

### **WELCOME**

**WEBINAR WASTE WATER BD-WILO-2022** 

Rohan Vedak | International Sales | Pune | India



- 1. Wilo Group Overview & Infrastructre
- 2. R&D & Expertise
- 3. Wilo Operation in Bangladesh
- 4. Products & Services
- 5. Experience with Solid Handling & Solution
- 6. QA



# 1. Wilo Group Overview

### WILO PROFILE



The Wilo Group is one of the **world's leading premium providers** of pumps and pump systems for the building services, water management and industrial sectors. In the past decade, we have developed from a hidden champion into a visible and connected champion. Today, Wilo has around 8,000 employees worldwide.

Our **innovative solutions**, smart products and individual services move water in an intelligent, efficient and climate-friendly manner. We are also making an important contribution to climate protection with our sustainability strategy and in conjunction with our partners. We are systematically pressing ahead with the digital transformation of the Group. We are already the **digital pioneer in the industry** with our products and solutions, processes and business models.

#### **MARKET SEGMENTS**



BUILDING SERVICES
RESIDENTIAL



BUILDING SERVICES COMMERCIAL



**OEM** 



WATER MANAGEMENT



**INDUSTRY** 

# INGENUITY, MOTIVATION AND COMMUNITY SPIRIT

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The Opländer family of entrepreneurs and philanthropists in Dortmund has a history of private enterprise going back almost 150 years – a long tradition that all started with Caspar Ludwig Opländer.



CASPAR LUDWIG OPLÄNDER known as "Louis" 26 February 1845 to 10 October 1891



**LOUIS OPLÄNDER**7 March 1873 to
18 May 1962



WILHELM OPLÄNDER 11 January 1901 to 6 March 1984



DR.-ING. H.C. JOCHEN OPLÄNDER Born on 30 January 1931



**OLIVER HERMES** *Born on 13 November 1970* 

### THE WILO SE **EXECUTIVE BOARD**

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**OLIVER HERMES** President & Chief Executive Officer Chief Technology Officer (CEO)



**GEORG WEBER** (CTO)



**MATHIAS WEYERS** Chief Financial Officer (CFO)



**DR. PATRICK NIEHR** Chief Change Officer (CCO)

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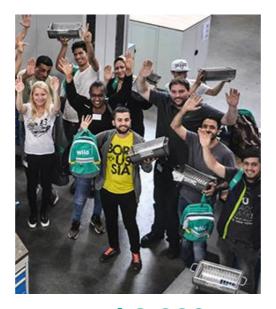
### WILO GROUP KEY FIGURES

#### **EUR 1.65 billion**

Despite the difficult conditions due to the pandemic and the economic , the Wilo Group achieved net sales of 1,650 MILLION EURO



> 2,500 service technicians look after Wilo's customers worldwide.



around 8,000 employees are working for the Wilo Group.

# ~ 10 MILLION pumps are produced every year.



### WILO, THE COMPANY BUILT ON **TRADITION**



2011 New factory in Kolahpur (India)

2012 New factory in Beijing (China)









We are establishing a new production complex in Dortmund of 120,000 square metres in size, with a modern building for research and development, sales and administration.



**WILO SE** 

Foundation of Invention of the world's first circulation accelerator

WILDPUMPE



**Production of** the first borehole pump



Wilo launches the world's first high-efficiency pump



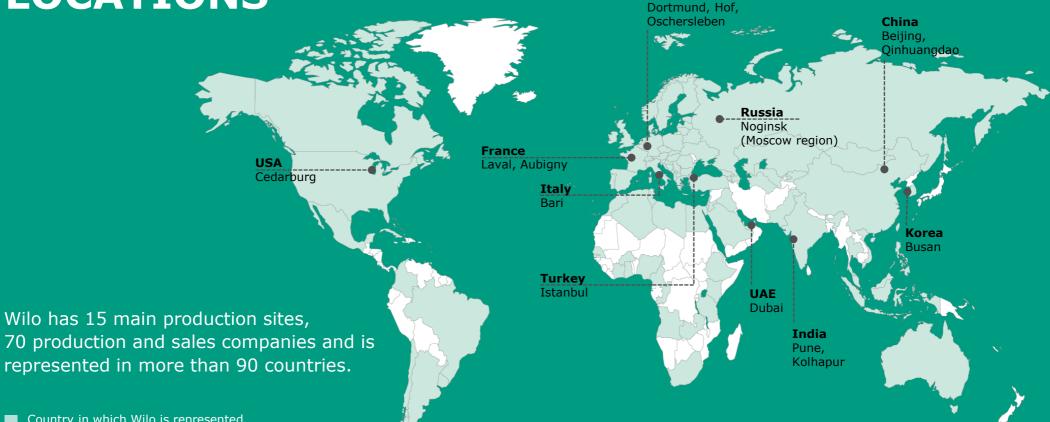
Foundation of the Caspar Ludwig Opländer **Foundation** 





**WILO GROUP LOCATIONS** 





**Germany** 

70 production and sales companies and is represented in more than 90 countries.

