



The Optimum Pump Station

THE SUMP THAT KEEPS ITSELF CLEAN

The Sump That Keeps Itself Clean

In The Optimal Pump Station (TOP) program, the sump has been redesigned and the pump discharge connections have been optimised to improve the flow over the sump floor during pumping.

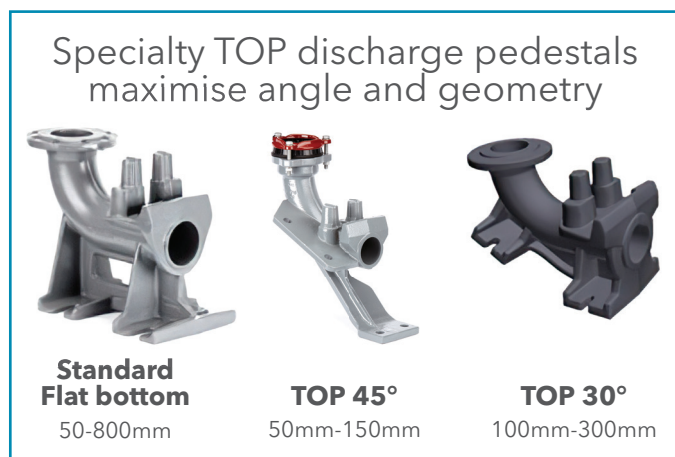
The TOP base design promotes the resuspension of settled solids and entrainment of floating debris. This results in more solids being removed from the sump, leaving a minimum residue beneath the pumps, which is ready to be removed during the next pump cycle.

Factors such as floor clearances and the spacing between adjacent pumps were fully evaluated before the optimum design for the self-cleaning sump was finalised. In the tests, measured volumes of solids were dumped into each sump; the efficiency of the TOP geometry became more obvious with every pumping cycle.

An added benefit is that, because Xylem Flygt pumps are capable of being run safely up to 15 starts per hour*, sump volumes can be further reduced. This in turn means a reduction in construction cost and long term operating costs. The result is that if you fit the new TOP sump you can minimise regular cleaning sessions and associated costs.

TOP can be retrofitted into existing concrete pump stations and can be supplied as options on fibreglass and concrete pump stations.

The convergent, sloping geometry of the TOP floor ensures controlled high fluid velocities which results in a dramatic improvement in solids transport.



How effective is the TOP sump geometry?

In a series of tests conducted in laboratory conditions, sumps with different diameters and floor configurations were evaluated alongside each other to gauge their ability to prevent sediment build-up. These tests also demonstrated their efficiency in transporting solids.

At the end of each pump cycle, the solids pumped out from the sumps were weighed and then returned to the sump for the next cycle.

The tests compared the effectiveness of a standard 1800mm diameter sump against a TOP 1800mm diameter sump. Both sumps were inter-connected, with 49kg of solids in each and the system was filled with 800 litres of water shared between the two. Water was pumped back and forth from one sump to the other a total of 10 times. Stop level in each case was the top of the volute.

Result:

94kg of solids in standard 1800mm diameter sump	4kg of solids in TOP 1800mm diameter sump
---	---

The TOP design gives:

- An integrated, self-cleaning design
- Minimal residual water volume and maximum sump velocities
- Tested and verified performance
- Simple, cost-effective retrofit solution for older stations
- Package pump station solutions for new applications
- A cost effective solution
- Easy installation



*A broad range of features are available on Flygt pumps, such as the Concenter range, to tackle particularly troublesome stations.

Reduce Service Calls

The flat shape of a traditional pumping station sump floor allows for the build-up of sludge, requiring regular cleaning. This is time consuming and expensive and can present safety hazards to personnel.

An option for the fibreglass or concrete Packaged Pumping Station is the patented TOP benching unit to improve the flow over the sump floor during pumping. This removes more solids, leaving minimal sludge accumulation and reducing, or even eliminating, the cost of service calls.

The Flygt TOP Packaged Pumping Station can be fully adopted under the latest guidelines, and has been approved by many water companies and local authorities in Australia and around the world. With the Xylem Flygt TOP design, you can minimise regular costly maintenance and expensive unplanned service calls.

It is available with a:

- Separate valve chamber
- Complete range of monitoring and control equipment
- Wide range of pipework sizes, access covers and safety gates
- Large variety of pump motor sizes and impeller combinations to suit all applications
- Available in concrete and Fibreglass material



Xylem |'zīləm|

- 1) The tissue in plants that brings water upward from the roots;
- 2) a leading global water technology company.

We're a global team unified in a common purpose: creating advanced technology solutions to the world's water challenges. Developing new technologies that will improve the way water is used, conserved, and re-used in the future is central to our work. Our products and services move, treat, analyze, monitor and return water to the environment, in public utility, industrial, residential and commercial building services settings. Xylem also provides a leading portfolio of smart metering, network technologies and advanced analytics solutions for water, electric and gas utilities. In more than 150 countries, we have strong, long-standing relationships with customers who know us for our powerful combination of leading product brands and applications expertise with a strong focus on developing comprehensive, sustainable solutions.

For more information on how Xylem can help you, go to www.xylem.com/au



Xylem - Australia
Tel: 13 19 14
Email: solve@xylem.com
www.xylem.com/au

Xylem - New Zealand
Tel: 0800 33 19 14
Email: solve@xylem.com
www.xylem.com/nz