

Pioneering for You

wilo

Edition 2014

Industry

Range Guide



World Leading.

WILO SE, with headquarters in Dortmund, is one of the world's leading manufacturers of pumps and pump systems for heating, air conditioning and cooling technology, as well as for water supplies and sewage treatment and disposal.

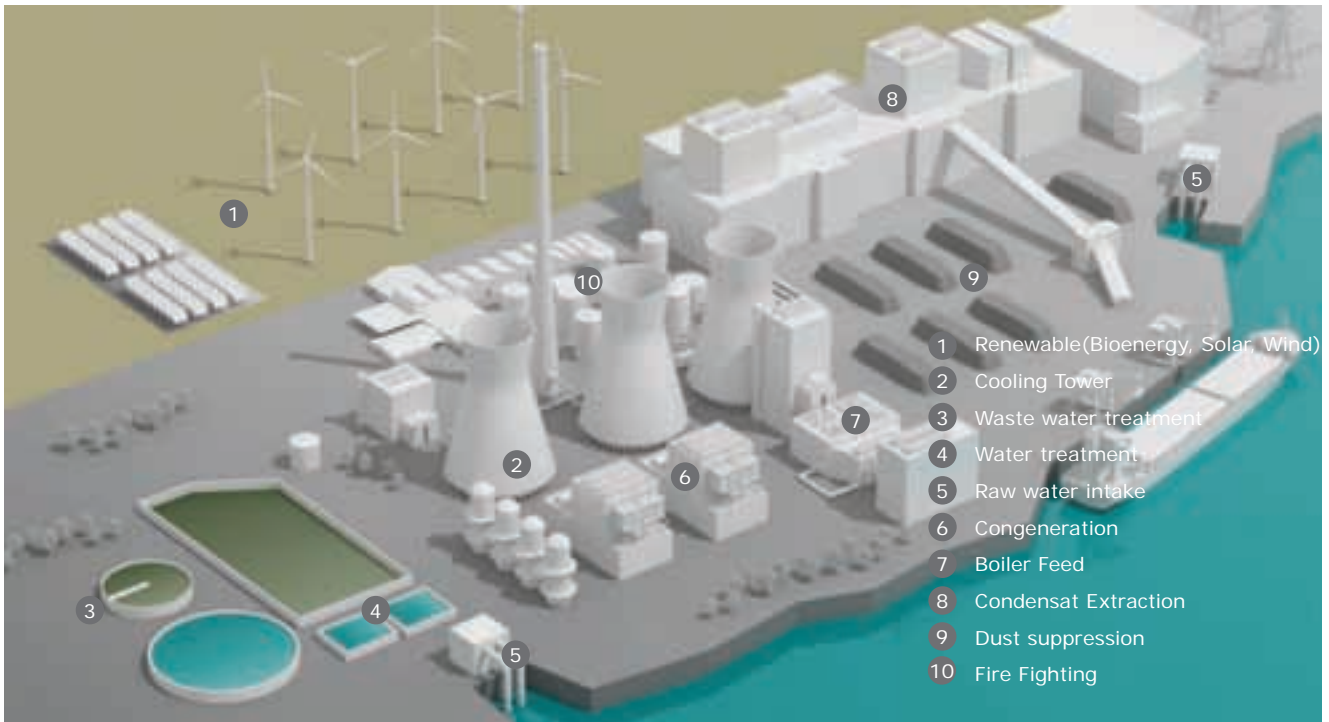
We are there for you worldwide.

Since 1872, we at Wilo have been turning visionary ideas into intelligent solutions that regularly set new standards in the industry. The goal of our company founder, Louis Oplander, was to use his copper and brass goods factory to improve and facilitate the supply of water and heat to people. He did this with great success: in 1928, he designed the world's first circulation accelerator and revolutionised the field of heating technology. Since then, our company history has been marked again and again by pioneering innovations such as the world's first high-efficiency pump for heating, air-conditioning and cooling and the world's first decentralised pump systems.

Today Wilo SE, with its headquarters in Dortmund, is one of the world's leading manufacturers and providers of pumps and pump systems for heating, air conditioning and cooling, for water supply and sewage disposal. With over 6,700 employees and 60 production and sales companies all over the world, we personally see to it that the desires and requirements of our customers and users are optimally met every day – with pioneering developments and solutions, high-efficiency products, tailored solutions for special applications and for industry and extensive service offerings. This is what we mean by Pioneering For You.



