



**ITT**

Water & Wastewater

# Flygt TOP Pumping stations

Customised prefabricated solutions



*Engineered for life*

# TOP choice for reliability and efficiency

## **Prefabricated TOP pumping stations**

Flygt TOP comes in a range of sizes for depths between 2 and 6 meters, and capacities between 4 and 95 litres per second. Prefabricated TOP pump stations from ITT Water & Wastewater are the perfect choice for situations where civil work and installation time must be kept to a minimum. We assume full responsibility for dimensioning your pump station and completing the order, which reduces project planning and installation costs.

## **Standardised and prefabricated**

Our modules simplify the construction and assembly of a complete pump station. Your TOP pump station is delivered pre-assembled with your configuration of valves, discharge piping, inlet and outlet connections—and is easily transportable to even remote locations. Once in the ground, the pumps and monitoring and control equipment are fitted, the piping, power and control cables are connected, and the station is ready to start up in minimal time.

## **Cleans itself**

Using submersible pumps reduces the cost of constructing pump stations. But the flat shape of a conventional sump floor still promotes the build up of sludge, which will require regular cleaning. This is not only time-consuming and expensive but also can present safety hazards to personnel. With the Flygt TOP pump sump, you can forget regular, costly maintenance to remove solids. Designed to be self-cleaning, the geometry of the TOP sump floor is hydraulically optimised to increase turbulence during pumping. Settled solids are re-suspended so that they can be pumped away, leaving only a minimum of residue beneath the pumps.



## **Quality Construction**

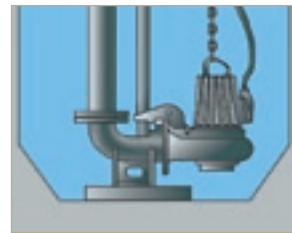
Because of its self-cleaning design, you can fit a TOP pump station and then virtually forget it. The station is made of Glass Fibre Reinforced Polymer (GRP) – a strong, lightweight material with superior resistance to corrosion, guaranteeing your pump station a long life. All raw materials meet ISO 2797 and ISO 2559. And all stations are batch tested to BS EN 12050. Combined with Flygt submersible pumps and other Flygt Accessories to improve performance, your TOP station will rarely require maintenance.

### TOP performance

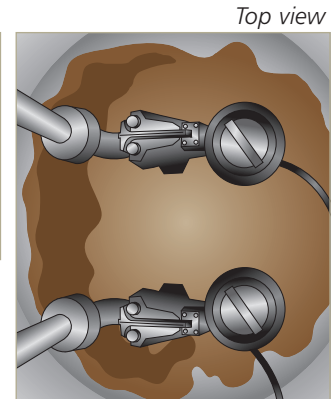
The patented TOP sump geometry is the result of extensive testing, investigating a wide range of parameters. Factors such as floor clearances and the spacing between adjacent pumps were also evaluated before the self-cleaning sump design was finalised. Then, in a series of performance tests, sumps with varying diameters and floor configurations were tested to gauge their ability to prevent sludge build-up—and efficiency in transporting solids.

### Back-to-back testing

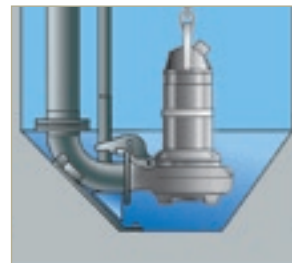
During these performance tests, two dual-pump sump designs (a conventional 1600 mm sump and a TOP 100 sump) were tested ‘back to back’. This meant that the two sumps were interconnected, and filled with 800 liters of water, and 49 kg of solids. The water was then pumped back and forth 10 times between the two sumps. The stop level in each instance was the top of the volute. The result: 94 kg of solids in the 1600 mm conventional sump, compared to 4 kg in the TOP 100 sump. Even when the pumps in the conventional sump were fitted with the Flygt automatic sump desludging flush valve, the TOP sump showed superior efficiency in solids transport..



