



Stainless steel heavy-duty submersible pumps



Grundfos SEN Range

Stainless steel submersible pumps for aggressive environments

Grundfos offers a full range of extremely dependable wastewater pumps, made entirely or partly of high-grade stainless steel. These powerful pumps are built for handling aggressive wastewater, process water, and unscreened raw sewage in aggressive environments.

The stainless steel pumps are available in three different versions: Version R, made entirely of stainless steel; version S, where the pump housing, flange and impeller are stainless steel; and version Q, where only the impeller is stainless steel.



Powerful advantages

➤ Higher pump efficiency over time

State-of-the-art technology makes the Grundfos pumps extremely efficient and highly dependable. Innovative features such as the unique SmartTrim adjustment of impeller clearance provide low life cycle costs.

➤ Less downtime

The inherent non-clogging design of our Super-Vortex impeller pumps and the excellent solids handling capability of our channel impeller pumps guarantee maximum operating time and substantial reductions in maintenance costs caused by pump blockage or clogging.

➤ Lifelong reliability

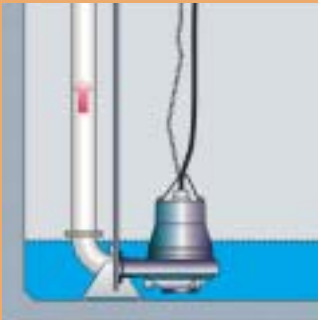
The stainless steel pumps are of a very sturdy construction, designed for continuous pumping under the most difficult operating conditions. The well-proven design is based on our long experience in the wastewater business.

At Grundfos we maintain a close dialogue with our customers in order to constantly improve our pump designs and performance. Only in this way can we build the long-lasting relationships on which our business is founded.



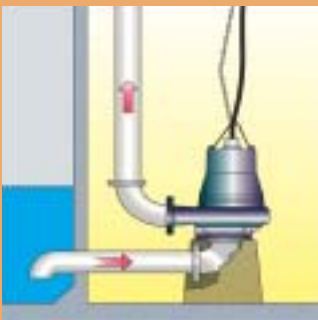
Installation options

Depending on the application, the Grundfos range of stainless steel submersible wastewater pumps is available for submerged or dry installation, or portable use as required.



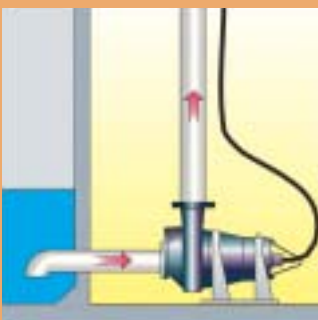
Submerged installation

For submerged installation with auto-coupling system, a base unit with a 90-degree bend, fixed to the bottom of the pit, is required. The pump is lowered into the pit along two guide rails. The pump automatically connects to the base unit, and, on the discharge side of the pump, a flexible neoprene seal – SmartSeal – ensures a leak-proof connection between the pump and the auto-coupling.



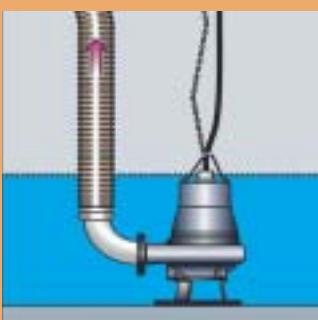
Vertical dry installation

The Grundfos submersible wastewater pumps can be installed either vertically or horizontally to suit specific application arrangements. All pump models are 100% watertight, which allows for dry installation where the workspace surrounding the pump remains clean and dry. However, the pumps are fully flood-proof if the unexpected should occur.



Horizontal dry installation

For reduced operating and installation costs, horizontal dry installation improves the overall efficiency of the system as unnecessary components and bends are avoided. The feasibility of horizontal dry installation, however, depends on the floor space available as the system takes up slightly more room than a vertically installed pump.



Portable submerged application

Certain applications require portable submersible pumps, for instance for emergency use in industry. Where a portable submersible pump is required, hoses of varying lengths and materials can be supplied.

Industrial effluent



The Grundfos stainless steel wastewater pumps are ideal for use in industrial applications where aggressive or corrosive liquids are encountered. The stainless steel parts are made of high-grade steel of DIN/EN 1.4408, 1.4460 or 1.4436 qualities. This makes the pumps suitable for a variety of acidic and corrosive liquids including environments with salt water influx.

Explosion-proof motors

The stainless steel wastewater pumps are available with explosion-proof motors for applications involving a high risk of explosion. For transfer of high-temperature liquids the pumps can be installed with cooling jackets fitted for external cooling water.

The Grundfos stainless steel wastewater pumps are available in three basic versions:

Version Q

– stainless steel impeller. Cast iron pump and motor housing.



Version S

– stainless steel pump housing, flange and impeller. Cast iron motor.



Version R

– made entirely of corrosion-resistant stainless steel.



Typical applications

The pictures show two typical industrial applications



Picture 1 shows one of two Grundfos stainless steel pumps used for pumping pigment-containing channel water with a density of 1.0 - 1.4 kg/dm³ and a maximum viscosity of 250 mPas. Both pumps are fitted with the patented shaft seal flushing system.

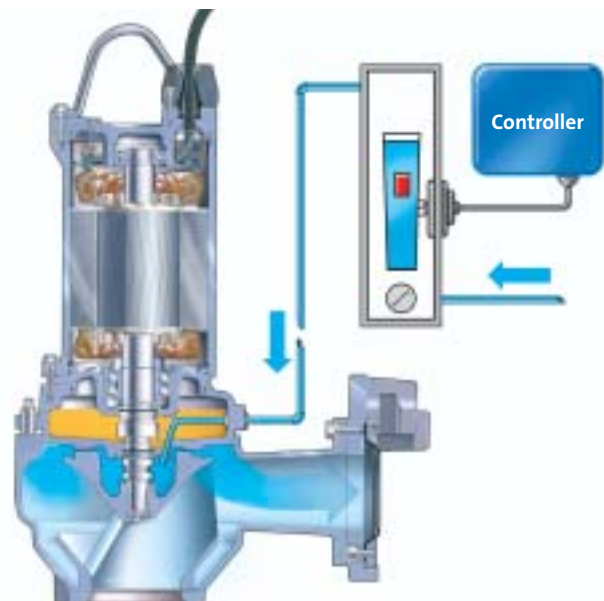


Picture 2 shows one of two Grundfos stainless steel pumps used at a glass wool manufacturing plant for pumping process water with a high content of abrasive particles. Both these pumps are also fitted with the efficient shaft seal flushing system.

Shaft seal flushing system

For applications involving particularly abrasive or sticky liquids, the stainless steel wastewater pumps can be fitted with a unique patented shaft seal flushing system. The system uses water from an external source.

The flushing system operates with a liquid pressure 0.5 bar higher than that of the pumped liquid. This protects the shaft seal from excessive wear, while preventing build-up of abrasives, which may lead to seal failure and pump breakdown.



Tough and reliable pumps...

The Grundfos stainless steel submersible wastewater pumps are built for the toughest environments. Maintaining peak efficiency throughout the entire lifetime of the system is a key issue, and the pumps are designed to reduce energy consumption and to keep downtime costs at a minimum.



Watertight cable entry, DIN/EN 1.4408 stainless steel/PA (depending on pump model) with soft shapes that protect the EPDM power cable.



Watertight encapsulated motor, DIN/EN 1.4408 stainless steel motor housing, insulation class F (155°C), enclosure class IP 68. Three thermal sensors in the stator windings continuously monitor motor temperature and ensure immediate cut-out of motor in the event of overheating.



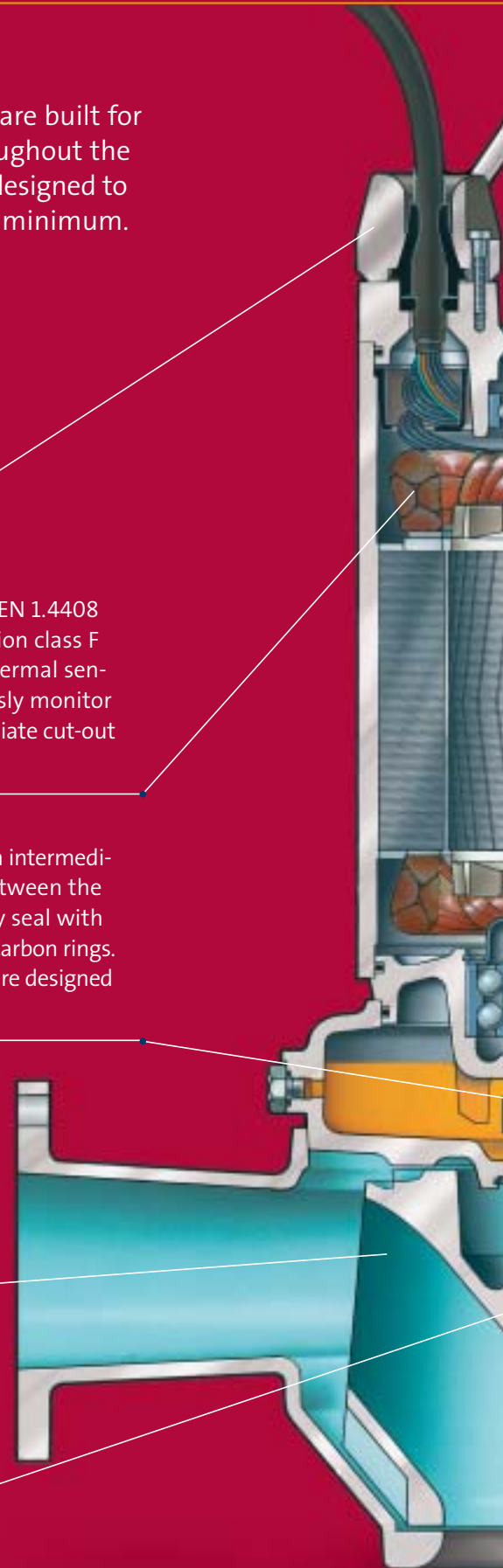
Double mechanical shaft seal system in intermediate oil chamber for reliable sealing between the pumped liquid and the motor. Primary seal with SiC/SiC rings. Secondary seal with SiC/Carbon rings. O-rings of FKM rubber. The shaft seals are designed for rotation in both directions.



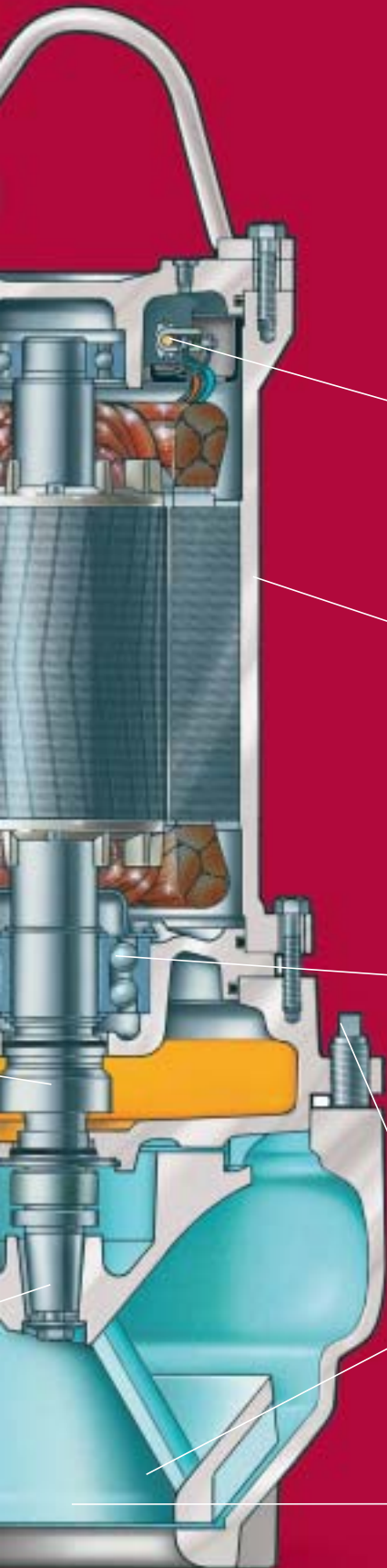
Self-cleaning channel impeller with long vanes that reduce risk of jamming or clogging, or unique SuperVortex impeller, depending on pump model.