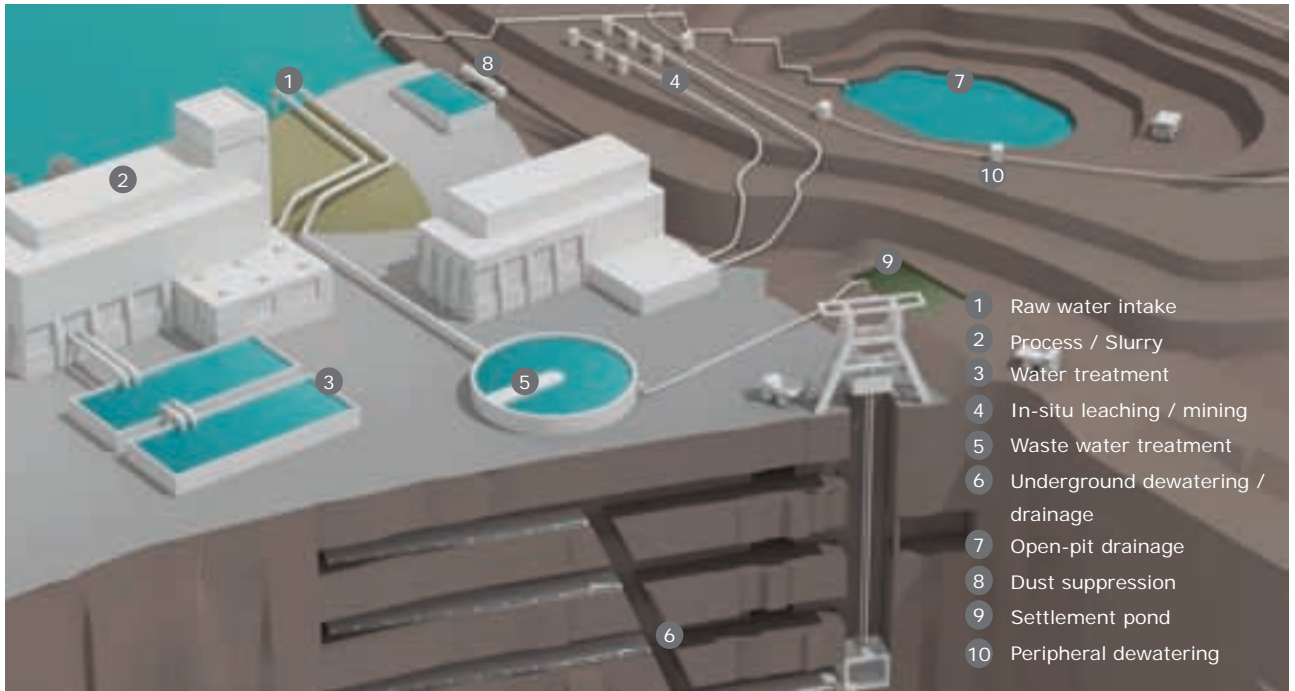
Power Industry.



Product / Application Matrix Power

								
	Borehole	Waste Water Submersible	Split Case	End Suction	Vertical turbine	Booster Sets	Mixers	In-Line
Q_{max} . m ³ /h	2.500	8.000	3.400	3.000	50.000	800	5.720 N	1150
H_{max} . m	580	100	245	140	450	160		110
Renewable energy	✓			✓		✓	✓	✓
Cooling tower	✓	✓	✓	✓	✓	✓		✓
Waste Water Treatment		✓					✓	
Water Treatment		✓	✓	✓		✓		
Raw Water Intake	✓	✓	✓	✓	✓			
Cogeneration			✓	✓				✓
Boiler feed						✓		
Condensate extraction			✓	✓	✓			✓
Dust suppression	✓					✓		
Fire Fighting	✓		✓	✓		✓		

Mining.

