

## Installation and operating guidelines

The PowerFlush Pro is a fully automatic macerator suitable for pumping waste from a complete bathroom to a higher level when gravity drainage is not possible and/or economical to install. The system can accept waste connections from a toilet, basin, shower or bidet.

The PowerFlush Pro incorporates the unique Piranha® cutting system – its razor sharp stainless steel blades act like a pair of rotary scissors to cut up waste items, reducing the chance of a blockage. The system is supplied as standard with a BMS compatible high level alarm

The PowerFlush is compact and easy to install, discharging to the right or left. The 100mm inlet to the chamber can be fitted centrally on the face or side.



# PowerFlushPro™

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## 2. Product summary

The PowerFlush Pro is a fully automatic macerator suitable for pumping waste from a complete bathroom to a higher level when gravity drainage is not possible and/or economical to install. The system can accept waste connections from a toilet, basin, shower or bidet.

The PowerFlush Pro incorporates the unique Piranha® cutting system – its razor sharp stainless steel blades act like a pair of rotary scissors to cut up waste items, reducing the chance of a blockage. The system is supplied as standard with a BMS compatible high level alarm

The PowerFlush is compact and easy to install, discharging to the right or left. The 100mm inlet to the chamber can be fitted centrally on the face or side.

### 2.1 Key features

- Unique ‘Piranha’ cutting system – part of the Edincare ‘FullCut’ range
- Designed to accept waste from a full bathroom suite including toilet, basin, shower and bidet
- Inlet and discharge pipe work can be fitted to either side of the unit for maximum versatility
- Supplied as standard with a BMS compatible high level alarm

### 2.2 Application

- PowerFlush Pro is a pumping station designed for direct connection to one toilet
- Installed above ground, directly behind toilet or behind partition wall
- For light domestic use and with the requirement that an additional toilet must be installed separately above the flood level
- Operates in combination with a cistern of minimum 6 litres flushing volume. Proper operation is not guaranteed at lesser volumes eg. when using the light flush in a dual-flush cistern
- In accordance with DIN EN 12050-3 only a hand basin, a bidet and a shower tray can be connected in addition to the toilet. Connection of a washing machine, dishwasher or bath is not allowed
- The tank must be in the same room as the utilities to which it is connected
- For domestic sewage and wastewater, with and without faeces, and without harmful substances, in accordance with DIN 1986 Part 3
- Use only cleaning products with a pH of 4–10 when cleaning utilities connected to the tank
- Not suitable for corrosive or flammable materials, oils, gaseous and explosive media, disposal of condensation from condensing boilers, or where the water has been filtered through a water softening system
- For liquids with a temperature of max. 40 °C, or 60 °C for up to 5 minutes
- The noise emission value is less than 70dB (A)
- If damage can occur due to a failure of the pumping station, for example due to a power failure or technical defect, an alternative system must be available as backup eg. emergency power supply, double pumping station, network-independent alarm, etc.

#### ATTENTION!

**Activation of the “high water level” alarm is delayed while the system attempts to fix the problem with two pumping test cycles. On completion, if the problem persists the alarm will then sound.**

## 3. Safety

Extracted from VDMA-Standard-sheet 24292

VDMA = Verband Deutscher Maschinen- und Anlagenbau e.V.

These operating instructions contain basic information on installation, operating and maintenance and should be followed carefully. For this reason it is essential that these instructions are carefully read before installation and commissioning. The operating instructions must always be available at the location of the unit.

In addition to the following safety regulations, it is also essential that the special safety instructions given under other headings be observed.

### 3.1 Warning symbols used in this document



The safety instructions given in this operating manual, the non-observance of which could cause danger to life, are specifically highlighted with the general danger symbol. See DIN 4844-W9.



The presence of a dangerous voltage is identified with the safety symbol. See DIN 4844-W8.

#### **ATTENTION!**

Applies to safety instructions, the non-observance of which could damage the unit or affect its functioning.

Symbols directly on the unit itself (eg. the nameplate) must be carefully observed and must be maintained in a legible condition.

### 3.2 Dangers which could arise due to non-observance of the safety instructions

The non-observance of the safety instructions can lead to both danger to personnel and also to possible harm to the environment or the unit itself.

In detail, non-observance can for example result in the following dangers:

- Failure of important functions of the unit/installation
- Danger to personnel by electrical, mechanical or chemical influences
- Danger to the environment by leakage of dangerous substances

### 3.3 Carrying out work in a safety conscious manner

The safety instructions listed in this operating manual, the existing National Regulations for Safety, as well as any internal operating or safety regulations which apply in the user's own premises must be observed.

### 3.4 Safety regulations for the owner/operator

All dangers due to electricity must be avoided (for details consult the regulations of your local Electricity Supply Company).

### 3.5 Safety regulations for maintenance, inspection and installation work

The user of the unit should ensure that all maintenance, inspection or installation work is carried out by authorised and qualified skilled personnel. The user must also make certain that they have carefully studied the operating instructions.

