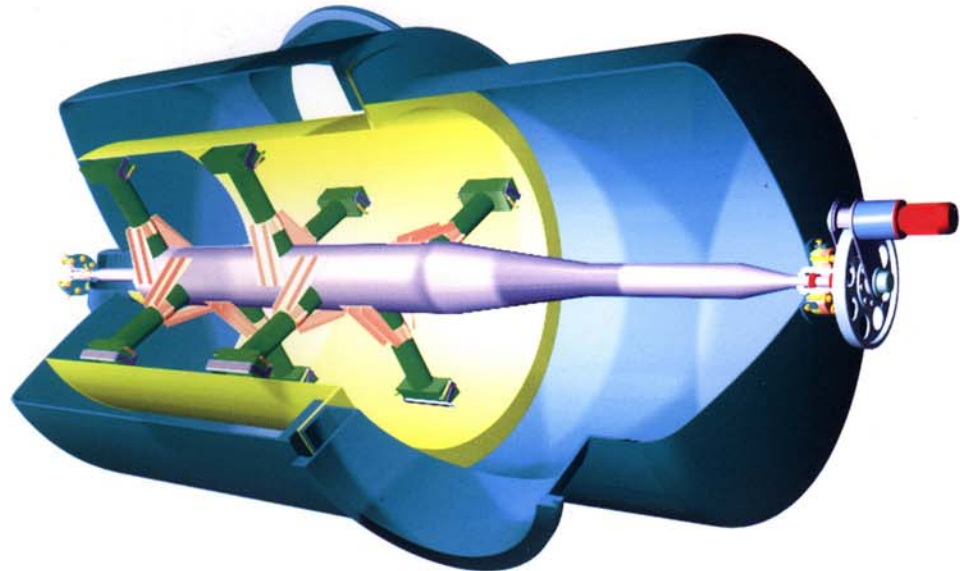


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ATMOSPHERIC AND SAND FILTRATION

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PRESSURE FILTRATION



Pressure filters manufactured by INKOS are designed for the filtration of liquids, mainly big flows of contaminated industrial and fluvial technological waters, through the filter screen. Filter operation is continuous. The liquid runs through the filter screen and impurities bigger than its holes are caught on the screen and removed periodically of its surface without interrupting the filtration.

Filter screens of the pressure filters manufactured by INKOS are seated horizontally. Water enters the filter under pressure, in the axis of a cylindrical screen. A hollow shaft with suction pipes is situated in the screen axis. While removing impurities, the shaft rotates, the suction pipes copy the interior screen shape and suck off caught impurities. The underpressure necessary for sucking off impurities and cleaning the screen with countercurrent is made by the difference between the pressure inside the filter and the atmospheric pressure on the outlet of suction pipe.

The filters have been verified during a long-term operation in many power plants in the Czech Republic and Slovakia. As against other designs, INKOS filters with cylindrical screens with circular holes and cylindrical wedge wire screens are provided with a mechanical scraper increasing markedly cleaning efficiency and removing caught impurities. High efficiency of cleaning the cylindrical screen with cassettes is ensured by step-by-step drive adjusting the suction pipes under the cassettes and enabling cleaning time regulation.



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MECHANICAL PRE-TREATMENT



For many years, INKOS has been delivering bar screens of its own design to inland and foreign waste water treatment plants, but also for mechanical pre-treatment of fluvial water for technological purposes. The bar screens are made from stainless steel. The company manufactures three types of bar screens - truck bar screens (SCV), chain bar screens (SCR), and rake bar screens (SCH).

Truck bar screens are situated in medium-sized and deep channels. It is of a great advantage that only a rack grating is situated in the water and the other mechanical parts for removing caught impurities are situated above the water. This design enables easy accessibility and service without manipulation with the whole bar screens.

Chain bar screens are designed for mechanical pre-treatment of waste and fluvial water in medium and large channels of a high water level. Rake bar screens are delivered for fine pre-cleaning in small and shallow channels.



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