Country in which Wilo is represented

Main production sites

### **WILO PARK**

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# BUILDING THE FUTURE

Our **new headquarters is** constructed on more than **190,000 square metres** at our Dortmund site. The first new building started operations in Feb 2021 **"The smart factory"**.

The Wilo Group honoured the grand opening of the Wilopark with a digital event on the 04th of February 2021. Over 1500 high-ranking international guests from business and politics as well as Wilo employees took part.

Guests of honour included German Chancellor Dr. Angela Merkel, the Minister President of North Rhine-Westphalia Armin Laschet, the Ministers of North Rhine-Westphalia Prof. Andreas Pinkwart and Karl-Josef Laumann as well as the Deputy Prime Minister of the Republic of Kazakhstan Roman Sklyar



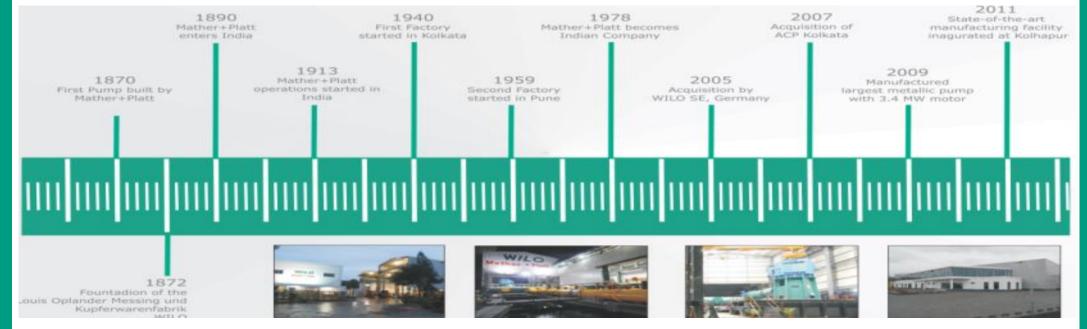


# 2. Wilo India Overview

#### **COMPANY HISTORY**



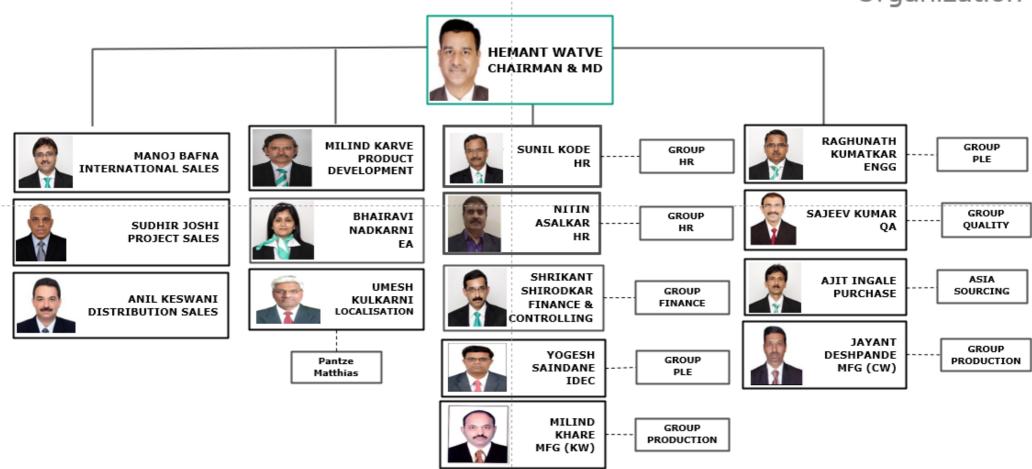
1870	First pump built by Mather +Platt	2005	Acquisition by WILO SE
1913	Mather + Platt operations started in India	2007	Acquisition of ACP Kolkata
1940	First factory started in Kolkata	2009	Manufactured largest VT pump with 3.4 MW motor
1959	Second factory started in Pune	2011	State-of-the-art manufacturing facility inaugurated in Kolhapur
1978	Mather + Platt becomes Indian company	2014	Name changed to WILO Mather and Platt Pumps Pvt. Ltd.