In principle all work on the unit should only be carried out while it is stationary. Pumps or units, used for pumping or fluids which could be injurious to health must be decontaminated. After completion of the work all safety and protective devices must be refitted and a check should be made that they are fully functional.

Before starting up again, the points listed under the section "Commissioning" should be complied with.

### 3.6 Unilateral modification and spare parts manufacturing

Modifications or changes to the unit/installation should only be carried out after consultations with the manufacturer. Original spare parts and accessories authorised by the manufacturer are essential for compliance with safety requirements. The use of other parts can invalidate any claims for guarantee.

### 3.7 Unproved usage

The operating safety of the unit is only guaranteed provided that the unit is used in accordance with these operation instructions. The limit values given in the data sheet should under no circumstance be exceeded. These installation and operation instructions do not supersede or exclude the following of generally valid regulations and standards.

## 4. Scope of delivery

Synthetic tank, pre-assembled and wired, ready for installation with rubber feet, tank mounting supports/securing brackets, inlet seals, non-return valve for external attachment, drain tube with cap, overflow protection and alarm, vent with integrated odour filter, built-in motor unit with shredding system and moisture sensor level control.

## 5. Technical specifications

### 5.1 Operating parameters

Model	PowerFlushPro
Free passage	Shredding system
Power cable	3G 1.0
Cable length	1.8m
Weight	7.0kg
Voltage/Frequency	1 x 230V / 50Hz
Type of current	Single phase
Nominal current	4.6A
Motor power P1	1.0kW
Speed	2900rpm
Motor protection	Temperature limiter built into the winding
Protection class	IP44
Motor insulation class	B
Temperature limiter	120°C
Fluid temperature	Max. 40°C, 60°C for 5 minutes

### 5.3 Level controls

Model	PowerFlushPro
Switch-on level	120mm
Switch-off level	45mm
Alarm	140mm

### 5.2 Connections

Model	PowerFlushPro
Side discharge line (with integrated checkvalve)	To the right or left. OD = 32 mm/25 mm
Side inlets	1 x DN 50 (right) 1 x DN 50 (left)
Toilet connection (optional connections)	1 x DN 100 (front) 1 x DN 100 (side)
Vent line	Connection of separate vent line DN 50 in odour filter opening (Figure. 5)

### 5.4 Materials

Model	PowerFlushPro
Cutting system	Special stainless steel
Tank casing	Polypropylene
Pump casing	Polypropylene
Impeller	Polyamide
Seals	NBR/EPDM
Motor shaft	Stainless steel 1.4028 (AISI 420)