DIN/EN 1.4460 stainless steel pump shaft with dynamically balanced rotor and conical shaft end for securing of impeller.



– with many unique features



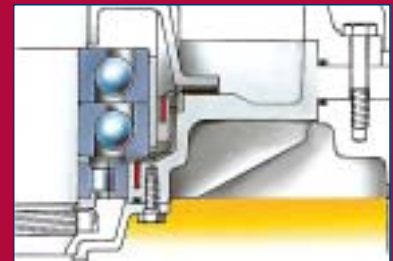
Moisture detector for continuously monitoring of motor enclosure. Automatic power cut-off in the event of leakage.



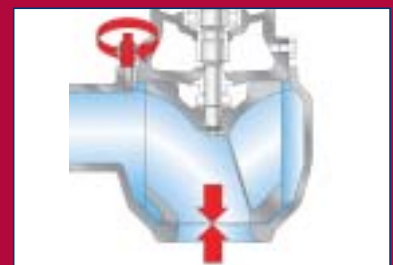
DIN/EN 1.4408 stainless steel pump housing (depending on pump model, see page 19 for details).



Heavy-duty maintenance-free ball bearings, greased for life. Lower bearing on all pump models consists of double row of ball bearings.



SmartTrim system for easy and quick adjustment of impeller clearance without dismantling the pump. This enables maintaining of factory-set impeller clearance and maximum pump efficiency. Adjustment is done by turning three screws on the pump housing. No special tools are required.



Auxiliary vanes at the bottom of channel impellers prevent back flow and jamming between impeller and pump housing.

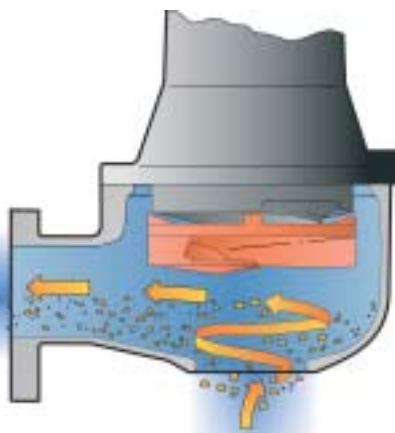


Grundfos SuperVortex



A unique impeller design

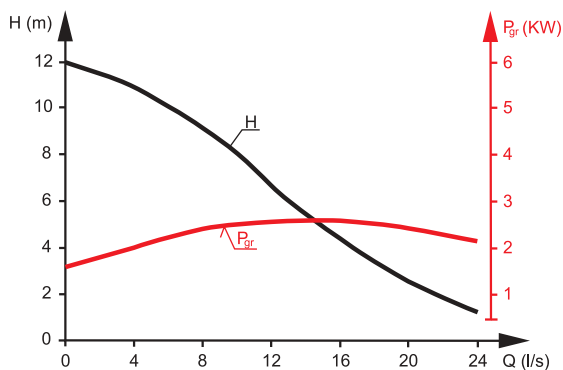
The unique design of the Grundfos SuperVortex impellers provides high pumping efficiency and less down time. With a flow range from 4 l/s, the stainless steel Grundfos SuperVortex pumps are the optimum solution for all smaller pumping stations where aggressive or corrosive liquids are encountered.



No clogging or jamming

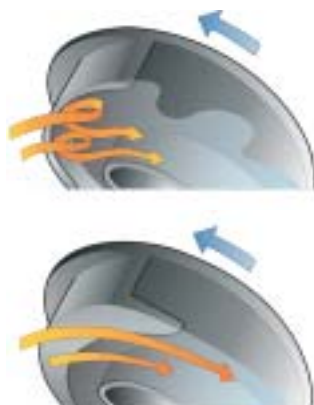
In a SuperVortex pump the flow takes place entirely outside the impeller. The design of the impeller ensures that long fibres, rags, etc. pass freely through the pumps without getting caught and without causing clogging or jamming. This means less downtime and, consequently, reduced service costs and higher pumping efficiency.

The design of the SuperVortex pumps also prevents the common problem of jamming between wear rings. A Grundfos SuperVortex pump needs no wear rings!



Full Q/H curve without operating limitations and vibrations

Due to the special power characteristics of the Grundfos SuperVortex pumps, it is possible to run the pumps from 4 l/s right up to the maximum flow on the curves without any risk of overloading the motor. The steep performance curve means minimal flow fluctuation with varying heads.



Conventional vortex impeller

In pumps fitted with a conventional vortex impeller, turbulent disturbance is liable to form around the impeller. This will disrupt the flow pattern and result in lower pumping efficiency and reduced head.

Grundfos SuperVortex impeller

The liquid passes freely outside the impeller without any turbulent disturbance.

Grundfos channel impellers

Efficient non-clogging

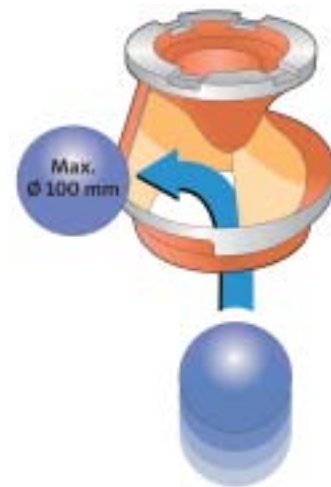
The Grundfos stainless steel channel-impeller pumps provide high efficiency and excellent non-clogging capabilities. The channel impellers are designed with a large free passage – 80 mm or 100 mm, depending on model – and long impeller vanes. Channel-impeller pumps are ideal for heavy-duty operation in larger pumping stations.



Large free passage for superior solids handling

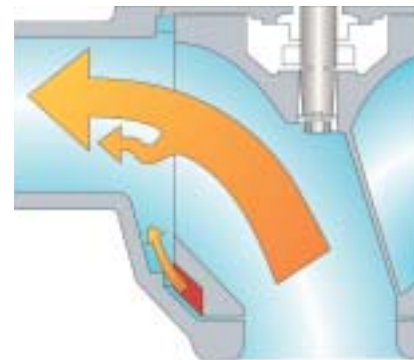
Compromising on the ability to handle solids, in order to obtain higher pumping efficiency, substantially increases the risk of clogging. More clogging means more downtime and increased operating costs.

The Grundfos channel-impeller pumps are capable of handling solids of up to 80 mm or 100 mm size. The full free passage, however, is much larger. The result is less clogging and less downtime.



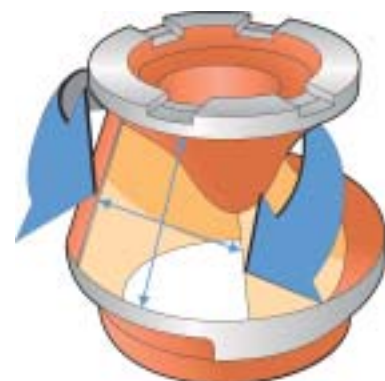
Self-cleaning impeller

On Grundfos wastewater pumps smaller than 12 kW, the bottom part of the channel impellers feature specially designed auxiliary vanes. These vanes are designed to create a powerful flow that keeps the clearance between the impeller and the pump housing free from solids or fibres.



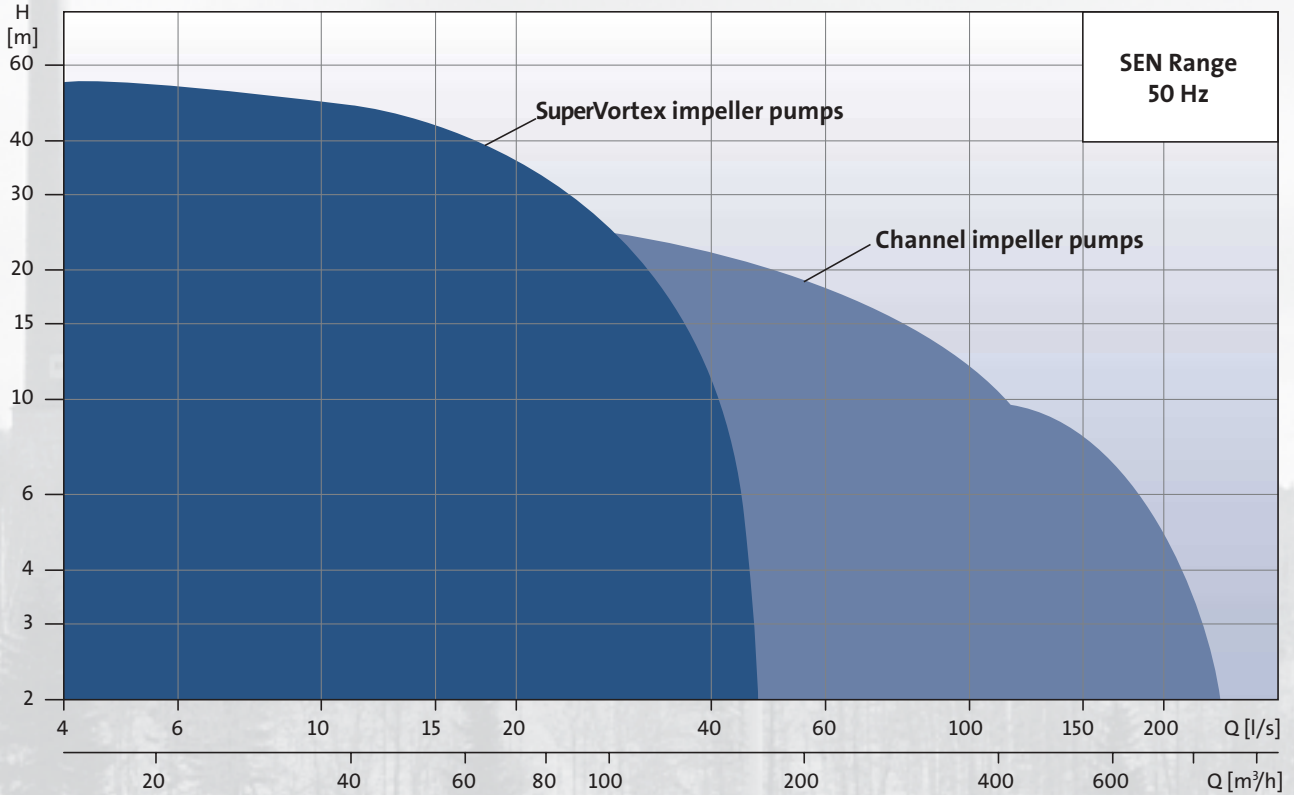
Semi-axial impeller design with long vane

The length of an impeller vane is a key factor in determining the length of fibres that may pass through a pump without getting caught. The Grundfos channel impellers are of a semi-axial design with extra long vanes. This provides maximum performance and eliminates problems with fibres or rags getting caught in the impeller.



