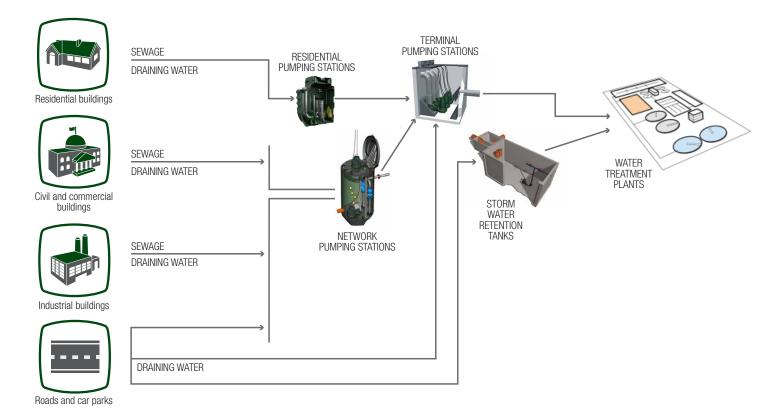


# WASTE WATER DRAINING TECHNOLOGIES



# WASTE WATER COLLECTION PROCESS

The sewer network is designed to collect and transfer sewage waste produced by human activity (homes, offices, companies) to an appropriate treatment and purification system, where liquids undergo a purification process before being reintroduced in the natural water cycle.



### GLOSSARY

#### **DRAINING WATER**

Non-purified and untreated water containing solid matter not exceeding 12 mm, from houses, agricultural companies and small enterprises (excluding WC waste water).

To avoid clogging problems, the use of pumps that allow the free passage of solid matter with size up to 10-12 mm is recommended.

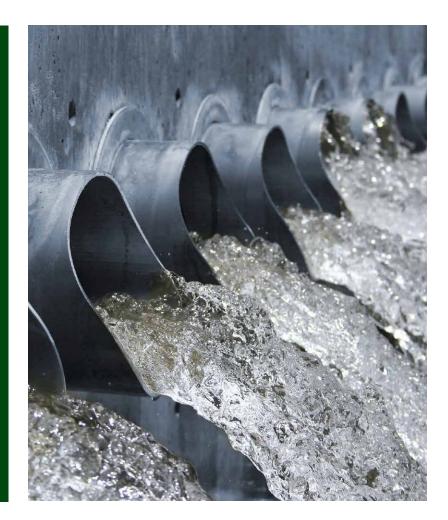
For non-purified water containing larger solid matter and fibres, such as drainage from roads and car parks, the use of pumps that allow the free passage of solid matter with size up to 35-45 mm is recommended.

#### SEWAGE

Untreated water and non-purified sewer water containing fibres, textile fragments and other solid matter, including waste from WCs, from domestic draining systems, agricultural companies and factories in general.

As far as the residential sector, the minimum free passage through the pump must be at least 50 mm.

To avoid clogging in civil buildings, agricultural companies and factories, the use of pumps that allow the free passage of solid matter with size of at least 65-80 mm is recommended. It must be remembered that WC waste often contains foreign matter such as sanitary pads, tampons, toilet paper, children's toys and toothbrushes.





# **DAB AND WASTE WATER**



With over 2 million items produced every year, DAB electric pumps are synonym of technology and reliability.

Established in 1975, DAB PUMPS is today an international point of reference in the water movement sector.

The careful selection of materials and the approval procedures applied to each line before production release, ensure both product resistance and maximum performance levels.

During the last years DAB has invested resources, passion and energy, acquiring companies with different specific skills, from electronics to motors.

This merger of technologies, competences and know-how has resulted in "Waste waters", the new offer for the management of waste water.

DAB provides solutions for residential, civil and industrial applications.



Each product has been developed to guarantee reliability, efficiency and easy maintenance, translating design choices into a significant advantage for installation and maintenance personnel.

For more information on the matter, do not hesitated to contact our sales network.

Competent and experience professionals will help you to identify the best solution for your specific needs.





### **RESIDENTIAL APPLICATIONS**

DAB offers innovative solutions for the movement of waste water in the residential sector.

Thanks to the constant technological research that has distinguished the first 40 years of its history, DAB can offer products characterised by extremely high performance and reliability levels that are also easy to maintain.