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## 5.5 Dimensions

### 5.5.1 Front connection

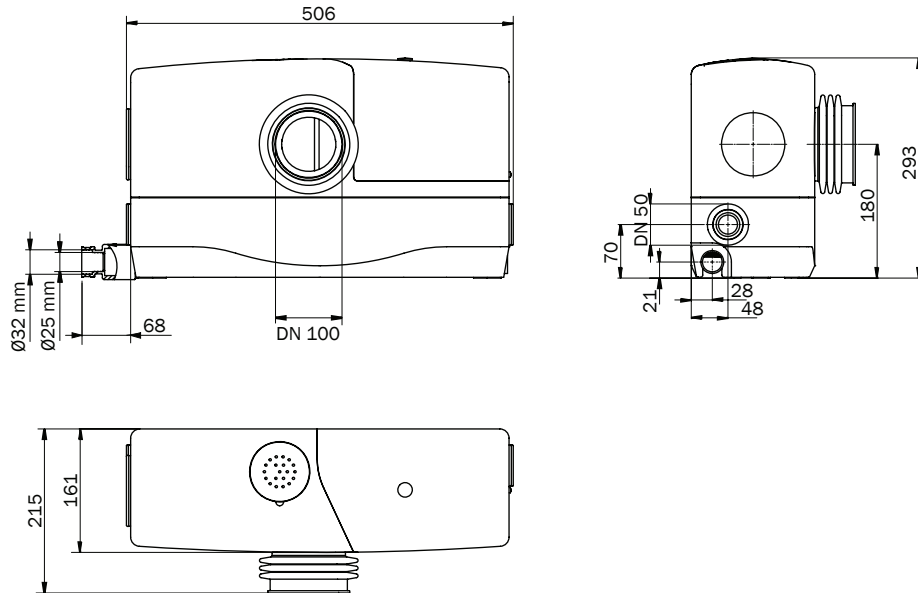


Figure 1. Front connection dimensions

### 5.5.2 Side connection

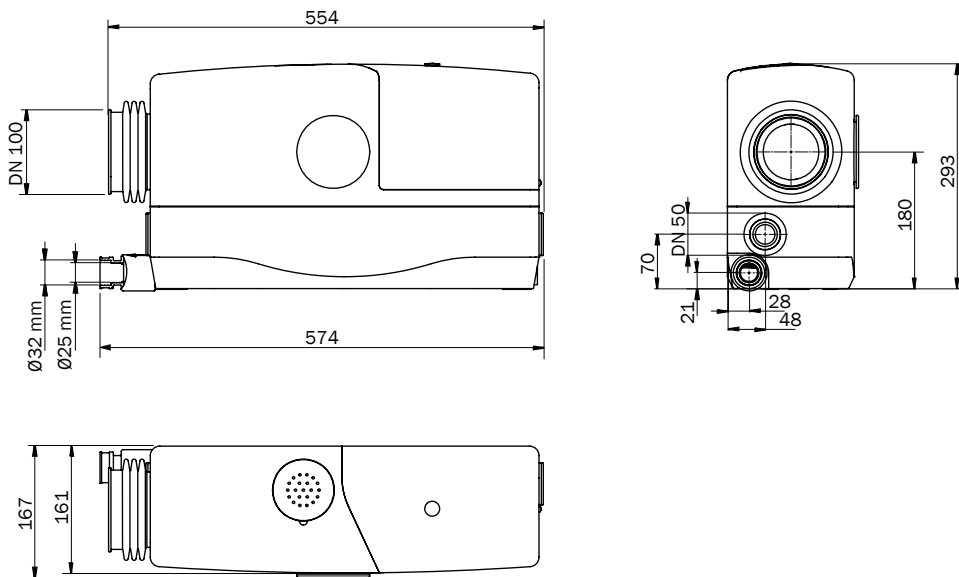


Figure 2. Front connection dimensions

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## 5.6 Exploded view

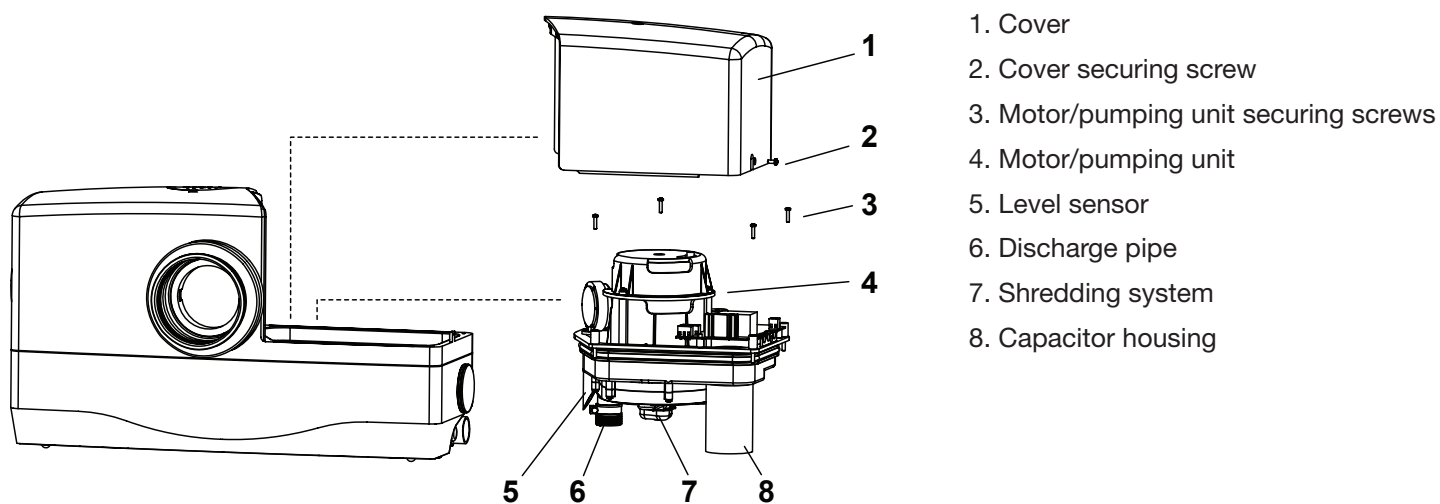


Figure 3. Exploded view

- To take out the pumping unit for service, remove securing screw (2) and lift off cover (1)
- Remove securing screws (3) and lift pumping unit (4) from tank (see fig. 9)



## 5.7 Performance curve

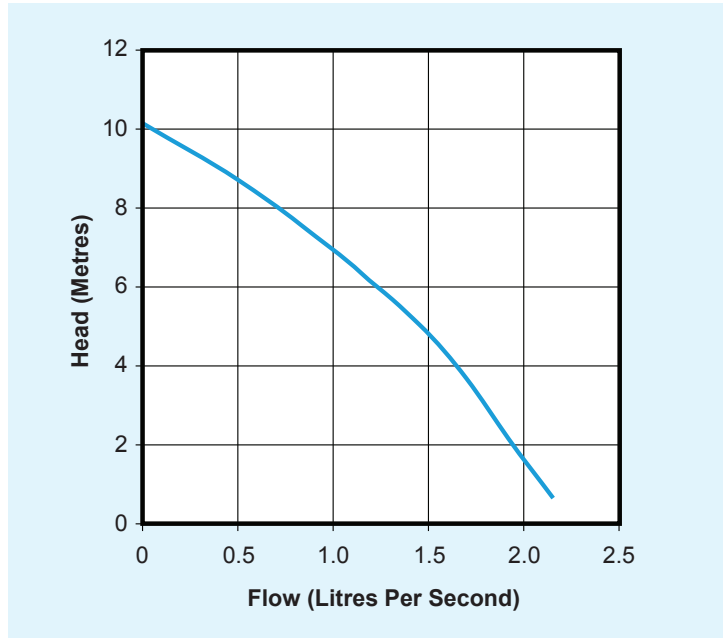


Figure 4.