### WILO INDIA ORGANISATION

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Organization



## WILO INDIA AT A GLANCE

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Total area: 26,309 sq.m

Total built-up area: 10,279 sq.m



Power connection: 4,500 kVA Captive power: 1,070 kVA



Total area: 40,436 sq.m

Total built-up area: 9,676 sq.m



Power connection: 764 kVA Captive power: 1,200 kVA (2DG)



### **PUNE FACILITY**

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Trevisan DS 600 X-2000 mm,Y-1500 mm,Z-1100 mm.



>15 CNC - Vertical & Horizontal turning centers & Machining centers. (CNC VTL & HMC in Plan) Max.Dia. 3000 mm, Height 2800mm, Max.Weight 8000 Kg >30 Conventional Machines - Drilling ,Boring ,



- >15 CNC Vertical & Horizontal turning centers & Machining centers. (CNC VTL & HMC in Plan)
- Max. Dia. 3000 mm, Height 2800 mm, Max.Weight 8000 Kg
- >30 Conventional Machines Drilling ,Boring , Milling
- >Vertical Turning Center

Table dia. 4000 mm , Height 3800 mm , Max, Weight 18000 Kg

### **TEST BED AT PUNE FACILITY**

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- > 6 test set ups for Split case pumps
- > 5 test set ups for Vertical pumps



#### **Test bed**

- > Testing as per ISO 9906 / IS 9137 / HIS / BS 5312
- > EOT crane capacity: 60 Ton
- > Voltage: 3.3,6.6,11 KV

#### **Testing Capacity**

- > Flow: Up to 60000 m3/hr
- > Head: Up to 2000 m > Power: Up to 4.5 MW



### **KOLHAPUR FACILITY**

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CNC Horizontal & Vertical turning centresCNC Horizontal & Vertical Machining centres



> Lean Manufacturing concept



> CI and Bronze Foundry for impellers

(1 ton single piece)



#### **Test bed**

> Flow: Up to 1000 m3/hr

> Power: Up to 400 kW

> Close Loop Set up

> Data Acquisition

#### **NEW PRODUCTION FACILITY**

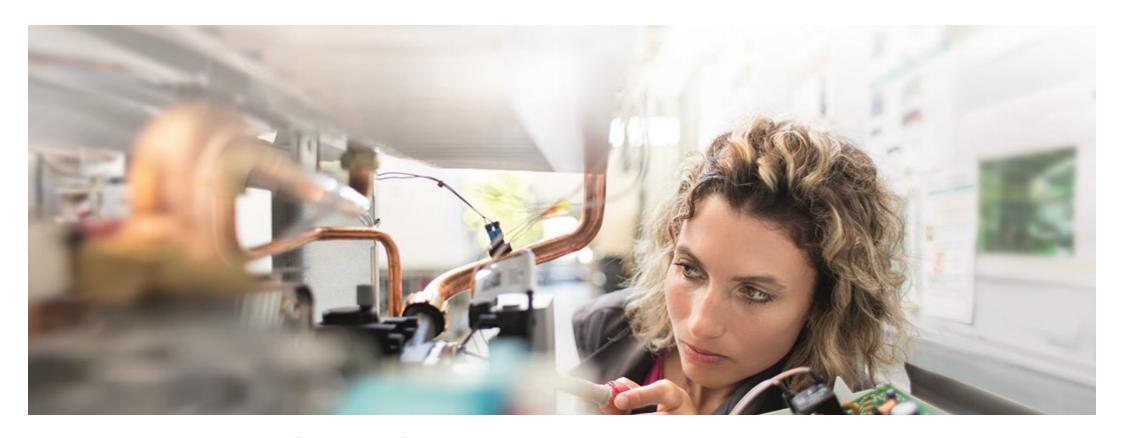
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#### **New Facility:**

- State of Art Facility "Green Field Project"
- Advanced operation & material handling facility
- Largest test bed in Pump Industry, 1,30,000 m3/hr







# 3. Research and Development



### **IDEC- Development And Engineering Centre**



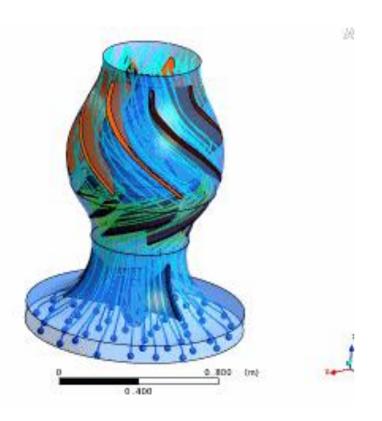
Our Development And Engineering Centre (R&D) Is Recognised By Ministry Of Science And Technology, Govt Of India For Research And Development Activity

- Basic hydraulic design from scratch.
- Numerical flow simulation using CFD to visualize the flow pattern and to predict the performance.
- · Flow analysis in pump intake.
- Upgradation of existing hydraulic design for improvement of performance in terms of efficiency and cavitation characteristics.
- Finite Element Analysis for structural design, stress and vibration analysis.
- Rotodynamic analysis for multistage Boiler Feed Pump.