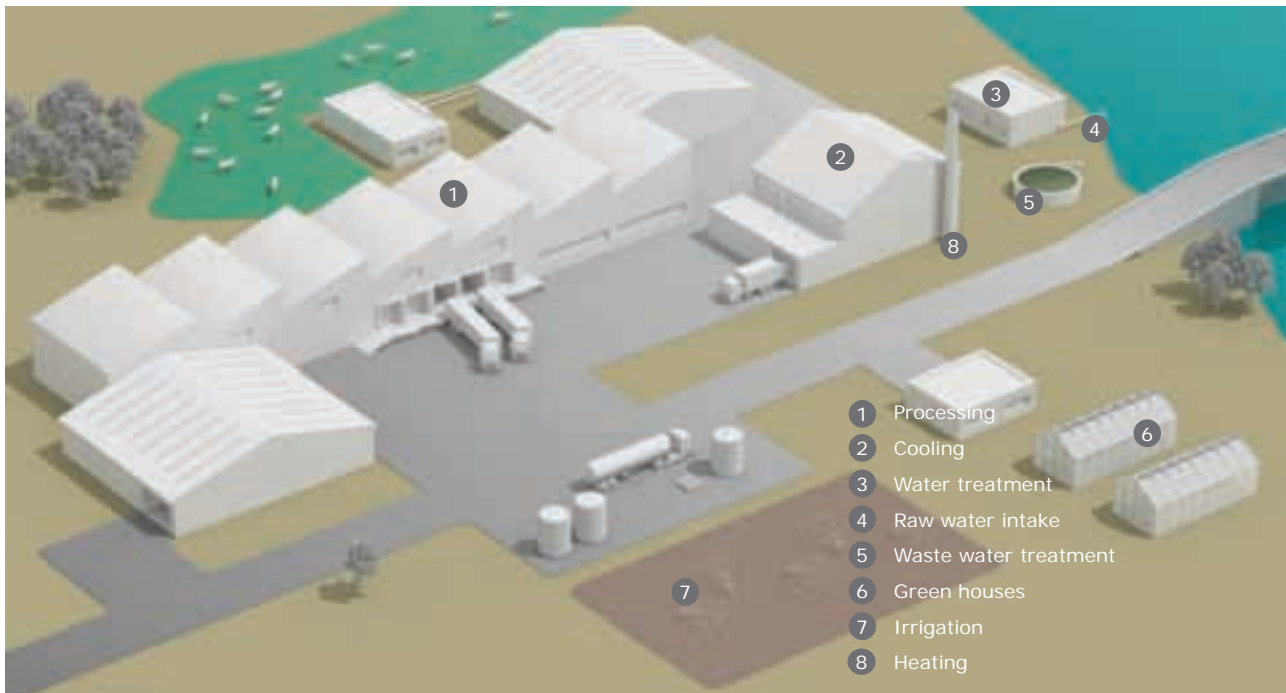


Product / Application Matrix Mining



	Borehole	Waste Water Submersible	Split Case	End Suction	Vertical turbine	Booster Set	Mixers
$Q_{max.} m^3/h$	2.500	8.000	3.400	3.000	50.000	800	5.720 N
$H_{max.} m$	580	100	245	140	450	160	
Raw Water Intake	✓	✓	✓	✓	✓		
Process / Slurry		✓					✓
Water Treatment		✓	✓	✓		✓	
In situ Leaching	✓						
Waste Water Treatm.		✓					✓
Undergr. dewatering	✓	✓			✓		
Open pit drainage	✓	✓					
Dust Suppression	✓					✓	
Settlement Pond		✓	✓		✓		✓
Peripheral dewatering	✓		✓		✓		

Food and Beverage Industry.