## 5.8 Maximum length of discharge lines

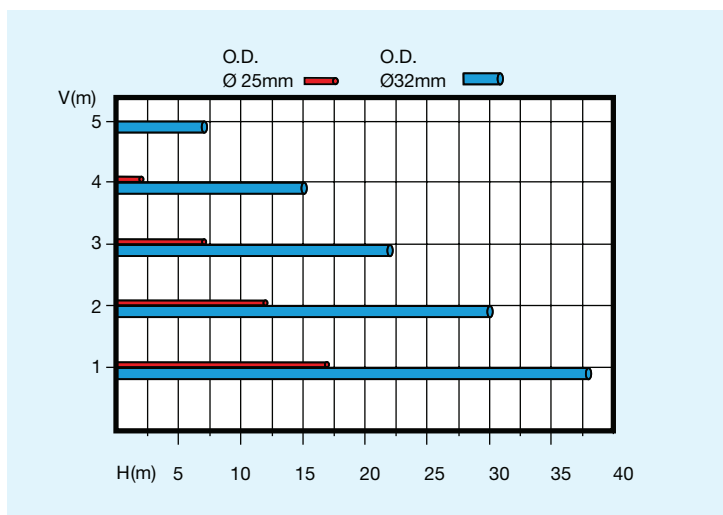


Figure 5. Maximum pipe length allowable for the optimum functioning of the unit.

Allowance has been made for two 90° bends and one ABS non-return valve.

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## 5.9 Installation dimensions (mm)

### 5.9.1 Behind toilet

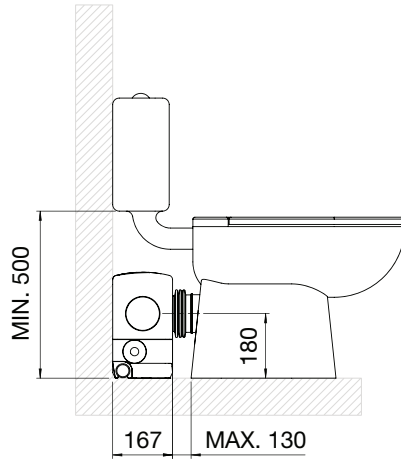


Figure 6. Installation behind a toilet

### 5.9.2 Behind partition with wash basin connection

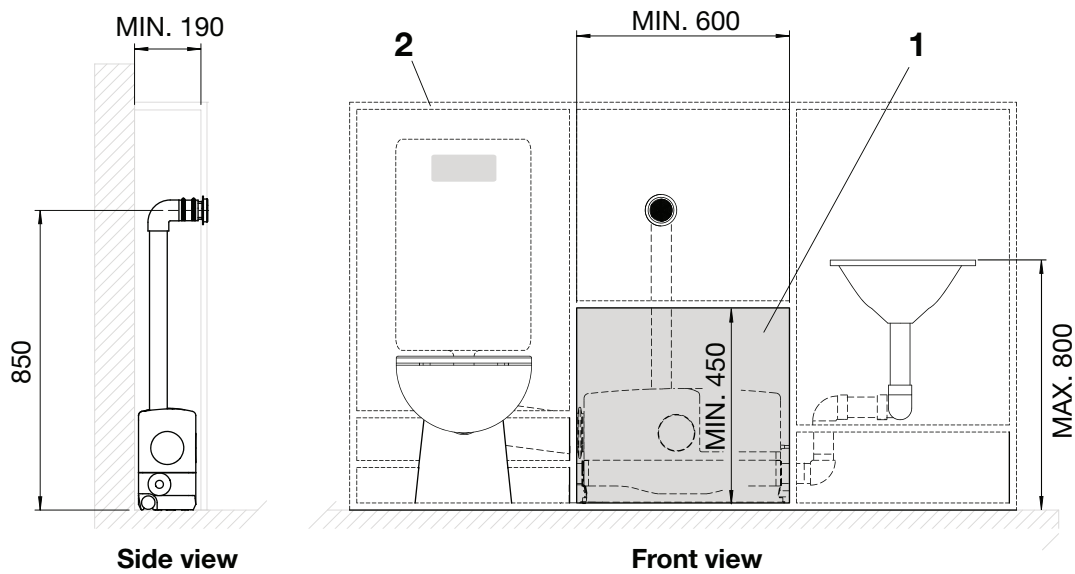
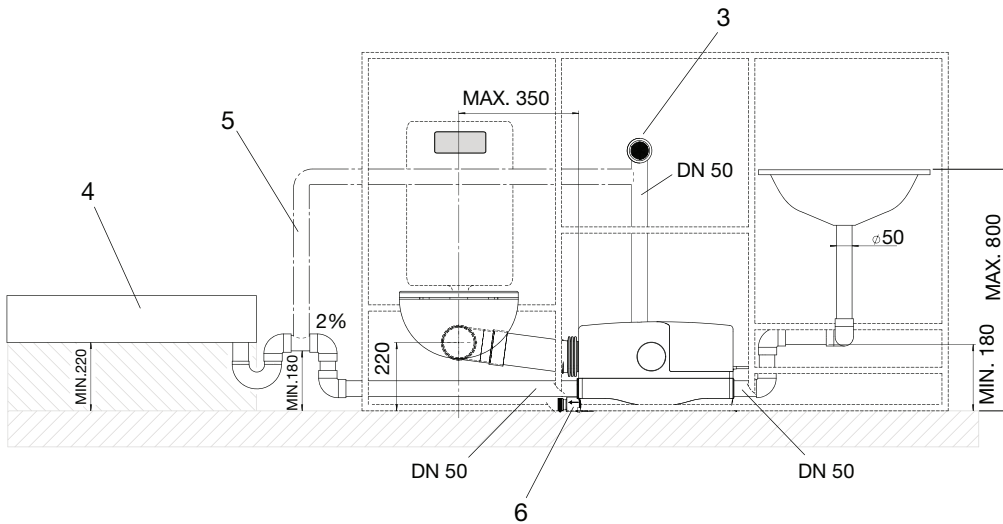