Performance overview and type key

Performance overview – stainless steel submersible wastewater pumps

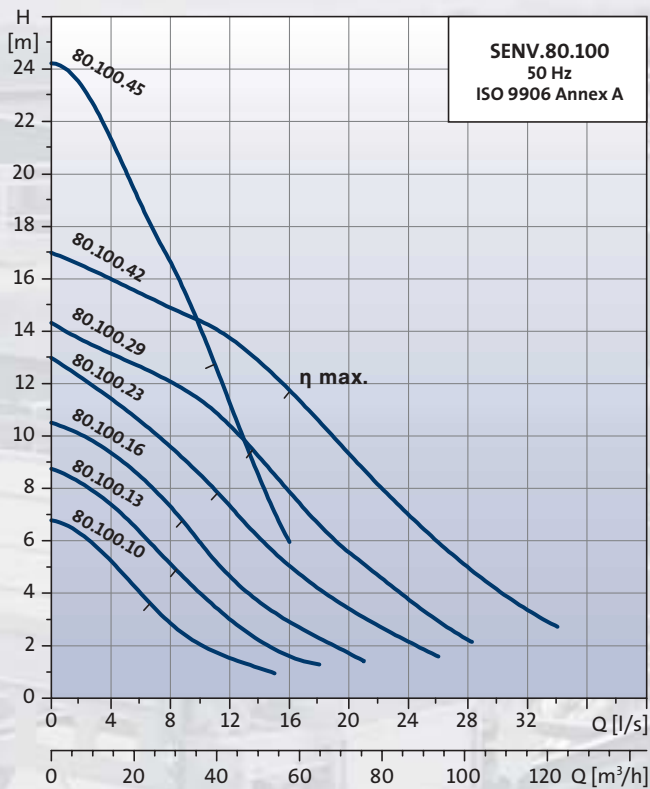
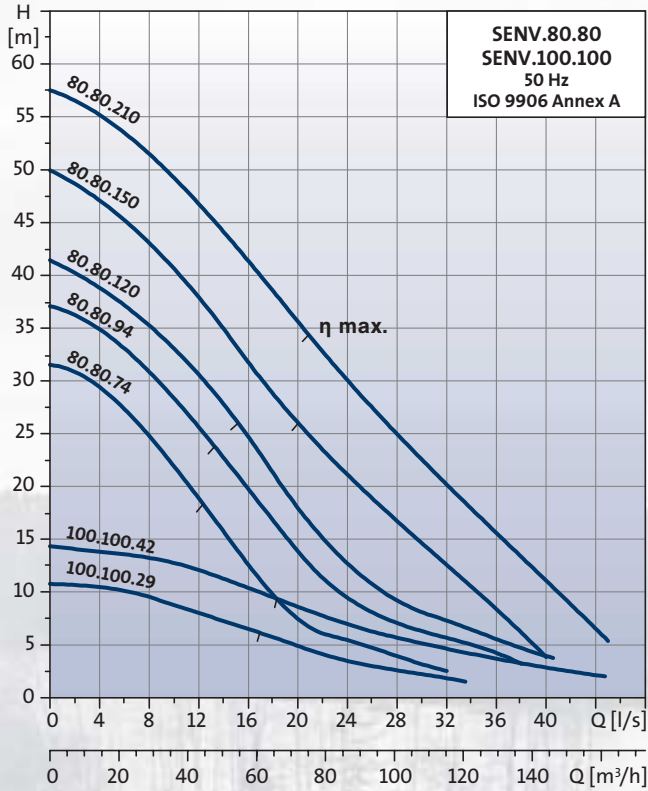


Type key – stainless steel submersible wastewater pumps

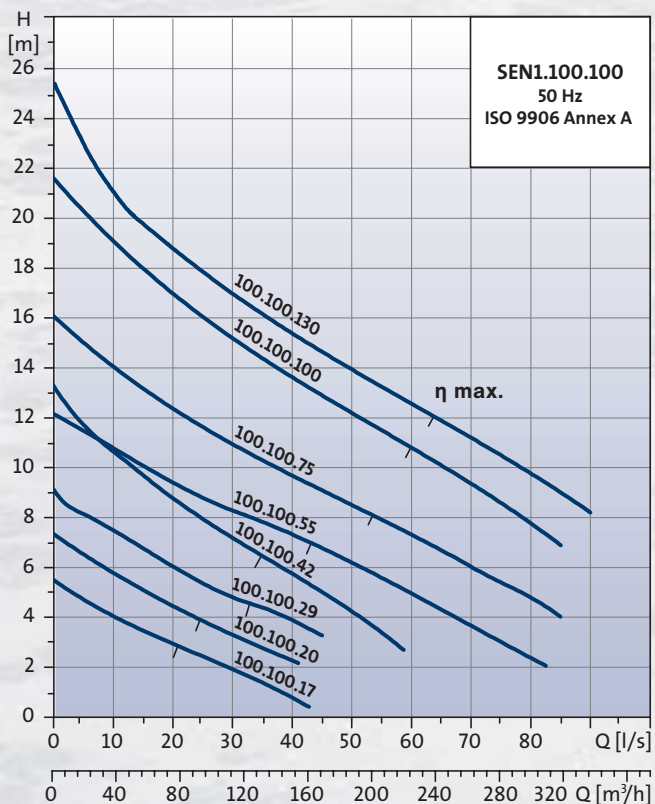
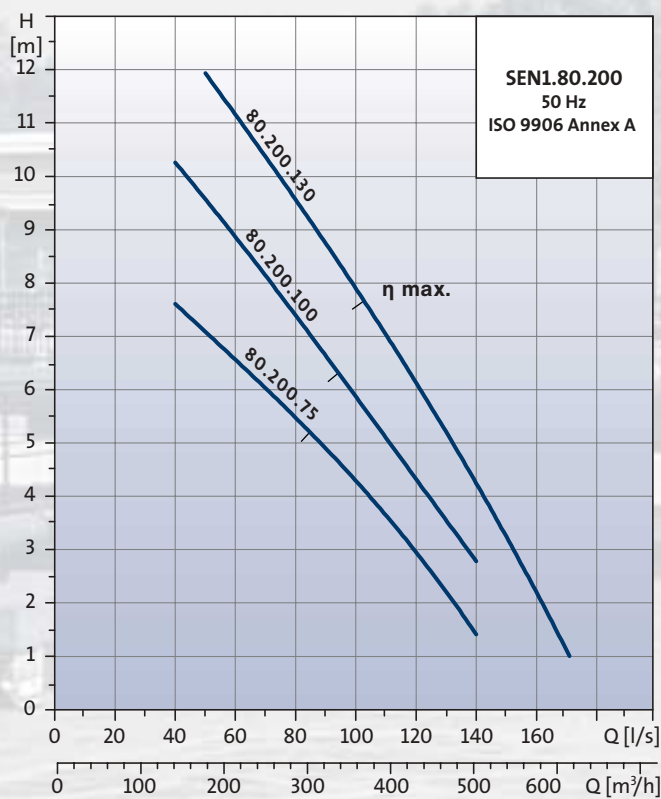
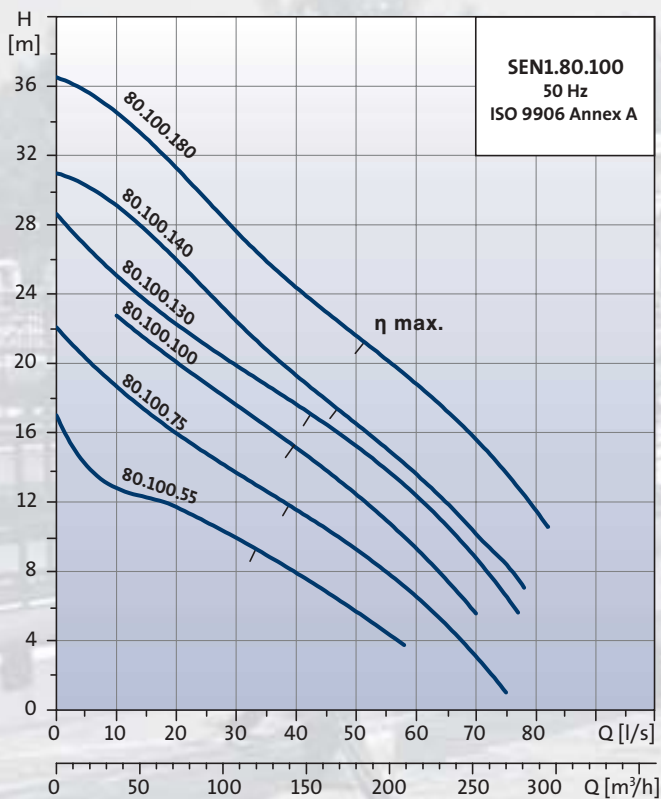
| | | | | | | | | | | | |
|--|--|---|---|------|------|------|----|-----|---|------|---|
| Example SEN1.100.100.130.D.Ex.4.511.Q | SE | N | 1 | .100 | .100 | .130 | .D | .Ex | 4 | .511 | Q |
| Pump range | | | | | | | | | | | |
| N | = Stainless steel | | | | | | | | | | |
| Impeller type | | | | | | | | | | | |
| 1 | = Figures indicate channel impellers and the number indicates the number of channels | | | | | | | | | | |
| V | = SuperVortex | | | | | | | | | | |
| Maximum solids size [mm] | | | | | | | | | | | |
| Nominal diameter of discharge port [mm] | | | | | | | | | | | |
| Motor power output $P_2 / 100$ [W] | | | | | | | | | | | |
| Installation | | | | | | | | | | | |
| Blank | = Without cooling jacket | | | | | | | | | | |
| D | = With cooling jacket | | | | | | | | | | |
| Version | | | | | | | | | | | |
| Blank | = Non-explosion-proof | | | | | | | | | | |
| Ex | = Explosion-proof | | | | | | | | | | |
| Number of poles | | | | | | | | | | | |
| Frequency, voltage and starting method | | | | | | | | | | | |
| 511 | = 50 Hz, 400 V, star-delta starting. The first digit indicates the frequency and the next two digits indicate the voltage and starting method. | | | | | | | | | | |
| 5 | = 50 Hz | | | | | | | | | | |
| 01 | = 400 V, direct-on-line starting | | | | | | | | | | |
| 11 | = 400 V, star-delta starting | | | | | | | | | | |
| Generation | | | | | | | | | | | |
| Blank | = First generation (A) | | | | | | | | | | |
| B | = Second generation | | | | | | | | | | |
| C | = Third generation, etc. | | | | | | | | | | |
| Pump materials | | | | | | | | | | | |
| R | = Pump and motor of stainless steel, DIN W.-Nr. 1.4408 | | | | | | | | | | |
| S | = Hydraulic parts of stainless steel, DIN W.-Nr. 1.4408 | | | | | | | | | | |
| Q | = Cast-iron pump with stainless steel impeller, DIN W.-Nr. 1.4408 | | | | | | | | | | |

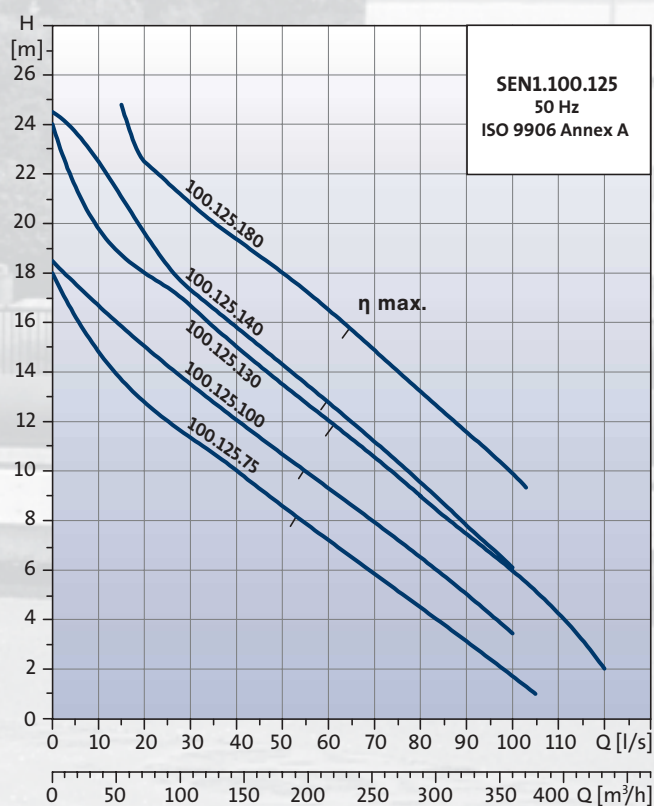
SuperVortex pumps

SuperVortex performance overview



Channel impeller pumps





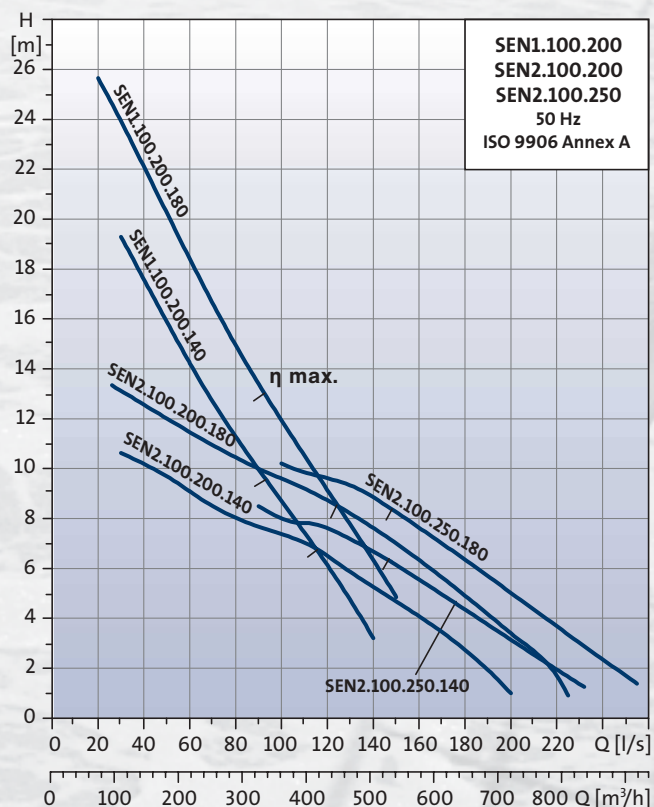
Operating conditions and maximum start-up frequency

Pump usage is restricted by the following limits:

- Maximum ambient temperature and pumped liquid temperature is +40°C
- Storage temperature range -30°C to +60°C
- Maximum submersion is 20 m

Pump start-up frequency should not exceed the recommendations in the table below. For shorter periods of time a start-up frequency of up to double the recommended is permissible.

| Motor size | Starts per hour |
|--------------|-----------------|
| 1 to 4.5 kW | 25 |
| 5.5 to 21 kW | 20 |



Grundfos SEN stainless steel pumps with cooling jacket.

