



# PUMPING STATIONS



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Stations for pumping communal, industrial, rain, underground wastewater.  
The applications inside the buildings, on sewage systems, WWTO, non-built up areas.

## **Pumping station types**

- ▶ conventional
- ▶ separation
- ▶ aboveground
- ▶ for pension houses and family houses
- ▶ mobile aboveground with actuator

## **SELECTION OF THE PUMPING STATION TYPE**

Each station is specific by its structure, technical and operating features.

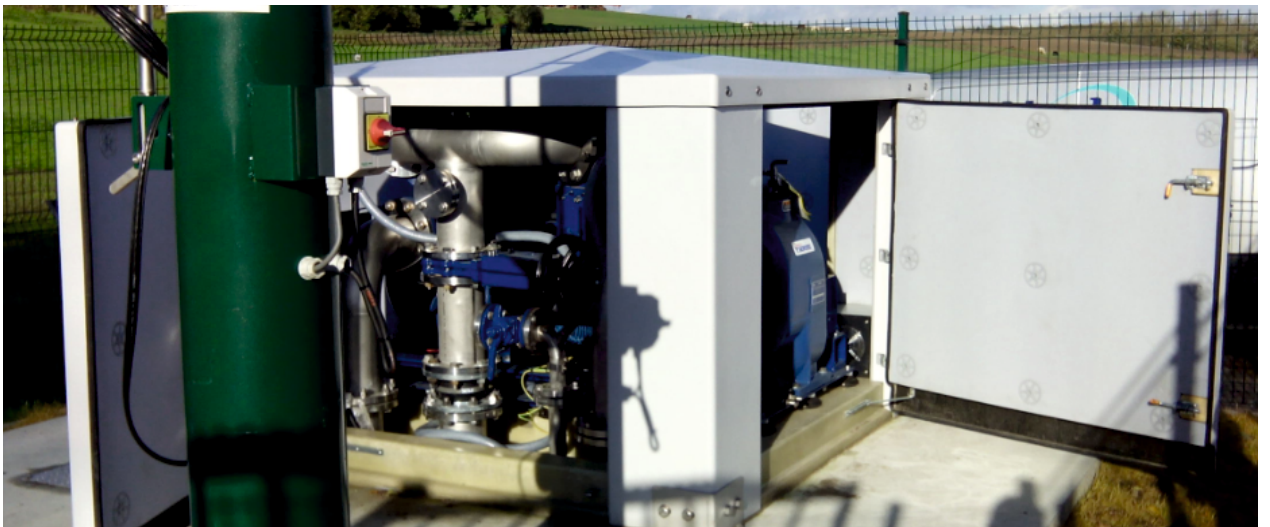
### **The selection criteria**

- ▶ quality of pumped medium
- ▶ quantity of pumped medium
- ▶ possibility of location
- ▶ service and automated control level requirement
- ▶ operation reliability

### **Delivery**

- ▶ complete package of a technology unit including tank and enclosure or
- ▶ separate technology unit





Pumping Station Types

## A) CONVENTIONAL PUMPING STATION WITH SUBMERSIBLE PUMP

### 1. Product

Pumping Station is a tank with a technology equipment installed inside. The station is dedicated for pumping waste and other water.

### 2. Principle

Wastewater flows to the station by gravity or by pressure.

Water accumulates in the station, pumped by automatically controlled pumps.

#### Material of the tank, external enclosure of the pumping station

- ▶ plastic
- ▶ concrete
- ▶ steel

#### Technology equipment

- ▶ pumps incl. foot
- ▶ sinking system
- ▶ coarse pre-treatment:
  - o mechanically operated rakes
  - o basket for rakings incl. outfit
  - o vessel for rakings liquidation
- ▶ lifting system
- ▶ ladder, stairs
- ▶ inlet opening, openings for technology equipment with cover lids
- ▶ shut-down valves and pipes
- ▶ electrical switchboard
- ▶ automated control system including water level measurement

#### Manufacture material PP, PE

- ▶ underground single-shell
- ▶ double-shell with reinforcement for high-load and against pressure water
- ▶ free standing tanks

## Application

- ▶ sewage pipeline systems
- ▶ wastewater treatment plants
- ▶ buildings

## 3. Advantages

- ▶ compact equipment delivered on site
- ▶ low weight, easy handling, transportation and installation
- ▶ immediately operated after the technology installation
- ▶ simple operation in automated and manual mode
- ▶ technology is easily handled above the pumping station
- ▶ tank and technology equipment variability

