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Reliable and efficient slurry handling

5500 series pumps



Flygt



ITT Industries
Engineered for life

Reliable slurry pumping with lower lifetime costs



Slurry pumping is one of the most demanding applications for any pump...and one of the costliest when it comes to wear and tear, maintenance and downtime. With a Flygt 5500 series slurry pump, you have an effective solution to the rising costs of slurry handling: robust, hard-working pumps that lower operating and maintenance costs and offer excellent value in terms of initial investment.

The submersible solution to cutting costs

For a start, the submersible concept offers a number of key benefits over dry-mounted pumps. It doesn't require any support superstructure, therefore requires less space for operation - an important factor in any industry.

Being submersible also means it's flood-proof. There are no long or exposed mechanical links between the motor unit and the volute - so maintenance can be greatly reduced. Operating underwater also means quiet operation.

A tough choice

Experience shows that the design of the impeller and volute is as important as the choice of material in order to minimize the wear rate. The 5500 series has been specifically designed for tough, high-wear applications, offering a very low wear rate.

The wet end is made entirely from high chrome cast iron for complete protection. And each pump in the range features what is probably the most reliable slurry seal system in the business.

Easier selection

Choosing the slurry pump that's right for your application is simple, thanks to the FLYPS pump selection software from ITT Flygt. For instance, using Flygt slurry pumps equipped with an agitator helps to prevent solids build-up on the sump floor. In particularly tough conditions, cleaning can be further helped by the addition of an externally-mounted Flygt submersible mixer. Mixers can be used to bring large quantities of sediment into suspension, simplifying the process of pumping out the slurry.

A handful of trouble: mineral granules can clog pumps and rapidly erode pump volutes and impellers. The cost? Expensive downtime, repair and maintenance. The solution? The Flygt 5500 series.

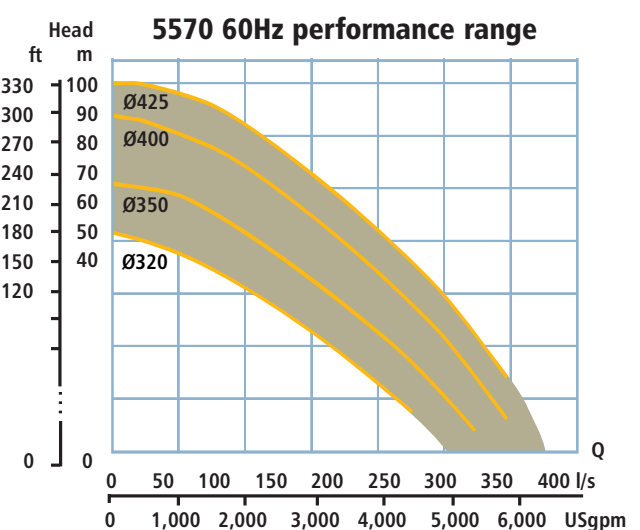
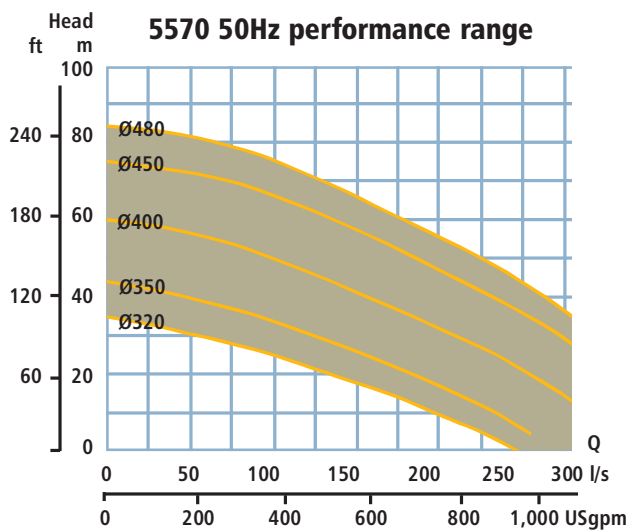
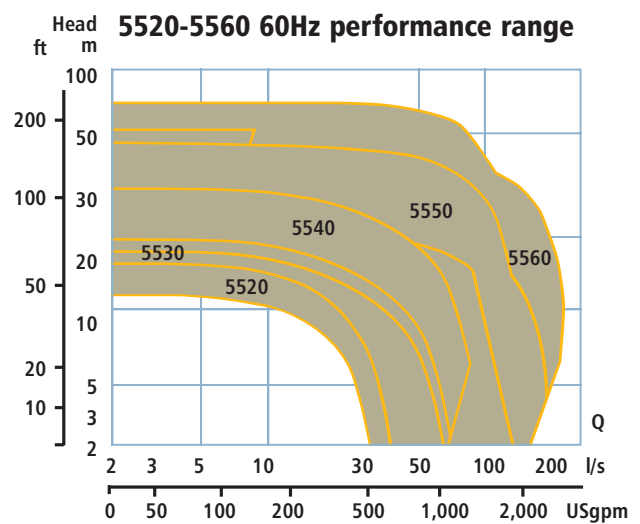
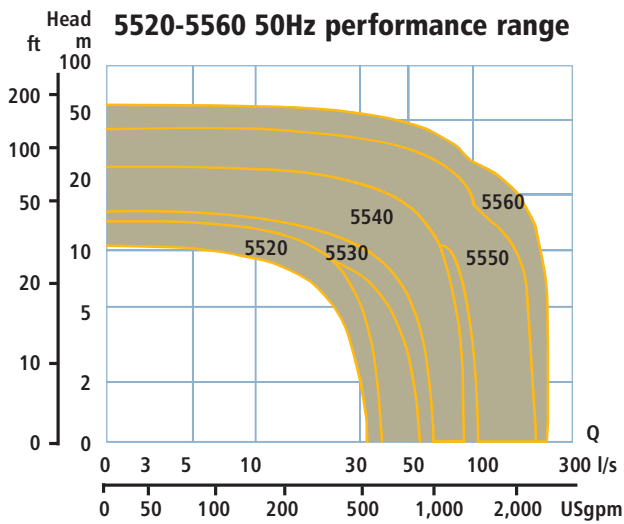


