VOGEL - Sewage Pumps
Channel Type Pumps, Design KS
Vortex Type Pumps, Design W, WTS
VOGEL - Pumps with Channel Type Impeller, Design KS

Performance Range:
Capacity up to 500 m³/h (2200 USgpm)
Head up to 45 m (150 feet)
Speed up to 1450 min⁻¹ (1450 r.p.m.)

Sizes:
DN 65 up to DN 150 (21/2” up to 6”) discharge

Temperature:
max. 120°C (250°F)

Casing pressure:
up to 10 bar (145 psig)

Liquids:
Contaminated liquids with solids
Waste water, sludge up to 8% atro
Suspensions, effluents, etc.
Raw, thick or thin juices

Applications:
Industrial or public waste and sewage plants
Chemical industry
Mining
Sugar mills
Pulp and paper mills

<table>
<thead>
<tr>
<th>Mat. code</th>
<th>Impeller</th>
<th>Wear Plates</th>
<th>Casing, Casing cover</th>
<th>Wear rings 1)</th>
<th>Bearing frame, Lantern</th>
<th>Shaft</th>
<th>Shaft sleeve</th>
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1) Casing wear ring optional
Other materials and special version upon request
VOGEL - Pumps with Channel Type Impeller, Design KS

Performance Range: 1450 r.p.m.

Performance Range: 950 r.p.m.
Design versions:

Design KS:
Horizontal pump with closed two channel impeller with wear plate oil lubricated bearing frame. Easy maintenance by back pull out system, disassembling of impeller and bearing frame without disturbing the suction and discharge pipes and the driving motor (spacer type coupling required). Suction branch axial, discharge branch tangential upwards.

Electric drive through flexible coupling, pump and motor mounted on common base plate. Optional V-belt drive, reverse overhead mounted (huckepack design).

Design KSV:
Vertical short shaft version for dry pit installation. Bearing frame grease lubricated powered by vertical flanged IEC motors resting on motor lanterns either through flexible coupling or extended cardan shaft.

Design KST:
Vertical line shaft version for wet or dry installation. Drive head with motor lantern arranged above pump sump or pump floor.
Radial bearings, sleeve bearing arranged in the column pipe. Lubricated by clear water.
Installation length up to 10 m.
 Vogel - Pumps with Channel Type Impeller, Design KS

- Horizontal pump with closed two channel type impeller.
- Wear plate at suction side to protect the casing.
- Casing wear ring optionally available.
- Easy maintenance by back pull out design, disassembling of impeller, shaft sealing and bearing frame without disturbing the suction and discharge pipes and the driving motor (spacer type coupling required).
- Oversized shaft and bearing for continuous heavy duty version.
- Axial thrust bearing (pair of angular contact bearings) at drive side for handling high axial loads in both directions. Roller bearing at pump side.
- Dry shaft design protected by closed impeller nut and shaft sleeve.
- Shaft sealing: stuffing box with external flush or mechanical seals acc. to EN 12756 (DIN 24960), single mechanical seal internal arranged or double seal arrangements.
VOGEL - Pumps with Vortex Type Impeller, Design W

Performance Range:
Capacity up to 900 m³/h (3900 USgpm)
Head up to 60 m (200 feet)
Speed up to 1450 min⁻¹ (1450 r.p.m.)

Sizes:
DN 100 up to DN 200 (4” up to 8”) discharge

Temperature:
max. 120°C (250° F)

Casing pressure:
max. 10 bar (145 psig)

Liquids:
Contaminated liquids with solids and fibres
Unscreened waste water, sludge up 10 % atro
Crystalline suspensions, effluent, etc.
Paper pulp, beet slices

Applications:
Industrial or public waste and sewage plants
Chemical industry
Mining
Sugar mills
Food processing
Pulp and paper mills

Materials:

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<tr>
<th>Mat. Code</th>
<th>Impeller</th>
<th>Casing, Casing cover</th>
<th>Bearing frame, Lantern</th>
<th>Shaft</th>
<th>Shaft sleeve</th>
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Other materials and special versions upon request.
VOGEL - Pumps with Vortex Type Impeller, Design W

Performance Range: 1450 r.p.m.