## 4. Type range

- ▶ **circular** - Ø 600 - Ø 3000 mm, height H: 1800 – 4500 mm
- ▶ **customized to comply customer's requirement**

## 5. Water quality – outflow

## 6. Warranty

- ▶ guaranteed pumping technology functionality

## 7. Service

- ▶ performed by ES authorized service technician
- ▶ service remote controlled by an authorized technician
- ▶ service intervention instantly or within 24 hours



Pump Ama-Porter -/ICS



Pump Amarex N





Handling with PS



Entry chimneys to PS



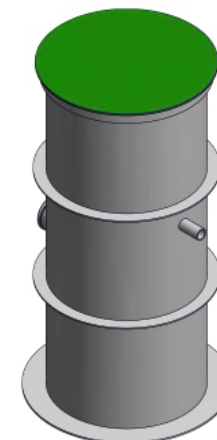
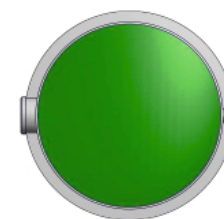
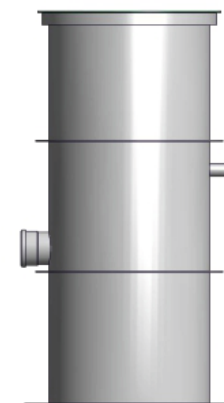
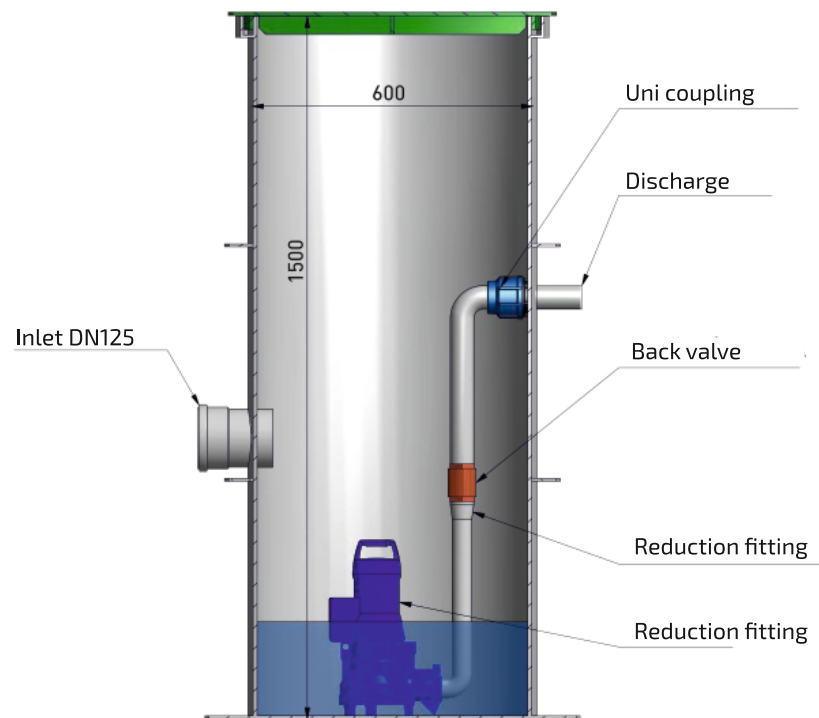
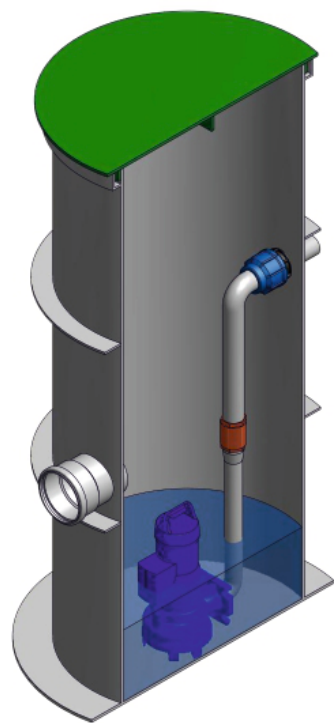
PS Installation





PS prepared for transport





## B) SOLIDS SEPARATION PUMPING STATIONS “AMADS” TYPE

### 1. Product

The Pumping Station is a technology equipment with the tank and pumps on common foundation base. The station intended for pumping wastewater with high content of solid waste, prevented from entering the pumps.