### RANGE





# **FEKABOX - FEKAFOS**



Tanks for the collection and redirection to the sewer network of domestic waste water (sewage and draining water), for basements and garages, for one or more houses, when the sewer network cannot be reached due to gravity issues.



Ready for perforation on-site on different sides and in various sizes from DN 110 to DN 50. It ensures high flexibility in often already existing systems.



2" threaded

# WHY CHOOSE A DAB AUTOMATIC LIFTING STATION

#### THE IMPORTANCE OF THE MATERIAL

They are made of polyethylene, with an average thickness of 8mm. Differently from cement, this material provides an important reduction of weight, with a significant impact on handling and installation costs. In addition, polyethylene also ensures a level of resistance that makes DAB tanks capable of withstanding chemical

attacks and mechanical stress.

#### **ERGONOMIC DESIGN**

The new range of DAB tanks is supplied with all the necessary arrangements to facilitate installation as much as possible. Each single aspect has been carefully checked to make the work of the installer as easy as possible, including the new pre-printed symbols at the inputs and outputs.

#### CERTIFICATIONS

The new FEKABOX and FEKAFOS tanks comply with European Standard EN 12050 1-2.







**COUPLING FOOT** 

They make pump installation and maintenance easier.



TWO-PUMP STATION

The FEKAFOS DOUBLE range requires two-pump stations.



#### COVER

Fully sealed and easy to install (no screws needed): it is fitted with seal and safety closing mechanism. It can withstand a weight of up to 100 kg.



# ■ NOVA (SV) / NOVA UP (X - MAE)

• WITH REMOVABLE FILTER, IT IS CAPABLE OF SUCTION OF UP TO A MIN. OF 2mm (NOVA UP).

- AUTOMATIC OPERATION PUMP ARM. INTEGRAL ELECTRONIC FLOAT SWITCH WITH START LEVEL SELECTION (NOVA UP MAE)
- COMPACT PUMP FOR INSTALLATION IN VERY NARROW WELLS, 20 CM MIN. (NA VERSION).
- CORROSION RESISTANCE STAINLESS STEEL PUMP SHAFT (NOVA).

Vertical delivery submersible pump for domestic applications, such as the draining or lifting of water from tanks or rivers. It can be used in the automatic version with the pump arm switch.

**OPERATING RANGE** flow rate up to 16 m<sup>3</sup>/h head up to 10.2 metres.

PUMPED LIQUID dirty water without fibres.

**LIQUID TEMPERATURE RANGE** from 0 °C to +35 °C for domestic use

OUTPUT vertical 1" 1/4 F

### DRENAG 1000

- AISI 304 PUMP WITH STAINLESS STEEL BALANCED MICROCAST IMPELLER
- 10 M CABLE
- SIC/SIC DOUBLE MECHANICAL SEAL IN OIL BATH
- SUITABLE FOR MOBILE APPLICATIONS WITH WEIGHT LOWER THAN 20 KG

Stainless steel submersible pump with microcast steel impeller, suitable for draining waste water, sandy water, muddy water with solid matter of up to 10 mm without fibres.

**OPERATING RANGE** flow rate up to 28 m<sup>3</sup>/h head up to 17 metres.

FREE PASSAGE 10 mm.

LIQUID TEMPERATURE RANGE from 0 °C to +35 °C

OUTPUT Vertical 1 ½" F



# VERTY NOVA

- SUITABLE FOR PARTICULARLY SMALL DRAINING WELLS (MINIMUM 20X20 CM)
- MINIMUM SUCTION LEVEL 2 MM IN MANUAL MODE.
- EASY ACCESS TO THE FLOAT FOR MAINTENANCE.
- INTUITIVE MODE SELECTOR FOR MANUAL OR AUTOMATIC OPERATION.

Vertical delivery submersible pump for domestic applications, such as the draining or lifting of water from tanks or rivers. Easy to use, it can operate both in automatic and manual mode.