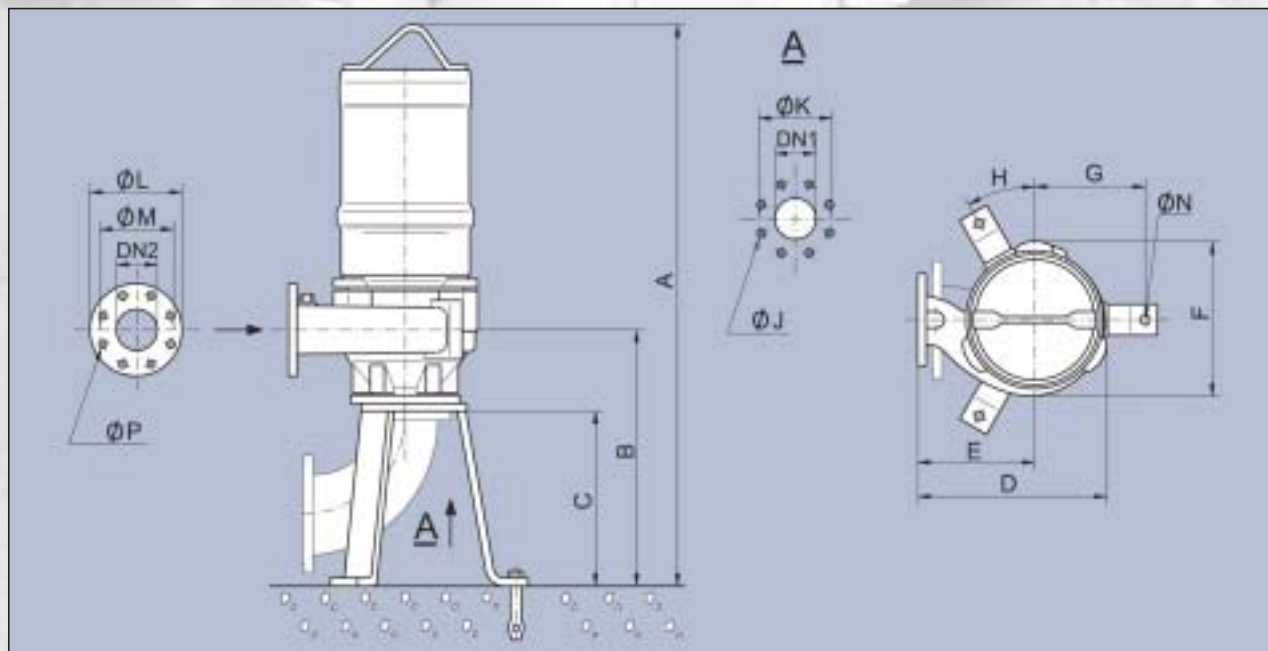
Electrical data and pump designation

| Pump type | Max. solids size [mm] | P ₂ [kW] | n [min ⁻¹] | Starting method | I _{1/1} [A] | $\frac{I_s}{I_{1/1}}$ | Weight [kg] |
|-----------------------|-----------------------|---------------------|------------------------|-----------------|----------------------|-----------------------|-------------|
| SENV.80.80.74 (Ex) | 80 | 7.4 | 2960 | Star/delta | 16.6 | 12.3 | 180 |
| SENV.80.80.94 (Ex) | 80 | 9.4 | 2940 | Star/delta | 19.4 | 10.4 | 170 |
| SENV 80.80.120 (Ex) | 80 | 12.0 | 2910 | Star/delta | 23.6 | 7.6 | 200 |
| SENV 80.80.150 (Ex) | 80 | 15.0 | 2780 | Star/delta | 41.2 | 9.1 | 250 |
| SENV.80.80.210 (Ex) | 80 | 21.0 | 2780 | Star/delta | 41.2 | 6.6 | 250 |
| SENV 80.100.10 (Ex) | 80 | 1.0 | 1440 | Direct-on-line | 4.3 | 6.9 | 60 |
| SENV.80.100.13 (Ex) | 80 | 1.3 | 1440 | Direct-on-line | 4.3 | 6.9 | 60 |
| SENV 80.100.16 (Ex) | 80 | 1.6 | 1440 | Direct-on-line | 4.3 | 6.9 | 60 |
| SENV 80.100.23 (Ex) | 80 | 2.3 | 1400 | Direct-on-line | 5.4 | 5.5 | 60 |
| SENV 80.100.29 (Ex) | 80 | 2.9 | 1430 | Direct-on-line | 8.1 | 6.2 | 100 |
| SENV 80.100.42 (Ex) | 80 | 4.2 | 1390 | Direct-on-line | 10.4 | 5.0 | 100 |
| SENV 80.100.45 (Ex) | 80 | 4.5 | 2840 | Direct-on-line | 10.2 | 7.0 | 100 |
| SENV.100.100.29 (Ex) | 100 | 2.9 | 1430 | Direct-on-line | 8.1 | 6.2 | 100 |
| SENV.100.100.42 (Ex) | 100 | 4.2 | 1380 | Direct-on-line | 10.4 | 5.0 | 100 |
| SEN1.80.100.55 (Ex) | 80 | 5.5 | 1460 | Star/delta | 13.8 | 7.4 | 210 |
| SEN1.80.100.75 (Ex) | 80 | 7.5 | 1440 | Star/delta | 16.7 | 7.4 | 210 |
| SEN1.80.100.100 (Ex) | 80 | 10.0 | 1460 | Star/delta | 22.0 | 9.6 | 240 |
| SEN1.80.100.130 (Ex) | 80 | 13.0 | 1440 | Star/delta | 26.4 | 8.3 | 240 |
| SEN1.80.100.140 (Ex) | 80 | 14.0 | 1470 | Star/delta | 33.9 | 4.9 | 285 |
| SEN1.80.100.180 (Ex) | 80 | 18.0 | 1460 | Star/delta | 37.4 | 4.4 | 310 |
| SEN1.80.200.75 (Ex) | 80 | 7.5 | 1440 | Star/delta | 16.7 | 7.4 | 320 |
| SEN1.80.200.100 (Ex) | 80 | 10.0 | 1460 | Star/delta | 22.0 | 9.6 | 415 |
| SEN1.80.200.130 (Ex) | 80 | 13.0 | 1440 | Star/delta | 26.4 | 8.3 | 415 |
| SEN1.100.100.17 | 100 | 1.7 | 910 | Direct-on-line | 5.5 | 6.0 | 110 |
| SEN1.100.100.20 (Ex) | 100 | 2.0 | 1430 | Direct-on-line | 8.1 | 6.2 | 110 |
| SEN1.100.100.29 (Ex) | 100 | 2.9 | 1430 | Direct-on-line | 8.1 | 6.2 | 110 |
| SEN1.100.100.42 (Ex) | 100 | 4.2 | 1390 | Direct-on-line | 10.5 | 5.0 | 110 |
| SEN1.100.100.55 (Ex) | 100 | 5.5 | 1460 | Star/delta | 13.8 | 7.4 | 205 |
| SEN1.100.100.75 (Ex) | 100 | 7.5 | 1440 | Star/delta | 16.7 | 7.4 | 200 |
| SEN1.100.100.100 (Ex) | 100 | 10.0 | 1460 | Star/delta | 22.0 | 9.6 | 215 |
| SEN1.100.100.130 (Ex) | 100 | 13.0 | 1440 | Star/delta | 26.4 | 8.3 | 215 |
| SEN1.100.125.75 (Ex) | 100 | 7.5 | 1440 | Star/delta | 16.7 | 7.4 | 235 |
| SEN1.100.125.100 (Ex) | 100 | 10.0 | 1460 | Star/delta | 22.0 | 9.6 | 235 |
| SEN1.100.125.130 (Ex) | 100 | 13.0 | 1440 | Star/delta | 26.4 | 8.3 | 235 |
| SEN1.100.125.140 (Ex) | 100 | 14.0 | 1450 | Star/delta | 33.9 | 4.9 | 320 |
| SEN1.100.125.180 (Ex) | 100 | 18.0 | 1460 | Star/delta | 37.4 | 4.4 | 310 |
| SEN1.100.200.140 (Ex) | 100 | 14.0 | 1470 | Star/delta | 33.9 | 8.3 | 390 |
| SEN2.100.200.140 (Ex) | 100 | 14.0 | 1470 | Star/delta | 33.9 | 8.3 | 400 |
| SEN1.100.200.180 (Ex) | 100 | 18.0 | 1460 | Star/delta | 37.4 | 4.4 | 390 |
| SEN2.100.200.180 (Ex) | 100 | 18.0 | 1460 | Star/delta | 37.4 | 4.4 | 405 |
| SEN2.100.250.140 (Ex) | 100 | 14.0 | 1470 | Star/delta | 33.9 | 8.3 | 470 |
| SEN2.100.250.180 (Ex) | 100 | 18.0 | 1460 | Star/delta | 37.4 | 4.4 | 545 |