### 2. Principle

#### Preconditions

- ▶ wastewater flows to the separation area
- ▶ solid particles are caught by the rakes
- ▶ pre-treated wastewater flows through the rakes to the accumulation tank

#### Pumping procedure

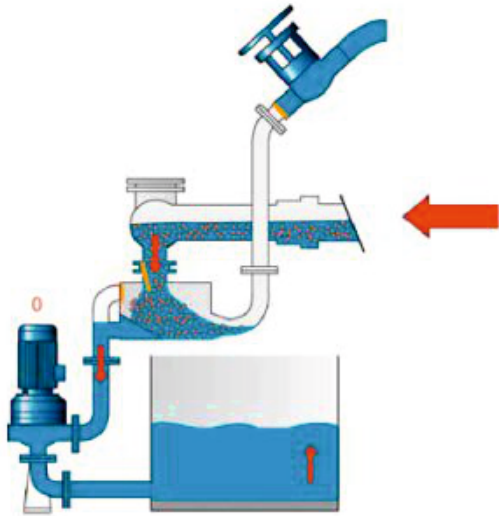
- ▶ automated control system starts up the pump
- ▶ wastewater is pumped from the accumulation tank to the separation section
- ▶ solid particles caught at the rakes are pressure-released and transported with pumped wastewater to the discharge piping
- ▶ flap valve on inlet piping is closed by pump switch on

#### Pumped medium

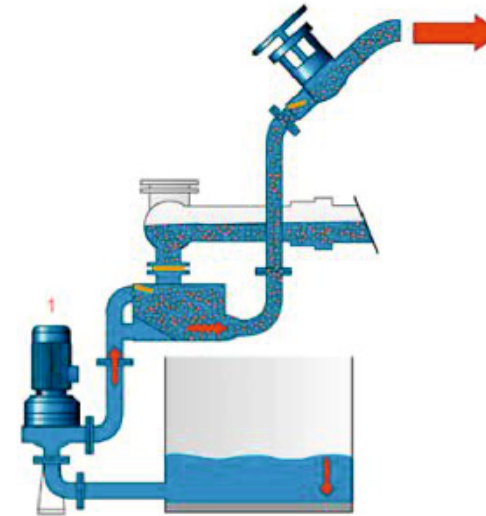
- ▶ all kinds of wastewater
- ▶ wastewater highly contaminated with high content of solid particles
- ▶ pH range 4 – 10
- ▶ temperature up to 40 deg. C

## Application

- ▶ sewage pipeline system, small and big contamination sources
- ▶ wastewater treatment plants
- ▶ long distances and heights
- ▶ existing pumping stations with diameter higher than 2 m



Inflow



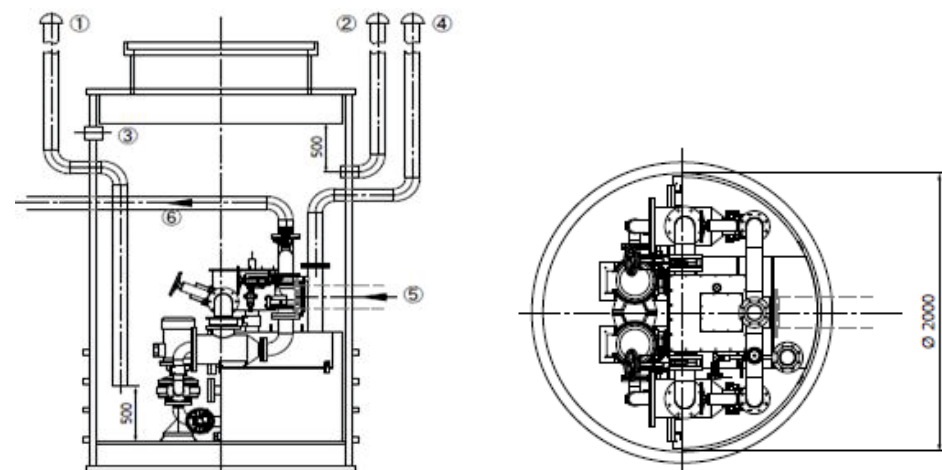
Pumping process

## 3. Advantages

- ▶ compact equipment as a product
- ▶ automated and reliable system of pumping highly contaminated wastewater
- ▶ installed underground inside a tank
- ▶ without coarse pre-treatment and rakings handling
- ▶ odourless
- ▶ automated unmanned operation
- ▶ remote monitoring, operation with ad-hoc service support
- ▶ easy access and maintenance during operation
- ▶ electric power saving and cost saving operation