**OPERATING RANGE** flow rate up to 10 m<sup>3</sup>/h head up to 9 metres.

**PUMPED LIQUID** dirty water without fibres.

LIQUID TEMPERATURE RANGE from 0 °C to 35 °C for domestic use,

**OUTPUT** vertical 1" ¼ F + fittings



## GRINDER 1000

• AISI 440C STAINLESS STEEL GRINDING SYSTEM WITH HIGH EROSION RESISTANCE, WITH SHARP EDGE THAT CAN WITHSTAND MANY HOURS OF OPERATION

• 10 M CABLE

• CARBON/ALUMINA DOUBLE MECHANICAL SEAL IN OIL BATH

Cast iron submersible pump with high tensile steel grinding system. Suitable for residential and civil applications with loaded water containing fibre and solids that need to be pumped through small ducts.

**OPERATING RANGE** flow rate up to 18 m<sup>3</sup>/h head up to 23 metres.

Nominal Power 1 HP = 1.8 kW

**LIQUID TEMPERATURE RANGE** from 0 °C to +35 °C

**OUTPUT** horizontal 2" F





## FEKA 600

- ONE OF OUR REPRESENTATIVE PRODUCTS.
- THANKS TO THE LEVEL SWITCH. IT ENABLES FIXED INSTALLATION. **GUARANTEEING AUTOMATIC OPERATION.**
- DRY RUN TIME UP TO 1 MINUTE.
- EXTREMELY SOLID AND RELIABLE.

The submersible pump is suitable for lifting sewage water from cesspools, and is capable of handling suspended solid matter with size up to 25 mm.

**OPERATING RANGE** flow rate up to 16 m3/h head up to 7.45 metres.

FREE PASSAGE 25 mm

LIQUID TEMPERATURE RANGE from 0 °C to +35 °C for domestic use

OUTPUT horizontal 1"1/4F

## FEKABOX

- IN COMPLIANCE WITH EUROPEAN STANDARD EN 12050-1/2
- LIGHT, BUT RESISTANT TO CHEMICAL AND MECHANICAL STRESS
- READY FOR EASY PUMP INSTALLATION AND MAINTENANCE THANKS TO THE LIFTING DEVICE
- COVER THAT CAN BE TIGHTENED WITHOUT USING SCREWS

Pumping stations suitable for the collection and redirection to the sewer network of residential drain water (waste, dirty, rain), of basements and garages, for one or more dwellings, when the sewer network cannot be reached due to gravity issues.

CAPACITY 110 to 200 litres

MATERIALS I I DPF

**OPERATING RANGE** flow rate up to 24 m<sup>3</sup>/h head up to 9 metres.

LIQUID TEMPERATURE RANGE from 0 °C to +50 °C





# FEKA VS

- AISI 304 PUMP WITH STAINLESS STEEL BALANCED MICROCAST IMPELLER
- 10 M CABLE
- 50 MM TOTAL FREE PASSAGE AND COMPLIANCE WITH EN 12050 (LGA APPROVAL)
- SIC/SIC DOUBLE MECHANICAL SEAL IN OIL BATH

Stainless steel submersible pump with microcast steel vortex impeller. Suitable for waste and sewage water containing solid matter with size up to 50 mm.

**OPERATING RANGE** flow rate up to 32 m3/h head up to 14 metres.

FREE PASSAGE 50 mm

LIQUID TEMPERATURE RANGE from 0 °C to +35 °C

OUTPUT horizontal 2" F



## FEKAFOS

- IN COMPLIANCE WITH EUROPEAN STANDARD EN 12050-1
- LIGHT. BUT RESISTANT TO CHEMICAL AND MECHANICAL STRESS
- WITH FLOATS AND LIFTING DEVICES
- COVER THAT CAN BE TIGHTENED WITHOUT USING SCREWS
- ALARM FLOAT

Pumping stations suitable for the collection and redirection to the sewer network of residential drain water (waste, dirty, rain), of basements and garages, for one or more dwellings, when the sewer network cannot be reached due to gravity issues.

CAPACITY 280 to 550 litres

MATERIALS LLDPE

**OPERATING RANGE** flow rate up to 24 m3/h head up to 9 metres.

LIQUID TEMPERATURE RANGE from 0 °C to +50 °C









### **CIVIL AND INDUSTRIAL APPLICATIONS**

The management of waste water in civil and industrial environments requires the use of sturdy products capable of high performance levels. For this reason, the DAB range of solutions sets itself apart due to its high reliability also in the most demanding operating conditions, and for its design aimed at making maintenance activities as simple as possible.