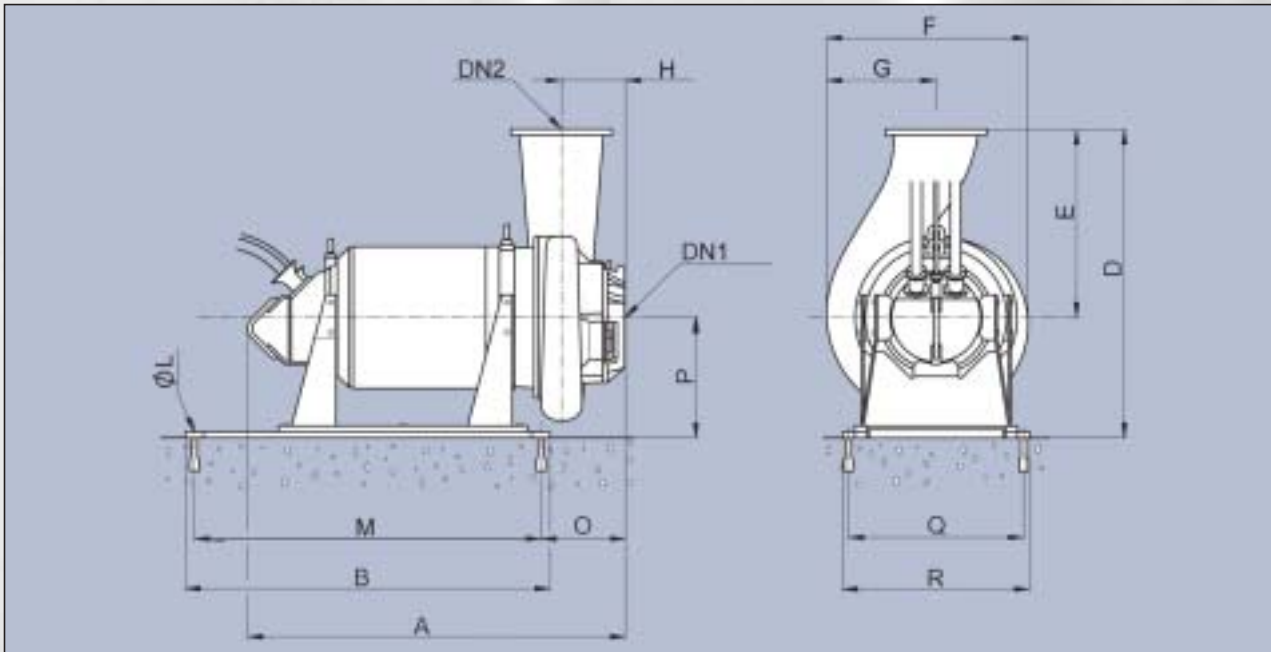
Dimensions and installation

Vertical dry installation



| Pump type | Dimensions [mm] | | | | | | | | | | | | | | | |
|------------------|-----------------|-----|------|------|-----|------|-----|-----|-----|-----|-----|-----|-----|-----|----|----|
| | DN1 | DN2 | A | B | C | D | E | F | G | H | ØJ | ØK | ØL | ØM | ØN | ØP |
| SENV.80.80.94 | 100 | 80 | 1325 | 620 | 425 | 580 | 400 | 370 | 270 | 30° | M16 | 180 | 200 | 160 | 24 | 19 |
| SENV.80.80.120 | 100 | 80 | 1325 | 620 | 425 | 580 | 400 | 370 | 270 | 30° | M16 | 180 | 200 | 160 | 24 | 19 |
| SENV.80.100.10 | 100 | 100 | 1120 | 545 | 425 | 347 | 217 | 255 | 270 | 30° | M16 | 180 | 225 | 180 | 24 | 19 |
| SENV.80.100.13 | 100 | 100 | 1120 | 545 | 425 | 347 | 217 | 255 | 270 | 30° | M16 | 180 | 225 | 180 | 24 | 19 |
| SENV.80.100.16 | 100 | 100 | 1120 | 545 | 425 | 347 | 217 | 255 | 270 | 30° | M16 | 180 | 225 | 180 | 24 | 19 |
| SENV.80.100.29 | 100 | 100 | 1095 | 525 | 425 | 372 | 217 | 320 | 270 | 30° | M16 | 180 | 225 | 180 | 24 | 19 |
| SENV.100.100.29 | 100 | 100 | 1135 | 565 | 425 | 420 | 265 | 320 | 270 | 30° | M16 | 180 | 225 | 180 | 24 | 19 |
| SEN1.80.100.55 | 100 | 100 | 1365 | 625 | 425 | 465 | 285 | 375 | 270 | 30° | M16 | 180 | 200 | 160 | 24 | 19 |
| SEN1.80.100.75 | 100 | 100 | 1365 | 625 | 425 | 465 | 285 | 375 | 270 | 30° | M16 | 180 | 200 | 160 | 24 | 19 |
| SEN1.80.100.100 | 100 | 100 | 1365 | 625 | 425 | 465 | 285 | 375 | 270 | 30° | M16 | 180 | 225 | 180 | 24 | 19 |
| SEN1.80.100.130 | 100 | 100 | 1365 | 625 | 425 | 465 | 285 | 375 | 270 | 30° | M16 | 180 | 225 | 180 | 24 | 19 |
| SEN1.80.100.140 | 150 | 100 | 1605 | 815 | 600 | 570 | 355 | 435 | 300 | 30° | M20 | 240 | 220 | 180 | 24 | 19 |
| SEN1.80.100.180 | 150 | 100 | 1605 | 815 | 600 | 570 | 355 | 435 | 300 | 30° | M20 | 240 | 220 | 180 | 24 | 19 |
| SEN1.80.200.75 | 200 | 200 | 1700 | 970 | 700 | 785 | 460 | 625 | 350 | 30° | M20 | 295 | 340 | 295 | 24 | 24 |
| SEN1.80.200.100 | 200 | 200 | 1700 | 970 | 700 | 785 | 460 | 625 | 350 | 30° | M20 | 295 | 340 | 295 | 24 | 24 |
| SEN1.80.200.130 | 200 | 200 | 1700 | 970 | 700 | 785 | 460 | 625 | 350 | 30° | M20 | 295 | 340 | 295 | 24 | 24 |
| SEN1.100.100.17 | 100 | 100 | 1150 | 600 | 425 | 425 | 257 | 335 | 270 | 30° | M16 | 180 | 220 | 180 | 24 | 19 |
| SEN1.100.100.20 | 100 | 100 | 1150 | 600 | 425 | 425 | 257 | 335 | 270 | 30° | M16 | 180 | 220 | 180 | 24 | 19 |
| SEN1.100.100.29 | 100 | 100 | 1150 | 600 | 425 | 425 | 257 | 335 | 270 | 30° | M16 | 180 | 220 | 180 | 24 | 19 |
| SEN1.100.100.55 | 150 | 100 | 1575 | 805 | 600 | 492 | 312 | 380 | 300 | 30° | M20 | 240 | 225 | 180 | 24 | 19 |
| SEN1.100.100.75 | 150 | 100 | 1575 | 805 | 600 | 492 | 312 | 380 | 300 | 30° | M20 | 240 | 225 | 180 | 24 | 19 |
| SEN1.100.100.100 | 150 | 100 | 1575 | 805 | 600 | 492 | 312 | 380 | 300 | 30° | M20 | 240 | 225 | 180 | 24 | 19 |
| SEN1.100.100.130 | 150 | 100 | 1575 | 805 | 600 | 492 | 312 | 380 | 300 | 30° | M20 | 240 | 225 | 180 | 24 | 19 |
| SEN1.100.130.75 | 150 | 130 | 1565 | 815 | 600 | 590 | 380 | 435 | 300 | 30° | M20 | 240 | 250 | 210 | 24 | 19 |
| SEN1.100.130.100 | 150 | 130 | 1565 | 815 | 600 | 590 | 380 | 435 | 300 | 30° | M20 | 240 | 250 | 210 | 24 | 19 |
| SEN1.100.130.130 | 150 | 130 | 1570 | 815 | 600 | 590 | 380 | 435 | 300 | 30° | M20 | 240 | 250 | 210 | 24 | 19 |
| SEN1.100.125.140 | 150 | 125 | 1640 | 840 | 600 | 575 | 360 | 445 | 300 | 30° | M20 | 240 | 250 | 210 | 24 | 19 |
| SEN1.100.125.180 | 150 | 125 | 1640 | 840 | 600 | 575 | 360 | 445 | 300 | 30° | M20 | 240 | 250 | 210 | 24 | 19 |
| SEN1.100.200.140 | 200 | 200 | 1730 | 920 | 700 | 765 | 500 | 550 | 350 | 30° | M20 | 295 | 340 | 295 | 24 | 24 |
| SEN2.100.200.140 | 200 | 200 | 1730 | 920 | 700 | 765 | 500 | 550 | 350 | 30° | M20 | 295 | 340 | 295 | 24 | 24 |
| SEN1.100.200.180 | 200 | 200 | 1730 | 920 | 700 | 765 | 500 | 550 | 350 | 30° | M20 | 295 | 340 | 295 | 24 | 24 |
| SEN2.100.200.180 | 200 | 200 | 1730 | 920 | 700 | 765 | 500 | 550 | 350 | 30° | M20 | 295 | 340 | 295 | 24 | 24 |
| SEN2.100.250.140 | 250 | 250 | 1910 | 1105 | 825 | 1120 | 750 | 730 | 400 | 30° | M20 | 350 | 406 | 350 | 28 | 24 |
| SEN2.100.250.180 | 250 | 250 | 1910 | 1105 | 825 | 1120 | 750 | 730 | 400 | 30° | M20 | 350 | 406 | 350 | 28 | 24 |