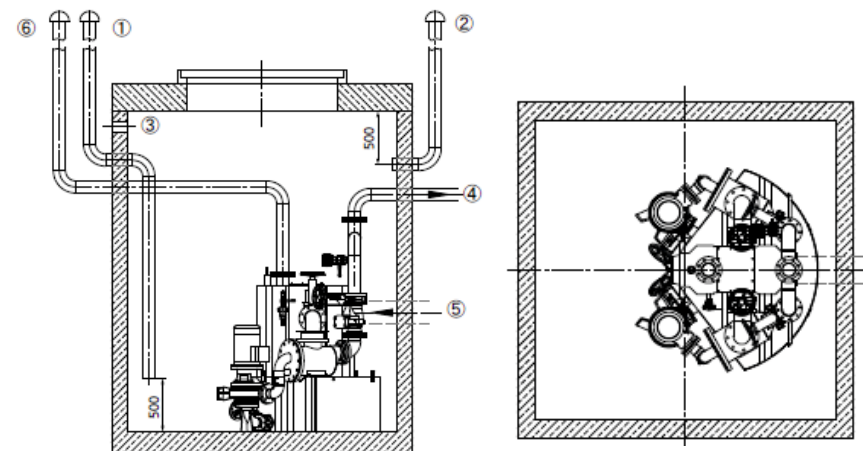


**PS AmaDS³ built-in a PPE shaft**



- 1. Air inlet to the shaft
- 2. Shaft ventilation
- 3. KG 110, power cabling
- 4. Tank ventilation, DN 100
- 5. Inflow, DN 200
- 6. Discharge piping, DN 100

**PS AmaDS³ built-in a rectangular shaft**



- 1. Air inlet to the shaft
- 2. Shaft ventilation
- 3. KG 110, power cabling
- 4. Tank ventilation, DN 100
- 5. Inflow, DN 200
- 6. Discharge piping, DN 100

## 4. Type range

Q: 5,5 l.s<sup>-1</sup> to 30 l.s<sup>-1</sup>,

6 m<sup>3</sup>h<sup>-1</sup> to 80 m<sup>3</sup>h<sup>-1</sup>,

Hmax: 85 m of height column

### Type range

Module AmaDS <sup>3</sup>	max inflow quantity m <sup>3</sup> /h	number of Population Equivalents PE	Inflow height mm	Volume of accumulation tank l
02.10 / 2 / 01.10	6	300	550	180
02.10 / 2 / 01.11	15	750	700	400
03.10 / 2 / 02.10	25	1250	1000	700
03.10 / 2 / 03.05	35	1750	1200	980
03.10 / 2 / 03.10	65	3250	1200	1100
03.10 / 2 / 04.10	90	4500	1400	1600
03.10 / 2 / 04.11	130	6250	1600	2400
04.11 / 2 / 05.10	200	9300	1900	4500

Modul AmaDS <sup>3</sup>	Inflow piping diameter DN mm	Discharge piping diameter mm	min diameter of shaft mm	Design type – compact
02.10 / 2 / 01.10	200	100	1800	kompaktný
02.10 / 2 / 01.11	200	100	1800	kompaktný
03.10 / 2 / 02.10	200	100	1800	kompaktný
03.10 / 2 / 03.05	200	100	2000	kompaktný
03.10 / 2 / 03.10	200	100	2000	kompaktný
03.10 / 2 / 04.10	200	100	2000	kompaktný
03.10 / 2 / 04.11	300	150	2500	kompaktný
04.11 / 2 / 05.10	300	150	3000	kompaktný