Applications

Thanks to the self-cleaning advantages of the impeller and volute design, 5500 series pumps offer new possibilities for cost-effective operation in a wide variety of applications. These include:

- Power generation (coal)
- Iron and steel production
- Mineral processing
- Mines
- Construction
- Other abrasive applications

A full range of slurry pumps for any need



Model	5520	5530	5540	5550	5560	5570
Rating						
4 pole	50 Hz, 3.1 kW	50 Hz, 5.9 kW	50 Hz, 13.5 kW	50 Hz, 30 kW	50 Hz, 54 kW	50 Hz, 70-215 kW
6 pole	50 Hz, 22 kW	60 Hz, 10 hp	60 Hz, 20 hp	60 Hz, 45 hp	60 Hz, 85 hp	50 Hz, 58-180 kW
4 pole	60 Hz, 5 hp			60 Hz, 35 hp	60 Hz, 75 hp	60 Hz, 100-335 hp
6 pole						60 Hz, 90-280 hp
Discharge	100 mm/4"	150 mm/6"	150 mm/6"	200 mm/8"	200 mm/8"	200 mm/8"



Longer service life, lower operating costs: the inside story

Heavy duty, long-life motors

Squirrel cage induction motors for Class S1 duty, designed and manufactured by ITT Flygt. Class H (5570 Class F) insulated stator windings rated at 180°C (350°F).

Full range of sensors for extra operational safety

Stator Housing: leakage. A float switch shuts the pump down if water is detected.

Stator Housing: temperature. Thermal sensors are embedded in the stator windings to prevent overheating.

Bearing Sensor: monitors bearing temperature (optional).