# FK





#### **NEW IE3 MOTORS**

The new **IE3 high efficiency motors** drastically reduce operation energy costs. Due to the low overheating temperatures, their operation is guaranteed for temperatures up 40 °C. For higher temperatures contact our sales network.

Thermal protection is standard, and their insulation class is F.



The **reliability comes** even before efficiency. A new design of Vortex impellers, and the guarantee of always having a **total free passage**, are two of the most important functionalities of the new FK. **In compliance with European Standard EN 12050-1** 



#### CARTRIDGE SEAL

The cartridge is a great advantage during maintenance of the pump, as it enables **removing and replacing the seals in less time**, with full reassurance that the operation has been carried out correctly. This is an **exclusive DAB patent**, with double Sic/ Sic seal with opposite faces **independent from the direction of rotation**, with Viton elastometers and Corteco.

#### EN 12050-1 EN 120

In compliance with European Standard EN 12050-1

### **EFFICIENCY FOR TRUE SAVINGS**

Example based on a comparison between a P2=3kW pump available on the market and a pump of the new FKV range with similar hydraulic performance.

	EFFIC	IENCY	P1 kW	€ / YEAR *
STANDARD PUMP	83 %	39 %	4.0	2190€
FKV PUMP	88 %	44 %	3.3	1807€
	EFFICIENCY			
IMPROVEMENT	+ 5%	+ 5%	<b>SAVINGS</b> 383 € / YEAR	

\* Calculations based on a use of 10h/day for one year. Average electricity costs in EU 15c€/kWh for systems with total annual consumption < 20MWh.

#### WHY RELIABLE

- NEW ANTI-CLOGGING VORTEX IMPELLERS
- CARTRIDGE SEAL
- SENSOR IN OIL CHAMBER
- TWO-COMPONENT PAINT COATING
- APPROVAL EN 12050-1 AND ATEX
- NEW DA-V COUPLING DEVICE

#### BECAUSE IT'S EASY TO MAINTAIN

- CABLE SPECIFIC FOR THE PUMP
- CARTRIDGE SEAL

#### WHY EFFICIENT

- NEW IE3 MOTORS
- NEW SINGLE-CHANNEL HYDRAULICS



## DRENAG 1400/1800

• RESIN COATED CABLE GLAND PREVENTING WATER FROM ENTERING THE MOTOR DUE TO A DAMAGED CABLE.

• VULCANISED DIFFUSER THAT ENABLES THE PUMPING OF SANDY AND SLIGHTLY ABRASIVE WATER, ENSURING THE LONG LIFE OF THE PUMP

• A STURDY GRID ON THE BASE OF THE PUMP CAPABLE OF WITHSTANDING SHOCK

Draining pump with nitrile rubber covered pump body, suitable for commercial or industrial environments, for sandy and slightly abrasive water.

**OPERATING RANGE** flow rate up to 33 m<sup>3</sup>/h head up to 21.5 metres.

Nominal Power 1.1 - 1.5 kW

LIQUID TEMPERATURE RANGE from 0 °C to +35 °C

**OUTPUT** horizontal 2" F

## FEKA 2000

- EASY TO MAINTAIN SIMPLE VERY STURDY MECHANICAL CONSTRUCTION PUMPS
- THE VORTEX IMPELLER ENSURES WIDE FREE PASSAGES FOR SOLID MATTER

Submersible cast iron pump with vortex impeller. Suitable for commercial or industrial waste water, such as waste water with solid matter up to 42 mm.

**OPERATING RANGE** flow rate up to 36 m<sup>3</sup>/h head up to 21 metres.

**FREE PASSAGE** 42 mm.

LIQUID TEMPERATURE RANGE from 0 °C to +35 °C

**OUTPUT** Flanged DN50, PN6



# DIG

• THE HIGH CHROME CONTENT IMPELLER WITH A HARDNESS OF 650 HD AND THE NITRILE RUBBER (NR) VULCANISED PUMP BODY GUARANTEE THE PUMPING OF ABRASIVE LIQUIDS

• HIGH HEAD PERFORMANCE RANGE

Heavy draining pump with high tensile strength chrome cast iron impeller, with nitrile rubber covered pump body, suitable for commercial or industrial environments, for highly abrasive water.