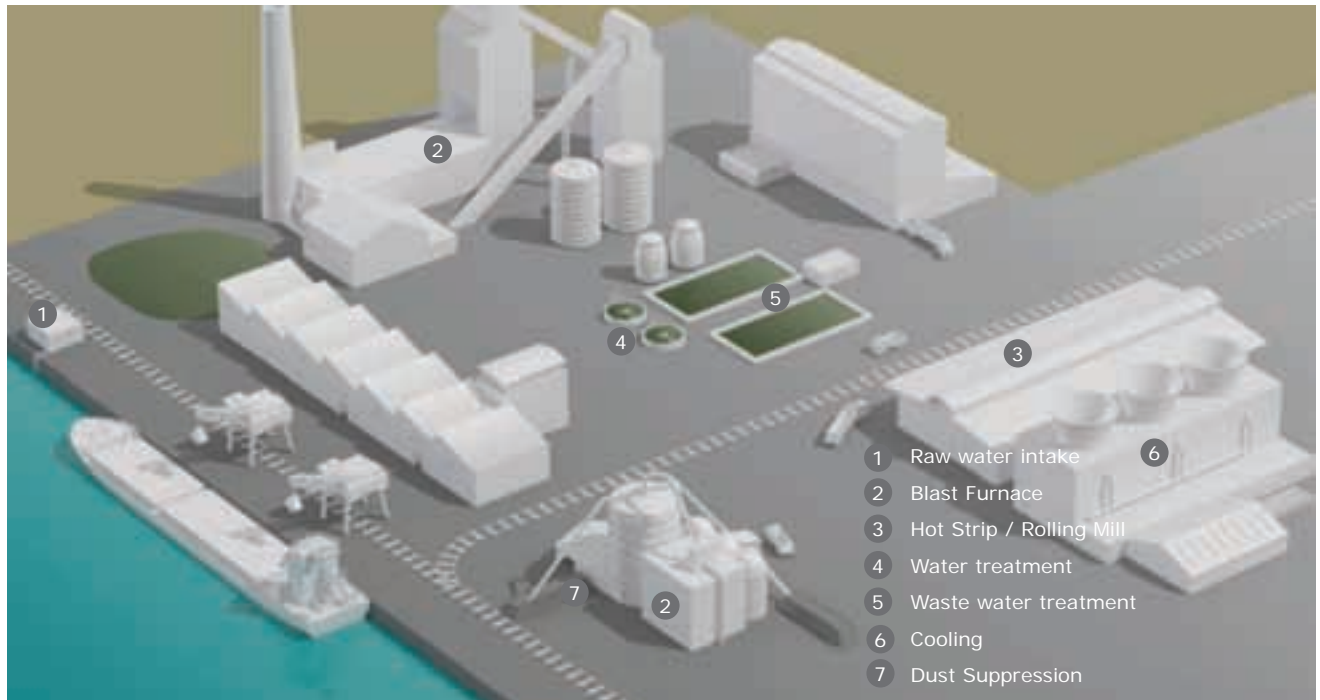


Product / Application Matrix F & B



	Borehole	Waste Water Submersible	Split Case	End Suction	HVAC Pumps	Booster Sets	Mixers	In-Line
$Q_{max.} m^3/h$	2.500	8.000	3.400	3.000	100	800	5.720 N	1150
$H_{max.} m$	580	100	245	140	12	160		110
Hygienic / Process							✓	
Cooling	✓	✓	✓	✓		✓		✓
Water Treatment		✓		✓		✓	✓	
Raw Water Intake	✓	✓	✓	✓				
Waste Water Treatm.		✓					✓	
Green Houses	✓				✓			✓
Irrigation	✓	✓		✓				✓
Heating				✓	✓			✓

Metal Industry.



Product / Application Matrix Metal



	Borehole	Waste Water Submersible	Split Case	End Suction	Vertical turbine	Booster Sets	Mixers	In-Line
Q_{max} . m ³ /h	2.500	8.000	3.400	3.000	50.000	800	5.720 N	1150
H_{max} . m	580	100	245	140	450	160		110
Raw Water Intake	✓	✓	✓	✓	✓			
Blast furnace		✓	✓	✓				✓
Hot Strip / Rolling Mill		✓	✓	✓		✓		✓
Water Treatment		✓		✓		✓		
Waste Water Treatment		✓					✓	
Cooling		✓	✓	✓	✓			✓
Dust Suppression	✓					✓		