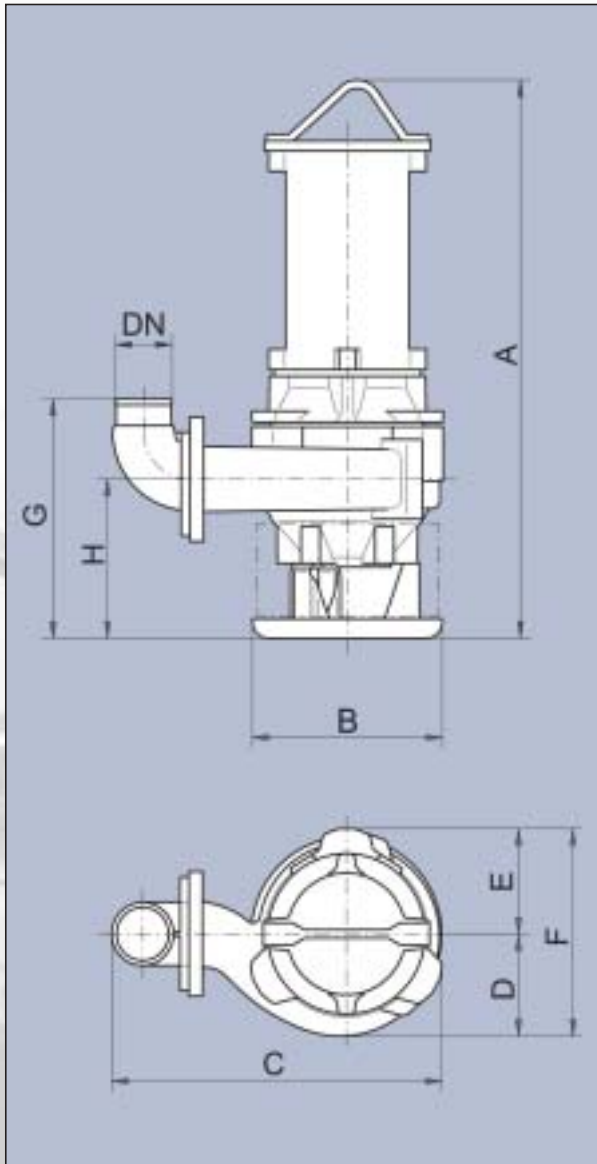
Horizontal dry installation



| Pump type | Dimensions [mm] | | | | | | | | | | | | | | |
|------------------|-----------------|-----|------|-----|------|-----|-----|-----|-----|----|-----|-----|-----|-----|-----|
| | DN1 | DN2 | A | B | D | E | F | G | H | ØL | M | O | P | Q | R |
| SENV.80.80.94 | 100 | 80 | 895 | 820 | 700 | 400 | 370 | 180 | 195 | 18 | 500 | 115 | 300 | 390 | 450 |
| SENV.80.80.120 | 100 | 80 | 895 | 820 | 700 | 400 | 370 | 180 | 195 | 18 | 500 | 115 | 300 | 390 | 450 |
| SENV.80.100.10 | 100 | 100 | 705 | 250 | 417 | 217 | 275 | 150 | 118 | 20 | – | 130 | 200 | 190 | 250 |
| SENV.80.100.13 | 100 | 100 | 705 | 250 | 417 | 217 | 275 | 150 | 118 | 20 | – | 130 | 200 | 190 | 250 |
| SENV.80.100.16 | 100 | 100 | 705 | 250 | 417 | 217 | 275 | 150 | 118 | 20 | – | 130 | 200 | 190 | 250 |
| SENV.80.100.29 | 100 | 100 | 675 | 250 | 437 | 217 | 320 | 160 | 102 | 20 | 150 | 57 | 220 | 230 | 300 |
| SENV.100.100.29 | 100 | 100 | 715 | 250 | 485 | 265 | 320 | 165 | 142 | 20 | 150 | 57 | 220 | 230 | 300 |
| SEN1.80.100.55 | 100 | 100 | 935 | 820 | 585 | 285 | 375 | 190 | 195 | 20 | 500 | 115 | 300 | 390 | 450 |
| SEN1.80.100.75 | 100 | 100 | 935 | 820 | 585 | 285 | 375 | 190 | 195 | 20 | 500 | 115 | 300 | 390 | 450 |
| SEN1.80.100.100 | 100 | 100 | 935 | 820 | 585 | 285 | 375 | 190 | 195 | 20 | 500 | 115 | 300 | 390 | 450 |
| SEN1.80.100.130 | 100 | 100 | 935 | 820 | 585 | 285 | 375 | 190 | 195 | 20 | 500 | 115 | 300 | 390 | 450 |
| SEN1.80.100.140 | 150 | 100 | 1020 | 820 | 655 | 355 | 440 | 230 | 185 | 20 | 500 | 115 | 375 | 390 | 450 |
| SEN1.80.100.180 | 150 | 100 | 1020 | 820 | 655 | 355 | 440 | 230 | 185 | 20 | 500 | 115 | 375 | 390 | 450 |
| SEN1.80.200.75 | 200 | 200 | 1000 | 820 | 860 | 460 | 625 | 365 | 275 | 18 | 500 | 115 | 400 | 390 | 450 |
| SEN1.80.200.100 | 200 | 200 | 1000 | 820 | 860 | 460 | 625 | 365 | 275 | 18 | 500 | 115 | 400 | 390 | 450 |
| SEN1.80.200.130 | 200 | 200 | 1000 | 820 | 860 | 460 | 625 | 365 | 275 | 18 | 500 | 115 | 400 | 390 | 450 |
| SEN1.100.100.17 | 100 | 100 | 735 | 250 | 477 | 257 | 335 | 175 | 180 | 20 | 150 | 57 | 220 | 230 | 335 |
| SEN1.100.100.20 | 100 | 100 | 735 | 250 | 477 | 257 | 335 | 175 | 180 | 20 | 150 | 57 | 220 | 230 | 335 |
| SEN1.100.100.29 | 100 | 100 | 735 | 250 | 477 | 257 | 335 | 175 | 180 | 20 | 150 | 57 | 220 | 230 | 335 |
| SEN1.100.100.55 | 150 | 100 | 960 | 820 | 610 | 310 | 380 | 190 | 190 | 20 | 500 | 130 | 300 | 390 | 450 |
| SEN1.100.100.75 | 150 | 100 | 960 | 820 | 610 | 310 | 380 | 190 | 190 | 20 | 500 | 130 | 300 | 390 | 450 |
| SEN1.100.100.100 | 150 | 100 | 960 | 820 | 610 | 310 | 380 | 190 | 190 | 20 | 500 | 130 | 300 | 390 | 450 |
| SEN1.100.100.130 | 150 | 100 | 960 | 820 | 612 | 312 | 380 | 190 | 175 | 20 | 500 | 130 | 300 | 390 | 450 |
| SEN1.100.130.75 | 150 | 130 | 950 | 820 | 680 | 380 | 430 | 240 | 200 | 20 | 500 | 130 | 300 | 390 | 450 |
| SEN1.100.130.100 | 150 | 130 | 950 | 820 | 680 | 380 | 430 | 240 | 200 | 20 | 500 | 130 | 300 | 390 | 450 |
| SEN1.100.130.130 | 150 | 130 | 950 | 820 | 680 | 380 | 430 | 240 | 200 | 20 | 500 | 130 | 300 | 390 | 450 |
| SEN1.100.125.140 | 150 | 125 | 1035 | 820 | 735 | 360 | 555 | 345 | 210 | 20 | 500 | 100 | 375 | 390 | 450 |
| SEN1.100.125.180 | 150 | 125 | 1035 | 820 | 735 | 360 | 555 | 345 | 210 | 20 | 500 | 100 | 375 | 390 | 450 |
| SEN1.100.200.140 | 200 | 200 | 1045 | 820 | 875 | 500 | 550 | 315 | 220 | 20 | 500 | 115 | 375 | 390 | 450 |
| SEN2.100.200.140 | 200 | 200 | 1045 | 820 | 875 | 500 | 550 | 315 | 220 | 20 | 500 | 115 | 375 | 390 | 450 |
| SEN1.100.200.180 | 200 | 200 | 1045 | 820 | 875 | 500 | 550 | 315 | 220 | 20 | 500 | 115 | 375 | 390 | 450 |
| SEN2.100.200.180 | 200 | 200 | 1045 | 820 | 875 | 500 | 550 | 315 | 220 | 20 | 500 | 115 | 375 | 390 | 450 |
| SEN2.100.250.140 | 250 | 250 | 1070 | | 1250 | 750 | 730 | 420 | 265 | 18 | 500 | 115 | 500 | 390 | 450 |
| SEN2.100.250.180 | 250 | 250 | 1070 | | 1250 | 750 | 730 | 420 | 265 | 18 | 500 | 115 | 500 | 390 | 450 |

Dimensions and installation

Submerged free-standing installation



| Pump type | Dimensions [mm] | | | | | | | | |
|------------------|-----------------|------|-----|------|-----|-----|-----|-----|-----|
| | DN | A | B | C | D | E | F | G | H |
| SENV.80.80.74 | 100 | 930 | 350 | 555 | 180 | 180 | 370 | 460 | 290 |
| SENV.80.80.94 | 100 | 930 | 350 | 555 | 180 | 180 | 370 | 460 | 290 |
| SENV.80.80.120 | 100 | 930 | 350 | 555 | 180 | 180 | 370 | 460 | 290 |
| SENV.80.80.150 | 80 | 1080 | 350 | 635 | 180 | 215 | 395 | 430 | 280 |
| SENV.80.80.210 | 80 | 1080 | 350 | 635 | 180 | 215 | 395 | 430 | 280 |
| SENV.80.100.10 | 80 | 735 | 305 | 490 | 150 | 125 | 275 | 305 | 160 |
| SENV.80.100.13 | 80 | 735 | 305 | 490 | 150 | 125 | 275 | 305 | 160 |
| SENV.80.100.16 | 80 | 735 | 305 | 490 | 150 | 125 | 275 | 305 | 160 |
| SENV.80.100.23 | 80 | 735 | 305 | 490 | 150 | 125 | 275 | 305 | 160 |
| SENV.80.100.29 | 80 | 765 | 305 | 490 | 155 | 155 | 310 | 355 | 195 |
| SENV.80.100.42 | 80 | 765 | 305 | 490 | 155 | 155 | 310 | 355 | 195 |
| SENV.80.100.45 | 100 | 725 | 305 | 545 | 150 | 150 | 300 | 335 | 190 |
| SENV.100.100.29 | 100 | 805 | 305 | 565 | 165 | 155 | 320 | 380 | 230 |
| SENV.100.100.42 | 100 | 805 | 305 | 565 | 165 | 155 | 320 | 380 | 230 |
| SEN1.80.100.55 | 100 | 1035 | 350 | 610 | 185 | 190 | 375 | 435 | 290 |
| SEN1.80.100.75 | 100 | 1035 | 350 | 610 | 185 | 190 | 375 | 435 | 290 |
| SEN1.80.100.100 | 100 | 1035 | 350 | 610 | 185 | 190 | 375 | 435 | 290 |
| SEN1.80.100.130 | 100 | 1035 | 350 | 610 | 185 | 190 | 375 | 435 | 290 |
| SEN1.80.100.140 | 100 | 1070 | 550 | 775 | 230 | 210 | 550 | 550 | 280 |
| SEN1.80.100.180 | 100 | 1070 | 550 | 775 | 230 | 210 | 550 | 550 | 280 |
| SEN1.80.200.75 | 200 | 1110 | 550 | 1210 | 365 | 275 | 640 | 815 | 380 |
| SEN1.80.200.100 | 200 | 1110 | 550 | 1210 | 365 | 275 | 640 | 815 | 380 |
| SEN1.80.200.130 | 200 | 1110 | 550 | 1210 | 365 | 275 | 640 | 815 | 380 |
| SEN1.100.100.17 | 100 | 820 | 305 | 570 | 175 | 160 | 335 | 415 | 270 |
| SEN1.100.100.20 | 100 | 820 | 305 | 570 | 175 | 160 | 335 | 415 | 270 |
| SEN1.100.100.29 | 100 | 820 | 305 | 570 | 175 | 160 | 335 | 415 | 270 |
| SEN1.100.100.42 | 100 | 820 | 305 | 570 | 175 | 160 | 335 | 415 | 270 |
| SEN1.100.100.55 | 100 | 1075 | 350 | 640 | 190 | 190 | 380 | 450 | 300 |
| SEN1.100.100.75 | 100 | 1075 | 350 | 640 | 190 | 190 | 380 | 450 | 300 |
| SEN1.100.100.100 | 100 | 1075 | 350 | 640 | 190 | 190 | 380 | 450 | 300 |
| SEN1.100.100.130 | 100 | 1075 | 350 | 640 | 190 | 190 | 380 | 450 | 300 |
| SEN1.100.130.75 | 150 | 1060 | 350 | 870 | 240 | 190 | 430 | 590 | 310 |
| SEN1.100.130.100 | 150 | 1060 | 350 | 870 | 240 | 190 | 430 | 590 | 310 |
| SEN1.100.130.130 | 150 | 1060 | 350 | 870 | 240 | 190 | 430 | 590 | 310 |
| SEN1.100.125.140 | 150 | 1105 | 550 | 915 | 235 | 210 | 550 | 585 | 305 |
| SEN1.100.125.180 | 150 | 1105 | 550 | 915 | 235 | 210 | 550 | 585 | 305 |
| SEN1.100.200.140 | 200 | 1125 | 550 | 1200 | 315 | 235 | 590 | 750 | 315 |
| SEN2.100.200.140 | 200 | 1125 | 550 | 1200 | 315 | 235 | 590 | 750 | 315 |
| SEN1.100.200.180 | 200 | 1125 | 550 | 1200 | 315 | 235 | 590 | 750 | 315 |
| SEN2.100.200.180 | 200 | 1125 | 550 | 1200 | 315 | 235 | 590 | 750 | 315 |
| SEN2.100.250.140 | | | | | | | | | |
| SEN2.100.250.180 | | | | | | | | | |

Pumped liquids

The Grundfos SEN stainless steel wastewater pumps are suitable for pumping:

- Sewage and wastewater containing long fibres and solids up to 80 mm or 100 mm.
- Industrial effluent containing abrasives or sticky material.
- Aggressive or corrosive drainwater and effluent
- Sludge and drainwater from aggressive or corrosive environments.

Liquid temperature: 0°C to +40°C.

Max. density: 1000 kg/m³.

Motor

2, 4 and 6-pole motors for 50 Hz with voltage tolerance of ± 10%. All motors have a built-in protection device consisting of three thermal switches embedded in the stator windings and a mechanically activated moisture-sensing micro switch below the motor top cover.

Voltage tolerances: 2.9 kW - 4.5 kW + 5% - 15%

Other motors + 10% - 10%

50Hz motors with windings for other voltages available on request, including the entire pump range wound for 60 Hz.

Enclosure class: IP 68.

Insulation Class: F (155°C).