Figure 7. Installation behind a partition with wash basin connection

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## 5.9.2 Behind partition with shower tray connection



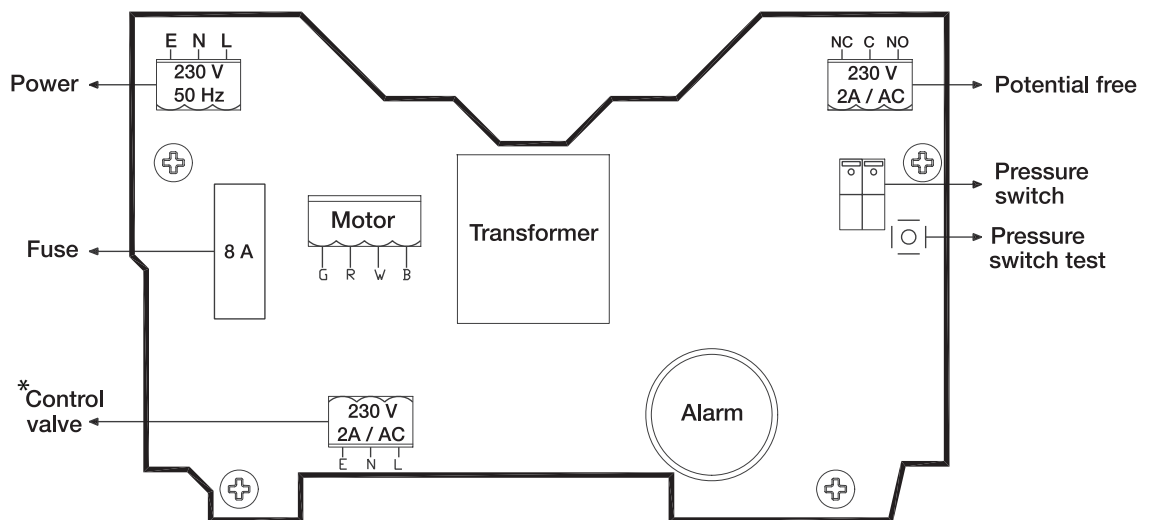
1. Removable panel
2. Partition frame
3. Venting insert
4. Shower tray
5. Secondary vent pipe option
6. Discharge flap valve
7. Evacuation pipe

Figure 8. Installation behind a partition with shower tray connection



The bottom level of the inlet lines from hand wash basins and shower trays must be at a minimum height of 180 mm. This ensures that the inlet line can run completely through a natural gradient and that no back-wash occurs.

## 5.10 Circuit diagram



\* During normal operation the control valve is energized by 230 V AC (2A) and thus remains opened. In case of high water level or power failure the valve will close (water stop).

Figure 9. Circuit diagram

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## 6. Installation

**ATTENTION!** The relevant standards must be observed.

For use below the backwash level:

- Guide the discharge line with a loop above the backwash level
- If the base of the discharge line loop is more than 5m above the lifting unit, an additional checkvalve must be installed
- Provide shut off valves
- Every drain must be fitted with an odour trap

Also see installation dimensions (Section 5.9).

### 6.1 For ground setup

**ATTENTION!** The set up must be made frost-free and on level ground.

#### 6.1.1 Connection of discharge pipe

- Use a PVC discharge pipe with an outside diameter of 25 or 32 mm
- Push the pipe to about 16 mm into the rubber sleeve (use a lubricant if necessary) and secure it on the outside with the existing hose clamp

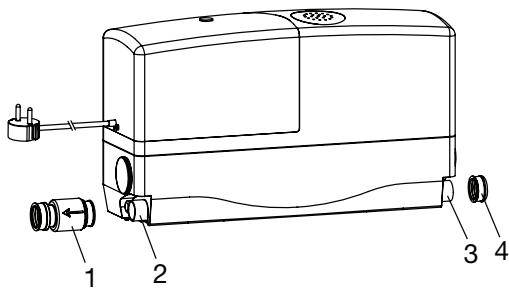


Figure 10.