#### **ENGINEERING CAPABILITIES**





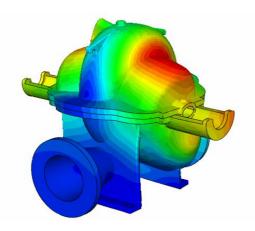
#### **Process & Capability**

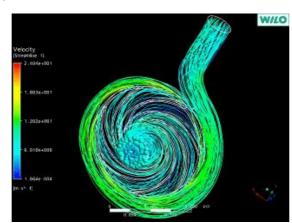
- IDEC in India working in close co-ordination & directly reporting to Group RI&T, Germany
- Design team of 36 qualified engineers
- CFD & Finite Element Analysis
- Reverse Engineering

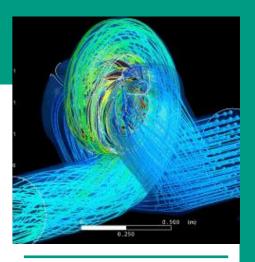
#### **ENGINEERING CAPABILITIES**

#### **Engineering capabilities include**

- 3D CAD Modeling
- In-house hydraulic design
- Flow Analysis
- Intake design review using CFD
- Stress, Torsional & Seismic analysis







**SOFTWARE'S USED** 

**ANSYS 19.0** 

**ABAQUS** 

**HYPERMESH 13.0** 

**SIEMENS NX 12.0** 

TCE 8

**M-DESIGN** 

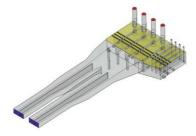
**SIMTOL** 

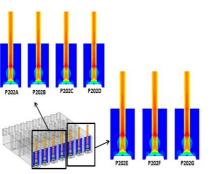
#### **SUMP MODEL STUDY**

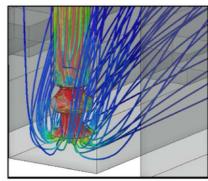












#### Physical model Study

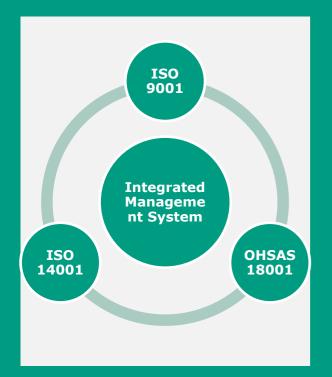
- To study the flow pattern & vortex formation
- To study swirl free flow conditions on the free surface as well as at the floor level below the bell mouth at the lowest low water level
- Studies carried out
  - Velocity measurement in duct
  - Swirl angle
  - Layout optimization
  - Flow pattern at different intersections (Bowl, Diffuser)

#### Computational study

- Vortices analysis
  - Air entering vortex
  - Submerged vortex
- Flow study

### **FACTORY APPROVALS**







ISO 9001: 2015



ISO 14001 : 2015



**OHSAS 18001: 2007** 

#### **PRODUCT CERTIFICATIONS**



#### CERTIFICATE OF COMPLIANCE

Certificate Number 20181116-EX15489 Report Reference EX15489-20090404 Issue Date 2018-NOVEMBER-16

Issued to: WILO Mather and Platt Pumps Pvt, LTD

Survey, No. 162 Mumbai - Pune Road

Chinchwad, Pune Maharashtra 411019 INDIA

This certificate confirms that CENTRIFUGAL FIRE PUMPS. SPLIT CASE representative samples of

Please see addendum page

Have been investigated by UL in accordance with the Standard(s) indicated on this Certificate.

Additional Information:

Standard(s) for Safety: UL 448, Standard for Pumps for Fire-Protection Service See the UL Online Certifications Directory at https://iq.ulprospector.com for additional information.

This Certificate of Compliance does not provide authorization to apply the UL Mark.

Only those products bearing the UL Mark should be considered as being UL Certified and covered under UL's Follow-Up Services.

Look for the UL Certification Mark on the product.