Performance Range: 950 r.p.m.
Design W:
Horizontal pump with vortex type impeller and oil lubricated bearing frame. Easy maintenance by back pull out system, disassembling of impeller and bearing frame without disturbing the suction and discharge pipes and the driving motor (spacer type coupling required). Suction branch axial, discharge branch vertical upwards.
Electric drive through flexible coupling, pump and motor mounted on common base plate. Optional V-belt drive, reverse overhead mounted (huckepack design).

Design WV:
Vertical short shaft version for dry installation. Bearing frame grease lubricated powered by vertical flanged IEC motor resting on motor lantern either through flexible coupling or extended cardan shaft.

Design WT:
Vertical line shaft version for wet or dry installation. Drive head with motor lantern arranged above pump sump or pump floor. Radial bearings, sleeve bearing arranged in the column pipe. Lubrication by clear water.
Installation length up to 10 m.
• Horizontal pump with vortex type impeller, clogless, large free passage for handling liquids containing solids and fibres.

• Easy maintenance by back pull out design, disassembling of impeller, shaft sealing and bearing frame without disturbing the suction and discharge pipes and the driving motor (spacer type coupling required).

• Oversized shaft and bearing for continuous heavy duty service.

• Axial thrust bearing (pair of angular contact bearings) at drive side for handling high axial loads in both directions. Roller bearing at pump side.

• Dry shaft design protected by closed impeller nut and shaft sleeve.

• Shaft sealing: stuffing box with external flush or mechanical seals acc. to EN 12756 (DIN 24960), single mechanical seal internal arranged or double seal arrangements.
VOGEL - Vertical Sump Pumps with Vortex Type Impeller, Design WTS

Performance Range:
Capacity up to $190 \text{ m}^3/\text{h}$ (840 USgpm)
Head up to $20 \text{ m}$ (65 feet)
Speed up to $1450 \text{ min}^{-1}$ (1450 r.p.m.)

Sizes:
DN 100 (4”) discharge

Temperature:
up to $95^\circ\text{C}$ (200°F)

Design:
Vertical line shaft pump with vortex type impeller. Drive head with motor lantern arranged above pump sump. Radial bearings, sleeve bearings arranged in the column pipe (Bronze bushes and stainl. steel sleeves) lubricated by the handled liquid or optional by external clean water. Discharge connection above the pit cover. Standard length to fit into pits of 1000, 1500, 2000, 2500, 3000 or 3500 mm depth when allowing a distance of 100 mm between the pump suction and the pit bottom.

Liquids:
Clean and/or contaminated liquids containing solids and fibres.

Applications:
Clogging free dewatering of waste water pits in industry as sugar mills, food processing, paper mills, power stations a. s. o.

Materials:
Impeller and casing cast iron 0.6025.
Shaft and sleeve stainl. steel 1.4021.
Bearing bushes Bronze 2.1050.01.

Other materials upon request.
VOGEL - Vertical Sump Pumps with Vortex Type Impeller, Design WTS

Performance Range:

![Graph showing capacity vs. total head for different pump types.]

### Pump Type

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<th>Pump Type</th>
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<td>21 . WTS 18</td>
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<td>31 . WTS 18</td>
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**Naming:**
- 211 WTS 18 E 116: Version with internal lubrication by handled liquid
- 212 WTS 18 E 116: Version with external clean water lubrication
- 213 WTS 18 E 116: Version with external lubrication by grease

- Number of poles (e.g. 6 stands for 930 r.p.m.)
- Motor power in 1/10 kW
- Standard shaft sealing
Liability of manufacturer and/or supplier

The mentioned limits of operation and/or application are only a general information and may not be applied for every case. The permitted range of operation and/or application for the specific case is to be obtained from our acknowledgement of order and/or the instructions for installations, operation and maintenance, sent with the goods.