1. Non-return valve
2. Discharge line (right)
3. Discharge line (left)
4. Cap for unused end of discharge line

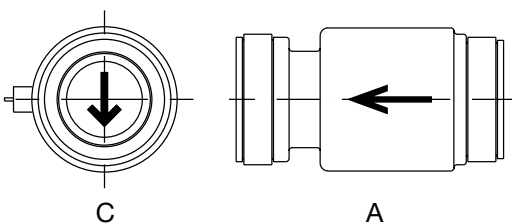


Figure 11. Fitting of the non-return valve

#### Fitting of non-return valve

- A** = Flow must follow direction of arrow  
**C** = Flap must hinge from the top with arrow pointing down

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## 6.1.2 Installation of securing brackets

Keeps the lifting unit safely in place, even in case of flooding.

1. Place the lifting unit in the desired installation location
2. Secure unit to the ground with the aid of the brackets

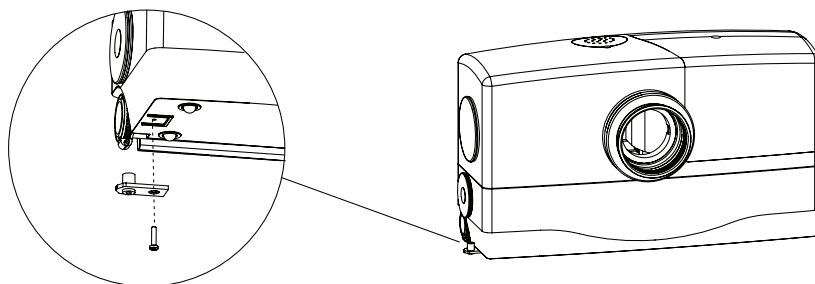


Figure 13. Installation of securing brackets

## 6.1.3 Side inlets DN 50

1. Remove the stopper (1) from the desired DN 50 inlet connection to reveal the fitted rubber seal (2).
2. Push the supply line DN 50 (3) approx. 16 mm into the 1 rubber seal (use a lubricant if necessary).

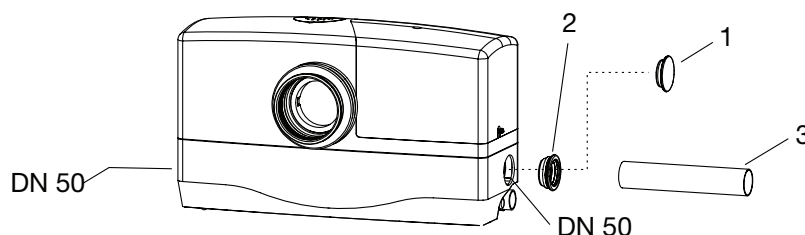


Figure 14. Side inlets DN 50

## 6.1.3 Separate vent line

1. For odour sensitive applications, eg. in doctor's offices, vent the unit above the roof.
2. Remove the filter cover and the carbon filter.
3. Push the vent line into the rubber seal (use a lubricant if necessary).

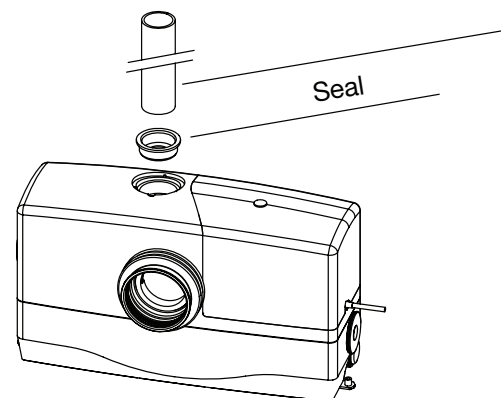


Figure 15. Separate vent line

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## 6.1.4 Toilet connection

- PowerFlush Pro is designed both for direct connection to the front of the unit when installed directly behind the toilet (set up A), or for side connection to a sewage pipe when installed behind a partition (set up B)
- The unused inlet is sealed using the push-fit sealing cap (4) and seal (3)
- The sealing sleeve (1) is attached to the unit by the clip-on ring clamp (2)

