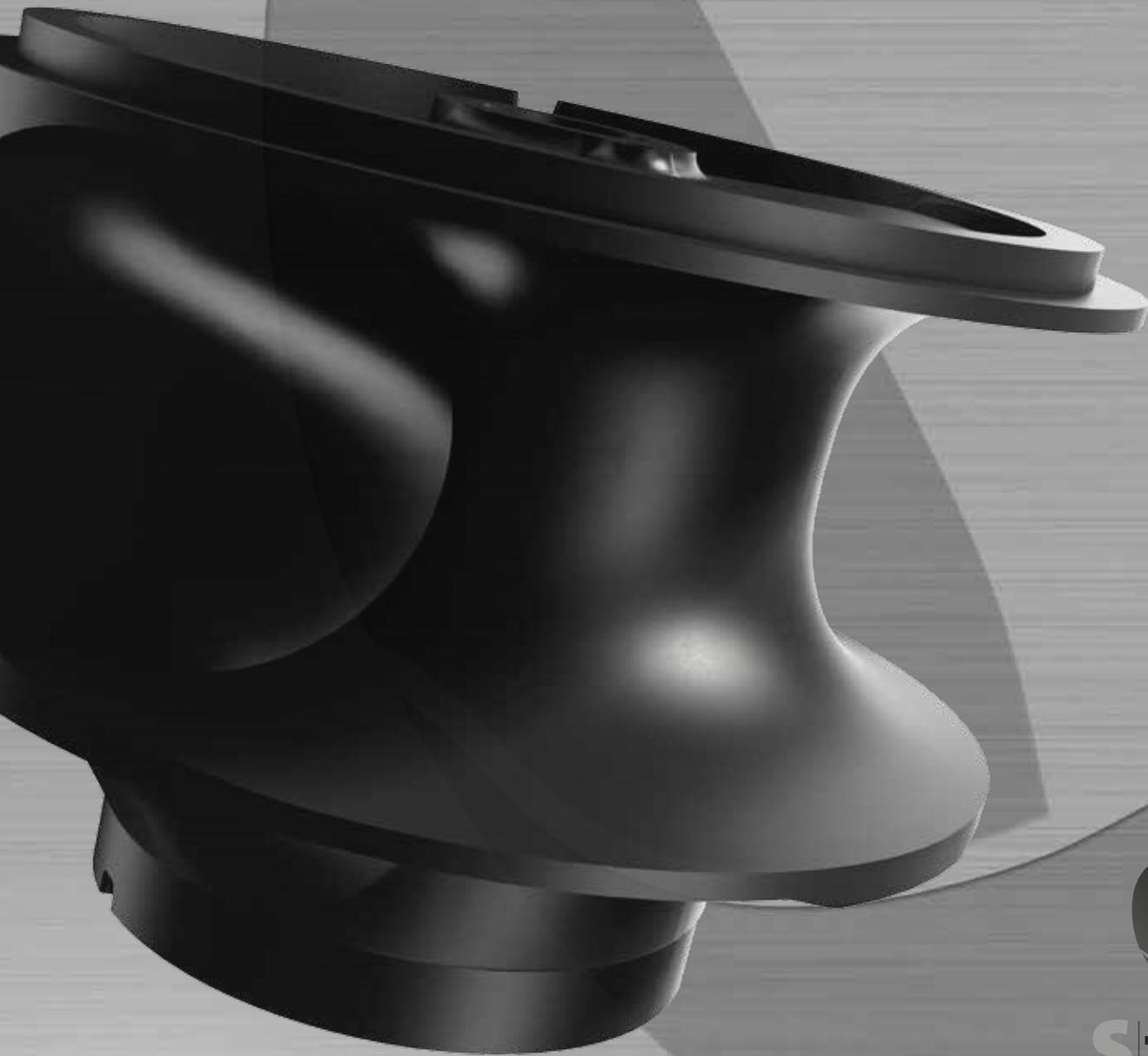


# NO COMPROMISE

HIGHEST HYDRAULIC EFFICIENCY AND BEST  
NON-CLOGGING CAPABILITIES



S|tube

# DESIGNED FOR MODERN WASTEWATER

## Introducing the Grundfos S-tube impeller

The S-tube offers greater hydraulic efficiency than any other type of wastewater impeller, without compromising free passage. This results in the lowest life cycle cost, trouble free operation and best-in-class non-clogging capabilities.

When you package this innovative, elegant and simple impeller design in the outstanding SE and SL ranges of submersible wastewater pumps and add IE3 motor components and super intelligent controls, we truly believe we are looking at the ultimate in wastewater pumping technology.

