



HIDROTAY®

SOLUTIONS FOR INDUSTRIAL WATER TREATMENT



- » Reverse osmosis
- » Ultrafiltration
- » Disinfection with O_3
- » Dosage and control
- » Custom kits



Ósmosis Inversa



Hidrotay manufactures water treatment equipment for a multitude of sectors (naval, food industry, fish farms, sewage plants, automotive industry ...) The activities of all these industries require a large supply of water specifically treated with the latest market technologies: reverse osmosis, ultrafiltration, ozone disinfection, specific filtration, dosage of chemical products, etc.

With more than twenty years of experience in the sector, **Hidrotay** engineers attend to all kinds of details when analyzing the real needs of the client and thus design a customized equipment. Thanks to advanced technology software, we follow the entire life of our products, making it possible to control them remotely at any time. In addition, our technicians go anywhere in the world to attend emergencies.



Reverse osmosis plays a fundamental role in the treatment of industrial and drinking water. In recent years, this technology has boomed in all kinds of industry sectors thanks to its simplicity, high efficiency, and safe operation.

Hidrotay offers reverse osmosis equipment that is characterized by its quality and versatility, ranging from standardized equipment for small applications to large production facilities.

Serie 4040

- Operation with 4040 type membranes.
- It take up little space and are used for low production applications.
- Easy access to its components for its maintenance.
- Great flexibility, reliability and robustness, with materials that guarantee resistance to corrosion.
- On-screen monitoring and reading of all operating parameters.
- Optional elements: washing kit and pre-filters.



Modelo	Nº membranas	Potencia instalada (kW)	Producción (m³/d)	Calidad del producto (mg/l)	Dimensiones (L x W x H)
HTRO-4040-1	1	3,6	4,2	93,4	1500 x 580 x 470
HTRO-4040-2	2	3,6	7,4	110,5	1500 x 580 x 470
HTRO-4040-3	3	7,5	13	91,1	1500 x 800 x 470
HTRO-4040-4	4	7,5	16,2	97,3	1500 x 800 x 610
HTRO-4040-6	6	7,5	23	115,5	1500 x 800 x 610

Serie 8040

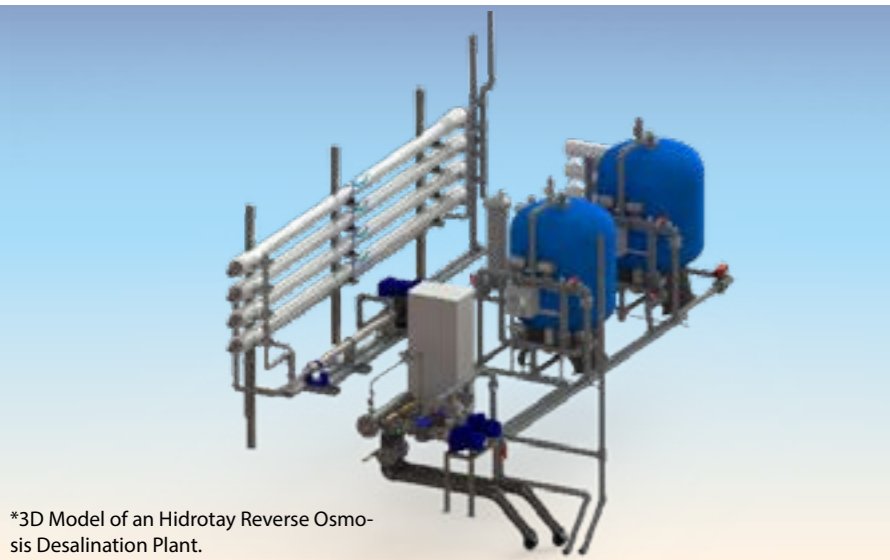
- Operation with 8040 type membranes.
- They are intended for medium production applications.
- Compact and robust frame, which allows easy access to component maintenance.
- Equipment of maximum reliability with materials that guarantee resistance to corrosion.
- On-screen monitoring and reading of all operating parameters.
- Includes housings for cartridge pre-filters.
- Optional elements: washing kit and pre-filters.



Modelo	Nº membranas	Potencia instalada (kW)	Producción (m³/d)	Calidad del producto (mg/l)	Dimensiones (L x W x H)
HTRO-8040-2	2	15	30	138,5	1660 x 940 x 1930
HTRO-8040-3	3	15	39	164,8	1660 x 940 x 1930
HTRO-8040-4	4	15	49	192,5	1660 x 940 x 1930

Custom plants

Much of the industrial activities require high flows of purified water, from the boilers of power plants to the processing of any type of food. The water to be used must also meet a series of strict physical-chemical requirements that must be achieved with specific combined treatments. Once the production requirements are known and the nature of the supply water is studied, we proceed with the design of the installation using software. Thus we have at any time a clear visualization of what we are doing, thus improving communication with the client.