## 5. Water quality – outflow

## 6. Warranty

- ▶ guaranteed pumping technology functionality

## 7. Service

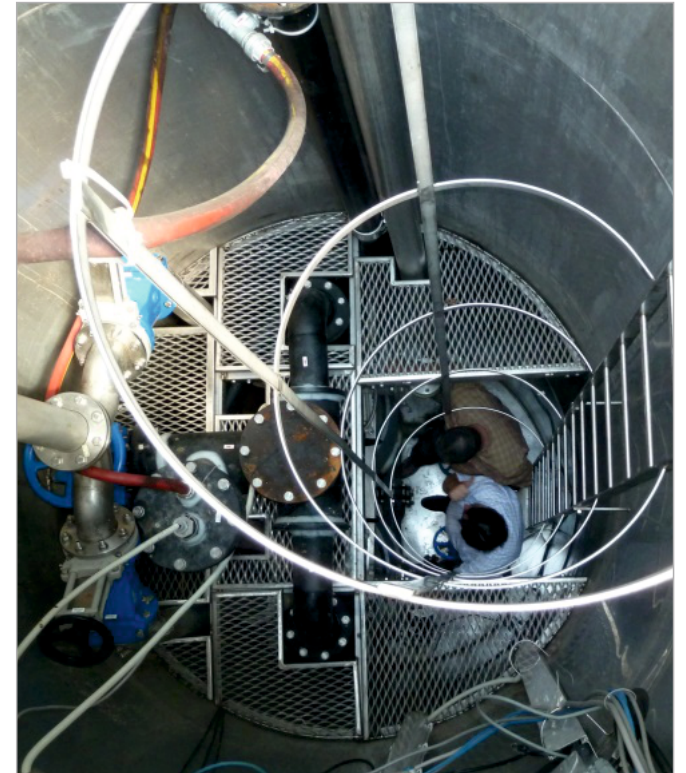
- ▶ performed by ES authorized service technician
- ▶ service remote controlled by an authorized technician
- ▶ service intervention instantly or within 24 hours



PS fencing



Entry chimney



Technology equipment

## C) ABOVEGROUND PUMPING STATIONS

### 1. Product

Pumping Station /PS/ is a compact technology equipment on a common foundation base in a roofed place installed on open terrain. The station is intended to pump wastewater.

### 2. Principle

- ▶ wastewater flows by gravity to the tank of the pumping station, installed underground
- ▶ pumping station is installed on the terrain, equipped with pumps, power cabling and automated control system
- ▶ suction pumps pump wastewater to the discharge piping

#### Pumping Station

- ▶ a complete pumping unit installed on the terrain
- ▶ equipped with 2 pcs of pumps with technical accessories
- ▶ power switchboard and automated control system
- ▶ suction piping connected to the pumping station tank

#### Pumping process

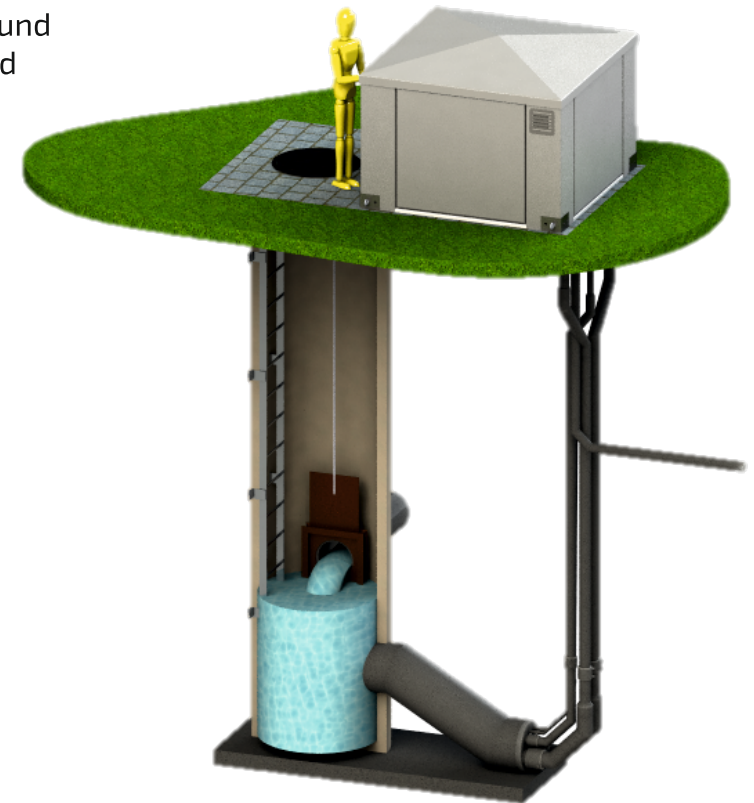
- ▶ automated control system switches on the selected pump
- ▶ wastewater is pressure-sucked from the PS tank to the pump
- ▶ suction height  $H = -8$  m
- ▶ water is pumped to the discharge piping

#### Pumped medium

- ▶ all sewage, industrial and rain wastewater
- ▶ pH range 4 – 10
- ▶ temperature to 40 deg C