With the S-tube, Grundfos sets new standards for wastewater hydraulic design. The S-tube resolves the challenges with sealing, vibration, abrasive wear and clogging that owners of wastewater pumping stations have lived with for way too long.



## Why is the S-TUBE so special?

Simplicity is at the heart of the S-tube impeller. We have created a design as simple and robust as a tube, resulting in longer lifetime.

When we decided to develop brand new state-of-the-art hydraulics, we looked at the technologies available on the market and decided that we had to keep things simple. We were not just chasing the highest efficiency at a specific duty point; we wanted our new hydraulics to have extremely high efficiencies over a wider range of the curve than can be seen in the market today.

When you experience the S-tube, you get the highest efficiency over a wider range, the largest free passage and the lowest vibrations, and there are no edges, dead zones, cutting functions or alternative constructions that will get worn over time. We have created an impeller that is quite simply the best at fulfilling the core function for which a wastewater impeller is designed: providing the user with trouble-free operation at the highest possible efficiency.

This really is simplicity at its best. As the S-tube increases in flow range, the simple design means that the free passage also increases.

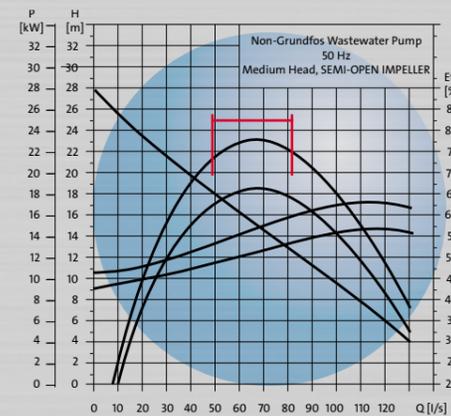
## Why is energy efficiency and free passage so important?

The answer is quite simple. In reality the content of wastewater has changed drastically over the years and for many reasons. The hydraulics designed 10, 20 or 30 years ago were not designed for today's wastewater. We have seen relatively good efficiencies and free passage over the years, but can these products cope with the wastewater of today?

The S-tube has been designed for today's wastewater and when tested to extreme levels, it did not disappoint.

## WHY FOCUS ON FREE PASSAGE?

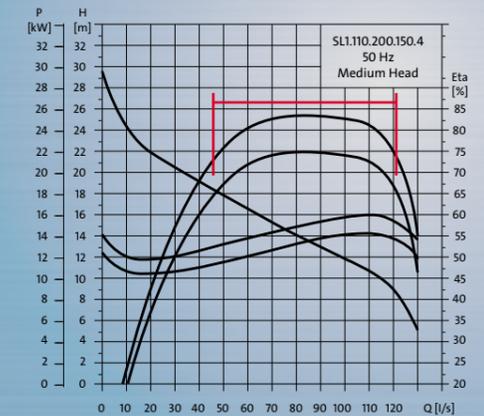
Greater free passage means better solids handling and greater non-clogging capabilities. When we look at what is available on the market today and compare it to the S-tube impeller, we know we have designed something exceptional. See the S-tube curve compared with a traditional semi-open impeller:



### SEMI-OPEN IMPELLER

- BEP = 78.9% hydraulic efficiency
- BEP = 68.6% overall efficiency
- Approximately 22% of the curve is above 75% hydraulic efficiency
- Free passage 50mm (illustrated by the blue circle above)

With these figures in mind, we challenge you to find a product with better efficiency combined with better free passage, with lower vibrations and the same great features and benefits that the S-tube provides. We have not found that yet, but we like to be challenged and we are always looking to improve what we do, so we leave that to you. All we know is that you won't be disappointed when you select an S-tube for your next application.



### S-tube

- BEP = 83.3% hydraulic efficiency
- BEP = 74.5% overall efficiency
- Approximately 55% of the curve is above 75% hydraulic efficiency
- Free passage 110mm (illustrated by the blue circle above)

## WHEN WE SAY NO COMPROMISE, WE MEAN IT

The S-tube impeller has been developed on the basis of extensive hydraulic experience and know-how. It has been tested thoroughly through simulations and tests in laboratories and not least in the field. The extensive field test program has been done in sewage collection and treatment systems in many countries around the world.

Our dedication and commitment to thoroughly testing and analysing our products in real world environments shows our no compromise approach to product development. The S-tube met and surpassed our own targets with flying colours.

Built into our renewed and expanded range of wastewater pumps, this ensures that you get a pump that meets your demands and will continue to do so in years to come.





See more at:  
[www.grundfos.com/no-compromise](http://www.grundfos.com/no-compromise)