*3D Model of an Hidrotay Reverse Osmosis Desalination Plant.



This **Hidrotay** reverse osmosis desalination plant, located in the coastal industry, is capable of producing up to **400 m³** of desalinated water per day. The water is captured from the estuary and pumped to sand filters that remove the thickest suspended solids. Then it goes through a series of fine filters that manage to retain the smallest particles up to 5 μm . Finally, a pump sends the water under high pressure to the reverse osmosis membranes where the elimination of the dissolved salts occurs, rejecting the brine part and obtaining quality drinking water.

Hidrotay offers its clients the possibility of integrating the **Industry 4.0** concept into their equipments. It consists of the digitization of the production process and its Internet connection. This allows us to monitor and control all operating parameters remotely, so that there will always be a qualified technician available to solve any problem without the need for travel.



When a problem appears during the process, alarm messages pop up on the distribution panel screen. These notices can be e-mailed to designated recipients, along with a screenshot of the latest alarm log.

The parameters readings on the screen are reflected in real time, making it possible to execute any action remotely unless they are password protected. In this case, the action must be authorized from the team itself as a security measure.



Hidrotay mounts energy recovery systems, also known as **ERD systems**, on its equipments with higher productions.

These systems reduce the energy consumption of a reverse osmosis system by approximately 50%. They are also very easy to maintain and operate..



In the image we can see the 3D model of a 200 m³ / day reverse osmosis equipment in a standard 20-foot container.

Containerized installation makes transportation easy and the perfect solution for limited time applications.

Ultrafiltration

Ultrafiltration (UF) is a process by which suspended solids, colloidal material, microbiological contaminants, and soluble species of high molecular mass are retained by a simple size exclusion mechanism (sieving) depending on the degree of pore of the membrane. It is capable, even the lowest degree of UF, to purify all the bacteria present in the water. The highest degrees of ultrafiltration retain even viruses. However, UF does not remove small molecules, ions, or dissolved salts.



It should be noted that the degree of screening for reverse osmosis is much higher, but ultrafiltration has operational advantages in many cases:

- **Low cost:** The economic cost compared to an R.O. of the same capacity is up to three times lower.
- **Low water consumption:** As there is no reject water, the flow of water that enters and leaves filtered is the same.
- **Low electrical consumption:** The pressure required for the UF process varies between 0.5 and 5 bar, so in most cases the mains pressure is sufficient without requiring additional pumping.
- **Low maintenance:** Lacking pumps and high pressures, they are simple systems that require a minimum of maintenance.
- **Auto-Cleaning:** **Hidrotay** UF systems are equipped with a **CIP (Clean In Place)** system that cleans the membranes against the current whenever necessary. In this way the system is kept in optimal conditions and with a long useful life.

Applications are as extensive as water needs in different sectors, such as water purification, drinking water treatments, juice clarification, protein fractionation, aquaculture, etc.



This HTUF-2008N model has been installed in a large company in the automotive sector to improve a critical production process.



This HTUF-2008N model operates in a cellar to treat the input water for wine processing.

Combination systems: For certain applications, the combination of several filtration systems is necessary to achieve the desired quality. In the figure below we can see the example of a combined UF plant (6 vertical membranes) followed by a RO system (6 horizontal vessels). The RO system is greatly benefited by working with previously ultrafiltered water. The fouling index of the membranes falls drastically, allowing work with greater capacity and lengthening the useful life of the components.



Disinfection with Ozone

Ozone (O₃) is a substance whose molecule is made up of three oxygen atoms. It is, therefore, an unstable molecule that reacts to any pollutant by oxidizing it. Its capabilities as a disinfectant are much greater than chlorine. Its by-product is basically O₂ and it does not add any chemical pollutant to the air or water.

Some of its countless applications are, for example:

- **Deodorant:** Ozone removes any odor at the root. It does not substitute it for another one but it eliminates it giving a feeling of cleanliness. It makes its application useful in toilets, butchers, fishmongers, changing rooms, offices, waiting rooms, kitchens, warehouses, etc.
- **Disinfection:** Its disinfecting power allows the destruction of any microorganism harmful to health, both in air and in water. Its use extends in various fields: aquaculture, nursing homes, hotels, swimming pools, spas, laundries, surgical instrumentation, cutlery, air conditioning, etc.
- **Oxygenation:** The main residual from the process is oxygen. In aquaculture or aquariums the water is oxygenated because it, being stagnant, tends to lose the oxygen necessary for the fish to breathe. Injecting ozone into oxygen and clean water at the same time.
- **Clarification:** The water not only disinfects but also eliminates chlorine and turbidity, giving it a better appearance and allowing later filtration of particles that when oxidized are larger and therefore easier to filter.



Sustainable technologies for industrial water treatment

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