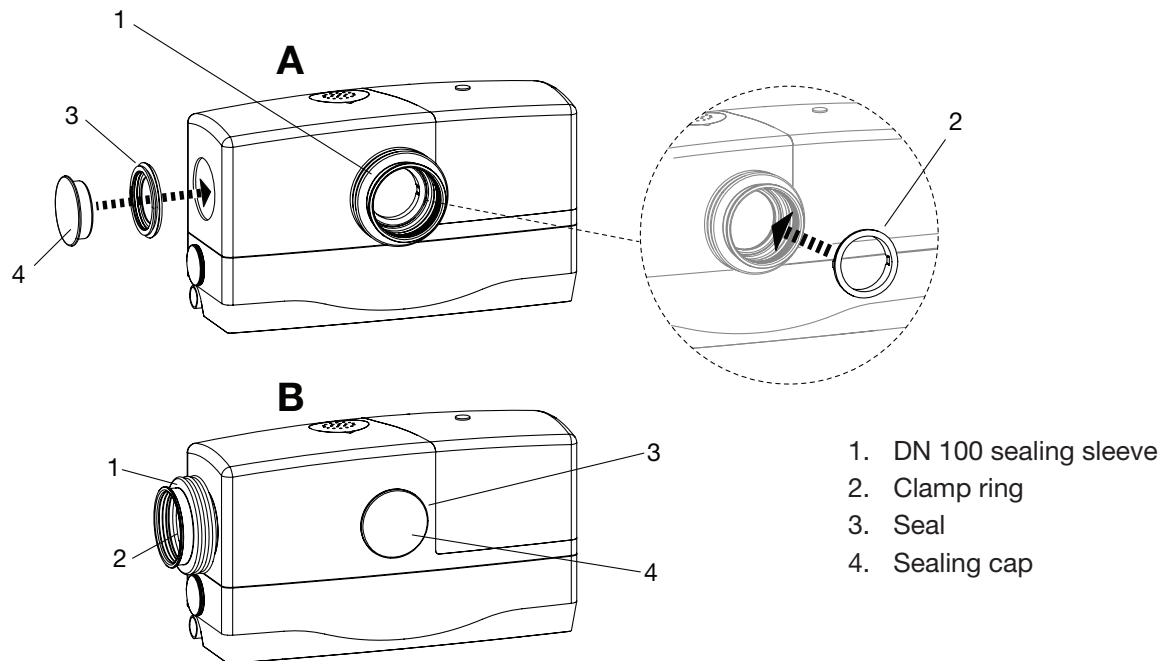


Figure 16. Toilet connection

### ATTENTION!

When installed behind a partition the unit should be vented externally using a vent pipe (see Section 5.9).

## 7. Commissioning

- The lifting unit is now operational
- Connect the unit and carry out a function test. Allow water to flow into the tank. The lifting unit turns on as soon as the electrical power supply is established and the water level in the tank is above the switch on level
- Check all connections/pipe lines for leaks
- In addition, observe the specifications in DIN EN 12056-4, DIN EN 12050-3 and DIN 1986/100

## 8. Maintenance



Before carrying out any maintenance work the unit should be completely disconnected from the mains, and measures should be taken to prevent the unit being inadvertently switched back on.



Do not dispose of wet strength kitchen paper towels, sanitary towels, tampons, condoms and/or nappies into the PowerFlush Pro as these will cause it to block. These products are designed not to break up in water and will block the unit.

The PowerFlush Pro requires minimal maintenance. Basic common sense and good housekeeping will ensure the best results. It is recommended that the unit be rinsed through bleach or any other suitable domestic cleaning product as you would a standard WC. This should help break down any build up of solids within the unit that may inhibit the operation of the pressure switch or pump.

When undertaking works on this product, suitable measures MUST be taken to ensure safe access in accordance with current safety regulations. (see section 10).

We also recommend the unit is serviced regularly and all mechanical parts are checked by a qualified engineer.

Please refer to the Service Agreement section for recommended service intervals, and for further information on service agreements offered by Edincare Pumps.

To arrange a service please call Edincare Aftersales on 01442 211554 (option 2), 8.30am–5.30pm, Monday to Friday or email [aftersales@edincare.com](mailto:aftersales@edincare.com).

### 8.1 Changing the carbon filter

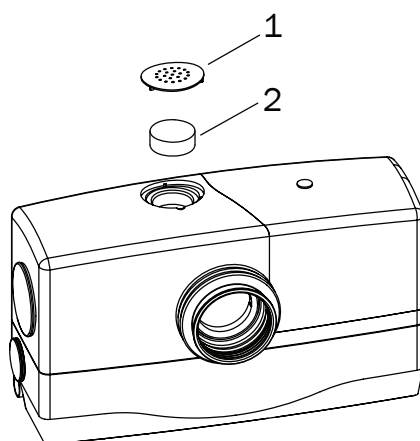


Figure 17. Changing the carbon filter

## 8.2 Steps to be taken in case of blockage



When there is a blockage or fault, water sources which drain into the unit should not be used.