**UL Certification** 

**FM Certification** 

**CE Certification** 

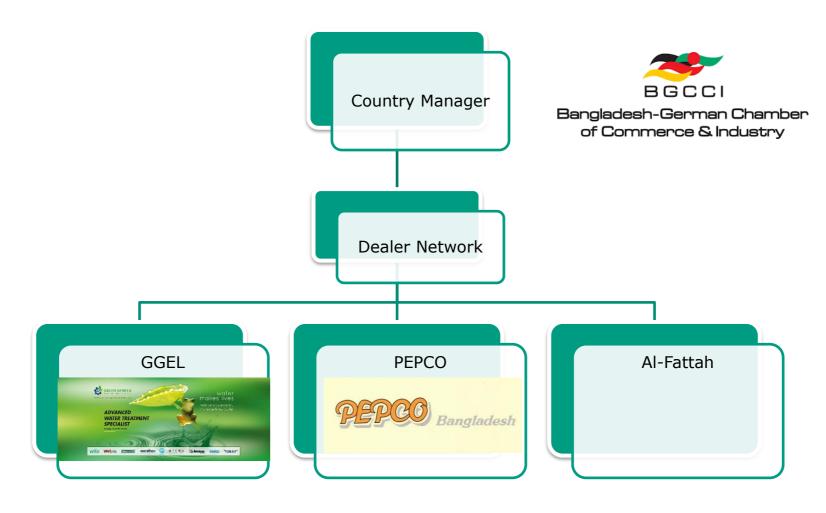


# 4. WILO In Bangladesh



#### **WILO BANGLADESH OPERATIONS**







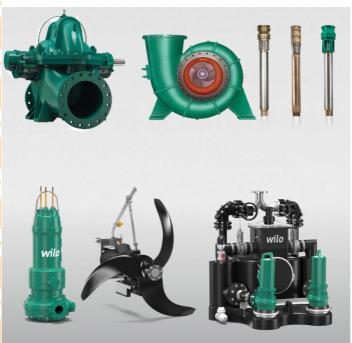
**Products For Water & Waste Water** 

#### **OUR PRODUCT PORTFOLIO**

#### **Building Services**



#### **Water Management**



#### **Industry**



#### Monoblock











#### **Bore well**



#### Inline



#### De watering/ Sewage





For WTP/STP







**End Suction** 

**Split-case** 

Multistage

**Booster System** 

**Vertical Execution** 





















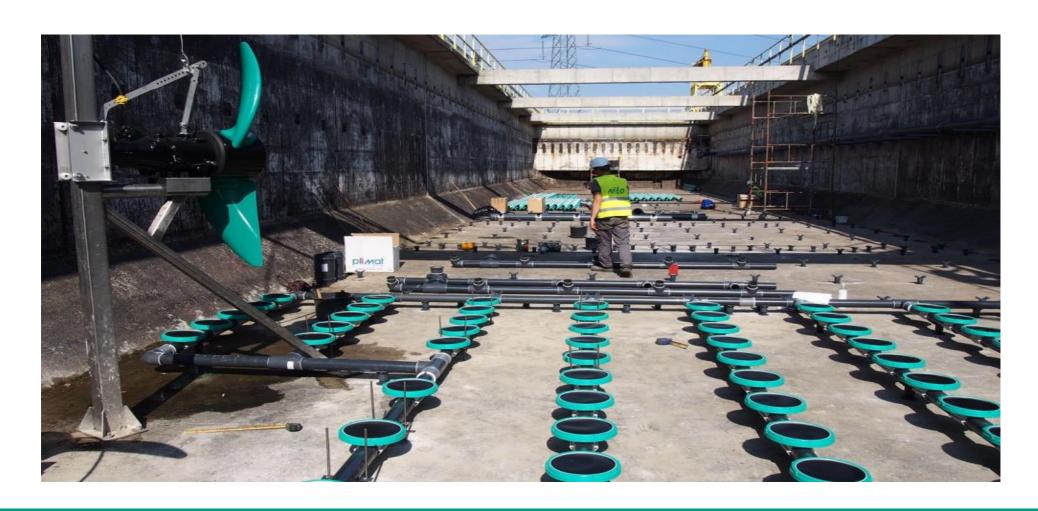






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### **EFFECTIVE AERATION WITH DIFFUSERS IN ETP/WTP**



#### **PRODUCT BASKET**



#### **Fire Fighting**







#### **Emu port Core System**



#### **SCOPE OF SUPPLY**

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#### Supply

- Bare shaft Pumps
- Standard Accessories
- Base Plate
- Coupling
- Coupling Guard
- Foundation bolt

#### **Drives & Connectors**

- Electric Motor
- Diesel Engine
- Steam Turbine
- Connectors
  - Gear box
  - Cardan Shaft

