

MIRACELL[®]

WASTEWATER TREATMENT SYSTEMS

by
DOWDENS
PUMPING & WATER TREATMENT

The system most preferred by customers who clearly understand the economic value in purchasing an expertly designed and professionally built system



www.dowdens.com.au/miracell.asp

PROCESS DESCRIPTION

Miracell® is a fully automatic Rotating Biological Contactor (RBC) wastewater treatment system. The Miracell® operates on the RBC principle and has many advantages over other package wastewater treatment systems that operate on the activated sludge principle. With conventional activated sludge systems a constant flow of air needs to be pumped through aerators by blowers in order to stimulate bacterial growth. The Miracell® design enables the bacteria to receive the necessary air naturally from the atmosphere to grow the bio-colony. A unique design feature is that the virtually indestructible polyethylene discs located on the shaft rotate at a very low speed by means of a reduction gear box with motor.

The system is designed such that 40% of the discs remain submerged in the wastewater at all times. As the discs rotate contact with the wastewater causes turbulence and consequently aeration. As a result of this repetitive process, organisms accumulate on the discs. The organisms receive the necessary

oxygen from the air during the rotation of the discs and consume the pollutants existing in the wastewater, converting them to carbon dioxide and water in a totally natural way.

The treated water discharged from the Miracell® is guaranteed to meet the most stringent discharge standards and may be used for dust suppression, irrigation or directly discharged to a waterway subject to Environmental Authority approval.



Miracell® is a fully automatic, modular design wastewater treatment system specifically designed for domestic wastewater treatment applications in capacities ranging from 50 to 20,000 people or businesses with wastewater treatment needs of between 10m³ up to 4000m³ / day. Representing the ultimate in wastewater treatment systems, a Miracell® consumes as little as one fifth of the electricity and requires as little as one third of the space of its competitors based on the activated sludge technology.

FEATURES & BENEFITS

- Miracell® is one of the most flexible and expandable systems on the market today with units and discs easily being added or removed to accommodate changes in demand.
- Being modular in design means Miracell® is the only wastewater treatment system that has the ability to decrease its capacity at times of lower flow rates via bypass around unused compartments and diverting wastewater to the last modular unit - conserving both energy and operating costs.
- Each Miracell® system is certified to meet or exceed Australian and European Environmental Discharge and Irrigation Standards.
- Due to the fact the system only requires a reduction gear box and small motor to drive it, Miracell® systems operate silently while consuming much less energy than its competitors.
- Systems are engineered and manufactured utilising innovative space age composites eliminating any concerns of deterioration from the corrosive effects of alkali materials in the system, this combined with the virtually indestructible polyethylene discs means Miracell® systems are guaranteed to last a life time!