Larger bearing design

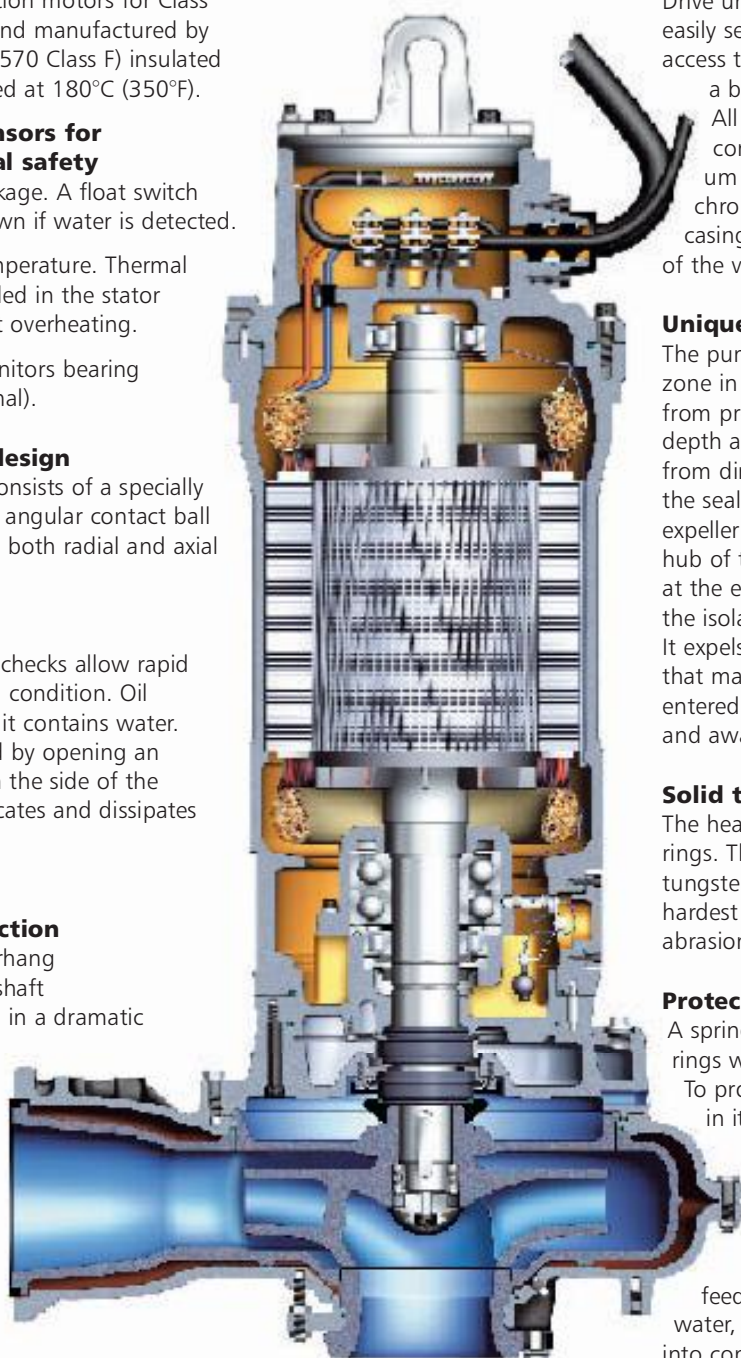
The main bearing consists of a specially developed two-row angular contact ball bearing, countering both radial and axial forces.

Easy oil checks

Easy-to-perform oil checks allow rapid investigation of seal condition. Oil turns milky white if it contains water. This can be checked by opening an inspection screw on the side of the pump. The oil lubricates and dissipates heat from the seals.

Shaft design eliminates deflection

The short shaft overhang virtually eliminates shaft deflection, resulting in a dramatic increase in seal and bearing life, low vibration and near-silent operation.



Fast access to wear parts

Drive unit and wet end easily separated for fast access to wear parts with a back pull-out function. All parts coming into contact with the medium are made of high chrome cast iron. Split casing design allows the lining of the volute to be replaced easily.



Unique double seal system

The pump is equipped with an isolation zone in order to release the seal system from pressures above the submersive depth and to prevent the slurry from directly penetrating the seal system. An expeller sits on the hub of the impeller at the entrance to the isolation zone. It expels particles that may have entered the zone out and away from the seals.