#### Instrumentation

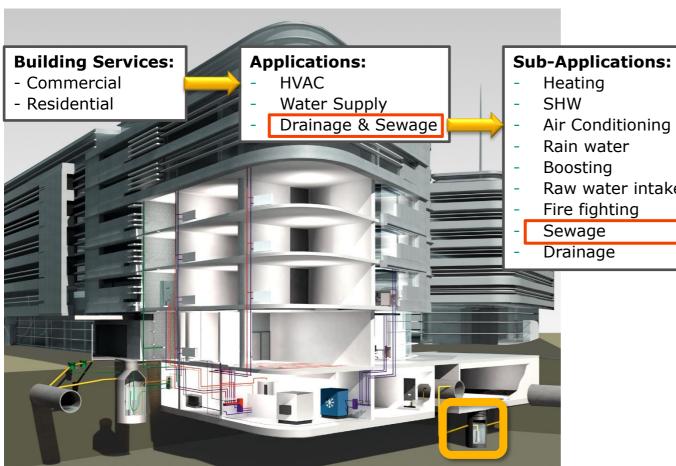
- Vibration monitoring system
- Gauges
  - Pressure
  - Temperature
- Level control



Solution To Solid Handling in Waste Water

#### **GLOBAL BUILDING MANAGEMENT APPROACH**





- Air Conditioning
- Raw water intake

#### **Sub-Applications** technologies:

- Inside sewage removal single room
- Inside sewage removal complete building
- Outside sewage removal complete building

### **WILO EMUPORT HAS A SOLUTION**



### **WILO EMUPORT HAS A SOLUTION**









#### **APPLICATION**

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#### → Building Service

- For all public buildings where there is a big danger for clogging due to public access
- Hotels, Shopping Malls, Hospitals, Rainlway Stations, Airports,...





#### → Water Management

Drainage of districts, small villages and general residential areas





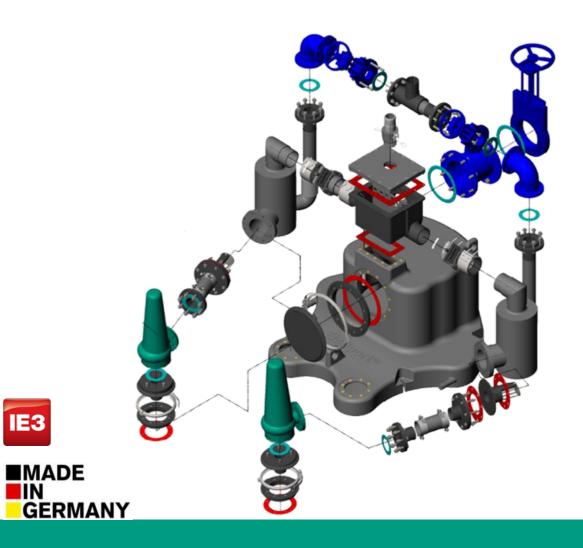




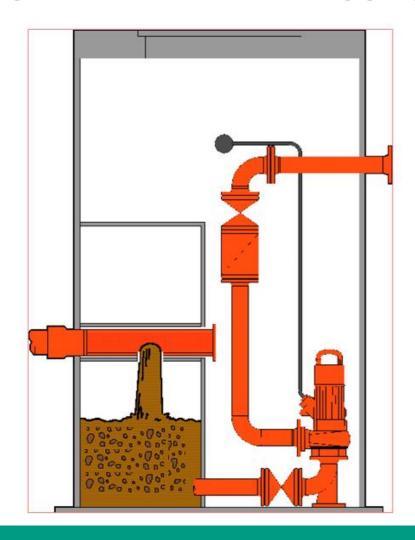
#### WILO-EMUPORT CORE NEW SOLIDS SEPARATION SYSTEM

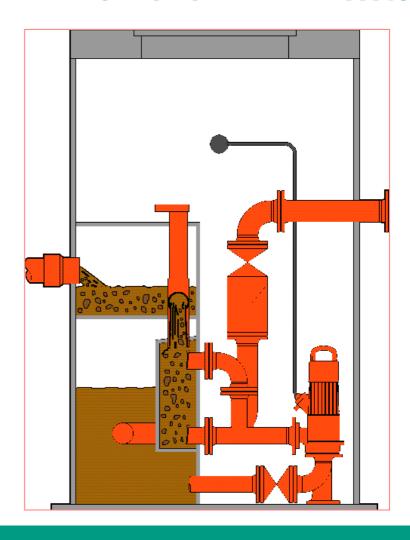
IE3





### PUMP WITH AND WITHOUT SOLID SEPARATION SYSTEM

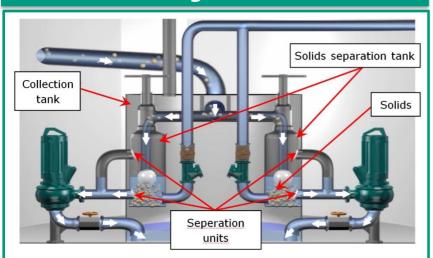




#### **EMU PORT SYSTEM FUNCTION:**



#### **Filling Process**

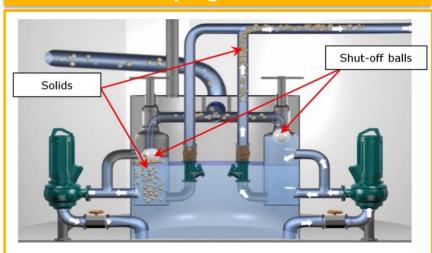


The incoming sewage is separated in the inflow box and so gets into the solid separation tank.