#### Application

- ▶ sewage pipelines, small and large contamination sources
- ▶ wastewater treatment plants
- ▶ possibility to modify all existing PS



- ▶ installation inside or outside residential areas

### 3. Advantages

- ▶ compact equipment as a product
- ▶ pumping station installed on the terrain in a close roofed place
- ▶ a variable coverage adapted to the surroundings
- ▶ pumps equipped with a powerful crusher of coarse contaminants
- ▶ automated reliable pumping system
- ▶ no coarse pre-treatment and rakings handling
- ▶ odourless
- ▶ automated unmanned operation
- ▶ remote monitoring, operation with ad-hoc service support
- ▶ electric power saving and cost saving operation
- ▶ container type with minimum civil works required

### 4. Type ranges

**Q:** max. 750 m<sup>3</sup>h<sup>-1</sup>, **Hmax: suction:** 8 m.v.s., **of height column:** 100 m.v.s.

#### Type range

##### Fiberglass cover

- ▶ 120 x 200 Super T Series max 1 x T4  
Ultra V Series max 1 x V3
- ▶ 200 x 200 Super T Series max 2 x T6  
Super T Series max 1 x T8  
Ultra V Series max 2 x V3

##### Concrete cover

- ▶ 250 x 325 Super T Series max 2 x T8  
Ultra V Series max 2 x V6
- ▶ 350 x 325 Super T Series max 2 x T10  
Ultra V Series max 2 x V6

## 5. Warranty

- ▶ guaranteed pumping technology functionality

## 6. Service

- ▶ performed by ES authorized service technician
- ▶ service remote controlled by an authorized technician
- ▶ service intervention instantly or within 24 hours



## D) ABOVEGROUND MOBILE PUMPING STATIONS WITH ACTUATOR

### 1. Product

Pumping station is a compact mobile technology equipment.

Dedicated to pump water in various facilities, on site, by flooding, emergencies, in agriculture, etc.



### 2. Principle

- ▶ self-suction type of pumps
- ▶ suction height  $H_{smax}$  – 8 m of height column

#### **Pumping station**

- ▶ mobile type on wheel chassis or inside a container
- ▶ equipped incl. a pump with technical outfit
- ▶ actuator included
- ▶ flexible suction and discharge piping

#### **Pumping process**

- ▶ manual and/or automated system



### Pumped medium

- ▶ highly contaminated wastewater, sewage, industrial, surface water
- ▶ pH range 4 – 10
- ▶ temperature to 40 deg. C



Wastewater pumping

### 3. Advantages

- ▶ heavy-duty equipment
- ▶ dry construction, installed in terrain
- ▶ compact with actuator
- ▶ container type or on a mobile chassis
- ▶ high suction feature enables to install off intervention zone
- ▶ pumps equipped with powerful crusher of coarse impurities
- ▶ automated reliable pumping system
- ▶ automated unmanned operation
- ▶ easy service
- ▶ engine with electric starter
- ▶ environment-friendly

### 4. Type range

Q : max. 360 m<sup>3</sup>.h<sup>-1</sup>

Hmax: suction 8 m of height column

Discharge: 100 m of height column

### 5. Warranty

- ▶ guaranteed pumping technology functionality

### 6. Service

- ▶ performed by ES authorized service technician

## E) PUMPING STATIONS FOR FAMILY HOUSES AND GUEST-HOUSES

### 1. Product

Pumping Station is a compact mobile technology equipment.

It is intended for pumping water in operation facilities, on sites, by flooding, emergencies, in agriculture and other applications.

### 2. Principle

- ▶ wastewater flows to accumulation part of pumping station
- ▶ in-flown wastewater is pumped to discharge piping by a pump fixed on a container
- ▶ pumping is automatically controlled

#### **Pumped medium**

- ▶ all kinds of wastewater
- ▶ pH range 4 – 10
- ▶ temperature to 40 Deg. C

#### **Applications**

- ▶ small contamination sources
- ▶ family houses and guest-houses
- ▶ village residential districts
- ▶ pressure sewage pipeline systems

### 3. Advantages

- ▶ compact equipment as a product
- ▶ perfectly tight
- ▶ automated reliable wastewater pumping
- ▶ odourless
- ▶ automated unmanned operation
- ▶ easy access and maintenance
- ▶ low weight
- ▶ perfect tightness