Product range	Borehole pumps	Submersible sewage pumps	Standard glanded pumps
Series	Wilo-EMU 4" to 24" TWI/NK/K + Polder	Wilo-EMU, FA, Rexa, Contractor	Wilo-CronoNorm-NLG-NL Wilo-VeroNorm-NPG-BL Long coupled: NL, NLG, NPG Close coupled: BL
Field of application	Water distribution/boosting, clean water treatment, raw water intake, desalination, professional irrigation/agriculture	Special applications, wastewater collection and transport, wastewater treatment, dewatering industrial process	Heating, air-conditioning, cooling, water supply, industrial process
Design	Submersible pump with sectional construction	Submersible sewage pump with glanded motors or self-cooling motors	Single-stage low-pressure centrifugal pump with axial suction, according to ISO 5199, mounted on a baseplate
Application	Supply of potable and other water from boreholes and rainwater storage tanks; process water supply; municipal and industrial water supply; sprinkling and irrigation; pressure boosting; lowering the ground water level; utilisation of geothermal energy and in offshore applications; supply of water to decorative fountains, snow cannons and water organs	Pumping sewage with solid content in wastewater treatment plants and pumping stations; local drainage and industrial applications	<ul style="list-style-type: none"> Pumping clean or slightly contaminated water (max. 20 ppm) without solid matter, for circulation, transfer and pressure boosting purposes Pumping heating water in accordance with VDI 2035, water/glycol mixtures, cooling/cold water and process water Applications in municipal water supply, irrigation, building services, general industry, power stations, etc.
Volume flow Q max.	2,500 m ³ /h	8000 m ³ /h	3000 m ³ /h
Delivery head H max.	560 m	100 m	140 m
Technical data	<ul style="list-style-type: none"> Mains connection: 3~400 V, 50 Hz Immersed operating mode: S1 Max. fluid temperature: 20 ... 30 °C Minimum flow rate at motor: 0.1 ... 0.5 m/s Max. sand content: 35 g/m³ Up to 10 starts per hour Max. immersion depth: 100 or 300/350 m Protection class: IP 68 Control range for frequency converter: 25...50 or 30...50 Hz MEI: ≥ 0.10 (for the series NK 6...) 	<ul style="list-style-type: none"> Mains connection: 1~230 V, 50 Hz or 3~400 V, 50 Hz Immersed operating mode: S1 Non-immersed operating mode: S2-30 min, S3 25 % Protection class: IP 68 Insulation class: F Fluid temperature: 3~40 °C Free passage: 50/65/80 mm Max. immersion depth: 20 m 	<ul style="list-style-type: none"> Permitted temperature range of the fluid -20 °C to +120 °C (depending on type) Mains connection 3~400 V, 50 Hz Minimum efficiency index MEI ≥ 0.1 (for the series) Protection class IP 55 Nominal diameters: DN 150 to DN 500 (depending on type) Max. operating pressure: varies according to type and application – up to 16 bar
Equipment/function	<ul style="list-style-type: none"> Multistage submersible pump Radial or semi-axial impellers Hydraulics and motor freely configurable according to power requirements Integrated non-return valve (depending on type) NEMA coupling or standardised connection (with motors 10" and greater) Three-phase motor for direct or star-delta start 	<ul style="list-style-type: none"> Heavy duty version made of cast iron. Self-cooling motors with 1- or 2-chamber system Simple installation via suspension unit 	<ul style="list-style-type: none"> Single-stage horizontal spiral housing pump with bearing bracket and exchangeable stationary wear rings (NLG only) in process design Shaft sealing with mechanical seals in accordance with EN 12756 or packing stuffing box Spiral housing with cast pump bases Greased grooved ball bearings for bearing of pump shaft <p>Materials for NLG:</p> <ul style="list-style-type: none"> Pump housing and pressure lid: EN-GJS-500-7 Bearing bracket: EN-GJL-250 Impeller: EN-GJL-250 Shaft: 1.4028 Stationary wear rings: G-CuSn10 Mechanical seal: AQ1EGG <p>Materials for NPG:</p> <ul style="list-style-type: none"> Pump housing: EN-GJL-250 Impeller: EN-GJL-250 Shaft: 1.4028 Other materials on request
Special features	<ul style="list-style-type: none"> Corrosion-resistant impellers Special materials possible Impeller trimming allows custom adaptation to duty point Motors with CoolAct technology for high power density (with motors 10" and greater) High voltage up to 6000 V possible Vertical and horizontal installation possible Ceram CT coating possible to increase efficiency (with hydraulics 8" and greater) Pressure shroud installation possible 	<ul style="list-style-type: none"> Operation in stationery wet well and dry well insulation Easy installation via suspension unit Special materials and coatings against abrasion and corrosion Longitudinally watertight cable inlet (depending on motor) Adjustment of duty point by trimming the impeller 	<ul style="list-style-type: none"> Motors with higher efficiency as standard; motors with IE2 technology if rated motor power is 0.75 kW or more Worldwide obtainability of standard motors and mechanical seals



