



Sea Water Treatment - Case Study



Case Study Information

Customer	Sea Water Treatment OEM
Location	United Kingdom

Equipment Supplied:

1 x VRX 80/160-8.6 - Horizontal Non-Clogging Centrifugal Pump w/ Oil Bath for Mechanical Seal & Bottom Bearing Lubrication

Fluid	Sea Water w/23mm Soft Rubber Balls
Capacity	40 m ³ /h @ approx. 1 bar
Suction/Discharge	DN100/DN80 - PN16
Motor	8.6kW / 480v / 4 Pole / 60Hz / IP55 / Class F
Construction	Bronze



Enquiry:

- ✓ One of our existing OEM customers who specialises in Sea Water Treatment and Pipework Anti Fouling within the marine market contacted us with an enquiry for some solids handling sea water pumps to be used on one of their automatic ball cleaning systems. The required pumps are used to circulate the below detailed 23 mm dia cleaning balls round a UV Reactor Line to clean the inside of reactor's quartz sleeves of biological residue that builds up over time. The balls polish the surface of the sleeves, gently removing any residue and also polish the inside of the chamber ensuring that its reflective surfaces are kept pristine.
- ✓ The client's existing pumps were proving to be fairly costly and on lengthy lead times so we were asked to supply interchangeable equivalents with a better price and lead time which the client could ultimately pass onto their end users in the form of improved deliveries and ultimate system pricing.
- ✓ The challenge wasn't just to match the small dimensions of the existing pumps (as they are mounted into a larger skid arrangement with little available extra space) but also to supply a sea water resistant solids handling pump that could pass the 23 mm balls at the required capacity. Furthermore, the client's own systems are up scalable, meaning that according to the end users UV reactor sizes, larger and smaller capacities would be required for their systems. As a result we needed to be able to also ensure that we could cater for these varying capacities with differing sizes of the same pump type. Essentially presenting the customer with a scalable pump range which could cater for their exacting requirements.

Solution:

- ✓ We were able to offer a monobloc, surface mounted, non clogging centrifugal pumps with a vortex impeller from our VRX range. Their simple construction, which has the impeller axially displaced from the pump suction enables the free passage of solids. Therefore, these units are able to handle liquids with high solids content almost as large as the pump discharge diameter. The monobloc or close coupled versions of these pumps feature a back pull out design, enabling the pump to be serviced whilst still connected to the pipework. In addition the mechanical seal can be oil cooled to extend the life of the seal and bottom bearing lubrication when pumping solids laden or abrasive fluids. This feature also protects the pump from running dry for certain periods.
- ✓ Standard materials are cast iron or marine bronze they are perfectly suited for fish pond drainage, pumping sea water with fish waste, black water, sewage, water with solids in suspension as well as sand and other solid wastes.
- ✓ With capacities up to 360 m³/hr and discharge pressures up to 2.5 Bar they are perfectly suited to a wide range of applications and our offering required very little modifications to their existing skid systems and our price was almost half which they were currently paying elsewhere! With an improved lead time offered on top of this the client has now standardised their systems to include our pumps and has never looked back!