Material specifications

Version R

| Part | Material | DIN / EN | AISI |
|--|--|----------|-------|
| Stator housing | Cast stainless steel | 1.4408 | CF-8M |
| Pump housing | Cast stainless steel | 1.4408 | CF-8M |
| Guide claw (for pumps installed on auto-coupling only) | Cast stainless steel | 1.4408 | CF-8M |
| Impeller | Cast stainless steel | 1.4408 | CF-8M |
| Pump shaft | Stainless steel | 1.4460 | 329 |
| Bolts and nuts | Stainless steel | 1.4436 | 316 |
| Cooling jacket (5.5-21.0 kW) | Cast stainless steel | 1.4408 | CF-8M |
| O-rings | NBR | | |
| O-rings, mechanical shaft seal | FKM | | |
| Bearings | Heavy-duty prelubricated ball bearings | | |
| Primary shaft seal | SiC/SiC | | |
| Secondary shaft seal | SiC/carbon | | |
| Lifting bracket (1.0-4.5 kW) | Stainless steel | 1.4436 | 316 |
| Lifting bracket (5.5-21.0 kW) | Stainless steel | 1.4436 | 316 |
| Cables | EPDM | | |
| Cable entry | Cast stainless steel | 1.4408 | CF-8M |
| Surface protection | 150 my two-component epoxy coating | | |
| Oil | SAE 10 W 30 | | |

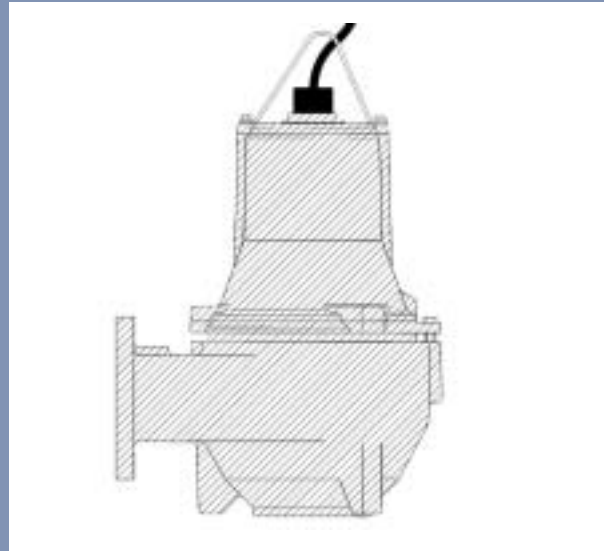
Version S

| Part | Material | DIN / EN | AISI |
|--|--|-----------|-------|
| Stator housing | Cast iron | EN-JL1040 | |
| Pump housing | Cast stainless steel | 1.4408 | CF-8M |
| Guide claw (for pumps installed on auto-coupling only) | Cast stainless steel | 1.4408 | CF-8M |
| Impeller | Cast stainless steel | 1.4408 | CF-8M |
| Pump shaft | Stainless steel | 1.4460 | 329 |
| Bolts and nuts | Stainless steel | 1.4436 | 316 |
| Cooling jacket (5.5-21.0 kW) | Ductile iron | EN-JS1050 | |
| O-rings | NBR | | |
| O-rings, mechanical shaft seal | FKM | | |
| Bearings | Heavy-duty prelubricated ball bearings | | |
| Primary shaft seal | SiC/SiC | | |
| Secondary shaft seal | SiC/carbon | | |
| Lifting bracket (1.0-4.5 kW) | Stainless steel | 1.4436 | 316 |
| Lifting bracket (5.5-21.0 kW) | Ductile iron | EN-JS1050 | |
| Cables | EPDM | | |
| Cable | entry PA | | |
| Surface protection | 150 my two-component epoxy coating | | |
| Oil | SAE 10 W 30 | | |

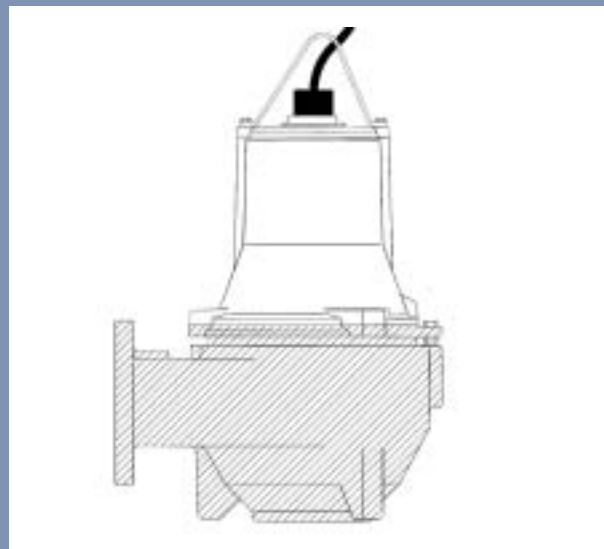
Version Q

| Part | Material | DIN / EN | AISI |
|--|--|-----------|-------|
| Stator housing | Cast iron | EN-JL1040 | |
| Pump housing | Cast iron | EN-JL1040 | |
| Guide claw (for pumps installed on auto-coupling only) | Cast iron | EN-JL1040 | |
| Impeller | Cast stainless steel | 1.4408 | CF-8M |
| Pump shaft | Stainless steel | 1.4460 | 329 |
| Bolts and nuts | Stainless steel | 1.4436 | 316 |
| Cooling jacket (5.5-21.0 kW) | Ductile iron | EN-JS1050 | |
| O-rings | NBR | | |
| O-rings, mechanical shaft seal | FKM | | |
| Bearings | Heavy-duty prelubricated ball bearings | | |
| Primary shaft seal | SiC/SiC | | |
| Secondary shaft seal | SiC/carbon | | |
| Lifting bracket (1.0-4.5 kW) | Stainless steel | 1.4436 | 316 |
| Lifting bracket (5.5-21.0 kW) | Ductile iron | EN-JS1050 | |
| Cables | EPDM | | |
| Cable | entry PA | | |
| Surface protection | 150 my two-component epoxy coating | | |
| Oil | SAE 10 W 30 | | |

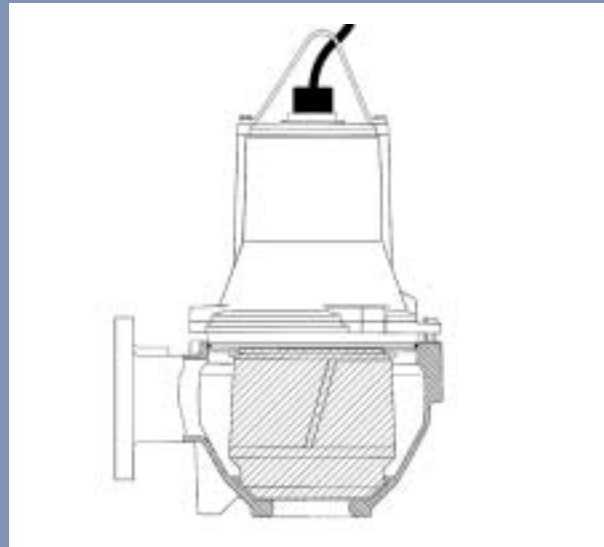
Entirely stainless steel



Hydraulic parts of stainless steel



Stainless steel impeller



Pump types and product numbers

The Grundfos SEN range of stainless steel pumps comprises models with standard motors as well as explosion-proof motors for mains supply of 3 x 400 V, 50 Hz.

All SEN pump models have a built-in thermal switch and a moisture sensor. The pumps are supplied with 8 m cable with protection sleeve on the free cable end. The pumps must be connected to a separate motor starter.

| Pump type | Product number | | | | | |
|------------------|-------------------|----------|----------|-------------|----------|----------|
| | Submerged version | | | Dry version | | |
| | Q | S | R | Q | S | R |
| SENV.80.80.74 | 96089703 | 96089705 | 96089707 | | | |
| SENV.80.80.94 | 96089715 | 96089717 | 96089719 | | | |
| SENV.80.80.120 | 96089727 | 96089729 | 96089731 | 96089728 | 96089730 | 96089732 |
| SENV.80.80.150 | 96089739 | 96089740 | 96089741 | | | |
| SENV.80.80.210 | 96089745 | 96089746 | 96089747 | | | |
| SENV.80.100.10 | 96089661 | | 96089663 | 96089661 | | 96089663 |
| SENV.80.100.13 | 96089667 | | 96089669 | 96089667 | | 96089669 |
| SENV.80.100.16 | 96089673 | | 96089675 | 96089673 | | 96089675 |
| SENV.80.100.23 | 96089679 | | 96089681 | | | |
| SENV.80.100.29 | 96089685 | 96089686 | 96089687 | 96089685 | 96089686 | 96089687 |
| SENV.80.100.42 | 96089691 | 96089692 | 96089693 | | | |
| SENV.80.100.45 | 96089697 | 96089698 | 96089699 | | | |
| SENV.100.100.29 | 96089751 | 96089753 | 96089755 | 96089751 | 96089753 | 96089755 |
| SENV.100.100.42 | 96089763 | 96089764 | 96089765 | | | |
| SEN1.80.100.55 | 96089769 | 96089771 | 96089773 | 96089770 | 96089772 | 96089774 |
| SEN1.80.100.75 | 96089781 | 96089783 | 96089785 | 96089782 | 96089784 | 96089786 |
| SEN1.80.100.100 | 96089805 | 96089807 | 96089809 | 96089806 | 96089808 | 96089810 |
| SEN1.80.100.130 | 96089829 | 96089831 | 96089833 | 96089830 | 96089832 | 96089834 |
| SEN1.80.100.140 | 96089853 | 96089855 | 96089857 | 96089854 | 96089856 | 96089858 |
| SEN1.80.100.180 | 96089865 | 96089867 | 96089869 | 96089866 | 96089868 | 96089870 |
| SEN1.80.200.75 | 96089793 | 96089795 | 96089797 | 96089794 | 96089796 | 96089798 |
| SEN1.80.200.100 | 96089817 | 96089819 | 96089821 | 96089818 | 96089820 | 96089822 |
| SEN1.80.200.130 | 96089841 | 96089843 | 96089845 | 96089842 | 96089844 | 96089846 |
| SEN1.100.100.17 | 96089877 | 96089879 | 96089881 | 96089877 | 96089879 | 96089881 |
| SEN1.100.100.20 | 96089889 | 96089891 | 96089893 | 96089889 | 96089891 | 96089893 |
| SEN1.100.100.29 | 96089901 | 96089903 | 96089905 | 96089901 | 96089903 | 96089905 |
| SEN1.100.100.42 | 96089913 | 96089914 | 96089915 | 96089913 | 96089914 | 96089915 |
| SEN1.100.100.55 | 96089919 | 96089921 | 96089923 | 96089920 | 96089922 | 96089924 |
| SEN1.100.100.75 | 96089931 | 96089933 | 96089935 | 96089932 | 96089934 | 96089936 |
| SEN1.100.100.100 | 96089955 | 96089957 | 96089959 | 96089956 | 96089958 | 96089960 |
| SEN1.100.100.130 | 96089979 | 96089981 | 96089983 | 96089980 | 96089982 | 96089984 |
| SEN1.100.125.75 | 96089943 | 96089945 | 96089947 | 96089944 | 96089946 | 96089948 |
| SEN1.100.125.100 | 96089967 | 96089969 | 96089971 | 96089968 | 96089970 | 96089972 |
| SEN1.100.125.130 | 96089991 | 96089993 | 96089995 | 96089992 | 96089994 | 96089996 |
| SEN1.100.125.140 | 96090003 | 96090005 | 96090007 | 96090004 | 96090006 | 96090008 |
| SEN1.100.125.180 | 96090051 | 96090053 | 96090055 | 96090052 | 96090054 | 96090056 |
| SEN1.100.200.140 | 96090015 | 96090017 | 96090019 | 96090016 | 96090018 | 96090020 |
| SEN2.100.200.140 | 96090027 | 96090029 | 96090031 | 96090028 | 96090030 | 96090032 |
| SEN1.100.200.180 | 96090063 | 96090065 | 96090067 | 96090064 | 96090066 | 96090068 |
| SEN2.100.200.180 | 96090075 | 96090077 | 96090079 | 96090076 | 96090078 | 96090080 |
| SEN2.100.250.140 | 96090039 | 96090041 | 96090043 | 96090040 | 96090042 | 96090044 |
| SEN2.100.250.180 | 96090087 | 96090089 | 96090091 | 96090088 | 96090090 | 96090092 |

Some pump models are suitable for submerged as well as dry installation (e.g. SENV.80.100.10).

These pump models will appear with identical product number in the table.


All pump types are available in explosion-proof version.