Product range	Axially split case pumps	Vertical turbine pumps	Multi-pump pressure boosting systems with speed controlled pumps or base-load pump
Series	Wilo-SCP	Series VMF, CNE, VAF	Wilo-SiBoost Smart Helix V Wilo-SiBoost Smart Helix VE Wilo-SiBoost Smart Helix EXCEL ...COR MVIE-VR, COR MVISE-VR, COR MHIE
Field of application	Cooling, air-conditioning, water distribution/boosting, industrial process	Water distribution/boosting, industrial process	Water distribution/boosting
Design	Low-pressure centrifugal pump with axially split housing mounted on a baseplate	Vertical turbine pumps for dry well installation with submerged axial or semi-axial hydraulics	Highly efficient pressure boosting system with 2 to 4 stainless steel, non-self-priming, high-pressure multistage centrifugal pumps (Helix V, VE or EXCEL) switched in parallel, including Smart Controller SC (available with and without frequency converter FC)
Application	Pumping heating water in accordance with VDI 2035, water/glycol mixtures, cooling/cold water and process water Applications in municipal water supply, irrigation, building services, general industry, power stations, etc.	For industrial or municipal water supply and <ul style="list-style-type: none"> • Irrigation • Fire fighting • Cooling water supply • Dewatering and flood control 	For fully automatic water supply and pressure boosting in residential and office buildings and in industrial systems <ul style="list-style-type: none"> • For pumping potable water and process water, cooling water, water for fire-fighting (except for fire extinguishing systems in accordance with DIN 14462) or other service water
Volume flow Q max.	3,400 m ³ /h Standard (larger engineered product available).	50,000 m ³ /h	80 m ³ /h
Delivery head H max.	245 m	450 m	160 m
Technical data	<ul style="list-style-type: none"> • Permitted temperature range -8 °C to +120 °C • Mains connection 3~400 V, 50 Hz • Protection class IP 55 • Nominal diameter on suction side DN 65 to DN 600 • Nominal diameter on pressure side DN 50 to DN 500 • Max. operating pressure: 16 or 25 bar depending on type 	<ul style="list-style-type: none"> • Permitted temperature range up to 80 °C, or up to 105 °C on request • Nominal diameter on pressure side DN 100 to DN 2000 	<ul style="list-style-type: none"> • Mains connection with Helix V: 3~230 V/400 V, 50 Hz with Helix VE and EXCEL: 3~400 V, 50 Hz • Max. fluid temperature 50 °C (70 °C optional) • Operating pressure 16 bar (25 bar optional) • Inlet pressure 10 bar • Nominal connection diameters R 1½" - DN 100 • Protection class IP 54 (SC control device)
Equipment/function	<p>1- or 2-stage, low-pressure centrifugal pump in monobloc design</p> <ul style="list-style-type: none"> • Delivered as complete unit (pump with coupling, coupling protection, motor and baseplate) or without motor or only pump hydraulics • Shaft sealing with mechanical seal or stuffing box packing • 4-pole and 6-pole motors <p>Materials:</p> <ul style="list-style-type: none"> • Pump housing: EN-GJL-250 • Impeller: G-CuSn5 ZnPb • Shaft: X12Cr13 	<p>For types of installation with pressure port, for concealed floor, floor-mounted or twin-ceiling installation</p> <ul style="list-style-type: none"> • Design: <ul style="list-style-type: none"> - As removable or permanent installation - With axial or semi-axial, single or multistage hydraulics - With open shaft for bearing lubrication with the fluid, or with shaft trim for separate bearing lubrication • Drive options: Electric motor, diesel motor or steam turbine 	<ul style="list-style-type: none"> • 2 to 4 pumps per system • Automatic pump control via Smart Controller SC. Smart FC version also includes a frequency converter in the switchbox • Components that come in contact with fluid are corrosion-resistant • Base frame made of galvanised steel, with height-adjustable vibration absorbers, cable inlet, and integrated hoisting gear • Check valve on the suction and pressure sides of each pump • Non-return valve, on the pressure side • Pressure sensor, pressure side • Pressure gauge, pressure side • Optional low-water cut-out switchgear with pressure gauge, suction side
Special features	<ul style="list-style-type: none"> • Higher capacities up to 17,000 m³/h on request • Special motors and other materials on request 	<ul style="list-style-type: none"> • Minimum surface area needed • High hydraulic efficiency • Submerged pump hydraulics • Design to order as per customer specifications 	<ul style="list-style-type: none"> • High-efficiency pump hydraulics • IE2 standard motors (IE3 / option), systems with Helix EXCEL with high-efficiency EC motor (efficiencies > IE4 acc. to IEC TS 60034-31 Ed.1) • Hydraulics of entire system are pressure-loss optimised • Integrated dry-running detection and low water cut-out switch • SC control device