**OPERATING RANGE** flow rate up to 240 m<sup>3</sup>/h head up to 58 metres.

NOMINAL POWER 1.7 - 11 kW

FREE PASSAGE 10 mm.

**OUTPUT** 2"1/2 threaded- 3" and 4" pipe



## FEKA 2500/2700

- EASY TO MAINTAIN SIMPLE VERY STURDY MECHANICAL CONSTRUCTION PUMPS
- VORTEX IMPELLER ENSURING A GOOD FREE PASSAGE FOR SOLID MATTER
- AVAILABILITY OF MODELS WITH 4-POLE MOTORS, IDEAL FOR MORE DEMANDING USES REQUIRING A HIGHER TORQUE

Submersible cast iron pump with vortex impeller. Suitable for commercial or industrial waste water, such as waste water with solid matter up to 62 mm.

**OPERATING RANGE** flow rate up to 48 m<sup>3</sup>/h head up to 17 metres.

FREE PASSAGE 62 mm.

**LIQUID TEMPERATURE RANGE** from 0 °C to +35 °C

**OUTPUT** Flanged DN65, PN6





### ■ FKV/FKC

#### • IE3 HIGH EFFICIENCY TECHNOLOGY MOTOR

- DAB PATENTED CARTRIDGE DOUBLE SEAL FOR EASY REPLACEMENT AND MAINTENANCE
- RANGE OF PUMPS IN COMPLIANCE WITH EUROPEAN STANDARD EN 12050-1

High efficiency submersible pumps with vortex and single-channel impeller. Suitable for commercial or industrial waste water, such as waste water with solid matter up to 100 mm in compliance with European Standard EN 12050-1.



**OPERATING RANGE** flow rate up to 100 m<sup>3</sup>/h head up to 41 metres.

NOMINAL POWER

FREE PASSAGE 65 - 100 mm

**OUTPUT** flanged DN65/80/100/150, PN16

## ■ FEKAFOS

- WITH FLOATS AND LIFTING DEVICES
- ENVIRONMENTALLY-FRIENDLY 100% RECYCLABLE TANK MATERIAL

Pumping stations suitable for the collection and redirection to the sewer network, of domestic drain water (waste, dirty, rain), of basements and garages, for several dwellings, when the sewer network cannot be reached due to gravity issues.

CAPACITY 1200/2000/3800 I

MATERIALS POLYETHYLENE

**OPERATING RANGE** flow rate up to 48 m<sup>3</sup>/h head up to 23 metres.

LIQUID TEMPERATURE RANGE + 55° C





# **FEKA 6000/8000**

- EXTREMELY ROBUST AND PROFESSIONAL MECHANICAL CONSTRUCTION PUMPS
- THE CHANNEL IMPELLER PROVIDES WIDE FREE PASSAGES FOR SOLID MATTER
- AVAILABILITY OF MODELS WITH 4/6-POLE MOTORS, IDEAL FOR MORE

DEMANDING USES REQUIRING A HIGHER TORQUE

Submersible electric pump for civil and industrial non aggressive waste water, suitable for dirty water in general, containing non-filamentous solid matter with size up to 80 mm.

**OPERATING RANGE** flow rate up to 780 m<sup>3</sup>/h head up to 24.5 metres.

**NOMINAL POWER** 5.2 - 19.3 kW

FREE PASSAGE 80 - 108 mm

OUTPUT flanged DN150/200, PN16





# **ELECTRIC CONTROL PANELS**

# e.box





#### 3" DISPLAY

• Step-by-step installer guide for all the settings of the first installation

- It gives the possibility of viewing the complete  $\log$  of pump and panel errors
- Easy pump and sensor status monitoring and set-up of the pump start/stop levels
- Possibility of selecting the language ad a password for protecting the settings



#### AUTOMATIC VOLTAGE SELECTOR

With one single model in stock, it will be possible to manage in a fully automatic manner both single-phase and three-phase pumps.





For typically domestic installations with varying requirements, we have made available E.BOX BASIC (single-phase only), with or without display and offering all the functions of PLUS models, but at limited costs.

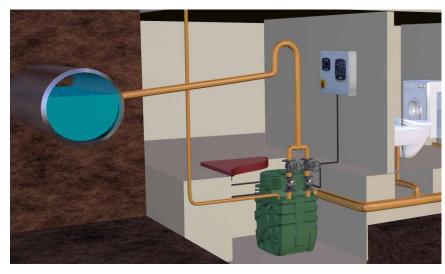


Possible connection to a GSM card for SMS control of the status of the pumps and the panel.