Accessories


| | Description | Pump type | | | | | | Product number | | | |
|---|--|------------------------------|--------|--------|---------|---------|---------|----------------|-----------------|------------------|----------|
| | | 80.80 | 80.100 | 80.200 | 100.100 | 100.125 | 100.200 | 100.250 | Material | | |
| | | | | | | | | | Stainless steel | Cast iron/ steel | |
|  | Auto-coupling. Incl. guide claw, profile seal, guide rail bracket and screws. For submerged installation. See page 15 for auto-coupling outlet dimensions (DN). | Pump outlet | | | | | | | | | |
| | | DN 80 for 7.4-12.0 kW | • | | | | | | | 96090109 | 96094504 |
| | | DN 80 for 15.0-21.0 kW | • | | | | | | | 96090122 | 96094508 |
| | | DN 100 for 1.0-4.5 kW | | • | | • | | | | 96090104 | 96094503 |
| | | DN 100 for 5.5-13.0 kW | | • | | • | | | | 96090111 | 96094505 |
| | | DN 100 for 14.0-18.0 kW | | • | | | | | | 96090124 | 96094509 |
| | | DN 125 for 7.5-18.0 kW | | | | | • | | | 96090114 | 96094506 |
| | | DN 200 for 7.5-18.0 kW | | | • | | | • | | 96090118 | 96094507 |
| DN 250 for 14.0-18.0 kW | | | | | | | • | 96090131 | 96094510 | | |
|  | Ring stand. Incl. 90° bend for hose connection, screws and gaskets. For submerged installation, portable. | Hose connection | | | | | | | | | |
| | | 80 mm for 15.0-21.0 kW | • | | | | | | | 96090106 | 96094511 |
| | | 100 mm for 1.0-4.5 kW | | • | | • | | | | 96090112 | 96094512 |
| | | 100 mm for 5.5-13.0 kW | | • | | • | | | | 96090116 | 96094513 |
| | | 100 mm for 14.0-18.0 kW | | • | | | | | | 96090120 | 96094514 |
| | | 150 mm for 7.5 - 13.0 kW | | | | | • | | | 96090123 | 96094515 |
| | | 150 mm for 14.0 - 18.0 kW | | | | | | • | | 96090126 | 96094516 |
| | | 200 mm for 7.5 - 13.0 kW | | | • | | | | | 96090128 | 96094517 |
| 200 mm for 14.0 - 18.0 kW | | | | | | • | | 96090130 | 96094518 | | |
|  | Base stand. Incl. screws and gaskets. Not including 90° suction bend. For vertical dry installation. | Pump outlet | | | | | | | | | |
| | | DN 80/100 | •(1) | •(2) | | | | | | 96090101 | 96094519 |
| | | DN 100 for 1.7-2.9 kW | | •(3) | | • | | | | 96090105 | 96094520 |
| | | DN 100 for 5.5-13.0 kW | | • | | • | | | | 96090110 | 96094521 |
| | | DN 125 for 7.5-14.0 kW | | | | | • | | | 96090115 | 96094522 |
| | | DN 200 for 7.5-18.0 kW | | | • | | | • | | 96090119 | 96094523 |
| | | DN 100/125 for 14.0 -18.0 kW | | • | | | •(4) | | | 96090125 | 96094524 |
| DN 250 14.0 -18.0 kW | | | | | | | • | 96090132 | 96094525 | | |
|  | Base stand. Incl. screws and bracket. For horizontal dry installation. | Pump outlet | | | | | | | | | |
| | | DN 100 for 1.0-1.6 kW | | • | | | | | | 96090135 | 96094526 |
| | | DN 100 for 1.7-2.9 kW | | • | | • | | | | 96090133 | 96094527 |
| | | DN 200 for 7.5-13.0 kW | | | • | | | | | 96090134 | 96094528 |
| | | DN 100 for 5.5-13.0 kW | • | • | | | | | | 96090136 | 96094529 |
| | | DN 100/125 for 5.5-13.0 kW | | | | • | • | | | 96090137 | 96094530 |
| | | DN 200 for 14.0-18.0 kW | | | | | | • | | 96090138 | 96094531 |
| | | DN 250 for 14.0-18.0 kW | | | | | | | • | 96090139 | 96094532 |
| DN 100/125 for 14.0-18.0 kW | | • | | | • | | | 96090140 | 96094533 | | |
|  | 90° suction bend with flanges. For vertical dry installation. | Flange connection | | | | | | | | | |
| | | DN 80/80 | | | | | | | | 96480844 | 96060928 |
| | | DN 100/100 | | | | | | | | 96480845 | 96060930 |
| | | DN 150/150 | | | | | | | | 96480846 | 96060934 |
| | | DN 200/200 | | | | | | | | 96480847 | 96060938 |
| DN 250/250 | | | | | | | | 96480848 | 96060942 | | |
|  | Lifting chain with shackle. Max. load 1100 kg. | Length of chain | | | | | | | | | |
| | | 4 m | | | | | | | | 96094534 | 96468283 |
| | | 6 m | | | | | | | | 96068195 | 96468285 |
| 8 m | | | | | | | | 96094535 | 96468286 | | |
|  | Signal lamp. Outdoor installation 1 x 230 V | | | | | | | | | 62500020 | |
|  | Acoustic signal (horn). 1 x 230 V | Outdoor installation | | | | | | | | 62500021 | |
| | | Indoor installation | | | | | | | | 62500022 | |

(1): 9.4 - 12.0 kW, (2): 1.0 - 1.6 kW, (3): 2.9 kW only, (4): 18.0 kW

Level switches and controllers

| Level switch | Description | Product number | |
|---|--|------------------------------------|-------------|
|  | Float switch, non-mercury. 1 switch with 10 m cable | 96 00 33 32 | |
| | Float switch with 20 m cable | 96 00 36 95 | |
| | Float switch for explosion protection with 10 m cable | 96 00 34 21 | |
| | Float switch for explosion protection with 20 m cable | 96 00 35 36 | |
| | Bracket for level switch | 96 00 33 38 | |
| | Standard float switch, non-mercury type, with 10 m cable and bracket | 1 pump without alarm (2 switches) | 62 50 00 13 |
| | | 1 pump with alarm (3 switches) | 62 50 00 14 |
| | | 2 pumps without alarm (3 switches) | 62 50 00 14 |
| | | 2 pumps with alarm (4 switches) | 62 50 00 15 |
| | Float switches for areas with a risk of explosion, with 10 m cable and bracket | 1 pump without alarm (2 switches) | 62 50 00 16 |
| | | 1 pump with alarm (3 switches) | 62 50 00 17 |
| 2 pumps without alarm (3 switches) | | 62 50 00 17 | |
| 2 pumps with alarm (4 switches) | | 62 50 00 18 | |

In addition to the chemical and thermal properties of the water-proof polypropylene housing as well as the polyurethane cable, the level switches are resistant to alcohol, uric acid, sewage, oils, fats, petrol, fruit acid, as well as a range of chemicals.

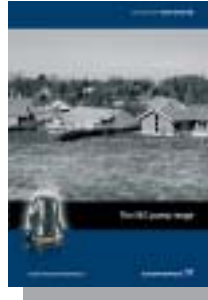
| Level controller | Description | Operating current per pump [A] | Mains switch required [A] | Product number | | | |
|---|--|--------------------------------|---------------------------|---------------------|------------------------|-------------------------|---|
| | | | | Standard controller | Including hour counter | Including start counter | Including combined hour and start counter |
|  | LC 107 controller for 1 pump 3 x 400 V, direct-on-line starting | 1 - 2.9 | 25 | 96 00 24 67 | | | |
| | | 1.6 - 5.0 | 25 | 96 00 24 68 | | | |
| | | 3.7 - 12.0 | 25 | 96 00 24 69 | | | |
| | | 12.0 - 23.0 | 40 | 96 00 24 70 | | | |
| | LCD 107 controller for 2 pumps 3 x 400 V, direct-on-line starting | 1 - 2.9 | 25 | 96 00 24 74 | | | |
| | | 1.6 - 5.0 | 25 | 96 00 24 75 | | | |
| | | 3.7 - 12.0 | 25 | 96 00 24 76 | | | |
| | | 12.0 - 23.0 | 40 | 96 00 24 77 | | | |
| | LC 108 controller for 1 pump 3 x 400 V, direct-on-line starting | 1 - 2.9 | 25 | 96 43 39 91 | 96 43 39 92 | 96 43 39 93 | 96 43 39 94 |
| | | 1.6 - 5.0 | 25 | 96 43 39 95 | 96 43 39 96 | 96 43 39 97 | 96 43 39 98 |
| | | 3.7 - 12.0 | 25 | 96 43 39 99 | 96 43 40 00 | 96 43 40 01 | 96 43 40 02 |
| | | 12.0 - 23.0 | 40 | 96 43 40 03 | 96 43 40 04 | 96 43 40 05 | 96 43 40 06 |
| | LC 108 controller for 1 pump 3 x 400 V, star-delta starting | 6.4 - 20.0 | 25 | 96 43 79 28 | | | |
| | | 20.8 - 30.0 | 40 | 96 43 79 50 | | | |
| | | 20.8 - 59.0 | 80 | 96 43 79 70 | | | |
| | | 24.2 - 72.0 | | 96 43 79 90 | | | |
| | LCD 108 controller for 2 pumps 3 x 400 V, direct-on-line starting | 1.0 - 2.9 | 25 | 96 43 40 39 | 96 43 40 40 | 96 43 40 41 | 96 43 40 42 |
| | | 1.6 - 5.0 | 25 | 96 43 40 43 | 96 43 40 44 | 96 43 40 45 | 96 43 40 46 |
| | | 3.7 - 12.0 | 40 | 96 43 40 47 | 96 43 40 48 | 96 43 40 49 | 96 43 40 50 |
| | | 12.0 - 23.0 | 60 | 96 43 40 51 | 96 43 40 52 | 96 43 40 53 | 96 43 40 54 |
| LCD 108 controller for 2 pumps 3 x 400 V, star-delta starting | 6.4 - 20.0 | 25 | 96 43 80 32 | | | | |
| | 20.8 - 30.0 | 40 | 96 43 80 52 | | | | |
| | 20.8 - 59.0 | 80 | 96 43 80 72 | | | | |
| | 24.2 - 72.0 | | 96 43 80 92 | | | | |

| Description | Product number |
|---|----------------|
| Battery back-up | 96 00 25 20 |
| Hour counter [400 V] | 96 00 25 15 |
| Start counter [400 V] | 96 00 25 17 |
| Combined hour and start counter [400 V] | 96 00 25 19 |
| 25 [A] external mains switch for supply cable | 96 00 25 11 |
| 40 [A] external mains switch for supply cable | 96 00 25 12 |
| 80 [A] external mains switch for supply cable | 96 00 25 13 |
| LC-Ex4 | 96 44 03 00 |

The Grundfos Wastewater Range

The sewage grinder pumps range

Brochure covers the new Grundfos range of sewage grinder (SEG) pumps for pumping of wastewater with toilet discharge.



Heavy-duty submersible sewage pumps

Brochure covers the Grundfos range of submersible channel impeller pumps from 1,65 kW up to 21 kW and SuperVortex pumps up to 29 kW. All designed for handling unscreened raw sewage.



Heavy-duty submersible sewage pumps

Brochure covers the Grundfos range of sewage pumps from 16 kW up to 155 kW for handling of raw sewage in heavy-duty applications.



Super heavy-duty submersible sewage and raw water pumps

Brochure covers the Grundfos range of super heavy-duty channel pumps, axial flow pumps, and propeller pumps from 2,8 kW up to 520 kW.



The portable dewatering pumps range

Brochure covers the Grundfos range of portable dewatering pumps (DW) from 0.8 kW to 20 kW for pumping raw water with abrasives.



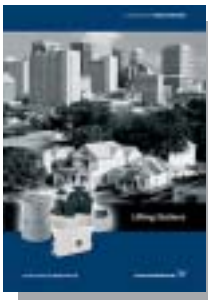
The KP/AP stainless steel range

Brochure covers a wide range of high quality stainless steel pumps for a variety of domestic and commercial applications.



The lifting stations

Brochure covers Grundfos lifting stations for individual as well as multi-user applications.



The range of controls

Brochure covers the Grundfos range of controls for the wastewater pumping systems.



Business with an attitude

Knowledge The sharing of knowledge, experience and expertise across our global network will always lead our business forward.

Innovation Combining the best technology with fresh ways of thinking, we will continue to develop even better pumps, systems, services and standards.

Solution With a complete product range, capable of providing every conceivable water solution, we are the most complete player on the market.