## 4. Type range

- ▶ for installation inside building on the floor
- ▶ for 1 toilet below sewage pipeline system level
- ▶ for basement appartments or houses
- ▶ for multi-generation houses, schools, industrial facilities
- ▶ for large geodetic heights or long discharge piping

Type	P1 (W)	P2 (W)	U (V)	In (A)	N (min <sup>-1</sup> )	Q <sub>max</sub> (m <sup>3</sup> /h)	H <sub>max</sub> (m)	Weight (kg)
Microboy	600	350	230	2,5	2800	7,5	11,8	11
Kompaktboy 1,1 W	1,7	1,1	230	7,6	1400	41	8,1	32,5
Kompaktboy 1,1 D	1,4	1,1	400	2,9	1400	41	8,1	32,5
Kompaktboy 1,5 D	1,8	1,5	400	3,3	1400	49	9,9	34,5
Kompaktboy 3,0 D	3,8	3,0	400	6,2	2800	35	15,0	36,0
Kompaktboy Doppel 1,1	1,4	1,1	400	2,9	1400	41	8,1	76
Kompaktboy Doppel 1,5	1,8	1,5	400	3,3	1400	49	9,9	98
Kompaktboy Doppel 3,0 - 2P	3,8	3,0	400	6,2	2800	35	15,0	126
Kompaktboy 71,1 W	2,2	1,7	230	10,5	2800	17	22	22
Kompaktboy 71,1 W	2,1	1,7	400	3,7	2800	17	22	22
Kompaktboy 71,1 W	2,1	1,7	400	3,7	2800	17	25	25
Kompaktboy 71,1 W	3,9	3,2	400	6,5	2800	17	35	39
Kompaktboy 71,1W	3,9	3,2	400	6,5	2800	17	39	39
Kompaktboy 71,1 D Doppel SE	2,1	1,7	400	3,7	2800	17	22	137
Kompaktboy 71,2 D Doppel SE	2,1	1,7	400	3,7	2800	17	25	137
Kompaktboy 71,3 D Doppel SE	3,9	3,2	400	6,5	2800	17	35	144
Kompaktboy 71,4 D Doppel SE	3,9	3,2	400	6,5	2800	17	39	144

## Pumped output

- ▶ from 1 toilet max. 165 m<sup>3</sup>.h<sup>-1</sup>,

Type	P1 (W)	P2 (W)	U (V)	In (A)	N (min <sup>-1</sup> )	Qmax (m <sup>3</sup> /h)	Hmax (m)	Weight (kg)
Boy 1,5 D	1,9	1,5	400	3,3	1400	40	7,0	65
Boy 3,0 D	4,0	3,0	400	6,9	1400	60	11,0	75
Boy Doppel 1,5 D	1,9	1,5	400	3,3	1400	40	7,0	90
Boy Doppel 3,0 D	4,0	3,0	400	6,9	1400	60	11,0	110
W 80	4,0	3,0	400	6,9	1400	60	11,0	115
W 80 Doppel	4,0	3,0	400	6,9	1400	60	11,0	205
WUZ 100 3,0	4,0	3,0	400	6,9	1400	120	10,0	210
WUZ 100 4,0	5,5	4,0	400	11,2	1400	140	13,0	220
WUZ 100 5,5	6,3	5,5	400	12,1	1400	160	18,0	225
WUZ 100 7,5	8,7	7,5	400	16,9	1400	165	22,0	240
WUZ Doppel 3,0	4,0	3,0	400	6,9	1400	120	10,0	370
WUZ Doppel 4,0	5,5	4,0	400	11,2	1400	140	13,0	385
WUZ Doppel 5,5	6,3	5,5	400	12,1	1400	160	18,0	400
WUZ Doppel 7,5	8,7	7,5	400	16,9	1400	165	22,0	425

## 5. Warranty

- ▶ guaranteed pumping technology functionality
- ▶ 60 months warranty for the entire pumping station
- ▶ 24 months warranty for technology

## 6. Service

- ▶ performed by ES authorized service technician
- ▶ service intervention instantly or within 48 hours



**MICROBOY**



**KOMPAKTBOY**



**KOMPAKTBOY Doppel**



**KOMPAKTBOY SE 71**



**KOMPAKTBOY Doppel SE 71**



**BOY / BOY DOPPEL**



**W 80 / W 80 DOPPEL**



**WUZ 100 / WUZ 100 DOPPEL**



# **PURE WATER**

## **FOR THE MANKIND**





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