Solid tungsten carbide seals

The heart of the seals are the mating rings. These are made from solid tungsten carbide, the stiffest and hardest material, for increased abrasion resistance.

Protected spring system

A spring system keeps the mating rings working closely together. To protect the spring, it is encased in its own sealed isolation zone.

External flushing

For liquids with a very high and sticky solid content, external flushing is possible. A hose feeds the isolation zone with clean water, preventing slurry from coming into contact with the seals.

Hydraulic Design: the shape of high efficiency and low velocity

Wear-resistant impeller design

The shape of the impeller used in slurry handling is important in ensuring high wear resistance and hydraulic efficiency. High hydraulic efficiency is the result of reduced internal losses.

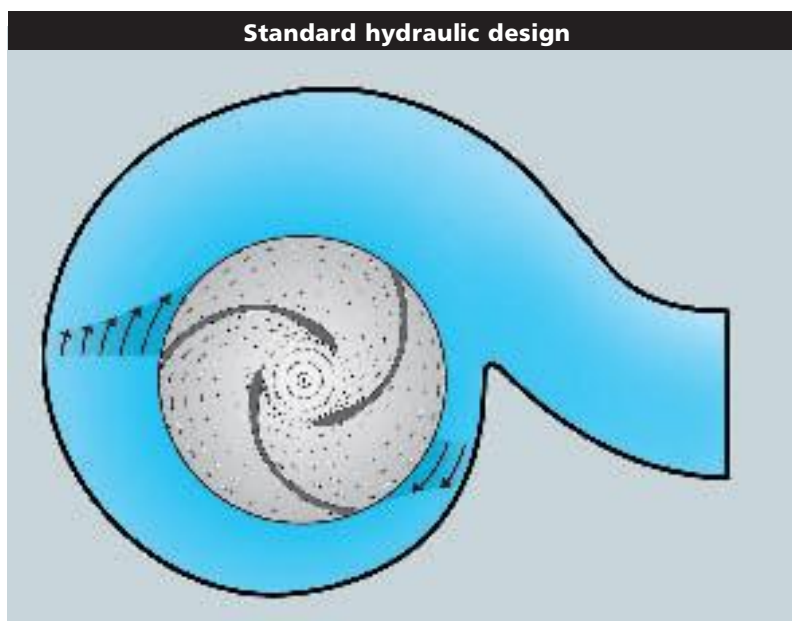
The Flygt 5500 impeller is specifically designed for high wear applications. In comparison with conventional designs, the Flygt impeller has a more swept-back design. This ensures a more homogenous flow between the vanes, minimizing the separation of solids and carrier fluid and resulting in extremely low wear rates. A standard curved impeller would force slurry against the surfaces of the vane due to the heterogeneous flow. The result would then be relatively high rates of wear.

Wear-resistant volute

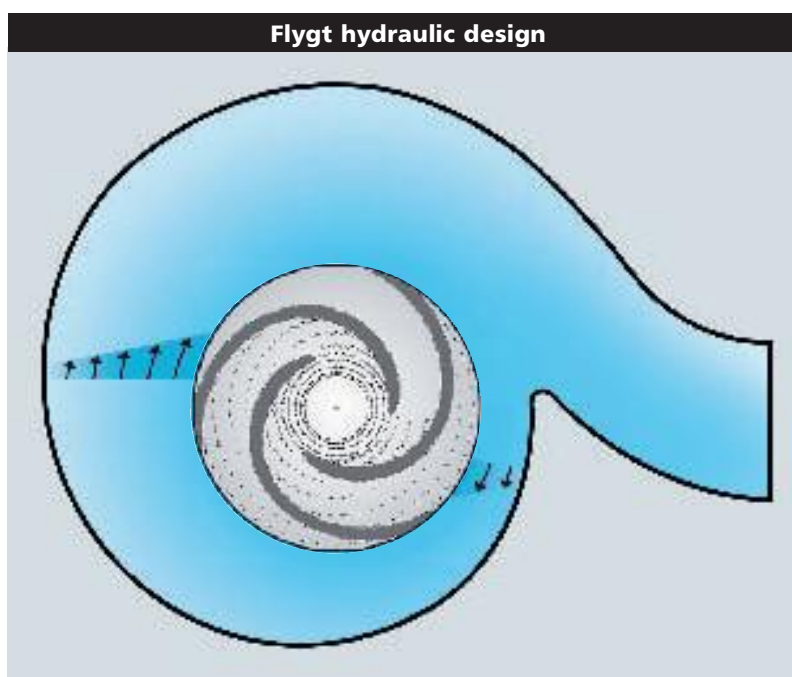
Because of the tangential outflow of particles from the impeller, suspended particles hit the liner at an almost parallel angle, thus decreasing liner wear. The larger volute size also means a lower internal velocity, which further reduces the amount of wear.