The big and potentially dangerous solids are kept back in the solid separation tank.

Only the pre-filtered sewage flows backwards through the pumps by gravity into the collection tank.

#### **Pumping Process**



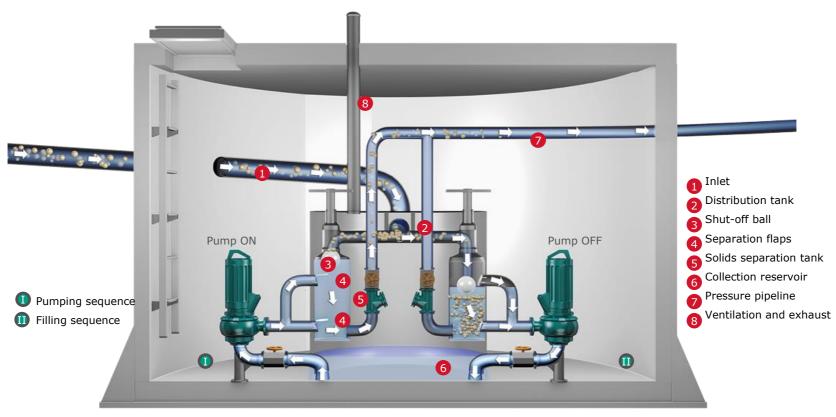
When the collection tank is filled, one pump will be switched at a certain level.

The pump sucks the pre-purified sewage out of the collection tank and pumps it into the solids separation tank where the solids are kept back.

In parallel to this the liquid flows in through the other pump. The pump cycle is intermittent causing a continuous cleaning and intake into the system.

#### **SCHEMATIC DIAGRAM OF FUNCTION**





https://www.youtube.com/watch?v=NO3NtR2Dw2Q

#### **WILO EMUPORT + PE = POLYETHYLENE**



## Wilo Aspiration

WILO EMUPORT PE = PE 100

- Best material against corrosion is PE
- With 20 years knowledge we are the leader with PE solids separation systems
- Our pumps have exclusive IP 68 protection
- To save energy consumpltion and maintenance costs