Product range	Submersible mixer	Vertical, multistage centrifugal pumps Helix VE, MVI, MVIE	Pumps station with synthetic tank
Series	Wilo-EMU TR 212 to TR 226 Wilo-EMU TR 316 to TR 326 Wilo-EMU TRE with IE3 motor	Wilo-Helix EXCEL Helix VE/V MVIE, MVI, MVIE	Wilo-DrainLift WS 830 Wilo-DrainLift WS 900 Wilo-DrainLift WS 1100
Field of application	Special applications, wastewater treatment	Water distribution/boosting	Wastewater collection and transport
Design	Slow-running submersible mixer with two-stage planetary gear reduction	Non-self-priming, highly efficient, fully stainless-steel high-pressure multistage centrifugal pump with EC motor in vertical design with integrated high-efficiency drive and in-line connections	Pumps station with synthetic tanks, as single- or double-pump system
Application	Energetically optimised mixing and circulation of activated sludge; generation of flow rates in circulation channels; other applications in industry	<ul style="list-style-type: none"> Water supply and pressure boosting Industrial circulation systems Process water Cooling water circulation systems Washing systems Irrigation 	For pumping untreated sewage that cannot be discharged to the sewer system via the natural fall
Volume flow Q max.	Thrust: 390 – 5720N	145 m ³ /h	180 m ³ /h
Delivery head H max.		243 m	55 m
Technical data	<ul style="list-style-type: none"> Mains connection: 3~400 V, 50 Hz Immersed operating mode: S1 Protection class: IP 68 Max. fluid temperature: 40 °C Two-stage planetary gear with exchangeable second planetary gear speed Mechanical seal with SiC/SiC pairing Permanently lubricated roller bearings Max. immersion depth: 20 m 	<ul style="list-style-type: none"> Fluid temperature: -20 to +120 °C with EPDM (-10 to +90 °C with FKM) Max. operating pressure: 16/25 bar Protection class IP 55 Minimum efficiency index MEI ≥ 0.7 (for the series) 	<ul style="list-style-type: none"> Synthetic pumps station made of recyclable PE Maximum upward pressure reliability due to 2 or 4 lateral fins 2/4 inlets can be selected on site Maximum stability due to moulded hemispherical shape of the sump floor Wilo surface coupling Easy accessibility of the level sensor due to installation with hinged supporting bar Maximum traffic load 5 kN/m² (in accordance with DIN EN 124, group 1) Max. pressure in the pressure pipe 6 bar
Equipment/function	<ul style="list-style-type: none"> Installation with stand allows free placement in basin Flexible installation Two-stage planetary gear with exchangeable second planetary gear speed 	<ul style="list-style-type: none"> Impellers, diffusers and stage housings made of corrosion-resistant material Version in stainless steel 1.44XX for aggressive media Versions <ul style="list-style-type: none"> Helix EXCEL 2 – 16, PN 16 with oval flanges, PN 25/Pmax: 30 bar with round flanges in accordance with ISO 2531 and ISO 7005 Helix EXCEL 22 – 36, PN 16 and PN 25/Pmax: 30 bar with round flanges in accordance with ISO 2531 and ISO 7005 High-efficiency EC motor (efficiencies > IE4 acc. to IEC TS 60034-31 Ed.1) 	Wilo-Drain pumps which can be used: TS 40 TP 50 TP 65 TP 80 FIT V05 PRO V05, V06 MTC 32 MTC 40 MTS 40
Special features	<ul style="list-style-type: none"> 2-stage planetary gear for adjusting the propeller speed Self-cleaning propeller Propeller blades can be replaced individually Easy-to-install blades and hub Propeller in GRP version ATEX and FM versions Gear shaft 1.4462 Type "TRE" with IE3 performance optimised motors (derived from IEC 60034-30) 	<ul style="list-style-type: none"> Efficiency-optimised, laser-welded 2D/3D high-efficiency hydraulics (MEI ≥ 0.7) Integrated electronic control "High-Efficiency Drive" with wide control range Control modes: speed control, constant pressure, PID The spacer coupling allows the mechanical seal to be replaced without removing the motor (from 7.5 kW) Intermediate bearings (Al203/CW) for long service life WRAS/KTW/ACS approval for all parts that come in contact with the fluid (EPDM version) 	<ul style="list-style-type: none"> Deposit-free collection space Maximum stability due to hemispherically shaped sump floor 2/4 inlets can be selected on site V4A stainless steel pipework Also with Wilo-Drain MTC 32, MTC 40, MTS 40 macerator pumps