Performance reduction during slurry pumping

Pumping slurry can cause severe reduction of a pump's hydraulic efficiency. The Flygt impeller is specifically designed to minimize this drop in efficiency. Official comparisons show that the efficiency of conventional impellers can drop twice as much as the Flygt design. Higher pumping efficiencies also correlate with lower wear rates.



Conventional impeller design separates solids from carrier fluid. Greater impact forces on both sides of impeller vane contribute to greater wear.



Swept-back impeller design and larger volute mean more homogeneous flow with less wear to all contact surfaces.

Optimizing your performance and applications

Unique agitator for maximum resuspension of solids

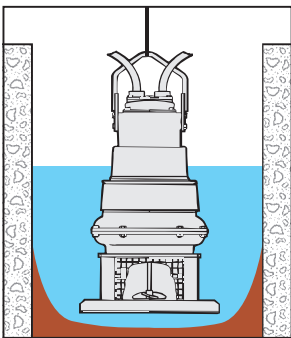
The robust axial flow agitator from ITT Flygt is designed for maximum resuspension of settled particles. This makes them easier to transport and ensures a cleaner sump at the end of the pumping cycle.

Standard agitator design vs. Flygt agitator

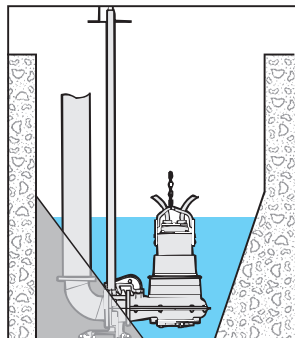
The standard design creates a radial flow, merely stirring the fluid. The Flygt agitator creates a vertical thrust force for maximum resuspension of solid particles.

Cleaner sump technology

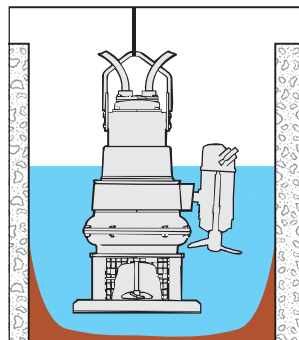
ITT Flygt can provide advice and help with sump construction. The addition of an agitator in smaller sumps, or a dedicated mixer in larger sumps, can significantly enhance the efficiency of suspending solids.