With its new user interface, e.box is now more intuitive and immediate. Understanding the status of the pumps and the errors on the same and the system has never been easier.

### **EMPTYING / FILLING FUNCTION**



# Ideal for controlling filling / emptying pumping stations used for draining both meteoric and waste water.

- Operation with both bulb and standard float, max 5 (2/3 operation. 2 alarm)
- Operation with depth sensor (0-10V / 4...20mA)
- Switching of the pump starting order at each start, every 24 hours, or at pre-set intervals.

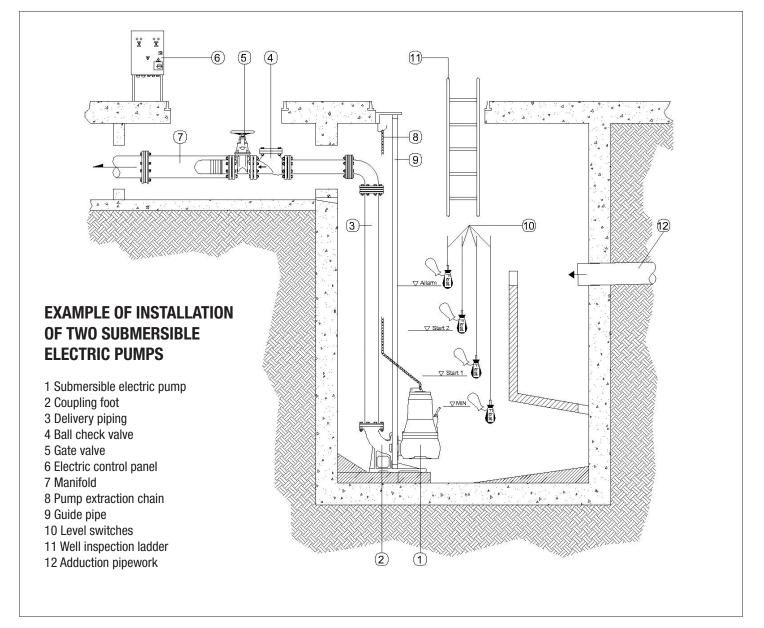
### ACCESSORIES





# **PUMPING STATION ACCESSORIES**

To ensure correct operation and simplify maintenance, DAB also provides a complete range of accessories:



















#### EN 12050-1

### Applies to waste water lifting systems containing faecal matter in buildings and building sites.

Faecal matter lifting systems must be capable of pumping waste water in accordance with the requirements of EN 12056-1, including all the solid matter normally contained in domestic waste water. They must be designed in a way that avoids the accumulation of solid matter.

#### **Requirements:**

- the system and the pumps must be capable of pumping waste water containing faecal matter, including solid matter normally found in domestic water (minimum free passage 40 mm);
- collection tanks must be covered, watertight and capable of preventing smell from escaping; the structural design must be in compliance with European standards;
- the collection tank must have appropriate ventilation and must include the fastening device to prevent rotation and floating;
- the pump and the system must guarantee a flow rate in the discharge piping of at least 0.7 m/s at the point of service

#### Test:

- the system must be able to withstand an overpressure of 0.5 +/- 0.01 bar for 10' without visible leaks
- the system must guarantee the pumping and the passage of floor cloths without significant efficiency loss and without clogging.

EN 12050-2

#### It Applies to waste water lifting systems not containing faecal matter in buildings and building sites.

The system must be capable of pumping domestic waste water not containing faecal matter, or rain water as defined by EN 12056-1, which may also contain sand and other solids, up to a maximum size of 8 mm.

#### **Requirements:**

- the system and the pump must be capable of pumping waste water not containing faecal matter or rain water that may also contain sand or other solids, up (minimum free passage 10 mm)
- the pump and the system must guarantee a flow rate at the discharge piping of at least 0.7 m/s at the point of service
- collection tanks must be covered, watertight and resistant to water at the atmospheric pressure (delta P = 0 bar); the structural design must be in compliance with European standards
- the collection tank must have appropriate ventilation and must include the fastening device to prevent rotation and floating;







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