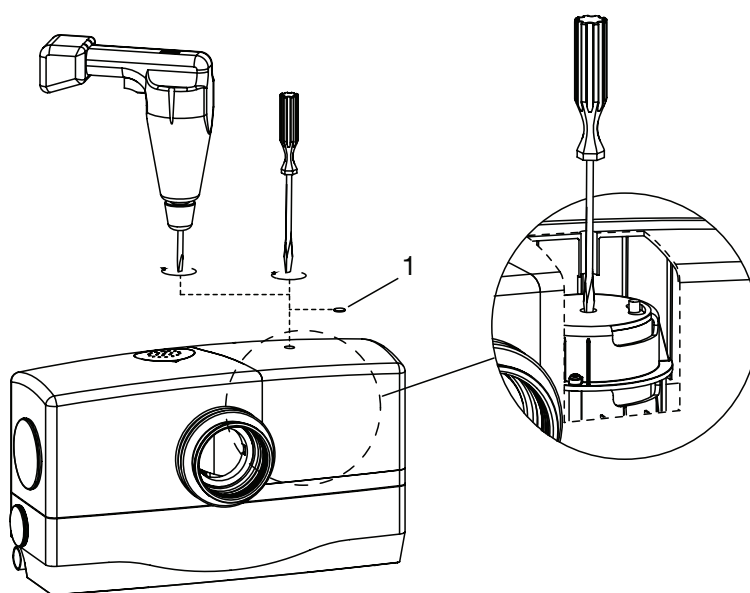


Figure 18. Steps to be taken in case of blockage

- Disconnect from electrical supply and ensure that it cannot be inadvertently reconnected
- Remove cap seal (1) from tank
- Insert a screwdriver or electrical drill and clear a possible blockage of the cutting system by manually rotating the rotorshaft

If rotating the rotorshaft fails to clear the blockage then the complete motor/pumping unit must be removed from the tank for inspection and the blockage cleared by hand.



Care must be taken when handling the motor/pumping unit as there is a danger of injury from the cutting tool in the hydraulic system.



## 9. Transport



**The product must not be thrown or dropped during transport or installation.  
The product must not be lifted by the power cable!**

Carefully unpack the product from its packing and inspect for any signs of damage. Should there be any damage present it must be reported immediately (no claim will be considered after 24hours from time of delivery).

## 10. Health and safety

In order to minimise the risk of accidents in connection with the service and installation work the following rules should be followed:

- Do not ignore health hazards. Observe strict cleanliness.
- Bear in mind the risk of electrical accidents.
- Use a safety helmet, safety goggles and protective shoes.
- All personnel who work with sewage systems must be vaccinated against diseases to which they may be exposed.
- A first aid kit must be close to hand.
- Note that special rules apply to installations in an explosive atmosphere.

### 10.1 Electrical connections

- The following works should only be done by qualified and authorized electricians.
- Edincare disclaims all responsibility for work done by untrained or/and unauthorized personnel.
- Heed operating voltage (see name plate and additional labels).
- Take out the main fuses to isolate the mains supply from the control unit before repairs or any other works and ensure it cannot be energized again.
- If the pump is equipped with an automatic level control, there is a risk of sudden restart.
- Before starting check the efficiency of the protective arrangements of the pump and the monitoring equipment. Failure to heed this warning may cause a lethal accident.
- Do not put the lead ends into water! Irruption of water may cause malfunctions.
- If persons are likely to come into physical contact with the pump or pumped media, the earthed (grounded) socket must have an additional connection to an earth (ground) fault protection device (GFI).
- Use the pump only in accordance to the data stated on the pumps plate respectively.
- Connection only to a mains supply installed in accordance to the local regulations. For fusing of D.O.L. starting pumps use only appropriate slow fuses or automatic circuit breakers with D characteristics. This is because the motor's nominal voltage is measured at the terminal board of the pump; please consider the voltage drop of long supply cables.

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- Replace the cable if the cable jacket is damaged. Do not pinch the cable or pull it around sharp bends.
- Always install the control unit in a dry and well-ventilated room above the backpressure level. Never install the control unit within the chamber.

## 10.2 Earthing

For safety reasons, the earth conductor should be approximately 50mm (2") longer than the phase conductors. If the motor cable is jerked loose by mistake, the earth conductor should be the last conductor to come loose from the first terminal. This applies to both ends of the cable. Ensure the correct earthing of the pump and control unit.

## 11. Product guarantee

12-month guarantee (please refer to our Terms and Conditions for further information).

<https://www.edincare.com/general-information/terms-conditions/#Guarantee>

## 12. Service agreement

Our service agreements consist of planned preventive maintenance visits at an agreed frequency. As part of all service visits, a detailed service check list is utilised that covers all visual inspections, working tests, system adjustments and electrical safety checks.

Service agreement benefits:

- 10% discount off of all parts.
- Flexible payment options, including monthly Direct Debit.
- Service terms available between 2–5 years (discounts offered subject to service term).
- Out of hours service.
- Service visits to suit your schedule.
- Reduced emergency call out rates.
- Provide full reporting on all works undertaken, this includes current condition of equipment and any recommended works.
- Preferential scheduling of emergency call outs.
- Increased life expectancy of equipment.
- Reduced risk of breakdowns with their associated costs and inconvenience.
- Free technical advice available via our help line.
- Fully trained service engineers.
- Nationwide coverage.

Service visit intervals:

Please note; in accordance with BS EN 12056-4 and Edincare Pumps recommendations the pump equipment must be maintained at intervals of:

- Once per annum – Single residential dwelling
- Twice per annum – Single residential dwelling where there is a risk of flooding as a result of product failure (for example, basement applications) & Multiple residential dwellings
- Four times per annum – Commercial premises

A service agreement can be arranged by contacting Edincare Aftersales on 01442 211554 (option 2) and/or at [aftersales@edincare.com](mailto:aftersales@edincare.com)



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