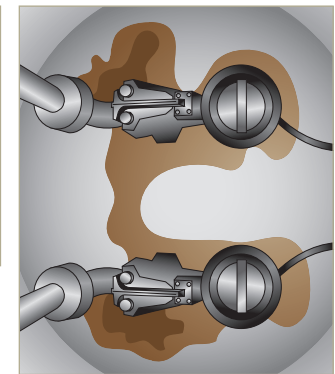
*The standard pump sump design for 30 years. Its flat sump floor generates stagnant regions where solids build up.*



*Deposits in the 1600 mm conventional sump. Solids have been deposited across the entire sump floor.*



*The TOP sump design with integrated discharge connection. Its sloping sides result in high flow velocities, creating turbulence that re-suspends solids, dramatically improving solids transport.*

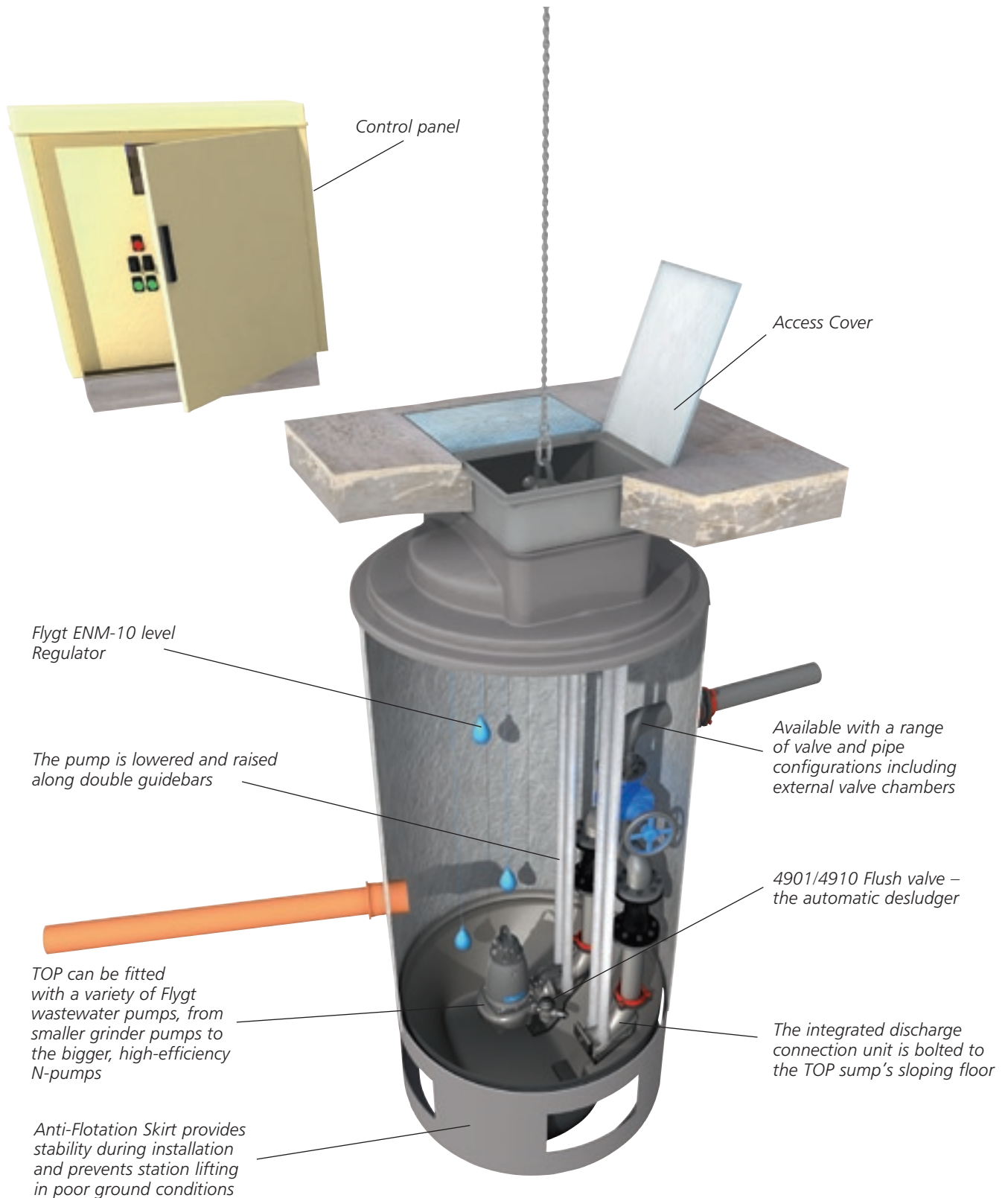


*Deposits in the TOP 100 sump. The small amount of remaining solids are collected close to the discharge connections.*

#### Test solids

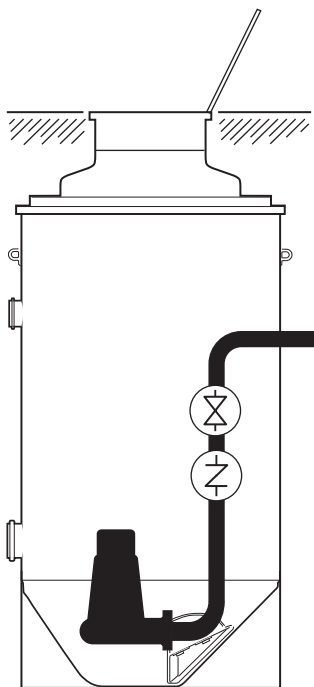