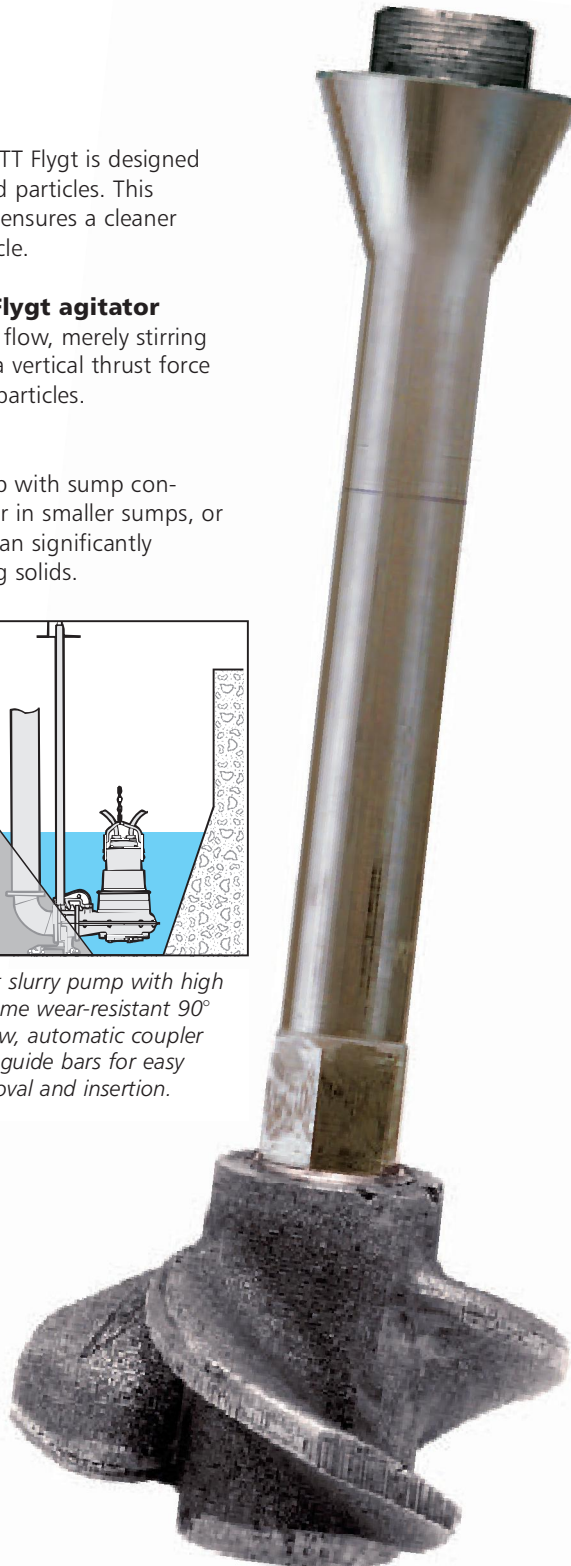
Attach the agitator in sumps where total homogeneity of slurry is not required.



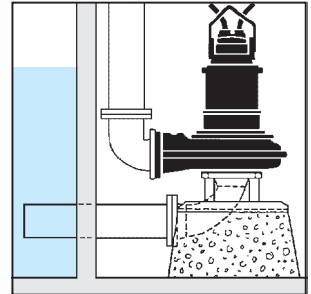
Flygt slurry pump with high chrome wear-resistant 90° elbow, automatic coupler and guide bars for easy removal and insertion.



For large sumps with very coarse and heavy particles and/or the need for homogeneous slurry, use a Flygt mixer in combination with the agitator.

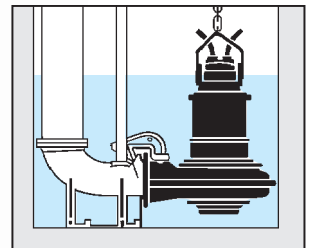


Methods of installation



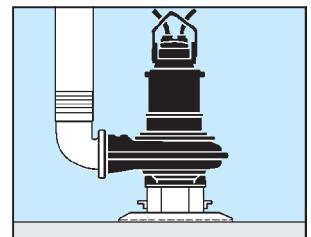
Permanent Dry

Flood-proof solution for wet well / dry well or in-line pumping systems.



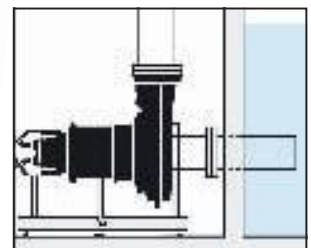
Semi-Permanent Wet

Cost-effective wet pit installation minimizing structural costs.



Portable Wet

Versatile, easy to install, multi-purpose.



Horizontally-mounted Permanent Dry

Well or in-line installation with flange connections for suction and discharge pipe work.