## WHY PE Wilo

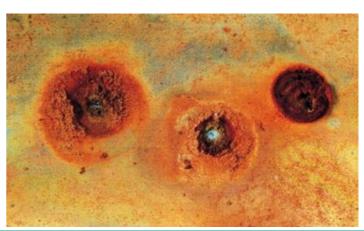












## WHY PE Wilo







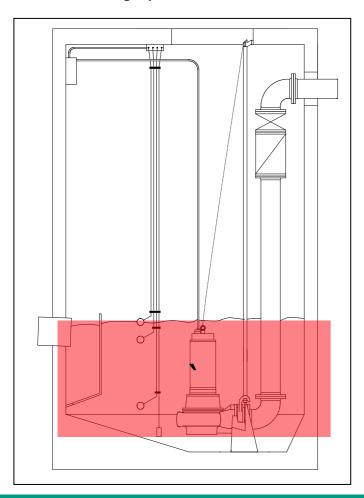




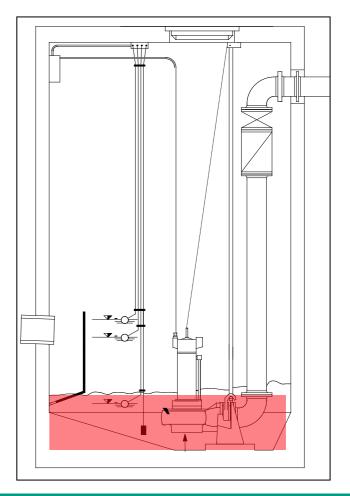
#### **DIFFERENT USEABLE PUMP VOLUMES**

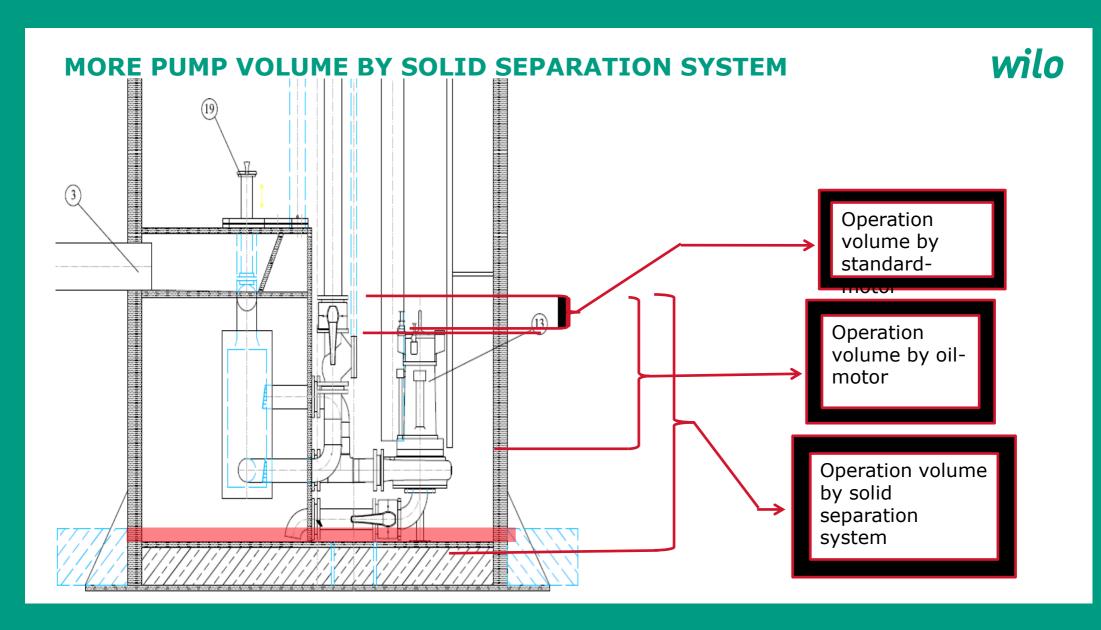
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Without cooling system - standard-motor



#### With self-cooling oil-motor





#### BENEFITS COMPARED TO CONVENTIONAL PUMP STATIONS



#### **Technical Advantage**

- Separation of the sewage into solids and prefiltered sewage.
- The solids are kept back before the pumps inside the solids separation tanks.
- The big solids do not have to be pumped through the pump hydraulic.
- Especially due to the increasing solids content in the sewage this technology is future-proofed and high reliable.

Hygienic and easy to maintain pump chamber due to sewage pumps in dry sump installation.

#### **Customer Benefit**



Maximum operation reliability with low maintenance costs and max. system availability



Hygienic maintenance and pumping system accessible by foot

Technical Advantage	Customer Benefit
Collection tank, solids separation tank & pipelines made of corrosion-free PE.	Collection tank, solids separation tank and pipelines made of corrosion-free polyethylene.
Monolithic collection tank without constructive welded connections.	No constructive sealing surfaces or welded seams which can be damaged in case of load.
Collection tank with rounded geometries, inclined tank bottom, lowest point directly below the pumps for an operation without deposits.	No deposits and no drying of the solids at critical spots.
Quick connectors to install the pumps on the system and on the inspection hole for a time-saving dismantling without the loosening of screws.	Time-saving dismantling and assembly of the inspection hole and the pumps
Pumps stand on the system in slightly bent position to guarantee the pump de-aeration.	No problems by formation of an air bubble in the pump hydraulic avoiding that the pumps cannot suck the liquid anymore.
Fully submersible pumps with protection class IP 68 and motor efficiency according to IE3.	Normally each pumping station will be flooded once in the life cycle. We guarantee the functioning of system even in case of a temporary flooding of the system

#### **COMMERCIAL APPLICATION - SOLUTION**



#### Benefits for commercial use

- Clogging free operation (by the technique with solids separation container)
- Maintenance possible during the partial operation (one pump operation) (no interruption or night work)
- ✓ Less service cases and low service costs
- Connection ready, compact system incl. Switchgear
- National wide Wilo service organization for commissioning / maintenance

#### SERVICES OFFERED

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- Supervision of erection / commissioning of Pumps
- Undertaking retrofit and energy audit jobs
- Annual Service contracts for Pumps



#### **Engineering Services**

- Engineered Pumping Solution
- New Design for special solution

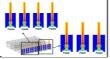




#### **Engineering Support**

- Sump Model Study
  - Physical
  - CFD
- Surge Analysis
- Seismic Analysis





#### **Training Support**

- In-House Training
  - For Products
  - Service
- On Site Training

#### **Customer Support**

- Technical Discussion
- Techno-commercial negotiations
- Site Visit
  - For trouble shooting
  - Maintenance

# Pion (1) (1) You