Type	Specific gravity	Description
Floating	<1	Fats and plastics (modeled by beads)
Neutral sanitary	=1	Paper, plastics, most organic and waste (modeled by beads, saw dust, rags and paper)
Sinking	>1	Sand, grit, rags/clothing and heavy organic waste (modeled by sand)

# The complete TOP pump station

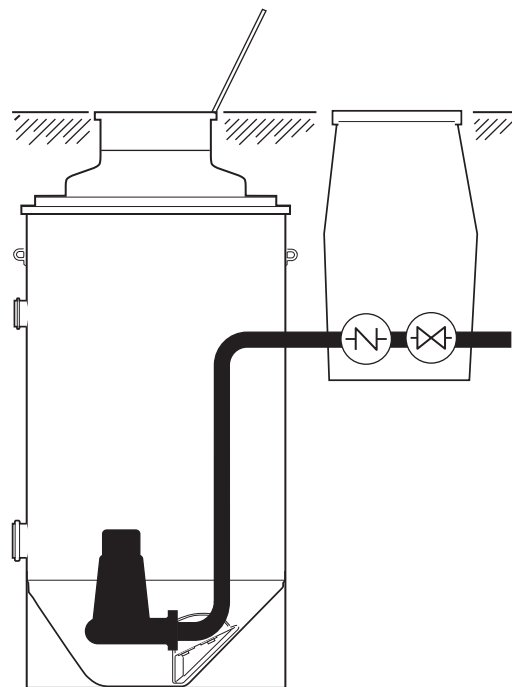


# - for flexible solutions

## Standard Pipework arrangements



Valves inside Tank



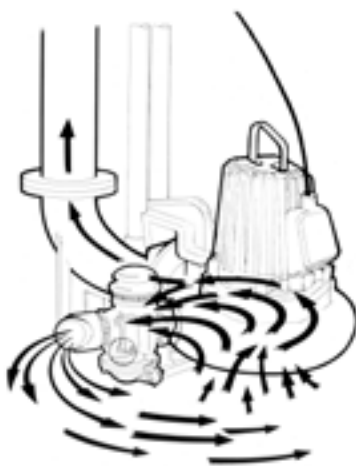
External Valve Chamber

TOP	100S	150L
Station		
Diam. (mm)	1500	1800
Depth (m)	2 to 6	2.5 to 6
No. of Pumps	2	2
Flow Rate (l/s)	4 to 40	4 to 95
Motors (kW)	1 to 7.5	1 to 22
Pipework diam.(mm)	50/65/80/100	50/65/80/100/150