Product range	Glanded high-efficiency pumps in in-line design, single and twin head	Glandless premium high-efficiency pumps
Series	Wilo-Stratos GIGA IP, IPE, IL, ILE, IPH, IPO DLE, DL, DPE, DPL	Wilo-Stratos PICO / Yonos PICO Stratos Eco / Stratos D
Field of application	Heating, air-conditioning, cooling, industrial process	Heating, air-conditioning, cooling
Design	High-efficiency in-line pump with EC motor, electronically controlled, with flange connection, in glanded design	Glandless circulation pump with screwed connection, EC motor and automatic power adjustment
Application	Pumping of heating water (in accordance with VDI 2035), cold water and water/glycol mixtures without abrasive substances in heating, cold water and cooling systems.	Hot-water heating systems of all kinds, air-conditioning applications, industrial circulation systems
Volume flow Q max.	1150 m ³ /h	61 m ³ /h
Delivery head H max.	110 m	16 m
Technical data	<ul style="list-style-type: none"> Permitted temperature range of the fluid -20 °C to +310 °C Mains connection: 3~380 V - 3~480 V (±10 %), 50/60 Hz Minimum efficiency index MEI ≥ 0.7 (for the series) Protection class IP 55 Max. operating pressure 16 bar up to +120 °C, 13 bar up to +140 °C 	<ul style="list-style-type: none"> Fluid temperature +2 °C to +110 °C Mains connection 1~230 V, 50 Hz Energy Efficiency Index (EEI) ≤ 0.20 (see also rating plate) Protection class IP X4D Screwed connection Rp ½, Rp 1 and Rp 1¼ Max. operating pressure 10 bar
Equipment/function	<p>Single-stage, low-pressure centrifugal pump in in-line design with</p> <ul style="list-style-type: none"> Mechanical seal Flange connection Lantern Coupling Electronically controlled EC motor <p>Materials:</p> <ul style="list-style-type: none"> Pump housing and lantern: EN-GJL-250 Impeller: PPS-GF40 Shaft: 1.4122 Mechanical seal: AQ1EGG, other mechanical seals on request 	<ul style="list-style-type: none"> Control mode: Δp-c and Δp-v; Dynamic Adapt control function can be combined with Δp-v Automatic setback operation Automatic venting routine Automatic deblocking function Display indication of current power consumption in W and cumulative electricity consumption in kWh Reset function for resetting the electricity meter Reset function for resetting to factory settings Blocking-current proof motor Particle filter Quick electrical connection with Wilo-Connector Options: version with red-brass pump housing for use in underfloor heating systems; version with short port-to-port length 130 mm
Special features	<ul style="list-style-type: none"> Maximum overall efficiency based on a new Wilo glanded design Highly efficient EC motor (efficiency higher than IE4 limit values) High-efficiency hydraulics adapted to the EC motor technology, with optimised efficiency, minimum efficiency index (MEI) ≥ 0.7 Integrated electronic control Control range is up to three times as high as for conventional electronically controlled pumps Interfaces to bus communication Integrated dual-pump management with efficiency-optimised peak-load operation 	<ul style="list-style-type: none"> High-efficiency pump especially for single and two-family houses, as well as for two to six-family houses. Up to 90% electricity savings compared to older uncontrolled heating pumps Only 3 watts minimum power consumption Very high starting torque for reliable starting Integrated motor protection Venting routine for automatic venting of the rotor chamber

Service

Wilco Service ensures the smooth efficient operation of all your pump equipment, improving reliability in operation, and giving peace of mind 24 hours a day.



Energy Solutions

Wilco Energy Solutions helps to reduce operating costs when replacing pumps, ensuring the correct specifications and latest high efficiency options are explored.

Life Cycle Costs

Life Cycle Costs are optimised with Wilco Pumps in conjunction with Service and Wilco Energy Solutions, see what you could save.

Service

- Technical Support
- Remedial Work
- On-site repair
- Root cause analysis
- Service contracts and commissioning

Energy Solutions

- Carbon Reduction
- Lower Energy costs
- Operation Optimisation
- Efficiency Savings
- Future – proof products

Life Cycle Costs

- Comparisons of old product vs new product
- Lower maintenance costs
- Decrease downtime costs
- Faster amortisation
- Lower energy costs

Finding the right solution.
This is what we call Pioneering for You.



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