

PROPAK

Water Treatment Technologies

Propak Biological Water Reclaim Systems

Propak Biological treatment systems were developed

**with respect for the all “natural”
water treatment technologies known
to nature. Propak
Biological water
reclaim systems**

**are engineered to perform in vehicle
washes such as car, truck, bus, train
and plane washes. Propak reclaim systems respect the
“natural environmental laws” for waste water treatment.**



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PROPAK Aqua Bio Treatment Systems

Recycling steps

1. Water coming from the carwash with all combined pollution (biodegradable and non) will enter into the first collection tank where particles heavier than water will be separated by gravity and collect at the bottom of the tank for periodic removal.
2. Entering the next tank the waste water will be aerated and mixed to create a stabile mixture for the bio treatment. By this time oils and chemicals are now emulsified.
3. From the aeration tank the mixture of chemicals particles and water is pumped into the hydro cyclone(s). This technology will separate particles bigger than 5 micron from the wastewater. The solids separated are returned to the first settling tank. The clean water is than ready to go into the bio reactor.
4. In the bio reactor, water comes into contact with the active bacteria that is growing on the bio media blocks. Aeration is infused from the bottom by using membrane aerators. The bacteria will transform all biodegradable matter into H₂O and CO₂. Bacteria will also grow on small particles that where not filtered out by the hydro cyclones. These bacteria clusters are free in the water and are called sludge. These clusters will be removed in the gravity separation process.
5. The next tank is the gravity separator where the sludge particles coming from the bio reactor are separated from the clean water. These clusters will be collected at the bottom of the separator where a pump will remove the sludge one time per day.
6. After the separator the clean water is stored in the clean water storage tank and ready for reuse in the car wash process. The biological treatment process can not produce on demand and needs to run continuously. When water in the clean water storage is not used, it will flow back into the aeration tank and start the treatment process over again.



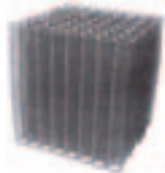
Nutrient Bag



Aeration



Cyclone System



Bio Block



Air Pump



Electric Cabinet

How to build your system

Basically there are two options for building a Bio treatment reclaim system:

- Above ground – 500 to 2,000 GPH
- Underground – 3,000 to 10,000 GPH

Above ground installation



Above ground treatment systems will have the Bio reactor and the separation tank combined into one compact tank assembly. These tanks are available in Stainless Steel, Aluminum, or Poly Propylene. The above ground tanks must have the regular oil water interceptors in use at the carwash for the necessary pre treatment. Water will be pumped from the last stage of the interceptor to the bio treatment system located in the equipment room. It is possible to connect several tanks together to increase the water process volume. Each tank will process 500 Gallons or 2000 Liter of water per hour. Even though water volume is not directly related to the bio reactor capacity, the maximum cleaning capacity of this type reactor is 1,5 Kg per 24 hour for each tank. Pollution calculations will be required to determine how many tanks will be required to treat the waste water. The size and number of reactors installed in the equipment room may take too much space. Installation is possible outside the building but only if frost free conditions are insured. In cases where the above ground installation is not an option, the Underground install is possible.

Under ground installation



Under ground installation of a treatment system will take minimum space in the equipment room where only the electric control panel, blower and cyclones are installed on the equipment room wall. The size of the underground installation must be calculated on the present and future carwash volume. The bio reactor in the underground system is sized and can not be upgraded to a higher capacity at a later time. The major advantage of the underground installation is that the tank assembly is pre-engineered and assembled. Installation is fast and easy to connect. Underground assemblies come with the aeration, bio, gravity separation and clean water storage chambers already pre-assembled and tested in one tank assembly.

Your installation

Propak treatment systems are available worldwide and your local car wash equipment distributor can assist you with sizing your wash application.

Propak Bio treatment systems are
“Natural Business”



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