*The above information shows the standard tank options available, however the TOP package pumping station can be bespoke manufactured to meet your individual requirements. Please contact your local representative for more information.*

# Keeping the TOP pump station in TOP trim

Although the TOP sump is designed to clean itself, we recommend the following Flygt products to keep the TOP pump station in optimal shape.



## **4901/4910 Flush valve** –the automatic deslugger

Developed specifically for fitting to the volute of all standard Flygt submersible pumps, the flush valve is a further weapon for reducing manual cleaning and maintenance. It operates automatically, controlled by the pressure developed by the pump at the start of each duty cycle. The valve is open and water is forced through it in a powerful jet

stream, causing intense turbulence that re-suspends solids so that they can be pumped away. The valve closes automatically after approximately 30 seconds, and then reopens after the pump stops, ready for the next cycle.

## **Monitoring and control**

ITT Water & Wastewater also supplies Flygt control panels for your pump station. These range from the simplest electro-mechanical version to highly sophisticated monitoring and control systems using the multi-protocol APP 700 controller. It includes sensors and alarms, and provides statistics and trend reports.



APP 700 can also communicate with a SCADA system, enabling full remote control of your pump station. In addition, all Flygt control panels can be equipped with a function that runs regular pump cleaning cycles automatically (APF).

## **N-technique**

The TOP sump design clears sludge and solids from your pump station at the same rate as they enter it. Flygt N pumps maintain a high level of pumping efficiency, even in dealing with fluids with a high content of solids and fibrous materials. This is because of the impeller shape in combination with a special relief groove in the volute. With its self-cleaning flow path through the pump, this design greatly reduces the risk of clogging. The result is reduced power consumption.



# After-Sales–support all the way

## **Our services**

ITT Water & Wastewater Service offers a comprehensive approach to customer needs. From 24/7 emergency breakdown attendance to planned preventative maintenance contracts, workshop repair and pumping station refurbishments. We support our customers every step of the way.

## **Service Centres**

We are committed to providing customers with the highest level of service, from pre-sale right through the lifetime of Flygt products. Our strategically located Service Centres are supported by a mobile team that reacts quickly to a customer request, so that downtime is minimised.



## **Nationwide network of service centres**

- Comprehensive pump station commissioning services
- On-site M&E Maintenance
- 24 hour emergency callout
- Workshop repair facilities where all repairs carry a 1 year comprehensive warranty on the pump, and not just the replaced parts
- Pumping station upgrades and refurbishments which can optimise the efficiency of your existing facility by replacing older equipment with newer models and systems

## **Maintenance Agreements**

We offer a broad selection of planned maintenance service contracts, ranging from a Bronze agreement that provides annual inspections–to fully comprehensive Gold agreements that can include the cost of all parts and labour. And also the Platinum purchase scheme, providing comprehensive cover and payment terms for the first 5 years of operation.

## **Genuine Flygt spares**

- Extensive stocks on 24 / 48 hour delivery
- Repair kits available for most pumps
- Upgrade kits to latest designs



### **What can ITT Water & Wastewater do for you?**

Integrated solutions for fluid handling are offered by ITT Water & Wastewater as a world leader in transport and treatment of wastewater. We provide a complete range of water, wastewater and drainage pumps, equipment for monitoring and control, units for primary and secondary biological treatment, products for filtration and disinfection, and related services. ITT Water & Wastewater, headquartered in Sweden, operates in some 140 countries across the world, with our own plants in Europe, China and North and South America. The company is wholly owned by the ITT Corporation of White Plains, New York, supplier of advanced technology products and services.

[www.ittwww.com](http://www.ittwww.com)



**WEDECO**

